

Multipole connectors for industrial purposes

ENGLISH

CN.16



The Company and the Product

I.L.M.E. SpA - INDUSTRIA LOMBARDA MATERIALE ELETTRICO - has been operating in Milan since 1938, in particular in the electrotechnical sector for the manufacturing of equipment for industrial installations.

ILME reflects the traditional **entrepreneurial spirit of Lombardy**, and has enjoyed continuous expansion for over half a century.

The company has carved an important role for itself in the main world markets, also operating directly in the countries that have assumed world leadership in the field of automation, including Germany and Japan.

In the **electrical connection** sector with applications in industrial automation, characterised by **top performance** and utmost **reliability needs**, ILME is today the acknowledged partner of many leading companies worldwide.



The company's fundamental values are: **product innovation**, original solutions, excellent **price-quality ratio**, a customer-oriented **sense of service**, ethical behaviour and an environmentally-friendly approach.

To promote the continuing improvement of its **qualitative results**, ILME has always encouraged its collaborators to work with utmost **responsibility and participation**.

The company focuses on a series of benefits to the user, including research into the most suitable materials, high quality and safe cabling, a rapid turnaround and readily available services.



ISO 9001 certification: 2008
Design, manufacture and distribution
of industrial electrical equipment (IAF 19, 29a)
Certificate No. 50 100 11133

CE marking

As from 1 January 1997, in order to launch electrical products on the European market the manufacturer must ensure these bear the relevant CE marking, in line with the Low Voltage Directive 73/23/EEC * (implemented in Italy as law 18-10-1977 no. 791) and its modification 93/68/EEC * (implemented in Italy as L. D. 25-11-1996 no. 626/96, published in the supplement to the Gazzetta Ufficiale of 14-12-1996). Said marking must be placed on the product - or, if this is not possible, on the packaging, the instructions for use or the warranty certificate - and acts as a declaration by the manufacturer that the product complies with all relevant EU directives.

ILME products bear the CE marking on the product or packaging.

Almost all ILME products fall under the Low Voltage Directive. A declaration of compliance is required before applying the CE marking. This document, to which the market is not directly entitled, must be made available to the control authorities (in Italy the Ministry for Industry, Commerce and Handicraft) at all times. In it, the manufacturer declares the technical safety standard(s) followed to manufacture the product. These standards must be, in decreasing order of preference:

- a European standard (EN prefix)
- a European harmonisation document (HD prefix)
- an international IEC standard
- a national standard
- in the absence of reference standards, the manufacturer's internal specifications, guaranteeing compliance with the directive's basic safety requirements.

Compliance with harmonised technical standards (i.e. ratified by the CENELEC) constitutes presumption of conformity to the directive's basic safety requirements. The CE marking of ILME products results from

said products' declaration of conformity to harmonised standards or international IEC standards. Through the CE marking, ILME declares full compliance, not merely with the directive's basic safety requirements, but also with those international or national EU standards on which voluntary safety certification markings are based (e.g. IMQ and VDE).

In this way, ILME intends to award the CE marking the value of self-certification in terms of safety, given the loss in legal value of voluntary certifications issued by third parties, ratified by directive 93/68/EEC *.

Notwithstanding the above, practically all ILME products still bear voluntary conformity markings.

This EC declaration of conformity becomes null and void when the assembly of products includes one or more components not manufactured by us and without EC approval.

* **Note:** New legal reference for the Low Voltage Directive is 2006/95/EC which is the consolidated edition of Directive 73/23/EEC + Directive 93/68/EEC.

On March 29, 2014, the new Low Voltage directive 2014/35/EU has been published on the Official Journal of the European Union, as a recast of the previous directive 2006/95/EC. It will enter into force on April 20, 2016.

CLASS

Application fields

The heavy duty multipole connectors for industrial purposes are used in electric and electronic machinery, control units, electric panels, control equipment and wherever connections are required for power and signalling circuits (N.B. connectors must not be handled live). They comply with the European standard EN 61984 (derived from the German standard DIN VDE 0627) and the European standard EN 175301-801 (derived from the German standard DIN 43652) where applicable.

OFFSHORE



NAVAL



ROBOTICS



AUTOMATION



WIND ENERGY



TRANSPORTATION



SALT-SPRAYERS



POWER SUPPLIES



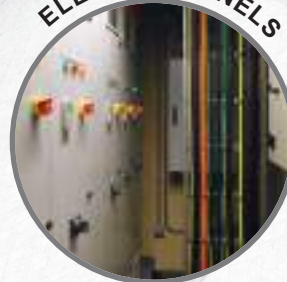
STAGE EQUIPMENT



MOULDING



ELECTRIC PANELS



REMOTE CONTROLS



SAFETY SYSTEMS



FOOD & BEVERAGE



Important Notes

ILME designs and manufactures complete solutions for Heavy Duty electrical power connections.

The connector (although offered to the user as a variety of elements, usually inserts and enclosures, to allow the selection of the ideal combination) has been **designed as a complete connector** and tested to be compliant with the essential safety requirements of the EU Low Voltage Directive 2006/95/EC (2014/35/EU from April 20, 2016) and in particular the EN 61984 standard.

The design of this “whole” system guarantees that every allowed combination of inserts, enclosures and accessories cannot result as improper.

The products in this catalogue alone cannot guarantee the best functionality upon installation, as this depends also on their correct **“putting into service”** which must be performed in compliance with the applicable system safety standards and according to the “rule of the art”.

Therefore the effectiveness of the installation of the connector depends on the choices of the end user who must also take into account the following safety requirements.

Connectors must **not be connected or disconnected when live or under load**.

After wiring the inserts it is necessary to **verify the continuity of the protective earth connections**.

The correct coupling of the inserts is guaranteed only if they are installed (with the four fixing screws supplied) inside the corresponding enclosures or onto compatible accessories in this catalogue. I.L.M.E. SpA is not responsible for any different application.

Wiring of **screw-type terminal connections** must be carried out applying the correct tightening torque in order to avoid false contacts or damage to the conductor, the screw or the terminal.

Crimping tools and contacts used should preferably be supplied by the same manufacturer to avoid difficulties with the insertion and retention of the contacts themselves.

Correct wiring of spring-clamp connection inserts is guaranteed only when the correct screwdriver indicated in the specific catalogue, or possibly on the insert, is used.

Avoid forcing the contacts during **connection and disconnection**.

Connectors must be coupled and uncoupled in the axial direction with respect to the contacts, without bending and pulling the attached conductor bundles or cables.

Installation of two **inserts side by side**, in enclosures with two bays, must respect the polarity drawing marked on the insert (or the contact side view, as shown in this catalogue) to avoid inverted coupling.

The installation of two or more identical connectors side by side is recommended only with the use of coding pins in order to avoid mismatched couplings.

In order to keep the declared degree of protection (IP code), enclosures must be completed with cable glands and/or other accessories with at least an equal protection rating.

Moreover, the IP protection rating (according to EN 60529) is guaranteed when the enclosures, complete with inserts, are coupled and locked with their locking levers (or devices).

Finally, Please note:

- ILME cannot be held responsible for individual components in uses other than those described in this catalogue.
- ILME cannot be held responsible for incorrect connector selection in relation to the environmental conditions of the application (e.g.: influence of ambient temperature, moisture, environmental pollution, etc.).

Connector inserts and their enclosures are generally compatible with similar/equivalent products from other manufacturers, according to the last samples tested.

Full compatibility cannot be guaranteed in the event of technical changes made by other manufacturers. In particular, maximum performance of IP68 enclosures (Series CG) cannot be guaranteed when coupled with other manufacturers' products.

I.L.M.E. SpA takes no responsibility in verifying whether the components herein contained comply with any specific regulations of fields of application.

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CDS
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CSAH
 Connection without tools 16A - 250V
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CSH
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CX - MIXED INSERTS
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HYGIENIC

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COB


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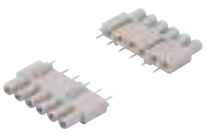
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Web site

Technical features available on www.ilme.com

CHOOSE YOUR CONNECTOR

COMING
SOON
2016

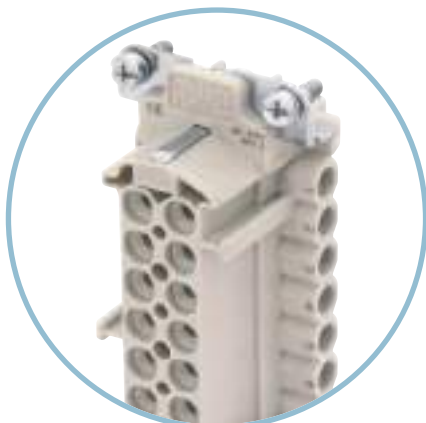
Starting from
INSERTS
through
APPLICATIONS
and
ENCLOSURES



Starting from
PART NUMBER
or **TECHNICAL DETAILS**
to find
the **DATASHEET**

Inserts

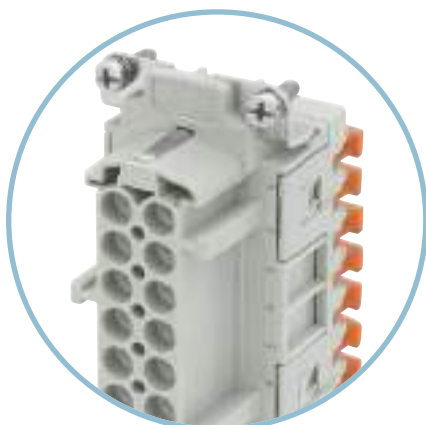
Inserts are made of self-extinguishing thermoplastic resin UL 94 V-0, normally used for applications in a maximum ambiente temperature of 125 °C. The special versions for use with a maximum ambiente temperature of 180 °C are made of PPS. Different conductor connection techniques are available: screw, crimp or spring connections. The contacts are in silver or gold plated brass. Inserts are numbered on both sides by laser printing or moulded. There is a large number of versions of inserts selected on the basis of the rated voltage (from 50V to 5000V), the rated current (from 5A to 200A max), the number of poles, the different load combinations required (power and signal poles within the same insert). Inserts are approved in accordance with the approval marks including UL, CSA, GL and EAC. For certifications of each model/series refer to the summary statement (pages 18 and 20) and the respective pages of this catalogue.



CNE
SCREW contacts



CD-CDD
CRIMP contacts



CSH - SQUICH®
SPRING contacts
with actuator



CSE
SPRING contacts



CDS
SPRING contacts
high density

MIXO series inserts

The MIXO series is a system composed of modular units to satisfy specific application needs using traditional enclosures. Inside a single enclosure various types of connections can be housed, for example electrical signals, contacts for conducting compressed air with pressures of up to 8 bars, fibre optics, Ethernet, USB and coaxial networks. Insert compartments are composed by placing multiple modules side by side to form a single compact block; this is inserted on metallic frames with predetermined slots. Once the modules have been inserted on the frame and locked with special keys, the connector composed in this manner can be inserted into the enclosure.



MIXO
5A - 10A - 16A - 40A
CRIMP contacts
SPRING contacts
AXIAL SCREW contacts



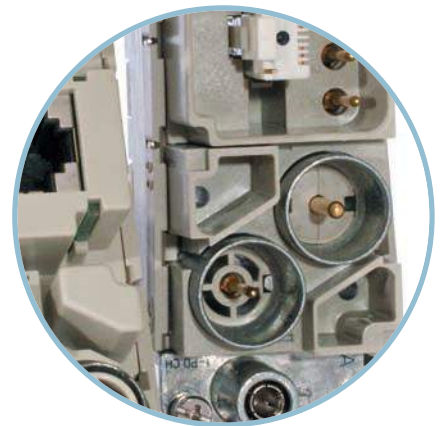
MIXO
70A - 100A - 200A
CRIMP contacts



MIXO BUS
CRIMP contacts



MIXO POF/MOST
CRIMP contacts
for fibre optics



**MIXO COAX, HT, RJ45,
USB, PNEUMATIC**
CRIMP contacts for
coaxial cables
high voltage
connector adapters
RJ45 and USB
pneumatic

Enclosures

A large number of enclosure versions are available with different combinations of component materials, each one suitable for a specific installation: normal environmental conditions, high temperature environments, aggressive environments and environments that require electromagnetic compatibility. The principal parts are made in die cast aluminium alloy with a coating of epoxy-polyester powder or in self-extinguishing thermoplastic. They are resistant to impacts and strong mechanical stress.

The coupling stability and protection against accidental opening are assured by single or double closing devices comprising levers, springs and pegs in stainless steel or entirely in plastic. Sealing is assured by special gaskets that protect the contact groups inside the enclosures against dust and aggressive agents. In general, the coupled enclosures with the appropriate user-selected connections guarantee IP44, IP65, IP66, IP67, IP68 and IP69 (IEC/EN 60529) protection rating.

Standard application

C-TYPE



from page 237

IL-BRID



from page 228

T-TYPE



from page 324

CK-CKA



from page 221

CQ



from page 226

COB



from page 460

Watertight

V-TYPE IP67



from page 272

IP68



from page 420

IP68 - CGK



from page 416

Enclosures

Aggressive environments

HYGIENIC



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T-TYPE / W



from page 334

W-TYPE



from page 367

Special enclosures

BIG - HOODS



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EMC



from page 379

180 °C



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LS-TYPE



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CENTRAL LEVER



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830V

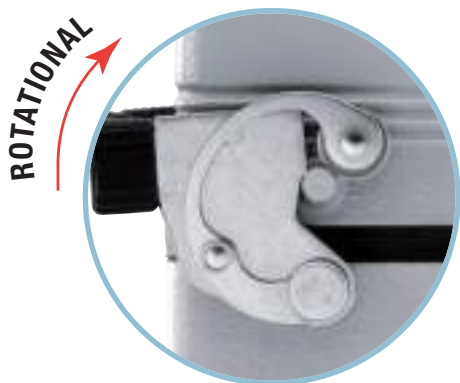


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Enclosures

Different locking levers

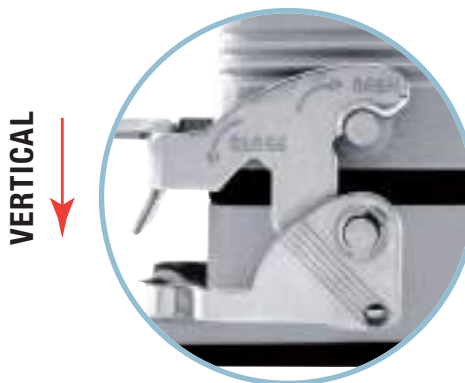
C-TYPE “CLASSIC, FLEXIBLE”



USED FOR ENCLOSURES:

- C-TYPE (IP65 or IP66)
- W-TYPE (IP65 or IP66) for aggressive environments
- 180 °C (IP65) for high temperatures with a completely metallic lever
- EMC (IP65 or IP66) for electromagnetic compatibility
- INSULATED 830V (IP65 or IP66) for CME 830V inserts

C7 “VERTICAL CLOSING UP TO IP67 PROTECTION DEGREE”



USED FOR ENCLOSURES:

- C7 (IP67) stainless steel levers
- CV (IP65 or IP66) stainless steel levers

IL-BRID LEVER “THE COORDINATED EFFECTS OF TWO MATERIALS”



USED FOR ENCLOSURES:

- IL-BRID (IP66)

T-TYPE “THERMOPLASTIC LEVER” OFFSHORE, FOOD AND BEVERAGE APPLICATIONS, LIGHT AND SOUNDS INSTALLATIONS



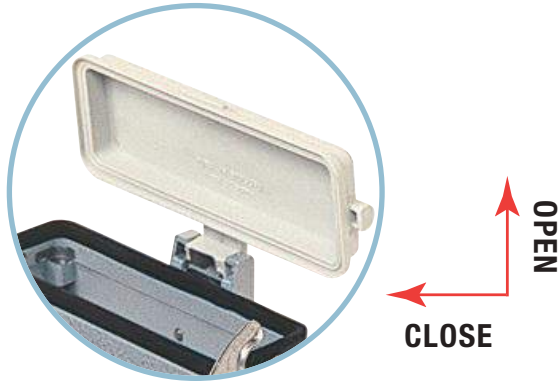
USED FOR ENCLOSURES:

- T-TYPE (IP65)
- T-TYPE/W (IP66)
- HYGIENIC: T-TYPE/H, T-TYPE/C (IP66/IP69)
- LS-TYPE (IP65)

Hinged cover

With two positions or self-closing

OPEN or CLOSE positions “WHITE THERMOPLASTIC” LP / CP



USED FOR ENCLOSURES:

- C-TYPE (housings with pegs)
- CV (housings with lever)

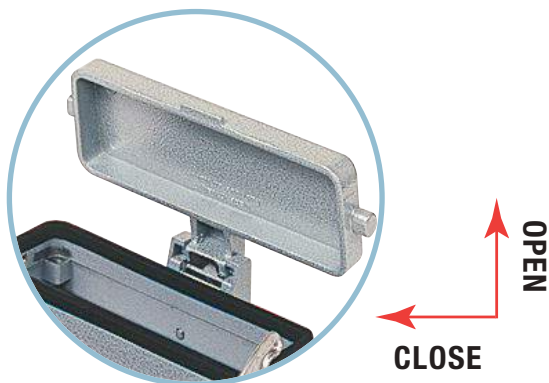
SELF-CLOSING “BLACK THERMOPLASTIC” LSP



USED FOR ENCLOSURES:

- CV (housings with lever)

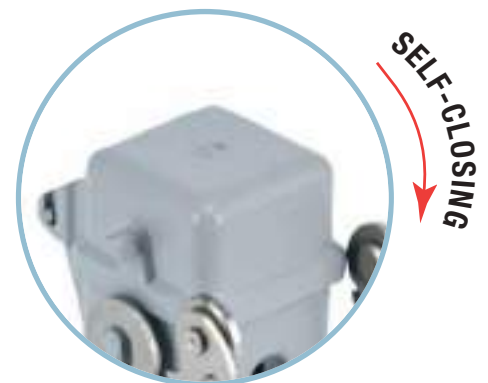
OPEN or CLOSE positions “METAL VERSION” LS / CS



USED FOR ENCLOSURES:

- C-TYPE (housings with pegs or lever)
- CV (housings with lever)

SELF-CLOSING “METAL VERSION” LS



USED FOR ENCLOSURES:

- CKA (housings with lever)
- C-TYPE size 104.62 (housings with lever)

Accessories and tools

For inserts and enclosures

Supports, adaptors and accessories

Provide the solution to the most diverse installation needs. The extensive range of articles comprises: panel supports for inserts, special enclosures (housing with double outlet, wide housings, housings without outlets, to be punched out, housings for round cables, hoods), insert combination blocks, accessories for CT inserts, interface for printed circuits, kits for control equipment, plates for mounting D-SUB inserts onto enclosures, reducing plates and closure plates, protection lid for transportation, coding pins.



Tools

To guarantee the efficiency and safety of the connections a complete series of specific tools is available for contact crimping that assure the maximum quality required by the standards.

Manual or pneumatic or electric (battery operated) semi-automatic tools for light production or automatic electro-pneumatic tools for large-scale production are available, together with a complete series of complimentary tools for mounting and dismounting of the crimped contacts.



DESINA® and EUROMAP

Specification

Connectors compliant with DESINA® standard

DESINA® (which stands for **DE**centralised and Standardised **IN**stAllation technology) is an innovative installation concept behind a study headed by the German manufacturers of machine tools association (VDW), with the co-operation of users (including German automotive manufacturers) and component manufacturers, which has led to the introduction of a specification aimed to standardise electrical, hydraulic and pneumatic components and their interconnection on common platform for CNC controlled machine tools and manufacturing lines.

In the last few years, the DESINA® specification has been successfully enclosed in the ISO TC 184/SC 1 "Industrial automation systems and integration / Physical device control" as an ISO standard.

This work has recently been completed, and the following standards have now become available:

ISO 23570-1 Industrial automation systems and integration – Distributed installation in industrial applications: Part 1 – Sensors and actuators.

ISO 23570-2 Industrial automation systems and integration – Distributed installation in industrial applications: Part 2 – Hybrid communication bus.

ISO 23570-3 Industrial automation systems and integration – Distributed installation in industrial applications: Part 3 – Power distribution bus.



EUROMAP (European Plastics and Rubber Machinery)

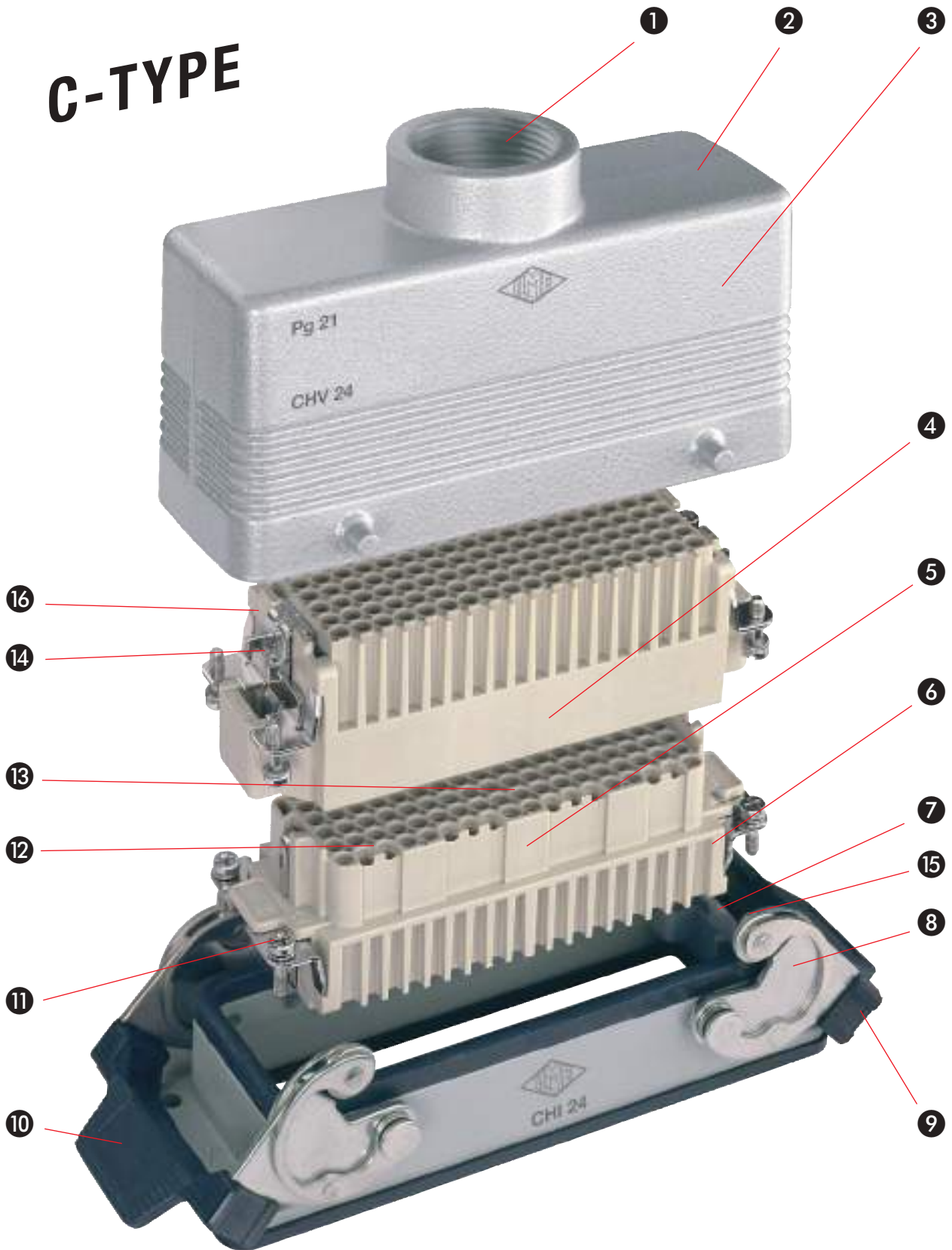
ILME connectors meet the Technical Recommendations:

- EUROMAP 12: CSAH / CDA / CDC inserts, 32 poles.
- EUROMAP 13: CSAH / CDA / CDC inserts, 16 poles.
- EUROMAP 14 – part 1: CSAH / CDA / CDC inserts 16 poles (with CDC inserts the iron and constantan thermocouple crimp contacts may also be used).
- EUROMAP 14 – part 2: CSH / CNE / CCE / CSE inserts, 16 poles - CP inserts, 6 poles.
- EUROMAP 16: CD inserts, 8 poles, CSAH / CDA / CDC inserts, 10 poles.
- EUROMAP 27-1: MIXO inserts, CX 08 C and CX 04 B.
- EUROMAP 28: CSH / CSE inserts, 6 poles.
- EUROMAP 29: CSH / CSE inserts, 24 poles.
- EUROMAP 62: CSAH / CDA / CDC inserts, 32 poles.
- EUROMAP 67: CD inserts, 50 poles (CD 25 Z version).
- EUROMAP 67.1: CD inserts, 50 poles (CD 25 Z version).
- EUROMAP 70: MIXO inserts, CX 12 D.
- EUROMAP 71: CD inserts, 50 poles (CD 25 Z version).
- EUROMAP 73: MIXO inserts, CX 12 D.
- EUROMAP 74: MIXO inserts, CX 12 D.



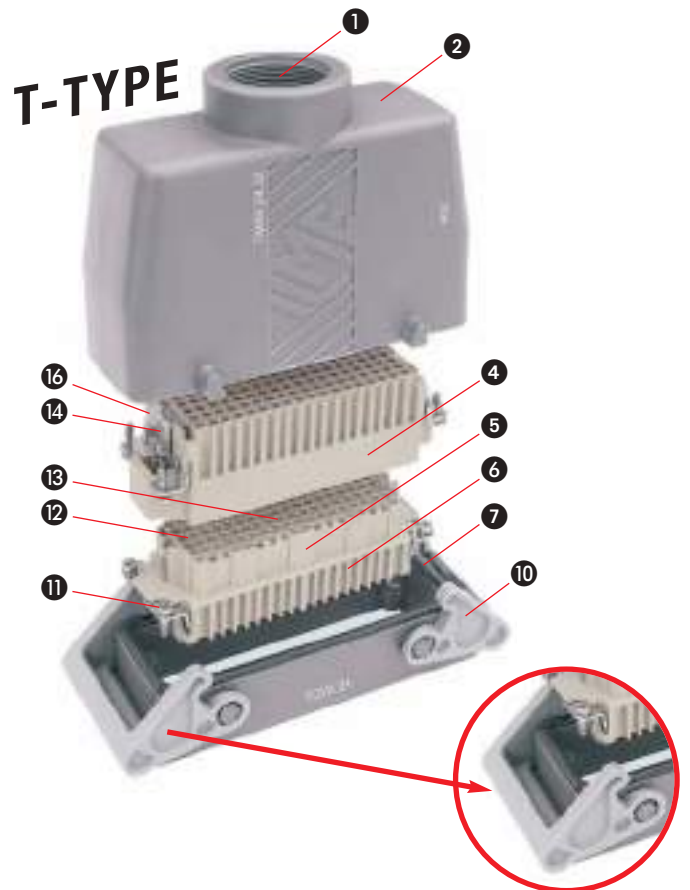
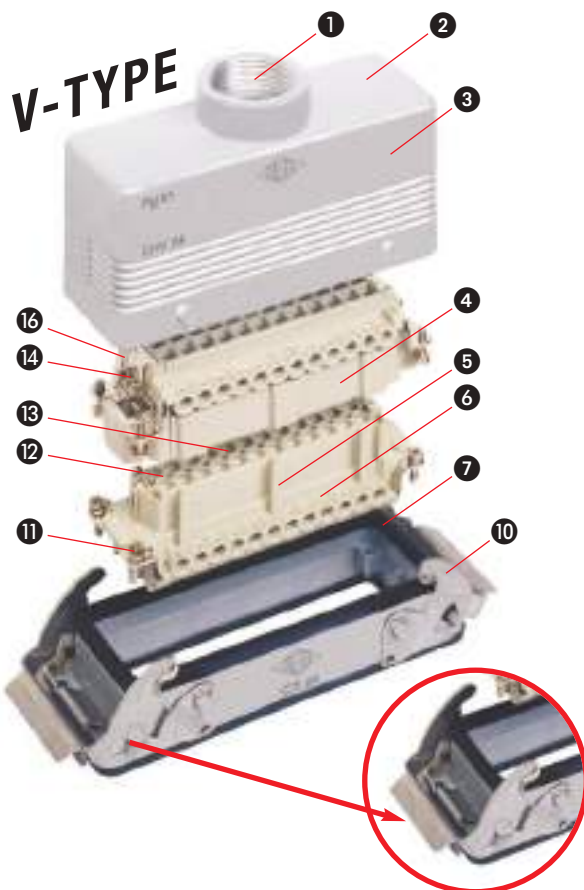
General features of multipole connectors for industrial purposes

C-TYPE



General features of multipole connectors for industrial purposes

- 1 Threaded cable passage in various Pg diameters (types with pre-code "C") or metric passage (types with pre-code "M") in accordance with EN 60423, for cable entry devices in accordance with EN 50262 superseded from 2016-09-23 by EN 62444 (NPT threading on request), may be located vertically, horizontally or frontally.
- 2 Rugged die-cast aluminum alloy or self-extinguishing thermoplastic enclosures (types CK, MK, CQ 08 and T-Type). UL approved.
Surface-mounting bulkhead and hood versions are available, with or without fixed covers or with mobile protection covers.
The types of enclosures CH-CA (Pg cable entries) and MH-MA (metric cable entries) have a tab that prevents the insertion of inserts series CME (all) and CMCE (only 16+2 poles), while CM (Pg) enclosures series and MM (metric) do not have any tabs and contain supplementary insulating strips inside.
- 3 Metallic enclosures with a coated finish of epoxy-polyester with high resistance to mechanical stress and external agents. Enclosures used with temperatures of up to 180 °C and in aggressive environments are treated with special coatings.
Where electromagnetic compatibility is necessary, EMC enclosures with high conductivity and high corrosion resistance surface treatment.
- 4 Inserts are made of UL certified self-extinguishing fibreglass reinforced thermoplastics, and feature an operating temperature range between -40 °C and +125 °C.
The inserts CME (all) and CMCE (only 16+2 poles) for 830V have a key that prevents the insertion of inserts for use other than that prescribed (types CM - Pg and MM - metric). For some series, inserts in PPS (polyphenylene sulphide) may be requested for special uses with temperatures of up to 180 °C.
- 5 Insert profiles polarised with asymmetrical guides to avoid incorrect matings.
Inserts have a mechanical life equal to or higher than 500 mating cycles.
- 6 Inserts are manufactured in compliance with European standard EN 61984 (DIN VDE 0627), certified and identified with UL and CSA markings.
- 7 Special seal gaskets in vinyl nitrile elastomer, polyurethane gasket or fluoro elastomer (on enclosures for use with maximum temperatures of 180 °C and for aggressive environments), in anti-aging, oil-resistant, fuel-resistant, together with the cable entry devices (not supplied) provide an IP degree of protection for coupled connectors. Special conductive gaskets for EMC enclosures.
- 8 Stainless steel closure levers and springs guarantee a perfect closure and sealing.
- 9 Locking device available in two versions, simple (with one lever), or double (with two levers). In metallic enclosures, ILME offers different types of levers: vertical or classic rotative closure.
- 10 Various handle solutions are available: in self-extinguishing, thermoplastic material; in die-cast aluminium with stainless steel.
- 11 Captive insert fastening screws, with anti-slackening spring washer or under-head knurling.
- 12 Contact position identified with numbers or codes on both sides of each insert and printed with a laser system or from a die.
- 13 Silver or gold plated brass contacts connected to the wires by means of captive screws supplied already slackened, with spring terminal, by means of crimping (contacts available separately), or with a built-in 45° terminal block (in turn with screw or spring terminal).
- 14 Protective earth terminal with a wide contact surface.
- 15 Pins and levers supplied with anti-friction rings that facilitate closure and limit wear and tear.
- 16 CE marking attesting conformity to the requirements of the Low Voltage directive 2006/95/EC (2014/35/EN from April 20, 2016).





Dimensioning of clearances and creepage distances.

European standard EN 61984 (2009-06) is the reference standard for safety requirements for multipole connectors for industrial uses and for the relevant tests which incorporates without modification the corresponding international standard IEC 61984 Ed EN 2.0 (2008-10).

It is applicable to connectors with rated voltage values of over 50V, and up to 1000V, and rated currents values of up to 125A per pole, for which no dedicated standard exists, or to which the particular specifications or the manufacturer refer as regards the safety aspects. It can be used as a guide for connectors with rated voltage exceeding 125A per pole and those with a rated voltage less than 50V (the latter excluded from the scope of the Low Voltage Directive 2014/35/EU).

The last edition of the EN 61984 standard also introduced the definition of **connector without breaking capacity (COC)** to better distinguish this category of products from **connectors with breaking capacity (CBC)**.

For terminal security and performance requirements, according to the connection technique adopted, the standard integrally refers to the corresponding standards (IEC/EN 60999 series and IEC/EN 60352 series). For determining the minimum distances through-air and along the surface insulating, i.e. creepage distances, for connectors, this standard now refers, without any modifications to standard IEC 60664-1 Ed. 2.0 (2007-04) ¹⁾.

The following illustrates the method of EN 61984 standard, with reference to IEC 60664-1 standard, for determining the minimum insulation in connectors. The rated characteristics for each ILME connector family are provided on pages 18 and 19. As in the first edition, the following are now obsolete: the insulation group concept and the distinction of rated voltage values into d.c. and a.c., voltage values 220V and 380V were adapted to standardised values 230V and 400V according to IEC 60038 ²⁾ and some concepts were taken from the regulations for LV electrical systems of the IEC 60364 ³⁾ series, such as:

- the overvoltage categories (I, II, III, IV), according to the use of the equipment ⁴⁾: these are correlated with the transient overvoltages taken as a basis for determining the rated impulse withstand voltage;
- the degrees of pollution;
- the classification of insulating materials according to their resistance to tracking;
- the conditions of the electrical field (homogenous or non-homogenous).

Overvoltage categories (or impulse withstand).

The overvoltage categories of a circuit or of an electrical system are identified by a conventional number (from I to IV) based on the limit or the control of the assumed transient overvoltage values obtained on a circuit or electrical system and depends on the means used to reduce the overvoltages.

TABLE 1

The rated impulse withstand voltage for equipment powered directly from the low-voltage mains (IEC 60664-1 Ed. 2.0 2008-10)

Rated supply voltage according to IEC 60038 (CENELEC HD 472 S1, CEI 8-6)		Voltage line to neutral derived from nominal voltages a.c. or d.c. ≤ V	Rated impulse withstand voltage ^{b)} Overvoltage category			
V Three-phase ^{a)}	V Single phase		V			
			I	II	III	IV
		50	330	500	800	1500
		100	500	800	1500	2500
		150	800	1500	2500	4000
230/400 } 277/480 } 400 / 690		300	1500	2500	4000	6000
		600	2500	4000	6000	8000
1000		1000	4000	6000	8000	12000

a) The “/” symbol indicates a four-wire three phase distribution system (star distribution). The lower value is the voltage between phase and neutral (phase voltage), whereas the higher value is the voltage between the phases (mains voltage). Where only one value is indicated, it refers to three-wire, three-phase systems (delta distribution) and specifies the line-to-line value.

b) Equipment with these rated impulse withstand values can be used in installations in accordance with standard IEC 60364-4-443 (Italian standard CEI 64-8/4 Section 443, German DIN VDE 0100-443).

Table 1 provided the rated impulse withstand voltage for equipment energised directly from the low voltage mains in function of the rated voltage of the power supply system, the relative voltage line-to-neutral and the overvoltage category.

Industrial machinery and installations with fixed connection to the low voltage supply system and consequently the relative components including multipole connectors, constitute an example of equipment belonging to overvoltage category III.

Examples of general equipment that comes under overvoltage category II are electrical household appliances, portable tools and other household or similar equipment.

For distribution networks with rated voltage **230/400V** (star distribution with neutral earthed), and overvoltage category III (category III: impulse withstanding), the demanded rated impulse withstand voltage is **4kV**.

For distribution networks with rated voltage **400 or 500V** (star distribution without neutral or with insulated neutral, or delta distribution, insulated or corner-earthed), and overvoltage category III (category III: impulse withstand), the demanded rated impulse withstand voltage is **6kV**.

Pollution degree.

Pollution indicates the presence of any kind of foreign matter, whether solid, liquid or gaseous (ionised gas) that can have a negative influence on the dielectric strength or on the surface resistivity of the insulating material.

The standard establishes four degrees of pollution. The categories are identified by conventional numbers based on the quantity of polluting agents or on the frequency of the phenomenon which determines the reduction of the dielectric strength and/or of the surface resistivity.

Pollution degree 1

No pollution or only dry, non-conductive pollution.

The pollution has no influence.

Pollution degree 2

Only non-conductive pollution except that occasionally a temporary conductivity caused by condensation may occur.

Pollution degree 3

Conductive pollution or dry, non-conductive pollution which becomes conductive due to condensation which may occur.

Pollution degree 4

The pollution generates persistent conductivity caused by conductive dust or by rain or snow.

Pollution degree 3 is typical of an industrial environment or similar, while pollution degree 2 is typical of a household environment or similar.

Standard EN 61984 permits the sizing of surface insulation distances (creepage distances) of connectors installed in enclosures in protection class ≥IP54 for the degree of pollution immediately below that of the application environment (e.g.: 2 instead of 3).

Abstract from standard EN 61984.

6.19.2.2 For a connector in protection rating IP54 or higher, according to Publication IEC 60529, the insulating parts inside the enclosure may be sized for a lower degree of pollution.

This applies also to coupled connectors, closure of which is ensured by the connector enclosure, and which may be uncoupled for test and maintenance purposes only.

One may therefore use connectors installed in enclosures or containers with degree of protection ≥ IP54, at the rated data referring to degree pollution 2 in industrial applications with degree of pollution 3, if, in compliance with the standard, the connector coupling is opened only occasionally for tests or maintenance. In the event of temporary or limited duration in uncoupled state, a closing cover is, however, necessary, guaranteeing at least degree of protection IP54.

However, this does not apply to connectors which remain uncoupled and exposed to an industrial atmosphere for an indefinite period.

It should be noted, however, that pollution could penetrate inside coupled connectors, also when it comes from remote parts of the electrical system (e.g. through conduits providing cable entry to the connectors enclosure).

Moreover, connector enclosures are usually supplied without cable entry devices, with the installer fitting such devices according to need. The degree of protection marked on the enclosures is guaranteed only for connectors coupled through the use of cable entry devices in equal or higher IP protection rating and expertly installed.

Examples of application for the selection of degree of pollution 2 for a connector.

- Connector on an electric motor controller, which is uncoupled only to replace a faulty motor, also in cases where degree of pollution 3 is instead specified for the system.

- Connector on a module-constructed machine, which is opened only for transport purposes and which is used only for faster installation and for safer putting into service.

One must make sure that the connector has not been polluted during transport.

To ensure this has not occurred, protective covers or adequate packing must be used.

- Connector inside a panel with degree of protection ≥ IP54.

In this case one may even renounce equipping the connector with an IP54 enclosure.

1) Endorsed with modifications as European standard EN 60664-1:2007 and published by CENELEC member countries as a national standard: Italian standard CEI EN 60664-1 (class. CEI 109-1) (2008-04), German standard DIN EN 60664-1:2008-01 (VDE 0110-1).
 2) Harmonisation Document CENELEC HD 472 S1, Italian standard CEI 8-6 (1989) + CEI 8-6;V1 (1997), German standard DIN IEC 60038:2002-11.
 3) Italian standard CEI 64-8, German standard DIN VDE 0100.
 4) EN 60664-1 modifies the definition to “impulse withstand category”.

Insulating material group.

Insulating material influences the determination of the minimum creepage distance. It is characterised according to the damage it suffers from the concentrated release of energy during scintillations when a surface leakage current is interrupted due to the drying of the contaminated surface.

The CTI (comparative tracking index, index of resistance to surface currents) is assumed as index of the resistance to creep currents of the insulating materials in the presence of atmospheric contaminating agents (standard IEC/EN 60112).

The CTI constitutes the numeric value of the maximum voltage at which a material can resist against 50 drops of an electrolytic test solution without tracking, i.e. without a progressive formation of conductive paths on the surface of the solid insulating material (and permanent electric arc between the electrodes of the test equipment) due to the combined effect of electrical stress and electrolytic contamination.

Solid insulating materials are classified into four groups:

- group I** 600 ≤ CTI
- group II** 400 ≤ CTI < 600
- group IIIa** 175 ≤ CTI < 400
- group IIIb** 100 ≤ CTI < 175

The values for groups IIIa/IIIb (Tab. F.2, IEC 60664-1) are identical for the purpose of determining the creepage distance values.

The insulating materials used to manufacture the ILME multipole connectors belong to groups IIIa / IIIb.

Electric field conditions

The insulation clearance is determined in Table 2 of IEC 60664-1, bearing in mind the following influencing factors:

- Rated impulse withstand voltage.
- Electric field conditions.
- Altitude: the values specified in Table 2 are valid up to 2.000 m; for higher altitudes, the corrective factors specified in Table F.8 of IEC 60664-1.
- The micro-environment.

The shape and arrangement of the conductive parts influence the homogeneity of the electric field and consequently the clearance needed to withstand a given voltage. The clearances in Case A (non-homogeneous field) have the required impulse withstand voltage under all conditions: clearances not less than those specified in **Table F.2 - Case A** can be used irrespective of the shape and arrangement of the conductive parts and without verification by an impulse withstand test.

Determination of clearances.

In accordance with standard IEC 60664-1, the following must be identified to determine it:

- a)** The rated voltage of the power supply (usually 230/400V and therefore a conventional voltage line-to-neutral of **300V**, in star distribution networks with earthed neutral, or 400V for star networks without neutral, or with insulated neutral, or in networks with the distribution transformer's secondary winding delta connected, insulated or corner-earthed and, therefore, with conventional phase voltage of 600V).
- b)** The overvoltage category (usually III).
- c)** The rated impulse withstand voltage determined from Table 1 of IEC 60664-1 (usually **4 kV** or **6 kV**).
- d)** The type of electric field to which the parts through which the current flows shall be subjected (worst case = **inhomogeneous field**) and the degree of pollution (usually 3).

The standard **EN 61984** requires that the **creepage distance** be dimensioned according to IEC 60664-1. For distances up to 2 mm of insulation, typically to connectors for printed circuits, the reference can be, alternatively, standard IEC 60664-5, to be read in conjunction with IEC 60664-1. The minimum through-air insulation distance is therefore given by Table F.2 of IEC 60664-1, according to the rated impulse derived from **Table B.1** of the same standard which is part of Attachment B (informative) Rated voltages of power supply networks for different modes of overvoltage control. This table is attributable in particular to devices that do not provide any upstream voltage discharge and represents, therefore the "worst case" and replaces **Table 5** of the previous edition of EN 61984. The rated impulse withstand voltage must be chosen based on the nominal supply voltage and overvoltage category. The assignment of connectors to a particular overvoltage category (usually III) is effected according to the rules of IEC 60664-1.

Rated voltage.

Voltage value assigned by the manufacturer to the connector refers to the operating and performance characteristics

NOTE – A connector may have more than one rated voltage value. [IEC 60664-1:2007, definition 3.9, modified]

TABLE B.1.

Inherent control or control of equivalent protection [IEC 60664-1 Ed.2.0 (2007-04)].

Phase-neutral voltages obtained from AC or DC rated voltages up to and including ¹⁾	Rated voltages currently used throughout the world				Rated impulse withstand voltage for the device ¹⁾			
	Three phase four wire systems neutral earthed	Three-phase three-wire systems not earthed	Single-phase two-wire AC or DC systems	Single-phase three-wire AC or DC systems				
					I	II	III	IV
50			12.5 24 25 30 42 48	30-60	330	500	800	1500
100	66/115	60	60		500	800	1500	2500
150	120/208 ^{*)} 127/220	115, 120, 127	100 ^{*)} , 110, 120	100/-200 ^{*)} 110-220 120-240	800	1500	2500	4000
300	220/380, 230/400, 240/415, 260/440, 277/480	200 ^{**)} , 220, 230, 240, 260, 277, 347, 380, 400, 415, 440, 480	220	220-440	1500	2500	4000	6000
600	347/600 380/660 400/690 417/720 480/830	500, 577, 600	480	480-960	2500	4000	6000	8000
1000		660 690, 720 830/1000	1000		4000	6000	8000	12000

1) These columns are taken from Table F.1 indicating the te rated impulse withstand voltages.

***)** Used in the United States and Canada.

****)** Used in Japan.

With the three values (b) (c) and (d) the minimum clearance is determined in Table 2 IEC 60664-1 through-air insulation distance

In regard to the choice of the type of electric field, the (through-air insulation distances) through possible windows and openings in the clearances insulating material housing, must comply with the values of case A of Table F.2 of IEC 60664-1, i.e. for inhomogeneous field conditions.



TABLE F.2.

Clearances to withstand transient overvoltages [IEC 60664-1 Ed.2.0 (2007-04)]

Required impulse withstand voltage ¹⁾⁵⁾	Minimum clearances in air up to 2.000 m. above sea level					
	Case A Inhomogeneous field (see 3.15) Pollution degree ⁶⁾			Case B Homogeneous field (see 3.14) Pollution degree ⁶⁾		
	1	2	3	1	2	3
	mm	mm	mm	mm	mm	mm
kV	mm	mm	mm	mm	mm	mm
0,33 ²⁾	0,01			0,01		
0,40	0,02			0,02		
0,50 ²⁾	0,04			0,04		
0,60	0,06	0,2 ³⁾⁴⁾	0,8 ⁴⁾	0,06	0,2 ³⁾⁴⁾	0,8 ⁴⁾
0,80 ²⁾	0,10			0,10		
1,0	0,15			0,15		
1,2	0,25			0,25		
1,5 ²⁾	0,5	0,5		0,3	0,3	
2,0	1,0	1,0	1,0	0,45	0,45	
2,5 ²⁾	1,5	1,5	1,5	0,60	0,60	
3,0	2,0	2,0	2,0	0,80	0,80	
4,0 ²⁾	3,0	3,0	3,0	1,2	1,2	1,2
5,0	4,0	4,0	4,0	1,5	1,5	1,5
6,0 ²⁾	5,5	5,5	5,5	2,0	2,0	2,0
8,0 ²⁾	8,0	8,0	8,0	3,0	3,0	3,0
10	11	11	11	3,5	3,5	3,5
12 ²⁾	14	14	14	4,5	4,5	4,5
15	18	18	18	5,5	5,5	5,5
20	25	25	25	8,0	8,0	8,0
25	33	33	33	10	10	10
30	40	40	40	12,5	12,5	12,5
40	60	60	60	17	17	17
50	75	75	75	22	22	22
60	90	90	90	27	27	27
80	130	130	130	35	35	35
100	170	170	170	45	45	45

- This voltage is
 - for functional insulation, at maximum impulse voltage expected to occur across the clearance (see 5.1.5),
 - for basic insulation directly exposed or significantly influenced by transient overvoltages from the low-voltage mains (see 4.3.3.3, 4.3.3.4.1 and 5.1.6), the rated impulse voltage of the equipment,
 - for other basic insulations (see 4.3.3.4.2), the highest impulse voltage that can occur in the circuit.
- For reinforced insulation, see 5.1.6.
- Preferred values as specified in 4.2.3.
- For printed wiring material, the values for pollution degree 1 apply except that the value shall not be less than 0,04 mm, as specified in Table F.4.
- The minimum clearances given for pollution degrees 2 and 3 are based on the reduced withstand characteristics of the associated creepage distance under humidity conditions (see IEC 60664-5).
- For parts or circuits within equipment subjected to impulse voltages according to 4.3.3.4.2, interpolation of values is allowed. However, standardization is achieved by using the preferred series of impulse voltage values in 4.2.3.
- The dimensions for pollution degree 4 are as specified for pollution degree 3, except that the minimum clearance is 1,6 mm.

When the clearance is less than the value indicated for Case A an impulse withstand voltage test is required.

Compared to the previous edition of IEC 60664-1 Table F.2 is has been changed (already with the Amendment 2). In particular, the columns referring to degree of pollution 4 have been removed. The definition of this pollution degree is varied in 6.2 to: "permanent conductivity occurs, due to conductive dust, rain or other humid conditions". The clearances for degree of pollution 4 area as specified for degree of pollution 3, with the exception that the minimum clearance is 1,6 mm.

"In 6.3 it states that the size of the surface distances can not be specified in presence of permanent conductive pollution (pollution degree 4).

For temporarily conductive pollution (pollution degree 3) the insulation surface can be designed to avoid the formation of a continuous conductive pollution path, for example using ribs or grooves".

The values in bold are the most common multipole connectors for industrial purposes.

If the component fulfils the minimum clearance prescribed for live parts of opposing polarities, it is exempted from the impulsive voltage withstand test. This test is run at sea level using increased voltage values in order to take into account rarefied air at high altitude (the prescribed values refer to 2000 m asl). However, if this distance is not respected, passing the test gives one the right to declare the relevant rated impulse withstand voltage. Declaration of the rated impulse withstand voltage is optional for standard EN 61984: if the manufacturer declares the rated impulse withstand voltage, the impulse withstand voltage test is, in any event, necessary as dielectric verification.

Alternatively, if the manufacturer does not declare this rated value, the dielectric voltage withstand test at mains frequencies of 50/60 Hz for 60 s (test 4a of IEC 60512) is necessary, but at reduced values compared to the peak values of the impulse test voltages of wave shape

standardised at 1,2/50 µs.

For this purpose, standard EN 61984 provides the following cross-reference table:

TABLE 8.

Test voltages (EN 61984 Ed. 2.0 - 2009-06)

Rated impulse withstand voltage U_{ipm} kV	Impulse withstand * voltage ^{a)} kV (1.2/50 µs) at 2000 above sea level	Test voltages Withstand voltage (r.m.s. value) kV (50/60 Hz)
0,5	0,5	0,55
0,8	0,8	0,91
1,5	1,5	1,75
2,5	2,5	2,95
4	4	4,8
6	6	7,3
8	8	9,8
12	12	14,8

* ^{a)} If the test laboratory is situated between sea level and an altitude of 2000 m asl, interpolation of test impulsive voltage is allowed.

NOTE:

This table uses the characteristics of the inhomogeneous field, Case A of IEC 60664-1

Rated impulse withstand voltage.

The rated impulse withstand voltage assigned by the manufacturer to the connector, which refers to the withstanding capacity of its insulation with respect to transient overvoltages [IEC 60664-1:2007, definition 3.9.2, modified].

Impulse withstand voltage.

Maximum peak value of a voltage impulse of prescribed shape and polarity which does not cause insulation reduction under specified conditions.

NOTE - The impulse withstand voltage is greater than or equal to the rated impulse withstand voltage [IEC 60664-1:2007, definition 3.8.1, modified].

Determination of creepage distances.

For the **minimum surface insulation distance** (creepage distance), i.e. “the shortest distance along the surface of the insulation material between two conducting parts” (IEC 60664-1 definition 3.3) standard IEC 61984:2009 for connectors refers to that prescribed by standard **IEC 60664-1:2007 in Table F.4**. It is determined according to rated voltage, degree of pollution and insulating material group.

The rated voltage providing access to Table 6 (rationalised voltage of the power supply system) is determined by Table 3a of IEC 60664-1 for single phase two or three wire a.c. or d.c. systems or Table 3b for three-phase three or four wire a.c. systems.

Usually for three-phase systems with 230V/400V rated voltage, the conventional line-to-line insulation voltage is 400V and the line-to-earth for TT or TN systems is 250V.

For three-phase systems with 400V or 500V rated voltage the conventional line-to-line insulation voltage is respectively 400V and 500V.

The degree of pollution must be specified according to standard IEC 60664-1.

This strongly influences the rated insulation voltage of a connector. Therefore, the rated insulation voltage of a connector should be reconsidered time by time for each degree of pollution.

Legend:

1) The phase-earth insulation for unearthed or impedance-earthed lines is equal to that between phases, because the operating voltage of any phase can, in practice, approach full voltage between the phases [line voltage]. This is because the actual voltage to earth is determined by the insulation resistance and by the capacitive reactance of each phase to earth. Consequently, a low (but acceptable) insulation resistance of a phase can, in effect, earth it and increase voltage to earth of the other two phases at full voltage between the phases [line voltage].

2) For equipment for use on both three-phase three-wire and three-phase four wire supplies, earthed or unearthed, use only the values for three-wire systems.

*) It is assumed that the rated voltage of the equipment is not less than this value.

**) These values correspond to the values given in Table F.1.

TABLE F.3a.

Single phase two or three wire a.c. or d.c. systems
(IEC 60664-1 Ed. 2.0 - 2007-04)

Rated supply voltage ¹⁾	Rationalised voltages for Table F.4	
	For insulation phase-phase ¹⁾	
	All systems	Three-wire systems with intermediate earth point
V	V	V
12,5	12,5	-
24	25	-
25	25	-
30	32	-
42	50	-
48	50	-
50 **)	50	-
60	63	-
30-60	63	32
100 **)	100	-
110	125	-
120	125	-
150 **)	160	-
220	250	-
110-220	250	125
120-240	250	125
300 **)	320	-
220-440	500	250
600 **)	630	-
480-960	1000	500
1000 **)	1000	-

TABLE F.3b.

Three phase 4 or 3 wire a.c. systems
(IEC 60664-1 Ed. 2.0 - 2007-04)

Rated supply voltage ¹⁾	Rationalised voltages for Table F.4		
	For insulation phase-phase ¹⁾		For insulation phase-phase ¹⁾
	All systems	Four-wire three-phase systems with earthed neutral	Four-wire three-phase systems unearthed ¹⁾ or with earthed phase
V	V	V	V
63	63	32	63
110	125	80	125
120	125	80	125
127	125	80	125
150 **)	160	-	160
208	200	125	200
220	250	160	250
230	250	160	250
240	250	160	250
300 **)	320	-	320
380	400	250	400
400	400	250	400
415	400	250	400
440	500	250	500
480	500	320	500
500	500	320	500
575	630	400	630
600 **)	630	-	630
660	630	400	630
690	630	400	630
720	800	500	800
830	800	500	800
960	1000	630	1000
1000 **)	1000	-	1000

With this voltage value, the pollution degree and the materials group the minimum creepage distance can be determined using **Table 6**.

TABLE F.4

Creepage distances to avoid failure due to surface currents [IEC 60664-1 Ed.2.0 (2007-04)]

Effective voltage ¹⁾	Minimum creepage distances								
	Materials for printed circuits		Pollution degree						
	1	2	1	2		3			
	All material groups mm	All material groups except IIIb mm	All material groups mm	Material group I mm	Material group II mm	Material group III mm	Material group I mm	Material group II mm	Material group III ⁽²⁾ mm
10	0,025	0,040	0,080	0,400	0,400	0,400	1,000	1,000	1,000
12.5	0,025	0,040	0,090	0,420	0,420	0,420	1,050	1,050	1,050
16	0,025	0,040	0,100	0,450	0,450	0,450	1,100	1,100	1,100
20	0,025	0,040	0,110	0,480	0,480	0,480	1,200	1,200	1,200
25	0,025	0,040	0,125	0,500	0,500	0,500	1,250	1,250	1,250
32	0,025	0,040	0,14	0,53	0,53	0,53	1,30	1,30	1,30
40	0,025	0,040	0,16	0,56	0,80	1,10	1,40	1,60	1,80
50	0,025	0,040	0,18	0,60	0,85	1,20	1,50	1,70	1,90
63	0,040	0,063	0,20	0,63	0,90	1,25	1,60	1,80	2,00
80	0,063	0,100	0,22	0,67	0,95	1,30	1,70	1,90	2,10
100	0,100	0,160	0,25	0,71	1,00	1,40	1,80	2,00	2,20
125	0,160	0,250	0,28	0,75	1,05	1,50	1,90	2,10	2,40
160	0,250	0,400	0,32	0,80	1,10	1,60	2,00	2,20	2,50
200	0,400	0,630	0,42	1,00	1,40	2,00	2,50	2,80	3,20
250	0,560	1,000	0,56	1,25	1,80	2,50	3,20	3,60	4,00
320	0,75	1,60	0,75	1,60	2,20	3,20	4,00	4,50	5,00
400	1,0	2,0	1,0	2,0	2,8	4,0	5,0	5,6	6,3
500	1,3	2,5	1,3	2,5	3,6	5,0	6,3	7,1	8,0 (7,9) ⁴⁾
630	1,8	3,2	1,8	3,2	4,5	6,3	8,0 (7,9) ⁴⁾	9,0 (8,4) ⁴⁾	10,0 (9,0) ⁴⁾
800	2,4	4,0	2,4	4,0	5,6	8,0	10,0 (9,0) ⁴⁾	11,0 (9,6) ⁴⁾	12,5 (10,2) ⁴⁾
1.000	3,2	5,0	3,2	5,0	7,1	10,0	12,5 (10,2) ⁴⁾	14,0 (11,2) ⁴⁾	16,0 (12,8) ⁴⁾
1.250			4,2	6,3	9,0	12,5	16,0 (12,8) ⁴⁾	18,0 (14,4) ⁴⁾	20,0 (16,0) ⁴⁾
1.600			5,6	8,0	11,0	16,0	20,0 (16,0) ⁴⁾	22,0 (17,6) ⁴⁾	25,0 (20,0) ⁴⁾
2.000			7,5	10,0	14,0	20,0	25,0 (20,0) ⁴⁾	28,0 (22,4) ⁴⁾	32,0 (25,6) ⁴⁾
2.500			10,0	12,5	18,0	25,0	32,0 (25,6) ⁴⁾	36,0 (28,8) ⁴⁾	40,0 (32,0) ⁴⁾
3.200			12,5	16,0	22,0	32,0	40,0 (32,0) ⁴⁾	45,0 (36,0) ⁴⁾	50,0 (40,0) ⁴⁾
4.000			16,0	20,0	28,0	40,0	50,0 (40,0) ⁴⁾	56,0 (44,8) ⁴⁾	63,0 (50,4) ⁴⁾
5.000			20,0	25,0	36,0	50,0	63,0 (50,4) ⁴⁾	71,0 (56,8) ⁴⁾	80,0 (64,0) ⁴⁾
6.300			25,0	32,0	45,0	63,0	80,0 (64,0) ⁴⁾	90,0 (72,0) ⁴⁾	100,0 (80,0) ⁴⁾
8.000			32,0	40,0	56,0	80,0	100,0 (80,0) ⁴⁾	110,0 (88,0) ⁴⁾	125,0 (100,0) ⁴⁾
10.000			40,0	50,0	71,0	100,0	125,0 (100,0) ⁴⁾	140,0 (112,0) ⁴⁾	160,0 (128,0) ⁴⁾
12.500			50,0 ³⁾	63,0 ³⁾	90,0 ³⁾	125,0 ³⁾			
16.000			63,0 ³⁾	80,0 ³⁾	110,0 ³⁾	160,0 ³⁾			
20.000			80,0 ³⁾	10,0 ³⁾	140,0 ³⁾	200,0 ³⁾			
25.000			10,0 ³⁾	125,0 ³⁾	180,0 ³⁾	250,0 ³⁾			
32.000			125,0 ³⁾	160,0 ³⁾	220,0 ³⁾	320,0 ³⁾			
40.000			160,0 ³⁾	200,0 ³⁾	280,0 ³⁾	400,0 ³⁾			
50.000			200,0 ³⁾	250,0 ³⁾	360,0 ³⁾	500,0 ³⁾			
63.000			250,0 ³⁾	320,0 ³⁾	450,0 ³⁾	600,0 ³⁾			

1) This voltage is

- for insulation according to the working voltage,
- for main and supplementary insulation of the circuit powered directly by the network (see 4.3.2.2.1), at the rationalized voltage of Table F.3a or Table F.3b, on the basis of the rated voltage of the equipment or rated insulation voltage,
- for main and supplementary insulation of the system, device and internal circuits not powered directly by the network (see 4.3.2.2.2), the highest rms voltage which can occur in the system, in the device or in the internal circuit, powered at rated voltage and in the combination of the most onerous operating conditions foreseen by the rated characteristics of the device.

2) Materials group IIIb is not recommended for application with pollution degree 3 above 630V.

3) Provisional data based on extrapolations. Technical committees that have other information based on experience may use their dimensions.

4) The values shown in brackets may be applied to decrease the creepage distance in the presence of ribbing (see 5.2.5).

NOTE: The high precision used in indicating creepage distances in this table does not mean that the uncertainty of measurement should be of the same order of magnitude.

NOTE: In **boldface** the typical values for multipole rectangular connectors for industrial uses are shown.

Standards

The RoHS 2 (2011/65/EU) and WEEE 2 (2012/19/EU) directives

- The **RoHS 2 2011/65/EU Directive** (recast) replaced on 2013-01-03 the original RoHS 2002/95/EC Directive (with its later amendment 2008/35/EC).

This Directive introduced the ban of use of certain hazardous substances in new electrical and electronic equipment (end products) placed on the market from 1st of July 2006 (the exceptions for some applications were listed in Annex of the Directive and in a number of further Decisions of the EU Commission ¹⁾). Indirectly – in the supply chain – the ban also applied to the electrical components of said electrical and electronic equipment.

The banned and/or restricted substances are:

Lead (Pb), Mercury (Hg), Cadmium (Cd), Hexavalent Chromium (Cr⁶⁺), Poly-Brominated Biphenyls (PBB) and Poly-Brominated Diphenyl-Ethers (PBDE) (these two last being families of flame retardants for thermoplastic materials).

All I.L.M.E. end products (industrial electrical equipment) as well as all I.L.M.E. components (for industrial electrical equipment) in the sense of the Directive are in conformity with the **2011/65/EU RoHS 2 Directive** within the terms of its scope and the starting dates (transitional periods) established for each category of EEE (electrical and electronic equipment) covered in Annex I of said Directive.

For all components (connector inserts, removable crimp contacts, enclosures for connectors, and accessories related to connectors as far as they are in the scope) the products comply with the limit values for certain substances as set out in said 2011/65/EU RoHS 2 Directive, including the permitted exemptions of Annexes III and IV.

NOTE – Such products by themselves – as components – are not covered by the RoHS II Directive, therefore for such products there are no direct legal requirements. No EU Declaration of Conformity can be issued, and the CE marking – which may be applied either on the part or on the packaging label in compliance with other applicable EU Directives, e.g. the Low Voltage Directive 2006/95/EC (to become 2014/35/EU from 2016-04-20) – is not referred to said RoHS II Directive.

- The **WEEE 2 2012/19/EU Directive** (recast) replaced on 2014-02-15 the original WEEE 2002/96/EC Directive (and its later amendments 2003/108/EC and 2008/34/EC). This Directive aims to recycle and minimize Waste from Electrical and Electronic Equipment (the so-called WEEE). It encourages the recycling, reuse and other forms of recovery of such technological waste and sets ambitious targets for recovery rate, variable depending on the product categories.

In this new Directive, up to 2018-08-14 a six years **transitional period** was established, in which the equipment included in its “open scope” still remain the same of former WEEE Directive. Since August 15, 2018 the scope will become “open”, subject to the exclusions for various categories of “equipment”, among which are included the **large-scale fixed installations**, *except any equipment which is not specifically designed and installed as*

part of those installations. These are defined as “a large-size combination of several types of apparatus and, where applicable, other devices, which: (i) are assembled, installed and de-installed by professionals; (ii) are intended to be used permanently as part of a building or a structure at a pre-defined and dedicated location; and (iii) can only be replaced by the same specifically designed equipment” and the **large-scale stationary industrial tools** defined as “a large size assembly of machines, equipment, and/or components, functioning together for a specific application, permanently installed and de-installed by professionals at a given place, and used and maintained by professionals in an industrial manufacturing facility or research and development facility”.

The **connectors and their accessories** that, as components, **are outside the scope of RoHS 2 Directive, do not fall in the scope of WEEE 2** even once “open scope”; moreover they are primarily used in installations of industrial automation (*large-scale stationary industrial tools*) which are exempted from conformity to the WEEE 2.

As required by the WEEE 2 Directive, I.L.M.E. will take care of any technical and administrative obligation for any I.L.M.E. product might be involved.

As a manufacturer of electrical equipment and components for industrial use, I.L.M.E. acknowledges the regulations introduced by these Directives.

The above mentioned Directives are already effective national law in all EU countries. Similar regional regulations aimed at the preservation of the environment are in force across the world outside Europe.

For the products described in this Catalogue, although the restrictions of use of the above mentioned hazardous substances are not legally applicable, in that no product in this Catalogue belongs to any of the product categories described and illustrated in the above mentioned RoHS 2 and WEEE 2 Directives, the **“RoHS conformity”** is important as required downstream in the supply chain. I.L.M.E. has therefore carried out the necessary corrective actions, which have led to the **“RoHS conformity”** of all products in this Catalogue, wherever required.

I.L.M.E. products sold after the 1st of July 2006 do not contain any of the restricted substances in concentrations higher than those allowed by the RoHS 2 Directive and by the subsequent related Decisions taken by the EU Commission.

- 1) At the date of withdrawal of the old RoHS 2002/95/EC Directive – 2013-01-03 – the following Commission decisions were applicable: **M1** 2005/618/EC of 18 August 2005, **M2** 2005/717/EC of 13 October 2005, **M3** 2005/747/EC of 21 October 2005, **M4** 2006/310/EC of 21 April 2006, **M5** 2006/690/EC, **M6** 2006/691/EC and **M7** 2006/692/EC of 12 October 2006, **M9** 2008/385/EC of 24 January 2008, **M10** 2009/428/EC of 4 June 2009, **M11** 2009/443/EC of 10 June 2009, **M12** 2010/122/EU of 25 February 2010, **M13** 2010/571/EU of 24 September 2010, **M14** 2011/534/EC of 8 September 2011.

Standards

Fire protection standards for railway applications

The new European standard **EN 45545** governing fire protection on railway vehicles was published in 2013. In Italy, the various parts are:

- **UNI CEI EN 45545-1:2013-05** Railway Applications – Fire protection on railway vehicles – Part 1: General;
- **UNI CEI EN 45545-2:2013-05** Railway Applications – Fire protection on railway vehicles – Part 2: Requirements for fire behaviour of materials and components;
- **UNI CEI EN 45545-3:2013-05** Railway Applications – Fire protection on railway vehicles – Part 3: Fire resistance requirements for fire barriers;
- **UNI CEI EN 45545-4:2013-05** Railway Applications – Fire protection on railway vehicles – Part 4: Fire safety requirements for rolling stock design;
- **UNI CEI EN 45545-5:2013-05** Railway Applications – Fire protection on railway vehicles – Part 5: Fire safety requirements for electrical equipment, including that of trolley buses, track guided buses and magnetic levitation vehicles;
- **UNI CEI EN 45545-6:2013-05** Railway Applications – Fire protection on railway vehicles – Part 6: Fire control and management systems;
- **UNI CEI EN 45545-7:2013-05** Railway Applications – Fire protection on railway vehicles – Part 7: Fire safety requirements for flammable liquid and flammable gas installations.

The standard replaces the previous voluntary Technical Specification CEN/TS 45545:2009 and has formalised the withdrawal of all conflicting national standards as of 1st April 2016, the date on which the following parallel standards cease to be effective: in Italy **UNI CEI 11170-1:2005**, **UNI CEI 11170-2:2005** and **UNI CEI 11170-3:2005**, in France, **NF F 16-101:1988** and **NF F 16-102:1992**, in Germany, **DIN 5510-2:2009**, in Great Britain, **BS 6853:1999**. These, however, will remain applicable until 31st March 2016. All certificates covering materials issued in line with national standards will remain valid in Europe up until this date. As of 1st April 2016, the only reference standard will be EN 45545:2013.

EN 45545-2 specifies the requirements for the fire behaviour of materials and components of railway vehicles according to the different hazard levels defined by EN 45545-1:2013 (HL = Hazard Level). See Table 1 - Classification of hazard levels (EN 45545-2:2013).

Each hazard level provides for its own specific test procedures, test conditions, fire-fighting requirements and severity (min or max threshold), ranging from **R1** to **R26**. Small electrical and earthing components, such as electrical connectors, must have a nominal fire behaviour rating (self-extinguishing).

94V-0 (standard UL 94)

The thermoplastic insulating material used in ILME connectors complies with the requirements of UL 94V-0. There are no requirements applicable to products with a combustible mass < 10 g not in contact with other unclassified products, if they are installed adjacent to components for which no certificates are available. In this case, the requirements depend on the so-called grouping rules.

The connectors are products not listed in Table 2 of EN 45545-2:2013. As non-listed products, they must satisfy the requirements of Table 3, and as their exposed surface area is $\leq 0.2 \text{ m}^2$, the requirement set for interior installation in railway vehicles is R22 while for exterior installation it is R23 (Table 5 of EN 45545-2:2013).

The materials making up the connectors constitute the maximum applicable requirement sets.

These sets specify parameters, procedures and limit thresholds (min or max) for the tests. In particular, R22 and R23 specify tests and limit values for oxygen content (oxygen index OI), smoke density ($D_s \text{ max}$) and toxicity (conventional toxicity index CIT_{NLP}). The polycarbonate used by ILME in its connectors satisfies the limit values specified in EN 45545-2.

See Table 2 - Requirements for unlisted products (including electrical connectors) - at following page.

Up until the publication of the previously mentioned new European standard, the most advanced fire safety standards for the railway industry were French:

- **NF F 16-101** Matériel roulant ferroviaire – Comportement au feu – Choix des matériaux;
 - **NF F 16-102** Matériel roulant ferroviaire – Comportement au feu – Choix des équipements électriques;
- which in turn referred to the test methods described in standards:
- **NF X 70 100** Analyse de gaz de pyrolyse et de combustion;
 - **NF X 10 702** Détermination de l'opacité des fumées en atmosphère non renouvelée.

Table 1 – Classification of hazard levels (EN 45545-2:2013)

Operation category #)	Design category			
	A: Vehicles forming part of an automatic train having no emergency trained staff on board	D: Double decked vehicles	S: Sleeping and couchette vehicles	N: All other vehicles (standard vehicles)
OC 1	HL1	HL1	HL2	HL1
OC 2	HL2	HL2	HL2	HL2
OC 3	HL2	HL2	HL3	HL2
OC 4	HL3	HL3	HL3	HL3

#) Relationship between service, infrastructure and evacuation conditions for passengers and staff

Standards

Fire protection standards for railway applications

Table 2 - Requirements for unlisted products (including electrical connectors)

Test method	Standard	Parameter	Unit	Interior	Exterior	Threshold R22 (more severe than R23)			ILME (polycarbonate)
Oxygen index	EN ISO 4589-2	OI (min)	%	R22	R23	HL1: 28	HL2: 28	HL3: 32	better than R22-HL3
Smoke density	EN ISO 5659-2	D _s max ¹⁾	---	R22	R23	HL1: 600	HL2: 300	HL3: 150	better than R22-HL3
Smoke toxicity	NF X70-100-1 NF X70-100-2	CIT _{NLP} (max) ²⁾	---	R22	R23	HL1: 1,2	HL2: 0,9	HL3: 0,75	better than R22-HL3

¹⁾ D_s max = specific optical density of smoke

²⁾ CIT_{NLP} (max) = maximum conventional toxicity index of smoke

These latter were somewhat similar, in terms of methods, to the American standards:

- **ASTM E 662** Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials;
- **ASTM E 162** Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source.

Test methods referred to in the American reference standard specifying the performance criteria:

- **NFPA 130** Standard for Fixed Guideway Transit and Passenger Rail Systems.

Also widely used are the Bombardier Transportation smoke toxicity specifications:

- **SMP 800-C** Toxic Gas Generation.

In Italy, from 2006 to 31st March 2016, for installation on board railway vehicles, a certificate of conformity to the following Italian railway standards is required:

- **UNI CEI 11170-1:2005** Trains and trams – Fire safety guidelines for trains, trams and track guided vehicles – General principles;
- **UNI CEI 11170-2:2005** Trains and trams – Fire safety guidelines for trains, trams and track guided vehicles – Design recommendations – Fire containment measures – Indication, monitoring and evacuation systems;
- **UNI CEI 11170-3:2005** Trains and trams – Fire safety guidelines for trains, trams and track guided vehicles – Material fire behaviour assessment – Acceptance limits;

published jointly by UNI and CEI on 30/11/2005 with parallel effectiveness until 31st March 2016. In these standards, the requirements for materials relating to electrical connectors are contained in the 2nd schedule “Acceptability criteria for electrical and electronic materials and components” at the application “All other applications including flammable materials” (all applications other than electric cables). For these applications, four material tests are required:

- Exposure to a small flame according to EN ISO 11925-2 with, depending on the level of risk, a resistance to fire of the material of 15 s for LR1 and LR2 and a resistance of 30 s for LR3 and LR4.
- Smokiness in compliance with French standard NF F 16-101 with IF better or equal to F2 for all risk levels. The material we use is classified as F1 (better than F2) according to the tests carried out.

– Smoke optical density measurement, in compliance with French standard NF X 10-702 (from NF F 16-101) with values ≤ 100 for all risk levels LR1...4.

– Toxicity measurement, in compliance with Italian standard CEI 20-37/7, with T ≤ 2 for all risk levels LR1...4.

Tests

EU - The material tested in accordance with the European Norm **EN 45545-2:2013** – showed an oxygen index (OI) of 40,4%, a D_s max (flaming) = 95 and a smoke toxicity index CIT_{NLP} = 0,28, **compliant with the requirements of EN 45545-2:2013 for all risk levels: HL1 – HL2 – HL3** and, consequently, for all the design categories (A, D, S, N) and operation categories (1, 2, 3, 4) defined in EN 45545-1:2013.

France - The material used in our connectors is certified by an accredited laboratory CERTIFER, according to the previously mentioned French standards **NF F 16-101** and **NF F 16-102**, and has a **classification F1** (Index Fumée I.F. = 18) and a smoke toxicity index (Index Toxicité Fumée) **I.T.C. = 18**.

Both values meet the requirements set out by the French standards and by the Italian standard UNI CEI 11170-3 schedule 2, which relates to electrical connectors.

Germany - The material used in our connectors also complies with the German standard **DIN 5510-2:2009** with a **flammability class = S3, smoke spreading class = SR2** and **drip class = ST2**.

UK - The material was also tested according to British Standard **BS 6853:1999**, with an **R (max) index = 0.6**, consequently within the limits of Tables 7 and 8 of the standard for vehicle categories Ia, Ib and II.

USA - Tests compliant with American standards have also been carried out at a qualified North American laboratory, confirming compliance with the requirements set out by the US Federal Transit Administration “Recommended Fire Safety Practices for Rail Transit Material Selection” for methods ASTM E 662 (NFPA 258) (specific optical smoke density), ASTM E 162 (ASTM D3635) (surface flammability ⇒ flame propagation index) and Bombardier Transportation SMP 800-C (smoke and gas toxicity).



inserts	No. of poles ¹⁾	auxiliary contacts	rated current	EN 61984 (2008-10) pollution degree 3			EN 61984 (2008-10) pollution degree 2			UL/CSA ³⁾ certification	certifications ³⁾
				rated voltage	rated impulse withstand voltage	pollution degree	rated voltage	rated impulse withstand voltage	pollution degree		
series	main contacts + ⊕								rated voltage or ---		
CK	3, 4	—	10A	230/400V	4kV	3	400/690V	4kV	2	600V	UL, CSA, CCC, GL, EAC
CKS	3, 4	—	10A	400V	4kV	3	690V	4kV	2	600V	cUL ^{A)} , CSA, CCC, EAC
CD	8 (without ⊕)	—	10A	50V	0,8kV	3				50V	UL, CSA, CCC, GL, EAC
CD	7, 15, 25, 40, (50), 64, (80), (128)	—	10A	250V ²⁾	4kV	3	230/400V ²⁾	4kV	2	600V	UL, CSA, CCC, GL, EAC
CT, CTS	40, 64	—	10A	250V	4kV	3	230/400V	4kV	2	600V	UL, CSA, CCC, GL, EAC
CDD	24, 38, 42, 72, (76), 108, (144), (216)	—	10A				250V	4kV	2	600V	UL, CSA, CCC, GL, EAC
CDS	9, 18, 27, 42, (54), (84)	—	10A	400V	6kV	3	400/690V	6kV	2	600V	cUL ^{A)} , (CSA), (GL), (EAC)
CSAH	10, 16, (32)	—	16A	500V	6kV	3	400/690V	6kV	2	600V	(cUL ^{A)}), (CSA), CCC, (EAC)
CDA, CDC	10, 16, (32)	—	16A	250V	4kV	3	230/400V	4kV	2	600V	(cUL ^{A)}), CSA, CCC, GL, EAC
CQE	10, 18, (20), 32, 46, (64), (92)	—	16A	500V ²⁾	6kV	3	830V ²⁾	8kV	2	600V	cUL ^{A)} , CSA, GL, EAC
CQEE	40, 64	—	16A	500V	6kV	3				600V	cUL ^{A)} , (CSA), (GL), (EAC)
CCE	6, 10, (12), 16, 24, (32), (48)	—	16A	500V	6kV	3	400/690V	6kV	2	600V	UL, CSA, GL, EAC
CNE	6, 10, (12), 16, 24, (32), (48)	—	16A	500V	6kV	3	400/690V	6kV	2	600V	cUL ^{A)} , CSA, CCC, GL, EAC
CSE	6, 10, (12), 16, 24, (32), (48)	—	16A	500V	6kV	3	400/690V	6kV	2	600V	UL, CSA, CCC, GL, EAC
CSH	6, 10, (12), 16, 24, (32), (48)	—	16A	500V	6kV	3	400/690V	6kV	2	600V	cUL ^{A)} , CSA, CCC, EAC
CSS	6, 10, (12), 16, 24, (32), (48)	—	16A	500V	6kV	3	400/690V	6kV	2	600V	UL, CSA, CCC, EAC
CT	6, 10, (12), 16, 24	—	16A				400V	4kV	2	600V	UL, CSA, CCC, GL, EAC
CTSE	6, 10, (12), 16, 24	—	16A	500V	6kV	3	400/690V	6kV	2	600V	UL, CSA, CCC, GL, EAC
CME	3, 6, 10, (12), (20), (32)	—	16A	830V	8kV	3	1000V	8kV	2	600V	UL, CSA, CCC, EAC
	16	—		400/690V	6kV	3	720/1250V	8kV	2		
		2, (4)		500V	6kV	3					
CMSH	3, 6, 10, (12), (20)	—	16A	830V	8kV	3	1000V	8kV	2	600V	(cUL ^{A)}), (CSA), (CCC), (EAC)
		2, (4)		500V	6kV	3	720/1250V	8kV	2		
CMCE	3, 6, 10, (12), (20), (32)	—	16A	830V	8kV	3	1000V	8kV	2	600V	UL, CSA, CCC, EAC
	16	—		400/690V	6kV	3	720/1250V	8kV	2		
		2, (4)		500V	6kV	3					
CP	6, (12)	—	35A	400/690V	6kV	3				600V	UL, CSA, CCC, EAC
CQ 12	12	—	10A	400V	6kV	3	400/690V	6kV	2	600V	cUL ^{A)} , CCC, GL, EAC
CQ 05	5	—	16A	230/400V	4kV	3	320/500V	4kV	2	600V	cUL ^{A)} CSA, CCC, GL, EAC
CQ 04/2	4	—	40A	400/690V	6kV	3				600V	cUL ^{A)} , CSA, EAC
		2	10A	250V	4kV	3					
CQ 08	8	—	16A	500V	6kV	3	400/690V	6kV	2	600V	cUL ^{A)} , CSA, CCC, EAC
CX 8/24	8	—	16A	230/400V	4kV	3	400V	4kV	2	600V	UL, CSA, CCC, GL, EAC
		24	10A	160V	2,5kV	3	250V	4kV	2		
CX 6/36	6	—	40A	690V	8kV	3				600V	UL, CSA, CCC, GL, EAC
		36	10A	160V	2,5kV	3	250V	4kV	2		
CX 12/2	12	—	40A	690V	8kV	3				600V	UL, CSA, CCC, GL, EAC
		2	10A	250V	4kV	3					
CX 6/6	6	—	100A	690V	8kV	3				600V	cUL ^{A)} , (CSA), (GL), (EAC)
		6	16A	400V	6kV	3					
CX 4/0	4	—	80A	690V	8kV	3				600V	UL, CSA, CCC, GL, EAC
CX 4/2	4	—	80A	690V	8kV	3				600V	UL, CSA, CCC, GL, EAC
		2	16A	400V	6kV	3	400/690V	6kV	2		
CX 4/8	4	—	80A	400V	6kV	3	400/690V	6kV	2	600V	UL, CSA, CCC, GL, EAC
		8	16A	230/400V	4kV	3	400V	4kV	2		
CXL 2/4	2	—	4	10A	25V	0,8kV	3			600V	cUL ^{A)} , UL, EAC

N.B. All inserts have a mechanical life equal to or higher than 500 mating cycles.

1) Polarities shown in brackets may be achieved by using two inserts.

2) Contacts partially fitted inside an insert allow inserts to be used for applications requiring rated voltages higher than those shown.

See tables on page 52 (CD inserts), page 66 (CDD inserts) and page 137 (CQE inserts).

3) The certifications shown in brackets are being applied for.

4) Please check the insert load curves to establish the actual maximum operating current according to the ambient temperature. See diagrams on pages 556 to 566.

A) UL for USA and Canada.

- UL - with protocol E115072
- CSA - with protocol LR 82270
- CCC - China Compulsory Certification mark (the CQC voluntary certification mark has been applied for, and it will replace the CCC mark in upon expiration)
- GL - Germanischer Lloyd - 3356706 HH
- EAC - Eur Asian Certification

inserts	contact resistance	insulation resistance	ambient temperature limit ⁵⁾ (°C)		protection rating	conductor connection					from page	
			series	≤		≥	min	max	without enclosures/ with enclosures	axial screw		screw
CK	≤ 1 mΩ	≥ 10 GΩ	-40	+100	IP20/IP68		✓					48
CKS	≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68			✓				49
CD	≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68						✓	54
CD ⁶⁾	≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68						✓	53
CT, CTS	≤ 4 mΩ	≥ 10 GΩ	-40	+125	IP20/IP67		✓			✓		64
CDD	≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68						✓	67
CDS	≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68			✓				78
CSAH	≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP66			✓			✓	87
CDA, CDC	≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP66		✓					98, 99
CQE	≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68						✓	138
CQEE	≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68						✓	146
CCE	≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68						✓	110
CNE	≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68		✓					104
CSE	≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68		✓					104
CSH	≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68			✓				91
CSS	≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68			✓				122
CT	≤ 4 mΩ	≥ 10 GΩ	-40	+125	IP20/IP67		✓			✓		130
CTSE	≤ 4 mΩ	≥ 10 GΩ	-40	+125	IP20/IP67			✓		✓		130
CME	≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP66		✓					149
CMSH	≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68			✓				149
CMCE	≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68						✓	148
CP	≤ 0.5 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68		✓					162
CQ 12	≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68						✓	165
CQ 05	≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68						✓	166
CQ 04/2	≤ 0.3 mΩ ≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP67						✓	168
CQ 08	≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP67						✓	167
CX 8/24	≤ 1 mΩ ≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68						✓	169
CX 6/36	≤ 0.3 mΩ ≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68						✓	170
CX 12/2	≤ 0.3 mΩ ≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68		✓				✓	171
CX 6/6	≤ 0.3 mΩ ≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68						✓	175
CX 4/0	≤ 0.3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68		✓					172
CX 4/2	≤ 0.3 mΩ ≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68		✓					172
CX 4/8	≤ 0.3 mΩ ≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68			✓				173
CXL 2/4	≤ 0.3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP67			✓				524

5) It may be used with ambient temperatures up to 180 °C by using the insert special version made of PPS (polyphenylene sulfide).

6) CD 07: IP67 with thermoplastic enclosures (cannot be used with metal enclosures).



inserts	No. of poles ¹⁾	auxiliary contacts	rated current ⁴⁾	EN 61984 (2008-10) pollution degree 3			EN 61984 (2008-10) pollution degree 2			UL/CSA ³⁾ certification	certifications ³⁾
				rated voltage	rated impulse withstand voltage	pollution degree	rated voltage	rated impulse withstand voltage	pollution degree		
series	main contacts + ⊕										
MIXO											
CX 01 Y	1	—	200A	1000V	8kV	3	920/1600V	8kV	2	(600V)	cUL ^{A)} , CCC, EAC
CX 01 YPE	1 pole for ⊕ connection	—	200A	—	—	3				(600V)	cUL ^{A)} , CCC, EAC
CX 02 G	2	—	100A	1000V	8kV	3	920/1600V	8kV	2	600V	cUL ^{A)} , CCC, GL, EAC
CX 02 7	2	—	70A	1000V	8kV	3	1600V	12kV	2	600V	cUL ^{A)} , EAC
CX 02 4A	2 (2,5 - 8 mm ²)	—	40A	1000V	8kV	3				600V	UL, CSA, EAC
CX 02 4B	2 (6 - 10 mm ²)	—	40A	1000V	8kV	3				600V	UL, CSA, EAC
CX 03/4 XD	3		40A	830V	8kV	3				(600V)	cUL ^{A)} , CCC, EAC
		4	10A								
CX 03 4 ⁷⁾	3	—	40A	400/690V	6kV	3				600V	UL, CSA, EAC
CX 04 X	4	—	40A	830V	8kV	3	1000V	8kV	2	600V	cUL ^{A)} , (CSA), (CCC), (GL), EAC
CX 05 S	5	—	16A	400V	6kV	3	500V	6kV	2	600V	UL, CSA, CCC, GL, EAC
CX 06 C	6	—	16A	500V	6kV	3	400/690V	6kV	2	600V	UL, CSA, CCC, GL, EAC
CX 08 C	8	—	16A	400V	6kV	3	400/690V	6kV	2	600V	UL, CSA, CCC, EAC
CX 20 C	20	—	16A	500V	6kV	3	830V	8kV	2	600V	cUL ^{A)} , CSA, EAC
CX 12 D	12	—	10A	160V	2,5kV	3	250V	4kV	2	600V	UL, CSA, CCC, GL, EAC
CX 17 D	17	—	10A	160V	2,5kV	3	250V	4kV	2	600V	cUL ^{A)} , CCC, EAC
CX 02 H	2	—	16A	2900/5000V	15kV	3					
CX 25 I	2	—	5A	50V	10A	3				(50V)	cUL ^{A)} , EAC
CX P	3	—	—	pneumatic contacts for up to 8 bar compressed air							UL, CSA, CCC, GL, EAC
CX P	2	—	—	pneumatic contacts for up to 8 bar compressed air							UL, CSA, CCC, GL, EAC
CX 02 B	2 ^{7*)}	—	—	50V	0,8kV	3				50V	UL, CSA, CCC, EAC
CX 01 B	1 (+ shield)	—	10A	50V	0,8kV	3				50V	UL, CSA, CCC, EAC
CX 01 BC	1 (+ shield)	—	16A	50V	0,8kV	3				(50V)	UL, CSA, CCC, EAC
CX 04 B	4 (+ shield)	—	10A	50V	0,8kV	3				50V	UL, CSA, CCC, EAC
CX 08 B	8 (+ shield)	—	5A	50V	0,8kV	3				(50V)	UL, CSA, CCC, EAC
CX 01 J	1 RJ45 insert CAT. 5										
		4	10A	250V	4kV	3					
CX 02 J	2 RJ45 inserts CAT. 5										
		8	1A	250V	4kV	3					
CX 01 J8	1 RJ45 insert CAT. 6	—	—	—	—	—					
CX 01 U	1 USB insert	—	—	50V	0,8kV	3					
CX 09 V	9 (+ shield)	—	5A	50V	0,8kV	3					
CX 04 L	4	—	—	contacts POF/MOST/coaxial DIN 41626							cUL ^{A)} , EAC

⁷⁾ = 500V version CX 03 4B (cUL^{A)}, EAC).

^{7*)} = CX 04 B (4P) multiaxial connectors or CX 01 B coaxial connector.

N.B. all inserts have a mechanical life equal to or higher than 500 mating cycles.

- UL - with protocol E115072
- CSA - with protocol LR 82270
- CCC - China Compulsory Certification mark (the CQC voluntary certification mark has been applied for, and it will replace the CCC mark in upon expiration)
- GL - Germanischer Lloyd - 3356706 HH
- EAC - Eur Asian Certification

1) Polarities shown in brackets may be achieved by using two inserts.

3) The certifications shown in brackets are being applied for.

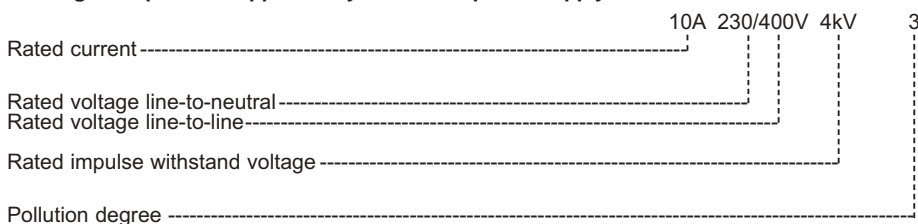
4) Please check the insert load curves to establish the actual maximum operating current according to the ambient temperature. See diagrams on pages 556 to 566.

A) UL for USA and Canada.

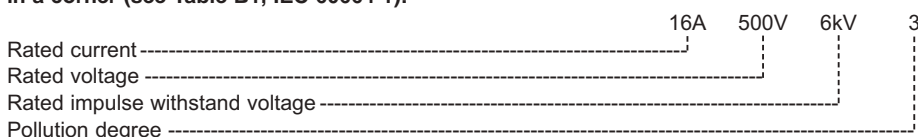
Rated data

Nominal data complies with requirements of EN 61984 standard.

Marking example to be applied only in a mains power supply with insulated neutral or with neutral to earth in a corner (see Table B1, IEC 60664-1):



Marking example to be applied in any mains power supplies, including those with insulated neutral and the delta power supplies with earth in a corner (see Table B1, IEC 60664-1):





inserts	contact resistance	insulation resistance	ambient temperature limit ⁵⁾ (°C)		protection rating	conductor connection					from page
			min	max		without enclosures/ with enclosures	axial screw	screw	spring	connection block at 45°	
series	≤	≥									
MIXO											
CX 01 Y	≤ 0.2 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	180
CX 01 YPE	≤ 0.2 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	181
CX 02 G	≤ 0.3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	182
CX 02 7	≤ 0.5 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	183
CX 02 4A	≤ 0.5 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68	✓					184
CX 02 4B	≤ 0.5 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68	✓					184
CX 03/4 XD	≤ 0.3 mΩ ≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	185
CX 03 4	≤ 0.3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	186-187
CX 04 X	≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	188
CX 05 S	≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	192
CX 06 C	≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	189
CX 08 C	≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	190
CX 20 C	≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	191
CX 12 D	≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	194
CX 17 D	≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	195
CX 02 H	≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	193
CX 25 I	≤ 4 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	196
CX P	—	≥ 10 GΩ	-40	+125	IP20/IP68	coupling					211
CX P	—	≥ 10 GΩ	-40	+125	IP20/IP68	coupling					211
CX 02 B	—	≥ 10 GΩ	-40	+125	IP20/IP68	coupling					197
CX 01 B	≤ 3 mΩ	≥ 10 GΩ	-40	+70	IP20/IP68					✓	197
CX 01 BC	≤ 1 mΩ	≥ 10 GΩ	-40	+70	IP20/IP68					✓	199
CX 04 B	≤ 3 mΩ	≥ 10 GΩ	-40	+70	IP20/IP68					✓	197
CX 08 B	≤ 3 mΩ	≥ 10 GΩ	-40	+70	IP20/IP68					✓	198
CX 01 J			-20	+120	IP20/IP68					✓	202
	≤ 3 mΩ	≥ 10 GΩ	-20	+120	IP20/IP68					✓	
CX 02 J			-20	+120	IP20/IP68					✓	203
	≤ 3 mΩ	≥ 10 GΩ	-20	+120	IP20/IP68					✓	
CX 01 J8	—	≥ 10 GΩ	-40	+70	IP20/IP68					✓	200
CX 01 U	≤ 30 mΩ	≥ 1 GΩ	-25	+80	IP20/IP68						205
CX 01 9V	≤ 15 mΩ	≥ 5 GΩ	-40	+125	IP20/IP68					✓	206
CX 04 L	—	≥ 10 GΩ	-40	+85	IP20/IP68					✓	209

5) It may be used with ambient temperatures up to 180 °C by using the insert special version made of PPS (polyphenylene sulfide).



contacts with screw terminal connections with or without wire protection



screw connected contacts in built-in terminal block



description

The different types of conductor connections to the male and female inserts are described on the right. The types are summarised as follows:

- screw terminals
- spring connection terminals
- connectors with incorporated terminal block
- crimp terminals

N.B.:
for all inserts with screw terminals it is important that the right torsional torque is applied to the screws in order to prevent wrong contacts or damage to the conductor, the screw or the terminal (see data mentioned in the inserts pages).

The 10A and 16A crimp contacts are available either **silver** or **gold-plated**. The gold-plated crimp contacts are recommended for applications with very low rated currents and rated voltages.

Thanks to the conduction characteristics of gold, the deterioration of signals is prevented and an excellent residence to the superficial oxidation of the contacts is obtained.

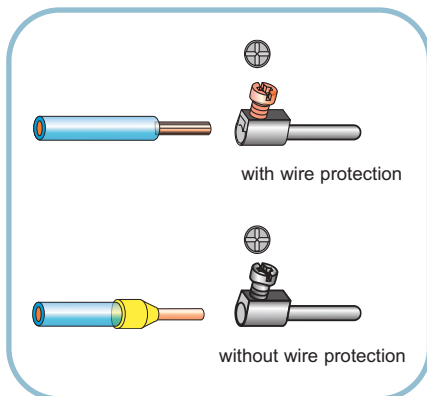
In particular, gold-plated contacts are recommended with signals with ≤ 5 mA current and ≤ 5 V voltage.

description

inserts: CK - CDA - CNE - CME - CP - CX

The connections of the conductors to the female and male inserts is made via screws (in accordance with standard EN 60999-1).

- Two different types of clamping are possible:
- with pressure plate for unprepared conductors
 - without wire protection that requires the conductors to be prepared with bush terminals



inserts: CX..A / CX..B

The connections of the conductors to the female and male inserts is made via screws in accordance with standard.

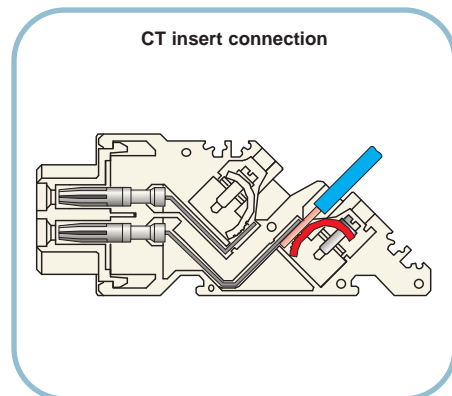
Fully insert the wire in the back of the contact; insert a 2mm hexagonal key in the front of the contact and tighten by holding down the cable (page 34).

description

inserts: CT

In this layout the wires are connected to the socket and plug insert contacts by means of a screw for all CT inserts (in compliance with EN 60999-1).

- The inserts contain:
- a terminal block at 45° for fixed installation on electrical panels or on built-in DIN EN 60715 rail, for easier wire cabling and identification operations
 - screw connection with pressure plate which does not require the wires to be prepared (CT inserts).



spring connected contacts with actuator button



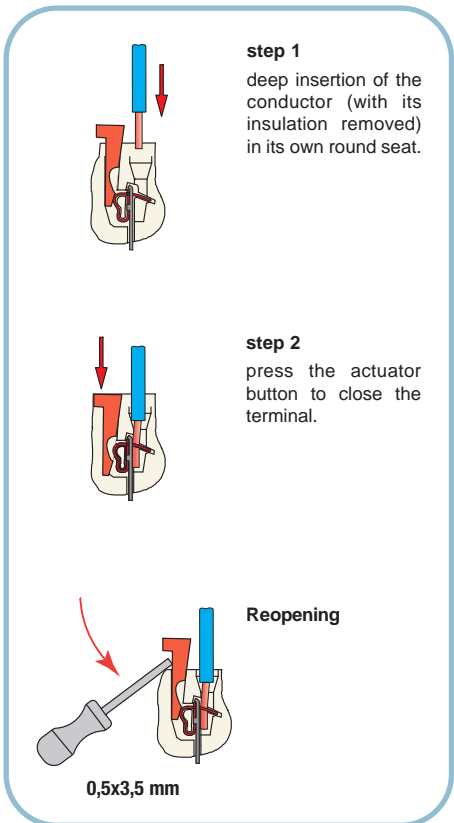
description

inserts: CSAH

In this layout the wires are connected to the socket and plug insert contacts by means of a spring terminal with actuator button.

This type of connection offers the following advantages:

- no special wire preparation (**other than stripping**);
- no cabling tool is necessary;
- it offers an excellent fastening solution and a great resistance to strong vibrations;
- it allows the use of rigid and flexible wires with cross-section;
- between 0,14 and 2,5 mm² (26 - 14 AWG);
- for wires with crimped ferrule, usable section: up to 1,5 mm² (AWG 16);
- it greatly reduces insert preparation and cabling times;
- a screwdriver with a 0,5 x 3,5 mm blade is the only tool required to remove the wire from the contact.



spring connected contacts with actuator button



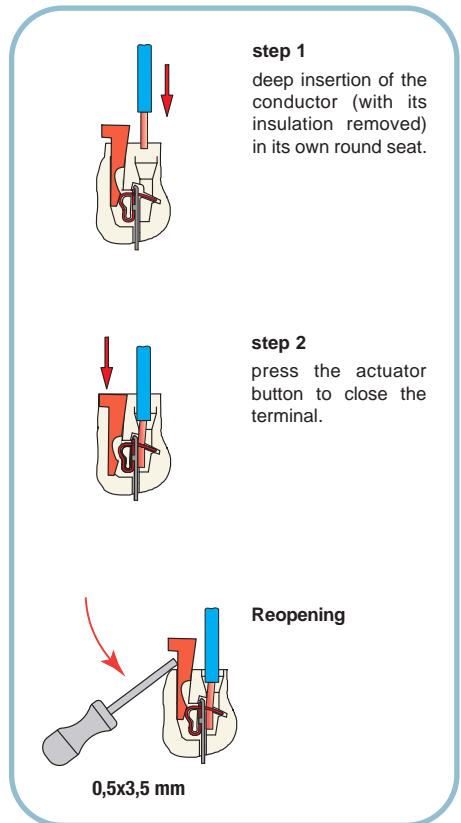
description

inserts: CSH - CMSH

In this layout the wires are connected to the socket and plug insert contacts by means of a spring terminal with actuator button.

This type of connection offers the following advantages:

- no special wire preparation (**other than stripping**);
- no cabling tool is necessary;
- it offers an excellent fastening solution and a great resistance to strong vibrations;
- it allows rigid and flexible wires with sections between 0,14 and 2,5 mm² (26 - 14 AWG) to be used (both with non-prepared conductors and those prepared with ferrule);
- it greatly reduces insert preparation and cabling times;
- a screwdriver with a 0,5 x 3,5 mm blade is the only tool required to remove the wire from the contact.



contacts connected with spring terminal



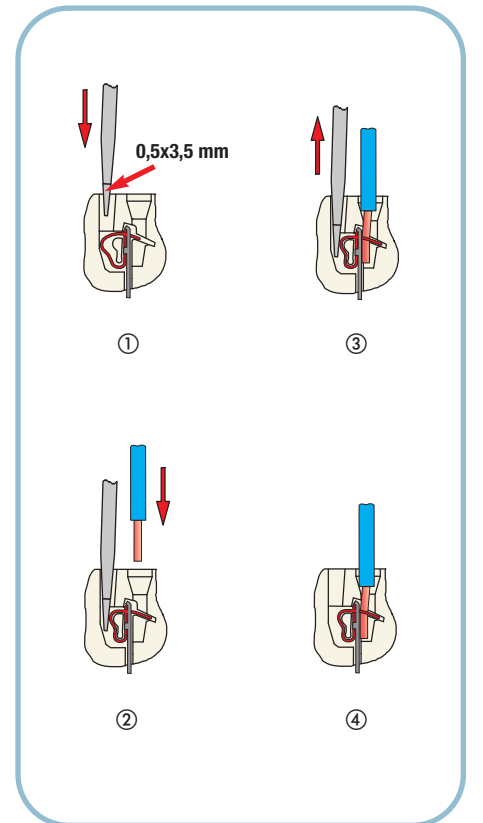
description

inserts: CDS

In this layout the wires are connected to the female and male insert contacts by means of a spring terminal.

This type of connection offers the following advantages:

- no special wire preparation;
- a screwdriver with a 0,5 x 3,5 mm blade is the only tool required to insert the wire in the contact;
- it offers an excellent fastening solution and a great resistance to strong vibrations;
- it allows the use of rigid and flexible wires with cross-sections between 0,14 and 2,5 mm² (26 - 14 AWG);
- for wires with crimped ferrule, usable section: up to 1,5 mm² (AWG 16);
- it allows conductivity tests under load to be carried out through the screwdriver insertion section, without splitting the insert;
- it greatly reduces insert preparation and cabling times.





contacts connected with in built-in terminal block



contacts connected with dual spring terminal



contacts connected with spring terminal



description

description

description

inserts: CTSE - CTS

With terminal block at 45° built-in for fixed installation on electrical panels or on built-in DIN EN 60715 rail, for easier wire cabling and identification operations. Spring terminal connection which does not require wire preparation (CTSE inserts). A screwdriver with a 3,5 x 0,5 mm blade is the only tool required to insert the wire in the contact.

inserts: CSS

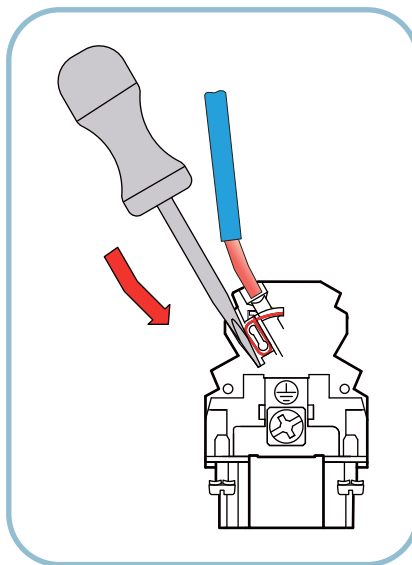
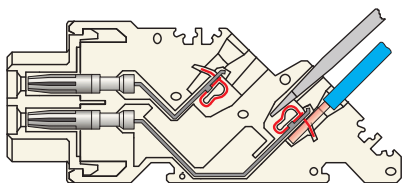
Equipped with two terminals per contact. This type of connection allows a circuit to be branched off. A screwdriver with a 3,5 x 0,5 mm blade is the only tool required to insert the wire in the contact.

inserts: CSE

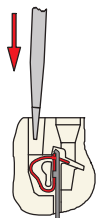
In this layout the wires are connected to the socket and plug insert contacts by means of a spring terminal. This type of connection offers the following advantages:

- no special wire preparation
- a screwdriver with a 3,5 x 0,5 mm blade is the only tool required to insert the wire in the contact
- offers an excellent fastening solution and a great resistance to strong vibrations
- allows rigid and flexible wires with sections between 0,14 and 2,5 mm² to be used (both with non-prepared conductors and those prepared with ferrule)
- allows conductivity tests under load to be carried out through the screwdriver insertion section, without splitting the insert
- greatly reduces insert preparation and cabling times.

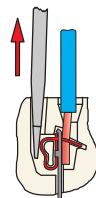
CTSE insert connection



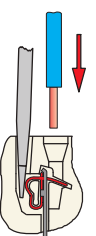
Spring terminal connection operating principles



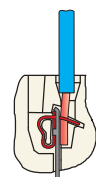
step 1
when the screwdriver is inserted in the square housing provided, the wire housing in the spring is opened.



step 3
when the screwdriver is removed, the spring is held down on the inserted wire.



step 2
the wire is pushed all the way in the round housing provided.



step 4
the connection is complete; pull on the wire to make sure that the spring firmly holds down the wire.

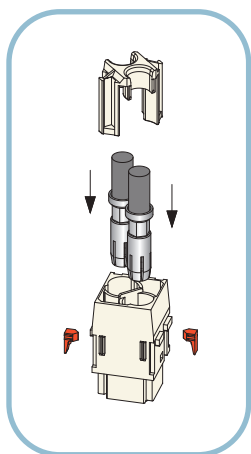
**removable crimp contacts
(with retainer device)**



description

inserts: MIXO 70A - 100A - 200A

This layout enables the wires to be connected to the socket and plug insert removable contacts by crimping them with a crimp tool and its locating turret. Connection is ensured and is **extremely resistant even to the most insidious strains**, such as vibrations.



70A / 100A max contacts

conductor section (mm ²)	AWG	identification
8 - 10	8 - 7	hole Ø 4,3 mm
16	6 - 5	hole Ø 5,5 mm
25	4 - 3	hole Ø 7,0 mm
35	2	Ø hole 7,9 / 8,2 mm

Contacts are supplied in the silver plated version only

200A max contacts

conductor section (mm ²)	AWG	identification
16	6	
25	4	
35	2	
50	1	
70	2/0	

Contacts are supplied in the silver plated version only

**removable crimp contacts
(with retainer device on contacts)**



description

inserts: CD - CDD - CX - MIXO

This layout enables the wires to be connected to the socket and plug insert removable contacts by crimping them with a crimp tool and its locating turret. The crimped connections are then inserted (with a fitting tool for sizes 1 and 2, without any tools for sizes ②, 3, 4 and 5) in the above mentioned sizes and are kept firmly in place by means of the flexible device fitted on the contacts. The wire housing entry on the contact is tapered to facilitate wire insertion and to avoid any damages occurring after the crimping operation. To remove connections, a special extractor tool must be used.

5A max contacts

conductor section (mm ²)	AWG	number identification
0,08 - 0,21	28 - 24	hole Ø 0,64 mm
0,13 - 0,33	26 - 22	hole Ø 0,90 mm
0,33 - 0,52	22 - 20	hole Ø 1,12 mm

Contacts can be supplied in the silver or gold plated version

10A max contacts

conductor section (mm ²)	AWG	number identification
0.14 ÷ 0.37	26 ÷ 22	
0.5	20	
0.75	18	
1	18	
1.5	16	
2.5	14	

Contacts can be supplied in the silver or gold plated version

**removable crimp contacts
(with retainer device inside insert)**



description

inserts: CQ - CQE - CCE - CDC - CMCE - CX - MIXO

The connections of the conductors to the removable contacts of the male and female inserts are made via crimping with a crimping tool and locator. The crimped connections are then introduced in the inserts of the above mentioned series and are firmly held in place by means of a retainer device fitted on the insert which holds down the contact. The contact can be removed by simply using a flat head 3mm screwdriver through the openings provided in the inserts (CDC, CMCE 16+2, CX 8/24 series) or by means of special extractor tools, to unlock the retainer device and release the contact (CQ, CCE, CMCE, CQE, CX, MIXO series). The wire housing entry on the contact is tapered to facilitate wire insertion and to avoid any damages occurring after the crimping operation.

16A max contacts

conductor section (mm ²)	AWG	throat identification
0,14 - 0,37	26 - 22	
0,5	20	
0,75	18	
1	18	
1,5	16	
2,5	14	
3,0	12	
4	12	

Contacts can be supplied in the silver or gold plated version.

Male contacts can also be supplied in the "advanced" version and iron/constantan contacts for thermocouples type J.

40A max contacts

conductor section (mm ²)	AWG	identification
1,5	16	hole Ø 1,75 mm
2,5	14	hole Ø 2,25 mm
4	12	hole Ø 2,85 mm
6	10	hole Ø 3,5 mm

Contacts are supplied in the silver plated version only

Insert features

for multipole connectors

Recommended tightening torque and size of screwdriver

size of screw	connector type	tightening torque (Nm)	tightening torque (lb.in)	recommended size of screwdriver (mm)
M2,5	CT 40, 64	0,4	3,5	0,5x3
M2,6	CT 06...24	0,4	3,5	0,5x3
Ø 2,9	CQ 04/2, CQ 08	0,7	6,2	Ph1
M3	screw of earthing terminal series CQ 05, CQ 12	0,5	4,4	0,5x3
M3	CDA	0,5	4,4	Ph0 or 0,6x3,5
M3	CK, CKS, CD 07, CD 08, CQ 05, CQ 12	0,5	4,4	0,5x3
M3	CX 4/2, CX 4/8 (16A)	0,5	4,4	0,6x3,5
M3	CX 4/8 Q (16A)	0,5	4,4	Ph0
M3	CNE, CME	0,5	4,4	Ph0 or 0,8x4
M3	screw of small earthing terminal, MIXO frames series	0,5	4,4	Ph1 or 1,0x5,5
M3	screw for fastening to enclosures, all series except T-Type	0,5 — 0,8	4,4 — 7,1	Ph1 or 0,8x4
M3	screw for fastening to T-Type enclosures	0,5	4,4	Ph1 or 0,8x4
M3,5	screw of earthing terminal series CDA, CDC, CSAH	0,8	7,1	Ph1 or 1,0x5,5
M4	screw of large earthing terminal, MIXO frames series	1,2	10,6	Ph1 or 1,0x5,5
M4	CP	1,2	10,6	Ph1 or 0,8x4
M4	screw of earthing terminal, all series except CDA, CDC, CSAH, MIXO	1,2	10,6	Ph2 or 1,0x5,5
M6	CX 4/... (80A)	2,5	22,1	1,0x5,5

Increasing the tightening torque does not improve considerably the contacts resistances. The screw torques are selected according to standard EN 60999-1, to provide excellent mechanical, thermal and electric behaviour. The conductor or terminal may be damaged if the recommended values are significantly exceeded.

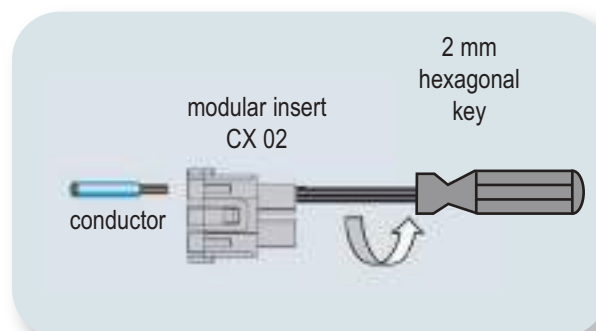
Tightening torque for insert series: CX..A / CX..B

The connections of the conductors to the female and male inserts is made via axial screws.

Fully insert the stripped wire in the back of the contact; insert a 2 mm hexagonal key in the front of the contact and tighten by holding down the wire.

After assembling the complete connector periodically check that the contact is screwed tight by applying the proper tightening torque.

- usable conductor cross-sections (EN 60228 Class 5):
 - from 2,5 to 8 mm² (CX 02 4AF/M)
 - from 6 to 10 mm² (CX 02 4BF/M)
 - (extra-flexible EN 60228 class 6: 2.5... 6 mm²)
- use only stranded flexible copper conductors
- do not twist the strands!
- tightening torque with 2 mm hexagonal Allen key:
 - 1,5 Nm max for conductors with section 2,5 ... 4 mm²
 - 2 Nm max for conductors with section 6 ... 10 mm²
- stripping length: 8^{±1} mm



Insert features

for multipole connectors

Stripping length			
connector inserts connection technique	conductor cross-section		stripping length (mm)
	(mm ²)	(AWG)	
Screw			
CK	0,75-2,5	18-14	6
CX 4/2, CX 4/8 (poles 16A) ¹⁾	0,75-4	18-12	7
	0,75-2,5	18-14	
CNE ¹⁾	0,5-4	20-12	7
CNE..X	0,25-2,5	24-14	7
CDA ¹⁾	0,5-4	20-12	7
CDA..X	0,25-2,5	24-14	7
CT 06...24	0,75-2,5	18-14	12
CT 40 and 64	0,75-2,5	18-14	12
CME ¹⁾	0,5-4	20-12	7
CME..X	0,5-2,5	20-14	7
CP ¹⁾	1,5-6	16-10	10,5
CX 4/.. (80A poles)	4-16	12-5	14
Crimp			
MIXO (5A)	0,08-0,52	28-20	4
CDD, CD, MIXO (10A), CQ 12	0,14-2,5 *	26-14	8 (* 6 for 2,5 mm ²)
CCE, CDC, CMCE, CQ, CQE, CQEE, MIXO (16A)	0,14-4	26-12	7,5
CX, MIXO (40A)	1,5-2,5	16-14	9
	4-6	12-10	9.6
MIXO (70A)	10-25	7-4	15
MIXO (100A), CX 6/6	10-35	7-2	15
MIXO (200A)	16-70	6-2/0	15
Spring			
CSE, CSH, CTSE 06...24, CMSH, MIXO (CX 05 S), CSS	0,14-2,5	26-14	9...11
CTS 40/64	0,14-2,5 unprepared	26-14 unprepared	9...11
	0,14-1 prepared	26-8 prepared	
CKS, CDS, CSAH	0,14-2,5 unprepared	26-14 unprepared	9...11
	0,14-1,5 prepared	26-16 prepared	

1) For CNE, CDA, CP, CME, "CX 4/8 – pole 16A" series connectors with screw terminal and conductor protection plate, the use of ferrules is not necessary (= unprepared conductor).

The use of ferrules (= prepared conductor) causes a reduction in maximum useful cross-section to the lower size (e.g. 4 mm² unprepared → 2,5 mm² prepared).

Contacts features

The 10A and 16A crimp contacts are available either **silver** or **gold-plated**.

The gold-plated crimp contacts are recommended for applications with very low rated currents and rated voltages.

Thanks to the conduction characteristics of gold, the deterioration of signals is prevented and an excellent resistance to the surface oxidation of the contacts is achieved. In particular, gold-plated contacts are recommended with signals with less than ± 5 mA current and ± 5 V voltage.



Standard ILME gold treatment is carried out in accordance with MIL-G-45204C Class 00, Type II, Grade C and ASTM B428-01 Class 0.5, Type II, Grade C.

The new basic or high thickness gold-plated contacts are in compliance with EN 61984: 2009, IEC 60512 and EN 60352-2:1994 (such as the standard version); see pages 480 - 481.



Iron/Constantan thermocouple contacts are also available according to DIN IEC 60584-1 type J.

CI 5A contacts can be used in 25 poles high density inserts.

MIXO series can also accommodate POF 1,0 mm and MOST 1/1,5 mm fibre optics.

Coaxial contacts from 50Ω to 75Ω are also applicable according to DIN 41626-2.



C-TYPE standard version



description

This series has been developed for application in electric and electronic machinery, control units, electric panels, control equipment, industrial environments, and in general, wherever a sectional and reliable connection is required for power and signal circuits.

The inserts of the CMCE series (excepting the 16+2 poles) and of the CMSH series may use standard enclosures also for uses of up to 830V.

UL certified for USA and Canada for NEMA 4, NEMA 4X and NEMA 12 protection ratings, printed on the packaging.

IP65, IP66 and IP69 protection ratings (IP44 and IP67 for CK and MK series).

Characteristics of materials used:

CK, MK and CQ series

- in self-extinguishing grey RAL 7035 or black thermoplastic material for insulating (in the CQ version, only available in black) or metallic enclosures;
- with epoxy-polyester powder coating for metallic enclosures;
- gaskets in anti-aging, oil-resistant, grease-resistant and fuel-resistant vinyl nitrile elastomer;
- monoblock locking device in stainless or galvanised steel for metallic enclosures;
- monoblock locking device in self-extinguishing thermoplastic material for insulating enclosures.

CH, CA and MH, MA, MF, series

- made of die cast aluminium alloy;
- with epoxy-polyester powder coating;
- gaskets in anti-aging, oil-resistant, grease-resistant and fuel-resistant vinyl nitrile elastomer;
- locking device with levers, springs and pins in stainless steel;
- lever handles in self-extinguishing thermoplastic material reinforced with glass fibres, UL approved (for CH, CA and MH, MA enclosures).

V-TYPE IP67 version



description

This original design locking lever, due to the **vertical closing movement, offers an IP66/IP67** protection rating (according to EN 60529) when fitted with a complete and coupled connector and used **with ILME standard aluminum hoods (without adaptor) with die cast pegs**.

The V-Type lever has also other interesting functional characteristics for several applications:

- **The friction on the pin is virtually zero** as the lever exerts its pressure vertically, thus significantly reducing wear in case of frequent use.
- **The lever can be used for applications with vibrations** because it has no springs and is therefore more rigid.
- **The lever occupies a very small space** during the closing phase.
- **It is recommended** in cases in which the **weight of the cable** tends to open elastic locking levers, like with vertically installed connectors and downwards cable exit.
- The absence of plastic parts provides better resistance in case of shocks and exposure to chemical contamination or risk of fire.

Characteristics of materials used:

C7, C7A and M7, M7A series

- locking device in stainless steel;
- made of die cast aluminium alloy;
- with epoxy-polyester powder coating;
- gaskets in anti-aging, oil-resistant, grease-resistant and fuel-resistant vinyl nitrile elastomer.

IL-BRID version



description

The new IL-BRID locking lever.

Through its original design, the new lever combines the smoothness of the thermoplastic material with the sturdiness of the stainless steel spring.

The locking lever also has a linear design which favors a quick wash without retaining external elements.

Soft closing.

In the first phase, the thermoplastic lever comes into play: sliding the new lever on the pin reduces friction and wear.

It is suitable in all applications with frequent opening and closing.

Strong hold.

After the first closing phase involving the plastic component, the stainless steel hook intervenes to guarantee higher resistance to mechanical wire stress.

Characteristics of materials used:

CZ and MZ series

- made of die cast aluminium alloy;
- with epoxy-polyester powder coating;
- gaskets in anti-aging, oil-resistant, grease-resistant and fuel-resistant vinyl nitrile elastomer;
- locking device with levers, springs and pins in stainless steel;
- lever handles in self-extinguishing thermoplastic material reinforced with glass fibres, UL approved (for CZ and MZ enclosures).

T-TYPE version


description

Alongside the wide range of traditional metallic enclosures for ILME multipole connectors, there is now available a **new series of enclosures in self-extinguishing** thermoplastic material in the most common sizes of "44.27", "57.27", "77.27" and "104.27".

Valuable characteristics of these new enclosures:

- **pre-fastened gaskets** for easier installation;
- **external dimensions** of the bulkhead housing are **similar to those of the corresponding metal enclosures**; hole fixing centres are **unchanged**.
- **ample space** inside enclosures for cables, with mounted connectors, similar to the corresponding metal high construction versions;
- possibility of making completely **insulated constructions** (equivalent to Class II);
- **absence of powder paint** for environments in which these are not recommended;
- **non-electrostatic** thermoplastic material.
- manufactured from **insulating material, do not require special reinforced insulation as the metal versions do**, for use with series CME higher voltage connector inserts (screw-type terminals).

T-TYPE series

- Enclosures in **thermoplastic material, dark grey RAL 7012 colour**, with high thicknesses providing structural solidity and durability.
- Built-in **polyurethane gaskets**.
- **Locking levers** in **thermoplastic material colour grey RAL 7001**.
- **M25, M32 and M40** threaded cable entries.
- **IP65** degree of protection according to **EN 60529**;
- **UL TYPE 12** degree of protection according to **ANSI/UL50**.
- Each enclosure carries its own part number, thread/size, conformity **markings** and UL type rating.
- Ambient temperature range: **-40 °C / +90 °C**.

T-TYPE / W version


description

This series has been developed for industrial applications with particularly aggressive external agents (e.g. salt atmospheres or environments).

T-TYPE/W series

- Enclosures in **thermoplastic material, dark grey RAL 7012 colour**, with high thicknesses providing structural solidity and durability.
- Built-in **VITON fluoroelastomer sealing gaskets**.
- **Locking levers** in **thermoplastic material colour grey RAL 7001**.
- **M25, M32 and M40** threaded cable entries.
- **IP66** degree of protection according to **EN 60529**.
- Each enclosure carries its own part number, thread size and conformity **markings**.
- Ambient temperature range: **-40 °C / +90 °C**.

NOTE:

As the characterizing element of the T-TYPE/W series is the **different sealing gasket** material, hoods and covers without sealing gaskets for these series are the same of T-TYPE Standard.

HYGIENIC version


description

The new Hygienic multi-pole connector enclosures version (**series T-TYPE/H and T-TYPE/C**) has been designed for installation on food industry machines and systems.

For this purpose, the following improvements to the T-TYPE series have been made in order to satisfy the requirements laid down by chapter 2.1 of **Machinery Directive 2006/42/EC** for the machines on which they are installed:

- material cleanability and resistance to the cleaning and sanitising agents normally used in the food industry;
- materials in terms of the requirements for accidental contact with food products.

T-TYPE/H series

- Enclosures in **thermoplastic material, dark grey RAL 7012 colour**, with high thicknesses providing structural solidity and durability.
- Sealing gaskets made by **HNBR rubber formulated in accordance with FDA Guideline 21 CFR §177.2600**.
- **Levers** in **thermoplastic material, blue RAL 5015 colour**.
- **M25, M32 and M40** threaded cable entries.
- **IP66 and IP69** degree of protection according to **EN 60529**.
- Each enclosure carries its own part number, thread/size and conformity **markings**.
- Ambient temperature range: **-40 °C / +70 °C**.

T-TYPE/C series

- The **Hygienic T-TYPE/C Series enclosures** have been **specifically designed** for food and beverage ambient temperature as low as **-50 °C (range: -50 °C / +70 °C)**.
- Enclosures in **thermoplastic material, dark grey RAL 7012 colour**, with high thicknesses providing structural solidity and durability.
- This version differs from the Hygienic T-TYPE/H one for the **sealing gaskets** made by in accordance with **FDA Guideline 21 CFR §177.2600**.
- ILME **T-TYPE/C** series enclosure materials have been selected according to **EU n. 10/2011** regulation requirements and each component has been tested according to **EU regulation n. 10/2011** and **EC regulation n. 1935/2004**.

NOTE: As the characterizing elements of the Hygienic Series are the different sealing gasket material and the different locking lever, hoods and covers without sealing gaskets and locking levers are the same of series T-TYPE Standard.



High protection IP68 version	BIG version	W version for aggressive environments
		
description	description	description
<p>For applications in the railway sector and whenever the following characteristics are demanded: high pressure, impact and corrosion resistance, in protection rating IP68. They also ensure a good screening for electromagnetic compatibility. The IP66 e IP68 protection ratings printed on the enclosure are ensured if the enclosures are correctly installed and the cable entry devices have equal or higher rating.</p> <p>UL certified for USA and Canada for NEMA 4, NEMA 4X and NEMA 12 protection ratings, printed on the packaging. IP69 protection rating for tightness to pressurized water jets.</p> <p>Characteristics of materials used:</p> <p>CG and MG series</p> <ul style="list-style-type: none"> - made of die cast aluminium alloy - with epoxy-polyester powder coating - locking device with screws or bayonets 	<p>The large dimensions of these innovative enclosures have been chosen to offer customers an adequate space to store conductors. The width of the new enclosures is greater than that of previous versions: 66 mm compared to the 43 mm for standard enclosures. The height of BIG enclosures has also been increased to 100 mm for sizes "44.27" and "57.27" (standard versions for high models: 70 and 72 mm), and to 110 mm for sizes "77.27" and "104.27" (standard versions for high models: 76 mm). The cable compartment is now fully accessible during assembly (the connector insert is fully inserted in the lower half of the enclosure), offering three times the space compared to standard enclosures. This means it is possible to bend cables and pipes with greater bending radii. Due to this important feature, the new BIG enclosures are particularly suitable for MIXO modular inserts, being versatile and customizable, for multiple cable entries. Each insert, differentiated according to electric power or signal, pneumatic, optical fiber or Ethernet network current, may thus have the specific branching. One single large connector can replace what previously required two connectors.</p> <p>Particular attention has been given to the number and dimensions of cable entries. The threaded entry is available in several metric diameters in accordance with EN 60423, for input devices compliant with EN 50262, with vertical or horizontal orientation.</p> <p>Characteristics of materials used:</p> <p>CB and MB series</p> <ul style="list-style-type: none"> - made of die cast aluminium alloy - with epoxy-polyester powder coating - die cast pegs 	<p>This series has been developed for industrial applications with particularly aggressive external agents (e.g. salt atmospheres or environments). The enclosures do not have any internal tabs and also allow insertion of the CME inserts. These enclosures have supplementary insulating strips inside. This version is distinguished by the black colour of the enclosures.</p> <p>UL certified for USA and Canada for NEMA 4, NEMA 4X and NEMA 12 protection ratings, printed on the packaging. IP65, IP66 and IP69 protection ratings.</p> <p>Characteristics of materials used:</p> <p>CK..W and MK..W series</p> <ul style="list-style-type: none"> - chromate treated die cast - with epoxy-polyester powder coating - gaskets in anti-aging fluoro elastomer - monoblock locking device in stainless steel <p>CZ..W, CH..W, CA..W series and MZ..W, MH..W, MA..W series</p> <ul style="list-style-type: none"> - made of die cast aluminium alloy - chromate treated die cast - with epoxy-polyester powder coating - gaskets in anti-aging fluoro elastomer - locking device with levers, springs and pins in stainless steel - pegs with stainless steel coating - monoblock lever handles in stainless steel (for CZ...W and MZ..W enclosures) - lever handles in self-extinguishing thermoplastic material reinforced with glass fibres, UL approved (CH..W, CA..W and MH..W, MA..W versions) - supplementary insulation inside enclosures

EMC version	180 °C version	Single CENTRAL LEVER version
		
description	description	description
<p>This series has been developed for industrial applications that require electromagnetic compatibility (EMC, Electromagnetic Compatibility), in accordance with the European standards that regulate the emission and immunity of the equipment.</p> <p>UL certified for USA and Canada for NEMA 4, NEMA 4X and NEMA 12 protection ratings, printed on the packaging. IP65, IP66 and IP69K protection ratings.</p> <p>Characteristics of materials used:</p> <p>CK..S and MK..S series</p> <ul style="list-style-type: none"> - chromate treated die cast with high surface conductivity - special gaskets in highly conductive material - monoblock locking device in stainless steel <p>CZ..S, CH..S, CA..S and MZ..S, MH..S, MA..S series</p> <ul style="list-style-type: none"> - made of die cast aluminium alloy - chromate treated die cast with high surface conductivity - special gaskets in highly conductive material - locking device with levers, springs and pins in stainless steel - lever handles in self-extinguishing thermoplastic material reinforced with glass fibres, UL approved 	<p>Series specifically developed for industrial applications where the ambient temperatures are particularly harsh (from -40°C to +180°C). For use with inserts in self-extinguishing thermoplastic material (PPS polyphenylene sulphide). This version is distinguished by the red colour of the enclosures.</p> <p>UL certified for USA and Canada for NEMA 4, NEMA 4X and NEMA 12 protection ratings, printed on the packaging. IP65 and IP69K protection ratings.</p> <p>Characteristics of materials used:</p> <p>CK..R, CZ..R, CH..R, CA..R and MK..R, MZ..R, MH..R, MA..R series</p> <ul style="list-style-type: none"> - made of die cast aluminium alloy - chromate treated die cast - coated with special thermoset powder with high resistant to high temperatures - gaskets in anti-aging fluoro elastomer - locking device with levers, springs and pins in stainless steel - monoblock levers in stainless steel (for CZ..R, CH..R 48 and MZ..R, MH..R 48 versions) - lever handles in aluminium with special die-cast coating (for CH..R 10, 16, 24 and MH..R 10, 16, 24 versions) - supplementary insulation inside enclosures 	<p>Series specifically designed for industrial applications with limited installation space. These enclosures can be installed, placed side-by-side and handled in a single operation. Furthermore, the lever's shape reduces the effort required to uncouple the inner fittings.</p> <p>Characteristics of materials used:</p> <p>CH..YC, CA..YC and MA..YC, CA..YX and MF..YX series</p> <ul style="list-style-type: none"> - made of die cast aluminium alloy - with epoxy-polyester powder coating - gaskets in anti-aging, oil-resistant, grease-resistant and fuel-resistant vinyl nitrile elastomer - locking device with single stainless steel lever

LS-TYPE version	Insulated C-TYPE 830V version	COB
		
<p>description</p>	<p>description</p>	<p>description</p>
<p>The new LS-TYPE enclosures are the ideal solution for the entertainment industry (lighting system power supply and related mixer and dimmer panels), including theatre stages, film sets, radio and TV studios, discos, trade fair booths, concert halls and night public events, both indoors and outdoors, etc. All parts are in elegant RAL 9005 black to make them suitable for situations and locations where they should not be visible in the dark.</p> <p>Characteristics of materials used:</p> <p>CHIN and MAPN, MFON, MFVN, MHON, MHVN series</p> <ul style="list-style-type: none"> - made of die cast aluminium alloy - with epoxy-polyester powder coating - gaskets in anti-aging, oil-resistant, grease-resistant and fuel-resistant vinyl nitrile elastomer - lever handles in self-extinguishing thermoplastic material reinforced with glass fibres, UL approved 	<p>Applications as for the standard version. The enclosures do not have tabs and allow the insertion of inserts with rated voltage up to 830V (series CME). The inserts of CME series connectors (screw) have a lateral key encryption that prevents installation in metal housings without additional insulation. These enclosures have supplementary insulating strips inside.</p> <p>UL certified for USA and Canada for NEMA 4, NEMA 4X and NEMA 12 protection ratings, printed on the packaging. IP65, IP66 and IP69K protection ratings.</p> <p>Characteristics of materials used:</p> <p>CM, CMA and MM, MMA, MMF series</p> <ul style="list-style-type: none"> - made of die cast aluminium alloy - with epoxy-polyester powder coating - gaskets in anti-aging, oil-resistant, grease-resistant and fuel-resistant vinyl nitrile elastomer - locking device with levers, springs and pins in stainless steel - lever handles in self-extinguishing thermoplastic material reinforced with glass fibres, UL approved - supplementary insulation inside enclosures 	<p>The COB system makes it possible to use multipole connectors within electric panels without the traditional metallic enclosure as protection is assured by the electric panel itself or other container.</p> <p>N.B.: connectors must <u>not</u> be handled live.</p> <p>The COB system may be assembled in the three following ways:</p> <ul style="list-style-type: none"> - on panels with window snap fastening device * (Figure 1 page 460); - on DIN EN 60715 rails, both lengthways and crossways to the support (Figure 2 page 461); - on fixed panels using screws (Figure 2 page 461). <p>The COB system offers the following advantages:</p> <ul style="list-style-type: none"> - reduction in cost and space with respect to metallic enclosures and traditional terminal boards - possibility of rewiring at the connector bench with connected devices - easy wiring inspection and tests with coupled connectors, thanks to rear access to the inserts via the turnover device - fast mounting in panels thanks to the snap fastening device on the DIN EN 60715 rails - sturdy support structure, specific to the size of each insert and does not require any preparation - broad passage for housing of conductor cables - mobile parts prearranged for the clamping of bundles of conductors of multipolar cables to prevent contact with the connector contacts



Changeover from Pg threads to M metric threads

After 31st December 1999, the German safety standard DIN VDE 0619 (1987-09) and the standards it refers to - DIN 46319 for dimensions with metric threads and DIN 46320 (T1-T4), DIN 46255 and DIN 46259 for dimensions with Pg threads (Pg= Panzerrohr-Gewinde: literally "threads for armoured pipes") - were withdrawn and European standard EN 50262 "Metric cable grippers for electrical installations" has been in force since 1st January 2000. This standard defines the new sizes with metric threads for cable grippers according to EN 60423 and establishes the safety prescriptions. Conversely, it does not specify the dimensions, such as the size of the tightening wrench, the diagonal dimension, or the dimensions of the tightness seals, as was the case in the withdrawn DIN for Pg cable grippers.

The standard came definitively into force on 1st April 2001, when the contrasting national standards were withdrawn.

It is valid in all member countries of CENELEC (European Electrical Standardisation Committee) and its publication has led to a broadening of the supply of enclosures for multi-pole connectors for industrial use, to include new enclosure versions with cable entry suitable for metric cable grippers.

Cable gripper producers have introduced the new metric series to add to the Pg size series, to gradually replace the latter type. The transition period indicated in the new standard should have ended on 1st March 2001, after which date the use of entry devices for Pg cables and, as a result, enclosures with Pg thread, should have ended in new installations. Nevertheless, both the cable entry devices and the relevant enclosures with Pg thread, may continue to be used as spare parts. For the CE marking of these items, observance of the safety conditions specified by the Low Voltage Directive is sufficient. To distinguish hoods and surface-mounting housings with metric entries from the relevant Pg versions (marked with a C pre-code), the ILME metric types are marked with an M pre-code. The transposition table below indicates the correspondence rule adopted in most cases by ILME for creating the new metric versions.

Cable diameter for use with ILME cable glands (for more information ask for the technical catalogue)

Pg → metric transposition

Pg	metric
Pg 11	M 20
Pg 13.5	M 20
Pg 16	M 20
Pg 21	M 25
Pg 29	M 32
Pg 36	M 40
Pg 42	M 50

Ø in mm	metric thread				
series	20	25	32	40	50
AS M..P	from 6 to 12,5	from 10 to 18	from 14 to 24	from 15 to 24	from 23 to 30
AS M..E	from 8 to 12,5	from 13.5 to 18	from 17 to 24		
AG M..T	6-8-10	11-14-17	19-21-24	26-29-32	35-38-41
AG M..I	from 5 to 12.5	from 9 to 18	from 14 to 25	from 18 to 32	from 24 to 38,5
AG M..R	6-8-10	11-14-17	19-21-24		

IP degree of protection and the EN 60529 standard

The minimum IP degree of protection is regulated in Italy by the CEI 64-8 installation standard (adoption of the CENELEC Harmonisation Documents HD 384 series derived from the IEC 60364 series publication) which, in Part 7, covers a number of special environments: construction and demolition sites, structures designed for agricultural or livestock breeding use, restricted conductor areas, caravans and caravan sites, environments with a greater risk in case of fire, public performance and entertainment areas, pools, fountains, marinas and harbour areas. The standard is applicable to enclosures for electrical equipment with a rated power not greater than 72,5 kW.

All the equipment must be installed according to the rule of art and must comply with any manufacturer's assembly instructions. When components of different degrees of protection are assembled, the resulting system will assume the lowest degree of protection of the mounted components.

The range of ILME enclosures presented in this Catalogue offers the following range of protection and a combination of them as specified therein (the so-called multiple or versatile IP ratings e.g. IP66/IP67, IP66/IP68/IP69):

- IP44** : protection against the *ingress of solid foreign objects* with a Ø 1,0 mm and greater and against *access to hazardous parts* with an access probe of Ø 1 mm (1st characteristic numeral), and protection against the *harmful effects of splashing water from any direction* (2nd characteristic numeral).
- IP55** : protection against *dust* and protection against the *access to hazardous parts* with an access probe of Ø 1,0 mm (1st characteristic numeral), and protected against the *harmful effects of water jets* from any direction (2nd characteristic numeral).
- IP66** : total protection against *dust* and access to *hazardous parts* with an accessibility probe of Ø 1,0 mm (1st characteristic numeral), and protected against *powerful water jets* from any direction, such as sea waves (2nd characteristic numeral).
- IP67** : total protection against *dust*, and against the *access to hazardous parts* with access probe of Ø 1,0 mm (1st characteristic numeral), and protection against *the effects of temporary immersion* (30 min) in water at the maximum depth of 1 m (2nd characteristic numeral) ¹⁾.
- IP68** : total protection against *dust*, and against the *access to hazardous parts* with access probe of Ø 1,0 mm (1st characteristic numeral), and protection against the effects of *continuous submersion in water* (duration ≥ 30 min upon agreement and water depth ≥ 1 m upon agreement) (2nd characteristic numeral).
- IP69** ²⁾: total protection against *dust*, and against *access to hazardous parts* with access probe of Ø 1,0 mm (1st characteristic numeral), and protection against the effects of *high pressure and temperature water jets* (2nd characteristic numeral).

¹⁾ The **IP66/IP67** degree of protection has been officially be introduced in Amendment 1 of IEC/EN 60309-1 and IEC/EN 60309-2 standards covering industrial plugs, socket-outlets, appliance inlets and couplers. It is already accounted for in the IP degree of protection standard EN 60529 as a "multiple" form of protection, covering the fact that the temporary immersion resistance test (protection IPX7) does not automatically cover the two lower degrees of protection IPX6 and IPX5, tested with the respective jet tests. If the end user requires the equipment to resist both against temporary immersions and pressurized water jets, devices rated IP66/IP67 i.e. with multiple IP marking must be selected.

²⁾ Some connector enclosures, as specified in the relevant Section, have successfully passed also the tests specified for the **IPX9** degree of protection recently introduced in EN 60529 standard, derived from the IPX9K degree of protection described in ISO 20653 and former DIN 40050-9 automotive standards. These series bear actually a "multiple" or a "versatile" rating per IEC/EN 60529, e.g. IP66/IP69 and IP66/IP68/IP69.

The following table shows the different levels of protection required by the IP standard

First characteristic numeral			Second characteristic numeral		
Protection of people against access to hazardous parts			Protection of materials against harmful penetration of water		
Protection of equipment against solid foreign objects					
IP	Solid external objects	Protection	IP	Tests	Protection
0		non-protected	0		non-protected
1		protected against access to hazardous parts with the back of a hand protected against solid foreign objects of Ø 50 mm and greater	1		protected against vertically falling water drops
2		protected against access to hazardous parts with a finger - protected against solid foreign objects of Ø 12,5 mm and greater	2		protected against vertically falling water drops when enclosure tilted up to 15° (on either side of the vertical)
3		protected against access to hazardous parts with a tool - protected against solid foreign objects of Ø 2,5 mm and greater	3		protected against spraying water (at an angle up to 60° on either side of the vertical)
4		protected against access to hazardous parts with a wire - protected against solid foreign objects of Ø 1,0 mm and greater	4		protected against splashing water from any direction
5		protected against access to hazardous parts with a wire dust-protected (no harmful dust deposit)	5		protected against water jets from any direction
6		protected against access to hazardous parts with a wire dust-tight (total protection against dust)	6		protected against powerful water jets from any direction (similar to sea waves)
			7		protected against the effects of temporary immersion in water at a maximum depth of 1 meter for 30 min
			8		protected against the effects of continuous immersion in water at depth and/or duration upon agreement, more severe than for numeral 7
			9		protected against high pressure and temperature water jets from any direction

cUL mark

Enclosures series

ILME enclosures have been certified by UL as Recognised Components for the USA and Canada (cUL mark) as accessories of our set of UL and CSA certified connector inserts (file UL E115072, file CSA 082270_0_000).

The certification has been achieved by successfully completing several tests carried out in compliance with standard **ANSI/UL 50** (Enclosures for Electrical Equipment) which is equivalent to the North American voluntary standard **NEMA 250** (NEMA = National Electrical Manufacturers Association) and to the equivalent Canadian standard **CSA C22.2 No.94** (Special Purpose Enclosures) for safety levels used in North America and required by the local installation codes (e.g. : NFPA 70 National Electrical Code in the US, CSA system standards for Canada); more specifically:

- **Type 12** (= NEMA 12): for internal use, similar to IP54 protection rating according to IEC/EN 60529;
- **Type 4** (= NEMA 4): for internal and external use, similar to IP66;
- **Type 4X** (= NEMA 4X): for internal and external use, as Type 4 + corrosion resistance, similar to IP66 protection rating.

The certification includes the enclosure series with ISO, Pg and metric cable entry as well as NPT, all special versions similar to standard types.

cUL[®] US



**Type
4/4X/12**



Type 12

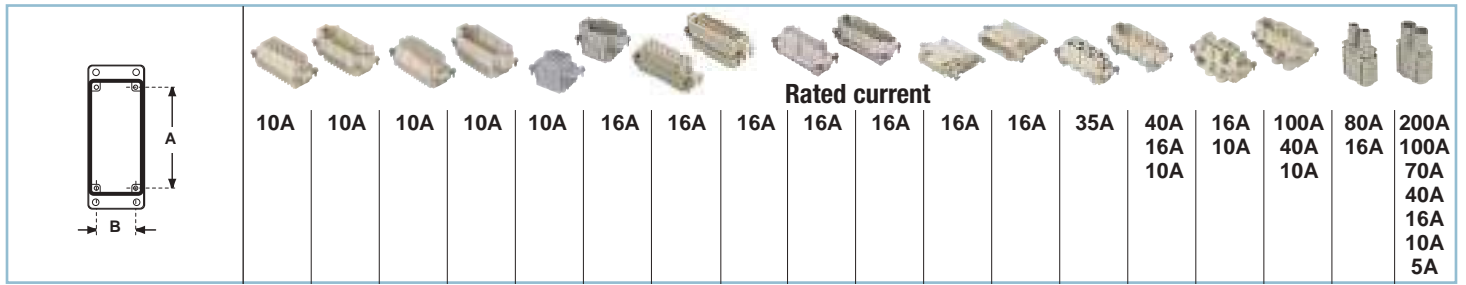




Enclosure versions

Enclosures size	C-TYPE or IL-BRID	V-TYPE	180 °C	For aggressive environments	EMC	High protection IP68	BIG hoods	Insulating T-TYPE	LS-TYPE
	from page	from page	from page	from page	from page	from page	from page	from page	from page
21.21	✓ 221	✗	✓ 397	✓ 369	✓ 387	✓ 416	✗	✗	✗
32.13	✓ 226	✗	✗	✗	✓ 388	✗	✗	✗	✗
49.16	✓ 230	✗	on request	✓ 370	✓ 390	✗	✗	✗	✗
66.16	✓ 233	✗	on request	✓ 371	✓ 391	✗	✗	✗	✗
66.40	✓ 237	✗	✗	✓ 372	✗	✗	✗	✗	✗
44.27	✓ 240	✓ 274, 284	✓ 398	✓ 373	✓ 392	✓ 420	✓ 304	✓ 326	✓ 450
57.27	✓ 244	✓ 275, 288	✓ 399	✓ 374	✓ 393	✓ 424	✓ 308	✓ 328	✓ 45
77.27	✓ 250	✓ 276, 292	✓ 400	✓ 375	✓ 394	✓ 428	✓ 312	✓ 330	✓ 454
104.27	✓ 258	✓ 277, 296	✓ 401	✓ 376	✓ 395	✓ 432	✓ 316	✓ 332	✓ 456
77.62	✓ 267	✗ see standard enclosures	✗	✓ 377	✗	✗	✗	✗	✗
104.62	✓ 271	✗ see standard enclosures	✓ 402	✓ 378	✗	✗	✗	✗	✗

- ✓ = normal production
- = may be supplied on request, contact our sales offices
- ✗ = currently unavailable



Insert series

Enclosures size A.B	CK, CKS	CD	CT, CTS	CDD	CDS	CDA, CDC, CSAH	CCE	CNE	CSE, CSS, CSH	CT, CTS, CTSE	CME	CMSH, CMCE	CP	CQ, CQE, CQEE	CX	CX	CX	MIXO
---------------------	---------	----	---------	-----	-----	----------------	-----	-----	---------------	---------------	-----	------------	----	---------------	----	----	----	------

Insert polarity + ⊕

21.21	3 4	7 8#												12 5				
32.13														8 4/2				
49.16		15				10												①*
66.16		25		38		16												
66.40		50		76		32												
44.27				24	9	6	6	6	6*					10				②*
57.27				42	18	10	10	10	10*	3+2	3+2			18	8/24			③*
77.27		40	40*	72	27	16	16	16	16*	6+2	6+2	6		32 40		6/36 12/2	4/0 4/2	④*
104.27		64	64*	108	42	24	24	24	24*	10+2 16+2	10+2 16+2★			46 64		6/6	4/8	⑥*
77.62		80		144	54	32	32	32	32*	12+4	12+4	12		64				⑧*
104.62		128		216	84	48	48	48	48*	20+4 32+4	20+4 32+4★			92				⑫*

= polarity without earth contact

* = can only be mounted in bulkhead housings (6/10/16/24 polarity, also usable with BIG series hoods)

⊙* = number of modular inserts that may be inserted in the enclosures

★ = polarity not available in CMSH version

The polarity values in "red" are obtained using double inserts

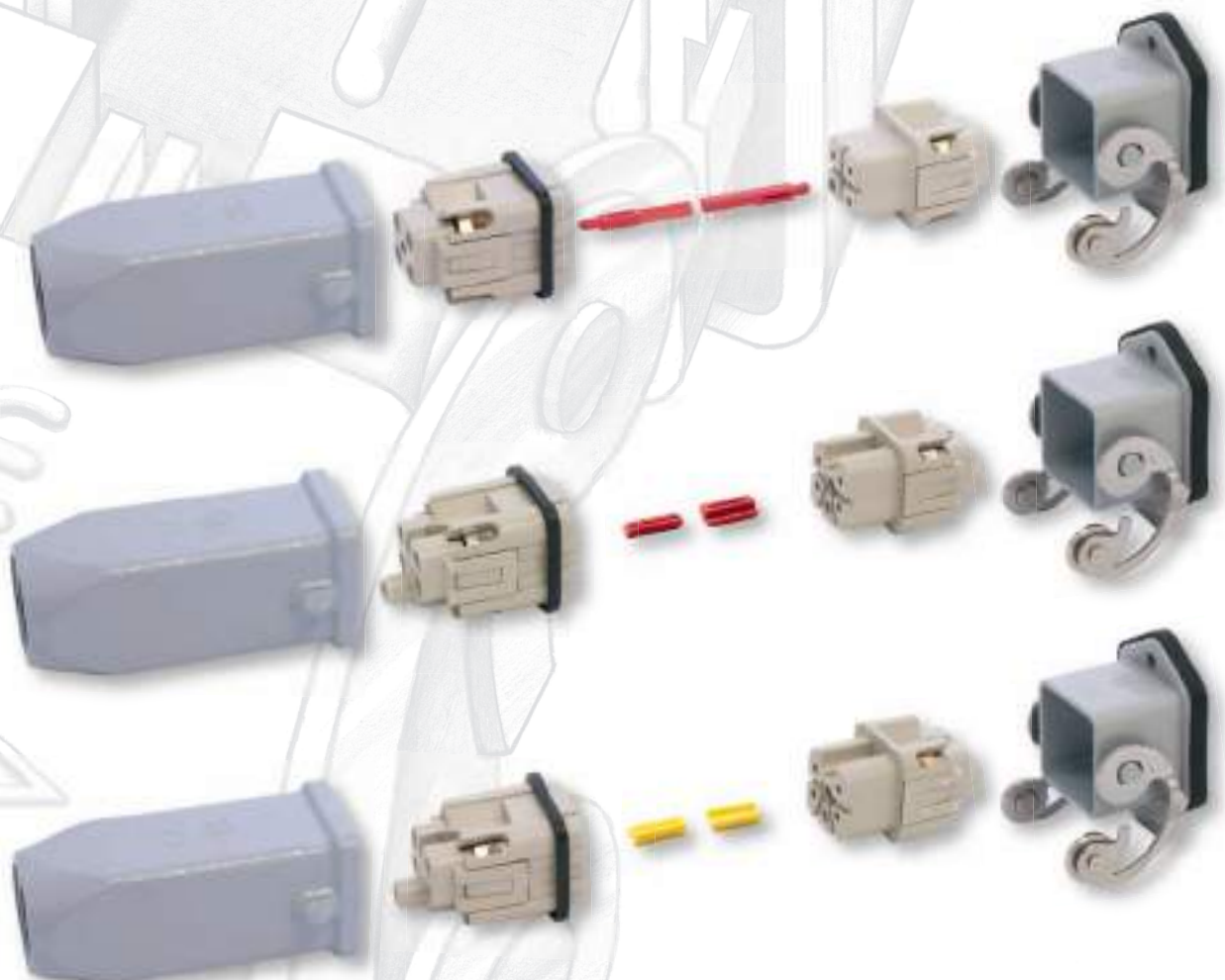
The polarity values in "green" must be mounted exclusively in insulated enclosures (CM - CMA and MM - MMA versions) or T-TYPE series

The polarity values indicated as exponentials in the CME, CMCE and CMSH inserts identify the pilot contacts for advanced opening

NEW

CK and CKS with coding pins

avoid incorrect connections



CK - CKS

CK and CKS series

Avoid incorrect connections

The new CK/CKS series of inserts addresses the need for connector coding with the addition of coding pins CR K03, CR K04R and CR K04G.

Each connector is made in such a way as to make coupling of inserts from different series impossible.

When a number of identical connectors with different functions are mounted close together, the coupling of a free part onto a non-corresponding fixed part must be prevented in order to avoid possible damage and breakdown.

The new coding pins allow the user to safely configure the male and female inserts to prevent the incorrect connection of identical connectors.

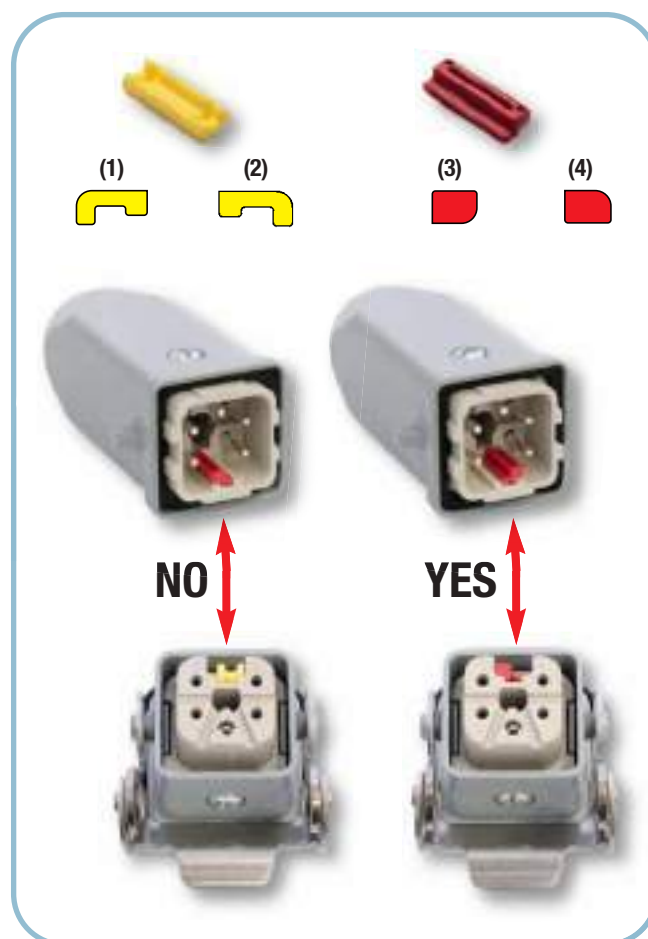
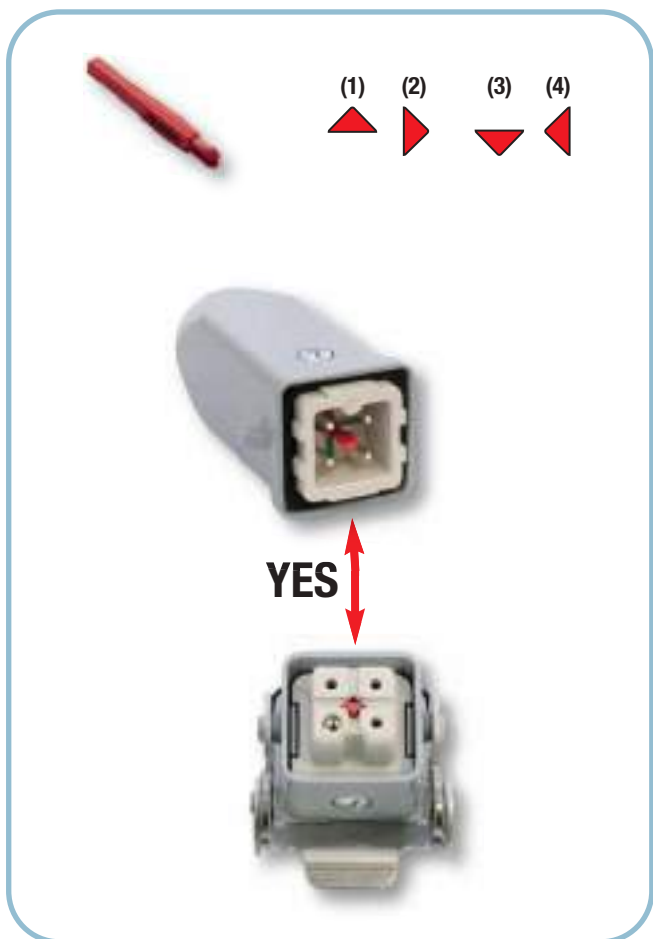
With various combinations of coding pins available, **it is possible to safely install up to 4 connectors of the same type but with different functions side-by-side.**

CR K03 version, for connectors 3P + ⊕.

Inserting the pin in the 4 possible positions by rotating through 90° allows 4 different insert codes to be obtained.

CR K04 version, for connectors 4P + ⊕.

There are 2 pin versions: Red and Yellow. Each pin has 2 possible insertion positions specular. Alternate use of the pins allows 4 combinations to be achieved.



enclosures:
size "21.21"

page:

insulating type 221 - 222
 metallic type 223 - 225
 W-TYPE for aggressive environments 369
 EMC 387
 IP68 416 - 418

- can be mated with CKS inserts

**inserts, 3 poles + ⊕
screw terminal connections**



silver plated contacts

NEW

**inserts, 4 poles + ⊕
screw terminal connections**



silver plated contacts

NEW

description	part No.
distinctive colour	white
female inserts with female contacts ¹⁾	CKF 03
male inserts with male contacts	CKM 03

part No.	part No.
black	black
CKF 03 N	CKF 03 N
CKM 03 N	CKM 03 N

part No.	part No.
white	black
CKF 04	CKF 04 N
CKM 04	CKM 04 N

description	part No.
distinctive colour	white
female inserts with female contacts ¹⁾	CKF 04
male inserts with male contacts	CKM 04

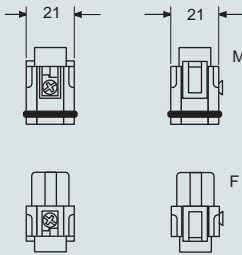
part No.	part No.
white	black
CKF 04	CKF 04 N
CKM 04	CKM 04 N

part No.	part No.
white	black
CKF 04	CKF 04 N
CKM 04	CKM 04 N

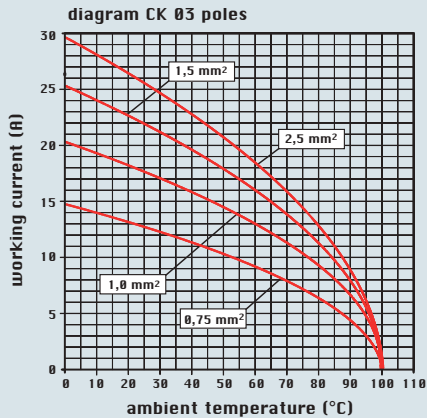
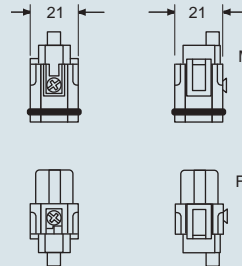
¹⁾ the female inserts can be mounted into the straight bulkhead housings CK I from the rear

- characteristics according to EN 61984:
10A 230/400V 4kV 3
10A 400/690V 4kV 2
- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: -40 °C ... +100 °C
- are made of self-extinguishing thermoplastic resin UL 94 V1
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 1 \text{ m}\Omega$
- for maximum current load, see the following load curves inserts, for more information see page 556

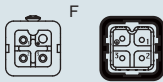
dimensions in mm



dimensions in mm

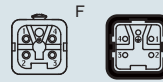


contacts side (front view)

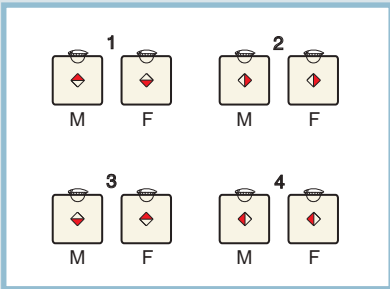


- inserts for wires with the following cross sections: 0,75 - 2,5 mm² - AWG 18 - 14
- conductor stripping length: 6 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

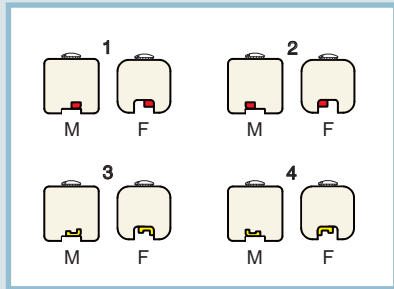
contacts side (front view)



- inserts for wires with the following cross sections: 0,75 - 2,5 mm² - AWG 18 - 14
- conductor stripping length: 6 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35



M = male insert
F = female insert



M = male insert
F = female insert

dimensions shown are not binding and may be changed without notice

CK

enclosures:
size "21.21" page:

insulating type 221 - 222
 metallic type 223 - 225
W-TYPE for aggressive environments 369
 EMC 387
 IP68 416 - 418

- can be mated with CK inserts
- inserts for application with temperatures up to 180 °C, available on request

inserts, 3 poles + ⊕ connection with spring terminal



silver plated contacts

NEW

inserts, 4 poles + ⊕ connection with spring terminal



silver plated contacts

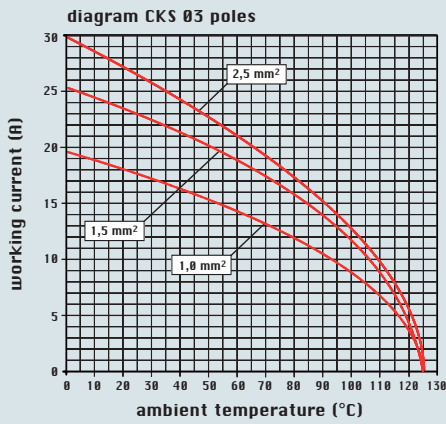
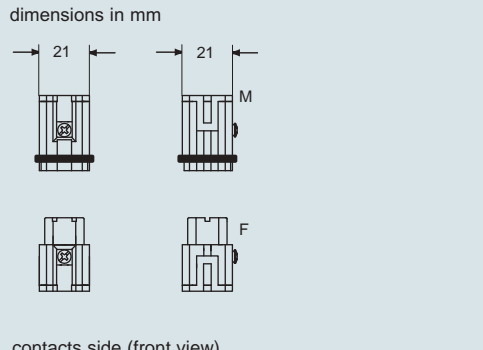
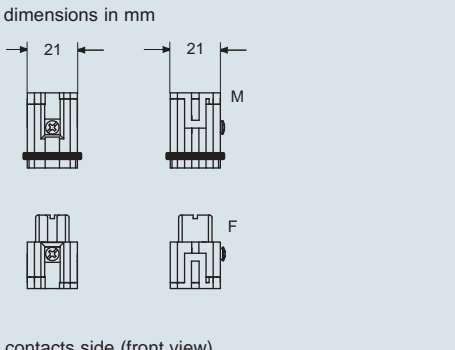
NEW

description part No.
 female inserts with female contacts **CKSF 03**
 male inserts with male contacts **CKSM 03**

description part No.
 female inserts with female contacts **CKSF 04**
 male inserts with male contacts **CKSM 04**

female inserts with female contacts
 male inserts with male contacts

- characteristics according to EN 61984:
10A 400V 4kV 3
10A 690V 4kV 2
- cUL - UL for USA and Canada, CSA, CCC *, EAC certified
 * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 556

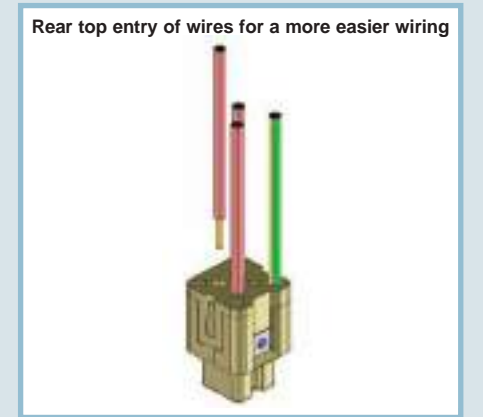
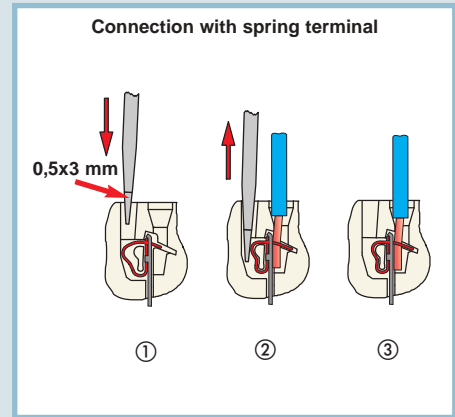
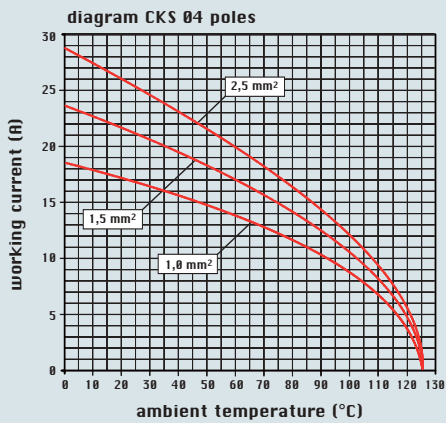


- inserts for wires with the following sections: 0,14 - 2,5 mm² - AWG 26 - 14 for prepared wires
 usable section: up to 1,5 mm² (AWG 16)
- conductor stripping length: 9...11 mm

- inserts for wires with the following sections: 0,14 - 2,5 mm² - AWG 26 - 14 for prepared wires
 usable section: up to 1,5 mm² (AWG 16)
- conductor stripping length: 9...11 mm

coding pins:
 CR K03 (page 490)

coding pins:
 CR K04R and CR K04G (page 490)



dimensions shown are not binding and may be changed without notice

enclosures:
size "21.21" page:

insulating type 221 - 222
 metallic type 223 - 225
 W-TYPE for aggressive environments 369
 EMC 387
 IP68 416 - 418

inserts, 3 poles + ⊕
screw terminal connections



gold plated contacts

NEW

inserts, 4 poles + ⊕
screw terminal connections



gold plated contacts

NEW

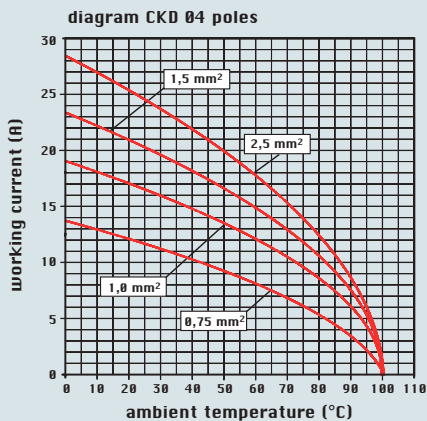
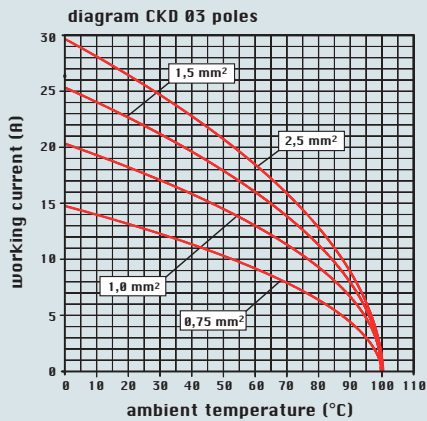
description

female inserts with female contacts ¹⁾
male inserts with male contacts

female inserts with female contacts ¹⁾
male inserts with male contacts

¹⁾ the female inserts can be mounted into the straight bulkhead housings CK I from the rear

- characteristics according to EN 61984:
10A 230/400V 4kV 3
10A 400/690V 4kV 2
- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +100 °C
- are made of self-extinguishing thermoplastic resin UL 94 V1
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 556

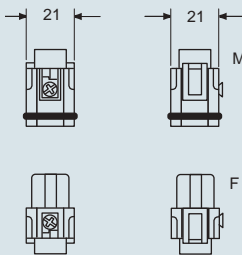


dimensions shown are not binding and may be changed without notice

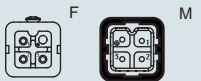
part No.

CKFD 03
CKMD 03

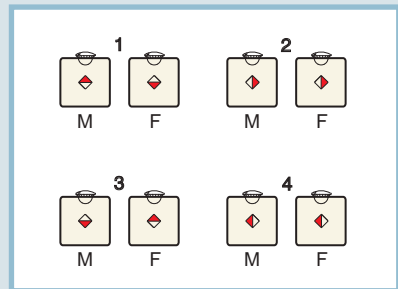
dimensions in mm



contacts side (front view)



- inserts for connectors with the following sections: 0,75 - 2,5 mm² - AWG 18 - 14
- conductors stripping length: 6 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

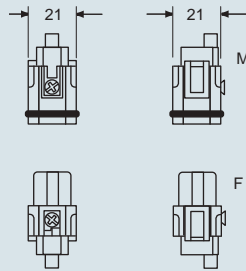


M = male insert
F = female insert

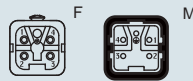
part No.

CKFD 04
CKMD 04

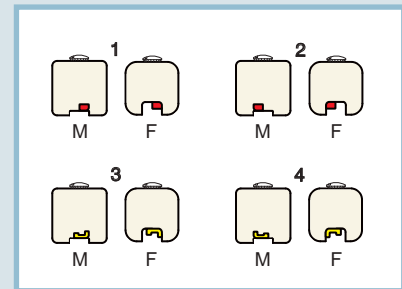
dimensions in mm



contacts side (front view)



- inserts for connectors with the following sections: 0,75 - 2,5 mm² - AWG 18 - 14
- conductors stripping length: 6 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35



M = male insert
F = female insert

enclosures:
 size "21.21" page:
 for 180 °C 397

**inserts, 3 poles + ⊕
 screw terminal connections**

**inserts, 4 poles + ⊕
 screw terminal connections**

NEW

NEW



silver plated contacts

180 °C

silver plated contacts

180 °C

description

part No.

part No.

use in temperatures up to 180 °C
 female inserts with female contacts ¹⁾, brown
 male inserts with male contacts, brown

**CKF 03 RY
 CKM 03 RY**

use in temperatures up to 180 °C
 female inserts with female contacts ¹⁾, brown
 male inserts with male contacts, brown

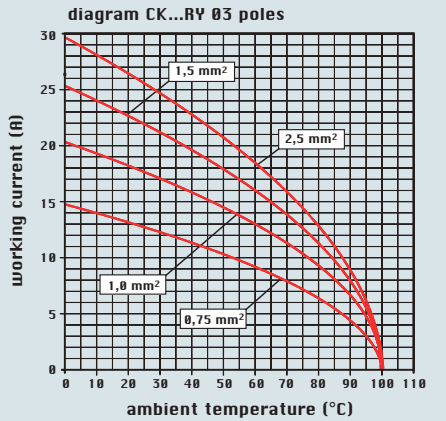
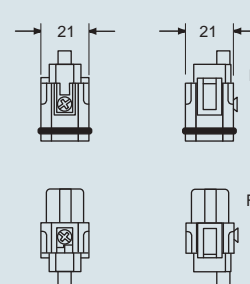
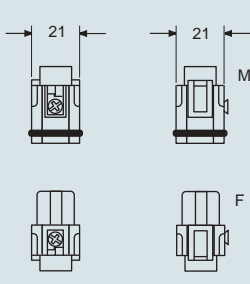
**CKF 04 RY
 CKM 04 RY**

¹⁾ the female inserts can be mounted into the straight bulkhead housings CK I from the rear

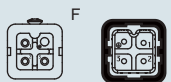
dimensions in mm

dimensions in mm

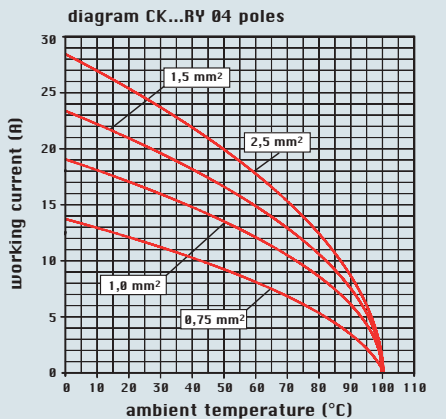
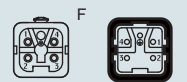
- characteristics according to EN 61984:
10A 230/400V 4kV 3
10A 400/690V 4kV 2
- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +180 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 557



contacts side (front view)



contacts side (front view)



- inserts for connectors with the following sections:
 0,75 - 2,5 mm² - AWG 18 - 14
- conductors stripping length: 6 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

- inserts for connectors with the following sections:
 0,75 - 2,5 mm² - AWG 18 - 14
- conductors stripping length: 6 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

dimensions shown are not binding
 and may be changed without notice

CD inserts

Special voltages

If all the contacts are used, the CD inserts series connectors may be used with voltage up to 250V (first column) pollution degree 3 in accordance with the standard EN 61984.

If the number of contacts is reduced and the contacts accordingly assigned, these connectors may be used at higher voltages.

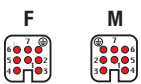
This is possible because the decrease in the number of contacts leads to an increase in clearances (distances in air) and creepage distances (distances along the surface)

When the contacts are arranged as shown below, the inserts may be used at rated voltage of 500V (second column) pollution degree 3 in accordance with the standard EN 61984.

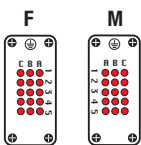
for use up to 250V
pollution degree 3

diagrams
contacts side (front view)

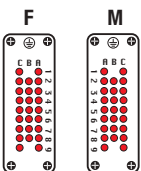
CD - 7 + ⊕



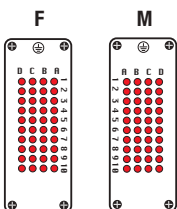
CD - 15 + ⊕



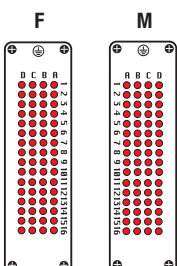
CD - 25 + ⊕



CD - 40 + ⊕



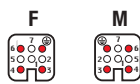
CD - 64 + ⊕



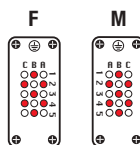
for use up to 500V
pollution degree 3

diagrams
contacts side (front view)

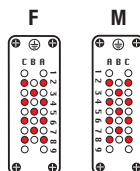
CD - 3 + ⊕



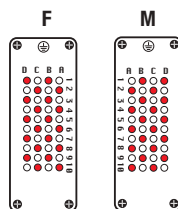
CD - 7 + ⊕



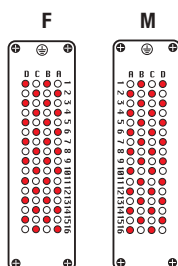
CD - 11 + ⊕



CD - 20 + ⊕



CD - 32 + ⊕

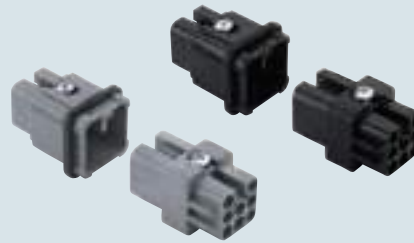


Legend:

- working contact
- without contact
- M = male insert
- F = female insert

enclosures:
size "21.21" page:
insulating type 221 - 222

inserts, crimp connections



10A crimp contacts
silver and gold plated

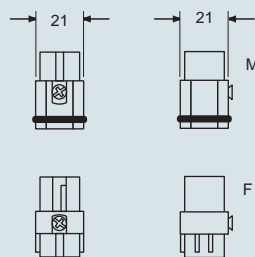


description	part No.	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts, grey and black ¹⁾ male inserts for male contacts, grey and black	grey CDF 07 CDM 07	black CDF 07 N CDM 07 N		
10A female contacts 0,14-0,37 mm ² AWG 26-22 identification No. 1 0,5 mm ² AWG 20 identification No. 2 0,75 mm ² AWG 18 identification No. ② 1 mm ² AWG 18 identification No. 3 1,5 mm ² AWG 16 identification No. 4 2,5 mm ² AWG 14 identification No. 5			silver plated CDFA 0.3 CDFA 0.5 CDFA 0.7 CDFA 1.0 CDFA 1.5 CDFA 2.5	gold plated 1) CDFD 0.3 CDFD 0.5 CDFD 0.7 CDFD 1.0 CDFD 1.5 CDFD 2.5
10A male contacts 0,14-0,37 mm ² AWG 26-22 identification No. 1 0,5 mm ² AWG 20 identification No. 2 0,75 mm ² AWG 18 identification No. ② 1 mm ² AWG 18 identification No. 3 1,5 mm ² AWG 16 identification No. 4 2,5 mm ² AWG 14 identification No. 5			silver plated CDMA 0.3 CDMA 0.5 CDMA 0.7 CDMA 1.0 CDMA 1.5 CDMA 2.5	gold plated 1) CDMD 0.3 CDMD 0.5 CDMD 0.7 CDMD 1.0 CDMD 1.5 CDMD 2.5

¹⁾ the female inserts can be mounted into the straight bulkhead housings CK I from the rear

- characteristics according to EN 61984:
10A 250V 4kV 3
10A 230/400V 4kV 2
- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for applications requiring higher voltages, please see the special voltage application section on page 52
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 557

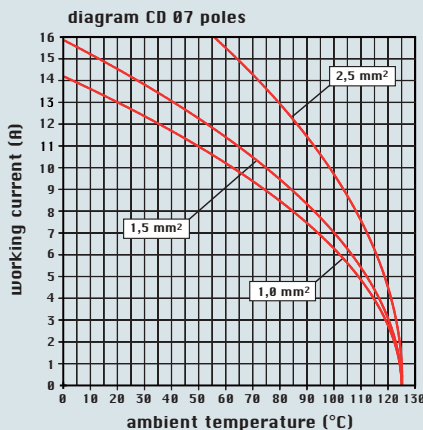
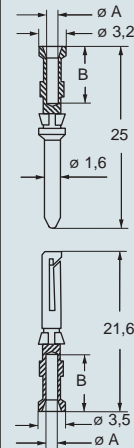
dimensions in mm



contacts side (front view)



dimensions in mm



coding pin **CR CP** with loss of one contact, page 491



CDF and CDM contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

¹⁾ basic or high thickness gold plating page 480

dimensions shown are not binding and may be changed without notice

enclosures:
size "21.21" page:

insulating type 221 - 222
metallic type 223 - 225
W-TYPE for aggressive environments 369
EMC 387
IP68 416 - 418

inserts, crimp connections



10A crimp contacts
silver and gold plated



1) the female inserts can be mounted into the straight bulkhead housings CK I from the rear

description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts ¹⁾ male inserts for male contacts	CDF 08 CDM 08		

10A female contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

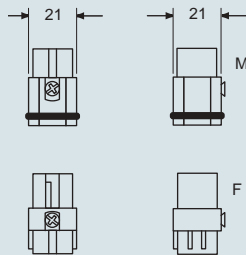
10A male contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

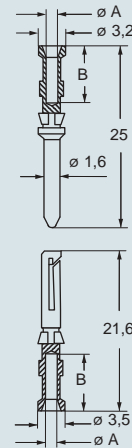
part No.	plating	part No.
CDFA 0.3	silver plated	CDFD 0.3
CDFA 0.5		CDFD 0.5
CDFA 0.7		CDFD 0.7
CDFA 1.0		CDFD 1.0
CDFA 1.5		CDFD 1.5
CDFA 2.5		CDFD 2.5
CDMA 0.3	gold plated 1)	CDMD 0.3
CDMA 0.5		CDMD 0.5
CDMA 0.7		CDMD 0.7
CDMA 1.0		CDMD 1.0
CDMA 1.5		CDMD 1.5
CDMA 2.5		CDMD 2.5

- characteristics according to EN 61984:
10A 50V ac / 120V dc 0,8kV 3
- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 50V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 557

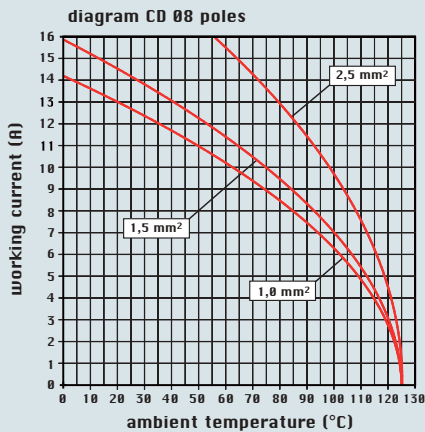
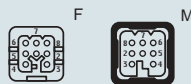
dimensions in mm



dimensions in mm



contacts side (front view)



coding pin CR CP with loss of one contact, page 491



CDF and CDM contacts

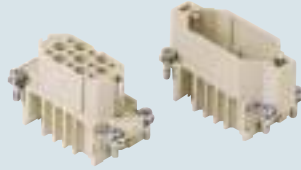
conductor section mm ²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

dimensions shown are not binding and may be changed without notice

enclosures:
 size "49.16" page:
 IL-BRID 230 - 232
 W-TYPE for aggressive environments 370
 EMC 390
 panel supports: page:
 COB + adaptor 462 - 464

inserts, crimp connections



10A crimp contacts
 silver and gold plated



description	part No.	part No.	part No.
-------------	----------	----------	----------

without contacts (to be ordered separately)
 female inserts for female contacts
 male inserts for male contacts

CDF 15
 CDM 15

10A female contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

CDF 15	CDFD 15
CDF 15	CDFD 15
CDF 15	CDFD 15
CDF 15	CDFD 15
CDF 15	CDFD 15
CDF 15	CDFD 15

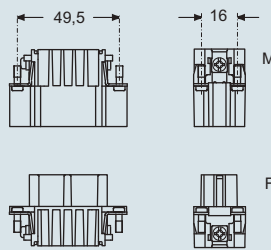
10A male contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

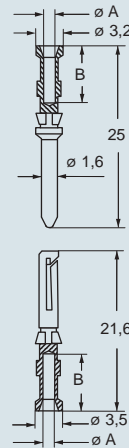
CDMA 0.3	CDMD 0.3
CDMA 0.5	CDMD 0.5
CDMA 0.7	CDMD 0.7
CDMA 1.0	CDMD 1.0
CDMA 1.5	CDMD 1.5
CDMA 2.5	CDMD 2.5

- characteristics according to EN 61984:
10A 250V 4kV 3
10A 230/400V 4kV 2
- compliant with DIN EC 175-301-801 standard
- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for applications requiring higher voltages, please see the special voltage application section on page 52
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 557

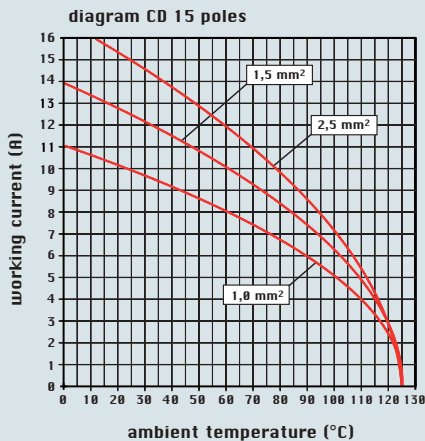
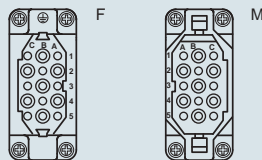
dimensions in mm



dimensions in mm



contacts side (front view)



coding pin CR CP with loss of one contact, page 491

CDF and CDM contacts

conductor section mm ²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

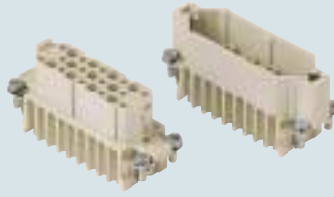
dimensions shown are not binding and may be changed without notice

enclosures:
size "66.16" page:

IL-BRID 233 - 235
W-TYPE for aggressive environments 371
EMC 391

panel supports: page:
COB + adaptor 462 - 464

inserts, crimp connections



10A crimp contacts
silver and gold plated



description	part No.	part No.	part No.
-------------	----------	----------	----------

without contacts (to be ordered separately)
female inserts for female contacts
male inserts for male contacts

CDF 25
CDM 25

10A female contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

CDFA 0.3	silver plated	CDFD 0.3	gold plated 1)
CDFA 0.5		CDFD 0.5	
CDFA 0.7		CDFD 0.7	
CDFA 1.0		CDFD 1.0	
CDFA 1.5		CDFD 1.5	
CDFA 2.5		CDFD 2.5	

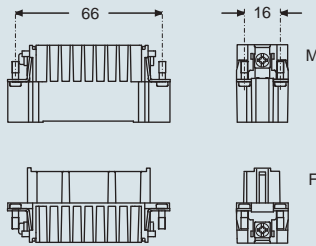
10A male contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

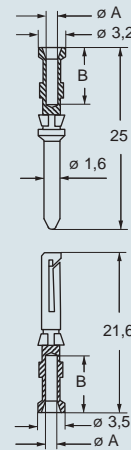
CDMA 0.3	gold plated 1)	CDMD 0.3
CDMA 0.5		CDMD 0.5
CDMA 0.7		CDMD 0.7
CDMA 1.0		CDMD 1.0
CDMA 1.5		CDMD 1.5
CDMA 2.5		CDMD 2.5

- characteristics according to EN 61984:
10A 250V 4kV 3
10A 230/400V 4kV 2
- compliant with DIN EC 175-301-801 standard
- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for applications requiring higher voltages, please see the special voltage application section on page 52
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 557

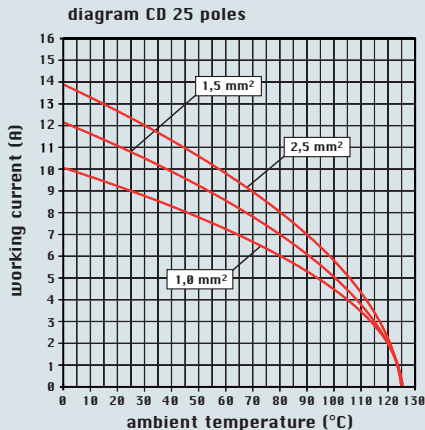
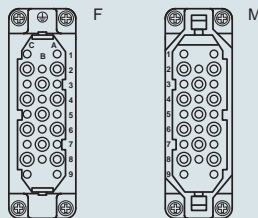
dimensions in mm



dimensions in mm



contacts side (front view)



coding pin **CR CP** with loss of one contact, page 491



CDF and CDM contacts

conductor section mm ²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

dimensions shown are not binding
and may be changed without notice

enclosures:
size "77.27" page:

C-TYPE IP65/IP66 250 - 256
 C7 IP67, two levers 276
 V-TYPE IP65/IP66, single lever 282/292 - 295
 BIG hoods 312 - 315
 T-TYPE IP65 insulating 330 - 331
 T-TYPE / W IP66 insulating 340 - 341
 HYGIENIC T-TYPE / H IP66/IP69 354 - 355
 HYGIENIC T-TYPE / C IP66/IP69, -50 °C 362 - 363
 W-TYPE for aggressive environments 375
 EMC 394
 central lever 408 - 409
 IP68 428 - 431
 LS-TYPE 454 - 455

panel supports: page:
COB 462 - 463

inserts, crimp connections



10A crimp contacts
silver and gold plated



description	part No.	part No.	part No.
-------------	----------	----------	----------

without contacts (to be ordered separately)
 female inserts for female contacts
 male inserts for male contacts

CDF 40
CDM 40

10A female contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

silver plated	C DFA 0.3	C DFD 0.3
	C DFA 0.5	C DFD 0.5
	C DFA 0.7	C DFD 0.7
	C DFA 1.0	C DFD 1.0
	C DFA 1.5	C DFD 1.5
	C DFA 2.5	C DFD 2.5

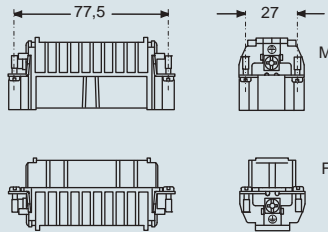
10A male contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

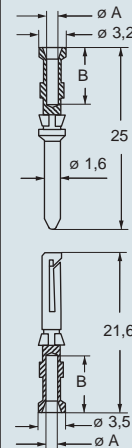
gold plated 1)	C DMA 0.3	C DMD 0.3
	C DMA 0.5	C DMD 0.5
	C DMA 0.7	C DMD 0.7
	C DMA 1.0	C DMD 1.0
	C DMA 1.5	C DMD 1.5
	C DMA 2.5	C DMD 2.5

- characteristics according to EN 61984:
10A 250V 4kV 3
10A 230/400V 4kV 2
- compliant with DIN EC 175-301-801 standard
- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for applications requiring higher voltages, please see the special voltage application section on page 52
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 557

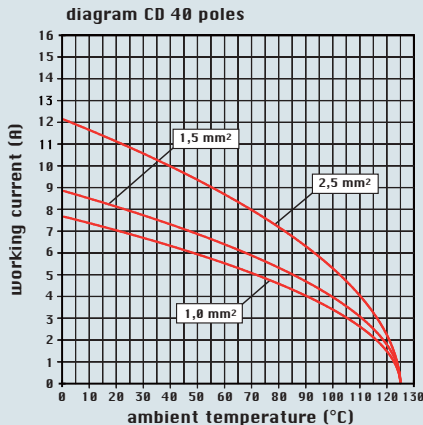
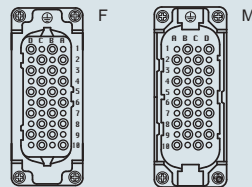
dimensions in mm



dimensions in mm



contacts side (front view)



coding pin **CR CP** with loss of one contact, page 491



CDF and CDM contacts

conductor section mm ²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

dimensions shown are not binding
and may be changed without notice

enclosures:
size "66.40"

page:

C-TYPE IP65/IP66 237 - 239
W-TYPE for aggressive environments 372

inserts, crimp connections



10A crimp contacts
silver and gold plated



description

part No.

part No.

part No.

part No.

without contacts (to be ordered separately)
female inserts, No. (A1÷C9) and (ZA1÷ZC9) *
male inserts, No. (A1÷C9) and (ZA1÷ZC9) *

CDF 25
CDM 25

CDF 25 Z *
CDM 25 Z *

10A female contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

10A male contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

CDF A 0.3
CDF A 0.5
CDF A 0.7
CDF A 1.0
CDF A 1.5
CDF A 2.5

silver plated

CDF D 0.3
CDF D 0.5
CDF D 0.7
CDF D 1.0
CDF D 1.5
CDF D 2.5

gold plated 1)

CDM A 0.3
CDM A 0.5
CDM A 0.7
CDM A 1.0
CDM A 1.5
CDM A 2.5

CDM D 0.3
CDM D 0.5
CDM D 0.7
CDM D 1.0
CDM D 1.5
CDM D 2.5

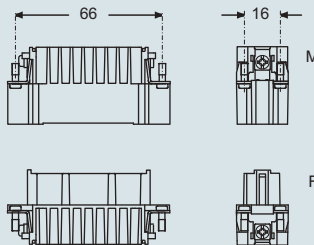
* coding compliant with EUROMAP recommendations

- characteristics according to EN 61984:

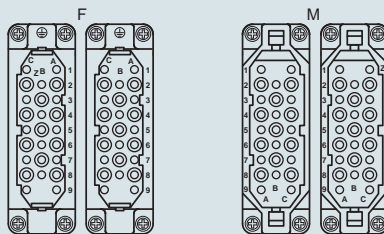
10A 250V 4kV 3
10A 230/400V 4kV 2

- compliant with DIN EC 175-301-801 standard
- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for applications requiring higher voltages, please see the special voltage application section on page 52
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 557

dimensions in mm



contacts side (front view)



dimensions in mm

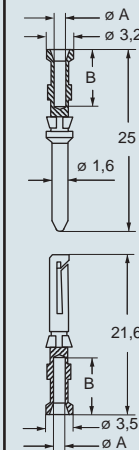
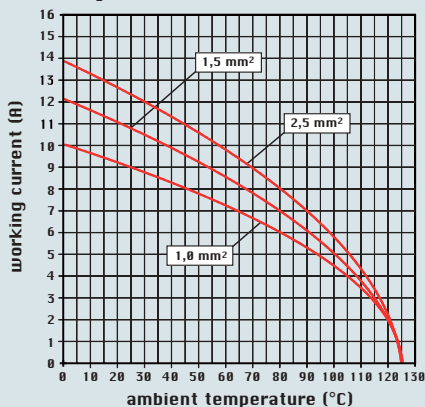


diagram CD 50 poles



coding pin **CR CP** with loss of one contact, page 491



CDF and CDM contacts

conductor section mm ²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

dimensions shown are not binding
and may be changed without notice

enclosures:
 size "104.27" page:

C-TYPE IP65/IP66 258 - 266
 C7 IP67, two levers 277
 V-TYPE IP65/IP66, single lever 283/296 - 299
 BIG hoods 316 - 319
 T-TYPE IP65 insulating 332 - 333
 T-TYPE / W IP66 insulating 342 - 343
 HYGIENIC T-TYPE / H IP66/IP69 356 - 357
 HYGIENIC T-TYPE / C IP66/IP69, -50 °C 364 - 365
 W-TYPE for aggressive environments 376
 EMC 395
 central lever 410 - 412
 IP68 432 - 435
 LS-TYPE 456 - 457

panel supports: page:
 COB 462 - 463

inserts, crimp connections



10A crimp contacts
 silver and gold plated



description	part No.
-------------	----------

without contacts (to be ordered separately)
 female inserts for female contacts
 male inserts for male contacts

10A female contacts		
0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

10A male contacts		
0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

- characteristics according to EN 61984:
10A 250V 4kV 3
10A 230/400V 4kV 2
- compliant with DIN EC 175-301-801 standard
- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for applications requiring higher voltages, please see the special voltage application section on page 52
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 557

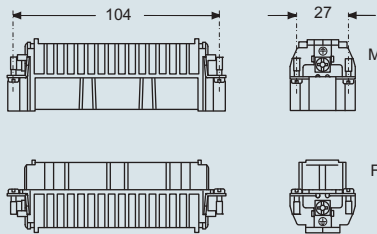
description	part No.
-------------	----------

CDF 64
 CDM 64

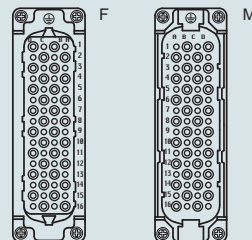
description	part No.	part No.
-------------	----------	----------

C DFA 0.3	silver plated	C DFD 0.3	gold plated 1)
C DFA 0.5		C DFD 0.5	
C DFA 0.7		C DFD 0.7	
C DFA 1.0		C DFD 1.0	
C DFA 1.5		C DFD 1.5	
C DFA 2.5		C DFD 2.5	
C DMA 0.3	gold plated 1)	C DMD 0.3	gold plated 1)
C DMA 0.5		C DMD 0.5	
C DMA 0.7		C DMD 0.7	
C DMA 1.0		C DMD 1.0	
C DMA 1.5		C DMD 1.5	
C DMA 2.5		C DMD 2.5	

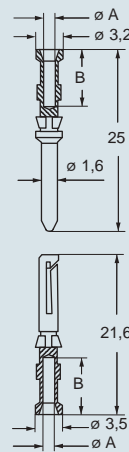
dimensions in mm



contacts side (front view)



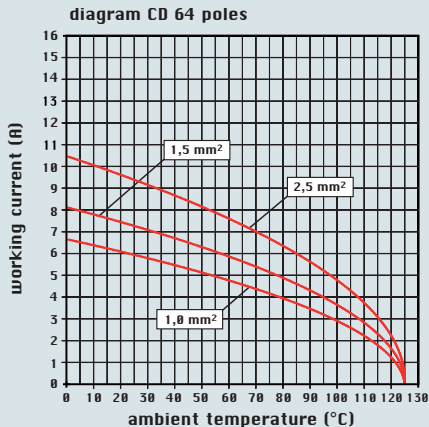
dimensions in mm



CDF and CDM contacts

conductor section mm ²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480



coding pin CR CP with loss of one contact, page 491



dimensions shown are not binding
 and may be changed without notice

enclosures:
size "77.62" page:

C-TYPE IP65/IP66 267 - 270
W-TYPE for aggressive environments 377

inserts, crimp connections



10A crimp contacts
silver and gold plated



description	part No.	part No.	part No.	part No.
-------------	----------	----------	----------	----------

without contacts (to be ordered separately)
female inserts
male inserts

CDF 40
CDM 40

CDFD 0.3
CDFD 0.5
CDFD 0.7
CDFD 1.0
CDFD 1.5
CDFD 2.5

silver plated

gold plated 1)

10A female contacts
0,14-0,37 mm² AWG 26-22 identification No. 1
0,5 mm² AWG 20 identification No. 2
0,75 mm² AWG 18 identification No. ②
1 mm² AWG 18 identification No. 3
1,5 mm² AWG 16 identification No. 4
2,5 mm² AWG 14 identification No. 5

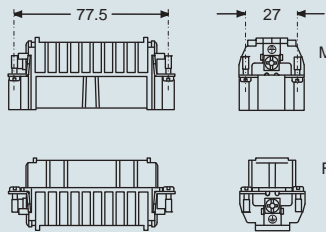
10A male contacts
0,14-0,37 mm² AWG 26-22 identification No. 1
0,5 mm² AWG 20 identification No. 2
0,75 mm² AWG 18 identification No. ②
1 mm² AWG 18 identification No. 3
1,5 mm² AWG 16 identification No. 4
2,5 mm² AWG 14 identification No. 5

CDMA 0.3
CDMA 0.5
CDMA 0.7
CDMA 1.0
CDMA 1.5
CDMA 2.5

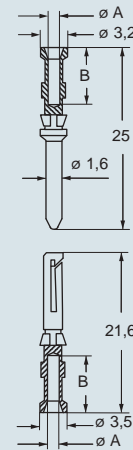
CDMD 0.3
CDMD 0.5
CDMD 0.7
CDMD 1.0
CDMD 1.5
CDMD 2.5

- characteristics according to EN 61984:
10A 250V 4kV 3
10A 230/400V 4kV 2
- compliant with DIN EC 175-301-801 standard
- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for applications requiring higher voltages, please see the special voltage application section on page 52
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 557

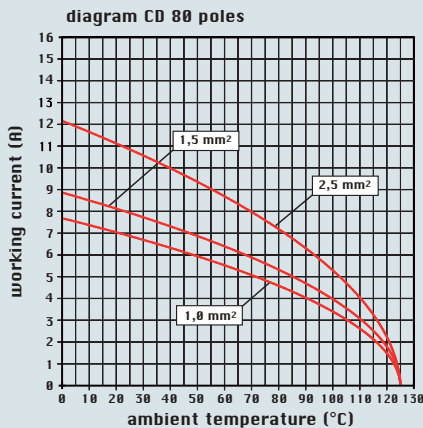
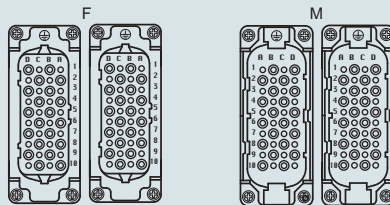
dimensions in mm



dimensions in mm



contacts side (front view)



coding pin CR CP with loss of one contact, page 491



CDF and CDM contacts

conductor section mm ²	conductor slot ∅ A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

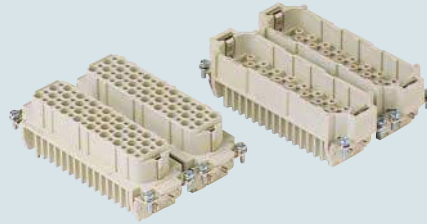
1) basic or high thickness gold plating page 480

dimensions shown are not binding
and may be changed without notice

enclosures:
size "104.62" page:

C-TYPE IP65/IP66..... 271
W-TYPE for aggressive environments.. 378

inserts, crimp connections



10A crimp contacts
silver and gold plated



description	part No.	part No.	part No.	part No.
-------------	----------	----------	----------	----------

without contacts (to be ordered separately)
female inserts
male inserts

CDF 64
CDM 64

CDFA 0.3
CDFA 0.5
CDFA 0.7
CDFA 1.0
CDFA 1.5
CDFA 2.5

silver plated

CDFD 0.3
CDFD 0.5
CDFD 0.7
CDFD 1.0
CDFD 1.5
CDFD 2.5

gold plated 1)

10A female contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

10A male contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

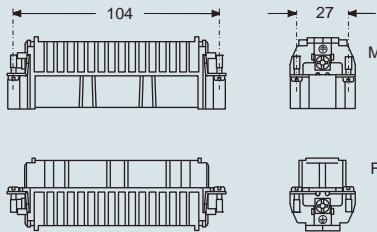
CDMA 0.3
CDMA 0.5
CDMA 0.7
CDMA 1.0
CDMA 1.5
CDMA 2.5

gold plated 1)

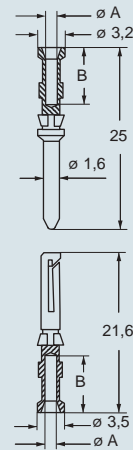
CDMD 0.3
CDMD 0.5
CDMD 0.7
CDMD 1.0
CDMD 1.5
CDMD 2.5

- characteristics according to EN 61984:
- 10A 250V 4kV 3**
- 10A 230/400V 4kV 2**
- compliant with DIN EC 175-301-801 standard
- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for applications requiring higher voltages, please see the special voltage application section on page 52
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 557

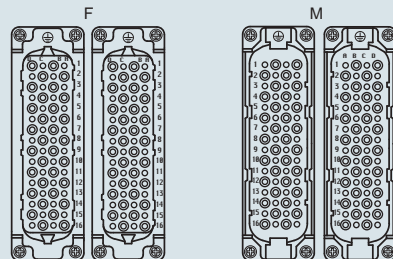
dimensions in mm



dimensions in mm



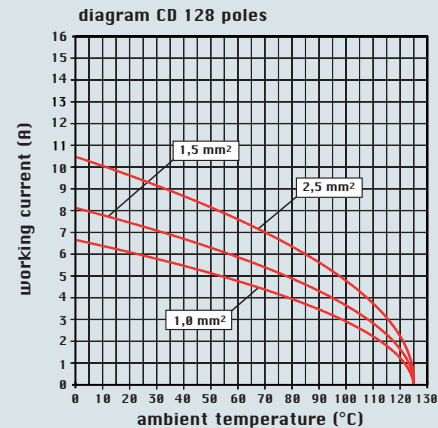
contacts side (front view)



CDF and CDM contacts

conductor section mm ²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480



coding pin CR CP with loss of one contact, page 491



dimensions shown are not binding
and may be changed without notice

CT - CTS series

Inserts with incorporated terminal block for multipole connectors (10A max versions)

Use.

The CT-series multipole connectors (with incorporated terminal block) are recommended for greater cost-saving and safety for use on machines and command and control panels.

For control panel mounting, bulkhead housings must be used.

The CT series inserts (10A max versions) are supplied in the plug or socket versions and must be mounted with insertion from the rear of the enclosure (Figures 1 and 2). The space occupied by the terminal block does not allow for the passage of the insert and insertion from the front of the enclosure.

As an alternative to the traditional terminal blocks, the inserts can be mounted inside the control panels on DIN EN 60715 rails (Figure 5) using suitable accessories providing the added advantage of easy sectioning.

The special structure of the CT inserts has all the conductor connections on the same side providing for easier wiring and a complete view of the work area.

The terminal block also has slots for housing the identification wire markers of each contact. Wire markers of different manufacturers may be used such as: Cabur, Grafoplast, Modernotecnica, Phoenix,

Siemens, Wago, Weidmüller.

The CT series is available in the versions "left" and "right" for mounting on the left (Figure 3) or on the right (Figure 4) of the control panel walls.

This characteristic is determined by the position of contact "1" and the ground terminal in the upper part of the insert terminal block for both left and right mounting.

The installation of inserts on DIN rails (Figure 5) inside the control panels is usually made to facilitate the wiring in sectionable parts. In this case the degree of protection for coupled connectors is IP20 (in accordance with EN 60529).

This type of mounting requires supports (CT APE) to be provided to the inserts suitable for mounting on DIN EN 60715 rail.

In addition, CRBF (female) and CRBM (male) coupling screws instead of normal screws are recommended for fixing the inserts to the enclosures (Figure 5) in order to guarantee a stable and safe coupling between the CT and CTS inserts installed on the DIN rails and corresponding CD inserts.

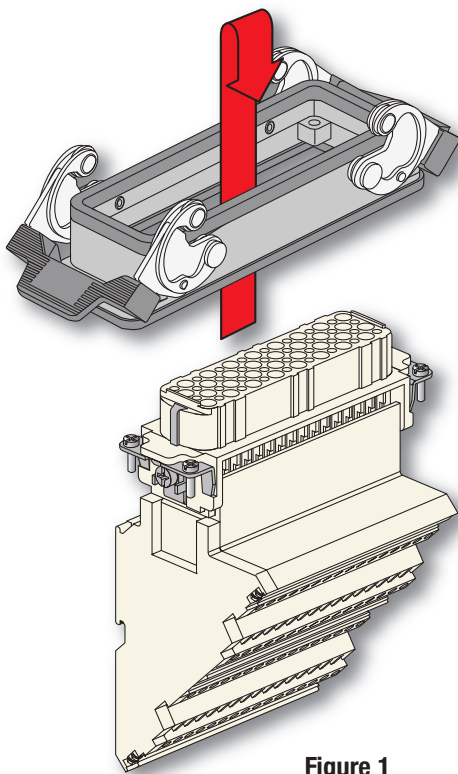


Figure 1

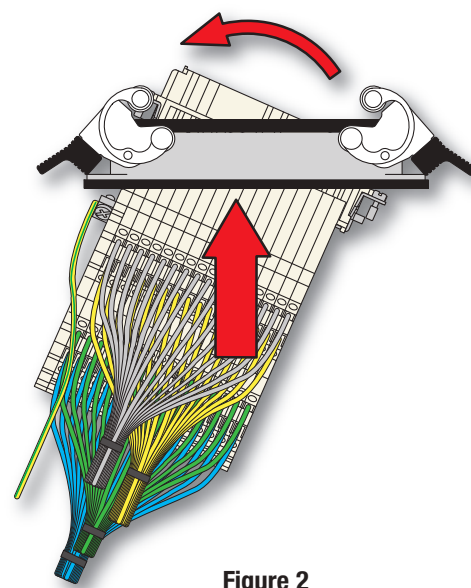


Figure 2

Figures 1 and 2 (rear mounting)

The insert is inserted into the bulkhead housing with pre-wired conductors connected at the opposite end.

CT - CTS series

Inserts with incorporated terminal block for multipole connectors

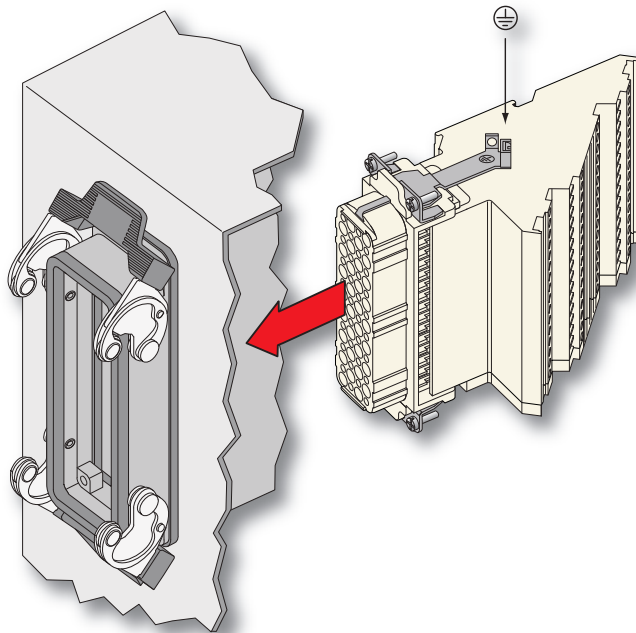


Figure 3 (left mounting)

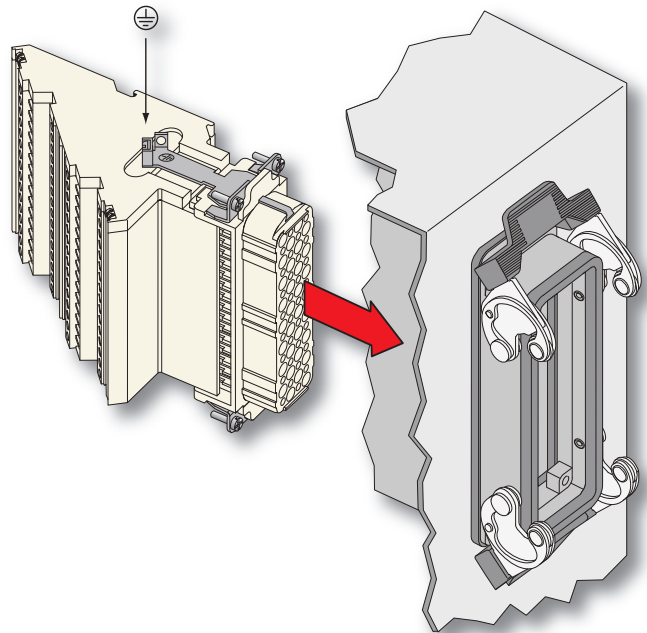


Figure 4 (right mounting)

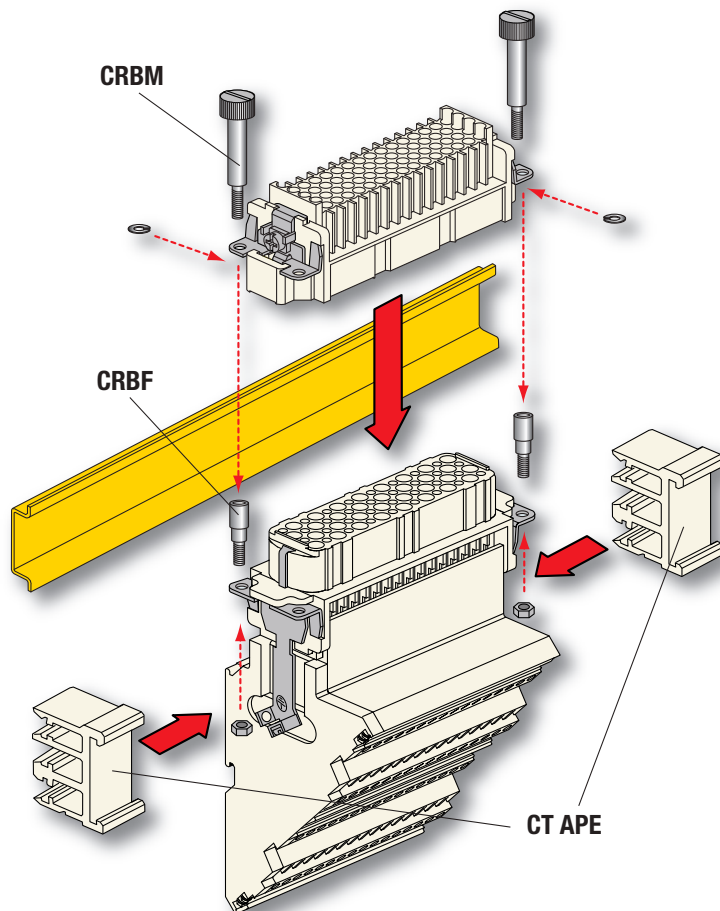
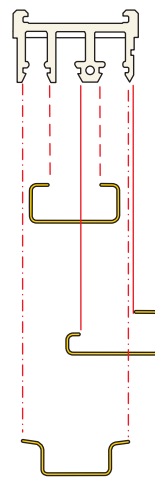


Figure 5 (mounting on DIN rail)



CT APE
possibility of coupling to DIN EN 60715 rail (for a greater stability of the CT inserts of 40 and 64 poles we recommend using the two CT APE supports)

EN 60715
C 30

EN 60715
G 32

EN 60715
TH 35-7,5 and TH 35-15

Accessories for CT inserts

- support for mounting on DIN rail (**CT APE** page 476)
- inserts coupling screws (**CRBM** and **CRBF** page 476)
- cable-clamping plates (**CRAD** and **CRAS** page 476)

enclosures *) :
size "77.27"

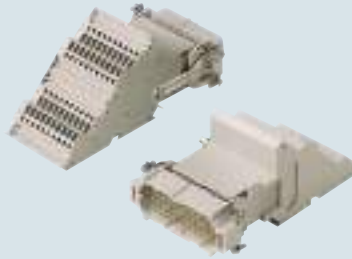
page:

C-TYPE IP65/IP66	250
C7 IP67, two levers	276
V-TYPE IP65/IP66, single lever	282/292
W-TYPE for aggressive environments	375
EMC	394
central lever	408
LS-TYPE	454

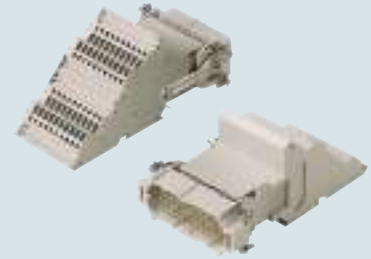
*) only bulkhead mounted housings

- can be mated with CD inserts
- rear-mounted inserts

**terminal block inserts
screw terminal connection**



**terminal block inserts
spring terminal connection**

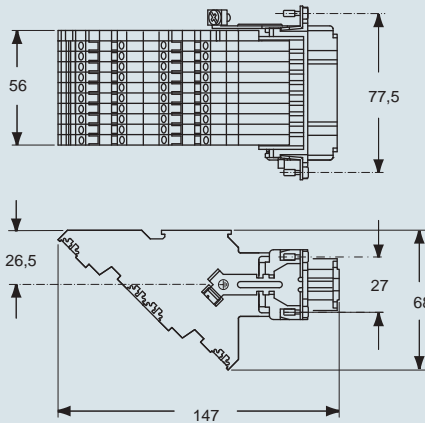


description	part No.	part No.	part No.	part No.
side-mounting (see page 63) female inserts with female contacts 1) male inserts with male contacts 1)	left CTF 40 L CTM 40 L	right CTF 40 R CTM 40 R	left CTSF 40 L CTSM 40 L	right CTSF 40 R CTSM 40 R
side-mounting (see page 63) female inserts with female contacts male inserts with male contacts				

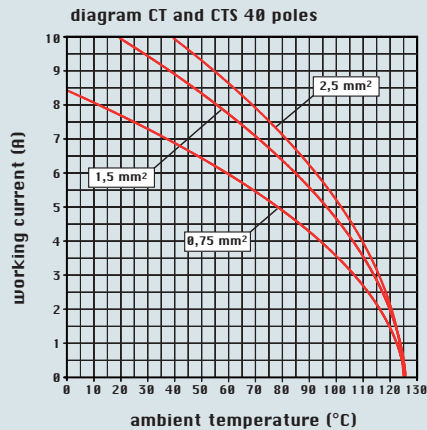
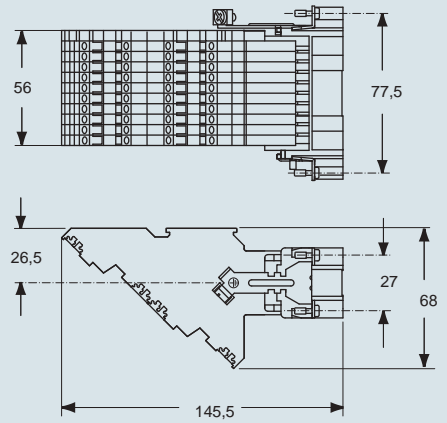
1) for non-prepared conductors

- characteristics according to EN 61984:
10A 250V 4kV 3
10A 230/400V 4kV 2
- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 4 \text{ m}\Omega$
- for maximum current load, see the following load curves inserts, for more information see page 557

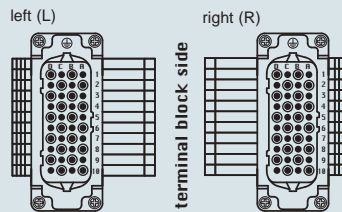
dimensions in mm
female inserts (CTF and CTSF)



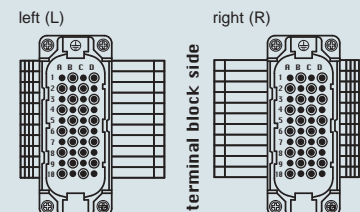
male inserts (CTM and CTSM)



contacts side (front view)
female inserts (CTF and CTSF)

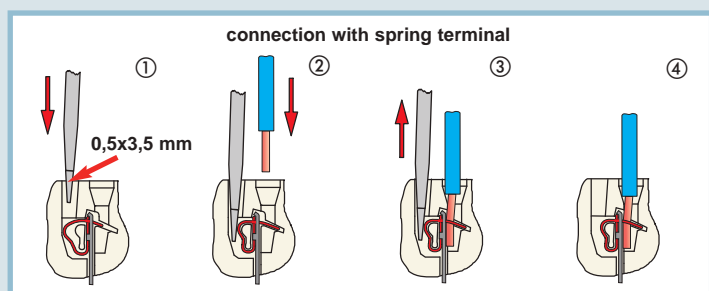


male inserts (CTM and CTSM)



- CT inserts with plate, for section conductors: 0.75 - 2.5 mm² - AWG 18 - 14
- conductors stripping length: 12 mm
- terminal screw torque: 0.4 Nm (3.54 lb.in), for more information see page 34 and 35

- CTS spring inserts for section conductors: effective sections for non-prepared conductors 0.14 - 2.5 mm² - AWG 26 - 14
- effective sections for prepared conductors 0.14 - 1 mm² - AWG 26 - 18
- conductors stripping length: 9...11 mm



dimensions shown are not binding and may be changed without notice

CT - CTS

enclosures *) :
size "104.27"

page:

C-TYPE IP65/IP66	258
C7 IP67, two levers	277
V-TYPE IP65/IP66, single lever	283/296
W-TYPE for aggressive environments	376
EMC	395
central lever	410
LS-TYPE	456

*) only bulkhead mounted housings

- can be mated with CD inserts
- rear-mounted inserts

**terminal block inserts
screw terminal connection**



**terminal block inserts
spring terminal connection**



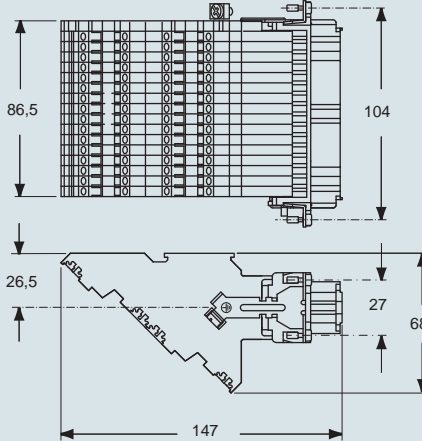
description	part No.	part No.	part No.	part No.
side-mounting (see page 63) female inserts with female contacts 1) male inserts with male contacts 1)	left CTF 64 L CTM 64 L	right CTF 64 R CTM 64 R	left CTS F 64 L CTSM 64 L	right CTS F 64 R CTSM 64 R
side-mounting (see page 63) female inserts with female contacts male inserts with male contacts				

1) for non-prepared conductors

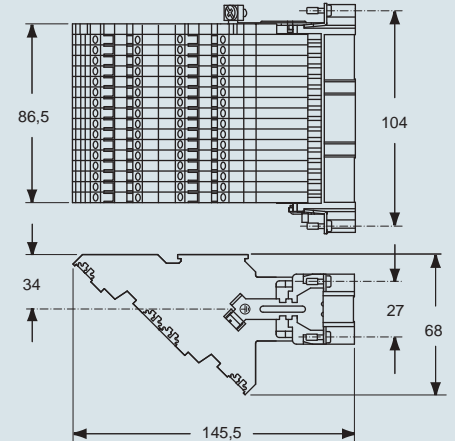
- characteristics according to EN 61984:
10A 250V 4kV 3
10A 230/400V 4kV 2
- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 4 \text{ m}\Omega$
- for maximum current load, see the following load curves inserts, for more information see page 557

dimensions in mm

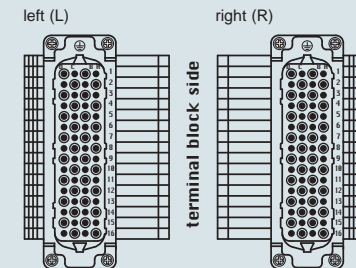
female inserts (CTF and CTSF)



male inserts (CTM and CTSM)



contacts side (front view)
female inserts (CTF and CTSF)



contacts side (front view)
male inserts (CTM and CTSM)

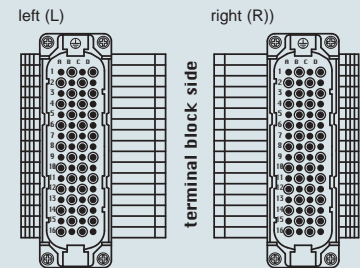
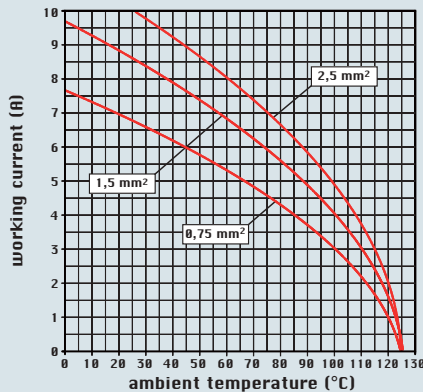
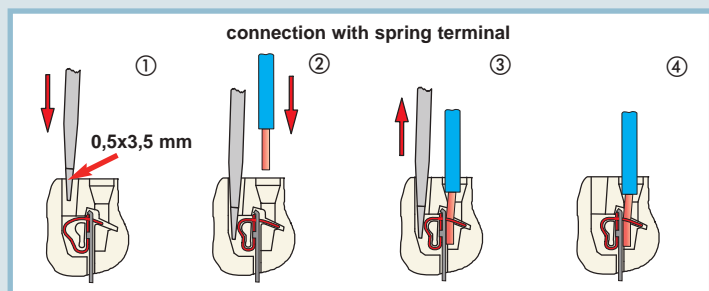


diagram CT and CTS 64 poles



- CT inserts with plate, for section conductors: 0.75 - 2.5 mm² - AWG 18 - 14
- conductors stripping length: 9...11 mm
- terminal screw torque: 0.4 Nm (3.54 lb.in), for more information see page 34 and 35

- CTS spring inserts for section conductors: effective sections for non-prepared conductors 0.14 - 2.5 mm² - AWG 26 - 14
- effective sections for prepared conductors 0.14 - 1 mm² - AWG 26 - 18
- conductors stripping length: 9...11 mm



dimensions shown are not binding
and may be changed without notice

CDD inserts

Special voltages

When all the contacts are used, the CDD inserts series connectors may be used with voltage up to 250V (first column); pollution degree 2, in accordance with the standard EN 61984.

If the number of contacts is reduced and the contacts accordingly assigned, these connectors may be used with higher voltages.

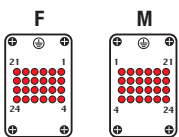
This is possible because the decrease in the number of contacts leads to an increase in the surface insulation distance in the air.

When the contacts are arranged as shown below, the inserts may be used at rated voltages of 400V (second column) and 500V (third column); pollution degree 2, in accordance with the standard EN 61984.

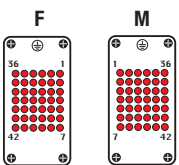
for use up to 250V
pollution degree 2

diagrams
contacts side (front view)

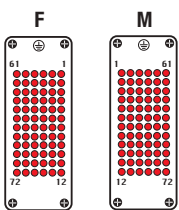
CDD - 24 + ⊕



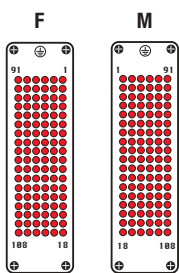
CDD - 42 + ⊕



CDD - 72 + ⊕



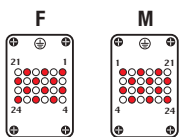
CDD - 108 + ⊕



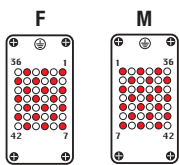
for use up to 400V
pollution degree 2

diagrams
contacts side (front view)

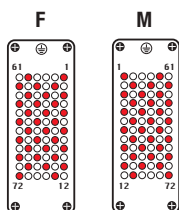
CDD - 12 + ⊕



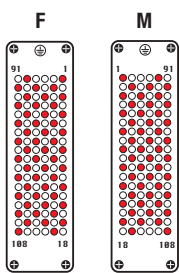
CDD - 21 + ⊕



CDD - 34 + ⊕



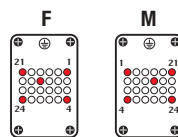
CDD - 52 + ⊕



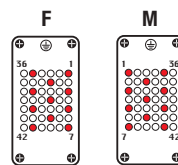
for use up to 500V
pollution degree 2

diagrams
contacts side (front view)

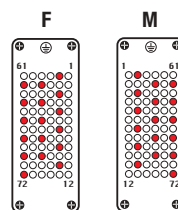
CDD - 5 + ⊕



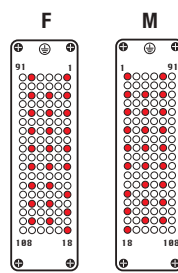
CDD - 11 + ⊕



CDD - 17 + ⊕



CDD - 26 + ⊕



Legend:

- working contact
- without contact
- M = male insert
- F = female insert

CDD

enclosures:
size "44.27" page:

C-TYPE IP65/IP66 240 - 243
C7 IP67, single lever 274
V-TYPE IP65/IP66, single lever 280/284 - 286
BIG hoods 304 - 306
T-TYPE IP65 insulating 326 - 327
T-TYPE / W IP66 insulating 336 - 337
HYGIENIC T-TYPE / H IP66/IP69 350 - 351
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 358 - 359
W-TYPE for aggressive environments 373
EMC 392
central lever 404 - 405
IP68 420 - 423
LS-TYPE 450 - 451

panel supports: page:
COB 462 - 463

inserts, crimp connections



10A crimp contacts silver and gold plated



description	part No.	part No.	part No.
-------------	----------	----------	----------

without contacts (to be ordered separately)
female inserts for female contacts
male inserts for male contacts

CDDF 24
CDDM 24

10A female contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

10A male contacts

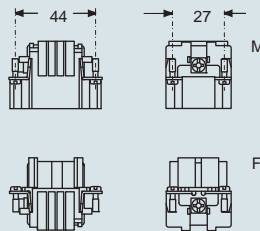
0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

CDFA 0.3	silver plated	CDFD 0.3	gold plated 1)
CDFA 0.5		CDFD 0.5	
CDFA 0.7		CDFD 0.7	
CDFA 1.0		CDFD 1.0	
CDFA 1.5		CDFD 1.5	
CDFA 2.5		CDFD 2.5	

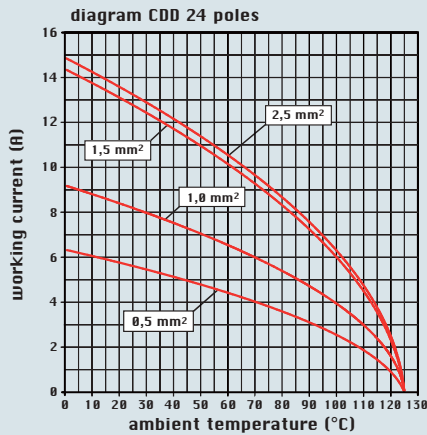
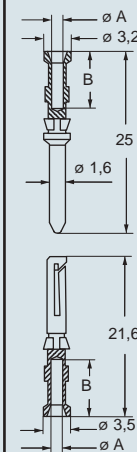
CDMA 0.3	silver plated	CDMD 0.3	gold plated 1)
CDMA 0.5		CDMD 0.5	
CDMA 0.7		CDMD 0.7	
CDMA 1.0		CDMD 1.0	
CDMA 1.5		CDMD 1.5	
CDMA 2.5		CDMD 2.5	

- characteristics according to EN 61984:
10A 250V 4kV 2
- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for applications requiring higher voltages, please see the special voltage application section on page 66
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 558

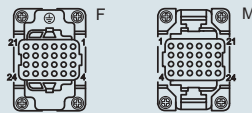
dimensions in mm



dimensions in mm



contacts side (front view)



coding pin **CR CP** with loss of one contact, page 491



CDF and CDM contacts

conductor section mm ²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

- PCBs interface, see article CIF 2.4

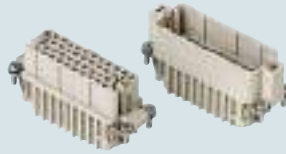
dimensions shown are not binding and may be changed without notice

enclosures:
size "66.16" page:

IL-BRID 233 - 235
W-TYPE for aggressive environments 371
EMC 391

panel supports: page:
COB + adaptor 462 - 464

inserts, crimp connections



10A crimp contacts silver and gold plated



description

part No.

part No.

part No.

without contacts (to be ordered separately)
female inserts for female contacts
male inserts for male contacts

CDDF 38
CDDM 38

10A female contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

10A male contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

CDFA 0.3
CDFA 0.5
CDFA 0.7
CDFA 1.0
CDFA 1.5
CDFA 2.5

silver plated

CDFD 0.3
CDFD 0.5
CDFD 0.7
CDFD 1.0
CDFD 1.5
CDFD 2.5

gold plated 1)

CDMA 0.3
CDMA 0.5
CDMA 0.7
CDMA 1.0
CDMA 1.5
CDMA 2.5

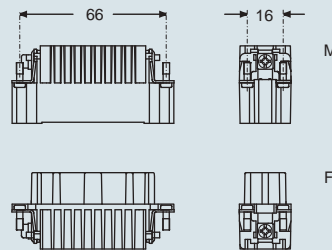
CDMD 0.3
CDMD 0.5
CDMD 0.7
CDMD 1.0
CDMD 1.5
CDMD 2.5

- characteristics according to EN 61984:

10A 250V 4kV 2

- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 558

dimensions in mm



dimensions in mm

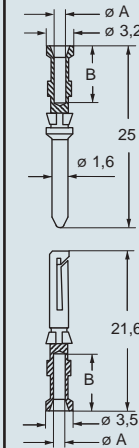
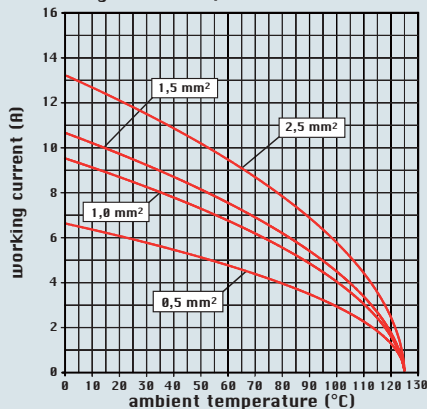
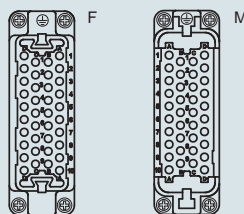


diagram CDD 38 poles



contacts side (front view)



coding pin **CR CP** with loss of one contact, page 491



CDF and CDM contacts

conductor section mm ²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

dimensions shown are not binding and may be changed without notice

enclosures:
size "57.27" page:

C-TYPE IP65/IP66	244 - 249
C7 IP67, two levers	275
V-TYPE IP65/IP66, single lever	281/288 - 291
BIG hoods	308 - 311
T-TYPE IP65 insulating	328 - 329
T-TYPE / W IP66 insulating	338 - 339
HYGIENIC T-TYPE / H IP66/IP69	352 - 353
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	360 - 361
W-TYPE for aggressive environments	374
EMC	393
central lever	406 - 407
IP68	424 - 427
LS-TYPE	452 - 453

panel supports: page:
COB

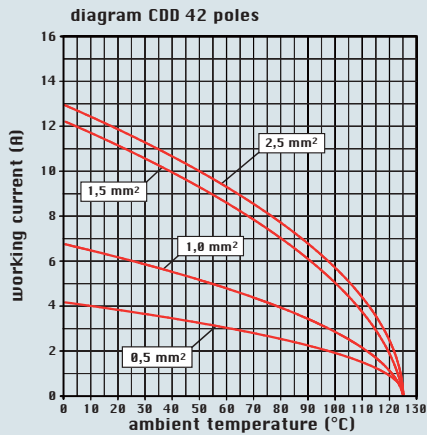
description

without contacts (to be ordered separately)
female inserts for female contacts
male inserts for male contacts

10A female contacts		
0,14-0,37 mm ² AWG 26-22	identification No. 1	
0,5 mm ² AWG 20	identification No. 2	
0,75 mm ² AWG 18	identification No. ②	
1 mm ² AWG 18	identification No. 3	
1,5 mm ² AWG 16	identification No. 4	
2,5 mm ² AWG 14	identification No. 5	

10A male contacts		
0,14-0,37 mm ² AWG 26-22	identification No. 1	
0,5 mm ² AWG 20	identification No. 2	
0,75 mm ² AWG 18	identification No. ②	
1 mm ² AWG 18	identification No. 3	
1,5 mm ² AWG 16	identification No. 4	
2,5 mm ² AWG 14	identification No. 5	

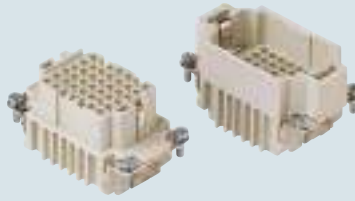
- characteristics according to EN 61984:
- 10A 250V 4kV 2**
- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for applications requiring higher voltages, please see the special voltage application section on page 66
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 558



- PCBs interface, see article CIF 2.4

dimensions shown are not binding
and may be changed without notice

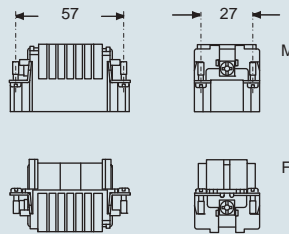
inserts, crimp connections



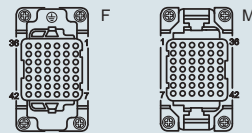
part No.

CDDF 42
CDDM 42

dimensions in mm



contacts side (front view)



coding pin CR CP with loss of one contact, page 491



10A crimp contacts
silver and gold plated



part No.

part No.

C DFA 0.3
C DFA 0.5
C DFA 0.7
C DFA 1.0
C DFA 1.5
C DFA 2.5

silver plated

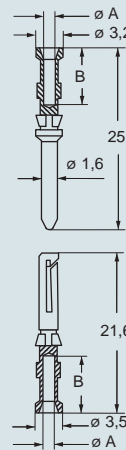
C DFD 0.3
C DFD 0.5
C DFD 0.7
C DFD 1.0
C DFD 1.5
C DFD 2.5

gold plated 1)

C DMA 0.3
C DMA 0.5
C DMA 0.7
C DMA 1.0
C DMA 1.5
C DMA 2.5

C DMD 0.3
C DMD 0.5
C DMD 0.7
C DMD 1.0
C DMD 1.5
C DMD 2.5

dimensions in mm



CDF and CDM contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

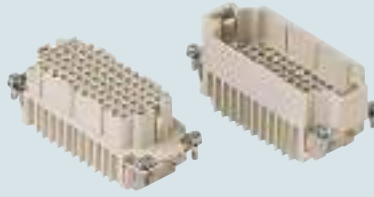
1) basic or high thickness gold plating page 480

enclosures:
size "77.27" page:

C-TYPE IP65/IP66 250 - 256
 C7 IP67, two levers 276
 V-TYPE IP65/IP66, single lever 282/292 - 295
 BIG hoods 312 - 315
 T-TYPE IP65 insulating 330 - 331
 T-TYPE / W IP66 insulating 340 - 341
 HYGIENIC T-TYPE / H IP66/IP69 354 - 355
 HYGIENIC T-TYPE / C IP66/IP69, -50 °C 362 - 363
 W-TYPE for aggressive environments 375
 EMC 394
 central lever 408 - 409
 IP68 428 - 431
 LS-TYPE 454 - 455

panel supports: page:
COB 462 - 463

inserts, crimp connections



10A crimp contacts
silver and gold plated



description
without contacts (to be ordered separately)
female inserts for female contacts
male inserts for male contacts

part No.
CDDF 72
CDDM 72

part No. part No.

10A female contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

10A male contacts

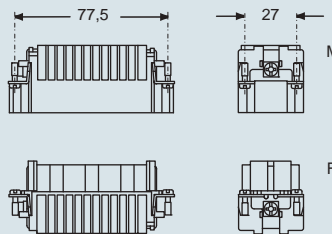
0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

CDFA 0.3	silver plated	CDFD 0.3	gold plated 1)
CDFA 0.5		CDFD 0.5	
CDFA 0.7		CDFD 0.7	
CDFA 1.0		CDFD 1.0	
CDFA 1.5		CDFD 1.5	
CDFA 2.5		CDFD 2.5	

CDMA 0.3	silver plated	CDMD 0.3	gold plated 1)
CDMA 0.5		CDMD 0.5	
CDMA 0.7		CDMD 0.7	
CDMA 1.0		CDMD 1.0	
CDMA 1.5		CDMD 1.5	
CDMA 2.5		CDMD 2.5	

- characteristics according to EN 61984:
- 10A 250V 4kV 2**
- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for applications requiring higher voltages, please see the special voltage application section on page 66
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 558

dimensions in mm



dimensions in mm

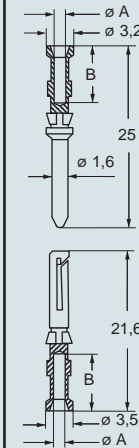
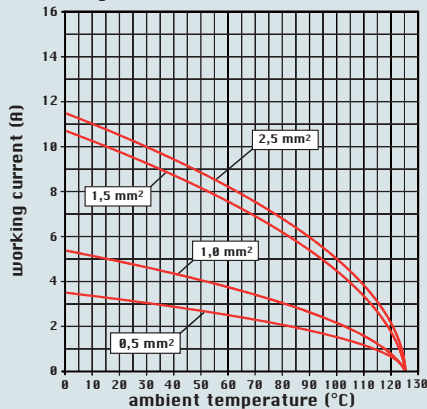
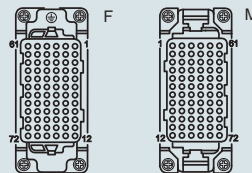


diagram CDD 72 poles



contacts side (front view)



coding pin **CR CP** with loss of one contact, page 491



CDF and CDM contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

- PCBs interface, see article CIF 2.4

dimensions shown are not binding
and may be changed without notice

CDD

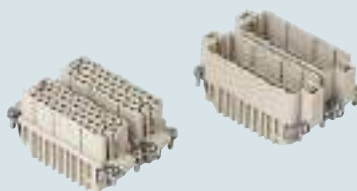
enclosures:
size "66.40"

page:

C-TYPE IP65/IP66 237 - 239

W-TYPE for aggressive environments 372

inserts, crimp connections



10A crimp contacts silver and gold plated



description	part No.	part No.	part No.	part No.
-------------	----------	----------	----------	----------

without contacts (to be ordered separately)
female inserts
male inserts

CDDF 38
CDDM 38

CDFA 0.3
CDFA 0.5
CDFA 0.7
CDFA 1.0
CDFA 1.5
CDFA 2.5

silver plated

CDFD 0.3
CDFD 0.5
CDFD 0.7
CDFD 1.0
CDFD 1.5
CDFD 2.5

gold plated 1)

10A female contacts
0,14-0,37 mm² AWG 26-22 identification No. 1
0,5 mm² AWG 20 identification No. 2
0,75 mm² AWG 18 identification No. ②
1 mm² AWG 18 identification No. 3
1,5 mm² AWG 16 identification No. 4
2,5 mm² AWG 14 identification No. 5

10A male contacts
0,14-0,37 mm² AWG 26-22 identification No. 1
0,5 mm² AWG 20 identification No. 2
0,75 mm² AWG 18 identification No. ②
1 mm² AWG 18 identification No. 3
1,5 mm² AWG 16 identification No. 4
2,5 mm² AWG 14 identification No. 5

CDMA 0.3
CDMA 0.5
CDMA 0.7
CDMA 1.0
CDMA 1.5
CDMA 2.5

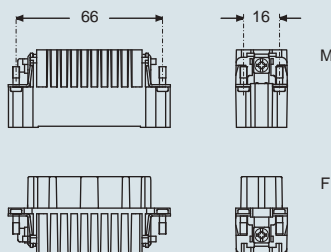
CDMD 0.3
CDMD 0.5
CDMD 0.7
CDMD 1.0
CDMD 1.5
CDMD 2.5

- characteristics according to EN 61984:

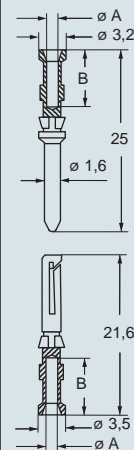
10A 250V 4kV 2

- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 558

dimensions in mm



dimensions in mm



contacts side (front view)

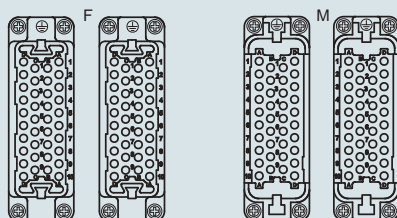
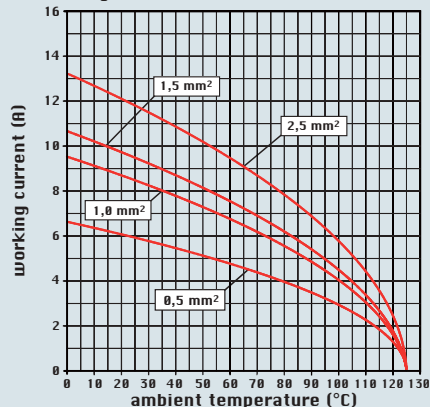


diagram CDD 76 poles



coding pin **CR CP** with loss of one contact, page 491



CDF and CDM contacts

conductor section mm ²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

dimensions shown are not binding and may be changed without notice

enclosures:
size "104.27" page:

C-TYPE IP65/IP66	258 - 266
C7 IP67, two levers	277
V-TYPE IP65/IP66, single lever	283/296 - 299
BIG hoods	316 - 319
T-TYPE IP65 insulating	332 - 333
T-TYPE / W IP66 insulating	342 - 343
HYGIENIC T-TYPE / H IP66/IP69	356 - 357
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	364 - 365
W-TYPE for aggressive environments	376
EMC	395
central lever	410 - 412
IP68	432 - 435
LS-TYPE	456 - 457

panel supports: page:
COB

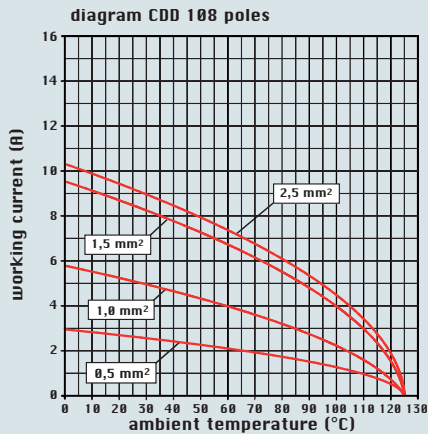
description

without contacts (to be ordered separately)
female inserts for female contacts
male inserts for male contacts

10A female contacts		
0,14-0,37 mm ² AWG 26-22	identification No. 1	
0,5 mm ² AWG 20	identification No. 2	
0,75 mm ² AWG 18	identification No. ②	
1 mm ² AWG 18	identification No. 3	
1,5 mm ² AWG 16	identification No. 4	
2,5 mm ² AWG 14	identification No. 5	

10A male contacts		
0,14-0,37 mm ² AWG 26-22	identification No. 1	
0,5 mm ² AWG 20	identification No. 2	
0,75 mm ² AWG 18	identification No. ②	
1 mm ² AWG 18	identification No. 3	
1,5 mm ² AWG 16	identification No. 4	
2,5 mm ² AWG 14	identification No. 5	

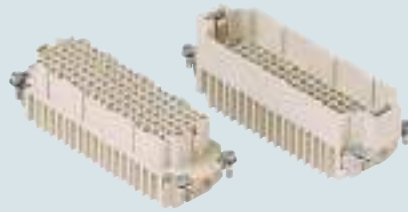
- characteristics according to EN 61984:
- 10A 250V 4kV 2**
- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for applications requiring higher voltages, please see the special voltage application section on page 66
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 558



- PCBs interface, see article CIF 2.4

dimensions shown are not binding
and may be changed without notice

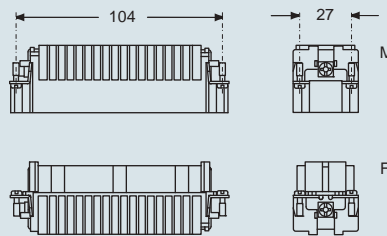
inserts, crimp connections



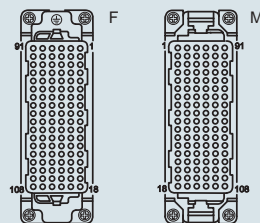
part No.

CDDF 108
CDDM 108

dimensions in mm



contacts side (front view)



coding pin CR CP with loss of one contact, page 491



10A crimp contacts
silver and gold plated



part No.

part No.

CDFA 0.3
CDFA 0.5
CDFA 0.7
CDFA 1.0
CDFA 1.5
CDFA 2.5

silver plated

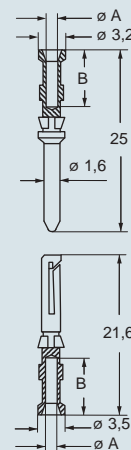
CDFD 0.3
CDFD 0.5
CDFD 0.7
CDFD 1.0
CDFD 1.5
CDFD 2.5

gold plated 1)

CDMA 0.3
CDMA 0.5
CDMA 0.7
CDMA 1.0
CDMA 1.5
CDMA 2.5

CDMD 0.3
CDMD 0.5
CDMD 0.7
CDMD 1.0
CDMD 1.5
CDMD 2.5

dimensions in mm



CDF and CDM contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

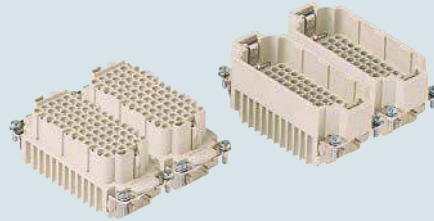
enclosures:
size "77.62"

page:

C-TYPE IP65/IP66 267 - 270

W-TYPE for aggressive environments 377

inserts, crimp connections



10A crimp contacts silver and gold plated



description

part No.

part No.

part No.

part No.

without contacts (to be ordered separately)
female inserts, No. (1-72) and (73-144)
male inserts, No. (1-72) and (73-144)

CDDF 72
CDDM 72

CDDF 72 N
CDDM 72 N

10A female contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

10A male contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

CDFA 0.3
CDFA 0.5
CDFA 0.7
CDFA 1.0
CDFA 1.5
CDFA 2.5

silver plated

CDFD 0.3
CDFD 0.5
CDFD 0.7
CDFD 1.0
CDFD 1.5
CDFD 2.5

gold plated 1)

CDMA 0.3
CDMA 0.5
CDMA 0.7
CDMA 1.0
CDMA 1.5
CDMA 2.5

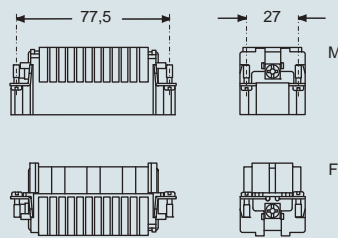
CDMD 0.3
CDMD 0.5
CDMD 0.7
CDMD 1.0
CDMD 1.5
CDMD 2.5

- characteristics according to EN 61984:

10A 250V 4kV 2

- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for applications requiring higher voltages, please see the special voltage application section on page 66
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 558

dimensions in mm



dimensions in mm

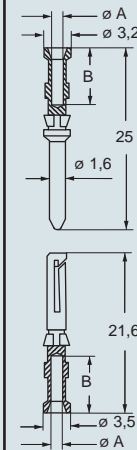
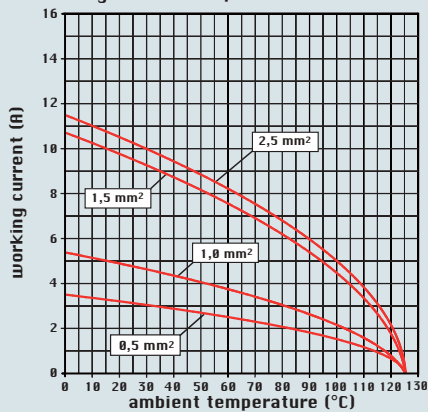
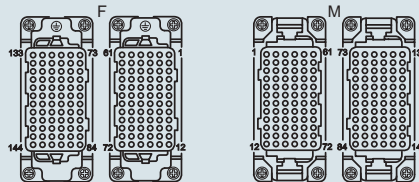


diagram CDD 144 poles



contacts side (front view)



coding pin **CR CP** with loss of one contact, page 491



CDF and CDM contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

- PCBs interface, see article CIF 2.4

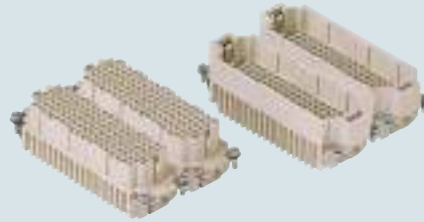
dimensions shown are not binding
and may be changed without notice

enclosures:
size "104.62"

page:

C-TYPE IP65/IP66..... 271
W-TYPE for aggressive environments 378

inserts, crimp connections



10A crimp contacts
silver and gold plated



description

part No.

part No.

part No.

part No.

without contacts (to be ordered separately)
female inserts, No. (1-108) and (109-216)
male inserts, No. (1-108) and (109-216)

CDDF 108
CDDM 108

CDDF 108 N
CDDM 108 N

10A female contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

10A male contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

CDFA 0.3
CDFA 0.5
CDFA 0.7
CDFA 1.0
CDFA 1.5
CDFA 2.5

silver plated

CDFD 0.3
CDFD 0.5
CDFD 0.7
CDFD 1.0
CDFD 1.5
CDFD 2.5

gold plated 1)

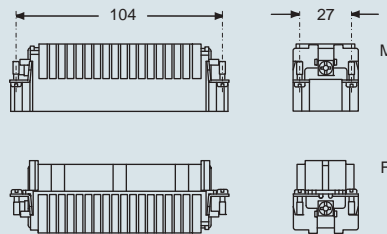
CDMA 0.3
CDMA 0.5
CDMA 0.7
CDMA 1.0
CDMA 1.5
CDMA 2.5

CDMD 0.3
CDMD 0.5
CDMD 0.7
CDMD 1.0
CDMD 1.5
CDMD 2.5

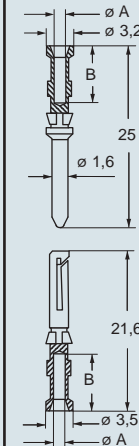
- characteristics according to EN 61984:
10A 250V 4kV 2

- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 3 \text{ m}\Omega$
- for applications requiring higher voltages, please see the special voltage application section on page 66
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 558

dimensions in mm



dimensions in mm



contacts side (front view)

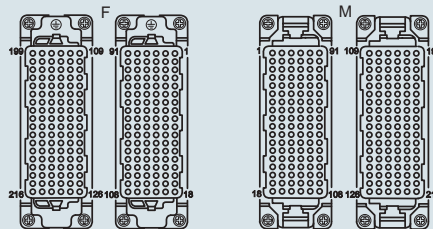
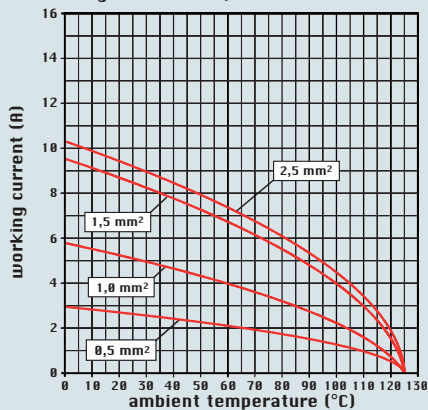


diagram CDD 216 poles



coding pin **CR CP** with loss of one contact, page 491



CDF and CDM contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

- PCBs interface, see article CIF 2.4

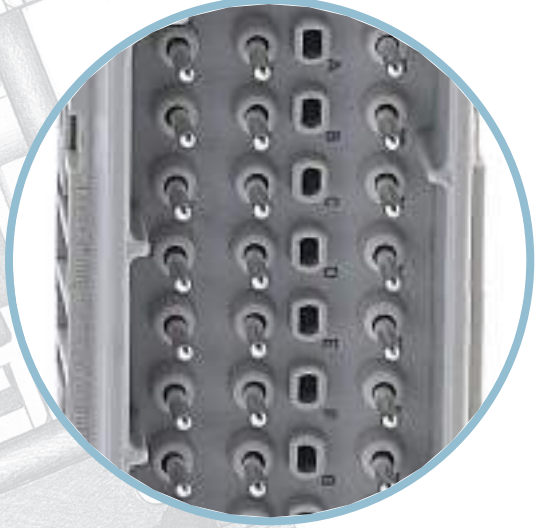
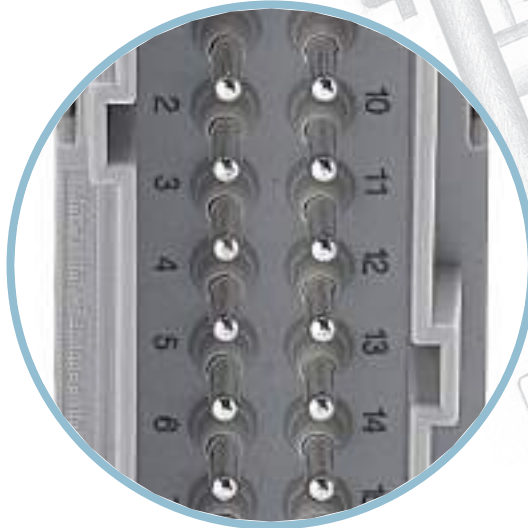
dimensions shown are not binding
and may be changed without notice

NEW

HIGH DENSITY spring connection

**STANDARD
16A**

**CDS
10A**



**STANDARD
16A**

**CDS - HIGH DENSITY
10A**

06 poles	→	09 poles	→	+50%
10 poles	→	18 poles	→	+80%
16 poles	→	27 poles	→	+70%
24 poles	→	42 poles	→	+75%
32 poles	→	54 poles	→	+70%
48 poles	→	84 poles	→	+75%

CDS series

High density spring connection

The originality of multipole connectors represents one of the core values of ILME, a leading company in this segment.

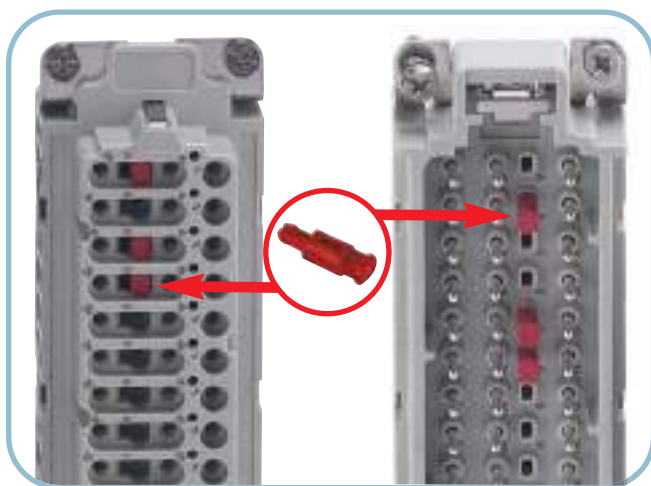
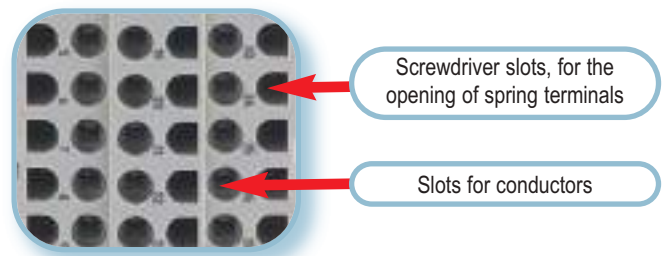
The continuous demand for a greater number of poles and of smaller dimensions has led to the design and manufacture of the new CDS series, which offers single connectors with a maximum number of 84 poles that occupy the same space of standard connectors with screw/spring connection.

The compact spring connection enables the occupied space to be reduced and avoids using "CRIMP" solutions that require the use of special tools.

The insertion of the screwdriver is facilitated by the particular shape of the hole, which ensures that the operation is always performed correctly.

The new **CDS series**, which is an evolution as compared to the compact CKS series, offers the following advantages:

- **Greater pole density as compared to existing connectors with screw terminals for enclosures of the same size**
- **No special wire preparation other than stripping**
- **An excellent fastening solution and a great resistance to strong vibrations**



It is possible to insert in the front area the new CR CDS coding pin that enables the polarisation of inserts in a wide range of combinations.

This means that it is possible to install side by side identical connectors with different functions.

The new CR CDS coding pins can also be used in combination with other CR 20 / CRM / CRF / CR 72 metal pins instead of insert fixing screws in order to increase the number of possible combinations.

Each position of the coding pin used on the female insert must correspond to an unused position on the male insert.

The required number of coding pins, depending on the size of connectors, and the maximum number of possible codings is shown in the following table.

CDS series - Coding with CR CDS pins

Size of connectors	Slots for coding pins (M) = male insert (F) = female insert	Required coding pins for each coupling	Possible codings
9P+⊕	3 (M) + 3 (F)	3	$2^3 - 2^{(*)} = 6$
18P+⊕	6 (M) + 3 (F)	6	$2^6 - 2 = 62$
27P+⊕	9 (M) + 9 (F)	9	$2^9 - 2 = 510$
42P+⊕	14 (M) + 14 (F)	14	$2^{14} - 2 = 16.382$

(*) This excludes the two codings where all the coding pins are on one side only (male or female insert) because they are ineffective.

CDS series

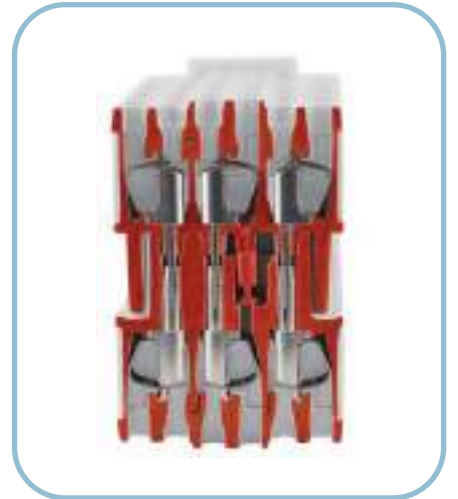
Contacts connected with spring terminal

Inserts series: CDS

In this layout the wires are connected to the female and male insert contacts by means of a spring terminal.

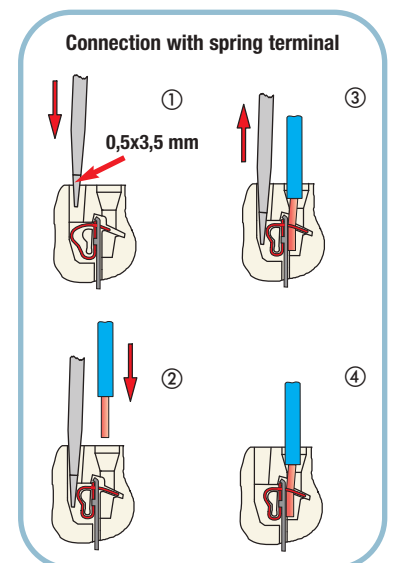
This type of connection offers the following advantages:

- › no special wire preparation;
- › a screwdriver with a 0,5 x 3,5 mm blade is the only tool required to insert the wire in the contact;
- › it offers an excellent fastening solution and a great resistance to strong vibrations;
- › it allows the use of rigid and flexible wires with cross-sections between 0,14 and 2,5 mm² (26 - 14 AWG);
- › for wires with crimped ferrule, useful cross-section: up to 1,5 mm² (AWG 16);
- › allows conductivity tests under load to be carried out through the screwdriver insertion section, without splitting the insert;
- › it greatly reduces insert preparation and cabling times.



Inserts series		CDS
No. of poles ¹⁾	main contacts + ⊕	9, 18, 27, 42, (54), (84)
	auxiliary contacts	--
rated current ²⁾		10A
EN 61984 pollution degree 3	rated voltage	400V
	rated impulse withstand voltage	6kV
	pollution degree	3
EN 61984 pollution degree 2	rated voltage	400V/690V
	rated impulse withstand voltage	6kV
	pollution degree	2
contact resistance		≤ 1 mΩ
insulation resistance		≥ 10 GΩ
ambient temperature limit (°C)	min	-40
	max	+125
degree of protection	with enclosures	IP65, IP66, IP67, IP68, IP69 (according to type)
	without enclosures	IP20
conductor connections		spring
conductor cross-section	mm ²	0,14 - 2,5 (for wires with crimped ferrule, usable section: up to 1,5 mm ²)
	AWG	26 - 14 (AWG 16 with crimped ferrule)
mechanical endurance (rating cycles)		≥ 500

- 1) Polarities shown in brackets may be achieved by using two inserts in their own double housings.
- 2) Please check the insert load curves to establish the actual maximum operating current according to the ambient temperature.



enclosures:
size "44.27"

page:

C-TYPE IP65/IP66 240 - 243
 C7 IP67, single lever 274
 V-TYPE IP65/IP66, single lever 280/284 - 286
 BIG hoods 304 - 306
 T-TYPE IP65 insulating 326 - 327
 T-TYPE / W IP66 insulating 336 - 337
 HYGIENIC T-TYPE / H IP66/IP69 350 - 351
 HYGIENIC T-TYPE / C IP66/IP69, -50 °C 358 - 359
 W-TYPE for aggressive environments 373
 EMC 392
 central lever 404 - 405
 IP68 420 - 423
 LS-TYPE 450 - 451

panel supports:

page:

COB 462 - 463

description

inserts,
spring terminal connections



silver plated contacts

NEW

spring terminal
female inserts with female contacts
male inserts with male contacts

part No.

CDSF 09
CDSM 09

- characteristics according to EN 61984:

- 10A 400V 6kV 3
- 10A 690V 6kV 2
- certifications: cUL - UL for USA and Canada, (CSA), (GL), (EAC); the certifications shown in brackets are being applied for.
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 1 \text{ m}\Omega$
- for maximum current load, see the following load curves inserts, for more information see page 558

dimensions in mm

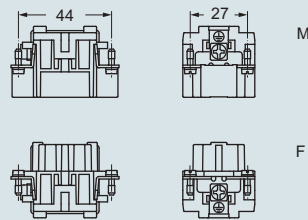
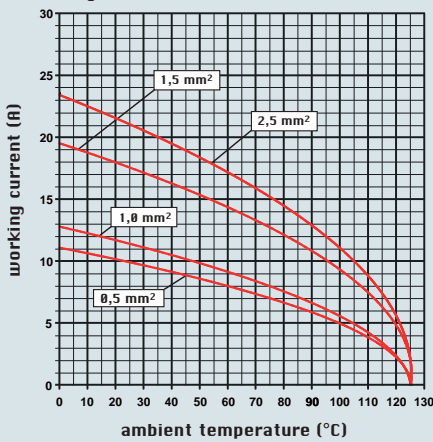
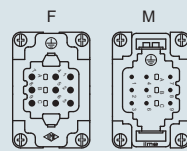


diagram CDS 09 poles

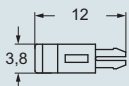


contacts side (front view)

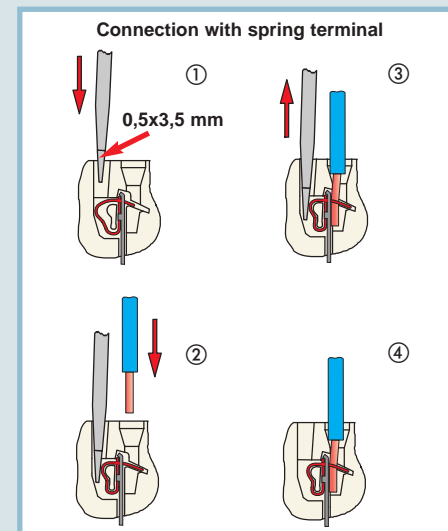


- inserts for conductors section: 0,14 - 2,5 mm² - AWG 26 - 14
- for wires with crimped ferrule, usable section: up to 1,5 mm² (AWG 16)
- conductors stripping length: 9...11 mm

CR CDS coding pin



dimensions shown are not binding and may be changed without notice

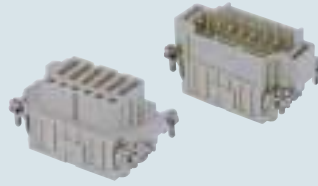


enclosures:
size "57.27"

page:

C-TYPE IP65/IP66	244 - 249
C7 IP67, two levers	275
V-TYPE IP65/IP66, single lever	281/288 - 291
BIG hoods	308 - 311
T-TYPE IP65 insulating	328 - 329
T-TYPE / W IP66 insulating	338 - 339
HYGIENIC T-TYPE / H IP66/IP69	352 - 353
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	360 - 361
W-TYPE for aggressive environments	374
EMC	393
central lever	406 - 407
IP68	424 - 427
LS-TYPE	452 - 453
panel supports:	page:
COB	462 - 463

inserts,
spring terminal connections



silver plated contacts

NEW

description

part No.

spring terminal
female inserts with female contacts
male inserts with male contacts

CDSF 18
CDSM 18

- characteristics according to EN 61984:

- 10A 400V 6kV 3**
- 10A 690V 6kV 2**
- certifications: cUL - UL for USA and Canada, (CSA), (GL), (EAC); the certifications shown in brackets are being applied for.
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 1 \text{ m}\Omega$
- for maximum current load, see the following load curves inserts, for more information see page 558

dimensions in mm

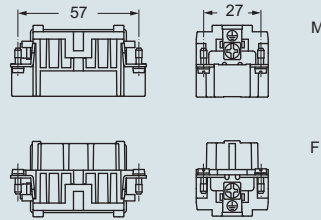
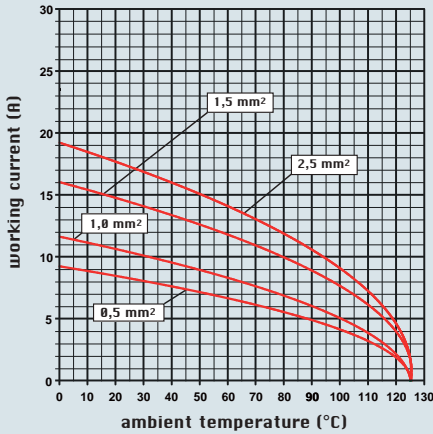
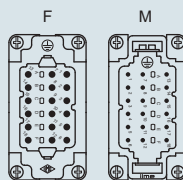


diagram CDS 18 poles

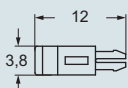


contacts side (front view)

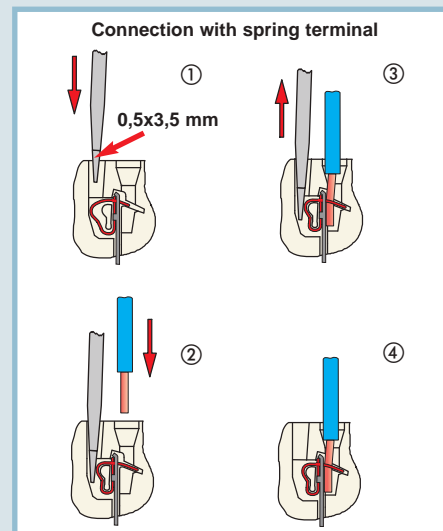


- inserts for conductors section: 0,14 - 2,5 mm² - AWG 26 - 14
- for wires with crimped ferrule, usable section: up to 1,5 mm² (AWG 16)
- conductors stripping length: 9...11 mm

CR CDS coding pin



dimensions shown are not binding
and may be changed without notice



enclosures:
size "77.27"

page:

C-TYPE IP65/IP66 250 - 256
 C7 IP67, two levers 276
 V-TYPE IP65/IP66, single lever 282/292 - 295
 BIG hoods 312 - 315
 T-TYPE IP65 insulating 330 - 331
 T-TYPE / W IP66 insulating 340 - 341
 HYGIENIC T-TYPE / H IP66/IP69 354 - 355
 HYGIENIC T-TYPE / C IP66/IP69, -50 °C 362 - 363
 W-TYPE for aggressive environments 375
 EMC 394
 central lever 408 - 409
 IP68 428 - 431
 LS-TYPE 454 - 455

panel supports:

page:

COB 462 - 463

description

inserts,
spring terminal connections



silver plated contacts

NEW

spring terminal
female inserts with female contacts
male inserts with male contacts

part No.

CDSF 27
CDSM 27

- characteristics according to EN 61984:

10A 400V 6kV 3
10A 690V 6kV 2

- certifications: cUL - UL for USA and Canada, (CSA), (GL), (EAC); the certifications shown in brackets are being applied for.

- insulation resistance: $\geq 10 \text{ G}\Omega$

- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$

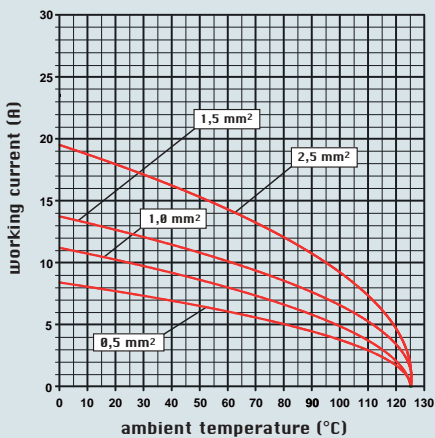
- made of self-extinguishing thermoplastic resin UL 94 V0

- mechanical life: ≥ 500 cycles

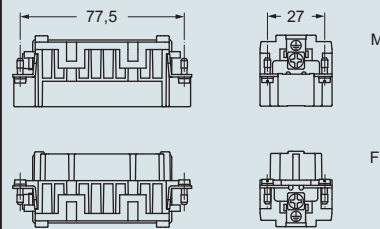
- contact resistance: $\leq 1 \text{ m}\Omega$

- for maximum current load, see the following load curves inserts, for more information see page 558

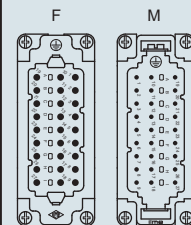
diagram CDS 27 poles



dimensions in mm



contacts side (front view)



- inserts for conductors section:

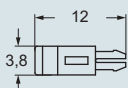
0,14 - 2,5 mm² - AWG 26 - 14

- for wires with crimped ferrule, usable section:

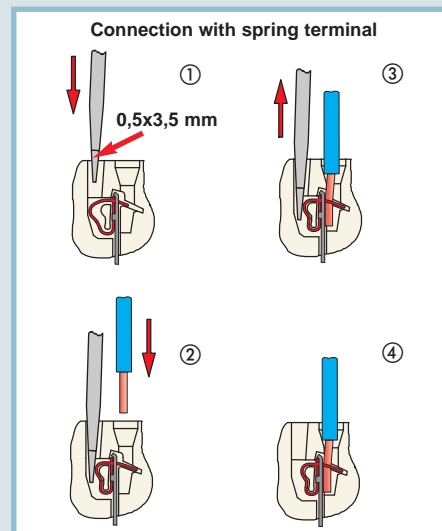
up to 1,5 mm² (AWG 16)

- conductors stripping length: 9...11 mm

CR CDS coding pin



dimensions shown are not binding
and may be changed without notice

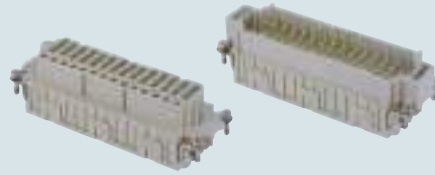


enclosures:
size "104.27"

page:

C-TYPE IP65/IP66	258 - 266
C7 IP67, two levers	277
V-TYPE IP65/IP66, single lever	283/296 - 299
BIG hoods	316 - 319
T-TYPE IP65 insulating	332 - 333
T-TYPE / W IP66 insulating	342 - 343
HYGIENIC T-TYPE / H IP66/IP69	356 - 357
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	364 - 365
W-TYPE for aggressive environments	376
EMC	395
central lever	410 - 412
IP68	432 - 435
LS-TYPE	456 - 457
panel supports: page:	
COB	462 - 463

inserts,
spring terminal connections



silver plated contacts

NEW

description

part No.

spring terminal
female inserts with female contacts
male inserts with male contacts

CDSF 42
CDSM 42

- characteristics according to EN 61984:

- 10A 400V 6kV 3**
- 10A 690V 6kV 2**
- certifications: cUL - UL for USA and Canada, (CSA), (GL), (EAC); the certifications shown in brackets are being applied for.
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 1 \text{ m}\Omega$
- for maximum current load, see the following load curves inserts, for more information see page 558

dimensions in mm

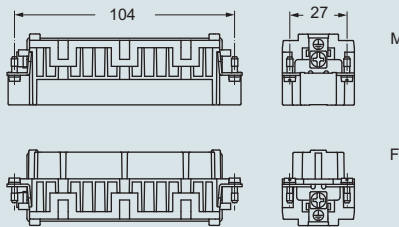
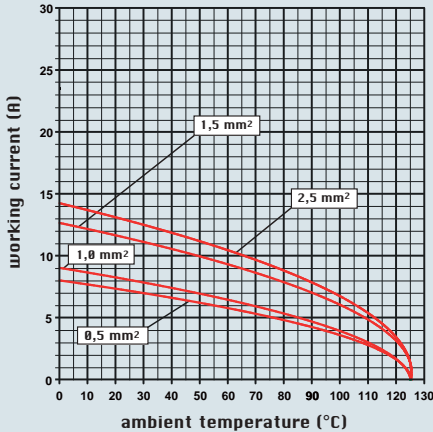
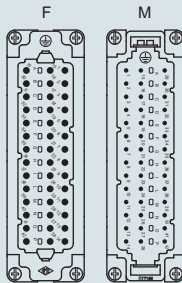


diagram CDS 42 poles

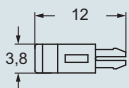


contacts side (front view)

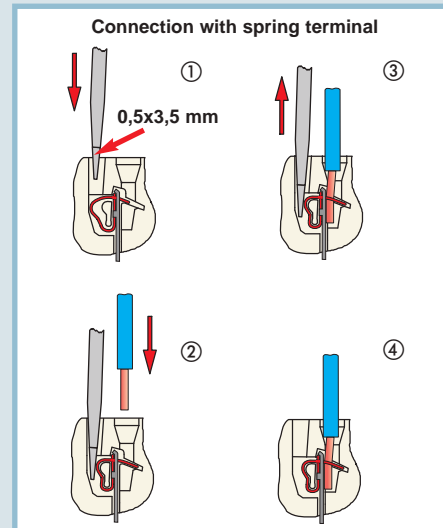


- inserts for conductors section: 0,14 - 2,5 mm² - AWG 26 - 14
- for wires with crimped ferrule, usable section: up to 1,5 mm² (AWG 16)
- conductors stripping length: 9...11 mm

CR CDS coding pin



dimensions shown are not binding
and may be changed without notice



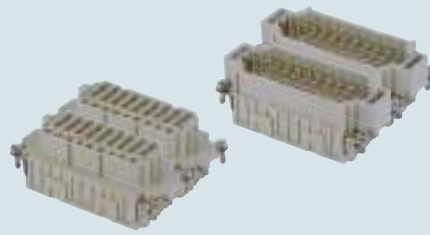
enclosures:
size "77.62"

page:

C-TYPE IP65/IP66 267 - 270

W-TYPE for aggressive environments 377

inserts,
spring terminal connections



silver
plated
contacts

NEW

description

part No.

part No.

spring terminal
female inserts with female contacts, No. (1-27) and (28-54)
male inserts with male contacts, No. (1+27) and (28-54)

CDSF 27
CDSM 27

CDSF 27 N
CDSM 27 N

- characteristics according to EN 61984:

10A 400V 6kV 3
10A 690V 6kV 2

- certifications: cUL - UL for USA and Canada, (CSA), (GL), (EAC); the certifications shown in brackets are being applied for.

- insulation resistance: $\geq 10 \text{ G}\Omega$

- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$

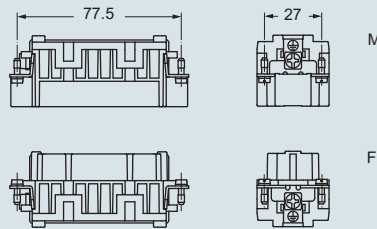
- made of self-extinguishing thermoplastic resin UL 94 V0

- mechanical life: ≥ 500 cycles

- contact resistance: $\leq 1 \text{ m}\Omega$

- for maximum current load, see the following load curves inserts, for more information see page 558

dimensions in mm



contacts side (front view)

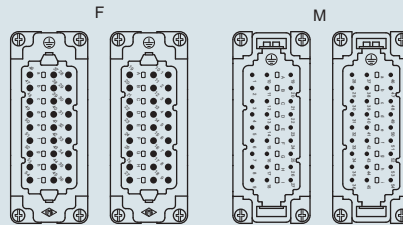
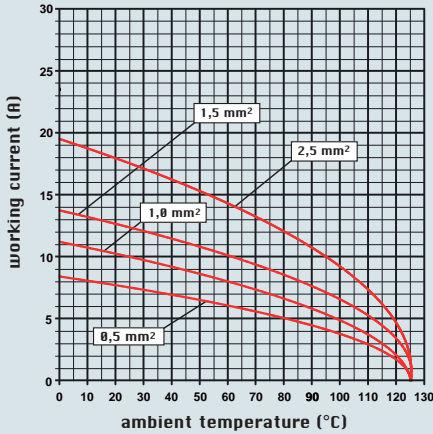


diagram CDS 54 poles



- inserts for conductors section:

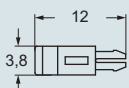
0,14 - 2,5 mm² - AWG 26 - 14

- for wires with crimped ferrule, usable section:

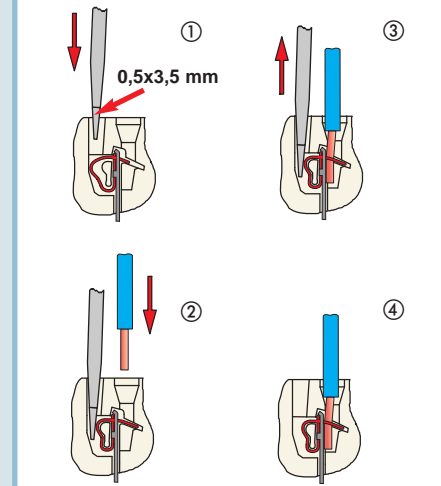
up to 1,5 mm² (AWG 16)

- conductors stripping length: 9...11 mm

CR CDS coding pin



Connection with spring terminal



dimensions shown are not binding
and may be changed without notice

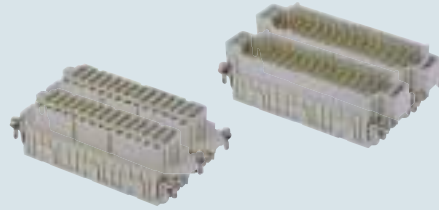
CDS

enclosures:
size "104.62"

page:

C-TYPE IP65/IP66..... 271
W-TYPE for aggressive environments 378

inserts,
spring terminal connections



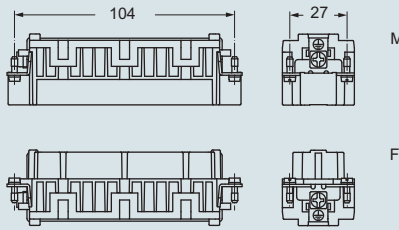
silver plated contacts

NEW

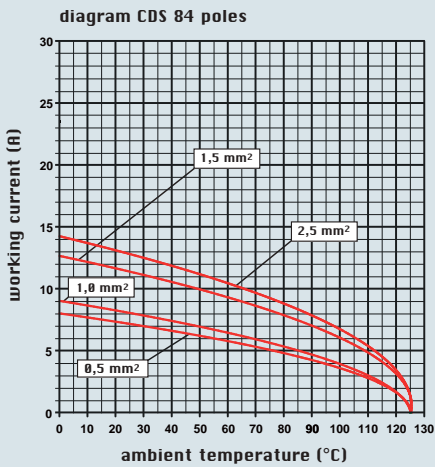
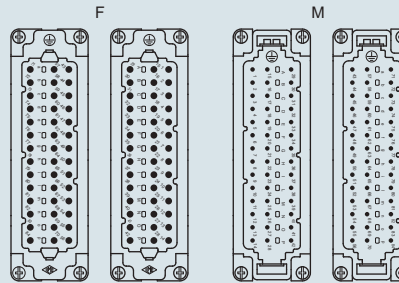
description	part No.	part No.
spring terminal female inserts with female contacts, No. (1-42) and (43-84)	CDSF 42	CDSF 42 N
male inserts with male contacts, No.(1-42) and (43-84)	CDSM 42	CDSM 42 N

- characteristics according to EN 61984:
10A 400V 6kV 3
10A 690V 6kV 2
- certifications: cUL - UL for USA and Canada, (CSA), (GL), (EAC); the certifications shown in brackets are being applied for.
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 1 \text{ m}\Omega$
- for maximum current load, see the following load curves inserts, for more information see page 558

dimensions in mm

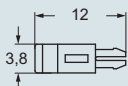


contacts side (front view)

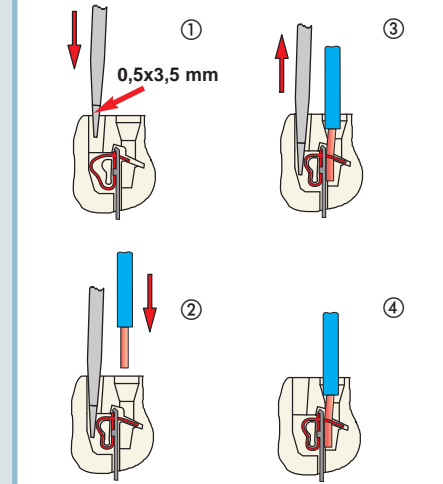


- inserts for conductors section: 0,14 - 2,5 mm² - AWG 26 - 14
- for wires with crimped ferrule, usable section: up to 1,5 mm² (AWG 16)
- conductors stripping length: 9...11 mm

CR CDS coding pin



Connection with spring terminal



dimensions shown are not binding and may be changed without notice

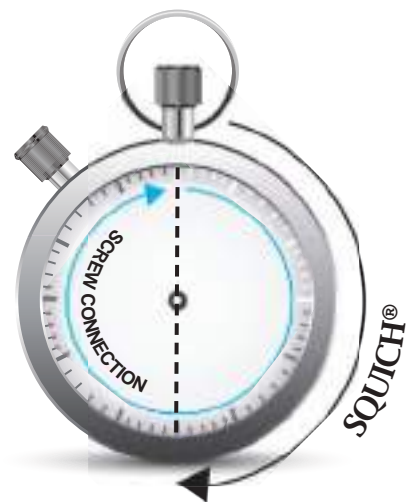
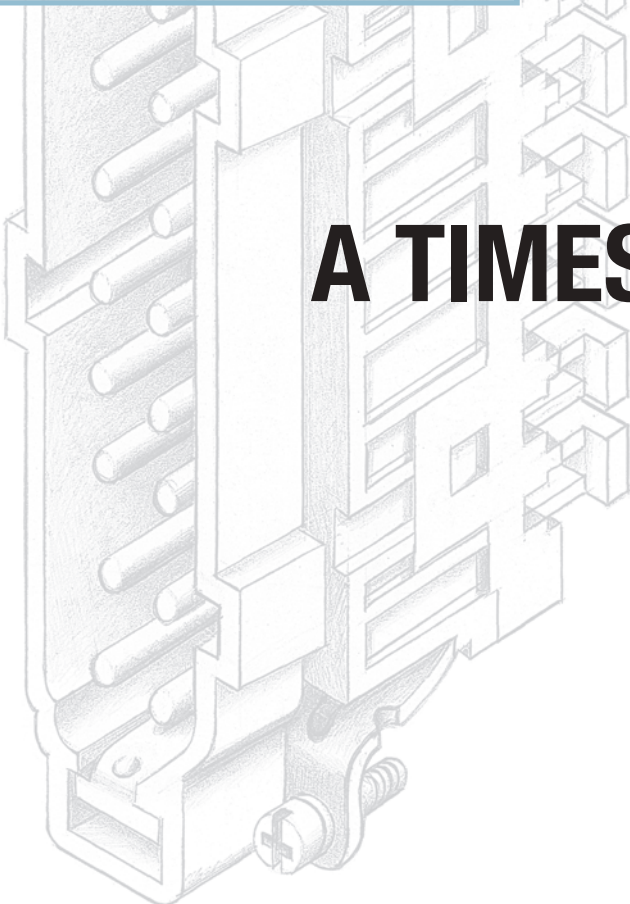
NEW

SQUICH®

**Connections without tools
reduced space**



A TIMESAVER



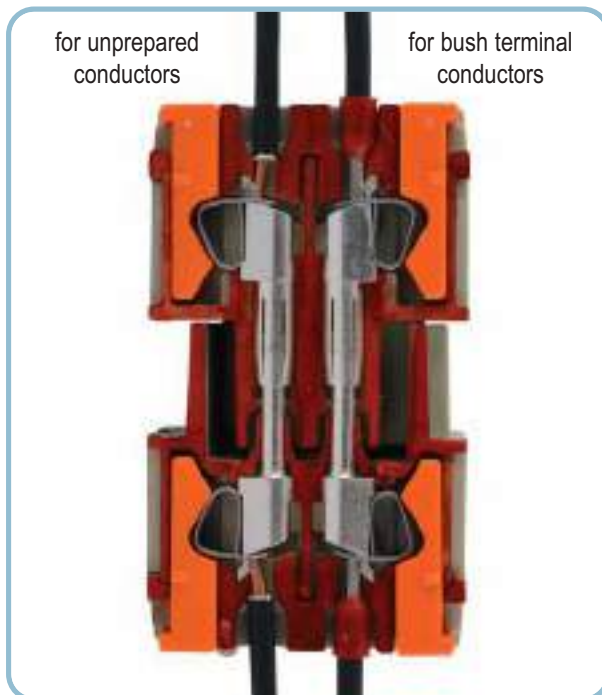
SQUICH® series

Connections without tools

To improve high performance industrial connections, ILME has developed and evolved its own spring clamp connectors to meet the market needs and make installation simpler.

The new “SQUICH®” (with spring and actuator button), the logical evolution of the CSH series, is characterized by the following advantages:

- ◆ Reduced space
- ◆ Reduced wiring times
- ◆ No need for tools
- ◆ Quick identification of wired and non-wired terminals
- ◆ Terminals already open and ready for conductor clamping.



The SQUICH® inserts are adaptable to any type of rigid or flexible conductor, including unprepared conductors

Each of the spring terminals has an actuator button, suitably shaped and incorporated in the cavity.

When this button is pressed, it triggers the closure of the spring device of the corresponding terminal, safely and reliably connecting the conductor to its respective electric contact in the connector.

The actuator buttons are supplied lifted, in the “open terminal” position and are easily distinguishable by the **orange colour which makes them stand out from the insulating body of the connector.**

The advantage of such an **exclusive solution** is that the **actuators disappear completely within the body of the connector**, making it easy to identify terminals not yet closed and eliminating possible obstacles to the movement of the conductors during installation and maintenance.

In this manner during the cabling phase the **need for a tool to activate the terminal is completely eliminated** and a **simple operation is all you need to make the connection.**

Shaped button for measuring instruments

The profile of the button used in the “SQUICH®” series inserts **allow a measuring probe to be inserted.**

This allows checks to be carried out to ensure that the wiring is correct.

Simple terminal reopening

To reopen the terminals, simply introduce the tip of a common 0,5 x 3,5 mm flat blade screwdriver in the shaped pocket on the head of the actuator, and slightly rotate the screwdriver downwards: this will lift the actuator into its open terminal position.



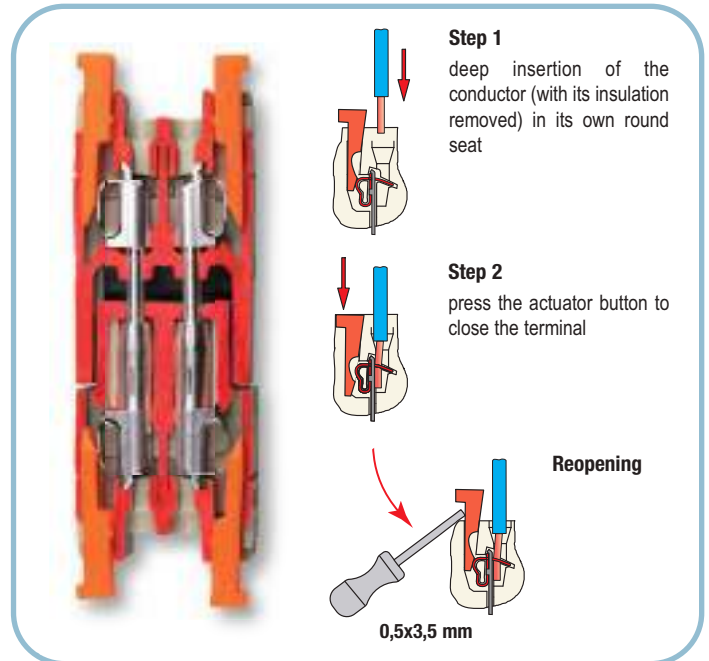
CSAH - SQUICH® series

Spring connection contacts with actuator button

Inserts series: CSAH

In this layout the wires are connected to the socket and plug insert contacts by means of a spring terminal with actuator button. This type of connection offers the following advantages:

- › no special wire preparation (**other than stripping**);
- › no cabling tool is necessary;
- › it offers an excellent fastening solution and a great resistance to strong vibrations;
- › it allows the use of rigid and flexible wires with cross-sections between 0,14 and 2,5 mm² (26 - 14 AWG);
- › for wires with crimped ferrule, useful cross-section: up to 1,5 mm² (AWG 16);
- › it greatly reduces insert preparation and cabling times;
- › a screwdriver with a 0,5 x 3,5 mm blade is the only tool required to remove the wire from the contact.



Inserts series		CSAH
No. of poles ¹⁾	main contacts + ⊕	10, 16, (32)
	auxiliary contacts	--
rated current ²⁾		16A
EN 61984 pollution degree 3	rated voltage	250V
	rated holding impulse withstand voltage	4kV
	pollution degree	3
EN 61984 pollution degree 2	rated voltage	230V/400V
	rated holding impulse withstand voltage	4kV
	pollution degree	2
contact resistance		≤ 3 mΩ
insulation resistance		≥ 10 GΩ
ambient temperature limit (°C)	min	-40 °C
	max	+125 °C
degree of protection	with enclosures	IP65, IP66, IP69 (according to type)
	without enclosures	IP20
conductor connections		spring with actuator button
conductor cross-section	mm ²	0,14 - 2,5 (for wires with crimped ferrule, usable section: up to 1,5 mm ²)
	AWG	26 - 14 (AWG 16 with crimped ferrule)
mechanical endurance (rating cycles)		≥ 500

- 1) Polarities shown in brackets may be achieved by using two inserts in their own double housings.
- 2) Please check the insert load curves to establish the actual maximum operating current according to the ambient temperature.

enclosures:
size "49.16" page:

IL-BRID 230 - 232
W-TYPE for aggressive environments 370
EMC 390

panel supports: page:
COB + adaptor 462 - 464

inserts,
spring terminal connections



silver
plated
contacts

NEW

description

part No.

spring terminals with actuator button
female inserts with female contacts
male inserts with male contacts

CSAHF 10
CSAHM 10

- characteristics according to EN 61984:

16A 250V 4kV 3
16A 400V 4kV 2

- certifications: (cUL - UL for USA and Canada), (CSA),
CCC *, (EAC); the certifications shown in brackets are
being applied for;

* CQC certification being applied for

- insulation resistance: $\geq 10 \text{ G}\Omega$

- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$

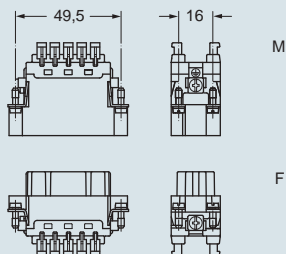
- are made of self-extinguishing thermoplastic resin
UL 94 V0

- mechanical life: ≥ 500 cycles

- contact resistance: $\leq 3 \text{ m}\Omega$

- for maximum current load, see the following load
curves inserts, for more information see page 558

dimensions in mm



contacts side (front view)

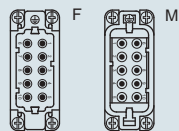
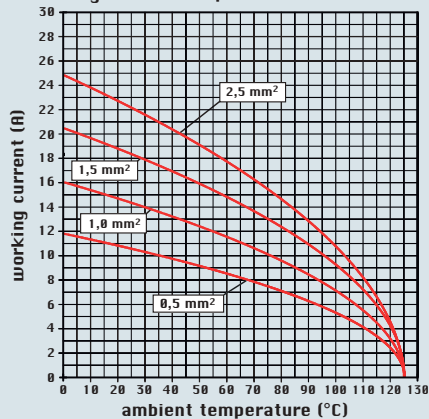
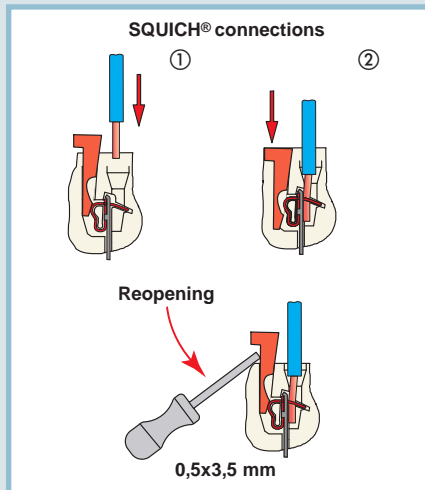


diagram CSAH 10 poles



- inserts for connectors with the following sections:
0,14 - 2,5 mm² - AWG 26 - 14
- for wires with crimped ferrule, usable section:
up to 1,5 mm² (AWG 16)
- conductors stripping length: 9...11 mm

dimensions shown are not binding
and may be changed without notice

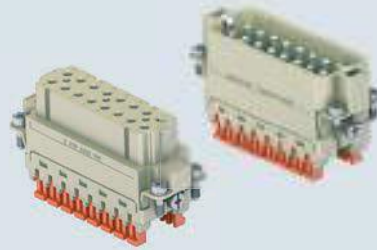


enclosures:
size "66.16" page:

IL-BRID 233 - 235
W-TYPE for aggressive environments 371
EMC 391

panel supports: page:
COB + adaptor 462 - 464

inserts,
spring terminal connections



silver
plated
contacts

NEW

description

part No.

spring terminals with actuator button
female inserts with female contacts
male inserts with male contacts

CSAHF 16
CSAHM 16

- characteristics according to EN 61984:

16A 250V 4kV 3
16A 400V 4kV 2

- certifications: (cUL - UL for USA and Canada), (CSA),
CCC *, (EAC); the certifications shown in brackets are
being applied for;

* CQC certification being applied for

- insulation resistance: $\geq 10 \text{ G}\Omega$

- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$

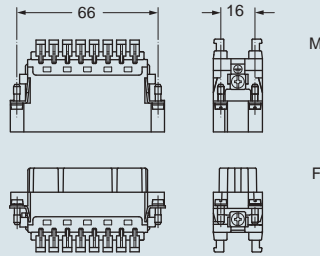
- are made of self-extinguishing thermoplastic resin
UL 94 V0

- mechanical life: ≥ 500 cycles

- contact resistance: $\leq 3 \text{ m}\Omega$

- for maximum current load, see the following load
curves inserts, for more information see page 558

dimensions in mm



contacts side (front view)

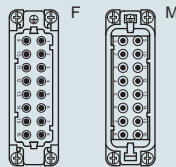
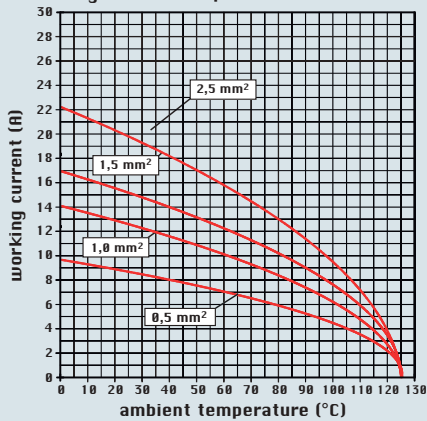
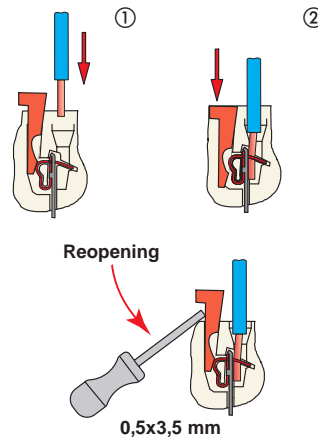


diagram CSAH 16 poles



- inserts for connectors with the following sections:
0,14 - 2,5 mm² - AWG 26 - 14
- for wires with crimped ferrule, usable section:
up to 1,5 mm² (AWG 16)
- conductors stripping length: 9...11 mm

SQUICH® connections



dimensions shown are not binding
and may be changed without notice

CSAH

enclosures:
size "66.40"

page:

C-TYPE IP65/IP66 237 - 239

W-TYPE for aggressive environments 372

inserts,
spring terminal connections



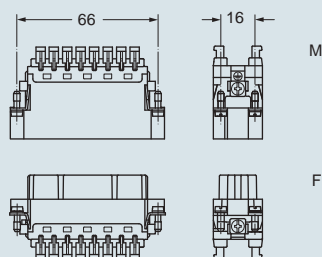
silver plated contacts

NEW

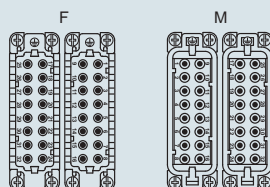
description	part No.	part No.
spring terminals with actuator button		
female inserts, No. (1-16) and (17-32)	CSAHF 16	CSAHF 16 N
male inserts, No. (1-16) and (17-32)	CSAHM 16	CSAHM 16 N

- characteristics according to EN 61984:
16A 250V 4kV 3
16A 400V 4kV 2
- certifications: (cUL - UL for USA and Canada), (CSA), CCC *, (EAC); the certifications shown in brackets are being applied for;
* CQC certification being applied for
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 3 \text{ m}\Omega$
- for maximum current load, see the following load curves inserts, for more information see page 558

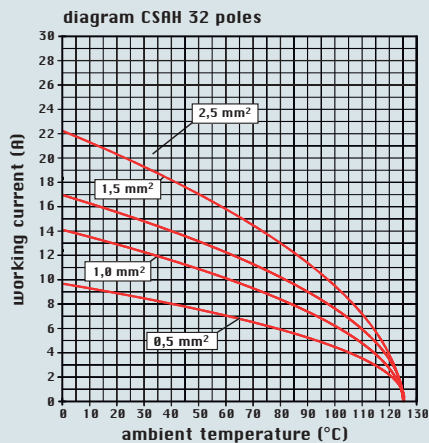
dimensions in mm



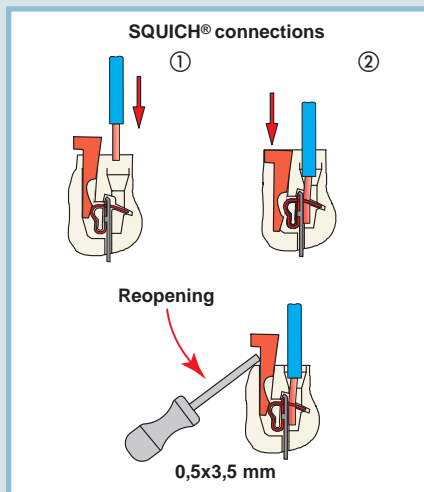
contacts side (front view)



- inserts for connectors with the following sections:
0,14 - 2,5 mm² - AWG 26 - 14
- for wires with crimped ferrule, usable section:
up to 1,5 mm² (AWG 16)
- conductors stripping length: 9...11 mm



dimensions shown are not binding
and may be changed without notice



CSH - SQUICH® series

Spring connection contacts with actuator button

Inserts series: CSH

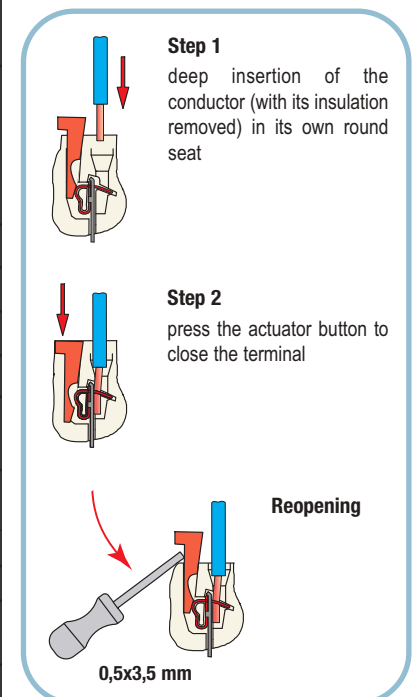
In this layout the wires are connected to the socket and plug insert contacts by means of a spring terminal with actuator button. This type of connection offers the following advantages:

- › no special wire preparation (**other than stripping**);
- › no cabling tool is necessary;
- › it offers an excellent fastening solution and a great resistance to strong vibrations;
- › it allows the use of rigid and flexible wires with cross-sections between 0,14 and 2,5 mm² (26 - 14 AWG);
- › it greatly reduces insert preparation and cabling times;
- › a screwdriver with a 0,5 x 3,5 mm blade is the only tool required to remove the wire from the contact.



Inserts series		CSH
No. of poles ¹⁾	main contacts + ⊕	6, 10, 16, 24, (32), (48)
	auxiliary contacts	--
rated current ²⁾		16A
EN 61984 pollution degree 3	rated voltage	500V
	rated holding impulse withstand voltage	6kV
	pollution degree	3
EN 61984 pollution degree 2	rated voltage	400V/690V
	rated holding impulse withstand voltage	6kV
	pollution degree	2
UL/CSA certification	rated voltage (a.c./d.c.)	600V
certifications		UL, CSA, CCC, EAC
contact resistance		≤ 3 mΩ
insulation resistance		≥ 10 GΩ
ambient temperature limit (°C)	min	-40 °C
	max	+125 °C
degree of protection	with enclosures	IP65, IP66, IP67, IP68, IP69K (according to type)
	without enclosures	IP20
conductor connections		spring and clamp with actuator button
conductor cross-section	mm ²	0,14 - 2,5
	AWG	26 - 14
mechanical endurance (mating cycles)		≥ 500

- 1) Polarities shown in brackets may be achieved by using two inserts in their own double housings.
- 2) Please check the insert load curves to establish the actual maximum operating current according to the ambient temperature.



enclosures:
size "44.27"

page:

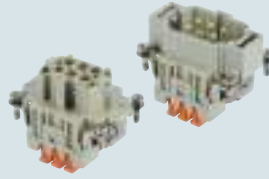
C-TYPE IP65/IP66	240 - 243
C7 IP67, single lever	274
V-TYPE IP65/IP66, single lever	280/284 - 286
BIG hoods	304 - 306
T-TYPE IP65 insulating	326 - 327
T-TYPE / W IP66 insulating	336 - 337
HYGIENIC T-TYPE / H IP66/IP69	350 - 351
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	358 - 359
W-TYPE for aggressive environments	373
EMC	392
central lever	404 - 405
IP68	420 - 423
LS-TYPE	450 - 451

panel supports:

page:

COB	462 - 463
-----------	-----------

inserts,
spring terminal connections



silver
plated
contacts

description

part No.

spring terminals with actuator button
female inserts with female contacts
male inserts with male contacts

CSHF 06
CSHM 06

- characteristics according to EN 61984:

16A 500V 6kV 3
16A 400/690V 6kV 2

- cUL - UL for USA and Canada, CSA, CCC *, EAC certified
* CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin
UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 3 \text{ m}\Omega$
- for maximum current load, see the following load
curves inserts, for more information see page 559

dimensions in mm

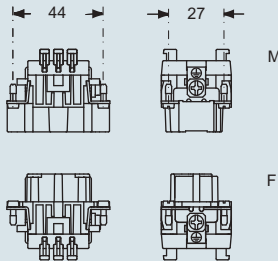
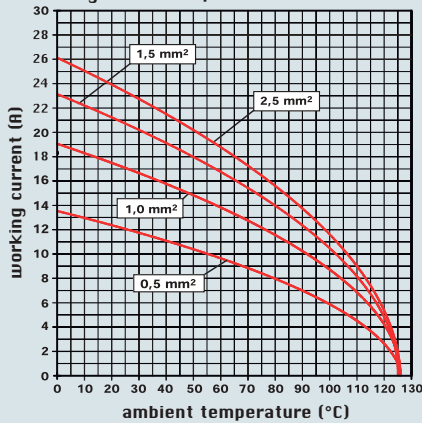
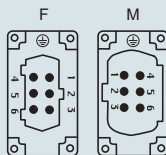


diagram CSH 06 poles

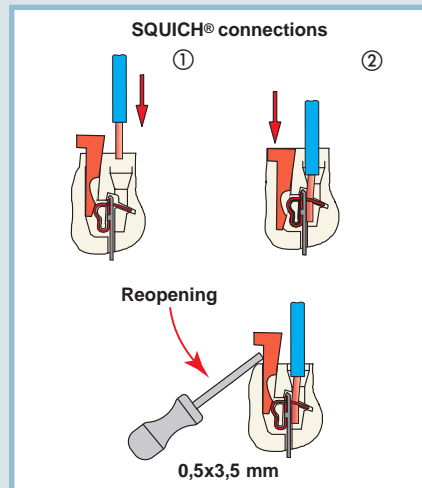


contacts side (front view)



- inserts for connectors with the following sections:
0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping length: 9...11 mm

dimensions shown are not binding
and may be changed without notice

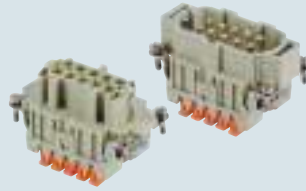


enclosures:
size "57.27"

page:

C-TYPE IP65/IP66	244 - 249
C7 IP67, two levers	275
V-TYPE IP65/IP66, single lever	281/288 - 291
BIG hoods	308 - 311
T-TYPE IP65 insulating	328 - 329
T-TYPE / W IP66 insulating	338 - 339
HYGIENIC T-TYPE / H IP66/IP69	352 - 353
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	360 - 361
W-TYPE for aggressive environments	374
EMC	393
central lever	406 - 407
IP68	424 - 427
LS-TYPE	452 - 453
panel supports:	page:
COB	462 - 463

inserts,
spring terminal connections



silver
plated
contacts

description

part No.

spring terminals with actuator button
female inserts with female contacts
male inserts with male contacts

CSHF 10
CSHM 10

- characteristics according to EN 61984:

- 16A 500V 6kV 3**
- 16A 400/690V 6kV 2**
- cUL - UL for USA and Canada, CSA, CCC *, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 3 \text{ m}\Omega$
- for maximum current load, see the following load curves inserts, for more information see page 559

dimensions in mm

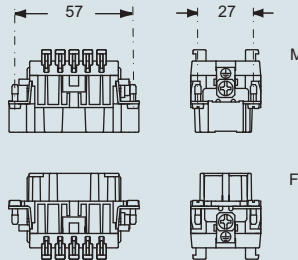
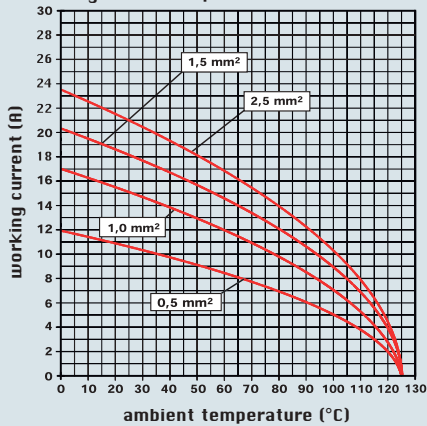
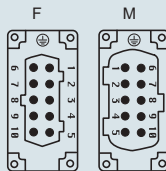


diagram CSH 10 poles

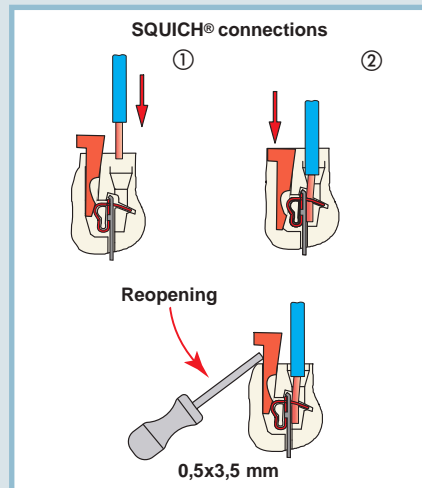


contacts side (front view)



- inserts for connectors with the following sections: 0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping length: 9...11 mm

dimensions shown are not binding
and may be changed without notice



enclosures:
size "77.27"

page:

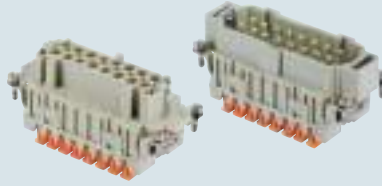
C-TYPE IP65/IP66	250 - 256
C7 IP67, two levers	276
V-TYPE IP65/IP66, single lever	282/292 - 295
BIG hoods	312 - 315
T-TYPE IP65 insulating	330 - 331
T-TYPE / W IP66 insulating	340 - 341
HYGIENIC T-TYPE / H IP66/IP69	354 - 355
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	362 - 363
W-TYPE for aggressive environments	375
EMC	394
central lever	408 - 409
IP68	428 - 431
LS-TYPE	454 - 455

panel supports:

page:

COB	462 - 463
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inserts,
spring terminal connections



silver plated contacts

description

part No.

spring terminals with actuator button
female inserts with female contacts
male inserts with male contacts

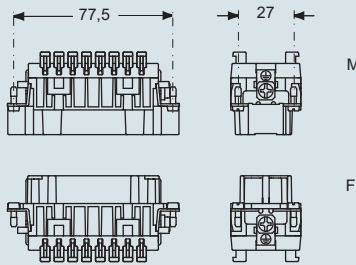
CSHF 16
CSHM 16

- characteristics according to EN 61984:

16A 500V 6kV 3
16A 400/690V 6kV 2

- cUL - UL for USA and Canada, CSA, CCC *, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 3 \text{ m}\Omega$
- for maximum current load, see the following load curves inserts, for more information see page 559

dimensions in mm



contacts side (front view)

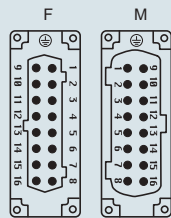
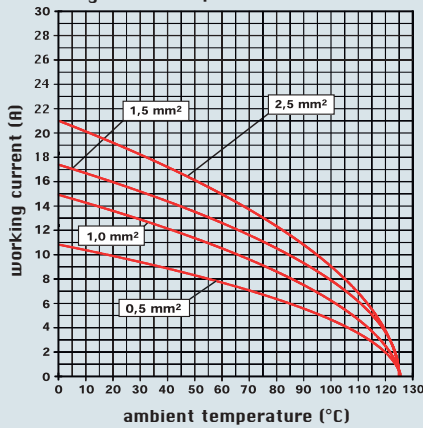
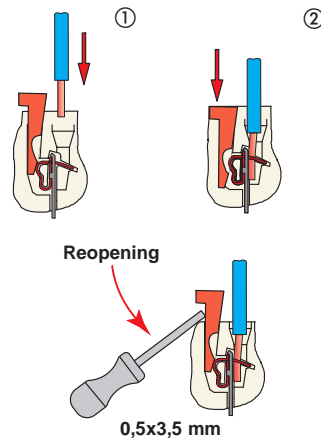


diagram CSH 16 poles



- inserts for connectors with the following sections: 0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping length: 9...11 mm

SQUICH® connections



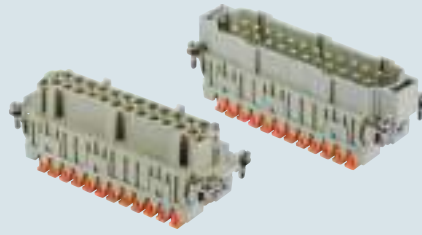
dimensions shown are not binding
and may be changed without notice

enclosures:
size "104.27" page:

C-TYPE IP65/IP66	258 - 266
C7 IP67, two levers	277
V-TYPE IP65/IP66, single lever	283296 - 299
BIG hoods	316 - 319
T-TYPE IP65 insulating	332 - 333
T-TYPE / W IP66 insulating	342 - 343
HYGIENIC T-TYPE / H IP66/IP69	356 - 357
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	364 - 365
W-TYPE for aggressive environments	376
EMC	395
central lever	410 - 412
IP68	432 - 435
LS-TYPE	456 - 457

panel supports: page:
COB

inserts,
spring terminal connections



silver plated contacts

description

part No.

spring terminals with actuator button
female inserts with female contacts
male inserts with male contacts

CSHF 24
CSHM 24

- characteristics according to EN 61984:
16A 500V 6kV 3
16A 400/690V 6kV 2
- cUL - UL for USA and Canada, CSA, CCC *, EAC certified
* CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin
UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 3 \text{ m}\Omega$
- for maximum current load, see the following load curves inserts, for more information see page 559

dimensions in mm

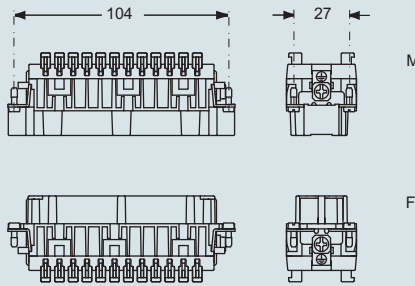
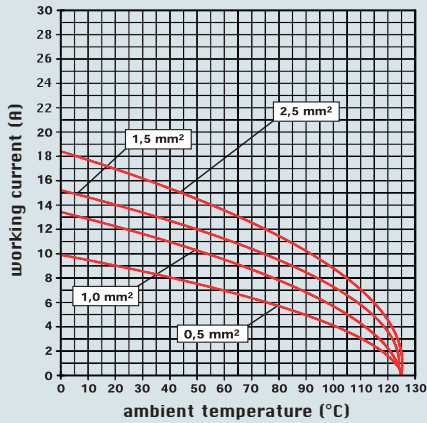
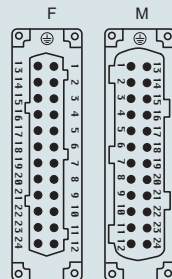


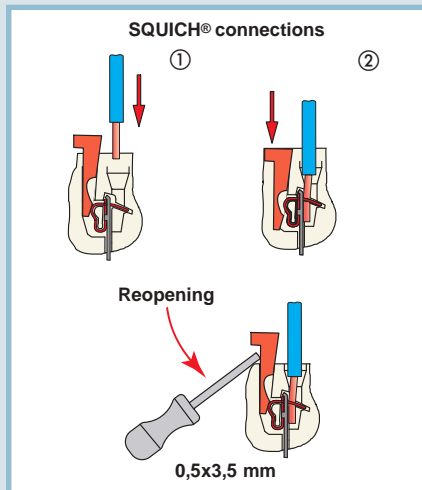
diagram CSH 24 poles



contacts side (front view)



- inserts for connectors with the following sections:
0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping length: 9...11 mm



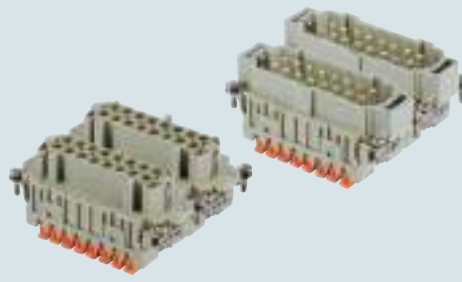
dimensions shown are not binding
and may be changed without notice

enclosures:
size "77.62"

page:

C-TYPE IP65/IP66 267 - 270
W-TYPE for aggressive environments 377

inserts,
spring terminal connections



silver
plated
contacts

description

part No.

part No.

spring terminals with actuator button
female inserts with female contacts, No. (1-16) and (17-32)
male inserts with male contacts, No. (1-16) and (17-32)

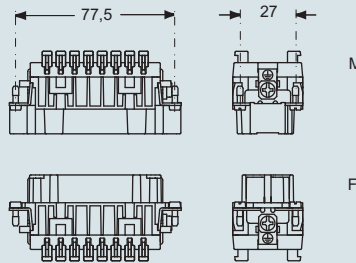
CSHF 16
CSHM 16

CSHF 16 N
CSHM 16 N

- characteristics according to EN 61984:

- 16A 500V 6kV 3
- 16A 400/690V 6kV 2
- cUL - UL for USA and Canada, CSA, CCC *, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 3 \text{ m}\Omega$
- for maximum current load, see the following load curves inserts, for more information see page 559

dimensions in mm



contacts side (front view)

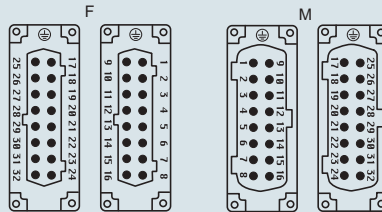
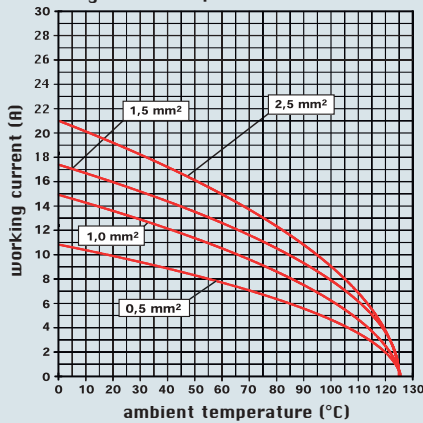
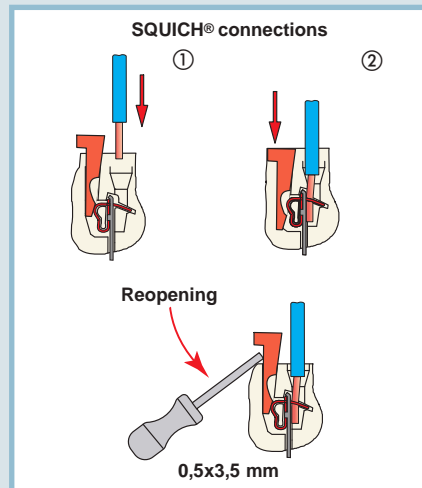


diagram CSH 32 poles



- inserts for connectors with the following sections: 0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping length: 9...11 mm



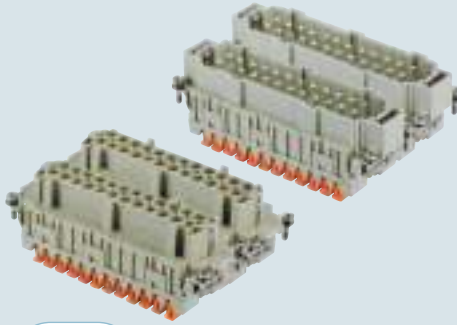
dimensions shown are not binding
and may be changed without notice

enclosures:
size "104.62"

page:

C-TYPE IP65/IP66..... 271
W-TYPE for aggressive environments 378

inserts,
spring terminal connections



silver plated contacts

description

part No.

part No.

spring terminals with actuator button
female inserts with female contacts, No. (1-24) and (25-48)
male inserts with male contacts, No. (1-24) and (25-48)

CSHF 24
CSHM 24

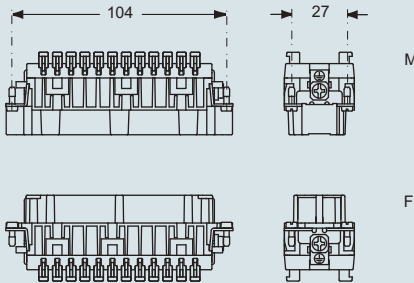
CSHF 24 N
CSHM 24 N

- characteristics according to EN 61984:

16A 500V 6kV 3
16A 400/690V 6kV 2

- cUL - UL for USA and Canada, CSA, CCC *, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 3 \text{ m}\Omega$
- for maximum current load, see the following load curves inserts, for more information see page 559

dimensions in mm



contacts side (front view)

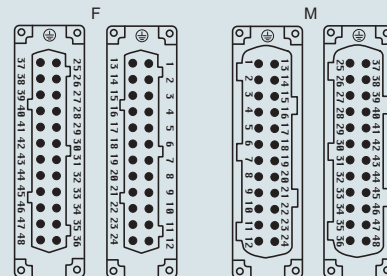
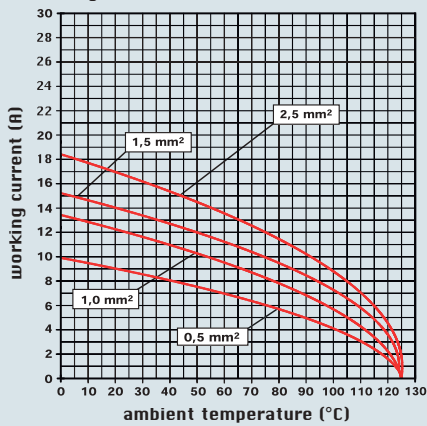
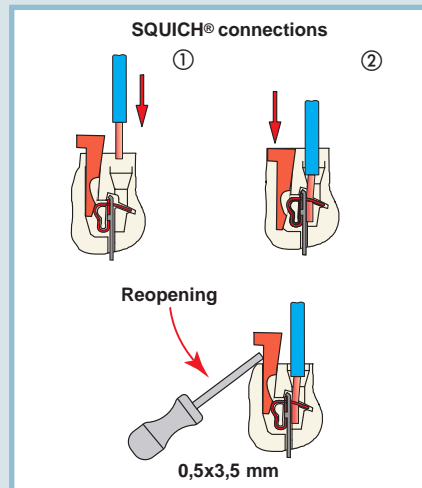


diagram CSH 48 poles



- inserts for connectors with the following sections: 0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping length: 9...11 mm

dimensions shown are not binding
and may be changed without notice



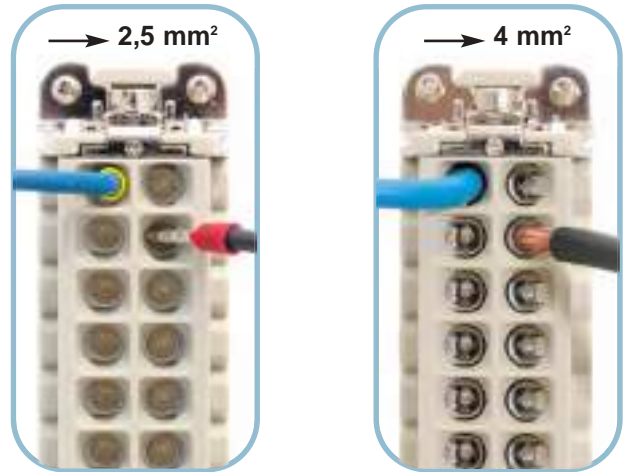
CDA - CDC series

Renewal of the compact inserts

The new CDA inserts with screw-type termination.

The renewed screw-type connector inserts (**CDA** series) with 10 and 16 poles + \oplus are now made using screw-type terminals (CNE series) with a built-in wire protection pressure plate of proven reliability and practicality.

The wire protection pressure plate preserves the conductors in case of wiring with unprepared conductors (i.e. without wire end ferrules) up to a maximum wire cross-section of 4 mm² (12 AWG). The variant without a wire protection pressure plate (code with suffix X) is also available, for use with prepared conductors featuring a wire end ferrule with a maximum usable wire cross-section of 2,5 mm² (14 AWG).



The new CDC inserts with crimp termination.

The renewed crimp termination **CDC** series of inserts with 10 and 16 poles + \oplus now adopt the tried and tested contact retention technique of connector series CCE and CQE for removable crimp contacts (series CC, max 16A).

The characteristics of **CDA/CDC** inserts are:

- according to standard EN 61984:

16A 250V 4kV 3

16A 230/400V 4kV 2

- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- construction material: UL 94 V-0 self-extinguishing thermoplastic resin
- mechanical life: ≥ 500 cycles.



The applications.

Like those of the previous series, the new CDA and CDC inserts and their enclosures are used in accordance with the recommendations EUROMAP 12, EUROMAP 13, EUROMAP 14-1, EUROMAP 16 and EUROMAP 62 (European industry consortium for moulding machines and plastic processing).

The CDC inserts can also be used with CC series crimp contacts made of iron/constantan (Fe-CuNi) for the cabling of J type thermocouples in accordance with IEC/EN 60584-1 (Recommendation EUROMAP 14-1).

The CDA/CDC series inserts can also be coupled with previous insert versions.



enclosures:
size "49.16" page:

- IL-BRID 230 - 232
- W-TYPE for aggressive environments 370
- EMC 390

panel supports: page:
COB + adaptor 462 - 464

**inserts,
screw terminal connection**



silver plated contacts

NEW

**inserts,
screw terminal connection**



silver plated contacts

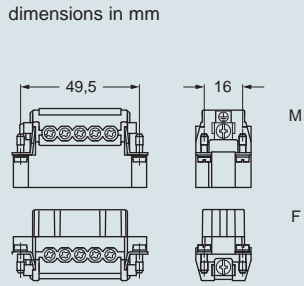
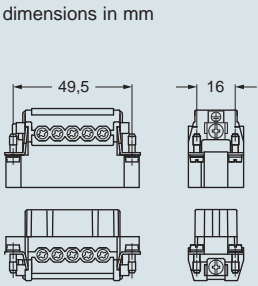
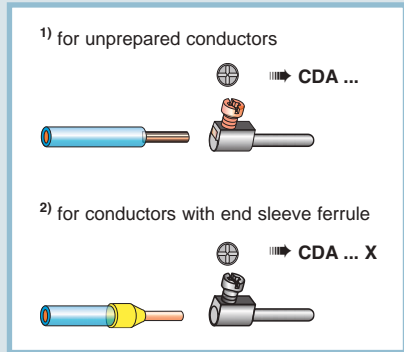
NEW

description
indirect, with pressure plate ¹⁾
female inserts with female contacts
male inserts with male contacts

part No.
CDAF 10
CDAM 10

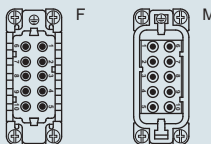
direct, without pressure plate ²⁾
female inserts with female contacts
male inserts with male contacts

part No.
CDAF 10 X
CDAM 10 X

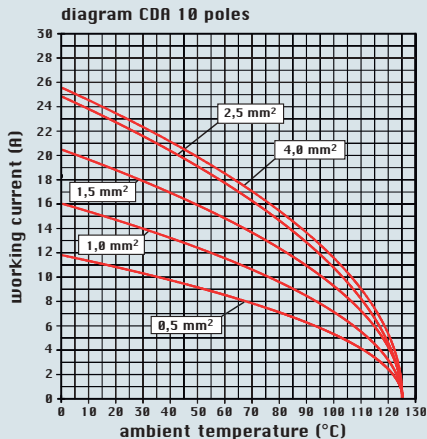
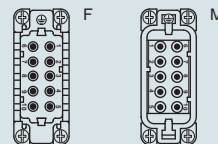


- characteristics according to EN 61984:
16A 250V 4kV 3
16A 230/400V 4kV 2
- cUL - UL for USA and Canada, CSA, CCC *, GL, EAC certified; * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 1 \text{ m}\Omega$
- according to recommendations EUROMAP N° 16
- for maximum current load, see the following inserts load curves, for more information see page 559

contacts side (front view)



contacts side (front view)



- inserts with pressure plate for conductors cross-sections: 0,5 - 4 mm² - AWG 20 - 12
- conductors stripping length: 7 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

- inserts without pressure plate for prepared conductors with cross-sections: 0,25 - 2,5 mm² - AWG 24 - 14
- the stripping length for prepared wires with bush crimped depends on that of the bush itself
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

dimensions shown are not binding
and may be changed without notice

CDA

enclosures:
size "49.16" page:

IL-BRID 230 - 232
W-TYPE for aggressive environments 370
EMC 390

panel supports: page:
COB + adaptor 462 - 464

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

inserts, crimp connections



NEW

16A crimp contacts normal and for advanced opening silver and gold plated

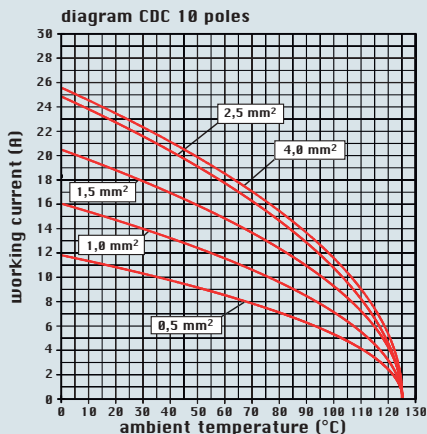


description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	CDCF 10 CDCM 10		
16A female contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves		CCFA 0.3 CCFA 0.5 CCFA 0.7 CCFA 1.0 CCFA 1.5 CCFA 2.5 CCFA 3.0 CCFA 4.0	CCFD 0.3 CCFD 0.5 CCFD 0.7 CCFD 1.0 CCFD 1.5 CCFD 2.5 CCFD 3.0 CCFD 4.0
16A male contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves		CCMA 0.3 CCMA 0.5 CCMA 0.7 CCMA 1.0 CCMA 1.5 CCMA 2.5 CCMA 3.0 CCMA 4.0	CCMD 0.3 CCMD 0.5 CCMD 0.7 CCMD 1.0 CCMD 1.5 CCMD 2.5 CCMD 3.0 CCMD 4.0
16A male crimp contacts for advanced opening 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves		CC 0.5 AN CC 0.7 AN CC 1.0 AN CC 1.5 AN CC 2.5 AN	

silver plated

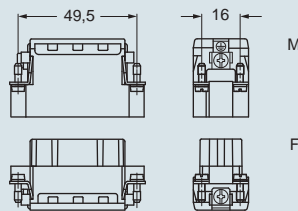
gold plated 1)

- characteristics according to EN 61984:
16A 250V 4kV 3
16A 230/400V 4kV 2
- cUL - UL for USA and Canada, CSA, CCC *, GL, EAC certified; * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- according to recommendations EUROMAP N° 16
- for maximum current load, see the following inserts load curves, for more information see page 559

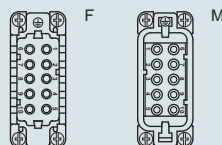


dimensions shown are not binding and may be changed without notice

dimensions in mm

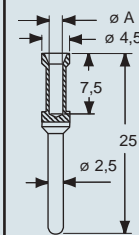


contacts side (front view)

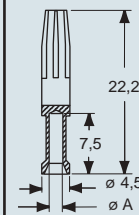
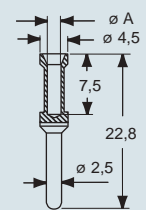


dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC...AN contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	(mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

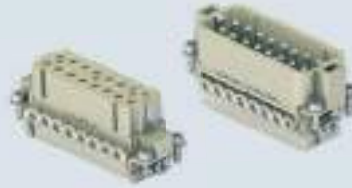
1) basic or high thickness gold plating page 481

enclosures:
size "66.16" page:

IL-BRID 233 - 235
W-TYPE for aggressive environments 371
EMC 391

panel supports: page:
COB + adaptor 462 - 464

inserts,
screw terminal connection



silver plated contacts

NEW

inserts,
screw terminal connection



silver plated contacts

NEW

description

part No.

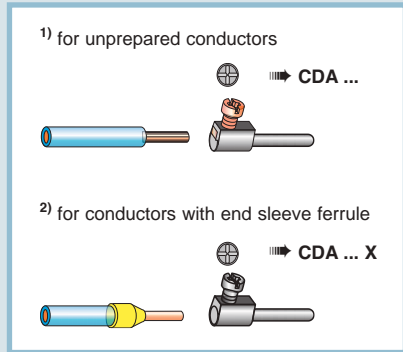
part No.

indirect, with pressure plate ¹⁾
female inserts with female contacts
male inserts with male contacts

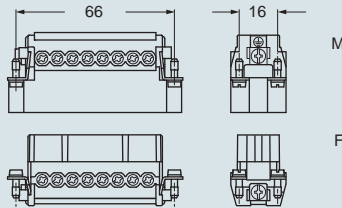
CDAF 16
CDAM 16

direct, without pressure plate ²⁾
female inserts with female contacts
male inserts with male contacts

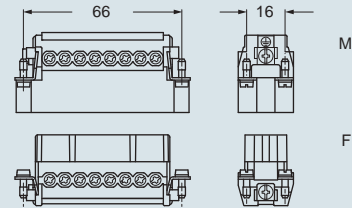
CDAF 16 X
CDAM 16 X



dimensions in mm



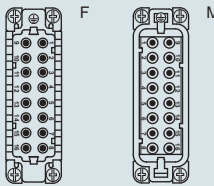
dimensions in mm



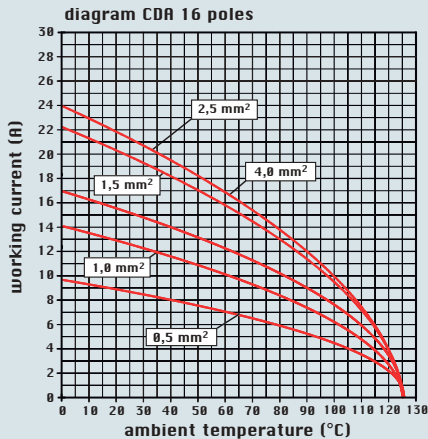
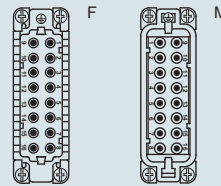
- characteristics according to EN 61984:

- 16A 250V 4kV 3
- 16A 230/400V 4kV 2
- cUL - UL for USA and Canada, CSA, CCC *, GL, EAC certified; * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 1 \text{ m}\Omega$
- according to recommendations EUROMAP N° 13/N° 14.1
- for maximum current load, see the following inserts load curves, for more information see page 559

contacts side (front view)



contacts side (front view)



- inserts with pressure plate for conductors cross-sections: 0,5 - 4 mm² - AWG 20 - 12
- conductors stripping length: 7 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

- inserts without pressure plate for prepared conductors with cross-sections: 0,25 - 2,5 mm² - AWG 24 - 14
- the stripping length for prepared wires with bush crimped depends on that of the bush itself
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

dimensions shown are not binding
and may be changed without notice

enclosures:
size "66.16" page:

IL-BRID 233 - 235
W-TYPE for aggressive environments 371
EMC 391

panel supports: page:
COB + adaptor 462 - 464

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

inserts, crimp connections



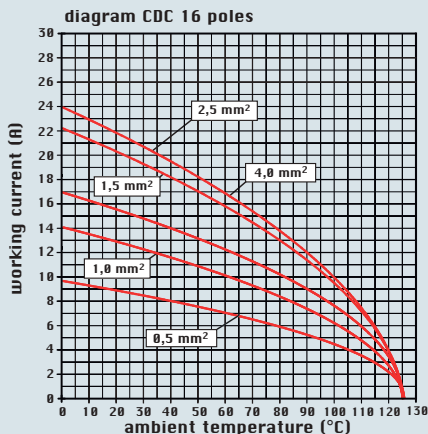
NEW

16A crimp contacts
normal and for advanced opening
silver and gold plated



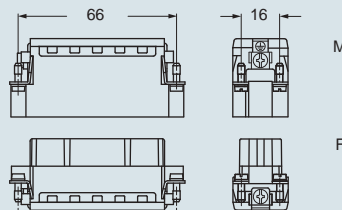
description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	CDCF 16 CDCM 16		
16A female contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves		silver plated	gold plated 1)
16A male contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves		silver plated	gold plated 1)
16A male crimp contacts for advanced opening 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves		silver plated	gold plated 1)
		CCFA 0.3 CCFA 0.5 CCFA 0.7 CCFA 1.0 CCFA 1.5 CCFA 2.5 CCFA 3.0 CCFA 4.0	CCFD 0.3 CCFD 0.5 CCFD 0.7 CCFD 1.0 CCFD 1.5 CCFD 2.5 CCFD 3.0 CCFD 4.0
		CCMA 0.3 CCMA 0.5 CCMA 0.7 CCMA 1.0 CCMA 1.5 CCMA 2.5 CCMA 3.0 CCMA 4.0	CCMD 0.3 CCMD 0.5 CCMD 0.7 CCMD 1.0 CCMD 1.5 CCMD 2.5 CCMD 3.0 CCMD 4.0
		CC 0.5 AN CC 0.7 AN CC 1.0 AN CC 1.5 AN CC 2.5 AN	

- characteristics according to EN 61984:
16A 250V 4kV 3
16A 230/400V 4kV 2
- cUL - UL for USA and Canada, CSA, CCC *, GL, EAC certified; * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- according to recommendations EUROMAP N° 13/N° 14.1
- for maximum current load, see the following inserts load curves, for more information see page 559

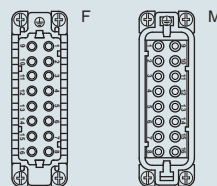


dimensions shown are not binding
and may be changed without notice

dimensions in mm

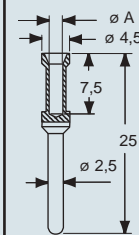


contacts side (front view)

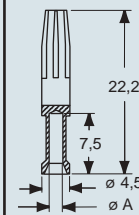
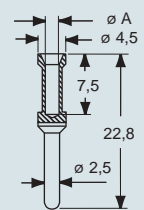


dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC...AN contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	(mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

enclosures:
size "66.40"

page:

C-TYPE IP65/IP66 237 - 239

W-TYPE for aggressive environments 372

inserts,
screw terminal connection



silver plated contacts

NEW

inserts,
screw terminal connection



silver plated contacts

NEW

description

part No.

part No.

part No.

part No.

indirect, with pressure plate ¹⁾
female inserts, No. (1-16) and (17-32)
male inserts, No. (1-16) and (17-32)

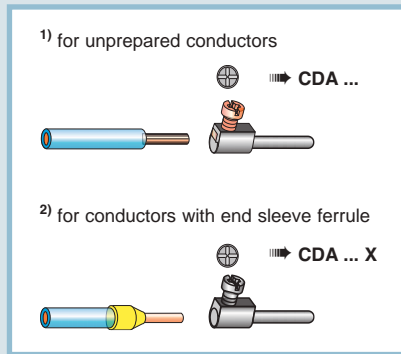
CDAF 16
CDAM 16

CDAF 16 N
CDAM 16 N

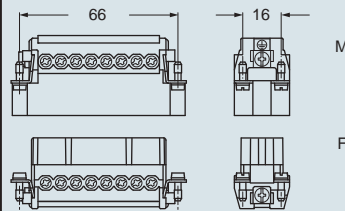
direct, without pressure plate ²⁾
female inserts, No. (1-16) and (17-32)
male inserts, No. (1-16) and (17-32)

CDAF 16 X
CDAM 16 X

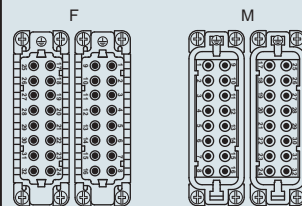
CDAF 16 XN
CDAM 16 XN



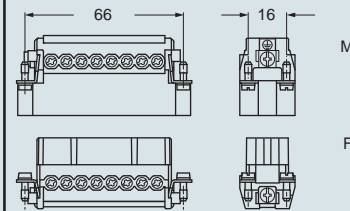
dimensions in mm



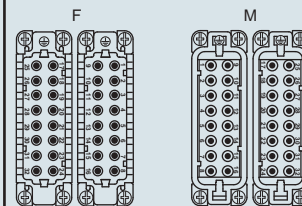
contacts side (front view)



dimensions in mm



contacts side (front view)



- characteristics according to EN 61984:

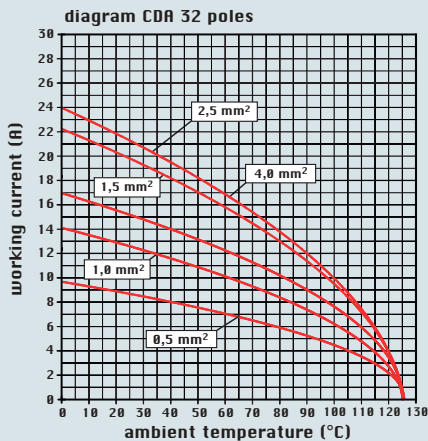
16A 250V 4kV 3

16A 230/400V 4kV 2

- cUL - UL for USA and Canada, CSA, CCC *, GL, EAC certified; * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 1 \text{ m}\Omega$
- according to recommendations EUROMAP N° 12/N° 62
- for maximum current load, see the following inserts load curves, for more information see page 559

- inserts with pressure plate for conductors cross-sections: $0,5 - 4 \text{ mm}^2$ - AWG 20 - 12
- conductors stripping length: 7 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

- inserts without pressure plate for prepared conductors with cross-sections: $0,25 - 2,5 \text{ mm}^2$ - AWG 24 - 14
- the stripping length for prepared wires with bush crimped depends on that of the bush itself
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35



dimensions shown are not binding
and may be changed without notice

enclosures:
size "66.40"

page:

C-TYPE IP65/IP66 237 - 239

W-TYPE for aggressive environments 372

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

inserts, crimp connections



NEW

16A crimp contacts
normal and for advanced opening
silver and gold plated

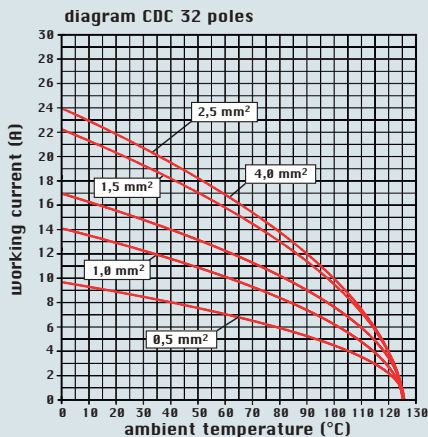


description	part No.	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts, No. (1-16) and (17-32) male inserts, No. (1-16) and (17-32)	CDCF 16 CDCM 16	CDCF 16 N CDCM 16 N		
16A female contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves			CCFA 0.3 CCFA 0.5 CCFA 0.7 CCFA 1.0 CCFA 1.5 CCFA 2.5 CCFA 3.0 CCFA 4.0	CCFD 0.3 CCFD 0.5 CCFD 0.7 CCFD 1.0 CCFD 1.5 CCFD 2.5 CCFD 3.0 CCFD 4.0
16A male contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves			CCMA 0.3 CCMA 0.5 CCMA 0.7 CCMA 1.0 CCMA 1.5 CCMA 2.5 CCMA 3.0 CCMA 4.0	CCMD 0.3 CCMD 0.5 CCMD 0.7 CCMD 1.0 CCMD 1.5 CCMD 2.5 CCMD 3.0 CCMD 4.0
16A male crimp contacts for advanced opening 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves			CC 0.5 AN CC 0.7 AN CC 1.0 AN CC 1.5 AN CC 2.5 AN	

silver plated

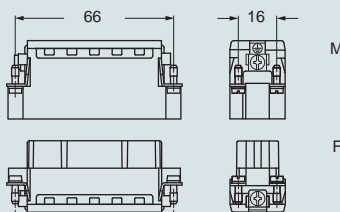
gold plated 1)

- characteristics according to EN 61984:
16A 250V 4kV 3
16A 230/400V 4kV 2
- cUL - UL for USA and Canada, CSA, CCC *, GL, EAC certified; * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- according to recommendations EUROMAP N° 12/N° 62
- for maximum current load, see the following inserts load curves, for more information see page 559

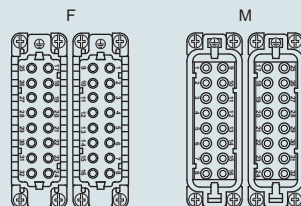


dimensions shown are not binding
and may be changed without notice

dimensions in mm

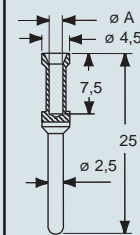


contacts side (front view)

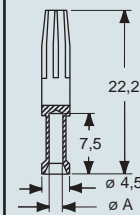
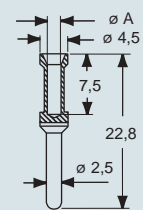


dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC...AN contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	(mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

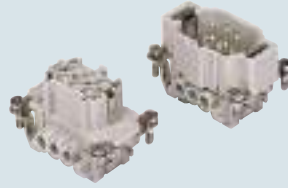
1) basic or high thickness gold plating page 481

enclosures:
size "44.27" page:

C-TYPE IP65/IP66 240 - 243
 C7 IP67, single lever 274
 V-TYPE IP65/IP66, single lever 280/284 - 286
 BIG hoods 304 - 306
 T-TYPE IP65 insulating 326 - 327
 T-TYPE / W IP66 insulating 336 - 337
 HYGIENIC T-TYPE / H IP66/IP69 350 - 351
 HYGIENIC T-TYPE / C IP66/IP69, -50 °C 358 - 359
 W-TYPE for aggressive environments 373
 EMC 392
 central lever 404 - 405
 IP68 420 - 423
 LS-TYPE 450 - 451

panel supports: page:
COB 462 - 463

inserts,
screw terminal connections



silver plated contacts

part No.

CNEF 06 T
CNEM 06 T

inserts,
spring terminal connections



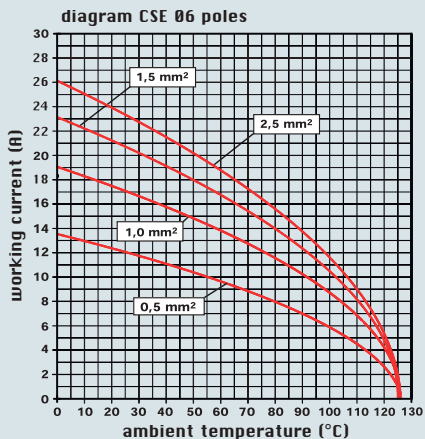
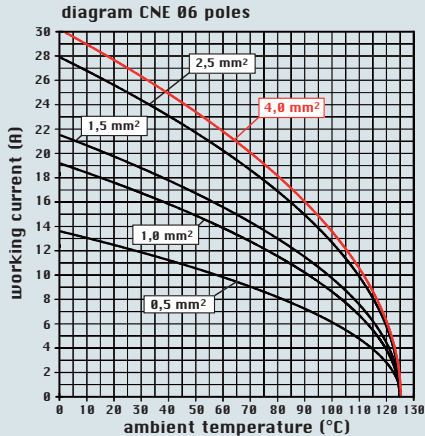
silver plated contacts

part No.

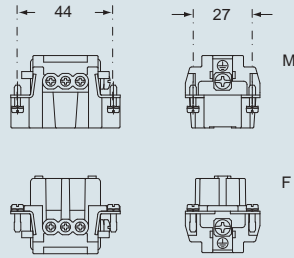
CSEF 06
CSEM 06

description	part No.
indirect, with plate 1) female inserts with female contacts male inserts with male contacts	CNEF 06 T CNEM 06 T
direct, without plate 2) female inserts with female contacts male inserts with male contacts	CNEF 06 TX CNEM 06 TX
spring terminal female inserts with female contacts male inserts with male contacts	CSEF 06 CSEM 06

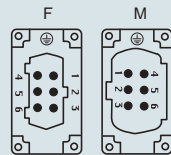
- characteristics according to EN 61984:
16A 500V 6kV 3
16A 400/690V 6kV 2
 - cUL - UL for USA and Canada (CNE), UL (CSE), CSA, CCC *, GL, EAC certified
 * CQC certification being applied for
 - rated voltage according to UL/CSA: 600V
 - insulation resistance: $\geq 10 \text{ G}\Omega$
 - ambient temperature limit: -40 °C ... +125 °C
 - are made of self-extinguishing thermoplastic resin UL 94 V0
 - mechanical life: ≥ 500 cycles
 - contact resistance: $\leq 1 \text{ m}\Omega$ (CNE) - $\leq 3 \text{ m}\Omega$ (CSE)
 - for maximum current load, see the following load curves inserts, for more information see page 559



dimensions in mm



contacts side (front view)

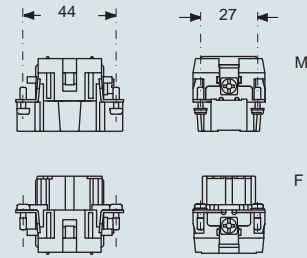


- inserts with plate for section conductors: 0,5 - 4 mm² - AWG 20 - 12
- inserts without plate for section conductors: 0,25 - 2,5 mm² - AWG 24 - 14
- conductors stripping length: 7 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

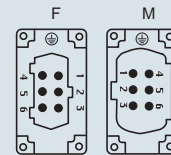
1) for unprepared conductors

2) for bush terminal conductors

dimensions in mm



contacts side (front view)



- inserts for section conductors: 0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping length: 9...11 mm

connection with spring terminal

dimensions shown are not binding and may be changed without notice

enclosures:
size "57.27" page:

C-TYPE IP65/IP66 244 - 249
C7 IP67, two levers 275
V-TYPE IP65/IP66, single lever 281/288 - 291
BIG hoods 308 - 311
T-TYPE IP65 insulating 328 - 329
T-TYPE / W IP66 insulating 338 - 339
HYGIENIC T-TYPE / H IP66/IP69 352 - 353
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 360 - 361
W-TYPE for aggressive environments 374
EMC 393
central lever 406 - 407
IP68 424 - 427
LS-TYPE 452 - 453

panel supports: page:
COB 462 - 463

inserts,
screw terminal connections



silver plated contacts

inserts,
spring terminal connections

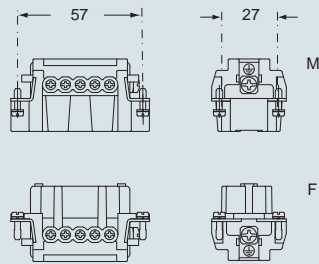


silver plated contacts

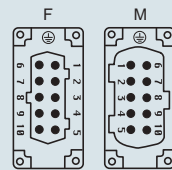
description	part No.	part No.
indirect, with plate 1) female inserts with female contacts male inserts with male contacts	CNEF 10 T CNEM 10 T	
direct, without plate 2) female inserts with female contacts male inserts with male contacts	CNEF 10 TX CNEM 10 TX	
spring terminal female inserts with female contacts male inserts with male contacts		CSEF 10 CSEM 10

- characteristics according to EN 61984:
16A 500V 6kV 3
16A 400/690V 6kV 2
- cUL - UL for USA and Canada (CNE), UL (CSE), CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 1 \text{ m}\Omega$ (CNE) - $\leq 3 \text{ m}\Omega$ (CSE)
- for maximum current load, see the following load curves inserts, for more information see page 559

dimensions in mm

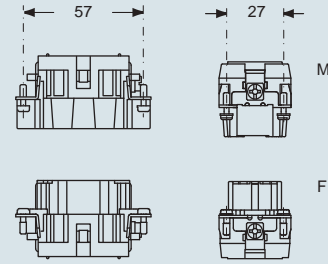


contacts side (front view)

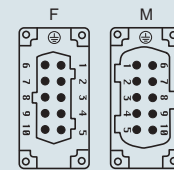


- inserts with plate for section conductors:
0,5 - 4 mm² - AWG 20 - 12
- inserts without plate for section conductors:
0,25 - 2,5 mm² - AWG 24 - 14
- conductors stripping length: 7 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

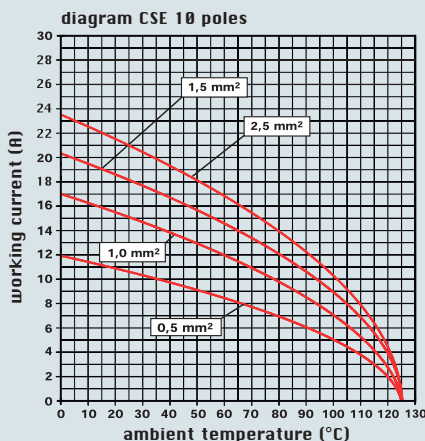
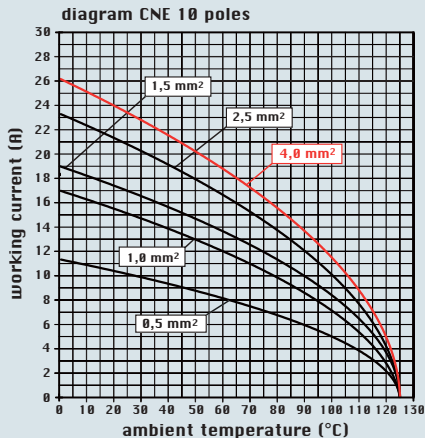
dimensions in mm



contacts side (front view)



- inserts for section conductors:
0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping length: 9...11 mm



1) for unprepared conductors

2) for bush terminal conductors

connection with spring terminal

dimensions shown are not binding and may be changed without notice

enclosures:
size "77.27"

page:

C-TYPE IP65/IP66 250 - 256
 C7 IP67, two levers 276
 V-TYPE IP65/IP66, single lever 282/292 - 295
 BIG hoods 312 - 315
 T-TYPE IP65 insulating 330 - 331
 T-TYPE / W IP66 insulating 340 - 341
 HYGIENIC T-TYPE / H IP66/IP69 354 - 355
 HYGIENIC T-TYPE / C IP66/IP69, -50 °C 362 - 363
 W-TYPE for aggressive environments 375
 EMC 394
 central lever 408 - 409
 IP68 428 - 431
 LS-TYPE 454 - 455

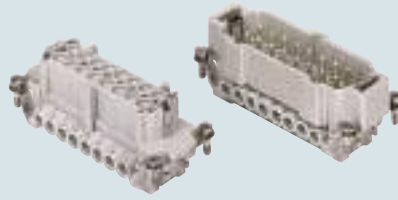
panel supports:

page:

COB 462 - 463

description

inserts,
screw terminal connections



silver plated contacts

part No.

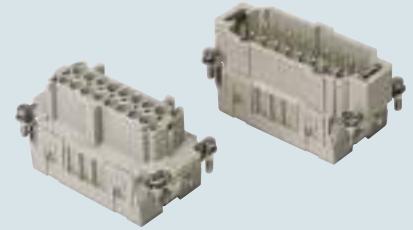
CNEF 16 T
CNEM 16 T

indirect, with plate 1)
female inserts with female contacts
male inserts with male contacts

direct, without plate 2)
female inserts with female contacts
male inserts with male contacts

spring terminal
female inserts with female contacts
male inserts with male contacts

inserts,
spring terminal connections



silver plated contacts

part No.

CSEF 16
CSEM 16

- characteristics according to EN 61984:
16A 500V 6kV 3
16A 400/690V 6kV 2
- cUL - UL for USA and Canada (CNE), UL (CSE), CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 1 \text{ m}\Omega$ (CNE) - $\leq 3 \text{ m}\Omega$ (CSE)
- for maximum current load, see the following load curves inserts, for more information see page 559

diagram CNE 16 poles

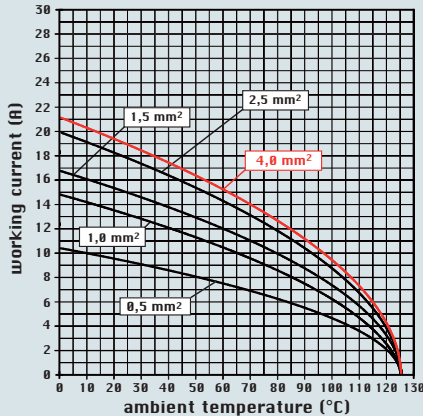
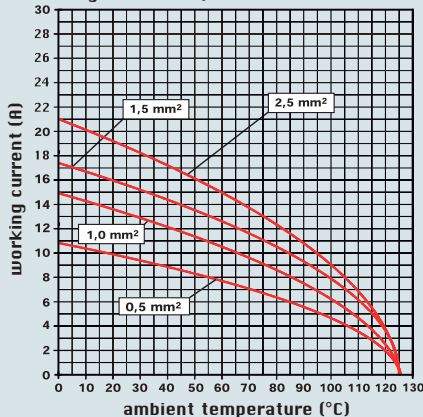
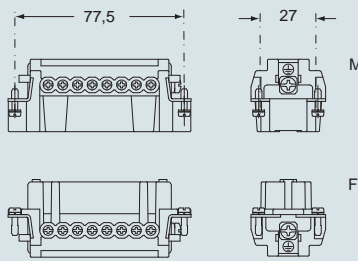


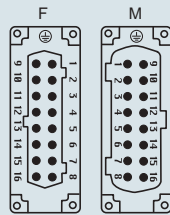
diagram CSE 16 poles



dimensions in mm

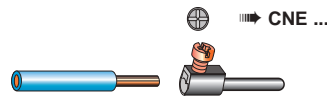


contacts side (front view)

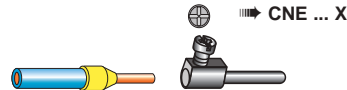


- inserts with plate for section conductors:
0,5 - 4 mm² - AWG 20 - 12
- inserts without plate for section conductors:
0,25 - 2,5 mm² - AWG 24 - 14
- conductors stripping length: 7 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

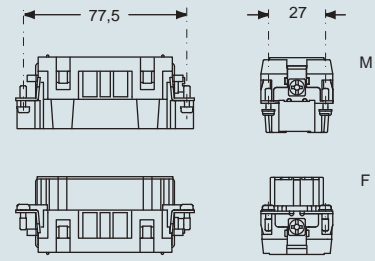
1) for unprepared conductors



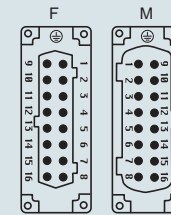
2) for bush terminal conductors



dimensions in mm

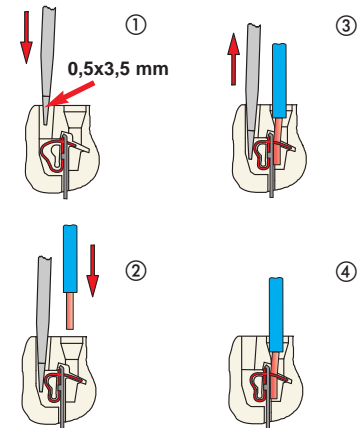


contacts side (front view)



- inserts for section conductors:
0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping length: 9...11 mm

connection with spring terminal



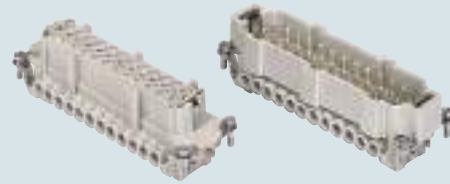
dimensions shown are not binding and may be changed without notice

enclosures:
 size "104.27" page:

C-TYPE IP65/IP66 258 - 266
 C7 IP67, two levers 277
 V-TYPE IP65/IP66, single lever 283/296 - 299
 BIG hoods 316 - 319
 T-TYPE IP65 insulating 332 - 333
 T-TYPE / W IP66 insulating 342 - 343
 HYGIENIC T-TYPE / H IP66/IP69 356 - 357
 HYGIENIC T-TYPE / C IP66/IP69, -50 °C 364 - 365
 W-TYPE for aggressive environments 376
 EMC 395
 central lever 410 - 412
 IP68 432 - 435
 LS-TYPE 456 - 457

panel supports: page:
 COB 462 - 463

inserts,
screw terminal connections



silver plated contacts

inserts,
spring terminal connections

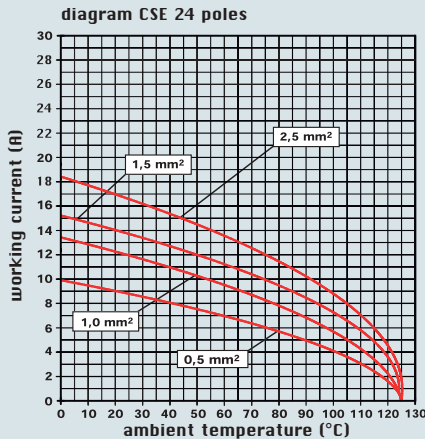
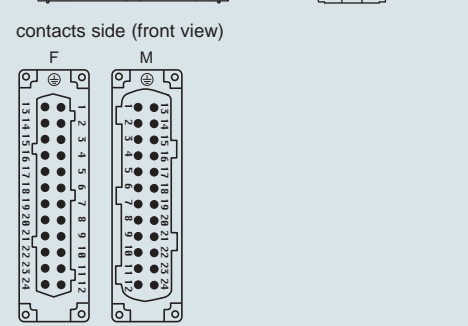
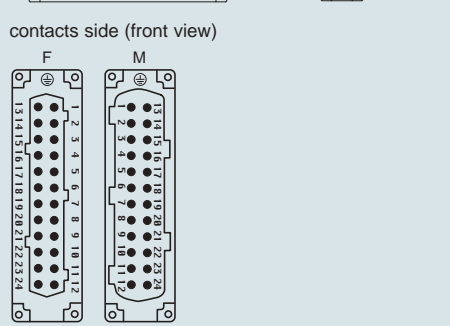
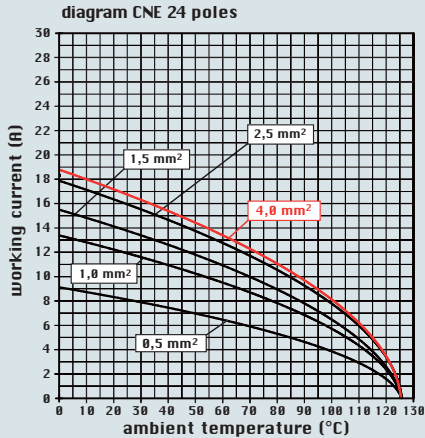
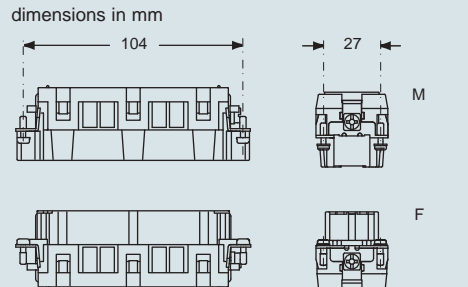
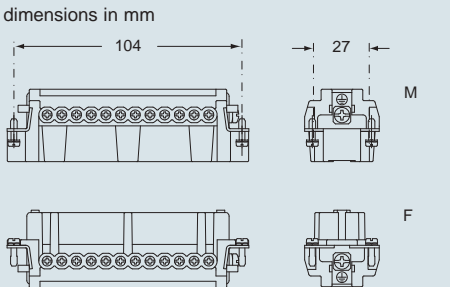


silver plated contacts

description	part No.
indirect, with plate 1) female inserts with female contacts male inserts with male contacts	CNEF 24 T CNEM 24 T
direct, without plate 2) female inserts with female contacts male inserts with male contacts	CNEF 24 TX CNEM 24 TX
spring terminal female inserts with female contacts male inserts with male contacts	CSEF 24 CSEM 24

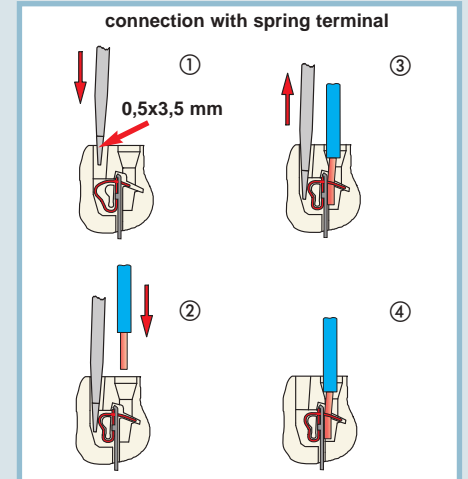
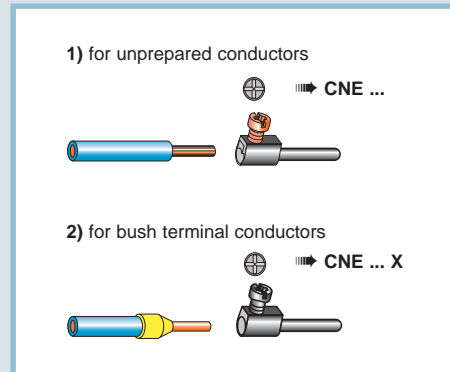
description	part No.
indirect, with plate 1) female inserts with female contacts male inserts with male contacts	CNEF 24 T CNEM 24 T
direct, without plate 2) female inserts with female contacts male inserts with male contacts	CNEF 24 TX CNEM 24 TX
spring terminal female inserts with female contacts male inserts with male contacts	CSEF 24 CSEM 24

- characteristics according to EN 61984:
16A 500V 6kV 3
16A 400/690V 6kV 2
 - cUL - UL for USA and Canada (CNE), UL (CSE), CSA, CCC *, GL, EAC certified
 * CQC certification being applied for
 - rated voltage according to UL/CSA: 600V
 - insulation resistance: $\geq 10 \text{ G}\Omega$
 - ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
 - are made of self-extinguishing thermoplastic resin UL 94 V0
 - mechanical life: ≥ 500 cycles
 - contact resistance: $\leq 1 \text{ m}\Omega$ (CNE) - $\leq 3 \text{ m}\Omega$ (CSE)
 - for maximum current load, see the following load curves inserts, for more information see page 559



- inserts with plate for section conductors:
 0,5 - 4 mm² - AWG 20 - 12
 - inserts without plate for section conductors:
 0,25 - 2,5 mm² - AWG 24 - 14
 - conductors stripping length: 7 mm
 - terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

- inserts for section conductors:
 0,14 - 2,5 mm² - AWG 26 - 14
 - conductors stripping length: 9...11 mm



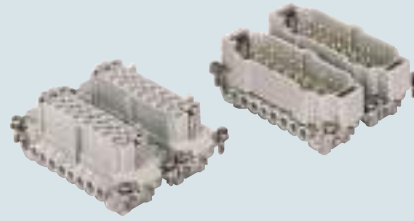
dimensions shown are not binding and may be changed without notice

enclosures:
size "77.62"

page:

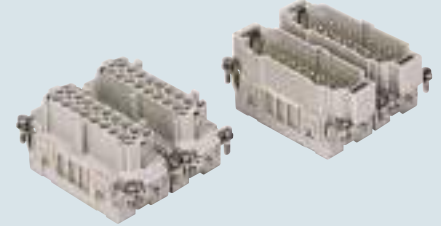
C-TYPE IP65/IP66 267 - 270
W-TYPE for aggressive environments 377

inserts,
screw terminal connections



silver plated contacts

inserts,
spring terminal connections



silver plated contacts

description	part No.	part No.	part No.	part No.
indirect, with plate 1) female inserts, No. (1-16) and (17-32) male inserts, No. (1-16) and (17-32)	CNEF 16 T CNEM 16 T	CNEF 16 TN CNEM 16 TN		
direct, without plate 2) female inserts, No. (1-16) and (17-32) male inserts, No. (1-16) and (17-32)	CNEF 16 TX CNEM 16 TX	CNEF 16 TXN CNEM 16 TXN		
spring terminal female inserts, No. (1-16) and (17-32) male inserts, No. (1-16) and (17-32)			CSEF 16 CSEM 16	CSEF 16 N CSEM 16 N

- characteristics according to EN 61984:
16A 500V 6kV 3
16A 400/690V 6kV 2
- cUL - UL for USA and Canada (CNE), UL (CSE), CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 1 \text{ m}\Omega$ (CNE) - $\leq 3 \text{ m}\Omega$ (CSE)
- for maximum current load, see the following load curves inserts, for more information see page 559

diagram CNE 32 poles

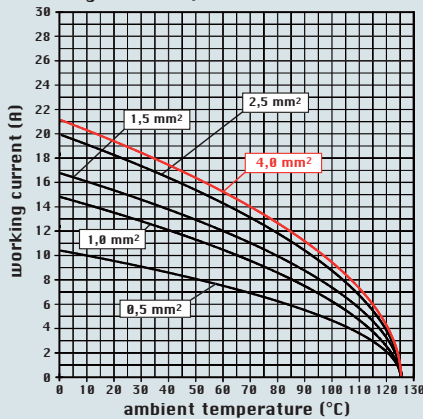
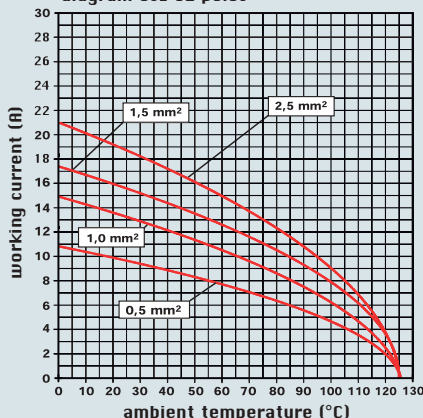
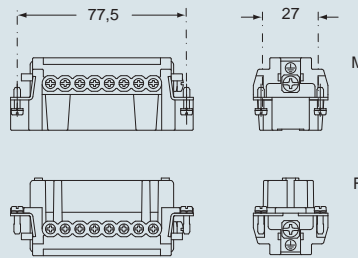


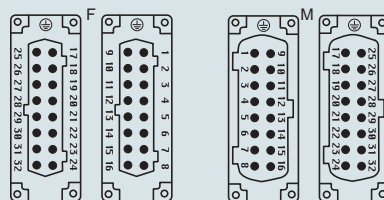
diagram CSE 32 poles



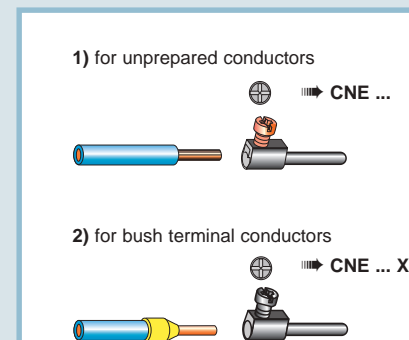
dimensions in mm



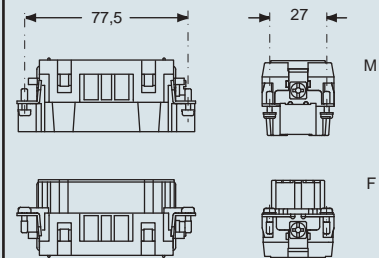
contacts side (front view)



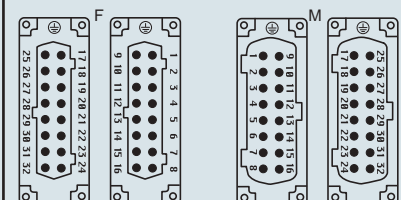
- inserts with plate for section conductors:
0,5 - 4 mm² - AWG 20 - 12
- inserts without plate for section conductors:
0,25 - 2,5 mm² - AWG 24 - 14
- conductors stripping length: 7 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35



dimensions in mm

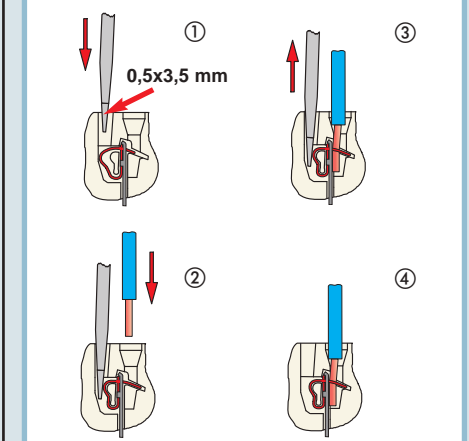


contacts side (front view)



- inserts for section conductors:
0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping length: 9...11 mm

connection with spring terminal

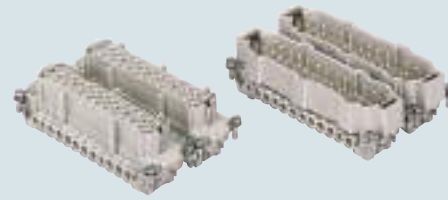


dimensions shown are not binding and may be changed without notice

enclosures:
size "104.62" page:

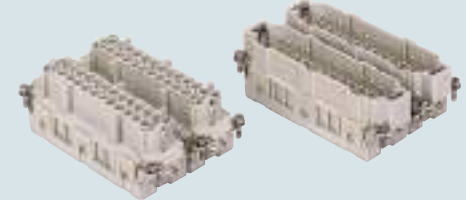
C-TYPE IP65/IP66..... 271
W-TYPE for aggressive environments 378

inserts,
screw terminal connections



silver plated contacts

inserts,
spring terminal connections



silver plated contacts

description	part No.	part No.	part No.	part No.
indirect, with plate 1) female inserts, No. (1-24) and (25-48) male inserts, No. (1-24) and (25-48)	CNEF 24 T CNEM 24 T	CNEF 24 TN CNEM 24 TN		
direct, without plate 2) female inserts, No. (1-24) and (25-48) male inserts, No. (1-24) and (25-48)	CNEF 24 TX CNEM 24 TX	CNEF 24 TXN CNEM 24 TXN		
spring terminal female inserts, No. (1-24) and (25-48) male inserts, No. (1-24) and (25-48)			CSEF 24 CSEM 24	CSEF 24 N CSEM 24 N

- characteristics according to EN 61984:
16A 500V 6kV 3
16A 400/690V 6kV 2
- cUL - UL for USA and Canada (CNE), UL (CSE), CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 1 \text{ m}\Omega$ (CNE) - $\leq 3 \text{ m}\Omega$ (CSE)
- for maximum current load, see the following load curves inserts, for more information see page 559

diagram CNE 48 poles

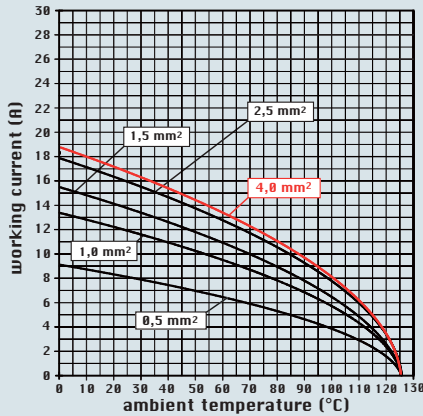
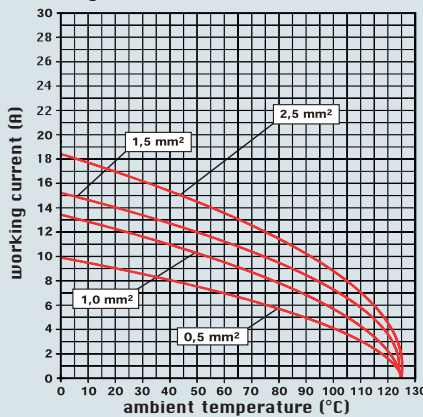
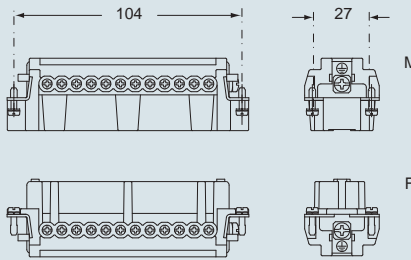


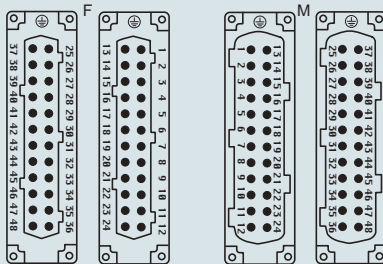
diagram CSE 48 poles



dimensions in mm



contacts side (front view)

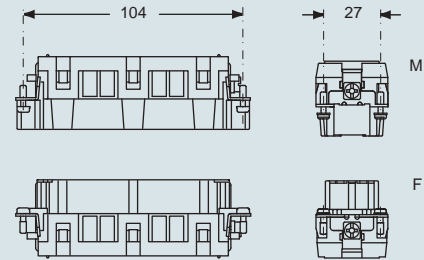


- inserts with plate for section conductors:
0,5 - 4 mm² - AWG 20 - 12
- inserts without plate for section conductors:
0,25 - 2,5 mm² - AWG 24 - 14
- conductors stripping length: 7 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

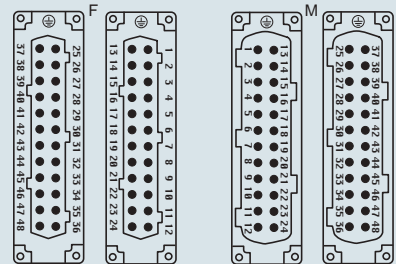
1) for unprepared conductors

2) for bush terminal conductors

dimensions in mm



contacts side (front view)



- inserts for section conductors:
0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping length: 9...11 mm

connection with spring terminal

dimensions shown are not binding and may be changed without notice

enclosures:
size "44.27" page:

C-TYPE IP65/IP66	240 - 243
C7 IP67, single lever	274
V-TYPE IP65/IP66, single lever	280/284 - 286
BIG hoods	304 - 306
T-TYPE IP65 insulating	326 - 327
T-TYPE / W IP66 insulating	336 - 337
HYGIENIC T-TYPE / H IP66/IP69	350 - 351
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	358 - 359
W-TYPE for aggressive environments	373
EMC	392
central lever	404 - 405
IP68	420 - 423
LS-TYPE	450 - 451

panel supports: page:
COB 462 - 463

inserts, crimp connections



16A crimp contacts
normal and for advanced opening
silver and gold plated

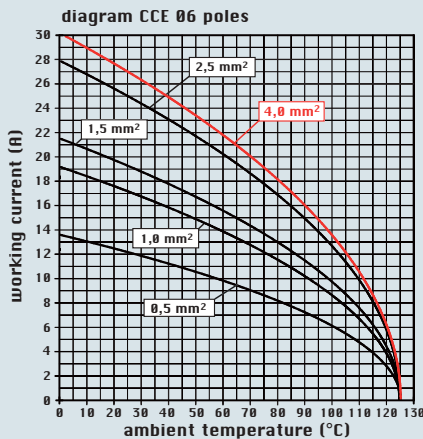


description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	CCEF 06 CCEM 06		
16A female contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves		CCFA 0.3 CCFA 0.5 CCFA 0.7 CCFA 1.0 CCFA 1.5 CCFA 2.5 CCFA 3.0 CCFA 4.0	CCFD 0.3 CCFD 0.5 CCFD 0.7 CCFD 1.0 CCFD 1.5 CCFD 2.5 CCFD 3.0 CCFD 4.0
16A male contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves		CCMA 0.3 CCMA 0.5 CCMA 0.7 CCMA 1.0 CCMA 1.5 CCMA 2.5 CCMA 3.0 CCMA 4.0	CCMD 0.3 CCMD 0.5 CCMD 0.7 CCMD 1.0 CCMD 1.5 CCMD 2.5 CCMD 3.0 CCMD 4.0
16A male crimp contacts for advanced opening 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves		CC 0.5 AN CC 0.7 AN CC 1.0 AN CC 1.5 AN CC 2.5 AN	

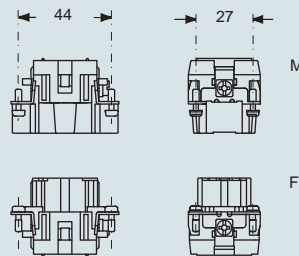
silver plated

gold plated 1)

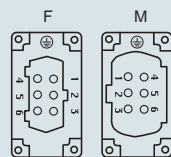
- characteristics according to EN 61984:
16A 500V 6kV 3
16A 400/690V 6kV 2
- UL, CSA, GL, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 559



dimensions in mm

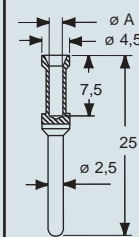


contacts side (front view)

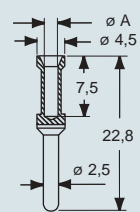


dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC...AN contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	(mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

dimensions shown are not binding and may be changed without notice

enclosures:
size "57.27" page:

C-TYPE IP65/IP66 244 - 249
 C7 IP67, two levers 275
 V-TYPE IP65/IP66, single lever 281/288 - 291
 BIG hoods 308 - 311
 T-TYPE IP65 insulating 328 - 329
 T-TYPE / W IP66 insulating 338 - 339
 HYGIENIC T-TYPE / H IP66/IP69 352 - 353
 HYGIENIC T-TYPE / C IP66/IP69, -50 °C 360 - 361
 W-TYPE for aggressive environments 374
 EMC 393
 central lever 406 - 407
 IP68 424 - 427
 LS-TYPE 452 - 453

panel supports: page:
COB 462 - 463

inserts, crimp connections



16A crimp contacts
normal and for advanced opening
silver and gold plated

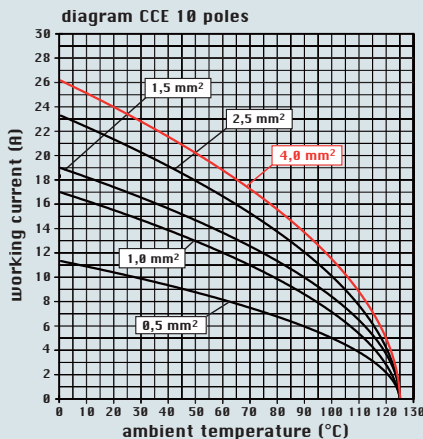


description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	CCEF 10 CCEM 10		
16A female contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves		CCFA 0.3 CCFA 0.5 CCFA 0.7 CCFA 1.0 CCFA 1.5 CCFA 2.5 CCFA 3.0 CCFA 4.0	CCFD 0.3 CCFD 0.5 CCFD 0.7 CCFD 1.0 CCFD 1.5 CCFD 2.5 CCFD 3.0 CCFD 4.0
16A male contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves		CCMA 0.3 CCMA 0.5 CCMA 0.7 CCMA 1.0 CCMA 1.5 CCMA 2.5 CCMA 3.0 CCMA 4.0	CCMD 0.3 CCMD 0.5 CCMD 0.7 CCMD 1.0 CCMD 1.5 CCMD 2.5 CCMD 3.0 CCMD 4.0
16A male crimp contacts for advanced opening 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves		CC 0.5 AN CC 0.7 AN CC 1.0 AN CC 1.5 AN CC 2.5 AN	

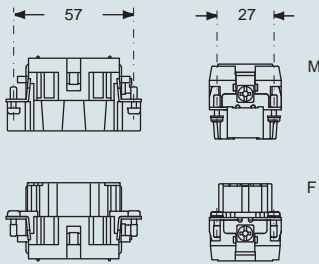
silver plated

gold plated 1)

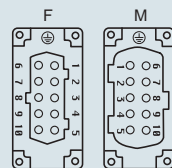
- characteristics according to EN 61984:
16A 500V 6kV 3
16A 400/690V 6kV 2
- UL, CSA, GL, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 559



dimensions in mm

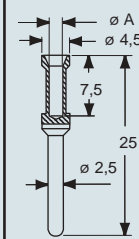


contacts side (front view)

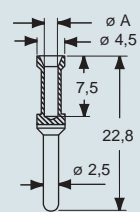


dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC...AN contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	(mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

enclosures:
size "77.27" page:

C-TYPE IP65/IP66	250 - 256
C7 IP67, two levers	276
V-TYPE IP65/IP66, single lever	282/292 - 295
BIG hoods	312 - 315
T-TYPE IP65 insulating	330 - 331
T-TYPE / W IP66 insulating	340 - 341
HYGIENIC T-TYPE / H IP66/IP69	354 - 355
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	362 - 363
W-TYPE for aggressive environments	375
EMC	394
central lever	408 - 409
IP68	428 - 431
LS-TYPE	454 - 455

panel supports: page:
COB

description

without contacts (to be ordered separately)
female inserts for female contacts
male inserts for male contacts

16A female contacts		
0,14-0,37 mm ²	AWG 26-22	three grooves
0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves
3 mm ²	AWG 12	one wide groove
4 mm ²	AWG 12	with no grooves

16A male contacts		
0,14-0,37 mm ²	AWG 26-22	three grooves
0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves
3 mm ²	AWG 12	one wide groove
4 mm ²	AWG 12	with no grooves

16A male crimp contacts for advanced opening		
0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves

inserts, crimp connections



part No.

CCEF 16
CCEM 16

16A crimp contacts
normal and for advanced opening
silver and gold plated



part No.

part No.

CCFA 0.3
CCFA 0.5
CCFA 0.7
CCFA 1.0
CCFA 1.5
CCFA 2.5
CCFA 3.0
CCFA 4.0

silver plated

CCFD 0.3
CCFD 0.5
CCFD 0.7
CCFD 1.0
CCFD 1.5
CCFD 2.5
CCFD 3.0
CCFD 4.0

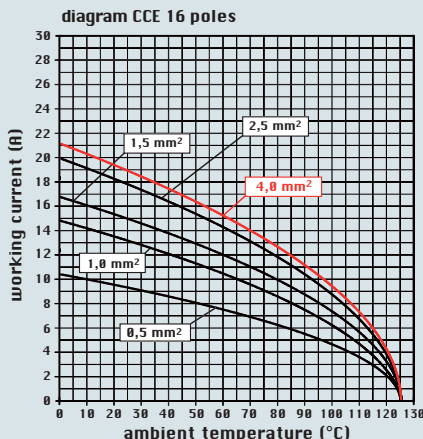
gold plated 1)

CCMA 0.3
CCMA 0.5
CCMA 0.7
CCMA 1.0
CCMA 1.5
CCMA 2.5
CCMA 3.0
CCMA 4.0

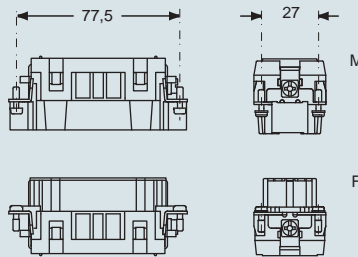
CCMD 0.3
CCMD 0.5
CCMD 0.7
CCMD 1.0
CCMD 1.5
CCMD 2.5
CCMD 3.0
CCMD 4.0

CC 0.5 AN
CC 0.7 AN
CC 1.0 AN
CC 1.5 AN
CC 2.5 AN

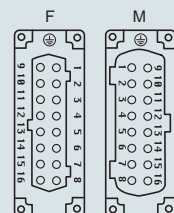
- characteristics according to EN 61984:
16A 500V 6kV 3
16A 400/690V 6kV 2
- UL, CSA, GL, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 559



dimensions in mm

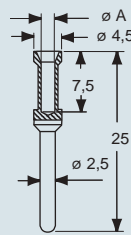


contacts side (front view)

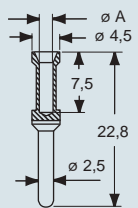


dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC...AN contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	(mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

dimensions shown are not binding and may be changed without notice

enclosures:

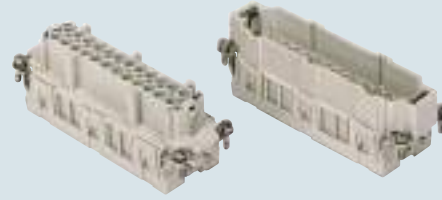
size "104.27" page:

C-TYPE IP65/IP66	258 - 266
C7 IP67, two levers	277
V-TYPE IP65/IP66, single lever	283296 - 299
BIG hoods	316 - 319
T-TYPE IP65 insulating	332 - 333
T-TYPE / W IP66 insulating	342 - 343
HYGIENIC T-TYPE / H IP66/IP69	356 - 357
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	364 - 365
W-TYPE for aggressive environments	376
EMC	395
central lever	410 - 412
IP68	432 - 435
LS-TYPE	456 - 457

panel supports:

COB

inserts, crimp connections



16A crimp contacts normal and for advanced opening silver and gold plated



description	part No.	part No.	part No.
-------------	----------	----------	----------

without contacts (to be ordered separately)
female inserts for female contacts
male inserts for male contacts

CCEF 24
CCEM 24

16A female contacts

0,14-0,37 mm ²	AWG 26-22	three grooves
0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves
3 mm ²	AWG 12	one wide groove
4 mm ²	AWG 12	with no grooves

16A male contacts

0,14-0,37 mm ²	AWG 26-22	three grooves
0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves
3 mm ²	AWG 12	one wide groove
4 mm ²	AWG 12	with no grooves

16A male crimp contacts for advanced opening

0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves

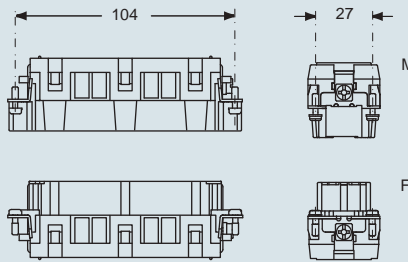
CCFA 0.3	silver plated	CCFD 0.3	gold plated 1)
CCFA 0.5		CCFD 0.5	
CCFA 0.7		CCFD 0.7	
CCFA 1.0		CCFD 1.0	
CCFA 1.5		CCFD 1.5	
CCFA 2.5		CCFD 2.5	
CCFA 3.0		CCFD 3.0	
CCFA 4.0		CCFD 4.0	

CCMA 0.3	CCMD 0.3
CCMA 0.5	CCMD 0.5
CCMA 0.7	CCMD 0.7
CCMA 1.0	CCMD 1.0
CCMA 1.5	CCMD 1.5
CCMA 2.5	CCMD 2.5
CCMA 3.0	CCMD 3.0
CCMA 4.0	CCMD 4.0

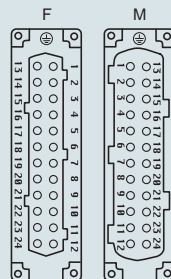
CC 0.5 AN
CC 0.7 AN
CC 1.0 AN
CC 1.5 AN
CC 2.5 AN

- characteristics according to EN 61984:
- 16A 500V 6kV 3**
- 16A 400/690V 6kV 2**
- UL, CSA, GL, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 559

dimensions in mm

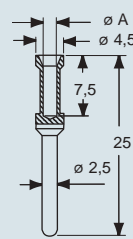


contacts side (front view)

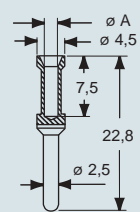


dimensions in mm

CCF and CCM



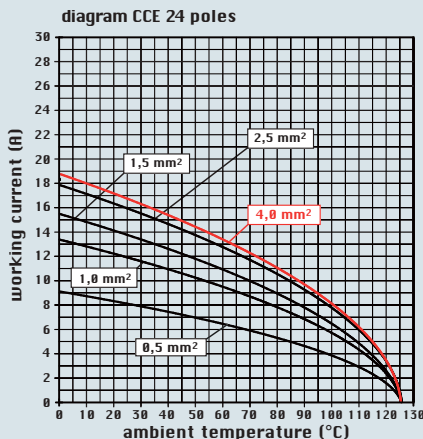
CC...AN



CCF, CCM and CC...AN contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	(mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481



- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

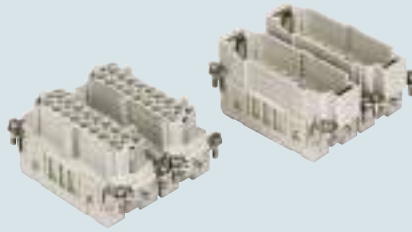
enclosures:
size "77.62"

page:

C-TYPE IP65/IP66 267 - 270

W-TYPE for aggressive environments 377

inserts, crimp connections



16A crimp contacts
normal and for advanced opening
silver and gold plated



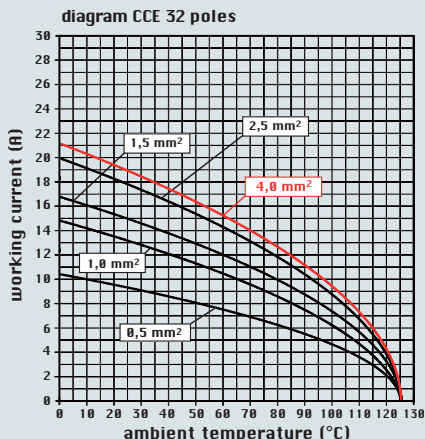
- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

description	part No.	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts, No. (1-16) and (17-32) male inserts, No. (1-16) and (17-32)	CCEF 16 CCEM 16	CCEF 16 N CCEM 16 N		
16A female contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves			CCFA 0.3 CCFA 0.5 CCFA 0.7 CCFA 1.0 CCFA 1.5 CCFA 2.5 CCFA 3.0 CCFA 4.0	CCFD 0.3 CCFD 0.5 CCFD 0.7 CCFD 1.0 CCFD 1.5 CCFD 2.5 CCFD 3.0 CCFD 4.0
16A male contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves			CCMA 0.3 CCMA 0.5 CCMA 0.7 CCMA 1.0 CCMA 1.5 CCMA 2.5 CCMA 3.0 CCMA 4.0	CCMD 0.3 CCMD 0.5 CCMD 0.7 CCMD 1.0 CCMD 1.5 CCMD 2.5 CCMD 3.0 CCMD 4.0
16A male crimp contacts for advanced opening 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves			CC 0.5 AN CC 0.7 AN CC 1.0 AN CC 1.5 AN CC 2.5 AN	

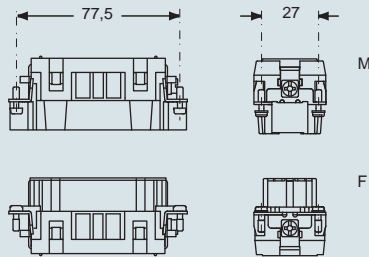
silver plated

gold plated 1)

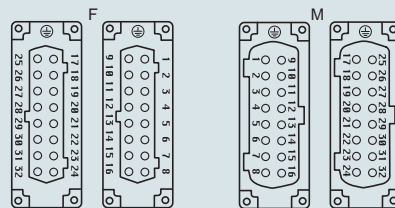
- characteristics according to EN 61984:
16A 500V 6kV 3
16A 400/690V 6kV 2
- UL, CSA, GL, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 559



dimensions in mm

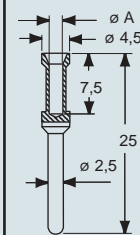


contacts side (front view)

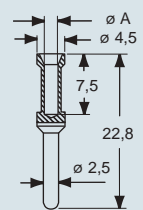


dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC...AN contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	(mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

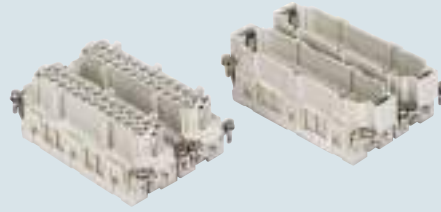
1) basic or high thickness gold plating page 481

dimensions shown are not binding and may be changed without notice

enclosures:
size "104.62" page:

C-TYPE IP65/IP66..... 271
W-TYPE for aggressive environments 378

inserts, crimp connections



16A crimp contacts
normal and for advanced opening
silver and gold plated



- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

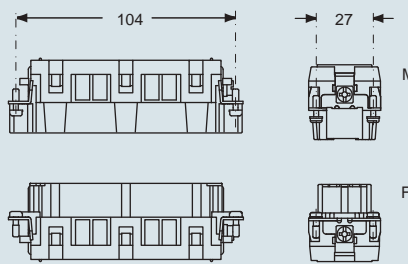
description	part No.	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts, No. (1-24) and (25-48) male inserts, No. (1-24) and (25-48)	CCEF 24 CCEM 24	CCEF 24 N CCEM 24 N		
16A female contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves			CCFA 0.3 CCFA 0.5 CCFA 0.7 CCFA 1.0 CCFA 1.5 CCFA 2.5 CCFA 3.0 CCFA 4.0	CCFD 0.3 CCFD 0.5 CCFD 0.7 CCFD 1.0 CCFD 1.5 CCFD 2.5 CCFD 3.0 CCFD 4.0
16A male contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves			CCMA 0.3 CCMA 0.5 CCMA 0.7 CCMA 1.0 CCMA 1.5 CCMA 2.5 CCMA 3.0 CCMA 4.0	CCMD 0.3 CCMD 0.5 CCMD 0.7 CCMD 1.0 CCMD 1.5 CCMD 2.5 CCMD 3.0 CCMD 4.0
16A male crimp contacts for advanced opening 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves			CC 0.5 AN CC 0.7 AN CC 1.0 AN CC 1.5 AN CC 2.5 AN	

silver plated

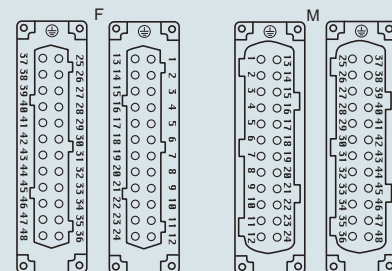
gold plated 1)

- characteristics according to EN 61984:
16A 500V 6kV 3
16A 400/690V 6kV 2
- UL, CSA, GL, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 559

dimensions in mm

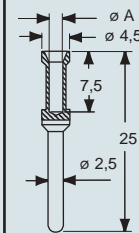


contacts side (front view)

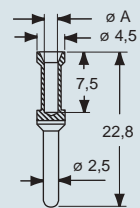


dimensions in mm

CCF and CCM



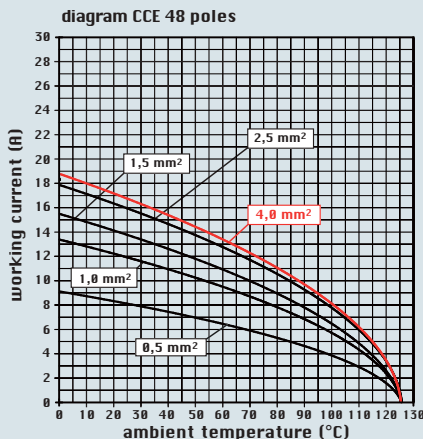
CC...AN



CCF, CCM and CC..AN contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	(mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481



dimensions shown are not binding and may be changed without notice

CCE

enclosures:
 size "44.27" page:
 for 180 °C 398

inserts,
 screw terminal connections



silver
 plated
 contacts

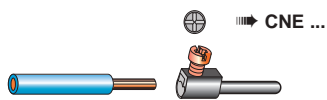
description

part No.

indirect, with plate 1), use in up to 180 °C
 female inserts with female contacts, brown
 male inserts with male contacts, brown

CNEF 06 RY
 CNEM 06 RY

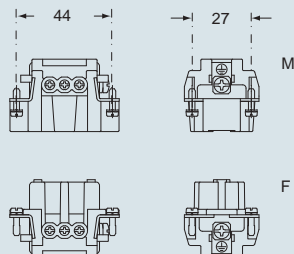
1) for unprepared conductors



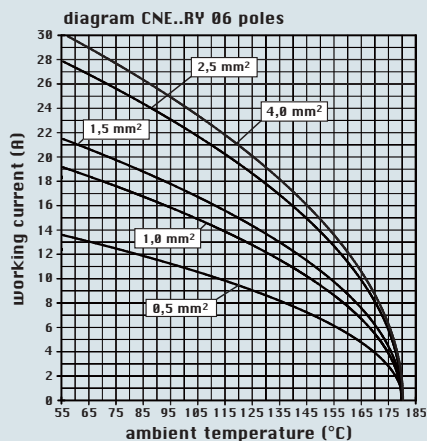
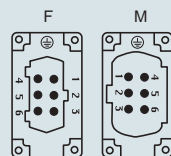
- characteristics according to EN 61984:

- 16A 500V 6kV 3**
- 16A 400/690V 6kV 2**
- cUL - UL for USA and Canada, CSA, CCC *, GL, EAC certified; * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: -40 °C ... +180 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 250 cycles
- contact resistance: $\leq 1 \text{ m}\Omega$
- for maximum current load, see the following load curves inserts, for more information see page 560

dimensions in mm



contacts side (front view)



- inserts with plate for section conductors:
 0,5 - 4 mm² - AWG 20 - 12
- conductors stripping length: 7 mm
- terminal screw torque: 0,5 Nm (4,4 lb.in), for more information see page 34 and 35

dimensions shown are not binding
 and may be changed without notice

enclosures:
 size "57.27" page:
 for 180 °C 399

inserts,
 screw terminal connections



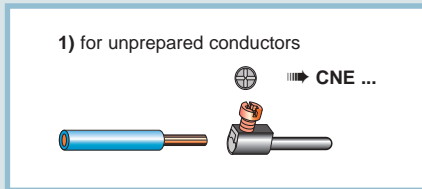
silver
 plated
 contacts

description

part No.

indirect, with plate 1), use in up to 180 °C
 female inserts with female contacts, brown
 male inserts with male contacts, brown

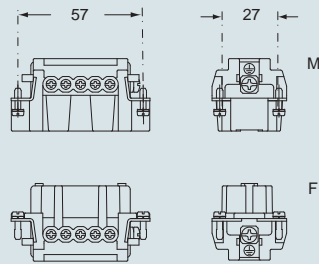
CNEF 10 RY
 CNEM 10 RY



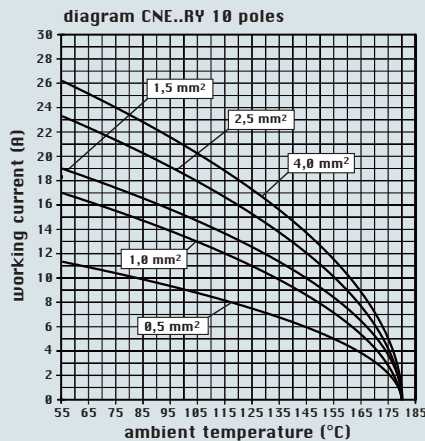
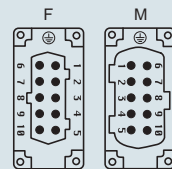
- characteristics according to EN 61984:

- 16A 500V 6kV 3**
- 16A 400/690V 6kV 2**
- cUL - UL for USA and Canada, CSA, CCC *, GL, EAC certified; * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: -40 °C ... +180 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 250 cycles
- contact resistance: $\leq 1 \text{ m}\Omega$
- for maximum current load, see the following load curves inserts, for more information see page 560

dimensions in mm



contacts side (front view)

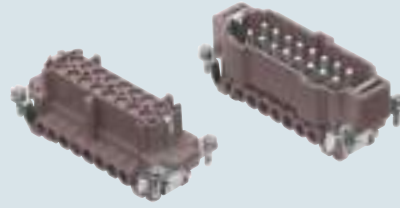


- inserts with plate for section conductors:
 0,5 - 4 mm² - AWG 20 - 12
- conductors stripping length: 7 mm
- terminal screw torque: 0,5 Nm (4,4 lb.in), for more information see page 34 and 35

dimensions shown are not binding
 and may be changed without notice

enclosures:
 size "77.27" page:
 for 180 °C 400

inserts,
 screw terminal connections



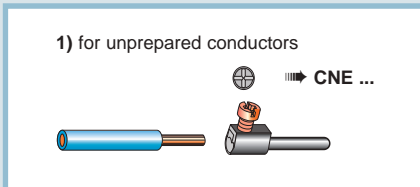
silver
 plated
 contacts

description

part No.

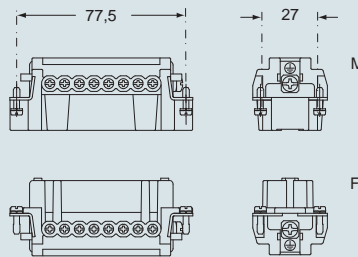
indirect, with plate 1), use in up to 180 °C
 female inserts with female contacts, brown
 male inserts with male contacts, brown

CNEF 16 RY
 CNEM 16 RY

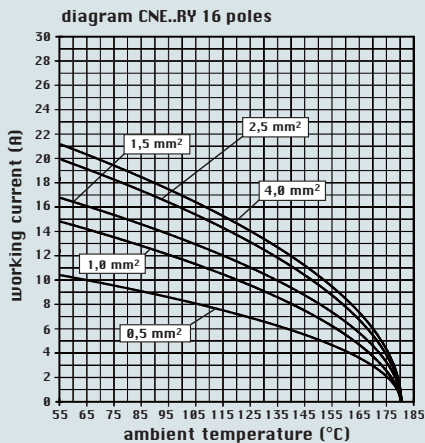
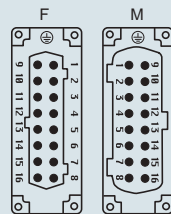


- characteristics according to EN 61984:
16A 500V 6kV 3
16A 400/690V 6kV 2
- cUL - UL for USA and Canada, CSA, CCC *, GL, EAC certified; * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: -40 °C ... +180 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 250 cycles
- contact resistance: $\leq 1 \text{ m}\Omega$
- for maximum current load, see the following load curves inserts, for more information see page 560

dimensions in mm



contacts side (front view)

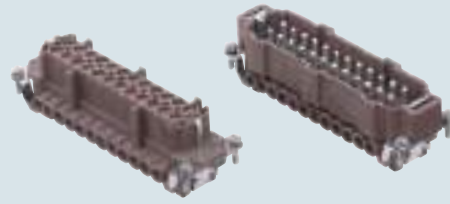


- inserts with plate for section conductors:
 0,5 - 4 mm² - AWG 20 - 12
- conductors stripping length: 7 mm
- terminal screw torque: 0,5 Nm (4,4 lb.in), for more information see page 34 and 35

dimensions shown are not binding
 and may be changed without notice

enclosures:
 size "104.27" page:
 for 180 °C 401

inserts,
 screw terminal connections



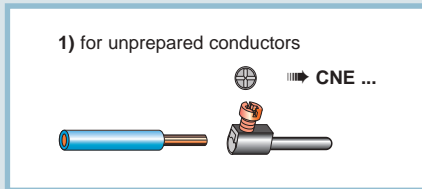
silver
 plated
 contacts

description

part No.

indirect, with plate 1), use in up to 180 °C
 female inserts with female contacts, brown
 male inserts with male contacts, brown

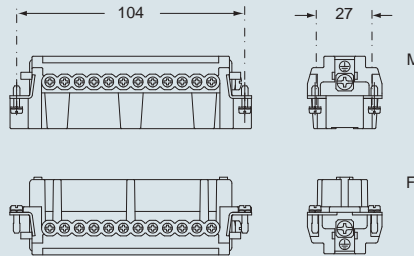
CNEF 24 RY
 CNEM 24 RY



- characteristics according to EN 61984:

- 16A 500V 6kV 3**
- 16A 400/690V 6kV 2**
- cUL - UL for USA and Canada, CSA, CCC *, GL, EAC certified; * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: -40 °C ... +180 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 250 cycles
- contact resistance: $\leq 1 \text{ m}\Omega$
- for maximum current load, see the following load curves inserts, for more information see page 560

dimensions in mm



contacts side (front view)

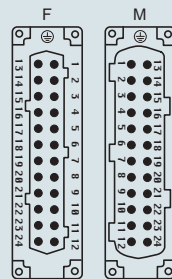
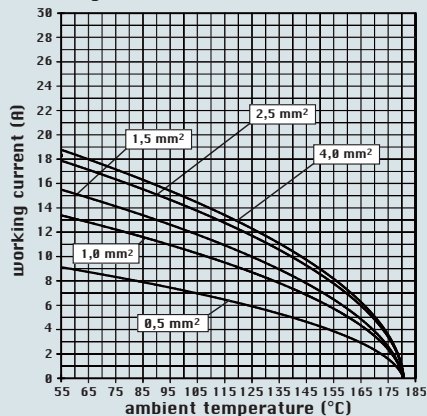


diagram CNE..RY 24 poles

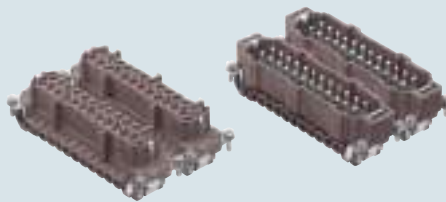


- inserts with plate for section conductors:
 0,5 - 4 mm² - AWG 20 - 12
- conductors stripping length: 7 mm
- terminal screw torque: 0,5 Nm (4,4 lb.in), for more information see page 34 and 35

dimensions shown are not binding
 and may be changed without notice

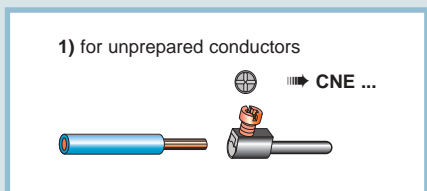
enclosures:
 size "104.62" page:
 for 180 °C 402

inserts,
 screw terminal connections



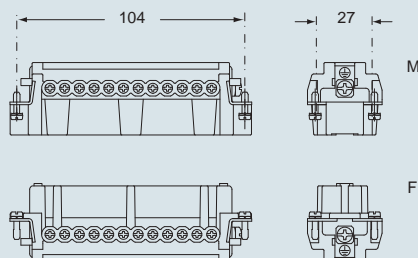
silver
 plated
 contacts

description	part No.	part No.
indirect, with plate 1), use in temperatures up to 180 °C female inserts, No.(1-24) and (25-48), brown male inserts, No. (1-24) and (25-48), brown	CNEF 24 RY CNEM 24 RY	CNEF 24 RYN CNEM 24 RYN

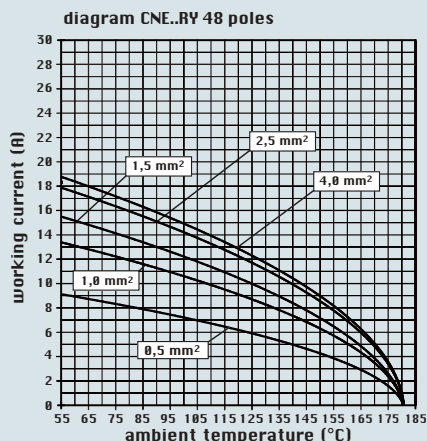
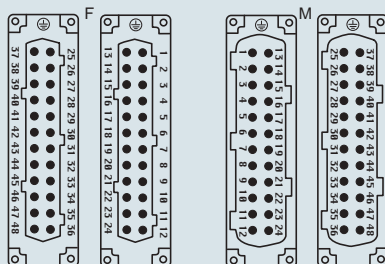


- characteristics according to EN 61984:
16A 500V 6kV 3
16A 400/690V 6kV 2
- cUL - UL for USA and Canada, CSA, CCC *, GL, EAC certified; * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: -40 °C ... +180 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 250 cycles
- contact resistance: $\leq 1 \text{ m}\Omega$
- for maximum current load, see the following load curves inserts, for more information see page 560

dimensions in mm



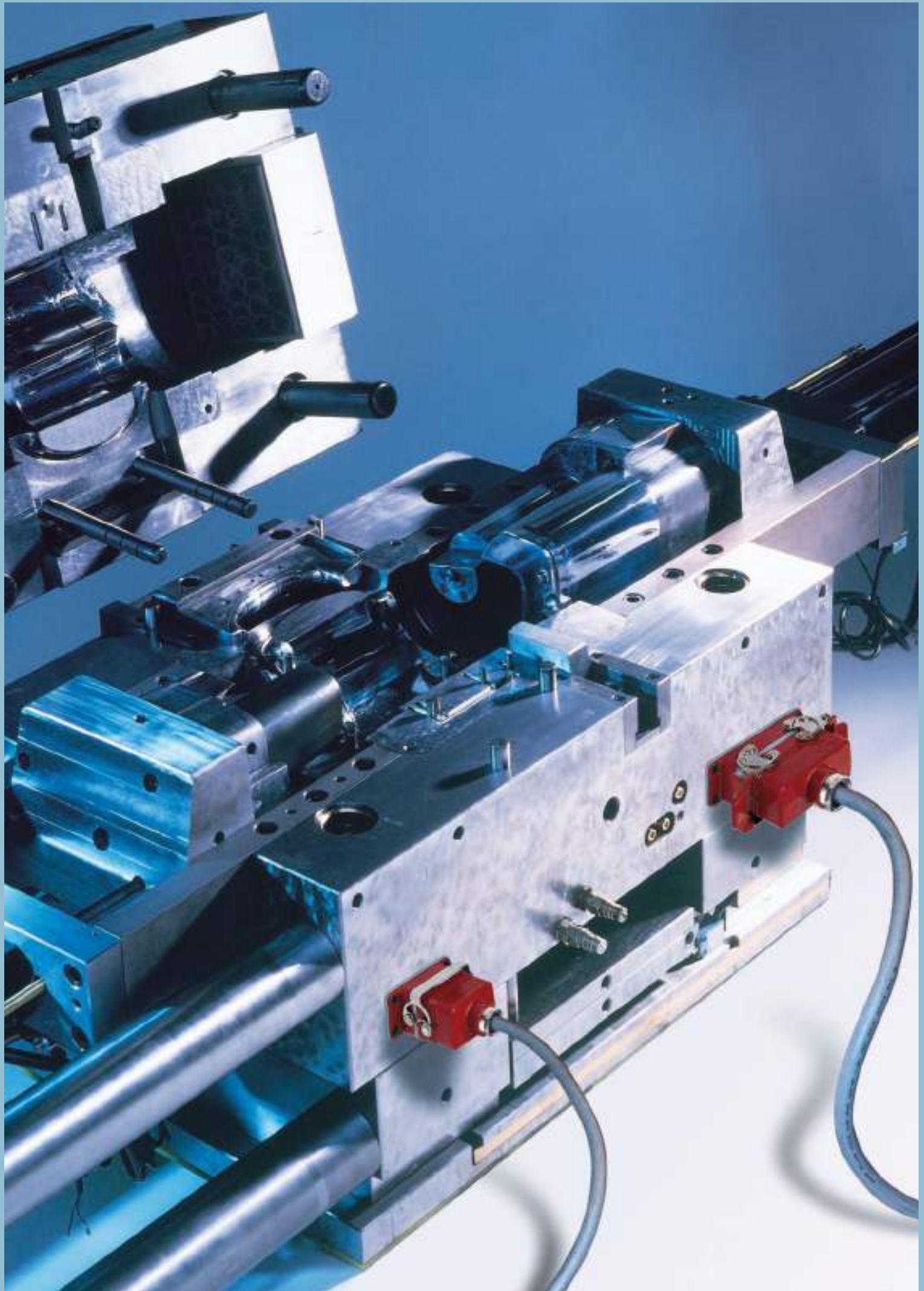
contacts side (front view)



- inserts with plate for section conductors:
 0,5 - 4 mm² - AWG 20 - 12
- conductors stripping length: 7 mm
- terminal screw torque: 0,5 Nm (4,4 lb.in), for more information see page 34 and 35

dimensions shown are not binding
 and may be changed without notice

CNE...RY



enclosures:
size "44.27"

page:

C-TYPE IP65/IP66	240 - 243
C7 IP67, single lever	274
V-TYPE IP65/IP66, single lever	280/284 - 286
BIG hoods	304 - 306
T-TYPE IP65 insulating	326 - 327
T-TYPE / W IP66 insulating	336 - 337
HYGIENIC T-TYPE / H IP66/IP69	350 - 351
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	358 - 359
W-TYPE for aggressive environments	373
EMC	392
central lever	404 - 405
IP68	420 - 423
LS-TYPE	450 - 451

panel supports:

page:

COB	462 - 463
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inserts,
connection with dual spring
terminal per pole



silver
plated
contacts

description

part No.

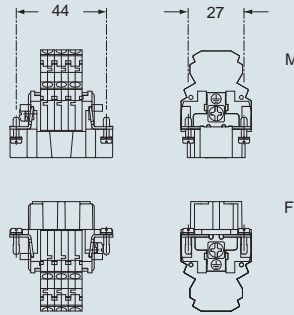
dual spring terminal per pole
socket inserts with female contacts
plug inserts with male contacts

CSSF 06
CSSM 06

The CSS series inserts can be inserted in flush mounted enclosures or in fixed / portable high enclosures.

dimensions in mm

- can be mated with CNE, CSE, CCE, CTE, CTSE, CSH inserts



- characteristics according to EN 61984:

- 16A 500V 6kV 3**
- 16A 400/690V 6kV 2**
- UL, CSA, CCC *, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 3 \text{ m}\Omega$
- for maximum current load, see the following load curves inserts, for more information see page 560

contacts side (front view)

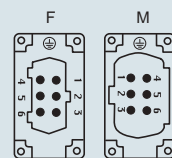
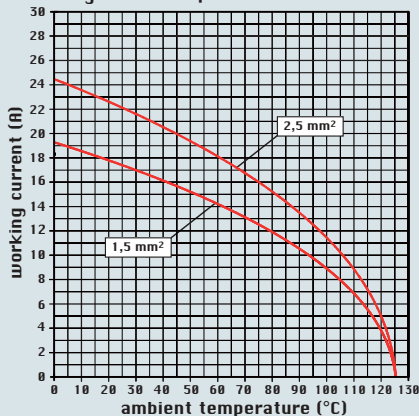
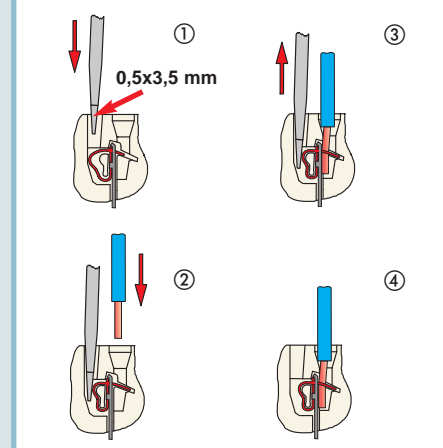


diagram CSS 06 poles



- inserts with plate, for section conductors: 0.14 - 2.5 mm² - AWG 26 - 14
- conductors stripping length: 9...11 mm

connection with spring terminal



dimensions shown are not binding
and may be changed without notice

CSS

enclosures:
size "57.27"

page:

C-TYPE IP65/IP66	244 - 249
C7 IP67, two levers	275
V-TYPE IP65/IP66, single lever	281/288 - 291
BIG hoods	308 - 311
T-TYPE IP65 insulating	328 - 329
T-TYPE / W IP66 insulating	338 - 339
HYGIENIC T-TYPE / H IP66/IP69	352 - 353
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	360 - 361
W-TYPE for aggressive environments	374
EMC	393
central lever	406 - 407
IP68	424 - 427
LS-TYPE	452 - 453
panel supports: page:	
COB	462 - 463

inserts,
connection with dual spring
terminal per pole



silver
plated
contacts

description

part No.

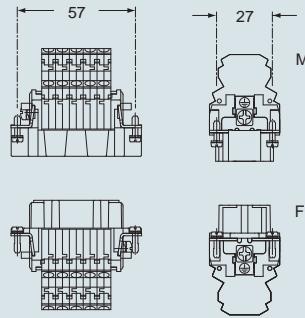
dual spring terminal per pole
socket inserts with female contacts
plug inserts with male contacts

CSSF 10
CSSM 10

The CSS series inserts can be inserted in flush mounted enclosures or in fixed / portable high enclosures.

dimensions in mm

- can be mated with CNE, CSE, CCE, CTE, CTSE, CSH inserts



- characteristics according to EN 61984:

16A 500V 6kV 3
16A 400/690V 6kV 2

- UL, CSA, CCC *, EAC certified

* CQC certification being applied for- rated voltage according to UL/CSA: 600V

- insulation resistance: $\geq 10 \text{ G}\Omega$

- ambient temperature limit: -40 °C ... +125 °C

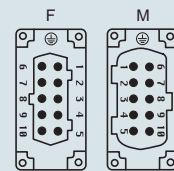
- are made of self-extinguishing thermoplastic resin UL 94 V0

- mechanical life: ≥ 500 cycles

- contact resistance: $\leq 3 \text{ m}\Omega$

- for maximum current load, see the following load curves inserts, for more information see page 560

contacts side (front view)

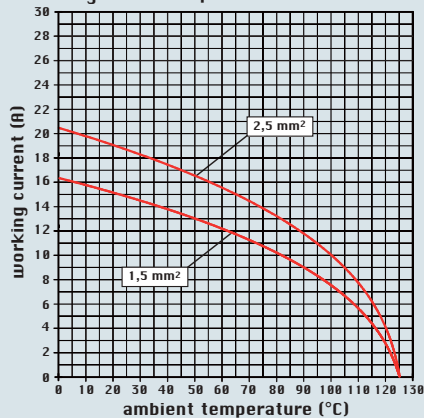


- inserts with plate, for section conductors:

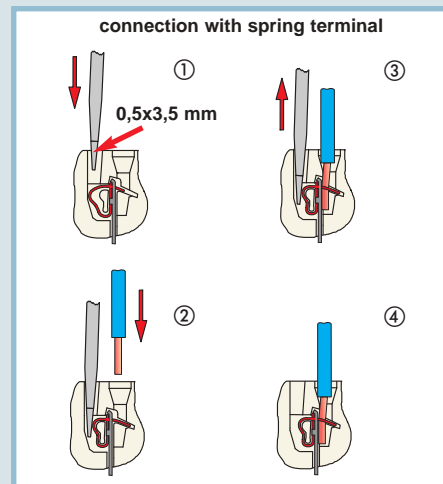
0.14 - 2.5 mm² - AWG 26 - 14

- conductors stripping length: 9...11 mm

diagram CSS 10 poles



dimensions shown are not binding
and may be changed without notice



enclosures:
size "77.27"

page:

C-TYPE IP65/IP66	250 - 256
C7 IP67, two levers	276
V-TYPE IP65/IP66, single lever	282/292 - 295
BIG hoods	312 - 315
T-TYPE IP65 insulating	330 - 331
T-TYPE / W IP66 insulating	340 - 341
HYGIENIC T-TYPE / H IP66/IP69	354 - 355
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	362 - 363
W-TYPE for aggressive environments	375
EMC	394
central lever	408 - 409
IP68	428 - 431
LS-TYPE	454 - 455

panel supports:

page:

COB	462 - 463
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description

part No.

dual spring terminal per pole
socket inserts with female contacts
plug inserts with male contacts

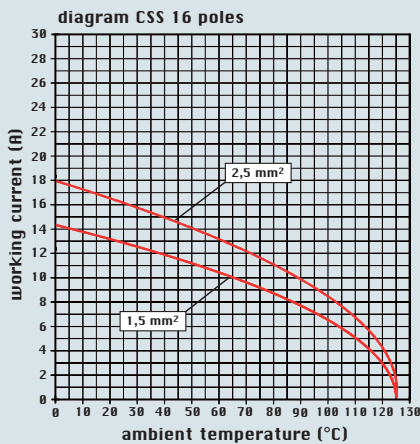
CSSF 16
CSSM 16

The CSS series inserts can be inserted in flush mounted enclosures or in fixed / portable high enclosures.

- can be mated with CNE, CSE, CCE, CTE, CTSE, CSH inserts

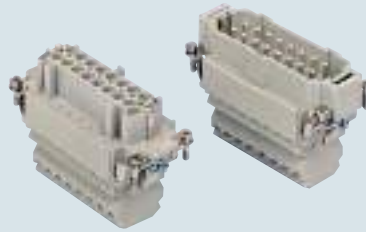
- characteristics according to EN 61984:

- 16A 500V 6kV 3**
- 16A 400/690V 6kV 2**
- UL, CSA, CCC *, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 3 \text{ m}\Omega$
- for maximum current load, see the following load curves inserts, for more information see page 560



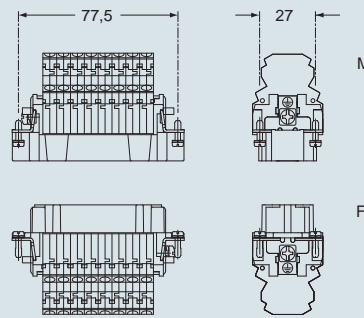
dimensions shown are not binding and may be changed without notice

inserts,
connection with dual spring terminal per pole

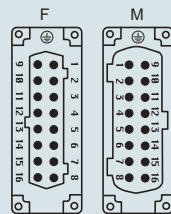


silver plated contacts

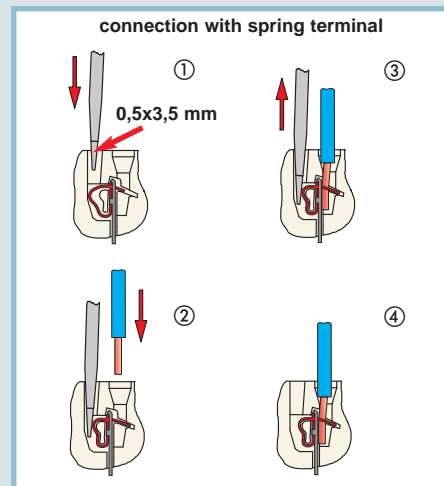
dimensions in mm



contacts side (front view)

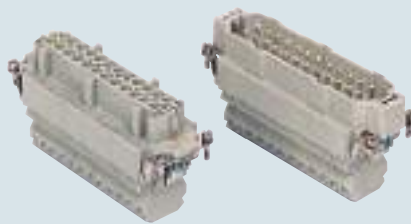


- inserts with plate, for section conductors: 0.14 - 2.5 mm² - AWG 26 - 14
- conductors stripping length: 9...11 mm



enclosures:	page:
size "104.27"	
C-TYPE IP65/IP66	258 - 266
C7 IP67, two levers	277
V-TYPE IP65/IP66, single lever	283/296 - 299
BIG hoods	316 - 319
T-TYPE IP65 insulating	332 - 333
T-TYPE / W IP66 insulating	342 - 343
HYGIENIC T-TYPE / H IP66/IP69	356 - 357
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	364 - 365
W-TYPE for aggressive environments	376
EMC	395
central lever	410 - 412
IP68	432 - 435
LS-TYPE	456 - 457
panel supports:	page:
COB	462 - 463

inserts,
connection with dual spring
terminal per pole



silver
plated
contacts

description	part No.
dual spring terminal per pole	
socket inserts with female contacts	CSSF 24
plug inserts with male contacts	CSSM 24

The CSS series inserts can be inserted in flush mounted enclosures or in fixed / portable high enclosures.

- can be mated with CNE, CSE, CCE, CTE, CTSE, CSH inserts

- characteristics according to EN 61984:

16A 500V 6kV 3

16A 400/690V 6kV 2

- UL, CSA, CCC *, EAC certified

* CQC certification being applied for

- rated voltage according to UL/CSA: 600V

- insulation resistance: $\geq 10 \text{ G}\Omega$

- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$

- are made of self-extinguishing thermoplastic resin

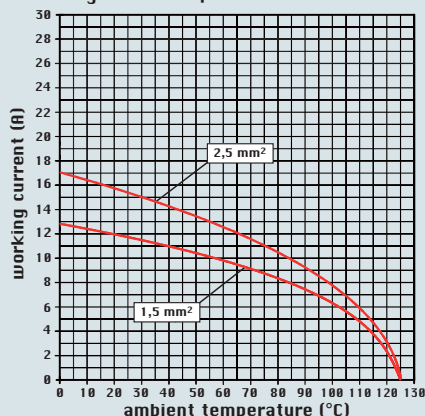
UL 94 V0

- mechanical life: ≥ 500 cycles

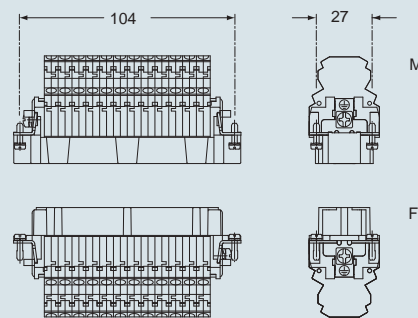
- contact resistance: $\leq 3 \text{ m}\Omega$

- for maximum current load, see the following load curves inserts, for more information see page 560

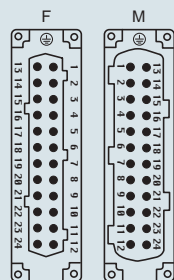
diagram CSS 24 poles



dimensions in mm



contacts side (front view)

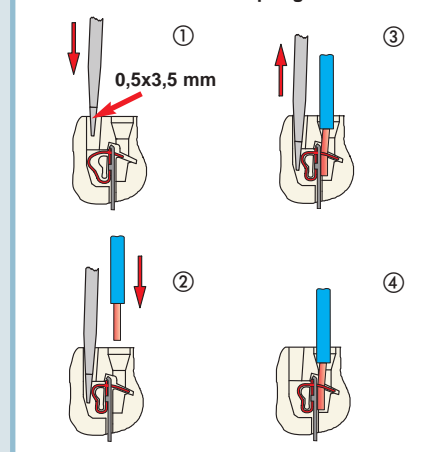


- inserts with plate, for section conductors:

0.14 - 2.5 mm² - AWG 26 - 14

- conductors stripping length: 9...11 mm

connection with spring terminal



dimensions shown are not binding
and may be changed without notice

enclosures:
size "77.62"

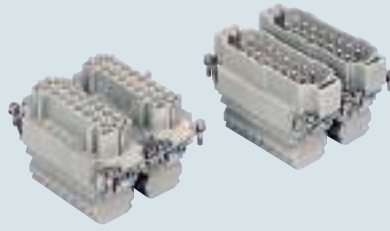
page:

C-TYPE IP65/IP66 267 - 270
W-TYPE for aggressive environments 377

The CSS series inserts can be inserted in flush mounted enclosures or in fixed / portable high enclosures.

- can be mated with CNE, CSE, CCE, CSH inserts

inserts,
connection with dual spring
terminal per pole

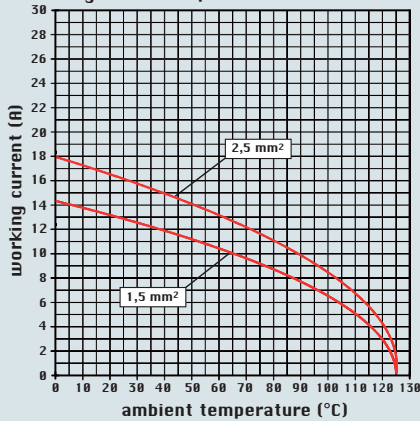


silver
plated
contacts

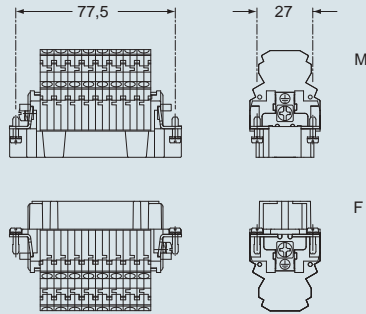
description	part No.	part No.
dual spring terminal per pole female inserts, No. (1-16) and (17-32) male inserts, No. (1-16) and (17-32)	CSSF 16 CSSM 16	CSSF 16 N CSSM 16 N

- characteristics according to EN 61984:
16A 500V 6kV 3
16A 400/690V 6kV 2
- UL, CSA, CCC *, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin
UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 3 \text{ m}\Omega$
- for maximum current load, see the following load curves inserts, for more information see page 560

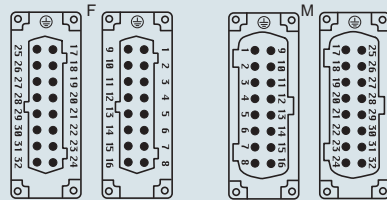
diagram CSS 32 poles



dimensions in mm

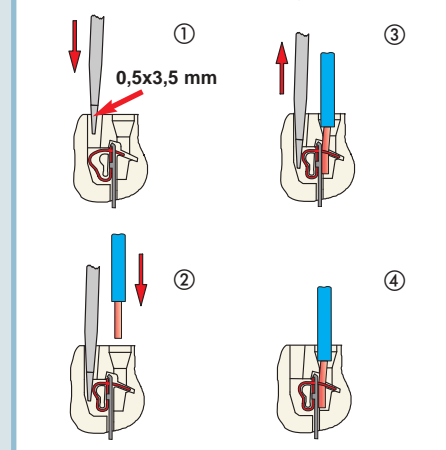


contacts side (front view)



- inserts with plate, for section conductors:
0.14 - 2.5 mm² - AWG 26 - 14
- conductors stripping length: 9...11 mm

connection with spring terminal



dimensions shown are not binding
and may be changed without notice

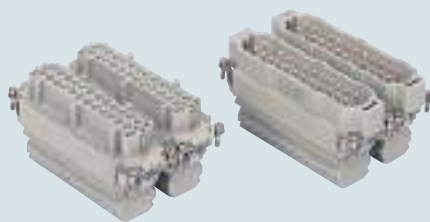
CSS

enclosures:
 size "104.62" page:
 C-TYPE IP65/IP66..... 271
 W-TYPE for aggressive environments 378

The CSS series inserts can be inserted in flush mounted enclosures or in fixed / portable high enclosures.

- can be mated with CNE, CSE, CCE, CSH inserts

inserts,
 connection with dual spring
 terminal per pole

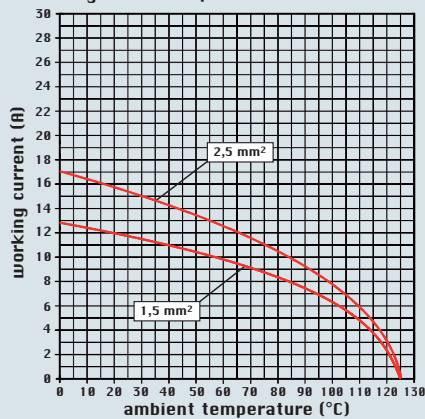


silver
 plated
 contacts

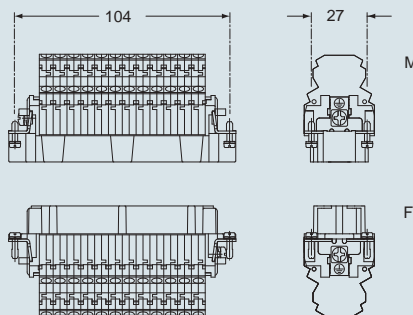
description	part No.	part No.
dual spring terminal per pole female inserts, No. (1-24) and (25-48) male inserts, No. (1-24) and (25-48)	CSSF 24 CSSM 24	CSSF 24 N CSSM 24 N

- characteristics according to EN 61984:
16A 500V 6kV 3
16A 400/690V 6kV 2
- UL, CSA, CCC *, EAC certified
 * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin
 UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 3 \text{ m}\Omega$
- for maximum current load, see the following load curves inserts, for more information see page 560

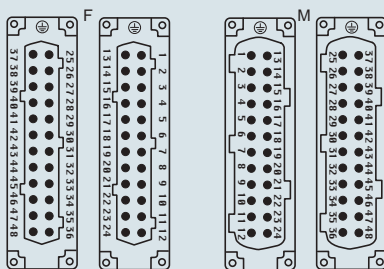
diagram CSS 48 poles



dimensions in mm

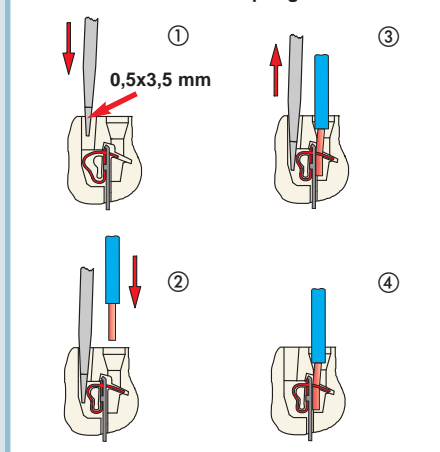


contacts side (front view)



- inserts with plate, for section conductors:
 0.14 - 2.5 mm² - AWG 26 - 14
- conductors stripping length: 9...11 mm

connection with spring terminal



dimensions shown are not binding
 and may be changed without notice

CSS

CT - CTSE series

Inserts with incorporated terminal block for multipole connectors (16A max versions)

Use.

The CT - CTSE series multipole connectors (with incorporated terminal block) are recommended for greater cost-saving and safety for use on machines and command and control panels.

The CT - CTSE series inserts (16A max versions) are supplied in the plug or socket versions and may be mounted with insertion from the front of the enclosure (Figure 1 for all the polarities of the inserts) or with insertion from the rear of the enclosure (Figure 2, only for 16 and 24-pole inserts).

As an alternative to the traditional terminal blocks, the inserts can be mounted inside the control panels on DIN EN rails (Figure 5) using suitable accessories providing the added advantage of easy sectioning.

The special structure of the CT - CTSE inserts has all the conductor connections on the same side providing for easier wiring and a complete view of the work area.

The terminal block also has slots for housing the identification wire markers of each contact.

Wire markers of different manufacturers may be used such as: Cabur, Grafoplast, Modernotecnica, Phoenix, Siemens, Wago, Weidmüller.

The CT - CTSE series is available in the versions "left" and "right" for mounting on the left (Figure 3) or on the right (Figure 4) of the control panel walls.

This characteristic is determined by the position of contact "1" and the ground terminal in the upper part of the insert terminal block for both left and right mounting.

The installation of inserts on DIN rails (Figure 5) inside the control panels is usually made to facilitate the wiring into sectionable parts.

In this case the degree of protection for coupled connectors is IP20 (in accordance with EN 60529).

This type of mounting requires supports (CT APE) to be provided to the inserts suitable for mounting on DIN EN 60715 rails.

Furthermore, to ensure a stable and secure mating between the CT and CTSE inserts installed on DIN rails and counterparts CNE, CSE, CCE, CSH, CSS mating screws CRBF (female) and CRBM (male) are recommended, to replace the ordinary fastening screws to the enclosures (Figure 5).

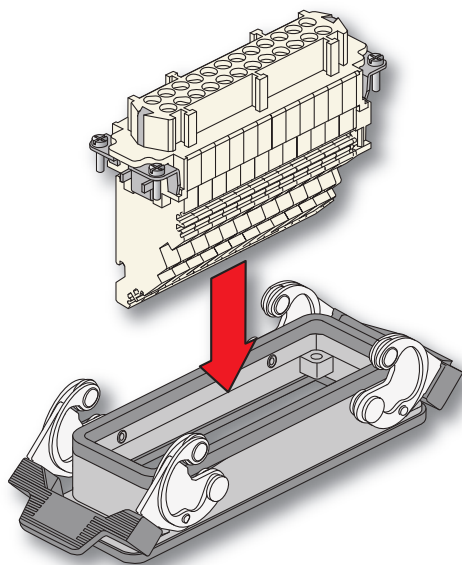


Figure 1 (front mounting)

The insert is inserted into the bulkhead housing without wired conductors or with pre-wired conductors that are not connected at the opposite end.

Mounting for inserts of 06, 10, 16 and 24 poles

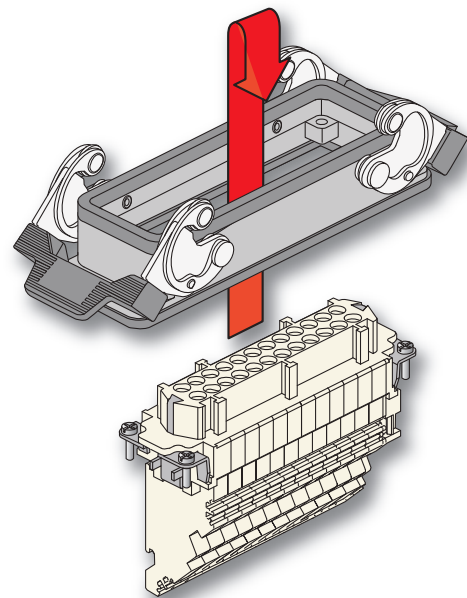


Figure 2 (rear mounting)

The insert is inserted into the bulkhead housing with pre-wired conductors connected at the opposite end.

Mounting for inserts of 16 and 24 poles

Except version T-TYPE

CT - CTSE series

Inserts with incorporated terminal block for multipole connectors

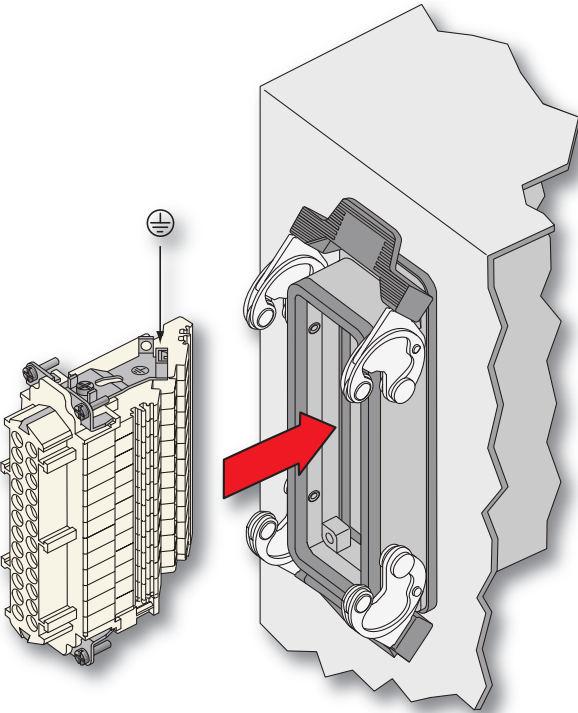


Figure 3 (left mounting)

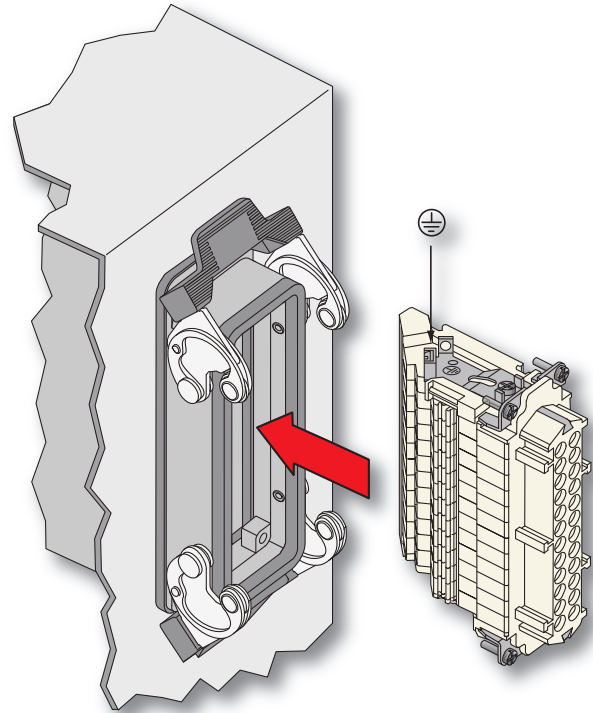


Figure 4 (right mounting)

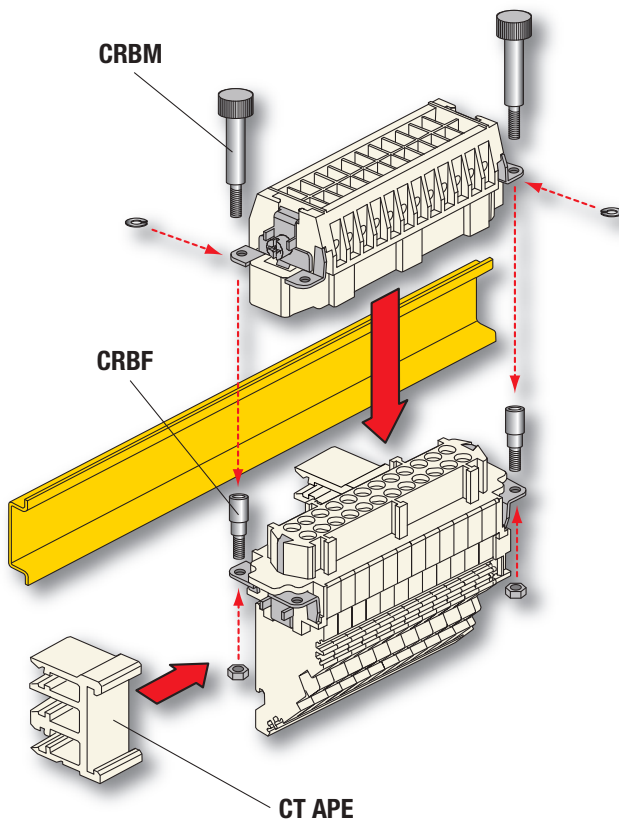
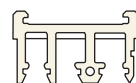


Figure 5 (mounting on DIN rail)



CT APE
possibility of coupling to DIN EN 60715 rail (for a greater stability of the CT, CTSE inserts of 16 and 24 poles we recommend using the two CT APE supports)



EN 60715 C 30



EN 60715 G 32



EN 60715 TH 35-7,5 and TH 35-15

Accessories for CT, CTSE inserts

- support for mounting on DIN rail (**CT APE** page 476)
- inserts coupling screws (**CRBM** and **CRBF** page 476)
- cable-clamping plates (**CRAD** and **CRAS** page 476)

enclosures *) :

size "44.27"

page:

C-TYPE IP65/IP66 240 and 243
 C7 IP67, single lever 274
 V-TYPE IP65/IP66, single lever 280/284
 BIG hoods 304 - 306
 T-TYPE IP65 insulating 326 - 327
 T-TYPE / W IP66 insulating 336 - 337
 HYGIENIC T-TYPE / H IP66/IP69 350 - 351
 HYGIENIC T-TYPE / C IP66/IP69, -50 °C 358 - 359
 W-TYPE for aggressive environments 373
 EMC 392
 central lever 404
 LS-TYPE 450

*) only bulkhead mounted housing and BIG hoods

- can be mated with CNE, CCE, CSS, CSE, CSH inserts
 - inserts may be fitted from front of enclosure

terminal block inserts
 screw terminal connection



silver plated contacts

terminal block inserts
 spring terminal connection



silver plated contacts

description
side mounting (see page 129) female inserts with female contacts 1) male inserts with male contacts 1)
side mounting (see page 129) female inserts with female contacts male inserts with male contacts

part No.	part No.
left CTF 06 L CTM 06 L	right CTF 06 R CTM 06 R

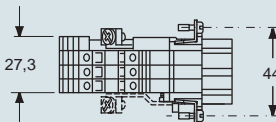
part No.	part No.
left CTSEF 06 L CTSEM 06 L	right CTSEF 06 R CTSEM 06 R

1) for non-prepared conductors

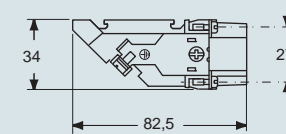
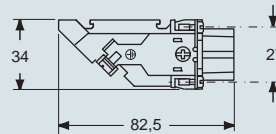
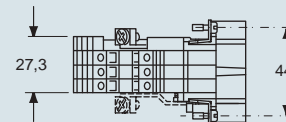
- characteristics according to EN 61984:
16A 230/400V 4kV 3 (CT)
16A 400V 4kV 2 (CT)
16A 500V 6kV 3 (CTSE)
16A 400/690V 6kV 2 (CTSE)
- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 4 \text{ m}\Omega$
- for maximum current load, see the following load curves inserts, for more information see pages 560, 561

dimensions in mm

female inserts (CTF and CTSEF)

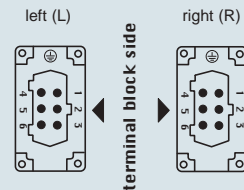


male inserts (CTM and CTSEM)



contacts side (front view)

female inserts (CTF and CTSEF)



male inserts (CTM and CTSEM)

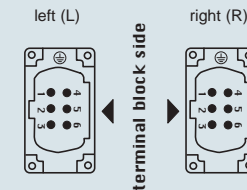


diagram CT 06 poles

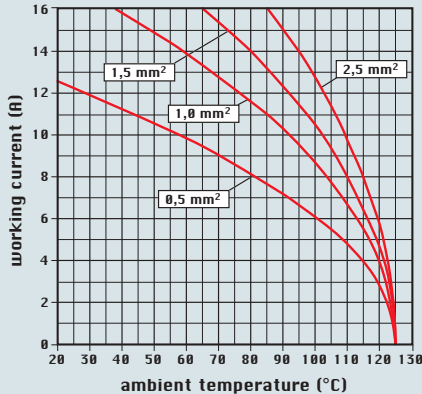
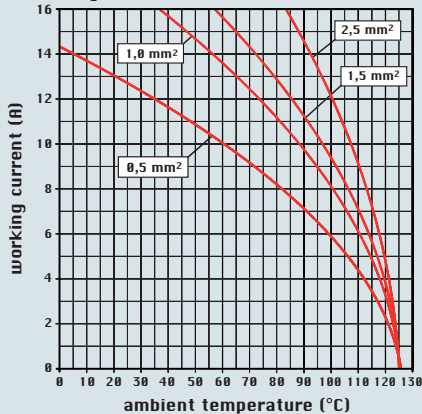


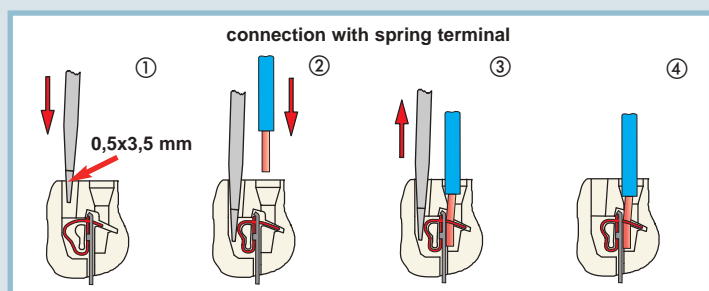
diagram CTSE 06 poles



dimensions shown are not binding
 and may be changed without notice

- CT inserts with plate, for section conductors:
 0,75 - 2,5 mm² - AWG 18 - 14
- conductors stripping length: 12 mm
- terminal screw torque: 0,4 Nm (3,54 lb.in), for more information see page 34 and 35

- CTSE spring inserts for section conductors:
 0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping length: 9...11 mm



enclosures *) :

size "57.27"

page:

C-TYPE IP65/IP66	244
C7 IP67, two levers	275
V-TYPE IP65/IP66, single lever	281/288
BIG hoods	308 - 311
T-TYPE IP65 insulating	328 - 329
T-TYPE / W IP66 insulating	338 - 339
HYGIENIC T-TYPE / H IP66/IP69	352 - 353
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	360 - 361
W-TYPE for aggressive environments	374
EMC	393
central lever	406
LS-TYPE	452

*) only bulkhead mounted housing and BIG hoods

- can be mated with CNE, CCE, CSS, CSE, CSH inserts
- inserts may be fitted from front of enclosure

terminal block inserts
screw terminal connection



silver plated contacts

terminal block inserts
spring terminal connection

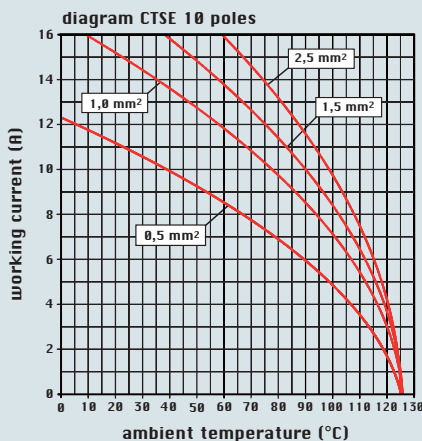
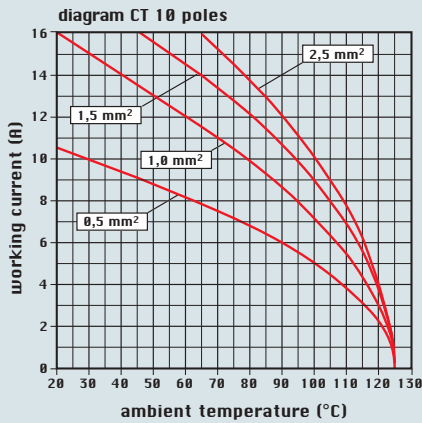


silver plated contacts

description	part No.	part No.	part No.	part No.
side mounting (see page 129) female inserts with female contacts 1) male inserts with male contacts 1)	left CTF 10 L CTM 10 L	right CTF 10 R CTM 10 R	left CTSEF 10 L CTSEM 10 L	right CTSEF 10 R CTSEM 10 R
side mounting (see page 129) female inserts with female contacts male inserts with male contacts				

1) for non-prepared conductors

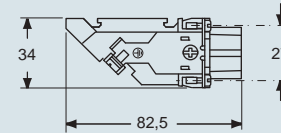
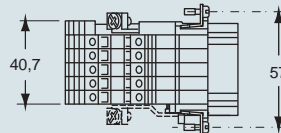
- characteristics according to EN 61984:
- 16A 230/400V 4kV 3 (CT)
- 16A 400V 4kV 2 (CT)
- 16A 500V 6kV 3 (CTSE)
- 16A 400/690V 6kV 2 (CTSE)
- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 4 mΩ
- for maximum current load, see the following load curves inserts, for more information see pages 560, 561



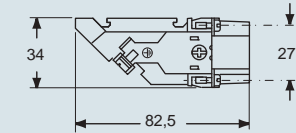
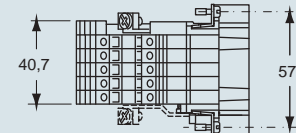
dimensions shown are not binding and may be changed without notice

dimensions in mm

female inserts (CTF and CTSEF)

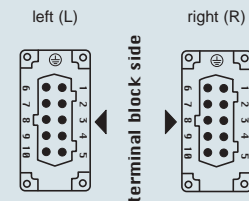


male inserts (CTM and CTSEM)

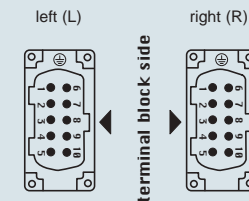


contacts side (front view)

female inserts (CTF and CTSEF)

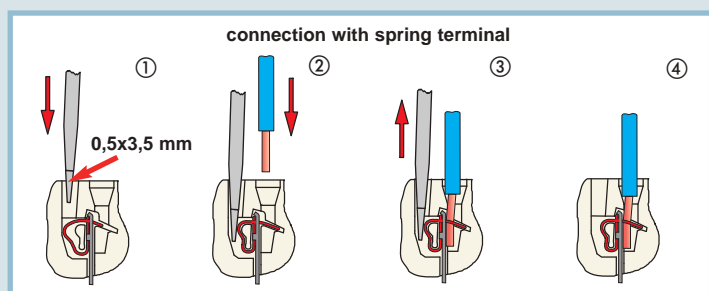


male inserts (CTM and CTSEM)



- CT inserts with plate, for section conductors: 0,75 - 2,5 mm² - AWG 18 - 14
- conductors stripping length: 12 mm
- terminal screw torque: 0,4 Nm (3,54 lb.in), for more information see page 34 and 35

- CTSE spring inserts for section conductors: 0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping length: 9...11 mm



enclosures *) :

size "77.27"

page:

C-TYPE IP65/IP66	250
C7 IP67, two levers	276
V-TYPE IP65/IP66, single lever	282/292
BIG hoods	312 - 315
T-TYPE IP65 insulating	330 - 331
T-TYPE / W IP66 insulating	340 - 341
HYGIENIC T-TYPE / H IP66/IP69	354 - 355
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	362 - 363
W-TYPE for aggressive environments	375
EMC	394
central lever	408
LS-TYPE	454

*) only bulkhead mounted housing and BIG hoods

- can be mated with CNE, CCE, CSS, CSE, CSH inserts
- inserts may be fitted from front of enclosure

terminal block inserts
screw terminal connection



silver plated contacts

terminal block inserts
spring terminal connection



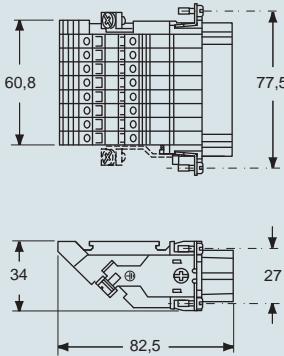
silver plated contacts

description	part No.	part No.	part No.	part No.
side mounting (see page 129) female inserts with female contacts 1) male inserts with male contacts 1)	left CTF 16 L CTM 16 L	right CTF 16 R CTM 16 R	left CTSEF 16 L CTSEM 16 L	right CTSEF 16 R CTSEM 16 R
side mounting (see page 129) female inserts with female contacts male inserts with male contacts				

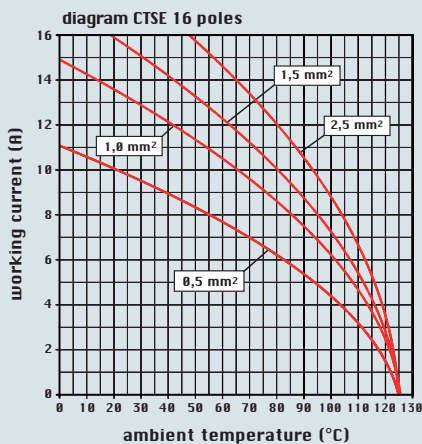
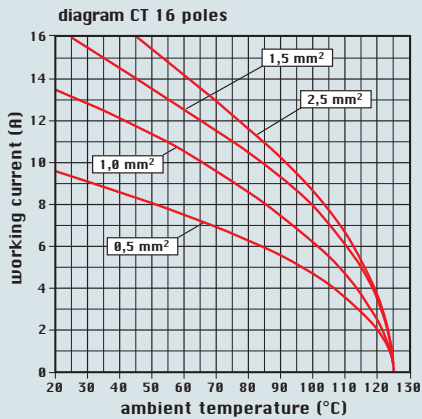
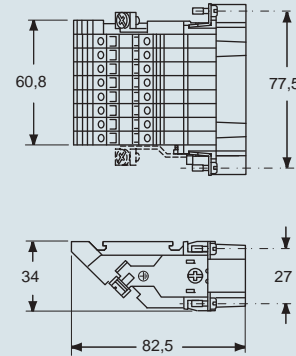
1) for non-prepared conductors

- characteristics according to EN 61984:
16A 230/400V 4kV 3 (CT)
16A 400V 4kV 2 (CT)
16A 500V 6kV 3 (CTSE)
16A 400/690V 6kV 2 (CTSE)
- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 4 mΩ
- for maximum current load, see the following load curves inserts, for more information see pages 560, 561

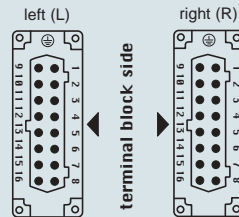
dimensions in mm
female inserts (CTF and CTSEF)



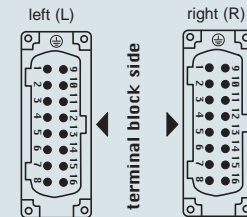
male inserts (CTM and CTSEM)



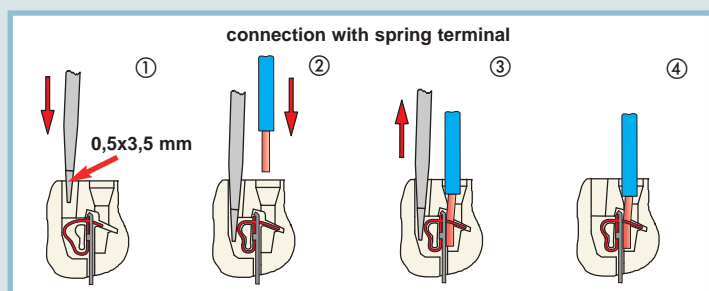
contacts side (front view)
female inserts (CTF and CTSEF)



male inserts (CTM and CTSEM)



- CT inserts with plate, for section conductors: 0,75 - 2,5 mm² - AWG 18 - 14
- conductors stripping length: 12 mm
- terminal screw torque: 0,4 Nm (3,54 lb.in), for more information see page 34 and 35
- CTSE spring inserts for section conductors: 0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping length: 9...11 mm



dimensions shown are not binding
and may be changed without notice

enclosures *) :

size "104.27" page:

C-TYPE IP65/IP66	258
C7 IP67, two levers	277
V-TYPE IP65/IP66, single lever	283/296
BIG hoods	316 - 319
T-TYPE IP65 insulating	332 - 333
T-TYPE / W IP66 insulating	342 - 343
HYGIENIC T-TYPE / H IP66/IP69	356 - 357
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	364 - 365
W-TYPE for aggressive environments	376
EMC	395
central lever	410
LS-TYPE	456 - 457

*) only bulkhead mounted housing and BIG hoods

- can be mated with CNE, CCE, CSS, CSE, CSH inserts
 - inserts may be fitted from front of enclosure

terminal block inserts
 screw terminal connection



silver plated contacts

terminal block inserts
 spring terminal connection



silver plated contacts

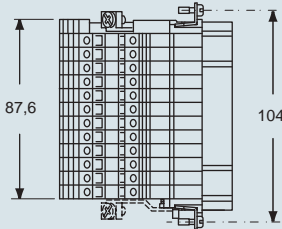
description	part No.	part No.	part No.	part No.
side mounting (see page 129) female inserts with female contacts 1) male inserts with male contacts 1)	left CTF 24 L CTM 24 L	right CTF 24 R CTM 24 R	left CTSEF 24 L CTSEM 24 L	right CTSEF 24 R CTSEM 24 R
side mounting (see page 129) female inserts with female contacts male inserts with male contacts				

1) for non-prepared conductors

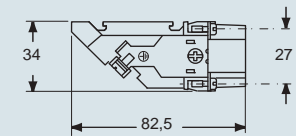
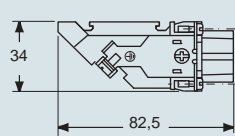
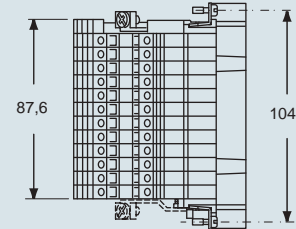
- characteristics according to EN 61984:
16A 230/400V 4kV 3 (CT)
16A 400V 4kV 2 (CT)
16A 500V 6kV 3 (CTSE)
16A 400/690V 6kV 2 (CTSE)
- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 4 \text{ m}\Omega$
- for maximum current load, see the following load curves inserts, for more information see pages 560, 561

dimensions in mm

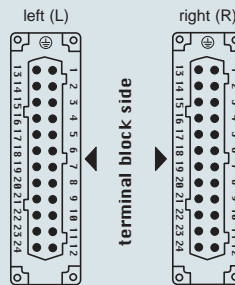
female inserts (CTF and CTSEF)



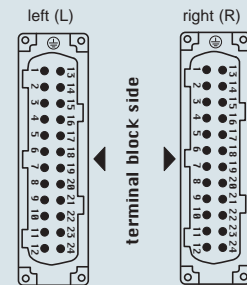
male inserts (CTM and CTSEM)



contacts side (front view)
 female inserts (CTF and CTSEF)



male inserts (CTM and CTSEM)



- CT inserts with plate, for section conductors: 0,75 - 2,5 mm² - AWG 18 - 14
- conductors stripping length: 12 mm
- terminal screw torque: 0,4 Nm (3,54 lb.in), for more information see page 34 and 35
- CTSE spring inserts for section conductors: 0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping length: 9...11 mm

diagram CT 24 poles

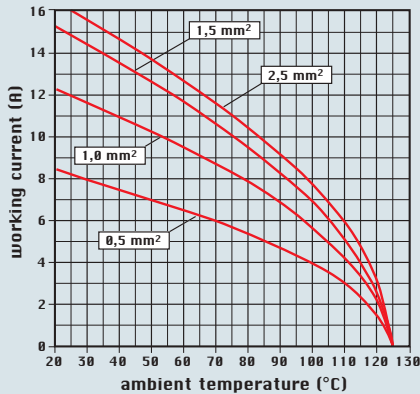
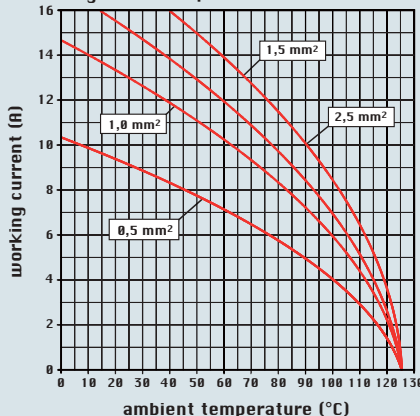
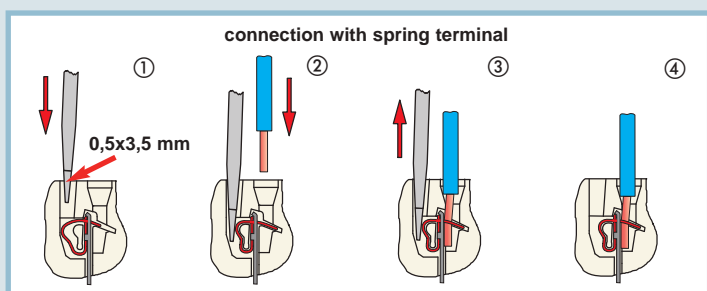


diagram CTSE 24 poles



dimensions shown are not binding
 and may be changed without notice



enclosures *) :
size "77.62"

page:

C-TYPE IP65/IP66 267

W-TYPE for aggressive environments .. 377

*) only bulkhead mounted housing

- CT screw version: on request
- can be mated with CNE, CCE, CSS, CSE, CSH inserts
- inserts may be fitted from front of enclosure

terminal block inserts
spring terminal connection



silver plated contacts

NEW

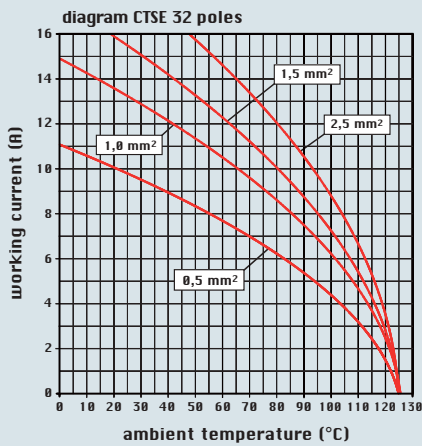
description	part No.	part No.	part No.	part No.
side mounting (see page 129)	left	right		
female inserts with female contacts, No. (1-16) and (17-32) 1)	CTSEF 16 LN	CTSEF 16 R	CTSEF 16 L	CTSEF 16 RN
male inserts with male contacts, No. (1-16) and (17-32) 1)	CTSEM 16 LN	CTSEM 16 R	CTSEM 16 L	CTSEM 16 RN

1) for non-prepared conductors

- characteristics according to EN 61984:

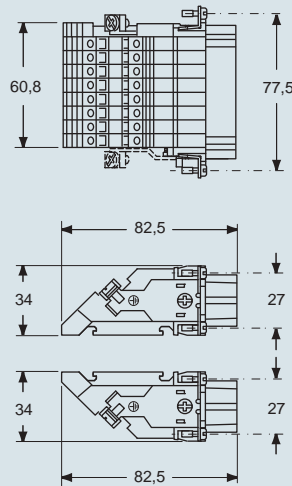
16A 500V 6kV 3
16A 400/690V 6kV 2

- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 4 \text{ m}\Omega$
- for maximum current load, see the following load curves inserts, for more information see pages 561

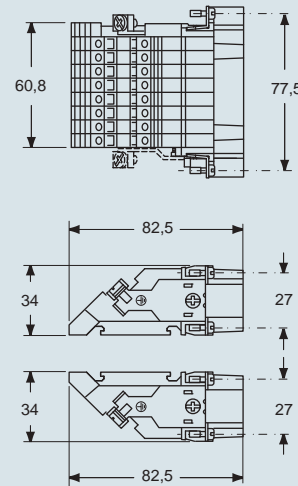


dimensions in mm

female inserts (CTSEF)

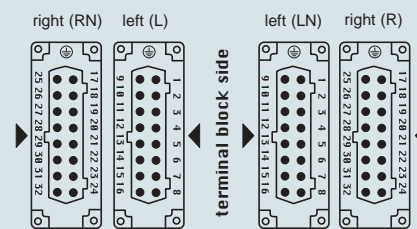


male inserts (CTSEM)

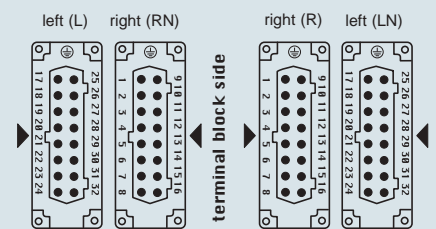


contacts side (front view)

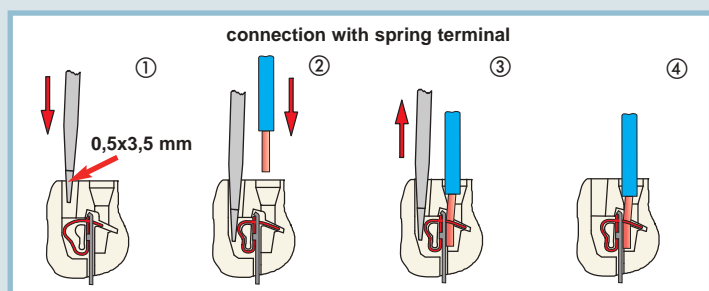
female inserts (CTSEF)



male inserts (CTSEM)



- CTSE spring inserts for section conductors: 0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping length: 9...11 mm



dimensions shown are not binding
and may be changed without notice

enclosures *) :
size "104.62"

page:

C-TYPE IP65/IP66 271
W-TYPE for aggressive environments . 378

*) only bulkhead mounted housing

- CT screw version: on request
- can be mated with CNE, CCE, CSS, CSE, CSH inserts
- inserts may be fitted from front of enclosure

terminal block inserts
spring terminal connection



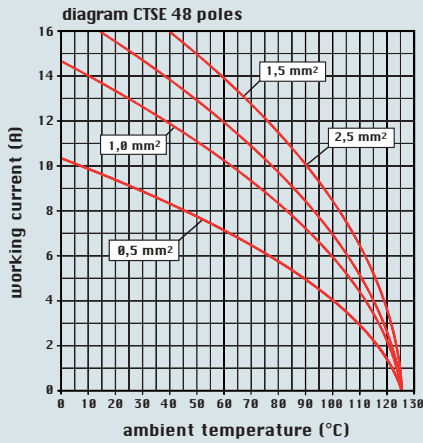
silver plated contacts

NEW

description	part No.	part No.	part No.	part No.
side mounting (see page 129)	left	right		
female inserts with female contacts, No. (1-24) and (25-48) 1)	CTSEF 24 LN	CTSEF 24 R	CTSEF 24 L	CTSEF 24 RN
male inserts with male contacts, No. (1-24) and (25-48) 1)	CTSEM 24 LN	CTSEM 24 R	CTSEM 24 L	CTSEM 24 RN

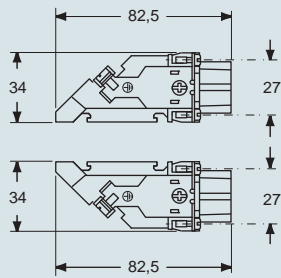
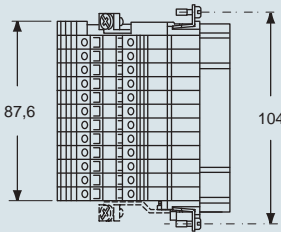
1) for non-prepared conductors

- characteristics according to EN 61984:
16A 500V 6kV 3
16A 400/690V 6kV 2
- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 4 \text{ m}\Omega$
- for maximum current load, see the following load curves inserts, for more information see pages 561

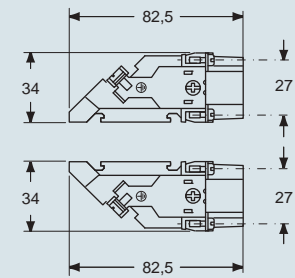
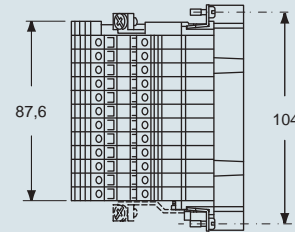


dimensions in mm

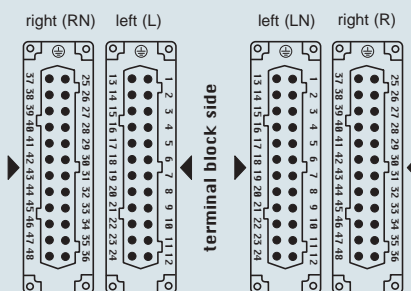
female inserts (CTF and CTSEF)



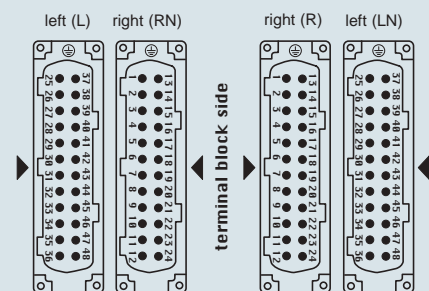
male inserts (CTM and CTSEM)



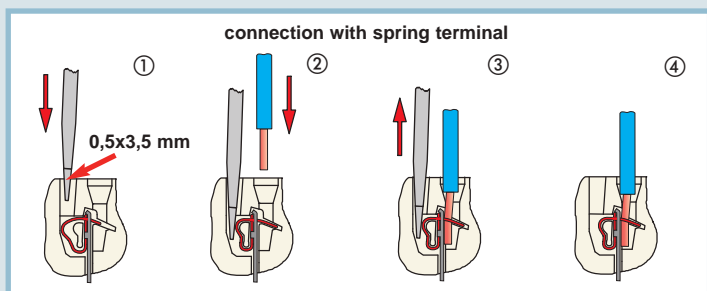
contacts side (front view)
female inserts (CTSEF)



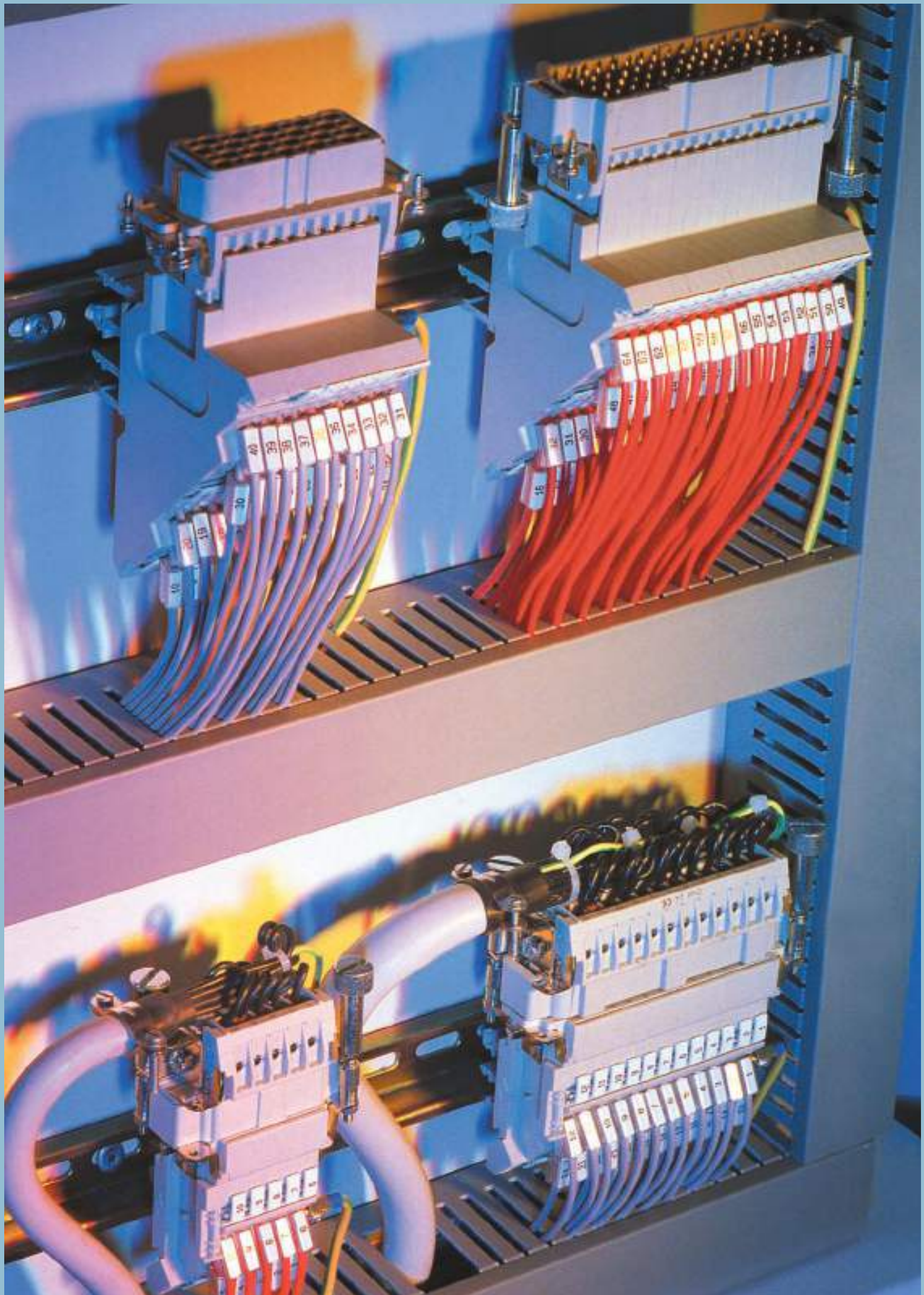
male inserts (CTSEM)



- CTSE spring inserts for section conductors: 0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping length: 9...11 mm



dimensions shown are not binding
and may be changed without notice



CQE inserts

Special voltages

When all the contacts are used, the CQE inserts series connectors may be used at rated voltage up to 500V (first column) pollution degree 3, in accordance with the standard EN 61984.

If the number of contacts is reduced and the contacts accordingly assigned, these connectors may be used with higher voltages.

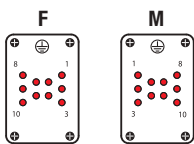
This is possible because the decrease in the number of contacts leads to an increase in the surface insulation distance in the air.

When the contacts are arranged as shown below, the inserts may be used at rated voltages of 690V (second column) and 1000V (third column) pollution degree 3, in accordance with the standard EN 61984.

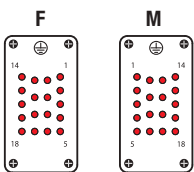
for use up to 500V
pollution degree 3

diagrams
contacts side (front view)

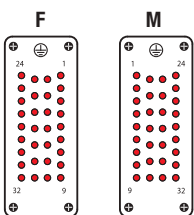
CQE - 10 + ⊕



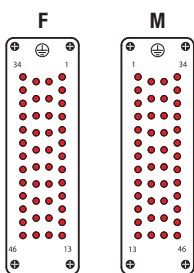
CQE - 18 + ⊕



CQE - 32 + ⊕



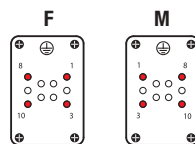
CQE - 46 + ⊕



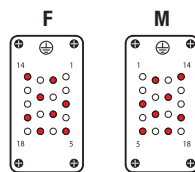
for use up to 690V
pollution degree 3

diagrams
contacts side (front view)

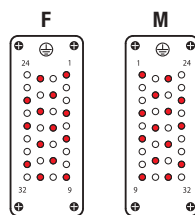
CQE - 4 + ⊕



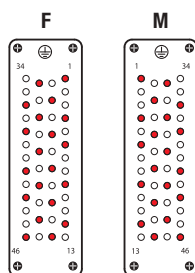
CQE - 8 + ⊕



CQE - 14 + ⊕



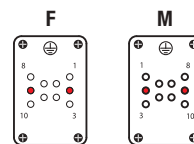
CQE - 20 + ⊕



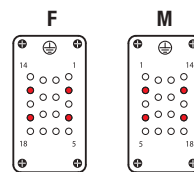
for use up to 1000V
pollution degree 3

diagrams
contacts side (front view)

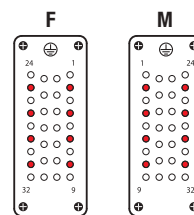
CQE - 2 + ⊕



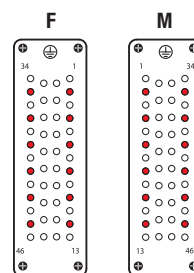
CQE - 4 + ⊕



CQE - 8 + ⊕



CQE - 12 + ⊕



Legend:

- working contact
- without contact
- M = male insert
- F = female insert

enclosures:
size "44.27" page:

C-TYPE IP65/IP66	240 - 243
C7 IP67, single lever	274
V-TYPE IP65/IP66, single lever	280/284 - 286
BIG hoods	304 - 306
T-TYPE IP65 insulating	326 - 327
T-TYPE / W IP66 insulating	336 - 337
HYGIENIC T-TYPE / H IP66/IP69	350 - 351
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	358 - 359
W-TYPE for aggressive environments	373
EMC	392
central lever	404 - 405
IP68	420 - 423
LS-TYPE	450 - 451

panel supports: page:
COB

inserts, crimp connections



16A crimp contacts normal and for advanced opening silver and gold plated



description	part No.	part No.	part No.
-------------	----------	----------	----------

without contacts (to be ordered separately)
female inserts for female contacts
male inserts for male contacts

CQEF 10
CQEM 10

16A female contacts

0,14-0,37 mm ²	AWG 26-22	three grooves
0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves
3 mm ²	AWG 12	one wide groove
4 mm ²	AWG 12	with no grooves

16A male contacts

0,14-0,37 mm ²	AWG 26-22	three grooves
0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves
3 mm ²	AWG 12	one wide groove
4 mm ²	AWG 12	with no grooves

16A male crimp contacts for advanced opening

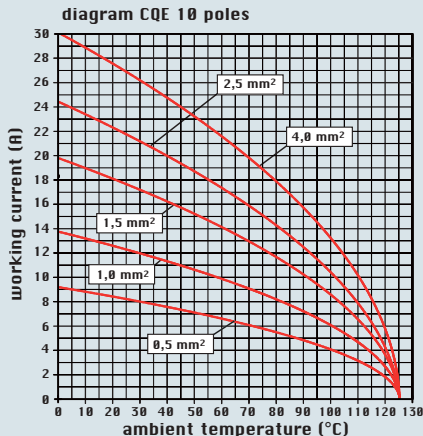
0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves

CCFA 0.3	silver plated	CCFD 0.3	gold plated 1)
CCFA 0.5		CCFD 0.5	
CCFA 0.7		CCFD 0.7	
CCFA 1.0		CCFD 1.0	
CCFA 1.5		CCFD 1.5	
CCFA 2.5		CCFD 2.5	
CCFA 3.0		CCFD 3.0	
CCFA 4.0		CCFD 4.0	

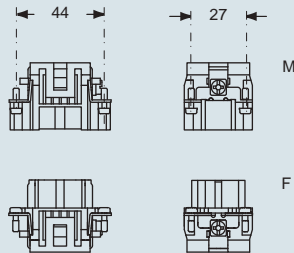
CCMA 0.3	CCMD 0.3
CCMA 0.5	CCMD 0.5
CCMA 0.7	CCMD 0.7
CCMA 1.0	CCMD 1.0
CCMA 1.5	CCMD 1.5
CCMA 2.5	CCMD 2.5
CCMA 3.0	CCMD 3.0
CCMA 4.0	CCMD 4.0

CC 0.5 AN
CC 0.7 AN
CC 1.0 AN
CC 1.5 AN
CC 2.5 AN

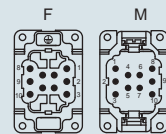
- characteristics according to EN 61984:
16A 500V 6kV 3
16A 830V 8kV 2
- cUL - UL for USA and Canada, CSA, GL, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 561



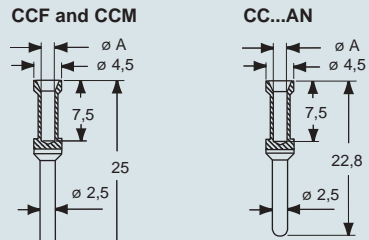
dimensions in mm



contacts side (front view)



dimensions in mm



CCF, CCM and CC...AN contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	(mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

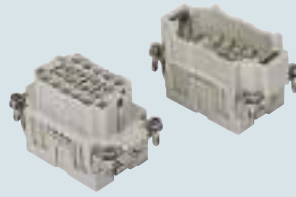
dimensions shown are not binding and may be changed without notice

enclosures:
size "57.27" page:

C-TYPE IP65/IP66	244 - 249
C7 IP67, two levers	275
V-TYPE IP65/IP66, single lever	281/288 - 291
BIG hoods	308 - 311
T-TYPE IP65 insulating	328 - 329
T-TYPE / W IP66 insulating	338 - 339
HYGIENIC T-TYPE / H IP66/IP69	352 - 353
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	360 - 361
W-TYPE for aggressive environments	374
EMC	393
central lever	406 - 407
IP68	424 - 427
LS-TYPE	452 - 453

panel supports: page:
COB

inserts, crimp connections



16A crimp contacts normal and for advanced opening silver and gold plated



description	part No.	part No.	part No.
-------------	----------	----------	----------

without contacts (to be ordered separately)
female inserts for female contacts
male inserts for male contacts

CQEF 18
CQEM 18

16A female contacts

0,14-0,37 mm ²	AWG 26-22	three grooves
0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves
3 mm ²	AWG 12	one wide groove
4 mm ²	AWG 12	with no grooves

16A male contacts

0,14-0,37 mm ²	AWG 26-22	three grooves
0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves
3 mm ²	AWG 12	one wide groove
4 mm ²	AWG 12	with no grooves

16A male crimp contacts for advanced opening

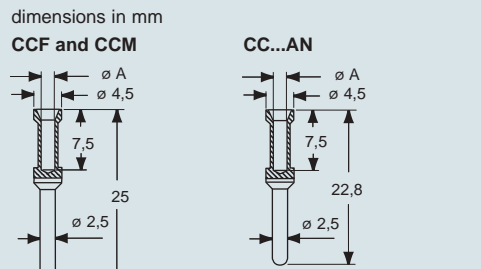
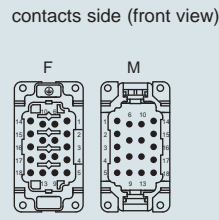
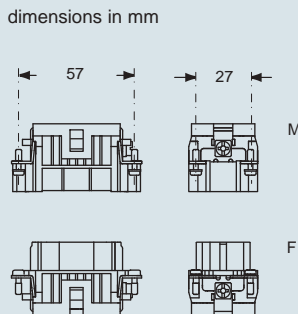
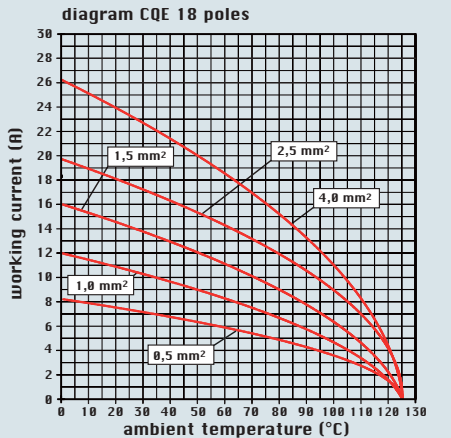
0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves

CCFA 0.3	silver plated	CCFD 0.3	gold plated 1)
CCFA 0.5		CCFD 0.5	
CCFA 0.7		CCFD 0.7	
CCFA 1.0		CCFD 1.0	
CCFA 1.5		CCFD 1.5	
CCFA 2.5		CCFD 2.5	
CCFA 3.0		CCFD 3.0	
CCFA 4.0		CCFD 4.0	

CCMA 0.3	CCMD 0.3
CCMA 0.5	CCMD 0.5
CCMA 0.7	CCMD 0.7
CCMA 1.0	CCMD 1.0
CCMA 1.5	CCMD 1.5
CCMA 2.5	CCMD 2.5
CCMA 3.0	CCMD 3.0
CCMA 4.0	CCMD 4.0

CC 0.5 AN
CC 0.7 AN
CC 1.0 AN
CC 1.5 AN
CC 2.5 AN

- characteristics according to EN 61984:
16A 500V 6kV 3
16A 830V 8kV 2
- cUL - UL for USA and Canada, CSA, GL, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 561



CCF, CCM and CC...AN contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	(mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

dimensions shown are not binding and may be changed without notice

enclosures:
size "77.27" page:

C-TYPE IP65/IP66	250 - 256
C7 IP67, two levers	276
V-TYPE IP65/IP66, single lever	282/292 - 295
BIG hoods	312 - 315
T-TYPE IP65 insulating	330 - 331
T-TYPE / W IP66 insulating	340 - 341
HYGIENIC T-TYPE / H IP66/IP69	354 - 355
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	362 - 363
W-TYPE for aggressive environments	375
EMC	394
central lever	408 - 409
IP68	428 - 431
LS-TYPE	454 - 455

panel supports: page:
COB

inserts, crimp connections

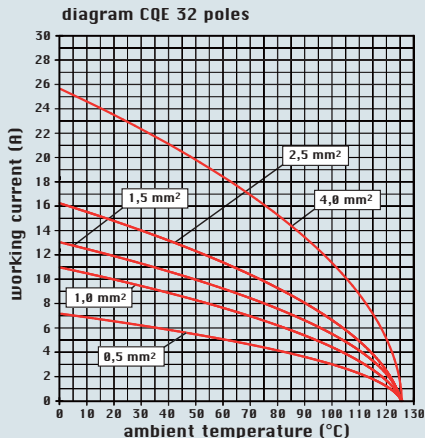


16A crimp contacts normal and for advanced opening silver and gold plated

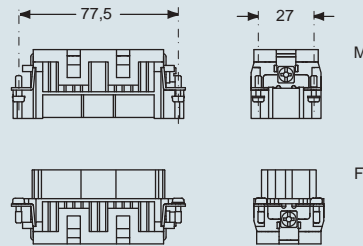


description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	CQEF 32 CQEM 32		
16A female contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves		silver plated	gold plated 1)
16A male contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves			
16A male crimp contacts for advanced opening 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves			
		CCFA 0.3 CCFA 0.5 CCFA 0.7 CCFA 1.0 CCFA 1.5 CCFA 2.5 CCFA 3.0 CCFA 4.0	CCFD 0.3 CCFD 0.5 CCFD 0.7 CCFD 1.0 CCFD 1.5 CCFD 2.5 CCFD 3.0 CCFD 4.0
		CCMA 0.3 CCMA 0.5 CCMA 0.7 CCMA 1.0 CCMA 1.5 CCMA 2.5 CCMA 3.0 CCMA 4.0	CCMD 0.3 CCMD 0.5 CCMD 0.7 CCMD 1.0 CCMD 1.5 CCMD 2.5 CCMD 3.0 CCMD 4.0
		CC 0.5 AN CC 0.7 AN CC 1.0 AN CC 1.5 AN CC 2.5 AN	

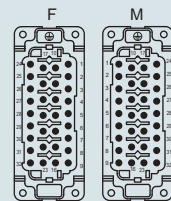
- characteristics according to EN 61984:
16A 500V 6kV 3
16A 830V 8kV 2
- cUL - UL for USA and Canada, CSA, GL, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 561



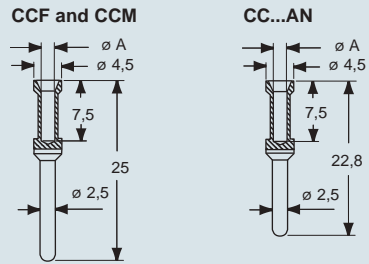
dimensions in mm



contacts side (front view)



dimensions in mm



CCF, CCM and CC..AN contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	(mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC..AN series) on pages 534, 538, 544, 546, 548

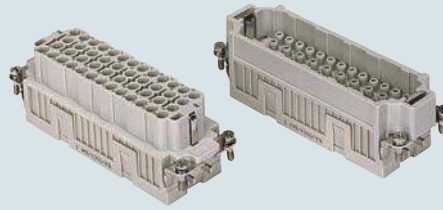
dimensions shown are not binding and may be changed without notice

enclosures:
size "104.27" page:

C-TYPE IP65/IP66 258 - 266
C7 IP67, two levers 277
V-TYPE IP65/IP66, single lever 283/296 - 299
BIG hoods 316 - 319
T-TYPE IP65 insulating 332 - 333
T-TYPE / W IP66 insulating 342 - 343
HYGIENIC T-TYPE / H IP66/IP69 356 - 357
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 364 - 365
W-TYPE for aggressive environments 376
EMC 395
central lever 410 - 412
IP68 432 - 435
LS-TYPE 456 - 457

panel supports: page:
COB 462 - 463

inserts, crimp connections

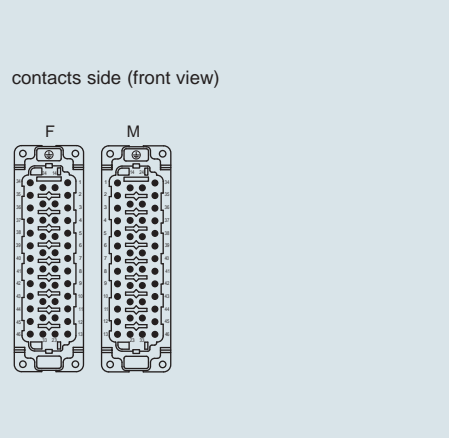
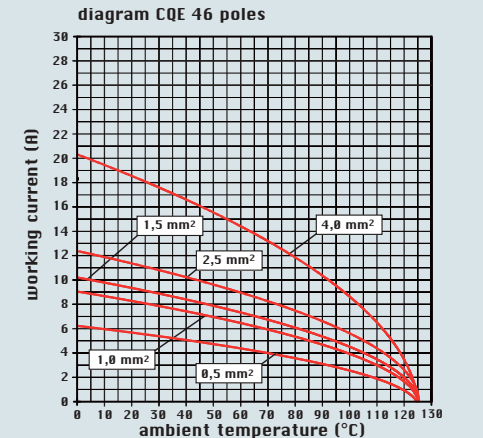
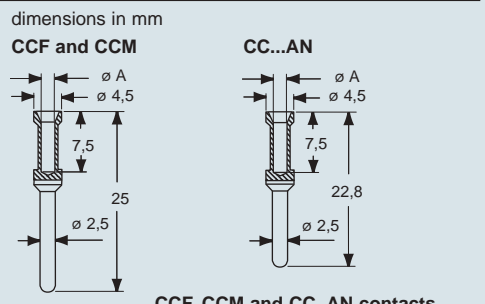
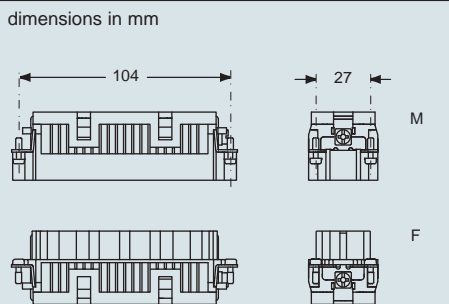


16A crimp contacts normal and for advanced opening silver and gold plated



description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	CQEF 46 CQEM 46		
16A female contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves		CCFA 0.3 CCFA 0.5 CCFA 0.7 CCFA 1.0 CCFA 1.5 CCFA 2.5 CCFA 3.0 CCFA 4.0	CCFD 0.3 CCFD 0.5 CCFD 0.7 CCFD 1.0 CCFD 1.5 CCFD 2.5 CCFD 3.0 CCFD 4.0
16A male contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves		CCMA 0.3 CCMA 0.5 CCMA 0.7 CCMA 1.0 CCMA 1.5 CCMA 2.5 CCMA 3.0 CCMA 4.0	CCMD 0.3 CCMD 0.5 CCMD 0.7 CCMD 1.0 CCMD 1.5 CCMD 2.5 CCMD 3.0 CCMD 4.0
16A male crimp contacts for advanced opening 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves		CC 0.5 AN CC 0.7 AN CC 1.0 AN CC 1.5 AN CC 2.5 AN	

- characteristics according to EN 61984:
16A 500V 6kV 3
16A 830V 8kV 2
 - cUL - UL for USA and Canada, CSA, GL, EAC certified
 - rated voltage according to UL/CSA: 600V
 - insulation resistance: ≥ 10 GΩ
 - ambient temperature limit: -40 °C ... +125 °C
 - are made of self-extinguishing thermoplastic resin UL 94 V0
 - mechanical life: ≥ 500 cycles
 - contact resistance: ≤ 1 mΩ
 - for maximum current load, see the following load curves inserts, for more information see page 561



CCF, CCM and CC...AN contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	(mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

dimensions shown are not binding and may be changed without notice

CQE

enclosures:
size "77.62"

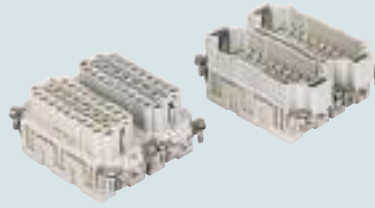
page:

C-TYPE IP65/IP66 267 - 270

W-TYPE for aggressive environments 377

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

inserts, crimp connections



16A crimp contacts normal and for advanced opening silver and gold plated

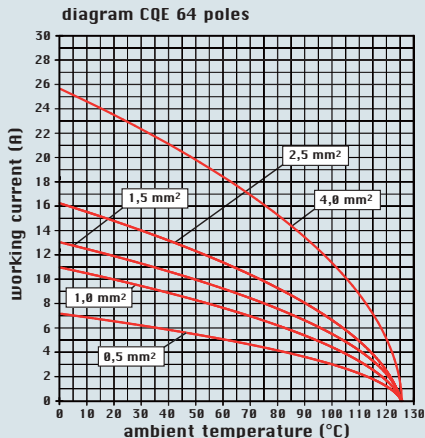


description	part No.	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts, No. (1-32) and (33-64) male inserts, No. (1-32) and (33-64)	CQEF 32 CQEM 32	CQEF 32 N CQEM 32 N		
16A female contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves			CCFA 0.3 CCFA 0.5 CCFA 0.7 CCFA 1.0 CCFA 1.5 CCFA 2.5 CCFA 3.0 CCFA 4.0	CCFD 0.3 CCFD 0.5 CCFD 0.7 CCFD 1.0 CCFD 1.5 CCFD 2.5 CCFD 3.0 CCFD 4.0
16A male contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves			CCMA 0.3 CCMA 0.5 CCMA 0.7 CCMA 1.0 CCMA 1.5 CCMA 2.5 CCMA 3.0 CCMA 4.0	CCMD 0.3 CCMD 0.5 CCMD 0.7 CCMD 1.0 CCMD 1.5 CCMD 2.5 CCMD 3.0 CCMD 4.0
16A male crimp contacts for advanced opening 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves			CC 0.5 AN CC 0.7 AN CC 1.0 AN CC 1.5 AN CC 2.5 AN	

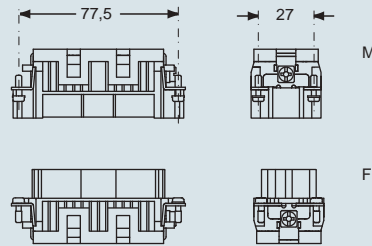
silver plated

gold plated 1)

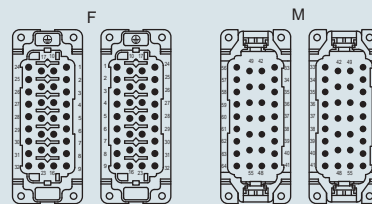
- characteristics according to EN 61984:
16A 500V 6kV 3
16A 830V 8kV 2
- cUL - UL for USA and Canada, CSA, GL, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 561



dimensions in mm

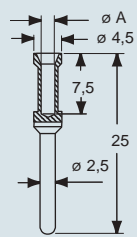


contacts side (front view)

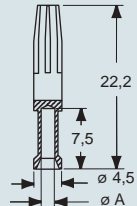
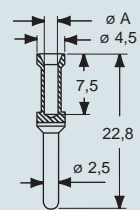


dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC...AN contacts

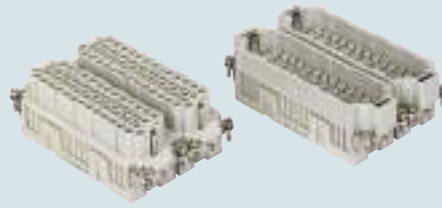
conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	(mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

dimensions shown are not binding and may be changed without notice

enclosures:
size "104.62" page:
C-TYPE IP65/IP66..... 271
W-TYPE for aggressive environments 378

inserts, crimp connections



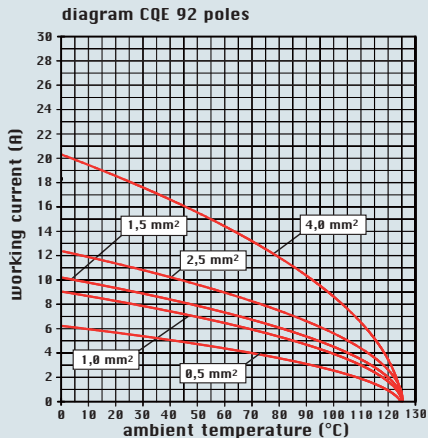
16A crimp contacts normal and for advanced opening silver and gold plated



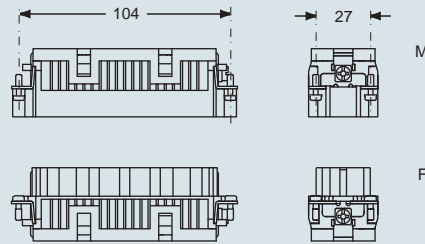
- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

description	part No.	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts, No. (1-46) and (47-92) male inserts, No. (1-46) and (47-92)	CQEF 46 CQEM 46	CQEF 46 N CQEM 46 N		
16A female contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves			CCFA 0.3 CCFA 0.5 CCFA 0.7 CCFA 1.0 CCFA 1.5 CCFA 2.5 CCFA 3.0 CCFA 4.0	CCFD 0.3 CCFD 0.5 CCFD 0.7 CCFD 1.0 CCFD 1.5 CCFD 2.5 CCFD 3.0 CCFD 4.0
16A male contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves			CCMA 0.3 CCMA 0.5 CCMA 0.7 CCMA 1.0 CCMA 1.5 CCMA 2.5 CCMA 3.0 CCMA 4.0	CCMD 0.3 CCMD 0.5 CCMD 0.7 CCMD 1.0 CCMD 1.5 CCMD 2.5 CCMD 3.0 CCMD 4.0
16A male crimp contacts for advanced opening 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves			CC 0.5 AN CC 0.7 AN CC 1.0 AN CC 1.5 AN CC 2.5 AN	

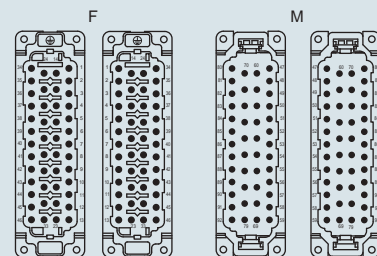
- characteristics according to EN 61984:
16A 500V 6kV 3
16A 830V 8kV 2
 - cUL - UL for USA and Canada, CSA, GL, EAC certified
 - rated voltage according to UL/CSA: 600V
 - insulation resistance: ≥ 10 GΩ
 - ambient temperature limit: -40 °C ... +125 °C
 - are made of self-extinguishing thermoplastic resin UL 94 V0
 - mechanical life: ≥ 500 cycles
 - contact resistance: ≤ 1 mΩ
 - for maximum current load, see the following load curves inserts, for more information see page 561



dimensions in mm

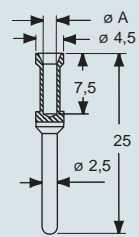


contacts side (front view)

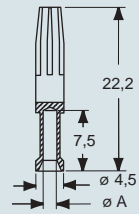
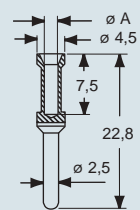


dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC...AN contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	(mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481



CQEE series

Main features

The new connector inserts series **CQEE** are the logical extension of the existing series CQE for removable crimp contacts series CC (16A max, available both in gold plated and in silver plated version) that include the CC...AN pin contacts with anticipated opening (first-to-break) and delayed closing (last-to-make).

Compared with the connector inserts of the same size of series CQE, the new inserts series **CQEE** provide a sensibly higher number of contacts: 64P+⊕ instead of 46P+⊕ for size 104.27 (+39%), 40P+⊕ instead of 32P+⊕ for size 77.27 (+25%).

With the same number of circuits, it is conversely possible to reduce the size of the connector inserts and of the related hood and housing, thus reducing the overall cost.

The new connector inserts series **CQEE** may replace in the same size (77.27, 104.27) and with the same contact density (40P+⊕ and 64P+⊕) the corresponding inserts of series CD for removable crimp contacts series CD (10A max).

This may be particularly useful when, as a function of the intended use, it is required:

- to use the connector at a higher rated voltage: CQEE covers use at 500V / 6kV / 3 where CD stops at 250V / 4kV / 3;
- to assign a larger current-carrying capacity, both due to the lower contact resistance (1 mΩ instead of 3 mΩ) and the larger wire size available for series CC compared with series CD contacts;
- to use wires with the larger cross-sectional area of 4 mm² / AWG 12, in order to contain the percent voltage drop [%] in circuits fed with extra-low voltage and with comparatively high currents, or in circuits of considerable length;
- to use crimp contacts with inherently higher mechanical robustness;
- to use anticipated pin contacts CC...AN (e.g. for the remote signaling of the "OPEN" or "CLOSED" status of the connector).

Inserts series		CQEE
No. of poles	main contact	40 + ⊕; 64 + ⊕
rated current ¹⁾		16A
EN 61984 pollution degree 3	rated voltage	500V
	rated impulse withstand voltage	6kV
	pollution degree	3
contact resistance		≤ 1 mΩ
insulation resistance		≥ 10 GΩ
ambient temperature limit (°C)	min	-40 °C
	max	+125 °C
degree of protection	with enclosures (according to version)	IP65, IP66, IP67, IP68, IP69K
	without enclosures	IP20
conductor connections		crimp
conductor cross-section (CC contact series)	mm ²	0,14 4,0
	AWG	26 - 12
stripping length	mm	7,5
mechanical endurance (rating cycles)		≥ 500

1) Please check the insert load curves to establish the actual maximum operating current according to the ambient temperature.

enclosures:
size "77.27" page:

C-TYPE IP65/IP66 250 - 256
C7 IP67, two levers 276
V-TYPE IP65/IP66, single lever 282/292 - 295
BIG hoods 312 - 315
T-TYPE IP65 insulating 330 - 331
T-TYPE / W IP66 insulating 340 - 341
HYGIENIC T-TYPE / H IP66/IP69 354 - 355
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 362 - 363
W-TYPE for aggressive environments 375
EMC 394
central lever 408 - 409
IP68 428 - 431
LS-TYPE 454 - 455

panel supports: page:
COB 462 - 463

inserts, crimp connections



NEW

16A crimp contacts normal and for advanced opening silver and gold plated



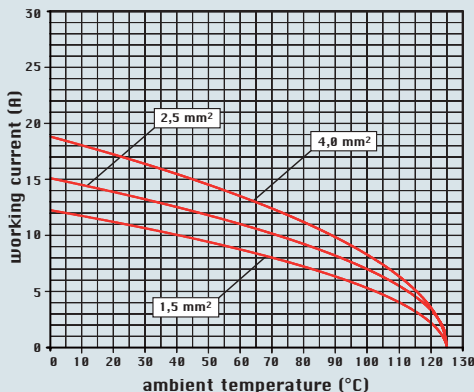
description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	CQEEF 40 CQEEM 40		
16A female contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves		CCFA 0.3 CCFA 0.5 CCFA 0.7 CCFA 1.0 CCFA 1.5 CCFA 2.5 CCFA 3.0 CCFA 4.0	CCFD 0.3 CCFD 0.5 CCFD 0.7 CCFD 1.0 CCFD 1.5 CCFD 2.5 CCFD 3.0 CCFD 4.0
16A male contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves		CCMA 0.3 CCMA 0.5 CCMA 0.7 CCMA 1.0 CCMA 1.5 CCMA 2.5 CCMA 3.0 CCMA 4.0	CCMD 0.3 CCMD 0.5 CCMD 0.7 CCMD 1.0 CCMD 1.5 CCMD 2.5 CCMD 3.0 CCMD 4.0
16A male crimp contacts for advanced opening 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves		CC 0.5 AN CC 0.7 AN CC 1.0 AN CC 1.5 AN CC 2.5 AN	

silver plated

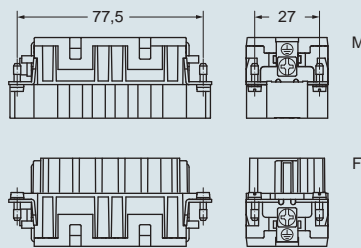
gold plated 1)

- characteristics according to EN 61984: **16A 500V 6kV 3**
- certifications: cUL - UL for USA and Canada, (CSA), (GL), (EAC); the certifications shown in brackets are being applied for.
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 561

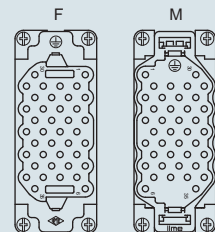
diagram CQEE 40 poles



dimensions in mm



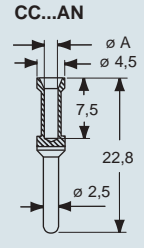
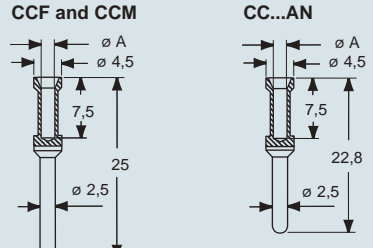
contacts side (front view)



coding pins CR CPQ, see page 491



dimensions in mm



CCF, CCM and CC..AN contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	(mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

enclosures:
size "104.27" page:

C-TYPE IP65/IP66 258 - 266
C7 IP67, two levers 277
V-TYPE IP65/IP66, single lever 283296 - 299
BIG hoods 316 - 319
T-TYPE IP65 insulating 332 - 333
T-TYPE / W IP66 insulating 342 - 343
HYGIENIC T-TYPE / H IP66/IP69 356 - 357
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 364 - 365
W-TYPE for aggressive environments 376
EMC 395
central lever 410 - 412
IP68 432 - 435
LS-TYPE 456 - 457

panel supports: page:
COB 462 - 463

inserts, crimp connections



NEW

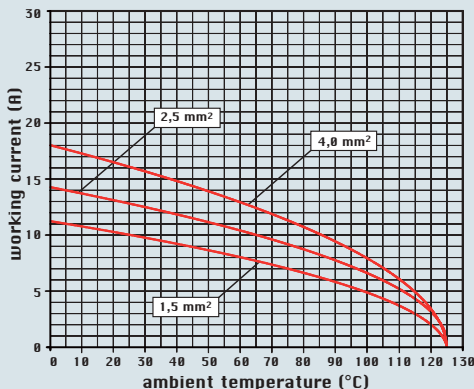
16A crimp contacts normal and for advanced opening silver and gold plated



description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	CQEEF 64 CQEEM 64		
16A female contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves		CCFA 0.3 CCFA 0.5 CCFA 0.7 CCFA 1.0 CCFA 1.5 CCFA 2.5 CCFA 3.0 CCFA 4.0	CCFD 0.3 CCFD 0.5 CCFD 0.7 CCFD 1.0 CCFD 1.5 CCFD 2.5 CCFD 3.0 CCFD 4.0
16A male contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves		CCMA 0.3 CCMA 0.5 CCMA 0.7 CCMA 1.0 CCMA 1.5 CCMA 2.5 CCMA 3.0 CCMA 4.0	CCMD 0.3 CCMD 0.5 CCMD 0.7 CCMD 1.0 CCMD 1.5 CCMD 2.5 CCMD 3.0 CCMD 4.0
16A male crimp contacts for advanced opening 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves		CC 0.5 AN CC 0.7 AN CC 1.0 AN CC 1.5 AN CC 2.5 AN	

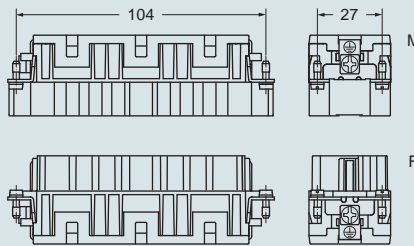
- characteristics according to EN 61984: **16A 500V 6kV 3**
- certifications: cUL - UL for USA and Canada, (CSA), (GL), (EAC); the certifications shown in brackets are being applied for.
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 561

diagram CQEE 64 poles

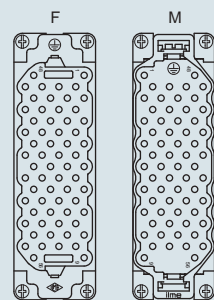


dimensions shown are not binding and may be changed without notice

dimensions in mm



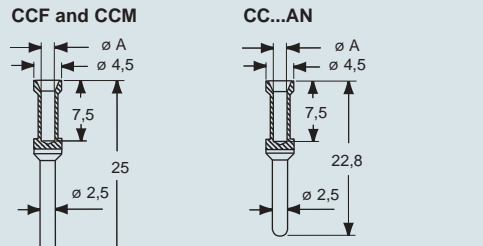
contacts side (front view)



coding pins CR CPQ, see page 491



dimensions in mm



CCF, CCM and CC..AN contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	(mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC..AN series) on pages 534, 538, 544, 546, 548

enclosures:
size "57.27"

page:

C-TYPE IP65/IP66 244 - 249
 C7 IP67, two levers 275
 V-TYPE IP65/IP66, single lever 281/288 - 291
 BIG hoods 308 - 311
 T-TYPE IP65 insulating 328 - 329
 T-TYPE / W IP66 insulating 338 - 339
 HYGIENIC T-TYPE / H IP66/IP69 352 - 353
 HYGIENIC T-TYPE / C IP66/IP69, -50 °C 360 - 361
 W-TYPE for aggressive environments 374
 EMC 393
 central lever 406 - 407
 IP68 424 - 427
 LS-TYPE 452 - 453

panel supports:

page:

COB 462 - 463

inserts,
crimp connections



16A crimp contacts
normal and for advanced opening
silver and gold plated



description	part No.	part No.	part No.
-------------	----------	----------	----------

without contacts (to be ordered separately)
 female inserts for female contacts
 male inserts for male contacts

CMCEF 03
 CMCEM 03

16A female contacts

0,14-0,37 mm ²	AWG 26-22	three grooves
0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves
3 mm ²	AWG 12	one wide groove
4 mm ²	AWG 12	with no grooves

16A male contacts

0,14-0,37 mm ²	AWG 26-22	three grooves
0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves
3 mm ²	AWG 12	one wide groove
4 mm ²	AWG 12	with no grooves

16A male crimp contacts for advanced opening

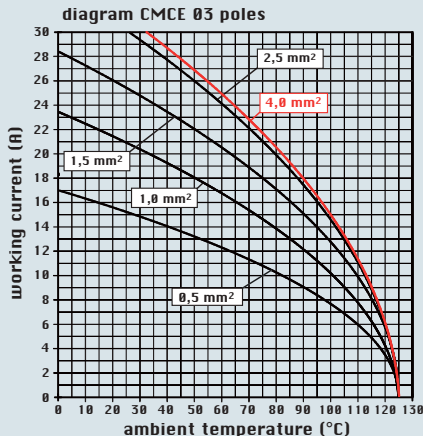
0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves

CCFA 0.3	silver plated	CCFD 0.3	gold plated 1)
CCFA 0.5		CCFD 0.5	
CCFA 0.7		CCFD 0.7	
CCFA 1.0		CCFD 1.0	
CCFA 1.5		CCFD 1.5	
CCFA 2.5		CCFD 2.5	
CCFA 3.0		CCFD 3.0	
CCFA 4.0	CCFD 4.0		

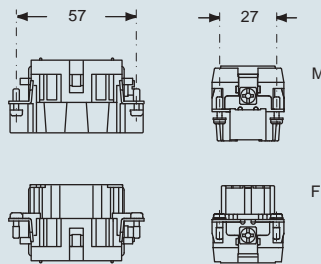
CCMA 0.3	silver plated	CCMD 0.3	gold plated 1)
CCMA 0.5		CCMD 0.5	
CCMA 0.7		CCMD 0.7	
CCMA 1.0		CCMD 1.0	
CCMA 1.5		CCMD 1.5	
CCMA 2.5		CCMD 2.5	
CCMA 3.0		CCMD 3.0	
CCMA 4.0	CCMD 4.0		

CC 0.5 AN
CC 0.7 AN
CC 1.0 AN
CC 1.5 AN
CC 2.5 AN

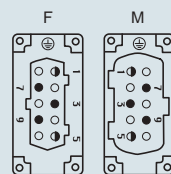
- characteristics according to EN 61984:
- 16A 830V 8kV 3**
- 16A 1000V 8kV 2**
- 16A 720/1250V 8kV 2**
- auxiliary contacts: **16A 500V 6kV 3**
- UL, CSA, CCC *, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 562



dimensions in mm

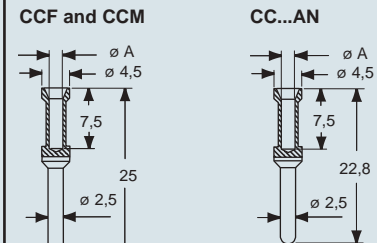


contacts side (front view)



the auxiliary contacts are in the forward position upon opening

dimensions in mm



CCF, CCM and CC..AN contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	(mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC..AN series) on pages 534, 538, 544, 546, 548

dimensions shown are not binding and may be changed without notice

enclosures:

size "57.27"	page:
C-TYPE IP65/IP66 *	244 - 249
C7 IP67, two levers *	275
V-TYPE IP65/IP66, single lever *	281/288 - 291
BIG hoods *	308 - 311
T-TYPE IP65 insulating	328 - 329
T-TYPE / W IP66 insulating	338 - 339
HYGIENIC T-TYPE / H IP66/IP69	352 - 353
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	360 - 361
W-TYPE for aggressive environments	374
EMC *	393
central lever *	406 - 407
IP68	424 - 427
insulated 830V	437 - 440
LS-TYPE *	452 - 453
panel supports: COB	462 - 463

* cannot be used with CME series

inserts,
screw terminal connection



silver plated contacts

inserts,
spring terminal connection



silver plated contacts

NEW

description

part No.

part No.

indirect, with plate 1)
female inserts with female contacts
male inserts with male contacts

CMEF 03 T
CMEM 03 T

direct, without plate 2)
female inserts with female contacts
male inserts with male contacts

CMEF 03 TX
CMEM 03 TX

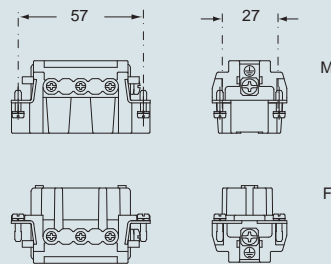
spring terminals with actuator button
female inserts with female contacts
male inserts with male contacts

CMSHF 03
CSMHM 03

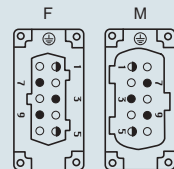
- characteristics according to EN 61984:

- 16A 830V 8kV 3
- 16A 1000V 8kV 2
- 16A 720/1250V 8kV 2
- auxiliary contacts: 16A 500V 6kV 3
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ (CME) - ≤ 3 mΩ (CMSH)
- for maximum current load, see the following load curves inserts, for more information see page 562

dimensions in mm



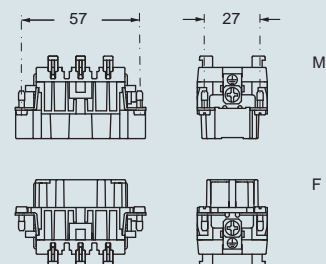
contacts side (front view)



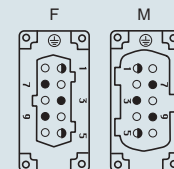
① the auxiliary contacts are in the forward position upon opening

- inserts with plate, for section conductors: 0,5 - 4 mm² - AWG 20 - 12
- inserts without plate, for section conductors: 0,25 - 2,5 mm² - AWG 24 - 14
- conductors stripping length: 7 mm
- terminal screw torque: 0.5 Nm (4.4 lb.in), for more information see page 34 and 35
- UL, CSA, CCC *, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V

dimensions in mm

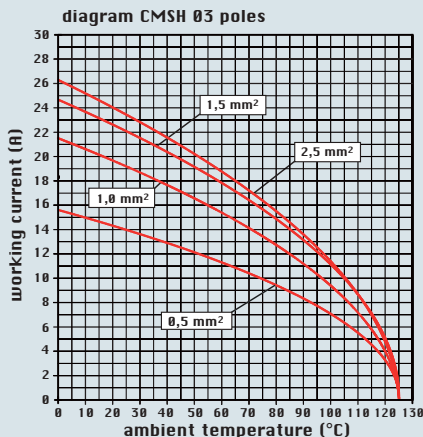
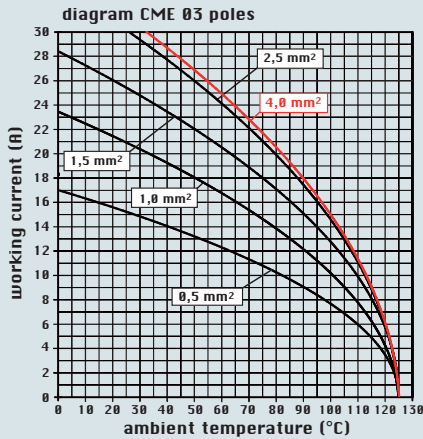


contacts side (front view)



① the auxiliary contacts are in the forward position upon opening

- inserts for section conductors: 0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping length: 9...11 mm



1) for non-prepared conductors

2) for bush terminal conductors

SQUICH® connections

Reopening

0,5x3,5 mm

dimensions shown are not binding and may be changed without notice

enclosures:
size "77.27"

page:

C-TYPE IP65/IP66	250 - 256
C7 IP67, two levers	276
V-TYPE IP65/IP66, single lever	282/292 - 295
BIG hoods	312 - 315
T-TYPE IP65 insulating	330 - 331
T-TYPE / W IP66 insulating	340 - 341
HYGIENIC T-TYPE / H IP66/IP69	354 - 355
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	362 - 363
W-TYPE for aggressive environments	375
EMC	394
central lever	408 - 409
IP68	428 - 431
LS-TYPE	454 - 455

panel supports:

page:

COB	462 - 463
-----------	-----------

inserts,
crimp connections



16A crimp contacts
normal and for advanced opening
silver and gold plated



description	part No.	part No.	part No.
-------------	----------	----------	----------

female inserts with female contacts
female inserts for female contacts
male inserts for male contacts

CMCEF 06
CMCEM 06

16A female contacts

0,14-0,37 mm ²	AWG 26-22	three grooves
0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves
3 mm ²	AWG 12	one wide groove
4 mm ²	AWG 12	with no grooves

16A male contacts

0,14-0,37 mm ²	AWG 26-22	three grooves
0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves
3 mm ²	AWG 12	one wide groove
4 mm ²	AWG 12	with no grooves

16A male crimp contacts for advanced opening

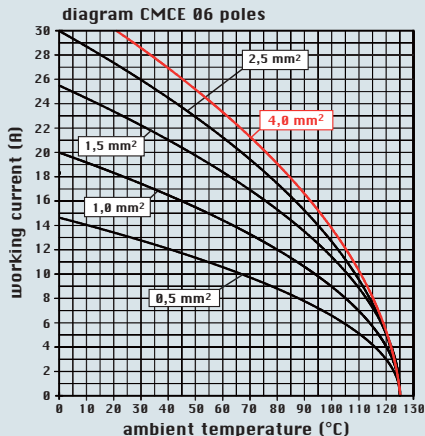
0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves

CCFA 0.3	silver plated	CCFD 0.3	gold plated 1)
CCFA 0.5		CCFD 0.5	
CCFA 0.7		CCFD 0.7	
CCFA 1.0		CCFD 1.0	
CCFA 1.5		CCFD 1.5	
CCFA 2.5		CCFD 2.5	
CCFA 3.0		CCFD 3.0	
CCFA 4.0	CCFD 4.0		

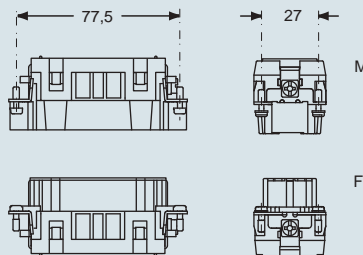
CCMA 0.3	CCMD 0.3
CCMA 0.5	CCMD 0.5
CCMA 0.7	CCMD 0.7
CCMA 1.0	CCMD 1.0
CCMA 1.5	CCMD 1.5
CCMA 2.5	CCMD 2.5
CCMA 3.0	CCMD 3.0
CCMA 4.0	CCMD 4.0

CC 0.5 AN
CC 0.7 AN
CC 1.0 AN
CC 1.5 AN
CC 2.5 AN

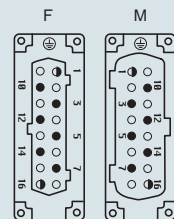
- characteristics according to EN 61984:
- 16A 830V 8kV 3**
- 16A 1000V 8kV 2**
- 16A 720/1250V 8kV 2**
- auxiliary contacts: **16A 500V 6kV 3**
- UL, CSA, CCC *, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 562



dimensions in mm

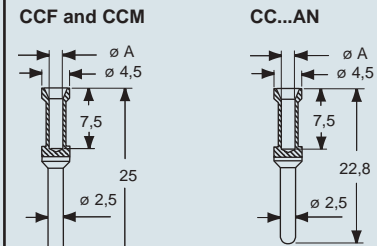


contacts side (front view)



the auxiliary contacts are in the forward position upon opening

dimensions in mm



CCF, CCM and CC..AN contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	(mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC..AN series) on pages 534, 538, 544, 546, 548

dimensions shown are not binding and may be changed without notice

enclosures:

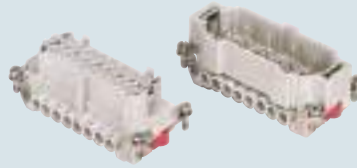
size "77.27"

page:

C-TYPE IP65/IP66 *	250 - 256
C7 IP67, two levers *	276
V-TYPE IP65/IP66, single lever *	282/292 - 295
BIG hoods *	312 - 315
T-TYPE IP65 insulating	330 - 331
T-TYPE / W IP66 insulating	340 - 341
HYGIENIC T-TYPE / H IP66/IP69	354 - 355
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	362 - 363
W-TYPE for aggressive environments	375
EMC *	394
central lever *	408 - 409
IP68	428 - 431
insulated 830V	441 - 444
LS-TYPE *	454 - 455
panel supports: COB	462 - 463

* cannot be used with CME series

**inserts,
screw terminal connection**



silver plated contacts

**inserts,
spring terminal connection**



silver plated contacts

NEW

description

part No.

part No.

indirect, with plate 1)
female inserts with female contacts
male inserts with male contacts

**CMEF 06 T
CMEM 06 T**

direct, without plate 2)
female inserts with female contacts
male inserts with male contacts

**CMEF 06 TX
CMEM 06 TX**

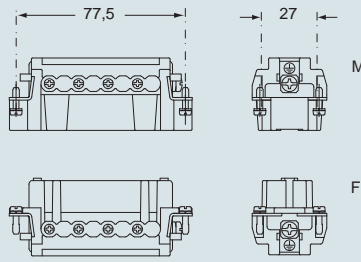
spring terminals with actuator button
female inserts with female contacts
male inserts with male contacts

**CMSHF 06
CSMHM 06**

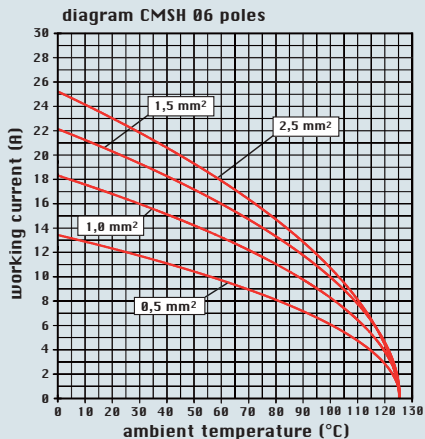
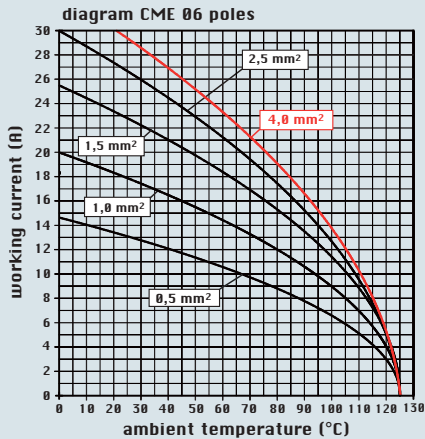
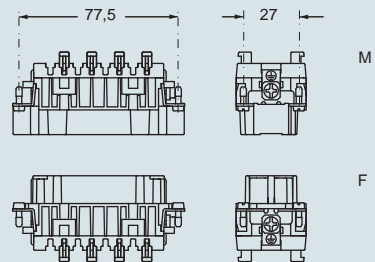
- characteristics according to EN 61984:

- 16A 830V 8kV 3**
- 16A 1000V 8kV 2**
- 16A 720/1250V 8kV 2**
- auxiliary contacts: **16A 500V 6kV 3**
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 1 \text{ m}\Omega$ (CME) - $\leq 3 \text{ m}\Omega$ (CMSH)
- for maximum current load, see the following load curves inserts, for more information see page 562

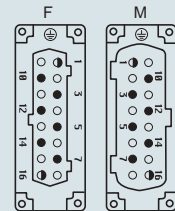
dimensions in mm



dimensions in mm



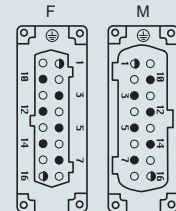
contacts side (front view)



● the auxiliary contacts are in the forward position upon opening

- inserts with plate, for section conductors: 0,5 - 4 mm² - AWG 20 - 12
- inserts without plate, for section conductors: 0,25 - 2,5 mm² - AWG 24 - 14
- conductors stripping length: 7 mm
- terminal screw torque: 0.5 Nm (4.4 lb.in), for more information see page 21 and 22
- UL, CSA, CCC *, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V

contacts side (front view)



● the auxiliary contacts are in the forward position upon opening

- inserts for section conductors: 0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping length: 9...11 mm

1) for non-prepared conductors

2) for bush terminal conductors

SQUICH® connections

Reopening

0,5x3,5 mm

dimensions shown are not binding and may be changed without notice

CME - CMSH

enclosures:
size "104.27" page:

C-TYPE IP65/IP66 258 - 266
 C7 IP67, two levers 277
 V-TYPE IP65/IP66, single lever 283/296 - 299
 BIG hoods 316 - 319
 T-TYPE IP65 insulating 332 - 333
 T-TYPE / W IP66 insulating 342 - 343
 HYGIENIC T-TYPE / H IP66/IP69 356 - 357
 HYGIENIC T-TYPE / C IP66/IP69, -50 °C 364 - 365
 W-TYPE for aggressive environments 376
 EMC 395
 central lever 410 - 412
 IP68 432 - 435
 LS-TYPE 456 - 457

panel supports: page:
 COB 462 - 463

inserts,
crimp connections



16A crimp contacts
normal and for advanced opening
silver and gold plated



description	part No.	part No.	part No.
-------------	----------	----------	----------

without contacts (to be ordered separately)
 female inserts for female contacts
 male inserts for male contacts

CMCEF 10
 CMCEM 10

16A female contacts

0,14-0,37 mm ²	AWG 26-22	three grooves
0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves
3 mm ²	AWG 12	one wide groove
4 mm ²	AWG 12	with no grooves

16A male contacts

0,14-0,37 mm ²	AWG 26-22	three grooves
0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves
3 mm ²	AWG 12	one wide groove
4 mm ²	AWG 12	with no grooves

16A male crimp contacts for advanced opening

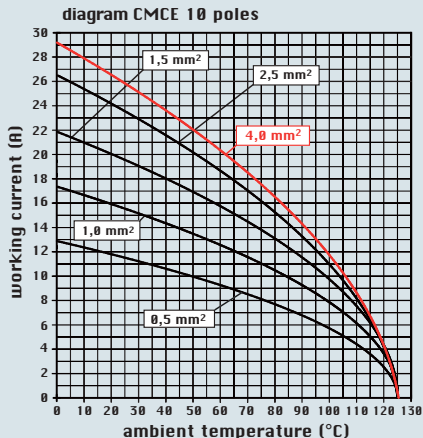
0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves

CCFA 0.3	silver plated	CCFD 0.3	gold plated 1)
CCFA 0.5		CCFD 0.5	
CCFA 0.7		CCFD 0.7	
CCFA 1.0		CCFD 1.0	
CCFA 1.5		CCFD 1.5	
CCFA 2.5		CCFD 2.5	
CCFA 3.0		CCFD 3.0	
CCFA 4.0	CCFD 4.0		

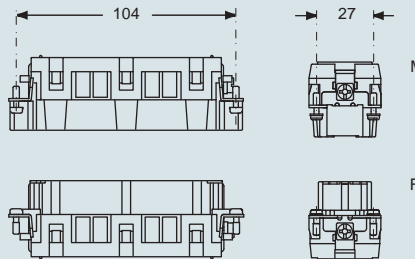
CCMA 0.3	silver plated	CCMD 0.3	gold plated 1)
CCMA 0.5		CCMD 0.5	
CCMA 0.7		CCMD 0.7	
CCMA 1.0		CCMD 1.0	
CCMA 1.5		CCMD 1.5	
CCMA 2.5		CCMD 2.5	
CCMA 3.0		CCMD 3.0	
CCMA 4.0	CCMD 4.0		

CC 0.5 AN
CC 0.7 AN
CC 1.0 AN
CC 1.5 AN
CC 2.5 AN

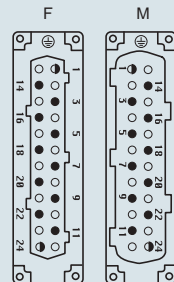
- characteristics according to EN 61984:
16A 830V 8kV 3
16A 1000V 8kV 2
16A 720/1250V 8kV 2
- auxiliary contacts: **16A 500V 6kV 3**
- UL, CSA, CCC *, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 562



dimensions in mm



contacts side (front view)



the auxiliary contacts are in the forward position upon opening

dimensions in mm

CCF and CCM		CC...AN	
	ϕA		ϕA
7,5	$\phi 4,5$	7,5	$\phi 4,5$
25		22,8	
$\phi 2,5$		$\phi 2,5$	

CCF, CCM and CC...AN contacts		
conductor section	conductor slot	conductors stripping length
mm ²	ϕA (mm)	(mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

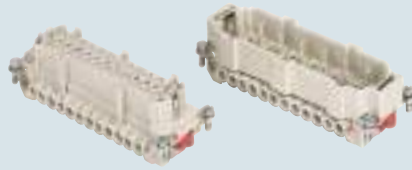
dimensions shown are not binding and may be changed without notice

enclosures:

size "104.27"	page:
C-TYPE IP65/IP66 *	258 - 266
C7 IP67, two levers *	277
V-TYPE IP65/IP66, single lever *	283/296 - 299
BIG hoods *	316 - 319
T-TYPE IP65 insulating	332 - 333
T-TYPE / W IP66 insulating	342 - 343
HYGIENIC T-TYPE / H IP66/IP69	356 - 357
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	364 - 365
W-TYPE for aggressive environments	376
EMC *	395
central lever *	410 - 412
IP68	432 - 435
insulated 830V	445 - 448
LS-TYPE *	456 - 457
panel supports: COB	462 - 463

* cannot be used with CME series

**inserts,
screw terminal connection**



silver plated contacts

**inserts,
spring terminal connection**



silver plated contacts

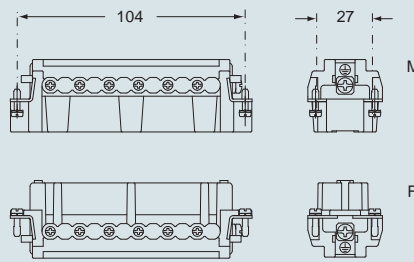
NEW

description	part No.
indirect, with plate 1) female inserts with female contacts male inserts with male contacts	CMEF 10 T CMEM 10 T
direct, without plate 2) female inserts with female contacts male inserts with male contacts	CMEF 10 TX CMEM 10 TX
spring terminals with actuator button female inserts with female contacts male inserts with male contacts	CMSHF 10 CMSHM 10

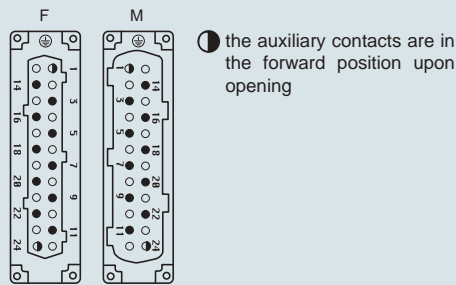
- characteristics according to EN 61984:

- 16A 830V 8kV 3**
- 16A 1000V 8kV 2**
- 16A 720/1250V 8kV 2**
- auxiliary contacts: **16A 500V 6kV 3**
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 1 \text{ m}\Omega$ (CME) - $\leq 3 \text{ m}\Omega$ (CMSH)
- for maximum current load, see the following load curves inserts, for more information see page 562

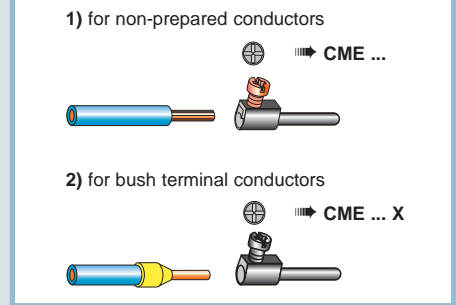
dimensions in mm



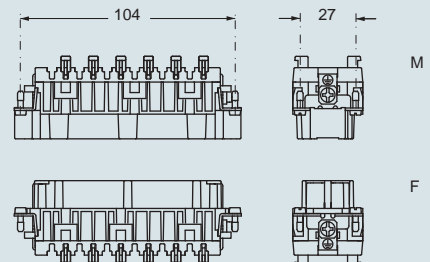
contacts side (front view)



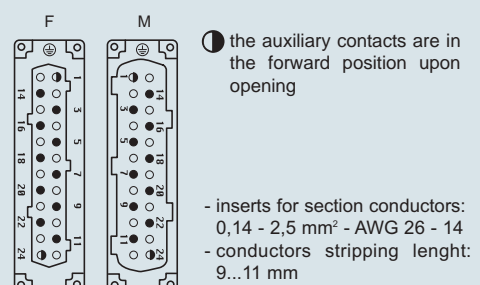
- inserts with plate, for section conductors: 0,5 - 4 mm² - AWG 20 - 12
- inserts without plate, for section conductors: 0,25 - 2,5 mm² - AWG 24 - 14
- conductors stripping length: 7 mm
- terminal screw torque: 0.5 Nm (4.4 lb.in), for more information see page 34 and 35
- UL, CSA, CCC *, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V



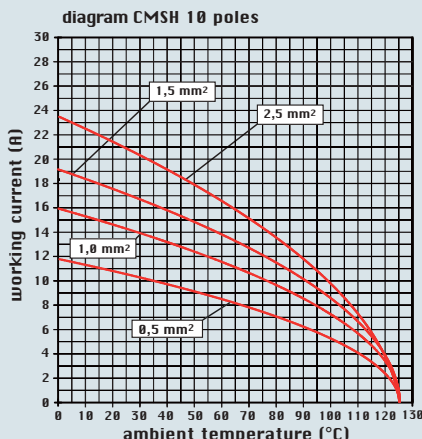
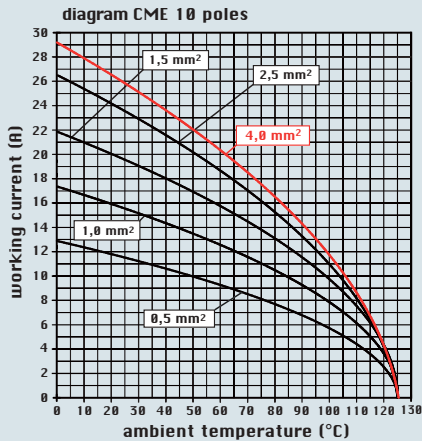
dimensions in mm



contacts side (front view)



- inserts for section conductors: 0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping length: 9...11 mm



dimensions shown are not binding and may be changed without notice

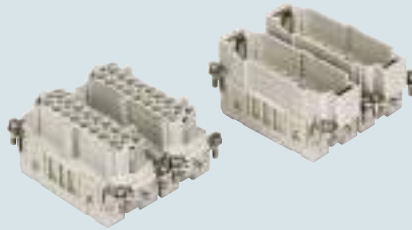
enclosures:
size "77.62"

page:

C-TYPE IP65/IP66 267 - 270

W-TYPE for aggressive environments 377

inserts,
crimp connections



16A crimp contacts
normal and for advanced opening
silver and gold plated



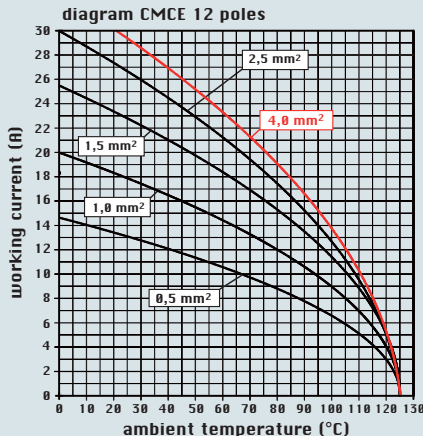
- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

description	part No.	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts, No. (1÷16) and (17÷32) male inserts, No. (1÷16) and (17÷32)	CMCEF 06 CMCEM 06	CMCEF 06 N CMCEM 06 N		
16A female contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves			CCFA 0.3 CCFA 0.5 CCFA 0.7 CCFA 1.0 CCFA 1.5 CCFA 2.5 CCFA 3.0 CCFA 4.0	CCFD 0.3 CCFD 0.5 CCFD 0.7 CCFD 1.0 CCFD 1.5 CCFD 2.5 CCFD 3.0 CCFD 4.0
16A male contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves			CCMA 0.3 CCMA 0.5 CCMA 0.7 CCMA 1.0 CCMA 1.5 CCMA 2.5 CCMA 3.0 CCMA 4.0	CCMD 0.3 CCMD 0.5 CCMD 0.7 CCMD 1.0 CCMD 1.5 CCMD 2.5 CCMD 3.0 CCMD 4.0
16A male crimp contacts for advanced opening 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves			CC 0.5 AN CC 0.7 AN CC 1.0 AN CC 1.5 AN CC 2.5 AN	

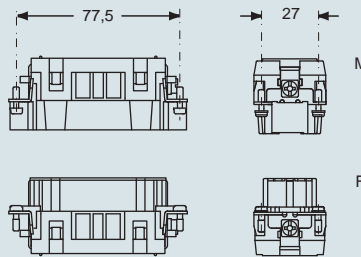
silver plated

gold plated 1)

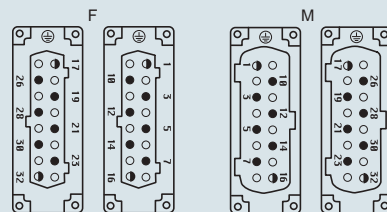
- characteristics according to EN 61984:
16A 830V 8kV 3
16A 1000V 8kV 2
16A 720/1250V 8kV 2
- auxiliary contacts: **16A 500V 6kV 3**
- UL, CSA, CCC *, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 562



dimensions in mm



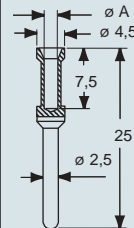
contacts side (front view)



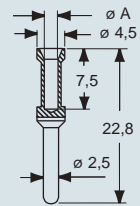
● the auxiliary contacts are in the forward position upon opening

dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC...AN contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	(mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

dimensions shown are not binding and may be changed without notice

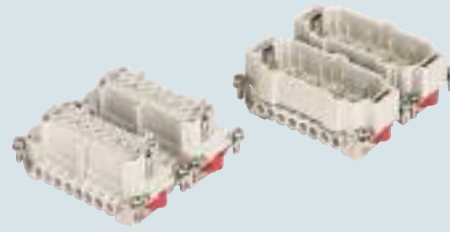
enclosures:
size "77.62"

page:

C-TYPE IP65/IP66 267 - 270
W-TYPE for aggressive environments 377

**inserts,
screw terminal connection**

**inserts,
spring terminal connection**



silver plated contacts

silver plated contacts

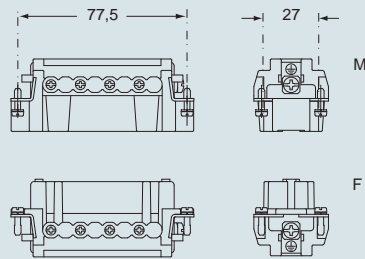
NEW

description	part No.	part No.	part No.	part No.
indirect, with plate 1) female inserts, No. (1-16) and (17-32) male inserts, No. (1-16) and (17-32)	CMEF 06 T CMEM 06 T	CMEF 06 TN CMEM 06 TN		
direct, without plate 2) female inserts, No. (1-16) and (17-32) male inserts, No. (1-16) and (17-32)	CMEF 06 TX CMEM 06 TX	CMEF 06 TXN CMEM 06 TXN		
spring terminals with actuator button female inserts, No. (1-16) and (17-32) male inserts, No. (1-16) and (17-32)			CMSHF 06 CMSHM 06	CMSHF 06 N CMSHM 06 N

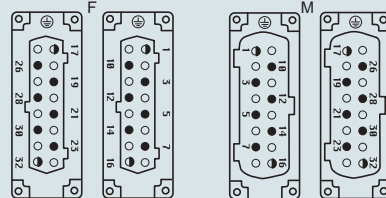
- characteristics according to EN 61984:

- 16A 830V 8kV 3**
- 16A 1000V 8kV 2**
- 16A 720/1250V 8kV 2**
- auxiliary contacts: **16A 500V 6kV 3**
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 1 \text{ m}\Omega$ (CME) - $\leq 3 \text{ m}\Omega$ (CMSH)
- for maximum current load, see the following load curves inserts, for more information see page 562

dimensions in mm

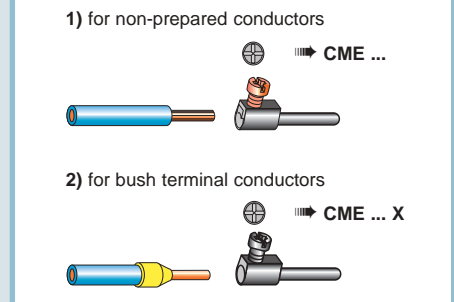


contacts side (front view)

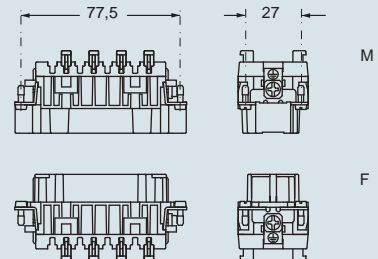


● the auxiliary contacts are in the forward position upon opening

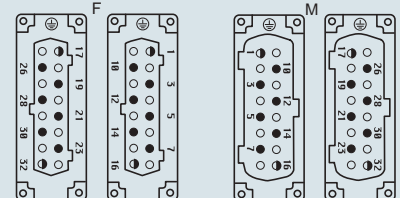
- inserts with plate, for section conductors: 0,5 - 4 mm² - AWG 20 - 12
- inserts without plate, for section conductors: 0,25 - 2,5 mm² - AWG 24 - 14
- conductors stripping length: 7 mm
- terminal screw torque: 0.5 Nm (4.4 lb.in), for more information see page 34 and 35
- UL, CSA, CCC *, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V



dimensions in mm

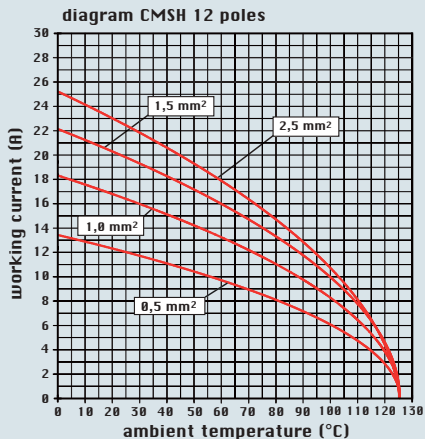
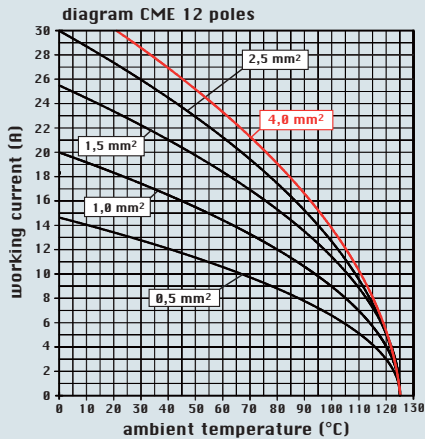
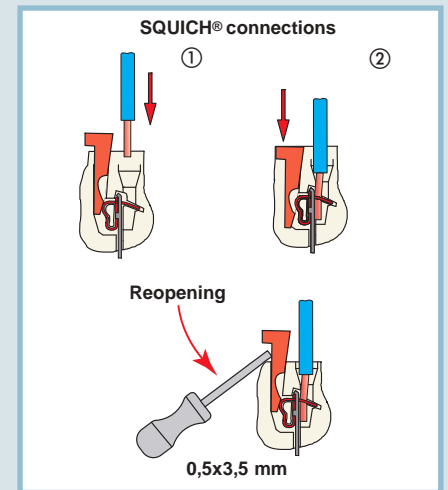


contacts side (front view)



● the auxiliary contacts are in the forward position upon opening

- inserts for section conductors: 0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping length: 9...11 mm



dimensions shown are not binding and may be changed without notice

enclosures:
 size "104.62" page:
C-TYPE IP65/IP66..... 271
W-TYPE for aggressive environments 378

**inserts,
 crimp connections**



**16A crimp contacts
 normal and for advanced opening
 silver and gold plated**



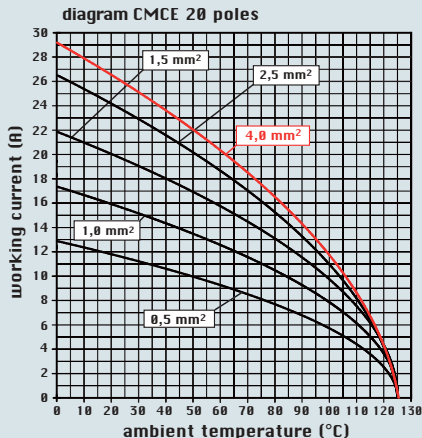
- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

description	part No.	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts, No. (1-24) and (25-48) male inserts, No. (1-24) and (25-48)	CMCEF 10 CMCEM 10	CMCFE 10 N CMCEM 10 N		
16A female contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves			CCFA 0.3 CCFA 0.5 CCFA 0.7 CCFA 1.0 CCFA 1.5 CCFA 2.5 CCFA 3.0 CCFA 4.0	CCFD 0.3 CCFD 0.5 CCFD 0.7 CCFD 1.0 CCFD 1.5 CCFD 2.5 CCFD 3.0 CCFD 4.0
16A male contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves			CCMA 0.3 CCMA 0.5 CCMA 0.7 CCMA 1.0 CCMA 1.5 CCMA 2.5 CCMA 3.0 CCMA 4.0	CCMD 0.3 CCMD 0.5 CCMD 0.7 CCMD 1.0 CCMD 1.5 CCMD 2.5 CCMD 3.0 CCMD 4.0
16A male crimp contacts for advanced opening 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves			CC 0.5 AN CC 0.7 AN CC 1.0 AN CC 1.5 AN CC 2.5 AN	

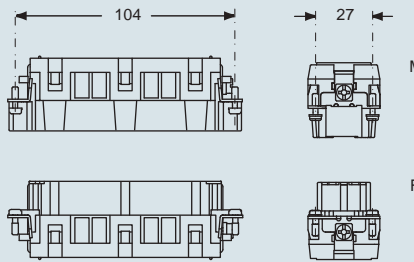
silver plated

gold plated 1)

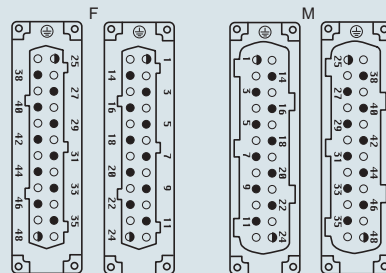
- characteristics according to EN 61984:
16A 830V 8kV 3
16A 1000V 8kV 2
16A 720/1250V 8kV 2
- auxiliary contacts: **16A 500V 6kV 3**
- UL, CSA, CCC *, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 562



dimensions in mm



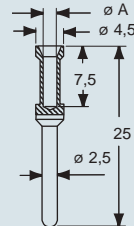
contacts side (front view)



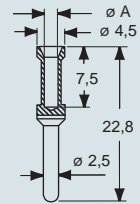
● the auxiliary contacts are in the forward position upon opening

dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC...AN contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	(mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

enclosures:
size "104.62" page:

C-TYPE IP65/IP66..... 271
W-TYPE for aggressive environments 378

**inserts,
screw terminal connection**



silver plated contacts

**inserts,
spring terminal connection**

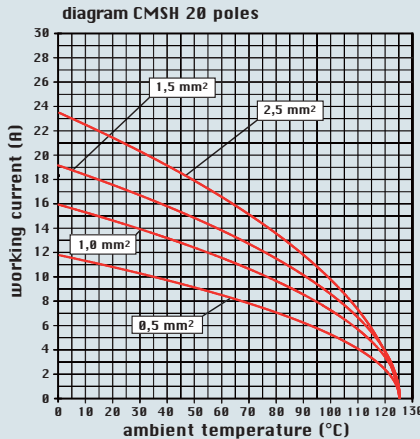
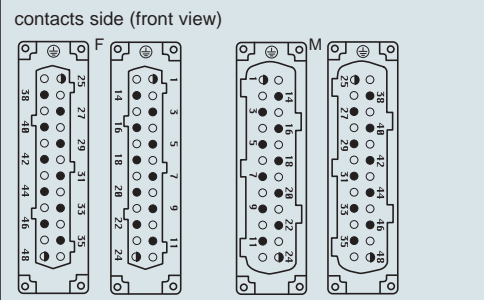
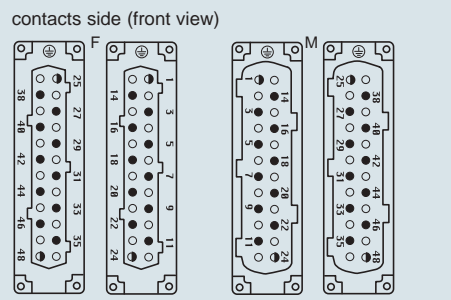
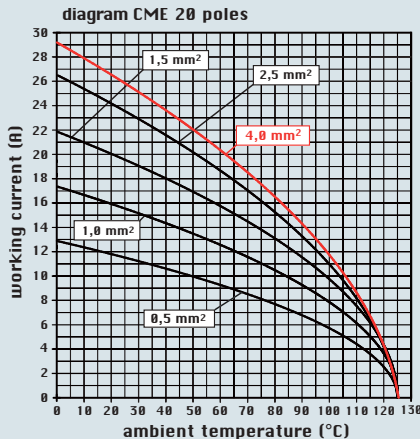
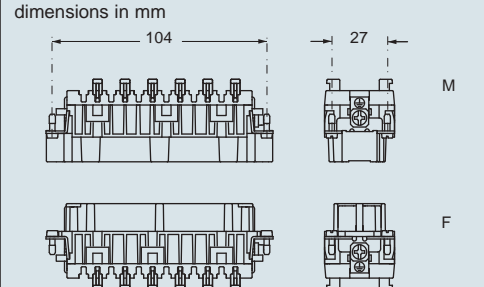
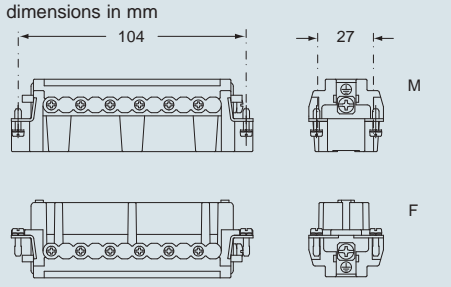


silver plated contacts

NEW

description	part No.	part No.	part No.	part No.
indirect, with plate 1) female inserts, No. (1-24) and (25-48) male inserts, No. (1-24) and (25-48)	CMEF 10 T CMEM 10 T	CMEF 10 TN CMEM 10 TN		
direct, without plate 2) female inserts, No. (1-24) and (25-48) male inserts, No. (1-24) and (25-48)	CMEF 10 TX CMEM 10 TX	CMEF 10 TXN CMEM 10 TXN		
spring terminals with actuator button female inserts, No. (1-24) and (25-48) male inserts, No. (1-24) and (25-48)			CMSHF 10 CMSHM 10	CMSHF 10 N CMSHM 10 N

- characteristics according to EN 61984:
16A 830V 8kV 3
16A 1000V 8kV 2
16A 720/1250V 8kV 2
- auxiliary contacts: **16A 500V 6kV 3**
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ (CME) - ≤ 3 mΩ (CMSH)
- for maximum current load, see the following load curves inserts, for more information see page 562

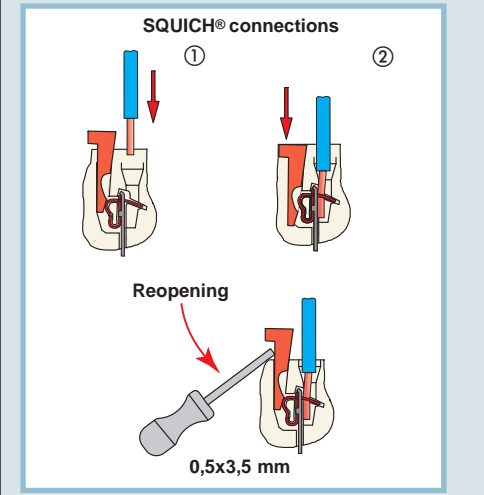
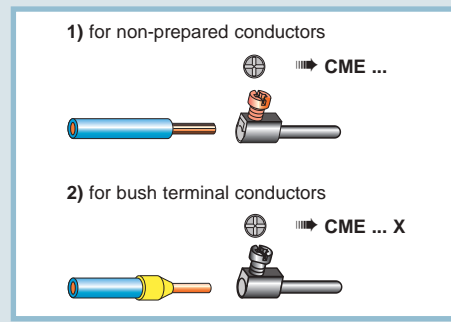


● the auxiliary contacts are in the forward position upon opening

- inserts with plate, for section conductors: 0,5 - 4 mm² - AWG 20 - 12
- inserts without plate, for section conductors: 0,25 - 2,5 mm² - AWG 24 - 14
- conductors stripping length: 7 mm
- terminal screw torque: 0.5 Nm (4.4 lb.in), for more information see page 34 and 35
- UL, CSA, CCC *, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V

● the auxiliary contacts are in the forward position upon opening

- inserts for section conductors: 0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping length: 9...11 mm



dimensions shown are not binding and may be changed without notice

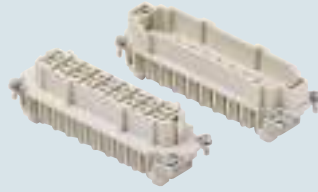
enclosures:
size "104.27" page:

T-TYPE IP65 insulating	332 - 333
T-TYPE / W IP66 insulating	342 - 343
HYGIENIC T-TYPE / H IP66/IP69	356 - 357
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	364 - 365
W-TYPE for aggressive environments	376
insulated 830V	445 - 448

panel supports:
COB

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF and CCM series) on pages 534, 538, 544, 546, 548

inserts,
crimp connections



16A crimp contacts
silver and gold plated



description
without contacts (to be ordered separately)
female inserts for female contacts
male inserts for male contacts

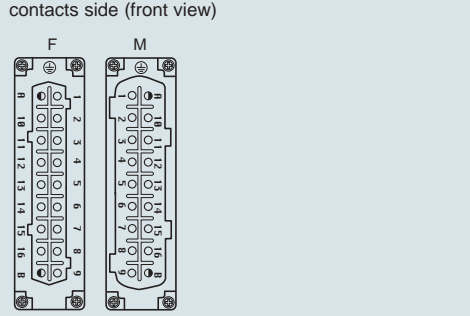
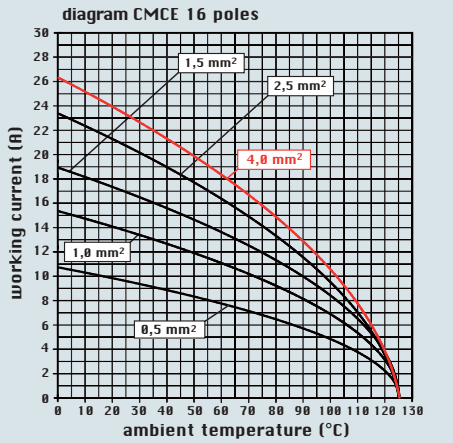
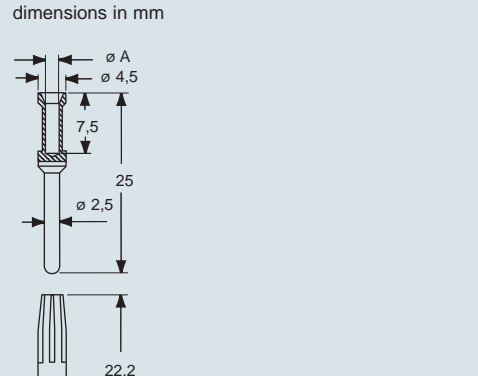
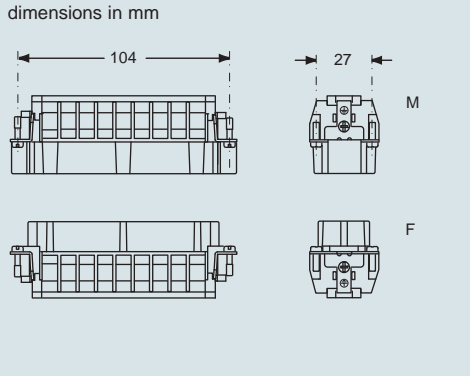
part No.
CMCEF 16
CMCEM 16

part No. part No.

16A female contacts		
0,14-0,37 mm ²	AWG 26-22	three grooves
0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves
3 mm ²	AWG 12	one wide groove
4 mm ²	AWG 12	with no grooves
16A male contacts		
0,14-0,37 mm ²	AWG 26-22	three grooves
0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves
3 mm ²	AWG 12	one wide groove
4 mm ²	AWG 12	with no grooves

CCFA 0.3	silver plated	CCFD 0.3	gold plated 1)
CCFA 0.5		CCFD 0.5	
CCFA 0.7		CCFD 0.7	
CCFA 1.0		CCFD 1.0	
CCFA 1.5		CCFD 1.5	
CCFA 2.5		CCFD 2.5	
CCFA 3.0		CCFD 3.0	
CCFA 4.0		CCFD 4.0	
CCMA 0.3	silver plated	CCMD 0.3	gold plated 1)
CCMA 0.5		CCMD 0.5	
CCMA 0.7		CCMD 0.7	
CCMA 1.0		CCMD 1.0	
CCMA 1.5		CCMD 1.5	
CCMA 2.5		CCMD 2.5	
CCMA 3.0		CCMD 3.0	
CCMA 4.0		CCMD 4.0	

- characteristics according to EN 61984:
16A 400/690V 6kV 3
16A 1000V 8kV 2
16A 720/1250V 8kV 2
- auxiliary contacts: **16A 500V 6kV 3**
- UL, CSA, CCC *, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- inserts and enclosures for applications with temperatures up to 180 °C, available on request; enclosures on page 401
- for maximum current load, see the following load curves inserts, for more information see page 562



- the auxiliary contacts are in the forward position upon opening
- the auxiliary contacts are the same as power contacts: early opening is obtained by drawing back the seats

CCF and CCM contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	(mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

dimensions shown are not binding and may be changed without notice

CMCE

enclosures:
size "104.27" page:

- T-TYPE IP65 insulating 332 - 333
- T-TYPE / W IP66 insulating 342 - 343
- HYGIENIC T-TYPE / H IP66/IP69 356 - 357
- HYGIENIC T-TYPE / C IP66/IP69, -50 °C 364 - 365
- W-TYPE for aggressive environments 376
- insulated 830V 445 - 448

panel supports: page:
COB 462 - 463

inserts,
screw terminal connection



silver
plated
contacts

description

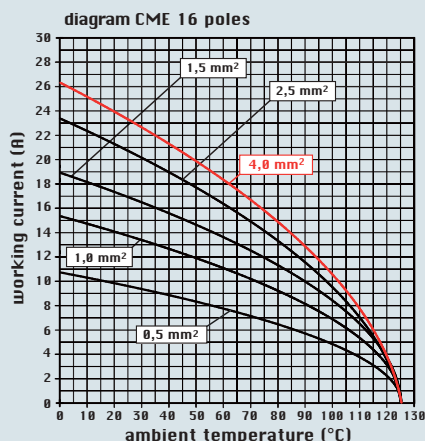
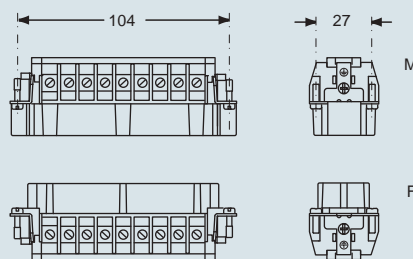
part No.

female inserts with female contacts
male inserts with male contacts

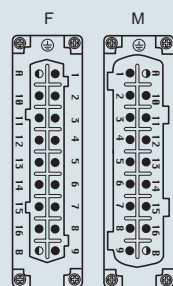
CMEF 16
CMEM 16

- characteristics according to EN 61984:
- 16A 400/690V 6kV 3**
- 16A 1000V 8kV 2**
- 16A 720/1250V 8kV 2**
- auxiliary contacts: **16A 500V 6kV 3**
- UL, CSA, CCC *, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 1 \text{ m}\Omega$
- inserts and enclosures for applications with temperatures up to 180 °C, available on request; enclosures on page 401
- for maximum current load, see the following load curves inserts, for more information see page 562

dimensions in mm



contacts side (front view)



● the auxiliary contacts are in the forward position upon opening

- inserts with plate, for section conductors:
0,75 - 2,5 mm² - AWG 18 - 14
- conductors stripping length: 7 mm
- terminal screw torque: 0,5 Nm (4,4 lb.in), for more information see page 34 and 35

dimensions shown are not binding
and may be changed without notice

enclosures:
size "104.62" page:

C-TYPE IP65/IP66..... 271
W-TYPE for aggressive environments 378

inserts,
crimp connections



16A crimp contacts
silver and gold plated



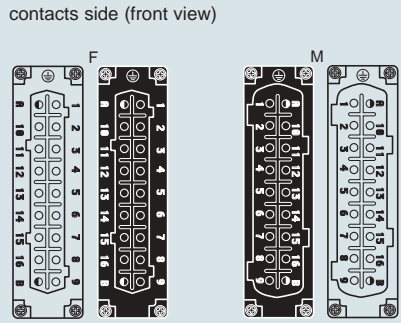
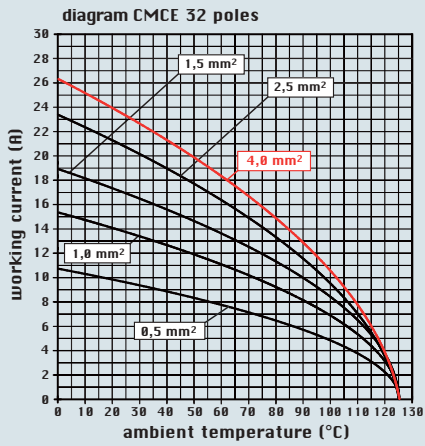
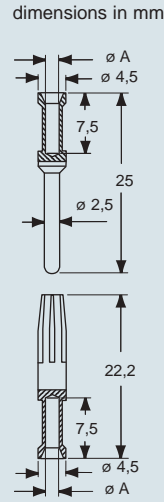
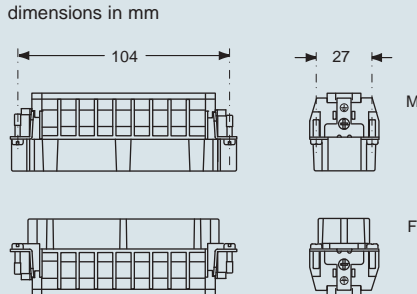
- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF and CCM series) on pages 534, 538, 544, 546, 548

description	part No.	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts, white and black male inserts, white and black	CMCEF 16 CMCEM 16	CMCEF 16 N CMCEM 16 N		

16A female contacts		
0,14-0,37 mm ²	AWG 26-22	three grooves
0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves
3 mm ²	AWG 12	one wide groove
4 mm ²	AWG 12	with no grooves
16A male contacts		
0,14-0,37 mm ²	AWG 26-22	three grooves
0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves
3 mm ²	AWG 12	one wide groove
4 mm ²	AWG 12	with no grooves

silver plated		gold plated 1)	
CCFA 0.3	CCFD 0.3	CCMA 0.3	CCMD 0.3
CCFA 0.5	CCFD 0.5	CCMA 0.5	CCMD 0.5
CCFA 0.7	CCFD 0.7	CCMA 0.7	CCMD 0.7
CCFA 1.0	CCFD 1.0	CCMA 1.0	CCMD 1.0
CCFA 1.5	CCFD 1.5	CCMA 1.5	CCMD 1.5
CCFA 2.5	CCFD 2.5	CCMA 2.5	CCMD 2.5
CCFA 3.0	CCFD 3.0	CCMA 3.0	CCMD 3.0
CCFA 4.0	CCFD 4.0	CCMA 4.0	CCMD 4.0

- characteristics according to EN 61984:
16A 400/690V 6kV 3
16A 1000V 8kV 2
16A 720/1250V 8kV 2
- auxiliary contacts: **16A 500V 6kV 3**
- UL, CSA, CCC *, EAC certified
* CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 562



- the auxiliary contacts are in the forward position upon opening
- the auxiliary contacts are the same as power contacts: early opening is obtained by drawing back the seats

CCF and CCM contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	(mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

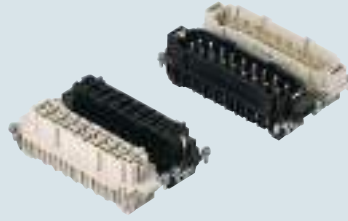
1) basic or high thickness gold plating page 481

dimensions shown are not binding and may be changed without notice

CMCE

enclosures:
 size "104.62" page:
C-TYPE IP65/IP66..... 271
W-TYPE for aggressive environments 378

**inserts,
 screw terminal connection**

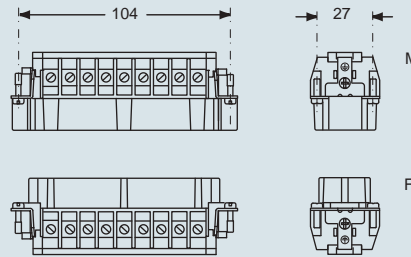


silver plated contacts

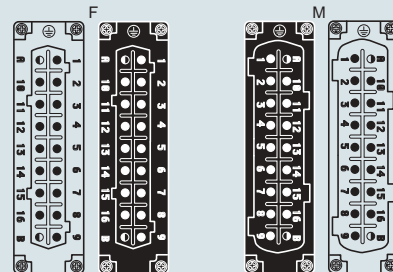
description	part No.	part No.
female inserts, white and black	CMEF 16	CMEF 16 N
male inserts, white and black	CMEM 16	CMEM 16 N

- characteristics according to EN 61984:
16A 400/690V 6kV 3
16A 1000V 8kV 2
16A 720/1250V 8kV 2
- auxiliary contacts: **16A 500V 6kV 3**
- UL, CSA, CCC *, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 562

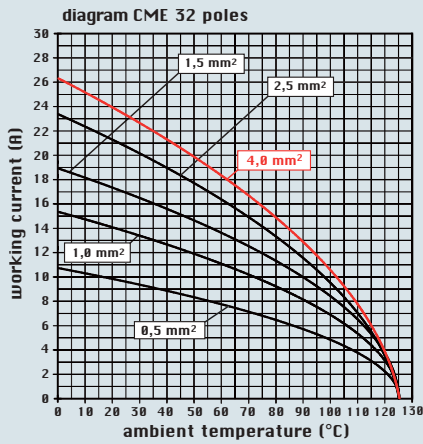
dimensions in mm



contacts side (front view)



● the auxiliary contacts are in the forward position upon opening



- inserts with plate, for section conductors: 0.75 - 2.5 mm² - AWG 18 - 14
- conductors stripping length: 7 mm
- terminal screw torque: 0.5 Nm (4.4 lb.in), for more information see page 34 and 35

dimensions shown are not binding and may be changed without notice

enclosures:
size "77.27" page:

C-TYPE IP65/IP66	250 - 256
C7 IP67, two levers	276
V-TYPE IP65/IP66, single lever	282/292 - 295
BIG hoods	312 - 315
T-TYPE IP65 insulating	330 - 331
T-TYPE / W IP66 insulating	340 - 341
HYGIENIC T-TYPE / H IP66/IP69	354 - 355
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	362 - 363
W-TYPE for aggressive environments	375
EMC	394
for 180 °C	400
central lever	408 - 409
IP68	428 - 431
LS-TYPE	454 - 455

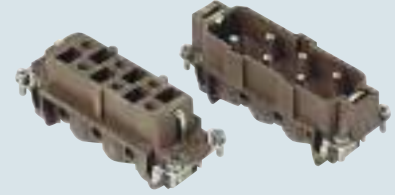
panel supports: page:
COB

inserts,
screw terminal connection



silver plated contacts

inserts,
screw terminal connection



silver plated contacts

description

indirect, with plate
female inserts with female contacts
male inserts with male contacts

part No.

CPF 06
CPM 06

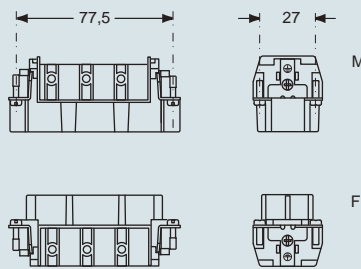
part No.

indirect, with plate, use in temperatures up to 180 °C
female inserts with female contacts, brown
male inserts with male contacts, brown

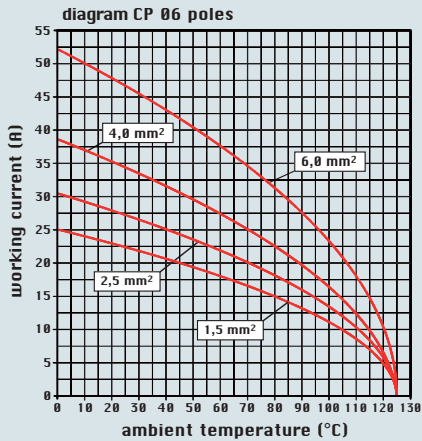
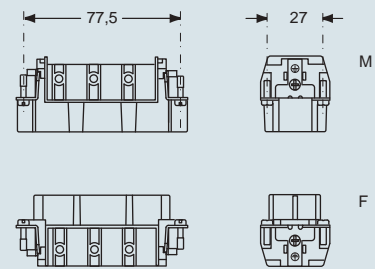
CPF 06 RY
CPM 06 RY

- characteristics according to EN 61984:
35A 400/690V 6kV 3
- UL, CSA, CCC *, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 G Ω
- ambient temperature limit: -40 °C ... +125 °C (CP RY version up to 180 °C)
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 0.5 m Ω
- for maximum current load, see the following load curves inserts, for more information see page 562

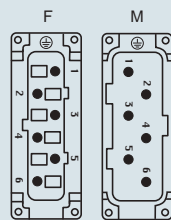
dimensions in mm



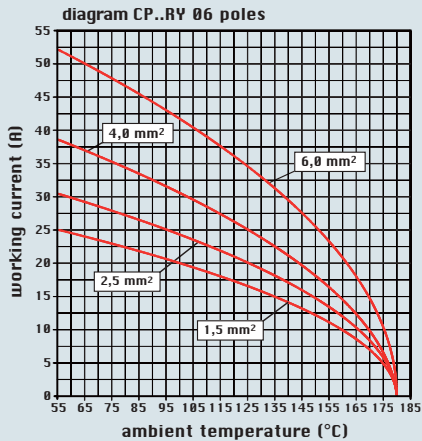
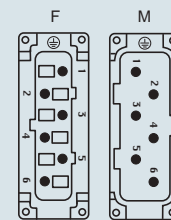
dimensions in mm



contacts side (front view)



contacts side (front view)



- inserts with plate, for section conductors: 1,50 - 6 mm² - AWG 16 - 10
- conductors stripping length: 10,5 mm
- terminal screw torque: 1,2 Nm (10,7 lb.in), for more information see page 34 and 35

- inserts with plate, for section conductors: 1,50 - 6 mm² - AWG 16 - 10
- conductors stripping length: 10,5 mm
- terminal screw torque: 1,2 Nm (10,7 lb.in), for more information see page 34 and 35

dimensions shown are not binding
and may be changed without notice

CP - CP..RY

enclosures:
size "77.62"

page:

C-TYPE IP65/IP66 267 - 270
W-TYPE for aggressive environments 377

inserts,
screw terminal connection

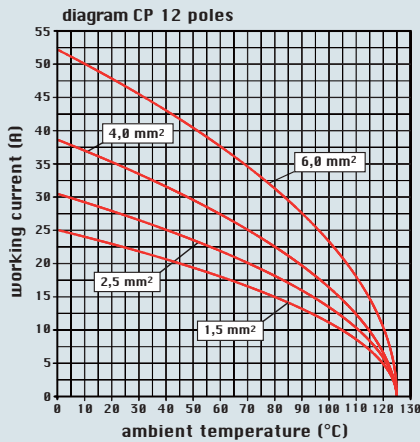
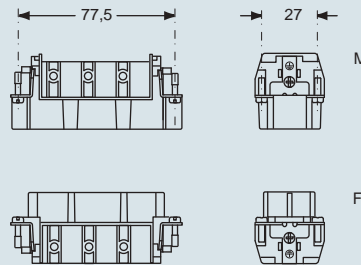


silver
plated
contacts

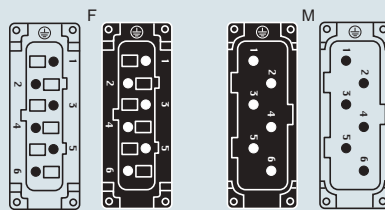
description	part No.	part No.
indirect, with plate female inserts No. (1-6), white and black male inserts No. (1-6), white and black	CPF 06 CPM 06	CPF 06 N CPM 06 N

- characteristics according to EN 61984:
- 35A 400/690V 6kV 3**
- UL, CSA, CCC *, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 0.5 \text{ m}\Omega$
- for maximum current load, see the following load curves inserts, for more information see page 562

dimensions in mm



contacts side (front view)



- inserts with plate, for section conductors:
1,50 - 6 mm² - AWG 16 - 10
- conductors stripping length: 10,5 mm
- terminal screw torque: 1,2 Nm (10,7 lb.in), for more information see page 34 and 35

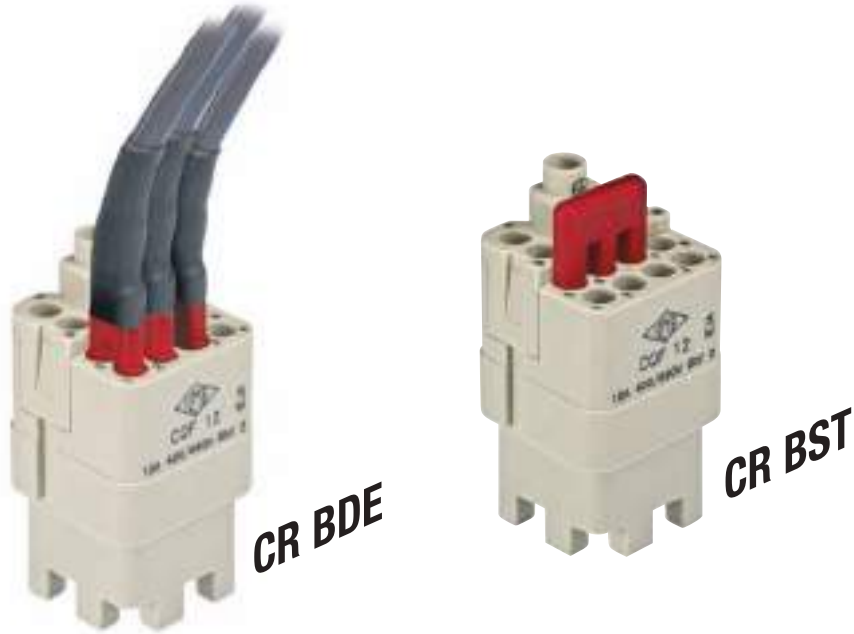
dimensions shown are not binding
and may be changed without notice

CQ series

12 poles + ⊕

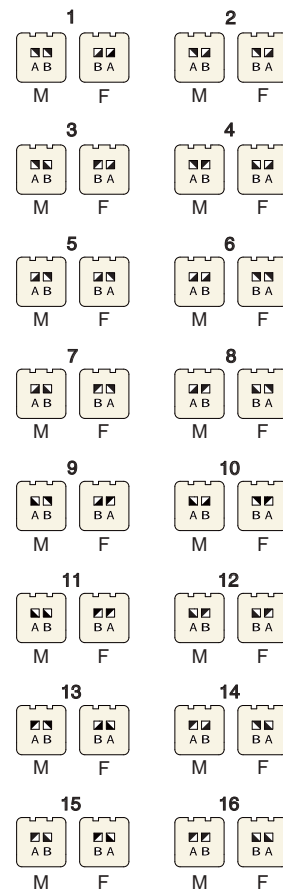
CQ

Bridges for delta or star connection



from page 493

Coding positions for CQ 12 connector



(A B) CQ 12 coding pin M = male insert F = female insert

page 165

enclosures:
size "21.21" page:

insulating type 221 - 222
 metallic type 223 - 225
 W-TYPE for aggressive environments 369
 EMC 387
 IP68 416 - 418



inserts, crimp connections



10A crimp contacts silver and gold plated



description	part No.	part No.	part No.
-------------	----------	----------	----------

without contacts (to be ordered separately)
 female inserts for female contacts
 male inserts for male contacts

CQF 12
CQM 12

10A female contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

silver plated	CDFA 0.3	CDFD 0.3
	CDFA 0.5	CDFD 0.5
	CDFA 0.7	CDFD 0.7
	CDFA 1.0	CDFD 1.0
	CDFA 1.5	CDFD 1.5
	CDFA 2.5	CDFD 2.5

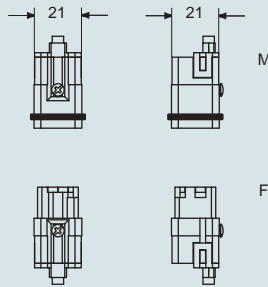
10A male contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

gold plated 1)	CDMA 0.3	CDMD 0.3
	CDMA 0.5	CDMD 0.5
	CDMA 0.7	CDMD 0.7
	CDMA 1.0	CDMD 1.0
	CDMA 1.5	CDMD 1.5
	CDMA 2.5	CDMD 2.5

- characteristics according to EN 61984:
- 10A 400V 6kV 3**
- 10A 400/690V 6kV 2**
- cUL (UL for USA and Canada), CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- the CQ 12 inserts are already supplied with a seal and a screw, which ensure IP66/IP67 protection rating
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 563

dimensions in mm



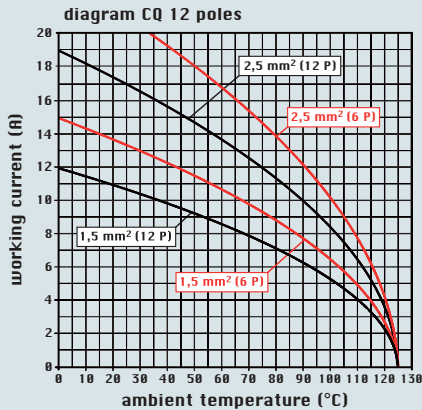
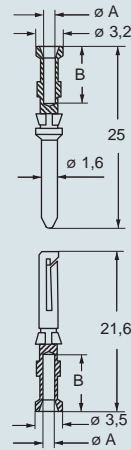
contacts side (front view)



the CR Q12 coding pins (to be ordered separately), allow the user to create 16 different combinations, according to the diagram shown on page 491



dimensions in mm



CDF and CDM contacts

conductor section mm ²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

dimensions shown are not binding and may be changed without notice

enclosures:
size "21.21" page:

insulating type 221 - 222
metallic type 223 - 225
W-TYPE for aggressive environments 369
EMC 387
IP68 416 - 418

inserts, crimp connections



16A crimp contacts normal and for advanced opening silver and gold plated



- inserts and enclosures for applications with temperatures up to 180 °C, available on request
 - can also be used partially fitted with 4 mm² section contacts

description	part No.	part No.	part No.
-------------	----------	----------	----------

without contacts (to be ordered separately)
 female inserts for female contacts
 male inserts for male contacts

CQF 05
CQM 05

16A female contacts

0,14-0,37 mm ²	AWG 26-22	three grooves
0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves
3 mm ²	AWG 12	one wide groove
4 mm ²	AWG 12	with no grooves

CCFA 0.3	silver plated	CCFD 0.3	gold plated 1)
CCFA 0.5		CCFD 0.5	
CCFA 0.7		CCFD 0.7	
CCFA 1.0		CCFD 1.0	
CCFA 1.5		CCFD 1.5	
CCFA 2.5		CCFD 2.5	
CCFA 3.0		CCFD 3.0	
CCFA 4.0		CCFD 4.0	

16A male contacts

0,14-0,37 mm ²	AWG 26-22	three grooves
0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves
3 mm ²	AWG 12	one wide groove
4 mm ²	AWG 12	with no grooves

CCMA 0.3	silver plated	CCMD 0.3	gold plated 1)
CCMA 0.5		CCMD 0.5	
CCMA 0.7		CCMD 0.7	
CCMA 1.0		CCMD 1.0	
CCMA 1.5		CCMD 1.5	
CCMA 2.5		CCMD 2.5	
CCMA 3.0		CCMD 3.0	
CCMA 4.0		CCMD 4.0	

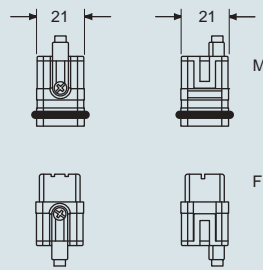
16A male crimp contacts for advanced opening

0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves

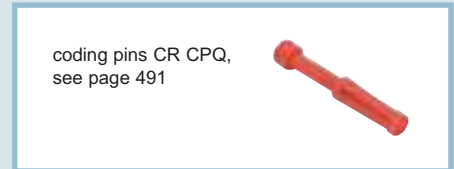
CC 0.5 AN
CC 0.7 AN
CC 1.0 AN
CC 1.5 AN
CC 2.5 AN

- characteristics according to EN 61984:
16A 230/400V 4kV 3
16A 320/500V 4kV 2
- cUL (UL for USA and Canada), CSA, CCC *, GL, EAC certified; * CQC certification being applied for - rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 563

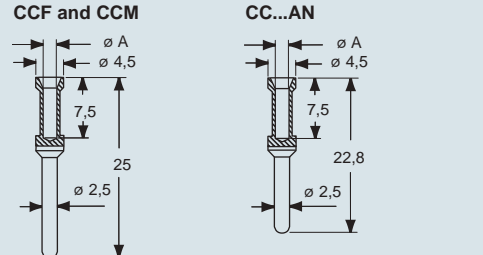
dimensions in mm



contacts side (front view)



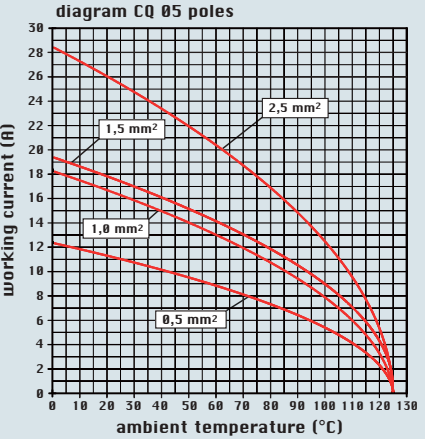
dimensions in mm



CCF, CCM and CC..AN contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	(mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481



dimensions shown are not binding and may be changed without notice

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

CQ

enclosures:
size "32.13"

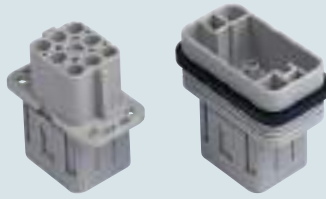
page:

insulating type 226 - 227
EMC 388 - 389

- can also be used partially fitted with 4 mm² section contacts



inserts, crimp connections



16A crimp contacts normal and for advanced opening silver and gold plated



description

part No.

part No.

part No.

without contacts (to be ordered separately)
female inserts for female contacts
male inserts for male contacts

CQF 08
CQM 08

16A female contacts
0,14-0,37 mm² AWG 26-22 three grooves
0,5 mm² AWG 20 with no grooves
0,75 mm² AWG 18 one groove (back side)
1 mm² AWG 18 one groove
1,5 mm² AWG 16 two grooves
2,5 mm² AWG 14 three grooves
3 mm² AWG 12 one wide groove
4 mm² AWG 12 with no grooves

16A male contacts
0,14-0,37 mm² AWG 26-22 three grooves
0,5 mm² AWG 20 with no grooves
0,75 mm² AWG 18 one groove (back side)
1 mm² AWG 18 one groove
1,5 mm² AWG 16 two grooves
2,5 mm² AWG 14 three grooves
3 mm² AWG 12 one wide groove
4 mm² AWG 12 with no grooves

16A male crimp contacts for advanced opening
0,5 mm² AWG 20 with no grooves
0,75 mm² AWG 18 one groove (back side)
1 mm² AWG 18 one groove
1,5 mm² AWG 16 two grooves
2,5 mm² AWG 14 three grooves

silver plated
CCFA 0.3
CCFA 0.5
CCFA 0.7
CCFA 1.0
CCFA 1.5
CCFA 2.5
CCFA 3.0
CCFA 4.0

gold plated 1)
CCFD 0.3
CCFD 0.5
CCFD 0.7
CCFD 1.0
CCFD 1.5
CCFD 2.5
CCFD 3.0
CCFD 4.0

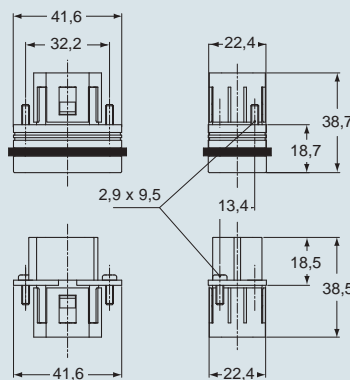
CCMA 0.3
CCMA 0.5
CCMA 0.7
CCMA 1.0
CCMA 1.5
CCMA 2.5
CCMA 3.0
CCMA 4.0

CCMD 0.3
CCMD 0.5
CCMD 0.7
CCMD 1.0
CCMD 1.5
CCMD 2.5
CCMD 3.0
CCMD 4.0

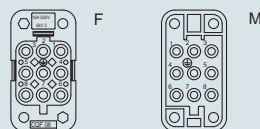
CC 0.5 AN
CC 0.7 AN
CC 1.0 AN
CC 1.5 AN
CC 2.5 AN

- characteristics according to EN 61984:
16A 500V 6kV 3
16A 400/690V 6kV 2
- cUL (UL for USA and Canada), CSA, CCC *, EAC, certified; * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 563

dimensions in mm

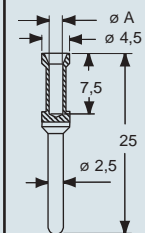


contacts side (front view)

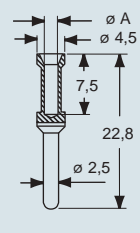


dimensions in mm

CCF and CCM



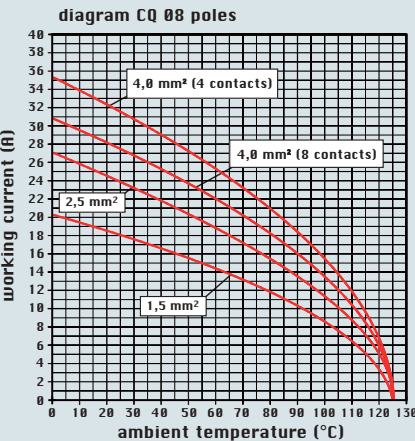
CC...AN



CCF, CCM and CC..AN contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	(mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481



- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

CQ 4 poles (40A - 400/690V) + 2 poles (10A - 250V) + ⊕



enclosures:
size "32.13"

page:

insulating type 226 - 227

EMC 388 - 389

- for contact crimping instructions, please see the crimping tool section (40A contacts, CXF, CXM series and 10A contacts CDF, CDM series) on pages 534, 536, 538, 544, 546, 548



inserts, crimp connections



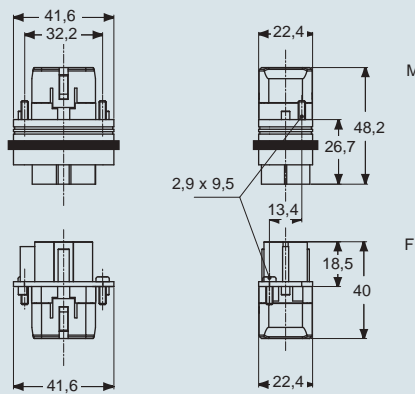
10A and 40A crimp contacts silver and gold plated



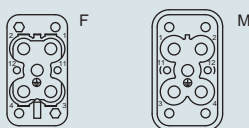
description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	CQF 04/2 CQM 04/2		
40A female contacts 1,5 mm ² AWG 16 2,5 mm ² AWG 14 4 mm ² AWG 12 6 mm ² AWG 10 40A male contacts 1,5 mm ² AWG 16 2,5 mm ² AWG 14 4 mm ² AWG 12 6 mm ² AWG 10		CXFA 1.5 CXFA 2.5 CXFA 4.0 CXFA 6.0 CXMA 1.5 CXMA 2.5 CXMA 4.0 CXMA 6.0	silver plated
10A female contacts 0,14-0,37 mm ² AWG 26-22 identification No. 1 0,5 mm ² AWG 20 identification No. 2 0,75 mm ² AWG 18 identification No. ② 1 mm ² AWG 18 identification No. 3 1,5 mm ² AWG 16 identification No. 4 2,5 mm ² AWG 14 identification No. 5 10A male contacts 0,14-0,37 mm ² AWG 26-22 identification No. 1 0,5 mm ² AWG 20 identification No. 2 0,75 mm ² AWG 18 identification No. ② 1 mm ² AWG 18 identification No. 3 1,5 mm ² AWG 16 identification No. 4 2,5 mm ² AWG 14 identification No. 5		CDFA 0.3 CDFA 0.5 CDFA 0.7 CDFA 1.0 CDFA 1.5 CDFA 2.5 CDMA 0.3 CDMA 0.5 CDMA 0.7 CDMA 1.0 CDMA 1.5 CDMA 2.5	silver plated gold plated 1)

- characteristics according to EN 61984:
4 poles 40A 400/690V 6kV 3
2 poles 10A 250V 4kV 3
- cUL (UL for USA and Canada), CSA, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 0.3 mΩ (4 poles)
≤ 3 mΩ (2 poles)
- for maximum current load, see the following load curves inserts, for more information see page 563

dimensions in mm



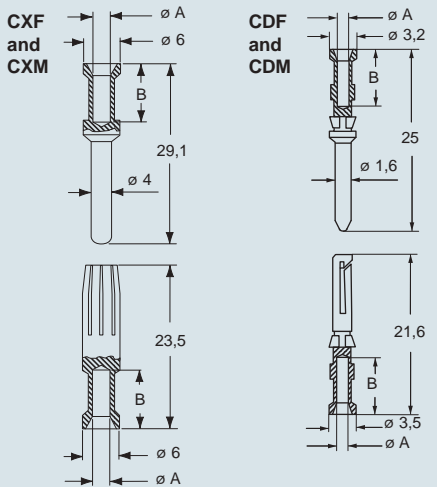
contacts side (front view)



CXF and CXM contacts

conductor section mm ²	conductor slot ø A (mm)	conductors stripping length B (mm)
1,5	1,75	9
2,5	2,25	9
4	2,85	9,6
6	3,5	9,6

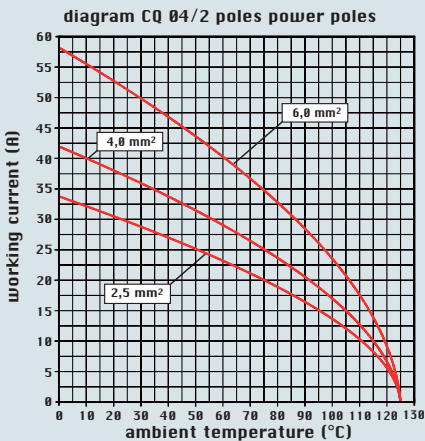
dimensions in mm



CDF and CDM contacts

conductor section mm ²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480



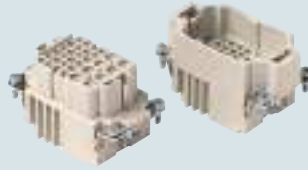
dimensions shown are not binding and may be changed without notice

enclosures:
size "57.27" page:

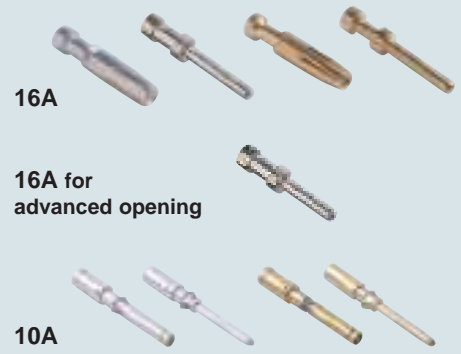
C-TYPE IP65/IP66 244 - 249
C7 IP67, two levers 275
V-TYPE IP65/IP66, single lever 281/288 - 291
BIG hoods 308 - 311
T-TYPE IP65 insulating 328 - 329
T-TYPE / W IP66 insulating 338 - 339
HYGIENIC T-TYPE / H IP66/IP69 352 - 353
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 360 - 361
W-TYPE for aggressive environments 374
EMC 393
central lever 406 - 407
IP68 424 - 427
LS-TYPE 452 - 453

panel supports: page:
COB 462 - 463

inserts,
crimp connections



16A and 10A crimp contacts
normal and for advanced opening
silver and gold plated



description

part No.

part No. part No.

without contacts (to be ordered separately)
female inserts for female contacts
male inserts for male contacts

CXF 8/24
CXM 8/24

16A female contacts

0,14-0,37 mm ²	AWG 26-22	three grooves
0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves
3 mm ²	AWG 12	one wide groove
4 mm ²	AWG 12	with no grooves

silver plated	CCFA 0.3	CCFD 0.3	
	CCFA 0.5	CCFD 0.5	
	CCFA 0.7	CCFD 0.7	
	CCFA 1.0	CCFD 1.0	
	CCFA 1.5	CCFD 1.5	
	CCFA 2.5	CCFD 2.5	
	CCFA 3.0	CCFD 3.0	
	CCFA 4.0	CCFD 4.0	
	gold plated	CCMA 0.3	CCMD 0.3
		CCMA 0.5	CCMD 0.5
		CCMA 0.7	CCMD 0.7
		CCMA 1.0	CCMD 1.0
CCMA 1.5		CCMD 1.5	
CCMA 2.5		CCMD 2.5	
CCMA 3.0		CCMD 3.0	
CCMA 4.0		CCMD 4.0	
CC 0.5 AN			
CC 0.7 AN			
CC 1.0 AN			
CC 1.5 AN			

16A male contacts

0,14-0,37 mm ²	AWG 26-22	three grooves
0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves
3 mm ²	AWG 12	one wide groove
4 mm ²	AWG 12	with no grooves

16A male crimp contacts for advanced opening

0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves

silver plated	CDFA 0.3	CDFD 0.3
	CDFA 0.5	CDFD 0.5
	CDFA 0.7	CDFD 0.7
	CDFA 1.0	CDFD 1.0
	CDFA 1.5	CDFD 1.5
CDFA 2.5	CDFD 2.5	
gold plated	CDMA 0.3	CDMD 0.3
	CDMA 0.5	CDMD 0.5
	CDMA 0.7	CDMD 0.7
	CDMA 1.0	CDMD 1.0
	CDMA 1.5	CDMD 1.5
CDMA 2.5	CDMD 2.5	

10A female contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

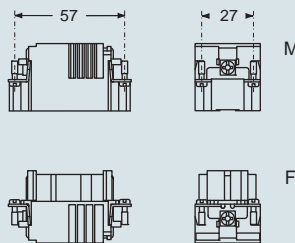
10A male contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

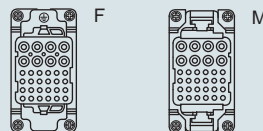
- characteristics according to EN 61984:
16A 230/400V 4kV 3
16A 400V 4kV 2
10A 160V 2,5kV 3
10A 250V 4kV 2

- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 G Ω
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 m Ω (8 poles)
 ≤ 3 m Ω (24 poles)
- for maximum current load, see the insert load curve section on page 563
- for contact crimping, see the crimp tool section (16A contacts CCF, CCM, CC...AN series and 10A contacts CDF, CDM series) on pages 534, 538, 544, 546, 548
- PCBs interface, see article CIF 2.4 (10A contacts)

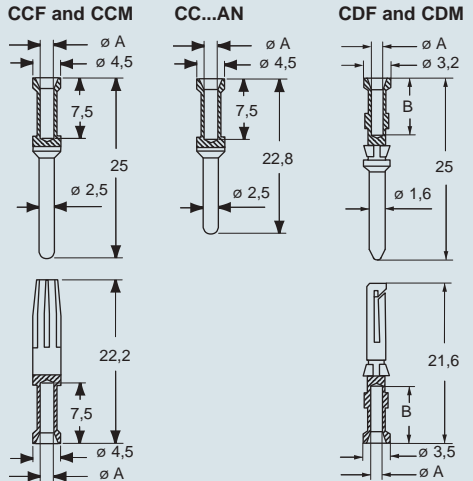
dimensions in mm



contacts side (front view)



dimensions in mm



- characteristics for contacts:
CCF, CCM and CC...AN see page 167
CDF and CDM see page 168

dimensions shown are not binding
and may be changed without notice

enclosures:
 size "77.27" page:

C-TYPE IP65/IP66 250 - 256
C7 IP67, two levers 276
V-TYPE IP65/IP66, single lever 282/292 - 295
BIG hoods 312 - 315
T-TYPE IP65 insulating 330 - 331
T-TYPE / W IP66 insulating 340 - 341
HYGIENIC T-TYPE / H IP66/IP69 354 - 355
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 362 - 363
W-TYPE for aggressive environments 375
EMC 394
central lever 408 - 409
IP68 428 - 431
LS-TYPE 454 - 455

panel supports: page:
COB 462 - 463

- PCBs interface, see article CIF 2.4 (10A contacts)

**inserts,
 crimp connections**



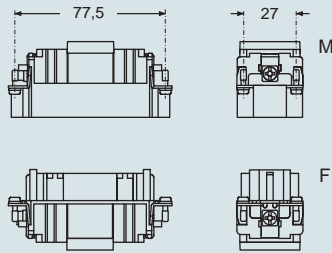
**40A and 10A crimp contacts
 silver and gold plated**



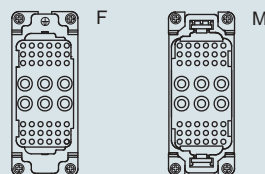
description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	CXF 6/36 CXM 6/36		
40A female contacts 1,5 mm ² AWG 16 2,5 mm ² AWG 14 4 mm ² AWG 12 6 mm ² AWG 10		CXFA 1.5 CXFA 2.5 CXFA 4.0 CXFA 6.0	silver plated
40A male contacts 1,5 mm ² AWG 16 2,5 mm ² AWG 14 4 mm ² AWG 12 6 mm ² AWG 10		CXMA 1.5 CXMA 2.5 CXMA 4.0 CXMA 6.0	silver plated
10A female contacts 0,14-0,37 mm ² AWG 26-22 identification No. 1 0,5 mm ² AWG 20 identification No. 2 0,75 mm ² AWG 18 identification No. ② 1 mm ² AWG 18 identification No. 3 1,5 mm ² AWG 16 identification No. 4 2,5 mm ² AWG 14 identification No. 5		CDFA 0.3 CDFA 0.5 CDFA 0.7 CDFA 1.0 CDFA 1.5 CDFA 2.5	silver plated
10A male contacts 0,14-0,37 mm ² AWG 26-22 identification No. 1 0,5 mm ² AWG 20 identification No. 2 0,75 mm ² AWG 18 identification No. ② 1 mm ² AWG 18 identification No. 3 1,5 mm ² AWG 16 identification No. 4 2,5 mm ² AWG 14 identification No. 5		CDMA 0.3 CDMA 0.5 CDMA 0.7 CDMA 1.0 CDMA 1.5 CDMA 2.5	gold plated 1)
CDFD 0.3 CDFD 0.5 CDFD 0.7 CDFD 1.0 CDFD 1.5 CDFD 2.5			gold plated 1)
CDMD 0.3 CDMD 0.5 CDMD 0.7 CDMD 1.0 CDMD 1.5 CDMD 2.5			gold plated 1)

- characteristics according to EN 61984:
40A 690V 8kV 3
10A 160V 2,5kV 3
10A 250V 4kV 2
- UL, CSA, CCC *, GL, EAC certified
 * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 0,3 mΩ (6 poles)
 ≤ 1 mΩ (36 poles)
- for maximum current load, see the following load curves inserts, for more information see page 563

dimensions in mm



contacts side (front view)

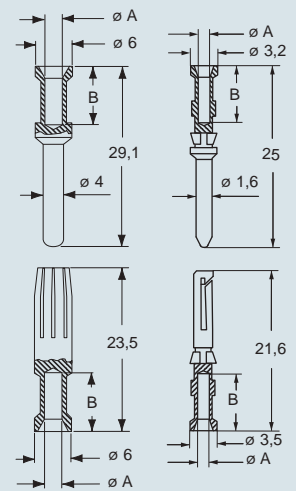


CXF and CXM contacts

conductor section mm ²	conductor slot ø A (mm)	conductors stripping length B (mm)
1,5	1,75	9
2,5	2,25	9
4	2,85	9,6
6	3,5	9,6

dimensions in mm

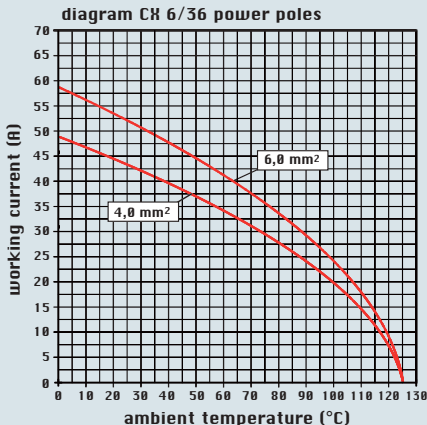
CXF and CXM CDF and CDM



for contact crimping instructions, please see the crimping tool section (40A contacts CXF, CXM series and 10A contacts CDF, CDM series) on pages 534, 536, 538, 544, 546, 548

CDF and CDM contacts

conductor section (mm ²)	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6



dimensions shown are not binding and may be changed without notice

1) basic or high thickness gold plating page 480

CX 12 poles (40A - 690V) + 2 poles (10A - 250V) + ⊕



enclosures:
size "77.27" page:

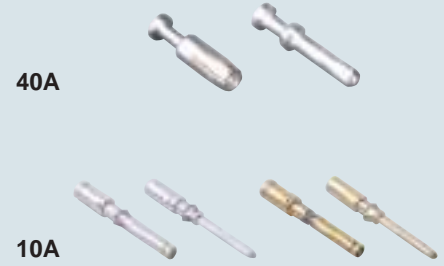
C-TYPE IP65/IP66	250 - 256
C7 IP67, two levers	276
V-TYPE IP65/IP66, single lever	282/292 - 295
BIG hoods	312 - 315
T-TYPE IP65 insulating	330 - 331
T-TYPE / W IP66 insulating	340 - 341
HYGIENIC T-TYPE / H IP66/IP69	354 - 355
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	362 - 363
W-TYPE for aggressive environments	375
EMC	394
central lever	408 - 409
IP68	428 - 431
LS-TYPE	454 - 455

panel supports: page:
COB

inserts,
crimp connections



40A and 10A crimp contacts
silver and gold plated



description

part No.

part No. part No.

without contacts (to be ordered separately)
female inserts for female contacts
male inserts for male contacts

CXF 12/2
CXM 12/2

40A female contacts
1,5 mm² AWG 16
2,5 mm² AWG 14
4 mm² AWG 12
6 mm² AWG 10

CXFA 1.5
CXFA 2.5
CXFA 4.0
CXFA 6.0

silver plated

40A male contacts
1,5 mm² AWG 16
2,5 mm² AWG 14
4 mm² AWG 12
6 mm² AWG 10

CXMA 1.5
CXMA 2.5
CXMA 4.0
CXMA 6.0

10A female contacts
0,14-0,37 mm² AWG 26-22 identification No. 1
0,5 mm² AWG 20 identification No. 2
0,75 mm² AWG 18 identification No. ②
1 mm² AWG 18 identification No. 3
1,5 mm² AWG 16 identification No. 4
2,5 mm² AWG 14 identification No. 5

CDFA 0.3
CDFA 0.5
CDFA 0.7
CDFA 1.0
CDFA 1.5
CDFA 2.5

silver plated

CDFD 0.3
CDFD 0.5
CDFD 0.7
CDFD 1.0
CDFD 1.5
CDFD 2.5

gold plated 1)

10A male contacts
0,14-0,37 mm² AWG 26-22 identification No. 1
0,5 mm² AWG 20 identification No. 2
0,75 mm² AWG 18 identification No. ②
1 mm² AWG 18 identification No. 3
1,5 mm² AWG 16 identification No. 4
2,5 mm² AWG 14 identification No. 5

CDMA 0.3
CDMA 0.5
CDMA 0.7
CDMA 1.0
CDMA 1.5
CDMA 2.5

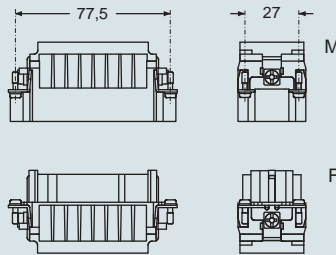
CDMD 0.3
CDMD 0.5
CDMD 0.7
CDMD 1.0
CDMD 1.5
CDMD 2.5

- characteristics according to EN 61984:

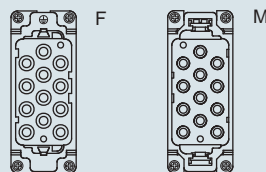
40A 690V 8kV 3
10A 160V 2,5kV 3
10A 250V 4kV 2

- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 0,3 mΩ (6 poles)
≤ 1 mΩ (36 poles)
- for maximum current load, see the following load curves inserts, for more information see page 563

dimensions in mm



contacts side (front view)

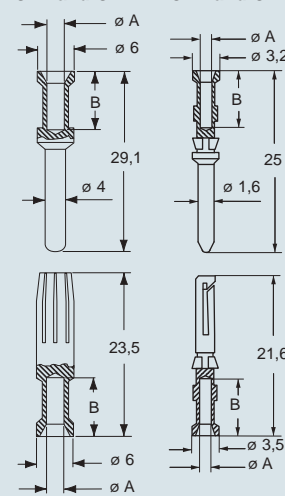


CXF and CXM contacts

conductor section mm ²	conductor slot ø A (mm)	conductors stripping length B (mm)
1,5	1,75	9
2,5	2,25	9
4	2,85	9,6
6	3,5	9,6

dimensions in mm

CXF and CXM CDF and CDM

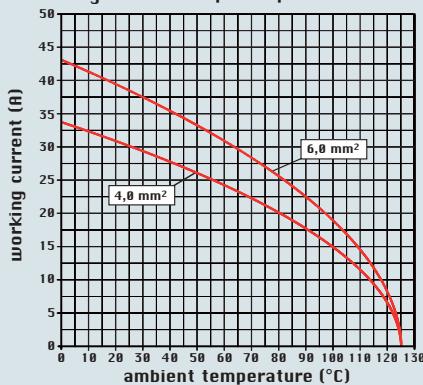


for contact crimping instructions, please see the crimping tool section (40A contacts CXF, CXM series and 10A contacts CDF, CDM series) on pages 534, 536, 538, 544, 546, 548

CDF and CDM contacts

conductor section (mm ²)	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

diagram CX 12/2 power poles



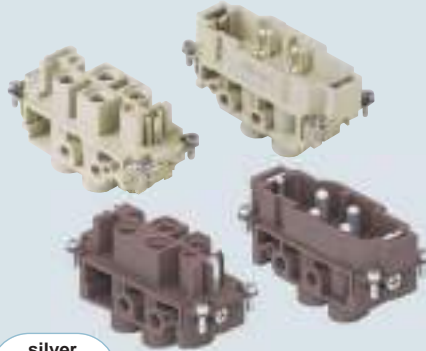
dimensions shown are not binding and may be changed without notice

1) basic or high thickness gold plating page 480

enclosures:		page:
size "77.27"		
C-TYPE IP65/IP66	250 - 256	
C7 IP67, two levers	276	
V-TYPE IP65/IP66, single lever	282/292 - 295	
BIG hoods	312 - 315	
T-TYPE IP65 insulating	330 - 331	
T-TYPE / W IP66 insulating	340 - 341	
HYGIENIC T-TYPE / H IP66/IP69	354 - 355	
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	362 - 363	
W-TYPE for aggressive environments	375	
EMC for 180 °C	394	
central lever	408 - 409	
IP68	428 - 431	
LS-TYPE	454 - 455	
panel supports:		page:
COB	462 - 463	

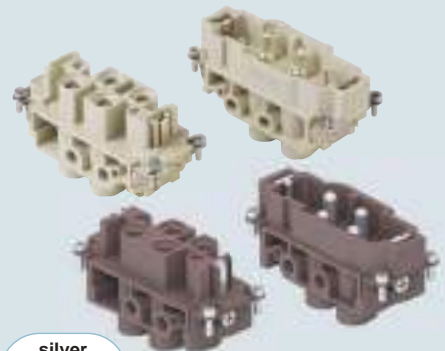
CX - CX...RY

**inserts,
screw terminal connection**



silver plated contacts

**inserts,
screw terminal connection**



silver plated contacts

description	part No.
-------------	----------

female inserts with female contacts
male inserts with male contacts

description	part No.
-------------	----------

CXF 4/0
CXM 4/0

description	part No.
-------------	----------

CXF 4/2
CXM 4/2

indirect, with plate, use in temperatures up to 180 °C
female inserts with female contacts, brown
male inserts with male contacts, brown

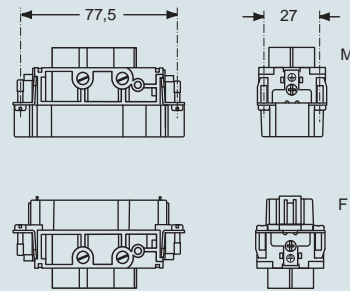
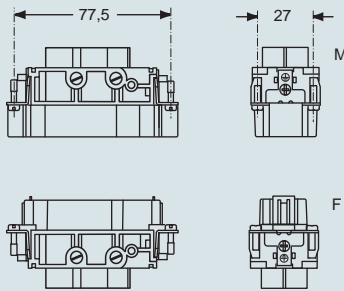
CXF 4/0 RY
CXM 4/0 RY

CXF 4/2 RY
CXM 4/2 RY

- characteristics according to EN 61984:
80A 690V 8kV 3
16A 400V 6kV 3
16A 400/690V 6kV 2
- UL, CSA, CCC *, GL, EAC certified
* CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 0,3 mΩ (4 poles)
≤ 1 mΩ (2 poles)
- for maximum current load, see the following load curves inserts, for more information see page 563 and 564

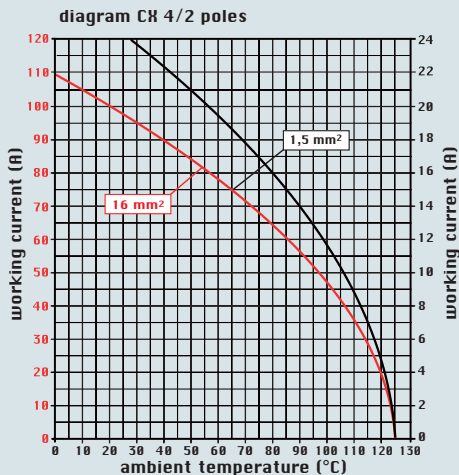
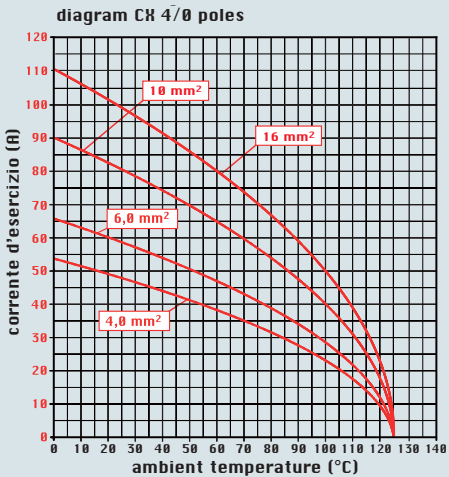
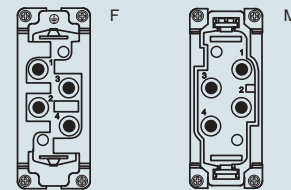
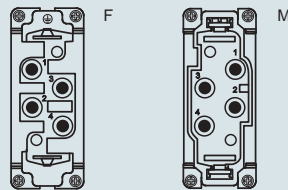
dimensions in mm

dimensions in mm



contacts side (front view)

contacts side (front view)



80A contacts

- without plate for section conductors:
4 - 16 mm² - AWG 12 - 6
- conductors stripping length: 14 mm
- terminal screw torque: 2,5 Nm (22.1 lb.in), for more information see page 34 and 35

80A contacts

- without plate for section conductors:
4 - 16 mm² - AWG 12 - 6
- conductors stripping length: 14 mm
- terminal screw torque: 2,5 Nm (22.1 lb.in), for more information see page 34 and 35

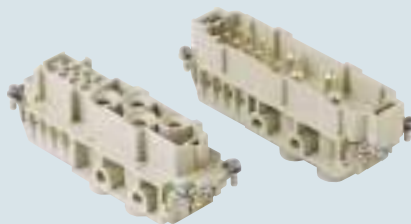
16A contacts

- without plate for section conductors:
0,25 - 2,5 mm² - AWG 24 - 14
- conductors stripping length: 7 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

dimensions shown are not binding and may be changed without notice

enclosures:	
size "104.27"	page:
C-TYPE IP65/IP66	258 - 266
C7 IP67, two levers	277
V-TYPE IP65/IP66, single lever	283/296 - 299
BIG hoods	316 - 319
T-TYPE IP65 insulating	332 - 333
T-TYPE / W IP66 insulating	342 - 343
HYGIENIC T-TYPE / H IP66/IP69	356 - 357
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	364 - 365
W-TYPE for aggressive environments	376
EMC	395
for 180 °C	401
central lever	410 - 412
IP68	432 - 435
LS-TYPE	456 - 457
panel supports:	page:
COB	462 - 463

**inserts,
screw terminal connection**



silver plated contacts

**inserts,
screw terminal connection**



silver plated contacts

description

part No.

part No.

female inserts with female contacts
male inserts with male contacts

CXF 4/8
CXM 4/8

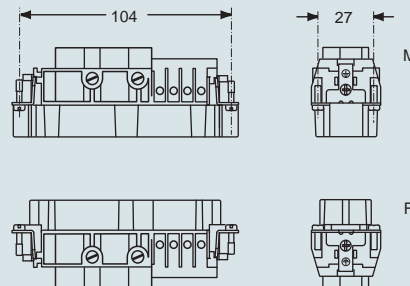
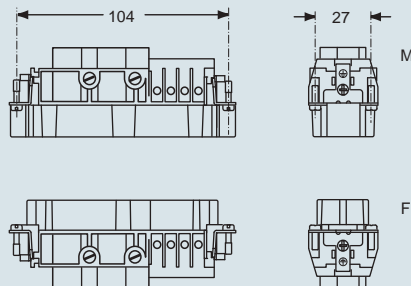
indirect, with plate, use in temperatures up to 180 °C
female inserts with female contacts, brown
male inserts with male contacts, brown

CXF 4/8 RY
CXM 4/8 RY

- characteristics according to EN 61984:
80A 400V 6kV 3
80A 400/690V 6kV 2
16A 230/400V 4kV 3
16A 400V 4kV 2
- UL, CSA, CCC *, GL, EAC certified
* CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 0,3 mΩ (4 poles)
≤ 1 mΩ (8 poles)
- for maximum current load, see the following load curves inserts, for more information see page 564

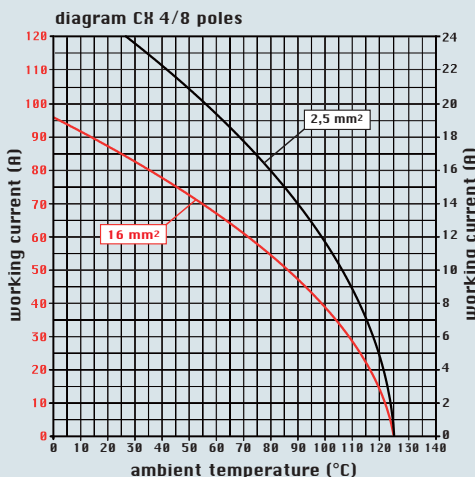
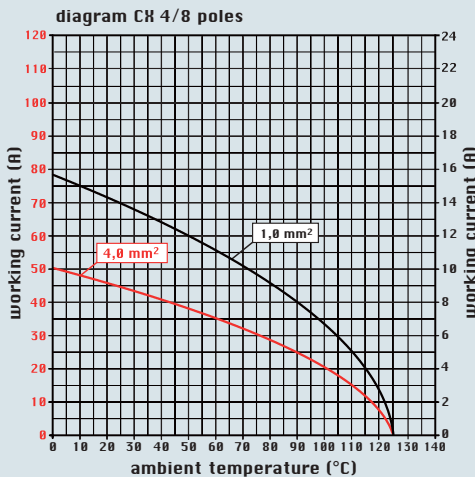
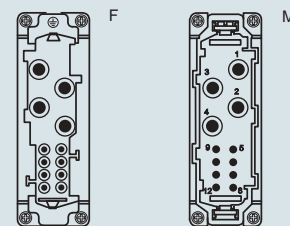
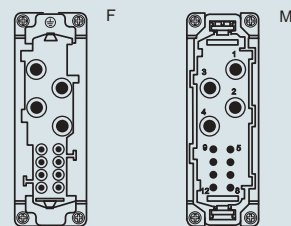
dimensions in mm

dimensions in mm



contacts side (front view)

contacts side (front view)



80A contacts

- without plate for section conductors:
4 - 16 mm² - AWG 12 - 6
- conductors stripping length: 14 mm
- terminal screw torque: 2,5 Nm (22.1 lb.in), for more information see page 34 and 35

80A contacts

- without plate for section conductors:
4 - 16 mm² - AWG 12 - 6
- conductors stripping length: 14 mm
- terminal screw torque: 2,5 Nm (22.1 lb.in), for more information see page 34 and 35

16A contacts

- without plate for section conductors:
0,25 - 2,5 mm² - AWG 24 - 14
- conductors stripping length: 7 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

16A contacts

- without plate for section conductors:
0,25 - 2,5 mm² - AWG 24 - 14
- conductors stripping length: 7 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

dimensions shown are not binding and may be changed without notice

CX series

Main features

CX inserts 100A/16A version

The CX series of combined “power /auxiliaries” connector inserts has been enhanced with a **new insert, CX 6/6 suitable for currents up to 100A** in the power side and 16A on the auxiliaries side, for crimp contacts series CG (100A max) and series CC (16A max) several benefits over conventional screw or axial screw contacts:

- More **resistant to mechanical stresses** such as vibrations, shock and cable loads
- More **corrosion resistant** (gas tight)
- **Quicker to connect** and ensuring more **consistent results** (regardless of the operators “force”)
- The connector is **electrically more efficient** (reduced voltage drop)

This innovative insert design, by following the same concepts of the MIXO 100A CX..G model, **patented by ILME**, ensures a quicker fitting and removal of crimped contacts.

The **provided locking keys** firmly fasten the contact holder.

The power contacts may be removed **without any special tool**, using a simple screwdriver (e.g.: 0,5 x 3 mm, 0,5 x 3,5 mm, 0,6 x 4 mm flat blade) The removal of auxiliary contacts series CC requires the extraction tool CQES.

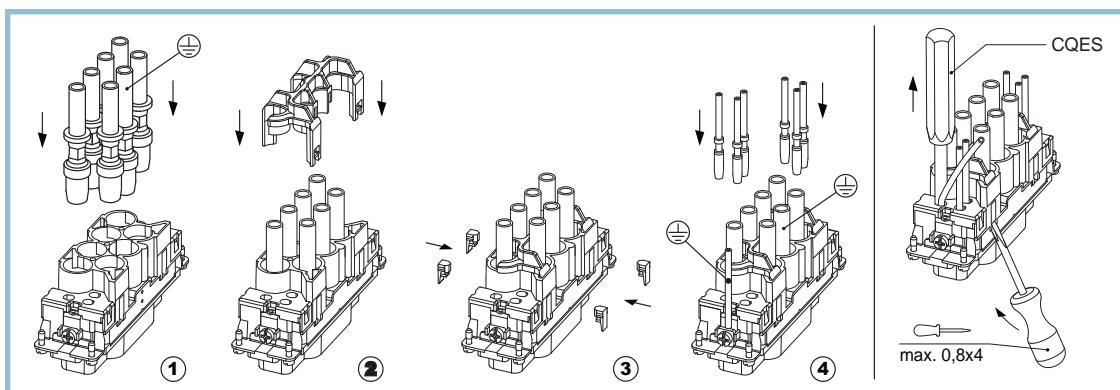
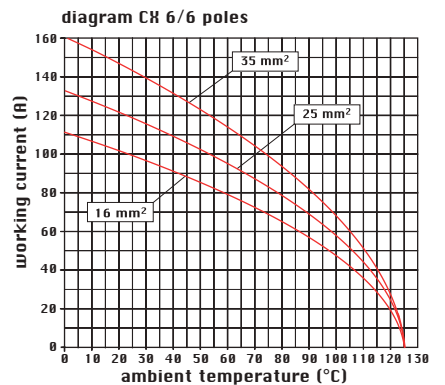
The crimping operation may be carried out quickly and efficiently with the **hand operated hydraulic pliers**, which is pre-fitted with the suitable locator. Suitable crimp dies are available on request.

Inserts series		CX	
No. of poles	main contact	6 + ⊕ (100A) **	
	auxiliary contacts	6 (16A)	
rated current ¹⁾		100A	16A
EN 61984 pollution degree 3	rated voltage	690V	400V
	rated impulse withstand voltage	8kV	6kV
	pollution degree	3	3
contact resistance		≤ 0,3 mΩ (100A) ≤ 1 mΩ (16A)	
insulation resistance		≥ 10 GΩ	
ambient temperature limit (°C)	min	-40 °C	
	max	+125 °C	
degree of protection	with enclosures (according to version)	IP65, IP66, IP67, IP68, IP69K	
	without enclosures	IP20	
conductor connections *		crimp	
conductor cross-section (CG contact series)	mm ²	16, 25, 35	
	AWG	6 - 5, 4 - 3, 2	
conductor cross-section (CC contact series)	mm ²	0,14 4,0	
	AWG	26 ÷ 12	
CG/CC stripping length	mm	15 / 7,5	
mechanical endurance (rating cycles)		≥ 500	

1) Please check the insert load curves to establish the actual maximum operating current according to the ambient temperature.

- * max external conductor Ø = 11,5 mm
- ** the power PE contact is not included and must be the same size as the power contacts used (for a total n° at contacts = 7)

- for maximum current load, see the following load curves inserts, for more information see page 565



enclosures:
size "104.27" page:

C-TYPE IP65/IP66 258 - 266
C7 IP67, two levers 277
V-TYPE IP65/IP66, single lever 283/296 - 299
BIG hoods 316 - 319
T-TYPE IP65 insulating 332 - 333
T-TYPE / W IP66 insulating 342 - 343
HYGIENIC T-TYPE / H IP66/IP69 356 - 357
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 364 - 365
W-TYPE for aggressive environments 376
EMC 395
central lever 410 - 412
IP68 432 - 435
LS-TYPE 456 - 457

panel supports: **COB** 462 - 463

**inserts,
crimp connections**



NEW

**100A and 16A crimp contacts
silver and gold plated**

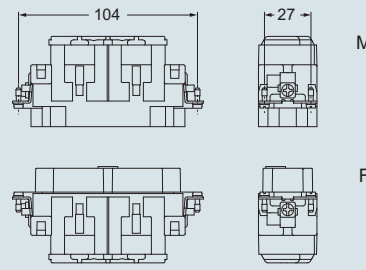


enclosures: bulkhead mounting housings, high construction housings or high construction hoods

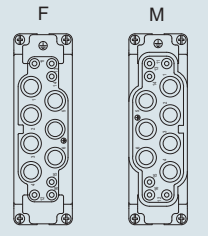
description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	CXF 6/6 CXM 6/6		
100A female contacts 8 - 10 mm ² AWG 8 - 7 16 mm ² AWG 6 - 5 25 mm ² AWG 4 - 3 35 mm ² AWG 2		CGFA 10 CGFA 16 CGFA 25 CGFA 35	silver plated
100A male contacts 8 - 10 mm ² AWG 8 - 7 16 mm ² AWG 6 - 5 25 mm ² AWG 4 - 3 35 mm ² AWG 2		CGMA 10 CGMA 16 CGMA 25 CGMA 35	silver plated
16A female contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves		CCFA 0.3 CCFA 0.5 CCFA 0.7 CCFA 1.0 CCFA 1.5 CCFA 2.5 CCFA 3.0 CCFA 4.0	silver plated
16A male contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves		CCMD 0.3 CCMD 0.5 CCMD 0.7 CCMD 1.0 CCMD 1.5 CCMD 2.5 CCMD 3.0 CCMD 4.0	gold plated 1)

- characteristics according to EN 61984:
100A 690V 8kV 3
16A 400V 6kV 3
- certifications: cUL (UL for USA and Canada)
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 0,3 mΩ (100A)
≤ 1 mΩ (16A)
- for contact crimping, see the crimp tool section (100A contacts CG series, and 16A contacts CC series) on pages 534, 538, 542, 544, 546, 548

dimensions in mm

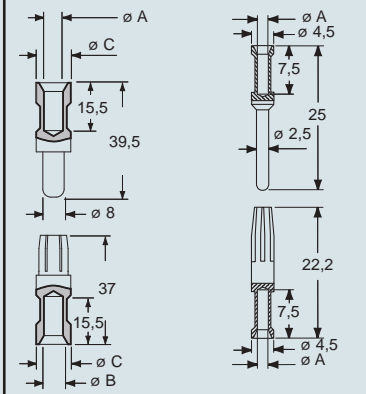


contacts side (front view)



dimensions in mm

CGF and CGM CCF and CCM



CGF and CGM contacts

conductor section (mm ²)	conductor slot ø A (mm)	conductor slot ø B (mm)	conductor slot ø C (mm)	conductors stripping length (mm)
8-10	4,3	4,3	13	15
16	5,5	5,5	13	15
25	7,0	7,0	13	15
35	7,9	8,2	12,5	15

CCF and CCM contacts

conductor section mm ²	conductor slot ø A (mm)	conductors stripping length B (mm)
0.14-0.37	0.9	7.5
0.5	1.1	7.5
0.75	1.3	7.5
1.0	1.45	7.5
1.5	1.8	7.5
2.5	2.2	7.5
3.0	2.55	7.5
4.0	2.85	7.5

1) basic or high thickness gold plating page 481

dimensions shown are not binding and may be changed without notice

MIXO series

Modular units for multipole connectors

Application

The MIXO series is a system of modular units for special applications that uses the traditional ILME enclosures.

Each enclosure can house different types of connections such as, for example: electric signals and contacts for the conduction of compressed air with pressure values of up to 8 bars.

The inserts are arranged side by side to form a single compact block which is inserted into metallic frames with mandatory housings. Once the modules have been inserted and locked with the special tabs, the connector can then be inserted into the enclosure.

The modular structure system makes it easy to access a series of contacts inserted in the frame (e.g., for substitution, checks or the addition of signals with new inserts for needs not foreseen during the initial installation) without having to disassemble the entire connector.

The use of enclosures provides the possibility of innumerable applications.

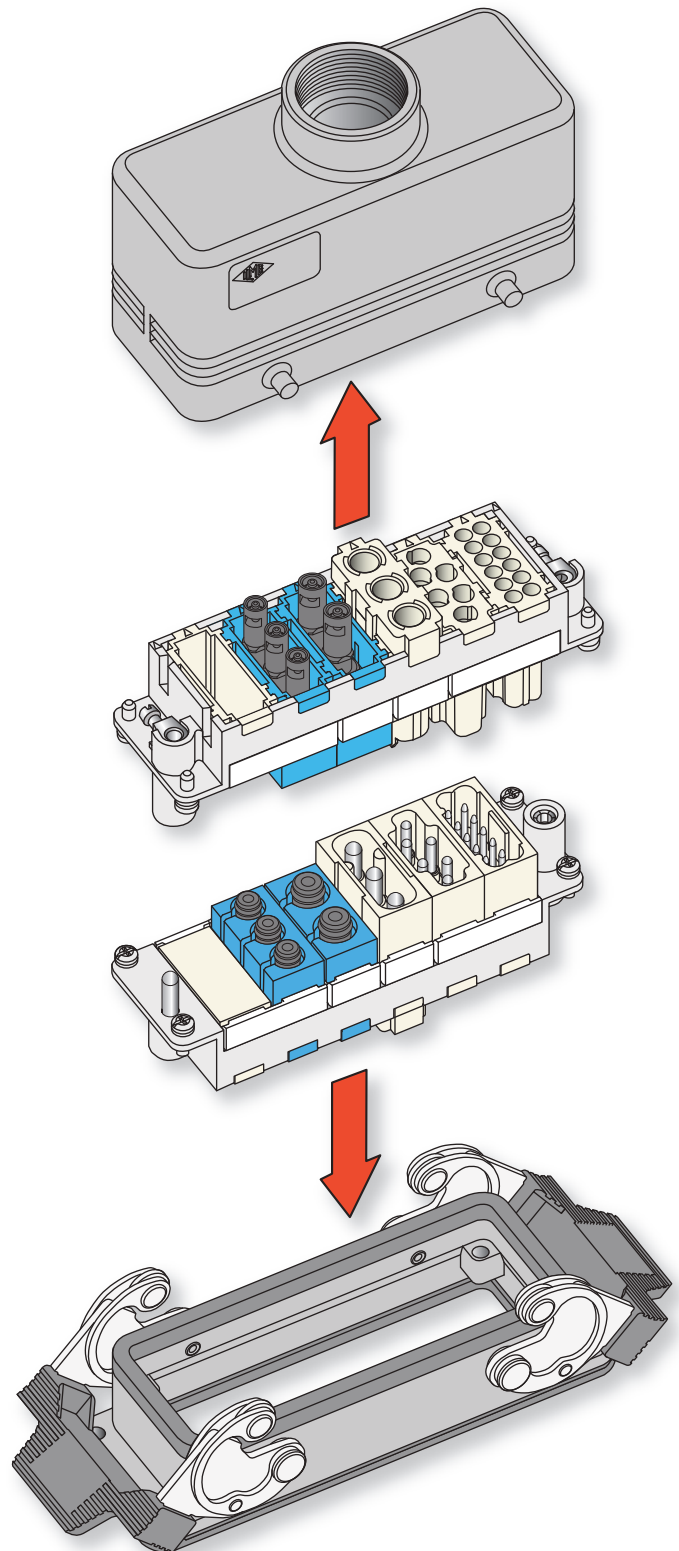
The MIXO series may be used with 5 different frame sizes. The following table lists the frames and the metallic enclosures that may be used.

frames	one or two-lever metallic enclosures
CX 01 T	size "49.16"
CX 02 TM/TF	size "44.27"
CX 03 TM/TF	size "57.27"
CX 04 TM/TF	size "77.27"
CX 06 TM/TF	size "104.27"
CX 04 TM/TF (x 2)	size "77.62"
CX 06 TM/TF (x 2)	size "104.62"

In addition, the MIXO series can be used with the COB series panel supports

frames	panel supports part No.
CX 02 TM/TF	fixed: COB 06 BC and COB TCQ
	mobile: COB TSF , COB TSFS and COB 06 CMS
CX 03 TM/TF	fixed: COB 10 BC and COB TCQ
	mobile: COB TSF , COB TSFS and COB 10 CMS
CX 04 TM/TF	fixed: COB 16 BC and COB TCQ
	mobile: COB TSF , COB TSFS and COB 16 CMS
CX 06 TM/TF	fixed: COB 24 BC and COB TCQ
	mobile: COB TSF , COB TSFS and COB 24 CMS

The MIXO series currently includes 6 different types of inserts. The field of application is provided in the table at the bottom of the next page.

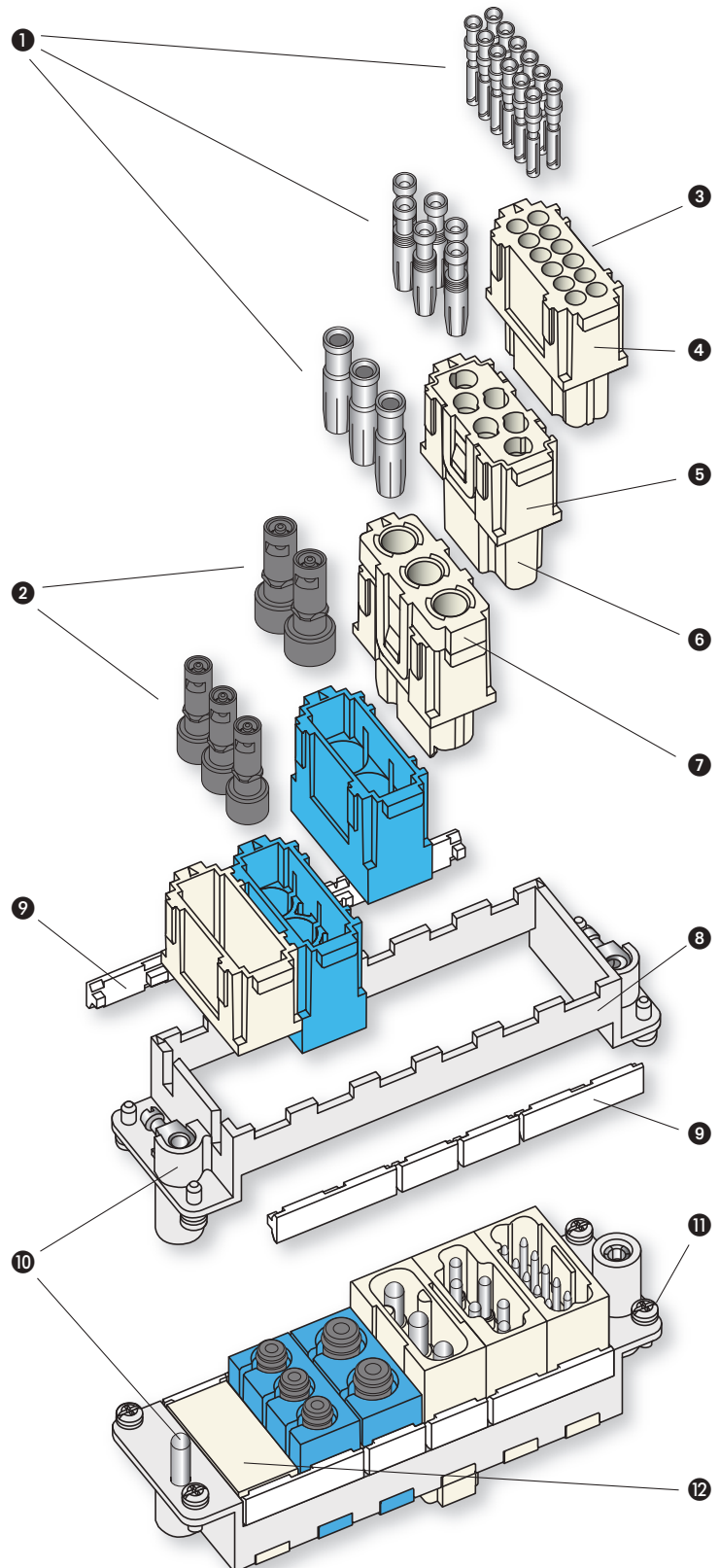


MIXO series

Modular units for multipole connectors

Characteristics

- ❶ Electric contacts in silver-plated or gold-plated brass with connections to the conductors via crimping, spring clamp or axial screw.
- ❷ Pneumatic contacts in plastic with insertion tube connection.
- ❸ Modular inserts of identical size with insertion system for forming the complete module and frame lock tab.
- ❹ Inserts in self-extinguishing thermoplastic material, reinforced with glass fibre, UL 94-V0 approved, with a working temperature range of -40 °C to +125 °C.
- ❺ Inserts in conformance with the requirements of the EN 61984 standard and certified and marked with the UL, CSA, CCC, GL, EAC marks.
- ❻ Inserts with asymmetric guide rails to prevent incorrect coupling.
- ❼ Position of contacts identified with numbers or codes on both sides of every insert.
- ❽ Male/female module carrier frames with mandatory housings and polarity, in die-cast zinc alloy.
- ❾ Module lock tab, may be divided according to the number of modules used; guarantees a perfect stability of the modules during wiring and coupling/uncoupling of the connectors.
- ❿ Asymmetric earth contacts (two for frame) with wide contact surface to prevent incorrect coupling; when two or more identical connectors of the MIXO series are used, coded pins prevent incorrect coupling (see pages 486, 487 and 491).
- ⓫ Captive frame fastening screws, with flexible spring washer.
- ⓬ Dummy module for unused frame slots.



MIXO series

Modular units for multipole connectors

Inserts	Contact type	Signal type	Connectors and tubes connections	Rated current (A)	Rated voltage (V)	No. of frame slots
CX 01 YF/M	main	electric	crimp	200	1000	2
CX 01 YPEF/M	PE	---	crimp	200	---	2
CX 02 GF/M	main	electric	crimp	100	1000	2
CX 02 7F/M	main	electric	crimp	70	1000	1
CX 02 4AF/M	main	electric	axial screw	40	1000	1
CX 02 4BF/M	main	electric	axial screw	40	1000	1
CX 03 4F/M	main	electric	crimp	40	400/690	1
CX 03 4BF/BM	main	electric	crimp	40	500	1
CX 3/4 XDF/M	main	electric	crimp	40/10	830	1
CX 04 XF/M	main	electric	crimp	40	830	1
CX 05 SF/M	main	electric	spring	16	400	1
CX 06 CF/M	main	electric	crimp	16	500	1
CX 08 CF/M	main	electric	crimp	16	400	1
CX 20 CF/M	main	electric	crimp	16	500	2
CX 12 DF/M	main / auxiliary	electric	crimp	10	250	1
CX 17 DF/M	main / auxiliary	electric	crimp	10	160	1
CX 25 IF/M	main / auxiliary	elettrico	crimp	4	50	1
CX 02 HF/M	main	electric	crimp	16	2900/5000	2
CX 02 BF/M	seat for two shielded connectors (see CX 04 B, CX 01 B, CX 01 BC, CX 08 B)				2	
CX 01 BCF/M	main / auxiliary + shield	electric	crimp	16	50	---
CX 01 BF/M	main / auxiliary + shield	electric	crimp	10	50	---
CX 04 BF/M	main / auxiliary + shield	electric	crimp	10	50	---
CX 08 BF/M	main / auxiliary + shield	electric	crimp	5	50	---
CX 03 P	pneumatic Ø 1.6 - 3.0 - 4.0 mm	gas **	push-in	---	---	1
CX 02 P	pneumatic Ø 6.0 mm	gas **	push-in	---	---	1
CX FM	none (dummy module)	---	---	---	---	1
CX 01 J8F/M/IM	RJ45	electric	crimp/IDC	---	---	1
CX 01 JF/M	RJ45 + auxiliary	electric	crimp	10	250	2
CX 02 JF/M	RJ45 + auxiliary	electric	crimp	10	250	3
CX 01 UF/M	USB	electric	---	---	---	1
CX 01 9VF/M	D-SUB	electric	crimp	5	50	1
CX 04 LF/M	POF / MOST / coaxial	optic / electric	crimp / solder	---	---	1

** Warning:

The use of pneumatic contacts requires an appropriate filtering and dehydration system to prevent dangerous condensation. Contacts may be used for pressure values of up to a maximum of 8 bars/116 psi.

MIXO series (100A - 200A)

Main features

MIXO CX..G 100A and CX..Y 200A version modular inserts

The MIXO series has been enhanced with a **new insert, suitable for currents up to 200A** and with **new**, series crimp contacts featuring several benefits over conventional screw or axial screw contacts:

- More **resistant to mechanical stresses** such as vibrations, shock and cable loads.
 - More **corrosion resistant** (gas tight).
 - **Quicker to connect** and ensuring more **consistent results** (regardless of the operators "force").
 - The connector is **electrically more efficient** (reduced voltage drop).
- This innovative insert design, **patented by ILME**, ensures a quicker fitting and removal of crimped contacts.

The **four provided keys** firmly fasten the contact holder and; once

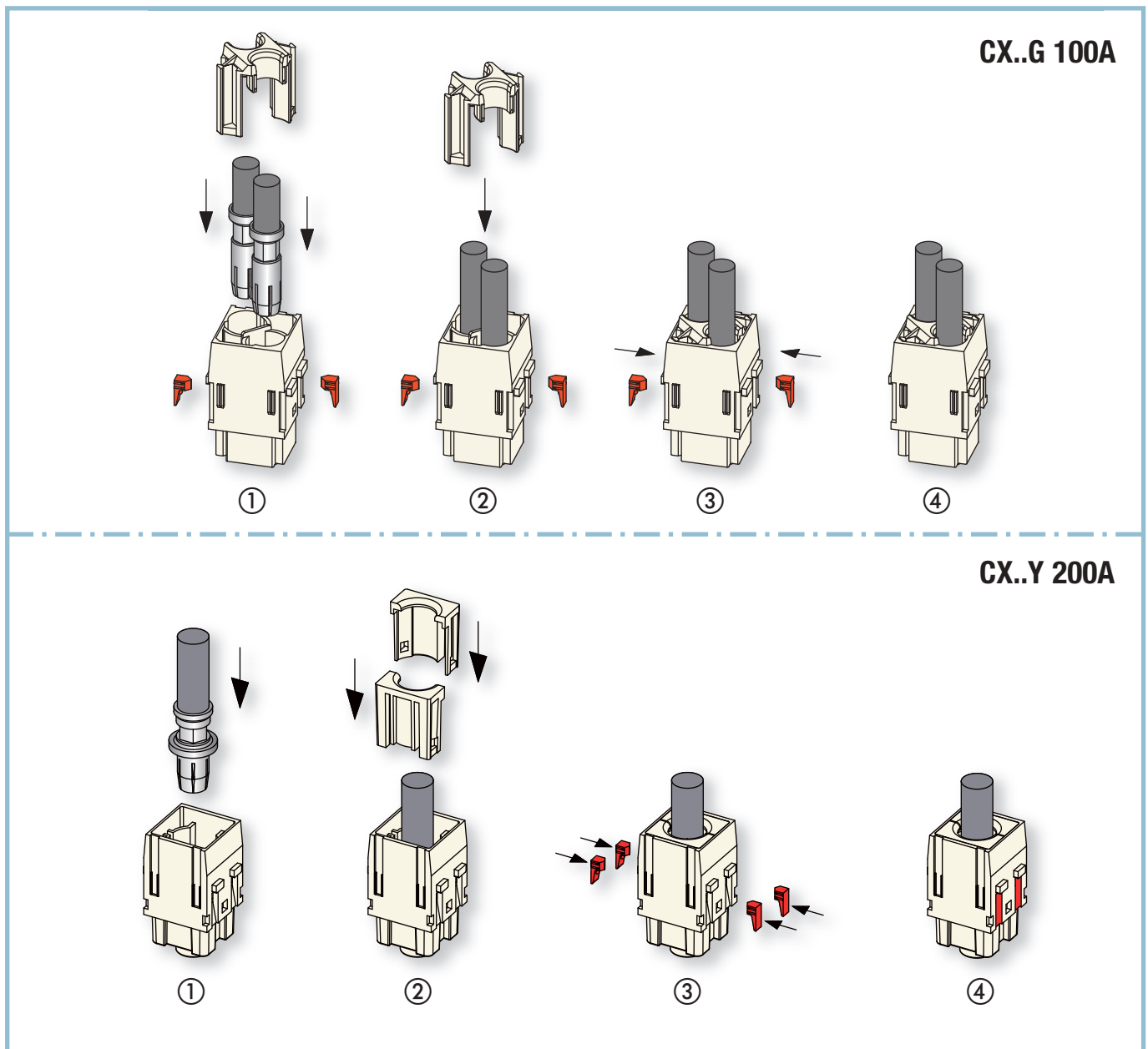
the insert is joined to other inserts (and it is installed in the corresponding MIXO frame) the connection is totally secure and **extremely resistant, even under the most severe stresses** such as vibration and shock.

The contacts can be removed **without any special tool**, using a simple screwdriver.

The crimping operation can be carried out quickly and efficiently with the **hand operated hydraulic pliers**, which is pre-fitted with the suitable locator.

Suitable crimp dies available on request.

MIXO



The modular inserts must be installed in suitable frames which are then mounted in traditional housings * or COB panel support.

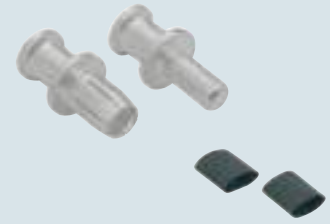
frames for modular units * page: 215

* enclosures: housings or high construction hoods

modular units,
crimp connections



200A silver plated crimp contacts
heat shrink tube



description

part No.

part No.

without contacts (to be ordered separately)
- female inserts for female contacts
- male inserts for female contacts

CX 01 YF
CX 01 YM

200A female crimp contacts
16 mm² AWG 6 one groove (back side)
25 mm² AWG 4 with no grooves
35 mm² AWG 2 one groove
50 mm² AWG 1 two grooves
70 mm² AWG 2/0 with no grooves

CYFA 16
CYFA 25
CYFA 35
CYFA 50
CYFA 70

200A male crimp contacts
16 mm² AWG 6 one groove (back side)
25 mm² AWG 4 with no grooves
35 mm² AWG 2 one groove
50 mm² AWG 1 two grooves
70 mm² AWG 2/0 with no grooves

CYMA 16
CYMA 25
CYMA 35
CYMA 50
CYMA 70

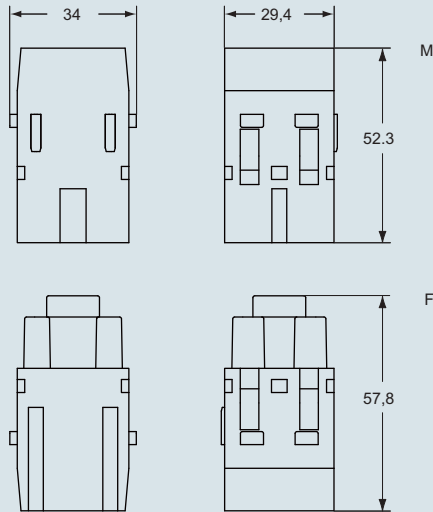
silver plated

heat shrink tube for CYFA/CYMA 16 contacts or for conductor with total external Ø < 10 mm

CR TT

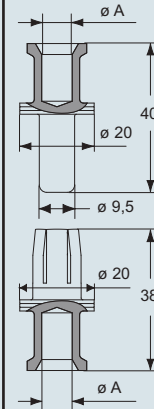
- characteristics according to EN 61984:
- 200A 1000V 8kV 3**
- 200A 920/1600V 8kV 2**
- cUL (UL for USA and Canada), CCC *, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 0,2 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 565

dimensions in mm



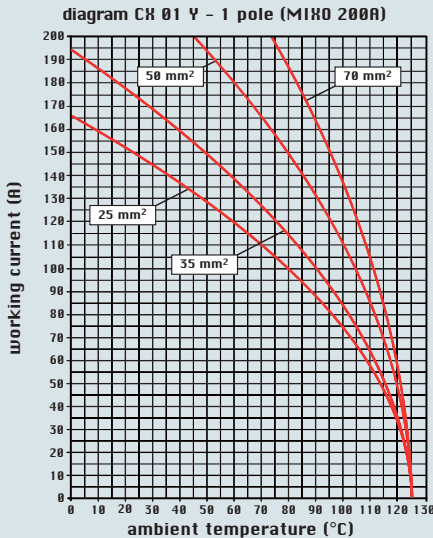
dimensions in mm

CYF and CYM



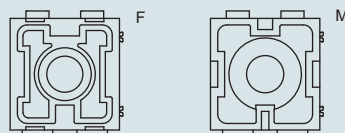
CYF and CYM contacts

conductor section (mm ²)	conductor slot ø A (mm)	conductor stripping length (mm)
16	6,1	15
25	7,0	15
35	8,2	15
50	9,8	15
70	11,8	15

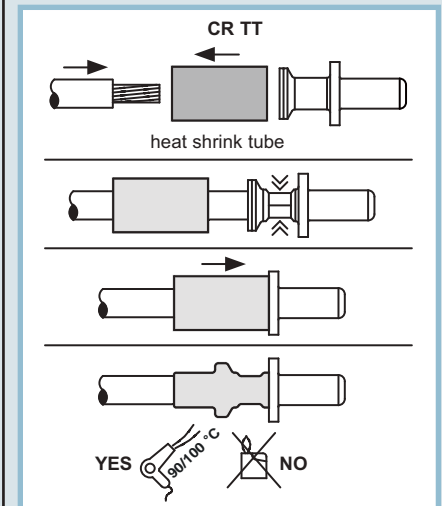


contacts side (front view)

side with reference arrow ▲



- 2 frame slots



dimensions shown are not binding
and may be changed without notice

The modular inserts must be installed in suitable frames which are then mounted in traditional housings * or COB panel support.

frames for modular units * page: 215

* enclosures: housings or high construction hoods

modular units,
crimp connections
PE module for earth termination



200A silver plated crimp contacts



description

part No.

part No.

without contacts (to be ordered separately)
- PE female inserts for female contacts
- PE male inserts for female contacts

CX 01 YPEF
CX 01 YPEM

200A female crimp contacts
16 mm² AWG 6 one groove (back side)
25 mm² AWG 4 with no grooves
35 mm² AWG 2 one groove
50 mm² AWG 1 two grooves
70 mm² AWG 2/0 with no grooves

CYFA 16
CYFA 25
CYFA 35
CYFA 50
CYFA 70

silver plated

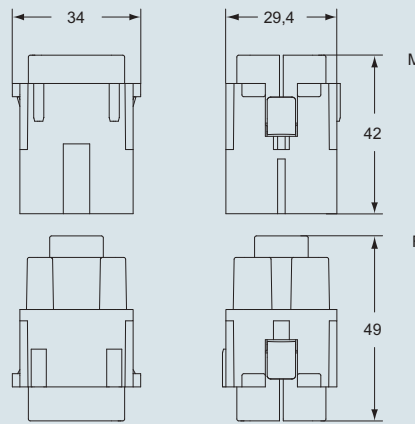
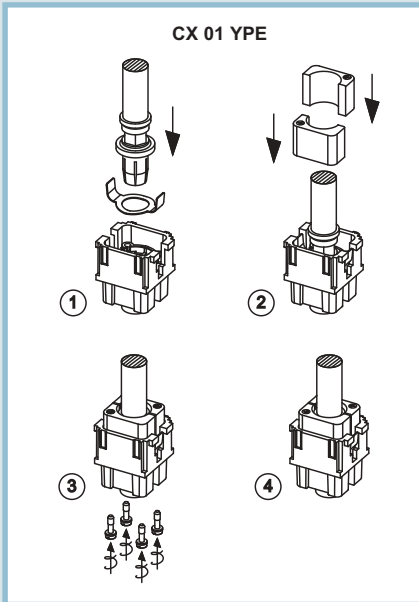
200A male crimp contacts
16 mm² AWG 6 one groove (back side)
25 mm² AWG 4 with no grooves
35 mm² AWG 2 one groove
50 mm² AWG 1 two grooves
70 mm² AWG 2/0 with no grooves

CYMA 16
CYMA 25
CYMA 35
CYMA 50
CYMA 70

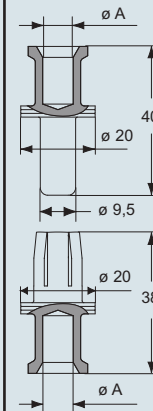
- cUL (UL for USA and Canada), CCC *, EAC certified
* CQC certification being applied for
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin
UL 94 V0

dimensions in mm

dimensions in mm

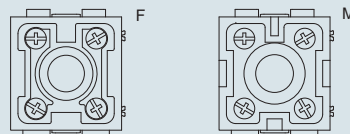


CYF and CYM



contacts side (front view)

side with reference arrow ▲



CYF and CYM contacts

conductor section (mm ²)	conductor slot ø A (mm)	conductor stripping length (mm)
16	6,1	15
25	7,0	15
35	8,2	15
50	9,8	15
70	11,8	15

- 2 frame slots

dimensions shown are not binding
and may be changed without notice

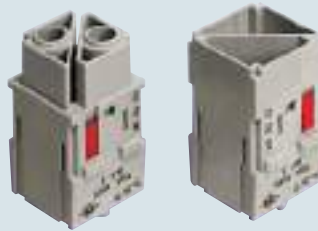
The modular inserts must be installed in suitable frames which in turn are installed in traditional housings * or COB panel support.

frames for modular units * page: 215

* enclosures: bulkhead mounting housings, high construction housings or high construction hoods

modular units,
crimp connections

100A silver plated crimp contacts,
PE adapter



description

part No.

part No.

without contacts (to be ordered separately)
- female inserts for female contacts **
- male inserts for female contacts **

CX 02 GF
CX 02 GM

100A female crimp contacts
8 - 10 mm² AWG 8 - 7
16 mm² AWG 6 - 5
25 mm² AWG 4 - 3
35 mm² AWG 2

100A male crimp contacts
8 - 10 mm² AWG 8 - 7
16 mm² AWG 6 - 5
25 mm² AWG 4 - 3
35 mm² AWG 2

CGFA 10
CGFA 16
CGFA 25
CGFA 35

silver plated

CGMA 10
CGMA 16
CGMA 25
CGMA 35

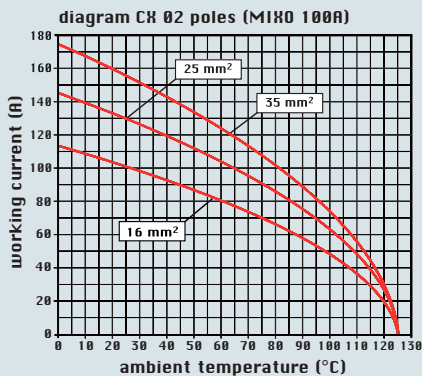
cable earthing adapter 16 mm² (AWG 6 - 5)

CGT 16

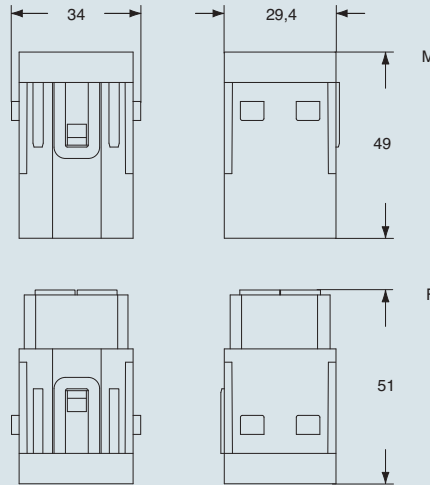
** on request, version with pole 3/4 numbering, references: **CX 02 GFN**, **CX 02 GMN**

- characteristics according to EN 61984:

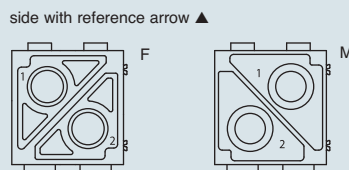
- 100A 1000V 8kV 3**
- 100A 920/1600V 8kV 2**
- cUL (UL for USA and Canada), CCC *, GL, EAC certified; * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 0.3 \text{ m}\Omega$
- for contact crimping instructions, please see the crimping tool section (100A contacts, CGF and CGM series) on page 542
- for maximum current load, see the following load curves inserts, for more information see page 565



dimensions in mm



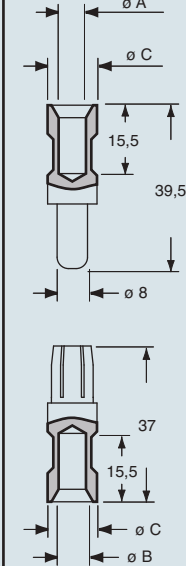
contacts side (front view)



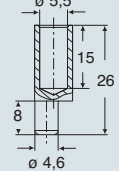
- 2 frame slots

dimensions in mm

CGF and CGM



CGT 16



CGF and CGM contacts

conductor section (mm ²)	conductor slot (mm)	ø B (mm)	ø C (mm)	conductor stripping length (mm)
8-10	4,3	4,3	13	15
16	5,5	5,5	13	15
25	7,0	7,0	13	15
35	7,9	8,2	12,5	15

How to use the PE adapter (CGT 16):

- 1) Strip 15 mm of flexible PE protective cable
- 2) Crimp the cable on the CGT 16 adapter by using the CGPZ pliers with the CGD 16 C matrix
- 3) Fix the adapter tip in the larger earth terminal (6 mm²) of frames CX...TM/TF
- 4) To be used with bulkhead mounting housings or high construction hoods
- 5) Cannot be used with T-TYPE series

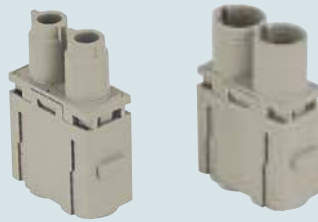
dimensions shown are not binding and may be changed without notice

The modular inserts must be installed in suitable frames which in turn are installed in traditional housings * or COB panel support.

frames for modular units * ... page: 214 - 215

* enclosures: bulkhead mounting housings, high construction housings or high construction hoods

modular units,
crimp connections



70A silver plated crimp contacts



description

part No.

part No.

without contacts (to be ordered separately)
- female inserts for female contacts
- male inserts for female contacts

CX 02 7F
CX 02 7M

70A female crimp contacts
10 mm² AWG 8 - 7
16 mm² AWG 6 - 5
25 mm² AWG 4 - 3

CX7FA 10
CX7FA 16
CX7FA 25

silver plated

70A male crimp contacts
10 mm² AWG 8 - 7
16 mm² AWG 6 - 5
25 mm² AWG 4 - 3

CX7MA 10
CX7MA 16
CX7MA 25

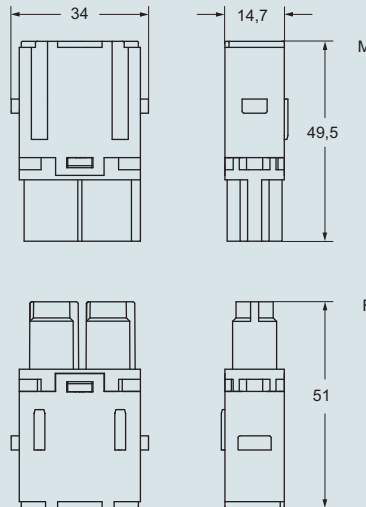
- characteristics according to EN 61984:

70A 1000V 8kV 3

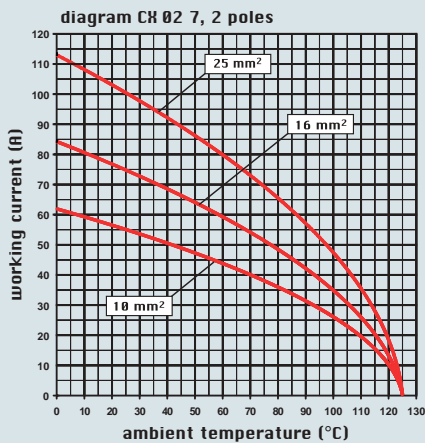
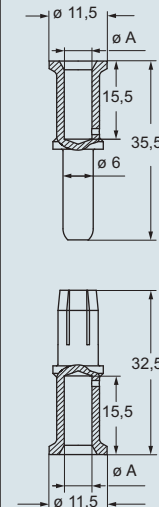
70A 1600V 12kV 2

- cUL (UL for USA and Canada), EAC certified
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- for crimp contacts CX7 series use:
CX7PZ crimping tool
CGD 10 C, CGD 16 C, CGD 25 C crimp matrixes
C7ES removal tool
- for maximum current load, see the following load curves inserts, for more information see page 565

dimensions in mm

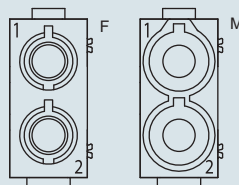


dimensions in mm



contacts side (front view)

side with reference arrow ▲



- 1 frame slot

contacts CX7F and CX7M

conductor section (mm ²)	conductor slot $\varnothing A$ (mm)	conductor stripping length (mm)
10	4,3	15
16	5,5	15
25	7,0	15

dimensions shown are not binding and may be changed without notice

The modular inserts must be installed in suitable frames which in turn are installed in traditional housings or COB panel support.

frames for modular units page: 214 - 215

- characteristics according to EN 61984:

40A 1000V 8kV 3
40A 1600V 12kV 2

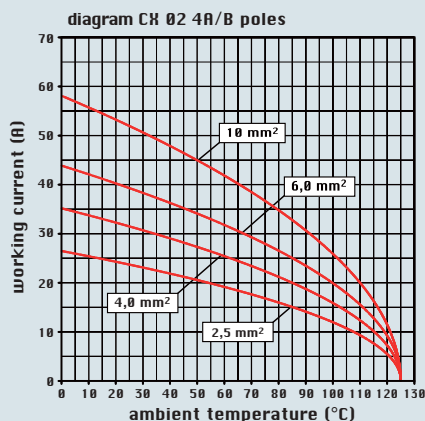
- UL, CSA, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 0.5 \text{ m}\Omega$

description

- female inserts with female contacts
- male inserts with female contacts

- female inserts with female contacts
- male inserts with female contacts

- for maximum current load, see the following load curves inserts, for more information see page 565



- use flexible cables with sections from 2,5 to 10 mm² or extra flexible cables with sections from 2,5 to 6 mm²
- do not twist the cables
- fully insert the braids in the rear section of the contact

conductor section (mm ²)	conductor stripping length (mm)	tightening torque (Nm)
2,5	5+1	1,5
4	5+1	1,5
6	8+1	2
10	8+1	2

- insert a 2 mm hexagonal key in the front section of the contact and tighten by keeping the cable held down in position
- a 2 mm hexagonal key can be supplied on request, reference **CX AS**



dimensions shown are not binding and may be changed without notice

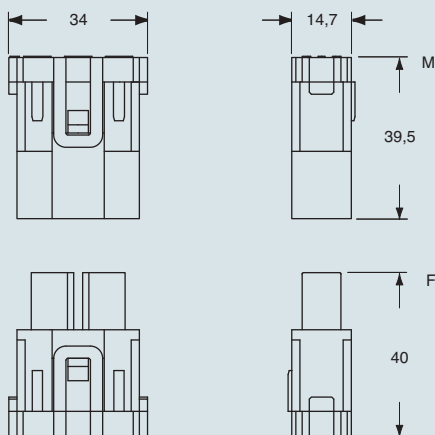
modular units,
screw terminal connection
2,5 - 8 mm²



part No.

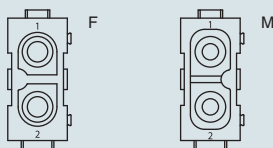
CX 02 4AF
CX 02 4AM

dimensions in mm



contacts side (front view)

side with reference arrow ▲



- inserts for $\varnothing 4\text{mm}$ cables, section: 2,5-8 mm² - AWG 14-8
- 1 frame slot

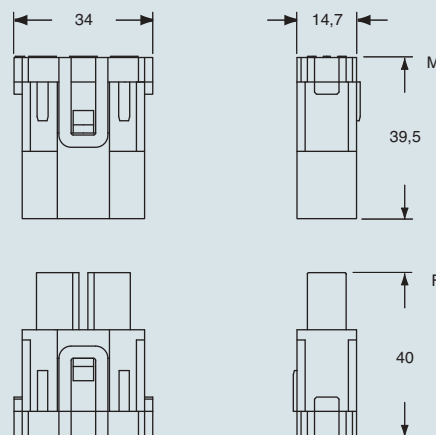
modular units,
screw terminal connection
6 - 10 mm²



part No.

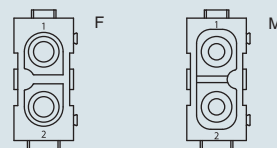
CX 02 4BF
CX 02 4BM

dimensions in mm



contacts side (front view)

side with reference arrow ▲



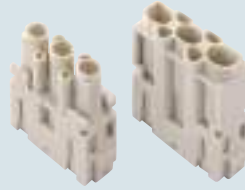
- inserts for $\varnothing 4.8\text{mm}$ cables, section: 6-10 mm² - AWG 10-8
- 1 frame slot

The modular inserts must be installed in suitable frames which are then mounted in traditional housings or COB panel support.

frames for modular units page: 214 - 215

- male and female contacts to test of contact with fingers
 - their key characteristic lies in the fact that they guarantee maximum safety even in case of accidental contact with fingers (IPXXB or IP2X).
 Safety is guaranteed as standard on female contacts, but also on male contacts. This feature is important as it ensures full compliance with the recent safety standard EN 60204-1, concerning electric equipment fitted on machines and in particular with the requirements of Article 6.2.4 concerning protection against residual voltage.
In the case of plugs or similar devices, the with drawal of which results in the exposure of conductors (for example pins), the discharge time shall not exceed 1 s, otherwise such conductors shall be protected against direct contact to at least an IP2X or IPXXB.

modular units, crimp connections



40A and 10A crimp contacts silver and gold plated



description

part No.

part No. part No.

without contacts (to be ordered separately)
 - female inserts for female contacts
 - male inserts for male contacts

CX 3/4 XDF
 CX 3/4 XDM

40A female crimp contacts
 1,5 mm² AWG 16
 2,5 mm² AWG 14
 4 mm² AWG 12
 6 mm² AWG 10
 40A male crimp contacts
 1,5 mm² AWG 16
 2,5 mm² AWG 14
 4 mm² AWG 12
 6 mm² AWG 10

CXFA 1.5
 CXFA 2.5
 CXFA 4.0
 CXFA 6.0

silver plated

CXMA 1.5
 CXMA 2.5
 CXMA 4.0
 CXMA 6.0

10A female contacts
 0,14-0,37 mm² AWG 26-22 identification No. 1
 0,5 mm² AWG 20 identification No. 2
 0,75 mm² AWG 18 identification No. ②
 1 mm² AWG 18 identification No. 3
 1,5 mm² AWG 16 identification No. 4
 2,5 mm² AWG 14 identification No. 5

C DFA 0.3
 C DFA 0.5
 C DFA 0.7
 C DFA 1.0
 C DFA 1.5
 C DFA 2.5

silver plated

C DFD 0.3
 C DFD 0.5
 C DFD 0.7
 C DFD 1.0
 C DFD 1.5
 C DFD 2.5

gold plated 1)

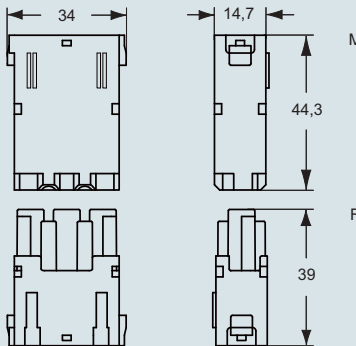
10A male contacts
 0,14-0,37 mm² AWG 26-22 identification No. 1
 0,5 mm² AWG 20 identification No. 2
 0,75 mm² AWG 18 identification No. ②
 1 mm² AWG 18 identification No. 3
 1,5 mm² AWG 16 identification No. 4
 2,5 mm² AWG 14 identification No. 5

C DMA 0.3
 C DMA 0.5
 C DMA 0.7
 C DMA 1.0
 C DMA 1.5
 C DMA 2.5

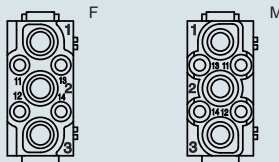
C DMD 0.3
 C DMD 0.5
 C DMD 0.7
 C DMD 1.0
 C DMD 1.5
 C DMD 2.5

- characteristics according to EN 61984:
3 poles 40A 830V 8kV 3
4 poles 10A 830V 8kV 3
 - cUL (UL for USA and Canada), CCC *, EAC certified
 * CQC certification being applied for
 - rated voltage according to UL/CSA: 600V
 - insulation resistance: ≥ 10 GΩ
 - ambient temperature limit: -40 °C ... +125 °C
 - are made of self-extinguishing thermoplastic resin UL 94 V0
 - mechanical life: ≥ 500 cycles
 - contact resistance: ≤ 0.3 mΩ (3 poles)
 ≤ 3 mΩ (4 poles)
 - for maximum current load, see the following load curves inserts, for more information see page 565

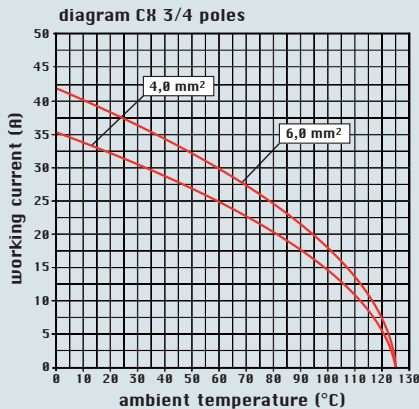
dimensions in mm



contacts side (front view)
 side with reference arrow ▲



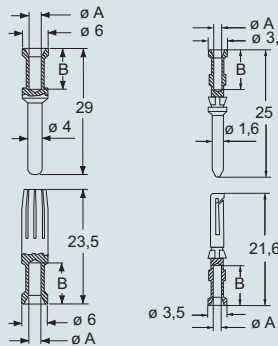
- 1 frame slot



dimensions shown are not binding and may be changed without notice

dimensions in mm

CXF and CXM CDF and CDM



conductor section (mm ²)	conductor slot \varnothing A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

CXF and CXM contacts		
1,5	1,8	9
2,5	2,2	9
4	2,85	9,6
6	3,5	9,6

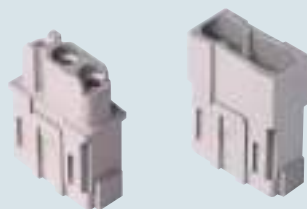
- for contact crimping, see the crimp tool section (40A contacts CXF, CXM series and 10A contacts CDF, CDM series) on pages 534, 536, 538, 544, 546, 548

The modular inserts must be installed in suitable frames which in turn are installed in traditional housings or COB panel support.

frames for modular units page: 214 - 215

modular units,
crimp connections

40A crimp contacts
silver plated



description

part No.

part No.

without contacts (to be ordered separately)
- female inserts for female contacts
- male inserts for male contacts

CX 03 4F *
CX 03 4M *

40A female crimp contacts

1,5 mm² AWG 16
2,5 mm² AWG 14
4 mm² AWG 12
6 mm² AWG 10

40A male crimp contacts

1,5 mm² AWG 16
2,5 mm² AWG 14
4 mm² AWG 12
6 mm² AWG 10

CXFA 1.5
CXFA 2.5
CXFA 4.0
CXFA 6.0

CXMA 1.5
CXMA 2.5
CXMA 4.0
CXMA 6.0

silver plated

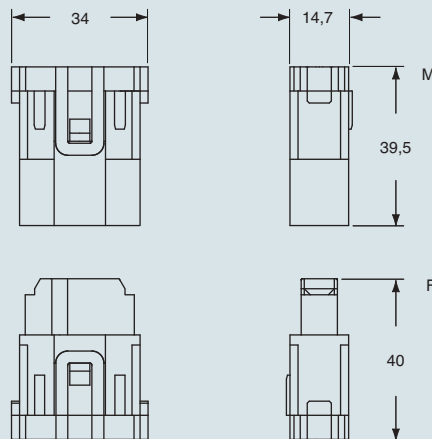
- characteristics according to EN 61984:

40A 400/690V 6kV 3

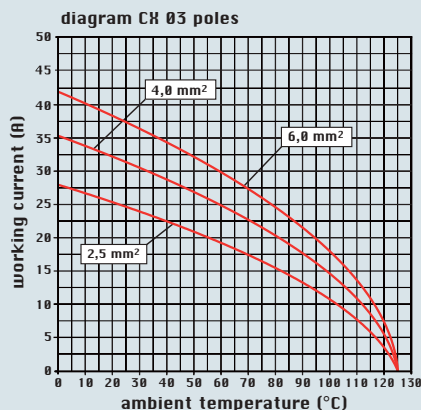
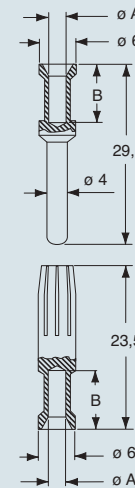
- UL, CSA, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 0.3 \text{ m}\Omega$
- for contact crimping instructions, please see the crimping tool section (40A contacts, CXF and CXM series) on pages 536 and 538
- for maximum current load, see the following load curves inserts, for more information see page 565

* cable diameter up to 5 mm

dimensions in mm

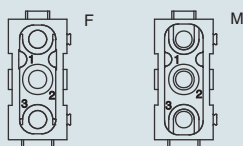


dimensions in mm



contacts side (front view)

side with reference arrow ▲



- 1 frame slot

CXF and CXM contacts

conductor section mm ²	conductor slot $\varnothing A$ (mm)	conductors stripping length B (mm)
1,5	1,8	9
2,5	2,2	9
4	2,85	9,6
6	3,5	9,6

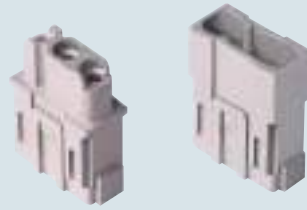
dimensions shown are not binding and may be changed without notice

The modular inserts must be installed in suitable frames which in turn are installed in traditional housings or COB panel support.

frames for modular units * page: 214 - 215

* enclosures: bulkhead mounting housings, high construction housings or high construction hoods

modular units,
crimp connections



40A crimp contacts
silver plated



description

part No.

part No.

without contacts (to be ordered separately)
- female inserts for female contacts
- male inserts for male contacts

CX 03 4BF *
CX 03 4BM *

40A female crimp contacts

1,5 mm² AWG 16
2,5 mm² AWG 14
4 mm² AWG 12
6 mm² AWG 10
10 mm² AWG 8

40A male crimp contacts

1,5 mm² AWG 16
2,5 mm² AWG 14
4 mm² AWG 12
6 mm² AWG 10
10 mm² AWG 8

CXFA 1.5
CXFA 2.5
CXFA 4.0
CXFA 6.0
CXFA 10

CXMA 1.5
CXMA 2.5
CXMA 4.0
CXMA 6.0
CXMA 10

silver plated

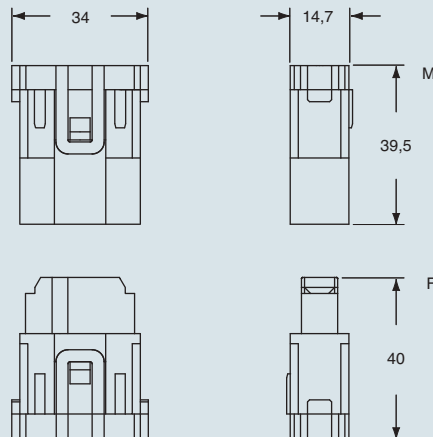
- characteristics according to EN 61984:

40A 500V 6kV 3

- cUL (UL for USA and Canada), EAC certified
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 0.3 \text{ m}\Omega$
- for contact crimping instructions (1.5 ÷ 10 mm²), please see the crimping tool section (40A contacts, CXF and CXM series) on pages 536 and 538
- for maximum current load, see the following load curves inserts, for more information see page 565

* cable diameter up to 7.5 mm
contact section up to 10 mm²

dimensions in mm



dimensions in mm

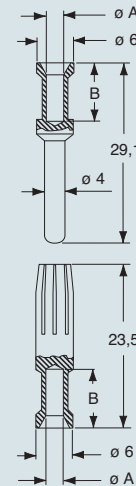
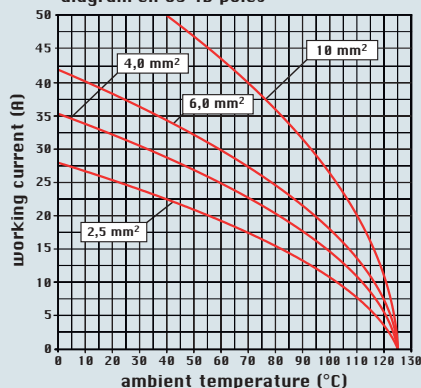
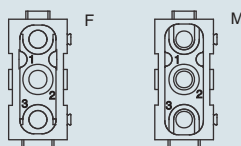


diagram CX 03 4B poles



contacts side (front view)

side with reference arrow ▲



- 1 frame slot

CXF and CXM contacts

conductor section mm ²	conductor slot $\varnothing A$ (mm)	conductors stripping length B (mm)
1,5	1,8	9
2,5	2,2	9
4	2,85	9,6
6	3,5	9,6
10	4,3	15

dimensions shown are not binding
and may be changed without notice

The modular inserts must be installed in suitable frames which are then mounted in traditional housings or COB panel support.

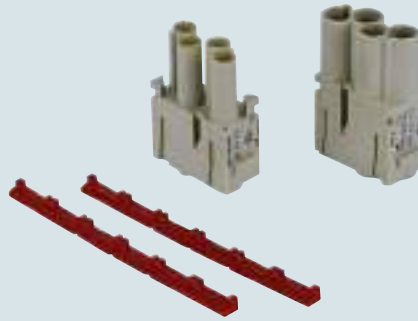
frames for modular units * page: 214 - 215

* enclosures: bulkhead mounting housings, high construction housings or high construction hoods

- male and female contacts to test of contact with fingers
 - their key characteristic lies in the fact that they guarantee maximum safety even in case of accidental contact with fingers (IPXXB or IP2X).
 Safety is guaranteed as standard on female contacts, but also on male contacts. This feature is important as it ensures full compliance with the recent safety standard EN 60204-1, concerning electric equipment fitted on machines and in particular with the requirements of Article 6.2.4 concerning protection against residual voltage.

In the case of plugs or similar devices, the with drawal of which results in the exposure of conductors (for example pins), the discharge time shall not exceed 1 s, otherwise such conductors shall be protected against direct contact to at least an IP2X or IPXXB.

modular units, crimp connections



40A crimp contacts silver plated



description

part No.

part No.

without contacts (to be ordered separately)
 - female inserts for female contacts
 - male inserts for male contacts

CX 04 XF
 CX 04 XM

40A female crimp contacts

1,5 mm² AWG 16
 2,5 mm² AWG 14
 4 mm² AWG 12
 6 mm² AWG 10

40A male crimp contacts

1,5 mm² AWG 16
 2,5 mm² AWG 14
 4 mm² AWG 12
 6 mm² AWG 10

CXFA 1.5
 CXFA 2.5
 CXFA 4.0
 CXFA 6.0

CXMA 1.5
 CXMA 2.5
 CXMA 4.0
 CXMA 6.0

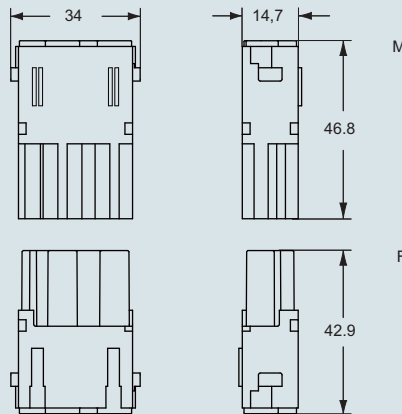
silver plated

- characteristics according to EN 61984:

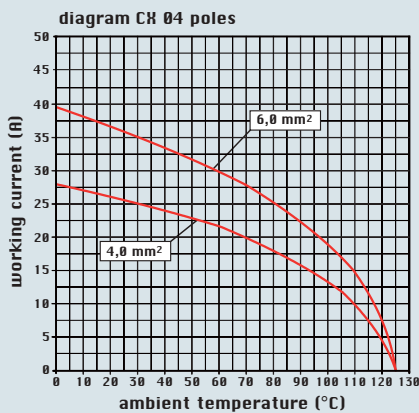
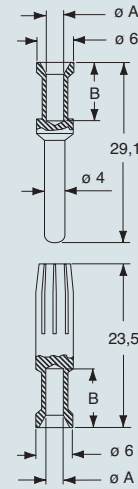
40A 830V 8kV 3
40A 1000V 8kV 2

- certifications: cUL (UL for USA and Canada), (CSA), (GL), EAC; the certifications shown in brackets are being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 0.3 \text{ m}\Omega$
- for contact crimping instructions, please see the crimping tool section (40A contacts, CXF and CXM series) on pages 536 and 538
- for maximum current load, see the following load curves inserts, for more information see page 565

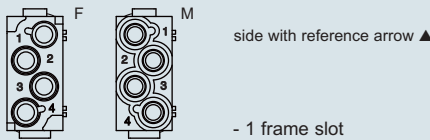
dimensions in mm



dimensions in mm

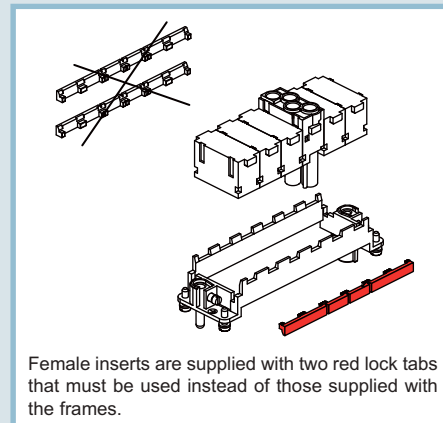


contacts side (front view)



CXF and CXM contacts

conductor section mm ²	conductor slot ø A (mm)	conductor stripping lenght B (mm)
1,5	1,8	9
2,5	2,2	9
4	2,85	9,6
6	3,5	9,6



Female inserts are supplied with two red lock tabs that must be used instead of those supplied with the frames.

dimensions shown are not binding and may be changed without notice

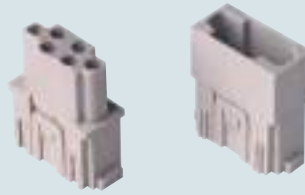
MIXO

The modular inserts must be installed in suitable frames which in turn are installed in traditional housings or COB panel support.

frames for modular units page: 214 - 215

modular units,
crimp connections

16A crimp contacts
normal or for advanced opening
silver and gold plated

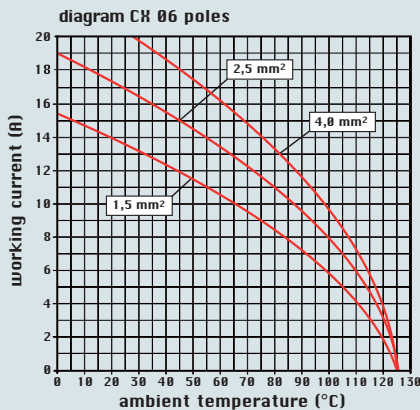


description	part No.	part No.	part No.
without contacts (to be ordered separately) - female inserts for female contacts - male inserts for female contacts	CX 06 CF CX 06 CM		
16A female contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves		CCFA 0.3 CCFA 0.5 CCFA 0.7 CCFA 1.0 CCFA 1.5 CCFA 2.5 CCFA 3.0 CCFA 4.0	CCFD 0.3 CCFD 0.5 CCFD 0.7 CCFD 1.0 CCFD 1.5 CCFD 2.5 CCFD 3.0 CCFD 4.0
16A male contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves		CCMA 0.3 CCMA 0.5 CCMA 0.7 CCMA 1.0 CCMA 1.5 CCMA 2.5 CCMA 3.0 CCMA 4.0	CCMD 0.3 CCMD 0.5 CCMD 0.7 CCMD 1.0 CCMD 1.5 CCMD 2.5 CCMD 3.0 CCMD 4.0
16A male crimp contacts for advanced opening 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves		CC 0.5 AN CC 0.7 AN CC 1.0 AN CC 1.5 AN CC 2.5 AN	

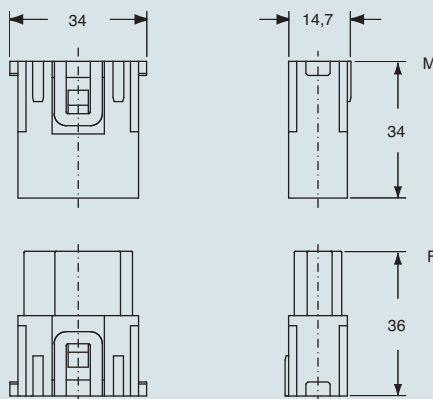
silver plated

gold plated 1)

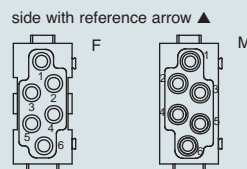
- characteristics according to EN 61984:
16A 500V 6kV 3
16A 400/690V 6kV 2
- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 565



dimensions in mm

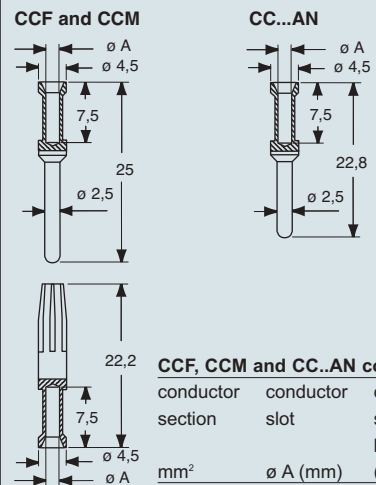


contacts side (front view)



- 1 frame slot

dimensions in mm



CCF, CCM and CC...AN contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	(mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

The modular inserts must be installed in suitable frames which in turn are installed in traditional housings or COB panel support.

frames for modular units page: 214 - 215

modular units,
crimp connections

16A crimp contacts
normal or for advanced opening
silver and gold plated



description

part No.

part No.

part No.

without contacts (to be ordered separately)
- female inserts for female contacts
- male inserts for female contacts

CX 08 CF
CX 08 CM

16A female contacts

0,14-0,37 mm ²	AWG 26-22	three grooves
0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves
3 mm ²	AWG 12	one wide groove
4 mm ²	AWG 12	with no grooves

16A male contacts

0,14-0,37 mm ²	AWG 26-22	three grooves
0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves
3 mm ²	AWG 12	one wide groove
4 mm ²	AWG 12	with no grooves

16A male crimp contacts for advanced opening

0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves

CCFA 0.3
CCFA 0.5
CCFA 0.7
CCFA 1.0
CCFA 1.5
CCFA 2.5
CCFA 3.0
CCFA 4.0

silver plated

CCFD 0.3
CCFD 0.5
CCFD 0.7
CCFD 1.0
CCFD 1.5
CCFD 2.5
CCFD 3.0
CCFD 4.0

gold plated 1)

CCMA 0.3
CCMA 0.5
CCMA 0.7
CCMA 1.0
CCMA 1.5
CCMA 2.5
CCMA 3.0
CCMA 4.0

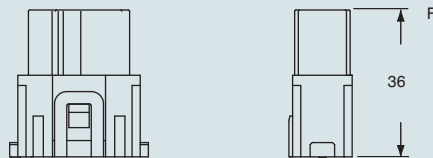
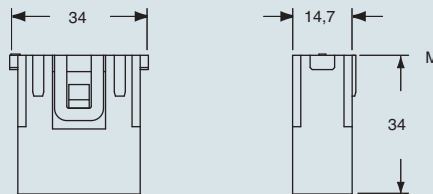
CCMD 0.3
CCMD 0.5
CCMD 0.7
CCMD 1.0
CCMD 1.5
CCMD 2.5
CCMD 3.0
CCMD 4.0

CC 0.5 AN
CC 0.7 AN
CC 1.0 AN
CC 1.5 AN
CC 2.5 AN

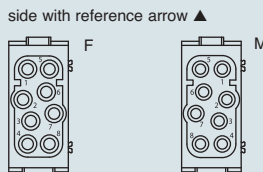
- characteristics according to EN 61984:

- 16A 400V 6kV 3**
- 16A 400/690V 6kV 2**
- UL, CSA, CCC *, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 1 \text{ m}\Omega$
- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 565

dimensions in mm

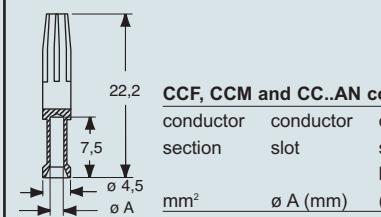
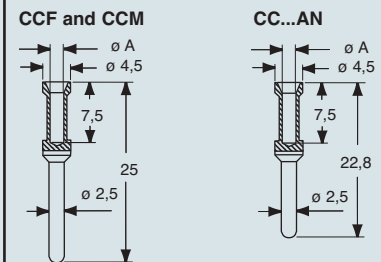


contacts side (front view)



- 1 frame slot

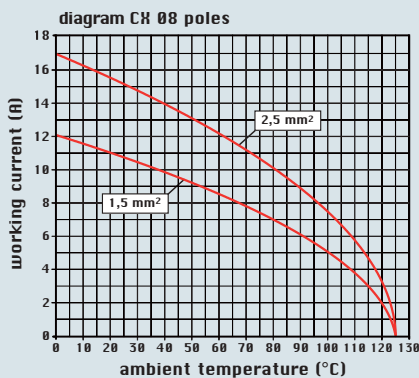
dimensions in mm



CCF, CCM and CC...AN contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	(mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481



dimensions shown are not binding and may be changed without notice

The modular inserts must be installed in suitable frames which in turn are installed in traditional housings or COB panel support.

frames for modular units page: 215

* on request, version with 3 fastened CX 20 CF/CM inserts with poles numbered from 1 – 60
 references: **CX 60 CF, CX 60 CM**

modular units,
 crimp connections



16A crimp contacts
 normal or for advanced opening
 silver and gold plated



description

part No.

part No. part No.

without contacts (to be ordered separately)
 - female inserts for female contacts *
 - male inserts for female contacts *

CX 20 CF
CX 20 CM

16A female contacts
 0,14-0,37 mm² AWG 26-22 three grooves
 0,5 mm² AWG 20 with no grooves
 0,75 mm² AWG 18 one groove (back side)
 1 mm² AWG 18 one groove
 1,5 mm² AWG 16 two grooves
 2,5 mm² AWG 14 three grooves
 3 mm² AWG 12 one wide groove
 4 mm² AWG 12 with no grooves

CCFA 0.3
CCFA 0.5
CCFA 0.7
CCFA 1.0
CCFA 1.5
CCFA 2.5
CCFA 3.0
CCFA 4.0

CCFD 0.3
CCFD 0.5
CCFD 0.7
CCFD 1.0
CCFD 1.5
CCFD 2.5
CCFD 3.0
CCFD 4.0

16A male contacts
 0,14-0,37 mm² AWG 26-22 three grooves
 0,5 mm² AWG 20 with no grooves
 0,75 mm² AWG 18 one groove (back side)
 1 mm² AWG 18 one groove
 1,5 mm² AWG 16 two grooves
 2,5 mm² AWG 14 three grooves
 3 mm² AWG 12 one wide groove
 4 mm² AWG 12 with no grooves

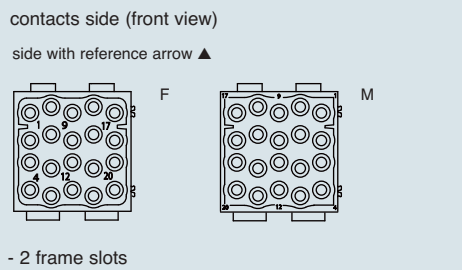
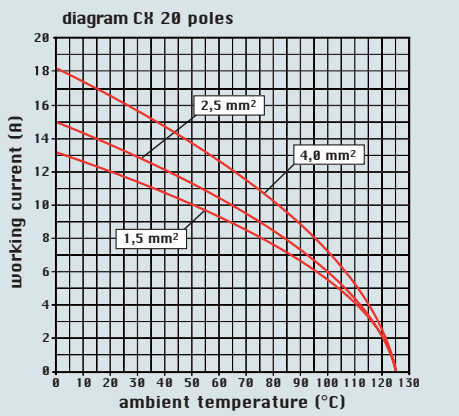
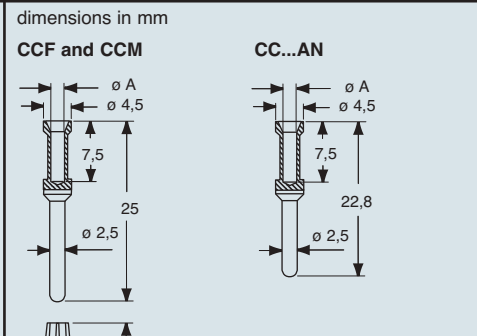
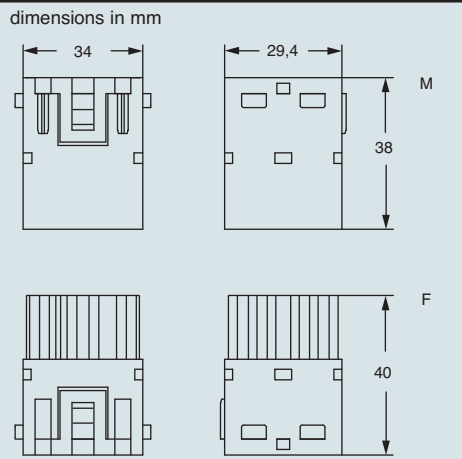
CCMA 0.3
CCMA 0.5
CCMA 0.7
CCMA 1.0
CCMA 1.5
CCMA 2.5
CCMA 3.0
CCMA 4.0

CCMD 0.3
CCMD 0.5
CCMD 0.7
CCMD 1.0
CCMD 1.5
CCMD 2.5
CCMD 3.0
CCMD 4.0

16A male crimp contacts for advanced opening
 0,5 mm² AWG 20 with no grooves
 0,75 mm² AWG 18 one groove (back side)
 1 mm² AWG 18 one groove
 1,5 mm² AWG 16 two grooves
 2,5 mm² AWG 14 three grooves

CC 0.5 AN
CC 0.7 AN
CC 1.0 AN
CC 1.5 AN
CC 2.5 AN

- characteristics according to EN 61984:
16A 500V 6kV 3
16A 830V 8kV 2
- cUL (UL for USA and Canada), CSA, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 565



CCF, CCM and CC...AN contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	(mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

dimensions shown are not binding and may be changed without notice

The modular inserts must be installed in suitable frames which in turn are installed in traditional housings or COB panel support.

frames for modular units page: 214 - 215

modular units,
spring connection



description

- female inserts with female contacts
- male inserts with male contacts

part No.

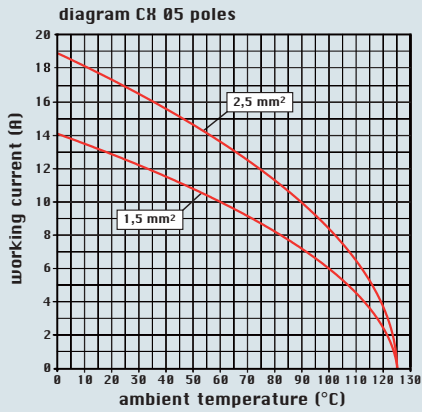
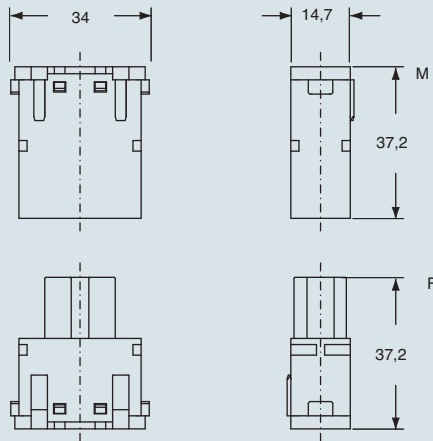
CX 05 SF
CX 05 SM

- characteristics according to EN 61984:

16A 400V 6kV 3
16A 500V 6kV 2

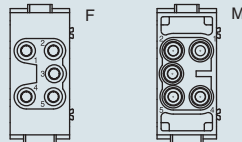
- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 3 \text{ m}\Omega$
- for maximum current load, see the following load curves inserts, for more information see page 566

dimensions in mm



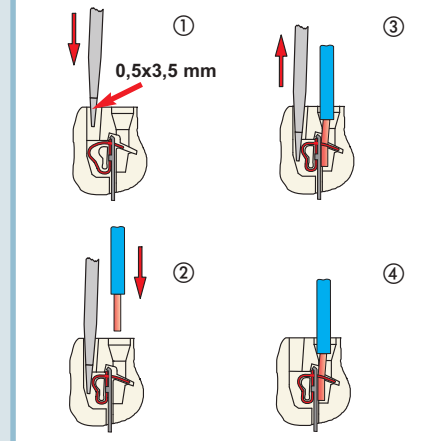
contacts side (front view)

side with reference arrow ▲



- inserts for section conductors: 0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping length: 9...11 mm
- 1 frame slot

connection with spring terminal



dimensions shown are not binding
and may be changed without notice

MIXO

The modular inserts must be installed in suitable frames which in turn are installed in traditional housings * or COB panel support.

frames for modular units * page: 215

* enclosures: bulkhead mounting housings, high construction housings or high construction hoods

- characteristics according to EN 61984 **:

16A 2900/5000V 15kV 3

** used for guidance as applicable

- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 1 \text{ m}\Omega$
- for contact crimping, see the crimp tool section (16A CCF and CCM series contacts) on pages 534, 538, 544, 546, 548

high voltage modular units, crimp connections contact holder removal tool



16A crimp contacts silver and gold plated



description	part No.	part No.	part No.
without contacts (to be ordered separately) - female inserts high voltage for female contacts - male inserts high voltage for male contacts	CX 02 HF CX 02 HM		
contact holder removal tool	CHES		
16A female contacts			
0,14-0,37 mm ² AWG 26-22 three grooves		CCFA 0.3	CCFD 0.3
0,5 mm ² AWG 20 with no grooves		CCFA 0.5	CCFD 0.5
0,75 mm ² AWG 18 one groove (back side)		CCFA 0.7	CCFD 0.7
1 mm ² AWG 18 one groove		CCFA 1.0	CCFD 1.0
1,5 mm ² AWG 16 two grooves		CCFA 1.5	CCFD 1.5
2,5 mm ² AWG 14 three grooves		CCFA 2.5	CCFD 2.5
3 mm ² AWG 12 one wide groove		CCFA 3.0	CCFD 3.0
4 mm ² AWG 12 with no grooves		CCFA 4.0	CCFD 4.0
16A male contacts			
0,14-0,37 mm ² AWG 26-22 three grooves		CCMA 0.3	CCMD 0.3
0,5 mm ² AWG 20 with no grooves		CCMA 0.5	CCMD 0.5
0,75 mm ² AWG 18 one groove (back side)		CCMA 0.7	CCMD 0.7
1 mm ² AWG 18 one groove		CCMA 1.0	CCMD 1.0
1,5 mm ² AWG 16 two grooves		CCMA 1.5	CCMD 1.5
2,5 mm ² AWG 14 three grooves		CCMA 2.5	CCMD 2.5
3 mm ² AWG 12 one wide groove		CCMA 3.0	CCMD 3.0
4 mm ² AWG 12 with no grooves			

silver plated

gold plated 1)

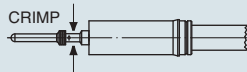
How to use the MIXO HT module

Wiring and assembly:

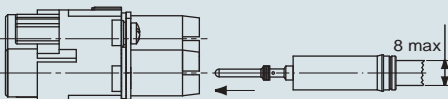
- 1) Strip the wire by 9.5 mm length and insert it into the contact holder



- 2) Crimp series CC contact (16A max) on the stripped wire



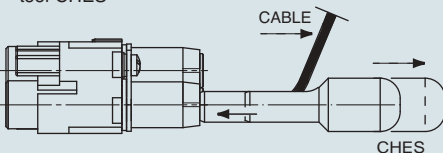
- 3) Insert the contact holder into the module



Heat shrinking tubes to be applied on the rear side of the module and over the contact holder are furnished together with the product

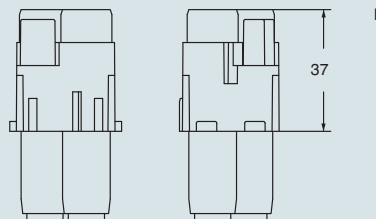
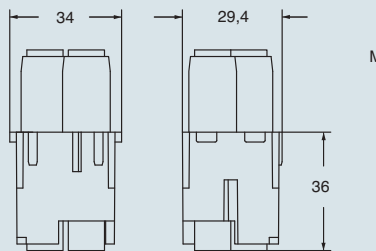
Removal:

- 1) Remove the contact holder by means of the proper tool CHES



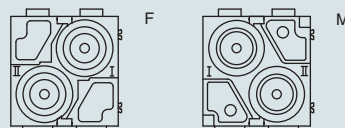
dimensions shown are not binding and may be changed without notice

dimensions in mm



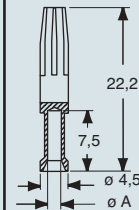
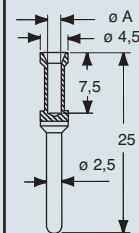
contacts side (front view)

side with reference arrow ▲



- 2 frame slots

dimensions in mm



CCF, CCM contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	(mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

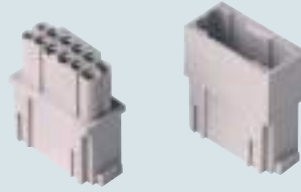
1) basic or high thickness gold plating page 481

The modular inserts must be installed in suitable frames which in turn are installed in traditional housings or COB panel support.

frames for modular units page: 214 - 215

modular units,
crimp connections

10A crimp contacts
silver and gold plated



description

part No.

part No.

part No.

without contacts (to be ordered separately)
- female inserts for female contacts
- male inserts for female contacts

CX 12 DF
CX 12 DM

10A female contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

10A male contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

CDFA 0.3
CDFA 0.5
CDFA 0.7
CDFA 1.0
CDFA 1.5
CDFA 2.5

silver plated

CDFD 0.3
CDFD 0.5
CDFD 0.7
CDFD 1.0
CDFD 1.5
CDFD 2.5

gold plated 1)

CDMA 0.3
CDMA 0.5
CDMA 0.7
CDMA 1.0
CDMA 1.5
CDMA 2.5

CDMD 0.3
CDMD 0.5
CDMD 0.7
CDMD 1.0
CDMD 1.5
CDMD 2.5

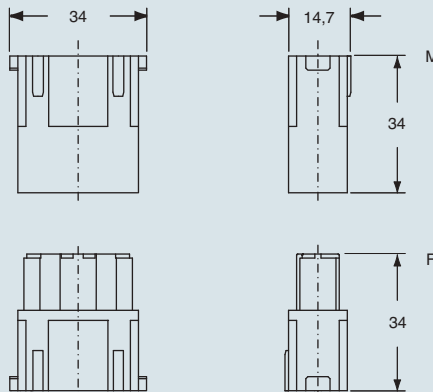
- characteristics according to EN 61984:

10A 160V 2,5kV 3

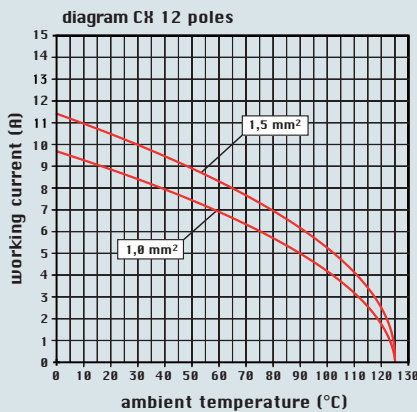
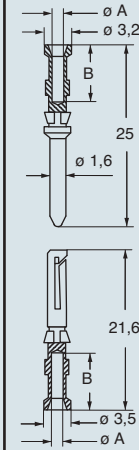
10A 250V 4kV 2

- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 3 \text{ m}\Omega$
- PCBs interface, see article CIF 2.4
- for contact crimping, see the crimp tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 566

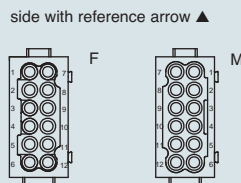
dimensions in mm



dimensions in mm



contacts side (front view)



- 1 frame slot

CDF and CDM contacts

conductor section mm ²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

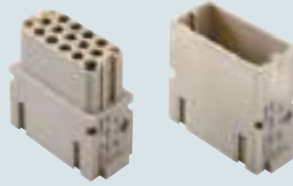
dimensions shown are not binding
and may be changed without notice

The modular inserts must be installed in suitable frames which are then mounted in traditional housings or COB panel support.

frames for modular units page: 214 - 215

modular units,
crimp connections

10A crimp contacts
silver and gold plated



description

part No.

part No.

part No.

without contacts (to be ordered separately)
- female inserts for female contacts
- male inserts for male contacts

CX 17 DF
CX 17 DM

10A female contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

10A male contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

CDFA 0.3
CDFA 0.5
CDFA 0.7
CDFA 1.0
CDFA 1.5
CDFA 2.5

silver plated

CDFD 0.3
CDFD 0.5
CDFD 0.7
CDFD 1.0
CDFD 1.5
CDFD 2.5

gold plated 1)

CDMA 0.3
CDMA 0.5
CDMA 0.7
CDMA 1.0
CDMA 1.5
CDMA 2.5

CDMD 0.3
CDMD 0.5
CDMD 0.7
CDMD 1.0
CDMD 1.5
CDMD 2.5

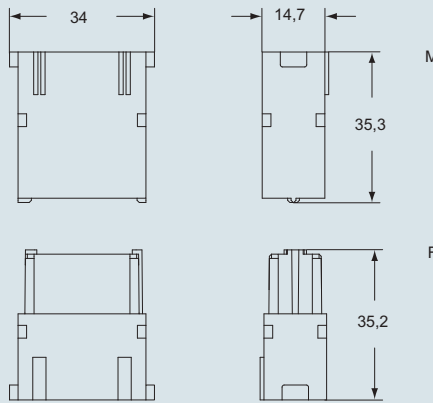
- characteristics according to EN 61984:

10A 160V 2,5kV 3

10A 250V 4kV 2

- cUL (UL for USA and Canada), CCC *, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 3 \text{ m}\Omega$
- for contact crimping, see the crimp tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 566

dimensions in mm



dimensions in mm

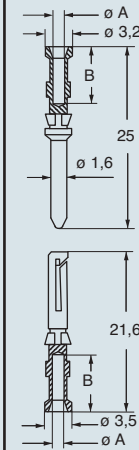
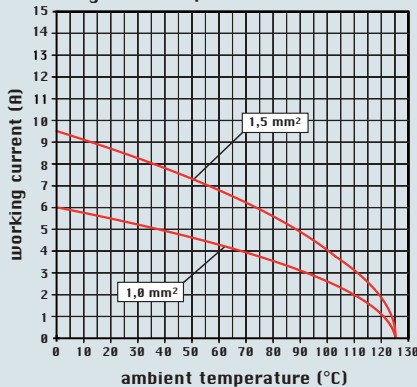
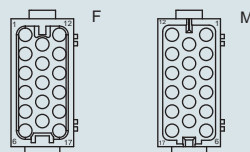


diagram CX 17 poles



contacts side (front view)

side with reference arrow ▲



- 1 frame slot

CDF and CDM contacts

conductor section mm ²	conductor slot $\varnothing A$ (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

dimensions shown are not binding
and may be changed without notice

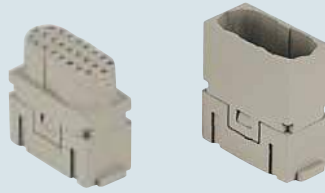
The modular inserts must be installed in suitable frames which are then mounted in traditional housings or COB panel support.

frames for modular units page: 214 - 215

- we recommend the use of CRF / CRM code pins

modular units,
crimp connections

crimp contacts
gold plated



description

part No.

part No.

without contacts (to be ordered separately)
- female inserts for female contacts
- male inserts for male contacts

CX 25 IF
CX 25 IM

4A female crimp contacts
0,08-0,21 mm² AWG 28-24
0,13-0,33 mm² AWG 26-22
0,33-0,52 mm² AWG 22-20

CIFD 0.2
CIFD 0.3
CIFD 0.5

gold plated

4A male crimp contacts
0,08-0,21 mm² AWG 28-24
0,13-0,33 mm² AWG 26-22
0,33-0,52 mm² AWG 22-20

CIMD 0.2
CIMD 0.3
CIMD 0.5

- characteristics according to EN 61984:

4A 50V 0.8kV 3

4A 160V 2.5kV 2

- cUL (UL for USA and Canada), EAC certified
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- for crimp contacts CI series use, on page 540

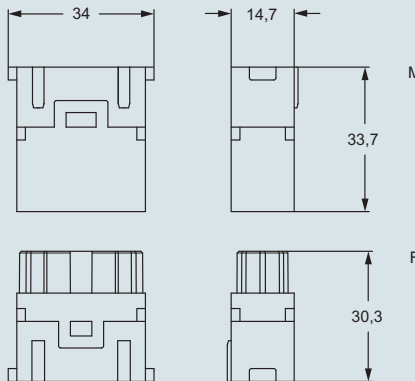
CIPZ D crimping tool

CITP D turret head

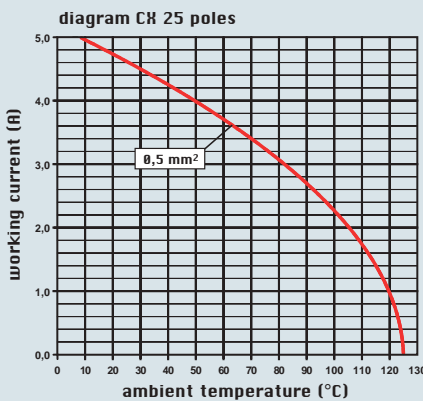
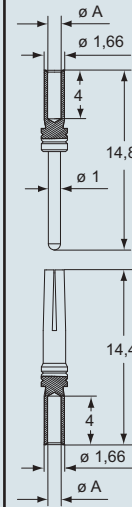
CIES insertion / removal tool

- for maximum current load, see the following load curves inserts, for more information see page 566

dimensions in mm

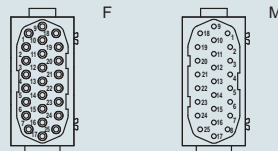


dimensions in mm



contacts side (front view)

side with reference arrow ▲



- 1 frame slot

CIF, CIM contacts

conductor section mm ²	conductor slot ø A (mm)	conductors stripping length (mm)
0,08-0,21	0,64	4
0,13-0,33	0,90	4
0,33-0,52	1,12	4

dimensions shown are not binding and may be changed without notice

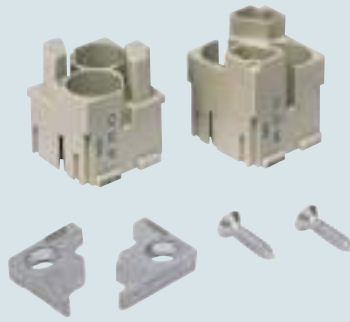
The modular inserts must be installed in suitable frames which in turn are installed in traditional housings or COB panel support.

frames for modular units * page: 215

* enclosures: bulkhead mounting housings, high construction housings or high construction hoods

- characteristics according to EN 61984: **10A 50V 0,8kV 3**
- UL, CSA, CCC *, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 50V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit:
 - 40 °C ... +70 °C (CX 01 B and CX 04 B)
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 3 \text{ m}\Omega$ (no CX 02 B)
- coaxial connector CX 01 B cables with a typical impedance of 75Ω (attenuation see page 567)
- CX 04 B multi-axial connector for STP cables with 2 pairs and terminations compliant with EN 50173-1 Cat. 5 (100 MHz), compatible with 4-wire field bus protocols
- extraction tool for BUS shielded connectors from MIXO BUS insert part No. CX BES see page 502

seat for shielded connectors metal adaptor

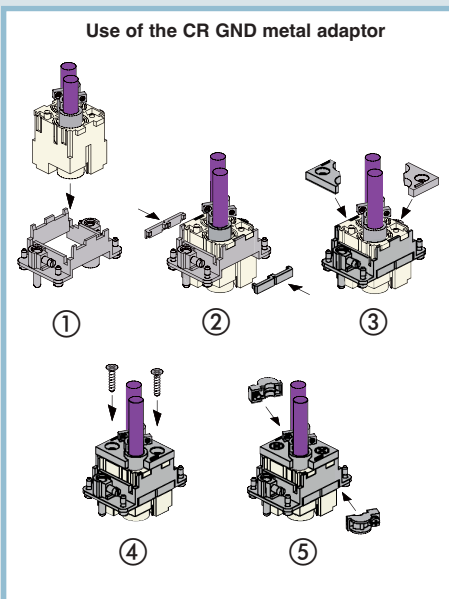


shielded connectors 10A crimp contacts, silver or gold plated



description	part No.	part No.	part No.
seat for two shielded connectors - female insert, two seats for BUS connectors - male insert, two seats for BUS connectors	CX 02 BF CX 02 BM		
shielded BUS multi axial connectors, 4 poles + shield - female insert, four contact seats + shield - male insert, four contact seats + shield		CX 04 BF CX 04 BM	
shielded BUS coaxial connectors, 1 pole + shield - female insert, one contact seats + shield - male insert, one contact seats + shield		CX 01 BF CX 01 BM	
metal adaptor (optional)	CR GND		
10A female contacts 0,14-0,37 mm ² AWG 26-22 identification No. 1 0,5 mm ² AWG 20 identification No. 2 0,75 mm ² AWG 18 identification No. ② 1 mm ² AWG 18 identification No. 3 1,5 mm ² AWG 16 identification No. 4 2,5 mm ² AWG 14 identification No. 5		CDFA 0.3 CDFA 0.5 CDFA 0.7 CDFA 1.0 CDFA 1.5 CDFA 2.5	CDFD 0.3 CDFD 0.5 CDFD 0.7 CDFD 1.0 CDFD 1.5 CDFD 2.5
10A male contacts 0,14-0,37 mm ² AWG 26-22 identification No. 1 0,5 mm ² AWG 20 identification No. 2 0,75 mm ² AWG 18 identification No. ② 1 mm ² AWG 18 identification No. 3 1,5 mm ² AWG 16 identification No. 4 2,5 mm ² AWG 14 identification No. 5		CDMA 0.3 CDMA 0.5 CDMA 0.7 CDMA 1.0 CDMA 1.5 CDMA 2.5	CDMD 0.3 CDMD 0.5 CDMD 0.7 CDMD 1.0 CDMD 1.5 CDMD 2.5

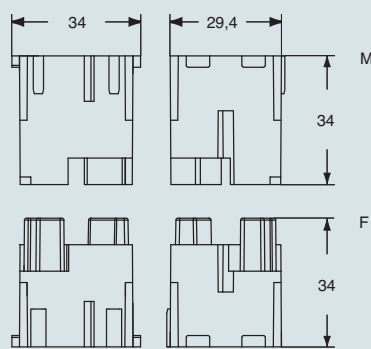
Note: The shielded connectors have their shield insulated from the enclosure's earthing point. If you wish to earth-connect the shield, install on the panel an anchorage for shielded cables CR..ST (see page 482) or the CR GND metal adaptor.



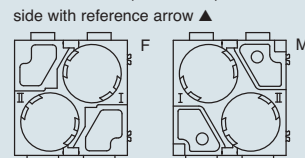
dimensions shown are not binding and may be changed without notice

dimensions in mm

CX 02 BF, CX 02 BM

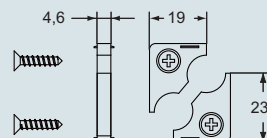


contacts side (front view)

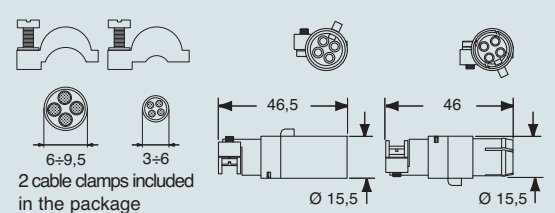


- 2 frame slots

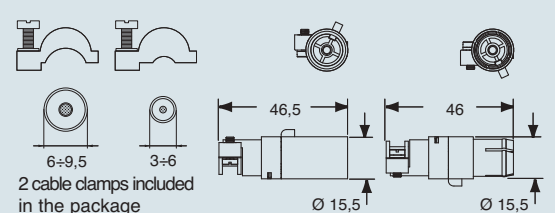
CR GND



CX 04 BF, CX 04 BM



CX 01 BF, CX 01 BM



- conductors stripping length see page 195
- crimp contacts dimensions (CDF and CDM) see page 195
- for contact crimping, see the crimp tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548

The modular inserts must be installed in suitable frames which are then mounted in traditional housings or COB panel support.

frames for modular units * page: 215

* enclosures: bulkhead mounting housings, high construction housings or high construction hoods

- characteristics according to EN 61984: **5A 50V 0,8kV 3**
- UL, CSA, CCC *, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 50V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +70 \text{ }^\circ\text{C}$ (CX 08 B)
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- maximum \varnothing of the insulator: 2.4 mm
- for crimp 5A contacts CI series using:
 - CIPZ D** crimping tool
 - CITP D** turret head
 - CIES** insertion / removal tool
- extraction tool for BUS shielded connectors from MIXO BUS insert part No. CX BES see page 502

seat for shielded connectors metal adaptor



shielded connectors 5A crimp contacts, gold plated

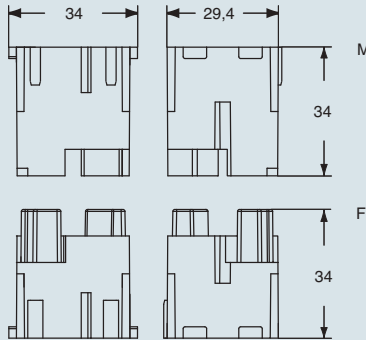


description	part No.	part No.
seat for two shielded connectors - female insert, two seats for BUS connectors - male insert, two seats for BUS connectors	CX 02 BF CX 02 BM	
shielded BUS multi axial connectors, 8 poles + shield - female insert, eight contact seats + shield - male insert, eight contact seats + shield		CX 08 BF CX 08 BM
metal adaptor (optional)	CR GND	
5A female crimp contacts 0.08-0.21 mm ² AWG 24-28 0.13-0.33 mm ² AWG 26÷20 0.33-0.52 mm ² AWG 20-22		CIFD 0.2 CIFD 0.3 CIFD 0.5
5A male crimp contacts 0.08-0.21 mm ² AWG 24-28 0.13-0.33 mm ² AWG 26÷20 0.33-0.52 mm ² AWG 20-22		CIMD 0.2 CIMD 0.3 CIMD 0.5

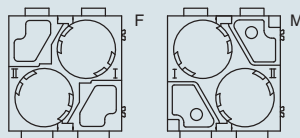
gold plated

Note: The shielded connectors have their shield insulated from the enclosure's earthing point. If you wish to earth-connect the shield, install on the panel an anchorage for shielded cables CR..ST (see page 482) or the CR GND metal adaptor.

dimensions in mm
CX 02 BF, CX 02 BM

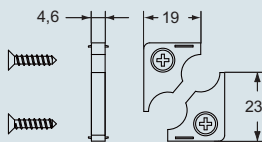


contacts side (front view)
side with reference arrow ▲

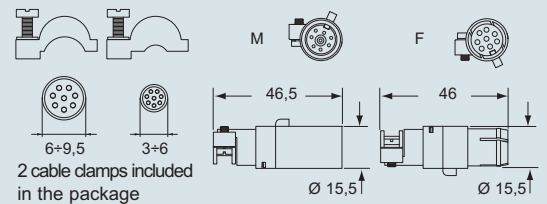


- 2 frame slots

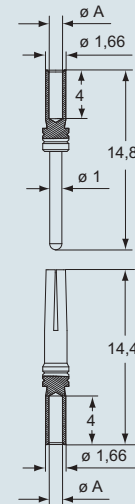
CR GND



CX 08 BF, CX 08 BM



CIF and CIM



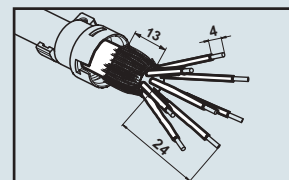
CIF, CIM contacts

conductor section	conductor slot	conductors stripping length
mm ²	$\varnothing A$ (mm)	(mm)
0,08-0,21	0,64	4
0,13-0,33	0,90	4
0,33-0,52	1,12	4

Use of the CR GND metal adaptor

1. Position the metal adaptor on the connector.
2. Align the adaptor with the connector's shield.
3. Push the adaptor into the connector housing.
4. Tighten the screws to secure the adaptor.
5. Final assembly check.

dimensions shown are not binding and may be changed without notice



The modular inserts must be installed in suitable frames which are then mounted in traditional housings or COB panel support.

frames for modular units * page: 215

* enclosures: bulkhead mounting housings, high construction housings or high construction hoods

- characteristics according to EN 61984:

- 16A 50V 0,8kV 3**
- UL, CSA, CCC *, EAC certified
- * CQC certification being applied for
- rated voltage according to UL/CSA: 50V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40 \text{ }^\circ\text{C} \dots +70 \text{ }^\circ\text{C}$ (CX 01 BC)
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 1 \text{ m}\Omega$ (no CX 02 B)
- CX 01 BC shielded connector for **cable with a typical impedance of $50 \text{ }\Omega$** (attenuation see page 567)
- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF and CCM series) on pages 534, 538, 544, 546, 548
- extraction tool for BUS shielded connectors from MIXO BUS insert part No. CX BES see page 502

seat for shielded connectors metal adaptor



shielded connectors 16A crimp contacts, silver or gold plated

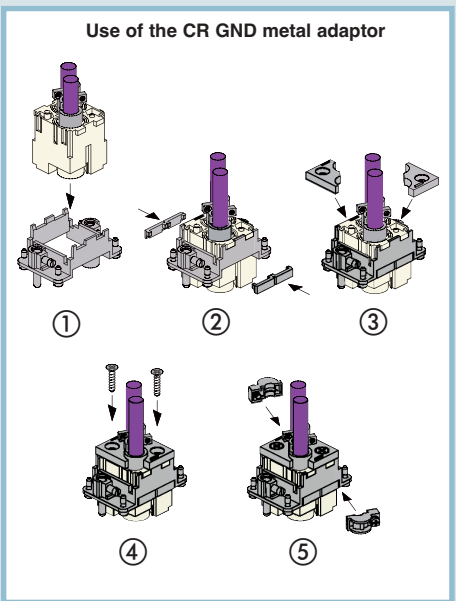


description	part No.	part No.	part No.
seat for two shielded connectors - female insert, two seats for BUS connectors - male insert, two seats for BUS connectors	CX 02 BF CX 02 BM		
shielded BUS coaxial connectors, 1 pole + shield - female insert, one contact seats + shield - male insert, one contact seats + shield		CX 01 BCF CX 01 BCM	
metal adaptor (optional)	CR GND		
16A female contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves		CCFA 0.3 CCFA 0.5 CCFA 0.7 CCFA 1.0 CCFA 1.5 CCFA 2.5 CCFA 3.0 CCFA 4.0	CCFD 0.3 CCFD 0.5 CCFD 0.7 CCFD 1.0 CCFD 1.5 CCFD 2.5 CCFD 3.0 CCFD 4.0
16A male contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves		CCMA 0.3 CCMA 0.5 CCMA 0.7 CCMA 1.0 CCMA 1.5 CCMA 2.5 CCMA 3.0 CCMA 4.0	CCMD 0.3 CCMD 0.5 CCMD 0.7 CCMD 1.0 CCMD 1.5 CCMD 2.5 CCMD 3.0 CCMD 4.0

silver plated

gold plated 1)

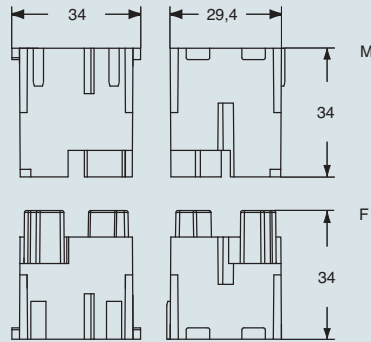
Note: The shielded connectors have their shield insulated from the enclosure's earthing point. If you wish to earth-connect the shield, install on the panel an anchorage for shielded cables CR..ST (see page 482) or the CR GND metal adaptor.



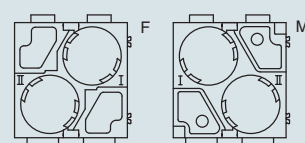
dimensions shown are not binding and may be changed without notice

dimensions in mm

CX 02 BF, CX 02 BM

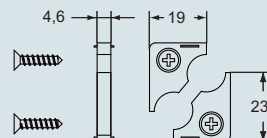


contacts side (front view)
side with reference arrow ▲

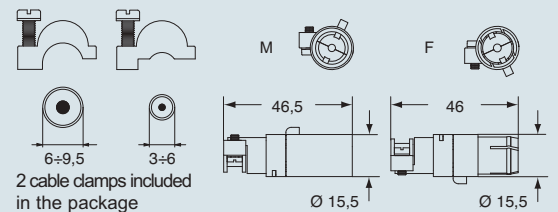


- 2 frame slots

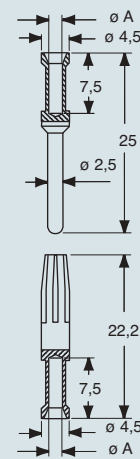
CR GND



CX 01 BCF, CX 01 BCM



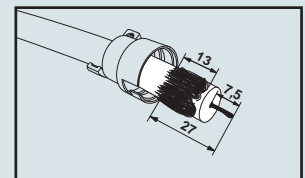
CCF and CCM



CCF and CCM contacts

conductor section mm ²	conductor slot ø A (mm)	conductors stripping length (mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481



The modular inserts must be installed in suitable frames which are then mounted in traditional housings or COB panel support.

frames for modular units page: 214 - 215

- characteristics according to EN 61984:

- 1A 50V 0,8kV 3**
- insulation resistance: $\geq 10 \text{ G}\Omega$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- temperature range: from $-40 \text{ }^\circ\text{C}$ to $+70 \text{ }^\circ\text{C}$
- we recommend to fix the cable with cable tie
- for contact crimping instructions see the crimping tool on page 554 and 555

WARNING:

inserts can be used on high enclosures or bulkhead housings only.

housing for RJ45 male connectors, RJ45 female connectors



NEW

crimp and IDC termination, RJ45 male connectors



NEW

description	part No.	part No.
<ul style="list-style-type: none"> - socket insert with 1 RJ45 female connector, - plug inserts for 1 RJ45 male crimp connector, 8 data contacts (without RJ45 connector, to be ordered separately) - plug insert for 1 RJ45 male IDC connector, 8 data contacts (without RJ45 connector, to be ordered separately) 	<p>CX 01 J8F CX 01 J8M</p> <p>CX 01 J8IM **</p>	
<ul style="list-style-type: none"> - RJ45 male crimp connector, 8 data contacts - RJ45 male IDC connector, 8 data contacts 		<p>CX 8 J6M CX 8 J6IM *</p>
<p>CX 01 J8F technical data:</p> <ul style="list-style-type: none"> - RJ45 female insert, Cat. 6 Class E_A (Telegärtner) - shielding housing: zinc diecast - housing finish: nickel-plated - current carrying capacity at $50 \text{ }^\circ\text{C}$: 1A - adequate for Power over Ethernet: PoE according to IEEE 802.3af - connectors: IEC 60603-7-5 - adequate for 10 Gigabit Ethernet: 10 Gigabit Ethernet acc. to IEEE 802.3an - custom-designed cabling systems: PROFINET Installation Guideline - generic cabling systems: ANSI/TIA/EIA-568-C.2 ISO/IEC 11801 EN50173-1 ISO/IEC 24702 EN 61918 - class E_A (channel): ISO/IEC 11801, EN 50173-1 <p>CX 8 J6M technical data:</p> <ul style="list-style-type: none"> - RJ45 male crimp connectors Cat. 6_A (Telegärtner) - crimp pliers: CJPZ T - screened cable stripper: CJST - Cu-conductor diameter solid: 0,40 - 0,51 mm (AWG 26/1 - 24/1) stranded: 0,46 - 0,61 mm (AWG 27/7 - 24/7) - insulation diameter: 0,85 - 1,05 mm - cable diameter: 5,0 - 7,0 mm - connectors: IEC 60603-7-5 - 10 Gigabit Ethernet acc. to IEEE 802.3an: adequate for 10 Gigabit Ethernet - category 6A: ISO/IEC 11801; EN 50173-1 - class E_A: ISO/IEC 11801; EN 50173-1 - category 6A: ANSI/TIA/EIA-568-C.2 <p>CX 8 J6IM technical data:</p> <ul style="list-style-type: none"> - RJ45 male IDC connectors Cat. 6 Class E_A (Telegärtner) - Cu-conductor diameter solid: 0,41 - 0,64 mm (AWG 26/1 - 22/1) stranded: 0,48 - 0,76 mm (AWG 26/7 - 22/7) - insulation diameter: 0,85 - 1,6 mm - cable diameter: 5,5 - 8,5 mm - connectors: IEC 60603-7-5 - category 6A: ISO/IEC 11801; DIN EN 50173-1 - wrenches pliers for CX 8 J6IM: CJPW K - 10 Gigabit Ethernet acc. to IEEE 802.3an: adequate for 10 Gigabit Ethernet - category 6A: ISO/IEC 11801; EN 50173-1 - class E_A: ISO/IEC 11801; EN 50173-1 - category 6A: ANSI/TIA/EIA-568-C.2 - custom-designed cabling systems: according to PROFINET Installation Guideline 	<p>dimensions in mm</p> <p>CX 01 J8F</p> <p>CX 01 J8M</p> <p>CX 01 J8IM **</p>	<p>dimensions in mm</p> <p>CX 8 J6M can be used with CX 01 J8M</p> <p>CX 8 J6IM * * can be used with CX 01 J8IM</p>
<p>dimensions shown are not binding and may be changed without notice</p>	<p>** CX 01 J8IM: to be used with high enclosures (T-Type hood M32/M40 only and CZAV/MZAV top entry hood only), bulkhead housings or COB ... BC/TCQ/TSF/TSFS only.</p>	

MIXO

with 2 RJ45 male connectors



NEW

MIXO

description	part No.	(L) meter
RJ45 male connector with 8 data contacts	CW 1 J2M87	1
	CW 2 J2M87	2
	CW 3 J2M87	3
	CW 5 J2M87	5
	CW 7.5 J2M87	7,5
	CW 10 J2M87	10
	CW 15 J2M87	15

RJ45 patch cord technical data (Telegärtner):

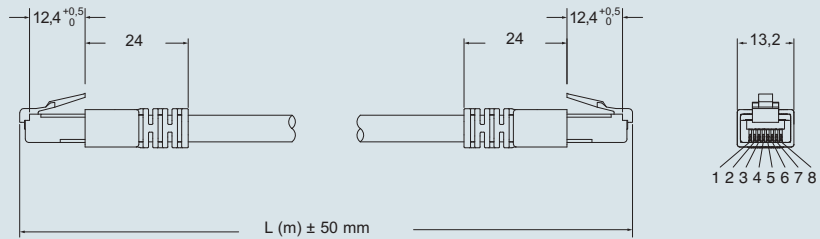
- S/FTP Cat. 7, 4x2x AWG 27/7, PUR jacket
- temperature range: from -40 °C + +75 °C
- nickel plated brass screening
- green RAL 6018 colour

Can be used with:

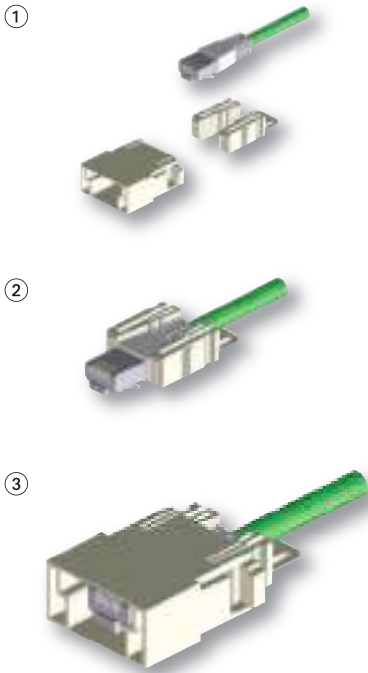
- MIXO RJ45 CX 01 J8M male inserts

dimensions in mm

CW...J2M87



RJ45 male assembly



Wiring Diagram 1:1

W-O 1	1 W-O
O 2	2 O
W-G 3	3 W-G
BL 4	4 BL
W-BL 5	5 W-BL
G 6	6 G
W-BR 7	7 W-BR
BR 8	8 BR
S	S

Legend

- BR** = brown
- BL** = blue
- G** = grey
- O** = orange
- W** = white
- S** = screen

dimensions shown are not binding
and may be changed without notice

The modular inserts must be installed in suitable frames which are then mounted in traditional housings or COB panel support.

frames for modular units page: 215

- characteristics according to EN 61984:

- 10A 250V 4kV 3**
- insulation resistance: $\geq 10 \text{ G}\Omega$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 3 \text{ m}\Omega$
- for contact crimping, see the crimp tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548

WARNING:

the female inserts can only be used on high or flush mounting enclosures

housing for RJ45 connectors, RJ45 connectors



10A crimp contacts silver and gold plated



description

part No.

part No. part No.

without RJ45 connector and without contacts (to be ordered separately)
 - socket inserts for 1 RJ45 female connector and for 4 10A (CDF) female contacts
 - plug inserts for 1 RJ45 male connector and for 4 10A (CDM) male contacts

CX 01 JF
CX 01 JM

- RJ45 female connector, 8 data contacts
 - RJ45 female connector, 8 data contacts / 2 power contacts

CX 8 JF *
CX 8/2 JF *

- RJ45 male connector, 4 data contacts
 - RJ45 male connector, 4 data contacts / 2 power contacts
 - RJ45 male connector, 6 data contacts / 2 power contacts
 - RJ45 male connector, 8 data contacts
 - RJ45 male connector, 4 data contacts cat. 5e profiNET®

CX 4 JM
CX 4/2 JM
CX 6/2 JM
CX 8 JM
CX 4E JM

10A female contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

10A male contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

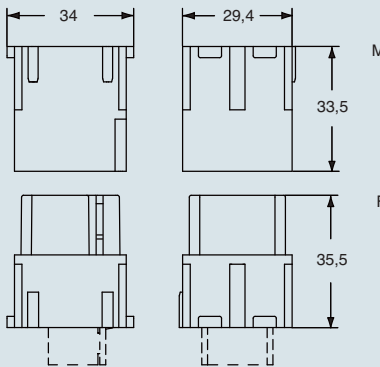
CDFA 0.3	silver plated	CDFD 0.3	gold plated
CDFA 0.5		CDFD 0.5	
CDFA 0.7		CDFD 0.7	
CDFA 1.0		CDFD 1.0	
CDFA 1.5		CDFD 1.5	
CDFA 2.5		CDFD 2.5	
CDMA 0.3	silver plated	CDMD 0.3	gold plated
CDMA 0.5		CDMD 0.5	
CDMA 0.7		CDMD 0.7	
CDMA 1.0		CDMD 1.0	
CDMA 1.5		CDMD 1.5	
CDMA 2.5		CDMD 2.5	

RJ45 connector features:

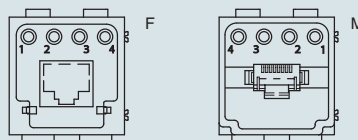
- RJ45 insert, Class 5 Ethernet
- rated current: 2,1A at 70 °C
- rated voltage: 50VDC / 35VAC
- IDC terminals:
- for 0,22 mm² (AWG 24/7) data contacts **CX 4 JM**
- for 0,14 mm² (AWG 26/7) or 0,22 mm² (AWG 24/7) data contacts **CX 4/2 JM**
- for 0,34 mm² (AWG 22/7) or 0,38 mm² (AWG 22/19) power contacts
- for 0,14 mm² (AWG 26/7) data contacts **CX 6/2 JM**
- for 0,25 mm² (AWG 23/19) power contacts
- for 0,14 mm² (AWG 26/7) data contacts **CX 8 JM**
- for 0,34 mm² (AWG 22/7) data contacts **CX 4E JM**
- /7 = 7-strands wire
- /19 = 19-strands wire
- Ø_{max} insulating conductors 1 mm (data), 1,4 mm (power and CX 4E JM)
- Ø_{max} complete cable 7 mm (CX 8 JM: 6,9 mm)
- temperature range: from -40°C to 120 °C
- nickel plated brass screening
- crimp pliers: **CJPZY**
- screened cable stripper: **CJST**

* 4 pole version on request, part No. **CX 4 JF** and **CX 4/2 JF** with "crossover" link

dimensions in mm
CX 01 JF, CX 01 JM



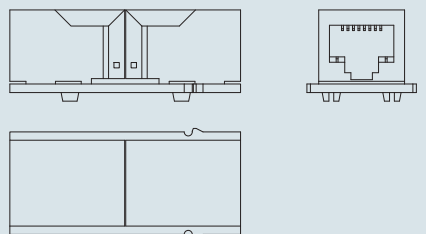
contacts side (front view)
 side with reference arrow ▲



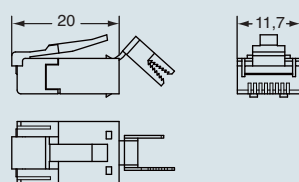
- 2 frame slots

crimp contacts dimensions (CDF and CDM) see page 195

dimensions in mm
CX 4 JF, CX 4/2 JF, CX 8 JF, CX 8/2 JF



CX 4 JM, CX 4/2 JM, CX 6/2 JM, CX 8 JM, CX 4E JM



dimensions shown are not binding and may be changed without notice

The modular inserts must be installed in suitable frames which are then mounted in traditional housings or COB panel support.

frames for modular units page: 215

- characteristics according to EN 61984:

- 10A 250V 4kV 3**
- insulation resistance: $\geq 10 \text{ G}\Omega$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 3 \text{ m}\Omega$
- for contact crimping, see the crimp tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548

WARNING:

the female inserts can only be used on high or flush mounting enclosures

housing for RJ45 connectors, RJ45 connectors



10A crimp contacts silver and gold plated



description	part No.	part No.	part No.			
without RJ45 connector and without contacts (to be ordered separately) - socket inserts for 2 RJ45 female connectors and for 8 10A (CDF) female contacts - plug inserts for 2 RJ45 male connectors and for 8 10A (CDM) male contacts	CX 02 JF CX 02 JM					
- RJ45 female connector, 8 data contacts - RJ45 female connector, 8 data contacts / 2 power contacts	CX 8 JF * CX 8/2 JF *					
- RJ45 male connector, 4 data contacts - RJ45 male connector, 4 data contacts / 2 power contacts - RJ45 male connector, 6 data contacts / 2 power contacts - RJ45 male connector, 8 data contacts - RJ45 male connector, 4 data contacts cat. 5e profiNET®	CX 4 JM CX 4/2 JM CX 6/2 JM CX 8 JM CX 4E JM					
10A female contacts 0,14-0,37 mm ² AWG 26-22 identification No. 1 0,5 mm ² AWG 20 identification No. 2 0,75 mm ² AWG 18 identification No. ② 1 mm ² AWG 18 identification No. 3 1,5 mm ² AWG 16 identification No. 4 2,5 mm ² AWG 14 identification No. 5 10A male contacts 0,14-0,37 mm ² AWG 26-22 identification No. 1 0,5 mm ² AWG 20 identification No. 2 0,75 mm ² AWG 18 identification No. ② 1 mm ² AWG 18 identification No. 3 1,5 mm ² AWG 16 identification No. 4 2,5 mm ² AWG 14 identification No. 5		<table border="0"> <tr> <td style="vertical-align: middle;"> CDFA 0.3 CDFA 0.5 CDFA 0.7 CDFA 1.0 CDFA 1.5 CDFA 2.5 </td> <td style="background-color: red; color: white; text-align: center; vertical-align: middle;">silver plated</td> <td style="vertical-align: middle;"> CDFD 0.3 CDFD 0.5 CDFD 0.7 CDFD 1.0 CDFD 1.5 CDFD 2.5 </td> <td style="background-color: red; color: white; text-align: center; vertical-align: middle;">gold plated</td> </tr> </table>	CDFA 0.3 CDFA 0.5 CDFA 0.7 CDFA 1.0 CDFA 1.5 CDFA 2.5	silver plated	CDFD 0.3 CDFD 0.5 CDFD 0.7 CDFD 1.0 CDFD 1.5 CDFD 2.5	gold plated
CDFA 0.3 CDFA 0.5 CDFA 0.7 CDFA 1.0 CDFA 1.5 CDFA 2.5	silver plated	CDFD 0.3 CDFD 0.5 CDFD 0.7 CDFD 1.0 CDFD 1.5 CDFD 2.5	gold plated			

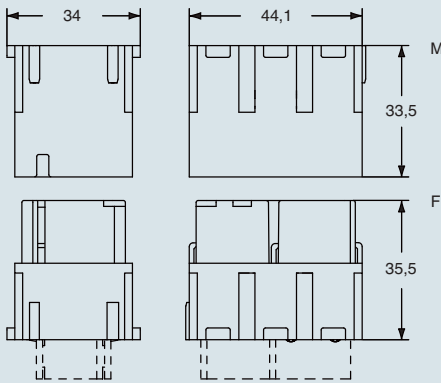
RJ45 connector features:

- RJ45 insert, Class 5 Ethernet
- rated current: 2,1A at 70 °C
- rated voltage: 50VDC / 35VAC
- IDC terminals:
- for 0,22 mm² (AWG 24/7) data contacts **CX 4 JM**
- for 0,14 mm² (AWG 26/7) or 0,22 mm² (AWG 24/7) data contacts **CX 4/2 JM**
- for 0,34 mm² (AWG 22/7) or 0,38 mm² (AWG 22/19) power contacts **CX 4/2 JM**
- for 0,14 mm² (AWG 26/7) data contacts **CX 6/2 JM**
- for 0,25 mm² (AWG 23/19) power contacts **CX 6/2 JM**
- for 0,14 mm² (AWG 26/7) data contacts **CX 8 JM**
- for 0,34 mm² (AWG 22/7) data contacts **CX 4E JM**
- /7 = 7-strands wire
- /19 = 19-strands wire
- \varnothing_{max} insulating conductors 1 mm (data), 1,4 mm (power and CX 4E JM)
- \varnothing_{max} complete cable 7 mm (CX 8 JM: 6,9 mm)
- temperature range: from -40°C to 120 °C
- nickel plated brass screening
- crimp pliers: **CJPZY**
- screened cable stripper: **CJST**

* 4 pole version on request, part No. **CX 4 JF** and **CX 4/2 JF** with "crossover" link

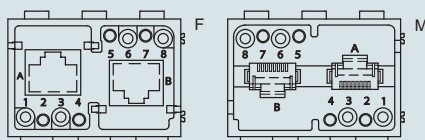
dimensions in mm

CX 02 JF, CX 02 JM



contacts side (front view)

side with reference arrow ▲

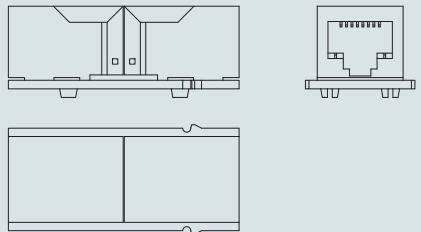


- 3 frame slots

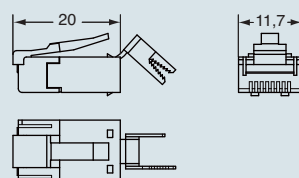
crimp contacts dimensions (CDF and CDM) see page 195

dimensions in mm

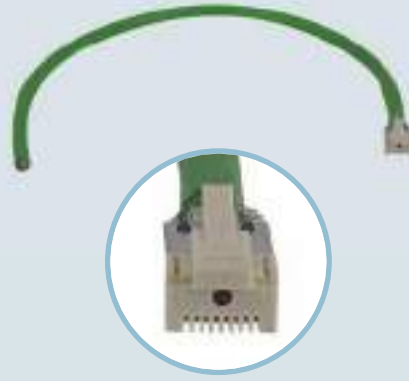
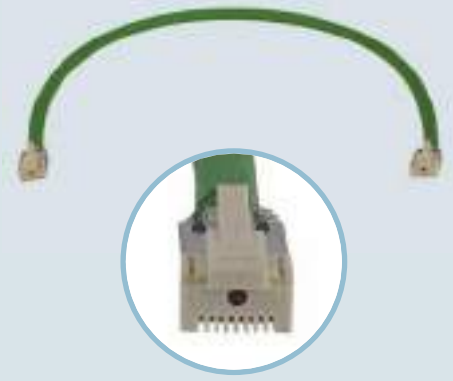
CX 4 JF, CX 4/2 JF, CX 8 JF, CX 8/2 JF



CX 4 JM, CX 4/2 JM, CX 6/2 JM, CX 8 JM, CX 4E JM



dimensions shown are not binding and may be changed without notice

with 1 RJ45 male connector

with 2 RJ45 male connectors


description	part No.	(L) metre	part No.	(L) metre
RJ45 male connector with 4 data contacts / 2 power contacts	CW 0.5 JM4/2 CW 2 JM4/2 CW 5 JM4/2 CW 10 JM4/2	0.5 2 5 10		
RJ45 male connector with 8 data contacts	CW 0.5 JM8 CW 2 JM8 CW 5 JM8 CW 10 JM8	0.5 2 5 10	CW 0.5 J2M8 CW 2 J2M8 CW 5 J2M8 CW 10 J2M8	0.5 2 5 10
RJ45 male connector with 4 data contacts, Class 5e	CW 0.5 JM4E CW 2 JM4E CW 5 JM4E CW 10 JM4E	0.5 2 5 10	CW 0.5 J2M4E CW 2 J2M4E CW 5 J2M4E CW 10 J2M4E	0.5 2 5 10

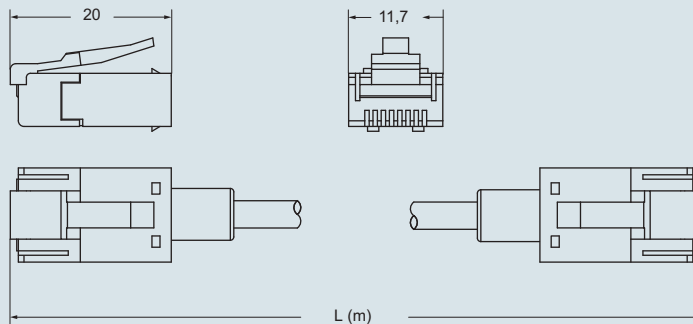
RJ45 connector features:

- insert RJ45, Class 5 Ethernet
- nominal current: 2.1A at 70 °C
- nominal voltage: 50V DC / 35V AC
- temperature range: from -40 °C to +120 °C
- nickel plated brass screening

Can be used with:

- MIXO RJ45: CX 01 JM and CX 02 JM male inserts see pages 202 and 203

dimensions in mm

CW JM 4/2, 8, 4E and CW J2M 4/2, 8, 4E

Wiring Diagram

J2M4/2	J2M8	J2M4E
1 — 1	1 — 1	1 — 1
2 — 2	2 — 2	2 — 2
3 — 3	3 — 3	3 — 3
4 — 4	4 — 4	4 — 4
5 — 5	5 — 5	5 — 5
6 — 6	6 — 6	6 — 6
7 — 7	7 — 7	7 — 7
8 — 8	8 — 8	8 — 8
A — A	A — A	A — A
B — B	B — B	B — B
VS — VS	VS — VS	VS — VS

 dimensions shown are not binding
and may be changed without notice

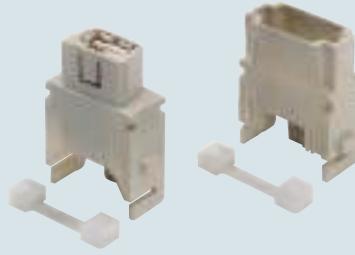
The modular inserts must be installed in suitable frames which are then mounted in traditional housings or COB panel support.

frames for modular units page: 214 - 215

WARNING

enclosures: bulkhead mounting housings, high construction housings or high construction hoods

housing for USB male connectors,
USB female - female connectors



patch cable USB



description

- female insert with USB female - female connector
- male insert without USB male connector (patch cable to be ordered separately)

part No.

CX 01 UF ¹⁾
CX 01 UM ¹⁾

part No.

patch cable USB-A / USB-A, 2 m **

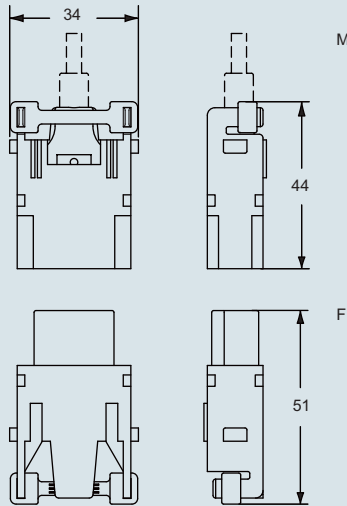
** 5 m on request

USB connector features:

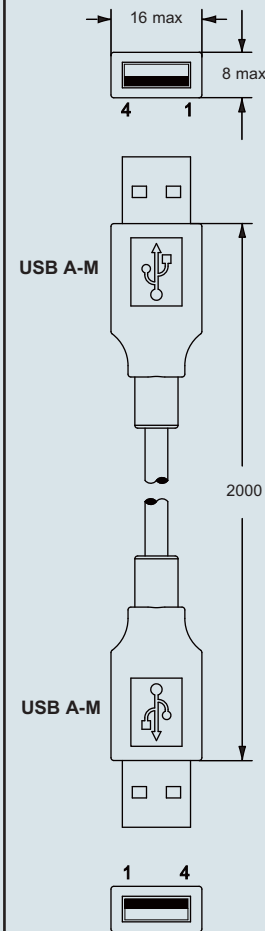
- USB-A / USB-A Hi-Speed - 2.0 insert
- temperature range: from -25 °C to +80 °C

¹⁾ cUL (UL for USA and Canada), EAC certified

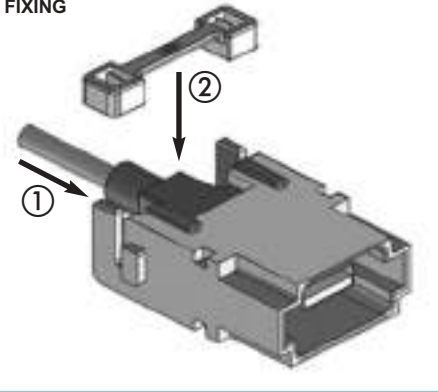
dimensions in mm



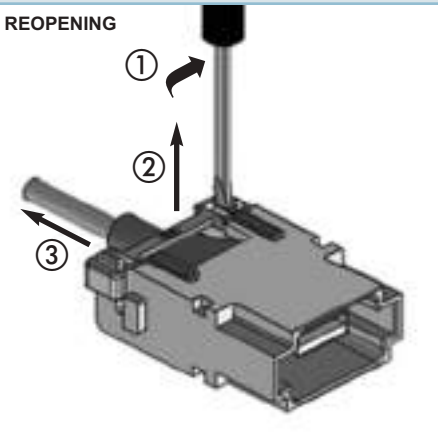
dimensions in mm



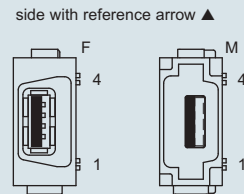
FIXING



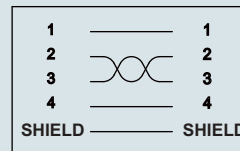
REOPENING



contacts side (front view)



- 1 frame slot



dimensions shown are not binding and may be changed without notice

The modular inserts must be installed in suitable frames which are then mounted in traditional housings * or COB panel support.

frames for modular units * page: 214 - 215

* enclosures: housings or high construction hoods

- characteristics according to EN 61984:

5A 50V 0,8kV 3

- for crimp 5A contacts CI series using:

CIPZ D crimping tool

CIVTP D turret head

CIVES insertion / removal tool

module adapter for 1 D-SUB connector



5A crimp contacts for D-SUB, gold plated



description

part No.

part No.

seat for 1 D-SUB crimp contacts connector and shield (included)

- female insert with connector

- male insert with connector

CX 01 9VF
CX 01 9VM

5A female crimp contacts

0.08-0.13 mm² AWG 28-26

0.20-0.52 mm² AWG 24-20

5A male crimp contacts

0.08-0.13 mm² AWG 28-26

0.20-0.52 mm² AWG 24-20

CIVFD 0.1
CIVFD 0.5

CIVMD 0.1
CIVMD 0.5

gold plated

we recommend the use of CRF CX / CRM CX code pins

dimensions in mm

dimensions in mm

Alternatively:

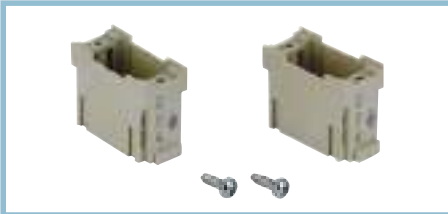
- Seat for 1 D-SUB connector (without connector and shield):

CX 01 VM (for male connector)

CX 01 VF (for female connector)

Can also be used with 15-pole D-SUB Hi-Density connectors.

For further information, please contact I.L.M.E. SpA.



- CR CX VS shield for CX 01 VM/VF inserts



- Special version with cable contacts section 0.32-0.82 mm² AWG 22-18

CIVFD 0.8 female

CIVMD 0.8 male



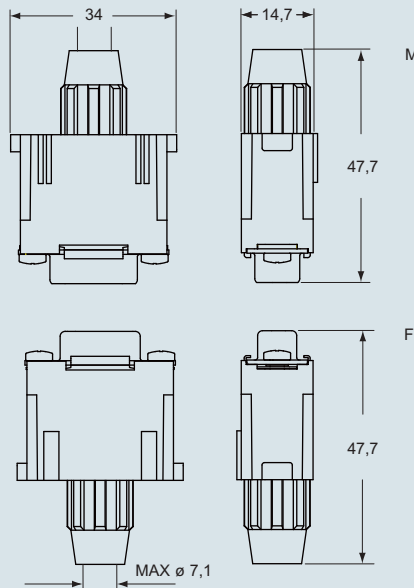
- Seats for 1 D-SUB screw connectors (without shield):

CX 01 9VFS (with female connectors)

CX 01 9VMS (with male connectors)

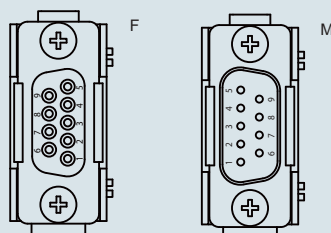
dimensions shown are not binding and may be changed without notice

CX 01 9VF, CX 01 9VM



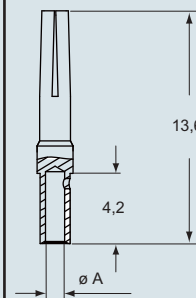
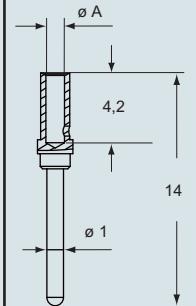
contacts side (front view)

side with reference arrow ▲



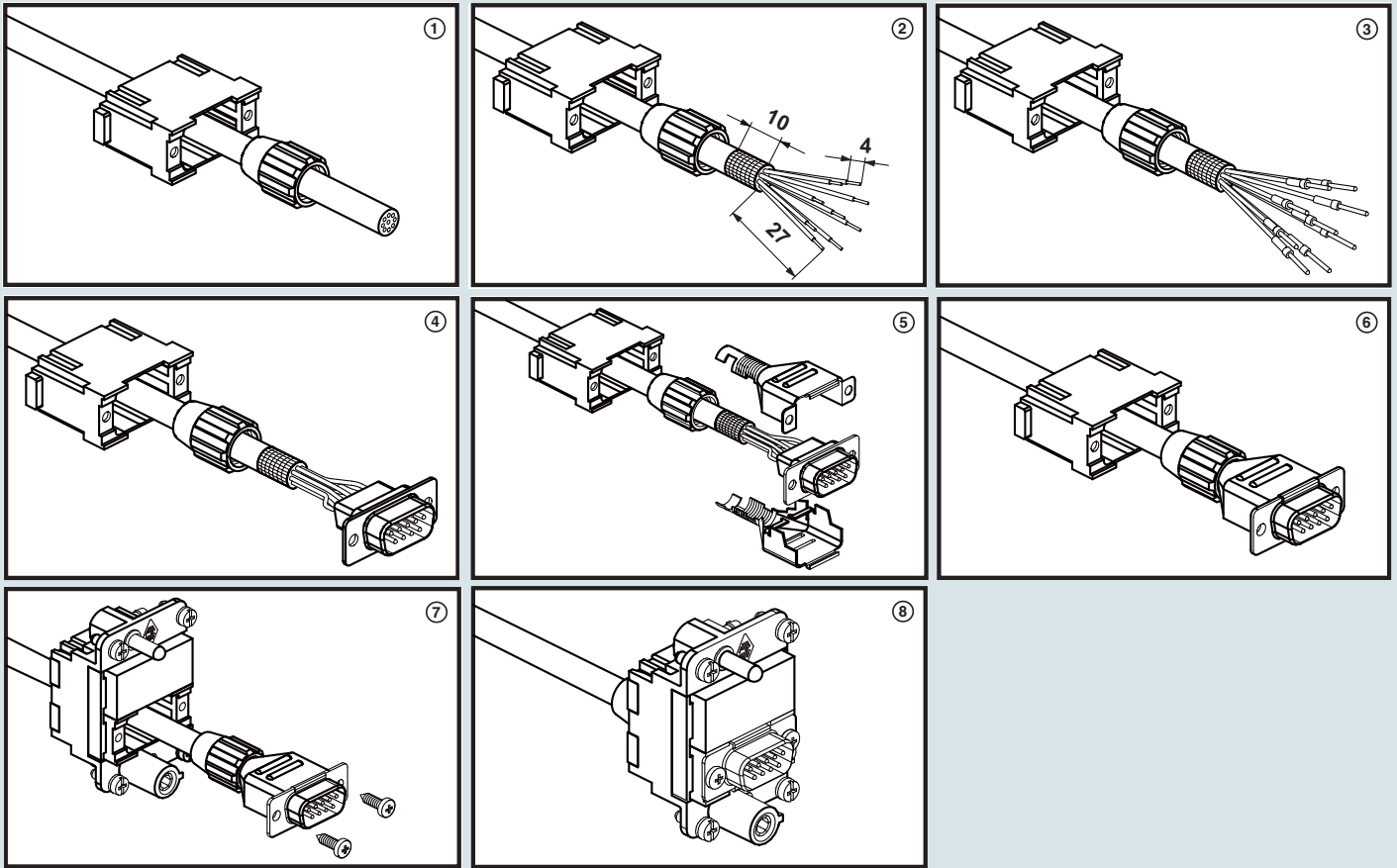
- 1 frame slot

CIVF and CIVM

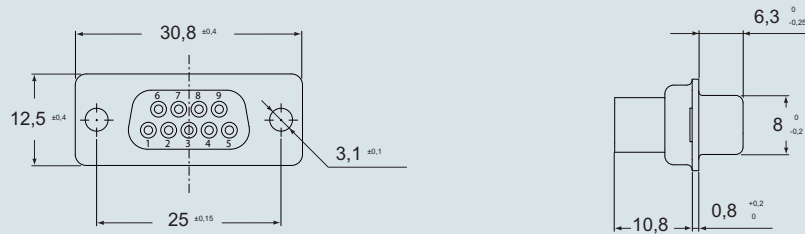


CIVF and CIVM contacts

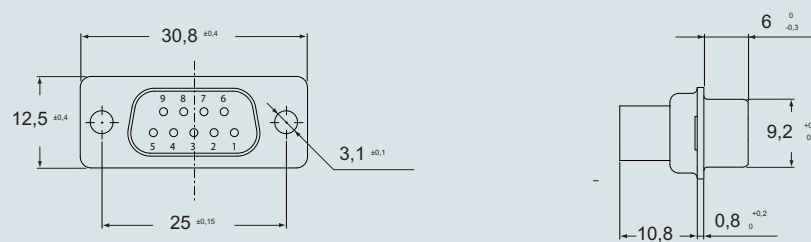
conductor section mm ²	conductor slot ø A (mm)	conductors stripping length (mm)
0,08+0,13	0,63	4
0,20+0,52	1,14	4



9-pole female CRIMP D-SUB connector (can be used with CX 01 VF)



9-pole male CRIMP D-SUB connector (can be used with CX 01 VM)



dimensions in mm

MIXO

MIXO series

Modular inserts for multipole connectors

MIXO inserts for multipole connectors for fibre optic and coaxial contacts.

LWL contacts according to CECC 78 001-801 (former DIN 41 626 part 3) for 1 / 2.2 mm POF (Polymer Optical Fibre) and 1.5 / 2.3 MOST (Media Oriented System Transport) optical fibre.

Coaxial contacts (DIN 41 626) 50 ohm and 75 ohm.

The new MIXO insert allows the use of contacts for fibre optic and contacts for coaxial cables.

To protect against EMC-problems (electromagnetic interference) and for the realization of galvanic separations on BUS applications of PROFINET/Ethernet fields, solutions with optical fibres are recommended. Fibre optic connectors are many industrial applications, particularly, modern railway vehicles, converters, wind energy, naval equipments and robots.

The new connectors can be used in applications from $-40\text{ }^{\circ}\text{C}$ up to $+85\text{ }^{\circ}\text{C}$ even in case of frequent temperature variability.

The inserts can be mounted in CX .. TF/TM frames and in the relative enclosures for industrial applications to achieve IP65/66/67/68/69K degree of protection (according to the required versions). The realization of mixed connectors electrical/optical are also possible.

These new inserts have the same features as the standard MIXO series with easy module fixing system.

On request we may provide also POF (\varnothing 2.2 mm external diameter, \varnothing 1,0 mm fibre) and MOST-POF (\varnothing 2,3 mm external diameter, \varnothing 1,0 mm fibre) contacts for use at higher temperatures and high temperature variations. For further optical fibre versions, please contact us.

To assemble the contacts it is needed to cut and strip the cable, to crimp the contact (even gluing is possible) and then to grind the fibre tip protruding from the contact.

In the same MIXO insert it is also possible to use coaxial connectors for 50 ohm (RG 316/U, RG 174/U and RG 188 A/U) and 75 ohm (RG 179 B/U, RG 187 A/U and TZC 75 101) cables.

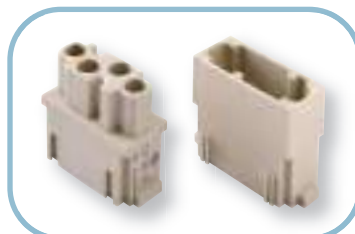
To remove both male and female contacts please use the correct extraction tool.



CECC 78 001-801 contacts
(DIN 41 626, part 3)



Mixo insert
for 4 optical fibre contacts



DIN 41 626 contacts



The modular inserts must be installed in suitable frames which are then mounted in traditional housings or COB panel support.

frames for modular units page: 214 - 215

modular units,
crimp connections

POF / MOST crimp contacts



description	part No.	part No.
without contacts (to be ordered separately) - female inserts for female contacts - male inserts for male contacts	CX 04 LF ¹⁾ CX 04 LM ¹⁾	
female contacts POF * 1.0 mm male contacts POF * 1.0 mm		CX PLF CX PLM
female contacts MOST ** 1/1.5 mm male contacts MOST ** 1/1.5 mm		CX MLF CX MLM

* POF = POLYMER OPTICAL FIBRE
** MOST = MEDIA ORIENTED SYSTEM TRANSPORT

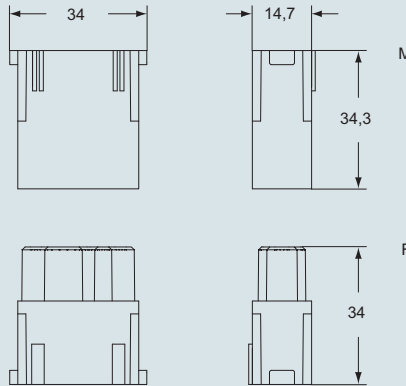
- cUL (UL for USA and Canada), EAC certified
- ambient temperature limit: -40 °C ... +85 °C
- inserts are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- max external diameter: 2.2 mm (POF)
2.3 mm (MOST)
- polymer fibre diameter: 1.0 mm (POF)
1/1.5 mm (MOST)
- attenuation: < 2.5 dB
- to crimp contacts CX PLF / PLM and CX MLF / MLM please use tool CLPZ R (see the crimping tool section on page 550)

We recommend to use CLASS enclosures with two levers or V-Type enclosures (with one or two levers) that provides a higher coupling depth due to the higher locking force they produce. We further suggest the use of code pins CRF CX / CRM CX.

¹⁾ cUL (UL for USA and Canada), EAC certified

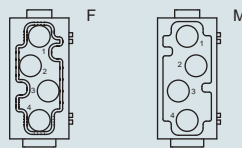
dimensions in mm

CX 04 LF / LM



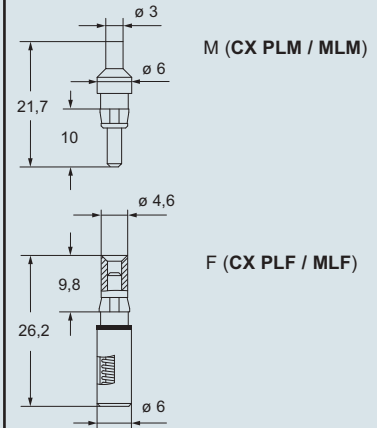
contacts side (front view)

side with reference arrow ▲

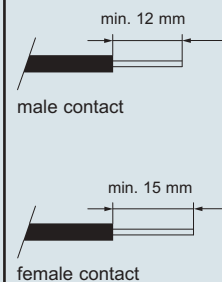


- 1 frame slot

dimensions in mm



cable stripping for fibre optic



dimensions shown are not binding and may be changed without notice

The modular inserts must be installed in suitable frames which are then mounted in traditional housings or COB panel support.

frames for modular units page: 214 - 215

modular units,
crimp / solder connections

crimp / solder coaxial contacts



description

part No.

part No.

without contacts (to be ordered separately)

- female inserts for female contacts
- male inserts for male contacts

CX 04 LF ¹⁾
CX 04 LM ¹⁾

female coaxial contacts 50Ω
male coaxial contacts 50Ω

CX 50 F
CX 50 M

female coaxial contacts 75Ω
male coaxial contacts 75Ω

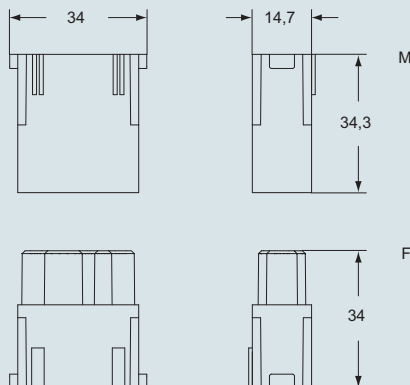
CX 75 F
CX 75 M

- inserts are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- in accordance with standard DIN 41626-2
- finishing: contact surfaces and body gold plated, back end and ferrule nickel plated
- frequency range: ≤ 2 GHz
- reflection coefficient: ≤ 0.1
- rated voltage: 50V
- rated current: 1.5A
- to crimp contacts CX 50 M/F, CX 75 M/F use tool COPZ (see the crimping tool section on page 552).

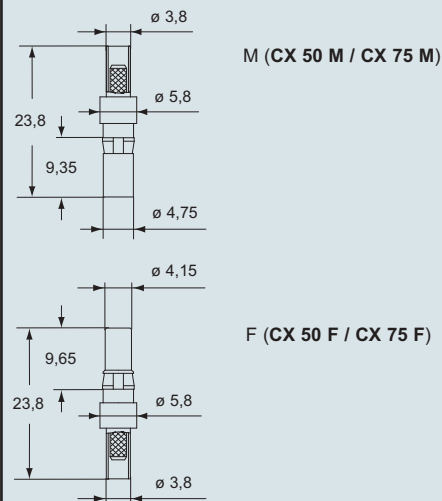
¹⁾ cUL (UL for USA and Canada), EAC certified

dimensions in mm

CX 04 LF / LM



dimensions in mm

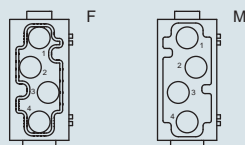


Warnings:

We recommend the use of code pins **CRF CX** / **CRM CX**.

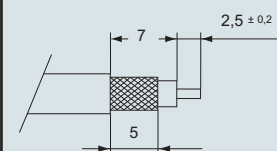
contacts side (front view)

side with reference arrow ▲



- 1 frame slot

conductor stripping



coaxial contacts	for cables	ø external	part No.
50Ω	RG 316/U	2,49 ±0,1	CX 50 F CX 50 M
	RG 174/U	2,79 ±0,127	
	RG 188 A/U	2,79 max	
75Ω	RG 179 B/U	2,54 ±0,127	CX 75 F CX 75 M
	RG 187 A/U	2,79 max	
	TZC 75 101	2,79 max	

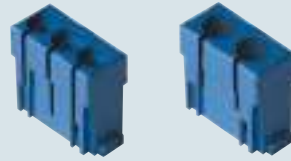
dimensions shown are not binding and may be changed without notice

The modular inserts must be installed in suitable frames which are then mounted in traditional housings or COB panel support.

frames for modular units page: 214 - 215

- UL, CSA, CCC *, GL, EAC certified
- * CQC certification being applied for
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles

modular units with 2 or 3 seats



pneumatic contacts with or without closing valve



description	part No.	part No.
without contacts (to be ordered separately) - inserts with 3 housings for tube Ø 1,6 ÷ 4,0 - inserts with 2 housings for tube Ø 6,0	CX 03 P CX 02 P	
female contacts without closing valve - for tubes with internal ø 1,6 mm - for tubes with internal ø 3 mm - for tubes with internal ø 4 mm - for tubes with internal ø 6 mm male contacts without closing valve - for tubes with internal ø 1,6 mm - for tubes with internal ø 3 mm - for tubes with internal ø 4 mm - for tubes with internal ø 6 mm		CX 1.6 PF CX 3.0 PF CX 4.0 PF CX 6.0 PF CX 1.6 PM CX 3.0 PM CX 4.0 PM CX 6.0 PM
female contacts with closing valve - for tubes with internal ø 1,6 mm - for tubes with internal ø 3 mm - for tubes with internal ø 4 mm - for tubes with internal ø 6 mm male contacts (use contacts without closing valve)		CX 1.6 VC CX 3.0 VC CX 4.0 VC CX 6.0 VC

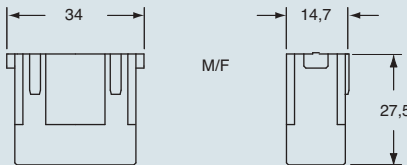
Warnings:

CRM/F CX (page 430) code pins and guides must be used for pneumatic contacts modules. These pins also provide coding if pneumatic contacts modules are used exclusively.

Use of units for pneumatic contacts

- identical male and female modular units
- pneumatic contacts for pressure values up to 8 bar, for use with clean and dry compressed air
- contacts for gas on request (see Warnings)
- use of tubes with Ø 1,6 - 3 - 4 and 6 mm, and possible replacement of tubes with assembled units
- possibility of using tubes with different diameters in the same modular unit
- female contacts with or without closing valve
- working temperature range - 40 °C ÷ + 80 °C

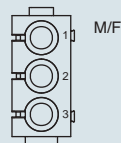
dimensions in mm



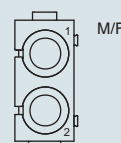
contacts side (front view)

side with reference arrow ▲

CX 03 P



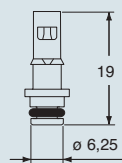
CX 02 P



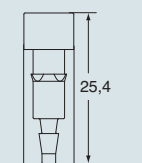
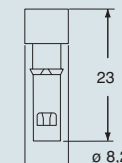
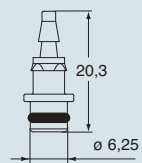
- 1 frame slot

dimensions in mm

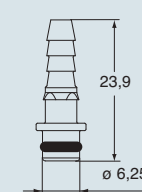
CX 1.6 PF/M



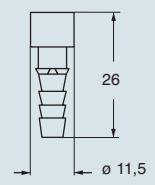
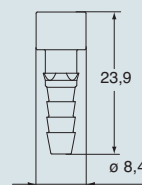
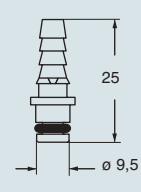
CX 3.0 PF/M



CX 4.0 PF/M



CX 6.0 PF/M

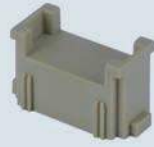


dimensions shown are not binding and may be changed without notice

The modular units inserts must be installed in suitable frames which in turn are installed in traditional housings or COB panel support. Alternatively, individual modules with a width of 14.7, can be installed in plastic supports.

frames for modular units page: 214 - 215

dummy module



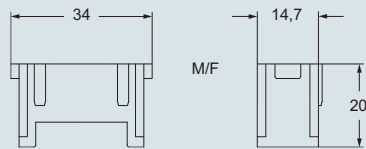
description

part No.

dummy module for unused frame seats

CX FM

dimensions in mm



- 1 frame slot

dimensions shown are not binding and may be changed without notice

MIXO

1) Calculate the number of frame slots taken up by the required inserts
frame slot 1, 2 or 3 modules



	No. of frame slots
CX 01 J8	1
CX 01 9VF/M	1
CX 01 UF/M	1
CX 02 4AF/M	1
CX 02 4BF/M	1
CX 02 7F/M	1
CX 02 P	1
CX 03 4F/M	1
CX 03 4BF/M	1
CX 03 P	1
CX 3/4 XDF/M	1
CX 04 LF/M	1
CX 04 XF/M	1
CX 05 SF/M	1
CX 06 CF/M	1
CX 08 CF/M	1
CX 12 DF/M	1
CX 17 DF/M	1
CX 25 IF/M	1
CX FM	1

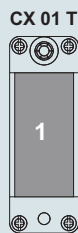


	No. of frame slots
CX 01 JF/M	2
CX 01 YF/M	2
CX 01 YPEF/M	2
CX 02 BF/M	2
CX 02 GF/M	2
CX 02 HF/M	2
CX 20 CF/M	2

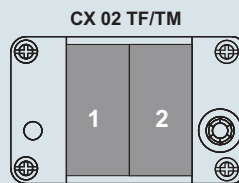


	No. of frame slots
CX 02 JF/M	3

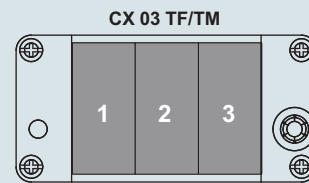
2) Select the right frame according to the number of required modules
available 1, 2, 3, 4 and 6 modules



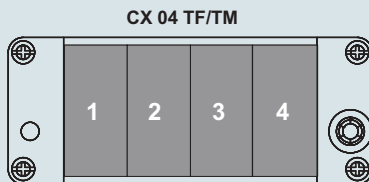
1 module



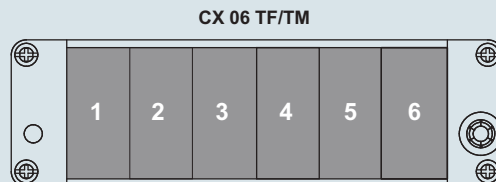
2 modules



3 modules



4 modules



6 modules

Fill the unused frame slots by using CX FM dummy module



enclosures:
size "49.16" page:

IL-BRID 230 - 232
W-TYPE for aggressive environments .. 370
EMC 390

panel supports: page:
COB + adaptor 462 - 464

frames for modular units



description

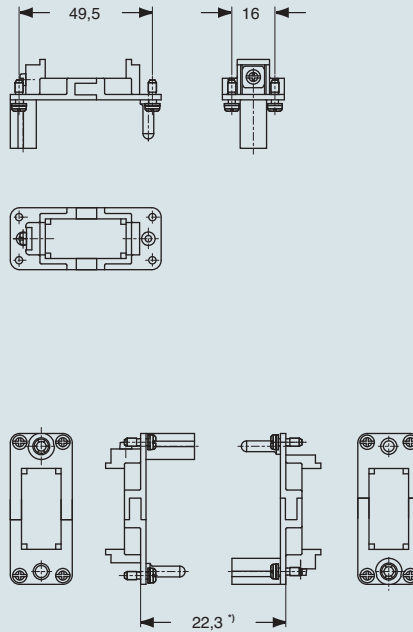
part No.

for CZ enclosures, size 49.16

CX 01 T

- die-cast zinc alloy frames
- with VDE ground contacts
- possibility of mounting female and male modular units on the same frame
- polarisation on frames
- code pins CR..CX

dimensions in mm



*) distance for electric contacts: max 24 mm
 distance for pneumatic contacts: max 23,5 mm

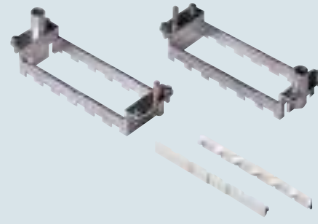
- small earth terminal for cables from 1-2,5 mm², AWG 18-14

dimensions shown are not binding
 and may be changed without notice

MIXO

enclosures:	page:
C-TYPE IP65/IP66	240 - 271
C7 IP67	274 - 277
V-TYPE IP65/IP66	280 - 299
BIG hoods	304 - 319
T-TYPE IP65 insulating	326 - 333
T-TYPE / W IP66 insulating	336 - 343
HYGIENIC T-TYPE / H IP66/IP69	350 - 357
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	358 - 365
W-TYPE for aggressive environments	373 - 378
EMC	392 - 395
central lever	404 - 412
IP68	420 - 435
LS-TYPE	450 - 457
panel supports:	page:
COB	462 - 463

frames for modular units with lock-in tabs



description	part No.
-------------	----------

frames for modular units (module lock-in tabs included)
 - for 2 modular units
 - for 3 modular units
 - for 4 modular units
 - for 6 modular units

part No.	part No.	for housings size
----------	----------	-------------------

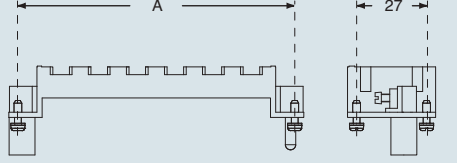
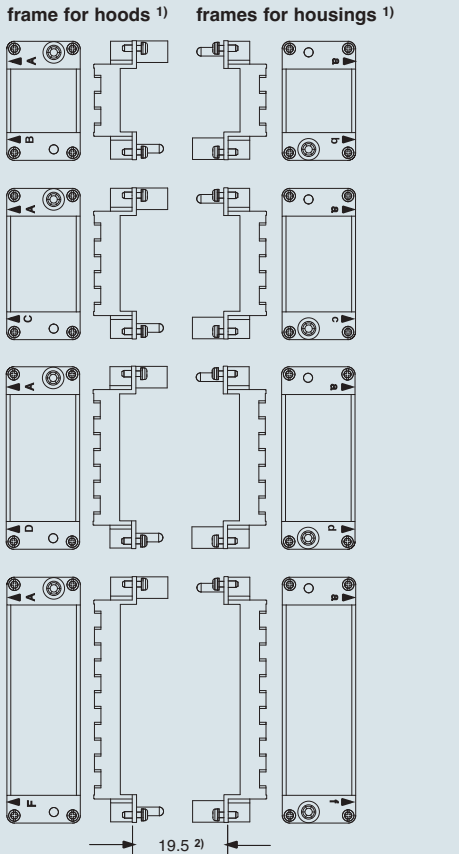
type for hoods	type for housings	for housings size
CX 02 TM	CX 02 TF	44,27
CX 03 TM	CX 03 TF	57,27
CX 04 TM	CX 04 TF	77,27 and 77,62
CX 06 TM	CX 06 TF	104,27 and 104,62

lock-in tabs for modular units (6 units) dividable

CX CFM

polarisation of frames with relative identification letters and couplings

dimensions in mm



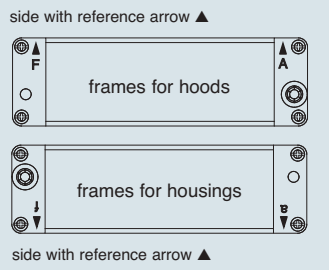
- die-cast zinc alloy frames
- with VDE ground contacts
- possibility of mounting female and male modular units on the same frame
- frames supplied with lock-in tab to attach units
- polarisation on frames
- code pins CR..CX

Warning
 the module support frames are marked:
 - with upper-case letters **A-B, A-C, A-D** and **A-F** (for use in hoods)
 - with lower-case letters **a-b, a-c, a-d** and **a-f** (for use in housings)
 Positioning the modules in the frames according to the respective letters is ensuring the specular assembly of modules, for which the hood will be coupled correctly to the housing.

part No.	A (mm)	for housings size
CX 02 TM / TF	44	44,27
CX 03 TM / TF	57	57,27
CX 04 TM / TF	77,5	77,27 and 77,62
CX 06 TM / TF	104	104,27 and 104,62

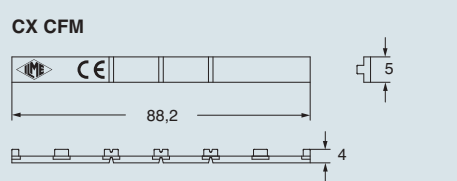
- large earth terminal for cables from 4-6 mm², AWG 12-10
- small earth terminal for cables from 1-2,5 mm², AWG 18-14

position of modules (contact side view)



¹⁾ the frames can be used either in hoods or housings, for a correct coupling please use both frame types (one with upper-case letters and the other with lower-case letters)
²⁾ distance for electric and fibre optic contacts: max 21 mm
 distance for pneumatic contacts: max 20,5 mm

When two or more identical connectors of the MIXO series are used, coded pins are used prevent incorrect coupling (CR...CX series).



dimensions shown are not binding and may be changed without notice

CLASS ENCLOSURES

CK-CKA

Insulating or Metallic
- IP44, IP66/67



from page 221

CQ

Insulating
- IP66/IP67
- Up to 40A inserts



from page 226

IL-BRID

Reduces the stress of closing lever
- Metallic
- Stainless steel and thermoplastic material
- IP66



from page 228

C-TYPE

Classic, flexible
- Metallic
- CLASS rotative lever
- IP65/IP66



from page 237

T-TYPE

For standard connections
- Insulating
- Robust
- Resistant to chemical agents
- IP65



from page 324

T-TYPE / W

For aggressive environments
- Insulating
- Robust
- Chemical resistant
- IP66



from page 334

HYGIENIC

For food & beverage applications
- Thermoplastic material
- IP66/IP69

T-TYPE/H

- HNBR gaskets
- Range of temperatures:
-40 °C / +70 °C

T-TYPE/C

- SILICONE gaskets
- Range of temperatures:
-50 °C / +70 °C



from page 344

V-TYPE IP67

Water tightness in a limited space
- Metallic
- Lever in stainless steel
- IP66/IP67



from page 272

V-TYPE IP65/IP66

Water tightness in a limited space
- Metallic
- Lever in stainless steel
- IP66/IP66



from page 279

CLASS ENCLOSURES

BIG - HOODS

Large and modular hoods

- Multiple cable entries
- Simple and easy to inspect cabling
- Electronic card slots
- IP66



from page 300

W-TYPE

For aggressive environments

- Metallic with chrome treatment
- IP66



from page 367

EMC

For electromagnetic compatibility

- Conductive gaskets
- IP66



from page 379

180 °C

For high temperature environments

- Metallic
- IP66



from page 396

CENTRAL LEVER

For limited mounting spaces

- Reduces insert uncoupling stress
- IP65/IP66



from page 403

IP68

Water tight

- Mechanical robustness
- Resistant to chemical agents
- Screw or bayonet locking



from page 413

830V

Insulated for CME and CMCE 16p inserts

- CLASS lever
- Standard
- IP65/IP66



from page 437

COB

Mounting inside control panel

- Inspectable
- IP20



from page 460

LS-TYPE

For stage equipment

- Metallic
- Thermoplastic lever
- IP65



from page 449

ENCLOSURE CHARACTERISTICS



Series	Version	Enclosure material	Size	Pg or M passage diameter	
CK/MK	Standard	Insulating	21.21 (03)	M 20	Pg 11
CKA/MKA CKAX/MKAX	Standard W (aggressive environments) S (EMC)	Metallic	21.21 (03)	M 20	Pg 11
CKG/MKG	Standard	Insulating	21.21 (03)	M 20	Pg 11
CKAG/MKAG	Standard	Metallic	21.21 (03)		
CGK/MGK	IP68	Metallic	21.21 (03)	M 20	Pg 13,5
CQ	Standard	Insulating	32.13 (08)	—	Pg 16 - 21
	S (EMC)	Metallic insulating			
IL-BRID (CZ/MZ)	Standard	Metallic	49.16 (15)	M 20 - 25	Pg 13,5 - 21
			66.16 (25)	M 20 - 25	Pg 16 - 21
C-TYPE (CH / CA/MH / MA)	Standard C-Type W (aggressive environments) S (EMC) R (high temperatures) 830V (insulated)	Metallic	66.40 (50)	M 25 - 29	Pg 21 - 29
			44.27 (6)	M 20 - 40	Pg 13,5 - 29
			57.27 (10)	M 20 - 40	Pg 16 - 29
			77.27 (16)	M 25 - 50	Pg 21 - 36
			104.27 (24)	M 25 - 50	Pg 21 - 36
			77.62 (32)	M 32 - 50	Pg 29 - 42
T-TYPE (TCH / TH / TMA / TA)	Standard (RAL 7012 grey) W (aggressive environments) HYGIENIC (H or C)	Insulating	44.27 (6)	M 25 - 32	—
			57.27 (10)	M 25 - 32	
			77.27 (16)	M 32 - 40	
			104.27 (24)	M 32 - 40	
V-TYPE IP67 (C7I, C7P/M7P, ...)	IP67 stainless steel levers	Metallic	44.27 (6)	M 20 - 40	Pg 16 - 29
			57.27 (10)	M 20 - 40	Pg 16 - 29
			77.27 (16)	M 25 - 40	Pg 21 - 29
			104.27 (24)	M 25 - 40	Pg 21 - 29
V-TYPE IP65/IP66 (CVI L, CVP/MVP L, ...)	IP65/IP66 stainless steel levers	Metallic	44.27 (6)	M 20 - 40	Pg 16 - 29
			57.27 (10)	M 20 - 40	Pg 16 - 29
			77.27 (16)	M 25 - 40	Pg 21 - 29
			104.27 (24)	M 25 - 40	Pg 21 - 29
BIG LARGE HOODS (CB - MB)	Standard, W (aggressive environments)	Metallic	44.27 (6)	M 20 - 50	—
			57.27 (10)	M 20 - 50	
			77.27 (16)	M 20 - 50	
			104.27 (24)	M 20 - 50	
IP68 (CG/MG)	IP68	Metallic	44.27 (6)	M 25 - 32	Pg 16 - 29
			57.27 (10)	M 25 - 32	Pg 16 - 29
			77.27 (16)	M 32 - 50	Pg 21 - 36
			104.27 (24)	M 32 - 50	Pg 21 - 36
Central Lever (YX - YC)	Standard	Metallic	44.27 (6)	M 25 - 32	Pg 21 - 29
			57.27 (10)	M 25 - 32	Pg 21 - 29
			77.27 (16)	M 32 - 40	Pg 21 - 36
			104.27 (24)	M 32 - 50	Pg 21 - 36
COB	Standard	Insulating	44.27 (6)	—	—
			57.27 (10)		
			77.27 (16) ¹⁾		
			104.27 (24)		
LS-TYPE (CHIN, CHPN/MHPN ...)	Light & Sound application	Metallic Thermoplastic lever	44.27 (6)	M 20 - 40	Pg 16 - 29
			57.27 (10)	M 20 - 40	Pg 16 - 29
			77.27 (16)	M 25 - 40	Pg 21 - 29
			104.27 (24)	M 25 - 40	Pg 21 - 29

¹⁾ 49.16 (15) and 66.16 (25) with adaptor CR xx/16.

ENCLOSURE CHARACTERISTICS



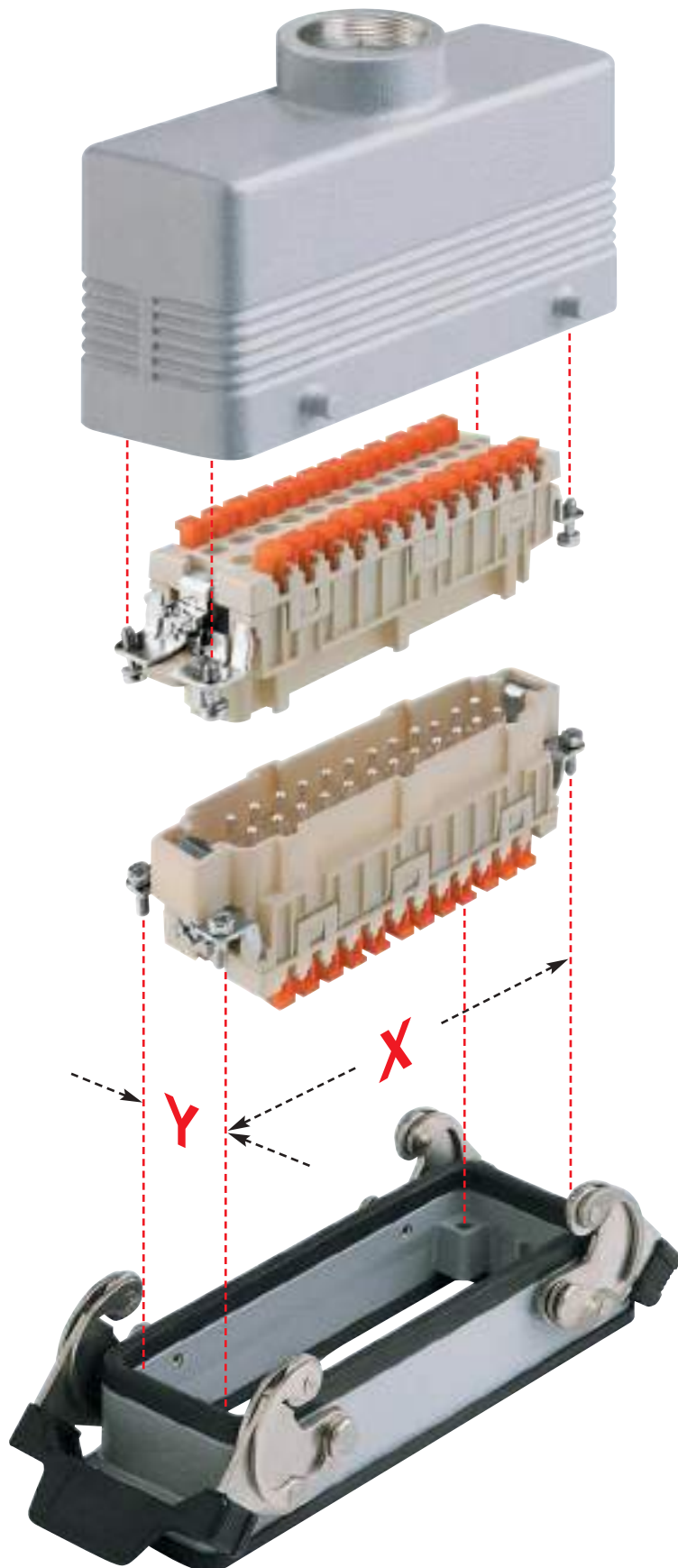
Series	Locking device	Notes	IP (EN 60529) ²⁾	UL 50 Type (NEMA 250 Type)	Environmental temperature range	from page
CK/MK	single		IP44	12	-40 °C ÷ +125 °C	221
		with CKR 65 (D)	IP66/IP67, IP69K ³⁾	12, 4, 4X	-40 °C ÷ +125 °C	
CKA/MKA CKAX/MKAX	single		IP44	12	-40 °C ÷ +125 °C	223
		with CKR 65 (D)	IP66/IP67, IP69K ³⁾	12, 4, 4X	-40 °C ÷ +125 °C	
CKG/MKG	single	for CXL, CJ K and CX 1/2 BD inserts	IP66/IP67, IP69K ³⁾	12, 4, 4X	-40 °C ÷ +125 °C	526
CKAG/MKAG						
CGK/MGK	screw		IP68, IP69K ³⁾	12, 4, 4X	-40 °C ÷ +125 °C	416
CQ	single	with conductive gasket CR 08 EMC	IP66/IP67, IP69K ³⁾	12, 4, 4X	-40 °C ÷ +125 °C	226 and 388
IL-BRID (CZ/MZ)	single		IP66, IP69K ³⁾	12, 4, 4X	-40 °C ÷ +125 °C	230
	dual					
C-TYPE (CH / CA/MH / MA)	single		IP66, IP69K ³⁾	12, 4, 4X ⁴⁾	-40 °C ÷ +125 °C	237
	dual		(IP65)	(12, 4, 4X ⁴⁾)	(R = -40 °C ÷ +180 °C)	
T-TYPE (TCH/TH/TMA/TA)	single		IP65, IP66, IP69	12 (Standard version only)	-40 °C ÷ +90 °C	326
	dual				-40 °C ÷ +70 °C (T-TYPE/C)	
V-TYPE IP67 (C7I, C7P/M7P, ...)	single (44.27)		IP67, IP69K ³⁾	12, 4, 4X ⁴⁾	-40 °C ÷ +125 °C	274
	dual (57.27, 77.27, 104.27)					
V-TYPE IP65/IP66	single		IP66, IP69K ³⁾	12, 4, 4X ⁴⁾	-40 °C ÷ +125 °C	280
BIG LARGE HOODS (CB - MB)	single (44.27)		IP66	12, 4, 4X	-40 °C ÷ +125 °C	304
	dual (57.77, 77.27, 104.27)					
IP68 (CG/MG)	screw or bayonet		IP66, IP68, IP69K ³⁾	12, 4, 4X	-40 °C ÷ +125 °C	416
Central Lever (YX - YC)	single central lever		IP65	12, 4, 4X	-40 °C ÷ +125 °C	404
COB	dual		IP20		-40 °C ÷ +125 °C	462
LS-TYPE (CHIN, CHPN/MHPN ...)	single (44.27)		IP65	12, 4, 4X ⁴⁾	-40 °C ÷ +125 °C	450
	dual (57.27, 77.27, 104.27)					

²⁾ The enclosures ensure IP protection rating when coupled and locked with the locking lever. The cover (CS, CP) only provides mechanical protection without ensuring the protection rating.

³⁾ According to DIN 40050-9.

⁴⁾ Not approved versions with plastic cover.

Combinations between enclosures and inserts



Identification of enclosures

Connector inserts and their enclosures are numerous and therefore the search for the correct pairing of one with another can be complex.

To facilitate this operation (in addition to the normal part number) the definition of “**size**” has been introduced in this catalogue.

As indicated in the illustration on the left and in the table below the size value refers to the screw fixing centre distances which constitute a unique element since they are common to both the inserts and the enclosures.

All the pages that illustrate combinable articles (inserts and enclosures) carry references as per the examples illustrated on the opposite page.

Following is a table that shows all the sizes of the enclosures and the dimensions of the housings where the inserts will be fastened.

enclosures size	insert housing with screw fixing centre distance x-y
“21.21”	(21 x 21 mm) **
“32.13”	32 x 13 mm
“49.16”	49,5 x 16 mm
“66.16”	66 x 16 mm
“66.40”	66 x 16 mm (2 inserts)
“44.27”	44 x 27 mm
“57.27”	57 x 27 mm
“77.27”	77,5 x 27 mm
“104.27”	104 x 27 mm
“77.62”	77,5 x 27 mm (2 inserts)
“104.62”	104 x 27 mm (2 inserts)

** dimensions relating to the insert cross-section size not being able to identify a screw fixing centre distance since provided with a single screw.



inserts:	page:
CK 3 poles + ⊕	48
CK 4 poles + ⊕	48
CKS 3 poles + ⊕	49
CKS 4 poles + ⊕	49
CD 7 poles + ⊕	53
CD 8 poles	54
CQ 12 poles + ⊕	165
CQ 5 poles + ⊕	166

insert dimensions:
21 x 21 mm

bulkhead mounting housings

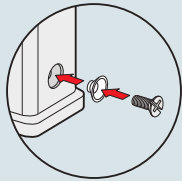


angled bulkhead mounting housings

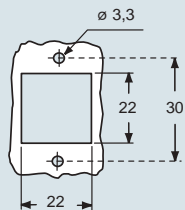


description	part No.		part No.	part No.
			(entry - Pg 11)	(entry - M 20)
with lever	CK 03 I	(white)		
with lever	CK 03 IN	(black)		
without cable entry, with lever			CK 03 IA	(white)
without cable entry, with lever			CK 03 IAN	(black)
with cable entry and lever			CK 03 IAPS	(white)
with cable entry and lever			CK 03 IAPNS	(black)
			MK IAP20	(white)
			MK IAPN20	(black)
gasket and screw kit for IP66/IP67 ¹⁾ for CK, CQ 05, CKS inserts	CKR 65		CKR 65	
gasket and screw kit for IP66/IP67 ¹⁾ for CD 07/08 inserts	CKR 65 D		CKR 65 D	

1) To obtain the protection rating IP66/IP67 a kit is provided that includes a gasket to fit under the insert fixing screws supplied with the kit (see illustrative example).
CQ 12 inserts are already supplied with a gasket and screw which ensure IP66/IP67 protection rating.

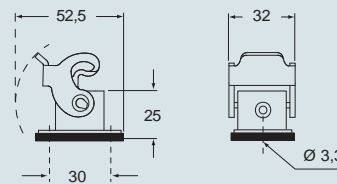


panel cut-out for enclosures, in mm



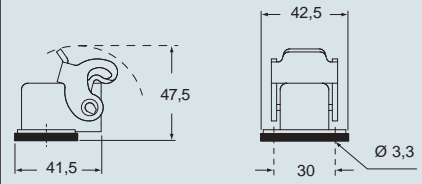
dimensions in mm

CK I(N)

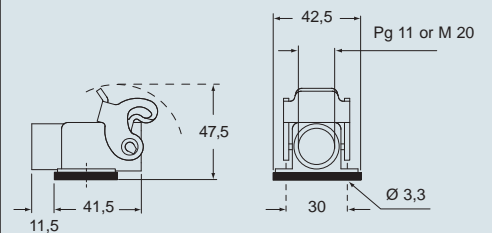


dimensions in mm

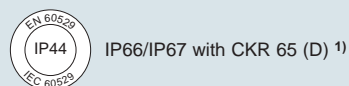
CK IA(N)



CK IAP(N)S and MK IAP(N)



CRUS® Type 12
Type 4/4X only
with CKR 65 (D)



dimensions shown are not binding
and may be changed without notice



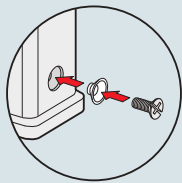
inserts:	page:
CK 3 poles + ⊕	48
CK 4 poles + ⊕	48
CKS 3 poles + ⊕	49
CKS 4 poles + ⊕	49
CD 7 poles + ⊕	53
CD 8 poles	54
CQ 12 poles + ⊕	165
CQ 5 poles + ⊕	166

insert dimensions:
21 x 21 mm



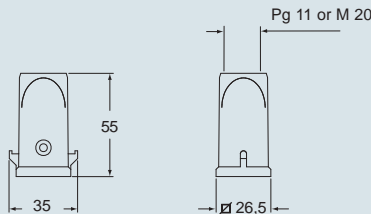
description	part No. (entry - Pg 11)	part No. (entry - M 20)	part No. (with eyelet)	part No. (with loop)
with pegs, top entry	CK 03 VS (white)	MK V20 (white)		
with pegs, top entry	CK 03 VNS (black)	MK VN20 (black)		
with pegs, side entry	CK 03 VAS (white)	MK VA20 (white)		
with pegs, side entry	CK 03 VANS (black)	MK VAN20 (black)		
with lever, top entry	CK 03 VGS (white)	MK VG20 (white)		
with lever, top entry	CK 03 VGNS (black)	MK VGN20 (black)		
with pegs and gasket, for female inserts			CK 03 C (white)	CK 03 CS (white)
with pegs and gasket, for female inserts			CK 03 CN (black)	
with pegs, for male inserts			CK 03 CA (white)	CK 03 CAS (white)
with pegs, for male inserts			CK 03 CAN (black)	
with lever and gasket, for female inserts				CK 03 CX (white)
with lever and gasket, for female inserts				CK 03 CXN (black)
with lever, for male inserts				CK 03 CXA (white)
with lever, for male inserts				CK 03 CXAN (black)
gasket and screw kit for IP66/IP67 ¹⁾ for CK, CQ 05, CKS inserts	CKR 65			
gasket and screw kit for IP66/IP67 ¹⁾ for CD 07/08 inserts	CKR 65 D			

1) To obtain the protection rating IP66/IP67 a kit is provided that includes a gasket to fit under the insert fixing screws supplied with the kit (see illustrative example).
CQ 12 inserts are already supplied with a gasket and screw which ensure IP66/IP67 protection rating.

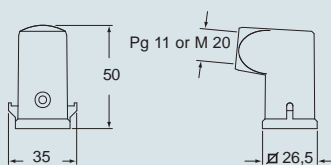


dimensions in mm

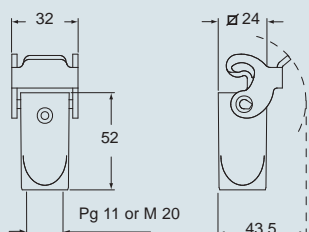
CK V(N)S and MK V(N)



CK VA(N)S and MK VA(N)

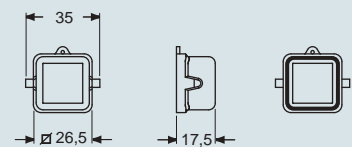


CK VG(N)S and MK VG(N)

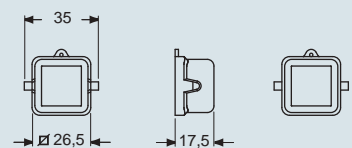


dimensions in mm

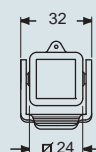
CK C(S)(N)



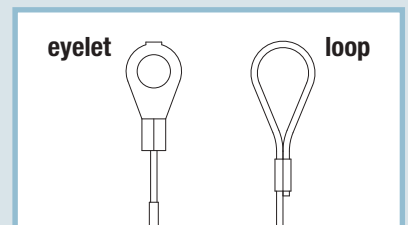
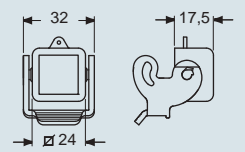
CK CA(S)(N)



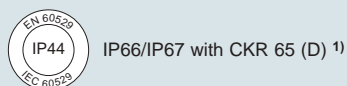
CK CX(N)



CK CXA(N)



CRAUS Type 12
Type 4/4X only
with CKR 65 (D)



dimensions shown are not binding
and may be changed without notice

C-TYPE - size 21.21



inserts:	page:
CK 3 poles + ⊕	48
CK 4 poles + ⊕	48
CKS 3 poles + ⊕	49
CKS 4 poles + ⊕	49
CD 8 poles	54
CQ 12 poles + ⊕	165
CQ 5 poles + ⊕	166

insert dimensions:
21 x 21 mm

bulkhead mounting housings

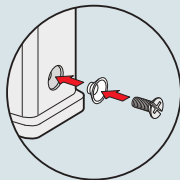


angled bulkhead mounting housings

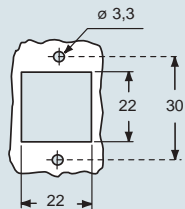


description	part No.	part No. (entry - Pg 11)	part No. (entry - M 20)
with galvanised steel lever with stainless steel lever	CKA 03 I CKAX 03 I		
without cable entry, galvanized steel lever without cable entry, stainless steel lever		CKA 03 IA CKAX 03 IA	
with cable entry, galvanized steel lever with cable entry, stainless steel lever with cable entry, galvanized steel lever, bulkhead hole closed with cable entry, stainless steel lever, bulkhead hole closed		CKA 03 IAPS CKAX 03 IAPS CKA 03 APS CKAX 03 APS	MKA IAP20 MKAX IAP20 MKA AP20 MKAX AP20
gasket and screw kit for IP66/IP67 ¹⁾ for CK, CQ 05, CKS inserts	CKR 65	CKR 65	
gasket and screw kit for IP66/IP67 ¹⁾ for CD 07/08 inserts	CKR 65 D	CKR 65 D	

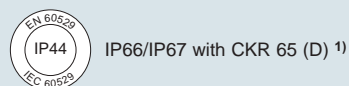
1) To obtain the protection rating IP66/IP67 a kit is provided that includes a gasket to fit under the insert fixing screws supplied with the kit (see illustrative example).
CQ 12 inserts are already supplied with a gasket and screw which ensure IP66/IP67 protection rating.



panel cut-out for enclosures, in mm



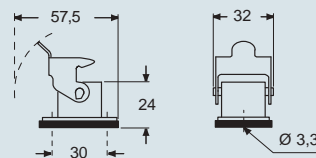
CRUS Type 12
Type 4/4X only
with CKR 65 (D)



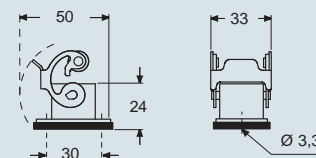
dimensions shown are not binding
and may be changed without notice

dimensions in mm

CKA I

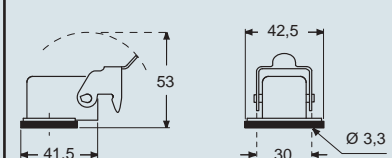


CKAX I

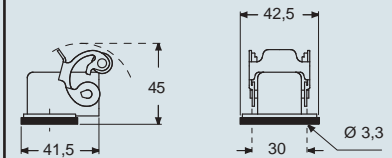


dimensions in mm

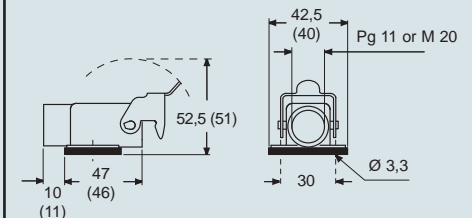
CKA IA



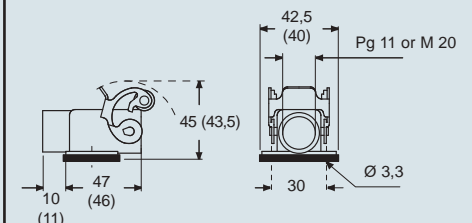
CKAX IA



CKA IAPS (CKA APS) and MKA IAP (MKA AP)



CKAX IAPS (CKAX APS) and MKAX IAP (MKAX AP)





inserts:	page:
CK 3 poles + ⊕	48
CK 4 poles + ⊕	48
CKS 3 poles + ⊕	49
CKS 4 poles + ⊕	49
CD 8 poles	54
CQ 12 poles + ⊕	165
CQ 5 poles + ⊕	166

insert dimensions:
21 x 21 mm

angled bulkhead mounting housings



bulkhead mounting housings with self closing cover

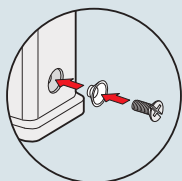


NEW

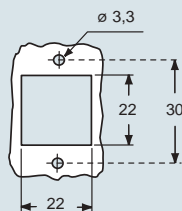
description	part No.	part No.
galvanized steel lever, M20 fixing thread (*) stainless steel lever, M20 fixing thread (*)	MKA IAF20 1) MKAX IAF20 1)	
galvanized steel lever, M25 fixing thread (*) stainless steel lever, M25 fixing thread (*)	MKA IAF25 1) MKAX IAF25 1)	
with galvanised steel lever, for female inserts with galvanised steel lever, for male inserts		CKA 03 ILS CKA 03 ILSA
with stainless steel lever, for female inserts with stainless steel lever, for male inserts		CKAX 03 ILS CKAX 03 ILSA
gasket and screw kit for IP66/IP67 1) for CK, CQ 05, CKS inserts	CKR 65	CKR 65
gasket and screw kit for IP66/IP67 1) for CD 07/08 inserts	CKR 65 D	CKR 65 D

(*) locknut supplied on request, see catalogue cable glands (articles AS M20N and AS M25N metallic, AS M20L and AS M25L insulating)

1) To obtain the protection rating IP66/IP67 a kit is provided that includes a gasket to fit under the insert fixing screws supplied with the kit (see illustrative example).
CQ 12 inserts are already supplied with a gasket and screw which ensure IP66/IP67 protection rating.

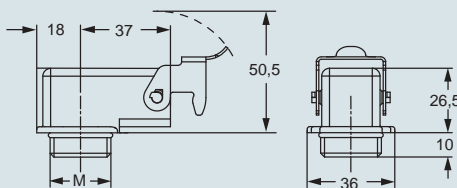


panel cut-out for enclosures CKA ILS/ILSA, in mm

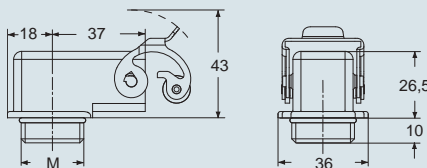


dimensions in mm

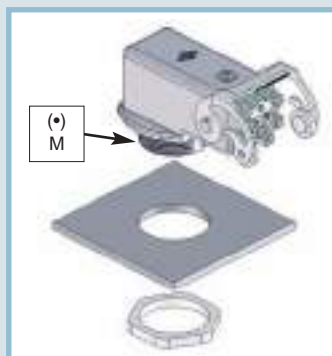
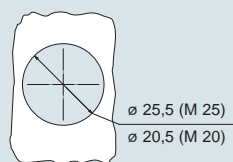
MKA IAF



MKAX IAF

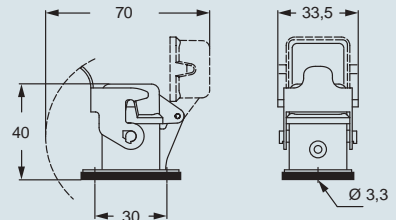


panel cut-out

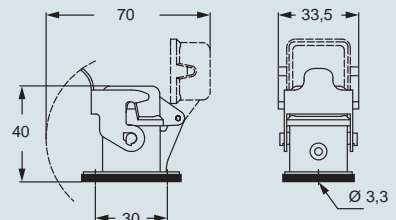


dimensions in mm

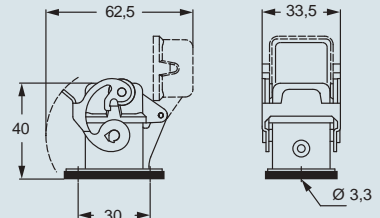
CKA ILS



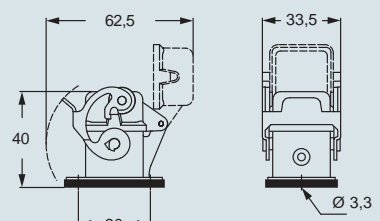
CKA ILSA



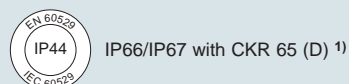
CKAX ILS



CKAX ILSA



CRUS Type 12
Type 4/4X only
with CKR 65 (D)



dimensions shown are not binding
and may be changed without notice

C-TYPE - size 21.21



inserts:	page:
CK 3 poles + ⊕	48
CK 4 poles + ⊕	48
CKS 3 poles + ⊕	49
CKS 4 poles + ⊕	49
CD 8 poles	54
CQ 12 poles + ⊕	165
CQ 5 poles + ⊕	166

insert dimensions:
21 x 21 mm

hoods

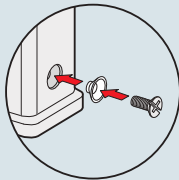


covers



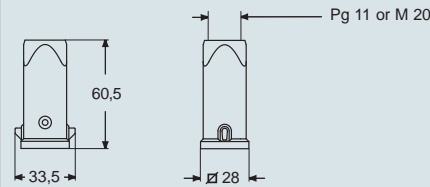
description	part No. (entry - Pg 11)	part No. (entry - M 20)	part No. (with eyelet)	part No. (with loop)
with pegs, top entry with pegs, side entry	CKA 03 VS CKA 03 VAS	MKA V20 MKA VA20		
with galvanised steel lever, top entry with stainless steel lever, top entry	CKA 03 VGS CKAX 03 VGS	MKA VG20 MKAX VG20		
with pegs and gasket, for female inserts with pegs, for male inserts			CKA 03 C 1) CKA 03 CA 1)	CKA 03 CS 1) CKA 03 CAS 1)
with stainless steel lever and gasket, for female inserts with stainless steel lever, for male inserts				CKAX 03 CX CKAX 03 CXA
gasket and screw kit for IP66/IP67 ²⁾ for CK, CQ 05, CKS inserts	CKR 65			
gasket and screw kit for IP66/IP67 ²⁾ for CD 08 inserts	CKR 65 D			

2) To obtain the protection rating IP66/IP67 a kit is provided that includes a gasket to fit under the insert fixing screws supplied with the kit (see illustrative example).
CQ 12 inserts are already supplied with a gasket and screw which ensure IP66/IP67 protection rating.

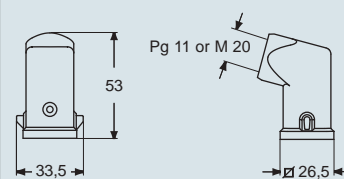


dimensions in mm

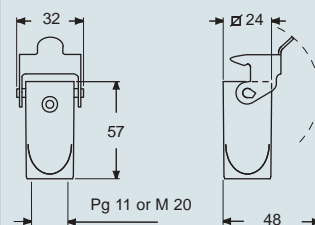
CKA VS and MKA V



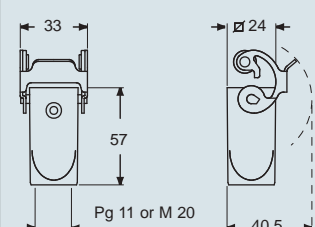
CKA VAS and MKA VA



CKA VGS and MKA VG



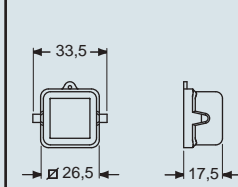
CKAX VGS and MKAX VG



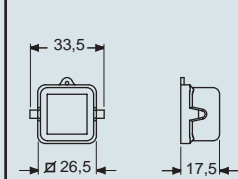
1) preferably be used with enclosures CKAX (stainless steel lever).

dimensions in mm

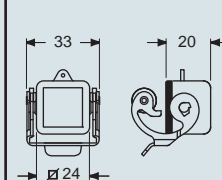
CKA C(S)



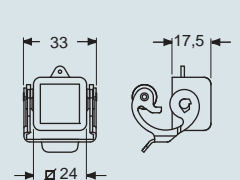
CKA CA(S)



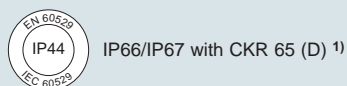
CKAX CX



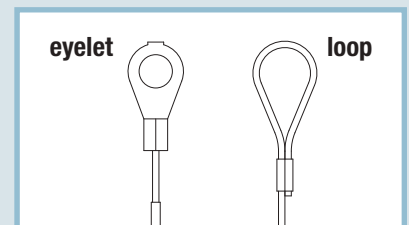
CKAX CXA



CRUS®
Type 12
Type 4/4X only
with CKR 65 (D)



dimensions shown are not binding
and may be changed without notice





inserts: page:
CQ 08 8 poles + ⊕ 167
CQ 04/2 4 poles + 2 poles + ⊕ 168

bulkhead mounting housing with single lever



hoods with 2 pegs



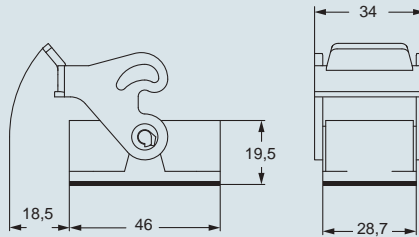
description	part No.	entry Pg	part No.	entry Pg
with lever without cable entry, angled, with lever with cable entry, angled, with lever	CQ 08 I CQ 08 IA CQ 08 IAP	21		
with pegs, side entry *			CQ 08 VA	16
with pegs, top entry *			CQ 08 V	21
with pegs, side and top entry 1)			MQ 08 VO225	25 x 2

* Pg male thread on enclosure exterior

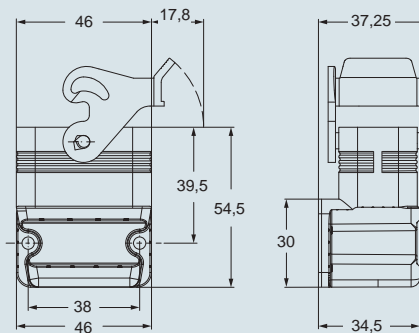
1) metric thread on the internal enclosure;
 accessories to be ordered separately:
 - **AL M25DN** insulating black sealing plug M25
 - **AL M25IN** insulating black cable gland M25

dimensions in mm

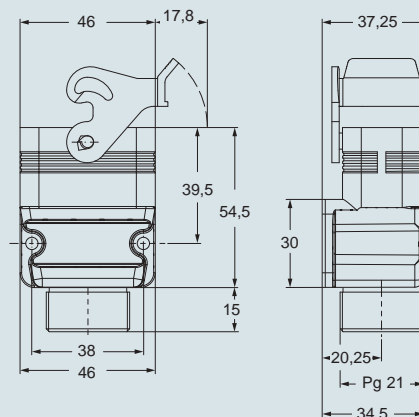
CQ I



CQ IA

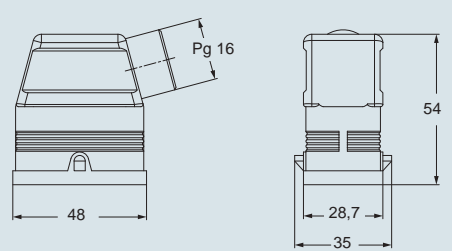


CQ IAP

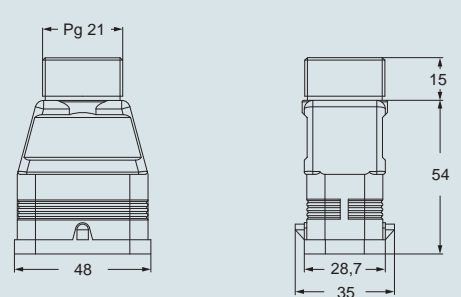


dimensions in mm

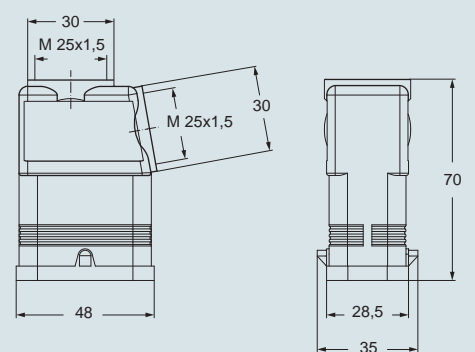
CQ VA



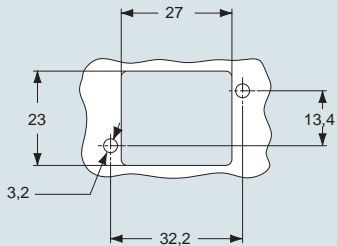
CQ V



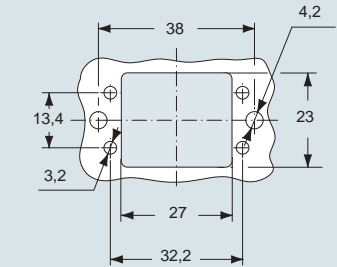
MQ VO



panel cut-out for CQ I enclosure, in mm



panel cut-out for CQ IA - CQ IAP enclosure, in mm



CALUS® Type 4/4X/12
 (pending for MQ 08 VO225)



dimensions shown are not binding and may be changed without notice

C-TYPE - size 32.13



inserts: page:
CQ 08 8 poles + ⊕ 167
CQ 04/2 4 poles + 2 poles + ⊕ 168

hoods with single lever



covers with 2 pegs
 thermoplastic resin cable glands



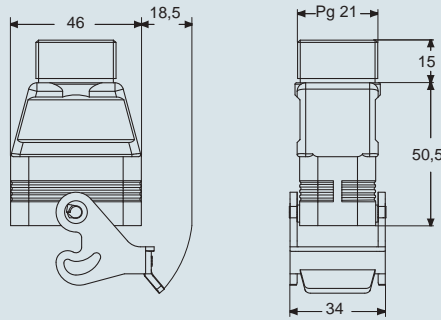
description	part No.	entry Pg	part No.
with lever, top entry *	CQ 08 VG	21	
cover with 2 pegs for female inserts cover with 2 pegs for male inserts			CQ 08 C CQ 08 CA
cable gland head and gasket for CQ 08 VA enclosure cable gland head and gasket for CQ 08 V and VG enclosure			CRQ 16 CRQ 21

* Pg male thread on enclosure exterior

cable diameters for cable glands:
 - CRQ 16: 10 - 14.5 mm
 - CRQ 21: 14 - 18 mm

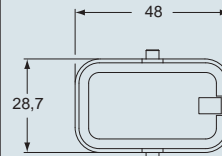
dimensions in mm

CQ VG

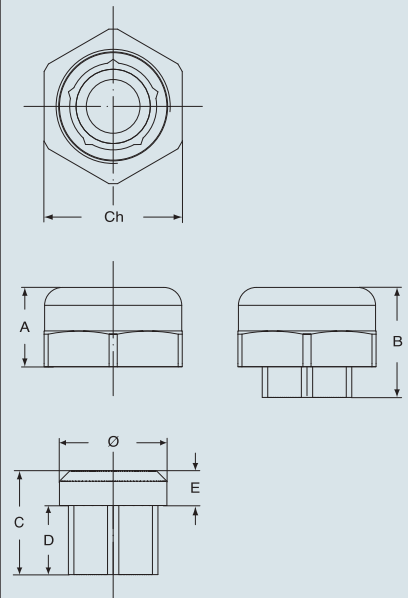


dimensions in mm

CQ C and CQ CA



CRQ 16 and CRQ 21



part No.	A	B	C	D	E	Ø	Ch
CRQ 16	15,5	21,5	20,25	13,5	6,75	21	27
CRQ 21	18,2	27,5	25	15,5	9	26,5	33

CRUIS® Type 4/4X/12



dimensions shown are not binding
 and may be changed without notice

NEW

IL-BRID series

Soft closing, strong hold



IL-BRID

IL-BRID series

The coordinated effects of two materials

The new IL-BRID locking lever.

Through its original design, the new lever combines the smoothness of the thermoplastic material with the sturdiness of the stainless steel spring.

The locking lever also has a linear design which favors a quick wash without retaining external elements.



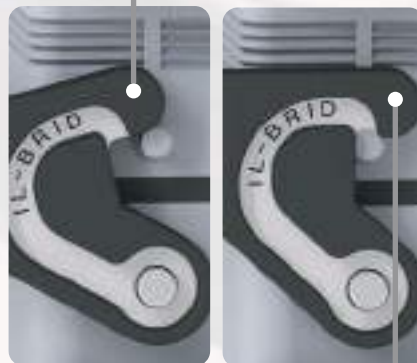
IL-BRID

NEW LEVER
IN STAINLESS STEEL
AND THERMOPLASTIC
MATERIAL

IL-BRID

Soft closing.

In the first phase, the thermoplastic lever comes into play: sliding the new lever on the pin reduces friction and wear. It is suitable in all applications with frequent opening and closing.



Strong hold.

After the first closing phase involving the plastic component, the stainless steel hook intervenes to guarantee higher resistance to mechanical stress.



inserts:		page:
CD	15 poles + ⊕	55
CSAH	10 poles + ⊕	87
CDA	10 poles + ⊕	98
CDC	10 poles + ⊕	99
MIXO	1 module	179 - 214

bulkhead mounting housings with single lever



NEW

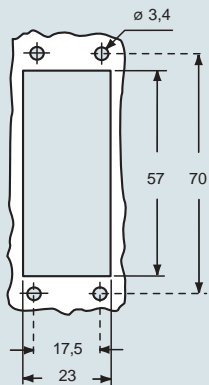
surface mounting housings with single lever



NEW

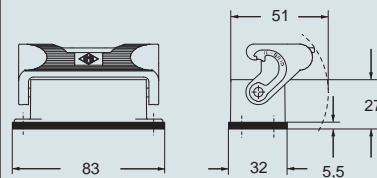
description	part No.	part No.	entry Pg	part No.	entry M
with single lever	CZI 15 L				
with single lever and cover	CZI 15 LS				
with single lever		CZP 15 L	16		
with single lever		CZP 15 L2	16 x 2		
with single lever		CZP 15 LS21	21	MZP 15 L25	25
with single lever		CZP 15 L221	21 x 2	MZP 15 L225	25 x 2
with lever and cover		CZP 15 LS	16		
with lever and cover		CZP 15 LS2	16 x 2		
with lever and cover		CZP 15 LS21	21	MZP 15 LS25	25
with lever and cover		CZP 15 LS221	21 x 2	MZP 15 LS225	25 x 2

panel cut-out for bulkhead mounting housings in mm

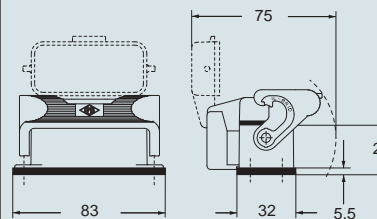


dimensions in mm

CZI L

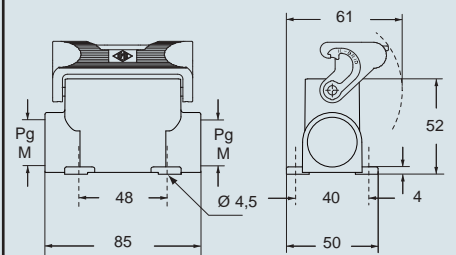


CZI LS

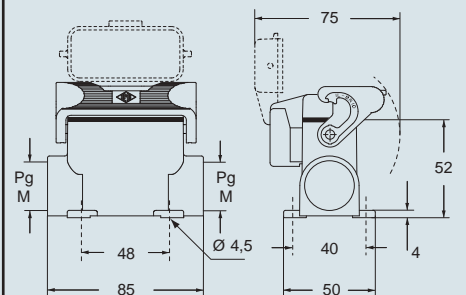


dimensions in mm

CZP L and MZP L



CZP LS and MZP LS



N.B.:
The enclosures ensure IP66 protection (or IP65 for hinged cover versions) rating when mated and locked with the closing levers.

CALUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

IL-BRID - size 49.16



inserts:		page:
CD	15 poles + ⊕	55
CSAH	10 poles + ⊕	87
CDA	10 poles + ⊕	98
CDC	10 poles + ⊕	99
MIXO	1 module	179 - 214

hoods with 2 pegs



hoods with single lever



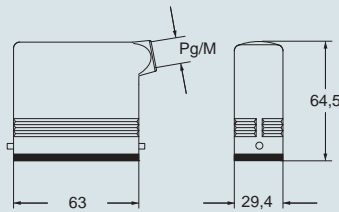
NEW

description	part No.		part No.		part No.		part No.	
		entry Pg		entry M		entry Pg		entry M
with pegs, side entry	CZO 15 L	16	MZO 15 L20	20				
with pegs, side entry			MZO 15 L25	25				
with pegs, side entry, high construction	CZAO 15 L16	16	MZAO 15 L20	20				
with pegs, side entry, high construction	CZAO 15 L21	21	MZAO 15 L25	25				
with pegs, top entry	CZV 15 L	13,5	MZV 15 L20	20				
with pegs, top entry, high construction	CZAV 15 L16	16	MZAV 15 L20	20				
with pegs, top entry, high construction	CZAV 15 L21	21	MZAV 15 L25	25				
with pegs, side entry, high construction, without adaptor *	CZFO 15 L16	16	MZFO 15 L20	20				
with pegs, side entry, high construction, without adaptor *	CZFO 15 L21	21	MZFO 15 L25	25				
with pegs, top entry, high construction, without adaptor *	CZFV 15 L16	16	MZFV 15 L20	20				
with pegs, top entry, high construction, without adaptor *	CZFV 15 L21	21	MZFV 15 L25	25				
with lever, top entry					CZV 15 LG	13,5	MZV 15 LG20	20

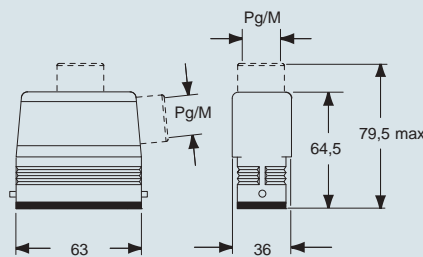
* enclosure without adaptor, threaded on the body, to be used only with a complete cable gland.

dimensions in mm

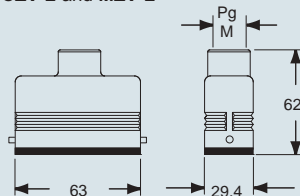
CZO L and MZO L



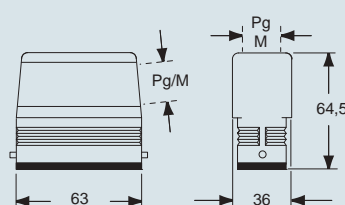
CZAO L - MZAO L and CZAV L - MZAV L



CZV L and MZV L

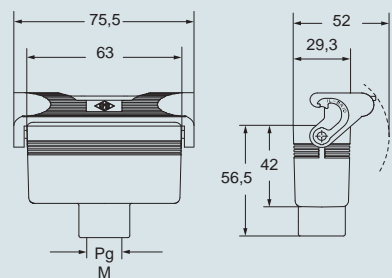


CZFO L - MZFO L and CZFV L - MZFV L



dimensions in mm

CZV LG and MZV LG



CALUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

IL-BRID - size 49.16



inserts:	page:
CD 15 poles + ⊕	55
CSAH 10 poles + ⊕	87
CDA 10 poles + ⊕	98
CDC 10 poles + ⊕	99
MIXO 1 module	179 - 214

covers



NEW

Cover versions L and LG cannot be used together with coding pins. If this application is required, please contact ILME SpA.

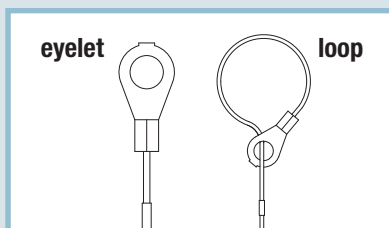
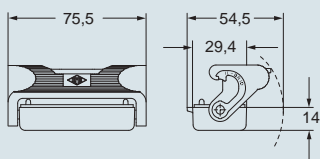
description	part No. (with eyelet)	part No. (with loop)
with pegs (for 1 lever enclosures)	CZC 15 L	CZC 15 SL
with lever (for enclosures with pegs)		CZC 15 LG

dimensions in mm

CZC L (SL)



CZC LG



CALUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

IL-BRID - size 49.16



inserts:		page:
CD	25 poles + ⊕	56
CDD	38 poles + ⊕	68
CSAH	16 poles + ⊕	88
CDA	16 poles + ⊕	100
CDC	16 poles + ⊕	101

bulkhead mounting housings with single lever



NEW

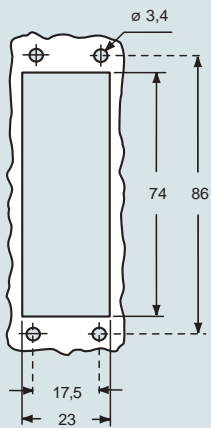
surface mounting housings with single lever



NEW

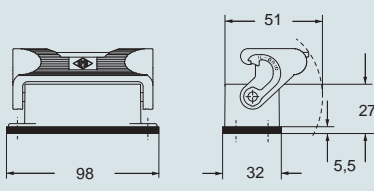
description	part No.	part No.	entry Pg	part No.	entry M
with single lever	CZI 25 L				
with single lever and cover	CZI 25 LS				
with single lever, high construction		CZAP 25 L	16		
with single lever, high construction		CZAP 25 L2	16 x 2		
with single lever, high construction		CZAP 25 L21	21	MZAP 25 L25	25
with single lever, high construction		CZAP 25 L221	21 x 2	MZAP 25 L225	25 x 2
with single lever and cover, high construction		CZAP 25LS	16		
with single lever and cover, high construction		CZAP 25LS2	16 x 2		
with single lever and cover, high construction		CZAP 25LS21	21	MZAP 25LS25	25
with single lever and cover, high construction		CZAP 25LS221	21 x 2	MZAP 25LS225	25 x 2

panel cut-out for bulkhead mounting housings in mm

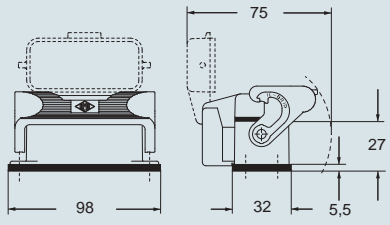


dimensions in mm

CZI L

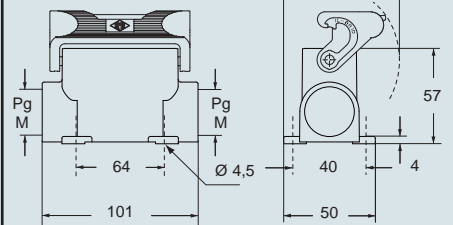


CZI LS

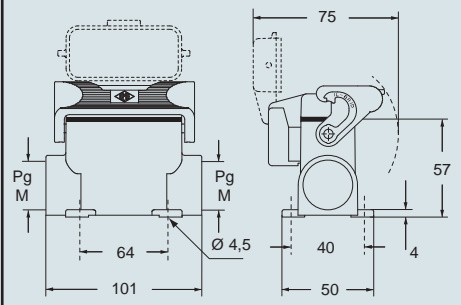


dimensions in mm

CZAP L and MZAP L



CZAP LS and MZAP LS



N.B.:
The enclosures ensure IP66 protection (or IP65 for hinged cover versions) rating when mated and locked with the closing levers.

CALUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

IL-BRID - size 66.16



inserts:	page:
CD 25 poles + ⊕	56
CDD 38 poles + ⊕	68
CSAH 16 poles + ⊕	88
CDA 16 poles + ⊕	100
CDC 16 poles + ⊕	101

hoods with 2 pegs



hoods with 2 pegs, double top entry



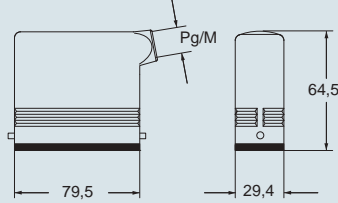
description	part No.		part No.		part No.		part No.	
		entry Pg		entry M		entry Pg		entry M
with pegs, side entry	CZO 25 L	16	MZO 25 L20	20				
with pegs, side entry			MZO 25 L25	25				
with pegs, side entry, high construction	CZAO 25 L16	16	MZAO 25 L20	20				
with pegs, side entry, high construction	CZAO 25 L21	21	MZAO 25 L25	25				
with pegs, top entry	CZV 25 L	16	MZV 25 L20 **	20				
with pegs, top entry, high construction	CZAV 25 L16	16	MZAV 25 L20	20				
with pegs, top entry, high construction	CZAV 25 L21	21	MZAV 25 L25	25				
with pegs, side entry, high construction, without adaptor *	CZFO 25 L16	16	MZFO 25 L20	20				
with pegs, side entry, high construction, without adaptor *	CZFO 25 L21	21	MZFO 25 L25	25				
with pegs, top entry, high construction, without adaptor *	CZFV 25 L16	16	MZFV 25 L20	20				
with pegs, top entry, high construction, without adaptor *	CZFV 25 L21	21	MZFV 25 L25	25				
with pegs for 1 lever					CZAV 25 L216	16 x 2	MZAV 25 L220	20 x 2
with pegs for 1 lever, without adaptor *					CZFV 25 L216	16 x 2	MZFV 25 L220	20 x 2

* enclosure without adaptor, threaded on the body, to be used only with a complete cable gland.

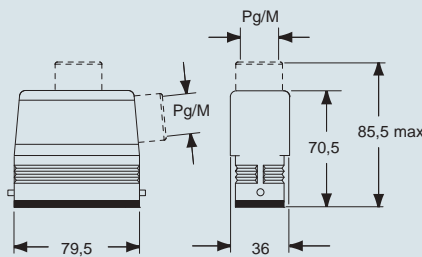
** can only be used with a complete cable gland (to be purchased separately)

dimensions in mm

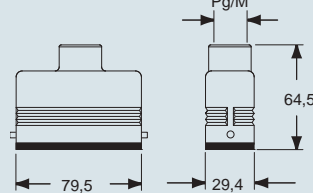
CZO L and MZO L



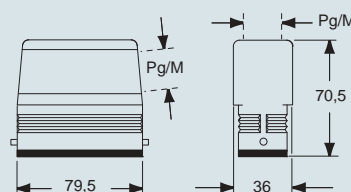
CZAO L - MZAO L and CZAV L - MZAV L



CZV L and MZV L

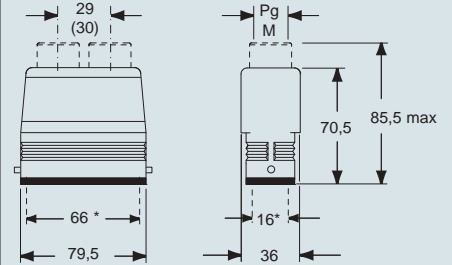


CZFO L - MZFO L and CZFV L - MZFV L



dimensions in mm

CZAV/CZFV L2 and (MZAV)/MZFV L2



CALUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice



inserts:		page:
CD	25 poles + ⊕	56
CDD	38 poles + ⊕	68
CSAH	16 poles + ⊕	88
CDA	16 poles + ⊕	100
CDC	16 poles + ⊕	101

Cover versions L and LG cannot be used together with coding pins. If this application is required, please contact ILME SpA.

hoods with single lever



NEW

covers

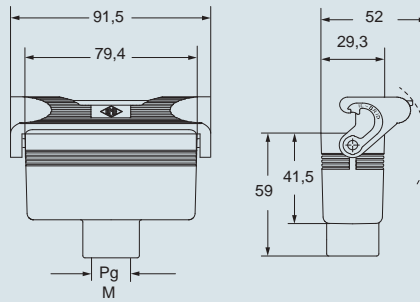


NEW

description	part No.		part No.		part No. (with eyelet)	part No. (with loop)
		entry Pg		entry M		
with lever, top entry	CZV 25 LG	16	MZV 25 LG20	20		
with pegs (for 1 lever enclosures)					CZC 25 L	CZC 25 SL
with lever (for enclosures with pegs)						CZC 25 LG

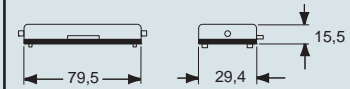
dimensions in mm

CZV LG e MZV LG

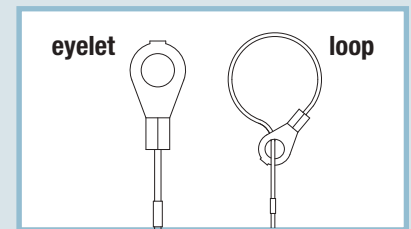
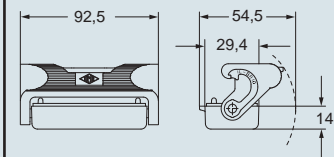


dimensions in mm

CZC L (SL)



CZC LG



CALUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

IL-BRID - size 66.16





inserts:		page:
CD	50 poles + ⊕	58
CDD	76 poles + ⊕	71
CSAH	32 poles + ⊕	89
CDA	32 poles + ⊕	102
CDC	32 poles + ⊕	103

insert dimensions:
2 x (66 x 16) mm

bulkhead mounting housings with 2 levers or 4 pegs



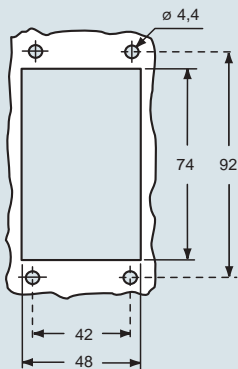
surface mounting housings with 2 levers or 4 pegs



description	part No.	part No.	entry Pg	part No.	entry M
with levers	CHI 50				
with levers and cover ¹⁾	CHI 50 CS				
with levers		CHP 50.21	21	MHP 50.32	32
with levers		CHP 50.221	21 x 2	MHP 50.232	32 x 2
with levers		CHP 50.29	29	MHP 50.40	40
with levers		CHP 50.229	29 x 2	MHP 50.240	40 x 2
with levers		CHP 50 CS	21	MHP 50 CS32	32
with levers and cover ¹⁾		CHP 50 CS2	21 x 2	MHP 50 CS232	32 x 2
with levers and cover ¹⁾		CHP 50 CS29	29	MHP 50 CS40	40
with levers and cover ¹⁾		CHP 50 CS229	29 x 2	MHP 50 CS240	40 x 2

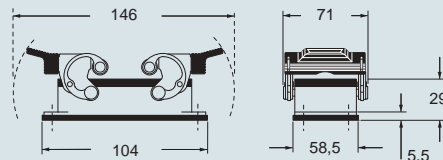
¹⁾ may be combined with enclosures:
- CHO/CAO 50 X and CAV 50 X
- MHO/MAO/MFO 50 X and MAV/MFV 50 X

panel cut-out for bulkhead mounting housings in mm

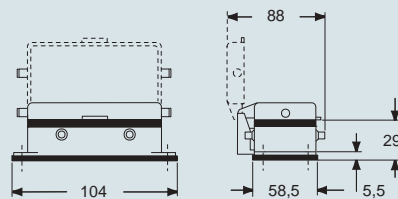


dimensions in mm

CHI

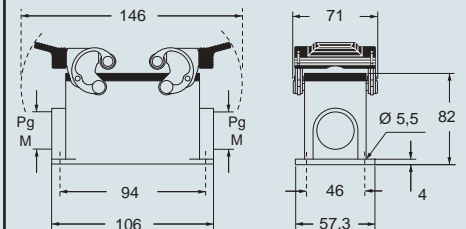


CHI CS

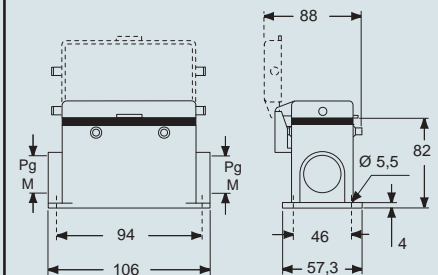


dimensions in mm

CHP and MHP



CHP CS and MHP CS



NB:
The enclosures ensure IP66 protection (or IP65 for hinged cover versions) rating when mated and locked with the closing levers.
The cover (CS, CP) only ensures mechanical protection, but does not ensure IP65 protection rating.

CALUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

C-TYPE - size 66.40



inserts:	page:
CD 50 poles + ⊕	58
CDD 76 poles + ⊕	71
CSAH 32 poles + ⊕	89
CDA 32 poles + ⊕	102
CDC 32 poles + ⊕	103

insert dimensions:
2 x (66 x 16) mm

hoods with 4 pegs



hoods with 2 levers or 4 pegs

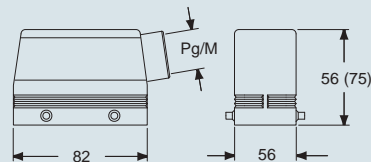


description	part No.		part No.		part No.		part No.	
		entry Pg		entry M		entry Pg		entry M
with pegs, side entry	CHO 50	21	MHO 50.25	25				
with pegs, side entry			MHO 50.32	32				
with pegs, side entry, high construction	CAO 50.21	21	MAO 50.25	25				
with pegs, side entry, high construction	CAO 50.29	29	MAO 50.32	32				
with pegs, top entry, high construction					CAV 50.21	21	MAV 50.25	25
with pegs, top entry, high construction					CAV 50.29	29	MAV 50.32	32
with levers and gasket, top entry, high construction					CAV 50 G29	29	MAV 50 G32	32
with pegs, side entry, high construction, without adaptor *	CFO 50.21	21	MFO 50.25	25				
with pegs, side entry, high construction, without adaptor *	CFO 50.29	29	MFO 50.32	32				
with pegs, top entry, high construction, without adaptor *					CFV 50.21	21	MFV 50.25	25
with pegs, top entry, high construction, without adaptor *					CFV 50.29	29	MFV 50.32	32
with levers and gasket, top entry, high, without adapter *					CFV 50 G29	29	MFV 50 G32	32

* enclosure without adaptor, threaded on the body, to be used only with a complete cable gland.

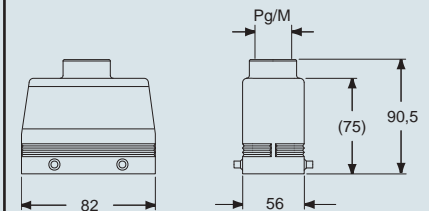
dimensions in mm

CHO (CAO/CFO) and MHO (MAO/MFO)

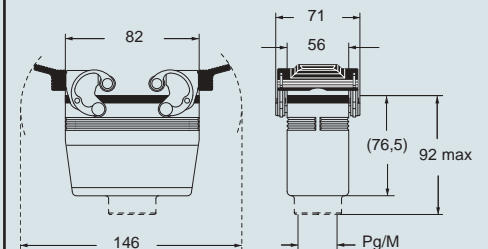


dimensions in mm

CAV (CFV) and MAV (MFV)



CAV G (CFV G) and MAV G (MFV G)



CAIUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

C-TYPE - size 66.40



inserts:	page:
CD 50 poles + ⊕	58
CDD 76 poles + ⊕	71
CSAH 32 poles + ⊕	89
CDA 32 poles + ⊕	102
CDC 32 poles + ⊕	103

insert dimensions:
2 x (66 x 16) mm

CHC 50 and CHC 50 G covers cannot be used together with coding pins. If this application is required, please contact ILME SpA.

hoods with 2 levers



covers



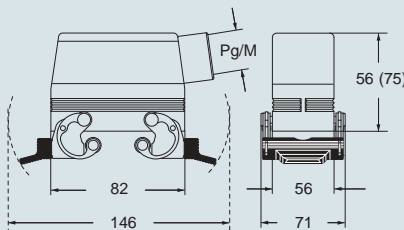
description	part No.		part No.		part No. (with eyelet)	part No. (with loop)
		entry Pg		entry M		
with levers, side entry ¹⁾	CHO 50 X	21	MHO 50 X25	25		
with levers, side entry ¹⁾			MHO 50 X32	32		
with levers, side entry, high construction ¹⁾	CAO 50 X	21	MAO 50 X25	25		
with levers, side entry, high construction ¹⁾	CAO 50 X29	29	MAO 50 X32	32		
with levers, top entry, high construction ¹⁾	CAV 50 X	21	MAV 50 X25	25		
with levers, top entry, high construction ¹⁾	CAV 50 X29	29	MAV 50 X32	32		
with levers, side entry, high construction, without adaptor ^{1)*}	CFO 50 X	21	MFO 50 X25	25		
with levers, side entry, high construction, without adaptor ^{1)*}	CFO 50 X29	29	MFO 50 X32	32		
with levers, top entry, high construction, without adaptor ^{1)*}	CFV 50 X	21	MFV 50 X25	25		
with levers, top entry, high construction, without adaptor ^{1)*}	CFV 50 X29	29	MFV 50 X32	32		
with 4 pegs (for enclosures with 2 levers)					CHC 50	CHC 50 S
with 2 levers (for hoods with 4 pegs)						CHC 50 G

¹⁾ may be combined with enclosures:
- CHI 50 CS, CHP 50 CS and MHP 50 CS

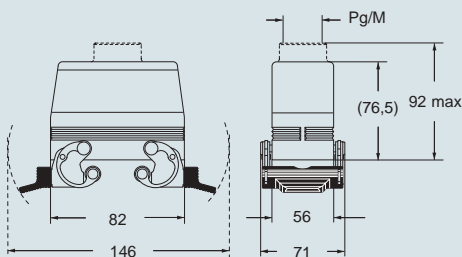
* enclosure without adaptor, threaded on the body, to be used only with a complete cable gland.

dimensions in mm

CHO X (CAO X/CFO X) and MHO X (MAO X/MFO X)

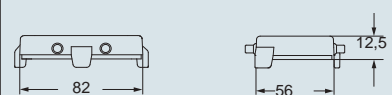


CAV X (CFV X) and MAV X (MFV X)

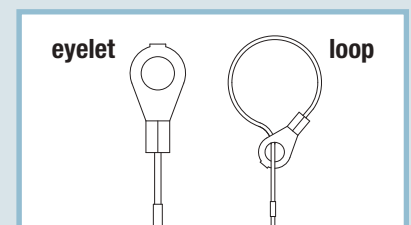
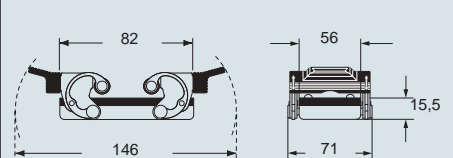


dimensions in mm

CHC(S)



CHC G



ILME® Type 4/4X/12



dimensions shown are not binding and may be changed without notice

C-TYPE - size 66.40



inserts:	page:
CDD 24 poles + ⊕	67
CDS 9 poles + ⊕	78
CSH 6 poles + ⊕	91
CNE, CSE 6 poles + ⊕	104
CCE 6 poles + ⊕	110
CSS 6 poles + ⊕	122
CT, CTSE (16A) * 6 poles + ⊕	130
CQE 10 poles + ⊕	138
MIXO 2 modules	179 - 215

*) can be used only in bulkhead mounting housings

insert centre distance:
44 x 27 mm

bulkhead mounting housings with single lever



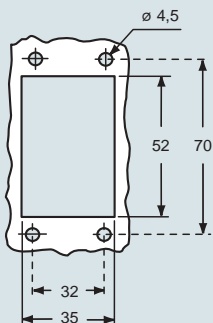
bulkhead mounting housings with 2 pegs



description	part No.	part No.
with lever	CHI 06 L	
with lever and cover	CHI 06 LS	
with pegs ¹⁾		CHI 06 LC
with pegs and aluminum cover ¹⁾		CHI 06 LCS
with pegs and plastic cover ¹⁾		CHI 06 LCP

¹⁾ may be combined with enclosures:
- CHO/CHV 06 LX
- CHO/CHV 06 LX

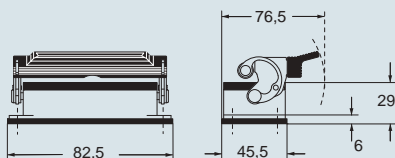
panel cut-out for bulkhead mounting housings in mm



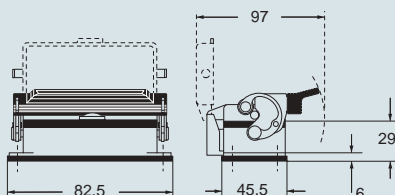
NB:
The enclosures ensure IP66 protection (or IP65 for hinged cover versions) rating when mated and locked with the closing levers.
The cover (CS, CP) only ensures mechanical protection, but does not ensure IP65 protection rating.

dimensions in mm

CHI L

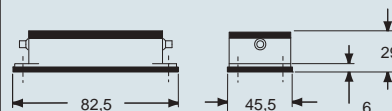


CHI LS

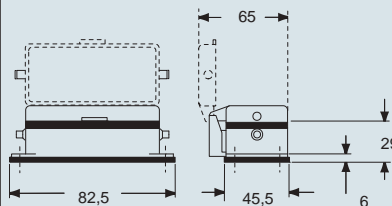


dimensions in mm

CHI LC



CHI LCS/LCP



CALUS® Type 4/4X/12
(except enclosures with plastic cover)



dimensions shown are not binding and may be changed without notice

C-TYPE - size 44.27



inserts:	page:
CDD 24 poles + ⊕	67
CDS 9 poles + ⊕	78
CSH 6 poles + ⊕	91
CNE, CSE 6 poles + ⊕	104
CCE 6 poles + ⊕	110
CSS 6 poles + ⊕	122
CQE 10 poles + ⊕	138
MIXO 2 modules	179 - 215

insert centre distance:
44 x 27 mm

surface mounting housings with single lever



angled surface mounting housings with single lever



description	part No.	entry Pg	part No.	entry M	part No.	entry M
with lever	CHP 06 L	16	MHP 06 L20	20		
with lever	CHP 06 L2	16 x 2	MHP 06 L220	20 x 2		
with lever, high construction	CAP 06 L	21	MAP 06 L32	32		
with lever, high construction	CAP 06 L2	21 x 2	MAP 06 L232	32 x 2		
with lever, high construction	CAP 06 L29	29	MAP 06 L40	40		
with lever, high construction	CAP 06 L229	29 x 2	MAP 06 L240	40 x 2		
with lever and cover	CHP 06 LS	16	MHP 06 LS20	20		
with lever and cover	CHP 06 LS2	16 x 2	MHP 06 LS220	20 x 2		
with lever and cover, high construction	CAP 06 LS	21	MAP 06 LS32	32		
with lever and cover, high construction	CAP 06 LS2	21 x 2	MAP 06 LS232	32 x 2		
with lever and cover, high construction	CAP 06 LS29	29	MAP 06 LS40	40		
with lever and cover, high construction	CAP 06 LS229	29 x 2	MAP 06 LS240	40 x 2		

with lever, cable gland entry, closed bulkhead *

MAV 06LG25-F M25

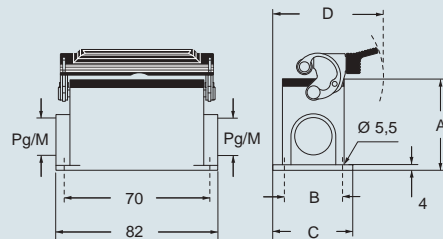
* - be used only with a complete cable gland (to be purchased separately)

dimensions in mm

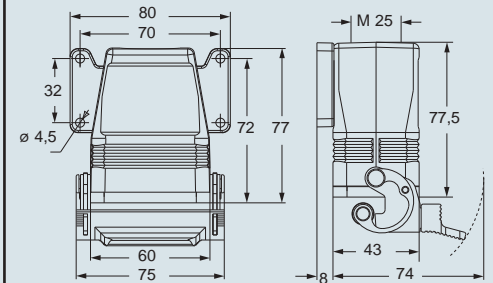
dimensions in mm

- versions with M32 , Pg 21 or Pg 29 entry on request

CHP L - CAP L and MHP L - MAP L

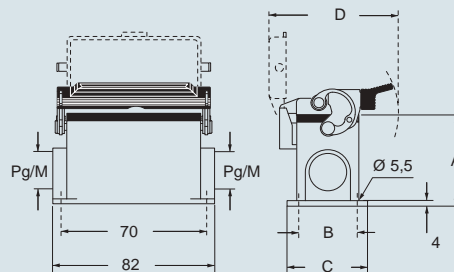


MAV 06LG25-F



NB:
The enclosures ensure IP66 protection (or IP65 for hinged cover versions) rating when mated and locked with the closing levers.
The cover (CS, CP) only ensures mechanical protection, but does not ensure IP65 protection rating.

CHP LS - CAP LS and MHP LS - MAP LS



CALUS® Type 4/4X/12



type	A	B	C	D
CHP L / MHP L	53	40	52	73,5
CAP L / MAP L	74	45	57	82
CHP LS / MHP LS	53	40	52	97
CAP LS / MAP LS	74	45	57	97

dimensions shown are not binding and may be changed without notice

C-TYPE - size 44.27



inserts:	page:
CDD 24 poles + ⊕	67
CDS 9 poles + ⊕	78
CSH 6 poles + ⊕	91
CNE, CSE 6 poles + ⊕	104
CCE 6 poles + ⊕	110
CSS 6 poles + ⊕	122
CQE 10 poles + ⊕	138
MIXO 2 modules	179 - 215

insert centre distance:
44 x 27 mm

hoods with 2 pegs



hoods with 1 lever



description	part No.		part No.		part No.		part No.	
		entry Pg		entry M		entry Pg		entry M
with pegs, side entry	CHO 06 L13	13.5	MHO 06 L20	20				
with pegs, side entry	CHO 06 L16	16	MHO 06 L25	25				
with pegs, side entry, high construction	CAO 06 L21	21	MAO 06 L25	25				
with pegs, side entry, high construction	CAO 06 L29	29	MAO 06 L32	32				
with pegs, side entry, high construction, without adaptor *	CFO 06 L21	21	MFO 06 L25	25				
with pegs, side entry, high construction, without adaptor *	CFO 06 L29	29	MFO 06 L32	32				
with pegs, top entry	CHV 06 L13 ¹⁾	13.5	MHV 06 L20 ¹⁾	20				
with pegs, top entry	CHV 06 L16 ¹⁾	16	MHV 06 L25 ¹⁾	25				
with pegs, top entry, high construction	CAV 06 L21	21	MAV 06 L25	25				
with pegs, top entry, high construction	CAV 06 L29	29	MAV 06 L32	32				
with pegs, top entry, high construction, without adaptor *	CFV 06 L21	21	MFV 06 L25	25				
with pegs, top entry, high construction, without adaptor *	CFV 06 L29	29	MFV 06 L32	32				
with lever, top entry					CHV 06 LG	16	MHV 06 LG25	25
with lever, top entry, high construction					CAV 06 LG21	21	MAV 06 LG25	25
with lever, top entry, high construction					CAV 06 LG29	29	MAV 06 LG32	32
with lever, top entry, high construction, without adaptor *					CFV 06 LG21	21	MFV 06 LG25	25
with lever, top entry, high construction, without adaptor *					CFV 06 LG29	29	MFV 06 LG32	32

* enclosure without adaptor, threaded on the body, to be used only with a complete cable gland.

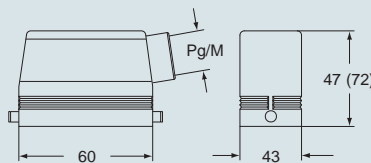
¹⁾ cannot be used with MIXO series

alternatively, hoods with pegs are coupled with fixed enclosures:

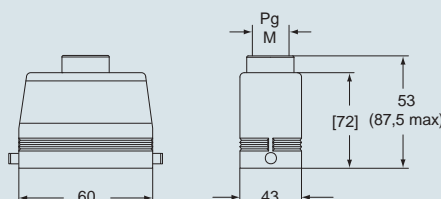
- C7, IP67 stainless steel lever, page 274
- CV, IP66 stainless steel lever, page 280 and 284

dimensions in mm

CHO L (CAO L) and (CFO L)
MHO L (MAO L) and (MFO L)

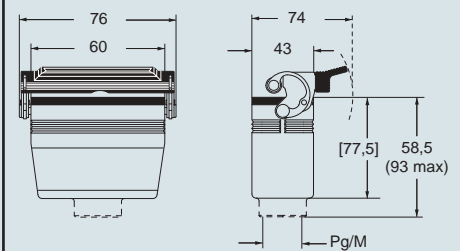


CHV L (CAV L) and [CFV L]
MHV L (MAV L) and [MFV L]



dimensions in mm

CHV LG (CAV LG) and [CFV LG]
MHV LG (MAV LG) and [MFV LG]



CALUS Type 4/4X/12



according to the type of lever

dimensions shown are not binding and may be changed without notice

C-TYPE - size 44.27



inserts:	page:
CDD 24 poles + ⊕	67
CDS 9 poles + ⊕	78
CSH 6 poles + ⊕	91
CNE, CSE 6 poles + ⊕	104
CCE 6 poles + ⊕	110
CSS 6 poles + ⊕	122
CQE 10 poles + ⊕	138
MIXO 2 modules	179 - 215

insert centre distance:
44 x 27 mm

hoods with 1 lever



covers

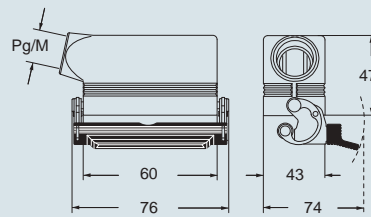


description	part No.		part No.		part No. (with eyelet)	part No. (with loop)
	entry Pg	entry M	entry Pg	entry M		
with lever, without gasket, side entry ^{1) 3)}	CHO 06 LX16	16	MHO 06 LX20	20		
with lever, without gasket, side entry ^{1) 3)}			MHO 06 LX25	25		
with lever, without gasket, top entry ^{1) 3)}	CHV 06 LX16	16	MHV 06 LX20	20		
with lever, without gasket, top entry ^{1) 3)}			MHV 06 LX25	25		
with lever (for hoods with pegs)						CHC 06 LG
with pegs (for enclosures with lever)					CHC 06 L	CHC 06 SL
with pegs and gasket (for hoods with lever) ²⁾						CHC 06 LC

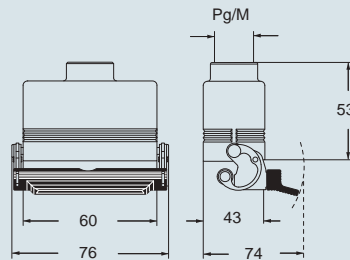
¹⁾ may be combined with enclosures: CHI 06 LCS/LCP/LC
²⁾ may be combined with enclosures:
 - CHO/CHV 06 LX
 - CHO/CHV 06 LX
³⁾ cannot be used with MIXO inserts

dimensions in mm

CHO LX and MHO LX

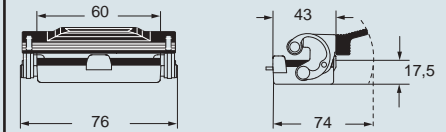


CHV LX and MHV LX



dimensions in mm

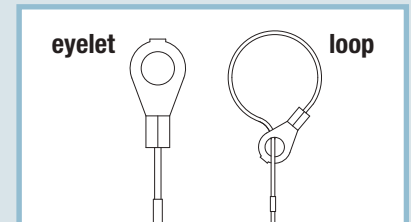
CHC LG



CHC L (SL)



CHC LC



CALUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

C-TYPE - size 44.27



inserts:	page:
CDD 42 poles + ⊕	69
CDS 18 poles + ⊕	79
CSH 10 poles + ⊕	92
CNE, CSE 10 poles + ⊕	105
CCE 10 poles + ⊕	111
CSS 10 poles + ⊕	123
CT, CTSE (16A) * .. 10 poles + ⊕	131
CQE 18 poles + ⊕	139
CMCE 3+2 (aux) poles + ⊕	148
CMSH 3+2 (aux) poles + ⊕	149
CX 8/24 poles + ⊕	169
MIXO 3 modules	179 - 215

*) can be used only in bulkhead mounting housings

insert centre distance:
57 x 27 mm

bulkhead mounting housings with 2 levers or 4 pegs



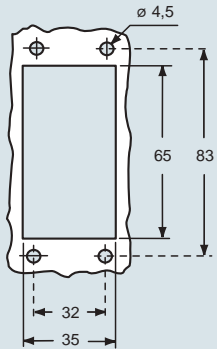
bulkhead mounting housings with single lever



description	part No.	part No.
with one or two levers	CHI 10	CHI 10 L
with pegs ¹⁾	CHI 10 C	
with pegs and aluminum cover ¹⁾	CHI 10 CS	
with pegs and plastic cover ¹⁾	CHI 10 CP	
with lever and cover.		CHI 10 LS

¹⁾ may be combined with enclosures:
- CHO/CAO 10 X and CHV/CAV 10 X
- MHO/MAO 10 X and MHV/MAV 10 X

panel cut-out for bulkhead mounting housings in mm



NB:
The enclosures ensure IP66 protection (or IP65 for hinged cover versions) rating when mated and locked with the closing levers.
The cover (CS, CP) only ensures mechanical protection, but does not ensure IP65 protection rating.

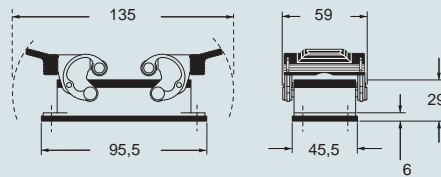
CALUS® Type 4/4X/12
(except enclosures with plastic cover)



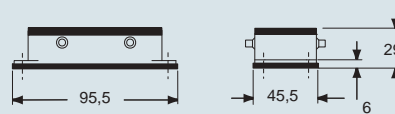
dimensions shown are not binding and may be changed without notice

dimensions in mm

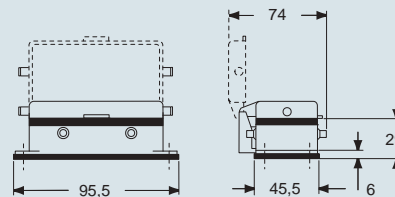
CHI



CHI C

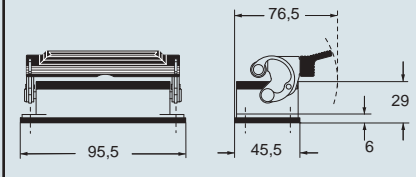


CHI CS/CP

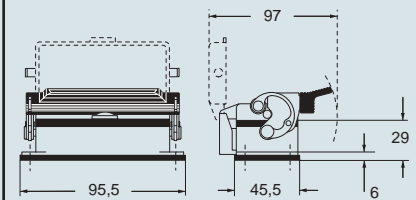


dimensions in mm

CHI L



CHI LS



ANGLED VERSION



page 469

C-TYPE - size 57.27



inserts:	page:
CDD 42 poles + ⊕	69
CDS 18 poles + ⊕	79
CSH 10 poles + ⊕	92
CNE, CSE 10 poles + ⊕	105
CCE 10 poles + ⊕	111
CSS 10 poles + ⊕	123
CQE 18 poles + ⊕	139
CMCE 3+2 (aux) poles + ⊕	148
CMSH 3+2 (aux) poles + ⊕	149
CX 8/24 poles + ⊕	169
MIXO 3 modules	179 - 215

insert centre distance:
57 x 27 mm

surface mounting housings with 2 levers or 4 pegs



surface mounting housings with single lever



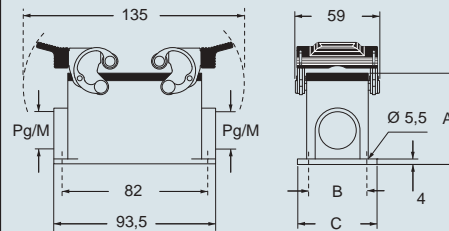
description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
with levers	CHP 10	16	MHP 10.20	20	CHP 10 L	16	MHP 10 L20	20
with levers	CHP 10.2	16 x 2	MHP 10.220	20 x 2	CHP 10 L2	16 x 2	MHP 10 L220	20 x 2
with levers, high construction	CAP 10.21	21	MAP 10.32	32	CAP 10 L	21	MAP 10 L32	32
with levers, high construction	CAP 10.221	21 x 2	MAP 10.232	32 x 2	CAP 10 L2	21 x 2	MAP 10 L232	32 x 2
with levers, high construction	CAP 10.29	29	MAP 10.40	40	CAP 10 L29	29	MAP 10 L40	40
with levers, high construction	CAP 10.229	29 x 2	MAP 10.240	40 x 2	CAP 10 L229	29 x 2	MAP 10 L240	40 x 2
with pegs and aluminum cover ¹⁾	CHP 10 CS	16	MHP 10 CS20	20				
with pegs and aluminum cover ¹⁾	CHP 10 CS2	16 x 2	MHP 10 CS220	20 x 2				
with pegs and aluminum cover, high construction ¹⁾	CAP 10 CS	21	MAP 10 CS32	32				
with pegs and aluminum cover, high construction ¹⁾	CAP 10 CS2	21 x 2	MAP 10 CS232	32 x 2				
with pegs and aluminum cover, high construction ¹⁾	CAP 10 CS29	29	MAP 10 CS40	40				
with pegs and aluminum cover, high construction ¹⁾	CAP 10 CS229	29 x 2	MAP 10 CS240	40 x 2				
with pegs and plastic cover ¹⁾	CHP 10 CP	16	MHP 10 CP20	20				
with pegs and plastic cover ¹⁾	CHP 10 CP2	16 x 2	MHP 10 CP220	20 x 2				
with pegs and plastic cover, high construction ¹⁾	CAP 10 CP	21	MAP 10 CP32	32				
with pegs and plastic cover, high construction ¹⁾	CAP 10 CP2	21 x 2	MAP 10 CP232	32 x 2				
with pegs and plastic cover, high construction ¹⁾	CAP 10 CP29	29	MAP 10 CP40	40				
with pegs and plastic cover, high construction ¹⁾	CAP 10 CP229	29 x 2	MAP 10 CP240	40 x 2				
with lever and cover					CHP 10 LS	16	MHP 10 LS20	20
with lever and cover					CHP 10 LS2	16 x 2	MHP 10 LS220	20 x 2
with lever and cover, high construction					CAP 10 LS	21	MAP 10 LS32	32
with lever and cover, high construction					CAP 10 LS2	21 x 2	MAP 10 LS232	32 x 2
with lever and cover, high construction					CAP 10 LS29	29	MAP 10 LS40	40
with lever and cover, high construction					CAP 10 LS229	29 x 2	MAP 10 LS240	40 x 2

¹⁾ may be combined with enclosures:
- CHO/CAO 10 X and CHV/CAV 10 X
- MHO/MAO 10 X and MHV/MAV 10 X

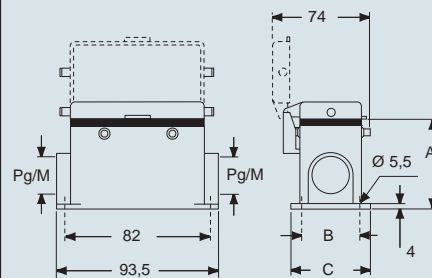
NB:
The enclosures ensure IP66 protection (or IP65 for hinged cover versions) rating when mated and locked with the closing levers.
The cover (CS, CP) only ensures mechanical protection, but does not ensure IP65 protection rating.

dimensions in mm

CHP - CAP and MHP - MAP



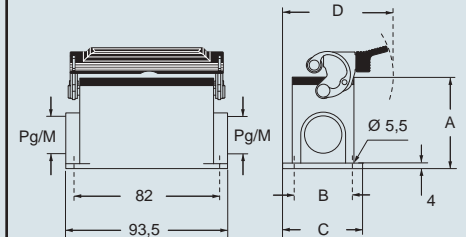
CHP CS/CP - CAP CS/CP and MHP CS/CP - MAP CS/CP



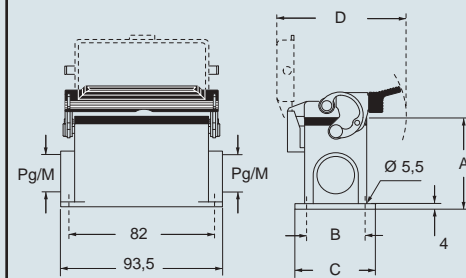
type	A	B	C
CHP / MHP	57	40	52
CAP / MAP	74	45	57
CHP CS / MHP CS	57	40	52
CAP CS / MAP CS	74	45	57
CHP CP / MHP CP	57	40	52
CAP CP / MAP CP	74	45	57

dimensions in mm

CHP L - CAP L and MHP L - MAP L



CHP LS - CAP LS and MHP LS - MAP LS



type	A	B	C	D
CHP L / MHP L	57	40	52	79,5
CAP L / MAP L	74	45	57	82
CHP LS / MHP LS	57	40	52	97
CAP LS / MAP LS	74	45	57	97

CALUS® Type 4/4X/12
(except enclosures with plastic cover)



dimensions shown are not binding and may be changed without notice



inserts:	page:
CDD 42 poles + ⊕	69
CDS 18 poles + ⊕	79
CSH 10 poles + ⊕	92
CNE, CSE 10 poles + ⊕	105
CCE 10 poles + ⊕	111
CSS 10 poles + ⊕	123
CQE 18 poles + ⊕	139
CMCE 3+2 (aux) poles + ⊕	148
CMSH 3+2 (aux) poles + ⊕	149
CX 8/24 poles + ⊕	169
MIXO 3 modules	179 - 215

insert centre distance:
57 x 27 mm

hoods with 4 pegs



hoods with 2 pegs



description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
with pegs, side entry	CHO 10	16	MHO 10.20	20	CHO 10 L	16	MHO 10 L20	20
with pegs, side entry			MHO 10.25	25			MHO 10 L25	25
with pegs, side entry, high construction	CAO 10.21	21	MAO 10.32	32	CAO 10 L21	21	MAO 10 L32	32
with pegs, side entry, high construction	CAO 10.29	29	MAO 10.40	40	CAO 10 L29	29	MAO 10 L40	40
with pegs, top entry	CHV 10	16	MHV 10.20 **	20	CHV 10 L	16	MHV 10 L20 **	20
with pegs, top entry			MHV 10.25	25			MHV 10 L25	25
with pegs, top entry, high construction	CAV 10.21	21	MAV 10.32	32	CAV 10 L21	21	MAV 10 L32	32
with pegs, top entry, high construction	CAV 10.29	29	MAV 10.40	40	CAV 10 L29	29	MAV 10 L40	40
with pegs, frontal entry, high construction	CAF 10	16	MAF 10.20	20				
with pegs, frontal entry, high constr., without adaptor *	CFF 10	16	MFF 10.20	20				

* enclosure without adaptor, threaded on the body, to be used only with a complete cable gland.

** can only be used with a complete cable gland (to be purchased separately)

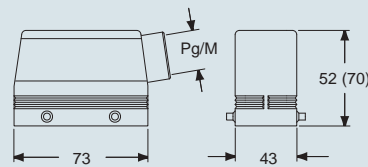
dimensions in mm

dimensions in mm

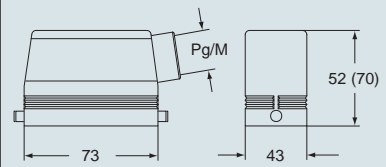
alternatively, hoods with pegs are coupled with fixed enclosures:

- C7, IP67 stainless steel lever, page 275
- CV, IP66 stainless steel lever, page 281 and 288

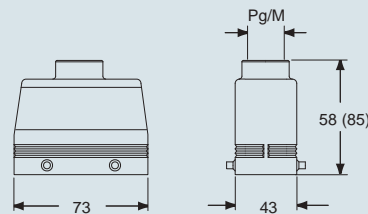
CHO (CAO) and MHO (MAO)



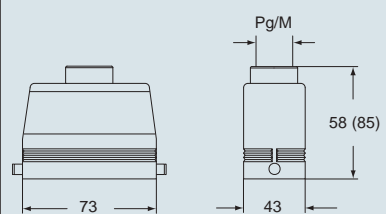
CHO L (CAO L) and MHO L (MAO L)



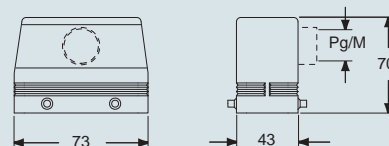
CHV (CAV) and MHV (MAV)



CHV L (CAV L) and MHV L (MAV L)



CAF/CFF and MAF/MFF



CALUS® Type 4/4X/12



according to the type of lever

dimensions shown are not binding and may be changed without notice

C-TYPE - size 57.27



inserts:	page:
CDD 42 poles + ⊕	69
CDS 18 poles + ⊕	79
CSH 10 poles + ⊕	92
CNE, CSE 10 poles + ⊕	105
CCE 10 poles + ⊕	111
CSS 10 poles + ⊕	123
CQE 18 poles + ⊕	139
CMCE 3+2 (aux) poles + ⊕	148
CMSH 3+2 (aux) poles + ⊕	149
CX 8/24 poles + ⊕	169
MIXO 3 modules	179 - 215

insert centre distance:
57 x 27 mm

hoods with double top entry

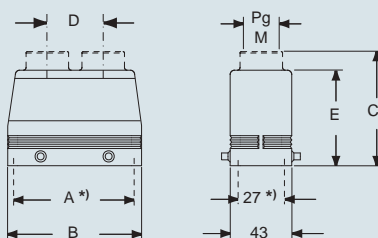


description	part No.	entry Pg	part No.	entry M
	with pegs for two levers - used with enclosures size "57.27"	CAV 10.213	13,5 x 2	MAV 10.220
with pegs for 2 lever, without adaptor * - used with enclosures size "57.27"	CFV 10.213	13,5 x 2	MFV 10.220	20 x 2

* enclosure without adaptor, threaded on the body, to be used only with a complete cable gland.

dimensions in mm

CAV/CFV and MAV/MFV



alternatively, hoods with pegs are coupled with fixed enclosures:

- C7, IP67 stainless steel lever, page 275
- CV, IP66 stainless steel lever, page 281 and 288

part No.	A *)	B	C	D	E
CAV 10.213	57	73	82 (84,5)	26 (28,5)	70
MAV 10.220	57	73	—	28,5 (26)	70

*) screw fixing centre distance

CAVUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

C-TYPE - size 57.27



inserts:	page:
CDD 42 poles + ⊕	69
CDS 18 poles + ⊕	79
CSH 10 poles + ⊕	92
CNE, CSE 10 poles + ⊕	105
CCE 10 poles + ⊕	111
CSS 10 poles + ⊕	123
CQE 18 poles + ⊕	139
CMCE 3+2 (aux) poles + ⊕	148
CMSH 3+2 (aux) poles + ⊕	149
CX 8/24 poles + ⊕	169
MIXO 3 modules	179 - 215

insert centre distance:
57 x 27 mm

hoods with 2 levers



hoods with 1 lever

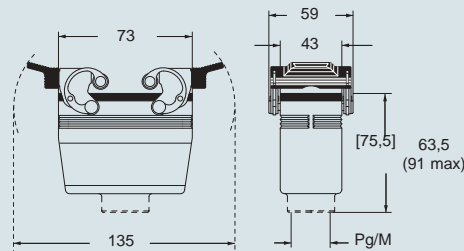


description	part No.		entry Pg		part No.		entry M	
with levers and gasket, top entry	CHV 10 G	16	MHV 10 G25	25	CHV 10 LG	16	MHV 10 LG25	25
with levers and gasket, top entry, high construction	CAV 10 G	21	MAV 10 G25	25	CAV 10 LG21	21	MAV 10 LG25	25
with levers and gasket, top entry, high construction	CAV 10 G29	29	MAV 10 G32	32	CAV 10 LG29	29	MAV 10 LG32	32
with levers and gasket, top entry, high, without adapter *	CFV 10 G	21	MFV 10 G25	25	CFV 10 LG21	21	MFV 10 LG25	25
with levers and gasket, top entry, high, without adapter *	CFV 10 G29	29	MFV 10 G32	32	CFV 10 LG29	29	MFV 10 LG32	32

* enclosure without adaptor, threaded on the body, to be used only with a complete cable gland.

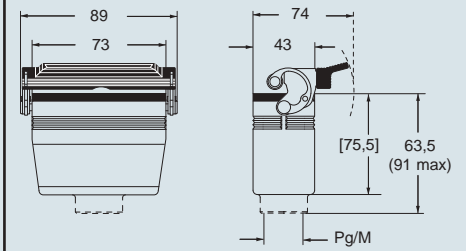
dimensions in mm

CHV G (CAV G) and [CFV G],
MHV G (MAV G) and [MFV G]



dimensions in mm

CHV LG (CAV LG) and [CFV LG],
MHV LG (MAV LG) and [MFV LG]



CAIUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

C-TYPE - size 57.27



inserts:	page:
CDD 42 poles + ⊕	69
CDS 18 poles + ⊕	79
CSH 10 poles + ⊕	92
CNE, CSE 10 poles + ⊕	105
CCE 10 poles + ⊕	111
CSS 10 poles + ⊕	123
CQE 18 poles + ⊕	139
CMCE 3+2 (aux) poles + ⊕	148
CMSH 3+2 (aux) poles + ⊕	149
CX 8/24 poles + ⊕	169
MIXO 3 modules	179 - 215

insert centre distance:
57 x 27 mm

hoods with 2 levers



covers

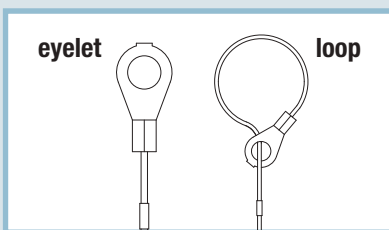


description	part No.	entry Pg	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with levers, side entry ¹⁾	CHO 10 X	16	MHO 10 X20	20		
with levers, side entry ¹⁾			MHO 10 X25	25		
with levers, side entry, high construction ¹⁾	CAO 10 X	21	MAO 10 X32	32		
with levers, side entry, high construction ¹⁾	CAO 10 X29	29	MAO 10 X40	40		
with levers, top entry ¹⁾	CHV 10 X	16	MHV 10 X20 **	20		
with levers, top entry ¹⁾			MHV 10 X25	25		
with levers, top entry, high construction ¹⁾	CAV 10 X	21	MAV 10 X32	32		
with levers, top entry, high construction ¹⁾	CAV 10 X29	29	MAV 10 X40	40		
with 4 pegs (for enclosures with 2 levers with gasket)					CHC 10	CHC 10 S
with 4 pegs and gasket (for enclosures with 2 levers) ²⁾					CHC 10 L	CHC 10 C
with 2 pegs (for enclosures with 1 lever with gasket)						CHC 10 SL
with 2 levers (for hoods with 4 pegs)						CHC 10 G
with 1 lever (for hoods with 2 pegs)						CHC 10 LG

¹⁾ may be combined with enclosures:
- CHI/CHP/CAP 10 CS/CP/C
- MHP/MAP 10 CS/CP

** can only be used with a complete cable gland (to be purchased separately)

²⁾ may be combined with enclosures:
- CHO/CAO 10 X and CHV/CAV 10 X
- MHO/MAO 10 X and MHV/MAV 10 X



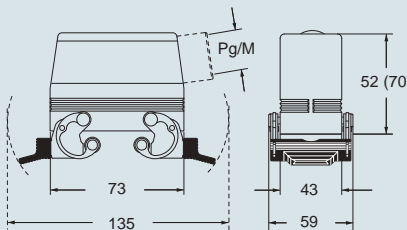
CALUS Type 4/4X/12



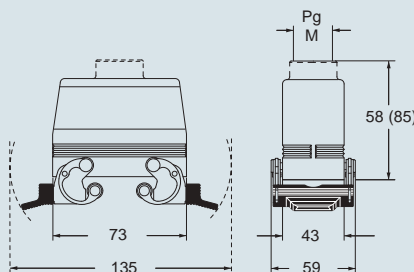
dimensions shown are not binding and may be changed without notice

dimensions in mm

CHO X (CAO X) and MHO X (MAO X)

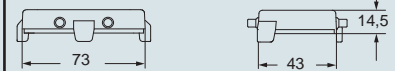


CHV X (CAV X) and MHV X (MAV X)

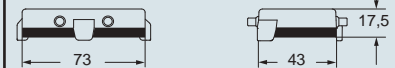


dimensions in mm

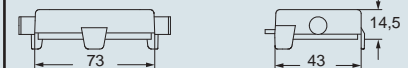
CHC (S)



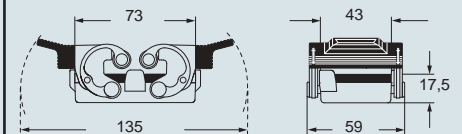
CHC C



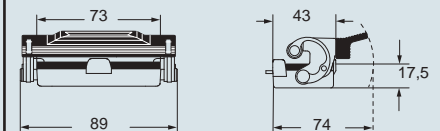
CHC L (SL)



CHC G



CHC LG





inserts:		page:
CD	40 poles + ⊕	57
CT, CTS (10A) *	40 poles + ⊕	64
CDD	72 poles + ⊕	70
CDS	27 poles + ⊕	80
CSH	16 poles + ⊕	93
CNE, CSE	16 poles + ⊕	106
CCE	16 poles + ⊕	112
CSS	16 poles + ⊕	124
CT, CTSE (16A) *	16 poles + ⊕	132
CQE	32 poles + ⊕	140
CQEE	40 poles + ⊕	146
CMCE, CMSH 6+2 (aux)	poles + ⊕	150-151
CP	6 poles + ⊕	162
CX	6/36 and 12/2 poles + ⊕	170-171
CX	4/0 and 4/2 poles + ⊕	172
MIXO	4 modules	179-215

*) can be used only in bulkhead mounting housings

insert centre distance: 77,5 x 27 mm

bulkhead mounting housings with 2 levers or 4 pegs



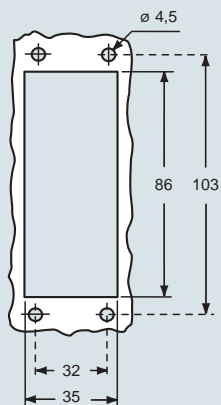
bulkhead mounting housings with single lever



description	part No.	part No.
with one or two levers	CHI 16	CHI 16 L
with pegs ¹⁾	CHI 16 C	
with pegs and aluminum cover ¹⁾	CHI 16 CS	
with pegs and plastic cover ¹⁾	CHI 16 CP	
with lever and cover		CHI 16 LS

¹⁾ may be combined with enclosures:
 - CHO/CAO 16 X and CHV/CAV 16 X
 - MHO/MAO 16 X and MHV/MAV 16 X

panel cut-out for bulkhead mounting housings in mm



NB:
 The enclosures ensure IP66 protection (or IP65 for hinged cover versions) rating when mated and locked with the closing levers.
 The cover (CS, CP) only ensures mechanical protection, but does not ensure IP65 protection rating.

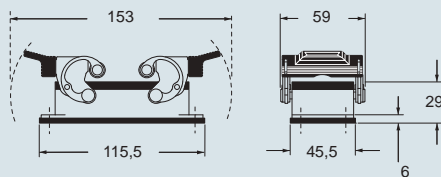
CALUS® Type 4/4X/12
 (except enclosures with plastic cover)



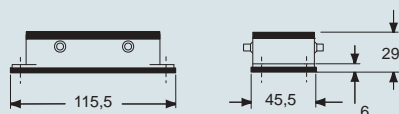
dimensions shown are not binding and may be changed without notice

dimensions in mm

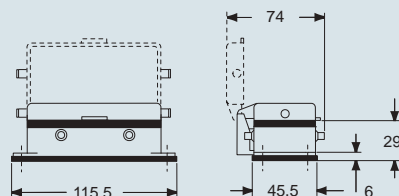
CHI



CHI C

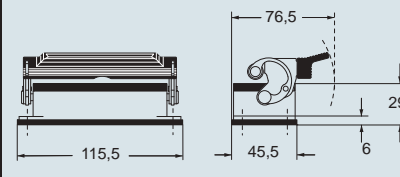


CHI CS/CP

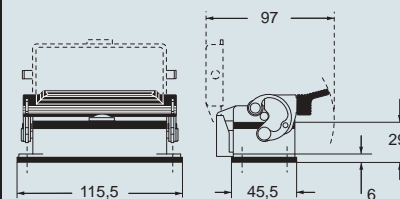


dimensions in mm

CHI L



CHI LS



C-TYPE - size 77.27



inserts:	page:
CD 40 poles + ⊕	57
CDD 72 poles + ⊕	70
CDS 27 poles + ⊕	80
CSH 16 poles + ⊕	93
CNE, CSE 16 poles + ⊕	106
CCE 16 poles + ⊕	112
CSS 16 poles + ⊕	124
CQE 32 poles + ⊕	140
CQEE 40 poles + ⊕	146
CMCE, CMSH 6+2 (aux)	150-151
CP 6 poles + ⊕	162
CX 6/36 and 12/2 poles + ⊕	170-171
CX 4/0 and 4/2 poles + ⊕	172
MIXO 4 modules	179-215

insert centre distance:
77,5 x 27 mm

hoods with 4 pegs



hoods with 2 pegs



description	part No.		part No.		part No.		part No.	
		entry Pg		entry M		entry Pg		entry M
with pegs, side entry	CHO 16	21	MHO 16.25	25	CHO 16 L	21	MHO 16 L25	25
with pegs, side entry			MHO 16.32	32			MHO 16 L32	32
with pegs, side entry, high construction	CAO 16.21	21	MAO 16.32	32	CAO 16 L21	21	MAO 16 L32	32
with pegs, side entry, high construction	CAO 16.29	29	MAO 16.40	40	CAO 16 L29	29	MAO 16 L40	40
with pegs, top entry	CHV 16	21	MHV 16.25 **	25	CHV 16 L	21	MHV 16 L25	25
with pegs, top entry			MHV 16.32	32			MHV 16 L32	32
with pegs, top entry, high construction	CAV 16.21	21	MAV 16.32	32	CAV 16 L21	21	MAV 16 L32	32
with pegs, top entry, high construction	CAV 16.29	29	MAV 16.40	40	CAV 16 L29	29	MAV 16 L40	40
with pegs, frontal entry, high construction	CAF 16	21	MAF 16.25	25				
with pegs, frontal entry, high constr., without adaptor *	CFF 16	21	MFF 16.25	25				

* enclosure without adaptor, threaded on the body, to be used only with a complete cable gland.

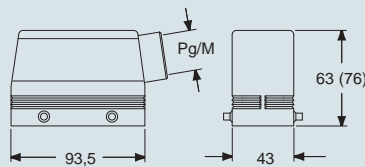
** can only be used with a complete cable gland (to be purchased separately)

dimensions in mm

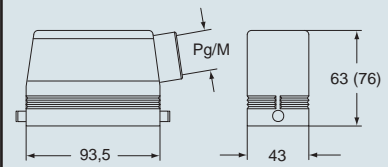
dimensions in mm

alternatively, hoods with pegs are coupled with fixed enclosures:
- C7, IP67 stainless steel lever, page 276
- CV, IP66 stainless steel lever, page 282 and 292

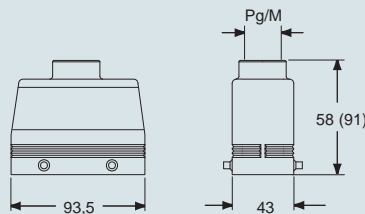
CHO (CAO) and MHO (MAO)



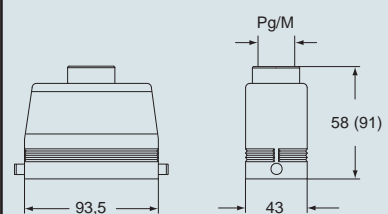
CHO L (CAO L) and MHO L (MAO L)



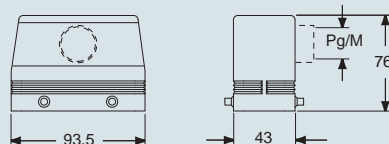
CHV (CAV) and MHV (MAV)



CHV L (CAV L) and MHV L (MAV L)



CAF/CFF and MAF/MFF



CAIUS Type 4/4X/12



according to the type of lever

dimensions shown are not binding and may be changed without notice

C-TYPE - size 77.27



inserts:	page:
CD 40 poles + ⊕	57
CDD 72 poles + ⊕	70
CDS 27 poles + ⊕	80
CSH 16 poles + ⊕	93
CNE, CSE 16 poles + ⊕	106
CCE 16 poles + ⊕	112
CSS 16 poles + ⊕	124
CQE 32 poles + ⊕	140
CQEE 40 poles + ⊕	146
CMCE, CMSH 6+2 (aux)	150-151
CP 6 poles + ⊕	162
CX 6/36 and 12/2 poles + ⊕	170-171
CX 4/0 and 4/2 poles + ⊕	172
MIXO 4 modules	179-215

insert centre distance:
77,5 x 27 mm

hoods with double top entry



hoods with double front entry

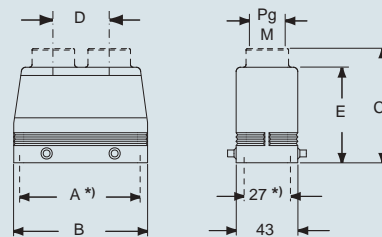


description	part No.		entry Pg		part No.		entry M	
with pegs for two levers - used with enclosures size "77.27" - used with enclosures size "77.27"	CAV 16.216	16 x 2	MAV 16.220	20 x 2				
	CAV 16.221	21 x 2	MAV 16.225	25 x 2				
with pegs for 2 lever, without adaptor * - used with enclosures size "77.27" - used with enclosures size "77.27"	CFV 16.216	16 x 2	MFV 16.220	20 x 2				
	CFV 16.221	21 x 2	MFV 16.225	25 x 2				
with pegs for two levers - used with enclosures size "77.27"					CAF 16.221	21 x 2	MAF 16.225	25 x 2
with pegs for 2 lever, without adaptor * - used with enclosures size "77.27"					CFF 16.221	21 x 2	MFF 16.225	25 x 2

* enclosure without adaptor, threaded on the body, to be used only with a complete cable gland.

dimensions in mm

CAV/CFV and MAV/MFV

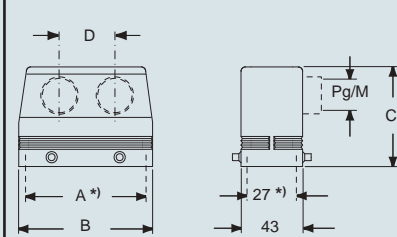


part No.	A *)	B	C	D	E
CAV 16.216/MAV 16.220	77,5	93,5	89 (90,5)	35 (30)	76
CAV 16.221/MAV 16.225	77,5	93,5	90,5	40	76
CFV 16.216/MFV 16.220	77,5	93,5	—	30 (35)	76
CFV 16.221/MFV 16.225	77,5	93,5	—	40	76

*) screw fixing centre distance

dimensions in mm

CAF/CFF and MAF/MFF



part No.	A *)	B	C	D
CAF/CFF 16.221 / MAF/MFF 16.225	77,5	93,5	76	40

*) screw fixing centre distance

alternatively, hoods with pegs are coupled with fixed enclosures:
- C7, IP67 stainless steel lever, page 276
- CV, IP66 stainless steel lever, page 282 and 292

CAI[®] US Type 4/4X/12



dimensions shown are not binding and may be changed without notice

C-TYPE - size 77.27



inserts:		page:
CD	40 poles + ⊕	57
CDD	72 poles + ⊕	70
CDS	27 poles + ⊕	80
CSH	16 poles + ⊕	93
CNE, CSE	16 poles + ⊕	106
CCE	16 poles + ⊕	112
CSS	16 poles + ⊕	124
CQE	32 poles + ⊕	140
CQEE	40 poles + ⊕	146
CMCE, CMSH 6+2 (aux)	poles + ⊕	150-151
CP	6 poles + ⊕	162
CX	6/36 and 12/2 poles + ⊕	170-171
CX	4/0 and 4/2 poles + ⊕	172
MIXO	4 modules	179-215

insert centre distance:
77,5 x 27 mm

inclined hoods for 2 levers with side entry



inclined hoods for 2 levers with top entry

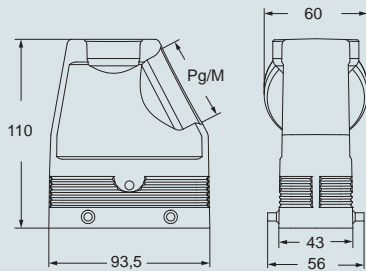


description	part No.		entry		part No.		entry	
			Pg	M			Pg	M
used with enclosures size "77.27" - with pegs for two levers, side entry - with pegs for two levers, side entry	CIO 16.36	36	MIO 16.40	40				
			MIO 16.50	50				
used with enclosures size "77.27" - with pegs for two levers, top entry	CIV 16.29	29			MIV 16.40	40		

alternatively, hoods with pegs are coupled with fixed enclosures:
- C7, IP67 stainless steel lever, page 276
- CV, IP66 stainless steel lever, page 282 and 292

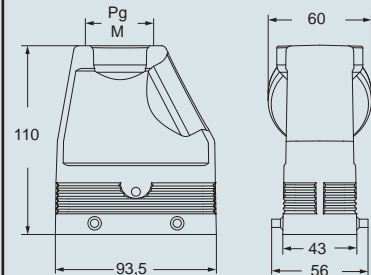
dimensions in mm

CIO and MIO



dimensions in mm

CIV and MIV



according to the type of lever

dimensions shown are not binding
and may be changed without notice

C-TYPE - size 77.27



inserts:	page:
CD 40 poles + ⊕	57
CDD 72 poles + ⊕	70
CDS 27 poles + ⊕	80
CSH 16 poles + ⊕	93
CNE, CSE 16 poles + ⊕	106
CCE 16 poles + ⊕	112
CSS 16 poles + ⊕	124
CQE 32 poles + ⊕	140
CQEE 40 poles + ⊕	146
CMCE, CMSH 6+2 (aux)	150-151
CP 6 poles + ⊕	162
CX 6/36 and 12/2 poles + ⊕	170-171
CX 4/0 and 4/2 poles + ⊕	172
MIXO 4 modules	179-215

insert centre distance:
77,5 x 27 mm

hoods with 2 levers



hoods with 1 lever

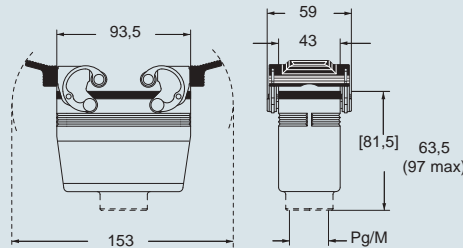


description	part No.		entry Pg		part No.		entry M	
with levers and gasket, top entry	CHV 16 G	21	MHV 16 G32	32	CHV 16 LG	21	MHV 16 LG32	32
with levers and gasket, top entry, high construction	CAV 16 G	21	MAV 16 G25	25	CAV 16 LG21	21	MAV 16 LG25	25
with levers and gasket, top entry, high construction	CAV 16 G29	29	MAV 16 G32	32	CAV 16 LG29	29	MAV 16 LG32	32
with levers and gasket, top entry, high construction			MAV 16 G40	40			MAV 16 LG40	40
with levers and gasket, top entry, high, without adapter *	CFV 16 G	21	MFV 16 G25	25	CFV 16 LG21	21	MFV 16 LG25	25
with levers and gasket, top entry, high, without adapter *	CFV 16 G29	29	MFV 16 G32	32	CFV 16 LG29	29	MFV 16 LG32	32
with levers and gasket, top entry, high, without adapter *			MFV 16 G40	40			MFV 16 LG40	40

* enclosure without adaptor, threaded on the body, to be used only with a complete cable gland.

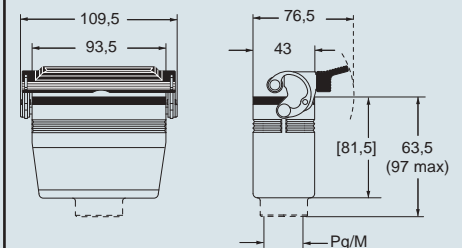
dimensions in mm

CHV G (CAV G) and [CFV G],
MHV G (MAV G) and [MFV G]



dimensions in mm

CHV LG (CAV LG) and [CFV LG],
MHV LG (MAV LG) and [MFV LG]



CAI® Type
US 4/4X/12



dimensions shown are not binding
and may be changed without notice



inserts:	page:
CD 40 poles + ⊕	57
CDD 72 poles + ⊕	70
CDS 27 poles + ⊕	80
CSH 16 poles + ⊕	93
CNE, CSE 16 poles + ⊕	106
CCE 16 poles + ⊕	112
CSS 16 poles + ⊕	124
CQE 32 poles + ⊕	140
CQEE 40 poles + ⊕	146
CMCE, CMSH 6+2 (aux)	150-151
CP 6 poles + ⊕	162
CX 6/36 and 12/2 poles + ⊕	170-171
CX 4/0 and 4/2 poles + ⊕	172
MIXO 4 modules	179-215

insert centre distance:
77,5 x 27 mm

hoods with 2 levers



covers



description	part No.	entry Pg	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with levers, side entry ¹⁾	CHO 16 X	21	MHO 16 X25	25		
with levers, side entry ¹⁾			MHO 16 X32	32		
with levers, side entry, high construction ¹⁾	CAO 16 X	21	MAO 16 X32	32		
with levers, side entry, high construction ¹⁾	CAO 16 X29	29	MAO 16 X40	40		
with levers, top entry ¹⁾	CHV 16 X	21	MHV 16 X25	25		
with levers, top entry ¹⁾			MHV 16 X32	32		
with levers, top entry, high construction ¹⁾	CAV 16 X	21	MAV 16 X32	32		
with levers, top entry, high construction ¹⁾	CAV 16 X29	29	MAV 16 X40	40		
with 4 pegs (for enclosures with 2 levers with gasket)					CHC 16	CHC 16 S
with 4 pegs and gasket (for enclosures with 2 levers) ²⁾					CHC 16 L	CHC 16 C
with 2 pegs (for enclosures with 1 lever with gasket)						CHC 16 SL
with 2 levers (for hoods with 4 pegs)						CHC 16 G
with 1 lever (for hoods with 2 pegs)						CHC 16 LG

¹⁾ may be combined with enclosures:
- CHI/CHP/CAP 16 CS/CP/C
- MHP/MAP 16 CS/CP

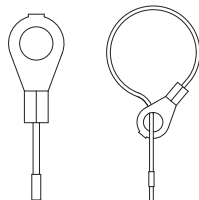
²⁾ may be combined with enclosures:
- CHO/CAO 16 X and CHV/CAV 16 X
- MHO/MAO 16 X and MHV/MAV 16 X

dust protection cover



CHCP 16 page 496

eyelet loop



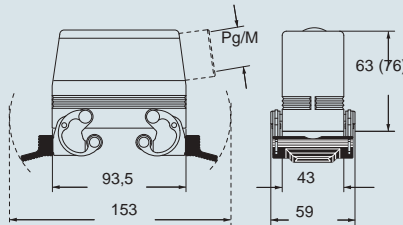
CALUS Type 4/4X/12



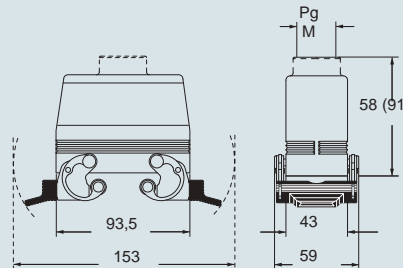
dimensions shown are not binding and may be changed without notice

dimensions in mm

CHO X (CAO X) and MHO X (MAO X)



CHV X (CAV X) and MHV X (MAV X)



dimensions in mm

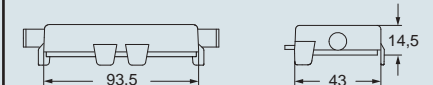
CHC (S)



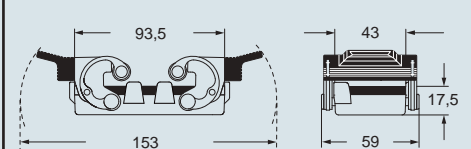
CHC C



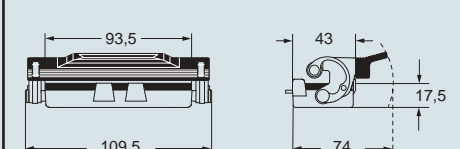
CHC L (SL)



CHC G



CHC LG



C-TYPE - size 77.27





inserts:	page:
CD 64 poles + ⊕	59
CT, CTS (10A) *) 64 poles + ⊕	65
CDD 108 poles + ⊕	72
CDS 42 poles + ⊕	81
CSH 24 poles + ⊕	94
CNE, CSE 24 poles + ⊕	107
CCE 24 poles + ⊕	113
CSS 24 poles + ⊕	125
CT, CTSE (16A) *) 24 poles + ⊕	133
CQE 46 poles + ⊕	141
CQEE 64 poles + ⊕	147
CMCE 10+2 (aux) poles + ⊕	152
CMSH 10+2 (aux) poles + ⊕	153
CX 4/8 and 6/6 poles + ⊕	173 and 175
MIXO 6 modules	179-215

*) can be used only in bulkhead mounting housings

insert centre distance: **104 x 27 mm**

bulkhead mounting housings with 2 levers or 4 pegs



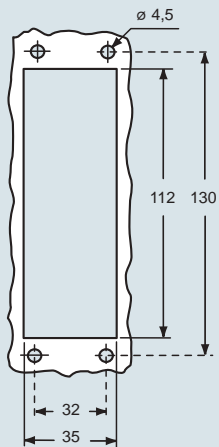
bulkhead mounting housings with single lever



description	part No.	part No.
with one or two levers	CHI 24	CHI 24 L
with pegs ¹⁾	CHI 24 C	
with pegs and aluminum cover ¹⁾	CHI 24 CS	
with pegs and plastic cover ¹⁾	CHI 24 CP	
with lever and cover		CHI 24 LS

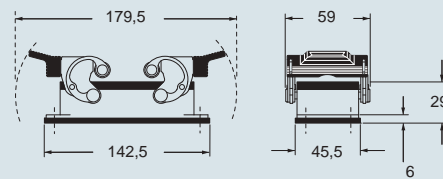
¹⁾ may be combined with enclosures:
 - CHO/CAO 24 X and CHV/CAV 24 X
 - MHO/MAO 24 X and MHV/MAV 24 X

panel cut-out for bulkhead mounting housings in mm

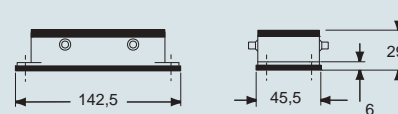


dimensions in mm

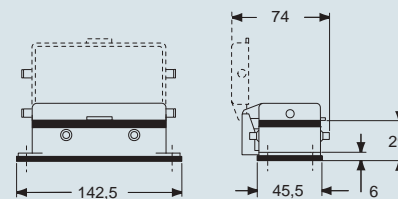
CHI



CHI C

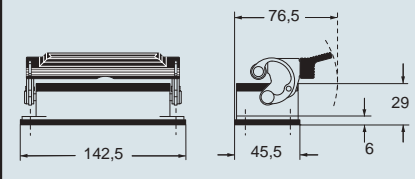


CHI CS/CP

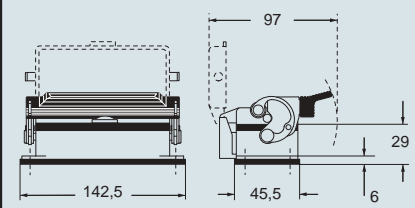


dimensions in mm

CHI L



CHI LS



NB:
 The enclosures ensure IP66 protection (or IP65 for hinged cover versions) rating when mated and locked with the closing levers.
 The cover (CS, CP) only ensures mechanical protection, but does not ensure IP65 protection rating.

CALUS® Type 4/4X/12
 (except enclosures with plastic cover)



dimensions shown are not binding and may be changed without notice

C-TYPE - size 104.27



inserts:	page:
CD 64 poles + ⊕	59
CDD 108 poles + ⊕	72
CDS 42 poles + ⊕	81
CSH 24 poles + ⊕	94
CNE, CSE 24 poles + ⊕	107
CCE 24 poles + ⊕	113
CSS 24 poles + ⊕	125
CQE 46 poles + ⊕	141
CQEE 64 poles + ⊕	147
CMCE 10+2 (aux) poles + ⊕	152
CMSH 10+2 (aux) poles + ⊕	153
CX 4/8 and 6/6 poles + ⊕	173 and 175
MIXO 6 modules	179-215

insert centre distance:
104 x 27 mm

surface mounting housings with 2 levers or 4 pegs



surface mounting housings with single lever

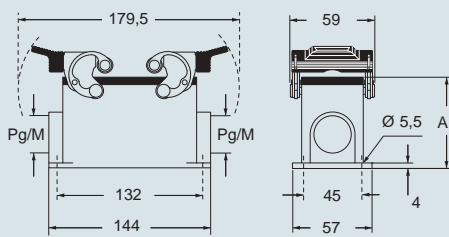


description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
with levers	CHP 24	21	MHP 24.25	25	CHP 24 L	21	MHP 24 L25	25
with levers	CHP 24.2	21 x 2	MHP 24.225	25 x 2	CHP 24 L2	21 x 2	MHP 24 L225	25 x 2
with levers, high construction	CAP 24.21	21	MAP 24.32	32	CAP 24 L	21	MAP 24 L32	32
with levers, high construction	CAP 24.221	21 x 2	MAP 24.232	32 x 2	CAP 24 L2	21 x 2	MAP 24 L232	32 x 2
with levers, high construction	CAP 24.29	29	MAP 24.40	40	CAP 24 L29	29	MAP 24 L40	40
with levers, high construction	CAP 24.229	29 x 2	MAP 24.240	40 x 2	CAP 24 L229	29 x 2	MAP 24 L240	40 x 2
with pegs and aluminum cover ¹⁾	CHP 24 CS	21	MHP 24 CS25	25				
with pegs and aluminum cover ¹⁾	CHP 24 CS2	21 x 2	MHP 24 CS225	25 x 2				
with pegs and aluminum cover, high construction ¹⁾	CAP 24 CS	21	MAP 24 CS32	32				
with pegs and aluminum cover, high construction ¹⁾	CAP 24 CS2	21 x 2	MAP 24 CS232	32 x 2				
with pegs and aluminum cover, high construction ¹⁾	CAP 24 CS29	29	MAP 24 CS40	40				
with pegs and aluminum cover, high construction ¹⁾	CAP 24 CS229	29 x 2	MAP 24 CS240	40 x 2				
with pegs and plastic cover ¹⁾	CHP 24 CP	21	MHP 24 CP25	25				
with pegs and plastic cover ¹⁾	CHP 24 CP2	21 x 2	MHP 24 CP225	25 x 2				
with pegs and plastic cover, high construction ¹⁾	CAP 24 CP	21	MAP 24 CP32	32				
with pegs and plastic cover, high construction ¹⁾	CAP 24 CP2	21 x 2	MAP 24 CP232	32 x 2				
with pegs and plastic cover, high construction ¹⁾	CAP 24 CP29	29	MAP 24 CP40	40				
with pegs and plastic cover, high construction ¹⁾	CAP 24 CP229	29 x 2	MAP 24 CP240	40 x 2				
with lever and cover					CHP 24 LS	21	MHP 24 LS25	25
with lever and cover					CHP 24 LS2	21 x 2	MHP 24 LS225	25 x 2
with lever and cover, high construction					CAP 24 LS	21	MAP 24 LS32	32
with lever and cover, high construction					CAP 24 LS2	21 x 2	MAP 24 LS232	32 x 2
with lever and cover, high construction					CAP 24 LS29	29	MAP 24 LS40	40
with lever and cover, high construction					CAP 24 LS229	29 x 2	MAP 24 LS240	40 x 2

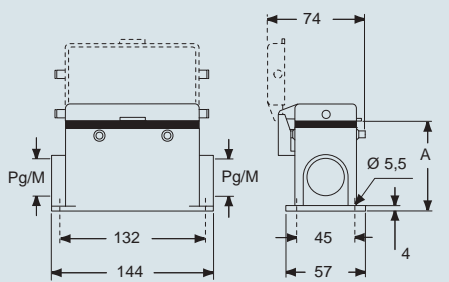
¹⁾ may be combined with enclosures:
- CHO/CAO 24 X and CHV/CAV 24 X
- MHO/MAO 24 X and MHV/MAV 24 X

dimensions in mm

CHP - CAP and MHP - MAP



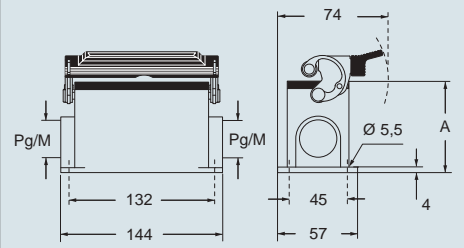
CHP CS/CP - CAP CS/CP and MHP CS/CP - MAP CS/CP



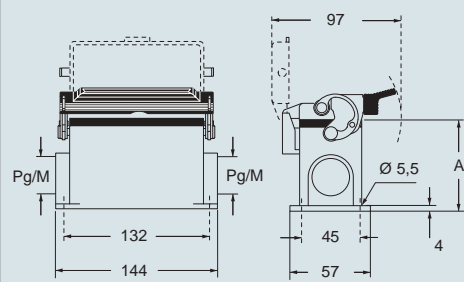
type	A
CHP / MHP	63
CAP / MAP	81
CHP CS / MHP CS	63
CAP CS / MAP CS	81
CHP CP / MHP CP	63
CAP CP / MAP CP	81

dimensions in mm

CHP L - CAP L and MHP L - MAP L



CHP LS - CAP LS and MHP LS - MAP LS



type	A
CHP L / MHP L	63
CAP L / MAP L	81
CHP LS / MHP LS	63
CAP LS / MAP LS	81

NB:
The enclosures ensure IP66 protection (or IP65 for hinged cover versions) rating when mated and locked with the closing levers.
The cover (CS, CP) only ensures mechanical protection, but does not ensure IP65 protection rating.

CALUS® Type 4/4X/12
(except enclosures with plastic cover)



dimensions shown are not binding and may be changed without notice

C-TYPE - size 104.27



inserts:	page:
CD 64 poles + ⊕	59
CDD 108 poles + ⊕	72
CDS 42 poles + ⊕	81
CSH 24 poles + ⊕	94
CNE, CSE 24 poles + ⊕	107
CCE 24 poles + ⊕	113
CSS 24 poles + ⊕	125
CQE 46 poles + ⊕	141
CQEE 64 poles + ⊕	147
CMCE 10+2 (aux) poles + ⊕	152
CMSH 10+2 (aux) poles + ⊕	153
CX 4/8 and 6/6 poles + ⊕	173 and 175
MIXO 6 modules	179-215

insert centre distance:
104 x 27 mm

hoods with 4 pegs



hoods with 2 pegs



description	part No.		part No.		part No.		part No.	
		entry Pg		entry M		entry Pg		entry M
with pegs, side entry	CHO 24	21	MHO 24.25	25	CHO 24 L	21	MHO 24 L25	25
with pegs, side entry			MHO 24.32	32			MHO 24 L32	32
with pegs, side entry, high construction	CAO 24.21	21	MAO 24.32	32	CAO 24 L21	21	MAO 24 L32	32
with pegs, side entry, high construction	CAO 24.29	29	MAO 24.40	40	CAO 24 L29	29	MAO 24 L40	40
with pegs, top entry	CHV 24	21	MHV 24.25 **	25	CHV 24 L	21	MHV 24 L25	25
with pegs, top entry			MHV 24.32	32			MHV 24 L32	32
with pegs, top entry	CHV 24.29	29	MHV 24.40	40	CHV 24 L29	29	MHV 24 L40	40
with pegs, top entry, high construction	CAV 24.21	21	MAV 24.32	32	CAV 24 L21	21	MAV 24 L32	32
with pegs, top entry, high construction	CAV 24.29	29	MAV 24.40	40	CAV 24 L29	29	MAV 24 L40	40
with pegs, frontal entry, high construction	CAF 24.21	21	MAF 24.25	25				
with pegs, frontal entry, high construction	CAF 24.29	29	MAF 24.32	32				
with pegs, frontal entry, high constr., without adaptor *	CFF 24.21	21	MFF 24.25	25				
with pegs, frontal entry, high constr., without adaptor *	CFF 24.29	29	MFF 24.32	32				

* enclosure without adaptor, threaded on the body, to be used only with a complete cable gland.

** can only be used with a complete cable gland (to be purchased separately)

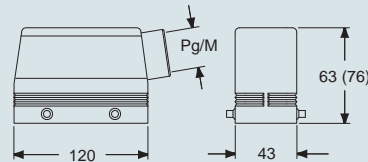
dimensions in mm

dimensions in mm

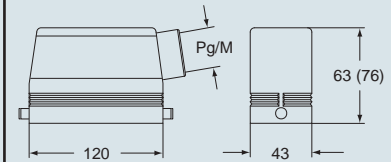
alternatively, hoods with pegs are coupled with fixed enclosures:

- C7, IP67 stainless steel lever, page 277
- CV, IP66 stainless steel lever, page 283 and 296

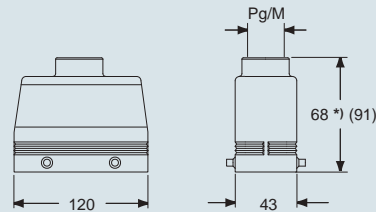
CHO (CAO) and MHO (MAO)



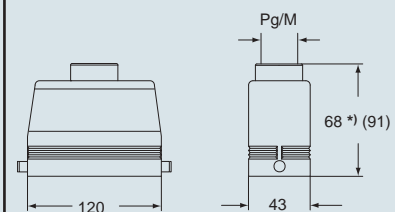
CHO L (CAO L) and MHO L (MAO L)



CHV (CAV) and MHV (MAV)



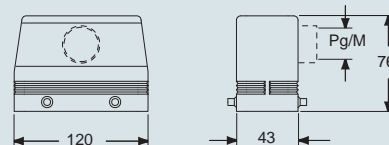
CHV L (CAV L) and MHV L (MAV L)



*) 69,5 for Pg 29 - M 40 versions

*) 69,5 for Pg 29 - M 40 versions

CAF/CFF and MAF/MFF



CALUS Type 4/4X/12



according to the type of lever

dimensions shown are not binding and may be changed without notice

C-TYPE - size 104.27



inserts:	page:
CD 64 poles + ⊕	59
CDD 108 poles + ⊕	72
CDS 42 poles + ⊕	81
CSH 24 poles + ⊕	94
CNE, CSE 24 poles + ⊕	107
CCE 24 poles + ⊕	113
CSS 24 poles + ⊕	125
CQE 46 poles + ⊕	141
CQEE 64 poles + ⊕	147
CMCE 10+2 (aux) poles + ⊕	152
CMSH 10+2 (aux) poles + ⊕	153
CX 4/8 and 6/6 poles + ⊕	173 and 175
MIXO 6 modules	179-215

insert centre distance:
104 x 27 mm

hoods with double top entry and 4 pegs



hoods with double front entry and 4 pegs

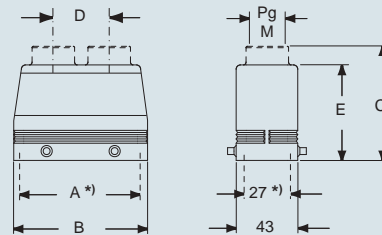


description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
with pegs for two levers - used with enclosures size "104.27" - used with enclosures size "104.27"	CAV 24.221 CAV 24.229	21 x 2 29 x 2	MAV 24.232	32 x 2				
with pegs for 2 lever, without adaptor * - used with enclosures size "104.27"	CFV 24.221	21 x 2	MFV 24.232	32 x 2				
with pegs for two levers - used with enclosures size "104.27"					CAF 24.221	21 x 2	MAF 24.225	25 x 2
with pegs for 2 lever, without adaptor * - used with enclosures size "104.27"					CFF 24.221	21 x 2	MFF 24.225	25 x 2

* enclosure without adaptor, threaded on the body, to be used only with a complete cable gland.

dimensions in mm

CAV/CFV and MAV/MFV

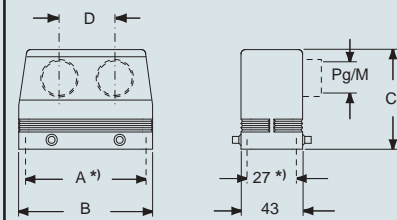


part No.	A *)	B	C	D	E
CAV 24.221/MAV 24.232	104	120	90.5 (91)	50	76
CAV 24.229	104	120	90.5	50	76
CFV 24.221/MFV 24.232	104	120	—	50	76

*) screw fixing centre distance

dimensions in mm

CAF/CFF and MAF/MFF



part No.	A *)	B	C	D
CAF/CFF 24.221 / MAF/MFF 24.225	104	120	76	50

*) screw fixing centre distance

alternatively, hoods with pegs are coupled with fixed enclosures:
- C7, IP67 stainless steel lever, page 277
- CV, IP66 stainless steel lever, page 283 and 296

CAIUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice



inserts:		page:
CD	64 poles + ⊕	59
CDD	108 poles + ⊕	72
CDS	42 poles + ⊕	81
CSH	24 poles + ⊕	94
CNE, CSE	24 poles + ⊕	107
CCE	24 poles + ⊕	113
CSS	24 poles + ⊕	125
CQE	46 poles + ⊕	141
CQEE	64 poles + ⊕	147
CMCE	10+2 (aux) poles + ⊕	152
CMSH	10+2 (aux) poles + ⊕	153
CX	4/8 and 6/6 poles + ⊕	173 and 175
MIXO	6 modules	179-215

insert centre distance:
104 x 27 mm

inclined hoods for 2 levers with side entry



inclined hoods for 2 levers with top entry

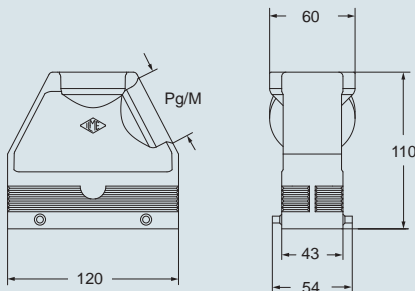


description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
	used with enclosures size "104.27" - with pegs for two levers, side entry - with pegs for two levers, side entry	CIO 24.36	36	MIO 24.40 MIO 24.50	40 50			
used with enclosures size "104.27" - with pegs for two levers, top entry - with pegs for two levers, top entry					CIV 24.36	36	MIV 24.40 MIV 24.50	40 50

alternatively, hoods with pegs are coupled with fixed enclosures:
- C7, IP67 stainless steel lever, page 277
- CV, IP66 stainless steel lever, page 283 and 296

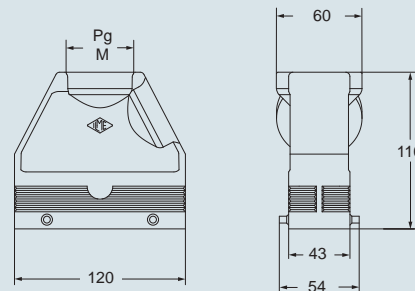
dimensions in mm

CIO and MIO



dimensions in mm

CIV and MIV



CAUS® Type 4/4X/12



according to the type of lever

dimensions shown are not binding and may be changed without notice

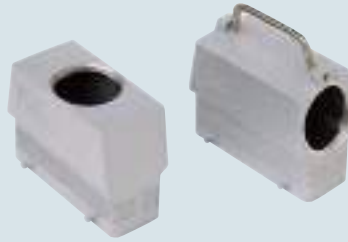
C-TYPE - size 104.27



inserts:		page:
CD	64 poles + ⊕	59
CDD	108 poles + ⊕	72
CDS	42 poles + ⊕	81
CSH	24 poles + ⊕	94
CNE, CSE	24 poles + ⊕	107
CCE	24 poles + ⊕	113
CSS	24 poles + ⊕	125
CQE	46 poles + ⊕	141
CQEE	64 poles + ⊕	147
CMCE	10+2 (aux) poles + ⊕	152
CMSH	10+2 (aux) poles + ⊕	153
CX	4/8 and 6/6 poles + ⊕	173 and 175
MIXO	6 modules	179-215

insert centre distance:
104 x 27 mm

enlarged hoods,
side or top entry with 4 pegs

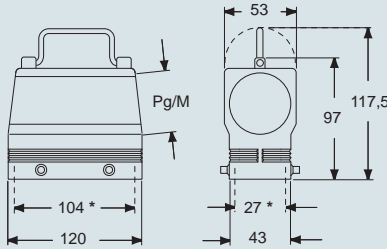


description	part No.	entry Pg	part No.	entry M
used with enclosures size "104.27"				
- with pegs for two levers, side entry	CQO 24	36	MQO 24.40	40
- with pegs for two levers, top entry	CQV 24	36	MQV 24.40	40

alternatively, hoods with pegs are coupled with fixed enclosures:
- C7, IP67 stainless steel lever, page 277
- CV, IP66 stainless steel lever, page 283 and 296

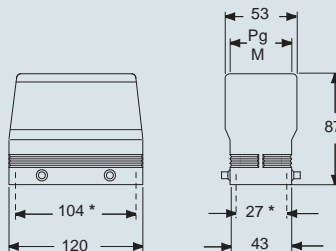
dimensions in mm

CQO and MQO



* screw fixing centre distance

CQV and MQV



*) screw fixing centre distance

CALUS® Type 4/4X/12



according to the type of lever

dimensions shown are not binding
and may be changed without notice



inserts:	page:
CD 64 poles + ⊕	59
CDD 108 poles + ⊕	72
CDS 42 poles + ⊕	81
CSH 24 poles + ⊕	94
CNE, CSE 24 poles + ⊕	107
CCE 24 poles + ⊕	113
CSS 24 poles + ⊕	125
CQE 46 poles + ⊕	141
CQEE 64 poles + ⊕	147
CMCE 10+2 (aux) poles + ⊕	152
CMSH 10+2 (aux) poles + ⊕	153
CX 4/8 and 6/6 poles + ⊕	173 and 175
MIXO 6 modules	179-215

insert centre distance:
104 x 27 mm

hoods with 2 levers



hoods with 1 lever

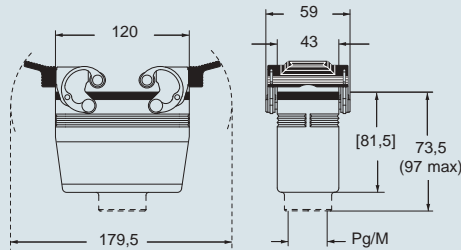


description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
with levers and gasket, top entry	CHV 24 G	21	MHV 24 G32	32	CHV 24 LG	21	MHV 24 LG32	32
with levers and gasket, top entry, high construction	CAV 24 G	21	MAV 24 G25	25	CAV 24 LG21	21	MAV 24 LG25	25
with levers and gasket, top entry, high construction	CAV 24 G29	29	MAV 24 G32	32	CAV 24 LG29	29	MAV 24 LG32	32
with levers and gasket, top entry, high construction			MAV 24 G40	40			MAV 24 LG40	40
with levers and gasket, top entry, high, without adaptor *	CFV 24 G	21	MFV 24 G25	25	CFV 24 LG21	21	MFV 24 LG25	25
with levers and gasket, top entry, high, without adaptor *	CFV 24 G29	29	MFV 24 G32	32	CFV 24 LG29	29	MFV 24 LG32	32
with levers and gasket, top entry, high, without adaptor *			MFV 24 G40	40			MFV 24 LG40	40

* enclosure without adaptor, threaded on the body, to be used only with a complete cable gland.

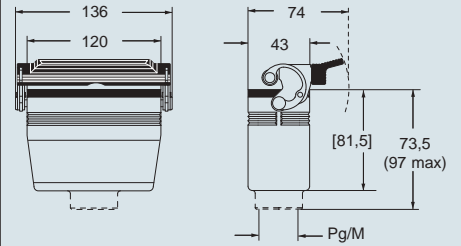
dimensions in mm

CHV G (CAV G) and [CFV G],
MHV G (MAV G) and [MFV G]



dimensions in mm

CHV LG (CAV LG) and [CFV LG],
MHV LG (MAV LG) and [MFV LG]



CALUS® Type 4/4X/12



dimensions shown are not binding and may be changed without notice

C-TYPE - size 104.27



inserts:		page:
CD	64 poles + ⊕	59
CDD	108 poles + ⊕	72
CDS	42 poles + ⊕	81
CSH	24 poles + ⊕	94
CNE, CSE	24 poles + ⊕	107
CCE	24 poles + ⊕	113
CSS	24 poles + ⊕	125
CQE	46 poles + ⊕	141
CQEE	64 poles + ⊕	147
CMCE	10+2 (aux) poles + ⊕	152
CMSH	10+2 (aux) poles + ⊕	153
CX	4/8 and 6/6 poles + ⊕	173 and 175
MIXO	6 modules	179-215

insert centre distance:
104 x 27 mm

hoods for ribbon cable with 4 pegs

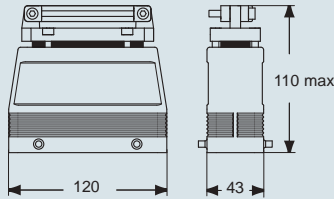


gaskets for ribbon cable hood



description	part No.	part No.
with pegs, top entry	CAN 24	
ribbon cable seals (supplied separately) - one slot for cable sizes 18.8 x 5.8 mm - one slot for cable sizes 63.8 x 5.1 mm - one slot for cable sizes 36 x 9 mm - not pre-drilled		CRN 1 CRN 2 CRN 3 CRN P

dimensions in mm



CRUS® Type 4/4X/12

dimensions shown are not binding and may be changed without notice

C-TYPE - size 104.27



inserts:	page:
CD 64 poles + ⊕	59
CDD 108 poles + ⊕	72
CDS 42 poles + ⊕	81
CSH 24 poles + ⊕	94
CNE, CSE 24 poles + ⊕	107
CCE 24 poles + ⊕	113
CSS 24 poles + ⊕	125
CQE 46 poles + ⊕	141
CQEE 64 poles + ⊕	147
CMCE 10+2 (aux) poles + ⊕	152
CMSH 10+2 (aux) poles + ⊕	153
CX 4/8 and 6/6 poles + ⊕	173 and 175
MIXO 6 modules	179-215

insert centre distance:
104 x 27 mm

hoods with 2 levers



covers

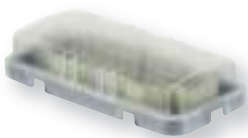


description	part No.	entry Pg	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with levers, side entry ¹⁾	CHO 24 X	21	MHO 24 X25	25		
with levers, side entry ¹⁾			MHO 24 X32	32		
with levers, side entry, high construction ¹⁾	CAO 24 X	21	MAO 24 X32	32		
with levers, side entry, high construction ¹⁾	CAO 24 X29	29	MAO 24 X40	40		
with levers, top entry ¹⁾	CHV 24 X	21	MHV 24 X25	25		
with levers, top entry ¹⁾			MHV 24 X32	32		
with levers, top entry, high construction ¹⁾	CAV 24 X	21	MAV 24 X32	32		
with levers, top entry, high construction ¹⁾	CAV 24 X29	29	MAV 24 X40	40		
with 4 pegs (for enclosures with 2 levers with gasket)					CHC 24	CHC 24 S
with 4 pegs and gasket (for enclosures with 2 levers) ²⁾					CHC 24 L	CHC 24 C
with 2 pegs (for enclosures with 1 lever with gasket)						CHC 24 SL
with 2 levers (for hoods with 4 pegs)						CHC 24 G
with 1 lever (for hoods with 2 pegs)						CHC 24 LG

¹⁾ may be combined with enclosures:
- CHI/CHP/CAP 24 CS/CP/C
- MHP/MAP 24 CS/CP

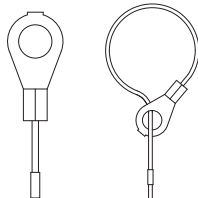
²⁾ may be combined with enclosures:
- CHO/CAO 24 X and CHV/CAV 24 X
- MHO/MAO 24 X and MHV/MAV 24 X

dust protection cover



CHCP 24 page 496

eyelet loop



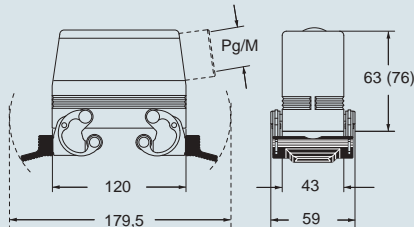
CALUS Type 4/4X/12



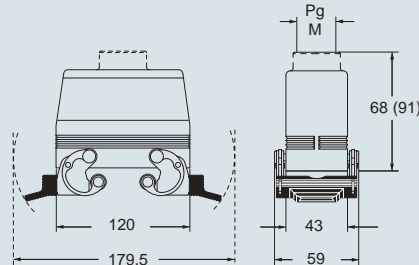
dimensions shown are not binding and may be changed without notice

dimensions in mm

CHO X (CAO X) and MHO X (MAO X)

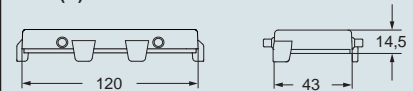


CHV X (CAV X) and MHV X (MAV X)



dimensions in mm

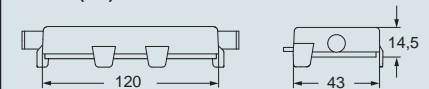
CHC (S)



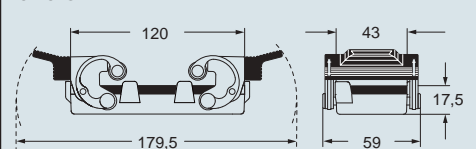
CHC C



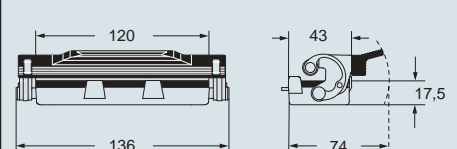
CHC L (SL)



CHC G



CHC LG





inserts:	page:
CD 80 poles + ⊕	60
CDD 144 poles + ⊕	73
CDS 54 poles + ⊕	82
CSH 32 poles + ⊕	95
CNE, CSE 32 poles + ⊕	108
CCE 32 poles + ⊕	114
CSS 32 poles + ⊕	126
CTSE (16A) *) 32 poles + ⊕	134
CQE 64 poles + ⊕	142
CMCE 12+4 (aux) poles + ⊕	154
CME 12+4 (aux) poles + ⊕	155
CMSH 12+4 (aux) poles + ⊕	155
CP 12 poles + ⊕	163
MIXO 4 + 4 modules	179-215

*) can be used only in bulkhead mounting housings

insert centre distance:
2 x (77,5 x 27) mm

bulkhead mounting housings with 2 levers or 4 pegs



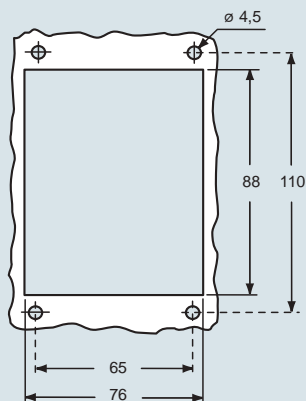
bulkhead mounting housings with single lever



description	part No.	part No.
with one or two levers	CHI 32	CHI 32 L
with pegs and cover ¹⁾	CHI 32 CS	
with lever and cover		CHI 32 LS

¹⁾ may be combined with enclosures:
- CHO/CHV/CFO/CFV 32 X
- MHO/MHV/MFO/MFV 32 X

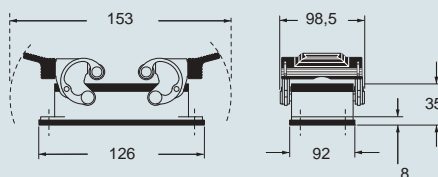
panel cut-out for bulkhead mounting housings in mm



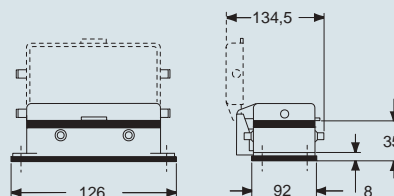
NB:
The enclosures ensure IP66 protection (or IP65 for hinged cover versions) rating when mated and locked with the closing levers.
The cover (CS) only ensures mechanical protection, but does not ensure IP65 protection rating.

dimensions in mm

CHI

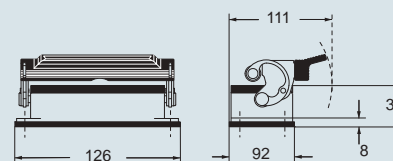


CHI CS

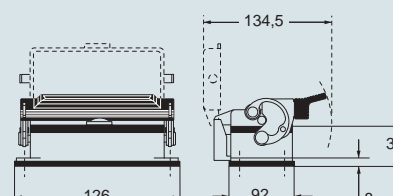


dimensions in mm

CHI L



CHI LS



CAIUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

C-TYPE - size 77.62



inserts:	page:
CD 80 poles + ⊕	60
CDD 144 poles + ⊕	73
CDS 54 poles + ⊕	82
CSH 32 poles + ⊕	95
CNE, CSE 32 poles + ⊕	108
CCE 32 poles + ⊕	114
CSS 32 poles + ⊕	126
CQE 64 poles + ⊕	142
CMCE 12+4 (aux) poles + ⊕	154
CME 12+4 (aux) poles + ⊕	155
CMSH 12+4 (aux) poles + ⊕	155
CP 12 poles + ⊕	163
MIXO 4 + 4 modules	179-215

insert centre distance:
2 x (77,5 x 27) mm

surface mounting housing with 2 levers



surface mounting housings with single lever

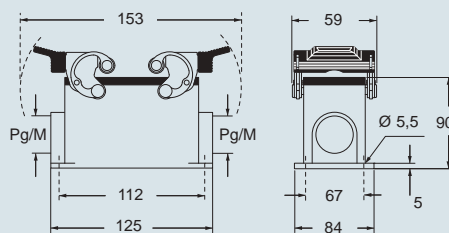


description	part No.		part No.		part No.		part No.	
	entry Pg	entry M	entry Pg	entry M	entry Pg	entry M	entry Pg	entry M
with one or two levers	CHP 32.29	29	MHP 32.40	40	CHP 32 L29	29	MHP 32 L40	40
with one or two levers	CHP 32.229	29 x 2	MHP 32.240	40 x 2	CHP 32 L229	29 x 2	MHP 32 L240	40 x 2
with one or two levers	CHP 32	36	MHP 32.50	50	CHP 32 L	36	MHP 32 L50	50
with one or two levers	CHP 32.2	36 x 2	MHP 32.250	50 x 2	CHP 32 L2	36 x 2	MHP 32 LS250	50 x 2
with one or two levers	CHP 32.42	42			CHP 32 L42	42		
with one or two levers	CHP 32.242	42 x 2			CHP 32 L242	42 x 2		
with lever and cover					CHP 32 LS29	29	MHP 32 LS40	40
with lever and cover					CHP 32 LS229	29 x 2	MHP 32 LS240	40 x 2
with lever and cover					CHP 32 LS	36	MHP 32 LS50	50
with lever and cover					CHP 32 LS2	36 x 2	MHP 32 LS250	50 x 2
with lever and cover					CHP 32 LS42	42		
with lever and cover					CHP 32 LS242	42 x 2		

NB:
The enclosures ensure IP66 protection (or IP65 for hinged cover versions) rating when mated and locked with the closing levers.
The cover (CS) only ensures mechanical protection, but does not ensure IP65 protection rating.

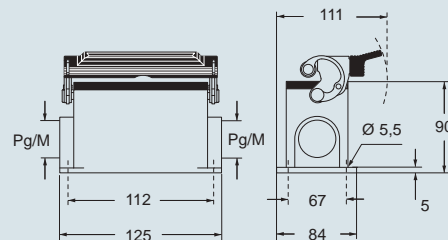
dimensions in mm

CHP and MHP

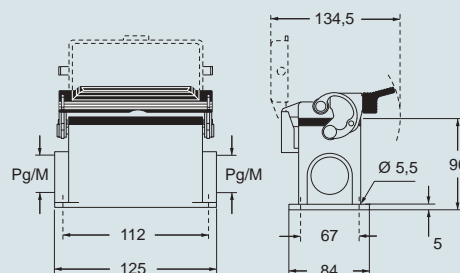


dimensions in mm

CHP L and MHP L



CHP LS and MHP LS



ILME Type 4/4X/12



dimensions shown are not binding and may be changed without notice

C-TYPE - size 77.62



inserts:	page:
CD 80 poles + ⊕	60
CDD 144 poles + ⊕	73
CDS 54 poles + ⊕	82
CSH 32 poles + ⊕	95
CNE, CSE 32 poles + ⊕	108
CCE 32 poles + ⊕	114
CSS 32 poles + ⊕	126
CQE 64 poles + ⊕	142
CMCE 12+4 (aux) poles + ⊕	154
CME 12+4 (aux) poles + ⊕	155
CMSH 12+4 (aux) poles + ⊕	155
CP 12 poles + ⊕	163
MIXO 4 + 4 modules	179-215

insert centre distance:
2 x (77,5 x 27) mm

hoods with 4 pegs and 2 levers



hoods with 2 pegs and 1 lever

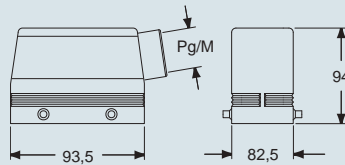


description	part No.		part No.		part No.		part No.	
		entry Pg		entry M		entry Pg		entry M
with pegs, side entry	CHO 32.29	29	MHO 32.32	32	CHO 32 L	36	MHO 32 L40	40
with pegs, side entry	CHO 32	36	MHO 32.40	40				
with pegs, side entry	CHO 32.42	42	MHO 32.50	50				
with pegs, side entry, without adaptor *	CFO 32.29	29	MFO 32.32	32	CFO 32 L	36	MFO 32 L40	40
with pegs, side entry, without adaptor *	CFO 32	36	MFO 32.40	40				
with pegs, side entry, without adaptor *	CFO 32.42	42	MFO 32.50	50				
with pegs, top entry	CHV 32.29	29	MHV 32.32	32	CHV 32 L	36	MHV 32 L40	40
with pegs, top entry	CHV 32	36	MHV 32.40	40				
with pegs, top entry	CHV 32.42	42	MHV 32.50	50				
with pegs, top entry, without adaptor *	CFV 32.29	29	MFV 32.32	32	CFV 32 L	36	MFV 32 L40	40
with pegs, top entry, without adaptor *	CFV 32	36	MFV 32.40	40				
with pegs, top entry, without adaptor *	CFV 32.42	42	MFV 32.50	50				
with levers and gasket, top entry	CHV 32 G29	29	MHV 32 G32	32	CHV 32 LG	36	MHV 32 LG40	40
with one or two levers and gasket, top entry	CHV 32 G	36	MHV 32 G40	40				
with levers and gasket, top entry	CHV 32 G42	42	MHV 32 G50	50				
with levers and gasket, top entry, without adaptor *	CFV 32 G29	29	MFV 32 G32	32	CFV 32 LG	36	MFV 32 LG40	40
with lever/s and gasket, top entry, without adaptor *	CFV 32 G	36	MFV 32 G40	40				
with levers and gasket, top entry, without adaptor *	CFV 32 G42	42	MFV 32 G50	50				

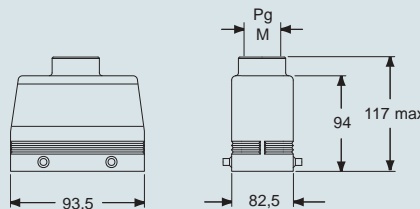
* enclosure without adaptor, threaded on the body, to be used only with a complete cable gland.

dimensions in mm

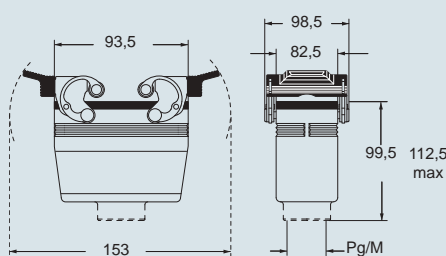
CHO/CFO and MHO/MFO



CHV/CFV and MHV/MFV

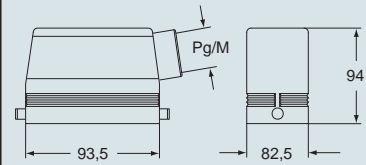


CHV/CFV G and MHV/MFV G

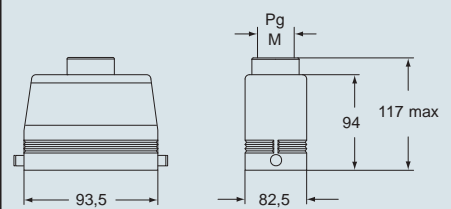


dimensions in mm

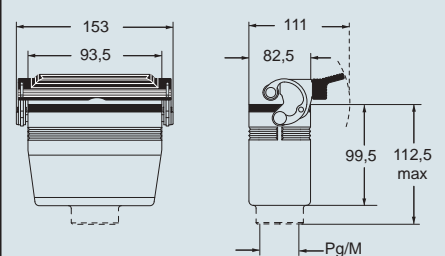
CHO/CFO L and MHO/MFO L



CHV/CFV L and MHV/MFV L



CHV/CFV LG and MHV/MFV LG



Type 4/4X/12



dimensions shown are not binding and may be changed without notice

C-TYPE - size 77.62



inserts:	page:
CD 80 poles + ⊕	60
CDD 144 poles + ⊕	73
CDS 54 poles + ⊕	82
CSH 32 poles + ⊕	95
CNE, CSE 32 poles + ⊕	108
CCE 32 poles + ⊕	114
CSS 32 poles + ⊕	126
CQE 64 poles + ⊕	142
CMCE 12+4 (aux) poles + ⊕	154
CME 12+4 (aux) poles + ⊕	155
CMSH 12+4 (aux) poles + ⊕	155
CP 12 poles + ⊕	163
MIXO 4 + 4 modules	179-215

insert centre distance:
2 x (77,5 x 27) mm

hoods with 2 levers



covers



description	part No.	entry Pg	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with levers, side entry ¹⁾	CHO 32 X	36	MHO 32 X40	40		
with levers, side entry, without adaptor * ¹⁾	CFO 32 X	36	MFO 32 X40	40		
with levers, top entry ¹⁾	CHV 32 X	36	MHV 32 X40	40		
with levers, top entry, without adaptor * ¹⁾	CFV 32 X	36	MFV 32 X40	40		
with 4 pegs (for enclosures with 2 levers with gasket) with 4 pegs and gasket (for enclosures with 2 levers) ²⁾ with 2 pegs (for enclosures with 1 lever with gasket)					CHC 32 CHC 32 L	CHC 32 S CHC 32 C CHC 32 SL
with 2 levers (for hoods with 4 pegs) with 1 lever (for hoods with 2 pegs)						CHC 32 G CHC 32 LG

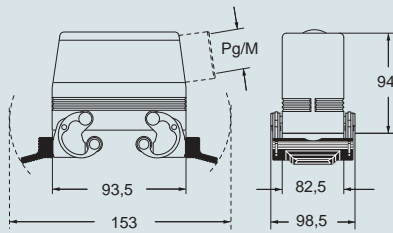
* enclosure without adaptor, threaded on the body, to be used only with a complete cable gland.

¹⁾ may be combined with CHI 32 CS enclosures

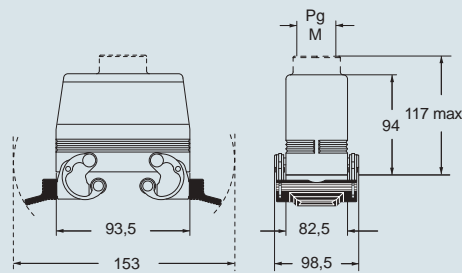
²⁾ may be combined with enclosures:
- CHO/CFO 32 X and CHV/CFV 32 X
- MHO/MFO 32 X and MHV/MFV 32 X

dimensions in mm

CHO/CFO X and MHO/MFO X

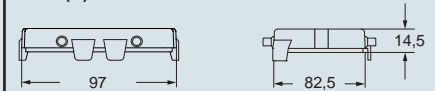


CHV/CFV X and MHV/MFV X



dimensions in mm

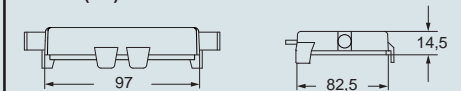
CHC (S)



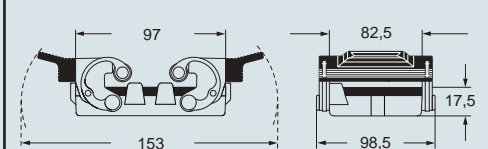
CHC C



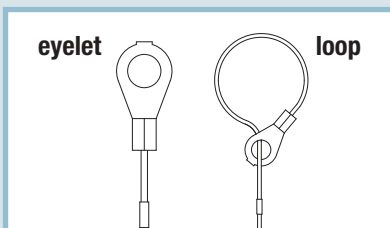
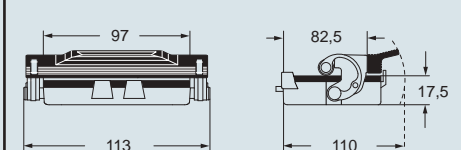
CHC L (SL)



CHC G



CHC LG



Type 4/4X/12



dimensions shown are not binding and may be changed without notice

C-TYPE - size 104.62



inserts:	page:
CD 128 poles + ⊕	61
CDD 216 poles + ⊕	74
CDS 84 poles + ⊕	83
CSH 48 poles + ⊕	96
CNE, CSE 48 poles + ⊕	109
CCE 48 poles + ⊕	115
CSS 48 poles + ⊕	127
CTSE (16A) *) 48 poles + ⊕	135
CQE 92 poles + ⊕	143
CMCE 20+4 (aux) poles + ⊕	156
CME 20+4 (aux) poles + ⊕	157
CMSH 20+4 (aux) poles + ⊕	157
CMCE 32+4 (aux) poles + ⊕	160
CME 32+4 (aux) poles + ⊕	161
MIXO 6 + 6 modules	179-215

*) can be used only in bulkhead mounting housings

insert centre distance: 2 x (104 x 27) mm

bulkhead and surface mounting enclosures with single lever



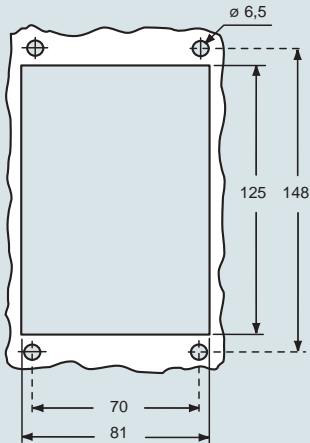
hoods with 2 pegs



description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting enclosures with lever	CHI 48 L	—						
bulkhead mounting enclosures with lever and cover	CHI 48 LS	—						
surface mounting enclosures with lever and cover	CHP 48 LS29	29 x 2	MHP 48 LS40	40 x 2				
surface mounting enclosures with lever and cover	CHP 48 LS	36 x 2	MHP 48 LS50	50 x 2				
with pegs, side entry					CHO 48 L29	29	MHO 48 L32	32
with pegs, side entry					CHO 48 L	36	MHO 48 L40	40
with pegs, side entry					CHO 48 L42	42	MHO 48 L50	50
with pegs, side entry, without adaptor *					CFO 48 L29	29	MFO 48 L32	32
with pegs, side entry, without adaptor *					CFO 48 L	36	MFO 48 L40	40
with pegs, side entry, without adaptor *					CFO 48 L42	42	MFO 48 L50	50
with pegs, top entry					CHV 48 L29	29	MHV 48 L32	32
with pegs, top entry					CHV 48 L	36	MHV 48 L40	40
with pegs, top entry					CHV 48 L42	42	MHV 48 L50	50
with pegs, top entry, without adaptor *					CFV 48 L29	29	MFV 48 L32	32
with pegs, top entry, without adaptor *					CFV 48 L	36	MFV 48 L40	40
with pegs, top entry, without adaptor *					CFV 48 L42	42	MFV 48 L50	50

* enclosure without adaptor, threaded on the body, to be used only with a complete cable gland.

panel cut-out for bulkhead mounting housings in mm



NB:
The enclosures ensure IP66 protection (or IP65 for hinged cover versions) rating when mated and locked with the closing levers.

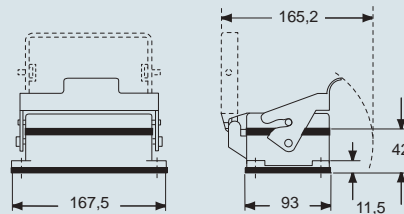
CALUS Type 4/4X/12



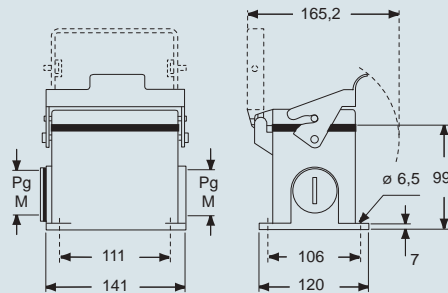
dimensions shown are not binding and may be changed without notice

dimensions in mm

CHI L - LS

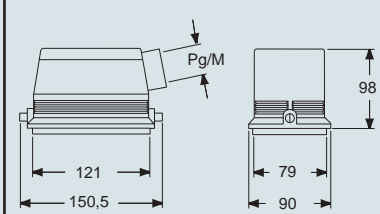


CHP LS and MHP LS

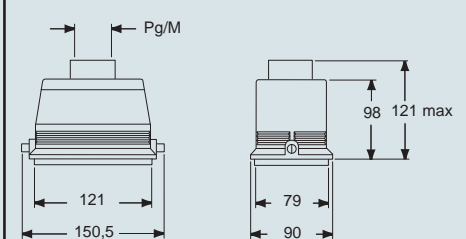


dimensions in mm

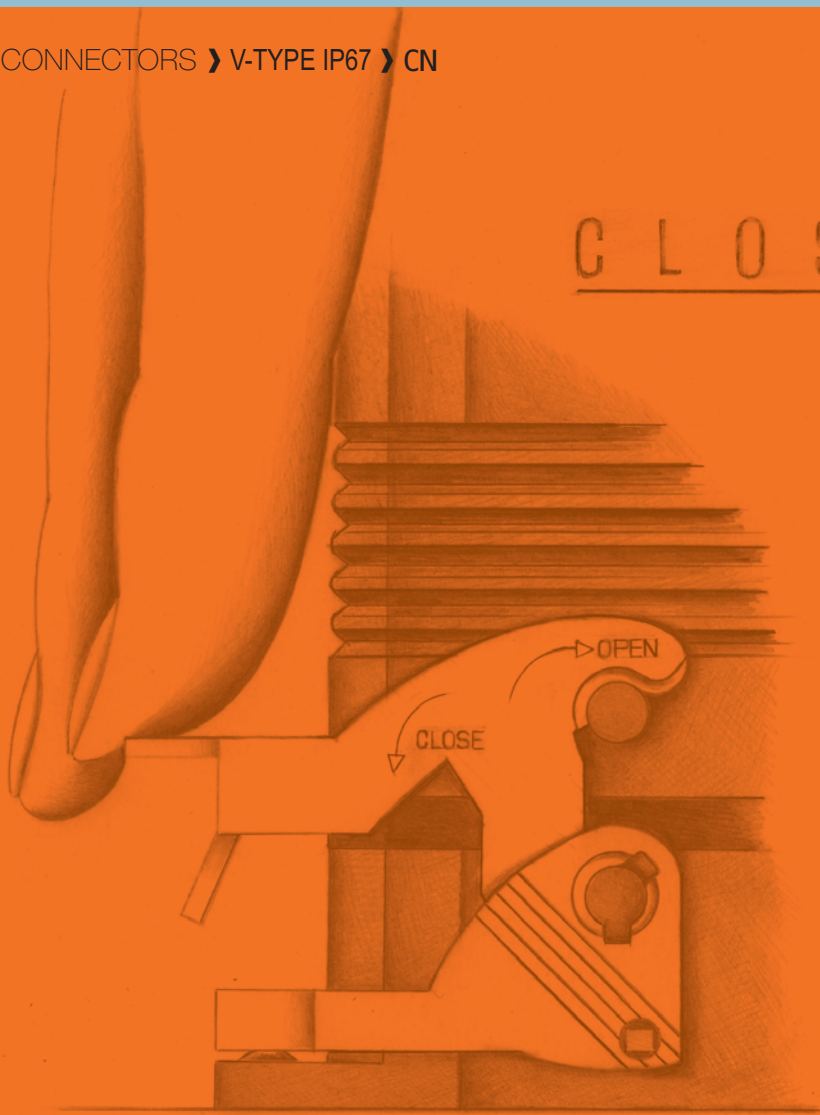
CHO/CFO L and MHO/MFO L



CHV/CFV L and MHV/MFV L



C L O S E



O P E N



IP67

V-TYPE IP67

Enclosures with IP67 V-TYPE closure

The performance requirements in **connection protection** are increasingly varied and specialized.

To respond to this wide range of needs, **ILME has developed several new solutions, including the innovative V-Type lever.**

This original lever, due to the **vertical closing movement, offers an IP66/IP67 degree of protection** (according to EN 60529) when fitted with a complete and coupled connector **and used with ILME standard hoods in die cast aluminium moulded (without adaptor).**

The high degree of protection is therefore not dependant on the use of special gaskets or locking devices.

The fixing flanges are the same as those fitted on traditional models.

This means it is possible to use the new housings **as alternatives to the traditional version without affecting the interchangeability,** or changing dimensions, spaces, flanges or fixing positions.



The tight seal after closure and the simplicity of the movement are key characteristics that **only ILME has managed to combine into a single lever.**

The V-TYPE lever also has other interesting functional characteristics for several applications:

- **The friction on the pin is almost zero** because the lever exerts its pressure vertically, thus significantly reducing wear in case of frequent use.
- The complete lever is **manufactured in stainless steel** and is fitted with a catch that prevents it from being accidentally detached.
- **The absence of parts in plastic** offers a higher resistance to impacts and in case of contact with oils and aggressive chemical substances or high ambient temperatures.
- **The lever can be used for applications with vibrations** because it has no springs and is therefore more rigid.
- **The lever occupies a very small space** during the closing phase.

The V-TYPE lever further extends the range, which includes the traditional version (CLASS series), with springs and rollers and the insulated version (T-TYPE series), **thus, offering customers a complete and custom selection for all needs. ILME is the ONLY company that offers a lever system for all possible requirements.**

The V-TYPE lever is the result of ongoing research on connection protection systems which confirms **ILME as a proactive leader in new solutions with forty years experience.**

The new lever differs from other commercial ones because of its closing movement principle, consisting of 2 hinged elements that are then pivoted on the housing.

This composite movement enables to move the lever above the pin of the housing that has to be fixed in place with an initial rotatory movement and then press it downwards to engage the locking mechanism.

- **It is recommended** in cases when the cable **weight forces the levers to open**, such as vertically installed connectors and the cable is mounted in the bottom.

The interchangeability with equivalent traditional levers with springs and rollers **simplifies the management of stocks, reduces costs and increases flexibility of use.**

Available in bulkhead or surface-mounted versions for sizes 44.27 with a single lever, 57.27, 77.27 and 104.27 with 2 levers. High construction models are available on request.

The item code identifies the new series with the **suffix C7 or M7:**

- **C7I** bulkhead mounting housing
- **C7P** surface mounting housing, Pg thread, standard height
- **M7P** surface mounting housing, metric thread, standard height
- **C7AP** surface mounting housing, Pg thread, high
- **M7AP** surface mounting housing, metric thread, high.



inserts:	page:
CDD 24 poles + ⊕	67
CDS 9 poles + ⊕	78
CSH 6 poles + ⊕	91
CNE, CSE 6 poles + ⊕	104
CCE 6 poles + ⊕	110
CSS 6 poles + ⊕	122
CT, CTSE (16A) * 6 poles + ⊕	130
CQE 10 poles + ⊕	138
MIXO 2 modules	179 - 215

*) can be used only in bulkhead mounting housings

insert centre distance:
44 x 27 mm

bulkhead mounting housings with single lever in stainless steel



lever in stainless steel

surface mounting housings with single lever in stainless steel

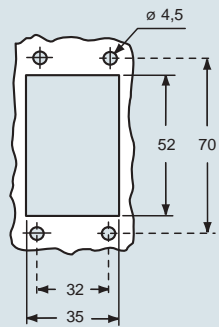


lever in stainless steel

description	part No.
with lever, size "44.27"	C7I 06 L
with lever, size "44.27"	
with lever, high construction, size "44.27"	
with lever, high construction, size "44.27"	
with lever, high construction, size "44.27"	
with lever, high construction, size "44.27"	

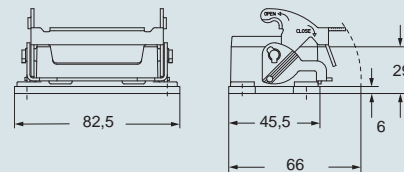
part No.	entry Pg	part No.	entry M
C7P 06 L	16	M7P 06 L20	20
C7P 06 L2	16 x 2	M7P 06 L220	20 x 2
C7AP 06 L	21	M7AP 06 L32	32
C7AP 06 L2	21 x 2	M7AP 06 L232	32 x 2
C7AP 06 L29	29	M7AP 06 L40	40
C7AP 06 L229	29 x 2	M7AP 06 L240	40 x 2

panel cut-out for bulkhead mounting housings in mm



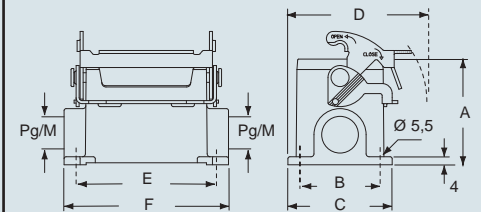
dimensions in mm

C7I L



dimensions in mm

C7P L - C7AP L and M7P L - M7AP L



The new lever, due to the vertical closing movement, offers an IP66/IP67 protection rating (according to EN 60529) when fitted with a complete and coupled connector and used with ILME standard hoods in die cast aluminum with pegs (without adaptor).

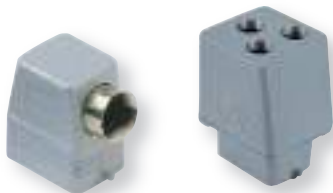
For bulkhead mounting housings, IP66/IP67 protection rating is guaranteed for mounting on a sufficiently rigid panel; use suitable length M4 screws (negligible surface buckling when subjected to tightening couple on the fixing screws of 0,8 - 1,2 Nm or deformation caused by the weight of the complete connector).

In case of insufficient rigidity use of C7.. FL flanges (page 278) is recommended, in which case use suitable length M4 screws and M4 (on the enclosure) and M4 (on the flange) flat/spring washers with M4 locknut.

In addition, the panel surface in contact with the flange gasket of the bulkhead mounting housings must be free from defects (deep scratches, grooves, burrs) that could negatively affect the performance of the gasket.

type	A	B	C	D	E	F
C7P/M7P 06 L	53	40	52	70	70	82
C7AP/M7AP 06 L	73	45	57	72,5	70	82

Hoods:



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CALUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

C7 - size 44.27



inserts:	page:
CDD 42 poles + ⊕	69
CDS 18 poles + ⊕	79
CSH 10 poles + ⊕	92
CNE, CSE 10 poles + ⊕	105
CCE 10 poles + ⊕	111
CSS 10 poles + ⊕	123
CT, CTSE (16A) *) .. 10 poles + ⊕	131
CQE 18 poles + ⊕	139
CMCE 3+2 (aux) poles + ⊕	148
CMSH 3+2 (aux) poles + ⊕	149
CX 8/24 poles + ⊕	169
MIXO 3 modules	179 - 215

*) can be used only in bulkhead mounting housings

insert centre distance:
57 x 27 mm

bulkhead mounting housings with 2 levers in stainless steel



lever in stainless steel

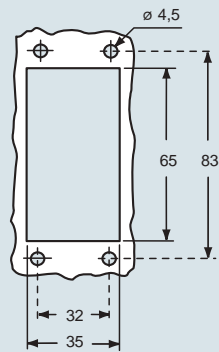
surface mounting housings with 2 levers in stainless steel



lever in stainless steel

description	part No.		part No.		part No.	
			entry Pg	entry M		
with levers, size "57.27"	C7I 10					
with levers, size "57.27"			C7P 10	16	M7P 10.20	20
with levers, size "57.27"			C7P 10.2	16 x 2	M7P 10.220	20 x 2
with levers, high construction, size "57.27"			C7AP 10.21	21	M7AP 10.32	32
with levers, high construction, size "57.27"			C7AP 10.221	21 x 2	M7AP 10.232	32 x 2
with levers, high construction, size "57.27"			C7AP 10.29	29	M7AP 10.40	40
with levers, high construction, size "57.27"			C7AP 10.229	29 x 2	M7AP 10.240	40 x 2

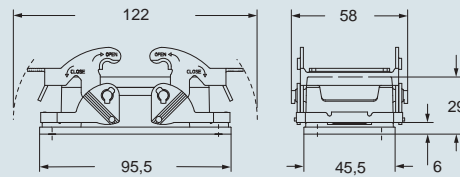
panel cut-out for bulkhead mounting housings in mm



The new lever, due to the vertical closing movement, offers an IP66/IP67 protection rating (according to EN 60529) when fitted with a complete and coupled connector and used with ILME standard hoods in die cast aluminum with pegs (without adaptor).

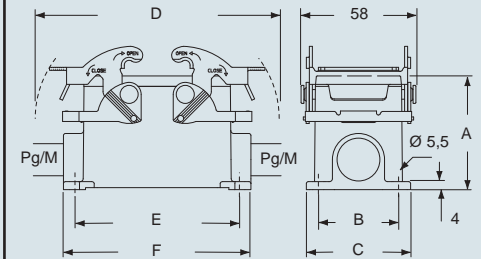
dimensions in mm

C7I



dimensions in mm

C7P - C7AP and M7P - M7AP



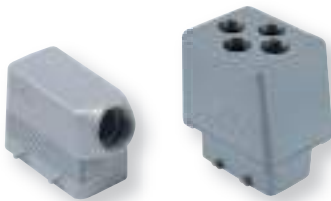
type	A	B	C	D	E	F
C7P/M7P 10	57	40	52	122	82	93,5
C7AP/M7AP 10	73	45	57	122	82	93,5

For bulkhead mounting housings, IP66/IP67 protection rating is guaranteed for mounting on a sufficiently rigid panel; use suitable length M4 screws (negligible surface buckling when subjected to tightening couple on the fixing screws of 0,8 - 1,2 Nm or deformation caused by the weight of the complete connector).

In case of insufficient rigidity use of C7.. FL flanges (page 278) is recommended, in which case use suitable length M4 screws and M4 (on the enclosure) and M4 (on the flange) flat/spring washers with M4 locknut.

In addition, the panel surface in contact with the flange gasket of the bulkhead mounting housings must be free from defects (deep scratches, grooves, burrs) that could negatively affect the performance of the gasket.

Hoods:



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ILME® Type 4/4X/12



dimensions shown are not binding and may be changed without notice

C7 - size 57.27



inserts:	page:
CD 40 poles + ⊕	57
CT, CTS (10A) *) 40 poles + ⊕	64
CDD 72 poles + ⊕	70
CDS 27 poles + ⊕	80
CSH 16 poles + ⊕	93
CNE, CSE 16 poles + ⊕	106
CCE 16 poles + ⊕	112
CSS 16 poles + ⊕	124
CT, CTSE (16A) *) .. 16 poles + ⊕	132
CQE 32 poles + ⊕	140
CQEE 40 poles + ⊕	146
CMCE, CMSH 6+2 (aux) poles + ⊕	150-151
CP 6 poles + ⊕	162
CX 6/36 and 12/2 poles + ⊕	170-171
CX 4/0 and 4/2 poles + ⊕	172
MIXO 4 modules	179-215

*) can be used only in bulkhead mounting housings

insert centre distance: 77,5 x 27 mm

bulkhead mounting housings with 2 levers in stainless steel



lever in stainless steel

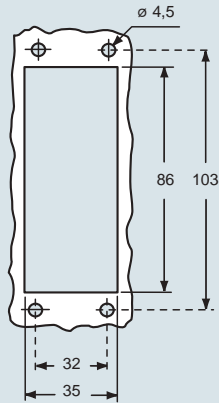
surface mounting housings with 2 levers in stainless steel



lever in stainless steel

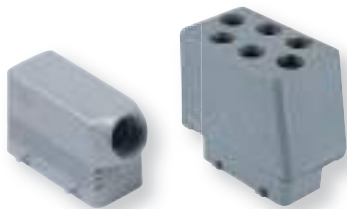
description	part No.	part No.		part No.	
		entry Pg	entry M	entry Pg	entry M
with levers, size "77.27"	C7I 16				
with levers, size "77.27"		C7P 16	21	M7P 16.25	25
with levers, size "77.27"		C7P 16.2	21 x 2	M7P 16.225	25 x 2
with levers, high construction, size "77.27"		C7AP 16.21	21	M7AP 16.32	32
with levers, high construction, size "77.27"		C7AP 16.221	21 x 2	M7AP 16.232	32 x 2
with levers, high construction, size "77.27"		C7AP 16.29	29	M7AP 16.40	40
with levers, high construction, size "77.27"		C7AP 16.229	29 x 2	M7AP 16.240	40 x 2

panel cut-out for bulkhead mounting housings in mm



The new lever, due to the vertical closing movement, offers an IP66/IP67 protection rating (according to EN 60529) when fitted with a complete and coupled connector and used with ILME standard hoods in die cast aluminum with pegs (without adaptor).

Hoods:



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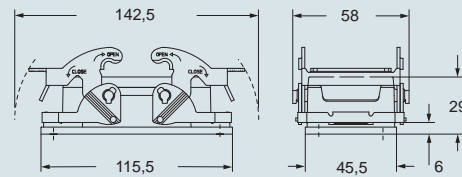
CAUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

dimensions in mm

C7I



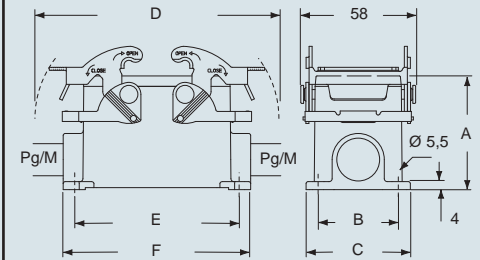
For bulkhead mounting housings, IP66/IP67 protection rating is guaranteed for mounting on a sufficiently rigid panel; use suitable length M4 screws (negligible surface buckling when subjected to tightening couple on the fixing screws of 0,8 - 1,2 Nm or deformation caused by the weight of the complete connector).

In case of insufficient rigidity use of C7.. FL flanges (page 278) is recommended, in which case use suitable length M4 screws and M4 (on the enclosure) and M4 (on the flange) flat/spring washers with M4 locknut.

In addition, the panel surface in contact with the flange gasket of the bulkhead mounting housings must be free from defects (deep scratches, grooves, burrs) that could negatively affect the performance of the gasket.

dimensions in mm

C7P - C7AP and M7P - M7AP



type	A	B	C	D	E	F
C7P/M7P 16	63	45	57	142,5	105	117
C7AP/M7AP 16	77	45	57	142,5	105	117

C7 - size 77.27



inserts:	page:
CD 64 poles + ⊕	59
CT, CTS (10A) *) ... 64 poles + ⊕	65
CDD 108 poles + ⊕	72
CDS 42 poles + ⊕	81
CSH 24 poles + ⊕	94
CNE, CSE 24 poles + ⊕	107
CCE 24 poles + ⊕	113
CSS 24 poles + ⊕	125
CT, CTSE (16A) *) .. 24 poles + ⊕	133
CQE 46 poles + ⊕	141
CQEE 64 poles + ⊕	147
CMCE 10+2 (aux) poles + ⊕	152
CMSH 10+2 (aux) poles + ⊕	153
CX 4/8 and 6/6 poles + ⊕	173 and 175
MIXO 6 modules	179-215

*) can be used only in bulkhead mounting housings

insert centre distance: 104 x 27 mm

bulkhead mounting housings with 2 levers in stainless steel



lever in stainless steel

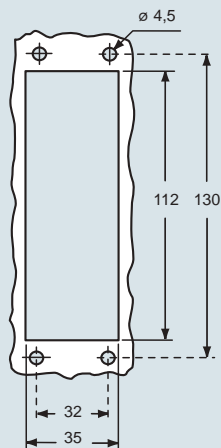
surface mounting housings with 2 levers in stainless steel



lever in stainless steel

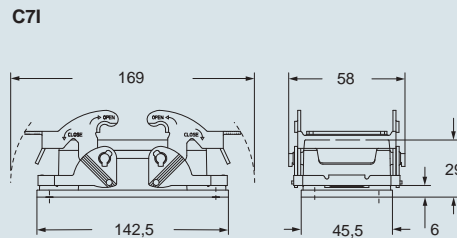
description	part No.		entry Pg	part No.		entry M
	C71 24			C7P 24	M7P 24.25	
with levers, size "104.27"	C71 24		21	M7P 24.25	25	
with levers, size "104.27"			21 x 2	M7P 24.225	25 x 2	
with levers, high construction, size "104.27"			21	M7AP 24.32	32	
with levers, high construction, size "104.27"			21 x 2	M7AP 24.232	32 x 2	
with levers, high construction, size "104.27"			29	M7AP 24.40	40	
with levers, high construction, size "104.27"			29 x 2	M7AP 24.240	40 x 2	

panel cut-out for bulkhead mounting housings in mm



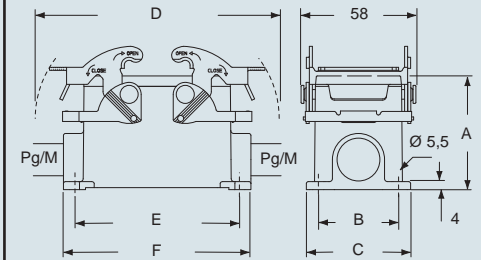
The new lever, due to the vertical closing movement, offers an IP66/IP67 protection rating (according to EN 60529) when fitted with a complete and coupled connector and used with ILME standard hoods in die cast aluminum with pegs (without adaptor).

dimensions in mm



dimensions in mm

C7P - C7AP and M7P - M7AP



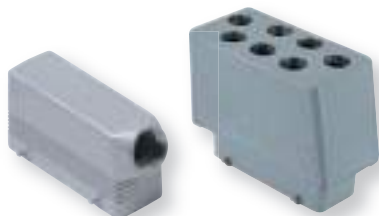
type	A	B	C	D	E	F
C7P/M7P 24	63	45	57	169	132	144
C7AP/M7AP 24	80	45	57	169	132	144

For bulkhead mounting housings, IP66/IP67 protection rating is guaranteed for mounting on a sufficiently rigid panel; use suitable length M4 screws (negligible surface buckling when subjected to tightening couple on the fixing screws of 0,8 - 1,2 Nm or deformation caused by the weight of the complete connector).

In case of insufficient rigidity use of C7.. FL flanges (page 278) is recommended, in which case use suitable length M4 screws and M4 (on the enclosure) and M4 (on the flange) flat/spring washers with M4 locknut.

In addition, the panel surface in contact with the flange gasket of the bulkhead mounting housings must be free from defects (deep scratches, grooves, burrs) that could negatively affect the performance of the gasket.

Hoods:



page 260

page 316 - 319

ILME® Type 4/4X/12



dimensions shown are not binding and may be changed without notice

C7 - size 104.27

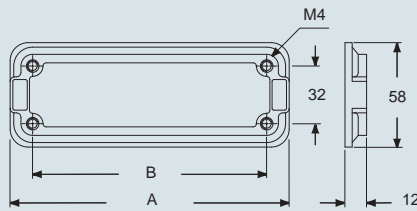
frames for bulkhead mounting housings



description	part No.
size "44.27"	C7 06 FL
size "57.27"	C7 10 FL
size "77.27"	C7 16 FL
size "104.27"	C7 24 FL

dimensions in mm

C7..FL



part No.	A	B
C7 06 FL	96	70
C7 10 FL	109	83
C7 16 FL	129	103
C7 24 FL	156	130

dimensions shown are not binding
and may be changed without notice

C7

SIMPLEX covers

NEW

Enclosure versions

Bulkhead mount housings with new **SELF-CLOSING** covers ensure IP65 protection rating (according to EN 60529) when mated and locked with the closing lever, or IP44 protection rating when not mated and not locked with lever.

Characteristics of materials used:

- › Made of die cast aluminium alloy.
- › With epoxy-polyester powder coating.
- › Gaskets in anti-aging, oil-resistant, grease-resistant and fuel-resistant vinyl nitrile elastomer.
- › Locking device in stainless steel.
- › Self-closing covers in self-extinguishing thermoplastic material reinforced with glass fibres, UL approved.

Houseable inserts.

The enclosures series can be used with inserts:

- | | |
|-----------------------|--|
| › CD | 40, 64 poles |
| › CT, CTS (10A) | 40, 64 poles |
| › CDD | 24, 42, 72, 108 poles |
| › CDS | 9, 18, 27, 42 poles |
| › CQE | 10, 18, 32, 46 poles |
| › CQEE | 40, 64 poles |
| › CSH | 6, 10, 16, 24 poles |
| › CCE | 6, 10, 16, 24 poles |
| › CNE, CSE | 6, 10, 16, 24 poles |
| › CSS | 6, 10, 16, 24 poles |
| › CT, CTE, CTSE (16A) | 6, 10, 16, 24 poles |
| › CMCE | 3+2 (aux), 6+2 (aux), 10+2 (aux) poles |
| › CME | 3+2 (aux), 6+2 (aux) poles |
| › CMSH | 3+2 (aux), 6+2 (aux), 10+2 (aux) poles |
| › CP | 6 poles |
| › CX | 8/24, 6/36, 12/2, 4/0, 4/2, 4/8, 6/6 poles |
| › MIXO frame | 2, 3, 4, 6 modules. |

SELF-CLOSING





inserts:	page:
CDD 24 poles + ⊕	67
CDS 9 poles + ⊕	78
CSH 6 poles + ⊕	91
CNE, CSE 6 poles + ⊕	104
CCE 6 poles + ⊕	110
CSS 6 poles + ⊕	122
CT, CTSE (16A) *) ... 6 poles + ⊕	130
CQE 10 poles + ⊕	138
MIXO 2 modules	179 - 215

*) can be used only in bulkhead mounting housings

insert centre distance:
44 x 27 mm

bulkhead mounting housings
with single lever



lever in
stainless
steel

NEW

description

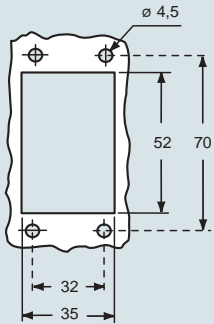
part No.

with lever and cover in plastic, size "44.27"

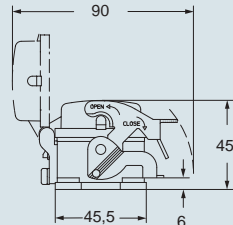
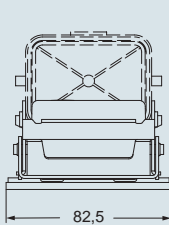
CVI 06 LSP

panel cut-out for bulkhead mounting housings in mm

dimensions in mm



CVI LSP



NB:
The enclosures ensure IP65 protection rating when mated and locked with the closing lever, or IP44 protection when not mated and locked with lever.



dimensions shown are not binding
and may be changed without notice

SIMPLEX - size 44.27



inserts:	page:
CDD 42 poles + ⊕	69
CDS 18 poles + ⊕	79
CSH 10 poles + ⊕	92
CNE, CSE 10 poles + ⊕	105
CCE 10 poles + ⊕	111
CSS 10 poles + ⊕	123
CT, CTSE (16A) *) .. 10 poles + ⊕	131
CQE 18 poles + ⊕	139
CMCE 3+2 (aux) poles + ⊕	148
CMSH 3+2 (aux) poles + ⊕	149
CX 8/24 poles + ⊕	169
MIXO 3 modules	179 - 215

*) can be used only in bulkhead mounting housings

insert centre distance:
57 x 27 mm

bulkhead mounting housings with single lever



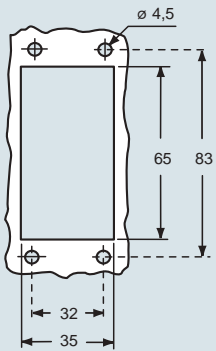
lever in stainless steel

NEW

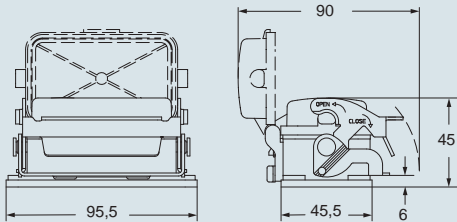
description	part No.
-------------	----------

with lever and cover in plastic, size "57.27"	CVI 10 LSP
---	-------------------

panel cut-out for bulkhead mounting housings in mm	dimensions in mm
--	------------------



CVI LSP



NB:
The enclosures ensure IP65 protection rating when mated and locked with the closing lever, or IP44 protection when not mated and locked with lever.



dimensions shown are not binding and may be changed without notice

SIMPLEX - size 57.27



inserts:	page:
CD 40 poles + ⊕	57
CT, CTS (10A) *) ... 40 poles + ⊕	64
CDD 72 poles + ⊕	70
CDS 27 poles + ⊕	80
CSH 16 poles + ⊕	93
CNE, CSE 16 poles + ⊕	106
CCE 16 poles + ⊕	112
CSS 16 poles + ⊕	124
CT, CTSE (16A) *) .. 16 poles + ⊕	132
CQE 32 poles + ⊕	140
CQEE 40 poles + ⊕	146
CMCE 6+2 (aux) poles + ⊕	150
CMSH 6+2 (aux) poles + ⊕	151
CP 6 poles + ⊕	162
CX 6/36 and 12/2 poles + ⊕	170-171
CX 4/0 and 4/2 poles + ⊕	172
MIXO 4 modules	179-215

*) can be used only in bulkhead mounting housings

insert centre distance: 77,5 x 27 mm

bulkhead mounting housings with single lever



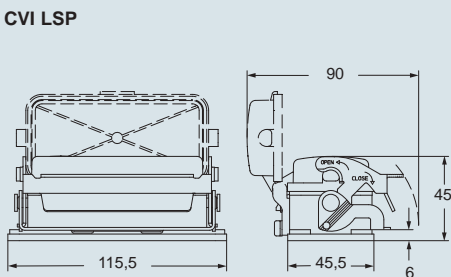
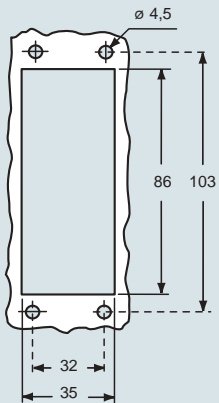
lever in stainless steel

NEW

description	part No.
-------------	----------

with lever and cover in plastic, size "77.27"	CVI 16 LSP
---	-------------------

panel cut-out for bulkhead mounting housings in mm	dimensions in mm
--	------------------



NB:
The enclosures ensure IP65 protection rating when mated and locked with the closing lever, or IP44 protection when not mated and locked with lever.



dimensions shown are not binding and may be changed without notice

SIMPLEX - size 77.27



inserts:	page:
CD 64 poles + ⊕	59
CT, CTS (10A) *) 64 poles + ⊕	65
CDD 108 poles + ⊕	72
CDS 42 poles + ⊕	81
CSH 24 poles + ⊕	94
CNE, CSE 24 poles + ⊕	107
CCE 24 poles + ⊕	113
CSS 24 poles + ⊕	125
CT, CTSE (16A) *) .. 24 poles + ⊕	133
CQE 46 poles + ⊕	141
CQEE 64 poles + ⊕	147
CMCE 10+2 (aux) poles + ⊕	152
CMSH 10+2 (aux) poles + ⊕	153
CX 4/8 and 6/6 poles + ⊕	173 and 175
MIXO 6 modules	179-215

*) can be used only in bulkhead mounting housings

insert centre distance: **104 x 27 mm**

bulkhead mounting housings with single lever

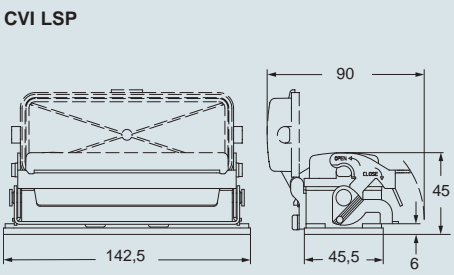
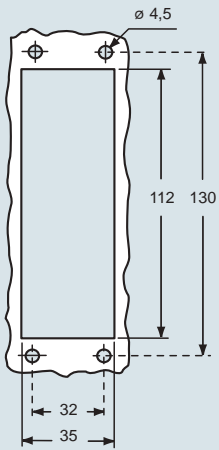


lever in stainless steel

NEW

description	part No.
with lever and cover in plastic, size "104.27"	CVI 24 LSP

panel cut-out for bulkhead mounting housings in mm	dimensions in mm
--	------------------



NB:
The enclosures ensure IP65 protection rating when mated and locked with the closing lever, or IP44 protection when not mated and locked with lever.



dimensions shown are not binding and may be changed without notice

SIMPLEX - size 104.27

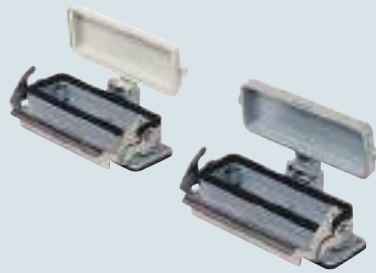


inserts:	page:
CDD 24 poles + ⊕	67
CDS 9 poles + ⊕	78
CSH 6 poles + ⊕	91
CNE, CSE 6 poles + ⊕	104
CCE 6 poles + ⊕	110
CSS 6 poles + ⊕	122
CT, CTSE (16A) * 6 poles + ⊕	130
CQE 10 poles + ⊕	138
MIXO 2 modules	179 - 215

*) can be used only in bulkhead mounting housings

insert centre distance:
44 x 27 mm

bulkhead mounting housings with single lever



lever in stainless steel

description

part No.

with lever and cover in aluminium, size "44.27"

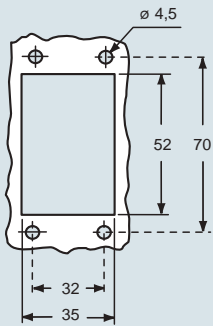
CVI 06 LS

with lever and cover in plastic, size "44.27"

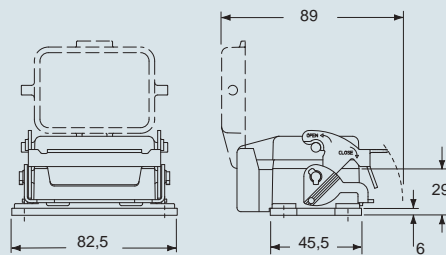
CVI 06 LP

panel cut-out for bulkhead mounting housings in mm

dimensions in mm



CVI LS/LP



NB:
The enclosures ensure IP66 protection (or IP65 cover versions) rating when mated and locked with the closing levers.



CRUS® Type 4/4X/12
(except enclosures with plastic cover)



dimensions shown are not binding and may be changed without notice

V-TYPE - size 44.27



inserts:	page:
CDD 24 poles + ⊕	67
CDS 9 poles + ⊕	78
CSH 6 poles + ⊕	91
CNE, CSE 6 poles + ⊕	104
CCE 6 poles + ⊕	110
CSS 6 poles + ⊕	122
CQE 10 poles + ⊕	138
MIXO 2 modules	179 - 215

insert centre distance:
44 x 27 mm

surface mounting housings
with single lever and plastic cover



lever in stainless steel

surface mounting housings
with single lever and aluminium cover



lever in stainless steel

description
with lever and cover, size "44.27"
with lever and cover, size "44.27"
with lever and cover, high construction, size "44.27"
with lever and cover, high construction, size "44.27"
with lever and cover, high construction, size "44.27"
with lever and cover, high construction, size "44.27"

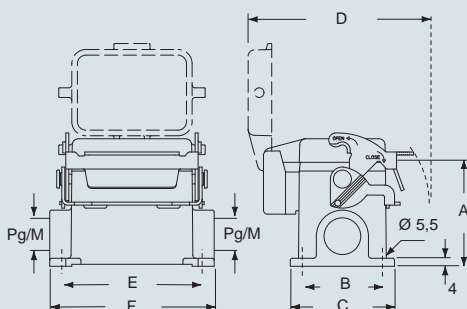
part No.	entry Pg	part No.	entry M
CVP 06 LP	16	MVP 06 LP20	20
CVP 06 LP2	16 x 2	MVP 06 LP220	20 x 2
CVAP 06 LP	21	MVAP 06 LP32	32
CVAP 06 LP2	21 x 2	MVAP 06LP232	32 x 2
CVAP 06 LP29	29	MVAP 06 LP40	40
CVAP 06LP229	29 x 2	MVAP 06LP240	40 x 2

part No.	entry Pg	part No.	entry M
CVP 06 LS	16	MVP 06 LS20	20
CVP 06 LS2	16 x 2	MVP 06 LS220	20 x 2
CVAP 06 LS	21	MVAP 06 LS32	32
CVAP 06 LS2	21 x 2	MVAP 06LS232	32 x 2
CVAP 06 LS29	29	MVAP 06 LS40	40
CVAP 06LS229	29 x 2	MVAP 06LS240	40 x 2

NB:
The enclosures ensure IP66 protection (or IP65 cover versions) rating when mated and locked with the closing levers.

dimensions in mm

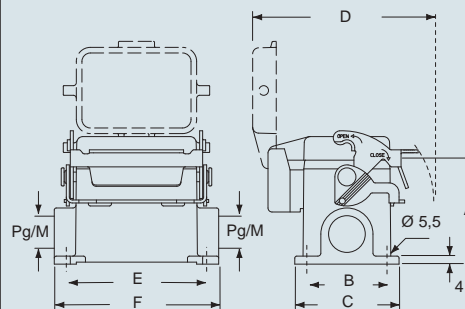
CVP LP - CVAP LP and MVP LP - MVAP LP



type	A	B	C	D	E	F
CVP/MVP 06 LP	53	40	52	91	70	82
CVAP/MVAP 06 LP	73	45	57	91	70	82

dimensions in mm

CVP LS - CVAP LS and MVP LS - MVAP LS



type	A	B	C	D	E	F
CVP/MVP 06 LS	53	40	52	91	70	82
CVAP/MVAP 06 LS	73	45	57	91	70	82



CALUS® Type 4/4X/12
(except enclosures with plastic cover)



dimensions shown are not binding
and may be changed without notice

V-TYPE - size 44.27



inserts:	page:
CDD 24 poles + ⊕	67
CDS 9 poles + ⊕	78
CSH 6 poles + ⊕	91
CNE, CSE 6 poles + ⊕	104
CCE 6 poles + ⊕	110
CSS 6 poles + ⊕	122
CQE 10 poles + ⊕	138
MIXO 2 modules	179 - 215

insert centre distance:
44 x 27 mm

hoods top entry
with gasket and 1 lever



lever in stainless steel

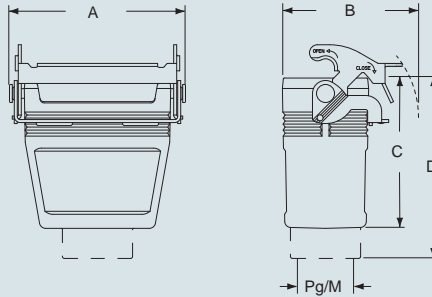
description	part no.	entry Pg	part no.	entry M
	with lever, size "44.27"	CVV 06 LG	16	MVV 06 LG25
with lever, high construction, size "44.27"	CVAV 06 LG21	21	MVAV 06 LG25	25
with lever, high construction, size "44.27"	CVAV 06 LG29	29	MVAV 06 LG32	32
with lever, high construction, without adaptor, size "44.27"	CVFV 06 LG21	21	MVFV 06 LG25	25
with lever, high construction, without adaptor, size "44.27"	CVFV 06 LG29	29	MVFV 06 LG32	32

V-TYPE - size 44.27



dimensions in mm

CVV LG - CVAV LG - CVFV LG and
MVV LG - MVAV LG - MVFV LG



type	A	B	C	D
CVV/MVV 06 LG	74	65	45,5	58,5
CVAV/MVAV 06 LG	74	65	77	93
CVFV/MVFV 06 LG	74	65	77	—

CAUS Type 4/4X/12



dimensions shown are not binding
and may be changed without notice





inserts:	page:
CDD 42 poles + ⊕	69
CDS 18 poles + ⊕	79
CSH 10 poles + ⊕	92
CNE, CSE 10 poles + ⊕	105
CCE 10 poles + ⊕	111
CSS 10 poles + ⊕	123
CT, CTSE (16A) *) .. 10 poles + ⊕	131
CQE 18 poles + ⊕	139
CMCE 3+2 (aux) poles + ⊕	148
CMSH 3+2 (aux) poles + ⊕	149
CX 8/24 poles + ⊕	169
MIXO 3 modules	179 - 215

*) can be used only in bulkhead mounting housings

insert centre distance:
57 x 27 mm

bulkhead mounting housings with single lever



lever in stainless steel

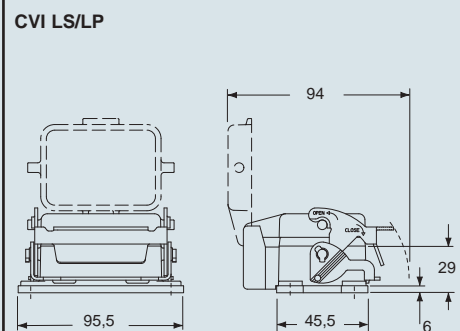
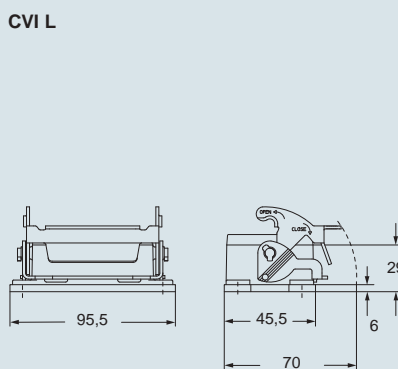
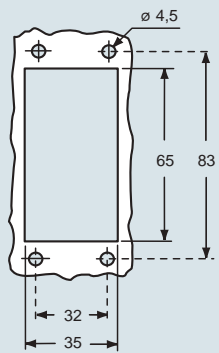
bulkhead mounting housings with single lever



lever in stainless steel

description	part No.	part No.
with lever, size "57.27"	CVI 10 L	
with lever and cover in aluminium, size "57.27"		CVI 10 LS
with lever and cover in plastic, size "57.27"		CVI 10 LP

panel cut-out for bulkhead mounting housings in mm	dimensions in mm	dimensions in mm
--	------------------	------------------



NB:
The enclosures ensure IP66 protection (or IP65 cover versions) rating when mated and locked with the closing levers.



CRUS® Type 4/4X/12
(except enclosures with plastic cover)



dimensions shown are not binding and may be changed without notice

V-TYPE - size 57.27



inserts:	page:
CDD 42 poles + ⊕	69
CDS 18 poles + ⊕	79
CSH 10 poles + ⊕	92
CNE, CSE 10 poles + ⊕	105
CCE 10 poles + ⊕	111
CSS 10 poles + ⊕	123
CQE 18 poles + ⊕	139
CMCE 3+2 (aux) poles + ⊕	148
CMSH 3+2 (aux) poles + ⊕	149
CX 8/24 poles + ⊕	169
MIXO 3 modules	179 - 215

insert centre distance:
57 x 27 mm

surface mounting housings
with single lever

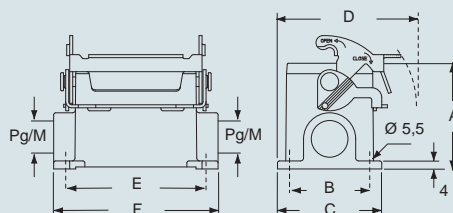


lever in
stainless
steel

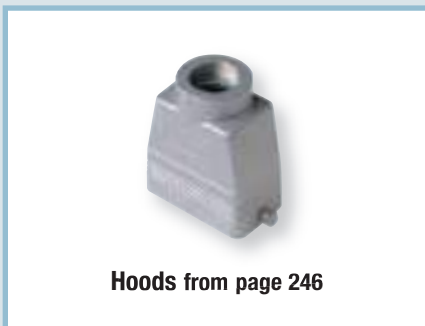
description	part No.	entry	part No.	entry
		Pg		M
with lever/s, size "57.27"	CVP 10 L	16	MVP 10 L20	20
with lever/s, size "57.27"	CVP 10 L2	16 x 2	MVP 10 L220	20 x 2
with lever/s, high construction, size "57.27"	CVAP 10 L21	21	MVAP 10 L32	32
with lever/s, high construction, size "57.27"	CVAP 10 L221	21 x 2	MVAP 10 L232	32 x 2
with lever/s, high construction, size "57.27"	CVAP 10 L29	29	MVAP 10 L40	40
with lever/s, high construction, size "57.27"	CVAP 10 L229	29 x 2	MVAP 10 L240	40 x 2

dimensions in mm

CVP L - CVAP L and MVP L - MVAP L



type	A	B	C	D	E	F
CVP/MVP 10 L	57	40	52	73	82	93,5
CVAP/MVAP 10 L	73	45	57	75,5	82	93,5



CAUS® Type
4/4X/12



dimensions shown are not binding
and may be changed without notice



inserts:	page:
CDD 42 poles + ⊕	69
CDS 18 poles + ⊕	79
CSH 10 poles + ⊕	92
CNE, CSE 10 poles + ⊕	105
CCE 10 poles + ⊕	111
CSS 10 poles + ⊕	123
CQE 18 poles + ⊕	139
CMCE 3+2 (aux) poles + ⊕	148
CMSH 3+2 (aux) poles + ⊕	149
CX 8/24 poles + ⊕	169
MIXO 3 modules	179 - 215

insert centre distance:
57 x 27 mm

surface mounting housings
with single lever and plastic cover



lever in stainless steel

surface mounting housings
with single lever and aluminium cover



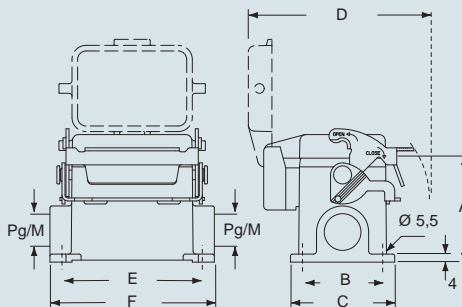
lever in stainless steel

description	part No.		part No.		part No.		part No.	
	entry Pg	entry M	entry Pg	entry M	entry Pg	entry M	entry Pg	entry M
with lever and cover, size "57.27"	CVP 10 LP	16	MVP 10 LP20	20	CVP 10 LS	16	MVP 10 LS20	20
with lever and cover, size "57.27"	CVP 10 LP2	16 x 2	MVP 10 LP220	20 x 2	CVP 10 LS2	16 x 2	MVP 10 LS220	20 x 2
with lever and cover, high construction, size "57.27"	CVAP 10 LP21	21	MVAP 10 LP32	32	CVAP 10 LS	21	MVAP 10 LS32	32
with lever and cover, high construction, size "57.27"	CVAP 10LP221	21 x 2	MVAP 10LP232	32 x 2	CVAP 10 LS2	21 x 2	MVAP 10LS232	32 x 2
with lever and cover, high construction, size "57.27"	CVAP 10 LP29	29	MVAP 10 LP40	40	CVAP 10 LS29	29	MVAP 10 LS40	40
with lever and cover, high construction, size "57.27"	CVAP 10LP229	29 x 2	MVAP 10LP240	40 x 2	CVAP 10LS229	29 x 2	MVAP 10LS240	40 x 2

NB:
The enclosures ensure IP66 protection (or IP65 cover versions) rating when mated and locked with the closing levers.

dimensions in mm

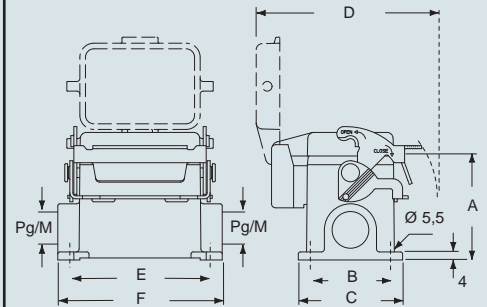
CVP LP - CVAP LP and MVP LP - MVAP LP



type	A	B	C	D	E	F
CVP/MVP 10 LP	57	40	52	94	82	93,5
CVAP/MVAP 10 LP	73	45	57	94	82	93,5

dimensions in mm

CVP LS - CVAP LS and MVP LS - MVAP LS



type	A	B	C	D	E	F
CVP/MVP 10 LS	57	40	52	94	82	93,5
CVAP/MVAP 10 LS	73	45	57	94	82	93,5



CAVUS® Type 4/4X/12
(except enclosures with plastic cover)



dimensions shown are not binding
and may be changed without notice

V-TYPE - size 77.27



inserts:	page:
CDD 42 poles + ⊕	69
CDS 18 poles + ⊕	79
CSH 10 poles + ⊕	92
CNE, CSE 10 poles + ⊕	105
CCE 10 poles + ⊕	111
CSS 10 poles + ⊕	123
CQE 18 poles + ⊕	139
CMCE 3+2 (aux) poles + ⊕	148
CMSH 3+2 (aux) poles + ⊕	149
CX 8/24 poles + ⊕	169
MIXO 3 modules	179 - 215

insert centre distance:
57 x 27 mm

hoods, top entry,
with gasket, with single lever



lever in stainless steel

hoods, top entry,
with gasket, with 2 levers



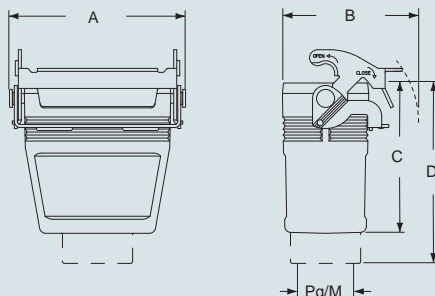
lever in stainless steel

description	part No.		entry		part No.		entry	
			Pg	M			Pg	M
with lever/s, size "57.27"	CVV 10 LG	16	MVV 10 LG25	25	CVV 10 G	16	MVV 10 G25	25
with lever/s, high construction, size "57.27"	CVAV 10 LG21	21	MVAV 10 LG25	25	CVAV 10 G21	21	MVAV 10 G25	25
with lever/s, high construction, size "57.27"	CVAV 10 LG29	29	MVAV 10 LG32	32	CVAV 10 G29	29	MVAV 10 G32	32
with lever/s, high construction, without adapter, size "57.27"	CVFV 10 LG21	21	MVFV 10 LG25	25	CVFV 10 G21	21	MVFV 10 G25	25
with lever/s, high construction, without adapter, size "57.27"	CVFV 10 LG29	29	MVFV 10 LG32	32	CVFV 10 G29	29	MVFV 10 G32	32

NB:
The enclosures ensure IP66 protection (or IP65 cover versions) rating when mated and locked with the closing levers.

dimensions in mm

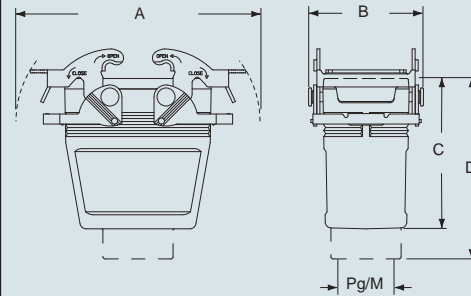
CVV LG - CVAV LG - CVFV LG and
MVV LG - MVAV LG - MVFV LG



type	A	B	C	D
CVV/MVV 10 LG	87	68	50,5	63,5
CVAV/MVAV 10 LG	87	68	75	91
CVFV/MVFV 10 LG	87	68	75	—

dimensions in mm

CVV G - CVAV G - CVFV G and
MVV G - MVAV G - MVFV G



type	A	B	C	D
CVV/MVV 10 G	122	57	50,5	63,5
CVAV/MVAV 10 G	122	57	75	91
CVFV/MVFV 10 G	122	57	75	—



CALUS® Type 4/4X/12



dimensions shown are not binding
and may be changed without notice

V-TYPE - size 77.27



inserts:	page:
CD 40 poles + ⊕	57
CT, CTS (10A) *) 40 poles + ⊕	64
CDD 72 poles + ⊕	70
CDS 27 poles + ⊕	80
CSH 16 poles + ⊕	93
CNE, CSE 16 poles + ⊕	106
CCE 16 poles + ⊕	112
CSS 16 poles + ⊕	124
CT, CTSE (16A) *) .. 16 poles + ⊕	132
CQE 32 poles + ⊕	140
CQEE 40 poles + ⊕	146
CMCE, CMSH 6+2 (aux) 150-151	
CP 6 poles + ⊕	162
CX 6/36 and 12/2 poles + ⊕	170-171
CX 4/0 and 4/2 poles + ⊕	172
MIXO 4 modules	179-215

*) can be used only in bulkhead mounting housings

insert centre distance: 77,5 x 27 mm

bulkhead mounting housings with single lever



lever in stainless steel

bulkhead mounting housings with single lever



lever in stainless steel

description

part No.

part No.

with lever, size "77.27"

CVI 16 L

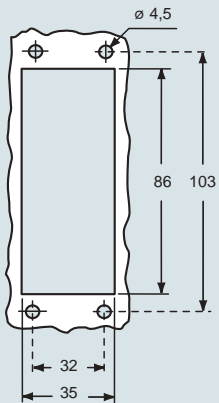
with lever and cover in aluminium, size "77.27"

CVI 16 LS

with lever and cover in plastic, size "77.27"

CVI 16 LP

panel cut-out for bulkhead mounting housings in mm



NB:
The enclosures ensure IP66 protection (or IP65 cover versions) rating when mated and locked with the closing levers.



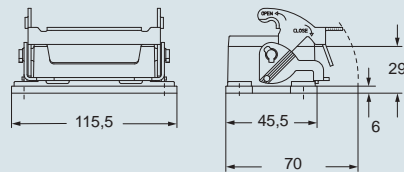
CAVUS® Type 4/4X/12
(except enclosures with plastic cover)



dimensions shown are not binding and may be changed without notice

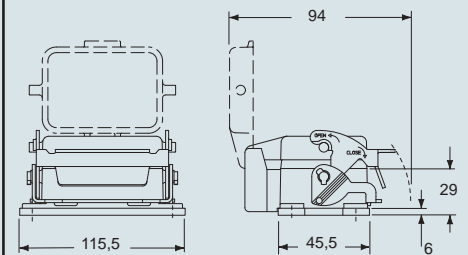
dimensions in mm

CVI L



dimensions in mm

CVI LS/LP



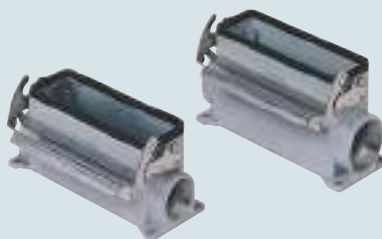
V-TYPE - size 77.27



inserts:		page:
CD	40 poles + ⊕	57
CDD	72 poles + ⊕	70
CDS	27 poles + ⊕	80
CSH	16 poles + ⊕	93
CNE, CSE	16 poles + ⊕	106
CCE	16 poles + ⊕	112
CSS	16 poles + ⊕	124
CQE	32 poles + ⊕	140
CQEE	40 poles + ⊕	146
CMCE	6+2 (aux) poles + ⊕	150
CMSH	6+2 (aux) poles + ⊕	151
CP	6 poles + ⊕	162
CX	6/36 and 12/2 poles + ⊕	170-171
CX	4/0 and 4/2 poles + ⊕	172
MIXO	4 modules	179-215

insert centre distance:
77,5 x 27 mm

surface mounting housings
with single lever

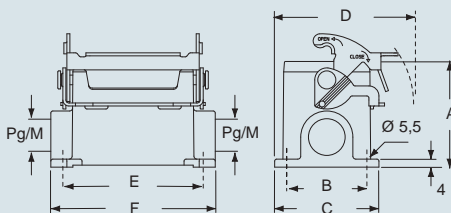


lever in
stainless
steel

description	part No.	entry	part No.	entry
		Pg		M
with lever, size "77.27"	CVP 16 L	21	MVP 16 L25	25
with lever, size "77.27"	CVP 16 L2	21 x 2	MVP 16 L225	25 x 2
with lever, high construction, size "77.27"	CVAP 16 L21	21	MVAP 16 L32	32
with lever, high construction, size "77.27"	CVAP 16 L221	21 x 2	MVAP 16 L232	32 x 2
with lever, high construction, size "77.27"	CVAP 16 L29	29	MVAP 16 L40	40
with lever, high construction, size "77.27"	CVAP 16 L229	29 x 2	MVAP 16 L240	40 x 2

dimensions in mm

CVP L - CVAP L and MVP L - MVAP L



type	A	B	C	D	E	F
CVP/MVP 16 L	63	45	57	75.5	105	117
CVAP/MVAP 16 L	77	45	57	75.5	105	117



CRUS® Type
4/4X/12



dimensions shown are not binding
and may be changed without notice



inserts:	page:
CD 40 poles + ⊕	57
CDD 72 poles + ⊕	70
CDS 27 poles + ⊕	80
CSH 16 poles + ⊕	93
CNE, CSE 16 poles + ⊕	106
CCE 16 poles + ⊕	112
CSS 16 poles + ⊕	124
CQE 32 poles + ⊕	140
CQEE 40 poles + ⊕	146
CMCE 6+2 (aux) poles + ⊕	150
CMSH 6+2 (aux) poles + ⊕	151
CP 6 poles + ⊕	162
CX 6/36 and 12/2 poles + ⊕	170-171
CX 4/0 and 4/2 poles + ⊕	172
MIXO 4 modules	179-215

insert centre distance:
77,5 x 27 mm

surface mounting housings
with single lever and plastic cover



lever in stainless steel

surface mounting housings
with single lever and aluminium cover



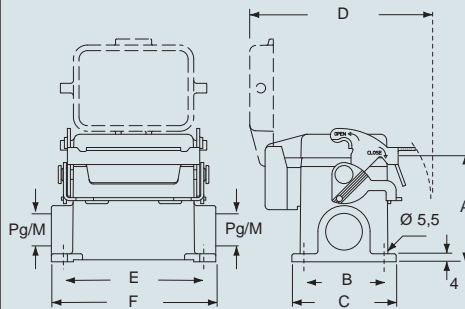
lever in stainless steel

description	part No.		part No.		part No.		part No.	
	entry Pg	entry M	entry Pg	entry M	entry Pg	entry M	entry Pg	entry M
with lever and cover, size "77.27"	CVP 16 LP	21	MVP 16 LP25	25	CVP 16 LS	21	MVP 16 LS25	25
with lever and cover, size "77.27"	CVP 16 LP2	21 x 2	MVP 16 LP225	25 x 2	CVP 16 LS2	21 x 2	MVP 16 LS225	25 x 2
with lever and cover, high construction, size "77.27"	CVAP 16 LP21	21	MVAP 16 LP32	32	CVAP 16 LS	21	MVAP 16 LS32	32
with lever and cover, high construction, size "77.27"	CVAP 16LP221	21 x 2	MVAP 16LP232	32 x 2	CVAP 16 LS2	21 x 2	MVAP 16LS232	32 x 2
with lever and cover, high construction, size "77.27"	CVAP 16 LP29	29	MVAP 16 LP40	40	CVAP 16 LS29	29	MVAP 16 LS40	40
with lever and cover, high construction, size "77.27"	CVAP 16LP229	29 x 2	MVAP 16LP240	40 x 2	CVAP 16LS229	29 x 2	MVAP 16LS240	40 x 2

NB:
The enclosures ensure IP66 protection (or IP65 cover versions) rating when mated and locked with the closing levers.

dimensions in mm

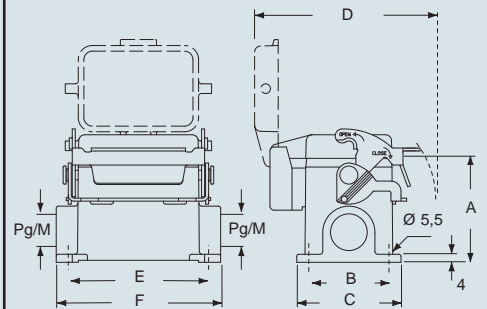
CVP LP - CVAP LP and MVP LP - MVAP LP



type	A	B	C	D	E	F
CVP/MVP 16 LP	63	45	57	94	105	117
CVAP/MVAP 16 LP	77	45	57	94	105	117

dimensions in mm

CVP LS - CVAP LS and MVP LS - MVAP LS



type	A	B	C	D	E	F
CVP/MVP 16 LS	63	45	57	94	105	117
CVAP/MVAP 16 LS	77	45	57	94	105	117



CALUS® Type 4/4X/12
(except enclosures with plastic cover)



dimensions shown are not binding
and may be changed without notice



inserts:	page:
CD 40 poles + ⊕	57
CDD 72 poles + ⊕	70
CDS 27 poles + ⊕	80
CSH 16 poles + ⊕	93
CNE, CSE 16 poles + ⊕	106
CCE 16 poles + ⊕	112
CSS 16 poles + ⊕	124
CQE 32 poles + ⊕	140
CQEE 40 poles + ⊕	146
CMCE 6+2 (aux) poles + ⊕	150
CMSH 6+2 (aux) poles + ⊕	151
CP 6 poles + ⊕	162
CX 6/36 and 12/2 poles + ⊕	170-171
CX 4/0 and 4/2 poles + ⊕	172
MIXO 4 modules	179-215

insert centre distance:
77,5 x 27 mm

hoods top entry
with gasket and 1 lever



lever in stainless steel

hoods, top entry,
with gasket and 2 levers

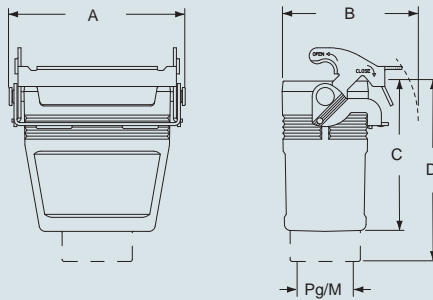


lever in stainless steel

description	part No.		entry		part No.		entry	
			Pg	M			Pg	M
with lever/s, size "77.27"	CVV 16 LG	21	MVV 16 LG32	32	CVV 16 G	21	MVV 16 G32	32
with lever/s, high construction, size "77.27"	CVAV 16 LG21	21	MVAV 16 LG25	25	CVAV 16 G21	21	MVAV 16 G25	25
with lever/s, high construction, size "77.27"	CVAV 16 LG29	29	MVAV 16 LG32	32	CVAV 16 G29	29	MVAV 16 G32	32
with lever/s, high construction, without adapter, size "77.27"	CVFV 16 LG21	21	MVFV 16 LG25	25	CVFV 16 G21	21	MVFV 16 G25	25
with lever/s, high construction, without adapter, size "77.27"	CVFV 16 LG29	29	MVFV 16 LG32	32	CVFV 16 G29	29	MVFV 16 G32	32

dimensions in mm

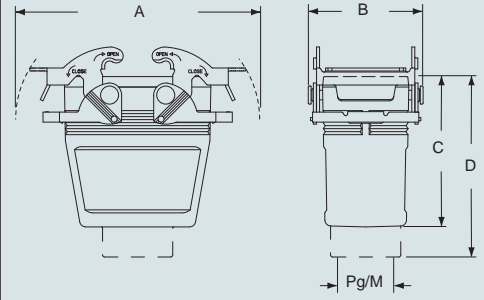
CVV LG - CVAV LG - CVFV LG and
MVV LG - MVAV LG - MVFV LG



type	A	B	C	D
CVV/MVV 16 LG	107.5	68	50.5	63.5
CVAV/MVAV 16 LG	107.5	68	81	97
CVFV/MVFV 16 LG	107.5	68	81	—

dimensions in mm

CVV G - CVAV G - CVFV G and
MVV G - MVAV G - MVFV G



type	A	B	C	D
CVV/MVV 16 G	142.5	57	50.5	63.5
CVAV/MVAV 16 G	142.5	57	81	97
CVFV/MVFV 16 G	142.5	57	81	—



Type
CRAUS 4/4X/12



dimensions shown are not binding
and may be changed without notice

V-TYPE - size 77.27



inserts:	page:
CD 64 poles + ⊕	59
CT, CTS (10A) *) ... 64 poles + ⊕	65
CDD 108 poles + ⊕	72
CDS 42 poles + ⊕	81
CSH 24 poles + ⊕	94
CNE, CSE 24 poles + ⊕	107
CCE 24 poles + ⊕	113
CSS 24 poles + ⊕	125
CT, CTSE (16A) *) .. 24 poles + ⊕	133
CQE 46 poles + ⊕	141
CQEE 64 poles + ⊕	147
CMCE 10+2 (aux) poles + ⊕	152
CMSH 10+2 (aux) poles + ⊕	153
CX 4/8 and 6/6 poles + ⊕	173 and 175
MIXO 6 modules	179-215

*) can be used only in bulkhead mounting housings

insert centre distance: **104 x 27 mm**

bulkhead mounting housings with single lever



lever in stainless steel

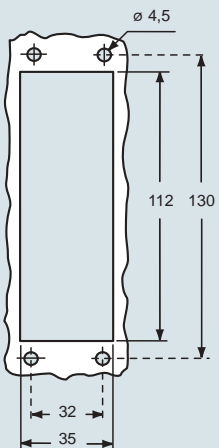
bulkhead mounting housings with single lever



lever in stainless steel

description	part No.	part No.
with lever, size "104.27"	CVI 24 L	
with lever and cover in aluminium, size "104.27"		CVI 24 LS
with lever and cover in plastic, size "104.27"		CVI 24 LP

panel cut-out for bulkhead mounting housings in mm



NB:
The enclosures ensure IP66 protection (or IP65 cover versions) rating when mated and locked with the closing levers.



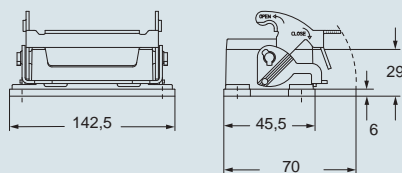
CAVUS® Type 4/4X/12
(except enclosures with plastic cover)



dimensions shown are not binding and may be changed without notice

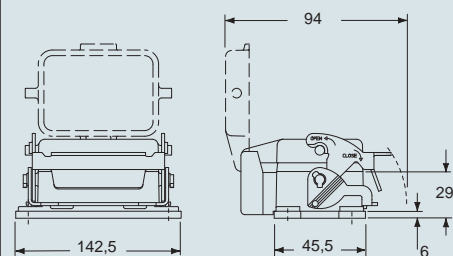
dimensions in mm

CVI L



dimensions in mm

CVI LS/LP





inserts:	page:
CD 64 poles + ⊕	59
CDD 108 poles + ⊕	72
CDS 42 poles + ⊕	81
CSH 24 poles + ⊕	94
CNE, CSE 24 poles + ⊕	107
CCE 24 poles + ⊕	113
CSS 24 poles + ⊕	125
CQE 46 poles + ⊕	141
CQEE 64 poles + ⊕	147
CMCE 10+2 (aux) poles + ⊕	152
CMSH 10+2 (aux) poles + ⊕	153
CX 4/8 and 6/6 poles + ⊕	173 and 175
MIXO 6 modules	179-215

insert centre distance:
104 x 27 mm

surface mounting housings
with single lever

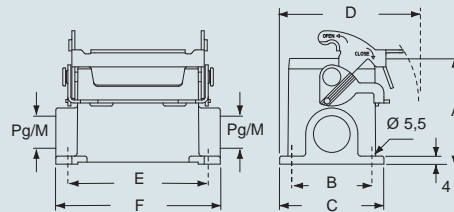


lever in
stainless
steel

description	part No.	entry Pg	part No.	entry M
	with lever, size "104.27"	CVP 24 L	21	MVP 24 L25
with lever, size "104.27"	CVP 24 L2	21 x 2	MVP 24 L225	25 x 2
with lever, high construction, size "104.27"	CVAP 24 L21	21	MVAP 24 L32	32
with lever, high construction, size "104.27"	CVAP 24 L221	21 x 2	MVAP 24 L232	32 x 2
with lever, high construction, size "104.27"	CVAP 24 L29	29	MVAP 24 L40	40
with lever, high construction, size "104.27"	CVAP 24 L229	29 x 2	MVAP 24 L240	40 x 2

dimensions in mm

CVP L - CVAP L and MVP L - MVAP L



type	A	B	C	D	E	F
CVP/MVP 24 L	63	45	57	75.5	132	144
CVAP/MVAP 24 L	80	45	57	75.5	132	144



CRUS® Type
4/4X/12



dimensions shown are not binding
and may be changed without notice

V-TYPE - size 77.27



inserts:	page:
CD 64 poles + ⊕	59
CDD 108 poles + ⊕	72
CDS 42 poles + ⊕	81
CSH 24 poles + ⊕	94
CNE, CSE 24 poles + ⊕	107
CCE 24 poles + ⊕	113
CSS 24 poles + ⊕	125
CQE 46 poles + ⊕	141
CQEE 64 poles + ⊕	147
CMCE 10+2 (aux) poles + ⊕	152
CMSH 10+2 (aux) poles + ⊕	153
CX 4/8 and 6/6 poles + ⊕	173 and 175
MIXO 6 modules	179-215

insert centre distance:
104 x 27 mm

surface mounting housings
with single lever and plastic cover



lever in stainless steel

surface mounting housings
with single lever and aluminium cover



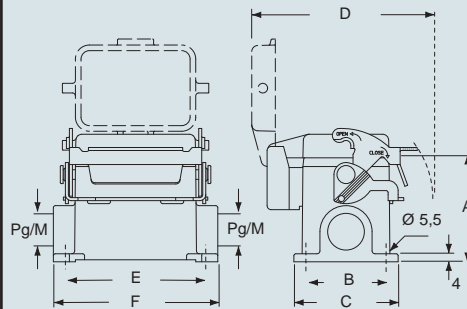
lever in stainless steel

description	part No.		entry		part No.		entry	
			Pg	M			Pg	M
with lever and cover, size "104.27"	CVP 24 LP	21			MVP 24 LP25	25		
with lever and cover, size "104.27"	CVP 24 LP2	21 x 2			MVP 24 LP225	25 x 2		
with lever and cover, high construction, size "104.27"	CVAP 24 LP21	21			MVAP 24 LP32	32		
with lever and cover, high construction, size "104.27"	CVAP 24LP221	21 x 2			MVAP 24LP232	32 x 2		
with lever and cover, high construction, size "104.27"	CVAP 24 LP29	29			MVAP 24 LP40	40		
with lever and cover, high construction, size "104.27"	CVAP 24LP229	29 x 2			MVAP 24LP240	40 x 2		

NB:
The enclosures ensure IP66 protection (or IP65 cover versions) rating when mated and locked with the closing levers.

dimensions in mm

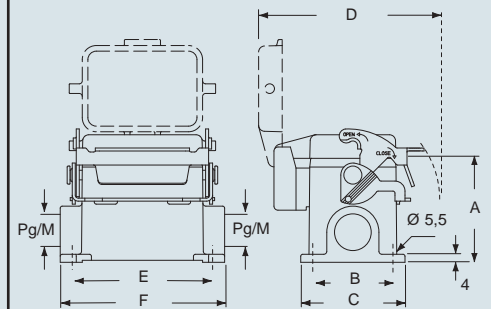
CVP LP - CVAP LP and MVP LP - MVAP LP



type	A	B	C	D	E	F
CVP/MVP 24 LP	63	45	57	94	132	144
CVAP/MVAP 24 LP	80	45	57	94	132	144

dimensions in mm

CVP LS - CVAP LS and MVP LS - MVAP LS



type	A	B	C	D	E	F
CVP/MVP 24 LS	63	45	57	94	132	144
CVAP/MVAP 24 LS	80	45	57	94	132	144



CALUS® Type 4/4X/12
(except enclosures with plastic cover)



dimensions shown are not binding
and may be changed without notice

V-TYPE - size 77.27



inserts:	page:
CD 64 poles + ⊕	59
CDD 108 poles + ⊕	72
CDS 42 poles + ⊕	81
CSH 24 poles + ⊕	94
CNE, CSE 24 poles + ⊕	107
CCE 24 poles + ⊕	113
CSS 24 poles + ⊕	125
CQE 46 poles + ⊕	141
CQEE 64 poles + ⊕	147
CMCE 10+2 (aux) poles + ⊕	152
CMSH 10+2 (aux) poles + ⊕	153
CX 4/8 and 6/6 poles + ⊕	173 and 175
MIXO 6 modules	179-215

insert centre distance:
104 x 27 mm

hoods top entry
with gasket and 1 lever



lever in stainless steel

hoods, top entry,
with gasket and 2 levers

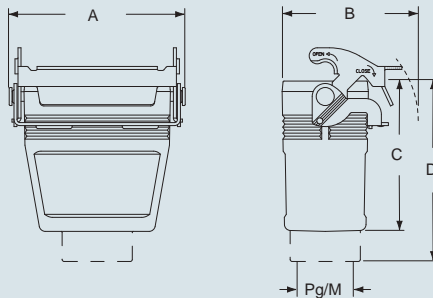


lever in stainless steel

description	part No.		entry		part No.		entry	
			Pg	M			Pg	M
with lever/s, size "104.27"	CVV 24 LG	21	MVV 24 LG32	32	CVV 24 G	21	MVV 24 G32	32
with lever/s, high construction, size "104.27"	CVAV 24 LG21	21	MVAV 24 LG25	25	CVAV 24 G21	21	MVAV 24 G25	25
with lever/s, high construction, size "104.27"	CVAV 24 LG29	29	MVAV 24 LG32	32	CVAV 24 G29	29	MVAV 24 G32	32
with lever/s, high construction, without adapter, size "104.27"	CVFV 24 LG21	21	MVFV 24 LG25	25	CVFV 24 G21	21	MVFV 24 G25	25
with lever/s, high construction, without adapter, size "104.27"	CVFV 24 LG29	29	MVFV 24 LG32	32	CVFV 24 G29	29	MVFV 24 G32	32

dimensions in mm

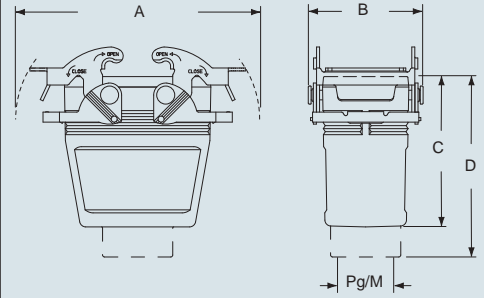
CVV LG - CVAV LG - CVFV LG and
MVV LG - MVAV LG - MVFV LG



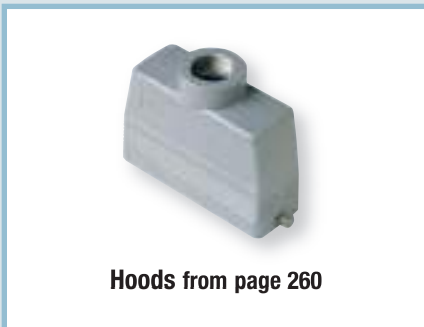
type	A	B	C	D
CVV/MVV 24 LG	134	68	60.5	73.5
CVAV/MVAV 24 LG	134	68	81	97
CVFV/MVFV 24 LG	134	68	81	—

dimensions in mm

CVV G - CVAV G - CVFV G and
MVV G - MVAV G - MVFV G



type	A	B	C	D
CVV/MVV 24 G	169	57	60.5	73.5
CVAV/MVAV 24 G	169	57	81	97
CVFV/MVFV 24 G	169	57	81	—



Type
CRAUS 4/4X/12

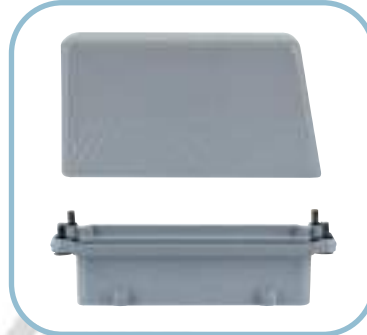


dimensions shown are not binding
and may be changed without notice

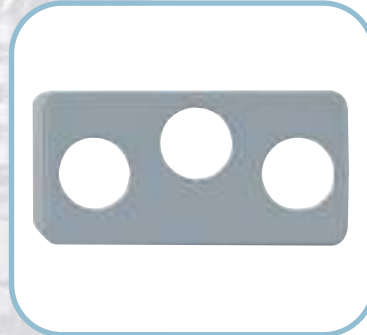
V-TYPE - size 77.27

BIG

LARGE
MODULAR
ENCLOSURE



MORE ENTRIES
AND SPACE
FOR CABLES



EASY
WIRING AND
INSPECTION



ELECTRONIC
BOARD
SLOTS



THE SPACE YOU HAVE ALWAYS WANTED...

BIG - overview

BIG Enclosures

The space you have always wanted

BIG Series, based on the wide-ranging experience achieved by ILME, introduces a significant **change in the design of hoods and has been specifically designed to meet the new**

Accurate design

The **large dimensions** of these innovative enclosures have been chosen to offer customers an **adequate space to store conductors**. The **width** of the new enclosures is **greater than that of previous versions**: 66 mm compared to the 43 mm for standard enclosures. The **height** of BIG enclosures has also been **increased to 100 mm** for sizes "44.27" and "57.27" (standard versions for high models: 70 and 72mm), **and to 110 mm** for sizes "77.27" and "104.27" (standard versions for high models: 76 mm).

The cable compartment is now fully accessible during assembly (the connector insert is fully inserted in the lower half of

requirements of the wiring market.

The new enclosures **integrate the existing range** and **are ideal for installations with structured and complex wiring.**

the enclosure), **offering three times the space compared to standard enclosures**. This means it is possible to bend cables and pipes with greater bending radii.

Due to this important feature, the new BIG enclosures are **particularly suitable for MIXO modular inserts**, being versatile and customizable, for multiple cable entries.

Each insert, differentiated according to electric power or signal, pneumatic, optical fiber or Ethernet network current, **may thus have the specific branching. One single large connector can replace what previously required two connectors.**



Ease of use

The possibility of **splitting the enclosure in two halves simplifies the installation of the insert**.

It is also possible to **connect the insert with a cable and later insert it in the lower half of the enclosure** (except for the 6 pole version).



BIG Enclosures

The space you have always wanted

Options for the connection of control and signalling devices

All the five walls of the upper half of the enclosure have a high thickness to allow them to be drilled and threaded, even with multiple threads.

BIG enclosures enable the connection – of push – buttons, selectors, switches and signalling lamps after the necessary holes have been drilled. It is possible, for example, to enable power supplies or signalling circuits, even after the connector has been coupled.



Simplified installation

Installation operations for the new hoods are simple and fast. No special accessories, tools or expensive additional operations are required.

The lower half of the enclosure must be fixed to the upper half by means of the 4 screws supplied.

It is possible to prevent the fixing screws from coming loose by fitting on each screw the O-ring seal supplied with the enclosures.



Compartment for electronic boards

It is possible to install electronic boards in the lower section of enclosures with side entry. In this case, it is however necessary to order CR MBS screws separately to fix the board in place.



Greater protection

It is also possible to fix one earthing terminal in the upper half of the enclosure to provide protection against indirect contacts.

In this case, it is however necessary to order separately earthing terminal CR MBT, consisting of a fixing screws and a wire-terminal for 6 mm² conductors.

BIG Enclosures

The space you have always wanted

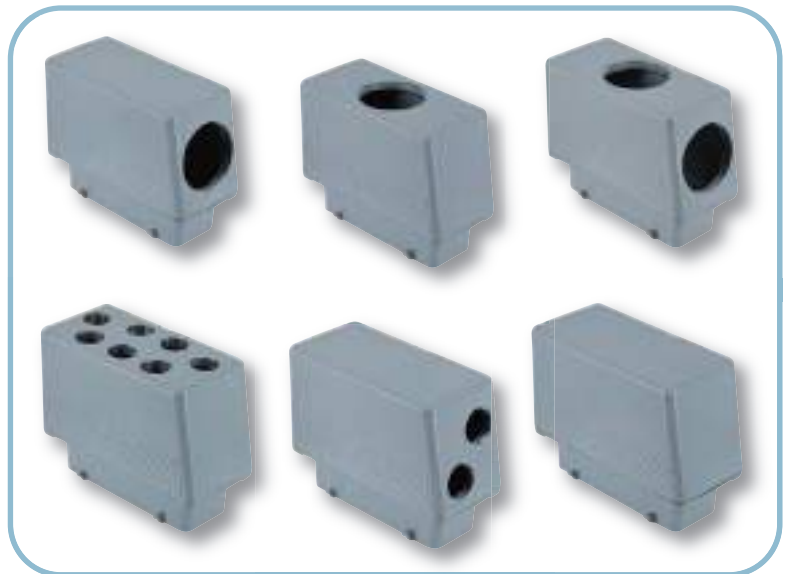
Range

The new items are classified with the following pre-code:

- MBO for enclosures with side entry
- MBV for enclosures with one or more top entries
- MBVO for enclosures with top and side entries
- CBC for closed enclosures that can be drilled

The available versions are:

- for enclosures with size "44.27":
single lever
- for enclosures with sizes "57.27", "72.27" and "104.27":
two levers



Technical characteristics

- 1) The new BIG enclosures are made in die-cast aluminum alloy and are fitted with cast pegs with a reinforced design, painted with epoxy-polyester powder paint. The sealing gasket in anti-aging NBR elastomer, resistant to oils and fuels, is positioned internally to guarantee a greater protection from light and atmospheric agents.
- 2) BIG enclosures guarantee an IP66 protection rating (EN 60529) after the connector has been coupled, and completed with appropriate cable glands; they are manufactured in compliance with standard IEC/EN 61984.
- 3) Ambient temperature range -40°C / +125°C.
- 4) Versions for class W aggressive environments are also available on request.



Warning

Due to the considerable weight of BIG hoods, when fitted with inserts, conductors and cable glands, we recommend to use them in combination with housings fitted with V-type closing levers (C7/M7/CV/MV/JCV/JMV).

If used in combination with enclosures series CLASS, it is advisable to appropriately anchor the cables in order to prevent their weight from being applied to the closing levers.

inserts:	page:
CDD 24 poles + ⊕	67
CDS 9 poles + ⊕	78
CSH 6 poles + ⊕	91
CNE, CSE 6 poles + ⊕	104
CCE 6 poles + ⊕	110
CSS 6 poles + ⊕	122
CT, CTSE (16A) 6 poles + ⊕	130
CQE 10 poles + ⊕	138
MIXO 2 modules	179 - 215

insert centre distance:
44 x 27 mm

hoods with 2 pegs



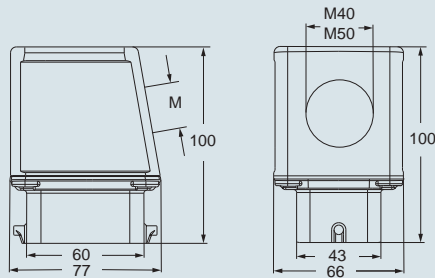
hoods with 2 pegs



description	part No.	entry M	part No.	entry M
with pegs, side entry	MBO 06 L40	40	MBV 06 L40	40
with pegs, side entry	MBO 06 L50	50	MBV 06 L50	50
with pegs, top entry				
with pegs, top entry				

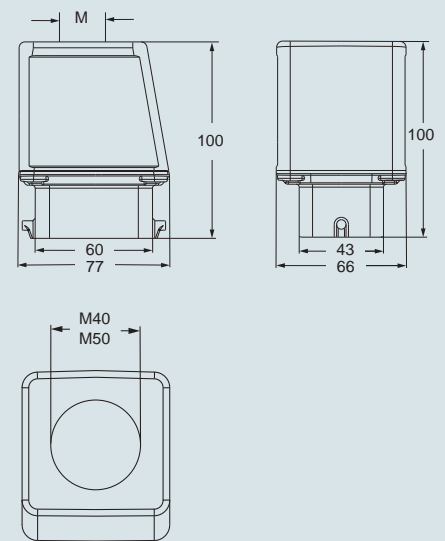
dimensions in mm

MBO 06 L



dimensions in mm

MBV 06 L



CALUS® Type 4/4X/12



dimensions shown are not binding and may be changed without notice

BIG - size 44.27



inserts:	page:	
CDD 24 poles + ⊕	67	
CDS 9 poles + ⊕	78	
CSH 6 poles + ⊕	91	
CNE, CSE 6 poles + ⊕	104	
CCE 6 poles + ⊕	110	
CSS 6 poles + ⊕	122	
CT, CTSE (16A) 6 poles + ⊕	130	
CQE 10 poles + ⊕	138	
MIXO 2 modules	179 - 215	

insert centre distance:
44 x 27 mm

hoods with 2 pegs



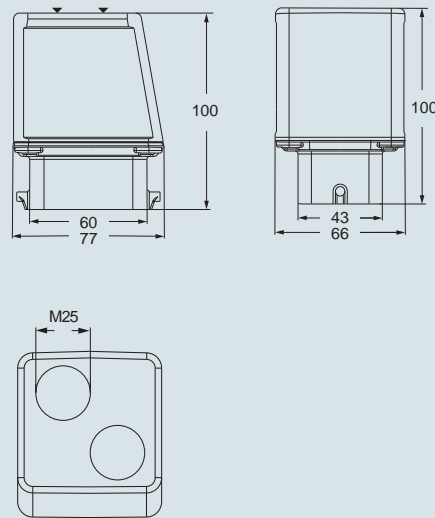
hoods with 2 pegs



description	part No.	entry M	part No.	entry M
with pegs, top entry	MBV 06 L225	25 x 2		
with pegs, top entry			MBV 06 L320	20 x 3

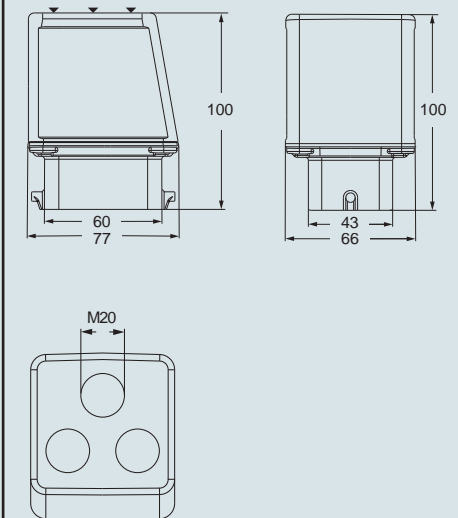
dimensions in mm

MBV 06 L225



dimensions in mm

MBV 06 L320



CALUS® Type 4/4X/12



dimensions shown are not binding and may be changed without notice

BIG - size 44.27

inserts:	page:
CDD 24 poles + ⊕	67
CDS 9 poles + ⊕	78
CSH 6 poles + ⊕	91
CNE, CSE 6 poles + ⊕	104
CCE 6 poles + ⊕	110
CSS 6 poles + ⊕	122
CT, CTSE (16A) 6 poles + ⊕	130
CQE 10 poles + ⊕	138
MIXO 2 modules	179 - 215

insert centre distance:
44 x 27 mm

hoods with 2 pegs



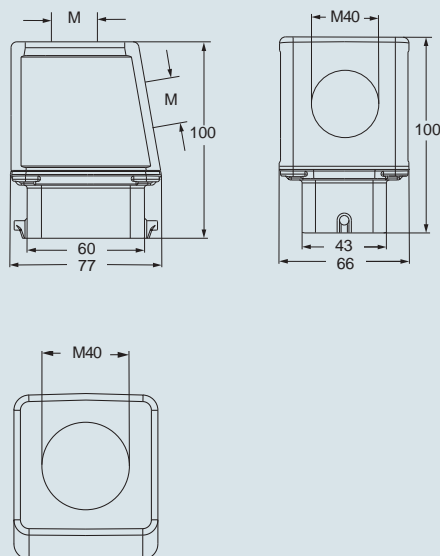
hoods with 2 pegs



description	part No.	entry M	part No.
with pegs, side and top entries	MBVO 06 L240	2 x 40	
with pegs, without entries, designed to be drilled			CBC 06 L

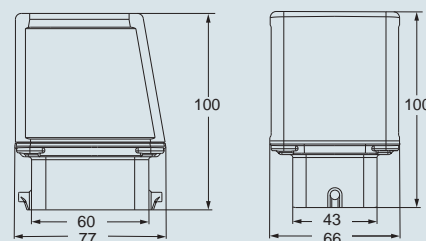
dimensions in mm

MBVO 06 L240



dimensions in mm

CBC 06 L



CAUS® Type 4/4X/12



dimensions shown are not binding and may be changed without notice

BIG - size 44.27



inserts:	page:
CDD 42 poles + ⊕	69
CDS 18 poles + ⊕	79
CSH 10 poles + ⊕	92
CNE, CSE 10 poles + ⊕	105
CCE 10 poles + ⊕	111
CSS 10 poles + ⊕	123
CT, CTSE (16A) 10 poles + ⊕	131
CQE 18 poles + ⊕	139
CMCE 3+2 (aux) poles + ⊕	148
CMSH 3+2 (aux) poles + ⊕	149
CX 8/24 poles + ⊕	169
MIXO 3 modules	179 - 215

insert centre distance:
57 x 27 mm

hoods with 4 pegs

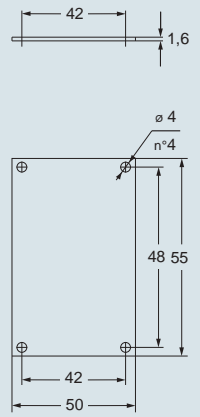


hoods with 4 pegs



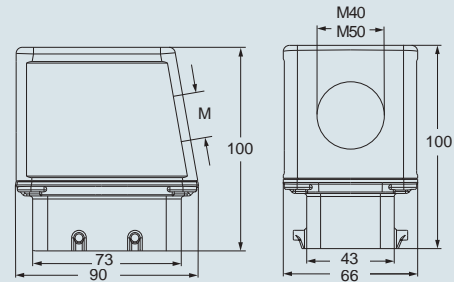
description	part No.	entry M	part No.	entry M
with pegs, side entry	MBO 10.40	40	MBV 10.40	40
with pegs, side entry	MBO 10.50	50	MBV 10.50	50
with pegs, top entry				
with pegs, top entry				

Dimensions of electronic boards for MBO enclosures side entry



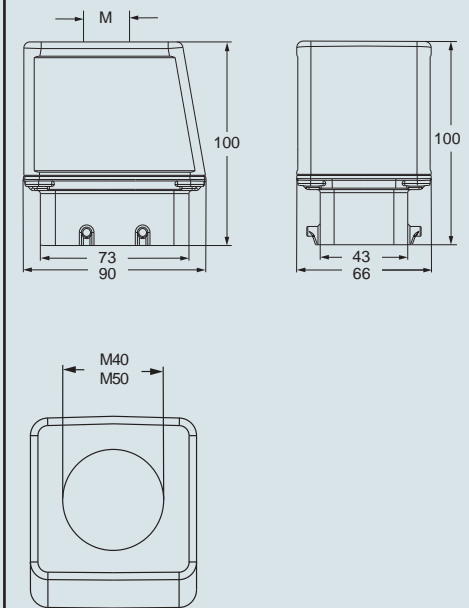
dimensions in mm

MBO 10



dimensions in mm

MBV 10



CAUS® Type
 4/4X/12



dimensions shown are not binding
 and may be changed without notice

BIG - size 57.27



inserts:	page:
CDD 42 poles + ⊕	69
CDS 18 poles + ⊕	79
CSH 10 poles + ⊕	92
CNE, CSE 10 poles + ⊕	105
CCE 10 poles + ⊕	111
CSS 10 poles + ⊕	123
CT, CTSE (16A) 10 poles + ⊕	131
CQE 18 poles + ⊕	139
CMCE 3+2 (aux) poles + ⊕	148
CMSH 3+2 (aux) poles + ⊕	149
CX 8/24 poles + ⊕	169
MIXO 3 modules	179 - 215

insert centre distance:
57 x 27 mm

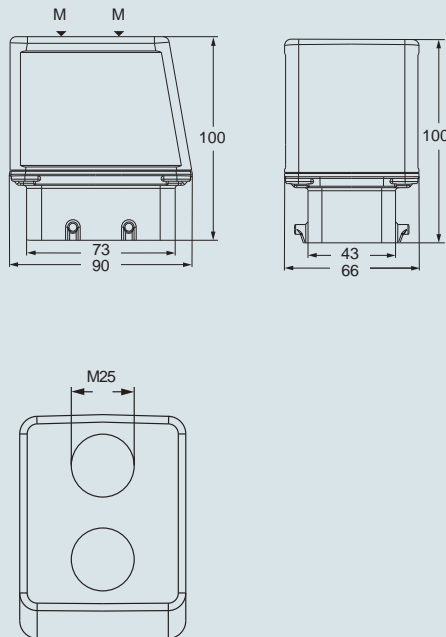
hoods with 4 pegs



description	part No.	entry M
with pegs, top entry	MBV 10.225	25 x 2

dimensions in mm

MBV 10.225



Housings from page 275

CAVUS® Type 4/4X/12



dimensions shown are not binding and may be changed without notice

inserts:	page:
CDD 42 poles + ⊕	69
CDS 18 poles + ⊕	79
CSH 10 poles + ⊕	92
CNE, CSE 10 poles + ⊕	105
CCE 10 poles + ⊕	111
CSS 10 poles + ⊕	123
CT, CTSE (16A) 10 poles + ⊕	131
CQE 18 poles + ⊕	139
CMCE 3+2 (aux) poles + ⊕	148
CMSH 3+2 (aux) poles + ⊕	149
CX 8/24 poles + ⊕	169
MIXO 3 modules	179 - 215

insert centre distance:
57 x 27 mm

hoods with 4 pegs



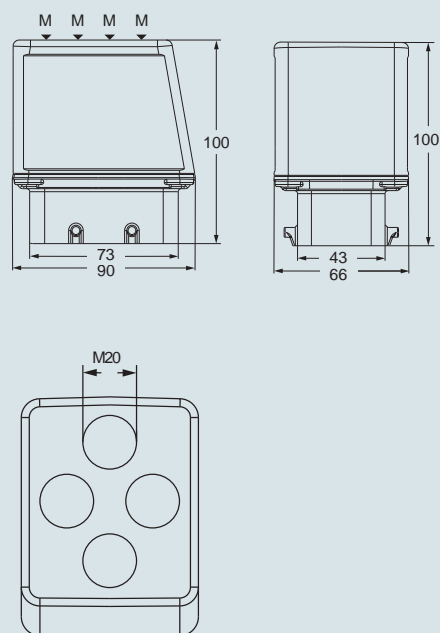
hoods with 4 pegs



description	part No.	entry M	part No.	entry M
with pegs, top entry	MBV 10.420	20 x 4	MBVO 10.240	40 x 2
with pegs, side and top entries				

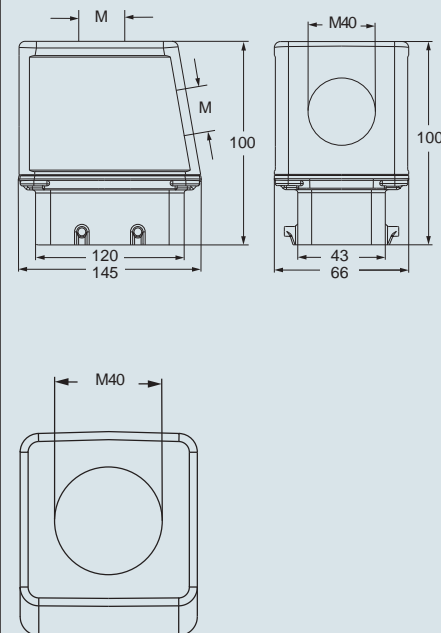
dimensions in mm

MBV 10.420



dimensions in mm

MBVO 10.240



CAUS® Type 4/4X/12



dimensions shown are not binding and may be changed without notice

BIG - size 57.27



inserts:	page:
CDD 42 poles + ⊕	69
CDS 18 poles + ⊕	79
CSH 10 poles + ⊕	92
CNE, CSE 10 poles + ⊕	105
CCE 10 poles + ⊕	111
CSS 10 poles + ⊕	123
CT, CTSE (16A) 10 poles + ⊕	131
CQE 18 poles + ⊕	139
CMCE 3+2 (aux) poles + ⊕	148
CMSH 3+2 (aux) poles + ⊕	149
CX 8/24 poles + ⊕	169
MIXO 3 modules	179 - 215

insert centre distance:
57 x 27 mm

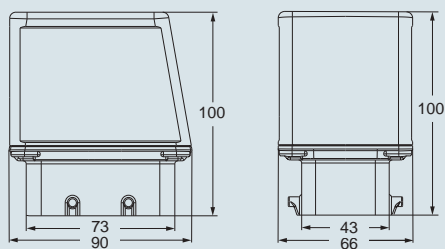
hoods with 4 pegs



description	part no.
with pegs, without entries, designed to be drilled	CBC 10

dimensions in mm

CBC 10



CAUS® Type 4/4X/12



dimensions shown are not binding and may be changed without notice

inserts:		page:
CD	40 poles + ⊕	57
CDD	72 poles + ⊕	70
CDS	27 poles + ⊕	80
CSH	16 poles + ⊕	93
CNE, CSE	16 poles + ⊕	106
CCE	16 poles + ⊕	112
CSS	16 poles + ⊕	124
CT, CTSE (16A)	16 poles + ⊕	132
CQE	32 poles + ⊕	140
CQEE	40 poles + ⊕	146
CMCE, CMSH 6+2 (aux)	poles + ⊕	150-151
CP	6 poles + ⊕	162
CX	6/36 and 12/2 poles + ⊕	170-171
CX	4/0 and 4/2 poles + ⊕	172
MIXO	4 modules	179-215

insert centre distance:
77,5 x 27 mm

hoods with 4 pegs

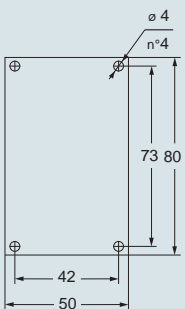
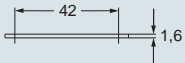


hoods with 4 pegs



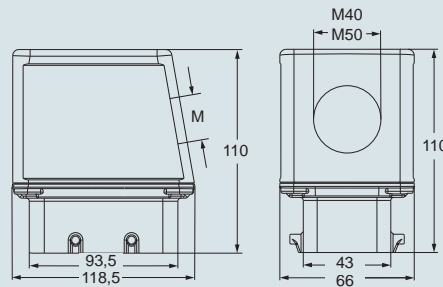
description	part No.	entry M	part No.	entry M
with pegs, side entry	MBO 16.40	40		
with pegs, side entry	MBO 16.50	50		
with pegs, top entry			MBV 16.40	40
with pegs, top entry			MBV 16.50	50

Dimensions of electronic boards for MBO enclosures
side entry



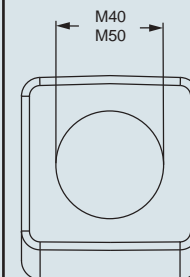
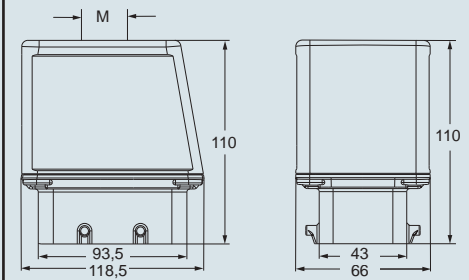
dimensions in mm

MBO 16



dimensions in mm

MBV 16



CAUS Type 4/4X/12



dimensions shown are not binding
and may be changed without notice

BIG - size 77.27



inserts:	page:
CD 40 poles + ⊕	57
CDD 72 poles + ⊕	70
CDS 27 poles + ⊕	80
CSH 16 poles + ⊕	93
CNE, CSE 16 poles + ⊕	106
CCE 16 poles + ⊕	112
CSS 16 poles + ⊕	124
CT, CTSE (16A) 16 poles + ⊕	132
CQE 32 poles + ⊕	140
CQEE 40 poles + ⊕	146
CMCE, CMSH 6+2 (aux) poles + ⊕	150-151
CP 6 poles + ⊕	162
CX 6/36 and 12/2 poles + ⊕	170-171
CX 4/0 and 4/2 poles + ⊕	172
MIXO 4 modules	179-215

insert centre distance:
77,5 x 27 mm

hoods with 4 pegs



hoods with 4 pegs



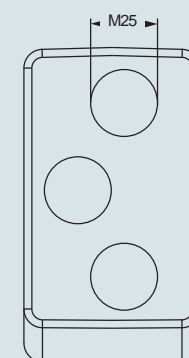
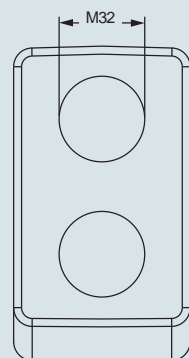
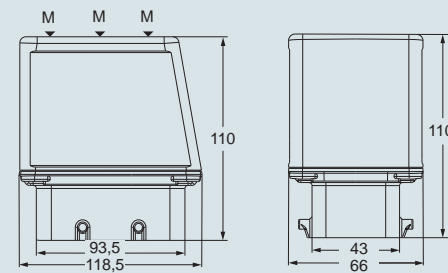
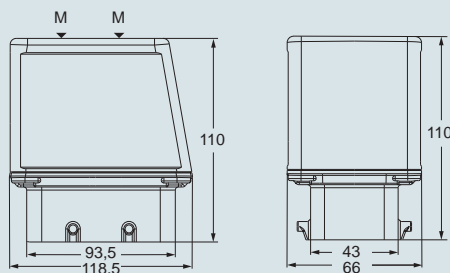
description	part No.	entry M	part No.	entry M
with pegs, top entry	MBV 16.232	32 x 2	MBV 16.325	25 x 3
with pegs, top entry				

dimensions in mm

dimensions in mm

MBV 16.232

MBV 16.325



CALUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

BIG - size 77.27

inserts:	page:
CD 40 poles + ⊕	57
CDD 72 poles + ⊕	70
CDS 27 poles + ⊕	80
CSH 16 poles + ⊕	93
CNE, CSE 16 poles + ⊕	106
CCE 16 poles + ⊕	112
CSS 16 poles + ⊕	124
CT, CTSE (16A) 16 poles + ⊕	132
CQE 32 poles + ⊕	140
CQEE 40 poles + ⊕	146
CMCE, CMSH 6+2 (aux) poles + ⊕	150-151
CP 6 poles + ⊕	162
CX 6/36 and 12/2 poles + ⊕	170-171
CX 4/0 and 4/2 poles + ⊕	172
MIXO 4 modules	179-215

insert centre distance:
77,5 x 27 mm

hoods with 4 pegs



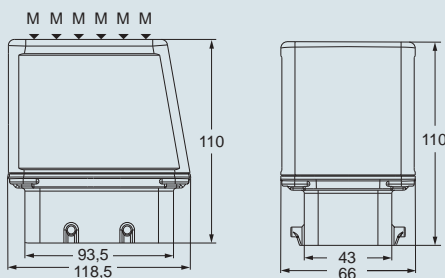
hoods with 4 pegs



description	part No.	entry M	part No.	entry M
with pegs, top entry	MBV 16.620	20 x 6	MBO 16.225	25 x 2
with pegs, side entry				

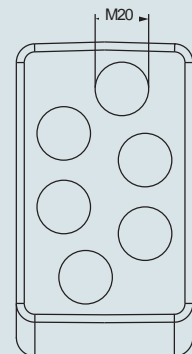
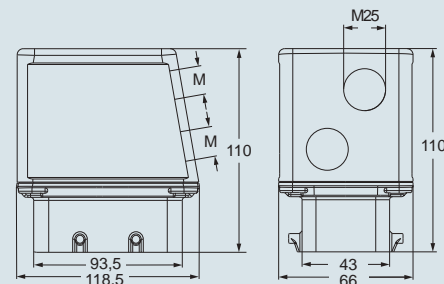
dimensions in mm

MBV 16.620



dimensions in mm

MBO 16.225



CALUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

BIG - size 77.27

inserts:	page:
CD 40 poles + ⊕	57
CDD 72 poles + ⊕	70
CDS 27 poles + ⊕	80
CSH 16 poles + ⊕	93
CNE, CSE 16 poles + ⊕	106
CCE 16 poles + ⊕	112
CSS 16 poles + ⊕	124
CT, CTSE (16A) 16 poles + ⊕	132
CQE 32 poles + ⊕	140
CQEE 40 poles + ⊕	146
CMCE, CMSH 6+2 (aux) poles + ⊕	150-151
CP 6 poles + ⊕	162
CX 6/36 and 12/2 poles + ⊕	170-171
CX 4/0 and 4/2 poles + ⊕	172
MIXO 4 modules	179-215

insert centre distance:
77,5 x 27 mm

hoods with 4 pegs



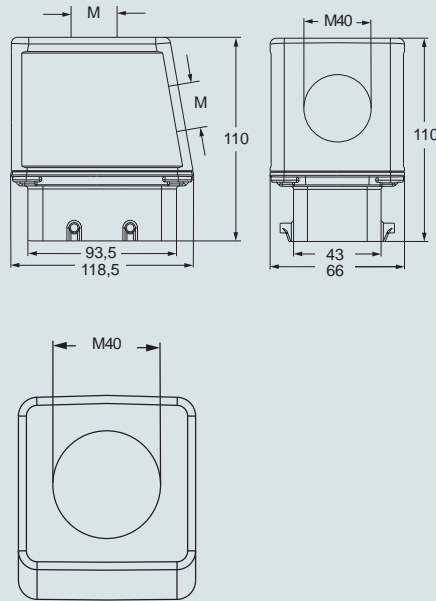
hoods with 4 pegs



description	part No.	entry M	part No.
with pegs, side and top entries	MBVO 16.240	40 x 2	
with pegs, without entries, designed to be drilled			CBC 16

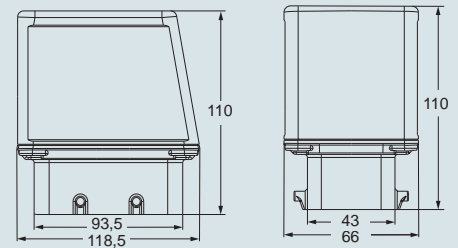
dimensions in mm

MBVO 16.240



dimensions in mm

CBC 16



CAUS® Type 4/4X/12



dimensions shown are not binding and may be changed without notice

BIG - size 77.27



inserts:	page:
CD 64 poles + ⊕	59
CDD 108 poles + ⊕	72
CDS 42 poles + ⊕	81
CSH 24 poles + ⊕	94
CNE, CSE 24 poles + ⊕	107
CCE 24 poles + ⊕	113
CSS 24 poles + ⊕	125
CT, CTSE (16A) 24 poles + ⊕	133
CQE 46 poles + ⊕	141
CQEE 64 poles + ⊕	147
CMCE 10+2 (aux) poles + ⊕	152
CMSH 10+2 (aux) poles + ⊕	153
CX 4/8 and 6/6 poles + ⊕	173 and 175
MIXO 6 modules	179-215

insert centre distance:
104 x 27 mm

hoods with 4 pegs

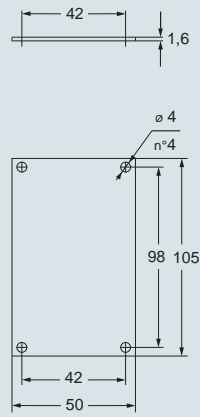


hoods with 4 pegs



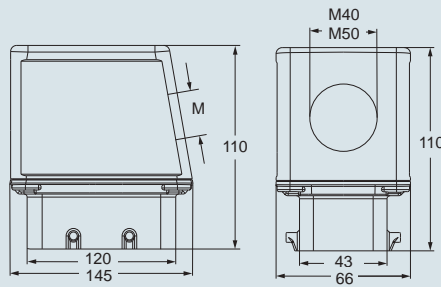
description	part No.	entry M	part No.	entry M
with pegs, side entry	MBO 24.40	40		
with pegs, side entry,	MBO 24.50	50		
with pegs, top entry			MBV 24.40	40
with pegs, top entry			MBV 24.50	50

Dimensions of electronic boards for MBO enclosures side entry



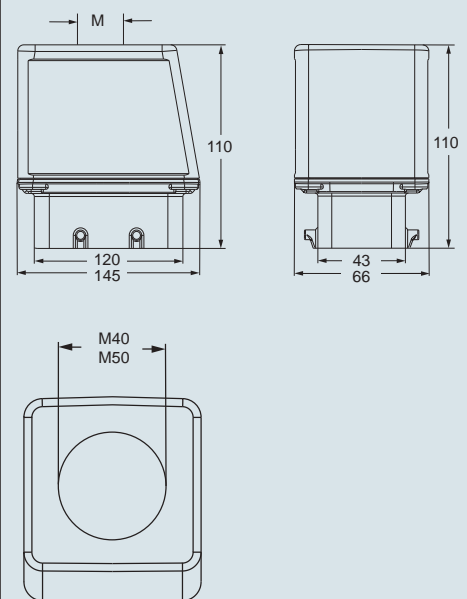
dimensions in mm

MBO 24



dimensions in mm

MBV 24



CALUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

BIG - size 104.27



inserts:	page:
CD 64 poles + ⊕	59
CDD 108 poles + ⊕	72
CDS 42 poles + ⊕	81
CSH 24 poles + ⊕	94
CNE, CSE 24 poles + ⊕	107
CCE 24 poles + ⊕	113
CSS 24 poles + ⊕	125
CT, CTSE (16A) 24 poles + ⊕	133
CQE 46 poles + ⊕	141
CQEE 64 poles + ⊕	147
CMCE 10+2 (aux) poles + ⊕	152
CMSH 10+2 (aux) poles + ⊕	153
CX 4/8 and 6/6 poles + ⊕	173 and 175
MIXO 6 modules	179-215

insert centre distance:
104 x 27 mm

hoods with 4 pegs



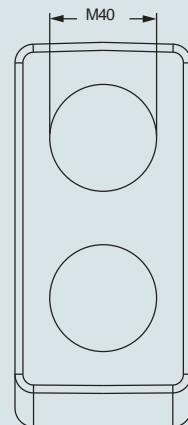
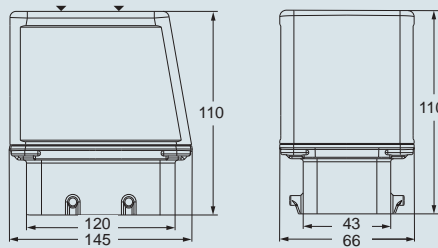
hoods with 4 pegs



description	part No.	entry M	part No.	entry M
with pegs, top entry	MBV 24.240	40 x 2	MBV 24.332	32 x 3
with pegs, top entry				

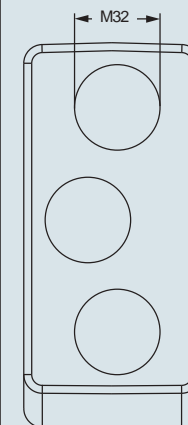
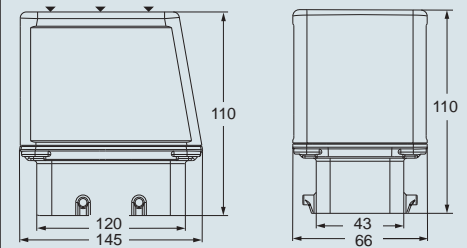
dimensions in mm

MBV 24.240



dimensions in mm

MBV 24.332



CAUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

BIG - size 104.27

inserts:	page:
CD 64 poles + ⊕	59
CDD 108 poles + ⊕	72
CDS 42 poles + ⊕	81
CSH 24 poles + ⊕	94
CNE, CSE 24 poles + ⊕	107
CCE 24 poles + ⊕	113
CSS 24 poles + ⊕	125
CT, CTSE (16A) 24 poles + ⊕	133
CQE 46 poles + ⊕	141
CQEE 64 poles + ⊕	147
CMCE 10+2 (aux) poles + ⊕	152
CMSH 10+2 (aux) poles + ⊕	153
CX 4/8 and 6/6 poles + ⊕	173 and 175
MIXO 6 modules	179-215

insert centre distance:
104 x 27 mm

hoods with 4 pegs



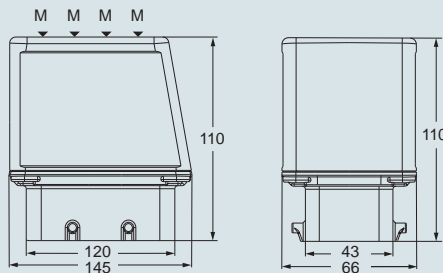
hoods with 4 pegs



description	part No.	entry M	part No.	entry M
with pegs, top entry	MBV 24.425	25 x 4		
with pegs, top entry	MBV 24.720	20 x 7		
with pegs, side entry			MBO 24.225	25 x 2

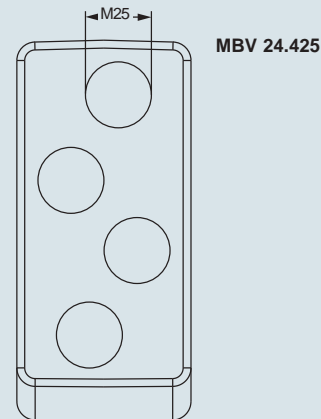
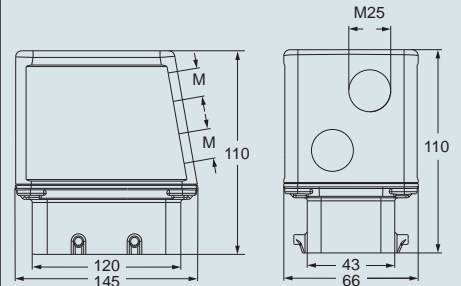
dimensions in mm

MBV 24

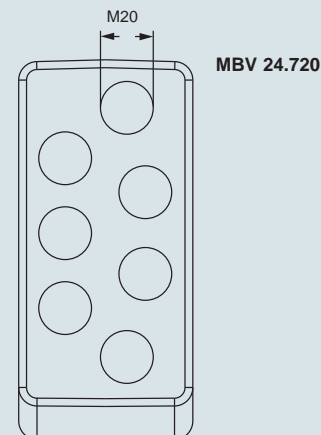


dimensions in mm

MBO 24.225



MBV 24.425



MBV 24.720



Housings page 277

CALUS® Type 4/4X/12



dimensions shown are not binding and may be changed without notice

inserts:	page:
CD 64 poles + ⊕	59
CDD 108 poles + ⊕	72
CDS 42 poles + ⊕	81
CSH 24 poles + ⊕	94
CNE, CSE 24 poles + ⊕	107
CCE 24 poles + ⊕	113
CSS 24 poles + ⊕	125
CT, CTSE (16A) 24 poles + ⊕	133
CQE 46 poles + ⊕	141
CQEE 64 poles + ⊕	147
CMCE 10+2 (aux) poles + ⊕	152
CMSH 10+2 (aux) poles + ⊕	153
CX 4/8 and 6/6 poles + ⊕	173 and 175
MIXO 6 modules	179-215

insert centre distance:
104 x 27 mm

hoods with 4 pegs



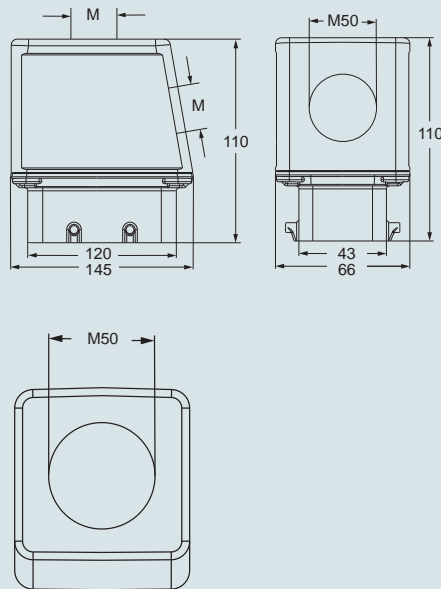
hoods with 4 pegs



description	part No.	entry M	part No.
with pegs, side and top entries	MBVO 24.250	50 x 2	
with pegs, without entries, designed to be drilled			CBC 24

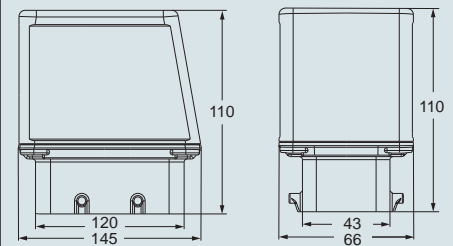
dimensions in mm

MBVO 24.250



dimensions in mm

CBC 24



CAUS® Type 4/4X/12



dimensions shown are not binding and may be changed without notice

BIG - size 104.27

NEW

T-TYPE enclosures

Standard & Aggressive environments,
Hygienic applications

**T-TYPE
STANDARD**

for standard
applications



Pages 324-333

**HYGIENIC
T-TYPE/H**

for food
& beverage

**HYGIENIC
T-TYPE/C**

for low
temperatures



ECOLAB

Pages 344-365

T-TYPE/W

for aggressive
environments



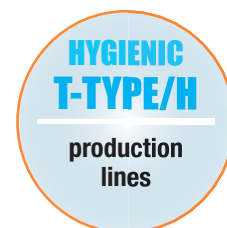
Pages 334-343

T-TYPE series

T-TYPE General information

International standards

The T-TYPE enclosures have been successfully tested



T-TYPE enclosures have been **successfully** tested in accordance with the following international standards, guaranteeing their usage for numerous applications:

- **EN 61984: Connectors - Safety requirements and tests.**
- **ANSI/UL 50 (Enclosures for Electrical Equipment)** equivalent to voluntary North American standard NEMA 250 (NEMA = National Electrical Manufacturers Association) and the corresponding Canadian standard CSA C22.2 No. 94 (Special Purpose Enclosures) for degrees of protection used in North America and required by local installation codes (e.g. NFPA 70 National Electrical Code in the USA, CSA plant standards for Canada). The current type approval was obtained after passing a number of tests carried out in accordance with the standard, in particular: **Type 12 (= NEMA 12)** for internal use, similar to degree of protection IP54 according to IEC/EN 60529. (Only standard T-TYPE enclosures).
- **EN 60529: Degrees of protection provided by enclosures (IP Code)** for ratings IP65, IP66 and IP69.
- **EN 62262: Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK Code)** for ratings IK09 (enclosures with levers), IK10 (enclosures without levers).
- **IEC 60068-2-52: Environmental testing - Part 2-52: Salt spray, cyclic:** with 5% solution of sodium chloride (NaCl), solution Ph from 6.5 to 7.2;

ENVIRONMENTAL CONDITIONS: 35 °C for 2 hours; 40 °C for 168 hours with 93% relative humidity;

NO. OF CYCLES: 4;

TEST PASSED: maintaining the IP degree of protection and with a contact resistance value $\leq 150\%$ of the initial value or $\leq 5 \text{ m}\Omega$.

- **IEC 60068-2-6: Environmental testing - Part 2-6:**

Vibrations (sinusoidal): with values 10Hz÷500Hz, 0.35 mm amplitude of displacement, 50 m/s^2 ($5g_n$), crossover point 60.1 Hz;

NO. OF CYCLES: 10;

TEST PASSED: scanning 3 axes for 2 hours, with contact resistance value $\leq 150\%$ of the initial value or $\leq 5 \text{ m}\Omega$ and no micro-interruption ($\geq 1 \mu\text{s}$).

- **IEC 60068-2-3: Environmental testing - Part 2-3:**

Damp heat: stationary at 40 °C, 93% relative humidity, 504 hours;

TEST PASSED: with contact resistance value $\leq 150\%$ of the initial value or $\leq 5 \text{ m}\Omega$ and no disruptive discharge (insulation resistance $> 100 \text{ G}\Omega$).

- **IEC 60068-2-30: Environmental testing - Part 2-30:**

Damp heat, cyclic: 40 °C, 95% relative humidity, 12 hours at ambient temperature;

NO. OF CYCLES: 21;

TEST PASSED: with contact resistance value $\leq 150\%$ of the initial value or $\leq 5 \text{ m}\Omega$ and no disruptive discharge (insulation resistance $> 100 \text{ G}\Omega$).

T-TYPE General information

Resistance to chemicals comparison table

The classification herewith provided is only a generic reference guide in order to enable a first selection. It is based on literature data provided by the suppliers of the raw materials used, which are related to tests carried out on specimens under test conditions which are not always homogeneous and involving accelerating techniques, therefore not necessarily describing real operational conditions. The actual behaviour of products in the field may therefore be positively or negatively influenced by several

variable environmental parameters such as temperature, relative humidity, simultaneous presence of a plurality of substances and their concentration, exposure time, dynamic or static application condition, and so on. The accuracy of transferring the indications given herein to the actual conditions of use is therefore merely indicative and does not imply any guarantee or responsibility by ILME.

	T-TYPE	T-TYPE / W	T-TYPE / H	T-TYPE / C
A				
Acetone (propanone)	x	x	x	x
Active chlorine	x	x	x	x
Alum	●	●	●	●
Ammonia, 10% aqueous solution	●	x	●	●
Ammonia, liquid	x	x	●	●
Ammonium acetate	●	x	●	●
Ammonium carbonate	●	●	●	x
Ammonium chloride	●	●	●	x
Ammonium nitrate	●	●	●	●
Ammonium phosphate	●	●	●	●
Ammonium sulphate	●	●	●	●
Amyl alcohol	□	□	□	x
Aniline	□	□	x	x
Aqua regia (1:3 nitric acid : hydrochloric acid)	x	x	x	x
Asphalt	□	□	□	x
B				
Beer	●	●	●	●
Benzene	x	□	x	x
Borax	□	□	□	□
Boric acid	●	●	●	●
Boric acid, 10% aqueous solution	●	●	●	●
Boric water (boric acid 3%)	●	●	●	●
Butane, gas	□	□	□	x
Butane, liquid	□	□	□	x
C				
Calcium chloride	●	●	●	●
Calcium chloride, 10% aqueous solution	●	●	●	●
Calcium chloride, diluted suspension	●	●	●	●
Calcium nitrate	●	●	●	●
Calcium sulphate	●	●	x	●
Caustic potash (potassium hydroxide) 10%	x	●	●	x
Citric acid 50% aqueous solution	x	x	●	●
Copper sulphate 10% aqueous solution	●	●	●	●
Cresol	□	□	x	x
Cresolic solution	□	□	x	x
Cutting oil	□	□	□	x
Cyclo-hexane	□	□	□	x
D				
Deca-hydro-naphtalene	x	x	x	x
Di-exyl Phtalate	●	x	x	x

	T-TYPE	T-TYPE / W	T-TYPE / H	T-TYPE / C
D				
Di-isononyl Phtalate	●	x	x	x
Di-optyl Phtalate	●	●	x	x
Diesel Oil	□	□	□	□
Diluted Glucose	●	●	●	●
Diluted Glycerine	●	●	●	●
Diluted Glycol	●	●	●	●
Diluted Phenol	□	□	x	x
Diluted urea	●	●	●	●
E				
Ethanol (ethyl alcohol)	x	x	x	●
Ethyl alcohol	●	●	□	●
Ethylene-glycol or propylene-glycol	●	●	●	●
F				
Fatty acids	●	●	●	□
Ferric chloride, 10% aqueous solution	x	x	x	x
Formalin (formaldehyde 40% aqueous solution)	x	x	●	●
Fruit juices	●	●	●	●
Fuel oils	□	□	□	x
G				
Gaseous ammonia	□	x	●	●
Gaseous propane	x	●	●	x
Glycerine	●	●	●	●
Grinding oil	□	□	□	x
Gypsum (see calcium sulphate)	●	●	x	●
H				
Heptane	□	□	□	x
Hexane	□	□	□	x
Hydrochloric acid, <2% aqueous solution	x	x	●	□
Hydrogen sulphide	□	x	●	x
I				
Ink	●	●	●	●
IRM oil 901	●	●	●	●
IRM oil 902	□	●	●	x
IRM oil 903	x	□	□	□
Isopropyl alcohol	□	●	●	●
K				
Kitchen salt, aqueous solution	●	●	●	●

Legend

● : Resistant

□ : Limited resistance

x : Not resistant

T-TYPE General information

Resistance to chemicals comparison table

	T-TYPE	T-TYPE / W	T-TYPE / H	T-TYPE / C
L				
Lactic acid	●	●	●	●
Linseed oil	●	●	●	●
Liquid soap	x	●	●	●
Lubricating engine oil	□	□	□	x
Lubricating oil	●	●	●	x
M				
Mercury	●	●	●	●
Methanol (methyl alcohol)	x	x	●	●
Methyl alcohol, diluted 50%	□	□	●	●
Mineral based oil	●	●	●	●
Mineral oils (un-tasteful)	●	●	●	●
Mothballs (naphthalene, paradichlorobenzene)	□	□	x	x
Muriatic acid, concentrated	x	x	x	x
N				
n-Butanol (butyl alcohol)	●	●	●	●
Naphthalene	□	●	x	x
Normal (low octane) gasoline (petrol)	□	□	□	x
O				
Octane	□	□	□	x
Oleic acid	●	●	●	x
Oxalic acid	●	●	●	●
Ozone	x	x	x	□
P				
Paraffin oil	●	●	●	●
Petrol ether	□	□	□	□
Petroleum	●	●	●	●
Petroleum spirit (dry cleaning)	□	□	x	x
Potassium carbonate	●	●	●	●
Potassium chlorate	●	●	x	●
Potassium chloride	●	●	●	●
Potassium cyanide, aqueous solution	●	●	●	●
Potassium di-chromate	□	□	●	●
Potassium iodide	□	□	●	●
Potassium nitrate	□	x	x	●
Potassium persulphate	□	□	x	●
Potassium sulphate	□	□	●	●
S				
Sea water	●	●	●	●
Silicon oil	●	●	●	x
Soap solution	□	●	●	●
Sodium bicarbonate (oxide)	●	●	●	●
Sodium carbonate (washing soda)	●	●	●	●
Sodium chlorate	●	●	x	●
Sodium chloride (kitchen salt)	●	●	●	●

	T-TYPE	T-TYPE / W	T-TYPE / H	T-TYPE / C
S				
Sodium disulphate, aqueous solution	●	●	●	●
Sodium hydroxide (caustic soda)	x	x	●	●
Sodium hydroxide 12,5% (liscivia)	□	x	●	●
Sodium Hypochlorite	x	x	●	●
Sodium nitrate	●	●	●	x
Sodium nitrite	□	□	●	x
Sodium perborate	●	●	●	●
Sodium phosphate	●	●	●	x
Sodium silicate	●	x	x	●
Sodium sulphate	●	●	●	●
S				
Sodium sulphide	●	●	●	●
Sodium Thiosulphate (photographic fixer)	●	●	●	●
Solution for photographic processing	●	●	●	●
Starch, aqueous (amylum)	●	●	●	●
Stearic acid	●	●	●	●
Succinic acid (butanedioic acid)	●	●	●	●
Sulphur	●	●	x	x
Sulphur dioxide (sulphurous anhydride)	□	x	x	□
Sulphuric acid, 2% aqueous solution	x	x	□	□
T				
Tallow	●	●	●	●
Tar	□	□	x	□
Tartaric acid	●	●	●	●
Toluene	x	x	x	x
Transformer oil (dielectric)	●	●	●	●
Trichloroethylene	x	x	x	x
Trichresyl phosphate	●	●	x	x
Turpentine essence	x	□	□	x
U				
Urine	●	●	●	●
V				
Vegetable oil	●	●	●	●
Vinegar	x	□	●	□
W				
Water	●	●	●	●
White alcohol (isopropanol + ethanol)	□	●	●	●
X				
Xylene	x	x	x	x

Legend

● : Resistant

□ : Limited resistance

x : Not resistant

T-TYPE Standard

For modular and standard inserts

Alongside the wide range of traditional metallic enclosures for ILME multipole connectors, there is now available a **new series of enclosures in self-extinguishing thermoplastic material** in the most common sizes "44.27", "57.27", "77.27" and "104.27".

Quality and money saving are the main features of these enclosures, as an outcome of careful product studies.

Valuable characteristics of these new versions of enclosures:
- **significant structural solidity** and mechanical robustness by virtue of **substantial thickness**;

- **external dimensions** of the bulkhead mounting housings are **similar to those of the corresponding metallic enclosures**;
- **hole fixing centres are unchanged**;
- **pre-fastened gaskets** for easier installation;
- **wide space inside the enclosures** for cables, with mounted connector inserts, similar to the corresponding "high construction" versions;
- possibility of making **total insulation** constructions (equivalent to Class II) □;
- **absence of powder paint** for environments in which these are not recommended (e.g. to avoid food contamination).

STANDARD APPLICATIONS

DATA SHEETS AT PAGES 326-333

- › **Enclosures in thermoplastic material, dark grey RAL 7012 colour**, with high thicknesses providing structural solidity and durability.
- › Built-in **polyurethane gaskets**.
- › **Locking levers in thermoplastic material colour grey RAL 7001**.
- › **M25, M32 and M40** threaded cable entries.
- › **IP65** degree of protection according to **EN 60529**;
- › **UL TYPE 12** degree of protection according to **ANSI/UL50**.
- › Each enclosure carries its own part number, thread/size, conformity **markings** and UL type rating.
- › Ambient temperature range: **-40 °C / +90 °C**.



Interchangeability with other ILME series

T-TYPE series housings can be coupled with metal hoods. Insulating hoods can be coupled with "V-TYPE" metal housings.

Hoods "57.27", "77.27" and "104.07" can be mounted on COB TCQ and COB BC frames simply by replacing the supplied levers with COB L levers (to be purchased separately).

Insulating enclosures are ideal for mounting of all ILME inserts with the exception of series models CT 40/ 64 and CTS 40/ 64 connector. Inserts with 45° terminals of the CTE series (screw-type terminals) and CTSE (spring terminals) are only insertable from the front (therefore not from the back) of the bulkhead mounting housings.

Being made by insulating material, they do not require a special reinforced insulation as metal ones do, for use with series CME higher voltage connector inserts (screw-type terminals).

With the exception of the limitations described below, it is generally possible to mount the MIXO series modular connectors and frames with the ground and screen anchors dedicated to this series.

Limitations

With respect to enclosures in metal alloy, ILME insulating enclosures have some limitations of use in combination with particular accessories:

- CRZ 06/ 10/ 16/ 24 reduction plates cannot be mounted with bulkhead mounting housings due to increased dimensions of the fastening flange of these insulating enclosures.
- The CYG 16 in-line joint cannot be mounted on the bulkhead mounting housings T-TYPE series because the gaskets of the latter do not fit together with the joint profile.
- The CYR 16.3 and CYR 24.4 round cable feed-throughs are difficult to position on their respective bulkhead mounting housings T-TYPE series.
- CPT 24 disposable protection cover cannot be mounted on insulating enclosures due to increased outer dimensions of these enclosures.
- MIXO series insert anchors cannot be mounted on TMAO 06/ 10 enclosures.
- MIXO series insert anchors cannot be mounted on TMAO 06/ 10 enclosures.
- When using both cable entries of surface mounting housings, the conduit shall be of insulating type.

T-TYPE Standard

For modular and standard inserts

FOCUS ON:

1 Construction

By using the BC-MUL[®] moulding technique and use of MIL.BOX[®] material, **these enclosures are structurally solid and mechanically robust**, due to their increased thickness. They are particularly resistant to the main pollutants present in industrial environments. The lever enclosure pegs are built into the enclosures. The methods for fastening the connector inserts to the enclosures are made of M3 threaded metal inserts.

With reference to metal construction enclosures, which to comply with the electrical installation safety norms, must be earthed via a metal connection to the grounding terminal of the inserts mounted inside the enclosures, the new series of enclosures offers a solution for **total insulation** constructions (equivalent to class II) where necessary. The thermoplastic material used is RAL 7012 dark grey colour and UL 94V-2 grade self-extinguishing and has passed glow wire testing in accordance with the IEC (EN) 60695-2-11 at 650 °C in compliance with intended uses.

The **surface mounting** high construction housings are supplied **with an open threaded entry** and diametrically opposite a closed threaded entry, which can be **opened** by the user, if required (with suitable tool).

Manufactured from insulating material, they do not require **special reinforced insulation** as the metal versions do, for use with series **CME higher voltage** connector inserts (screw-type terminals).

2 Gaskets

T-TYPE standard sealing gaskets have been produced by means of the FIPFG technology (Formed-In-Place-Foam-Gasket). They have therefore been incorporated in the base flange on bulkhead mounting housings for easier installation.

- T-TYPE standard: Built-in polyurethane gaskets
- T-TYPE/W: Viton fluoroelastomer gaskets

3 Levers

The locking levers have been produced in self-extinguishing thermoplastic material, grey RAL 7001 colour.

4 Dimensions

The internal dimensions allow mounting of all connector inserts in their relevant sizes. The external dimensions of the bulkhead mounting housings are similar to those of the corresponding metallic enclosures; hole fixing centres are unchanged.

Hoods offer an inner cabling space similar to that of the “high” construction models of the corresponding metal enclosures. Other characteristics are in compliance with the applicable safety standard for electrical connectors, IEC/EN 61984.

5 Cable entries

The housing and hood cable entries are available with metric thread, respectively:

- **M25 or M32** for smaller sizes “44.27” and “57.27”.
- **M32 or M40** for larger sizes “77.27” and “104.27”.

The recent standard IEC/EN 61076-7-100 regarding metric cable entries for multipole electrical connectors for heavy duty uses, which standardises some main dimensions for entries and their related accessories (gaskets, pressure nuts), have been carefully considered in the product design.

6 Markings

Each enclosure carries its own part number and conformity markings.





inserts:	page:
CDD 24 poles + ⊕	67
CDS 9 poles + ⊕	78
CSH 6 poles + ⊕	91
CNE, CSE 6 poles + ⊕	104
CCE 6 poles + ⊕	110
CSS 6 poles + ⊕	122
CT, CTSE (16A) * 6 poles + ⊕	130
CQE 10 poles + ⊕	138
MIXO 2 modules	179 - 215

*) only for standard insulating version TCHI

insert centre distance:
44 x 27 mm

housings with single lever

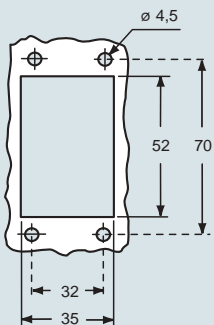


hoods with 2 pegs



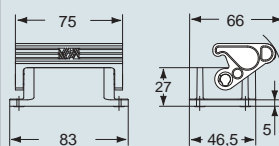
description	part No.	entry M	part No.	entry M
bulkhead mounting housing with thermoplastic lever	TCHI 06 L			
surface mounting housing with thermoplastic lever	TMAP 06 L25	25		
surface mounting housing with thermoplastic lever	TMAP 06 L32	32		
with pegs, side entry			TMAO 06 L25	25
with pegs, side entry			TMAO 06 L32	32
with pegs, top entry			TMAV 06 L25	25
with pegs, top entry			TMAV 06 L32	32

panel cut-out for bulkhead mounting housing in mm

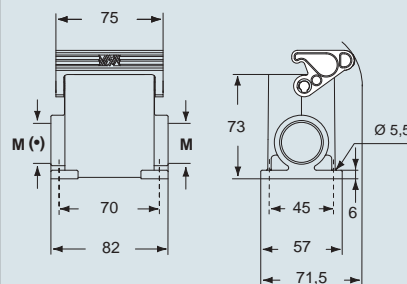


dimensions in mm

TCHI 06 L



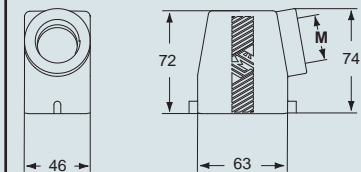
TMAP 06 L25 and TMAP 06 L32



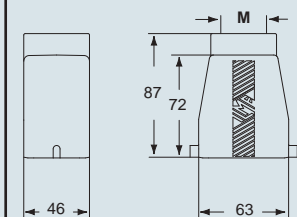
(*) The surface mounting, high construction housings are supplied with an open threaded entry (*) and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).

dimensions in mm

TMAO 06 L25 and TMAO 06 L32



TMAV 06 L25 and TMAV 06 L32



CAIUS Type 12



ambient temperature limits -40 °C / +90 °C

dimensions shown are not binding
and may be changed without notice



inserts:	page:
CDD 24 poles + ⊕	67
CDS 9 poles + ⊕	78
CSH 6 poles + ⊕	91
CNE, CSE 6 poles + ⊕	104
CCE 6 poles + ⊕	110
CSS 6 poles + ⊕	122
CT, CTSE (16A) * 6 poles + ⊕	130
CQE 10 poles + ⊕	138
MIXO 2 modules	179 - 215

*) only for standard insulating version TCHI

insert centre distance:
44 x 27 mm

hoods with single lever top entry



NEW

covers

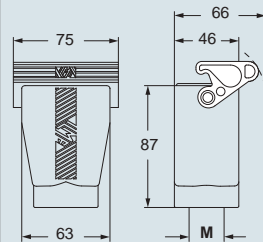


NEW

description	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with thermoplastic lever and gasket	TMAV 06 LG25	25		
with thermoplastic lever and gasket	TMAV 06 LG32	32		
with pegs			TCHC 06 L	TCHC 06 SL
with thermoplastic lever and gasket				TCHC 06 LG

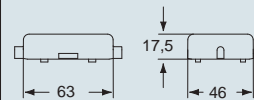
dimensions in mm

TMAV 06 LG25 and TMAV 06 LG32

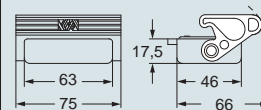


dimensions in mm

TCHC 06 L (SL)



TCHC 06 LG

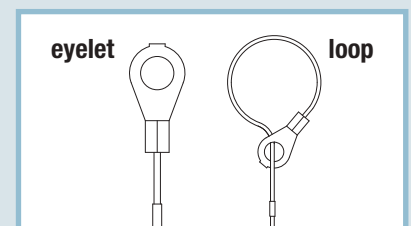


CRUS Type 12



ambient temperature limits -40 °C / +90 °C

dimensions shown are not binding and may be changed without notice



T-TYPE - size 44.27



inserts:	page:
CDD 42 poles + ⊕	69
CDS 18 poles + ⊕	79
CSH 10 poles + ⊕	92
CNE, CSE 10 poles + ⊕	105
CCE 10 poles + ⊕	111
CSS 10 poles + ⊕	123
CT, CTSE (16A) * .. 10 poles + ⊕	131
CQE 18 poles + ⊕	139
CMCE 3+2 (aux) poles + ⊕	148
CME 3+2 (aux) poles + ⊕	149
CMSH 3+2 (aux) poles + ⊕	149
CX 8/24 poles + ⊕	169
MIXO 3 modules	179 - 215

*) only for standard insulating version TCHI

insert centre distance:
57 x 27 mm

housings with double lever



hoods with 4 pegs

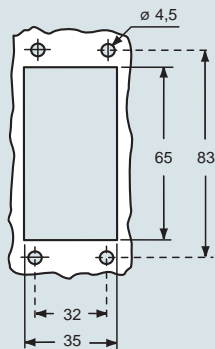


description	part No.	entry M
bulkhead mounting housing with thermoplastic levers	TCHI 10	
surface mounting housing with thermoplastic levers	TMAP 10.25	25
surface mounting housing with thermoplastic levers	TMAP 10.32	32
with pegs, side entry		
with pegs, side entry		

description	part No.	entry M
with pegs, top entry		
with pegs, top entry		

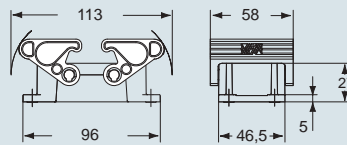
description	part No.	entry M
with pegs, side entry	TMAO 10.25	25
with pegs, side entry	TMAO 10.32	32
with pegs, top entry	TMAV 10.25	25
with pegs, top entry	TMAV 10.32	32

panel cut-out for bulkhead mounting housing in mm



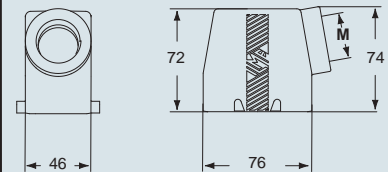
dimensions in mm

TCHI 10

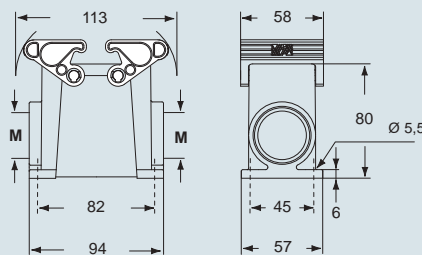


dimensions in mm

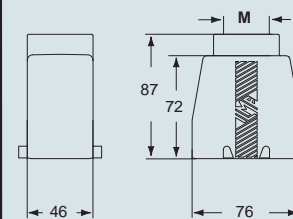
TMAO 10.25 and TMAO 10.32



TMAP 10.25 and TMAP 10.32



TMAV 10.25 and TMAV 10.32



The surface mounting, high construction housings are supplied with an open threaded entry and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).

CRUS Type 12



ambient temperature limits -40 °C / +90 °C

dimensions shown are not binding and may be changed without notice



inserts:	page:
CDD 42 poles + ⊕	69
CDS 18 poles + ⊕	79
CSH 10 poles + ⊕	92
CNE, CSE 10 poles + ⊕	105
CCE 10 poles + ⊕	111
CSS 10 poles + ⊕	123
CT, CTSE (16A) * .. 10 poles + ⊕	131
CQE 18 poles + ⊕	139
CMCE 3+2 (aux) poles + ⊕	148
CME 3+2 (aux) poles + ⊕	149
CMSH 3+2 (aux) poles + ⊕	149
CX 8/24 poles + ⊕	169
MIXO 3 modules	179 - 215

*) only for standard insulating version TCHI

insert centre distance:
57 x 27 mm

hoods with double lever top entry



NEW

covers

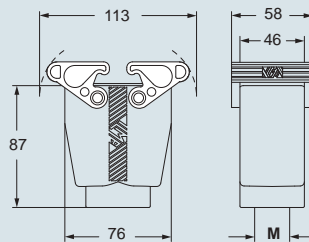


NEW

description	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with thermoplastic levers and gasket	TMAV 10 G25	25		
with thermoplastic levers and gasket	TMAV 10 G32	32		
with 4 pegs			TCHC 10	TCHC 10 S
with 2 thermoplastic levers and gasket				TCHC 10 G

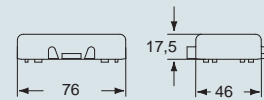
dimensions in mm

TMAV 10 G25 and TMAV 10 G32

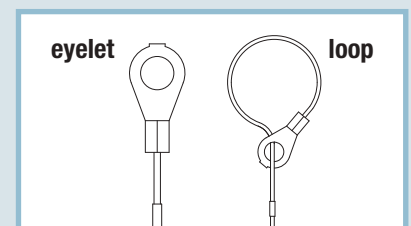
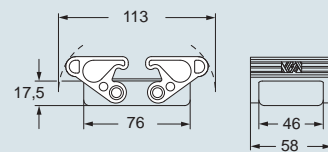


dimensions in mm

TCHC 10 (S)



TCHC 10 G



CRUS Type 12



ambient temperature limits -40 °C / +90 °C

dimensions shown are not binding and may be changed without notice

T-TYPE - size 57.27



inserts:	page:
CD 40 poles + ⊕	57
CDD 72 poles + ⊕	70
CDS 27 poles + ⊕	80
CSH 16 poles + ⊕	93
CNE, CSE 16 poles + ⊕	106
CCE 16 poles + ⊕	112
CSS 16 poles + ⊕	124
CT, CTSE (16A) *) .. 16 poles + ⊕	132
CQE 32 poles + ⊕	140
CQEE 40 poles + ⊕	146
CMCE 6+2 (aux) poles + ⊕	150
CME, CMSH.. 6+2 (aux) poles + ⊕	151
CP 6 poles + ⊕	162
CX 6/36 and 12/2 poles + ⊕	170-171
CX 4/0 and 4/2 poles + ⊕	172
MIXO 4 modules	179-215

*) only for standard insulating version TCHI

insert centre distance: 77,5 x 27 mm

housings with double lever

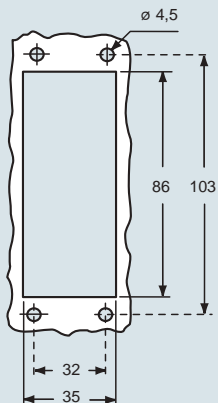


hoods with 4 pegs



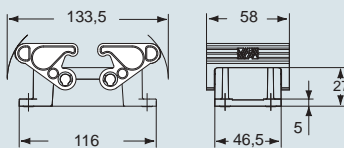
description	part No.	entry M	part No.	entry M
bulkhead mounting housing with thermoplastic levers	TCHI 16			
surface mounting housing with thermoplastic levers	TMAP 16.32	32		
surface mounting housing with thermoplastic levers	TMAP 16.40	40		
with pegs, side entry			TMAO 16.32	32
with pegs, side entry			TMAO 16.40	40
with pegs, top entry			TMAV 16.32	32
with pegs, top entry			TMAV 16.40	40

panel cut-out for bulkhead mounting housing in mm

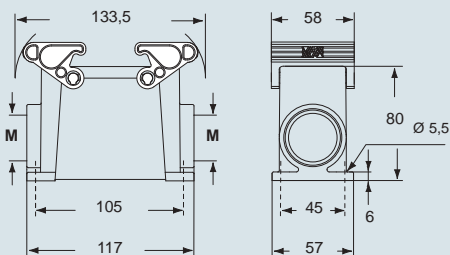


dimensions in mm

TCHI 16

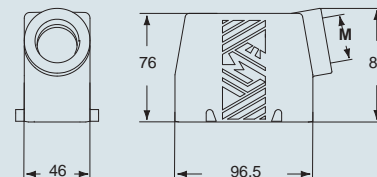


TMAP 16.32 and TMAP 16.40

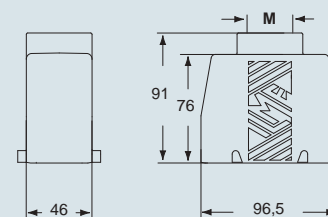


dimensions in mm

TMAO 16.32 and TMAO 16.40



TMAV 16.32 and TMAV 16.40



The surface mounting, high construction housings are supplied with an open threaded entry and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).

CRUS Type 12



ambient temperature limits -40 °C / +90 °C

dimensions shown are not binding and may be changed without notice

T-TYPE - size 77.27



inserts:	page:	hoods with double lever top entry
CD 40 poles + ⊕	57	
CDD 72 poles + ⊕	70	
CDS 27 poles + ⊕	80	
CSH 16 poles + ⊕	93	
CNE, CSE 16 poles + ⊕	106	
CCE 16 poles + ⊕	112	
CSS 16 poles + ⊕	124	
CT, CTSE (16A) * .. 16 poles + ⊕	132	
CQE 32 poles + ⊕	140	
CQEE 40 poles + ⊕	146	
CMCE 6+2 (aux) poles + ⊕	150	
CME, CMSH .. 6+2 (aux) poles + ⊕	151	
CP 6 poles + ⊕	162	
CX 6/36 and 12/2 poles + ⊕	170-171	
CX 4/0 and 4/2 poles + ⊕	172	
MIXO 4 modules	179-215	

*) only for standard insulating version TCHI

insert centre distance: **77,5 x 27 mm**



NEW

covers

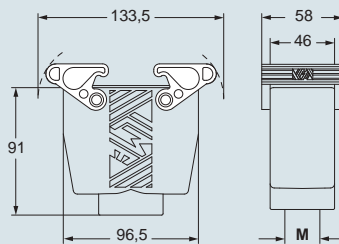


NEW

description	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with thermoplastic levers and gasket	TMAV 16 G32	32		
with thermoplastic levers and gasket	TMAV 16 G40	40		
with 4 pegs			TCHC 16	TCHC 16 S
with 2 thermoplastic levers and gasket				TCHC 16 G

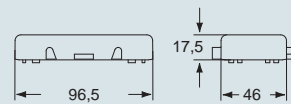
dimensions in mm

TMAV 16 G32 and TMAV 16 G40

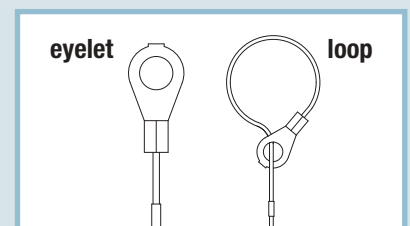
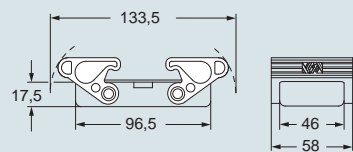


dimensions in mm

TCHC 16 (S)



TCHC 16 G



CRUS Type 12



ambient temperature limits -40 °C / +90 °C

dimensions shown are not binding and may be changed without notice

T-TYPE - size 77.27



inserts:	page:
CD 64 poles + ⊕	59
CDD 108 poles + ⊕	72
CDS 42 poles + ⊕	81
CSH 24 poles + ⊕	94
CNE, CSE 24 poles + ⊕	107
CCE 24 poles + ⊕	113
CSS 24 poles + ⊕	125
CT, CTSE (16A) *) .. 24 poles + ⊕	133
CQE 46 poles + ⊕	141
CQEE 64 poles + ⊕	147
CMCE 10+2 (aux) poles + ⊕	152
CME, CMSH 10+2 (aux) poles + ⊕	153
CMCE 16+2 (aux) poles + ⊕	158
CME 16+2 (aux) poles + ⊕	159
CX 4/8 and 6/6 poles + ⊕	173 and 175
MIXO 6 modules	179-215

*) only for standard insulating version TCHI

insert centre distance: 104 x 27 mm

housings with double lever



hoods with 4 pegs

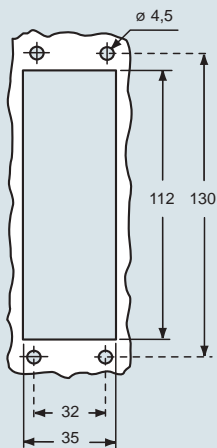


description	part No.	entry M
bulkhead mounting housing with thermoplastic levers	TCHI 24	
surface mounting housing with thermoplastic levers	TMAP 24.32	32
surface mounting housing with thermoplastic levers	TMAP 24.40	40
with pegs, side entry		
with pegs, side entry		

description	part No.	entry M
with pegs, top entry		
with pegs, top entry		

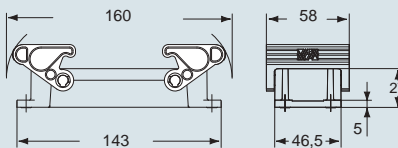
description	part No.	entry M
with pegs, side entry	TMAO 24.32	32
with pegs, side entry	TMAO 24.40	40
with pegs, top entry	TMAV 24.32	32
with pegs, top entry	TMAV 24.40	40

panel cut-out for bulkhead mounting housing in mm

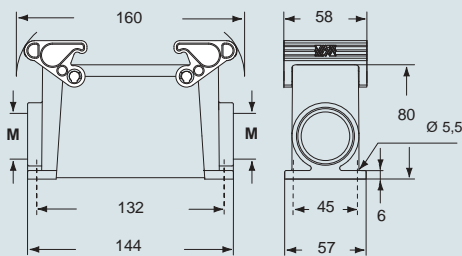


dimensions in mm

TCHI 24

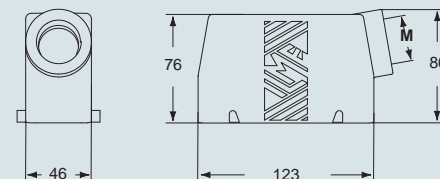


TMAP 24.32 and TMAP 24.40

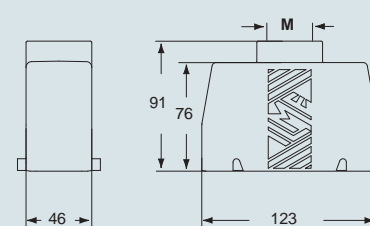


dimensions in mm

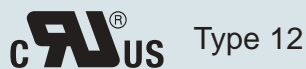
TMAO 24.32 and TMAO 24.40



TMAV 24.32 and TMAV 24.40



The surface mounting, high construction housings are supplied with an open threaded entry and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).



ambient temperature limits -40 °C / +90 °C

dimensions shown are not binding and may be changed without notice

T-TYPE - size 104.27



inserts:	page:
CD 64 poles + ⊕	59
CDD 108 poles + ⊕	72
CDS 42 poles + ⊕	81
CSH 24 poles + ⊕	94
CNE, CSE 24 poles + ⊕	107
CCE 24 poles + ⊕	113
CSS 24 poles + ⊕	125
CT, CTSE (16A) * .. 24 poles + ⊕	133
CQE 46 poles + ⊕	141
CQEE 64 poles + ⊕	147
CMCE 10+2 (aux) poles + ⊕	152
CME, CMSH 10+2 (aux) poles + ⊕	153
CMCE 16+2 (aux) poles + ⊕	158
CME 16+2 (aux) poles + ⊕	159
CX 4/8 and 6/6 poles + ⊕	173 and 175
MIXO 6 modules	179-215

*) only for standard insulating version TCHI

insert centre distance: **104 x 27 mm**

hoods with double lever top entry



NEW

covers

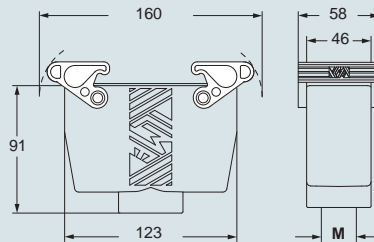


NEW

description	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with thermoplastic levers and gasket	TMAV 24 G32	32		
with thermoplastic levers and gasket	TMAV 24 G40	40		
with 4 pegs			TCHC 24	TCHC 24 S
with 2 thermoplastic levers and gasket				TCHC 24 G

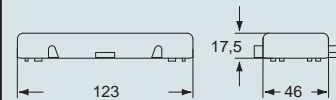
dimensions in mm

TMAV 24 G32 and TMAV 24 G40

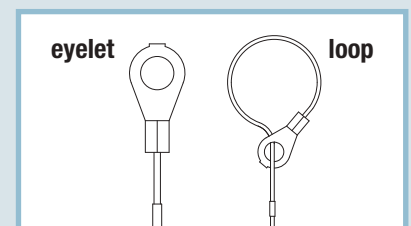
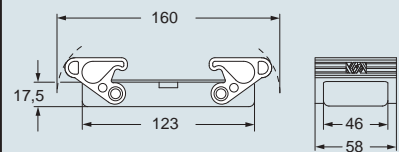


dimensions in mm

TCHC 24



TCHC 24 G



ILME® Type 12



ambient temperature limits -40 °C / +90 °C

dimensions shown are not binding and may be changed without notice

T-TYPE - size 104.27

T-TYPE / W

Aggressive environments

- › Enclosures in **thermoplastic material, dark grey RAL 7012 colour**, with high thicknesses providing structural solidity and durability.
- › Built-in **VITON® fluoroelastomer sealing gaskets**.
- › **Locking levers** in thermoplastic material colour grey RAL 7001.
- › **M25, M32 and M40** threaded cable entries.
- › **IP66** degree of protection according to **EN 60529**.
- › Each enclosure carries its own part number, thread size and conformity **markings**.
- › Ambient temperature range: **-40 °C / +90 °C**.

NOTE: As the characterizing element of the T-TYPE/W series is the **different sealing gasket** material, hoods and covers without sealing gaskets for these series are the same of T-TYPE Standard.

VITON® is a trade mark of DuPont Performance Elastomers LLC.



T-TYPE/W

IP66
for aggressive environments



T-TYPE / W

Featuring an original design, T-TYPE/W construction types available are:

surface mounting housings

with double entry of which one closed but threaded



hoods

with levers



bulkhead mounting housings



hoods

with side entry



hoods

with top entry



covers

with pegs (for housings) with levers (for hoods)



single lever, side and top entry,
for size "44.27"



single lever, side and top entry,
for size "44.27"



double lever, side and top entry,
for other sizes "57.27, 77.27, 104.27"



double lever, side and top entry,
for other sizes "57.27, 77.27, 104.27"





inserts:	page:
CDD 24 poles + ⊕	67
CDS 9 poles + ⊕	78
CSH 6 poles + ⊕	91
CNE, CSE 6 poles + ⊕	104
CCE 6 poles + ⊕	110
CSS 6 poles + ⊕	122
CT, CTSE (16A) *) 6 poles + ⊕	130
CQE 10 poles + ⊕	138
MIXO 2 modules	179 - 215

*) only for standard insulating version THIW

insert centre distance:
44 x 27 mm

housings with single lever



VITON®
gasket

NEW

hoods with 2 pegs

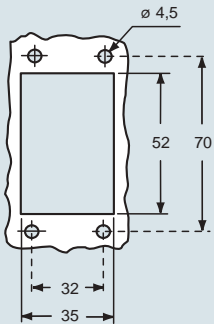


description	part No.	entry M
bulkhead mounting housing with thermoplastic levers	THIW 06 L	
surface mounting housing with thermoplastic levers	TAPW 06 L25	25
surface mounting housing with thermoplastic levers	TAPW 06 L32	32
with pegs, side entry		
with pegs, side entry		
with pegs, top entry		
with pegs, top entry		

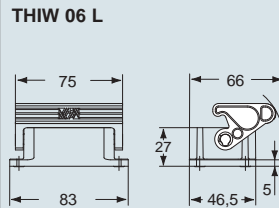
part No.	entry M
THIW 06 L	
TAPW 06 L25	25
TAPW 06 L32	32

part No.	entry M
TMAO 06 L25	25
TMAO 06 L32	32
TMAV 06 L25	25
TMAV 06 L32	32

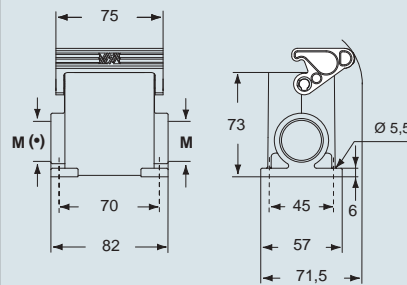
panel cut-out for bulkhead mounting housing in mm



dimensions in mm

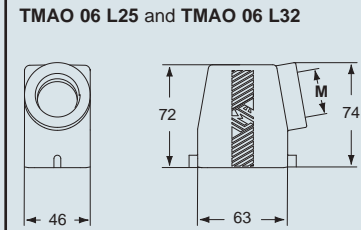


TAPW 06 L25 and TAPW 06 L32

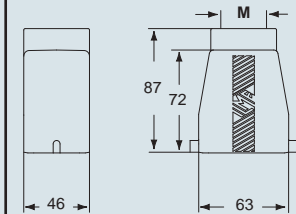


(+) The surface mounting, high construction housings are supplied with an open threaded entry (+) and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).

dimensions in mm



TMAV 06 L25 and TMAV 06 L32



ambient temperature limits -40 °C / +90 °C

dimensions shown are not binding
and may be changed without notice

T-TYPE / W - size 44.27

inserts:	page:
CDD 24 poles + ⊕	67
CDS 9 poles + ⊕	78
CSH 6 poles + ⊕	91
CNE, CSE 6 poles + ⊕	104
CCE 6 poles + ⊕	110
CSS 6 poles + ⊕	122
CT, CTSE (16A) * 6 poles + ⊕	130
CQE 10 poles + ⊕	138
MIXO 2 modules	179 - 215

*) only for standard insulating version THIW

insert centre distance:
44 x 27 mm

hoods with single lever top entry



VITON®
gasket

NEW

covers



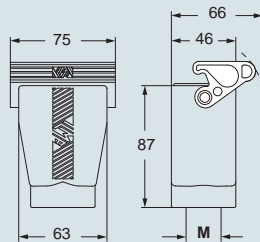
VITON®
gasket

NEW

description	part No.		entry	part No.	part No.
			M	(with eyelet)	(with loop)
with thermoplastic lever and gasket	TAVW 06 LG25	25			
with thermoplastic lever and gasket	TAVW 06 LG32	32			
with pegs				TCHC 06 L	TCHC 06 SL
with thermoplastic lever and gasket					THCW 06 LG

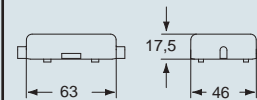
dimensions in mm

TAVW 06 LG25 e TAVW 06 LG32

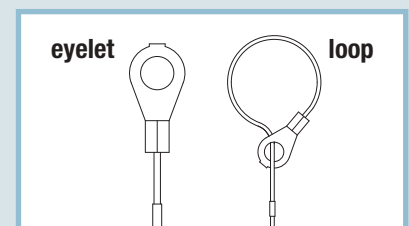
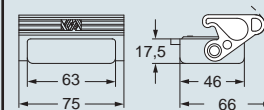


dimensions in mm

TCHC 06 L (SL)



THCW 06 LG



ambient temperature limits -40 °C / +90 °C

dimensions shown are not binding
and may be changed without notice



inserts:	page:
CDD 42 poles + ⊕	69
CDS 18 poles + ⊕	79
CSH 10 poles + ⊕	92
CNE, CSE 10 poles + ⊕	105
CCE 10 poles + ⊕	111
CSS 10 poles + ⊕	123
CT, CTSE (16A) *) .. 10 poles + ⊕	131
CQE 18 poles + ⊕	139
CMCE 3+2 (aux) poles + ⊕	148
CME 3+2 (aux) poles + ⊕	149
CMSH 3+2 (aux) poles + ⊕	149
CX 8/24 poles + ⊕	169
MIXO 3 modules	179 - 215

*) only for standard insulating version THIW

insert centre distance:
57 x 27 mm

housings with double lever



NEW

hoods with 4 pegs

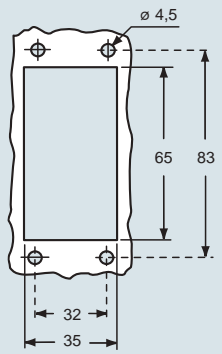


description	part No.	entry M
bulkhead mounting housing with thermoplastic levers	THIW 10	
surface mounting housing with thermoplastic levers	TAPW 10.25	25
surface mounting housing with thermoplastic levers	TAPW 10.32	32
with pegs, side entry		
with pegs, side entry		
with pegs, top entry		
with pegs, top entry		

part No.	entry M

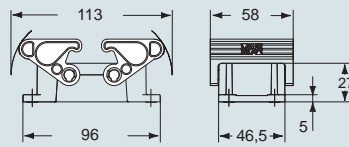
part No.	entry M

panel cut-out for bulkhead mounting housing in mm

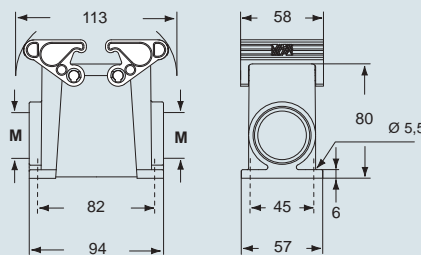


dimensions in mm

THIW 10

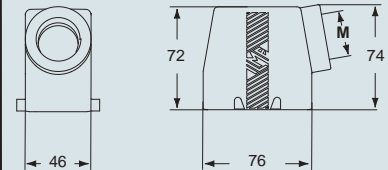


TAPW 10.25 and TAPW 10.32

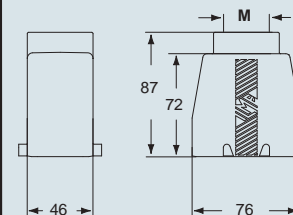


dimensions in mm

TMAO 10.25 and TMAO 10.32



TMAV 10.25 and TMAV 10.32



The surface mounting, high construction housings are supplied with an open threaded entry and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).



ambient temperature limits -40 °C / +90 °C

dimensions shown are not binding and may be changed without notice

T-TYPE / W - size 57.27

inserts:	page:
CDD 42 poles + ⊕	69
CDS 18 poles + ⊕	79
CSH 10 poles + ⊕	92
CNE, CSE 10 poles + ⊕	105
CCE 10 poles + ⊕	111
CSS 10 poles + ⊕	123
CT, CTSE (16A) * .. 10 poles + ⊕	131
CQE 18 poles + ⊕	139
CMCE 3+2 (aux) poles + ⊕	148
CME 3+2 (aux) poles + ⊕	149
CMSH 3+2 (aux) poles + ⊕	149
CX 8/24 poles + ⊕	169
MIXO 3 modules	179 - 215

*) only for standard insulating version THIW

insert centre distance:
57 x 27 mm

hoods with double lever top entry



VITON®
gasket

NEW

covers



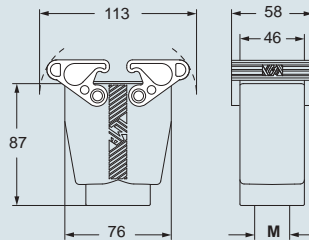
VITON®
gasket

NEW

description	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with thermoplastic levers and gasket	TAVW 10 G25	25		
with thermoplastic levers and gasket	TAVW 10 G32	32		
with 4 pegs			TCHC 10	TCHC 10 S
with 2 thermoplastic levers and gasket				THCW 10 G

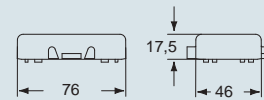
dimensions in mm

TAVW 10 G25 and TAVW 10 G32

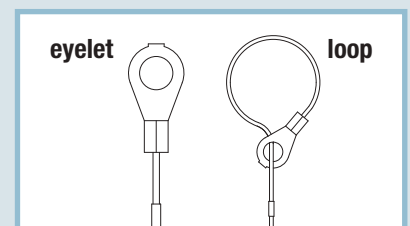
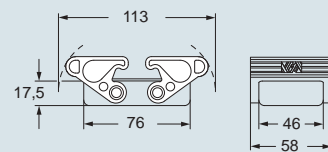


dimensions in mm

TCHC 10 (S)



THCW 10 G



ambient temperature limits -40 °C / +90 °C

dimensions shown are not binding
and may be changed without notice



inserts:	page:
CD 40 poles + ⊕	57
CDD 72 poles + ⊕	70
CDS 27 poles + ⊕	80
CSH 16 poles + ⊕	93
CNE, CSE 16 poles + ⊕	106
CCE 16 poles + ⊕	112
CSS 16 poles + ⊕	124
CT, CTSE (16A) *) .. 16 poles + ⊕	132
CQE 32 poles + ⊕	140
CQEE 40 poles + ⊕	146
CMCE 6+2 (aux) poles + ⊕	150
CME, CMSH.. 6+2 (aux) poles + ⊕	151
CP 6 poles + ⊕	162
CX 6/36 and 12/2 poles + ⊕	170-171
CX 4/0 and 4/2 poles + ⊕	172
MIXO 4 modules	179-215

*) only for standard insulating version THIW

insert centre distance: 77,5 x 27 mm

housings with double lever



VITON®
gasket

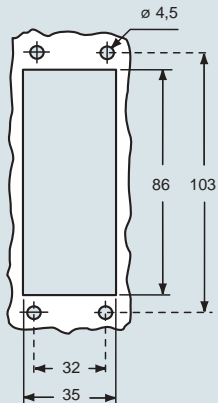
NEW

hoods with 4 pegs



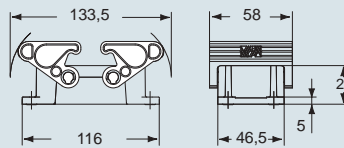
description	part No.	entry M	part No.	entry M
bulkhead mounting housing with thermoplastic levers	THIW 16			
surface mounting housing with thermoplastic levers	TAPW 16.32	32		
surface mounting housing with thermoplastic levers	TAPW 16.40	40		
with pegs, side entry			TMAO 16.32	32
with pegs, side entry			TMAO 16.40	40
with pegs, top entry			TMAV 16.32	32
with pegs, top entry			TMAV 16.40	40

panel cut-out for bulkhead mounting housing in mm

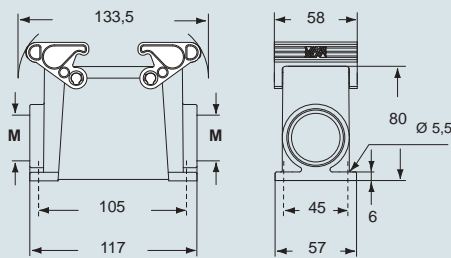


dimensions in mm

THIW 16

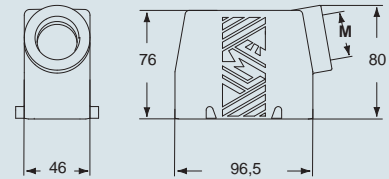


TAPW 16.32 and TAPW 16.40

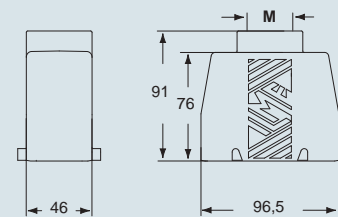


dimensions in mm

TMAO 16.32 and TMAO 16.40



TMAV 16.32 and TMAV 16.40



The surface mounting, high construction housings are supplied with an open threaded entry and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).



ambient temperature limits -40 °C / +90 °C

dimensions shown are not binding and may be changed without notice

T-TYPE / W - size 77.27

inserts:	page:
CD 40 poles + ⊕	57
CDD 72 poles + ⊕	70
CDS 27 poles + ⊕	80
CSH 16 poles + ⊕	93
CNE, CSE 16 poles + ⊕	106
CCE 16 poles + ⊕	112
CSS 16 poles + ⊕	124
CT, CTSE (16A) *) .. 16 poles + ⊕	132
CQE 32 poles + ⊕	140
CQEE 40 poles + ⊕	146
CMCE 6+2 (aux) poles + ⊕	150
CME, CMSH.. 6+2 (aux) poles + ⊕	151
CP 6 poles + ⊕	162
CX 6/36 and 12/2 poles + ⊕	170-171
CX 4/0 and 4/2 poles + ⊕	172
MIXO 4 modules	179-215

*) only for standard insulating version THIW

insert centre distance: **77,5 x 27 mm**

hoods with double lever top entry



VITON® gasket

NEW

covers



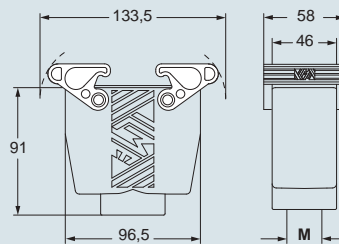
VITON® gasket

NEW

description	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with thermoplastic levers and gasket	TAVW 16 G32	32		
with thermoplastic levers and gasket	TAVW 16 G40	40		
with 4 pegs			TCHC 16	TCHC 16 S
with 2 thermoplastic levers and gasket				THCW 16 G

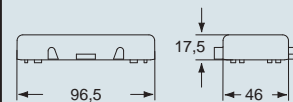
dimensions in mm

TAVW 16 G32 and TAVW 16 G40

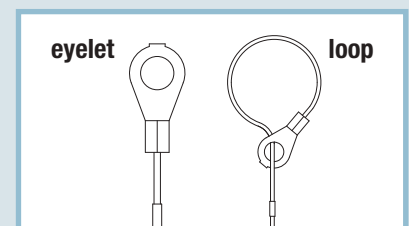
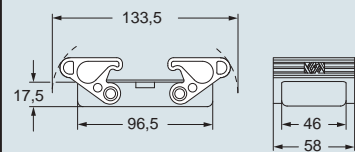


dimensions in mm

TCHC 16 (S)



THCW 16 G



ambient temperature limits -40 °C / +90 °C

dimensions shown are not binding and may be changed without notice



inserts:	page:
CD 64 poles + ⊕	59
CDD 108 poles + ⊕	72
CDS 42 poles + ⊕	81
CSH 24 poles + ⊕	94
CNE, CSE 24 poles + ⊕	107
CCE 24 poles + ⊕	113
CSS 24 poles + ⊕	125
CT, CTSE (16A) * .. 24 poles + ⊕	133
CQE 46 poles + ⊕	141
CQEE 64 poles + ⊕	147
CMCE 10+2 (aux) poles + ⊕	152
CME, CMSH 10+2 (aux) poles + ⊕	153
CMCE 16+2 (aux) poles + ⊕	158
CME 16+2 (aux) poles + ⊕	159
CX 4/8 and 6/6 poles + ⊕	173 and 175
MIXO 6 modules	179-215

*) only for standard insulating version THIW

insert centre distance: 104 x 27 mm

housings with double lever



VITON®
gasket

NEW

hoods with 4 pegs

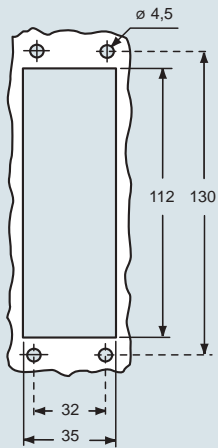


description	part No.	entry M
bulkhead mounting housing with thermoplastic levers	THIW 24	
surface mounting housing with thermoplastic levers	TAPW 24.32	32
surface mounting housing with thermoplastic levers	TAPW 24.40	40
with pegs, side entry		
with pegs, side entry		

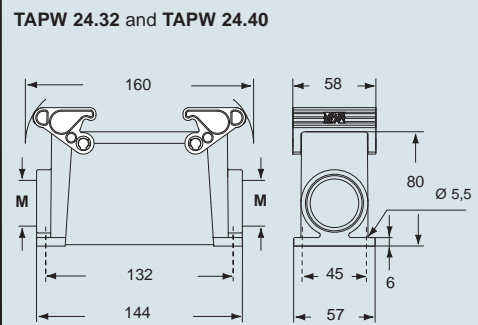
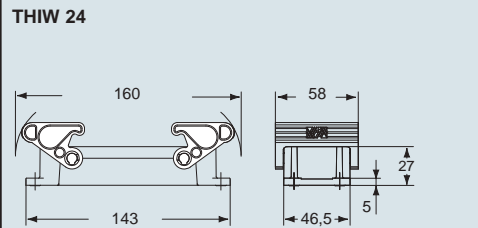
part No.	entry M
THIW 24	
TAPW 24.32	32
TAPW 24.40	40

part No.	entry M
TMAO 24.32	32
TMAO 24.40	40
TMAV 24.32	32
TMAV 24.40	40

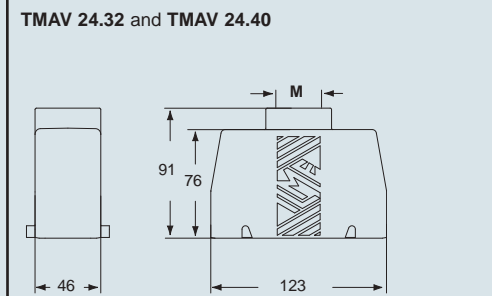
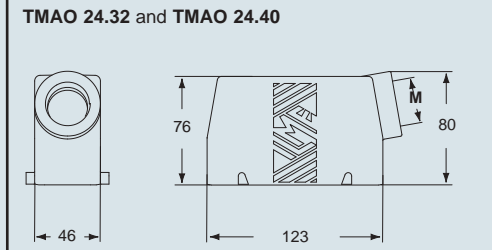
panel cut-out for bulkhead mounting housing in mm



dimensions in mm



dimensions in mm



The surface mounting, high construction housings are supplied with an open threaded entry and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).



ambient temperature limits -40 °C / +90 °C

dimensions shown are not binding and may be changed without notice

T-TYPE / W - size 104.27



inserts:	page:
CD 64 poles + ⊕	59
CDD 108 poles + ⊕	72
CDS 42 poles + ⊕	81
CSH 24 poles + ⊕	94
CNE, CSE 24 poles + ⊕	107
CCE 24 poles + ⊕	113
CSS 24 poles + ⊕	125
CT, CTSE (16A) *) .. 24 poles + ⊕	133
CQE 46 poles + ⊕	141
CQEE 64 poles + ⊕	147
CMCE 10+2 (aux) poles + ⊕	152
CME, CMSH 10+2 (aux) poles + ⊕	153
CMCE 16+2 (aux) poles + ⊕	158
CME 16+2 (aux) poles + ⊕	159
CX 4/8 and 6/6 poles + ⊕	173 and 175
MIXO 6 modules	179-215

*) only for standard insulating version THIW

insert centre distance: **104 x 27 mm**

hoods with double lever top entry



VITON® gasket

NEW

covers



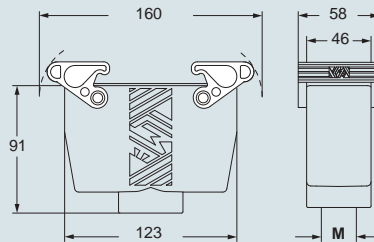
VITON® gasket

NEW

description	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with thermoplastic levers and gasket	TAVW 24 G32	32		
with thermoplastic levers and gasket	TAVW 24 G40	40		
with 4 pegs			TCHC 24	TCHC 24 S
with 2 thermoplastic levers and gasket				THCW 24 G

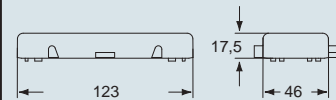
dimensions in mm

TAVW 24 G32 and TAVW 24 G40

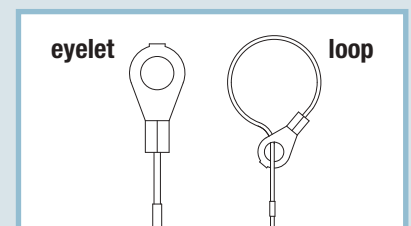
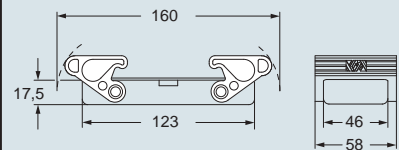


dimensions in mm

TCHC 24 (S)



THCW 24 G



ambient temperature limits -40 °C / +90 °C

dimensions shown are not binding and may be changed without notice

T-TYPE / W - size 104.27

HYGIENIC

For food and beverage

PASTA



DAIRY



PASTRIES AND BAKERY PRODUCTS



HYGIENIC application fields

food & beverage
applications

CANNED VEGETABLES AND FRUIT JUICE



WINE AND SPIRITS



PET FOOD



MEAT AND POULTRY



HYGIENIC

Resistance of materials to detergents/disinfectants used in the food industry

The new **ILME T-TYPE/H and T-TYPE/C** enclosure materials have been selected to guarantee compatibility with the principal alkaline or acid detergents and disinfectants used in the food industry. In particular, series T-TYPE/H and

T-TYPE/C enclosures have been tested according to protocol **F&E/P3-E n. 40-1 by Ecolab**, leading multinational in the detergent sector, to verify their compatibility with the following cleaning fluids:



- Acid foaming detergents: P3-topax 52, P3-topmaxx 520 and P3-topax 56.
- Alkaline foaming detergents: P3-topax 19 and Ecofoam Basic.
- Strong alkaline foaming detergents: P3-topax 36 and P3-topax 30.

- Alkaline-chloride foaming detergents-disinfectants: P3-topax 66, Ecofoam CL and P3-topax M95.
- Non-foaming peracetic based disinfectants: P3-oxonia active, P3-topactive OKTO and P3-topactive DES.
- Neutral disinfectants: P3-topax 990 and P3-topax 91.

ECOLAB F&E/P3-E n. 40-1 Test Protocol

SEE DECLARATION OF COMPATIBILITY AT PAGES 346-347

- Full immersion of parts in detergent/disinfectant solutions.
- Water hardness of 200ppm CaCO₃
- Tests performed at concentrations 30% higher than those normally recommended in technical data sheets.
- Test duration (each detergent): 28 days at 20 °C (equivalent to 6 years of daily cleaning).

- Test solution renewed every 3-4 days for oxidizing products (P3-oxonia active, P3-topactive OKTO, P3-topax 66).
- Test results evaluation: ISO 4068-1 (esthetic appearance and mass loss).

Cleanability and degrees of protection used in the food industry

Series T-TYPE/H and T-TYPE/C enclosures have been designed to facilitate cleaning of surfaces that could potentially come into contact with food. For this purpose **Series T-TYPE/H and T-TYPE/C** enclosures have **IP66 and IP69 degrees of protection as per IEC 60529 Edition 2.2 (2013-08)** to allow jet washing, as typically used in the food industry.

The suitability of ILME products for the **cleanability** requirements stated by Machinery Directive 2006/42/EC for both Splash and Food Area zones (EN 1672-2 and EN ISO 14159) **depends on the specific installation of ILME products on the machine and must be evaluated by the machine manufacturer** (see page 31, Table 1, Applications Zones). In addition to the Hygienic version, aluminium enclosures are also available with degrees of protection up to IP68 (check for possible applicability).





Declaration of compatibility - By courtesy of ECOLAB s.r.l.



DECLARATION OF COMPATIBILITY
 between **ECOLAB** hygiene products
 and **ILME** enclosures for multiple connectors

For the completely safe cleaning of your plant



The ideal partner for Industrial Connections for power supply of plug connected devices, connections for auxiliary circuits and automation control:

T-type H and T-type C enclosures



The declaration proves the high resistance of these enclosures to Ecolab products commonly and worldwide used in Food and Beverage Industries.

ILME S.p.a.
 Via Marco Antonio Colonna, 9 - 20149 Milano (MI)
www.ilme.com



Supplier of hygiene solutions for Food and Beverage industries

Products



Equipments



Services



Ecolab s.r.l.
 Via Paracelso 6 - 20864 Agrate Brianza (MB)
www.it.ecolab.eu

T-TYPE HYGIENIC



Declaration of compatibility - By courtesy of ECOLAB s.r.l.



Compatible products with T-type/C and T-type/H ILME enclosures

See below for the test procedure

PRODUCT	%	T-TYPE ENCLOSURE	DEFECT QUANTITY	DEFECT QUALITY	COLOR VARIATION
P3-topax 52	6	C and H	0	0	0
P3-topax 19	6	C and H	0	0	0
P3-topax 36	6	C and H	0	0	0
P3-topax 91	6	C and H	0	0	0
P3-topax 990	6	C and H	0	0	0
P3-oxonia active	1	C and H	0	0	0
P3-topactive okto	3	C and H	0	0	0
P3-topax 66	6	C and H	0	0	0

DEFECT QUANTITY: 0 means - No detectable defect
 DEFECT QUALITY: 0 means - Up to 10x magnification no detectable defect
 COLOR VARIATION: 0 means - Unchanged, no discoloration

Test procedure

- Test performed by Ecolab Technical Application Service
- Ecolab reference method 40.1 – ISO 4068-1 for the evaluation
- Full immersion of parts in detergent/disinfectant solutions
- Water hardness of 200ppm CaCO₃
- 8 days total time at 20°C (equivalent to the contact time that occurs in 6 years of daily cleaning)
- Concentrations tested 30% higher than those normally recommended
- Test solution renewed every 3-4 days for oxidizing products (P3-oxonia active, P3-topactive OKTO, P3-topax 66)

Final statement

- The Ecolab Technical Application Service Italy certifies that the ILME enclosures for multipole connectors T-type/C and T-type/H are perfectly compatible with the above listed Ecolab detergents and disinfectants used in a concentration 30% higher than those normally recommended.

January 2015

HYGIENIC

T-TYPE/H & T-TYPE/C

For this purpose, the following improvements to the T-TYPE series have been made in order to satisfy the requirements laid down by chapter 2.1 of **Machinery Directive 2006/42/EC** for the machines on which they are installed:

- material cleanability and resistance to the cleaning and sanitising agents normally used in the food industry;
- materials in terms of the requirements for accidental contact with food products.

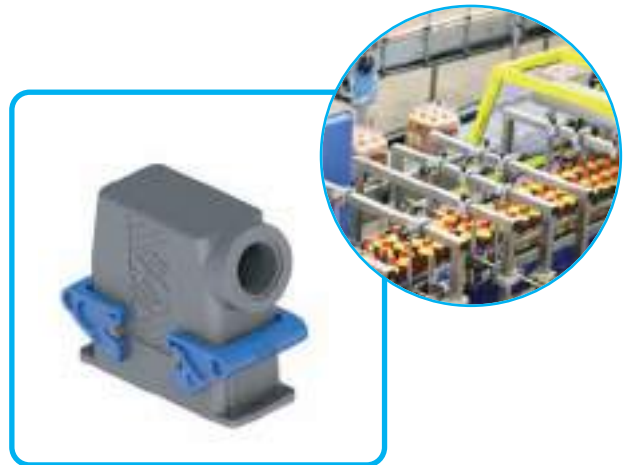
T-TYPE / H

PRODUCTION LINES APPLICATIONS



DATA SHEETS AT PAGES 350-357

- › Enclosures in **thermoplastic material, dark grey RAL 7012 colour**, with high thicknesses providing structural solidity and durability.
- › Sealing gaskets made by **HNBR rubber formulated in accordance with FDA Guideline 21 CFR §177.2600**.
- › Levers in **thermoplastic material, blue RAL 5015 colour**.
- › **M25, M32 and M40** threaded cable entries.
- › **IP66 and IP69** degree of protection according to **EN 60529**.
- › Each enclosure carries its own part number, thread/size and conformity **markings**.
- › Ambient temperature range: **-40 °C / +70 °C**.



T-TYPE / C

LOW TEMPERATURE APPLICATIONS



DATA SHEETS AT PAGES 358-365

- › The **Hygienic T-TYPE/C Series enclosures** have been **specifically designed** for food and beverage ambient temperature as low as **-50 °C (range: -50 °C / +70 °C)**.
- › Enclosures in **thermoplastic material, dark grey RAL 7012 colour**, with high thicknesses providing structural solidity and durability.
- › This version differs from the Hygienic T-TYPE/H one for the **sealing gaskets** made by in accordance with **FDA Guideline 21 CFR §177.2600**.
- › **ILME T-TYPE/C** series enclosure materials have been selected according to **EU n. 10/2011** regulation requirements and each component has been tested according to **EU regulation n. 10/2011** and **EC regulation n. 1935/2004**.

NOTE: As the characterizing elements of the Hygienic Series are the different sealing gasket material and the different locking lever, hoods and covers without sealing gaskets and locking levers are the same of series T-TYPE Standard.



HYGIENIC

T-TYPE/H & T-TYPE/C

FOCUS ON:

1 Construction

By using the BC-MUL[®] moulding technique together with the use of MIL.BOX[®] material, **these enclosures are structurally solid and mechanically robust**, due to their increased thickness. They are particularly resistant to the main pollutants present in industrial environments. The lever enclosure pegs are built into the enclosures. The methods for fastening the connectors to the enclosures are made by M3 threaded metal inserts. With reference to metal construction, which to comply with electrical installation safety norms, must be earthed via a metal connection to the protective earth terminal of the connector inserts inside the enclosure, **the new series of enclosures offers a solution for total insulation constructions** ☐ (equivalent to class II) where necessary.

The thermoplastic material used is RAL 7012 dark grey colour and has passed **glow wire** testing in accordance with the IEC (EN) 60695-2-11 at **650 °C** in compliance with intended uses.

2 Gaskets

Gaskets have been produced in **HNBR rubber or SILICONE rubber** and have been incorporated in the base flange on bulkhead mounting housings for easier installation.

3 Levers

The locking levers have been produced in **self-extinguishing thermoplastic material**, blue RAL 5015 colour.

In accordance with the requirements set forth in **EHEDG Guideline n. 32** "Materials of construction for food equipment in contact with food" (EHEDG = European Hygienic Engineering & Design Group), the closing levers and sealing gaskets are coloured blue to easily identify any accidental contaminations in food products and to facilitate the visual identification of their complete cleanliness.

4 Dimensions

The internal dimensions allow mounting of all connector inserts in their relevant sizes. The external dimensions of the bulkhead mounting housings are similar to those of the corresponding metallic enclosures; hole fixing centres are unchanged. Hoods offer an inner cabling space similar to that of the "high" construction models of the corresponding metal enclosures. Other characteristics are in compliance with the applicable safety standard for electrical connectors, **IEC/EN 61984**.

5 Cable entries

The housing and hood cable entries are available with metric thread, respectively:

- **M25 or M32** for smaller sizes "44.27" and "57.27".
- **M32 or M40** for larger sizes "77.27" and "104.27".

The surface mounting, high construction housings are supplied with an open threaded entry and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).

The recent standard **IEC/EN 61076-7-100** regarding metric cable entries for multipole electrical connectors for heavy duty uses, which standardises some main dimensions for entries and their related accessories (gaskets, pressure nuts), have been carefully considered in the product design.

6 Markings

Each enclosure carries its own part number and conformity markings.



inserts:	page:
CDD 24 poles + ⊕	67
CDS 9 poles + ⊕	78
CSH 6 poles + ⊕	91
CNE, CSE 6 poles + ⊕	104
CCE 6 poles + ⊕	110
CSS 6 poles + ⊕	122
CT, CTSE (16A) *) 6 poles + ⊕	130
CQE 10 poles + ⊕	138
MIXO 2 modules	179 - 215

*) only for standard insulating version THIH

insert centre distance:
44 x 27 mm

housings with single lever



HNBR gasket

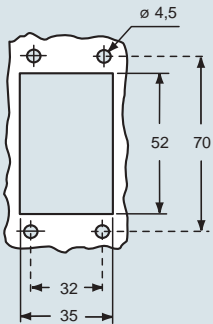
NEW

hoods with 2 pegs



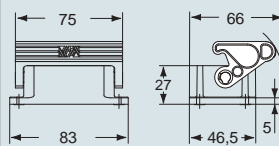
description	part No.	entry M	part No.	entry M
bulkhead mounting housing with thermoplastic lever	THIH 06 L			
surface mounting housing with thermoplastic lever	TAPH 06 L25	25		
surface mounting housing with thermoplastic lever	TAPH 06 L32	32		
with pegs, side entry			TMAO 06 L25	25
with pegs, side entry			TMAO 06 L32	32
with pegs, top entry			TMAV 06 L25	25
with pegs, top entry			TMAV 06 L32	32

panel cut-out for bulkhead mounting housing in mm

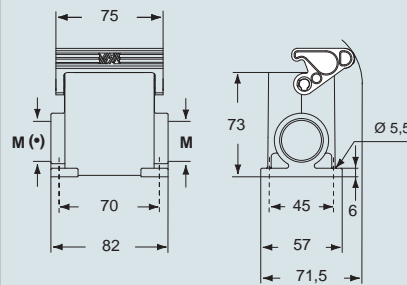


dimensions in mm

THIH 06 L



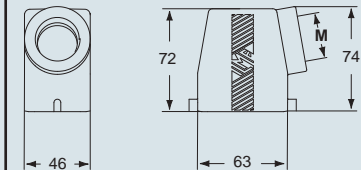
TAPH 06 L25 and TAPH 06 L32



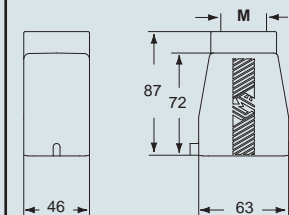
(*) The surface mounting, high construction housings are supplied with an open threaded entry (*) and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).

dimensions in mm

TMAO 06 L25 and TMAO 06 L32



TMAV 06 L25 and TMAV 06 L32



ambient temperature limits -40 °C / +70 °C

dimensions shown are not binding and may be changed without notice

T-TYPE / H - size 44.27

inserts:	page:
CDD 24 poles + ⊕	67
CDS 9 poles + ⊕	78
CSH 6 poles + ⊕	91
CNE, CSE 6 poles + ⊕	104
CCE 6 poles + ⊕	110
CSS 6 poles + ⊕	122
CT, CTSE (16A) * 6 poles + ⊕	130
CQE 10 poles + ⊕	138
MIXO 2 modules	179 - 215

*) only for standard insulating version THIH

insert centre distance:
44 x 27 mm

hoods with single lever
top entry



HNBR
gasket

NEW

covers



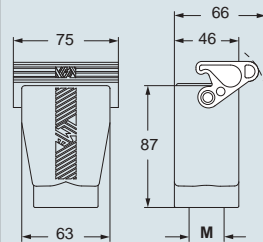
NEW

HNBR
gasket

description	part No.		part No.	
	entry M		(with eyelet)	(with loop)
with thermoplastic lever and gasket	TAVH 06 LG25	25		
with thermoplastic lever and gasket	TAVH 06 LG32	32		
with pegs			TCHC 06 L	TCHC 06 SL
with thermoplastic lever and gasket				THCH 06 LG

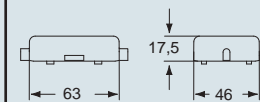
dimensions in mm

TAVH 06 LG25 and TAVH 06 LG32

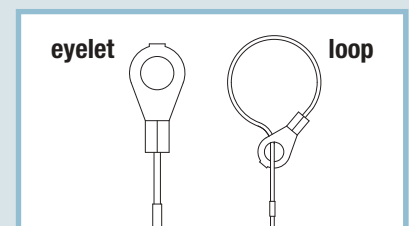
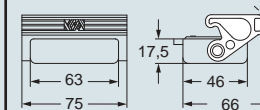


dimensions in mm

TCHC 06 L (SL)



THCH 06 LG



ambient temperature limits -40 °C / +70 °C

dimensions shown are not binding
and may be changed without notice



inserts:	page:
CDD 42 poles + ⊕	69
CDS 18 poles + ⊕	79
CSH 10 poles + ⊕	92
CNE, CSE 10 poles + ⊕	105
CCE 10 poles + ⊕	111
CSS 10 poles + ⊕	123
CT, CTSE (16A) *) .. 10 poles + ⊕	131
CQE 18 poles + ⊕	139
CMCE 3+2 (aux) poles + ⊕	148
CME 3+2 (aux) poles + ⊕	149
CMSH 3+2 (aux) poles + ⊕	149
CX 8/24 poles + ⊕	169
MIXO 3 modules	179 - 215

*) only for standard insulating version THIH

insert centre distance:
57 x 27 mm

housings with double lever



HNBR gasket

NEW

hoods with 4 pegs

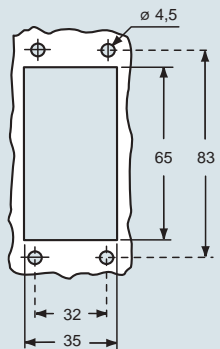


description	part No.	entry M
bulkhead mounting housing with thermoplastic levers	THIH 10	
surface mounting housing with thermoplastic levers	TAPH 10.25	25
surface mounting housing with thermoplastic levers	TAPH 10.32	32
with pegs, side entry		
with pegs, side entry		
with pegs, top entry		
with pegs, top entry		

part No.	entry M

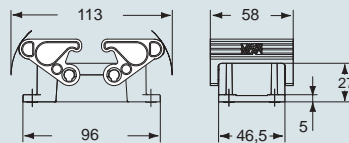
part No.	entry M
TMAO 10.25	25
TMAO 10.32	32
TMAV 10.25	25
TMAV 10.32	32

panel cut-out for bulkhead mounting housing in mm

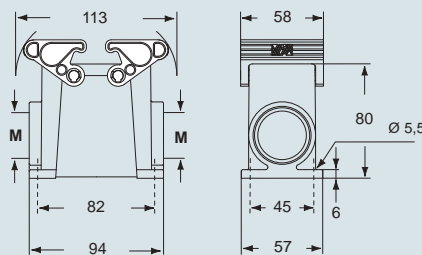


dimensions in mm

THIH 10

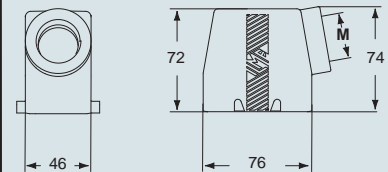


TAPH 10.25 and TAPH 10.32

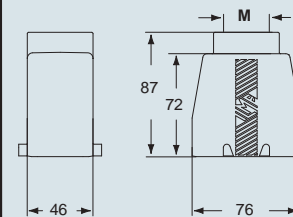


dimensions in mm

TMAO 10.25 and TMAO 10.32



TMAV 10.25 and TMAV 10.32



The surface mounting, high construction housings are supplied with an open threaded entry and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).



ambient temperature limits -40 °C / +70 °C

dimensions shown are not binding and may be changed without notice

T-TYPE / H - size 57.27

inserts:	page:	
CDD 42 poles + ⊕	69	
CDS 18 poles + ⊕	79	
CSH 10 poles + ⊕	92	
CNE, CSE 10 poles + ⊕	105	
CCE 10 poles + ⊕	111	
CSS 10 poles + ⊕	123	
CT, CTSE (16A) * .. 10 poles + ⊕	131	
CQE 18 poles + ⊕	139	
CMCE 3+2 (aux) poles + ⊕	148	
CME 3+2 (aux) poles + ⊕	149	
CMSH 3+2 (aux) poles + ⊕	149	
CX 8/24 poles + ⊕	169	
MIXO 3 modules	179 - 215	

*) only for standard insulating version THIH

insert centre distance:
57 x 27 mm

hoods with double lever top entry



HNBR gasket

NEW

covers



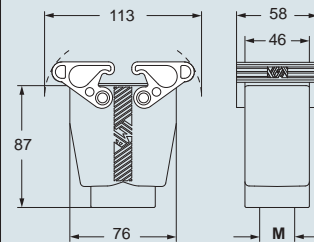
NEW

HNBR gasket

description	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with thermoplastic levers and gasket	TAVH 10 G25	25		
with thermoplastic levers and gasket	TAVH 10 G32	32		
with 4 pegs			TCHC 10	TCHC 10 S
with 2 thermoplastic levers and gasket				THCH 10 G

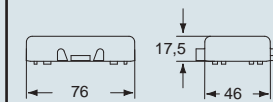
dimensions in mm

TAVH 10 G25 and TAVH 10 G32

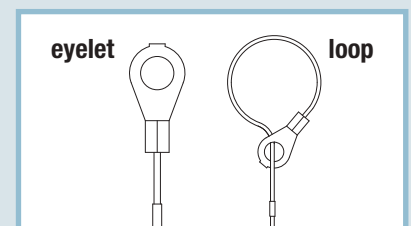
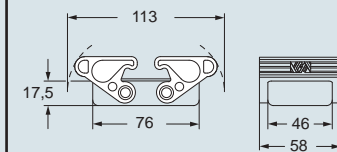


dimensions in mm

TCHC 10 (S)



THCH 10 G



ambient temperature limits -40 °C / +70 °C

dimensions shown are not binding and may be changed without notice

inserts:	page:
CD 40 poles + ⊕	57
CDD 72 poles + ⊕	70
CDS 27 poles + ⊕	80
CSH 16 poles + ⊕	93
CNE, CSE 16 poles + ⊕	106
CCE 16 poles + ⊕	112
CSS 16 poles + ⊕	124
CT, CTSE (16A) *) .. 16 poles + ⊕	132
CQE 32 poles + ⊕	140
CQEE 40 poles + ⊕	146
CMCE 6+2 (aux) poles + ⊕	150
CME, CMSH.. 6+2 (aux) poles + ⊕	151
CP 6 poles + ⊕	162
CX 6/36 and 12/2 poles + ⊕	170-171
CX 4/0 and 4/2 poles + ⊕	172
MIXO 4 modules	179-215

*) only for standard insulating version THIH

insert centre distance: 77,5 x 27 mm

housings with double lever



HNBR gasket

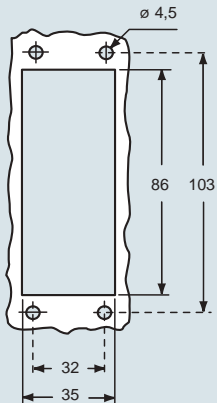
NEW

hoods with 4 pegs



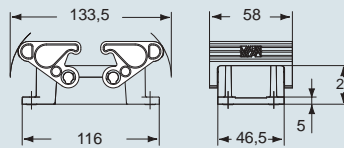
description	part No.	entry M	part No.	entry M
bulkhead mounting housing with thermoplastic levers	THIH 16			
surface mounting housing with thermoplastic levers	TAPH 16.32	32		
surface mounting housing with thermoplastic levers	TAPH 16.40	40		
with pegs, side entry			TMAO 16.32	32
with pegs, side entry			TMAO 16.40	40
with pegs, top entry			TMAV 16.32	32
with pegs, top entry			TMAV 16.40	40

panel cut-out for bulkhead mounting housing in mm

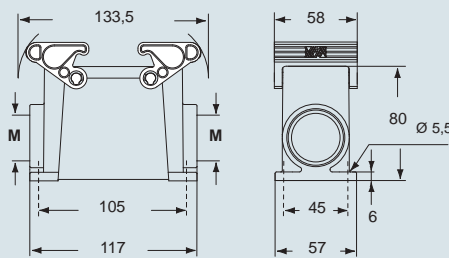


dimensions in mm

THIH 16

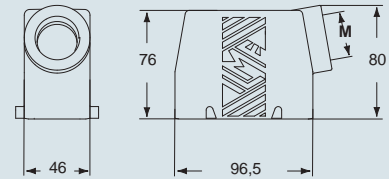


TAPH 16.32 and TAPH 16.40

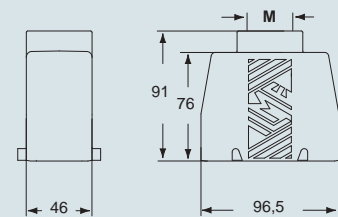


dimensions in mm

TMAO 16.32 and TMAO 16.40



TMAV 16.32 and TMAV 16.40



The surface mounting, high construction housings are supplied with an open threaded entry and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).



ambient temperature limits -40 °C / +70 °C

dimensions shown are not binding and may be changed without notice

inserts:	page:	hoods with double lever top entry
CD 40 poles + ⊕	57	
CDD 72 poles + ⊕	70	
CDS 27 poles + ⊕	80	
CSH 16 poles + ⊕	93	
CNE, CSE 16 poles + ⊕	106	
CCE 16 poles + ⊕	112	
CSS 16 poles + ⊕	124	
CT, CTSE (16A) * .. 16 poles + ⊕	132	
CQE 32 poles + ⊕	140	
CQEE 40 poles + ⊕	146	
CMCE 6+2 (aux) poles + ⊕	150	
CME, CMSH.. 6+2 (aux) poles + ⊕	151	
CP 6 poles + ⊕	162	
CX 6/36 and 12/2 poles + ⊕	170-171	
CX 4/0 and 4/2 poles + ⊕	172	
MIXO 4 modules	179-215	

*) only for standard insulating version THIH

insert centre distance: 77,5 x 27 mm



HNBR gasket

NEW

covers



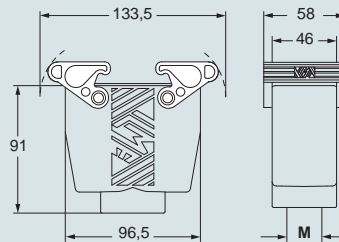
HNBR gasket

NEW

description	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with thermoplastic levers and gasket	TAVH 16 G32	32		
with thermoplastic levers and gasket	TAVH 16 G40	40		
with 4 pegs			TCHC 16	TCHC 16 S
with 2 thermoplastic levers and gasket				THCH 16 G

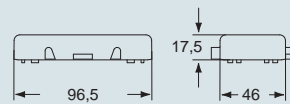
dimensions in mm

TAVH 16 G32 and TAVH 16 G40

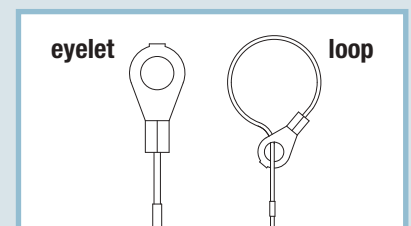
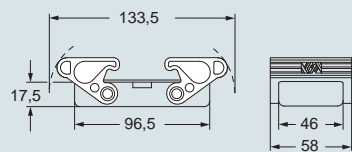


dimensions in mm

TCHC 16 (S)



THCH 16 G



ambient temperature limits -40 °C / +70 °C

dimensions shown are not binding and may be changed without notice



inserts:	page:
CD 64 poles + ⊕	59
CDD 108 poles + ⊕	72
CDS 42 poles + ⊕	81
CSH 24 poles + ⊕	94
CNE, CSE 24 poles + ⊕	107
CCE 24 poles + ⊕	113
CSS 24 poles + ⊕	125
CT, CTSE (16A) *) .. 24 poles + ⊕	133
CQE 46 poles + ⊕	141
CQEE 64 poles + ⊕	147
CMCE 10+2 (aux) poles + ⊕	152
CME, CMSH 10+2 (aux) poles + ⊕	153
CMCE 16+2 (aux) poles + ⊕	158
CME 16+2 (aux) poles + ⊕	159
CX 4/8 and 6/6 poles + ⊕	173 and 175
MIXO 6 modules	179-215

*) only for standard insulating version THIH

insert centre distance: 104 x 27 mm

housings with double lever



HNBR gasket

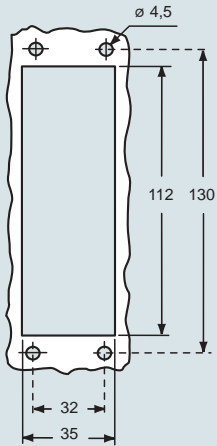
NEW

hoods with 4 pegs



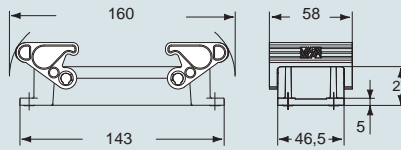
description	part No.	entry M	part No.	entry M
bulkhead mounting housing with thermoplastic levers	THIH 24			
surface mounting housing with thermoplastic levers	TAPH 24.32	32		
surface mounting housing with thermoplastic levers	TAPH 24.40	40		
with pegs, side entry			TMAO 24.32	32
with pegs, side entry			TMAO 24.40	40
with pegs, top entry			TMAV 24.32	32
with pegs, top entry			TMAV 24.40	40

panel cut-out for bulkhead mounting housing in mm

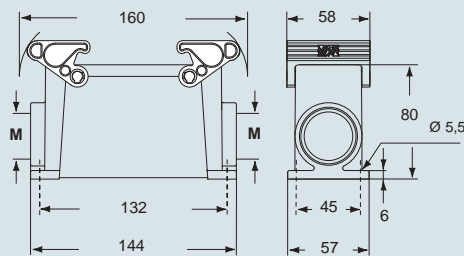


dimensions in mm

THIH 24

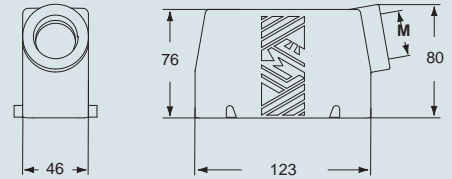


TAPH 24.32 and TAPH 24.40

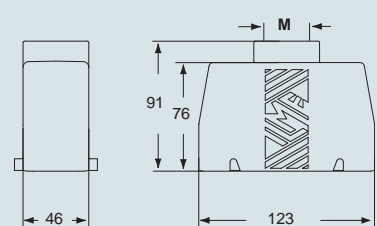


dimensions in mm

TMAO 24.32 and TMAO 24.40



TMAV 24.32 and TMAV 24.40



The surface mounting, high construction housings are supplied with an open threaded entry and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).



ambient temperature limits -40 °C / +70 °C

dimensions shown are not binding and may be changed without notice

T-TYPE / H - size 104.27

inserts:	page:
CD 64 poles + ⊕	59
CDD 108 poles + ⊕	72
CDS 42 poles + ⊕	81
CSH 24 poles + ⊕	94
CNE, CSE 24 poles + ⊕	107
CCE 24 poles + ⊕	113
CSS 24 poles + ⊕	125
CT, CTSE (16A) *) .. 24 poles + ⊕	133
CQE 46 poles + ⊕	141
CQEE 64 poles + ⊕	147
CMCE 10+2 (aux) poles + ⊕	152
CME, CMSH 10+2 (aux) poles + ⊕	153
CMCE 16+2 (aux) poles + ⊕	158
CME 16+2 (aux) poles + ⊕	159
CX 4/8 and 6/6 poles + ⊕	173 and 175
MIXO 6 modules	179-215

*) only for standard insulating version THIH

insert centre distance: 104 x 27 mm

hoods with double lever top entry



HNBR gasket

NEW

covers



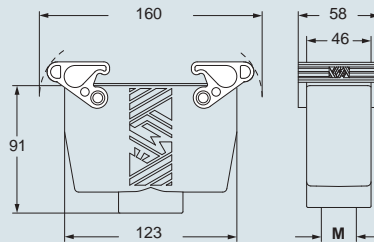
HNBR gasket

NEW

description	part No.	entry M	covers	
			part No. (with eyelet)	part No. (with loop)
with thermoplastic levers and gasket	TAVH 24 G32	32		
with thermoplastic levers and gasket	TAVH 24 G40	40		
with 4 pegs			TCHC 24	TCHC 24 S
with 2 thermoplastic levers and gasket				THCH 24 G

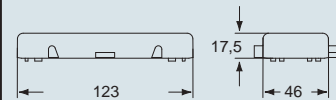
dimensions in mm

TAVH 24 G32 and TAVH 24 G40

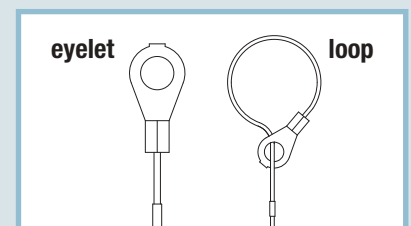
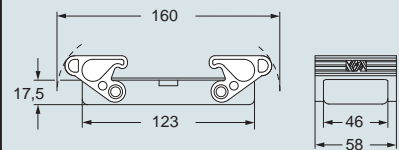


dimensions in mm

TCHC 24 (S)



THCH 24 G



ambient temperature limits -40 °C / +70 °C

dimensions shown are not binding and may be changed without notice



inserts:	page:
CDD 24 poles + ⊕	67
CDS 9 poles + ⊕	78
CSH 6 poles + ⊕	91
CNE, CSE 6 poles + ⊕	104
CCE 6 poles + ⊕	110
CSS 6 poles + ⊕	122
CT, CTSE (16A) *) 6 poles + ⊕	130
CQE 10 poles + ⊕	138
MIXO 2 modules	179 - 21

*) only for standard insulating version THIC

insert centre distance:
44 x 27 mm

housings with single lever



SILICONE gasket

NEW

hoods with 2 pegs

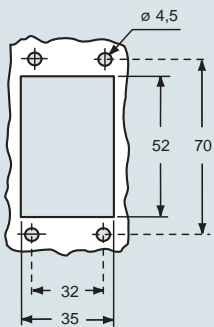


description	part No.	entry M
bulkhead mounting housing with thermoplastic lever	THIC 06 L	
surface mounting housing with thermoplastic lever	TAPC 06 L25	25
surface mounting housing with thermoplastic lever	TAPC 06 L32	32
with pegs, side entry		
with pegs, side entry		

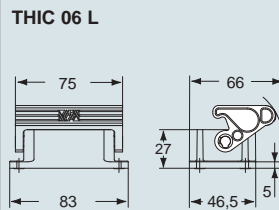
part No.	entry M
THIC 06 L	
TAPC 06 L25	25
TAPC 06 L32	32

part No.	entry M
TMAO 06 L25	25
TMAO 06 L32	32
TMAV 06 L25	25
TMAV 06 L32	32

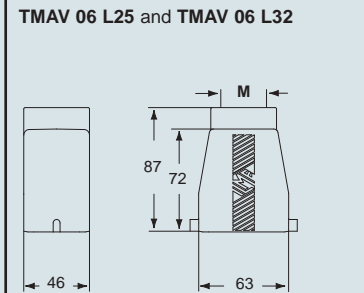
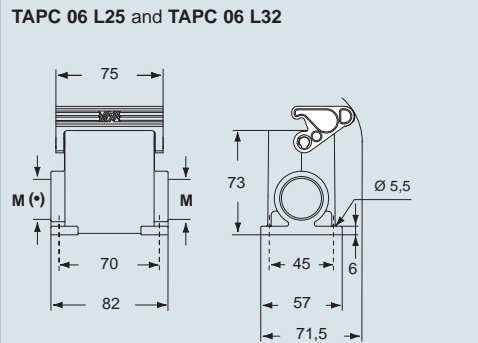
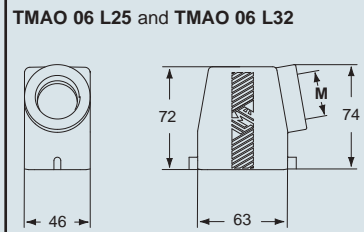
panel cut-out for bulkhead mounting housing in mm



dimensions in mm



dimensions in mm



(*) The surface mounting, high construction housings are supplied with an open threaded entry (*) and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).



ambient temperature limits -50 °C / +70 °C

dimensions shown are not binding and may be changed without notice

T-TYPE / C - size 44.27



inserts:	page:
CDD 24 poles + ⊕	67
CDS 9 poles + ⊕	78
CSH 6 poles + ⊕	91
CNE, CSE 6 poles + ⊕	104
CCE 6 poles + ⊕	110
CSS 6 poles + ⊕	122
CT, CTSE (16A) * 6 poles + ⊕	130
CQE 10 poles + ⊕	138
MIXO 2 modules	179 - 21

*) only for standard insulating version THIC

insert centre distance:
44 x 27 mm

hoods with single lever top entry



SILICONE gasket

NEW

covers



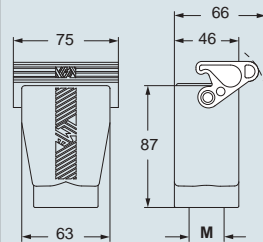
NEW

SILICONE gasket

description	part No.		part No.	
	entry M		(with eyelet)	(with loop)
with thermoplastic lever and gasket	TAVC 06 LG25	25		
with thermoplastic lever and gasket	TAVC 06 LG32	32		
with pegs			TCHC 06 L	TCHC 06 SL
with thermoplastic lever and gasket				THCC 06 LG

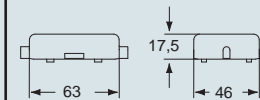
dimensions in mm

TAVC 06 LG25 and TAVC 06 LG32

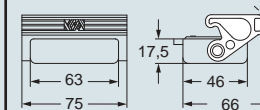


dimensions in mm

TCHC 06 L (SL)

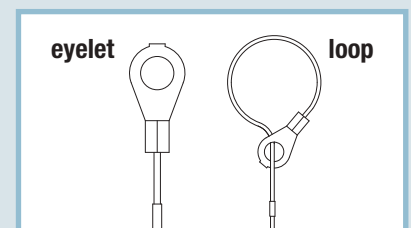


THCC 06 LG



ambient temperature limits -50 °C / +70 °C

dimensions shown are not binding and may be changed without notice





inserts:	page:
CDD 42 poles + ⊕	69
CDS 18 poles + ⊕	79
CSH 10 poles + ⊕	92
CNE, CSE 10 poles + ⊕	105
CCE 10 poles + ⊕	111
CSS 10 poles + ⊕	123
CT, CTSE (16A) *) .. 10 poles + ⊕	131
CQE 18 poles + ⊕	139
CMCE 3+2 (aux) poles + ⊕	148
CME 3+2 (aux) poles + ⊕	149
CMSH 3+2 (aux) poles + ⊕	149
CX 8/24 poles + ⊕	169
MIXO 3 modules	179 - 215

*) only for standard insulating version THIC

insert centre distance:
57 x 27 mm

housings with double lever



SILICONE gasket

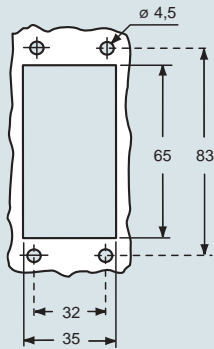
NEW

hoods with 4 pegs



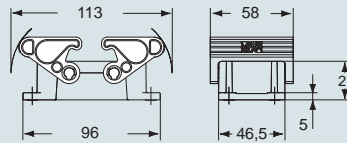
description	part No.	entry M	part No.	entry M
bulkhead mounting housing with thermoplastic levers	THIC 10			
surface mounting housing with thermoplastic levers	TAPC 10.25	25		
surface mounting housing with thermoplastic levers	TAPC 10.32	32		
with pegs, side entry			TMAO 10.25	25
with pegs, side entry			TMAO 10.32	32
with pegs, top entry			TMAV 10.25	25
with pegs, top entry			TMAV 10.32	32

panel cut-out for bulkhead mounting housing in mm

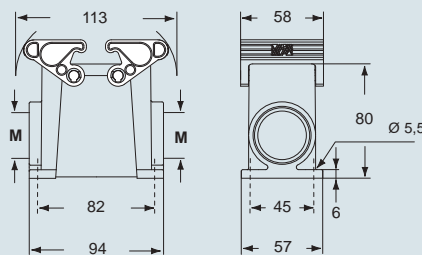


dimensions in mm

THIC 10

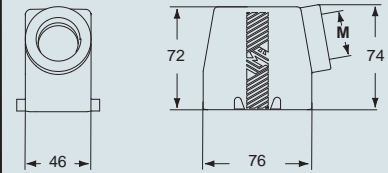


TAPC 10.25 and TAPC 10.32

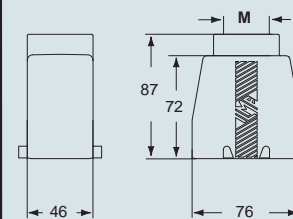


dimensions in mm

TMAO 10.25 and TMAO 10.32



TMAV 10.25 and TMAV 10.32



The surface mounting, high construction housings are supplied with an open threaded entry and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).



ambient temperature limits -50 °C / +70 °C

dimensions shown are not binding and may be changed without notice

T-TYPE / C - size 57.27

inserts:	page:
CDD 42 poles + ⊕	69
CDS 18 poles + ⊕	79
CSH 10 poles + ⊕	92
CNE, CSE 10 poles + ⊕	105
CCE 10 poles + ⊕	111
CSS 10 poles + ⊕	123
CT, CTSE (16A) * .. 10 poles + ⊕	131
CQE 18 poles + ⊕	139
CMCE 3+2 (aux) poles + ⊕	148
CME 3+2 (aux) poles + ⊕	149
CMSH 3+2 (aux) poles + ⊕	149
CX 8/24 poles + ⊕	169
MIXO 3 modules	179 - 215

*) only for standard insulating version THIC

insert centre distance:
57 x 27 mm

hoods with double lever top entry



SILICONE gasket

NEW

covers



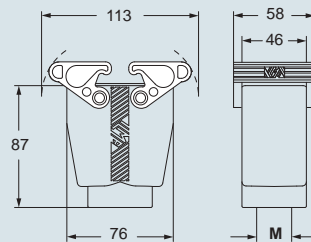
NEW

SILICONE gasket

description	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with thermoplastic levers and gasket	TAVC 10 G25	25		
with thermoplastic levers and gasket	TAVC 10 G32	32		
with 4 pegs			TCHC 10	TCHC 10 S
with 2 thermoplastic levers and gasket				THCC 10 G

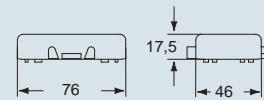
dimensions in mm

TAVC 10 G25 and TAVC 10 G32

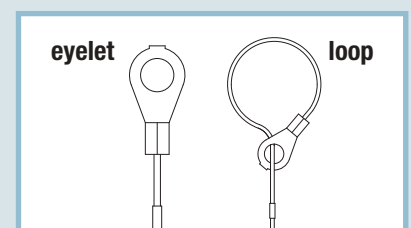
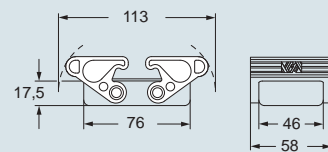


dimensions in mm

TCHC 10 (S)



THCC 10 G



ambient temperature limits -50 °C / +70 °C

dimensions shown are not binding and may be changed without notice

inserts:	page:
CD 40 poles + ⊕	57
CDD 72 poles + ⊕	70
CDS 27 poles + ⊕	80
CSH 16 poles + ⊕	93
CNE, CSE 16 poles + ⊕	106
CCE 16 poles + ⊕	112
CSS 16 poles + ⊕	124
CT, CTSE (16A) *) .. 16 poles + ⊕	132
CQE 32 poles + ⊕	140
CQEE 40 poles + ⊕	146
CMCE 6+2 (aux) poles + ⊕	150
CME, CMSH.. 6+2 (aux) poles + ⊕	151
CP 6 poles + ⊕	162
CX 6/36 and 12/2 poles + ⊕	170-171
CX 4/0 and 4/2 poles + ⊕	172
MIXO 4 modules	179-215

*) only for standard insulating version THIC

insert centre distance: 77,5 x 27 mm

housings with double lever



SILICONE gasket

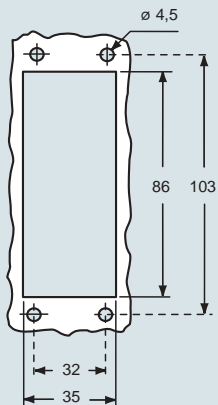
NEW

hoods with 4 pegs



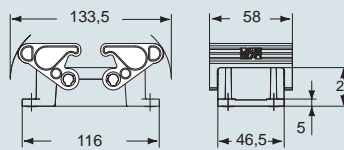
description	part No.	entry M	part No.	entry M
bulkhead mounting housing with thermoplastic levers	THIC 16			
surface mounting housing with thermoplastic levers	TAPC 16.32	32		
surface mounting housing with thermoplastic levers	TAPC 16.40	40		
with pegs, side entry			TMAO 16.32	32
with pegs, side entry			TMAO 16.40	40
with pegs, top entry			TMAV 16.32	32
with pegs, top entry			TMAV 16.40	40

panel cut-out for bulkhead mounting housing in mm

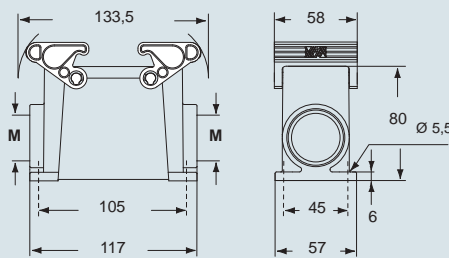


dimensions in mm

THIC 16

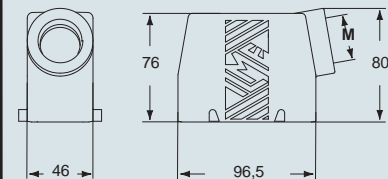


TAPC 16.32 and TAPC 16.40

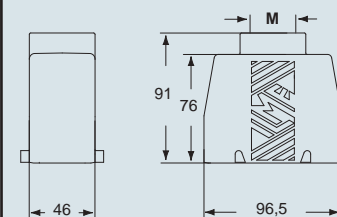


dimensions in mm

TMAO 16.32 and TMAO 16.40



TMAV 16.32 and TMAV 16.40



The surface mounting, high construction housings are supplied with an open threaded entry and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).



ambient temperature limits -50 °C / +70 °C

dimensions shown are not binding and may be changed without notice

T-TYPE / C - size 77.27

inserts:	page:
CD 40 poles + ⊕	57
CDD 72 poles + ⊕	70
CDS 27 poles + ⊕	80
CSH 16 poles + ⊕	93
CNE, CSE 16 poles + ⊕	106
CCE 16 poles + ⊕	112
CSS 16 poles + ⊕	124
CT, CTSE (16A) *) .. 16 poles + ⊕	132
CQE 32 poles + ⊕	140
CQEE 40 poles + ⊕	146
CMCE 6+2 (aux) poles + ⊕	150
CME, CMSH.. 6+2 (aux) poles + ⊕	151
CP 6 poles + ⊕	162
CX 6/36 and 12/2 poles + ⊕	170-171
CX 4/0 and 4/2 poles + ⊕	172
MIXO 4 modules	179-215

*) only for standard insulating version THIC

insert centre distance: **77,5 x 27 mm**

hoods with double lever top entry



SILICONE gasket

NEW

covers



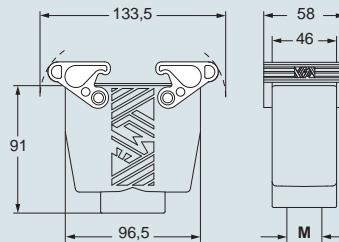
NEW

SILICONE gasket

description	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with thermoplastic levers and gasket	TAVC 16 G32	32		
with thermoplastic levers and gasket	TAVC 16 G40	40		
with 4 pegs			TCHC 16	TCHC 16 S
with 2 thermoplastic levers and gasket				THCC 16 G

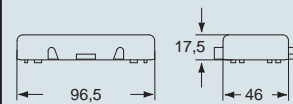
dimensions in mm

TAVC 16 G32 and TAVC 16 G40

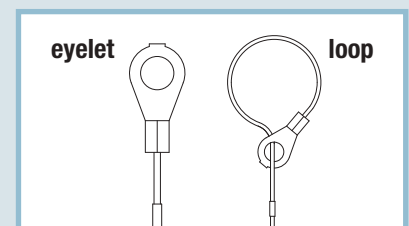
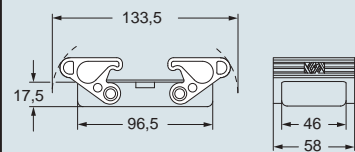


dimensions in mm

TCHC 16 (S)



THCC 16 G



ambient temperature limits -50 °C / +70 °C

dimensions shown are not binding and may be changed without notice



inserts:	page:
CD 64 poles + ⊕	59
CDD 108 poles + ⊕	72
CDS 42 poles + ⊕	81
CSH 24 poles + ⊕	94
CNE, CSE 24 poles + ⊕	107
CCE 24 poles + ⊕	113
CSS 24 poles + ⊕	125
CT, CTSE (16A) * .. 24 poles + ⊕	133
CQE 46 poles + ⊕	141
CQEE 64 poles + ⊕	147
CMCE 10+2 (aux) poles + ⊕	152
CME, CMSH 10+2 (aux) poles + ⊕	153
CMCE 16+2 (aux) poles + ⊕	158
CME 16+2 (aux) poles + ⊕	159
CX 4/8 and 6/6 poles + ⊕	173 and 175
MIXO 6 modules	179-215

*) only for standard insulating version THIC

insert centre distance: 104 x 27 mm

housings with double lever



SILICONE gasket

NEW

hoods with 4 pegs

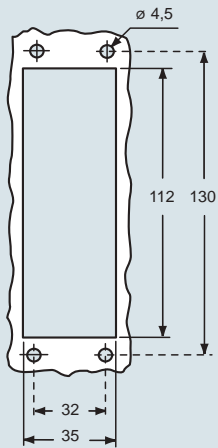


description	part No.	entry M
bulkhead mounting housing with thermoplastic levers	THIC 24	
surface mounting housing with thermoplastic levers	TAPC 24.32	32
surface mounting housing with thermoplastic levers	TAPC 24.40	40
with pegs, side entry		
with pegs, side entry		

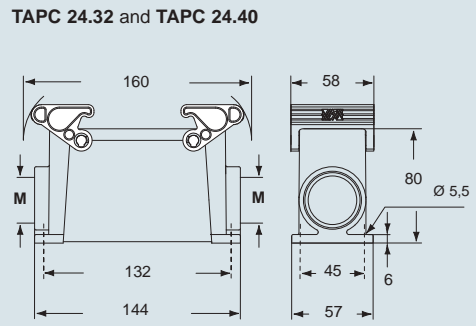
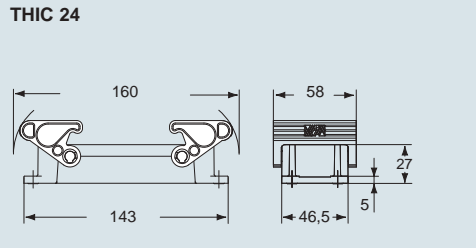
description	part No.	entry M
with pegs, top entry		
with pegs, top entry		

description	part No.	entry M
with pegs, top entry	TMAO 24.32	32
with pegs, top entry	TMAO 24.40	40
with pegs, top entry	TMAV 24.32	32
with pegs, top entry	TMAV 24.40	40

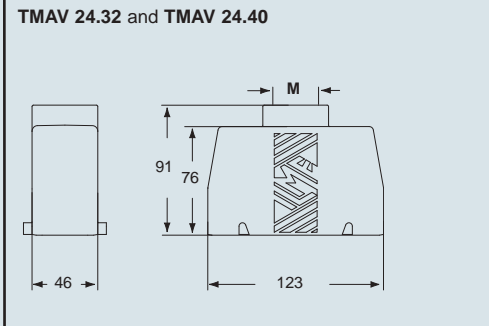
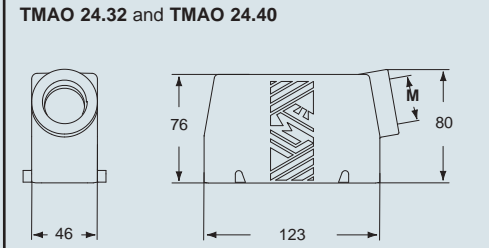
panel cut-out for bulkhead mounting housing in mm



dimensions in mm



dimensions in mm



The surface mounting, high construction housings are supplied with an open threaded entry and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).



ambient temperature limits -50 °C / +70 °C

dimensions shown are not binding and may be changed without notice

T-TYPE / C - size 104.27



inserts:	page:
CD 64 poles + ⊕	59
CDD 108 poles + ⊕	72
CDS 42 poles + ⊕	81
CSH 24 poles + ⊕	94
CNE, CSE 24 poles + ⊕	107
CCE 24 poles + ⊕	113
CSS 24 poles + ⊕	125
CT, CTSE (16A) *) .. 24 poles + ⊕	133
CQE 46 poles + ⊕	141
CQEE 64 poles + ⊕	147
CMCE 10+2 (aux) poles + ⊕	152
CME, CMSH 10+2 (aux) poles + ⊕	153
CMCE 16+2 (aux) poles + ⊕	158
CME 16+2 (aux) poles + ⊕	159
CX 4/8 and 6/6 poles + ⊕	173 and 175
MIXO 6 modules	179-215

*) only for standard insulating version THIC

insert centre distance: **104 x 27 mm**

hoods with double lever top entry



SILICONE gasket

NEW

covers



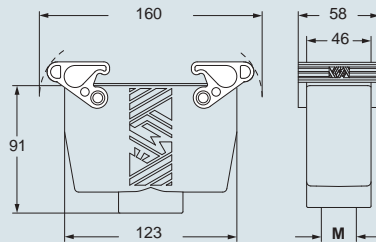
SILICONE gasket

NEW

description	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with thermoplastic levers and gasket	TAVC 24 G32	32		
with thermoplastic levers and gasket	TAVC 24 G40	40		
with 4 pegs			TCHC 24	TCHC 24 S
with 2 thermoplastic levers and gasket				THCC 24 G

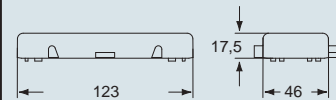
dimensions in mm

TAVC 24 G32 and TAVC 24 G40

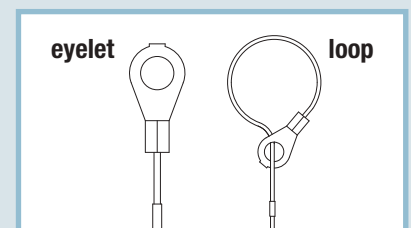
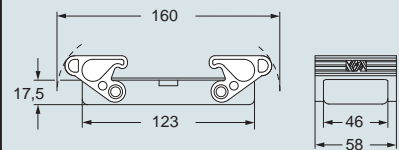


dimensions in mm

TCHC 24 (S)



THCC 24 G



ambient temperature limits -50 °C / +70 °C

dimensions shown are not binding and may be changed without notice

inserts: page:

CD	40, 64 poles + ⊕ 57 and 59
CDD	24, 42, 72, 108 poles + ⊕ 67-72
CDS	9, 18, 27, 42 poles + ⊕ 78-81
CSH	6, 10, 16, 24 poles + ⊕ 91-94
CNE, CSE	6, 10, 16, 24 poles + ⊕ 104-107
CCE	6, 10, 16, 24 poles + ⊕ 110-113
CSS	6, 10, 16, 24 poles + ⊕ 122-125
CT, CTSE	6, 10, 16, 24 poles + ⊕ 130-133
CQE	10, 18, 32, 46 poles + ⊕ 138-141
CQEE	40, 64 poles + ⊕ 146-147
CMCE 3, 6, 10, 16+2 (aux) poles + ⊕ 148-158	
CMSH	3, 6, 10+2 (aux) poles + ⊕ 149-153
CP	6 poles + ⊕ 162
CX	8/24, 6/36, 12/2 poles + ⊕ 169-171

insert centre distance:
44 X 27 mm, 57 x 27 mm
77,5 x 27 mm, 104 x 27 mm

optional PE jumpers



NEW

description

part No.

galvanized brass, to be optionally used with T-TYPE enclosures series and COB systems.

- for inserts "44.27" size
- for inserts "57.27" size
- for inserts "77.27" size
- for inserts "104.27" size

- CR 06 BPE**
- CR 10 BPE**
- CR 16 BPE**
- CR 24 BPE**

CR...BPE accessories PE (protective earth) jumpers could be mounted under the connector inserts for the connection of the two insert's PE plates.

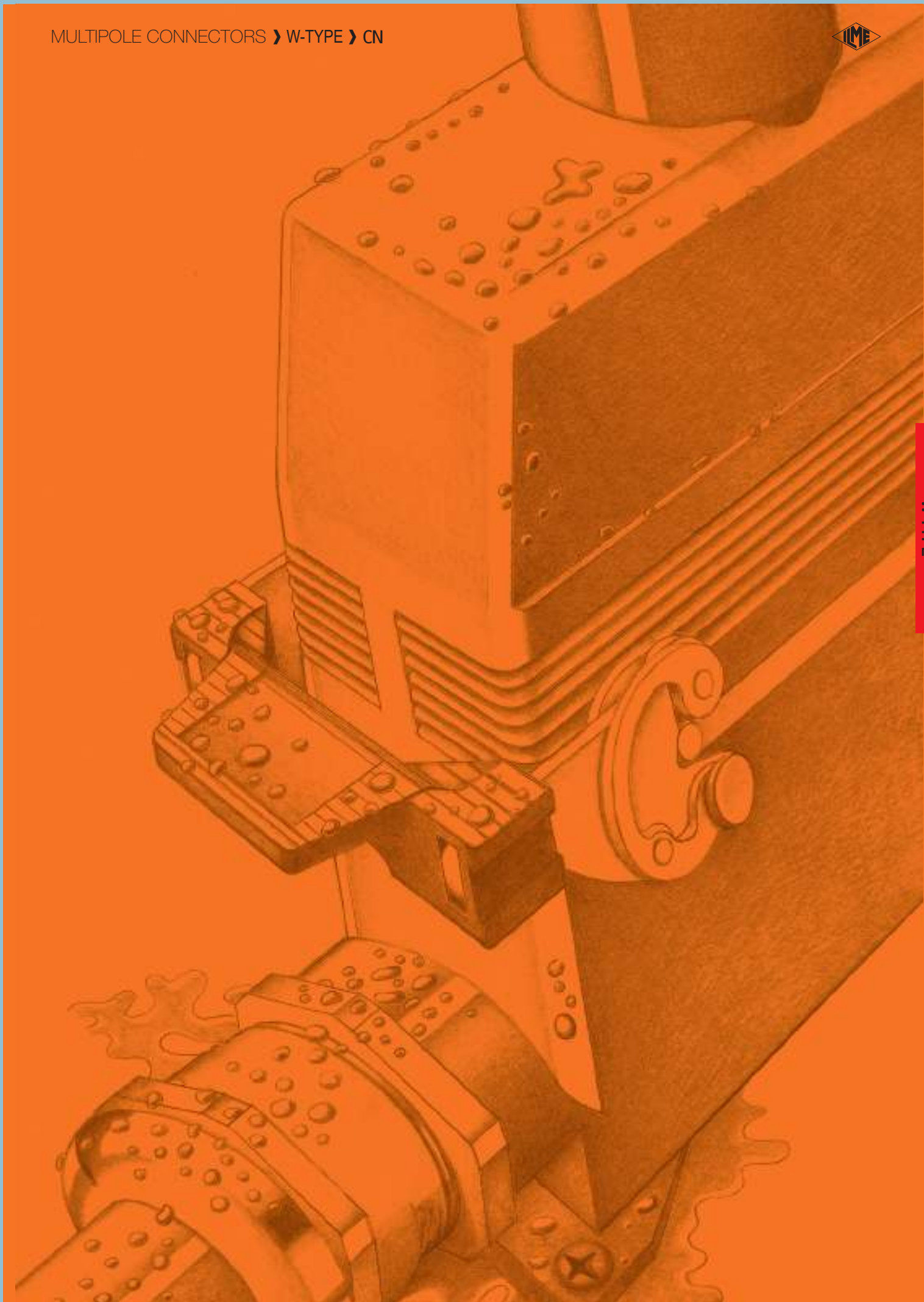
To guarantee to proper alignment of the insert inside the enclosure, it is necessary to use both jumpers supplied (in the same housing or hood); the jumpers are not usable individually.

Furthermore the user is responsible for verifying the continuity of the PE connection ⊕ (male and female) independently of using CR...BPE earth jumpers.



dimensions shown are not binding and may be changed without notice

Accessories



W-TYPE

W-TYPE

Enclosures for aggressive environments

The Heavy Duty series is specially **designed for industrial applications where particularly aggressive external agents are present** (e.g. salty environments, etc.).

The range includes enclosures in the 8 basic sizes and in dual versions with 32 and 48 poles.

The enclosures may be bulkhead, surface-mounting or hoods with side or top entry.

The version is **distinguished by the black colour** and has the following characteristics:

- **chromate die-casting** treatment (RoHS compliant) providing **50% improvement in resistance in salt spray tests** (according to UNI EN ISO 9227) compared to the previous green versions
- **painted with thermosetting epoxy powder (improved resistance to chemical agents compared to epoxy polyester).**

Other construction characteristics are:

1) CKA..W and MKA..W series

- 21.21 size inserts
- gaskets in anti-aging fluoro elastomer
- monoblock locking device in stainless steel

2) CH..W, CA..W and MH..W, MA..W series

- 44.27, 57.27, 77.27, 104.27, 77.62, 104.62, 66.40 size inserts
- gaskets in anti-aging fluoro elastomer
- pegs in stainless steel

- CLASS type levers (stainless steel lever body, springs and pins, lever in thermoplastic material reinforced with glass fibers)
- supplementary insulation inside enclosures

3) CZ..W and MZ..W series

- 49.16, 66.16 size inserts
- locking device with levers, springs and pins in stainless steel
- pegs in stainless steel
- supplementary insulation inside enclosures

UL approved for USA and Canada for protection ratings **UL Type 4 (= NEMA 4), UL Type 4X (= NEMA 4X) and UL Type 12 (= NEMA 12)** according to the American standard ANSI/UL 50.

With connector complete and with appropriate cable glands, it is possible to guarantee **IP44, IP66 protection** compliant with EN 60529 **and IP69K** compliant with DIN 40050-9 (water jet at 80 °C (± 5 °C) at a pressure of 80bar ÷ 100 bar, for a period of 30s for each angle of inclination 0°, 30°, 60° and 90° w.r.t the plane).

Ambient temperature limits from -40 °C to +125 °C.

Enclosures **can accommodate all connector inserts** with crimp, screw, spring and the innovative Squich® connection.

The enclosures do not have any internal tabs and therefore **allow insertion of CME inserts** with rated voltage of 830V, thanks to the additional insulation strips placed inside.





inserts:	page:
CK 3 poles + ⊕	48
CK 4 poles + ⊕	48
CKS 3 poles + ⊕	49
CKS 4 poles + ⊕	49
CD 8 poles	54
CQ 12 poles + ⊕	165
CQ 5 poles + ⊕	166

insert dimensions:
21 x 21 mm

**bulkhead mounting housings
straight and angled**

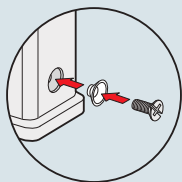


hoods

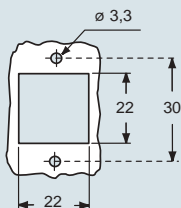


description	part No. (entry - Pg 11)	part No. (entry - M 20)	part No. (entry - Pg 11)	part No. (entry - M 20)
with stainless steel lever without cable gland, stainless steel lever without cable gland, stainless steel lever	CKAXW 03 I CKAXW 03 IA CKAXW 03 IAP CKAXW 03 AP	MKAXW IAP20 MKAXW AP20		
with pegs, top entry with pegs, side entry			CKAW 03 V CKAW 03 VA	MKAW V20 MKAW VA20
with stainless steel lever, top entry			CKAXW 03 VG	MKAXW VG20
gasket and screw kit for IP66/IP67 ¹⁾ for CK, CQ 05, CKS inserts	CKR 65		CKR 65	
gasket and screw kit for IP66/IP67 ¹⁾ for CD 08 inserts	CKR 65 D		CKR 65 D	

1) To obtain the protection rating IP66/IP67 a kit is provided that includes a gasket to fit under the insert fixing screws supplied with the kit (see illustrative example).
CQ 12 inserts are already supplied with a gasket and screw which ensure IP66/IP67 protection rating.

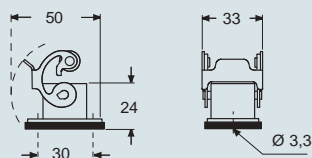


panel cut-out for bulkhead mounting housings in mm

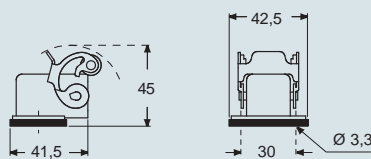


dimensions in mm

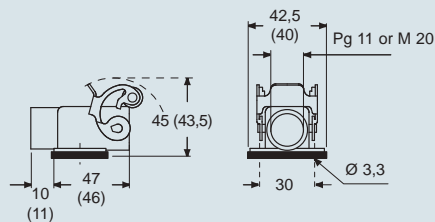
CKAXW I



CKAXW IA

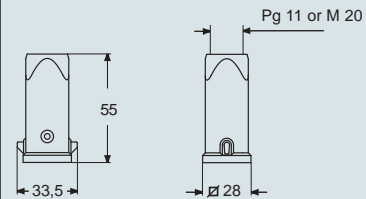


**CKAXW IAP (CKAXW AP) and
MKAXW IAP (MKAXW AP)**

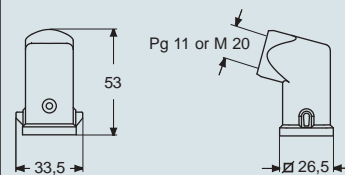


dimensions in mm

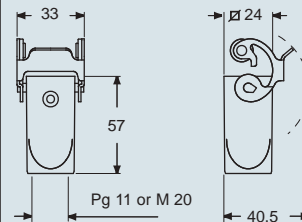
CKAW V and MKAW V



CKAW VA and MKAW VA



CKAXW VG and MKAXW VG



CRUS®
Type 12
Type 4/4X only
with CKR 65 (D)



IP66/IP67 with CKR 65 (D) ¹⁾
IP69K (compliant with DIN 40050-9)

dimensions shown are not binding
and may be changed without notice

W-TYPE - size 21.21

CZ-MZ and CZA-MZA enclosures size "49.16" for aggressive environments W-TYPE

inserts:	page:
CD 15 poles + ⊕	55
CSAH 10 poles + ⊕	87
CDA 10 poles + ⊕	98
CDC 10 poles + ⊕	99
MIXO 1 module	179 - 214

insert centre distance:
49 x 16 mm

The covers for L and LG versions cannot be used together with coding pins.
If this application is required, please contact ILME SpA.

housings and cover

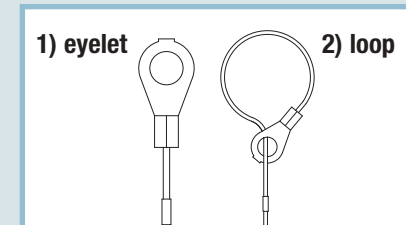
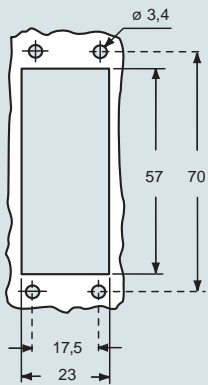


hoods and cover



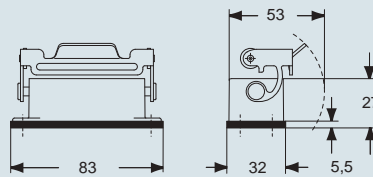
description	part No.		part No.		part No.		part No.	
		entry Pg		entry M		entry Pg		entry M
bulkhead mounting housing with lever	CZIW 15 L	—						
surface mounting housing, with lever	CZPW 15 L2	16 x 2	MZPW 15 L225	25 x 2				
cover with pegs (for 1 lever enclosures) 1)	CZCW 15 L							
enclosure with pegs, side entry					CZOW 15 L	16	MZOW 15 L20	20
enclosure with pegs, side entry					CZAOW 15 L21	21	MZOW 15 L25	25
enclosure with pegs, side entry, high construction					CZVW 15 L	13,5	MZAOW 15 L25	25
enclosure with pegs, top entry					CZAVW 15 L21	21	MZVW 15 L20	20
enclosure with pegs, top entry, high construction							MZAVW 15 L25	25
cover with lever (for enclosures with pegs) 2)					CZCW 15 LG			

panel cut-out for bulkhead mounting housing in mm

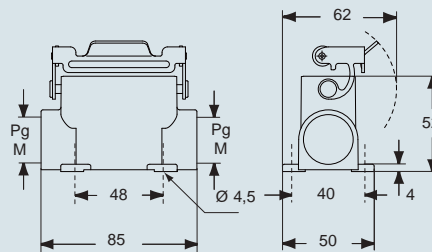


dimensions in mm

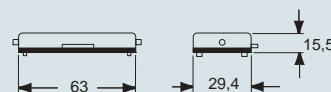
CZIW L



CZPW L and MZPW L

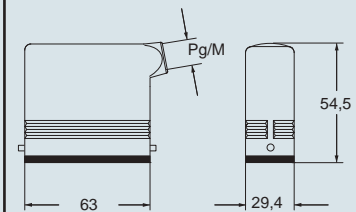


CZCW L

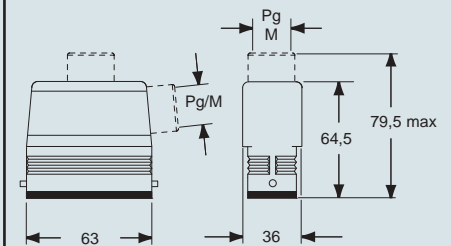


dimensions in mm

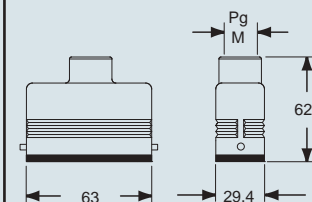
CZOW L and MZOW L



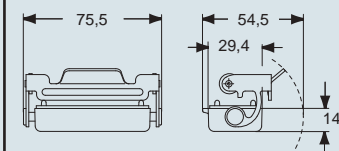
CZAOW L - MZAOW L and CZAVW L - MZAVW L



CZVW L and MZVW L



CZCW LG



ILME® Type
4/4X/12



IP69K (compliant with DIN 40050-9)

dimensions shown are not binding
and may be changed without notice

W-TYPE - size 49.16

CZ-MZ and CZA-MZA enclosures size "66.16" for aggressive environments W-TYPE

inserts:	page:
CD 25 poles + ⊕	56
CDD 38 poles + ⊕	68
CSAH 16 poles + ⊕	88
CDA 16 poles + ⊕	100
CDC 16 poles + ⊕	101

insert centre distance:
66 x 16 mm

The covers for L and LG versions cannot be used together with coding pins.
If this application is required, please contact ILME SpA.

housings and cover

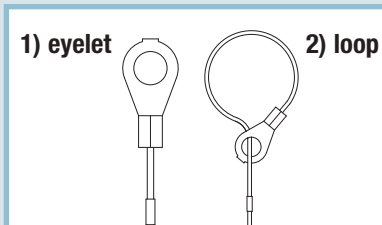
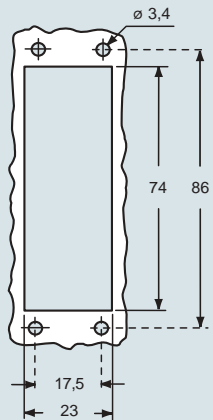


hoods and cover



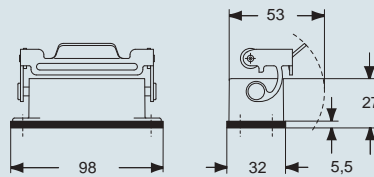
description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housing with lever	CZIW 25 L	—						
surface mounting housing, with lever	CZAPW 25 L2	16 x 2	MZAPW 25L225	25 x 2				
cover with pegs (for 1 lever enclosures) 1)	CZCW 25 L							
enclosure with pegs, side entry					CZOW 25 L	16	MZOW 25 L20	20
enclosure with pegs, side entry					CZAOW 25 L21	21	MZOW 25 L25	25
enclosure with pegs, side entry, high construction					CZVW 25 L	16	MZAOW 25 L25	25
enclosure with pegs, top entry					CZAVW 25 L21	21	MZVW 25 L20 *	20
enclosure with pegs, top entry, high construction							MZAVW 25 L25	25
cover with lever (for enclosures with pegs) 2)					CZCW 25 LG			

panel cut-out for bulkhead mounting housing in mm

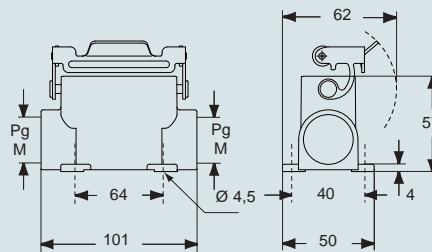


dimensions in mm

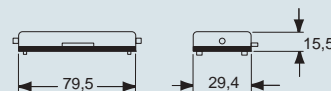
CZIW L



CZPW L and MZPW L

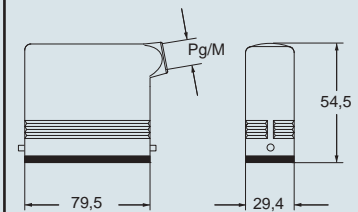


CZCW L

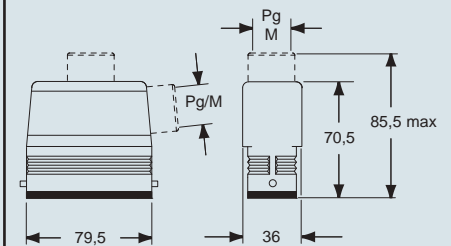


dimensions in mm

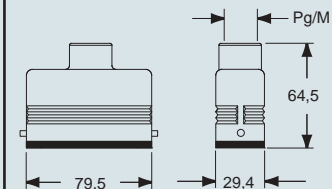
CZOW L and MZOW L



CZAOW L - MZAOW L and CZAVW L - MZAVW L

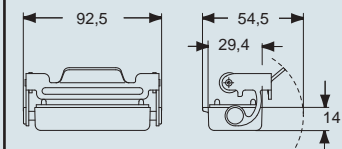


CZVW L and MZVW L



* can only be used with a complete cable gland (to be purchased separately)

CZCW LG



ILME® Type
4/4X/12



IP69K (compliant with DIN 40050-9)

dimensions shown are not binding
and may be changed without notice

W-TYPE - size 66.16



inserts:	page:
CD 50 poles + ⊕	58
CDD 76 poles + ⊕	71
CSAH 32 poles + ⊕	89
CDA 32 poles + ⊕	102
CDC 32 poles + ⊕	103

insert dimensions:
2 x (66 x 16) mm

CHCW 50 and CHCW 50 G covers cannot be used together with coding pins. If this application is required, please contact ILME SpA.

housings and cover

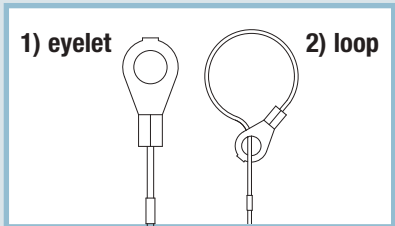
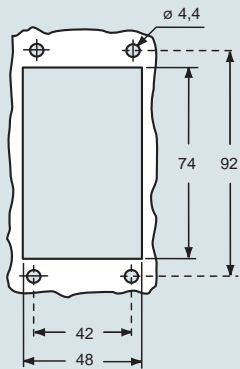


hoods and cover



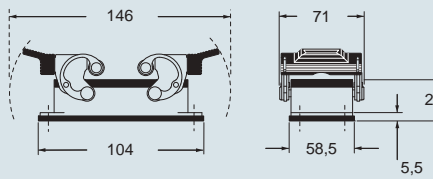
description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housings with lever	CHIW 50	—						
surface mounting housing, with lever	CHPW 50.21	21	MHPW 50.32	32				
surface mounting housing, with lever	CHPW 50.229	29 x 2	MHPW 50.250	50 x 2				
cover with 4 pegs (for housings with 2 levers) 1)	CHCW 50							
enclosure with pegs, side entry					CHOW 50	21	MHOW 50.25	25
enclosure with pegs, side entry							MHOW 50.32	32
enclosure with pegs, side entry, high construction					CAOW 50.29	29	MAOW 50.32	32
enclosure with pegs, top entry, high construction					CAVW 50.29	29	MAVW 50.32	32
cover with 2 levers (for enclosures with 4 pegs) 2)					CHCW 50 G			

panel cut-out for bulkhead mounting housing in mm

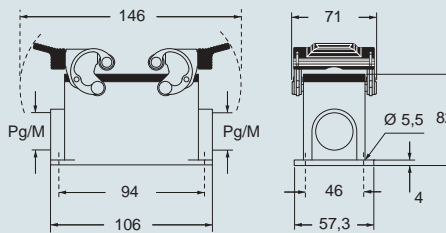


dimensions in mm

CHIW



CHPW and MHPW

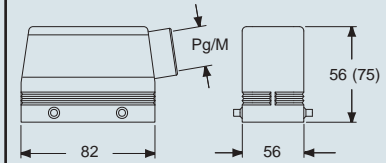


CHCW

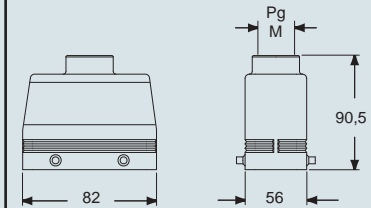


dimensions in mm

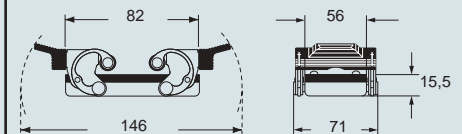
CHOW (CAOW) and MHOW (MAOW)



CAVW and MAVW



CHCW G



CALUS Type 4/4X/12



IP69K (compliant with DIN 40050-9)

dimensions shown are not binding and may be changed without notice



inserts:	page:
CDD 24 poles + ⊕	67
CDS 9 poles + ⊕	78
CSH 6 poles + ⊕	91
CNE, CSE 6 poles + ⊕	104
CCE 6 poles + ⊕	110
CSS 6 poles + ⊕	122
CT, CTSE (16A) * 6 poles + ⊕	130
CQE 10 poles + ⊕	138
MIXO 2 modules	179 - 215

*) only for enclosure CHIW 06 L

insert centre distance:
44 x 27 mm

housings and cover

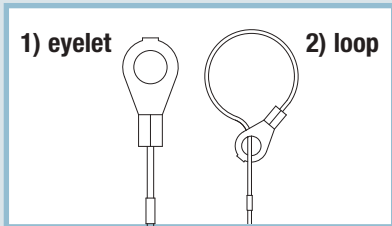
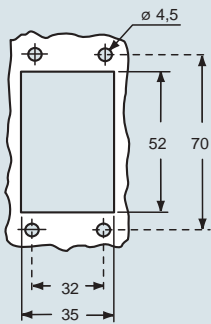


hoods and cover

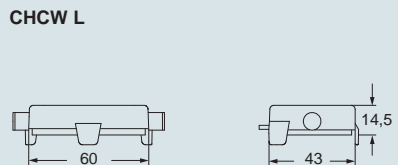
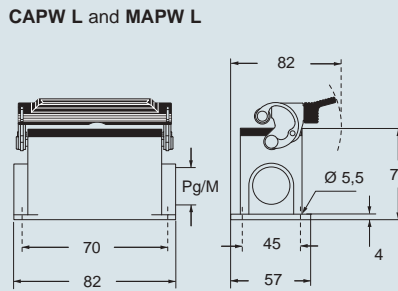
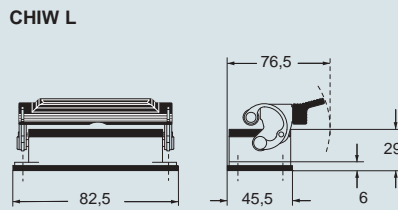


description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housing with lever	CHIW 06 L	—						
surface mounting housing, with lever	CAPW 06 L	21	MAPW 06 L32	32				
cover with pegs (for 1 lever enclosures) 1)	CHCW 06 L							
enclosure with pegs, side entry, high construction					CAOW 06 L21	21	MAOW 06 L32	32
enclosure with pegs, top entry, high construction					CAVW 06 L21	21	MAVW 06 L32	32
cover with lever (for enclosures with pegs) 2)					CHCW 06 LG			
enclosure with pegs and gasket, side entry, high construction					CAVW 06 LG	21	MAVW 06 LG32	32

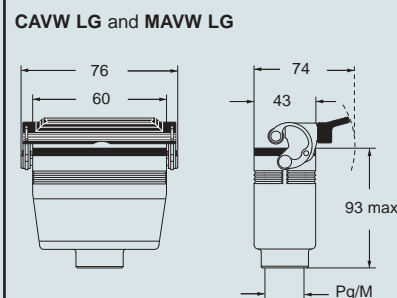
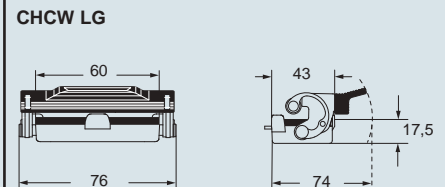
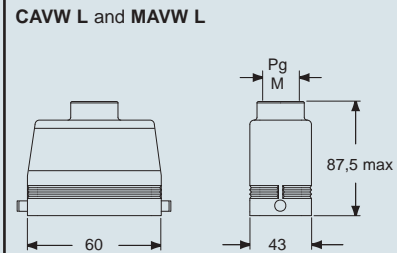
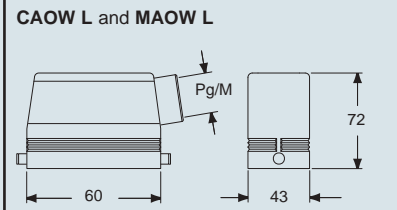
panel cut-out for bulkhead mounting housing in mm



dimensions in mm



dimensions in mm



CALUS Type 4/4X/12



IP69K (compliant with DIN 40050-9)

dimensions shown are not binding and may be changed without notice

W-TYPE - size 44.27



inserts:	page:
CDD 42 poles + ⊕	69
CDS 18 poles + ⊕	79
CSH 10 poles + ⊕	92
CNE, CSE 10 poles + ⊕	105
CCE 10 poles + ⊕	111
CSS 10 poles + ⊕	123
CT, CTSE (16A) *) .. 10 poles + ⊕	131
CQE 18 poles + ⊕	139
CMCE 3+2 (aux) poles + ⊕	148
CME 3+2 (aux) poles + ⊕	149
CMSH 3+2 (aux) poles + ⊕	149
CX 8/24 poles + ⊕	169
MIXO 3 modules	179 - 215

*) only for enclosure CHIW 10

insert centre distance:
57 x 27 mm

housings and cover

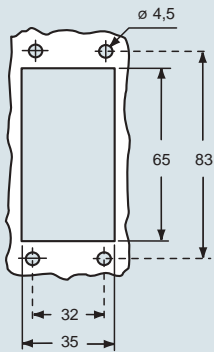


hoods and cover



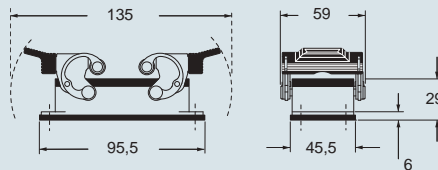
description	part No.		entry		part No.		entry	
			Pg	M			Pg	M
bulkhead mounting housing with levers	CHIW 10	—	—	—				
surface mounting housing, with levers, high construction	CAPW 10.21	21	MAPW 10.32	32				
cover with 4 pegs (for enclosures with 2 levers) 1)	CHCW 10							
enclosure with pegs, side entry, high construction					CAOW 10.21	21	MAOW 10.32	32
enclosure with pegs, top entry, high construction					CAVW 10.21	21	MAVW 10.32	32
cover with 2 levers (for enclosures with 4 pegs) 2)					CHCW 10 G			
enclosure with levers and gasket, top entry, high construction					CAVW 10 G	21	MAVW 10 G32	32

panel cut-out for bulkhead mounting housings in mm

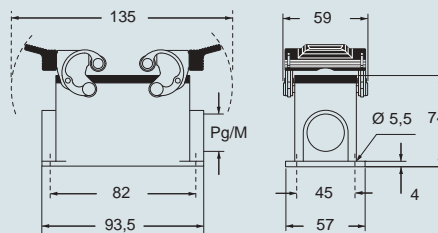


dimensions in mm

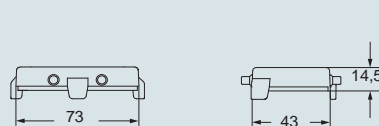
CHIW



CAPW and MAPW

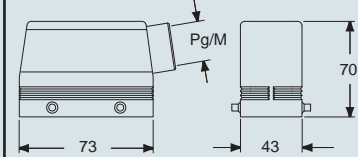


CHCW

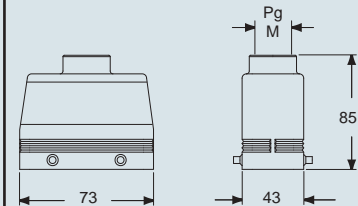


dimensions in mm

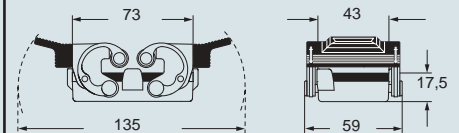
CAOW and MAOW



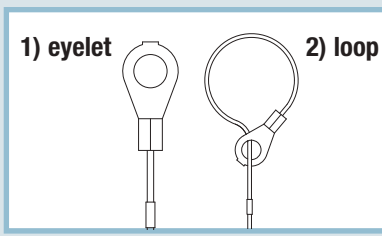
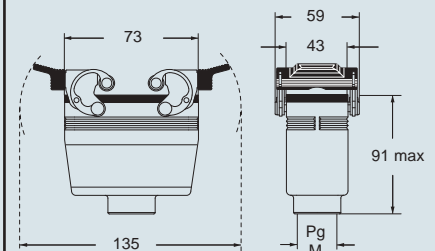
CAVW and MAVW



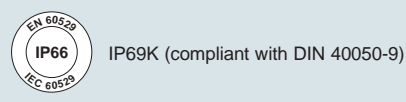
CHCW G



CAVW G and MAVW G



CALUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

W-TYPE - size 57.27



inserts:	page:
CD 40 poles + ⊕	57
CT, CTS (10A) *) ... 40 poles + ⊕	64
CDD 72 poles + ⊕	70
CDS 27 poles + ⊕	80
CSH 16 poles + ⊕	93
CNE, CSE 16 poles + ⊕	106
CCE 16 poles + ⊕	112
CSS 16 poles + ⊕	124
CT, CTSE (16A) *) .. 16 poles + ⊕	132
CQE 32 poles + ⊕	140
CQEE 40 poles + ⊕	146
CMCE 6+2 (aux) poles + ⊕	150
CME, CMSH .. 6+2 (aux) poles + ⊕	151
CP 6 poles + ⊕	162
CX 6/36 and 12/2 poles + ⊕	170-171
CX 4/0 and 4/2 poles + ⊕	172
MIXO 4 modules	179-215

*) only for enclosure CHIW 16

insert centre distance: 77,5 x 27 mm

housings and cover

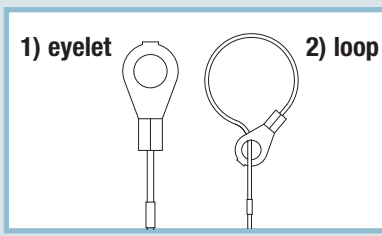
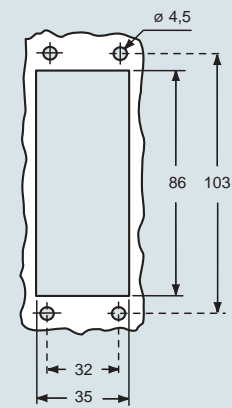


hoods and cover

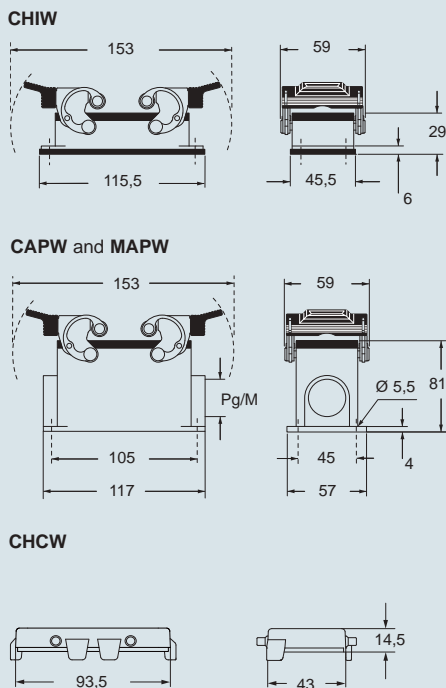


description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housing with levers	CHIW 16	—						
surface mounting housing, with levers, high construction	CAPW 16.21	21	MAPW 16.32	32				
cover with 4 pegs (for enclosures with 2 levers 1)	CHCW 16							
enclosure with pegs, side entry,					CHOW 16	21	MHOW 16.25	25
enclosure with pegs, side entry, high construction					CAOW 16.29	29	MHOW 16.32	32
enclosure with pegs, side entry, high construction							MAOW 16.32	32
enclosure with pegs, top entry,					CHVW 16	21	MHVW 16.25	25
enclosure with pegs, top entry, high construction					CAVW 16.29	29	MHVW 16.32	32
enclosure with pegs, top entry, high construction							MAVW 16.32	32
enclosure with pegs, top entry, high construction							MAVW 16.40	40
cover with 2 levers (for enclosures with 4 pegs 2)					CHCW 16 G			
enclosure with levers, top entry, high construction					CAVW 16 G29	29	MAVW 16 G32	32

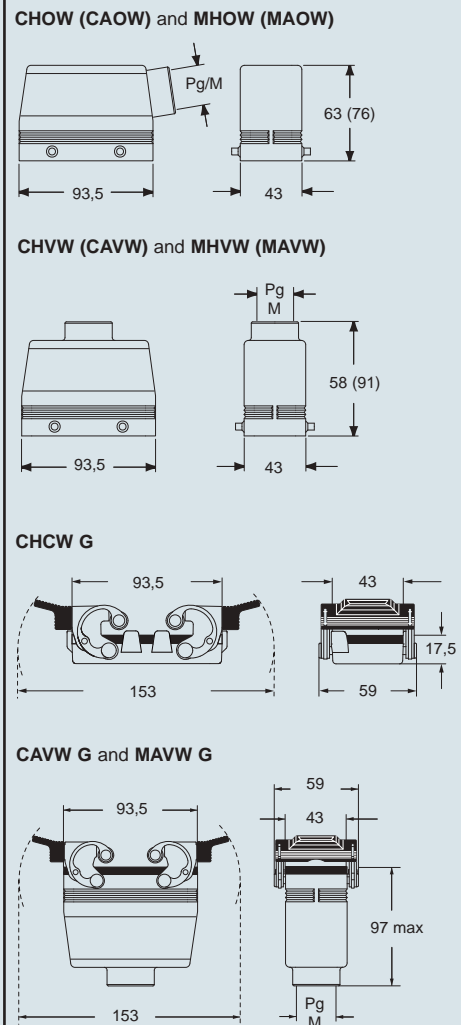
panel cut-out for bulkhead mounting housings in mm



dimensions in mm



dimensions in mm



ILME Type 4/4X/12



IP69K (compliant with DIN 40050-9)

dimensions shown are not binding and may be changed without notice

W-TYPE - size 77.27



inserts:	page:
CD 64 poles + ⊕	59
CT, CTS (10A) *) 64 poles + ⊕	65
CDD 108 poles + ⊕	72
CDS 42 poles + ⊕	81
CSH 24 poles + ⊕	94
CNE, CSE 24 poles + ⊕	107
CCE 24 poles + ⊕	113
CSS 24 poles + ⊕	125
CT, CTSE (16A) *) 24 poles + ⊕	133
CQE 46 poles + ⊕	141
CQEE 64 poles + ⊕	147
CMCE 10+2 (aux) poles + ⊕	152
CME, CMSH 10+2 (aux) poles + ⊕	153
CMCE 16+2 (aux) poles + ⊕	158
CME 16+2 (aux) poles + ⊕	159
CX 4/8 and 6/6 poles + ⊕	173 and 175
MIXO 6 modules	179-215

*) only for enclosure CHIW 24

insert centre distance: 104 x 27 mm

housings and cover

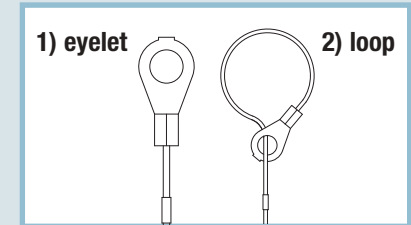
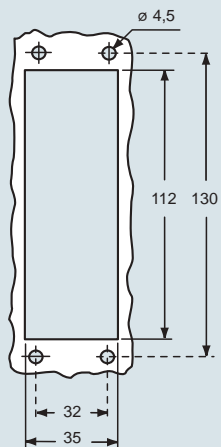


hoods and cover

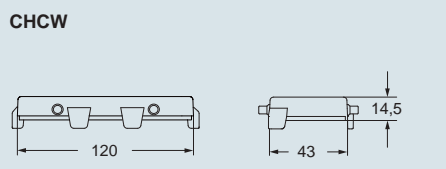
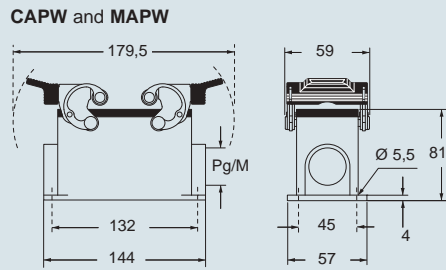
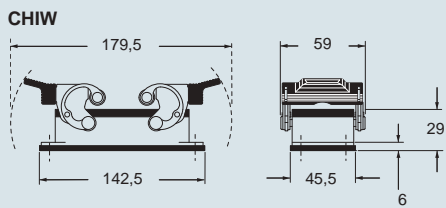


description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housing with levers	CHIW 24	—						
surface mounting housing, with levers, high construction	CAPW 24.21	21	MAPW 24.32	32				
cover with 4 pegs (for enclosures with 2 levers) 1)	CHCW 24							
enclosure with pegs, side entry,					CHOW 24	21	MHOW 24.25	25
enclosure with pegs, side entry, high construction					CAOW 24.29	29	MHOW 24.32	32
enclosure with pegs, side entry, high construction							MAOW 24.32	32
enclosure with pegs, top entry,					CHVW 24	21	MHVW 24.25	25
enclosure with pegs, top entry, high construction					CAVW 24.29	29	MHVW 24.32	32
enclosure with pegs, top entry, high construction							MAVW 24.32	32
enclosure with pegs, top entry, high construction							MAVW 24.40	40
cover with 2 levers (for enclosures with 4 pegs) 2)					CHCW 24 G			
enclosure with levers and gasket, top entry					CHVW 24 G	21	MHVW 24 G32	32

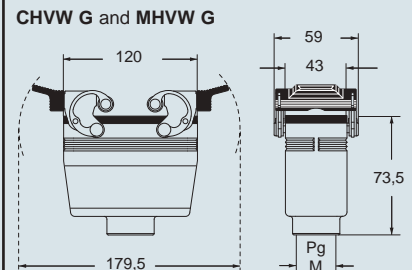
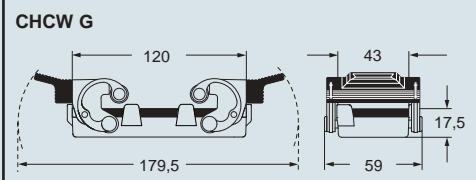
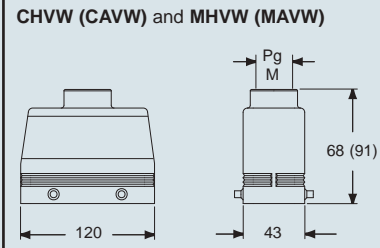
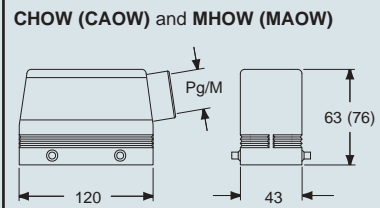
panel cut-out for bulkhead mounting housings in mm



dimensions in mm



dimensions in mm



CALUS Type 4/4X/12



IP69K (compliant with DIN 40050-9)

dimensions shown are not binding and may be changed without notice

W-TYPE - size 104.27



inserts:	page:
CD 80 poles + ⊕	60
CDD 144 poles + ⊕	73
CDS 54 poles + ⊕	82
CSH 32 poles + ⊕	95
CNE, CSE 32 poles + ⊕	108
CCE 32 poles + ⊕	114
CSS 32 poles + ⊕	126
CTSE (16A) *) 32 poles + ⊕	134
CQE 64 poles + ⊕	142
CMCE 12+4 (aux) poles + ⊕	154
CME 12+4 (aux) poles + ⊕	155
CMSH 12+4 (aux) poles + ⊕	155
CP 12 poles + ⊕	163
MIXO 4 + 4 modules	179-215

*) only for enclosure CHIW 32

insert centre distance:
2 x (77.5 x 27) mm

housings and cover

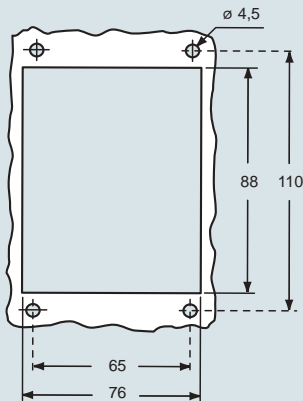


hoods and cover



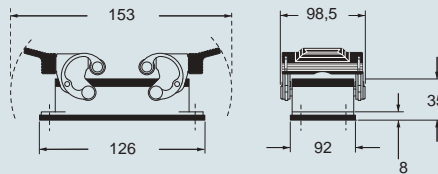
description	part No.		part No.		part No.		part No.	
	entry Pg	entry M	entry Pg	entry M	entry Pg	entry M	entry Pg	entry M
bulkhead mounting housing with levers	—	—	—	—	—	—	—	—
surface mounting housing, with levers	36	50	36	50	36	40	36	40
cover with 4 pegs (for enclosures with 2 levers) 1)	36	50	36	50	36	40	36	40
enclosure with pegs, side entry, enclosure with pegs, top entry,	—	—	—	—	36	40	36	40
cover with 2 levers (for enclosures with 4 pegs) 2) 2)	—	—	—	—	36	40	36	40
enclosure with levers and gasket, top entry, high construction	—	—	—	—	36	40	36	40

panel cut-out for bulkhead mounting housings in mm

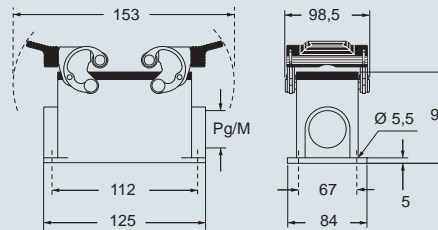


dimensions in mm

CHIW



CHPW and MHPW

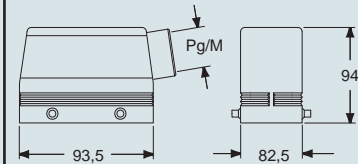


CHCW

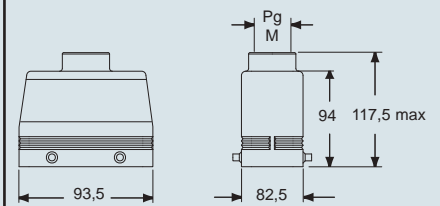


dimensions in mm

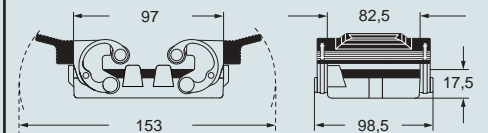
CHOW and MHOW



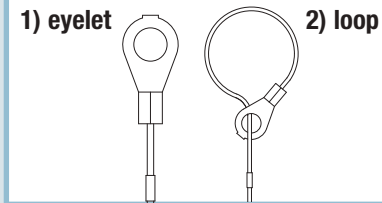
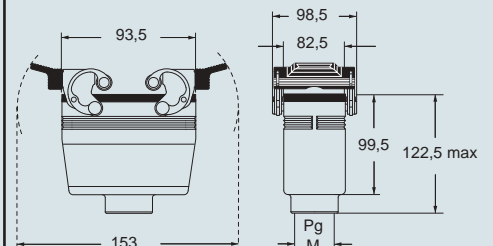
CHVW and MHVW



CHCW G



CHVW G and MHVW G





CALUS Type 4/4X/12



IP69K (compliant with DIN 40050-9)

dimensions shown are not binding and may be changed without notice



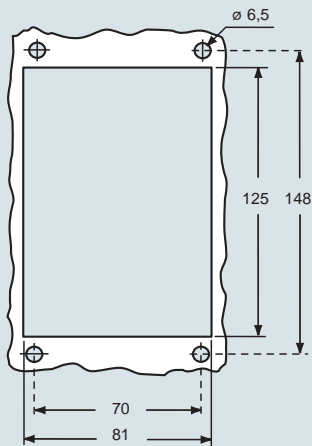
inserts:	page:	bulkhead and surface mounting housings	hoods
CD 128 poles + ⊕	61		
CDD 216 poles + ⊕	74		
CDS 84 poles + ⊕	83		
CSH 48 poles + ⊕	96		
CNE, CSE 48 poles + ⊕	109		
CCE 48 poles + ⊕	115		
CSS 48 poles + ⊕	127		
CTSE (16A) *) 48 poles + ⊕	135		
CQE 92 poles + ⊕	143		
CMCE 20+4 (aux) poles + ⊕	156		
CME 20+4 (aux) poles + ⊕	157		
CMSH 20+4 (aux) poles + ⊕	157		
CMCE 32+4 (aux) poles + ⊕	160		
CME 32+4 (aux) poles + ⊕	161		
MIXO 6 + 6 modules	179-215		

*) only for enclosure CHIW 48 LS

insert centre distance: 2 x (104 x 27) mm

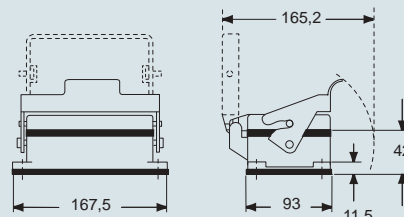
description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housings, with lever and cover	CHIW 48 LS	—						
surface mounting housings, with lever and cover	CHPW 48 LS	36 x 1/2	MHPW 48 LS40	40 x 1/2				
side entry, with pegs					CHOW 48 L	36	MHOW 48 L40	40
top entry, with pegs					CHVW 48 L	36	MHVW 48 L40	40

panel cut-out for bulkhead mounting housings in mm

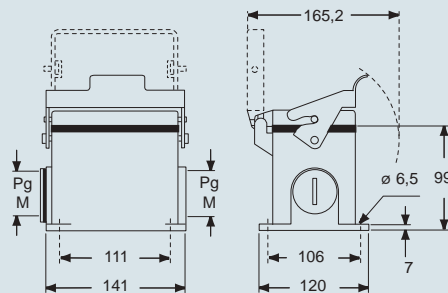


dimensions in mm

CHIW LS

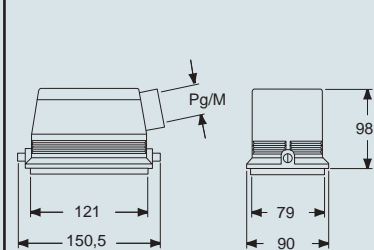


CHPW LS and MHPW LS

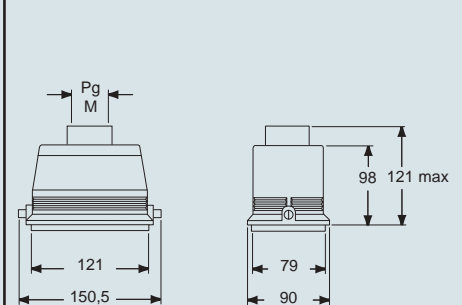


dimensions in mm

CHOW L and MHOW L



CHVW L and MHVW L



ILME® Type 4/4X/12



IP69K (compliant with DIN 40050-9)

dimensions shown are not binding and may be changed without notice

W-TYPE - size 104.62

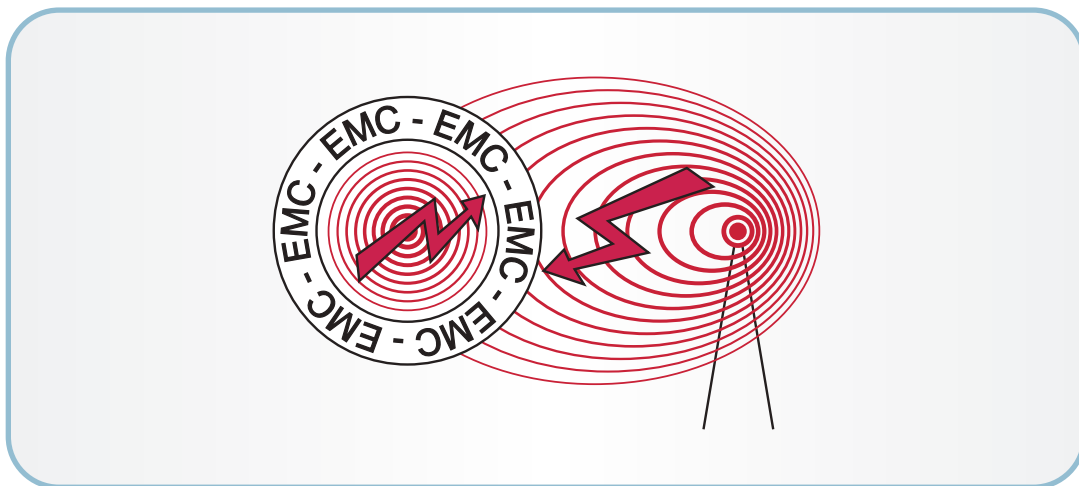
EMC

Connectors and electromagnetic compatibility

Connectors and electromagnetic compatibility (EMC) Directives and standards.

The concept of **Electromagnetic Compatibility** (EMC) is the reversal in the positive sense of what was until recently known as **Electromagnetic Interference** (EMI): *we have electromagnetic compatibility* between a device and the environment (including surrounding equipment) when there is no reciprocal electromagnetic interference or when this is within tolerable limits.

In other words, *to obtain electromagnetic compatibility*, measures must be adopted aimed at bringing the electrical or electronic equipment to levels of **emission** and **electromagnetic immunity** against electromagnetic interference such that it continues to function properly without causing disturbance to other equipment present in the surrounding environment.



In the electrical equipment of industrial machines, rectangular multipole connectors with their metallic enclosures are widely used due to their high standards of safety, reliability, mechanical robustness and resistance to corrosion and pollution.

These connectors are passive electromechanical components: they do not generate electromagnetic interference and are not disturbed in their function. Taken by themselves, therefore, they fall outside the scope of Directive 89/336/EEC on electromagnetic compatibility and the CE mark is therefore not required for EMC aspects: it still applies, however, under the Low Voltage Directive.

It is rather the devices and industrial equipment mentioned above, in which the connectors are for the most part used (e.g. on-board electric panels) which, taken as a whole, must be CE marked also for EMC aspects, having to meet the fundamental safety requirements of the EMC Directive.

For EMC in industrial environments two European standards are in force, not intended for specific equipment, which regulate the emissions and immunity of devices. These are therefore generic standards, one for emissions (EN 50081-2 (1993), class. IEC 110-13, 1994, IEC CISPR 26 project) and one for immunity (EN 50082-2 (1995), class. IEC 110-25, 1995, IEC 61000-6-2) project¹⁾.

These apply in the absence of provisions in the particular EMC product standards or in the total absence of the latter.

For industrial equipment, when appliances are not intentionally designed to generate radio frequencies²⁾, the latter case applies (no particular standards).

In European standards for electrical panels (EN 60947-1) and in those for electrical equipment of machines (EN 60204-1) emission and immunity limits have for some time been in the process of being issued, as well as their verification, if necessary, with reference to above-mentioned industrial environment EMC standards.

EMC testing should not be performed on individual components, but rather on the entire apparatus, at times not without inconsiderable logistical difficulties due to the size, reproducing as far as possible their operation in real operating conditions.

It is therefore incorrect to assign limits of electromagnetic emission and immunity imposed on the equipment on, for example, connectors present as components of the equipment.

1) there are two similar for the other standardized environment, defined as residential, commercial and light industrial environment, respectively EN 50081-1 (1992), class. IEC 110-7, 1992 for emissions (IEC CISPR 27 project) and EN 50082-1 (1992), class. IEC 110-8, 1992 for immunity (IEC 61000-6-1 project).

2) in which case for such devices, called ISM (industrial, scientific, medical) EN 55011 standard for emission of radio interference would apply.

EMC

Connectors and electromagnetic compatibility

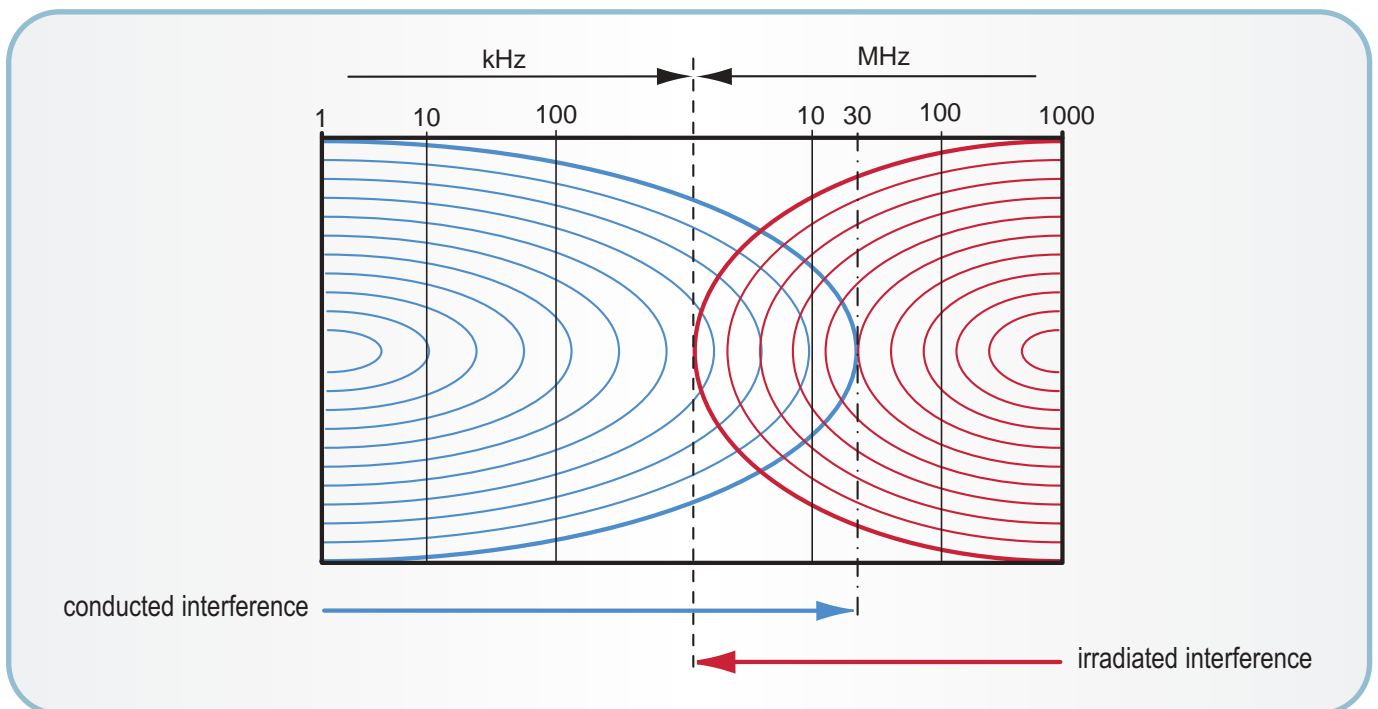
Electromagnetic interference and ILME connectors.

The entry into force of the EMC Directive, with requirement for electrical and electronic equipment to comply with the levels of electromagnetic pollution dictated by the standards, brought renewed interest in all the appropriate steps to mitigate the effects of electromagnetic interference.

Electromagnetic interference can occur in two forms: **conducted or radiated**. With reference to connectors, **conducted interference** transmitted on conductors wired to the connectors, is, for example: harmonic, superimposed on the voltage of the power supply at 50 Hz, caused by withdrawal of biased current or by electromechanical or electronic switches, or radio frequency interference noise which is inductively or capacitively coupled with the cable, overlapping transported signals.

This is characterized by frequency and amplitude (intensity) and can be filtered to some extent, both in the outgoing (emission) and incoming (immunity) direction, only via in-line passive electrical filters, which the designer of the electrical equipment must foresee since he is the only one with a knowledge of all the terms of the problem³⁾.

Radiated interference, transmitted in the form of electromagnetic waves, is characterized by the values of amplitude of associated electric (V/m) and magnetic fields and with the frequency or frequency band (rarely is this located on a single frequency, more often it occupies a band). This may come from inside the device: in this case it is necessary to mitigate emissions. Or from the outside, in which case it is necessary to raise immunity.



By test convention, **interference with frequency up to 30 MHz** is considered to be conducted and **irradiated with frequency above 30 MHz up to 1 GHz**.

3) For example, for trapezoidal Sub-D type connectors for digital data transmission, there are connectors on the market which incorporate "general purpose" filters for any conducted interference.

The sources of electromagnetic interference are classified as intentional and unintentional.

The first (e.g. radio-telecommunication antennas, mobile phones) use high frequency electromagnetic fields for functional reasons. For the second (e.g. ignition of internal combustion engines, electric arc furnaces) they are a by-product.

EMC

Connectors and electromagnetic compatibility

In most industrial applications, compared to the overall EMC issues of a device, connectors (inserts + enclosures), taken by themselves, are not the priority concern of the designer.

The enclosures of the low-frequency industrial connectors, taking shape as a barrier to a “shell”, are implicitly a “peripheral” aspect: the designer of electrical equipment / electronics will take care first of all the “core” of the EMC problem, that of the active components to ‘inside of your system by limiting the emissions and enhance immunity.

In fact, to have significant problems due to radiation through the opening constituted by a connector enclosure on a control panel, there must be a particularly “efficient” radiofrequency source inside the panel.

Essentially, significant design errors must have been committed regarding the EMC of the entire equipment.

In certain cases the coupling of connectors may constitute the weak

link in the chain, for example where it is not possible for functional reasons to further reduce interference of the electronics inside the control panel. In these cases one must rely on the efficiency of the shield. Even if the equipment manufacturer uses shielded fabrication and high quality shielded cables, continuity and homogeneity of such shielding could be significantly degraded precisely in the passage between mobile connector and panel.

In dealing with electromagnetic compatibility of electrical equipment of an industrial machine, a second aspect to be addressed as a priority is the presence of large quantities of interface cabling.

In these cases, the significant attenuation of the shield necessary for the cables must not be jeopardised by the connector enclosures due to imperfect earthing of the cable shield.

It should nevertheless be pointed out that increasing shielding may not be sufficient to solve possible problems and should be considered as a complementary choice.

Electromagnetic shielding of connectors: fundamental principles.

To considering electromagnetic compatibility of an electrical/electronic device in the final verification rather than in the design phase almost always leads to a substantial increase in overall development time and costs.

The designer who deals with electromagnetic compatibility issues should use the same rules and the same precautions regardless of whether the equipment is subsequently shielded.

Numerous products meet electromagnetic compatibility standards without the use of shielding. However, when all other limiting interventions are impossible or uneconomical, recourse to increased efficiency of the electromagnetic shield is the only answer.

An **electromagnetic shield** is a barrier to the transmission of electromagnetic fields.

To generalise the concept to include conducted emissions, a filter can be considered as a shield.

We will restrict ourselves here to considering a shield as a barrier to radiated emissions.

The metallic containers which completely enclose an electrical/electronic device or a part thereof **constitute an electromagnetic shield**, with the task of preventing the emissions of electrical/electronic devices or a part thereof to radiate outside the equipment container itself.

A cable connected to a device is part of the same for the purposes of electromagnetic compatibility.

A flexible multicore cable is shielded by surrounding the insulated conductors with a conductive metal mesh.

An electromagnetic shield is characterized by a parameter which measures its efficiency.

Attenuation of the shield is the ratio between the radiated power generated inside a device and the residual radiated power outside the unit.

Attenuation introduced by a shield can be measured by comparing the absence and presence of the shield.

Shielding attenuation is measured in dB (decibels). 20 dB is equivalent to an order of magnitude, i.e. attenuation of a factor of 10, 40 dB = attenuation of a factor of 100, etc.

EMC

Connectors and electromagnetic compatibility

To obtain large shielding attenuation values (e.g. 100 dB) the shield must completely enclose the electronic device and not have any means of access from the outside, such as openings, joints, cracks or cables.

Any means of access through a shield, if not properly treated, can drastically reduce the efficiency of the shield.

The passage of a cable through a shield must be properly considered. One common method is to place filters on the cable at which it crosses the shield. Another is to use shielded cables, with their shields connected for the entire perimeter to the equipment shield. To reduce radiated emissions of a cable, the cable shield must be connected to a point with zero potential (an ideal ground therefore, not a logical ground of an electronic circuit).

To achieve electromagnetic shielding conductive materials (metals) are used.

Shielding attenuation depends mainly on the electrical conductivity of the material and thickness of the shield.

Rectangular or square connectors - special case - intrinsically anisotropic, are more difficult to shield and less predictable in behaviour than circular connectors (isotropic geometry) used, not by accident, with coaxial terminations for RF applications.

Connector enclosures are typically made of aluminium alloy, excellent metal for shielding electric fields because it is an excellent conductor.

EMC connector enclosures and accessories.

In light of the foregoing, ILME has developed for designers of the electrical/electronic machine equipment the new series of EMC connector enclosures and accessories.

Available in bulkhead mounting housings and hood versions in the various sizes 06/10/16/24, they maintain the robustness and reliability of standard types whilst possessing increased high frequency shielding characteristics.

In the development of EMC enclosures recourse to geometrical modifications compared to the standard versions has been avoided so as not to affect their dimensional compatibility with the latter:

It is also better than steel in shielding phenomena of an impulsive nature (typical example is electrostatic discharge) which cause interference in the high frequency spectrum and is among the most insidious and dangerous.

It is important to ensure electrical continuity along the boundary of the enclosure, not only to ensure high shielding attenuation but also to avoid accumulation of static electricity.

It is important not to “economically” tip the balance of a screening system which is only as effective as its weakest component.

A good shielded cable has a shield attenuation greater than that attributable to the connector, but only for very small lengths of cable (e.g. one metre).

When the length of the shielded cable increases, shield attenuation is significantly reduced.

This indicates that it is much more important to improve the shield quality of cables, which are mainly responsible for radiated interference emissions and in an electrical system are often present in considerable quantity, before that of the connector.

What dramatically increases the efficiency of shielding is the quality of its connection to the conductor: EMC cable glands create a very homogeneous and continuous contact between the cable shield and connector enclosure.

in using EMC enclosures the equipment designer need not foresee any changes in layout due to increased dimensions and need not renounce the convenience of the traditional lever closures.

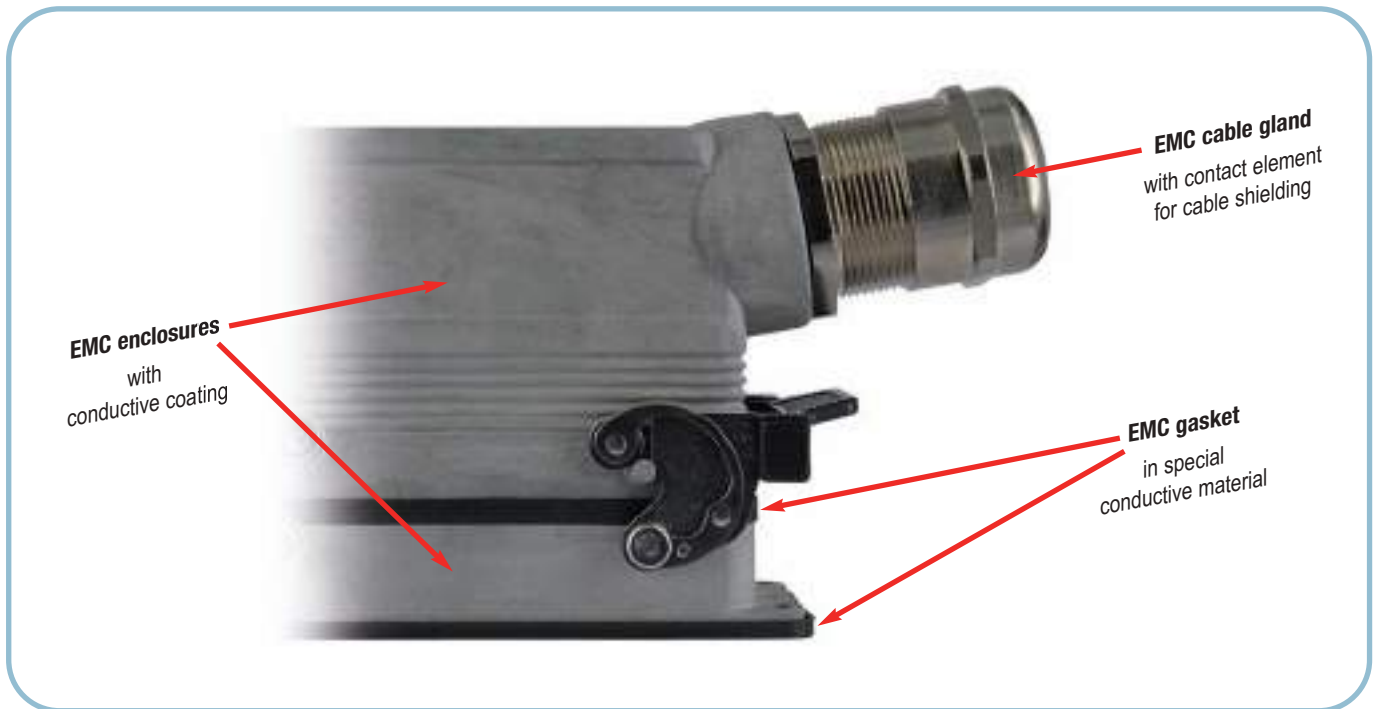
The increase in shielding attenuation is achieved primarily by providing a homogeneous and as uniform as possible electrical continuity of earthing to the cable shield in the connection between cable and hood and between hood and enclosure.

At the contact between the bulkhead mounting housings and fixing surface a special conductive gasket is foreseen.

EMC

Connectors and electromagnetic compatibility

EMC connector.



The enclosure surfaces are treated to make them extremely conductive while maintaining the necessary corrosion resistance. The bulkhead mounting housing has a special conductive gasket. For best results the surface underneath the gasket should be conductive.

Since the use of this enclosure system presupposes the use of shielded cables, the hood should comprise a special cable gland with anchoring device for the cable shield.

These metal cable glands ensure IP65 protection rating, are resistant to corrosion and equipped internally with a contact element with geometry that ensures uniform earthing of the cable conductor shield on the metal shell of the hood.

Even with standard enclosures (not EMC), the contact with an EMC cable gland between the cable shield and the connector enclosure, permanently earthed to the insert inside, produces an attenuation of electromagnetic interference on average higher

(by approx. 6 - 15 dB up to 600 MHz, corresponding to a factor of 2 - 5,6) than the attenuation achieved by connecting the shield mesh directly to the earth terminal of the connector insert.

The reasons for this are:

- the uniform 360° contact via the contact device of the EMC cable gland avoids what instead happens when the shield mesh is earthed to the earth terminal of the connector, i.e. the discontinuity of the shield which necessarily opens precisely around the connector;
- more efficient distribution of induced current circulating on the shield mesh;
- directly involving the metal shell constituted by the enclosure avoids transmitting interference to the connector, as happens when the shield is connected to the earth terminal of the connector.

EMC

Connectors and electromagnetic compatibility

Experimental tests.

Tests for measurement of the shielding of ILME special EMC enclosures for multipole rectangular connectors for industrial use were conducted at the CESI EMC Laboratory in Milan, national notified body for certification under the EMC Directive.

Shielding attenuation of a component is defined as the ratio of the power radiated within the component and the maximum interference power outside the component in the room (VG 95214-11).

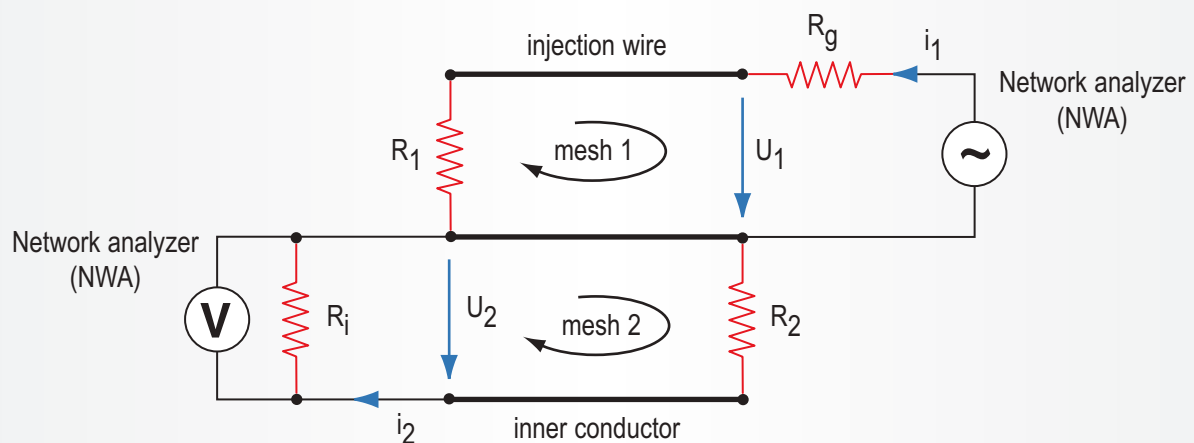
For a connector it can be expressed, in analogy with cables, as a function of transfer impedance, which is the ratio between the voltage induced in the shield and the current flowing outside the same.

The transfer impedance measurement is a widely used and accepted method to determine shielding attenuation of coaxial cables and connectors.

Only recently, due to the increase in digital data transmission speeds and the increase in frequencies of transmitted signals, the issue of identifying efficient and repeatable methods for measuring shielding efficiency, also for connectors traditionally considered low frequency, has been addressed at a regulatory level.

An experimental method for determining surface transfer impedance of coupled low frequency connectors is still being studied by IEC.

The method chosen by ILME for verification of its system of EMC enclosures and accessories is the **line injection method** based on German military standards **VG 95214-10** and **VG 95214-11**.



Legend:

- R_g = output impedance of the signal generator (NWA port1)
- R_1 = termination resistance of the generator circuit (mesh 1)
- R_i = input impedance of the measuring instrument (NWA port 2)
- R_2 = termination resistance of the generator circuit (mesh 2)

A signal with a frequency of 0.1 MHz and 1000 MHz generated by port 1 of the measuring device (network analyzer with 75 Ω output impedance) circulates in mesh 1 consisting of an insulated conductor (injection wire) resting on the surface of two coupled enclosures (shield), terminating on a calibrated (and shielded) resistance of 75 Ω . As a result of the current i_1 injected in mesh 1, an induced voltage U_2 is generated in mesh 2, consisting of an inner pick-up conductor connected to two contacts at the center of

the connector inserts, terminated on another calibrated resistance of 75 Ω (shielded), in turn earthed on the coupled enclosures which act as a shield. The voltage is measured on port 2 of the measuring device for S parameters (scattering parameters).

The network analyzer sees the device under test as a filter and calculates the measurement providing a graph illustrating the shielding attenuation (measured in dB) as a function of frequency in MHz.

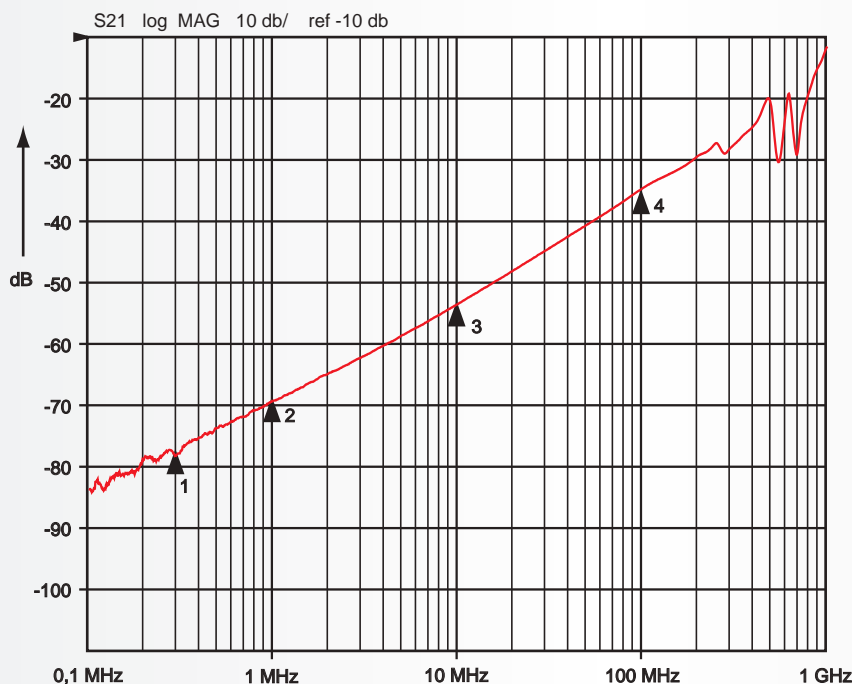
EMC

Connectors and electromagnetic compatibility

The tests were performed on:
 - coupled standard enclosures
 - coupled EMC enclosures

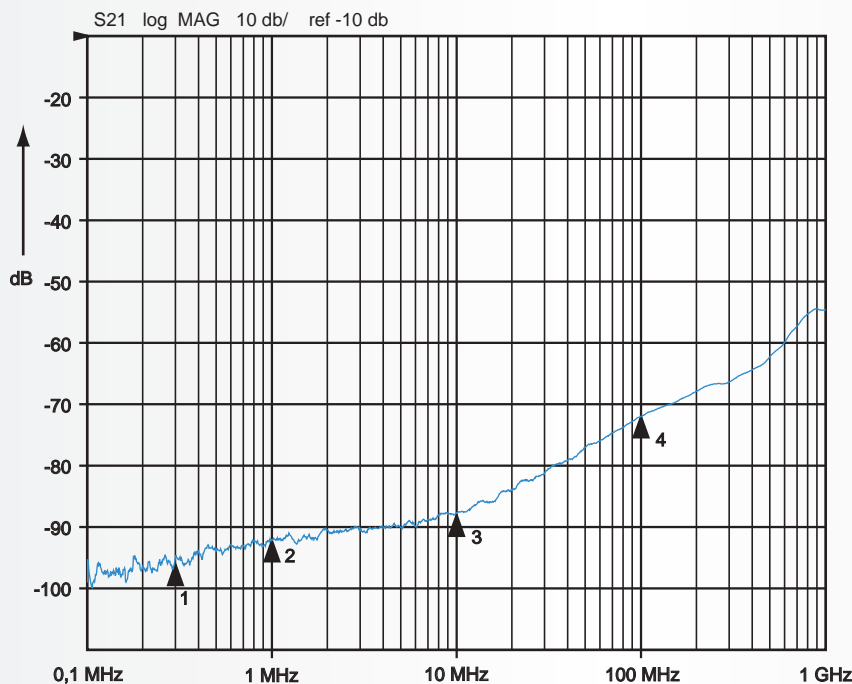
The results are summarized in the diagrams below.

Standard enclosure diagram.



1_	-78.167	dB
	300	kHz
2_	-69.369	dB
	1	MHz
3_	-53.543	dB
	10	MHz
4_	-34.719	dB
	100	MHz

EMC enclosure diagram.



1_	-93.988	dB
	300	kHz
2_	-91.86	dB
	1	MHz
3_	-87.557	dB
	10	MHz
4_	-71.649	dB
	100	MHz

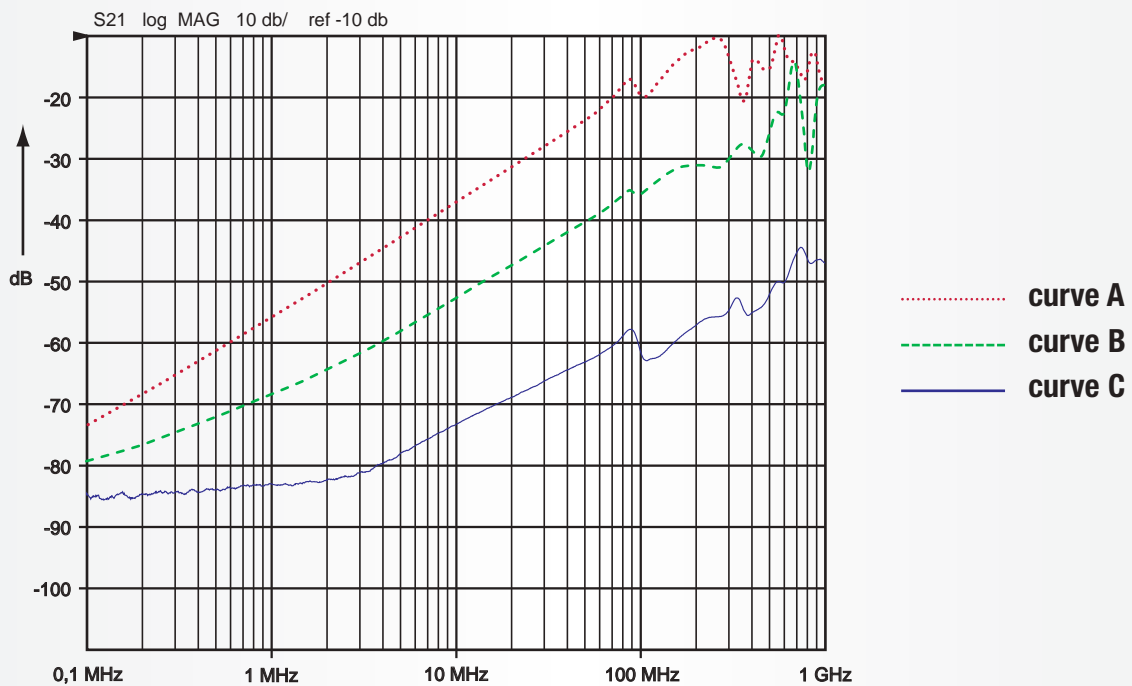
EMC

Connectors and electromagnetic compatibility

To highlight the influence of the cable gland the shielding attenuation measurements were repeated on:

- coupled standard enclosures with standard cable gland and cable shield earthed to the earth terminal of the connector
see curve A
- coupled standard enclosures with EMC cable gland and cable shield earthed to the cable gland
see curve B
- coupled EMC enclosures with EMC cable gland and cable shield earthed to the cable gland
see curve C

The results are summarized in the diagrams below.



Conclusions

The measurements suggest the following considerations:

- standard enclosures already provide good levels of shielding attenuation;
- when used with EMC cable glands, standard enclosures clearly increase their shielding attenuation;
- EMC enclosures, with better shielding attenuation values, provide further improvements.



inserts:	page:
CK 3 poles + ⊕	48
CK 4 poles + ⊕	48
CKS 3 poles + ⊕	49
CKS 4 poles + ⊕	49
CD 8 poles	54
CQ 12 poles + ⊕	165
CQ 5 poles + ⊕	166

insert dimensions:
21 x 21 mm

**bulkhead mounting housings
straight and angled**

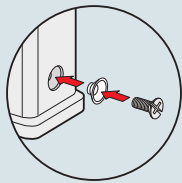


hoods

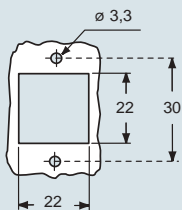


description	part No. (entry - Pg 11)	part No. (entry - M 20)	part No. (entry - Pg 11)	part No. (entry - M 20)
with stainless steel lever without cable entry, stainless steel lever with cable entry, stainless steel lever with cable entry, stainless steel lever, bulkhead hole closed	CKAXS 03 I CKAXS 03 IA CKAXS 03 IAP CKAXS 03 AP	MKAXS IAP20 MKAXS AP20		
with pegs, top entry with pegs, side entry			CKAS 03 V CKAS 03 VA	MKAS V20 MKAS VA20
with stainless steel lever, top entry			CKAXS 03 VG	MKAXS VG20
gasket and screw kit for IP66/IP67 ¹⁾ for CK, CQ 05, CKS inserts	CKR 65		CKR 65	
gasket and screw kit for IP66/IP67 ¹⁾ for CD 08 inserts	CKR 65 D		CKR 65 D	

1) To obtain the protection rating IP66/IP67 a kit is provided that includes a gasket to fit under the insert fixing screws supplied with the kit (see illustrative example).
CQ 12 inserts are already supplied with a gasket and screw which ensure IP66/IP67 protection rating.

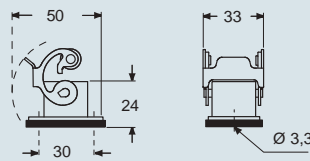


panel cut-out for bulkhead mounting housings in mm

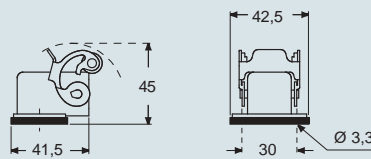


dimensions in mm

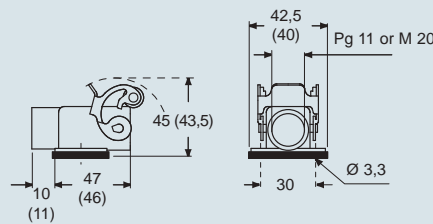
CKAXS I



CKAXS IA

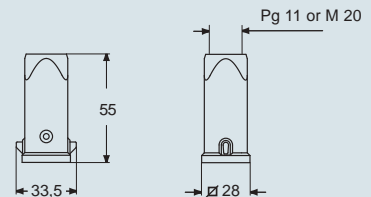


**CKAXS IAP (CKAXS AP) and
MKAXS IAP (MKAXS AP)**

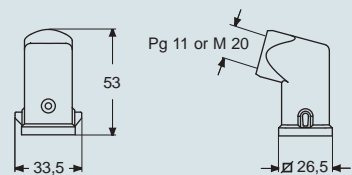


dimensions in mm

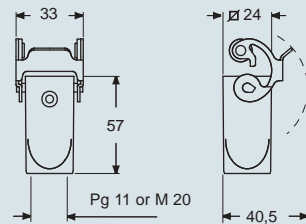
CKAS V and MKAS V



CKAS VA and MKAS VA



CKAXS VG and MKAXS VG



ILME®
Type 12
Type 4/4X only
with CKR 65 (D)



IP66/IP67 with CKR 65 (D) ¹⁾

dimensions shown are not binding
and may be changed without notice



inserts: page:
CQ 08 8 poles + ⊕ 167
CQ 04/2 4 poles + 2 poles + ⊕ 168

- metallic insulating enclosures



bulkhead mounting housing with single lever

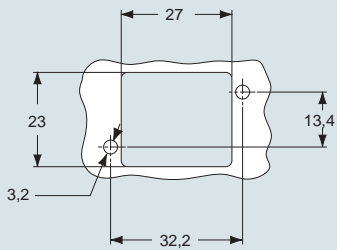


hoods with 2 pegs

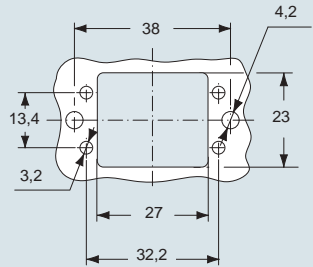


description	part No.	entry Pg	part No.	entry Pg
with lever without cable entry, angled, with lever with cable entry, angled, with lever	CQS 08 I CQS 08 IA CQS 08 IAP	21		
with pegs, side entry *			CQS 08 VA	16
with pegs, top entry *			CQS 08 V	21

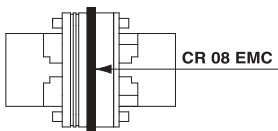
* Pg male thread on enclosure exterior
 panel cut-out for CQS I enclosure, in mm



panel cut-out for CQS IA - CQS IAP enclosure, in mm

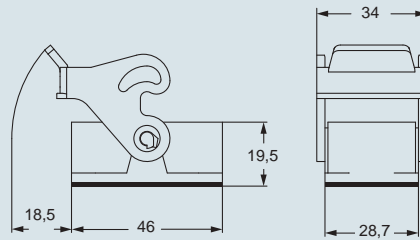


Note:
 when using series "CQS 08" enclosures, replace the gasket provided with male inserts with the conductive gasket "CR 08 EMC".

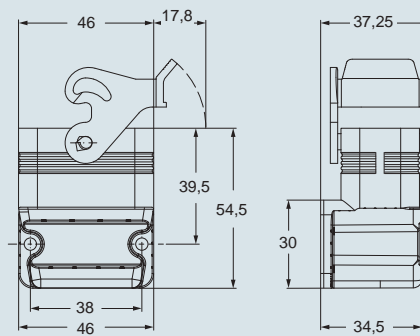


dimensions in mm

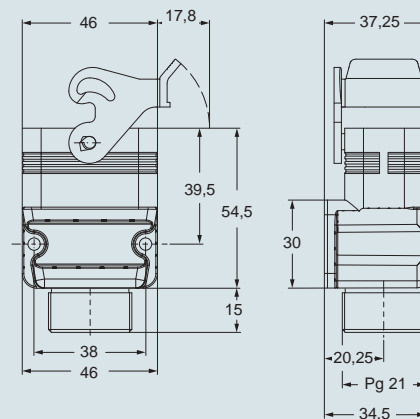
CQS I



CQS IA

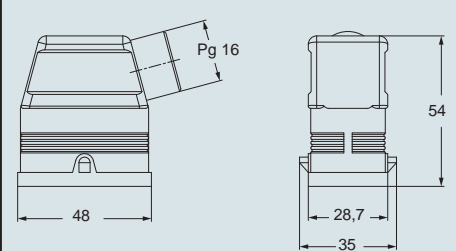


CQS IAP

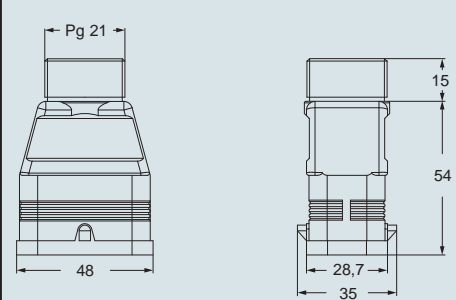


dimensions in mm

CQS VA



CQS V



CRUS® Type 12



dimensions shown are not binding
 and may be changed without notice

EMC - size 32.13



inserts: page:
CQ 08 8 poles + ⊕ 167
CQ 04/2 4 poles + 2 poles + ⊕ 168

- metallic insulating enclosures

hoods with single lever



conductive gasket for CQM male inserts
 thermoplastic resin cable glands

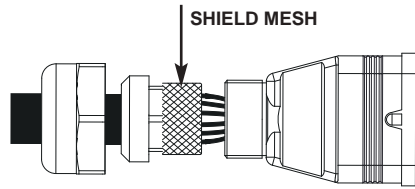


description	part No.	entry Pg	part No.
with lever, top entry *	CQS 08 VG	21	
conductive gasket for CQM male inserts			CR 08 EMC
cable gland head and gasket for CQS 08 VA enclosure			CRQ 16
cable gland head and gasket for CQS 08 V, VG and IAP enclosure			CRQ 21

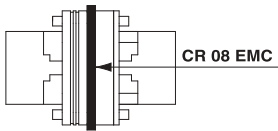
* Pg male thread on enclosure exterior

cable diameters for cable glands:
 - CRQ 16: 10 - 14.5 mm (4 - 7 mm on request)
 - CRQ 21: 14 - 18 mm (7 - 10 mm on request)

place the cable shield mesh between the CRQ cable gland gasket and the seat of the gasket itself.

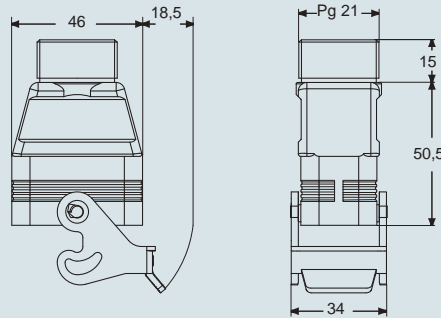


Note:
 when using series "CQS 08" enclosures, replace the gasket provided with male inserts with the conductive gasket "CR 08 EMC".



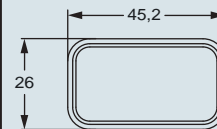
dimensions in mm

CQS VG

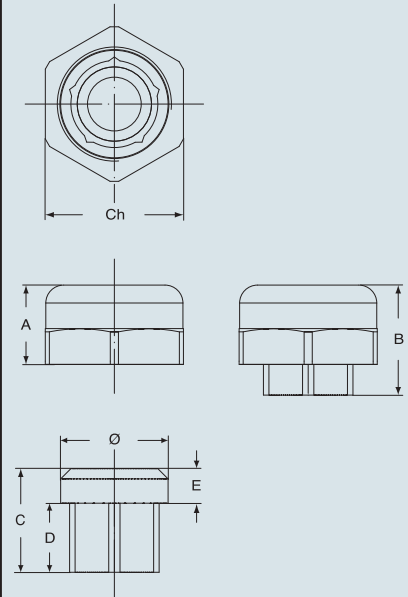


dimensions in mm

CR 08 EMC



CRQ 16 and CRQ 21



part No.	A	B	C	D	E	Ø	Ch
CRQ 16	15,5	21,5	20,25	13,5	6,75	21	27
CRQ 21	18,2	27,5	25	15,5	9	26,5	33

CAUS® Type 12



dimensions shown are not binding
 and may be changed without notice



inserts:	page:
CD 15 poles + ⊕	55
CSAH 10 poles + ⊕	87
CDA 10 poles + ⊕	98
CDC 10 poles + ⊕	99
MIXO 1 module	179 - 214

insert centre distance:
49 x 16 mm

The covers for L and LG versions cannot be used together with coding pins.
If this application is required, please contact ILME SpA.

housings and cover
for electromagnetic compatibility



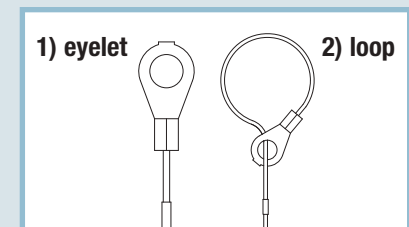
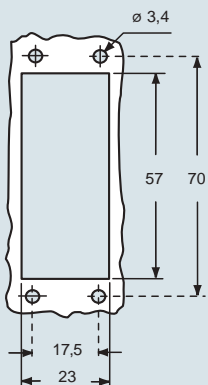
hoods and cover
for electromagnetic compatibility



description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housing with lever	CZIS 15 L	—						
surface mounting housing with lever	CZPS 15 L2	16 x 2	MZPS 15 L225	25 x 2				
cover with pegs (for 1 lever enclosures 1)	CZCS 15 L							
enclosure with pegs, side entry					CZOS 15 L	16	MZOS 15 L20	20
enclosure with pegs, side entry					CZFOS 15 L21	21	MZOS 15 L25	25
enclosure with pegs, side entry, high, without adaptor *					CZVS 15 L	13.5	MZFOS 15 L25	25
enclosure with pegs, top entry					CZVFS 15 L21	21	MZVS 15 L20	20
enclosure with pegs, top entry, high, without adaptor *							MZVFS 15 L25	25
cover with lever (for enclosures with pegs) 2)					CZCS 15 LG			

* enclosure without adaptor, threaded on the enclosure body, to be used only with a complete cable gland.

panel cut-out for bulkhead mounting housing in mm



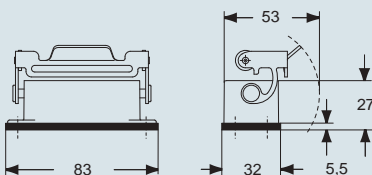
ILME® Type 4/4X/12



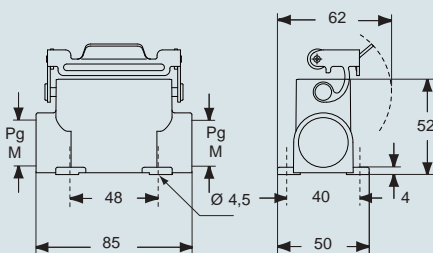
dimensions shown are not binding and may be changed without notice

dimensions in mm

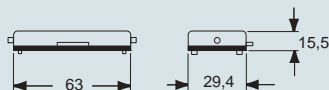
CZIS L



CZPS L and MZPS L

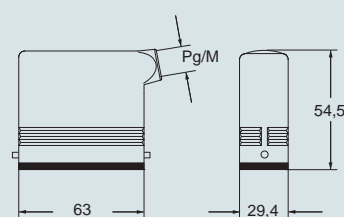


CZCS L

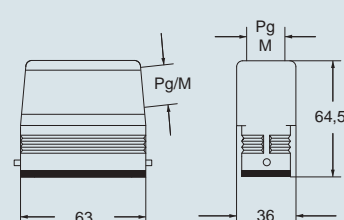


dimensions in mm

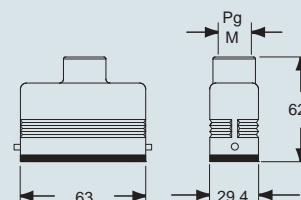
CZOS L and MZOS L



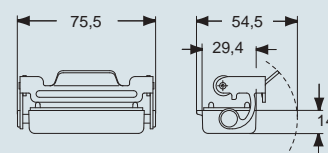
CZFOS L - MZFOS L and CZFVS L - MZFVS L



CZVS L and MZVS L



CZCS LG





inserts:	page:
CD 25 poles + ⊕	56
CDD 38 poles + ⊕	68
CSAH 16 poles + ⊕	88
CDA 16 poles + ⊕	100
CDC 16 poles + ⊕	101

insert centre distance:
66 x 16 mm

The covers for L and LG versions cannot be used together with coding pins.
If this application is required, please contact ILME SpA.

housings and cover for electromagnetic compatibility



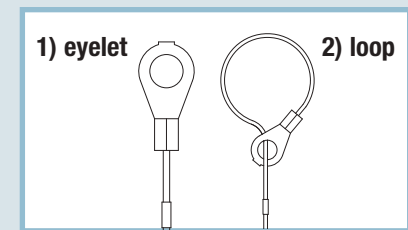
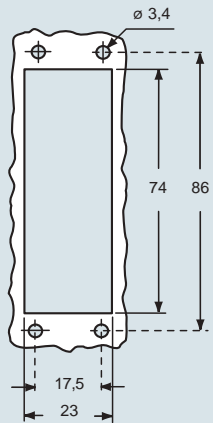
hoods and cover for electromagnetic compatibility



description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housing with lever	CZIS 25 L	—						
surface mounting housing with lever, high construction	CZAPS 25 L2	16 x 2	MZAPS 25L225	25 x 2				
cover with pegs (for 1 lever enclosures 1)	CZCS 25 L							
enclosure with pegs, side entry					CZOS 25 L	16	MZOS 25 L20	20
enclosure with pegs, side entry							MZOS 25 L25	25
enclosure with pegs, side entry, high, without adaptor *					CZFOS 25 L21	21	MZFOS 25 L25	25
enclosure with pegs, top entry					CZVS 25 L	16	MZVS 25 L20 **	20
enclosure with pegs, top entry, without adaptor *					CZFVS 25 L21	21	MZFVS 25 L25	25
cover with lever (for enclosures with pegs 2)					CZCS 25 LG			

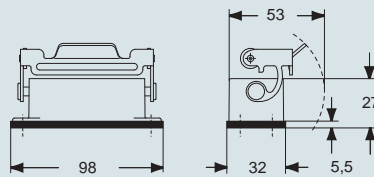
* enclosure without adaptor, threaded on the enclosure body, to be used only with a complete cable gland.

panel cut-out for bulkhead mounting housing in mm

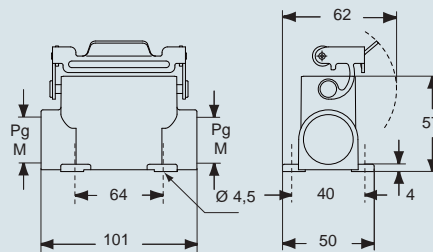


dimensions in mm

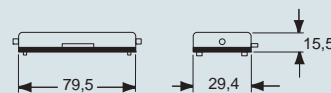
CZIS L



CZAPS L and MZAPS L

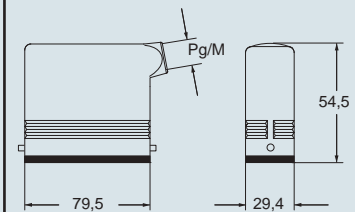


CZCS L

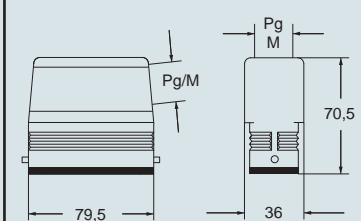


dimensions in mm

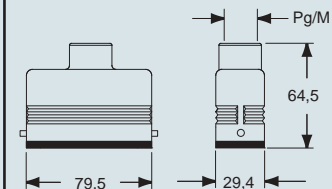
CZOS L and MZOS LL



CZFOS L - MZFOS L and CZFVS L - MZFVS L

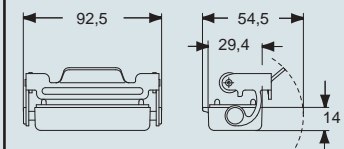


CZVS L and MZVS L



** can only be used with a complete cable gland (to be purchased separately)

CZCS LG



ILME Type 4/4X/12



dimensions shown are not binding and may be changed without notice



inserts:	page:
CDD 24 poles + ⊕	67
CDS 9 poles + ⊕	78
CSH 6 poles + ⊕	91
CNE, CSE 6 poles + ⊕	104
CCE 6 poles + ⊕	110
CSS 6 poles + ⊕	122
CT, CTSE (16A) *)..... 6 poles + ⊕	130
CQE 10 poles + ⊕	138
MIXO 2 modules	179 - 215

*) only for enclosure CHIS 06 L

insert centre distance:
44 x 27 mm

housings and cover
for electromagnetic compatibility



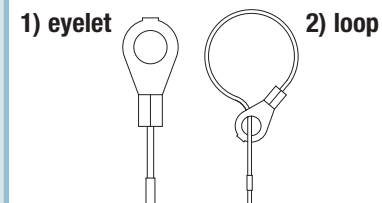
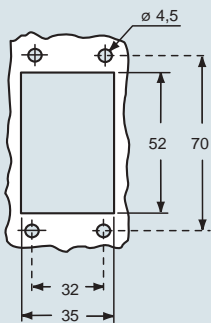
hoods and cover
for electromagnetic compatibility



description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housing with lever	CHIS 06 L	—						
surface mounting housing with lever, high construction	CAPS 06 L	21	MAPS 06 L32	32				
cover with pegs (for 1 lever enclosures) 1)	CHCS 06 L							
enclosure with pegs, side entry, high, without adaptor *					CFOS 06 L21	21	MFOS 06 L32	32
enclosure with pegs, top entry, high, without adaptor *					CFVS 06 L21	21	MFVS 06 L32	32
cover with lever (for enclosures with pegs) 2)					CHCS 06 LG			

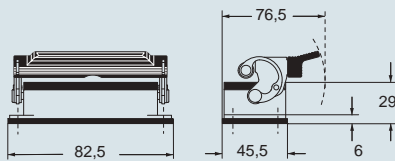
* enclosure without adaptor, threaded on the enclosure body, to be used only with a complete cable gland.

panel cut-out for bulkhead mounting housing in mm

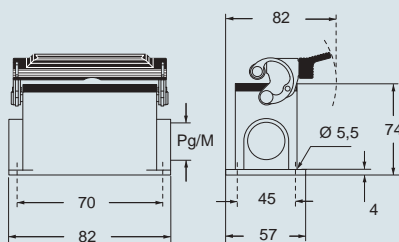


dimensions in mm

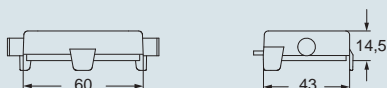
CHIS L



CAPS L and MAPS L

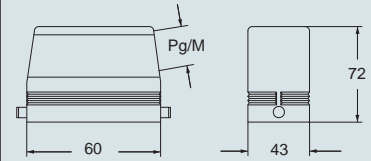


CHCS L

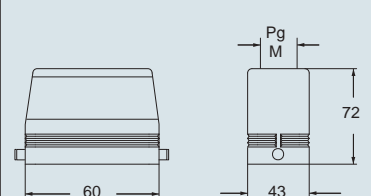


dimensions in mm

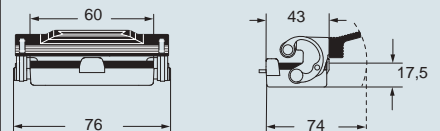
CFOS L and MFOS L



CFVS L and MFVS L



CHCS LG



CALUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

EMC - size 44.27



inserts:	page:
CDD 42 poles + ⊕	69
CDS 18 poles + ⊕	79
CSH 10 poles + ⊕	92
CNE, CSE 10 poles + ⊕	105
CCE 10 poles + ⊕	111
CSS 10 poles + ⊕	123
CT, CTSE (16A) *) .. 10 poles + ⊕	131
CQE 18 poles + ⊕	139
CMCE 3+2 (aux) poles + ⊕	148
CMSH 3+2 (aux) poles + ⊕	149
CX 8/24 poles + ⊕	169
MIXO 3 modules	179 - 215

*) only for enclosure CHIS 10

insert centre distance:
57 x 27 mm

housings and cover
for electromagnetic compatibility

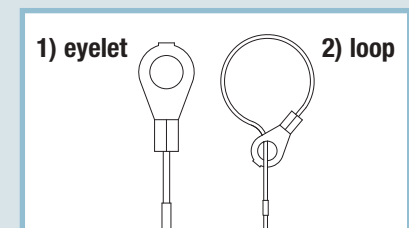
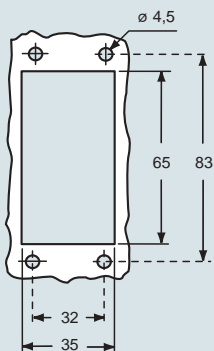


hoods and cover
for electromagnetic compatibility

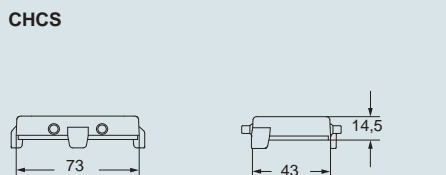
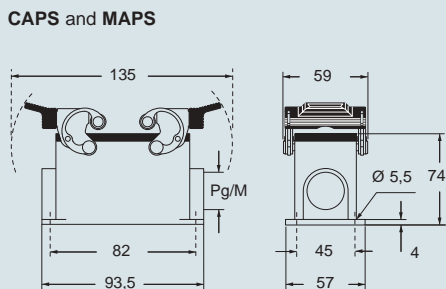
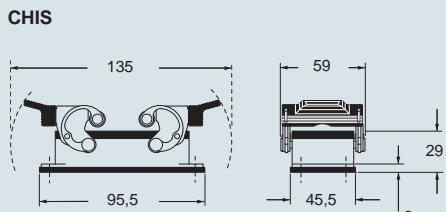


description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housing, with levers	CHIS 10	—						
surface mounting housing, with levers, high construction	CAPS 10.21	21	MAPS 10.32	32				
cover with 4 pegs (for enclosures with 2 levers) 1)	CHCS 10							
enclosure with pegs, side entry, high construction					CAOS 10.21	21	MAOS 10.32	32
enclosure with pegs, top entry, high construction					CAVS 10.21	21	MAVS 10.32	32
cover with 2 levers (for enclosures with 4 pegs) 2)					CHCS 10 G			

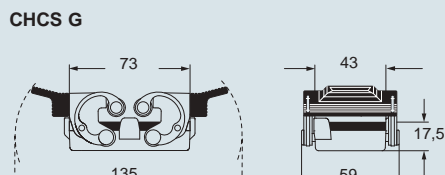
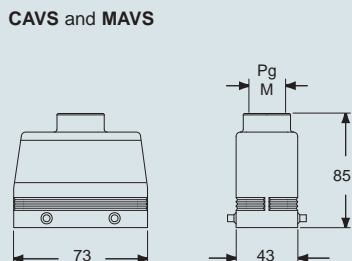
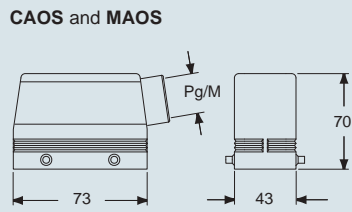
panel cut-out for bulkhead mounting housings in mm



dimensions in mm



dimensions in mm



CAUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice



inserts:	page:
CD 40 poles + ⊕	57
CT, CTS (10A) *) ... 40 poles + ⊕	64
CDD 72 poles + ⊕	70
CDS 27 poles + ⊕	80
CSH 16 poles + ⊕	93
CNE, CSE 16 poles + ⊕	106
CCE 16 poles + ⊕	112
CSS 16 poles + ⊕	124
CT, CTSE (16A) *) .. 16 poles + ⊕	132
CQE 32 poles + ⊕	140
CQEE 40 poles + ⊕	146
CMCE 6+2 (aux) poles + ⊕	150
CME, CMSH .. 6+2 (aux) poles + ⊕	151
CP 6 poles + ⊕	162
CX 6/36 and 12/2 poles + ⊕	170-171
MIXO 4/0 and 4/2 poles + ⊕	172
MIXO 4 modules	179-215

*) only for enclosure CHIS 16

insert centre distance: 77,5 x 27 mm

housings and cover for electromagnetic compatibility



hoods and cover for electromagnetic compatibility

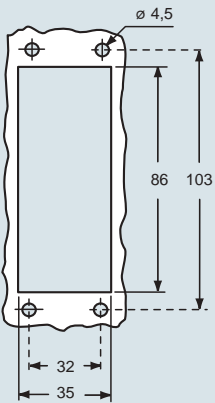


description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housing with levers	CHIS 16	—						
surface mounting housing, with levers, high construction	CAPS 16.21	21	MAPS 16.32	32				
cover with 4 pegs (for enclosures with 2 levers) 1)	CHCS 16							
enclosure with pegs, side entry					CHOS 16	21	MHOS 16.25	25
enclosure with pegs, side entry							MHOS 16.32	32
enclosure with pegs, side entry, high construction					CAOS 16.29	29	MAOS 16.32	32
enclosure with pegs, side entry, high construction							MAOS 16.40	40
enclosure with pegs, top entry					CHVS 16	21	MHVS 16.25	25
enclosure with pegs, top entry							MHVS 16.32	32
enclosure with pegs, top entry, high construction					CAVS 16.29	29	MAVS 16.32	32
enclosure with pegs, top entry, high construction							MAVS 16.40	40
cover with 2 levers (for enclosures with 4 pegs) 2)					CHCS 16 G			

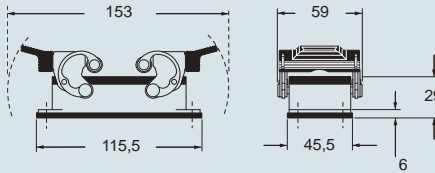
panel cut-out for bulkhead mounting housings in mm

dimensions in mm

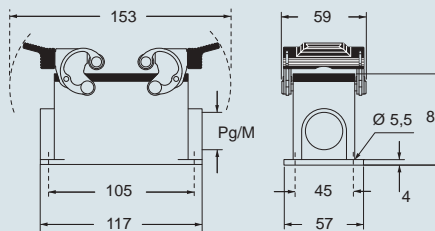
dimensions in mm



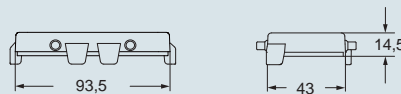
CHIS



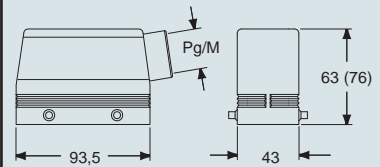
CAPS and MAPS



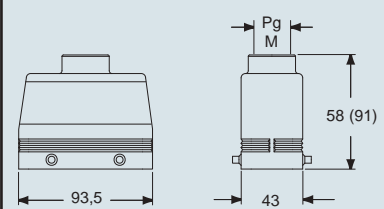
CHCS



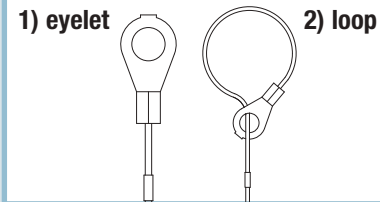
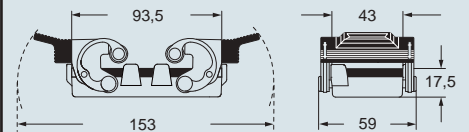
CHOS (CAOS) and MHOS (MAOS)



CHVS (CAVS) and MHVS (MAVS)



CHCS G



Type 4/4X/12



dimensions shown are not binding and may be changed without notice

EMC - size 77.27

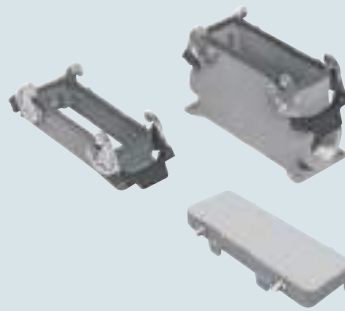


inserts:	page:
CD 64 poles + ⊕	59
CT, CTS (10A) *) 64 poles + ⊕	65
CDD 108 poles + ⊕	72
CDS 42 poles + ⊕	81
CSH 24 poles + ⊕	94
CNE, CSE 24 poles + ⊕	107
CCE 24 poles + ⊕	113
CSS 24 poles + ⊕	125
CT, CTSE (16A) *) 24 poles + ⊕	133
CQE 46 poles + ⊕	141
CQEE 64 poles + ⊕	147
CMCE 10+2 (aux) poles + ⊕	152
CMSH 10+2 (aux) poles + ⊕	153
CX 4/8 and 6/6 poles + ⊕	173 and 175
MIXO 6 modules	179-215

*) only for enclosure CHIS 24

insert centre distance:
104 x 27 mm

housings and cover
for electromagnetic compatibility

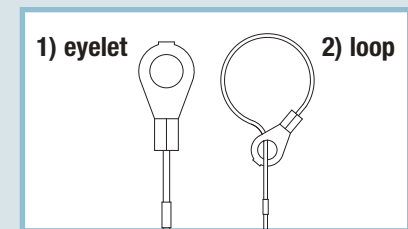
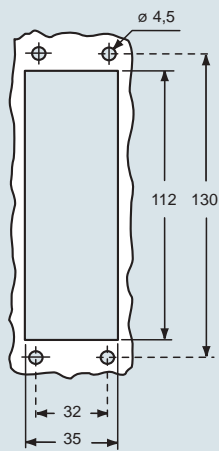


hoods and cover
for electromagnetic compatibility



description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housing with levers	CHIS 24	—						
surface mounting housing with levers, high construction	CAPS 24.21	21	MAPS 24.32	32				
cover with 4 pegs (for enclosures with 2 levers) 1)	CHCS 24							
enclosure with pegs, side entry					CHOS 24	21	MHOS 24.25	25
enclosure with pegs, side entry					CAOS 24.29	29	MHOS 24.32	32
enclosure with pegs, side entry, high construction							MAOS 24.32	32
enclosure with pegs, side entry, high construction							MAOS 24.40	40
enclosure with pegs, top entry					CHVS 24	21	MHVS 24.25	25
enclosure with pegs, top entry							MHVS 24.32	32
enclosure with pegs, top entry, high construction					CAVS 24.29	29	MAVS 24.32	32
enclosure with pegs, top entry, high construction							MAVS 24.40	40
cover with 2 levers (for enclosures with 4 pegs) 2)					CHCS 24 G			

panel cut-out for bulkhead mounting housings in mm



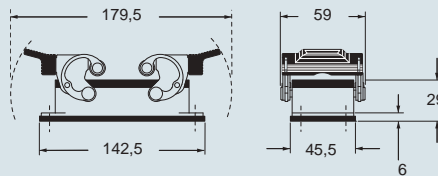
CAUS® Type 4/4X/12



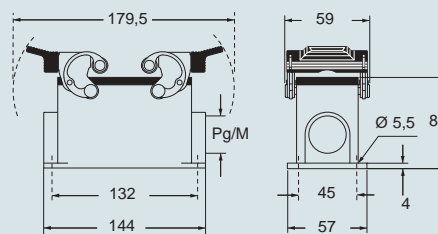
dimensions shown are not binding and may be changed without notice

dimensions in mm

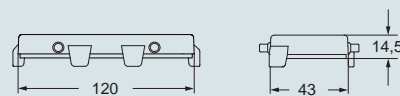
CHIS



CAPS and MAPS

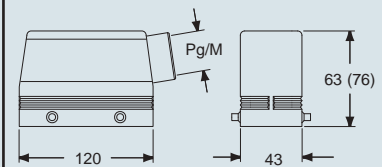


CHCS

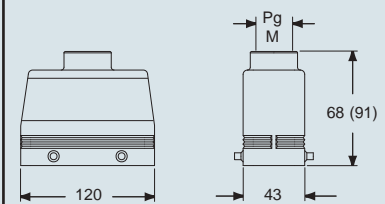


dimensions in mm

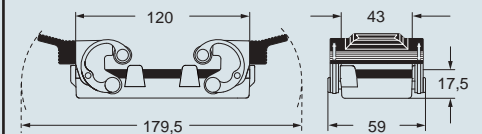
CHOS (CAOS) and MHOS (MAOS)



CHVS (CAVS) and MHVS (MAVS)



CHCS G



180 °C

Characteristics

180 °C ENCLOSURE VERSION



Description.

Series specifically developed for industrial applications where the ambient temperatures are particularly harsh (from -40°C to +180°C). These enclosures have supplementary insulating strips inside. For use with inserts in self-extinguishing thermoplastic material (PPS polyphenylene sulphide).

This version is distinguished by the red colour of the enclosures.

UL certified for USA and Canada for NEMA 4, NEMA 4X and NEMA 12 protection ratings, printed on the packaging. IP65, IP66 and IP69K protection ratings.

Characteristics of materials used:

- made of die cast aluminium alloy
- chromate treated die cast
- coated with special thermoset powder with high resistance to high temperatures
- gaskets in anti-aging fluoro elastomer

- locking device with levers, springs and pegs in stainless steel
- monoblock lever handles in stainless steel (for CZ..R, CH..R 48 and MZ..R, MH..R 48 versions)
- lever handles in aluminium with special die-cast coating (for CH..R 10, 16, 24 and MH..R 10, 16, 24 versions)



inserts:	page:
CK RY 3 poles + ⊕	51
CK RY 4 poles + ⊕	51

insert dimensions:
21 x 21 mm

**bulkhead mounting housings
straight and angled**



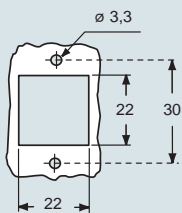
hoods



description	part No. (entry - Pg 11)	part No. (entry - M 20)	part No. (entry - Pg 11)	part No. (entry - M 20)
with stainless steel lever ¹⁾	CKAXR 03 I			
without cable entry, stainless steel lever ¹⁾	CKAXR 03 IA			
with cable entry, stainless steel lever ¹⁾	CKAXR 03 IAP	MKAXR IAP20		
with cable entry, stainless steel lever ¹⁾ , bulkhead hole closed	CKAXR 03 AP	MKAXR AP20		
with pegs, top entry ¹⁾			CKAR 03 V	MKAR V20
with pegs, side entry ¹⁾			CKAR 03 VA	MKAR VA20
with stainless steel lever, top entry ¹⁾			CKAXR 03 VG	MKAXR VG20

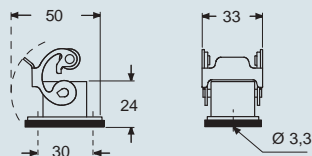
1) Enclosures with IP44 protection rating.

panel cut-out for bulkhead mounting housings in mm

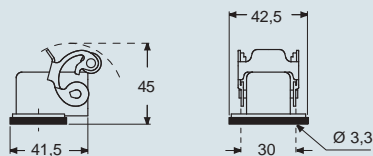


dimensions in mm

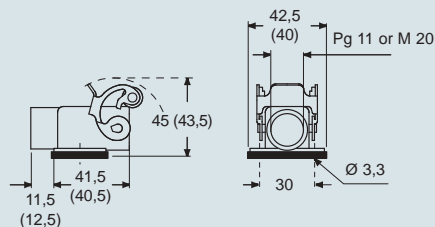
CKAXR I



CKAXR IA

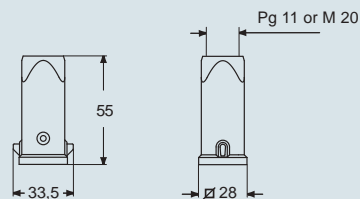


**CKAXR IAP (CKAXR AP) and
MKAXR IAP (MKAXR AP)**

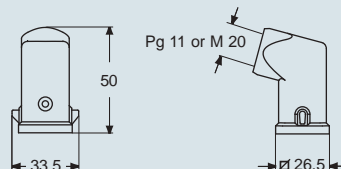


dimensions in mm

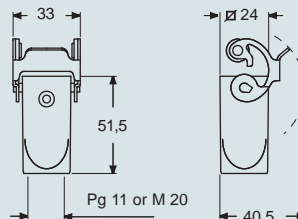
CKAR V and MKAR V



CKAR VA and MKAR VA



CKAXR VG and MKAXR VG



CRUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

180 °C - size 21.21



inserts: page:
CNE RY 6 poles + ⊕ 116

insert centre distance:
44 x 27 mm

bulkhead and surface mounting housings and cover

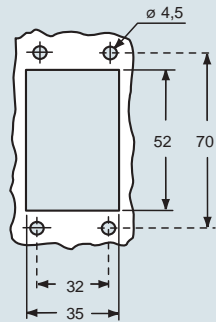


hoods and cover



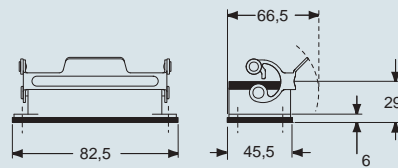
description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housing with lever	CZIR 06 L	—						
surface mounting housing, with lever	CZPR 06 L	16	MZPR 06 L20	20				
surface mounting housing with lever, high construction	CZAPR 06 L	21	MZAPR 06 L32	32				
cover with pegs (for enclosures) 1)	CHCR 06 L							
enclosure with pegs, side entry					CHOR 06 L13	13.5	MHOR 06 L20	20
enclosure with pegs, side entry, high construction					CAOR 06 L21	21	MAOR 06 L32	32
enclosure with pegs, top entry					CHVR 06 L13	13.5	MHVR 06 L20	20
enclosure with pegs, top entry, high construction					CAVR 06 L21	21	MAVR 06 L32	32
cover with lever (for hoods) 2)					CZCR 06 LG			

panel cut-out for bulkhead mounting housing in mm

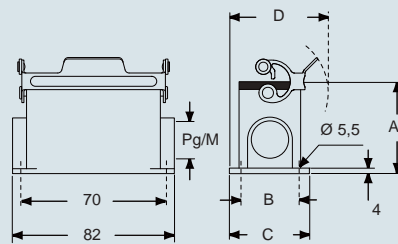


dimensions in mm

CZIR L



CZPR L - CZAPR L and MZPR L - MZAPR L



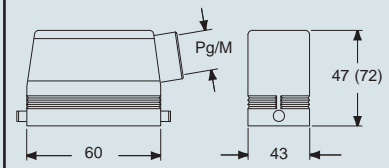
type	A	B	C	D
CZPR L / MZPR L	53	40	52	69,5
CZAPR L / MZAPR L	74	45	57	72

CHCR L

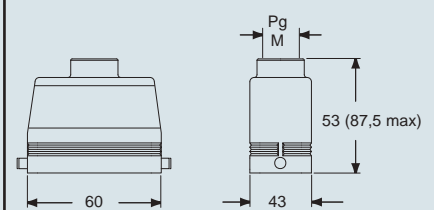


dimensions in mm

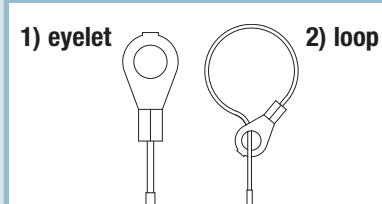
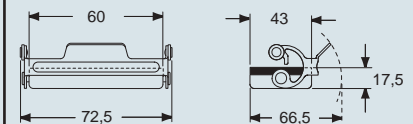
CHOR L (CAOR L) and MHOR L (MAOR L)



CHVR L (CAVR L) and MHVR L (MAVR L)



CZCR LG



CALUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

180 °C - size 44.27



inserts: page:
CNE RY 10 poles + ⊕ 117

insert centre distance:
57 x 27 mm

bulkhead and surface mounting housings and cover

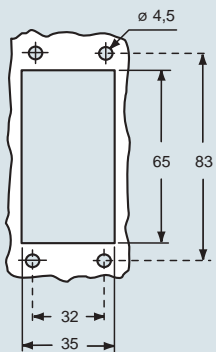


hoods and cover



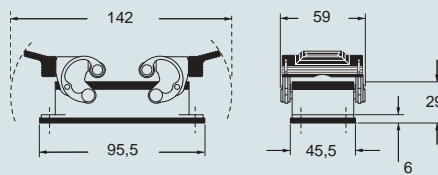
description	part No.		part No.		part No.		part No.	
	entry Pg	entry M	entry Pg	entry M	entry Pg	entry M	entry Pg	entry M
bulkhead mounting housing, with lever	—	—	—	—	—	—	—	—
surface mounting housing, with levers	16	20	16	20	16	20	16	20
surface mounting housing, with levers, high construction	21	32	21	32	21	32	21	32
cover with 4 pegs (for enclosures) 1)	CHCR 10							
enclosure with pegs, side entry					CHOR 10	16	MHOR 10.20	20
enclosure with pegs, side entry, high construction					CAOR 10.21	21	MAOR 10.32	32
enclosure with pegs, top entry					CHVR 10	16	MHVR 10.20**	20
enclosure with pegs, top entry, high construction					CAVR 10.21	21	MAVR 10.32	32
cover with 2 levers (for hoods) 2)					CHCR 10 G			

panel cut-out for bulkhead mounting housings in mm

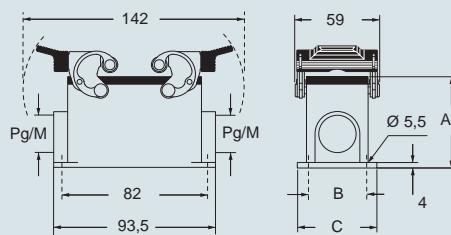


dimensions in mm

CHIR

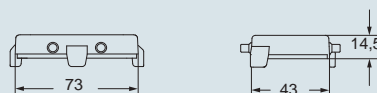


CHPR - CAPR and MHPR - MAPR



type	A	B	C
CHPR / MHPR	57	40	52
CAPR / MAPR	74	45	57

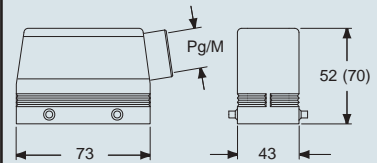
CHCR



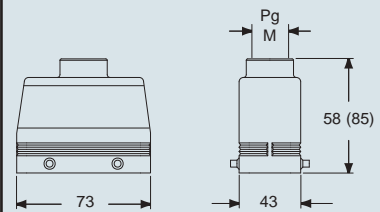
** can only be used with a complete cable gland (to be purchased separately)

dimensions in mm

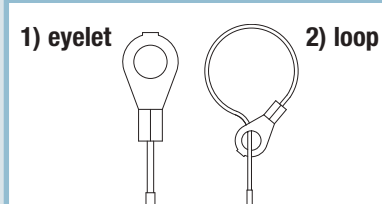
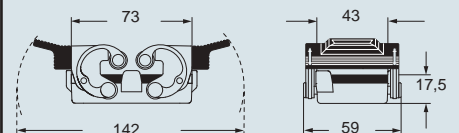
CHOR (CAOR) and MHOR (MAOR)



CHVR (CAVR) and MHVR (MAVR)



CHCR G



CALUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

180 °C - size 57.27



inserts:	page:
CNE RY 16 poles + ⊕	118
CP RY 6 poles + ⊕	162
CX RY 4/0 and 4/2 poles + ⊕	172

insert centre distance:
77,5 x 27 mm

bulkhead and surface mounting housings and cover

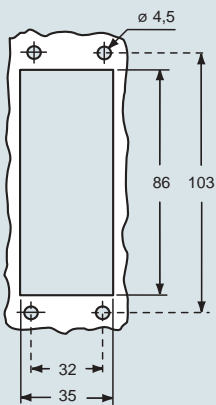


hoods and cover

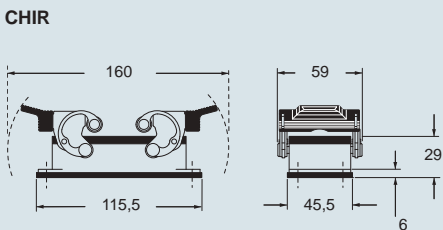


description	part No.		part No.		part No.		part No.	
		entry Pg		entry M		entry Pg		entry M
bulkhead mounting housing with levers	CHIR 16	—						
surface mounting housing, with levers, high construction	CAPR 16.21	21	MAPR 16.32	32				
cover with 4 pegs (for enclosures 1)	CHCR 16							
enclosure with pegs, side entry					CHOR 16	21	MHOR 16.25	25
enclosure with pegs, side entry, high construction					CAOR 16.21	21	MAOR 16.40	40
enclosure with pegs, top entry					CHVR 16	21	MHVR 16.25	25
enclosure with pegs, top entry, high construction					CAVR 16.21	21	MAVR 16.40	40
cover with 2 levers (for hoods 2)					CHCR 16 G			

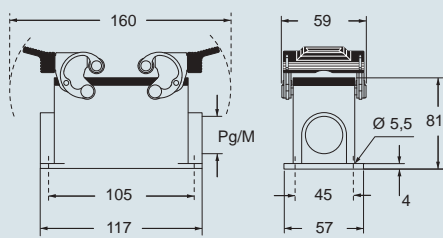
panel cut-out for bulkhead mounting housings in mm



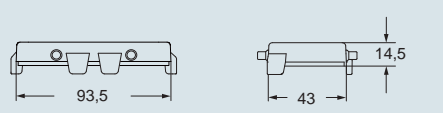
dimensions in mm



CAPR and MAPR

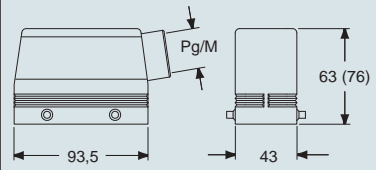


CHCR

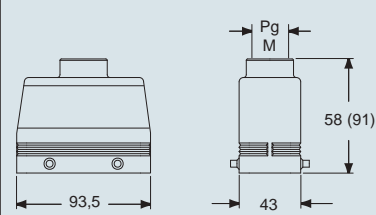


dimensions in mm

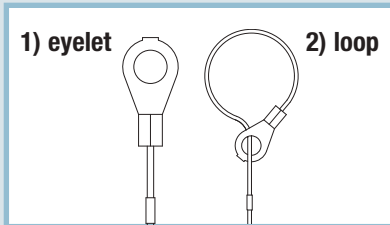
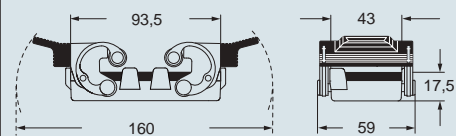
CHOR (CAOR) and MHOR (MAOR)



CHVR (CAVR) and MHVR (MAVR)



CHCR G



CALUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

180 °C - size 77.27



inserts: page:
CNE RY 24 poles + ⊕ 119
CX RY 4/8 poles + ⊕ 173

insert centre distance:
104 x 27 mm

bulkhead and surface mounting housings and cover

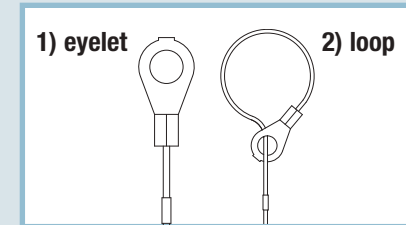
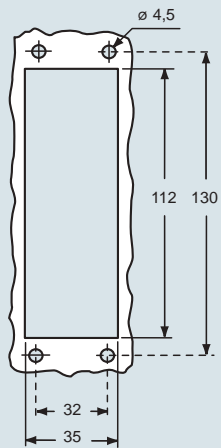


hoods and cover

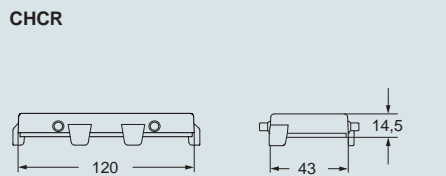
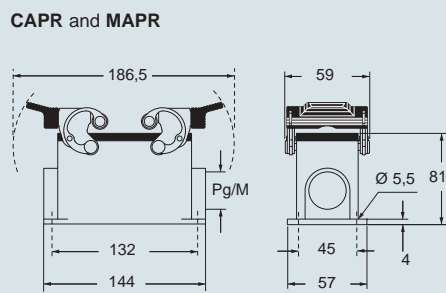
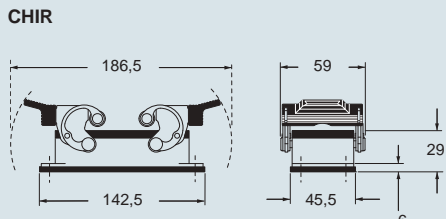


description	part No.		part No.		part No.		part No.	
		entry Pg		entry M		entry Pg		entry M
bulkhead mounting housing, with levers	CHIR 24	—						
surface mounting housing, with levers, high construction	CAPR 24.21	21	MAPR 24.32	32				
cover with 4 pegs (for enclosures 1)	CHCR 24							
enclosure with pegs, side entry					CHOR 24	21	MHOR 24.25	25
enclosure with pegs, side entry, high construction					CAOR 24.29	29	MAOR 24.40	40
enclosure with pegs, top entry					CHVR 24	21	MHVR 24.25	25
enclosure with pegs, top entry, high construction					CAVR 24.29	29	MAVR 24.40	40
cover with 2 levers (for hoods 2)					CHCR 24 G			

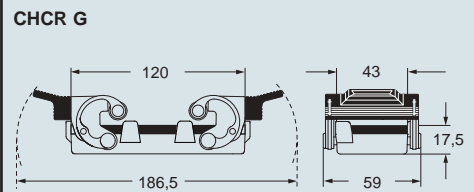
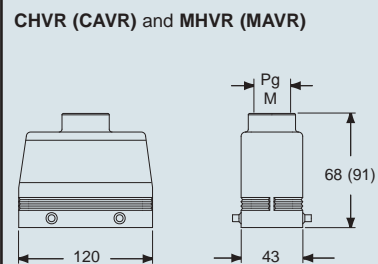
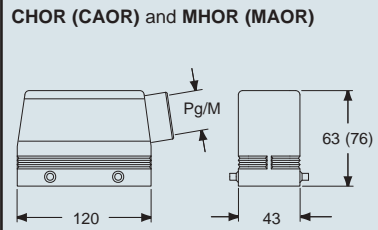
panel cut-out for bulkhead mounting housings in mm



dimensions in mm



dimensions in mm



CALUS® Type 4/4X/12



dimensions shown are not binding and may be changed without notice

180 °C - size 104.27



inserts: page:
CNE RY 48 poles + ⊕ 120

insert centre distance:
2 x (104 x 27) mm

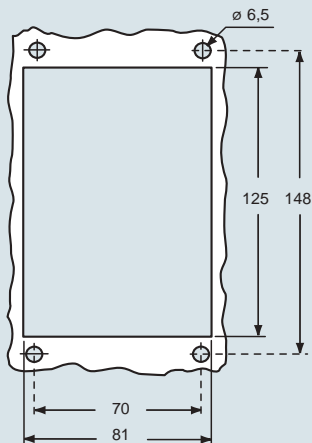
bulkhead and surface mounting housings

hoods



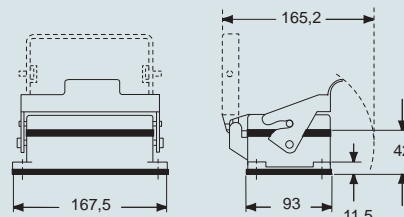
description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housings, with lever and cover	CHIR 48 LS	—						
surface mounting housings, with lever and cover	CHPR 48 LS	36 x 1/2	MHPR 48 LS40	40 x 1/2				
with pegs, side entry					CHOR 48 L	36	MHOR 48 L40	40
with pegs, top entry					CHVR 48 L	36	MHVR 48 L40	40

panel cut-out for bulkhead mounting housings in mm

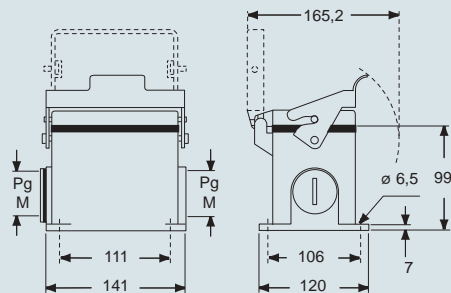


dimensions in mm

CHIR LS

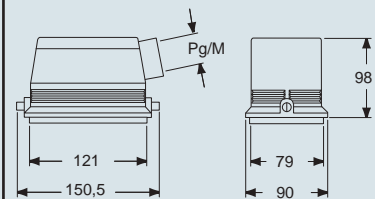


CHPR LS and MHPR LS

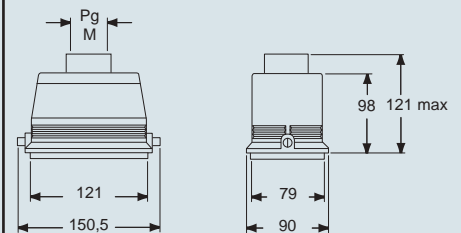


dimensions in mm

CHOR L and MHOR L



CHVR L and MHVR L



CALUS® Type 4/4X/12



dimensions shown are not binding and may be changed without notice

180 °C - size 104.62

CENTRAL LEVER

Characteristics



Description.

Series specifically designed for industrial applications with limited installation space. These enclosures can be installed, placed side-by-side and handled in a single operation.

Furthermore, the lever's shape reduces the effort required to uncouple the inner fittings.

Characteristics of materials used:

CH..YC, CA..YC and MA..YC, CA..YX and MF..YX series

- made of die cast aluminium alloy
- with epoxy-polyester powder coating
- gaskets in anti-aging, oil-resistant, grease-resistant and fuel-resistant vinyl nitrile elastomer
- locking device with single stainless steel lever.



inserts:		page:
CDD	24 poles + ⊕	67
CDS	9 poles + ⊕	78
CSH	6 poles + ⊕	91
CNE, CSE	6 poles + ⊕	104
CCE	6 poles + ⊕	110
CSS	6 poles + ⊕	122
CT, CTSE (16A) *	6 poles + ⊕	130
CQE	10 poles + ⊕	138
MIXO	2 modules	179 - 215

*) can be used only in bulkhead mounting housings

insert centre distance:
44 x 27 mm

bulkhead mounting housings for central lever

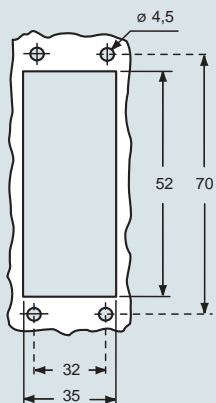


surface mounting housings, high construction with two entries for central lever



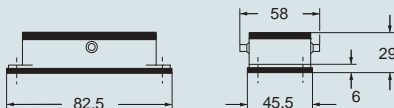
description	part No.	part No.	entry Pg	part No.	entry M
bulkhead mounting with pegs for central lever	CHI 06 YC				
surface mounting, high construction, with pegs, for central lever		CAP 06 YC229	29x2	MAP 06 YC232	32x2

panel cut-out for bulkhead mounting housings in mm



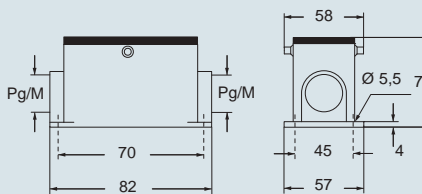
dimensions in mm

CHI YC



dimensions in mm

CAP YC and MAP YC



Even when coding is not required, it is recommended to use CRM and CRF pins with CD and CDD inserts and CRM CX and CRF CX pins with MIXO inserts to reduce movements when fitting and removing the connectors and to avoid contact damages. Within this scope, the DIN 43 652 standard requires a maximum angular longitudinal fluctuation of ±5°.

CRUS® Type 4/4X/12



dimensions shown are not binding and may be changed without notice

CENTRAL LEVER - size 44.27



inserts:	page:
CDD 24 poles + ⊕	67
CDS 9 poles + ⊕	78
CSH 6 poles + ⊕	91
CNE, CSE 6 poles + ⊕	104
CCE 6 poles + ⊕	110
CSS 6 poles + ⊕	122
CQE 10 poles + ⊕	138
MIXO 2 modules	179 - 215

insert centre distance:
44 x 27 mm

hoods with central lever



hoods with central lever

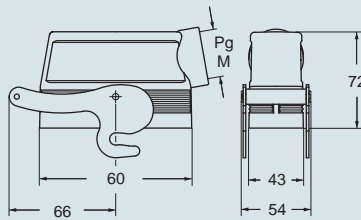


description	part No.		entry		part No.		entry	
			Pg	M			Pg	M
side entry, high construction	CAO 06 YX21	21	MAO 06 YX25	25				
side entry, high construction	CAO 06 YX29	29	MAO 06 YX32	32				
top entry, high construction					CAV 06 YX21	21	MAV 06 YX25	25
top entry, high construction					CAV 06 YX29	29	MAV 06 YX32	32

Even when coding is not required, it is recommended to use CRM and CRF pins with CD and CDD inserts and CRM CX and CRF CX pins with MIXO inserts to reduce movements when fitting and removing the connectors and to avoid contact damages. Within this scope, the DIN 43 652 standard requires a maximum angular longitudinal fluctuation of ±5°.

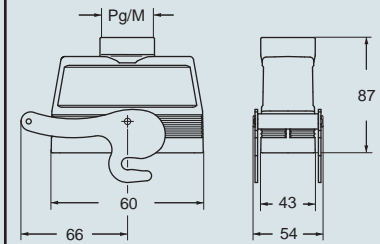
dimensions in mm

CAO..YX and MAO..YX



dimensions in mm

CAV..YX and MAV..YX



CRUS® Type 4/4X/12



dimensions shown are not binding and may be changed without notice

CENTRAL LEVER - size 44.27



inserts:		page:
CDD	42 poles + ⊕	69
CDS	18 poles + ⊕	79
CSH	10 poles + ⊕	92
CNE, CSE	10 poles + ⊕	105
CCE	10 poles + ⊕	111
CSS	10 poles + ⊕	123
CT, CTSE (16A) * ..	10 poles + ⊕	131
CQE	18 poles + ⊕	139
CMCE	3+2 (aux) poles + ⊕	148
CMSH	3+2 (aux) poles + ⊕	149
CX	8/24 poles + ⊕	169
MIXO	3 modules	179 - 215

*) can be used only in bulkhead mounting housings

insert centre distance:
57 x 27 mm

bulkhead mounting housings for central lever

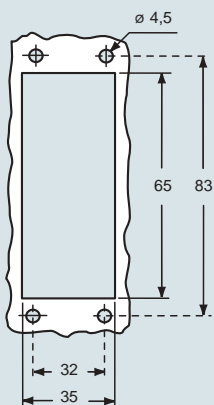


surface mounting housings, high construction with two entries for central lever



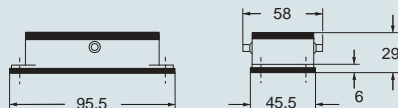
description	part No.	part No.	entry Pg	part No.	entry M
bulkhead mounting with pegs for central lever	CHI 10 YC				
surface mounting, high construction, with pegs, for central lever		CAP 10 YC229	29x2	MAP 10 YC232	32x2

panel cut-out for bulkhead mounting housings in mm



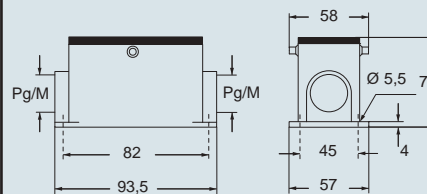
dimensions in mm

CHI YC



dimensions in mm

CAP YC and MAP YC



Even when coding is not required, it is recommended to use CRM and CRF pins with CD and CDD inserts and CRM CX and CRF CX pins with MIXO inserts to reduce movements when fitting and removing the connectors and to avoid contact damages. Within this scope, the DIN 43 652 standard requires a maximum angular longitudinal fluctuation of ±5°.

CRUS® Type 4/4X/12



dimensions shown are not binding and may be changed without notice

CENTRAL LEVER - size 57.27



inserts:	page:
CDD 42 poles + ⊕	69
CDS 18 poles + ⊕	79
CSH 10 poles + ⊕	92
CNE, CSE 10 poles + ⊕	105
CCE 10 poles + ⊕	111
CSS 10 poles + ⊕	123
CQE 18 poles + ⊕	139
CMCE 3+2 (aux) poles + ⊕	148
CMSH 3+2 (aux) poles + ⊕	149
CX 8/24 poles + ⊕	169
MIXO 3 modules	179 - 215

insert centre distance:
57 x 27 mm

hoods with central lever



hoods with central lever

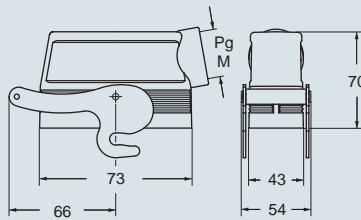


description	part No.		entry		part No.		entry	
			Pg	M			Pg	M
side entry, high construction	CAO 10 YX21		21		MAO 10 YX32		32	
side entry, high construction	CAO 10 YX29		29		MAO 10 YX40		40	
top entry, high construction					CAV 10 YX21		21	
top entry, high construction					CAV 10 YX29		29	
					MAV 10 YX32		32	
					MAV 10 YX40		40	

Even when coding is not required, it is recommended to use CRM and CRF pins with CD and CDD inserts and CRM CX and CRF CX pins with MIXO inserts to reduce movements when fitting and removing the connectors and to avoid contact damages. Within this scope, the DIN 43 652 standard requires a maximum angular longitudinal fluctuation of ±5°.

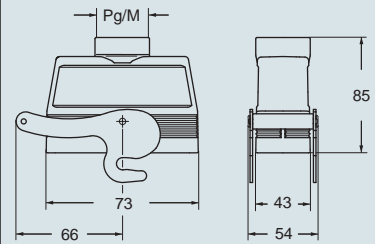
dimensions in mm

CAO..YX and MAO..YX



dimensions in mm

CAV..YX and MAV..YX



CRUS® Type 4/4X/12



dimensions shown are not binding and may be changed without notice

CENTRAL LEVER - size 57.27



inserts:		page:
CD	40 poles + ⊕	57
CT, CTS (10A) *)	40 poles + ⊕	64
CDD	72 poles + ⊕	70
CDS	27 poles + ⊕	80
CSH	16 poles + ⊕	93
CNE, CSE	16 poles + ⊕	106
CCE	16 poles + ⊕	112
CSS	16 poles + ⊕	124
CT, CTSE (16A) *) ..	16 poles + ⊕	132
CQE	32 poles + ⊕	140
CQEE	40 poles + ⊕	146
CMCE, CMSH 6+2 (aux)	poles + ⊕	150-151
CP	6 poles + ⊕	162
CX	6/36 and 12/2 poles + ⊕	170-171
CX	4/0 and 4/2 poles + ⊕	172
MIXO	4 modules	179-215

*) can be used only in bulkhead mounting housings

insert centre distance: **77,5 x 27 mm**

bulkhead mounting housings for central lever

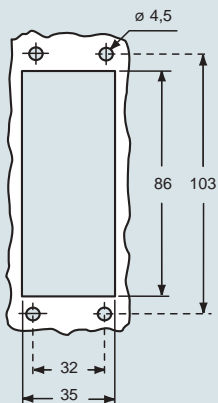


surface mounting housings, high construction with two entries for central lever



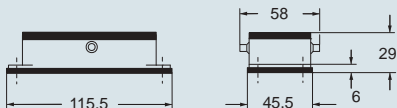
description	part No.	part No.	entry Pg	part No.	entry M
bulkhead mounting with pegs for central lever	CHI 16 YC				
surface mounting, high construction, with pegs, for central lever		CAP 16 YC229	29x2	MAP 16 YC232	32x2

panel cut-out for bulkhead mounting housings in mm



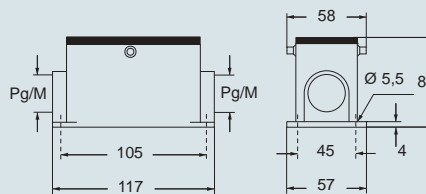
dimensions in mm

CHI YC



dimensions in mm

CAP YC and MAP YC



Even when coding is not required, it is recommended to use CRM and CRF pins with CD and CDD inserts and CRM CX and CRF CX pins with MIXO inserts to reduce movements when fitting and removing the connectors and to avoid contact damages. Within this scope, the DIN 43 652 standard requires a maximum angular longitudinal fluctuation of $\pm 5^\circ$.

CRUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

CENTRAL LEVER - size 77.27



inserts:		page:
CD	40 poles + ⊕	57
CDD	72 poles + ⊕	70
CDS	27 poles + ⊕	80
CSH	16 poles + ⊕	93
CNE, CSE	16 poles + ⊕	106
CCE	16 poles + ⊕	112
CSS	16 poles + ⊕	124
CQE	32 poles + ⊕	140
CQEE	40 poles + ⊕	146
CMCE	6+2 (aux) poles + ⊕	150
CMSH	6+2 (aux) poles + ⊕	151
CP	6 poles + ⊕	162
CX	6/36 and 12/2 poles + ⊕	170-171
CX	4/0 and 4/2 poles + ⊕	172
MIXO	4 modules	179-215

insert centre distance:
77,5 x 27 mm

hoods with central lever



hoods with central lever

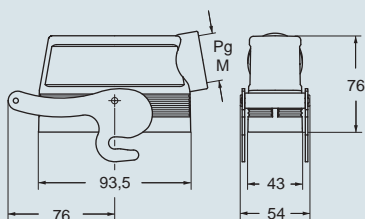


description	part No.		entry Pg		part No.		entry M	
	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
side entry, high construction	CAO 16 YX21	21	MAO 16 YX32	32				
side entry, high construction	CAO 16 YX29	29	MAO 16 YX40	40				
top entry, high construction					CAV 16 YX21	21	MAV 16 YX32	32
top entry, high construction					CAV 16 YX29	29	MAV 16 YX40	40

Even when coding is not required, it is recommended to use CRM and CRF pins with CD and CDD inserts and CRM CX and CRF CX pins with MIXO inserts to reduce movements when fitting and removing the connectors and to avoid contact damages. Within this scope, the DIN 43 652 standard requires amaximum angular longitudinal fluctuation of ±5°.

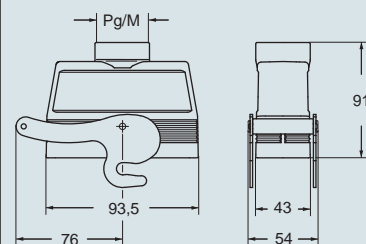
dimensions in mm

CAO..YX and MAO..YX



dimensions in mm

CAV..YX and MAV..YX



CRUS® Type 4/4X/12



dimensions shown are not binding and may be changed without notice

CENTRAL LEVER - size 77.27



inserts:		page:
CD	64 poles + ⊕	59
CT, CTS (10A) *)	64 poles + ⊕	65
CDD	108 poles + ⊕	72
CDS	42 poles + ⊕	81
CSH	24 poles + ⊕	94
CNE, CSE	24 poles + ⊕	107
CCE	24 poles + ⊕	113
CSS	24 poles + ⊕	125
CT, CTSE (16A) *)	24 poles + ⊕	133
CQE	46 poles + ⊕	141
CQEE	64 poles + ⊕	147
CMCE	10+2 (aux) poles + ⊕	152
CMSH	10+2 (aux) poles + ⊕	153
CX	4/8 and 6/6 poles + ⊕	173 and 175
MIXO	6 modules	179-215

*) can be used only in bulkhead mounting housings

insert centre distance: **104 x 27 mm**

bulkhead mounting housings for central lever

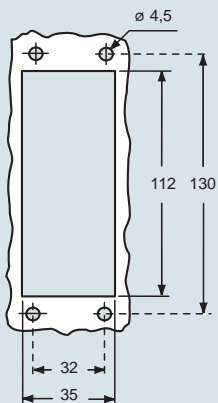


surface mounting housings, high construction with two entries for central lever



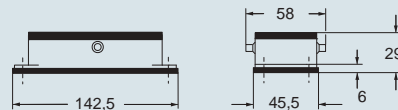
description	part No.	part No.	entry Pg	part No.	entry M
bulkhead mounting with pegs for central lever	CHI 24 YC				
surface mounting, high construction, with pegs, for central lever		CAP 24 YC229	29x2	MAP 24 YC232	32x2

panel cut-out for bulkhead mounting housings in mm



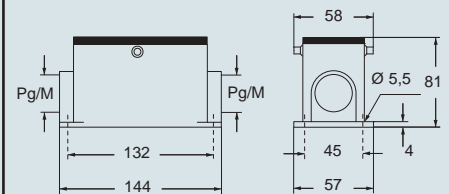
dimensions in mm

CHI YC



dimensions in mm

CAP YC and MAP YC



Even when coding is not required, it is recommended to use CRM and CRF pins with CD and CDD inserts and CRM CX and CRF CX pins with MIXO inserts to reduce movements when fitting and removing the connectors and to avoid contact damages. Within this scope, the DIN 43 652 standard requires a maximum angular longitudinal fluctuation of $\pm 5^\circ$.

CRUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

CENTRAL LEVER - size 104.27



inserts:		page:
CD	64 poles + ⊕	59
CDD	108 poles + ⊕	72
CDS	42 poles + ⊕	81
CSH	24 poles + ⊕	94
CNE, CSE	24 poles + ⊕	107
CCE	24 poles + ⊕	113
CSS	24 poles + ⊕	125
CQE	46 poles + ⊕	141
CQEE	64 poles + ⊕	147
CMCE	10+2 (aux) poles + ⊕	152
CMSH	10+2 (aux) poles + ⊕	153
CX	4/8 and 6/6 poles + ⊕	173 and 175
MIXO	6 modules	179-215

insert centre distance:
104 x 27 mm

hoods with central lever



hoods with central lever

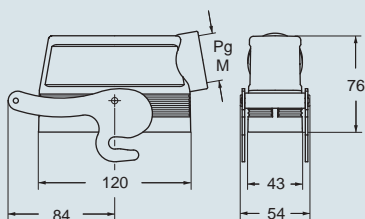


description	part No.		entry		part No.		entry	
			Pg	M			Pg	M
side entry, high construction	CAO 24 YX21		21		MAO 24 YX32		21	
side entry, high construction	CAO 24 YX29		29		MAO 24 YX40		29	
top entry, high construction					CAV 24 YX21		21	
top entry, high construction					CAV 24 YX29		29	
					MAV 24 YX32		32	
					MAV 24 YX40		40	

Even when coding is not required, it is recommended to use CRM and CRF pins with CD and CDD inserts and CRM CX and CRF CX pins with MIXO inserts to reduce movements when fitting and removing the connectors and to avoid contact damages. Within this scope, the DIN 43 652 standard requires a maximum angular longitudinal fluctuation of ±5°.

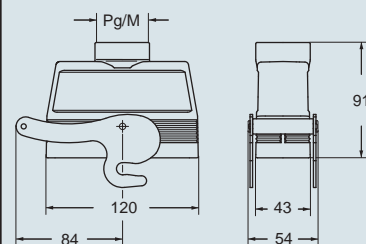
dimensions in mm

CAO..YX and MAO..YX



dimensions in mm

CAV..YX and MAV..YX



CRUS® Type 4/4X/12



dimensions shown are not binding and may be changed without notice

CENTRAL LEVER - size 104.27



inserts:		page:
CD	64 poles + ⊕	59
CDD	108 poles + ⊕	72
CDS	42 poles + ⊕	81
CSH	24 poles + ⊕	94
CNE, CSE	24 poles + ⊕	107
CCE	24 poles + ⊕	113
CSS	24 poles + ⊕	125
CQE	46 poles + ⊕	141
CQEE	64 poles + ⊕	147
CMCE	10+2 (aux) poles + ⊕	152
CMSH	10+2 (aux) poles + ⊕	153
CX	4/8 and 6/6 poles + ⊕	173 and 175
MIXO	6 modules	179-215

insert centre distance:
104 x 27 mm

inclined hoods with central lever with side entry



inclined hoods with central lever with top entry

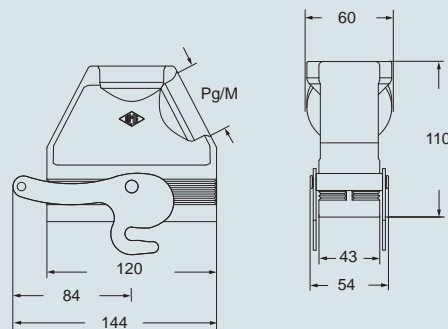


description	part No.		entry		part No.		entry	
			Pg	M			Pg	M
side entry, high construction	CIO 24 YX36	36			MIO 24 YX40	40		
side entry, high construction					MIO 24 YX50	50		
top entry, high construction							CIV 24 YX36	36
top entry, high construction								
							MIV 24 YX50	50

Even when coding is not required, it is recommended to use CRM and CRF pins with CD and CDD inserts and CRM CX and CRF CX pins with MIXO inserts to reduce movements when fitting and removing the connectors and to avoid contact damages. Within this scope, the DIN 43 652 standard requires a maximum angular longitudinal fluctuation of ±5°.

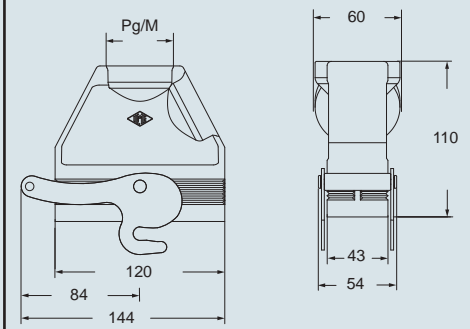
dimensions in mm

CIO..YX and MIO..YX



dimensions in mm

CIV..YX and MIV..YX



dimensions shown are not binding and may be changed without notice

CENTRAL LEVER - size 104.27



IP68

High protection IP68



IP68

General characteristics

CG/MG series (“44.27”, “57.27”, “77.27”, “104.27”).

The new CG/MG series of fixed and portable enclosures for connectors combines water tightness to IP68 rating and high mechanical sturdiness compliant with EMC standards.

The enclosures ensure the highest degree of protection from external interferences; more specifically, they protect people from accessing the dangerous components housed inside the enclosures (direct contact) and they protect the internal connector inserts from the ingress of foreign matters (dust) and from the harmful effects of fluid ingress.

The water tightness between the bulkhead mounting housings and the panel is ensured by an O-ring seal held in position in a slot within the bulkhead mounting housing base.

A second O-ring seal fitted around the edges of the enclosure ensures the water tightness between the portable and the fixed enclosure when the connector is mated.

To ensure the water tightness when the enclosure is fitted onto a cabinet panel, the optional mounting frame with four M6 threaded blind holes may need to be installed inside the panel. The fastening screws must be fitted inside the enclosure and, through the fastening holes to be drilled on the panel, must be tightened onto the M6 mounting frame internal thread instead of the usual fastening nuts.

The flush mounted fixed enclosure fastening holes have been drilled inside the O-ring seal in order to avoid having to use other seals. Although these enclosures are larger than the standard enclosures to leave more space for the cables, and the walls are thicker to achieve more mechanical sturdiness, the fixing points have remained the same as those of the standard enclosures.

The series is offered with two types of locking systems: bayonet and screw. The two closing points are located in asymmetrical positions to ensure an optimal water tightness and the lowest footprint in case of multiple enclosures placed alongside at the front.

The locking parts of both versions are made of high quality stainless steel and are firmly fastened inside the portable enclosure.

These locking parts can be fitted and removed by using either a 1,5 mm flat blade screwdriver or a 10 mm hexagonal key.

The fixed and portable enclosures are made of foundry grade aluminium alloy, particularly resistant to sea water corrosion.

The finish is made from epoxy polyester powder, which gives the enclosures high scratch and shock resistant properties.

The metal cover is made with the same quality materials as the enclosures, and is fitted with a short cord to make it always retrievable.

Scope of application:

External interconnections in vehicles, in harsh environments and in humid areas and with sensitive interconnections requiring screening.

They are particularly suitable for the applications in the railway industry and any application requiring high resistance to pressure, impact and corrosion, with IP68 protection rating.

They also ensure a good screening for electromagnetic compatibility.

The IP68 protection rating printed on the enclosure is ensured if the enclosures are correctly installed and the cable entry devices have equal or higher rating.

Protection rating compliant with EN 60529 standard.

When closed, the CG/MG enclosures protect the connector inserts fitted inside from outside interference, such as mechanical knocks, foreign bodies, humidity, dust, water or other fluids such as cleaning or cooling agents, oils etc.

The IP68 protection rating ensured by the enclosure is fully described in the EN 60529 standard, which classifies the enclosures according to their protection against the entry of foreign bodies and water.

IP68 = total protection against *dust*, and against the *access to hazardous parts* with access probe of Ø 1,0 mm (1st characteristic numeral), and protection against the effects of *continuous submersion in water* (duration ≥ 30 min upon agreement and water depth ≥ 1 m upon agreement) (2nd characteristic numeral).

These enclosure have also successfully passed the tests required for the IPX6 protection rating compliant with EN 60529 standard and for the IPX9K protection rating compliant with DIN 40050-9 standard.

The following table shows the different levels of protection required by the IP standard.

First characteristic numeral			Second characteristic numeral		
Protection of people against access to hazardous parts - Protection of equipment against solid foreign objects			Protection of materials against harmful penetration of water		
IP	Solid external objects	Protection	IP	Tests	Protection
0		non-protected	0		non-protected
1		protected against access to hazardous parts with the back of a hand protected against solid foreign objects of Ø 50 mm and greater	1		protected against vertically falling water drops
2		protected against access to hazardous parts with a finger - protected against solid foreign objects of Ø 12,5 mm and greater	2		protected against vertically falling water drops when enclosure tilted up to 15° (on either side of the vertical)
3		protected against access to hazardous parts with a tool - protected against solid foreign objects of Ø 2,5 mm and greater	3		protected against spraying water (at an angle up to 60° on either side of the vertical)
4		protected against access to hazardous parts with a wire - protected against solid foreign objects of Ø 1,0 mm and greater	4		protected against splashing water from any direction
5		protected against access to hazardous parts with a wire dust-protected (no harmful dust deposit)	5		protected against water jets from any direction
6		protected against access to hazardous parts with a wire dust-tight (total protection against dust)	6		protected against powerful water jets from any direction (similar to sea waves)
			7		protected against the effects of temporary immersion in water at a maximum depth of 1 meter for 30 min
			8		protected against the effects of continuous immersion in water at depth and/or duration upon agreement, more severe than for numeral 7
			9		protected against high pressure and temperature water jets from any direction

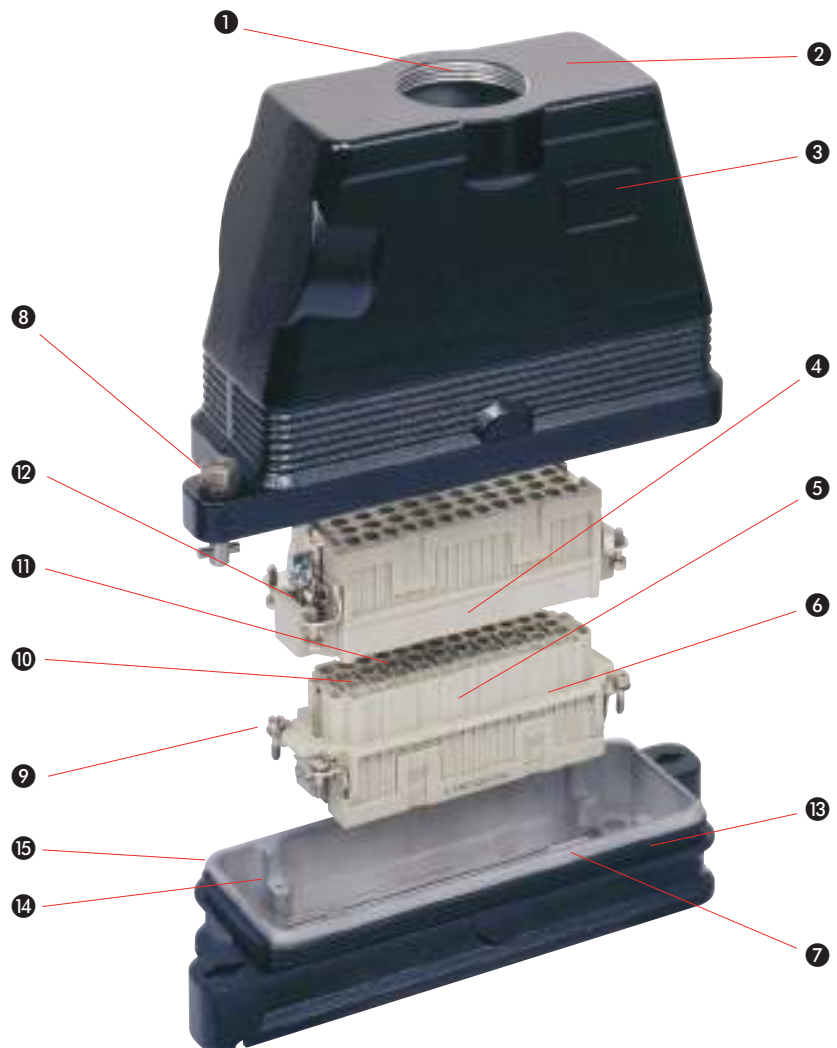
IP68

Features of multipole connectors for industrial use in CG/MG enclosures

CG/MG series (“44.27”, “57.27”, “77.27”, “104.27”).

- 1 Threaded cable entry hole, available in different Pg diameters (types with prefix starting with “C”) or metric pitch (types with prefix starting with “M”) compliant with EN 60423 standard, for cable entry devices compliant with EN 50262 standard, for vertical or horizontal layout.
- 2 Sturdy, corrosion proof foundry grade aluminium alloy enclosures, with chromate treated die cast. The following types are available: wall mounted, flush mounted fixed and portable enclosures with portable protective cover.
- 3 Oven painted with epoxy polyester powder in black RAL 9005, which gives the enclosures a high mechanical strength and makes them resistant to external agents.
- 4 The inserts are made of UL certified self-extinguishing fibreglass reinforced thermoplastics, and feature an operating temperature range between -40 °C and +125 °C.
- 5 Insert profile polarised with asymmetrical guides to avoid incorrect matings. The inserts have a mechanical life equal to or higher than 500 mating cycles.
- 6 Inserts are manufactured in compliance with European standard EN 61984 (DIN VDE 0627), certified and identified with UL and CSA markings.
- 7 Special NBR elastomere, anti-ageing, oil and fuel resistant seals which, together with the cable entry devices (not supplied) ensure mated connectors IP68 protection rating. The seals are internally positioned to give a better protection from sunlight and outside elements.
- 8 Fixings are available in two solutions: with hexagonal head stainless steel screws or bayonet type. The slotted hexagonal head screws can be fitted and removed by using either a 1,5 mm thick blade screwdriver or a 10 mm hexagonal key, and can be easily accessed even when fitted on enclosures with horizontally exited cables. Tightening torque 2,5 Nm.
- 9 Captive insert fastening screws, with anti-slackening spring washer.
- 10 Contact position identified with numbers or codes on both sides of each insert and printed with a laser system or from a die.

- 11 Silver or gold plated brass contacts connected to the wires by means of captive screws supplied already slackened, with spring terminal, by means of crimping (contacts available separately), or with a built-in 45° terminal block (still with screw or spring terminal).
- 12 Protective earth terminal with a wide contact surface.
- 13 Fixed, flush mounted enclosure with fastening screws inside the gasket.
- 14 Wider enclosures to give more space for the cabling.
- 15 They ensure a good screening for electromagnetic compatibility, resistance to vibrations in compliance with EN 61373 standard and to pressurised water.





inserts:	page:
CK 3 poles + ⊕	48
CK 4 poles + ⊕	48
CKS 3 poles + ⊕	49
CKS 4 poles + ⊕	49
CD * 8 poles	54
CQ 12 poles + ⊕	165
CQ 5 poles + ⊕	166
CJ KF.....	503
(can be used only in I enclosures)	
CJK 8	506
CX 1/2 BD.....	512
CLK SC	509

* to ensure IP68 protection rating with CD 08 insert, purchase the kit CKR 65 D. In this case do not use the screw supplied with the enclosure.

insert dimensions:
21 x 21 mm

bulkhead mounting housing

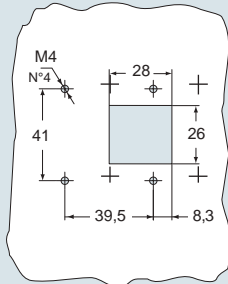


angled bulkhead mounting housings

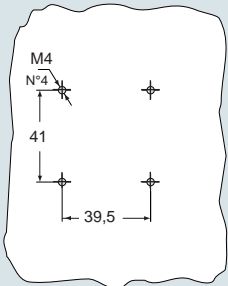


description	part No.	part No.	entry Pg	part No.	entry M
bulkhead mounting housing	CGK I				
without cable entry (on request)		CGK IA			
with cable entry		CGK IAP13	13.5	MGK IAP20	20

panel cut-out for CGK IA enclosures, in mm

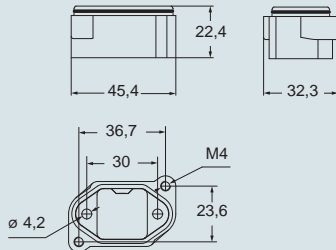


panel cut-out for CGK/MGK IAP enclosures, in mm

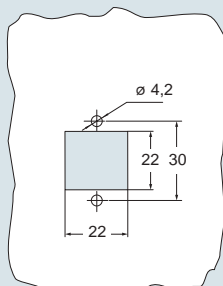


dimensions in mm

CGK I

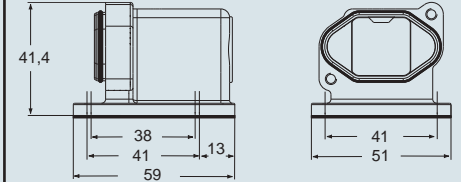


panel cut-out for CGK I enclosures, in mm

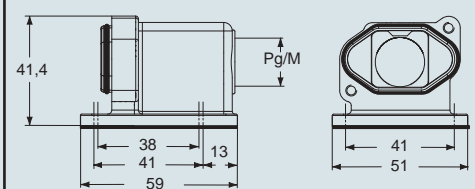


dimensions in mm

CGK IA



CGK IAP and MGK IAP



dust protection cover



CGKCP FX from page 497

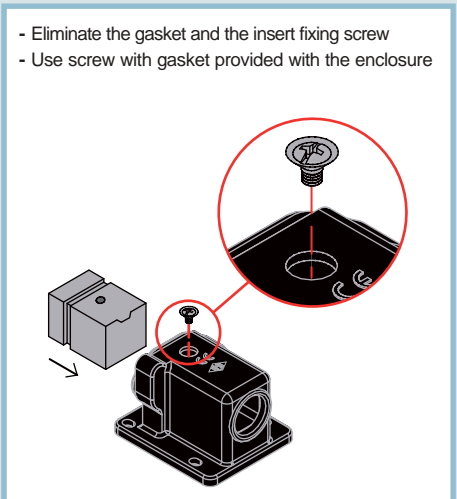


Type 12
Type 4/4X



IP69K (compliant with DIN 40050-9)

dimensions shown are not binding and may be changed without notice



- Eliminate the gasket and the insert fixing screw
- Use screw with gasket provided with the enclosure

High protection IP68 version



inserts:	page:
CK 3 poles + ⊕	48
CK 4 poles + ⊕	48
CKS 3 poles + ⊕	49
CKS 4 poles + ⊕	49
CD * 8 poles	54
CQ 12 poles + ⊕	165
CQ 5 poles + ⊕	166
CJ KM.....	503
(can be used only in hoods)	
CJK 8	506
CX 1/2 BD.....	512
CLK SC	509

* to ensure IP68 protection rating with CD 08 insert, purchase the kit CKR 65 D. In this case do not use the screw supplied with the enclosure.

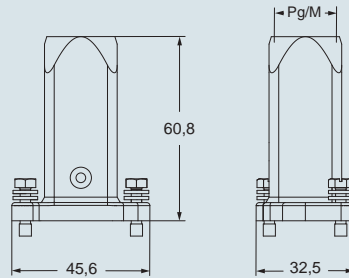
insert dimensions:
21 x 21 mm



description	part No.	entry	part No.	entry
		Pg		M
top entry	CGK V13	13.5	MGK V20	20

dimensions in mm

CGK V and MGK V



CAVUS® Type 12
Type 4/4X



IP69K (compliant with DIN 40050-9)

dimensions shown are not binding
and may be changed without notice



inserts:	page:
CK 3 poles + ⊕	48
CK 4 poles + ⊕	48
CKS 3 poles + ⊕	49
CKS 4 poles + ⊕	49
CD * 8 poles	54
CQ 12 poles + ⊕	165
CQ 5 poles + ⊕	166
CJ KF.....	503
(can be used only in I/IAP enclosures)	
CJ KM.....	503
(can be used only in hoods)	
CJK 8	506
CX 1/2 BD.....	512
CLK SC	509

* to ensure IP68 protection rating with CD 08 insert, purchase the kit CKR 65 D. In this case do not use the screw supplied with the enclosure.

insert dimensions: 21 x 21 mm

bulkhead mounting housing



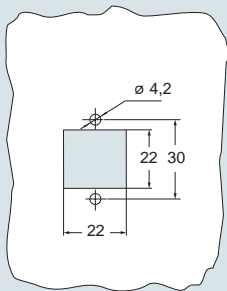
hoods



description	part No.	part No.	entry Pg	part No.	entry M
bulkhead mounting housing	CGK I B				
top entry		CGK V13 B	13,5	MGK V20 B	20

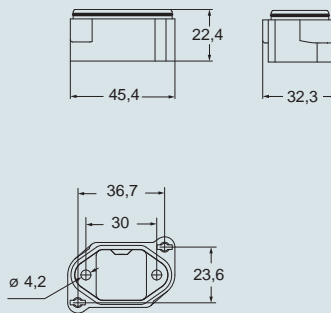
- Eliminate the gasket and the insert fixing screw
- Use screw with gasket provided with the enclosure

panel cut-out for CGK I B enclosures, in mm



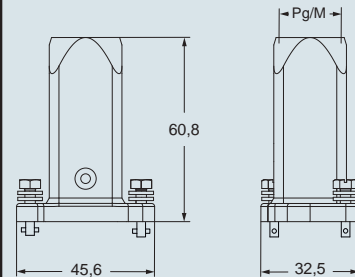
dimensions in mm

CGK I B



dimensions in mm

CGK V B and MGK V B



dust protection cover



CGKCP FX from page 497

dust protection cover



CGKCP MB from page 497

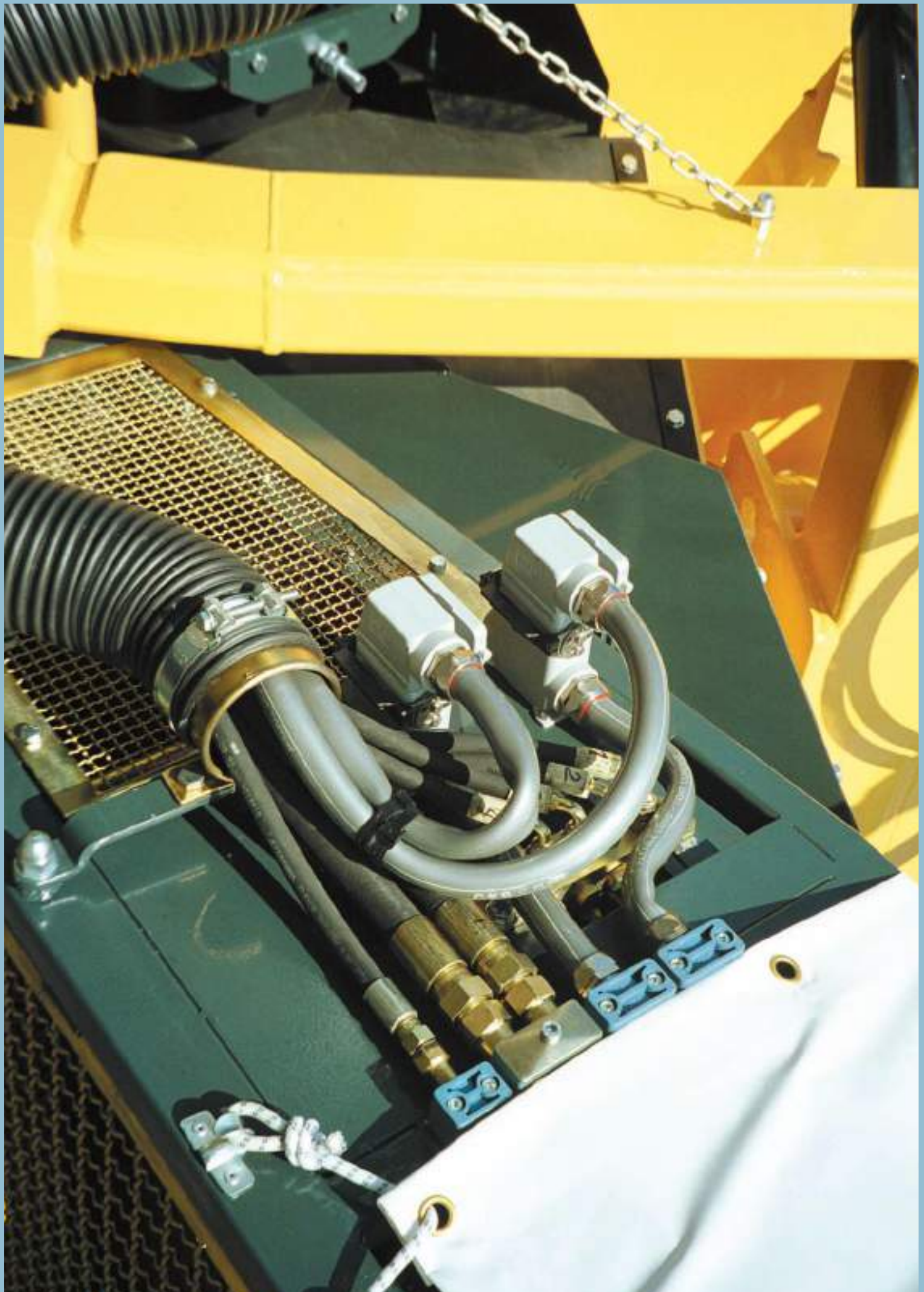
CAIUS® Type 12
Type 4/4X



IP69K (compliant with DIN 40050-9)

dimensions shown are not binding and may be changed without notice

High protection IP68 version





inserts:	page:
CDD 24 poles + ⊕	67
CDS 9 poles + ⊕	78
CSH 6 poles + ⊕	91
CNE, CSE 6 poles + ⊕	104
CCE 6 poles + ⊕	110
CSS 6 poles + ⊕	122
CQE 10 poles + ⊕	138
MIXO 2 modules	179 - 215

insert centre distance:
44 x 27 mm

bulkhead mounting housings

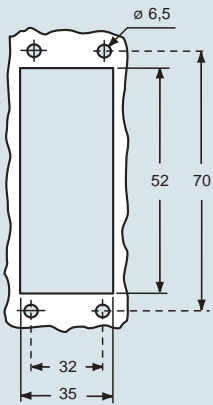


surface mounting housings



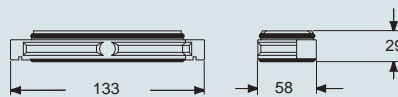
description	part No.	part No.	entry Pg	part No.	entry M
size "44.27"	CGI 06				
size "44.27"		CGP 06.29	29	MGP 06.32	32

panel cut-out for bulkhead mounting housings in mm



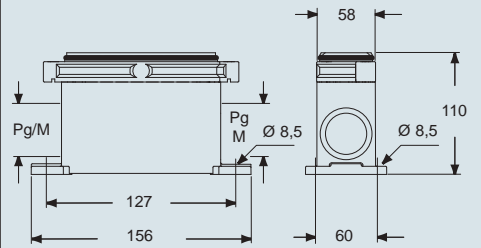
dimensions in mm

CGI



dimensions in mm

CGP and MGP



dust protection cover



CGCP FX from page 497

CAUS® Type 4/4X/12



IP69K (compliant with DIN 40050-9)

and may be changed without notice

High protection IP68 version



inserts:	page:
CDD 24 poles + ⊕	67
CDS 9 poles + ⊕	78
CSH 6 poles + ⊕	91
CNE, CSE 6 poles + ⊕	104
CCE 6 poles + ⊕	110
CSS 6 poles + ⊕	122
CQE 10 poles + ⊕	138
MIXO 2 modules	179 - 215

insert centre distance:
44 x 27 mm

hoods



covers

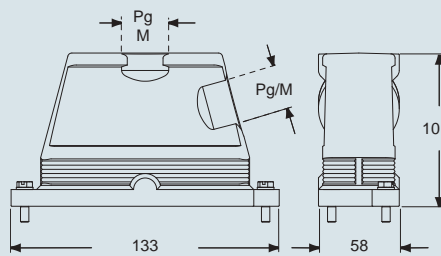


description	part No.	entry Pg	part No.	entry M	part No.
with side entry					
size "44.27"	CGO 06.16	16	MGO 06.25	25	
size "44.27"	CGO 06.21	21	MGO 06.32	32	
size "44.27"	CGO 06.29	29			
with top entry					
size "44.27"	CGV 06.16	16	MGV 06.25	25	
size "44.27"	CGV 06.21	21	MGV 06.32	32	
size "44.27"	CGV 06.29	29	MGV 06.40	40	
size "44.27"					CGC 06



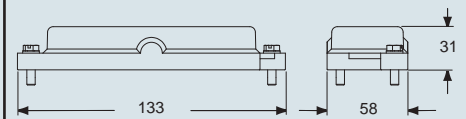
dimensions in mm

CGO/MGO and CGV/MGV



dimensions in mm

CGC



CAUS® Type 4/4X/12



IP69K (compliant with DIN 40050-9)

dimensions shown are not binding and may be changed without notice

High protection IP68 version



inserts:	page:
CDD 24 poles + ⊕	67
CDS 9 poles + ⊕	78
CSH 6 poles + ⊕	91
CNE, CSE 6 poles + ⊕	104
CCE 6 poles + ⊕	110
CSS 6 poles + ⊕	122
CQE 10 poles + ⊕	138
MIXO 2 modules	179 - 215

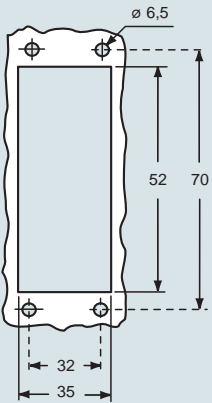
insert centre distance:
44 x 27 mm

bulkhead mounting housings



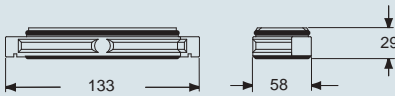
description	part No.
size "44.27"	CGI 06 B

panel cut-out for bulkhead mounting housings in mm



dimensions in mm

CGI B



dust protection cover



CGCP FX from page 497

CAUS® Type 4/4X/12



IP69K (compliant with DIN 40050-9)

dimensions shown are not binding
and may be changed without notice

High protection IP68 version



inserts:	page:
CDD 24 poles + ⊕	67
CDS 9 poles + ⊕	78
CSH 6 poles + ⊕	91
CNE, CSE 6 poles + ⊕	104
CCE 6 poles + ⊕	110
CSS 6 poles + ⊕	122
CQE 10 poles + ⊕	138
MIXO 2 modules	179 - 215

insert centre distance:
44 x 27 mm

hoods



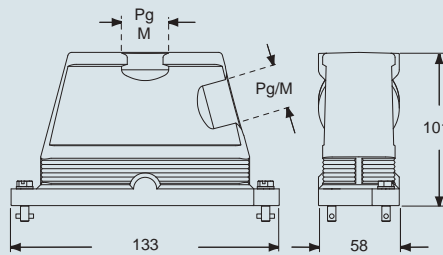
covers



description	part No.	entry Pg	part No.	entry M	part No.
with side entry					
size "44.27"	CGO 06.16 B	16	MGO 06.25 B	25	
size "44.27"	CGO 06.21 B	21	MGO 06.32 B	32	
size "44.27"	CGO 06.29 B	29			
with top entry					
size "44.27"	CGV 06.16 B	16	MGV 06.25 B	25	
size "44.27"	CGV 06.21 B	21	MGV 06.32 B	32	
size "44.27"	CGV 06.29 B	29	MGV 06.40 B	40	
size "44.27"					CGC 06 B

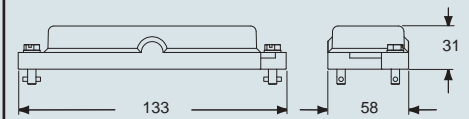
dimensions in mm

CGO/MGO B and CGV/MGV B



dimensions in mm

CGC B



CAUS Type 4/4X/12



IP69K (compliant with DIN 40050-9)

dimensions shown are not binding and may be changed without notice

High protection IP68 version



inserts:	page:
CDD 42 poles + ⊕	69
CDS 18 poles + ⊕	79
CSH 10 poles + ⊕	92
CNE, CSE 10 poles + ⊕	105
CCE 10 poles + ⊕	111
CSS 10 poles + ⊕	123
CQE 18 poles + ⊕	139
CMCE 3+2 (aux) poles + ⊕	148
CMSH 3+2 (aux) poles + ⊕	149
CX 8/24 poles + ⊕	169
MIXO 3 modules	179 - 215

insert centre distance:
57 x 27 mm

bulkhead mounting housings

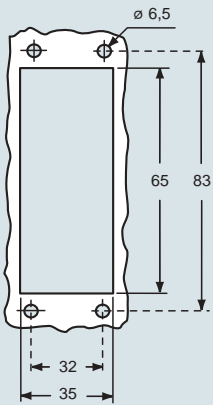


surface mounting housings



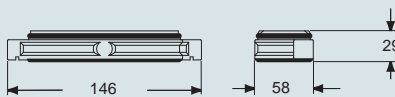
description	part No.	part No.	entry Pg	part No.	entry M
size "57.27"	CGI 10				
size "57.27"		CGP 10.29	29	MGP 10.32	32

panel cut-out for bulkhead mounting housings in mm



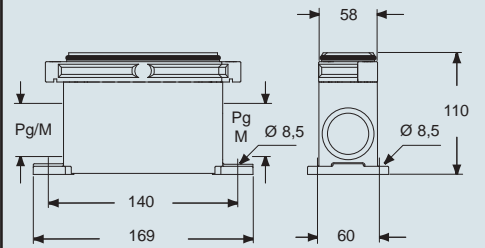
dimensions in mm

CGI



dimensions in mm

CGP and MGP



dust protection cover



CGCP FX from page 497

CALUS Type 4/4X/12



IP69K (compliant with DIN 40050-9)

and may be changed without notice

High protection IP68 version

inserts:	page:
CDD 42 poles + ⊕	69
CDS 18 poles + ⊕	79
CSH 10 poles + ⊕	92
CNE, CSE 10 poles + ⊕	105
CCE 10 poles + ⊕	111
CSS 10 poles + ⊕	123
CQE 18 poles + ⊕	139
CMCE 3+2 (aux) poles + ⊕	148
CMSH 3+2 (aux) poles + ⊕	149
CX 8/24 poles + ⊕	169
MIXO 3 modules	179 - 215

insert centre distance:
57 x 27 mm

hoods



covers

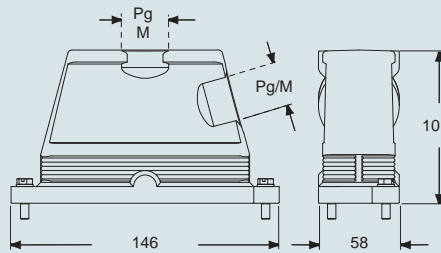


description	part No.	entry Pg	part No.	entry M	part No.
with side entry					
size "57.27"	CGO 10.16	16	MGO 10.25	25	
size "57.27"	CGO 10.21	21	MGO 10.32	32	
size "57.27"	CGO 10.29	29			
with top entry					
size "57.27"	CGV 10.16	16	MGV 10.25	25	
size "57.27"	CGV 10.21	21	MGV 10.32	32	
size "57.27"	CGV 10.29	29	MGV 10.40	40	
size "57.27"					CGC 10



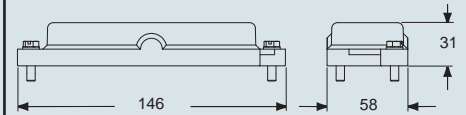
dimensions in mm

CGO/MGO and CGV/MGV



dimensions in mm

CGC



ILME® Type
4/4X/12



IP69K (compliant with DIN 40050-9)

dimensions shown are not binding
and may be changed without notice



inserts:	page:
CDD 42 poles + ⊕	69
CDS 18 poles + ⊕	79
CSH 10 poles + ⊕	92
CNE, CSE 10 poles + ⊕	105
CCE 10 poles + ⊕	111
CSS 10 poles + ⊕	123
CQE 18 poles + ⊕	139
CMCE 3+2 (aux) poles + ⊕	148
CMSH 3+2 (aux) poles + ⊕	149
CX 8/24 poles + ⊕	169
MIXO 3 modules	179 - 215

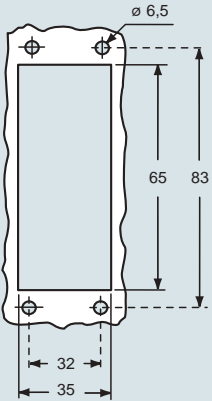
insert centre distance:
57 x 27 mm

bulkhead mounting housings



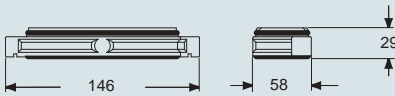
description	part No.
size "57.27"	CGI 10 B

panel cut-out for bulkhead mounting housings in mm



dimensions in mm

CGI B



dust protection cover



CGCP FX from page 497

CAUS® Type 4/4X/12



IP69K (compliant with DIN 40050-9)

dimensions shown are not binding
and may be changed without notice

High protection IP68 version



inserts:	page:
CDD 42 poles + ⊕	69
CDS 18 poles + ⊕	79
CSH 10 poles + ⊕	92
CNE, CSE 10 poles + ⊕	105
CCE 10 poles + ⊕	111
CSS 10 poles + ⊕	123
CQE 18 poles + ⊕	139
CMCE 3+2 (aux) poles + ⊕	148
CMSH 3+2 (aux) poles + ⊕	149
CX 8/24 poles + ⊕	169
MIXO 3 modules	179 - 215

insert centre distance:
57 x 27 mm

hoods



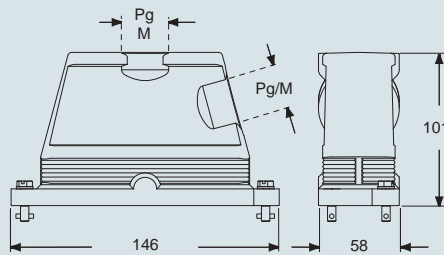
covers



description	part No.	entry Pg	part No.	entry M	part No.
with side entry					
size "57.27"	CGO 10.16 B	16	MGO 10.25 B	25	
size "57.27"	CGO 10.21 B	21	MGO 10.32 B	32	
size "57.27"	CGO 10.29 B	29			
with top entry					
size "57.27"	CGV 10.16 B	16	MGV 10.25 B	25	
size "57.27"	CGV 10.21 B	21	MGV 10.32 B	32	
size "57.27"	CGV 10.29 B	29	MGV 10.40 B	40	
size "57.27"					CGC 10 B

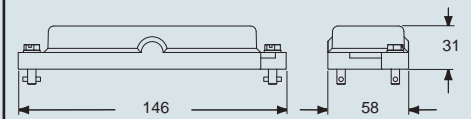
dimensions in mm

CGO/MGO B and CGV/MGV B



dimensions in mm

CGC B



CRUS Type 4/4X/12



IP69K (compliant with DIN 40050-9)

dimensions shown are not binding and may be changed without notice

High protection IP68 version



inserts:	page:
CD 40 poles + ⊕	57
CDD 72 poles + ⊕	70
CDS 27 poles + ⊕	80
CSH 16 poles + ⊕	93
CNE, CSE 16 poles + ⊕	106
CCE 16 poles + ⊕	112
CSS 16 poles + ⊕	124
CQE 32 poles + ⊕	140
CQEE 40 poles + ⊕	146
CMCE 6+2 (aux) poles + ⊕	150
CMSH 6+2 (aux) poles + ⊕	151
CP 6 poles + ⊕	162
CX 6/36 and 12/2 poles + ⊕	170-171
CX 4/0 and 4/2 poles + ⊕	172
MIXO 4 modules	179-215

insert centre distance:
77,5 x 27 mm

bulkhead mounting housings

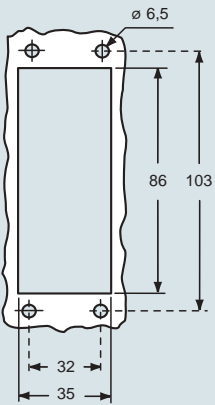


surface mounting housings



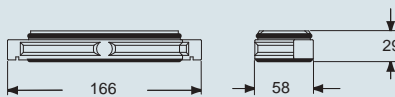
description	part No.	part No.	entry Pg	part No.	entry M
size "77.27"	CGI 16				
size "77.27"		CGP 16.36	36	MGP 16.40	40

panel cut-out for bulkhead mounting housings in mm



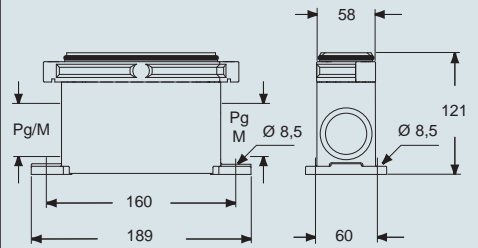
dimensions in mm

CGI



dimensions in mm

CGP and MGP



dust protection cover



CGCP FX from page 497

CAUS Type 4/4X/12



IP69K (compliant with DIN 40050-9)

and may be changed without notice

High protection IP68 version



inserts:	page:
CD 40 poles + ⊕	57
CDD 72 poles + ⊕	70
CDS 27 poles + ⊕	80
CSH 16 poles + ⊕	93
CNE, CSE 16 poles + ⊕	106
CCE 16 poles + ⊕	112
CSS 16 poles + ⊕	124
CQE 32 poles + ⊕	140
CQEE 40 poles + ⊕	146
CMCE 6+2 (aux) poles + ⊕	150
CMSH 6+2 (aux) poles + ⊕	151
CP 6 poles + ⊕	162
CX 6/36 and 12/2 poles + ⊕	170-171
CX 4/0 and 4/2 poles + ⊕	172
MIXO 4 modules	179-215

insert centre distance:
77,5 x 27 mm

hoods



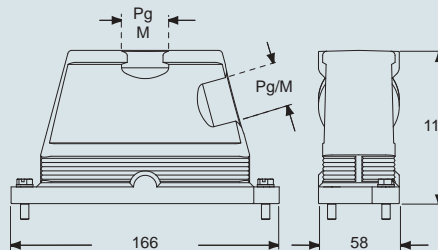
covers



description	part No.	entry Pg	part No.	entry M	part No.
with side entry					
size "77.27"	CGO 16.21	21	MGO 16.32	32	
size "77.27"	CGO 16.29	29	MGO 16.40	40	
size "77.27"	CGO 16.36	36	MGO 16.50	50	
with top entry					
size "77.27"			MGV 16.25	25	
size "77.27"			MGV 16.225	25x2	
size "77.27"	CGV 16.21	21	MGV 16.32	32	
size "77.27"	CGV 16.221	21x2			
size "77.27"	CGV 16.29	29	MGV 16.40	40	
size "77.27"	CGV 16.36	36	MGV 16.50	50	
size "77.27"					CGC 16

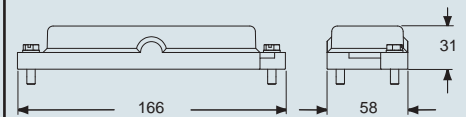
dimensions in mm

CGO/MGO and CGV/MGV



dimensions in mm

CGC



CAUS® Type 4/4X/12



IP69K (compliant with DIN 40050-9)

dimensions shown are not binding and may be changed without notice

High protection IP68 version



inserts:	page:
CD 40 poles + ⊕	57
CDD 72 poles + ⊕	70
CDS 27 poles + ⊕	80
CSH 16 poles + ⊕	93
CNE, CSE 16 poles + ⊕	106
CCE 16 poles + ⊕	112
CSS 16 poles + ⊕	124
CQE 32 poles + ⊕	140
CQEE 40 poles + ⊕	146
CMCE 6+2 (aux) poles + ⊕	150
CMSH 6+2 (aux) poles + ⊕	151
CP 6 poles + ⊕	162
CX 6/36 and 12/2 poles + ⊕	170-171
CX 4/0 and 4/2 poles + ⊕	172
MIXO 4 modules	179-215

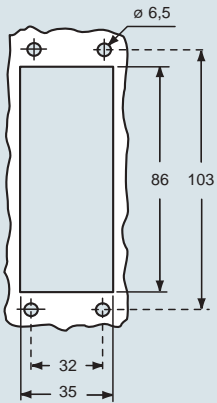
insert centre distance:
77,5 x 27 mm

bulkhead mounting housings



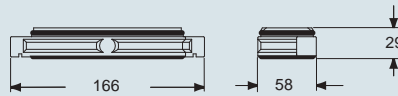
description	part No.
size "77.27"	CGI 16 B

panel cut-out for bulkhead mounting housings in mm



dimensions in mm

CGI B



dust protection cover



CGCP FX from page 497

CAUS® Type 4/4X/12



IP69K (compliant with DIN 40050-9)

dimensions shown are not binding and may be changed without notice

High protection IP68 version



inserts:	page:
CD 40 poles + ⊕	57
CDD 72 poles + ⊕	70
CDS 27 poles + ⊕	80
CSH 16 poles + ⊕	93
CNE, CSE 16 poles + ⊕	106
CCE 16 poles + ⊕	112
CSS 16 poles + ⊕	124
CQE 32 poles + ⊕	140
CQEE 40 poles + ⊕	146
CMCE 6+2 (aux) poles + ⊕	150
CMSH 6+2 (aux) poles + ⊕	151
CP 6 poles + ⊕	162
CX 6/36 and 12/2 poles + ⊕	170-171
CX 4/0 and 4/2 poles + ⊕	172
MIXO 4 modules	179-215

insert centre distance:
77,5 x 27 mm

hoods



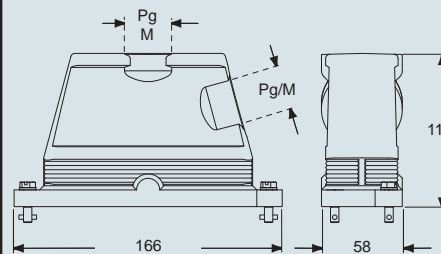
covers



description	part No.	entry Pg	part No.	entry M	part No.
with side entry					
size "77.27"	CGO 16.21 B	21	MGO 16.32 B	32	
size "77.27"	CGO 16.29 B	29	MGO 16.40 B	40	
size "77.27"	CGO 16.36 B	36	MGO 16.50 B	50	
with top entry					
size "77.27"			MGV 16.25 B	25	
size "77.27"			MGV 16.225 B	25x2	
size "77.27"	CGV 16.21 B	21	MGV 16.32 B	32	
size "77.27"	CGV 16.221 B	21x2			
size "77.27"	CGV 16.29 B	29	MGV 16.40 B	40	
size "77.27"	CGV 16.36 B	36	MGV 16.50 B	50	
size "77.27"					CGC 16 B

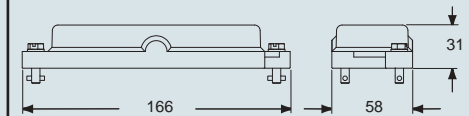
dimensions in mm

CGO/MGO B and CGV/MGV B



dimensions in mm

CGC B



CALUS Type 4/4X/12



IP69K (compliant with DIN 40050-9)

dimensions shown are not binding and may be changed without notice

High protection IP68 version



inserts:	page:
CD 64 poles + ⊕	59
CDD 108 poles + ⊕	72
CDS 42 poles + ⊕	81
CSH 24 poles + ⊕	94
CNE, CSE 24 poles + ⊕	107
CCE 24 poles + ⊕	113
CSS 24 poles + ⊕	125
CQE 46 poles + ⊕	141
CQEE 64 poles + ⊕	147
CMCE 10+2 (aux) poles + ⊕	152
CMSH 10+2 (aux) poles + ⊕	153
CX 4/8 and 6/6 poles + ⊕	173 and 175
MIXO 6 modules	179-215

insert centre distance:
104 x 27 mm

bulkhead mounting housings



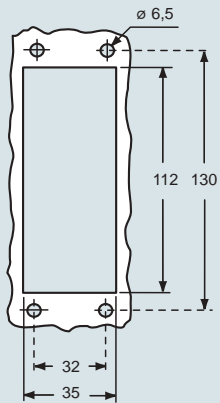
surface mounting housings



description	part No.
size "104.27"	CGI 24
size "104.27"	
size "104.27"	

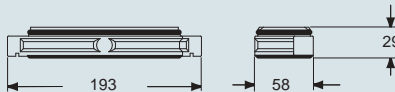
part No.	entry Pg	part No.	entry M
CGP 24.36	36	MGP 24.40	40
CGP 24.236	36 x 2	MGP 24.240	40 x 2

panel cut-out for bulkhead mounting housings in mm



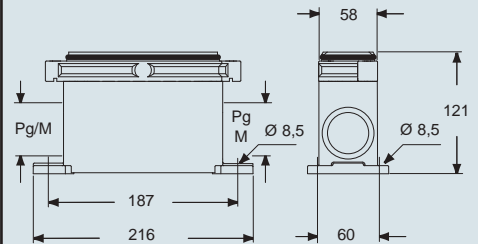
dimensions in mm

CGI



dimensions in mm

CGP and MGP



dust protection cover



CGCP FX from page 497

CAUS® Type 4/4X/12



IP69K (compliant with DIN 40050-9)

and may be changed without notice

High protection IP68 version



inserts:	page:
CD 64 poles + ⊕	59
CDD 108 poles + ⊕	72
CDS 42 poles + ⊕	81
CSH 24 poles + ⊕	94
CNE, CSE 24 poles + ⊕	107
CCE 24 poles + ⊕	113
CSS 24 poles + ⊕	125
CQE 46 poles + ⊕	141
CQEE 64 poles + ⊕	147
CMCE 10+2 (aux) poles + ⊕	152
CMSH 10+2 (aux) poles + ⊕	153
CX 4/8 and 6/6 poles + ⊕	173 and 175
MIXO 6 modules	179-215

hoods



covers

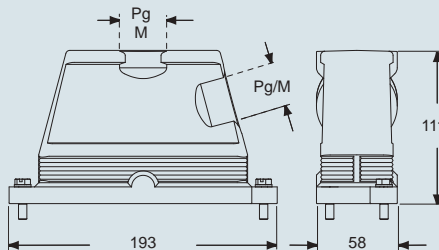


insert centre distance:
104 x 27 mm

description	part No.	entry Pg	part No.	entry M	part No.
with side entry size "104.27"	CGO 24.21	21	MGO 24.32	32	
	CGO 24.29	29	MGO 24.40	40	
	CGO 24.36	36	MGO 24.50	50	
with top entry size "104.27"	CGV 24.21	21	MGV 24.325	25x3	
			MGV 24.32	32	
			MGV 24.232	32x2	
			MGV 24.40	40	
			MGV 24.240	40x2	
size "104.27"			CGC 24		

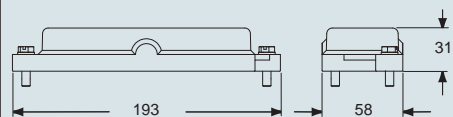
dimensions in mm

CGO/MGO and CGV/MGV



dimensions in mm

CGC



CALUS® Type 4/4X/12



IP69K (compliant with DIN 40050-9)

dimensions shown are not binding and may be changed without notice

High protection IP68 version



inserts:	page:
CD 64 poles + ⊕	59
CDD 108 poles + ⊕	72
CDS 42 poles + ⊕	81
CSH 24 poles + ⊕	94
CNE, CSE 24 poles + ⊕	107
CCE 24 poles + ⊕	113
CSS 24 poles + ⊕	125
CQE 46 poles + ⊕	141
CQEE 64 poles + ⊕	147
CMCE 10+2 (aux) poles + ⊕	152
CMSH 10+2 (aux) poles + ⊕	153
CX 4/8 and 6/6 poles + ⊕	173 and 175
MIXO 6 modules	179-215

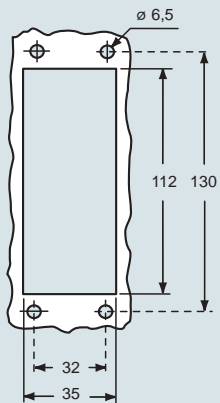
bulkhead mounting housings



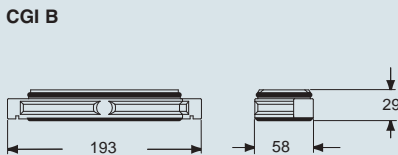
insert centre distance:
104 x 27 mm

description	part No.
size "104.27"	CGI 24 B

panel cut-out for bulkhead mounting housings in mm



dimensions in mm



High protection IP68 version



CAUS® Type 4/4X/12

IP69K (compliant with DIN 40050-9)

dimensions shown are not binding
and may be changed without notice

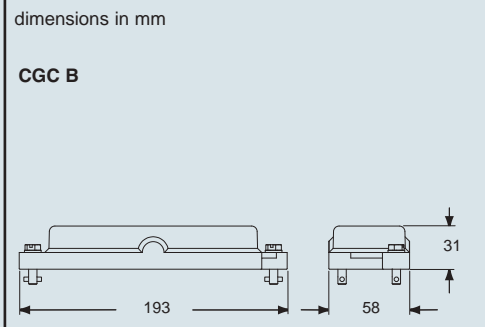
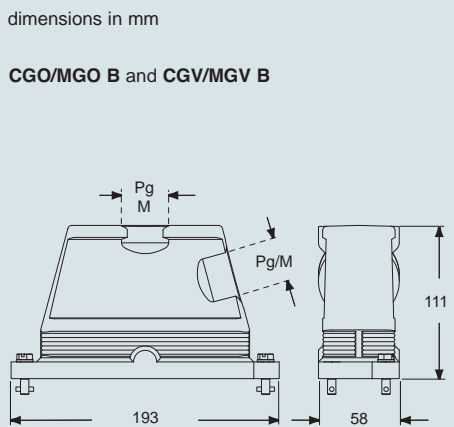


inserts:		page:
CD	64 poles + ⊕	59
CDD	108 poles + ⊕	72
CDS	42 poles + ⊕	81
CSH	24 poles + ⊕	94
CNE, CSE	24 poles + ⊕	107
CCE	24 poles + ⊕	113
CSS	24 poles + ⊕	125
CQE	46 poles + ⊕	141
CQEE	64 poles + ⊕	147
CMCE	10+2 (aux) poles + ⊕	152
CMSH	10+2 (aux) poles + ⊕	153
CX	4/8 and 6/6 poles + ⊕	173 and 175
MIXO	6 modules	179-215

insert centre distance:
104 x 27 mm



description	part No.	entry Pg	part No.	entry M	part No.
with side entry size "104.27"	CGO 24.21 B	21	MGO 24.32 B	32	CGC 24 B
	CGO 24.29 B	29	MGO 24.40 B	40	
	CGO 24.36 B	36	MGO 24.50 B	50	
with top entry size "104.27"	CGV 24.21 B	21	MGV 24.325 B	25x3	CGC 24 B
	CGV 24.29 B	29	MGV 24.32 B	32	
	CGV 24.229 B	29x2	MGV 24.232 B	32x2	
	CGV 24.36 B	36	MGV 24.40 B	40	
			MGV 24.240 B	40x2	
size "104.27"			MGV 24.50 B	50	



CAUS Type 4/4X/12



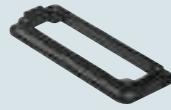
IP69K (compliant with DIN 40050-9)

dimensions shown are not binding and may be changed without notice

High protection IP68 version

bulkhead mounting housings: page:
 size "44.27" 420-423
 size "57.27" 424-427
 size "77.27" 428-431
 size "104.27" 432-434

frames for bulkhead mounting housings



description

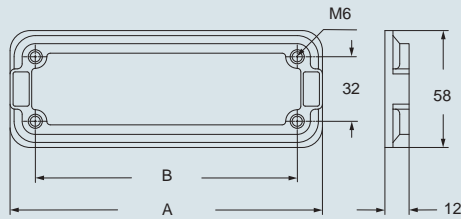
part No.

size "44.27"
 size "57.27"
 size "77.27"
 size "104.27"

CG 06 FL
 CG 10 FL
 CG 16 FL
 CG 24 FL

dimensions in mm

CG FL



part No.	A	B
CG 06 FL	96	70
CG 10 FL	109	83
CG 16 FL	129	103
CG 24 FL	156	130

CRUS® Type 4/4X/12

dimensions shown are not binding and may be changed without notice

High protection IP68 version



inserts: page:
CME 3+2 (aux) poles + ⊕ 149

insert centre distance:
57 x 27 mm

bulkhead mounting housings with 2 levers

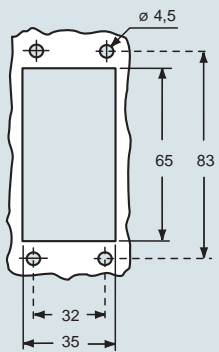


bulkhead mounting housings with single lever



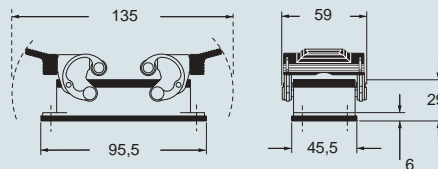
description	part No.	part No.
with one or two levers	CMI 03	CMI 03 L
with lever and cover		CMI 03 LS

panel cut-out for bulkhead mounting housings in mm



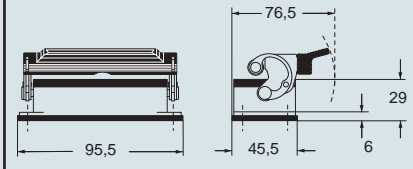
dimensions in mm

CMI

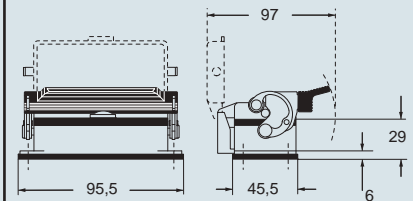


dimensions in mm

CMI L



CMI LS



NB:
 The enclosures ensure IP66 protection (or IP65 for cover versions) rating when mated and locked with the closing levers.

CAUS® Type
 4/4X/12



dimensions shown are not binding
 and may be changed without notice



inserts: page:
CME 3+2 (aux) poles + ⊕ 149

insert centre distance:
57 x 27 mm

surface mounting housings with 2 levers



surface mounting housings with single lever

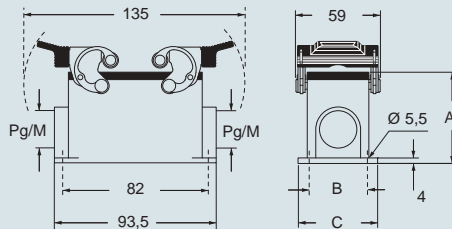


description	part No.	entry Pg	entry M	part No.	entry Pg	entry M		
with levers	CMP 03	16	MMP 03.20	20	CMP 03 L	16	MMP 03 L20	20
with levers	CMP 03.2	16 x 2	MMP 03.220	20 x 2	CMP 03 L2	16 x 2	MMP 03 L220	20 x 2
with levers, high construction			MMAP 03.32	32			MMAP 03 L32	32
with levers, high construction			MMAP 03.232	32 x 2			MMAP 03 L232	32 x 2
with levers, high construction			MMAP 03.40	40			MMAP 03 L40	40
with levers, high construction			MMAP 03.240	40 x 2			MMAP 03 L240	40 x 2
with lever and cover					CMP 03 LS	16	MMP 03 LS20	20
with lever and cover					CMP 03 LS2	16 x 2	MMP 03 LS220	20 x 2
with lever and cover, high construction							MMAP 03 LS32	32
with lever and cover, high construction							MMAP 03LS232	32 x 2
with lever and cover, high construction							MMAP 03 LS40	40
with lever and cover, high construction							MMAP 03LS240	40 x 2

NB:
 The enclosures ensure IP66 protection (or IP65 for cover versions) rating when mated and locked with the closing levers.

dimensions in mm

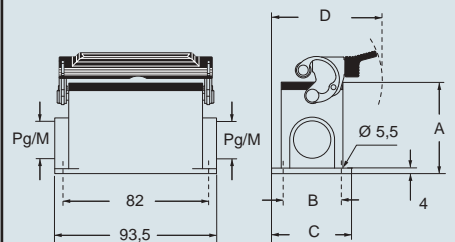
CMP - CMAP and MMP - MMAP



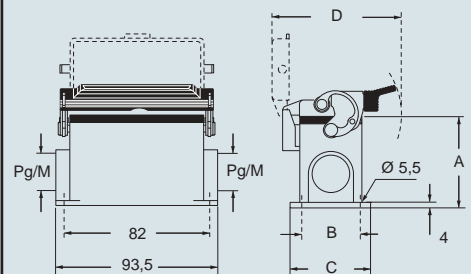
type	A	B	C
CMP / MMP	57	40	52
MMAP	74	45	57

dimensions in mm

CMP L and MMP L - MMAP L



CMP LS and MMP LS - MMAP LS



type	A	B	C	D
CMP L / MMP L	57	40	52	79.5
MMAP L	74	45	57	82
CMP LS / MMP LS	57	40	52	97
MMAP LS	74	45	57	97

CALUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

830V - size 57.27



inserts: page:
CME 3+2 (aux) poles + ⊕ 149

insert centre distance:
57 x 27 mm

hoods with 4 pegs



hoods with 2 pegs

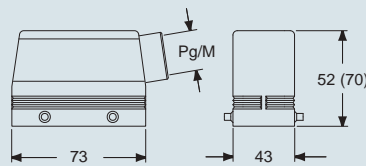


description	hoods with 4 pegs		hoods with 2 pegs	
	part No.	entry Pg	part No.	entry M
with pegs, side entry with pegs, side entry with pegs, side entry, high construction with pegs, side entry, high construction	CMO 03	16	MMO 03.20	20
			MMO 03.25	25
			MMAO 03.32	32
			MMAO 03.40	40
with pegs, top entry with pegs, top entry with pegs, top entry, high construction with pegs, top entry, high construction	CMV 03	16	MMV 03.20	20
			MMV 03.25	25
			MMAV 03.32	32
			MMAV 03.40	40
with pegs, side entry	CMO 03 L	16	MMO 03 L20	20
			MMO 03 L25	25
			MMAO 03 L32	32
			MMAO 03 L40	40
with pegs, top entry	CMV 03 L	16	MMV 03 L20 *	20
			MMV 03 L25	25
			MMAV 03 L32	32
			MMAV 03 L40	40

* can only be used with a complete cable gland (to be purchased separately)

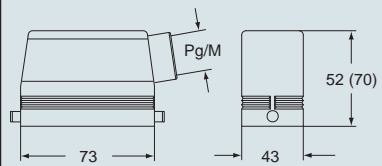
dimensions in mm

CMO and MMO (MMAO)

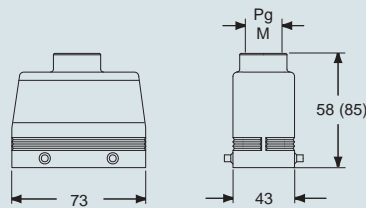


dimensions in mm

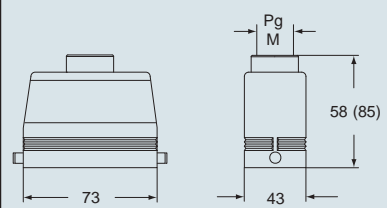
CMO L and MMO L (MMAO L)



CMV and MMV (MMAV)



CMV L and MMV L (MMAV L)



CALUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice



inserts: page:
CME 3+2 (aux) poles + ⊕ 149

insert centre distance:
57 x 27 mm

hoods with 2 levers



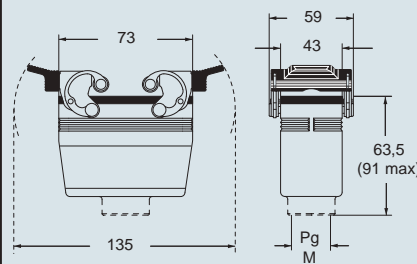
covers



description	part No.		part No.		part No. (with eyelet)		part No. (with loop)	
		entry Pg		entry M		entry		entry
with levers and gasket, top entry	CMV 03 G	16	MMV 03 G25	25				
with levers and gasket, top entry, high construction			MMAV 03 G25	25				
with levers and gasket, top entry, high construction			MMAV 03 G32	32				
with 4 pegs (for enclosures with 2 levers with gasket)					CHC 10			
with 2 pegs (for enclosures with 1 lever with gasket)					CHC 10 L			
with 2 levers (for hoods with 4 pegs)							CHC 10 G	
with 1 lever (for hoods with 2 pegs)							CHC 10 LG	

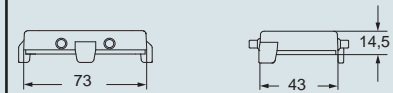
dimensions in mm

CMV G and MMV G (MMAV G)



dimensions in mm

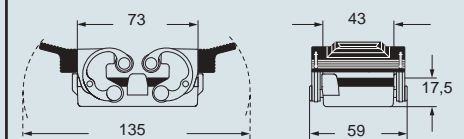
CHC



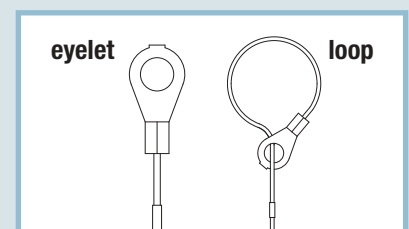
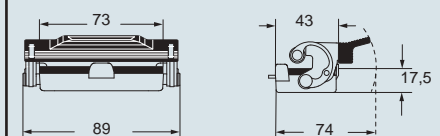
CHC L



CHC G



CHC LG



CALUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

830V - size 57.27



inserts: page:
CME 6+2 (aux) poles + ⊕ 151

insert centre distance:
77,5 x 27 mm

bulkhead mounting housings with 2 levers



bulkhead mounting housings with single lever



description

part No.

part No.

with one or two levers

CMI 06

CMI 06 L

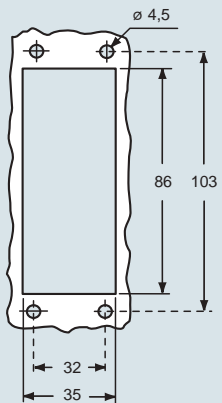
with lever and cover

CMI 06 LS

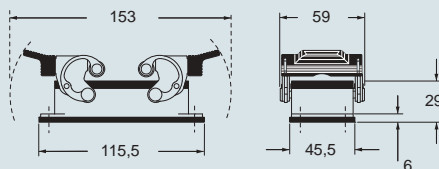
panel cut-out for bulkhead mounting housings in mm

dimensions in mm

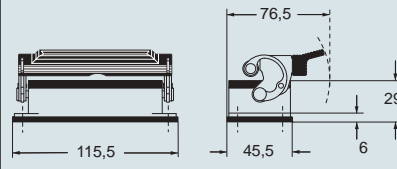
dimensions in mm



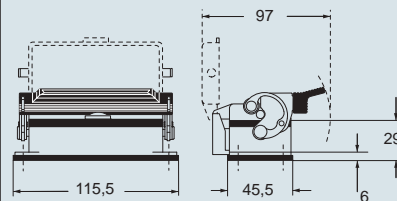
CMI



CMI L



CMI LS



NB:
 The enclosures ensure IP66 protection (or IP65 for cover versions) rating when mated and locked with the closing levers.

CALUS® Type 4/4X/12



dimensions shown are not binding and may be changed without notice



inserts: page:
CME 6+2 (aux) poles + ⊕ 151

insert centre distance:
77,5 x 27 mm

surface mounting housings with 2 levers



surface mounting housings with single lever

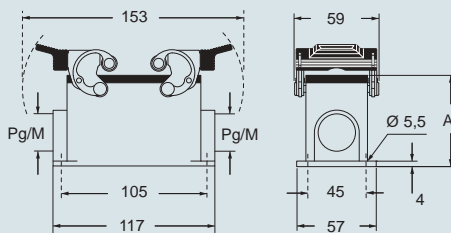


description	part No.		part No.		part No.		part No.	
	entry Pg	entry M	entry Pg	entry M	entry Pg	entry M	entry Pg	entry M
with levers	CMP 06	21	MMP 06.25	25	CMP 06 L	21	MMP 06 L25	25
with levers	CMP 06.2	21 x 2	MMP 06.225	25 x 2	CMP 06 L2	21 x 2	MMP 06 L225	25 x 2
with levers, high construction			MMAP 06.32	32			MMAP 06 L32	32
with levers, high construction			MMAP 06.232	32 x 2			MMAP 06 L232	32 x 2
with levers, high construction			MMAP 06.40	40			MMAP 06 L40	40
with levers, high construction			MMAP 06.240	40 x 2			MMAP 06 L240	40 x 2
with lever and cover					CMP 06 LS	21	MMP 06 LS25	25
with lever and cover					CMP 06 LS2	21 x 2	MMP 06 LS225	25 x 2
with lever and cover, high construction							MMAP 06 LS32	32
with lever and cover, high construction							MMAP 06LS232	32 x 2
with lever and cover, high construction							MMAP 06 LS40	40
with lever and cover, high construction							MMAP 06LS240	40 x 2

NB:
 The enclosures ensure IP66 protection (or IP65 for cover versions) rating when mated and locked with the closing levers.

dimensions in mm

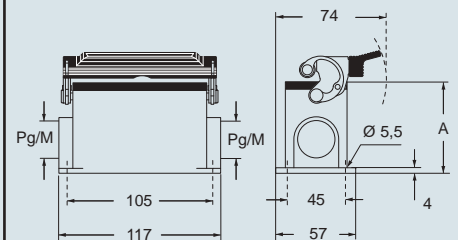
CMP and MMP - MMAP



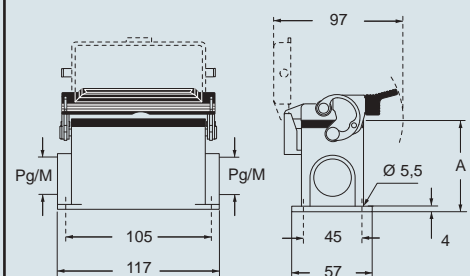
type	A
CMP / MMP	63
MMAP	81

dimensions in mm

CMP L and MMP L - MMAP L



CMP LS and MMP LS - MMAP LS



type	A
CMP L / MMP L	63
MMAP L	81
CMP LS / MMP LS	63
MMAP LS	81

CALUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

830V - size 77.27



inserts: page:
CME 6+2 (aux) poles + ⊕ 151

insert centre distance:
77,5 x 27 mm

hoods with 4 pegs



hoods with 2 pegs

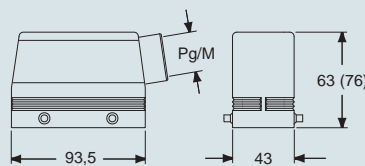


description	hoods with 4 pegs		hoods with 2 pegs	
	part No.	entry Pg	part No.	entry M
with pegs, side entry with pegs, side entry, high construction	CMO 06	21	MMO 06.25	25
			MMO 06.32	32
			MMAO 06.32	32
			MMAO 06.40	40
with pegs, top entry with pegs, top entry, high construction	CMV 06	21	MMV 06.25 *	25
			MMV 06.32	32
			MMAV 06.32	32
			MMAV 06.40	40

* can only be used with a complete cable gland (to be purchased separately)

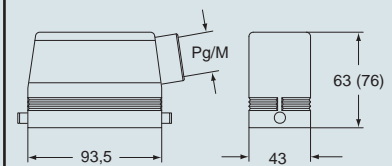
dimensions in mm

CMO and MMO (MMAO)

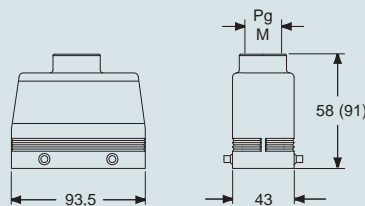


dimensions in mm

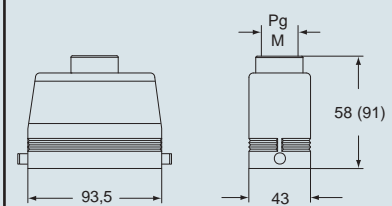
CMO L and MMO L (MMAO L)



CMV and MMV (MMAV)



CMV L and MMV L (MMAV L)



CALUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

830V - size 77.27



inserts: page:
CME 6+2 (aux) poles + ⊕ 151

insert centre distance:
77,5 x 27 mm

hoods with 2 levers



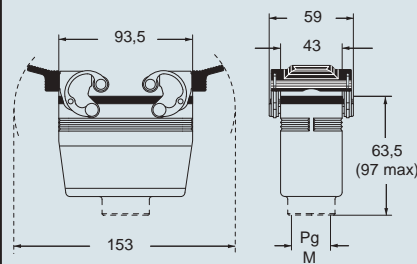
covers



description	part No.		part No.		part No. (with eyelet)		part No. (with loop)	
		entry Pg		entry M		entry		entry
with levers and gasket, top entry	CMV 06 G	21	MMV 06 G32	32				
with levers and gasket, top entry, high construction			MMAV 06 G25	25				
with levers and gasket, top entry, high construction			MMAV 06 G32	32				
with 4 pegs (for enclosures with 2 levers with gasket)					CHC 16			
with 2 pegs (for enclosures with 1 lever with gasket)					CHC 16 L			
with 2 levers (for hoods with 4 pegs)							CHC 16 G	
with 1 lever (for hoods with 2 pegs)							CHC 16 LG	

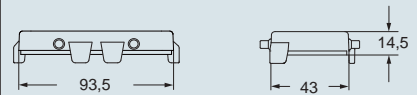
dimensions in mm

CMV G and MMV G (MMAV G)

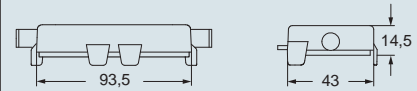


dimensions in mm

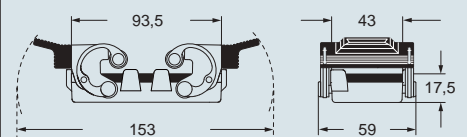
CHC



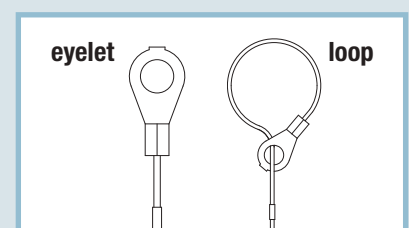
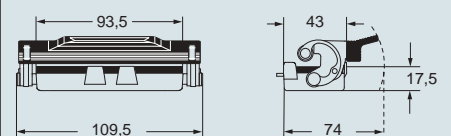
CHC L



CHC G



CHC LG



CALUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

830V - size 77.27



inserts:	page:
CME 10+2 (aux) poles + ⊕	153
CMCE 16+2 (aux) poles + ⊕	158
CME 16+2 (aux) poles + ⊕	159

insert centre distance:
104 x 27 mm

bulkhead mounting housings with 2 levers

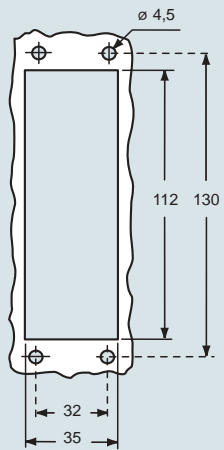


bulkhead mounting housings with single lever

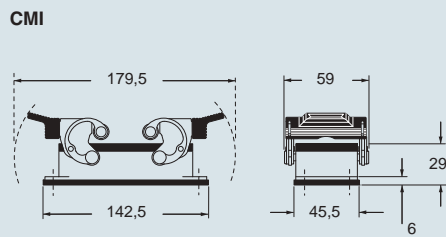


description	part No.	part No.
with one or two levers	CMI 16	CMI 16 L
with lever and cover		CMI 16 LS

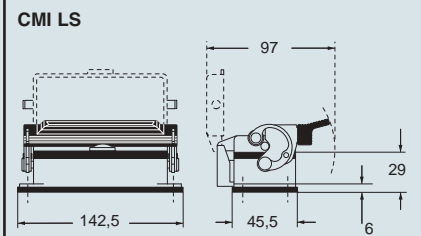
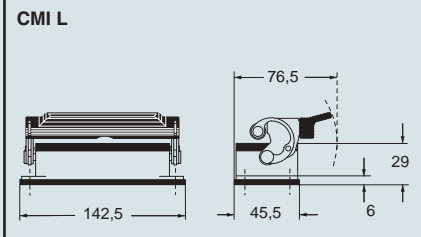
panel cut-out for bulkhead mounting housings in mm



dimensions in mm



dimensions in mm



NB:
The enclosures ensure IP66 protection (or IP65 for cover versions) rating when mated and locked with the closing levers.

CALUS® Type 4/4X/12



dimensions shown are not binding and may be changed without notice

830V - size 104.27



inserts:	page:
CME 10+2 (aux) poles + ⊕	153
CMCE 16+2 (aux) poles + ⊕	158
CME 16+2 (aux) poles + ⊕	159

insert centre distance:
104 x 27 mm

surface mounting housings with 2 levers



surface mounting housings with single lever

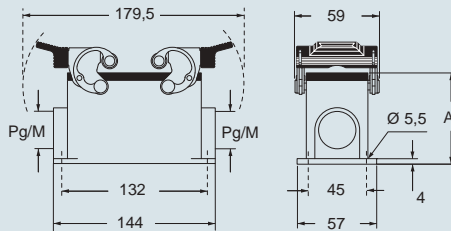


description	part No.		entry Pg		part No.		entry M	
with levers	CMP 16	21	MMP 16.25	25	CMP 16 L	21	MMP 16 L25	25
with levers	CMP 16.2	21 x 2	MMP 16.225	25 x 2	CMP 16 L2	21 x 2	MMP 16 L225	25 x 2
with levers, high construction			MMAP 16.32	32			MMAP 16 L32	32
with levers, high construction			MMAP 16.232	32 x 2			MMAP 16 L232	32 x 2
with levers, high construction			MMAP 16.40	40			MMAP 16 L40	40
with levers, high construction			MMAP 16.240	40 x 2			MMAP 16 L240	40 x 2
with lever and cover					CMP 16 LS	21	MMP 16 LS25	25
with lever and cover					CMP 16 LS2	21 x 2	MMP 16 LS225	25 x 2
with lever and cover, high construction							MMAP 16 LS32	32
with lever and cover, high construction							MMAP 16LS232	32 x 2
with lever and cover, high construction							MMAP 16 LS40	40
with lever and cover, high construction							MMAP 16LS240	40 x 2

NB:
The enclosures ensure IP66 protection (or IP65 for cover versions) rating when mated and locked with the closing levers.
The cover (CS, CP) only ensures mechanical protection, but does not ensure IP65 protection rating.

dimensions in mm

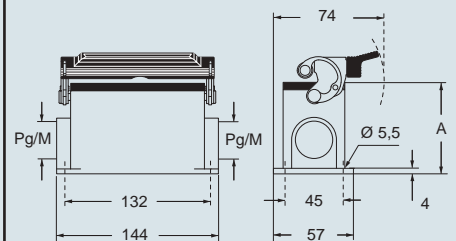
CMP and MMP - MMAP



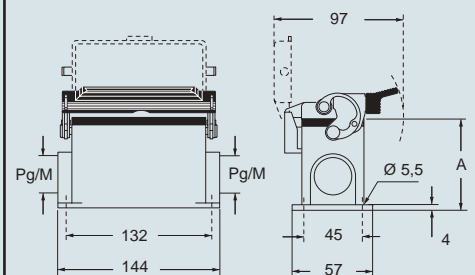
type	A
CMP / MMP	63
MMAP	81

dimensions in mm

CMP L and MMP L - MMAP L



CMP LS and MMP LS - MMAP LS



type	A
CMP L / MMP L	63
MMAP L	81
CMP LS / MMP LS	63
MMAP LS	81

CALUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

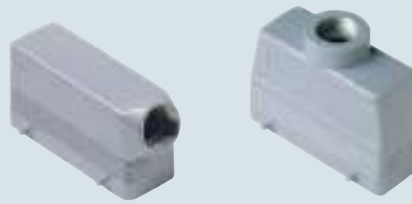
830V - size 104.27



inserts:	page:
CME 10+2 (aux) poles + ⊕	153
CMCE 16+2 (aux) poles + ⊕	158
CME 16+2 (aux) poles + ⊕	159

insert centre distance:
104 x 27 mm

hoods with 4 pegs



hoods with 2 pegs

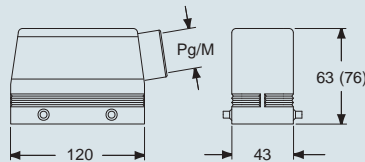


description	hoods with 4 pegs		hoods with 2 pegs		hoods with 4 pegs		hoods with 2 pegs	
	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
with pegs, side entry	CMO 16	21	MMO 16.25	25	CMO 16 L	21	MMO 16 L25	25
with pegs, side entry			MMO 16.32	32			MMO 16 L32	32
with pegs, side entry, high construction			MMAO 16.32	32			MMAO 16 L32	32
with pegs, side entry, high construction			MMAO 16.40	40			MMAO 16 L40	40
with pegs, top entry	CMV 16	21	MMV 16.25 *	25	CMV 16 L	21	MMV 16 L25	25
with pegs, top entry			MMV 16.32	32			MMV 16 L32	32
with pegs, top entry			MMV 16.40	40			MMV 16 L40	40
with pegs, top entry, high construction			MMAV 16.32	32			MMAV 16 L32	32
with pegs, top entry, high construction			MMAV 16.40	40			MMAV 16 L40	40

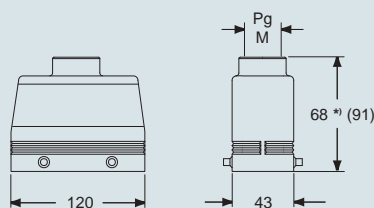
* can only be used with a complete cable gland (to be purchased separately)

dimensions in mm

CMO and MMO (MMAO)



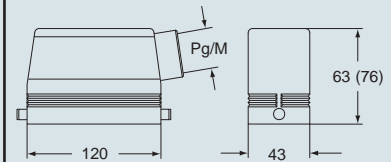
CMV and MMV (MMAV)



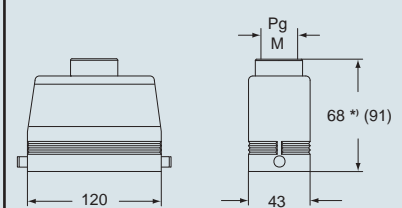
*) 69,5 for Pg 29 - M 40 versions

dimensions in mm

CMO L and MMO L (MMAO L)



CMV L and MMV L (MMAV L)



*) 69,5 for Pg 29 - M 40 versions

CALUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

830V - size 104.27



inserts:	page:
CME 10+2 (aux) poles + ⊕	153
CMCE 16+2 (aux) poles + ⊕	158
CME 16+2 (aux) poles + ⊕	159

insert centre distance:
104 x 27 mm

hoods with 2 levers



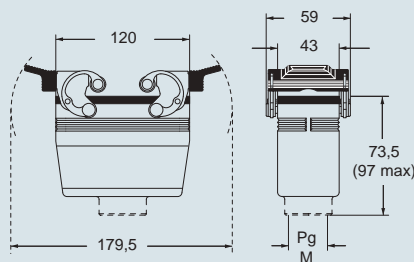
covers



description	part No.		part No.		part No. (with eyelet)		part No. (with loop)	
		entry Pg		entry M		entry		entry
with levers and gasket, top entry	CMV 16 G	21	MMV 16 G32	32				
with levers and gasket, top entry, high construction			MMAV 16 G25	25				
with levers and gasket, top entry, high construction			MMAV 16 G32	32				
with 4 pegs (for enclosures with 2 levers with gasket)					CHC 24			
with 2 pegs (for enclosures with 1 lever with gasket)					CHC 24 L			
with 2 levers (for hoods with 4 pegs)							CHC 24 G	
with 1 lever (for hoods with 2 pegs)							CHC 24 LG	

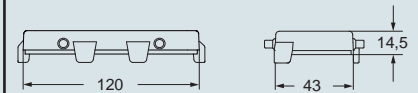
dimensions in mm

CMV G and MMV G (MMAV G)

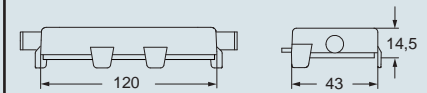


dimensions in mm

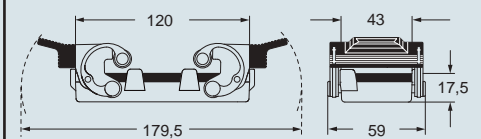
CHC



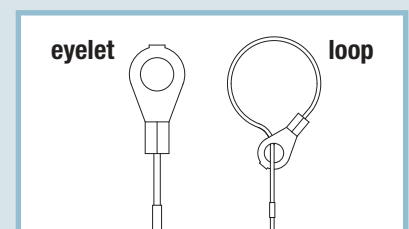
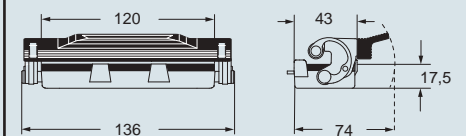
CHC L



CHC G



CHC LG



CALUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

830V - size 104.27

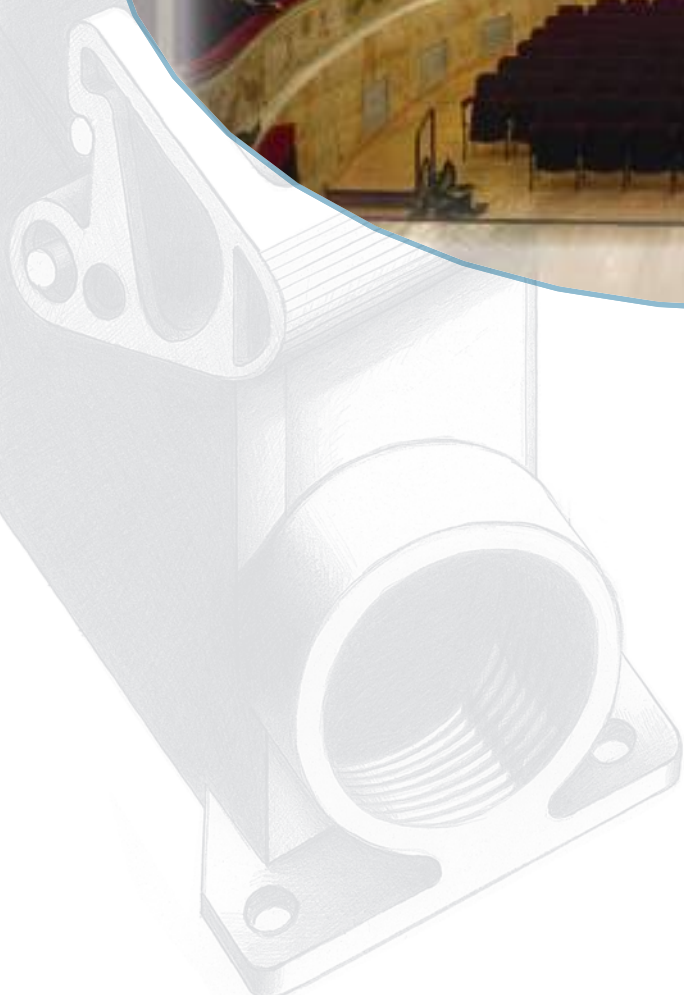
LS-TYPE

NEW

Connections for stage equipment

The **LS-TYPE** enclosures are the ideal solution for the entertainment industry (lighting system power supply and related mixer and dimmer panels), including theatre stages, film sets, radio and TV studios, discos, trade fair booths, concert halls and night public events, both indoors and outdoors, etc.

All parts are in elegant RAL 9005 black to make them suitable for situations and locations where they should not be visible in the dark.





inserts:	page:
CDD 24 poles + ⊕	67
CDS 9 poles + ⊕	78
CSH 6 poles + ⊕	91
CNE, CSE 6 poles + ⊕	104
CCE 6 poles + ⊕	110
CSS 6 poles + ⊕	122
CT, CTSE (16A) *) 6 poles + ⊕	130
CQE 10 poles + ⊕	138
MIXO 2 modules	179 - 215

*) only in the CHIN 06 L enclosure

insert centre distance:
44 x 27 mm

housings with single lever

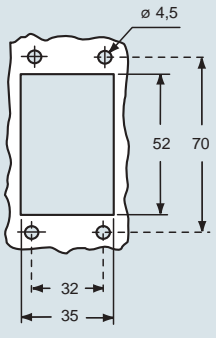


hoods with 2 pegs



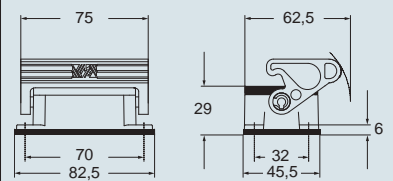
description	part No.	entry M	part No.	entry M
bulkhead mounting housing, with lever	CHIN 06 L			
surface mounting housing, high construction, with lever	MAPN 06 L32	32		
with pegs, side entry			MHON 06 L25	25
with pegs, side entry, high construction			MFON 06 L25	25
with pegs, top entry			MHVN 06 L25	25
with pegs, top entry, high construction			MFVN 06 L25	25

panel cut-out for bulkhead mounting housing in mm

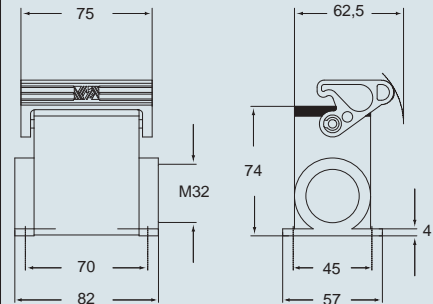


dimensions in mm

CHIN 06 L



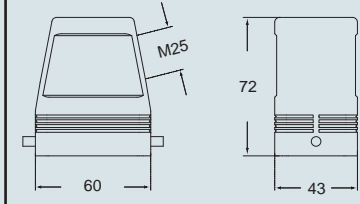
MAPN 06 L32



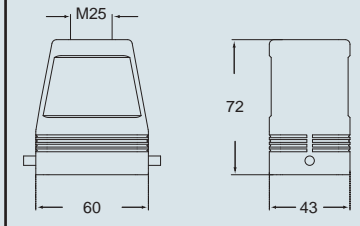
- kiln powder coating with RAL 9005 black epoxy polyester powder
- RAL 9005 black self-extinguishing thermoplastic locking lever (spare lever page 458)

dimensions in mm

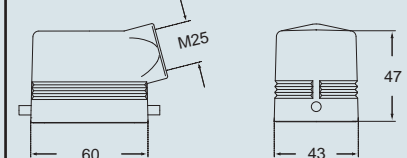
MFON 06 L25



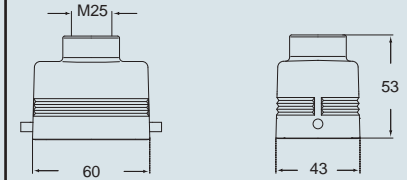
MFVN 06 L25



MHON 06 L25



MHVN 06 L25



CALUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

LS-TYPE - size 44.27



inserts:	page:
CDD 24 poles + ⊕	67
CDS 9 poles + ⊕	78
CSH 6 poles + ⊕	91
CNE, CSE 6 poles + ⊕	104
CCE 6 poles + ⊕	110
CSS 6 poles + ⊕	122
CQE 10 poles + ⊕	138
MIXO 2 modules	179 - 215

insert centre distance:
44 x 27 mm

hoods with single lever



covers

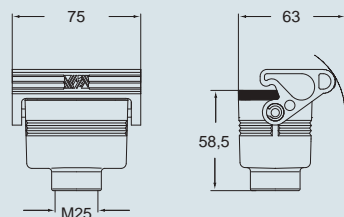


description	part No.	entry	part No. (with eyelet)	part No. (with loop)
		M		
with lever and gasket, top entry	MHVN 06 LG25	25		
with lever and gasket, top entry, high construction	MFVN 06 LG25	25		
covers with pegs			CHCN 06 L	
covers with lever				CHCN 06 LG

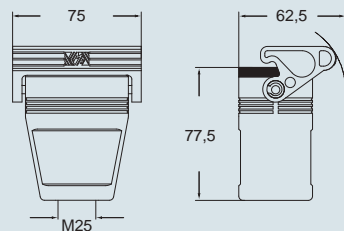
- kiln powder coating with RAL 9005 black epoxy polyester powder
- RAL 9005 black self-extinguishing thermoplastic locking lever (spare lever page 458)

dimensions in mm

MHVN 06 LG25

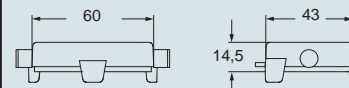


MFVN 06 LG25

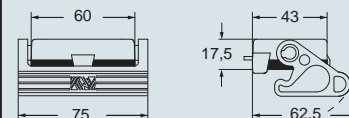


dimensions in mm

CHCN 06 L



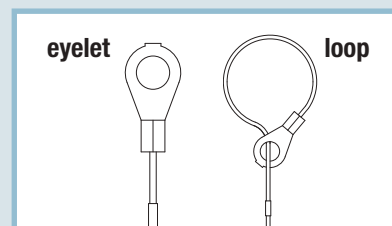
CHCN 06 LG



CALUS® Type 4/4X/12



dimensions shown are not binding and may be changed without notice



LS-TYPE - size 44.27



inserts:	page:
CDD 42 poles + ⊕	69
CDS 18 poles + ⊕	79
CSH 10 poles + ⊕	92
CNE, CSE 10 poles + ⊕	105
CCE 10 poles + ⊕	111
CSS 10 poles + ⊕	123
CT, CTSE *) 10 poles + ⊕	131
CQE 18 poles + ⊕	139
CMCE 3+2 (aux) poles + ⊕	148
CMSH 3+2 (aux) poles + ⊕	149
CX 8/24 poles + ⊕	169
MIXO 3 modules	179 - 215

*) only in the CHIN 10 enclosure

insert centre distance:
57 x 27 mm

housings with double lever

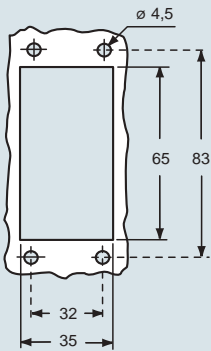


hoods with 4 pegs



description	part No.	entry M	part No.	entry M
bulkhead mounting housing, with 2 levers	CHIN 10			
surface mounting housing, high construction, with 2 levers	MAPN 10.32	32		
with pegs, side entry			MHON 10.25	25
with pegs, side entry, high construction			MFON 10.32	32
with pegs, top entry			MHVN 10.25	25
with pegs, top entry, high construction			MFVN 10.32	32

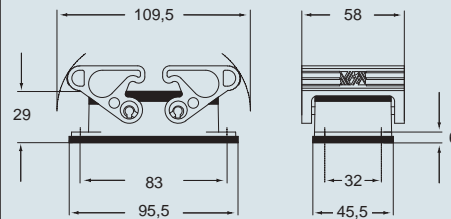
panel cut-out for bulkhead mounting housing in mm



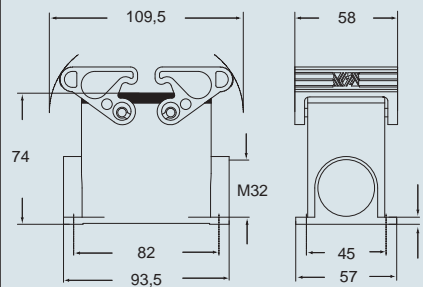
- kiln powder coating with RAL 9005 black epoxy polyester powder
- RAL 9005 black self-extinguishing thermoplastic locking lever (spare lever page 458)

dimensions in mm

CHIN 10

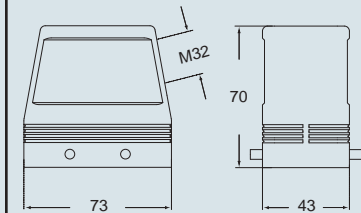


MAPN 10.32

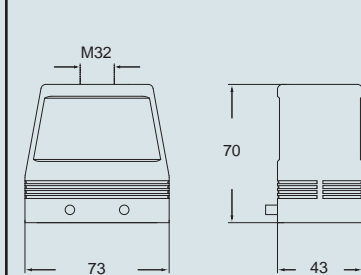


dimensions in mm

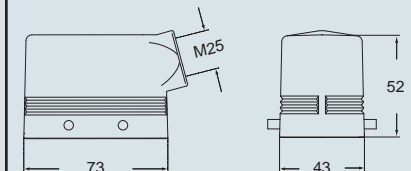
MFON 10.32



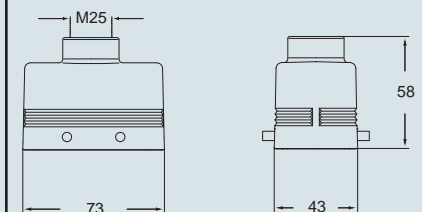
MFVN 10.32



MHON 10.25



MHVN 10.25



CALUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

LS-TYPE - size 57.27



inserts:	page:
CDD 42 poles + ⊕	69
CDS 18 poles + ⊕	79
CSH 10 poles + ⊕	92
CNE, CSE 10 poles + ⊕	105
CCE 10 poles + ⊕	111
CSS 10 poles + ⊕	123
CQE 18 poles + ⊕	139
CMCE 3+2 (aux) poles + ⊕	148
CMSH 3+2 (aux) poles + ⊕	149
CX 8/24 poles + ⊕	169
MIXO 3 modules	179 - 215

insert centre distance:
57 x 27 mm

hoods with double lever



covers

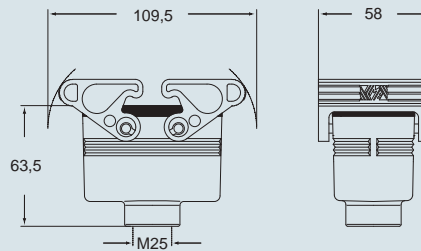


description	part No.		part No. (with eyelet)	part No. (with loop)
		entry M		
with 2 levers and gasket, top entry	MHVN 10 G25	25		
with 2 levers and gasket, top entry, high construction	MFVN 10 G32	32		
covers with pegs			CHCN 10	
covers with 2 levers				CHCN 10 G

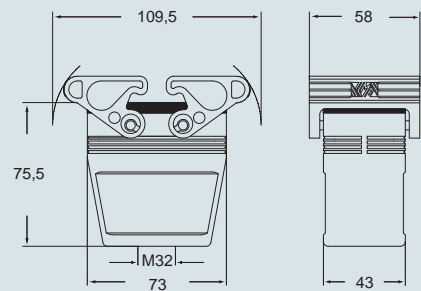
- kiln powder coating with RAL 9005 black epoxy polyester powder
- RAL 9005 black self-extinguishing thermoplastic locking lever (spare lever page 458)

dimensions in mm

MHVN 10 G25

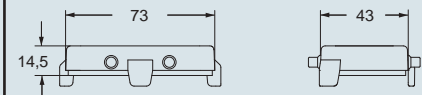


MFVN 10 G32

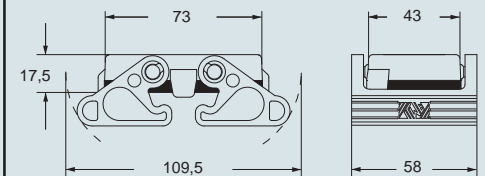


dimensions in mm

CHCN 10



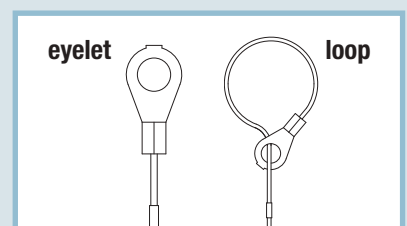
CHCN 10 G



CALUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice



LS-TYPE - size 57.27



inserts:	page:
CD 40 poles + ⊕	57
CT, CTS (10A) *) ... 40 poles + ⊕	64
CDD 72 poles + ⊕	70
CDS 27 poles + ⊕	80
CSH 16 poles + ⊕	93
CNE, CSE 16 poles + ⊕	106
CCE 16 poles + ⊕	112
CSS 16 poles + ⊕	124
CT, CTSE (16A) *) .. 16 poles + ⊕	132
CQE 32 poles + ⊕	140
CQEE 40 poles + ⊕	146
CMCE 6+2 (aux) poles + ⊕	150
CMSH 6+2 (aux) poles + ⊕	151
CP 6 poles + ⊕	162
CX 6/36 and 12/2 poles + ⊕	170-171
CX 4/0 and 4/2 poles + ⊕	172
MIXO 4 modules	179-215

*) only in the CHIN 16 enclosure
insert centre distance: 77,5 x 27 mm

housings with double lever

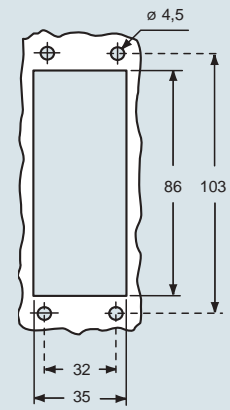


hoods with 4 pegs

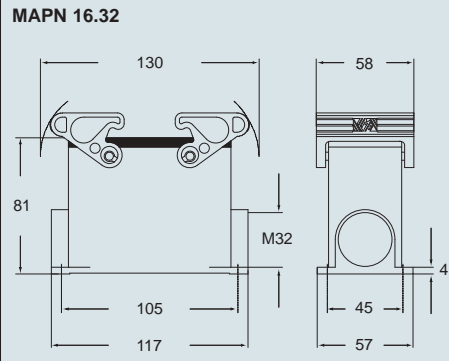
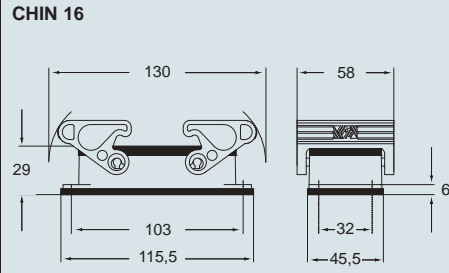


description	part No.	entry M	part No.	entry M
bulkhead mounting housing, with 2 levers	CHIN 16			
surface mounting housing, high construction, with 2 levers	MAPN 16.32	32		
with pegs, side entry			MHON 16.32	32
with pegs, side entry, high construction			MFON 16.32	32
with pegs, top entry			MHVN 16.32	32
with pegs, top entry, high construction			MFVN 16.32	32

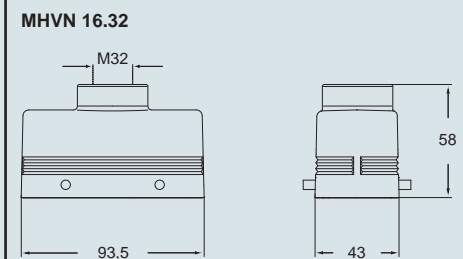
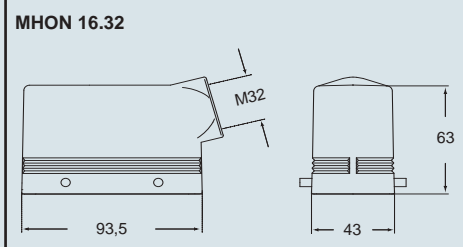
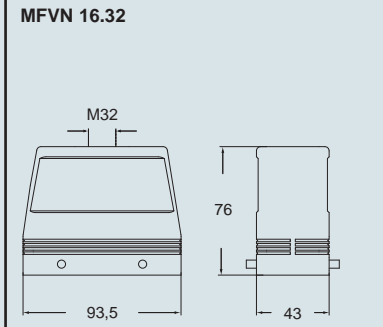
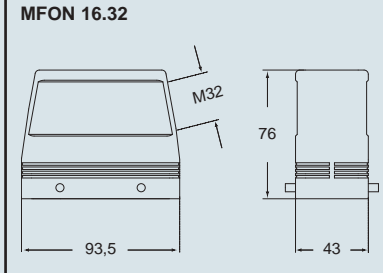
panel cut-out for bulkhead mounting housing in mm



dimensions in mm



dimensions in mm



- kiln powder coating with RAL 9005 black epoxy polyester powder
- RAL 9005 black self-extinguishing thermoplastic locking lever (spare lever page 458)

CALUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

LS-TYPE - size 77.27



inserts:	page:	hoods with double lever
CD 40 poles + ⊕	57	
CDD 72 poles + ⊕	70	
CDS 27 poles + ⊕	80	
CSH 16 poles + ⊕	93	
CNE, CSE 16 poles + ⊕	106	
CCE 16 poles + ⊕	112	
CSS 16 poles + ⊕	124	
CQE 32 poles + ⊕	140	
CQEE 40 poles + ⊕	146	
CMCE 6+2 (aux) poles + ⊕	150	
CMSH 6+2 (aux) poles + ⊕	151	
CP 6 poles + ⊕	162	
CX 6/36 and 12/2 poles + ⊕	170-171	
CX 4/0 and 4/2 poles + ⊕	172	
MIXO 4 modules	179-215	

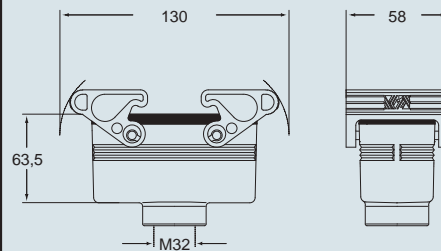
insert centre distance:
77,5 x 27 mm

description	part No.		part No.	
		entry M	(with eyelet)	(with loop)
with 2 levers and gasket, top entry	MHVN 16 G32	32		
with 2 levers and gasket, top entry, high construction	MFVN 16 G32	32		
cover with pegs			CHCN 16	
cover with 2 levers				CHCN 16 G

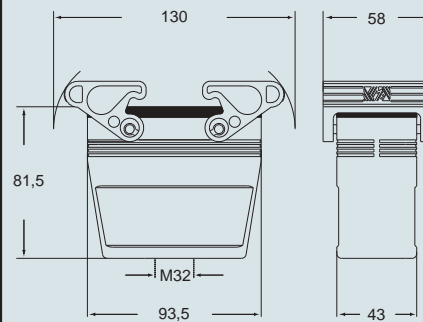
- kiln powder coating with RAL 9005 black epoxy polyester powder
- RAL 9005 black self-extinguishing thermoplastic locking lever (spare lever page 458)

dimensions in mm

MHVN 16 G32



MFVN 16 G32

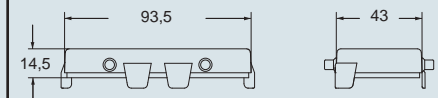


covers

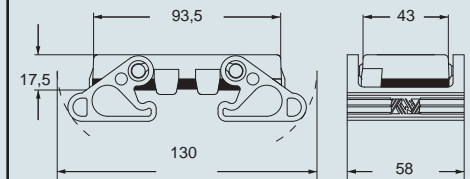


dimensions in mm

CHCN 16



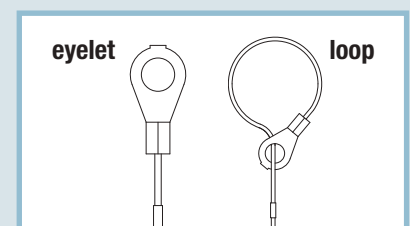
CHCN 16 G



CALUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice





inserts:	page:
CD 64 poles + ⊕	59
CT, CTS (10A) *) 64 poles + ⊕	65
CDD 108 poles + ⊕	72
CDS 42 poles + ⊕	81
CSH 24 poles + ⊕	94
CNE, CSE 24 poles + ⊕	107
CCE 24 poles + ⊕	113
CSS 24 poles + ⊕	125
CT, CTSE (16A) *) 24 poles + ⊕	133
CQE 46 poles + ⊕	141
CQEE 64 poles + ⊕	147
CMCE 10+2 (aux) poles + ⊕	152
CMSH 10+2 (aux) poles + ⊕	153
CX 4/8 and 6/6 poles + ⊕	173 and 175
MIXO 6 modules	179-215

*) only in the CHIN 24 enclosure

insert centre distance: 104 x 27 mm

housings with double lever

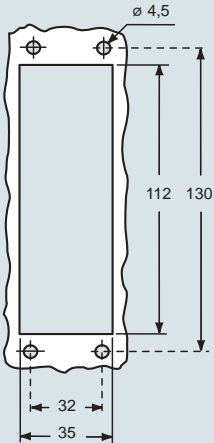


hoods with 4 pegs



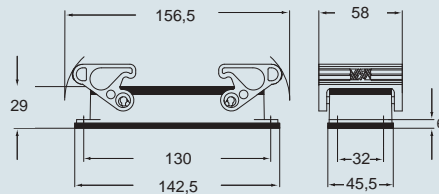
description	part No.	entry M	part No.	entry M
bulkhead mounting housing, with 2 levers	CHIN 24			
surface mounting housing, high construction, with 2 levers	MAPN 24.32	32		
with pegs, side entry			MHON 24.32	32
with pegs, side entry, high construction			MFON 24.32	32
with pegs, side entry			MHVN 24.32	32
with pegs, side entry, high construction			MFVN 24.32	32

panel cut-out for bulkhead mounting housing in mm

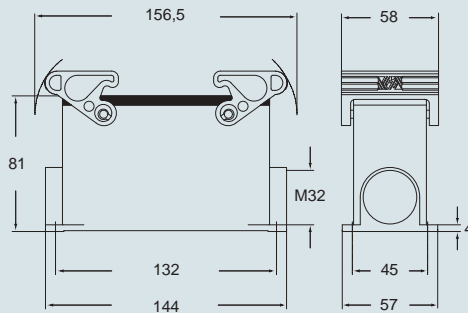


dimensions in mm

CHIN 24

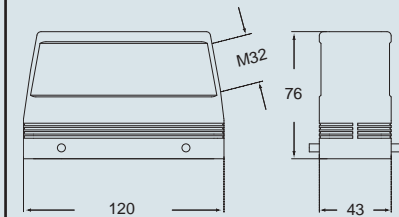


MAPN 24.32

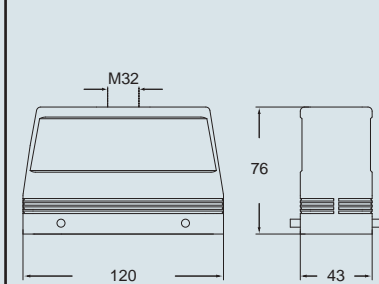


dimensions in mm

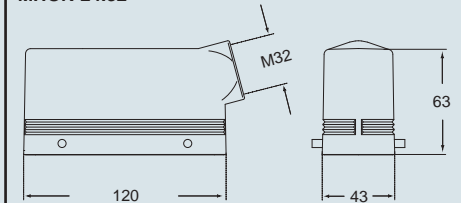
MFON 24.32



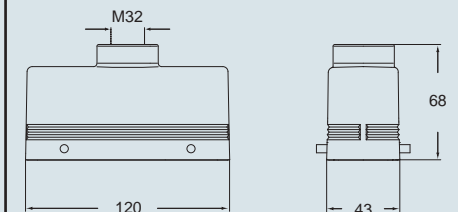
MFVN 24.32



MHON 24.32



MHVN 24.32



- kiln powder coating with RAL 9005 black epoxy polyester powder
- RAL 9005 black self-extinguishing thermoplastic locking lever (spare lever page 458)

CALUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice

LS-TYPE - size 104.27



inserts:	page:
CD 64 poles + ⊕	59
CDD 108 poles + ⊕	72
CDS 42 poles + ⊕	81
CSH 24 poles + ⊕	94
CNE, CSE 24 poles + ⊕	107
CCE 24 poles + ⊕	113
CSS 24 poles + ⊕	125
CQE 46 poles + ⊕	141
CQEE 64 poles + ⊕	147
CMCE 10+2 (aux) poles + ⊕	152
CMSH 10+2 (aux) poles + ⊕	153
CX 4/8 and 6/6 poles + ⊕	173 and 175
MIXO 6 modules	179-215

insert centre distance:
104 x 27 mm

hoods with double lever



covers



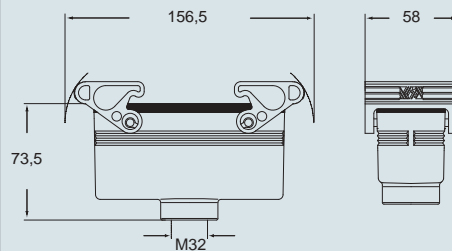
description	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with 2 levers and gasket, top entry	MHVN 24 G32	32		
with 2 levers and gasket, top entry, high construction	MFVN 24 G32	32		

covers with pegs covers with 2 levers		CHCN 24	CHCN 24 G
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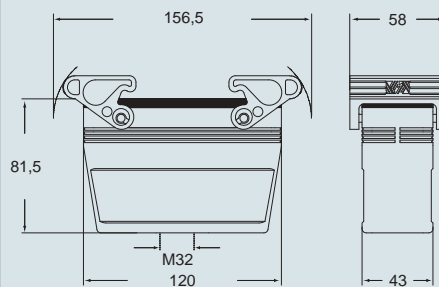
- kiln powder coating with RAL 9005 black epoxy polyester powder
- RAL 9005 black self-extinguishing thermoplastic locking lever (spare lever page 458)

dimensions in mm

MHVN 24 G32

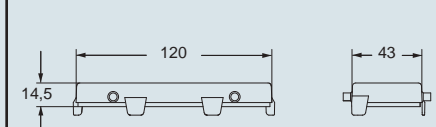


MFVN 24 G32

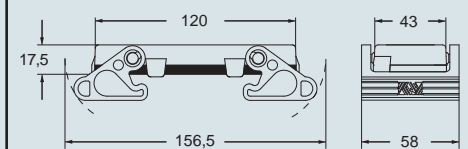


dimensions in mm

CHCN 24



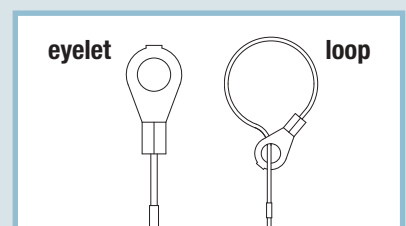
CHCN 24 G



CALUS Type 4/4X/12



dimensions shown are not binding and may be changed without notice



LS-TYPE - size 104.27

spare part lever



spare part lever



description

part No.

part No.

for "44.27" enclosures with levers

CR 06 LN

for "57.27", "77.27", "104.27" enclosures with levers

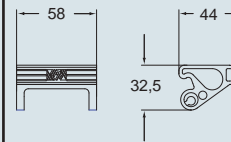
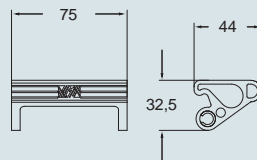
CR LN

dimensions in mm

dimensions in mm

CR 06 LN

CR LN



dimensions shown are not binding
and may be changed without notice

LS-TYPE



COB series

Panel supports for multipole connectors

Use

The COB system makes it possible to use multipole connectors within electric panels without the traditional metallic enclosures as protection is assured by the electric panel itself or other container.

(N.B.: the connectors must not be handled live).

The COB system may be assembled in the three following ways:

- On panels with window snap fastening device **(Figure 1)**.
- On DIN EN 60715 rails, both lengthways and crossways to the support **(Figure 2)**.
- On fixed panels using screws **(Figure 2)**.

The COB system offers the following advantages:

- Reduction in cost and space with respect to metallic enclosures and traditional terminal boards.
- Possibility of rewiring at the connector bench with connected devices.
- Easy wiring inspection and tests with coupled connectors, thanks to rear access to the inserts via the turnover device.
- Fast mounting in panels thanks to the snap fastening device on the DIN EN 60715 rails.
- Sturdy support structure, specific to the size of each insert and does not require any preparation.
- Broad passage for housing of conductor cables.
- Mobile parts prearranged for the clamping of bundles of conductors of multipolar cables to prevent contact with the connector contacts.

The COB system satisfies the most varied installation needs thanks to the interchangeability of the connector inserts. The inserts can be installed as per the following table:

Supports for connector inserts

types	COB TCQ			
fixed	COB 06 BC	COB 10 BC	COB 16 BC	COB 24 BC
types	COB TSF and COB TSFS			
mobile	COB 06 CMS	COB 10 CMS	COB 16 CMS	COB 24 CMS

Insert centre distance

mm	44 x 27	57 x 27	49.5 x 16 * 66 x 16 * 77.5 x 27	104 x 27
----	---------	---------	---------------------------------------	----------

Insert series and polarity + ⊕

CD			15 *, 25 *, 40	64
CDD	24	42	38 *, 72	108
CDA, CSAH			10 *, 16 *	
CDC			10 *, 16 *	
CDS	9	18	27	42
CCE	6	10	16	24
CQE	10	18	32	46
CQEE			40	64
CNE	6	10	16	24
CSH	6	10	16	24
CSE	6	10	16	24
CMCE		3 + 2	6 + 2	10 + 2 16 + 2
CME		3 + 2	6 + 2	10 + 2 16 + 2
CMSH		3 + 2	6 + 2	10 + 2
CP			6	
CX			4/0, 4/2 6/36 12/2	4/8 6/6
MIXO	2 modules	3 modules	4 modules	6 modules

* mounting via adaptor plates described on page 464

In addition, the COB..BC supports may house the ILME CR...AD1 and CR...AD2 series plates for the D-SUB inserts (microconnectors).

COB TCQ + COB TSFS (COB...CMS, alternative)

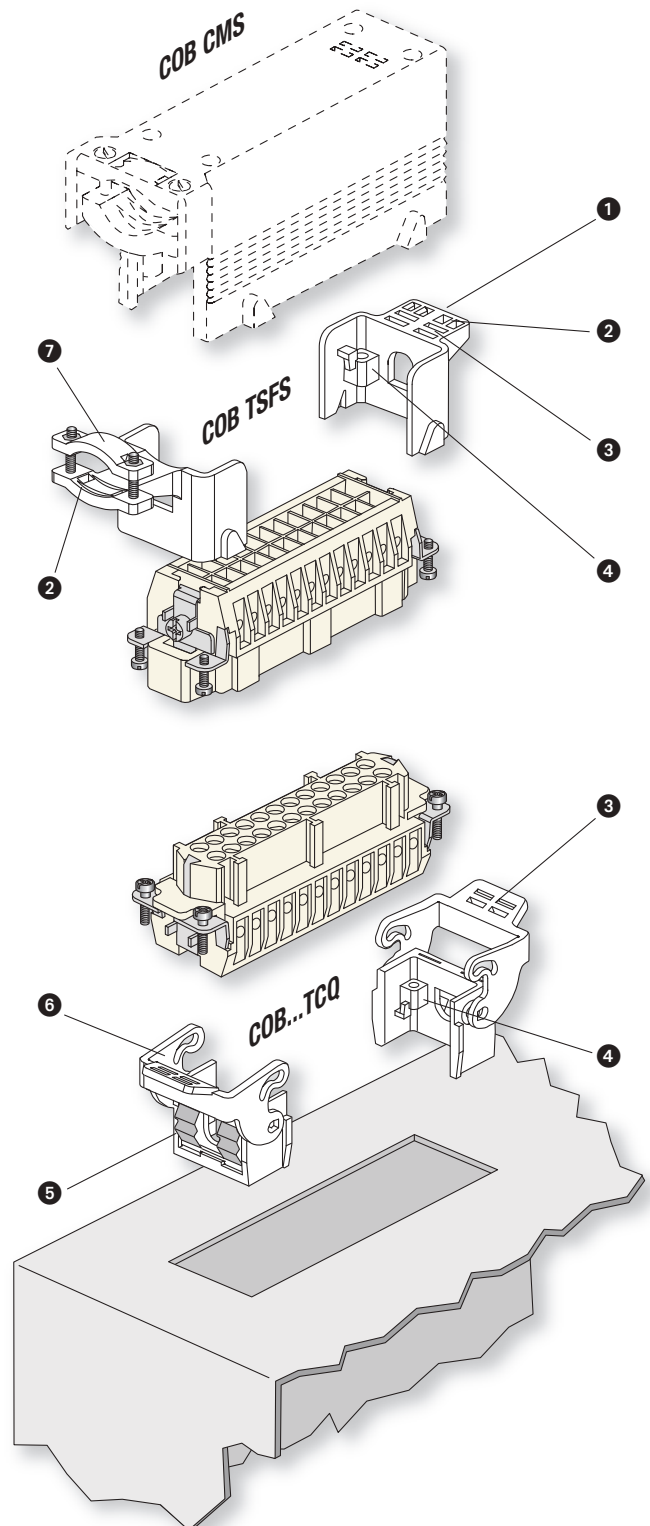


Figure 1:

- Snap fastening in window *, panels or control panels.

COB series

Panel supports for multipole connectors

Characteristics

- 1 **COB, TSF** or **COB TSFS** insert support blocks (with cable clamp) for mobile mounting, in self-extinguishing thermoplastic material.
- 2 Passage for cable support bands (from 2,2 to 4,8 mm).
- 3 Locations for insertion of identification tags (size 9 x 20 mm).
- 4 Threaded metallic inserts for fixing the inserts with normal screws and possibility of coded connection with the use of specific pins (ILME part: CR 20, CRM, CRF, CR 20 CX, CRM CX and CRF CX) when identical connectors are used.
- 5 **COB TCQ** insert carrier block for window mounting in self-extinguishing thermoplastic material, with spring snap fastening.
- 6 Locking device with levers in self-extinguishing thermoplastic material for insert coupling.
- 7 Sturdy cable clamp for clamping multipolar cables with a diameter of up to 25 mm or bundles of unipolar conductors.
- 8 **COB...CMS** enclosure for mobile mounting, in self-extinguishing thermoplastic material, IP20 protection rating.
- 9 Free passage for mounting wired insert with conductor cables.
- 10 Mobile blocks (in COB...BC kit) in self-extinguishing thermoplastic material, with quick release device for insert turnover, wiring operations, verifications and maintenance.
- 11 **COB...BC** panel support for bulkhead mounting in self-extinguishing thermoplastic material, sturdy block support structure, with broad passage for housing of conductor cables.
- 12 Holes for fixed fastening with screws without DIN EN 60715 rails.
- 13 Snap fastening on DIN EN 60715 rails, both lengthways and crossways to the support Figure.
- 14 Turnover pins that can be released and allow the use of prewired inserts.

COB...BC + COB...CMS
(COB TSF, alternative)

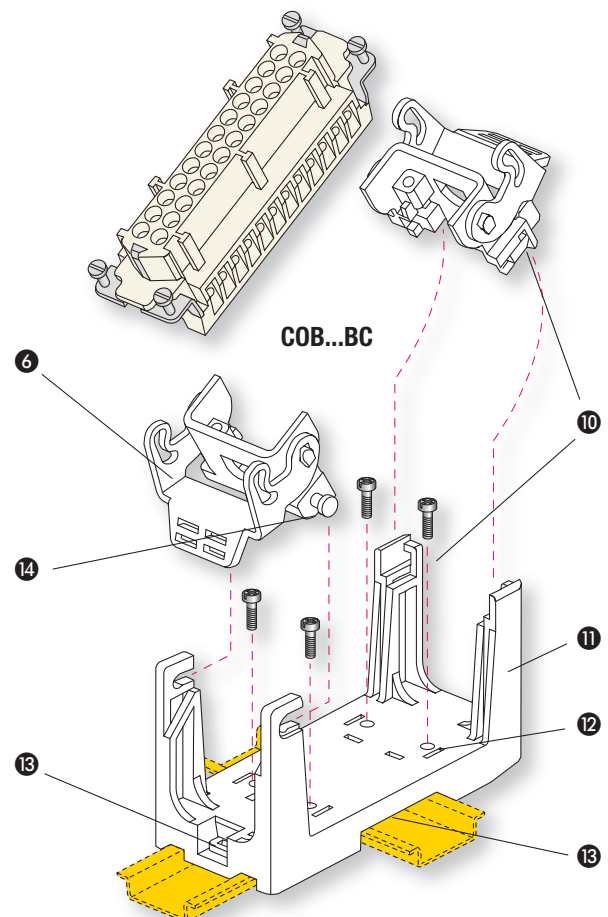
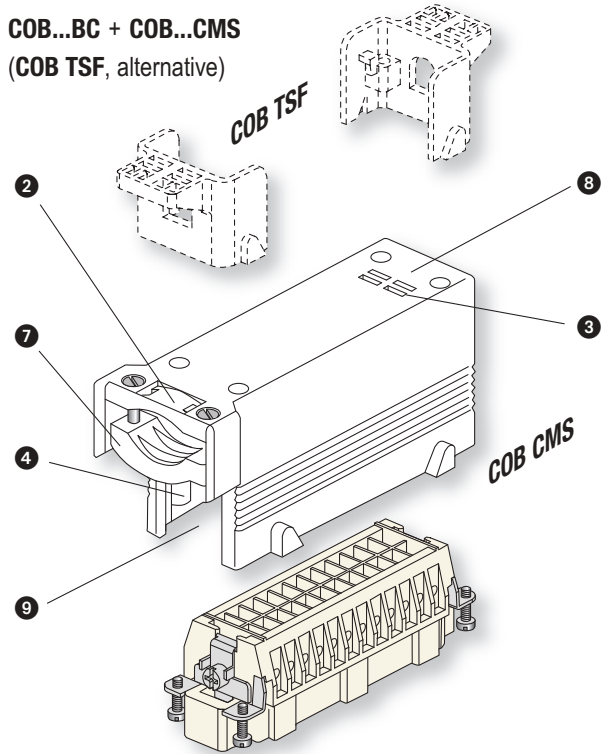


Figure 2:

- snap fastening on DIN EN 60715 rails both lengthways and crossways to the support
- installation in panels or control panels, with fixed fastening with screws.

inserts:	page:
CD40, 64 poles + ⊕	57 and 59
CDD 24, 42, 72, 108 poles + ⊕	67-72
CDS 9, 18, 27, 42 poles + ⊕	78-81
CSH 6, 10, 16, 24 poles + ⊕	91-94
CNE, CSE 6, 10, 16, 24 poles + ⊕	104-107
CCE 6, 10, 16, 24 poles + ⊕	110-113
CSS 6, 10, 16, 24 poles + ⊕	122-125
CQE 10, 18, 32, 46 poles + ⊕	138-141
CQEE 40, 64 poles + ⊕	146-147
CMCE..... 3+ ² , 6+ ² , 10+ ² , 16+ ² poles + ⊕	148-158
CME 3+ ² , 6+ ² , 10+ ² , 16+ ² poles + ⊕	149-159
CMSH 3+ ² , 6+ ² , 10+ ² poles + ⊕	149-153
CP 6 poles + ⊕	162
CX 8/24, 6/36, 12/2 poles + ⊕	169-171
CX 4/0, 4/2, 4/8, 6/6 poles + ⊕	172-175
MIXO..... 2, 3, 4, 6 modules	179-215

insert centre distance:
44 x 27 mm, 57 x 27 mm
77,5 x 27 mm, 104 x 27 mm

connector carrier for faceplate mounting in window*, snap fastening



connector carrier baseplate for mounting on DIN EN 60715 rail or fixed mounting using screws



description

part No.

part No.

kit with 2 elements, for coupling of inserts with screw fixing centre distance (short side = 27 mm)

COB TCQ

kit comprising frame and mobile blocks, for insert coupling:
 - with screw fixing centre distance of 44 x 27 mm
 - with screw fixing centre distance of 57 x 27 mm
 - with screw fixing centre distance of 77,5 x 27 mm
 - with screw fixing centre distance of 104 x 27 mm

COB 06 BC
COB 10 BC
COB 16 BC
COB 24 BC

panel cut-out in mm

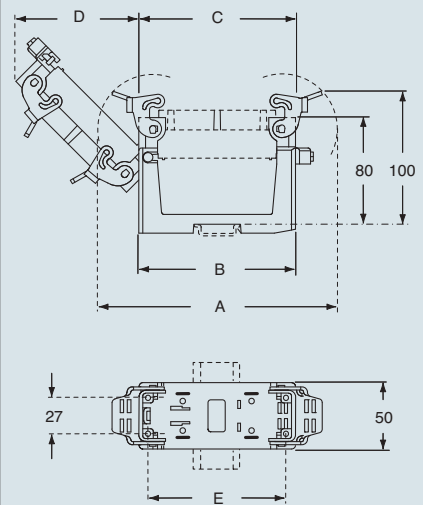
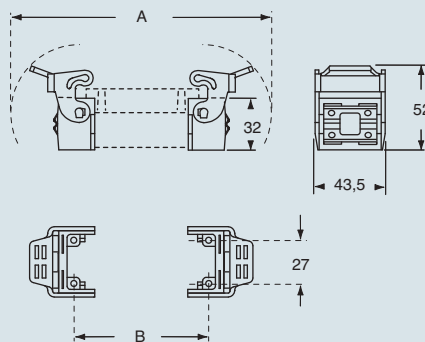
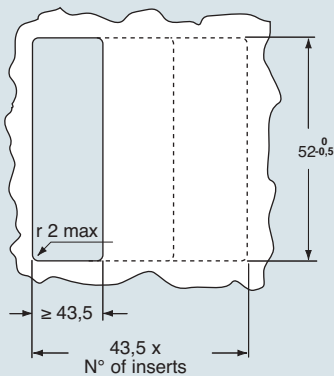
dimensions in mm

dimensions in mm

COB TCQ
 window size on plate thickness 1,3-3 mm

COB TCQ

COB BC
 overall dimensions with longitudinal DIN rails

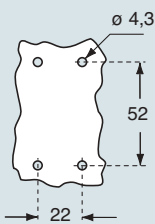


for insert coupling:	X _{0.5}
with centre distance 44 x 27 mm	65
with centre distance 57 x 27 mm	78
with centre distance 77.5 x 27 mm	98
with centre distance 104 x 27 mm	125

COB TCQ	A	B
for inserts		
with centre distance 44 x 27 mm	120	44
with centre distance 57 x 27 mm	133	57
with centre distance 77.5 x 27 mm	153,5	77,5
with centre distance 104 x 27 mm	180	104

part No.	A	B	C	D	E
COB 06 BC	120	91.5	58	50	44
COB 10 BC	133	91.5	71	59.5	57
COB 16 BC	153.5	91.5	91.5	74	77.5
COB 24 BC	180	118	118	93	104

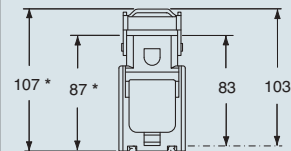
COB...BC



It is the responsibility of the installer to verify the continuity of the PE protective earth circuit ⊕ between the two halves of the connector.

dimensions shown are not binding and may be changed without notice

overall dimensions without DIN rails (values with "asterisk") overall dimensions with longitudinal DIN rails



inserts:	page:
CD 40, 64 poles + ⊕	57 and 59
CDD 24, 42, 72, 108 poles + ⊕	67-72
CDS 9, 18, 27, 42 poles + ⊕	78-81
CSH 6, 10, 16, 24 poles + ⊕	91-94
CNE, CSE 6, 10, 16, 24 poles + ⊕	104-107
CCE 6, 10, 16, 24 poles + ⊕	110-113
CSS 6, 10, 16, 24 poles + ⊕	122-125
CQE 10, 18, 32, 46 poles + ⊕	138-141
CQEE 40, 64 poles + ⊕	146-147
CMCE 3+ ² , 6+ ² , 10+ ² , 16+ ² poles + ⊕	148-158
CME 3+ ² , 6+ ² , 10+ ² , 16+ ² poles + ⊕	149-159
CMSH 3+ ² , 6+ ² , 10+ ² poles + ⊕	149-153
CP 6 poles + ⊕	162
CX 8/24, 6/36, 12/2 poles + ⊕	169-171
CX 4/0, 4/2, 4/8, 6/6 poles + ⊕	172-175
MIXO 2, 3, 4, 6 modules	179-215

insert centre distance:
44 x 27 mm, 57 x 27 mm
77,5 x 27 mm, 104 x 27 mm

insert carrier blocks for mobile mounting



insert carrier insulated enclosures for mobile mounting



description

part No.

part No.

kit with 2 elements, for coupling of inserts
 with screw fixing centre distance (short side = 27 mm)
 - with handle for cable support bands
 - with handle for cable support or cable clamp bands

COB TSF
COB TSFS

side entry, with cable clamp
 for insert coupling:
 - with screw fixing centre distance of 44 x 27 mm
 - with screw fixing centre distance of 57 x 27 mm
 - with screw fixing centre distance of 77,5 x 27 mm
 - with screw fixing centre distance of 104 x 27 mm

COB 06 CMS
COB 10 CMS
COB 16 CMS
COB 24 CMS

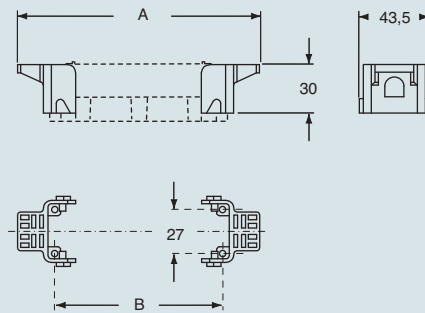
It is the responsibility of the installer to verify the continuity of the PE protective earth circuit ⊕ between the two halves of the connector.

dimensions in mm

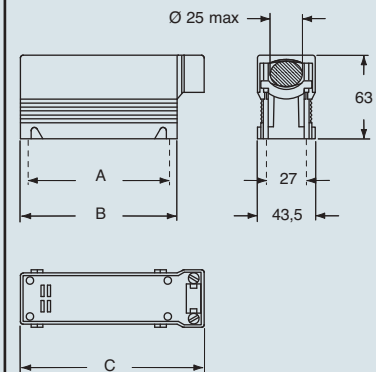
dimensions in mm



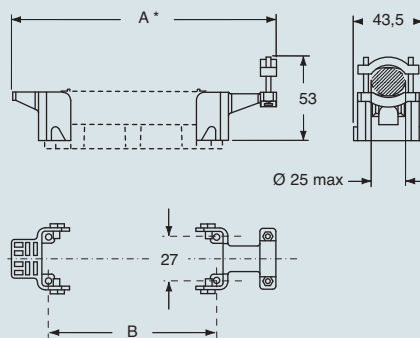
COB TSF



COB CMS



COB TSFS



part No.	A	B	C
COB 06 CMS	44	58	74
COB 10 CMS	57	71	87
COB 16 CMS	77,5	91,5	107,5
COB 24 CMS	104	118	134

for inserts	A	A*	B
with centre distance of 44 x 27 mm	90	104	44
with centre distance of 57 x 27 mm	103	117	57
with centre distance of 77,5 x 27 mm	123,5	137,5	77,5
with centre distance of 104 x 27 mm	150	164	104

dimensions shown are not binding
 and may be changed without notice

inserts:	page:
CD 15, 25 poles + ⊕	55-56
CDD 38 poles + ⊕	68
CSAH 10, 16 poles + ⊕	87-88
CDA 10, 16 poles + ⊕	98-100
CDC 10, 16 poles + ⊕	99-101
MIXO 1 module	179-215

insert centre distance:
49,5 x 16 mm
66 x 16 mm

Adaptor plates for insert mounting



levers for coupling with metallic enclosures

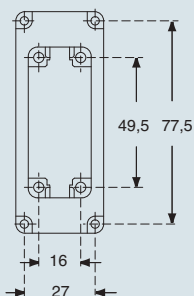


description	part No.	part No.
mounting on COB series articles (see below) for 1 insert with centre distance of 49.5 x 16 mm	CR 15/16	
mounting on COB series articles (see below) for 1 insert with centre distance of 66 x 16 mm	CR 25/16	
kit with 2 elements, to be mounted instead of the standard levers to be coupled with: COB TCQ and COB...BC ¹⁾		COB L

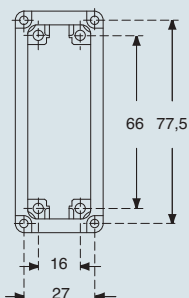
¹⁾ They allow the mounting of aluminium hoods with 4 pegs, size 55.27, 77.27 and 104.27

dimensions in mm

CR 15/16



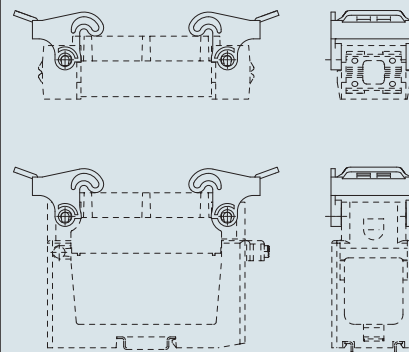
CR 25/16



Adaptor plates

- They allow the inserting of inserts of "49.16" and "66.16" on the following COB series articles: COB TCQ, COB 16 BC, COB TSF, COB TSFS, COB 16 CMS

It is the responsibility of the installer to verify the continuity of the PE protective earth circuit ⊕ between the two halves of the connector.



dimensions shown are not binding
and may be changed without notice

COB



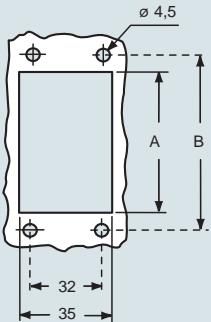
inserts:	page:
CD40, 64 poles + ⊕	57 and 59
CDD 24, 42, 72, 108 poles + ⊕	67-72
CDS 9, 18, 27, 42 poles + ⊕	78-81
CSH 6, 10, 16, 24 poles + ⊕	91-94
CNE, CSE 6, 10, 16, 24 poles + ⊕	104-107
CCE 6, 10, 16, 24 poles + ⊕	110-113
CSS 6, 10, 16, 24 poles + ⊕	122-125
CQE 10, 18, 32, 46 poles + ⊕	138-141
CQEE 40, 64 poles + ⊕	146-147
CMCE... 3+ ² , 6+ ² , 10+ ² , 16+ ² poles + ⊕	148-158
CME 3+ ² , 6+ ² , 10+ ² , 16+ ² poles + ⊕	149-159
CMSH 3+ ² , 6+ ² , 10+ ² poles + ⊕	149-153
CP 6 poles + ⊕	162
CX 8/24, 6/36, 12/2 poles + ⊕	169-171
CX 4/0, 4/2, 4/8, 6/6 poles + ⊕	172-175
MIXO..... 2, 3, 4, 6 modules	179-215

insert centre distance:
44 x 27 mm, 57 x 27 mm
77,5 x 27 mm, 104 x 27 mm

description	part No.
size "44.27"	CHI 06 LCH
size "57.27" ¹⁾	CHI 10 CH
size "77.27" ¹⁾	CHI 16 CH
size "104.27" ¹⁾	CHI 24 CH

¹⁾ may be combined also with enclosures:
 - surface mounting housings (CHP/MHP...)
 - hoods with lever and gasket (LG)

panel cut-out for bulkhead mounting housings in mm



part No.	A	B
CHI 06 LCH - CHI 06 L - C71 06 L	52	70
CHI 10 CH - CHI 10 - C71 10	65	83
CHI 16 CH - CHI 16 - C71 16	86	103
CHI 24 CH - CHI 24 - C71 24	112	130

NB:
 The enclosures ensure IP66 protection rating when mated and locked with the closing levers.



dimensions shown are not binding
 and may be changed without notice

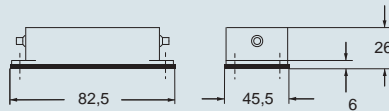
bulkhead mounting housings
 with 2 or 4 pegs



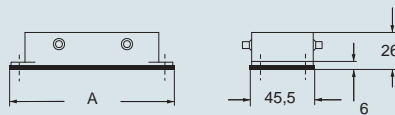
description	part No.
size "44.27"	CHI 06 LCH
size "57.27" ¹⁾	CHI 10 CH
size "77.27" ¹⁾	CHI 16 CH
size "104.27" ¹⁾	CHI 24 CH

dimensions in mm

CHI LCH



CHI C



part No.	A
CHI 10 CH	95,5
CHI 16 CH	115,5
CHI 24 CH	142,5

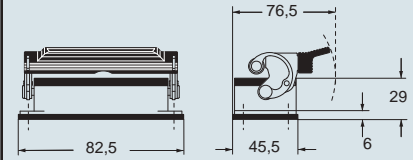
bulkhead mounting housings



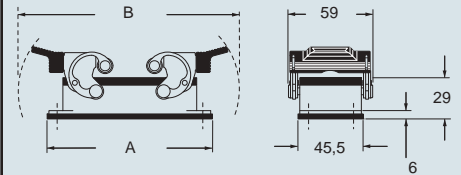
description	part No. C-TYPE	part No. C7
size "44.27"	CHI 06 L	C71 06 L
size "57.27" ¹⁾	CHI 10	C71 10
size "77.27" ¹⁾	CHI 16	C71 16
size "104.27" ¹⁾	CHI 24	C71 24

dimensions in mm

CHI L

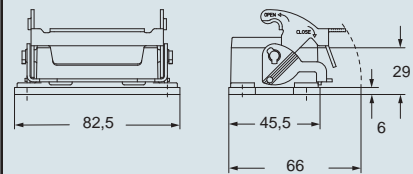


CHI

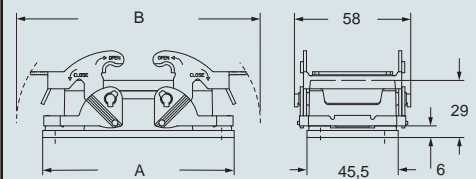


part No.	A	B
CHI 10	95,5	135
CHI 16	115,5	153
CHI 24	142,5	179,5

C71 L



C71



part No.	A	B
C71 10	95,5	122
C71 16	115,5	142,5
C71 24	142,5	169

inserts:		page:
CD	64 poles + ⊕	59
CDD	108 poles + ⊕	72
CDS	42 poles + ⊕	81
CSH	24 poles + ⊕	94
CNE, CSE	24 poles + ⊕	104
CCE	24 poles + ⊕	113
CSS	24 poles + ⊕	125
CQE	46 poles + ⊕	141
CMCE	10+2 (aux) poles + ⊕	152
CMSH	10+2 (aux) poles + ⊕	153
CX	4/8 and 6/6 poles + ⊕	173 and 175
MIXO	6 modules	179-215

insert centre distance:
104 x 27 mm

**surface mounting housings
 with 2 levers, bottom entry**

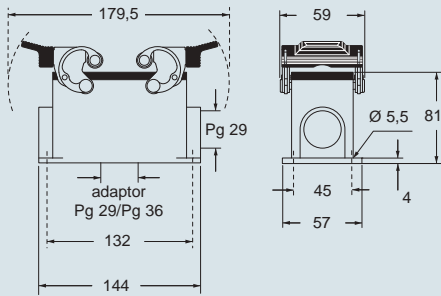


description	part No.	entry Pg
with levers, high construction, bottom entry with metal adaptor Pg 29 (hole)/Pg 36 (thread)	CAP 24 G36	36

NB:
 The enclosures ensure IP66 protection rating when mated and locked with the closing levers.

dimensions in mm

CAP



dimensions shown are not binding
 and may be changed without notice

enclosures:

- size "49.16" from page 230
- size "66.16" from page 233
- size "44.27" from page 240
- size "57.27" from page 244
- size "77.27" from page 250
- size "104.27" from page 258

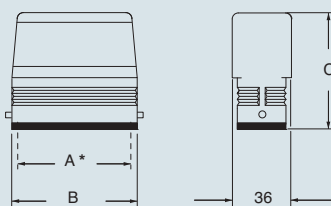
hoods without entry, to be pierced



description	part No. with 2 pegs	part No. with 4 pegs
with pegs for levers - used with enclosures size "49.19" - used with enclosures size "66.16" - used with enclosures size "66.40" - used with enclosures size "44.27" - used with enclosures size "57.27" - used with enclosures size "77.27" - used with enclosures size "104.27" - used with enclosures size "77.62" - used with enclosures size "104.62"	CZAC 15 L CZAC 25 L CAC 06 L CAC 10 L CAC 16 L CAC 24 L CAC 32 L CAC 48 L	CAC 50 CAC 10 CAC 16 CAC 24 CAC 32

dimensions in mm

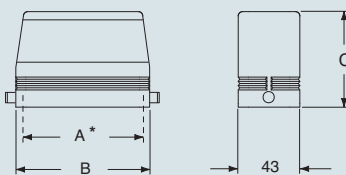
CZAC L



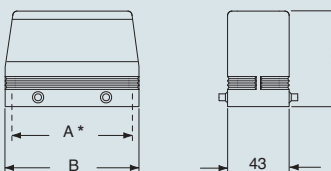
part No.	A *	B	C
CZAC 15 L	49,5	63	64,5
CZAC 25 L	66	79,5	70,5

* screw fixing centre distance

CAC L



CAC



part No.	A *	B	C
CAC 50	66	82	75
CAC 06 L	44	60	72
CAC 10 - CAC 10 L	57	73	70
CAC 16 - CAC 16 L	77,5	93,5	76
CAC 24 - CAC 24 L	104	120	76
CAC 32 - CAC 32 L	77,5	93,5	94
CAC 48 L	104	121	98

* screw fixing centre distance

CAUS® Type 4/4X/12

dimensions shown are not binding and may be changed without notice

Special design



inserts:	page:
CDD 42 poles + ⊕	69
CDS 18 poles + ⊕	79
CSH 10 poles + ⊕	92
CNE, CSE 10 poles + ⊕	105
CCE 10 poles + ⊕	111
CSS 10 poles + ⊕	123
CQE 18 poles + ⊕	139
CMCE 3+2 (aux) poles + ⊕	148
CMSH 3+2 (aux) poles + ⊕	149
CX 8/24 poles + ⊕	169
MIXO 3 modules	179 - 215

insert centre distance:
57 x 27 mm

angled bulkhead mounting housings
with single lever



lever in
stainless
steel

NEW

angled bulkhead mounting housings
with single lever



lever in
stainless
steel

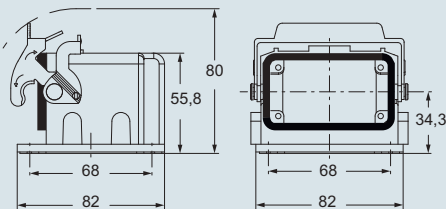
NEW

description	part No.	part No.	entry M
with lever, without cable gland entry ^{1) 3)}	CVI 10 LA		
with lever, with cable gland entry, closed bulkhead ²⁾		MVI 10 LAP32	32

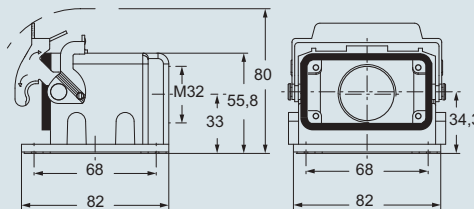
¹⁾ Flange gasket to be purchased separately.
part No.: **CR 10 MO**.



dimensions in mm



dimensions in mm



²⁾ Be used only with a complete cable gland (to be purchased separately).
Versions with M25 or Pg 21 entry on request.

³⁾ Kit with earthing contact, comprising a special screw and wire-terminals for 6 mm² earthing conductors (for the additional connection of the upper enclosure half) part No.: **CR MOT**



N.B.:
The enclosures ensure IP66 protection rating when mated and locked with the closing lever.

Following flange versions available on request:
73 x 73, 78 x 78, 80 x 80, 98 x 98 mm



dimensions shown are not binding
and may be changed without notice

V-TYPE - size 57.27

enclosures:
 size "77.27"
 size "104.27"

Note:
 cannot be used with T-TYPE series

cable passing hoods
 degree of protection IP54



description	part No.	size
with pegs for two levers	CYR 16.3	77.27
- 3 holes for round cables $\varnothing 5 \div 13.5$ mm	CYR 24.4	104.27
- 4 holes for round cables $\varnothing 5 \div 13.5$ mm		

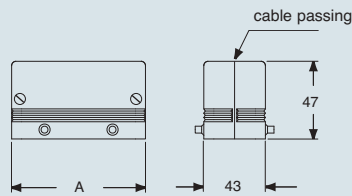
CYR enclosures for round cables

The CYR enclosures are used in installations that require a passage for round cables for data transmission (e.g. computers or PLC) via equipment such as command or control panels, ensuring a good condition of the cable connections.

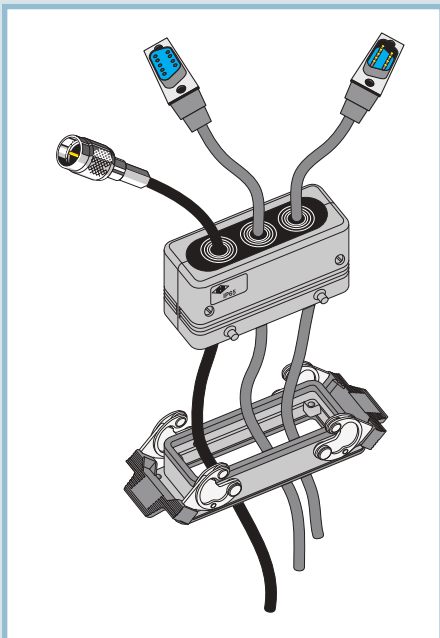
The enclosures are in two parts and have sealing gaskets to preserve the degree of protection of the equipment. The enclosures also contain a rapid cable block device.

The CYR 16.3 and 24.4 can be used with the **bulkhead mounting housings with 2 levers** respectively.

dimensions in mm



part No.	A	grommet entry	nr.	size
CYR 16.3	93.5	$\varnothing 5 / 13.5$	3	77.27
CYR 24.4	120	$\varnothing 5 / 13.5$	4	104.27



CRUS® Type 12

dimensions shown are not binding
 and may be changed without notice

CYR

enclosures:
size "77.27"

enclosures for in-line joints
degree of protection IP65

Note:
cannot be used with T-TYPE series and IP68 series



description

part No.

without housings (to be ordered separately)
made in two halves

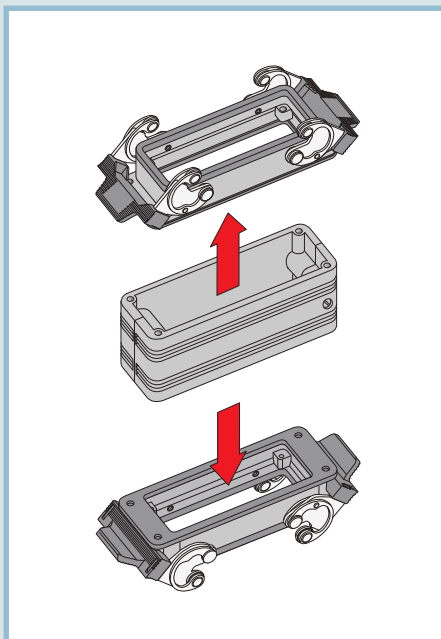
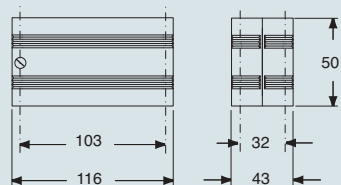
CYG 16

CYG 16 in-line joint

- The joint is made with the CYG 16 enclosure and two bulkhead housings "size 77.27" with one or two levers (to be ordered separately).
- The joint is ideal for use with extension connections and/or as adaptor.
- Made in two halves to facilitate conductor cabling.
- Two inserts in various combinations may be inserted in the joint (to be ordered separately):

- female/female inserts (as adaptor joint)
- male/male inserts (as adaptor joint)
- female/male inserts (as extension joint)

dimensions in mm



CAUS® Type
4/4X/12

dimensions shown are not binding
and may be changed without notice

enclosures:
size "44.27"
size "57.27"

- degree of protection IP65
(according to EN 60529)

1 branch-off T-BOX coupling



1 branch-off T-BOX coupling
to be fitted on DIN rails



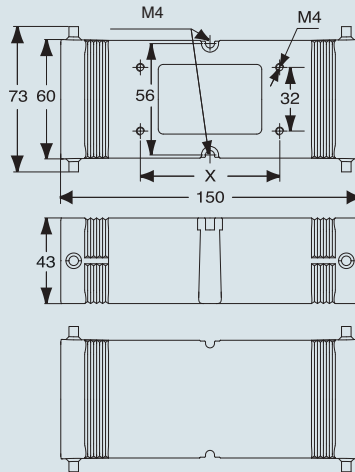
description	part No.	part No.
for 2 C hoods with lever and gasket "44.27" size and one housing "44.27" A size	CYG 06H06	
for 2 C hoods with lever and gasket "44.27" size and one housing "57.27" A size	CYG 06H10	
for 2 C hoods with lever and gasket "44.27" size and one housing "44.27" A size		CYG 06H06D
for 2 C hoods with lever and gasket "44.27" size and one housing "57.27" A size		CYG 06H10D

How to use the CYG 06H branch coupling

The cables are branched off by using the CYG 06H coupling in the 1 or 2 branch-off versions. Multi-pole inserts "44.27" size can be fitted inside the two side recesses. The entire unit can be used with one lever hoods complete with connector inserts. The front faces can be fitted with "44.27" and/or "57.27" size bulkhead housings. The coupling may also be used as an adapter by using a combination of different insert versions. The CHC 06 LG cover may be used to close the coupling side faces. In the branch-offs, the CSS series dual spring terminal inserts allow two wires to be connected without having to fit additional terminals inside the coupling.

dimensions in mm

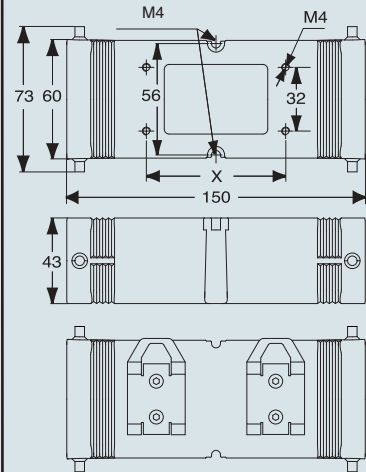
CYG...H06 / H10



part No.	X
CYG 06H06	70
CYG 06H10	83

dimensions in mm

CYG...H06D / H10D

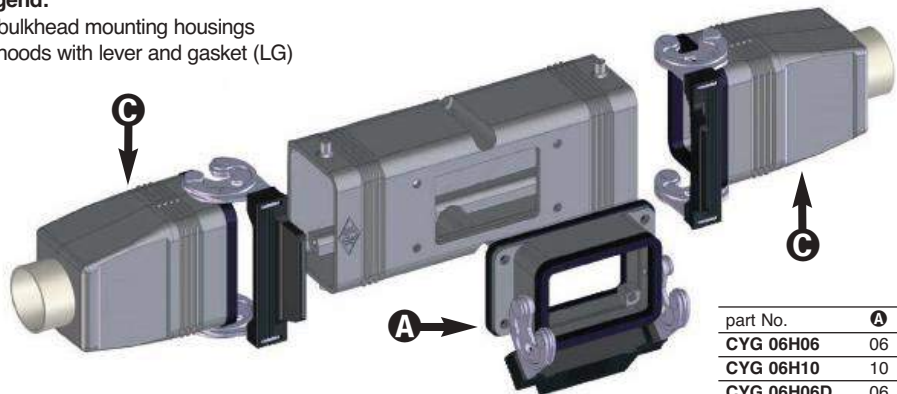


part No.	X
CYG 06H06D	70
CYG 06H10D	83

CALUS Type 4/4X/12

Legend:

- A** bulkhead mounting housings
- C** hoods with lever and gasket (LG)



part No.	A	C
CYG 06H06	06	06
CYG 06H10	10	06
CYG 06H06D	06	06
CYG 06H10D	10	06

dimensions shown are not binding
and may be changed without notice

enclosures:
size "44.27"
size "57.27"

- degree of protection IP65
(according to EN 60529)

2 branch-off T-BOX coupling



2 branch-off T-BOX coupling



description

part No.

part No.

for 2 **C** "44.27" size hoods with lever and gasket and 1 "44.27" **B** size fixing side housing and one "57.27" **A** size housing

CYG 06H0610

for 2 **C** "44.27" size hoods with lever and gasket and 1 "57.27" **B** size fixing side housing and one "44.27" **A** size enclosure

CYG 06H1006

for 2 **C** "44.27" size hoods with lever and gasket and two "44.27" **A** and **B** size housing

CYG 06H0606

for 2 **C** "44.27" size hoods with lever and gasket and two "57.27" **A** and **B** size housing

CYG 06H1010

How to use the CYG 06H branch coupling

The cables are branched off by using the CYG 06H coupling in the 1 or 2 branch-off versions.

Multi-pole inserts "44.27" size can be fitted inside the two side recesses.

The entire unit can be used with one lever hoods complete with connector inserts.

The front faces can be fitted with "44.27" and/or "57.27" size bulkhead housings.

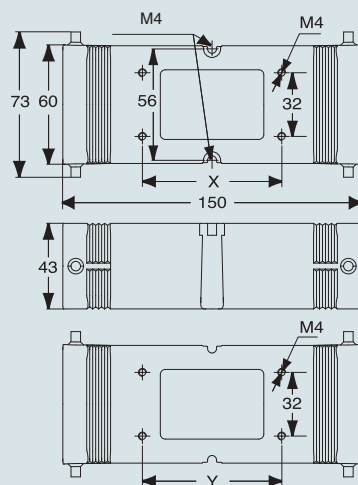
The coupling may also be used as an adapter by using a combination of different insert versions.

The CHC 06 LG cover may be used to close the coupling side faces.

In the branch-offs, the CSS series dual spring terminal inserts allow two wires to be connected without having to fit additional terminals inside the coupling.

dimensions in mm

CYG...H0610 / H1006 and CYG...H0606 / H1010

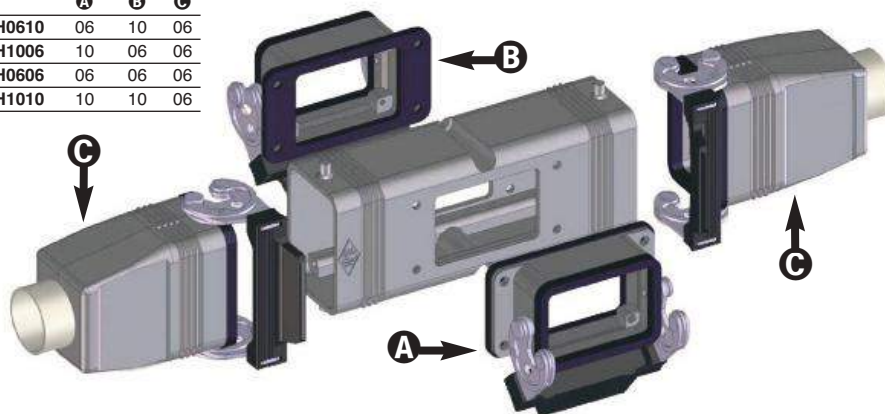


part No.	X	Y
CYG 06H0610	83	70
CYG 06H1006	70	83
CYG 06H0606	70	70
CYG 06H1010	83	83

Legend:

- A** bulkhead mounting housings
- B** bulkhead mounting housings
- C** hoods with lever and gasket (LG)

part No.	A	B	C
CYG 06H0610	06	10	06
CYG 06H1006	10	06	06
CYG 06H0606	06	06	06
CYG 06H1010	10	10	06



CALUS® Type 4/4X/12

dimensions shown are not binding and may be changed without notice

T-BOX



panel fitted insert fastening screws



screws for second earth terminal



description	part No.	part No.
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to be fitted instead of the current insert fastening screws

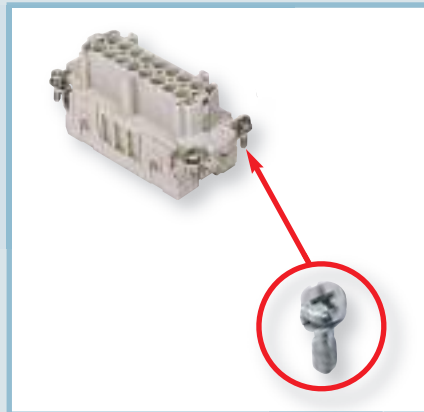
CRIC M3 *

- for CDA/CDC inserts
- for CD 15/25, CDD 38 inserts
- for CD 40/64, CDD 24/42/72/108, CQE, CNE, CSS, CX 8/24, CCE, CSE, CMSE, CME, CMCE, CSH inserts
- for CP, CX 12/2, CX 6/36, CX 4/0, CX 4/2 inserts

- CR VATG**
- CR VDTG**
- CR VNTG**
- CR VPTG**

ILME will not be responsible for any different mounting applications. It is the responsibility of the installer to ensure the correct coupling and earth contact of the inserts.

* The approved method of mounting inserts is by fixing the four screws in an ILME enclosure or housing.



dimensions shown are not binding and may be changed without notice

support for rail mounting
DIN EN 60715



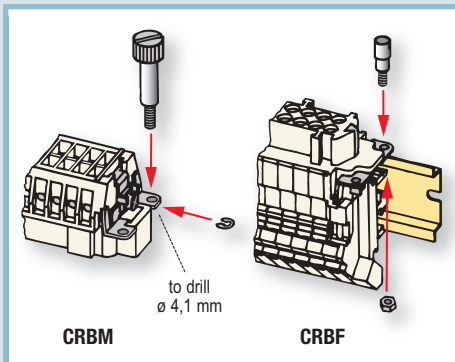
CT/CTS/CTSE inserts coupling screws
cable-clamping plates



description	part No.	part No.
supports for CT, CTS, CTSE inserts	CT APE	
bush for CT, CTS, CTSE inserts		CRBF
screw pin for CD, CNE, CCE, CSE, CSH inserts		CRBM
straight cable clamping plate		CRAD
angled cable clamping plate		CRAS

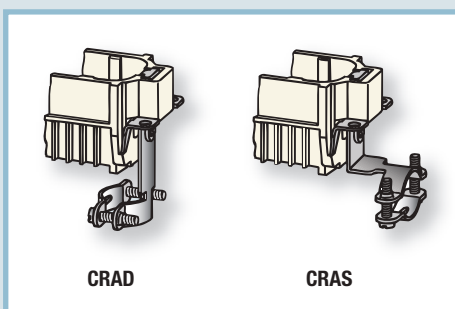
Coupling screws for CT/CTSE inserts

The use of CRBF (female) and CRBM (male) coupling screws is recommended to guarantee a stable and safe coupling between inserts (without enclosures) with terminal blocks and inserts without terminal blocks.



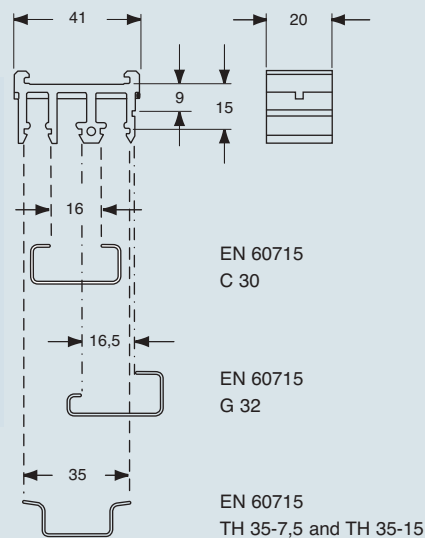
Use of cable-clamping plates

In accordance with the recommendations of standard IEC 60352-2, the weight of the conductor groups or multipolar cables must not cause any stress on the contacts inside the inserts. It is therefore advisable to use cable-clamping plates in those inserts without enclosures.



dimensions in mm

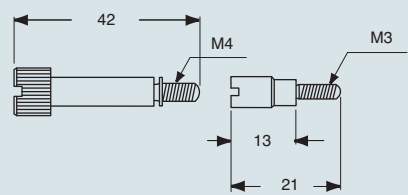
CT APE



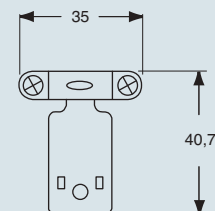
dimensions in mm

CRBM

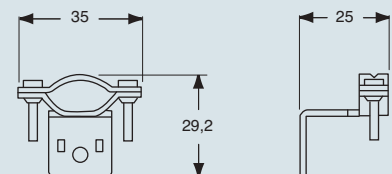
CRBF



CRAD



CRAS

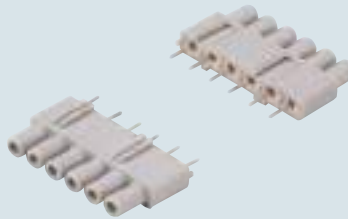


Note:
for conductor groups or cable with Ø min = 12 mm and Ø max = 23 mm

dimensions shown are not binding
and may be changed without notice

inserts:	page:
CDD 24 poles + ⊕	67
CDD 42 poles + ⊕	69
CDD 72 poles + ⊕	70
CDD 108 poles + ⊕	72
CX 8/24 poles + ⊕	169
CX 6/36 poles + ⊕	170
CX 12 (MIXO) 12 poles	194

interface for printed circuit



6A contacts for interface silver and gold plated



description	part No.	part No.	part No.
-------------	----------	----------	----------

interface module with 6 female contacts (gold)
 - for up to 2,4 mm thick PCB
 interface module with 6 female contacts (silver)
 - for up to 2,4 mm thick PCB

CIF 2.4
CIF 2.4 A

6A female contacts for female inserts with terminal Ø 1 mm
 6A male contacts for male inserts with terminal Ø 1 mm

CDFA 6A	silver plated	CDFD 6A	gold plated
CDMA 6A	silver plated	CDMD 6A	gold plated

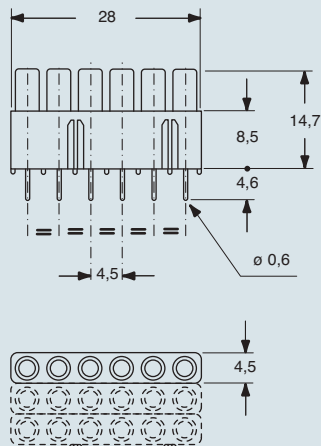
CIF interface

The interface block is made according to the multipole connector used by assembling a suitable number of CIF modules (see table).

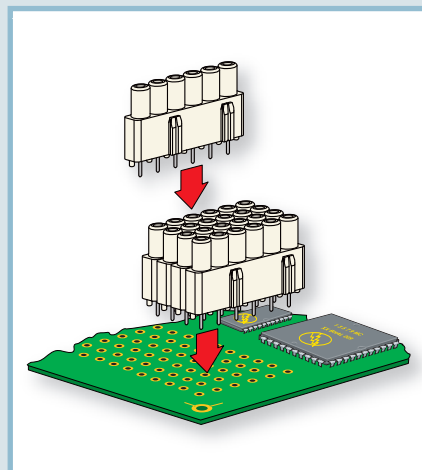
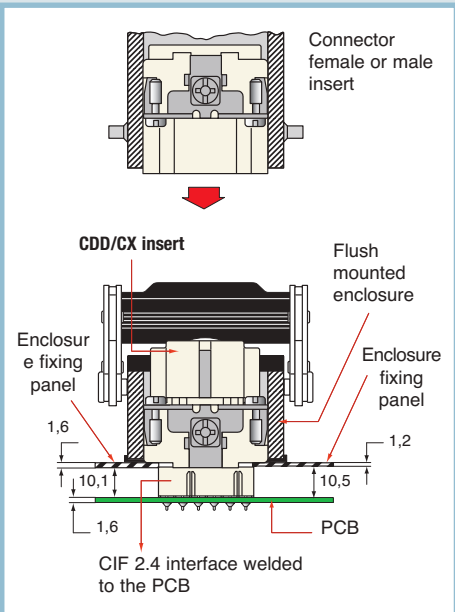
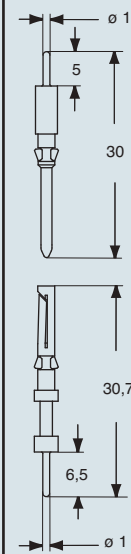
inserts serie	poles n°	modules "CIF" n°
CDD	24	4
CDD	42	7
CDD	72	12
CDD	108	18
CX	8/24	4
CX	6/36	6
CX (MIXO)	12	2

The block is then welded on the printed circuit on which the multipole connector (female or male) equipped with coupling contacts will then be inserted.

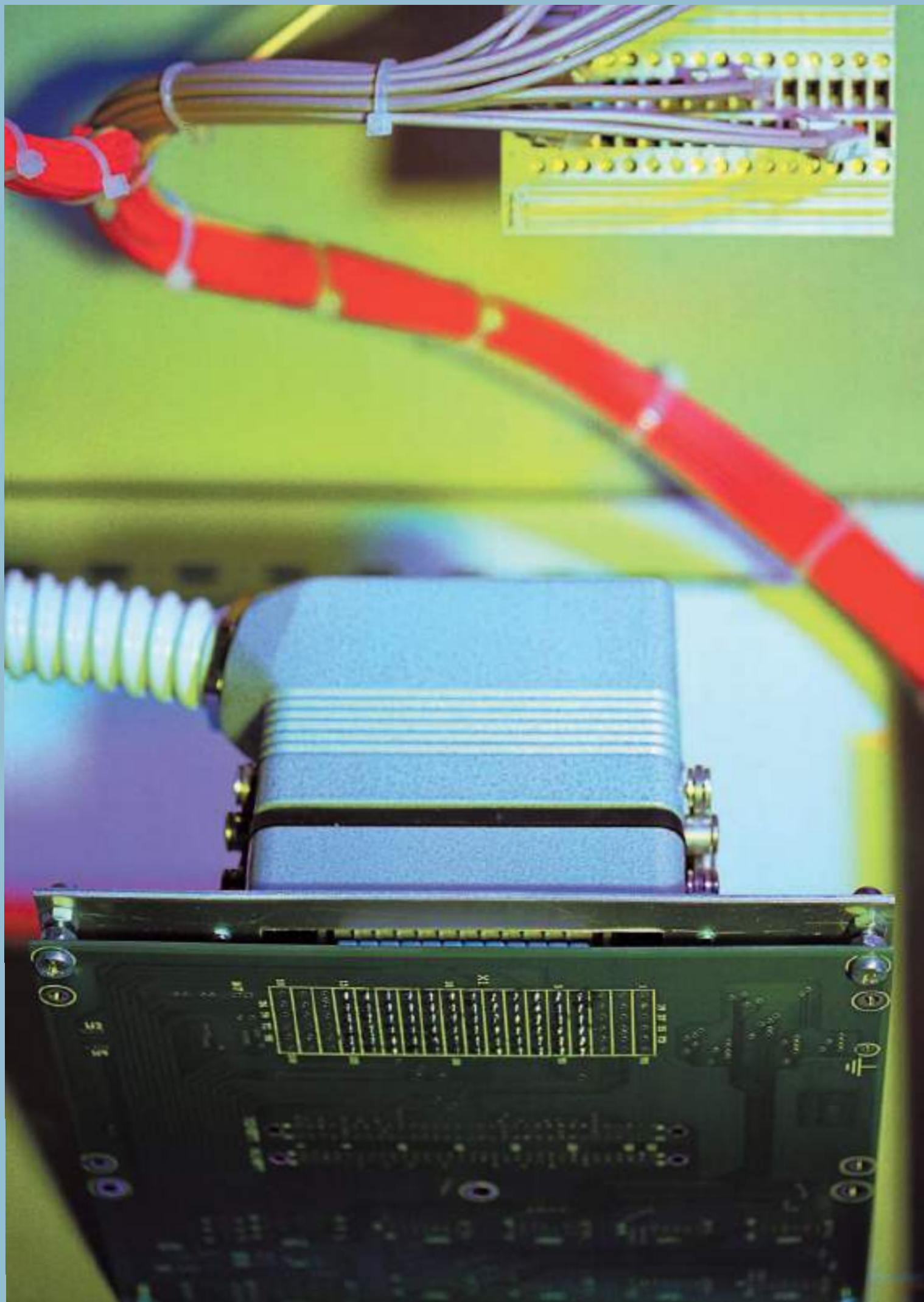
dimensions in mm



dimensions in mm



dimensions shown are not binding and may be changed without notice



inserts:	page:
CDC	10, 16 poles + ⊕ 99 and 101
CCE ..	6, 10, 16, 24, 32, 48 poles + ⊕ 110-115
CQE ..	10, 18, 32, 46, 64, 92 poles + ⊕ 138-143
CQEE	40, 64 poles + ⊕ 146-147
CMCE .	3+2, 6+2, 10+2, 16+2, 12+4, 20+4, 32+4 .. poles + ⊕ 148-160
CQ	5 poles + ⊕ 166
CX	8/24 poles + ⊕ 169
CX	6/6 poles + ⊕ 175
MIXO	(16A) 189-199

**constantan (Cu Ni)
crimp contacts**



**iron (Fe)
crimp contacts**



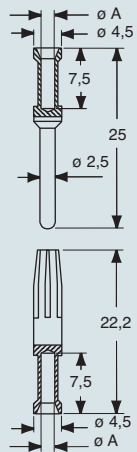
description	part No.	part No.
16A, 0,3 mm ² , AWG 22 female contacts	CCFC 0.3	CCFF 0.3
16A, 0,3 mm ² , AWG 22 male contacts	CCMC 0.3	CCMF 0.3
16A, 0,5 mm ² , AWG 20 female contacts	CCFC 0.5	CCFF 0.5
16A, 0,5 mm ² , AWG 20 male contacts	CCMC 0.5	CCMF 0.5

Note:
A mixed combination of standard Iron, Constantan and silver and gold plated contacts can be fitted in the same insert.

- for crimp contacts, see the crimp tool section (16A, CCF and CCM series contacts) pages 534, 538, 544, 546, 548
- for thermocouples compliant with DIN IEC 584 type J
- contact resistance ≤ 1 Ohm

dimensions in mm

CCF and CCM

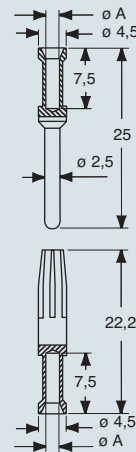


CCF and CCM contacts

conductor section mm ²	conductor slot ø A (mm)	conductors stripping length (mm)
0,3	1,1	7,5
0,5	1,1	7,5

dimensions in mm

CCF and CCM



CCF and CCM contacts

conductor section mm ²	conductor slot ø A (mm)	conductors stripping length (mm)
0,3	1,1	7,5
0,5	1,1	7,5

dimensions shown are not binding and may be changed without notice

insert:	page:
CD (10A)	53-61
CDD (10A)	67-74
CQ (10A)	165 and 168
CX 8/24 (16A/10A)	169
CX 6/36 (10A)	170
CX 12/2 (10A)	171
MIXO (10A)	185-203

**10A crimp contacts
high thickness gold plating**



NEW

**10A crimp contacts
basic gold plated**



NEW

description	part No.	part No.
10A female contacts		
0,14-0,37 mm ² AWG 26-22 identification No. 1	CDF2D 0.3	CDFJD 0.3
0,5 mm ² AWG 20 identification No. 2	CDF2D 0.5	CDFJD 0.5
0,75 mm ² AWG 18 identification No. ②	CDF2D 0.7	CDFJD 0.7
1,0 mm ² AWG 18 identification No. 3	CDF2D 1.0	CDFJD 1.0
1,5 mm ² AWG 16 identification No. 4	CDF2D 1.5	CDFJD 1.5
2,5 mm ² AWG 14 identification No. 5	CDF2D 2.5	CDFJD 2.5
10A male contacts		
0,14-0,37 mm ² AWG 26-22 identification No. 1	CDM2D 0.3	CDMJD 0.3
0,5 mm ² AWG 20 identification No. 2	CDM2D 0.5	CDMJD 0.5
0,75 mm ² AWG 18 identification No. ②	CDM2D 0.7	CDMJD 0.7
1,0 mm ² AWG 18 identification No. 3	CDM2D 1.0	CDMJD 1.0
1,5 mm ² AWG 16 identification No. 4	CDM2D 1.5	CDMJD 1.5
2,5 mm ² AWG 14 identification No. 5	CDM2D 2.5	CDMJD 2.5

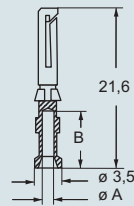
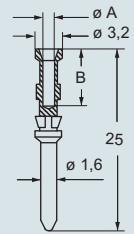
gold plated

gold plated

The new gold plated contacts provide:
 - corrosion resistance (according to EN 60068)
 - mechanical life: ≥ 500 coupling cycles
 - in compliance with EN 61984:2010-4, IEC 60512, EN 60352-2: 1994
 - compliant to directive RoHS
 - contact resistance: ≤ 3 mΩ
 - certifications: UL

dimensions in mm

CDF2 and CDM2

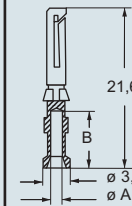
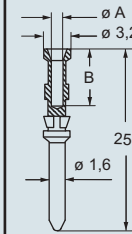


contacts CDF2 and CDM2

conductor section mm ²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

dimensions in mm

CDFJ and CDMJ



contacts CDFJ and CDMJ

conductor section mm ²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

dimensions shown are not binding and may be changed without notice

insert:	page:
CDC (16A)	99-103
CCE (16A)	110-115
CQE (16A)	138-143
CQEE (16A)	146-147
CMCE (16A)	148-160
CQ (16A)	166-167
CX 8/24 (16A/10A)	169
CX 6/6 (16A/10A)	175
MIXO (16A)	189-199

**16A crimp contacts
high thickness gold plating**



NEW

**16A crimp contacts
basic gold plated**



NEW

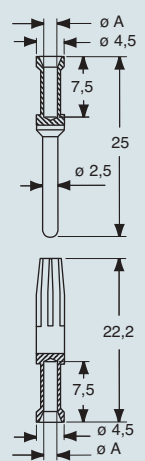
description	part No.	part No.
<p>16A female contacts</p> <p>0,14-0,37 mm² AWG 26-22 one groove</p> <p>0,5 mm² AWG 20 with no grooves</p> <p>0,75 mm² AWG 18 one groove (back side)</p> <p>1,0 mm² AWG 18 one groove</p> <p>1,5 mm² AWG 16 two grooves</p> <p>2,5 mm² AWG 14 three grooves</p> <p>3,0 mm² AWG 12 one wide groove</p> <p>4,0 mm² AWG 12 with no grooves</p>	<p>gold plated</p> <p>CCF2D 0.3</p> <p>CCF2D 0.5</p> <p>CCF2D 0.7</p> <p>CCF2D 1.0</p> <p>CCF2D 1.5</p> <p>CCF2D 2.5</p> <p>CCF2D 3.0</p> <p>CCF2D 4.0</p>	<p>gold plated</p> <p>CCFJD 0.3</p> <p>CCFJD 0.5</p> <p>CCFJD 0.7</p> <p>CCFJD 1.0</p> <p>CCFJD 1.5</p> <p>CCFJD 2.5</p> <p>CCFJD 3.0</p> <p>CCFJD 4.0</p>
<p>16A male contacts</p> <p>0,14-0,37 mm² AWG 26-22 one groove</p> <p>0,5 mm² AWG 20 with no grooves</p> <p>0,75 mm² AWG 18 one groove (back side)</p> <p>1,0 mm² AWG 18 one groove</p> <p>1,5 mm² AWG 16 two grooves</p> <p>2,5 mm² AWG 14 three grooves</p> <p>3,0 mm² AWG 12 one wide groove</p> <p>4,0 mm² AWG 12 with no grooves</p>	<p>CCM2D 0.3</p> <p>CCM2D 0.5</p> <p>CCM2D 0.7</p> <p>CCM2D 1.0</p> <p>CCM2D 1.5</p> <p>CCM2D 2.5</p> <p>CCM2D 3.0</p> <p>CCM2D 4.0</p>	<p>CCMJD 0.3</p> <p>CCMJD 0.5</p> <p>CCMJD 0.7</p> <p>CCMJD 1.0</p> <p>CCMJD 1.5</p> <p>CCMJD 2.5</p> <p>CCMJD 3.0</p> <p>CCMJD 4.0</p>

The new gold plated contacts provide:

- corrosion resistance (according to EN 60068)
- mechanical life: ≥ 500 coupling cycles
- in compliance with EN 61984:2010-4, IEC 60512, EN 60352-2: 1994
- compliant to directive RoHS
- contact resistance: ≤ 1 mΩ
- certifications: UL

dimensions in mm

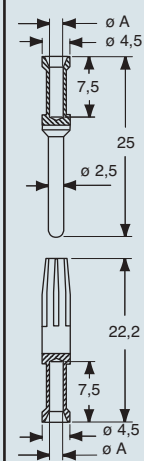
CCF2 and CCM2



contacts CCF2 and CCM2		
conductor section mm ²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3,0	2,55	7,5
4,0	2,85	7,5

dimensions in mm

CCFJ and CCMJ



contacts CCFJ and CCMJ		
conductor section mm ²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3,0	2,55	7,5
4,0	2,85	7,5

dimensions shown are not binding and may be changed without notice

enclosures:

MIXO seriesfrom page 180

CX 01 YF/YM/YPEF/YPEM, CX 02 GF/M, CX 02 HF/M:
only with CR 24 ATD

N.B.:
size 44.27 and 57.27 cannot be used with T-TYPE series

ground terminals for shielded cables (for MIXO series)
clamps for cables Ø 5 mm and Ø 10 mm



anchorages for several earth connections cables (for MIXO series)



description	part No.	part No.
in zinc iron, to be mounted on MIXO frames in bulkhead mounting housings and high construction hoods - enclosures "44.27" and MIXO frames for 2 inserts - enclosures "57.27" and MIXO frames for 3 inserts - enclosures "77.27", "77.62" and MIXO frames for 4 inserts - enclosures "104.27", "104.62" and MIXO frames for 6 inserts	CR 06 ST CR 10 ST CR 16 ST CR 24 ST	
to be mounted on CR..ST ground terminals clamp for shielding cables Ø 5 mm clamp for shielding cables Ø 10 mm	CR 05 CA CR 10 CA	
in zinc iron, to be mounted on MIXO frames in bulkhead mounting housings and high construction hoods - enclosures "44.27" and MIXO frames for 2 inserts - enclosures "57.27" and MIXO frames for 3 inserts - enclosures "77.27", "77.62" and MIXO frames for 4 inserts - enclosures "104.27", "104.62" and MIXO frames for 6 inserts - enclosures "104.27", "104.62" and MIXO frames for 6 inserts		CR 06 AT CR 10 AT CR 16 AT CR 24 AT CR 24 ATD

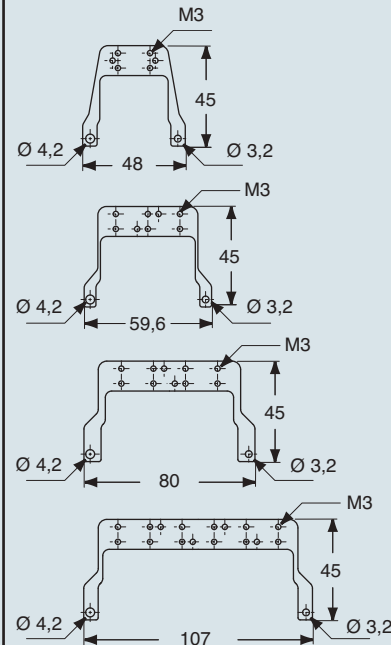
Anchorage CR .. ST are designed for installation on the frames of the MIXO modular connectors, for earth connecting the screening braid of shielded cables.

With the CR..ST anchorages we advise you to use high construction hoods top entry.

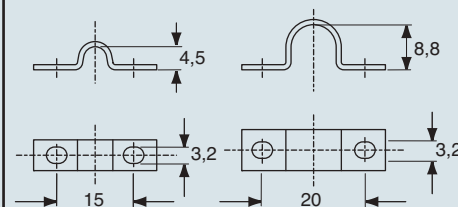
Anchorage CR .. AT / ATD are designed for installation on the frames of the MIXO modular connectors for earth connecting several cables.

dimensions in mm

CR...ST

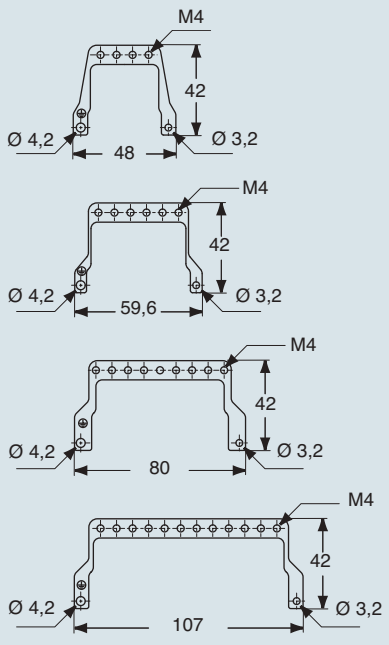


CR...CA

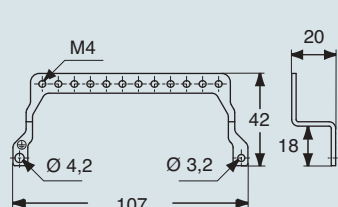


dimensions in mm

CR...AT



CR...ATD



dimensions shown are not binding and may be changed without notice

Accessories

inserts: page:

CD	40, 64 poles + ⊕	57 and 59
CDD	24, 42, 72, 108 poles + ⊕	67-72
CDS	9, 18, 27, 42 poles + ⊕	78-81
CSH	6, 10, 16, 24 poles + ⊕	91-94
CNE, CSE..	6, 10, 16, 24 poles + ⊕	104-107
CCE	6, 10, 16, 24 poles + ⊕	110-113
CSS	6, 10, 16, 24 poles + ⊕	122-125
CQE	10, 18, 32, 46 poles + ⊕	138-141
CQEE	40, 64 poles + ⊕	146-147
CMSH 3+2, 6+2, 10+2 (aux)	poles + ⊕	149-153
CP	6 poles + ⊕	162
CX	8/24, 6/36, 12/2 poles + ⊕	169-171

screw fixing centre distance:
44 x 27 mm, 57 x 27 mm,
77,5 x 27 mm, 104 x 27 mm

N.B.:
 size 44.27 and 57.27 cannot be used with T-TYPE series

ground terminals for shielded cables and for several earth connections clamps for cables Ø 5 mm and Ø 10 mm



description

part No.

in zinc plated iron, to be fitted on connectors in bulkhead housings, high hoods and COB series enclosures
 - "44.27" enclosures and inserts
 - "57.27" enclosures and inserts *
 - "77.27", "77.62" enclosures and inserts
 - "104.27", "104.62" enclosures and inserts
 - CSS "104.27" enclosures and inserts **

- CR 06 SC**
- CR 10 SC**
- CR 16 SC**
- CR 24 SC**
- CR 24 SCA**

to be fitted on CR..SC anchors
 U-bolt for Ø 5 mm cable screening
 U bolt for Ø 10 mm cable screening

- CR 05 CA**
- CR 10 CA**

* The high construction hoods with side entry cannot be used.

dimensions in mm

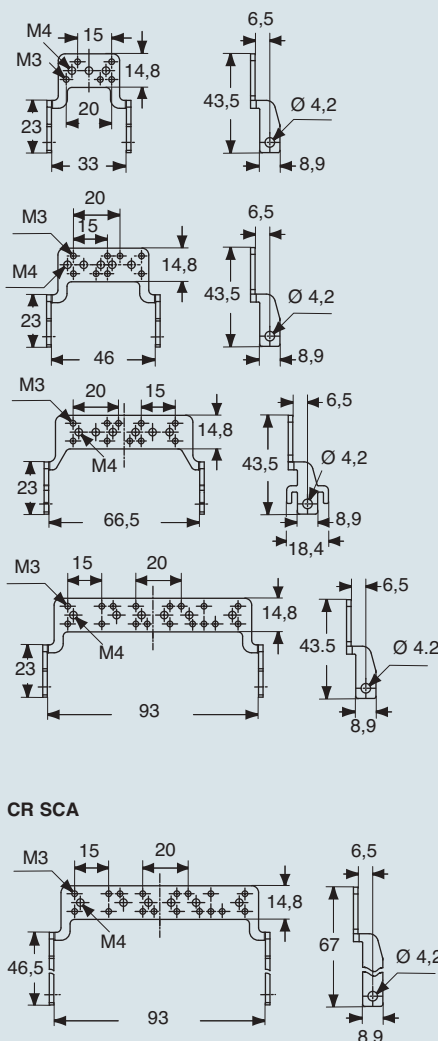
** Can be used only in bulkhead housings.

CR...SC

CR...CA

The CR... SC anchors are fitted on connectors for connecting to earth multiple cables and screened cables braids.

With the CR.SC anchorages, we advise you to use high construction hoods top entry.



CR SCA

The CR..FS series anchorages are employed for use of connector inner fittings (normal or MIXO modular) without enclosures and enable securing cables with clamps to prevent transmitting friction forces to contacts. CR..SS anchorages (with grip to facilitate detachment) are used for earth connecting several conductors and/or of the screen of shielded cables.

* except CT, CTS and CTSE

grip panels for cables outside enclosure equipped with fixing screws and rings



supports, screws and clamps for grip panels of cables outside enclosure



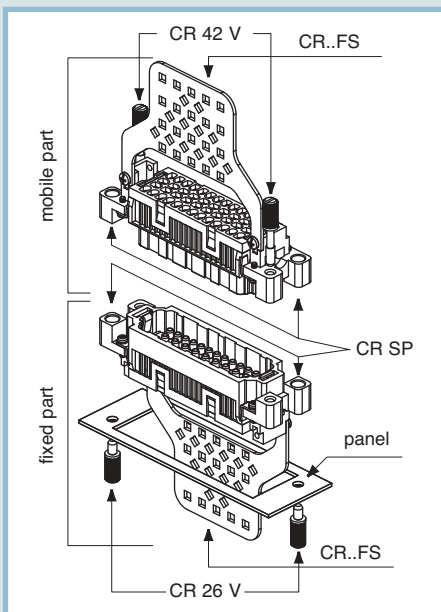
description	part No.	part No.
in zinc iron, to be mounted on: - inserts size "44.27" * and MIXO frames for 2 inserts - inserts size "57.27" * and MIXO frames for 3 inserts - inserts size "77.27" * and MIXO frames for 4 inserts - inserts size "104.27" * and MIXO frames for 6 inserts	CR 06 FS CR 10 FS CR 16 FS CR 24 FS	
for shielded cables, to be mounted on: - inserts size "77.27" * and MIXO frames for 4 inserts - inserts size "104.27" * and MIXO frames for 6 inserts	CR 16 SS CR 24 SS	
supports in die-cast zinc N° 2 pieces equipped with fixing screws and rings for earth connecting		CR SP
short screws in zinc iron, N° 2 pieces long screws in zinc iron, N° 2 pieces		CR 26 V CR 42 V
to be mounted on CR..SS anchorage clamp for shielding cables Ø 5 mm clamp for shielding cables Ø 10 mm		CR 05 CA CR 10 CA

* Except CT, CTS, and CTSE

In the fixed part, a pair of CR SP supports is fitted on the connector, using its securing screws. A CR..FS or CR..SS anchorage is fitted on the supports, using the supplied securing screws and washers. All parts are secured on the rear panel with the pair of CR 26 V viton screws.

In the mobile part too, a pair of CR SP supports are fitted on the connector and a CR..FS or CR..SS anchorage is secured on it. The pair of CR 42 V screws fasten the mobile part to the fixed part.

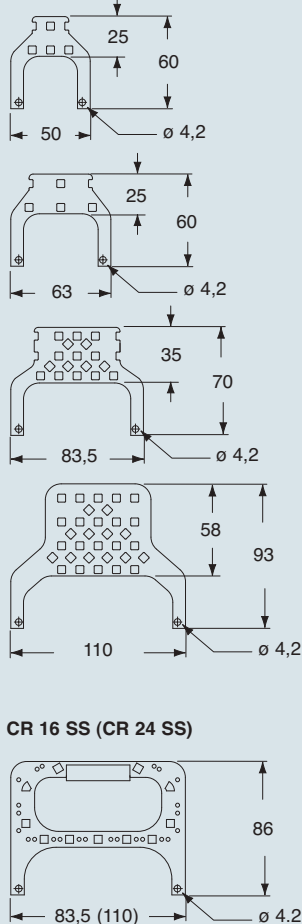
Note: By unscrewing the CR 26 V panel screws, the whole assembly (mobile part + fixed part) can be removed from the panel for inspection.



dimensions shown are not binding and may be changed without notice

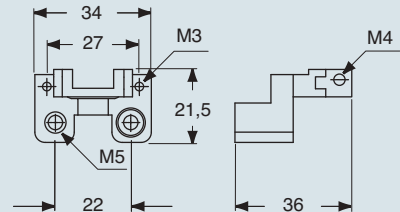
dimensions in mm

CR...FS

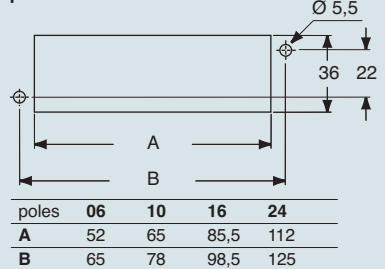


dimensions in mm

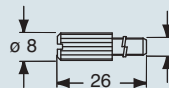
CR SP



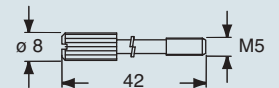
panel cut-out



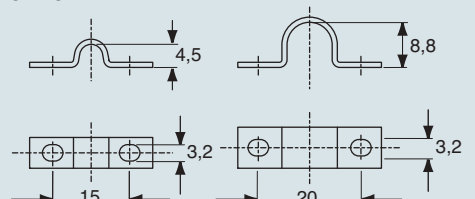
CR 26 V



CR 42 V



CR...CA



Technical specifications

- materials
 - floating frame, inserts: stainless steel
 - fixing screws: zinc-plated steel
- mechanical endurance: ≥ 500 cycles
- compensation range:
 - x axis: $\pm 1,5$ mm
 - y axis: $\pm 1,5$ mm

Caution:

-As the frames are floating, **the PE earthing connection of the metal surfaces on which they are mounted (mounting bases) must be performed separately** and cannot be done by connecting the PE earthing contact to the corresponding connector inserts.

Note:

- The supply includes 1 frame and 4 shoulder screws with cylindrical head and notch to fix the frame in place.

self-centering floating frame



NEW

description

part No.

in stainless steel, to be mounted on:

- inserts size "44.27" * and MIXO frames for 2 inserts
- inserts size "57.27" * and MIXO frames for 3 inserts
- inserts size "77.27" * and MIXO frames for 4 inserts
- inserts size "104.27" * and MIXO frames for 6 inserts

CR 06 DF
CR 10 DF
CR 16 DF
CR 24 DF

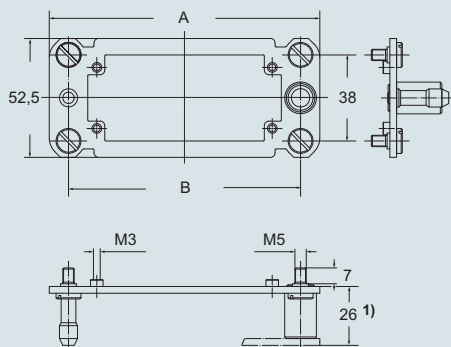
* Except CT, CTS and CTSE

For use with MIXO inserts CX 04 X, please contact ILME SpA.

Characteristics

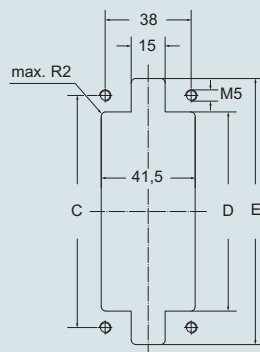
- Suitable, depending on size, for all MIXO connector inserts and frames, except series CT, CTS and CTSE.
- Designed to be used in the transportation, printing and power electronic industries (for example boxes for rack cabinets) and in all industrial applications that require, during assembly or maintenance, the connection of connectors without possibility of controlling the alignment.
- Enables the **self-centering coupling of two corresponding** connectors without the use of enclosures; they freely move on their base plate ($\pm 1,5$ mm on both axes) ensuring the **alignment of the coupling**.

dimensions in mm

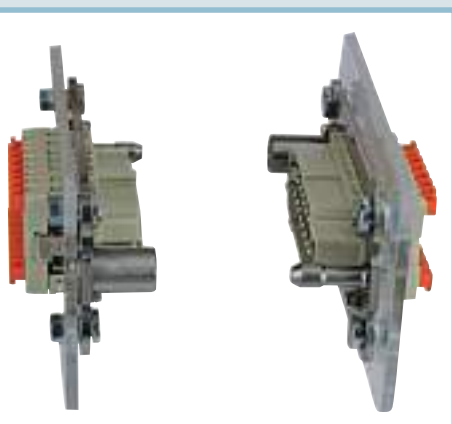


1) distance for electric and fibre optic contacts: max 27 mm
distance for pneumatic contacts: max 26,5 mm

panel cut-out in mm



part No.	A	B	C	D	E
CR 06 DF	86	69	69	54,5	84
CR 10 DF	99	82	82	67,5	97
CR 16 DF	119,5	102,5	102,5	88	117,5
CR 24 DF	146	129	129	114,5	144



dimensions shown are not binding and may be changed without notice

single code pins
for 6 codings



selectivity using single code pins



description	part No.	part No.
single code pin (not for MIXO inserts)	stainless steel CR 20	zinc plated iron CR 20 D
single code pin (for MIXO inserts only)	stainless steel CR 20 CX	zinc plated iron CR 20 CX D

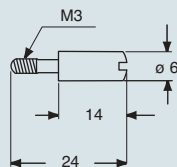
CR 20/CR 20 D and CR 20 CX/CR 20 CX D code pins

Each series of connector inserts is made in such a way as to make incorrect coupling between inserts of different series impossible. When a number of identical connectors with different functions are mounted closely together these must be selected in such a way as to prevent the coupling of a mobile part on a non-corresponding fixed part and consequent damage and breakdown.

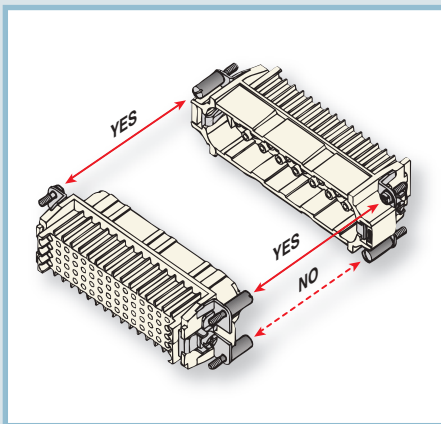
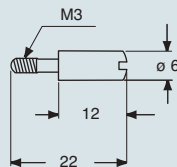
Code pins are supplied to apply in place of the normal insert fastening screws (see example below). In this way the coupling of identical connectors is assured. The combination of code pins makes it possible to obtain a high number of selective couplings.

dimensions in mm

CR 20 / CR 20 D



CR 20 CX / CR 20 CX D



Application with single insert

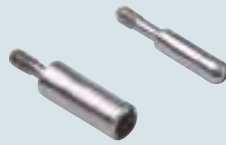
Application with double inserts

- code pin
(CR 20/CR 20 D and CR 20 CX/CR 20 CX D)
- + normal fixing screw
- M = male insert
- F = female insert

dimensions shown are not binding
and may be changed without notice

double coding and guide pins, for 16 codes

selection is made by using double coding and guide pins

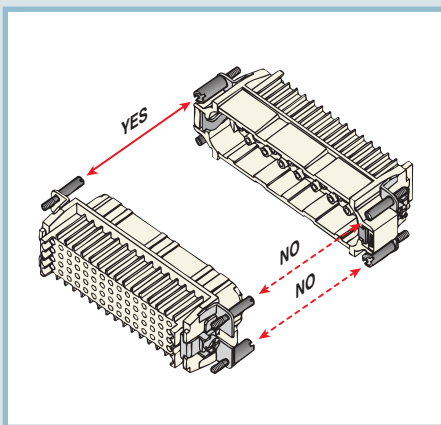


description	part No.	part No.
double coding pins (excluding MIXO inserts) - male pin - female pin	stainless steel CRM CRF	zinc plated iron CRM D CRF D
double code pins (for MIXO inserts only) - male pin - female pin	stainless steel CRM CX CRF CX	zinc plated iron CRM CX D CRF CX D

Code pins
- CRM/CRM D and CRF/CRF D
- CRM CX/CRM CX D and CRF CX/CRF CX D

Each series of connector inserts is made in such a way as to make incorrect coupling between inserts of different series impossible. When a number of identical connectors with different functions are mounted closely together these must be selected in such a way as to prevent the coupling of a mobile part on a non-corresponding fixed part and consequent damage and breakdown.

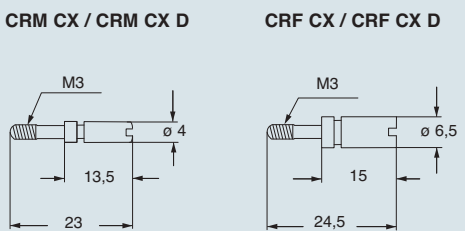
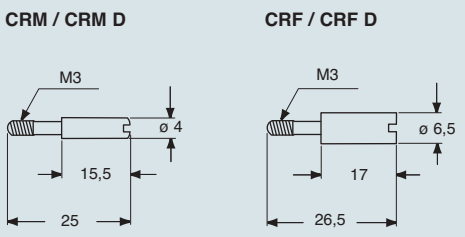
Code pins are supplied to apply in place of the normal insert fastening screws (see example below). In this way the coupling of identical connectors is assured. The combination of code pins makes it possible to obtain a high number of selective couplings.



Even when coding is not required, it is recommended to use CRM and CRF pins with CD and CDD inserts to reduce movements when fitting and removing the connectors and to avoid contact damages. Within this scope, the standard DIN 43 652 requires a maximum angular longitudinal fluctuation of $\pm 5^\circ$.

dimensions shown are not binding and may be changed without notice

dimensions in mm



Application with single insert

Application with double inserts

- female code pin (CRF/CRF D and CRF CX/CRF CX D)
- male code pin (CRM/CRM D and CRM CX/CRM CX D)
- + normal fixing screw
- M = male insert
- F = female insert

coding and guide pins, for 72 codes

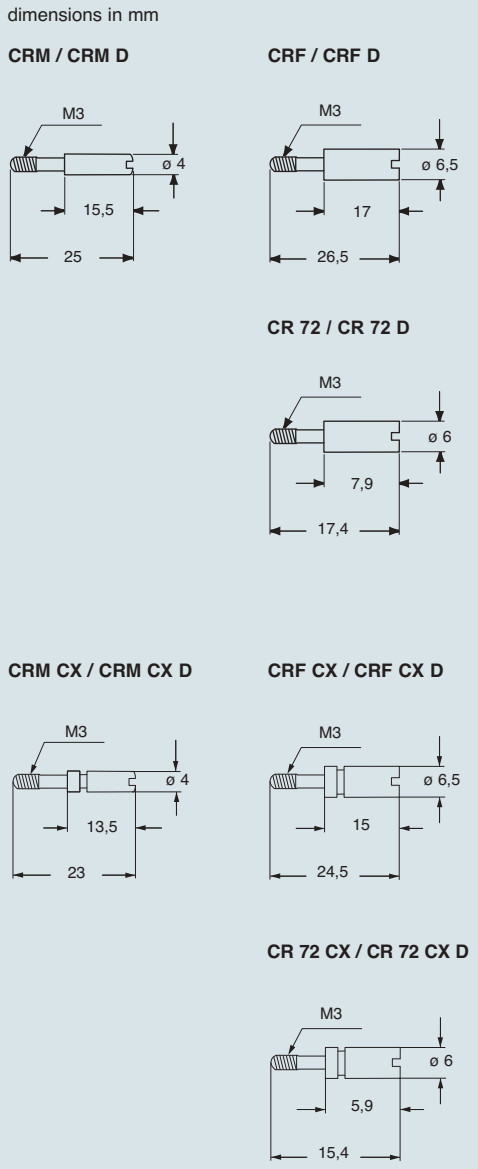


description	part No.	part No.
double coding pins (excluding MIXO inserts) - male pin - female pin - single code pin	stainless steel CRM CRF CR 72	zinc plated iron CRM D CRF D CR 72 D
double coding pins (for MIXO inserts only) - male pin - female pin - single code pin	stainless steel CRM CX CRF CX CR 72 CX	zinc plated iron CRM CX D CRF CX D CR 72 CX D

Code pins
- CRM/CRM D, CRF/CRF D and CR 72/CR 72 D
- CRM CX/CRM CX D, CRF CX/CRF CX D and CR 72 CX/CR 72 CX D

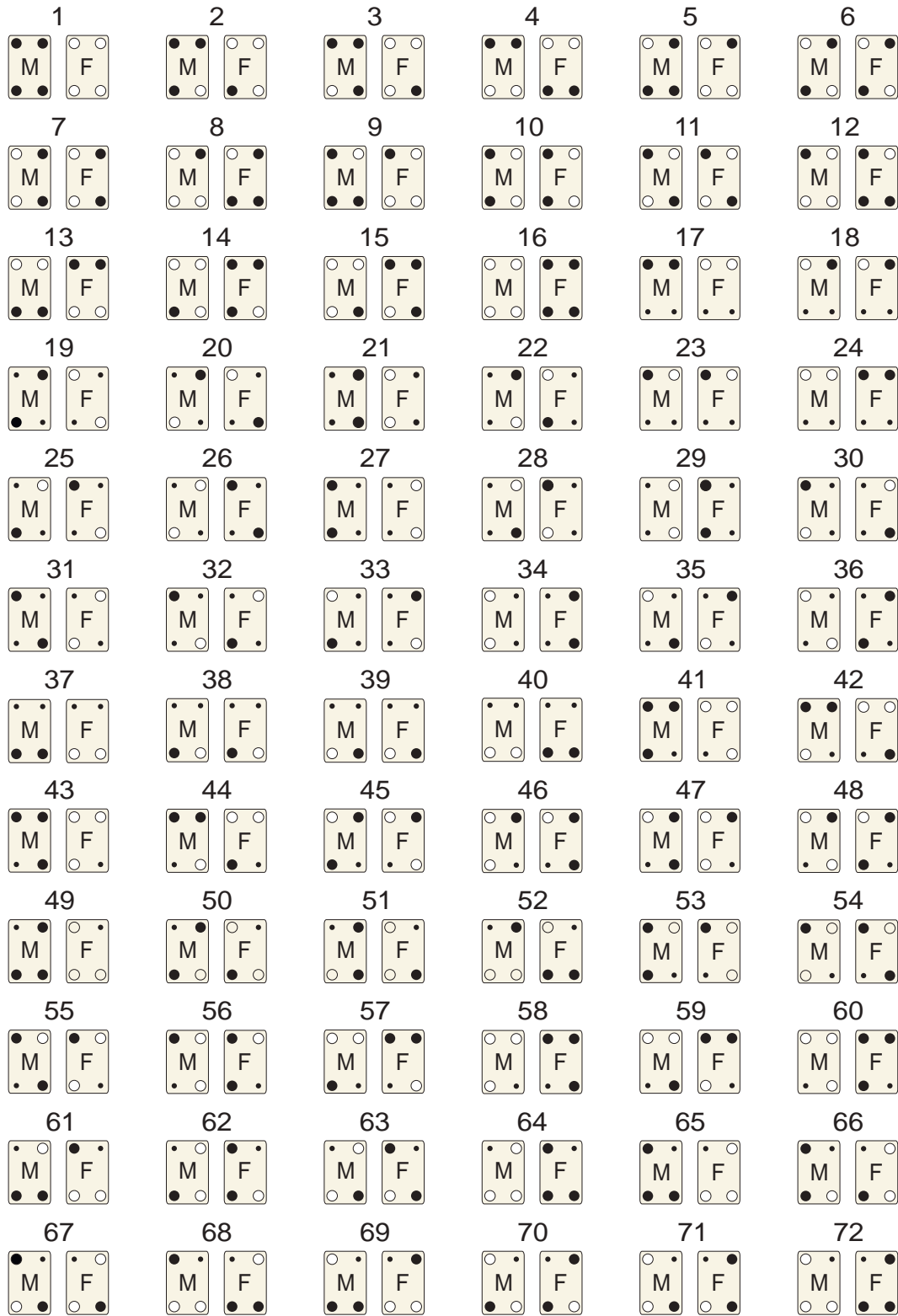
Each series of connector inserts is made in such a way as to make incorrect coupling between inserts of different series impossible. When a number of identical connectors with different functions are mounted closely together these must be selected in such a way as to prevent the coupling of a mobile part on a non-corresponding fixed part and consequent damage and breakdown.

Code pins are supplied to apply in place of the normal insert fastening screws. In this way the coupling of identical connectors is assured. The combination of code pins makes it possible to obtain a high number of selective couplings.



dimensions shown are not binding and may be changed without notice

Coding selection using the three coding pins



- female code pin (CRF/CRF D and CRF CX/CRF CX D)
- male code pin (CRM/CRM D and CRM CX/CRM CX D)
- single code pin (CR 72/CR 72 D and CR 72 CX/CR 72 CX D)
- M = male insert
- F = female insert

plain coding pins
for CK / CKS 03 inserts



NEW

plain coding pins
for CK / CKS 04 inserts



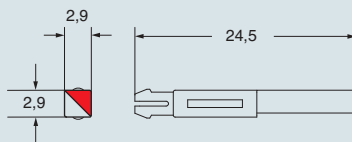
NEW

description	part No.	part No.	part No.
coding pins for CK/CKS 03 inserts	CR K03		
coding pins for CK/CKS 04 inserts		red CR K04R	yellow CR K04G



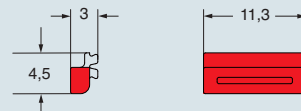
dimensions in mm

CR K03

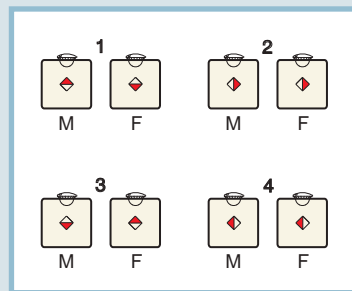
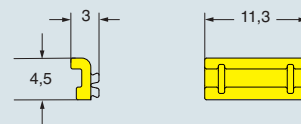


dimensions in mm

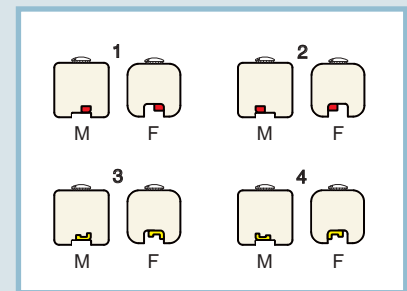
CR K04R



CR K04G



M = male insert
F = female insert



M = male insert
F = female insert

dimensions shown are not binding
and may be changed without notice

plain coding pins
for crimp inserts



plain coding pins
for CQ 12 inserts



description	part No.	part No.
coding pins for CDC, CQ, CQE, CCE, CMCE, MIXO (16A) inserts - pin to be inserted into one contact cavity of the female insert instead of the crimp contact, the corresponding contact cavity of the male insert must be left empty	CR CPQ	
coding pins for CD and CDD inserts - plastic pin, to be inserted into one contact cavity of the female insert instead of a crimp contact, the corresponding contact cavity of the male insert must be left empty	CR CP	
coding pins for CQ 12 inserts		CR Q12

Code pins

Each series of connector inserts is made in such a way as to make incorrect coupling between inserts of different series impossible.

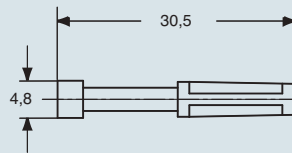
When a number of identical connectors with different functions are mounted closely together these must be selected in such a way as to prevent the coupling of a mobile part on a non-corresponding fixed part and consequent damage and breakdown.

Within this scope, special coding pins have been manufactured in order to restrict or avoid mating identical multiple connectors.

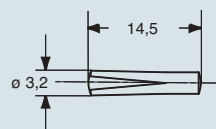
By combining multiple coding pins, a high number of selected matings can be produced.

dimensions in mm

CR CPQ

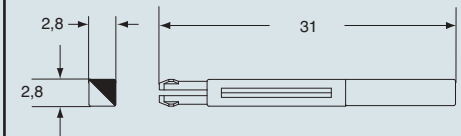


CR CP

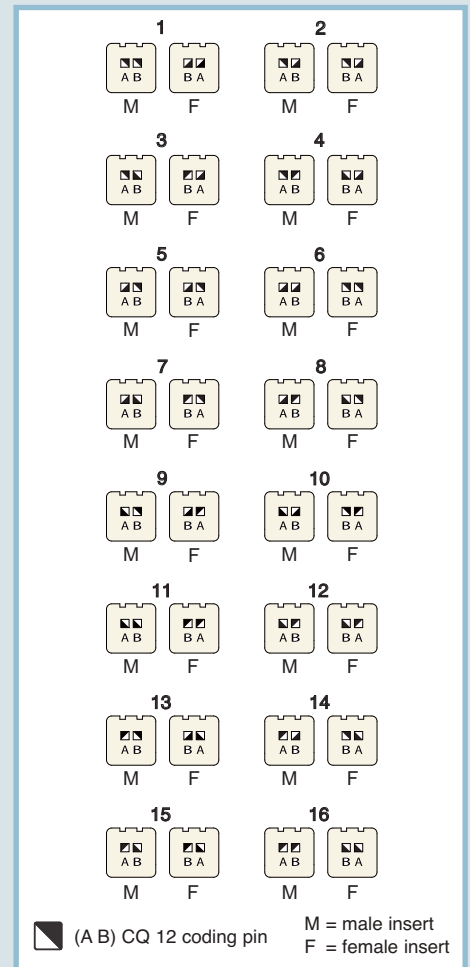


dimensions in mm

CR Q12



CR Q12



dimensions shown are not binding and may be changed without notice

terminal connector
for CKF 03 inserts

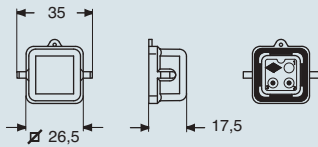


description	part No.
with pegs and seal, connects pole 2 with pole 3 with pegs and seal, connects pole 1 with pole 2	CKM 03 T1 CKM 03 T3

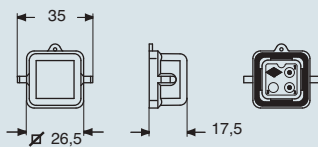
When the terminal connector is mated with a CKF/CKSF 03 insert (complete with an enclosure with lever), it performs a dual function:
- connects two socket insert poles
- acts as a cover (IP65 protection rating compliant with EN 60529 standard, with lever closed).

dimensions in mm

CKM 03 T1



CKM 03 T3

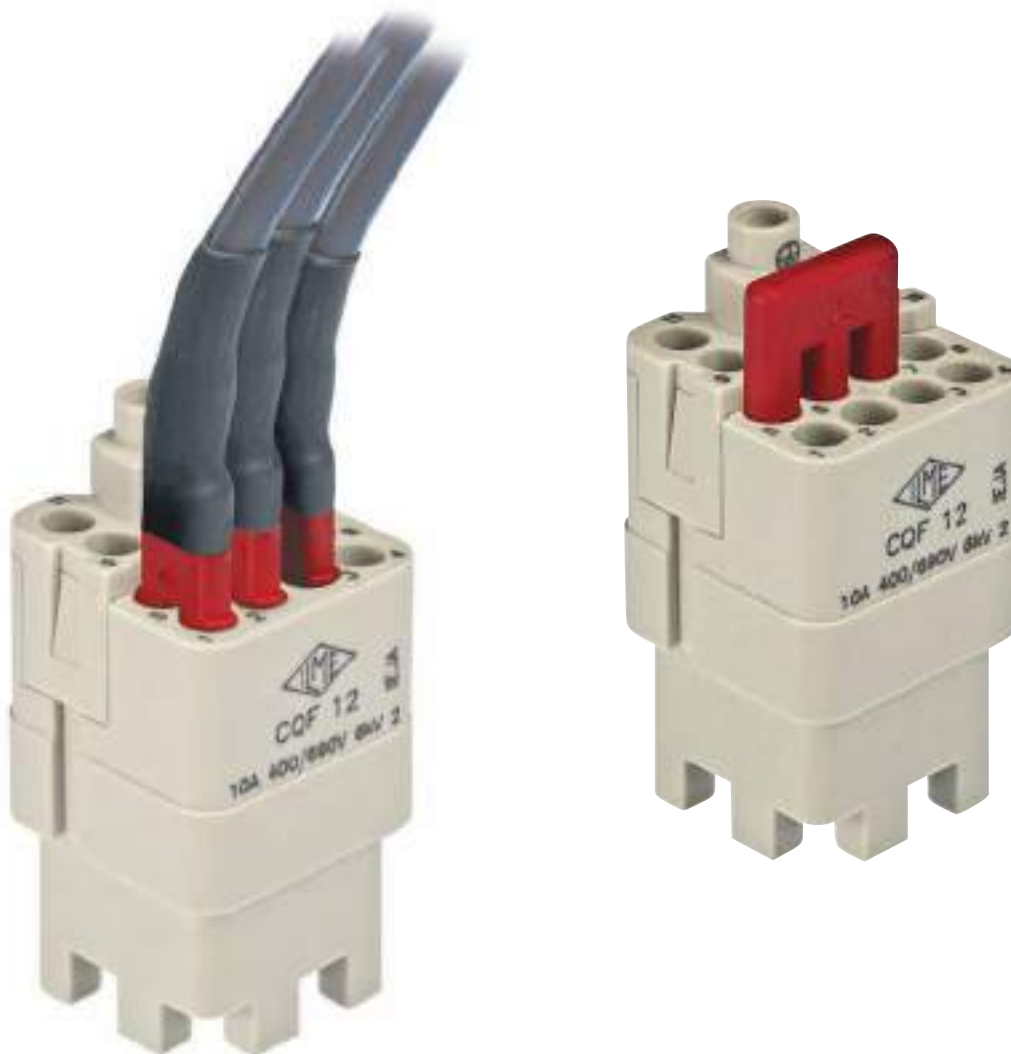


- interconnected male contacts

dimensions shown are not binding
and may be changed without notice

Bridges

for delta or star connection



CR bridges for delta or star connection



inserts:

- CQF * 12 poles + ⊕
- CDDF 24, 42, 72 (144), 108 (216) poles + ⊕

* for enclosures C-TYPE series (CKA/MKA...I/VS) only

For wires with cross-section ranging from 1,5 to 2,5 mm² (16-14 AWG), crimp connection with **CRPZ** pliers (model CEMBRE IDT) and **CRD** matrix.

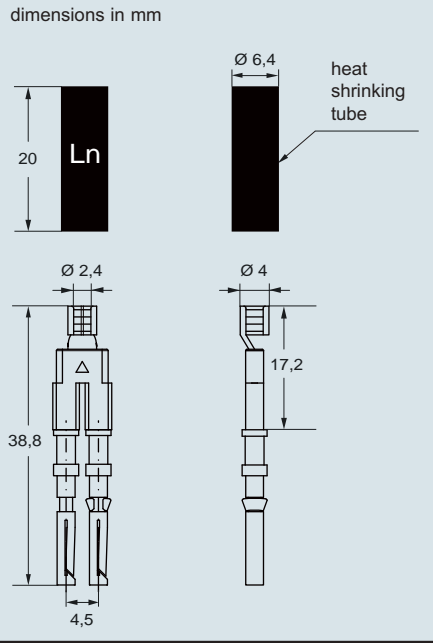


bridges for delta connection

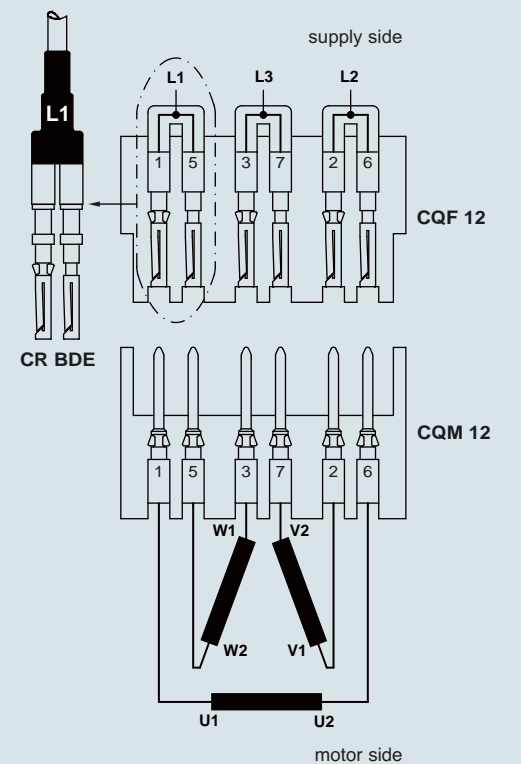


description	Part No.
bridge with 2 female 10A contacts, silver plated and open type crimp barrel	CR BDE

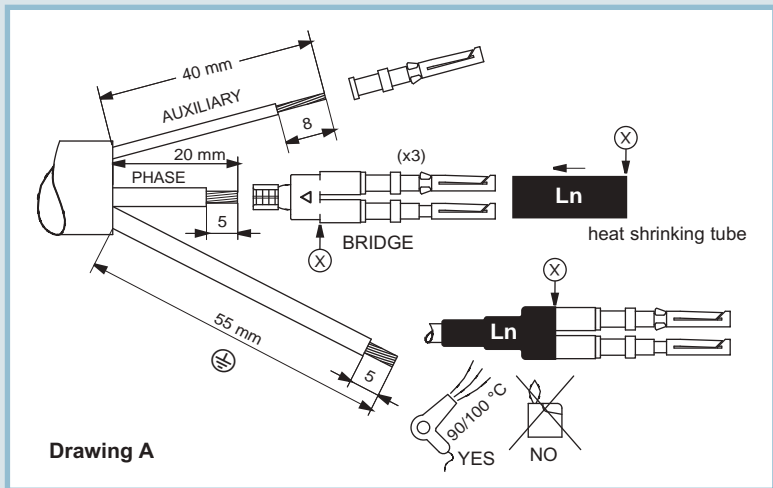
NOTE:
The typical use of the product requires three bridges each with its shrinking tube with L1 / L2 / L3 marking to identify the phases in the wiring.



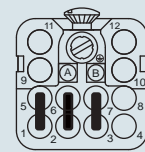
Example of DELTA connection using inserts CQ 12



- 1 - Cut and strip the wires as shown in **Drawing A**.
- 2 - Crimp the contacts on the auxiliary wires and the bridge end to the phase wires (3 units) using CRPZ pliers and CRD matrix (position 2,5).
- 3 - Insert the insulating heat shrinking tubes on the bridges, their end must be aligned with the position ⊗. Then heat them at 90/100 °C till they shrink over the wires.
- 4 - Insert the 3 bridges according to the **Drawing B**.



Drawing B



CQF 12 (termination side)

1-5	BRIDGE L1 (winding U1/W2)
2-6	BRIDGE L2 (winding V1/U2)
3-7	BRIDGE L3 (winding W1/V2)
4	auxiliary circuit
8	auxiliary circuit
9	auxiliary circuit
10	auxiliary circuit
11	auxiliary circuit
12	auxiliary circuit
⊕	protective earth

dimensions shown are not binding and may be changed without notice

CR bridges for delta or star connection



inserts:

- CQF 12 poles + ⊕
- CDDF 24, 42, 72 (144), 108 (216) poles + ⊕

bridges for star connection



description

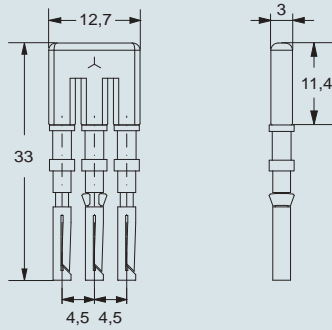
Part No.

bridge with 3 female 10A contacts, silver plated

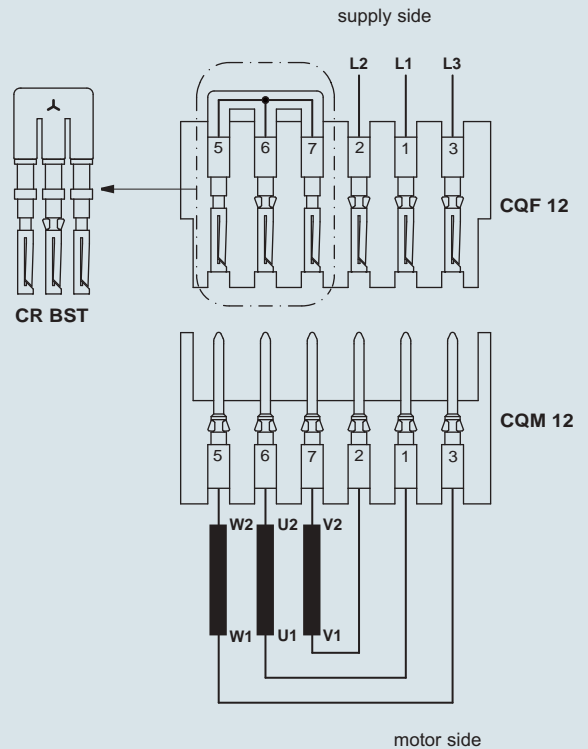
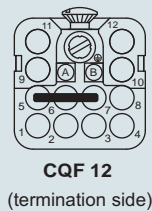
CR BST



dimensions in mm



Example of STAR connection using inserts CQ 12



5-6-7	BRIDGE W2-U2-V2
1	L1
2	L2
3	L3
4	auxiliary circuit
8	auxiliary circuit
9	auxiliary circuit
10	auxiliary circuit
11	auxiliary circuit
12	auxiliary circuit
⊕	protective earth

dimensions shown are not binding and may be changed without notice

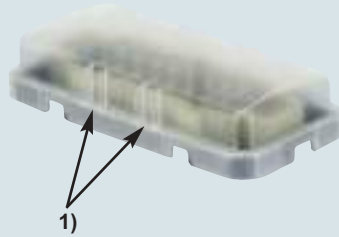
enclosures:

size "44.27", "57.27", "77.27", "104.27"

for versions:

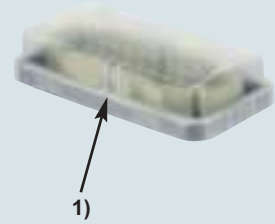
- C-TYPE IP65/IP66
- C7 IP67 stainless steel lever
- V-TYPE IP65/IP66 stainless steel lever
- BIG hoods
- W-TYPE for aggressive environments
- EMC
- 180 °C
- central lever
- insulated 830V
- LS-TYPE

dust protection cover



NEW

painting protection cover 2)



NEW

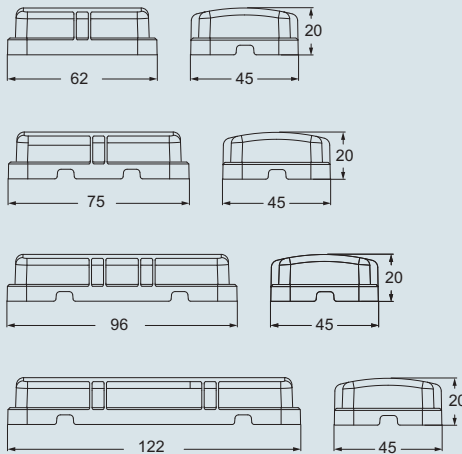
description	part No.	part No.
for housings and hoods with 1 or 2 levers, with 2 or 4 pegs - size "44.27" - size "57.27" - size "77.27" - size "104.27"	CHCP 06 CHCP 10 CHCP 16 CHCP 24	CHCP 10 V

1) Possibility of using cable ties to increase the retention of the insulating cover on the hood.

2) For housings and hoods with gasket only.

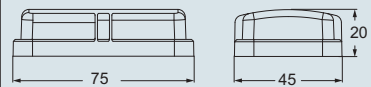
dimensions in mm

CHCP



dimensions in mm

CHCP 10 V



dimensions shown are not binding and may be changed without notice

for versions:

- IP68:

size "21.21", "44.27", "57.27", "77.27", "104.27"

dust protection cover,
for housings



dust protection cover,
for hoods



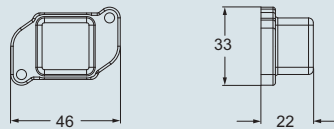
description	part No.	part No.
for housings and hoods - size "21.21" - size "44.27" - size "57.27" - size "77.27" - size "104.27"	CGKCP FX CGCP 06 FX CGCP 10 FX CGCP 16 FX CGCP 24 FX	CGKCP MB CGCP 06 MB CGCP 10 MB CGCP 16 MB CGCP 24 MB

1) Possibility of using cable ties to increase the retention of the insulating cover on the hood.

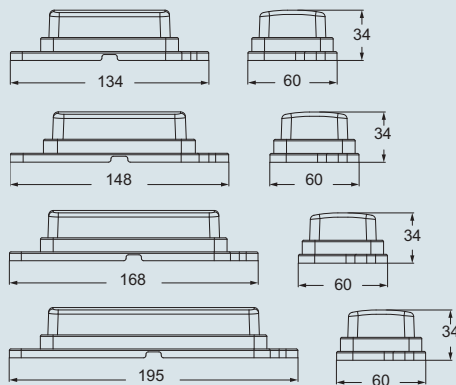
2) possibility to fix by screw:
 - CGKCP FX: 2xM3
 - CGCP FX: 2xM6

dimensions in mm

CGKCP FX

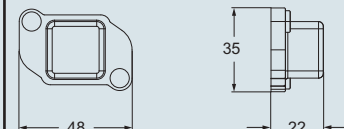


CGCP FX

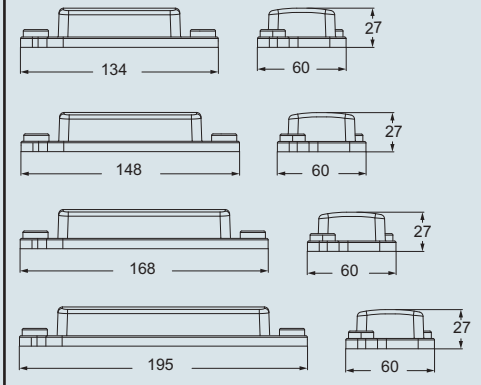


dimensions in mm

CGKCP MB



CGCP MB



dimensions shown are not binding
and may be changed without notice

insert joining block



metal replacement handles



description	part No.	part No.
-------------	----------	----------

made of die cast aluminium alloy
to mate two inserts (see below)

CBGF

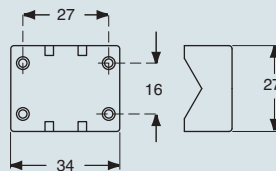
to replace thermoplastic handles
2 component kit for dual lever enclosures ¹⁾

CR TM-1

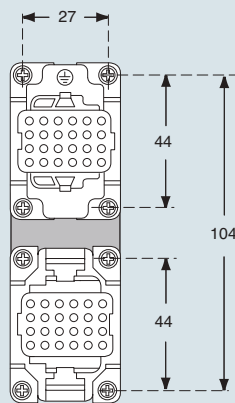
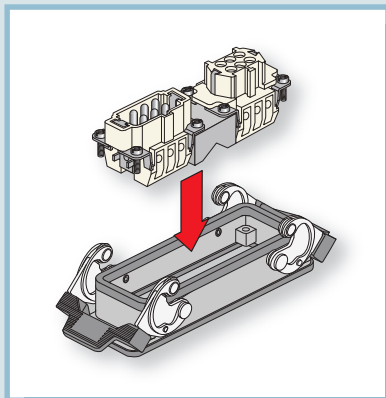
¹⁾ can only be used on dual lever enclosures sizes
57.27, 77.27 and 104.27

dimensions in mm

- CBGF combination block**
- Allows two "44.27 size" inserts to be inserted in "104.27 size" enclosures and on the following COB series items:
COB TCQ, COB 24 BC, COB TSF, COB TSFS, COB 24 CMS
 - Allows female contacts and male contacts in the same enclosure or mounting
 - Allows mixed type contacts in the same enclosure or mounting (for example, 6 poles 16A CNEF + 24 poles 10A CDDF)



C-TYPE enclosures
(with two levers only):
size "57.27" from page 244
size "77.27" from page 250
size "104.27" from page 258



enclosures :
size "104.27" from page 258

panel supports:
COB page 462 - 463

inserts with screw fixing centre distance:
(2x) 44 x 27 mm

dimensions shown are not binding
and may be changed without notice

enclosures:
size "104.27" from page 258

temporary protection cover
for transportation

pliers for uncoupling connectors



description

part No.

part No.

for housings and hoods
- with 1 or 2 levers, with 2 or 4 pegs

CPT 24 *

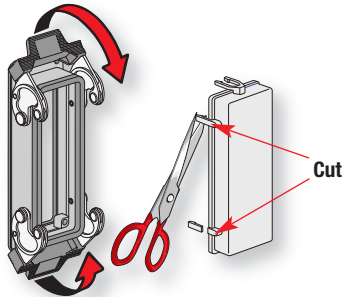
for housings and hoods
- with 2 levers and 4 pegs

CPES

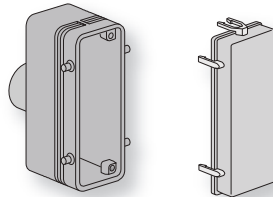
* Cannot be used with T-TYPE series

USE

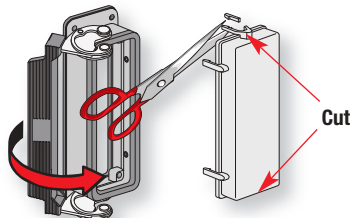
CPT 24 for enclosures with 2 levers



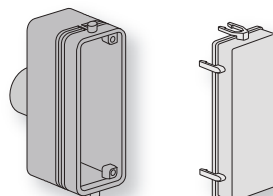
CPT 24 for enclosures with 4 pegs



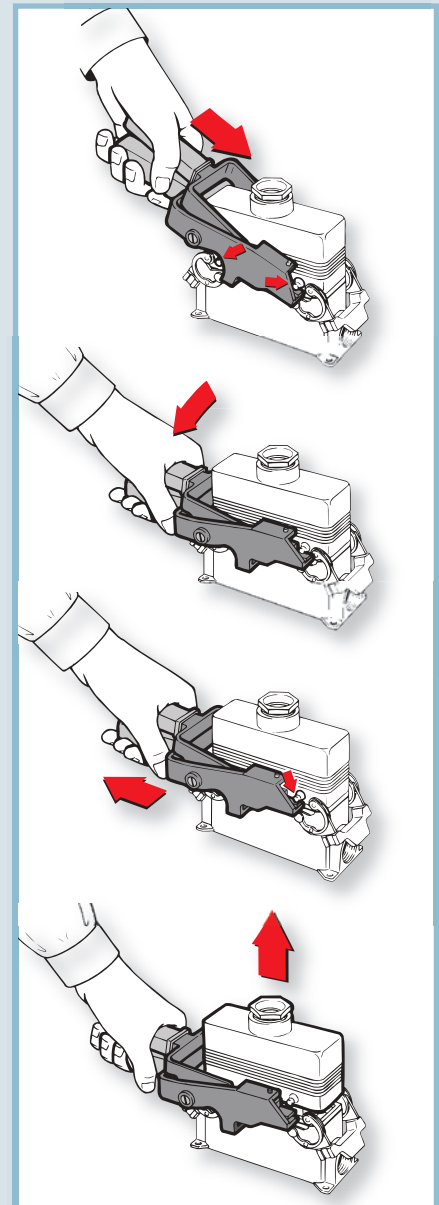
CPT 24 for enclosures with 1 lever



CPT 24 for enclosures with 2 pegs



USE



enclosures:

- size "49.16" from page 230
- size "66.16" from page 233
- size "44.27" from page 240
- size "57.27" from page 244
- size "77.27" from page 250

Use M3 passing screws tightened with nut and washer (not included).
Verify connection continuity of coupled connectors

plates for D-SUB inserts (IEC 60807-2)
CZ / MZ / MZF enclosures



plates for D-SUB inserts (IEC 60807-2)
CH / CA and MH / MA / MF enclosures



description	part No.	for enclosures size
for 1 D-SUB insert 9 poles (not included)	CR 09 AD	"49.16"
for 1 D-SUB insert 15 poles (not included)	CR 15 AD	"49.16"
for 1 D-SUB insert 25 poles (not included)	CR 25 AD	"49.16"
for 1 D-SUB insert 37 poles (not included)	CR 37 AD	"66.16"
for 1 D-SUB insert 50 poles (not included)	CR 50 AD	"66.16"
for 2 D-SUB inserts 9 poles (not included)		
for 2 D-SUB inserts 15 poles (not included)		
for 2 D-SUB inserts 25 poles (not included)		
for 2 D-SUB inserts 37 poles (not included)		
for 2 D-SUB inserts 50 poles (not included)		

description	part No.	for enclosures size
for 1 D-SUB insert 9 poles (not included)	CR 09 AD1	"44.27"
for 1 D-SUB insert 15 poles (not included)	CR 15 AD1	"44.27"
for 1 D-SUB insert 25 poles (not included)	CR 25 AD1	"57.27"
for 1 D-SUB insert 37 poles (not included)	CR 37 AD1	"77.27"
for 1 D-SUB insert 50 poles (not included)	CR 50 AD1	"77.27"
for 2 D-SUB inserts 9 poles (not included)	CR 09 AD2	"44.27"
for 2 D-SUB inserts 15 poles (not included)	CR 15 AD2	"44.27"
for 2 D-SUB inserts 25 poles (not included)	CR 25 AD2	"57.27"
for 2 D-SUB inserts 37 poles (not included)	CR 37 AD2	"77.27"
for 2 D-SUB inserts 50 poles (not included)	CR 50 AD2	"77.27"

Plates CR...AD, CR...AD1 and CR...AD2

For machinery or command equipment that need connection with programming and control electronic devices. The plate housings have notches for the rear insertion of cabled D-SUB inserts.

CR...AD

mounting on bulkhead housings and hoods
one-way mounting in bulkhead housings or hoods.

CR...AD1 and CR...AD2

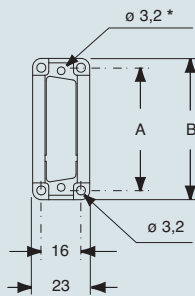
mounting on bulkhead housings (Figure 1)
The D-SUB connector must be mounted on the side marked with the letter "A"

mounting on hoods (Figure 2)

The D-SUB connector must be mounted on the side marked with the letter "T"

dimensions in mm

CR...AD



* For passing screws type M3

The electrical continuity is guaranteed only if mounted in our enclosures.

part No.	A	B
CR 09 AD	49,5	56,5
CR 15 AD	49,5	56,5
CR 25 AD	49,5	56,5
CR 37 AD	66	73,5
CR 50 AD	66	73,5

dimensions in mm

CR...AD1

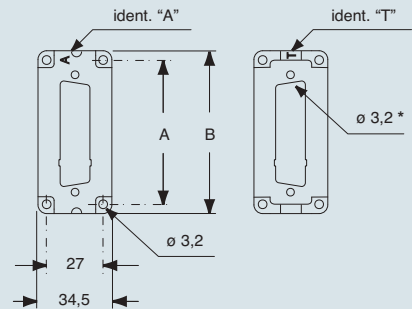


Figure 1

Figure 2

CR...AD2

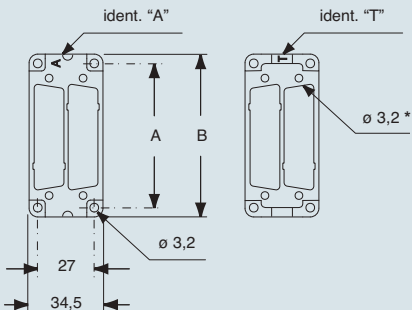
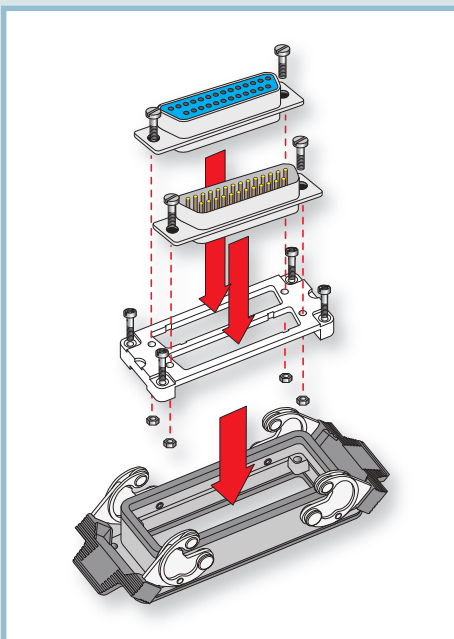


Figure 1

Figure 2

* For passing screws type M3

part No.	A	B
CR 09 AD1 / 2	44	51,5
CR 15 AD1 / 2	44	51,5
CR 25 AD1 / 2	57	64,5
CR 37 AD1 / 2	77,5	85
CR 50 AD1 / 2	77,5	85



dimensions shown are not binding
and may be changed without notice

enclosures *):
size "104.62" page:

C-TYPE IP65/IP66 271

* normally bulkhead type

**kit for control equipment
plate only**



**kit for control equipment
plate with enclosure**



description	part No.	for enclosure	part No.
-------------	----------	---------------	----------

with Schuko® socket 16A and 2 seats for: CR 09 AD, CR 15 AD, CR 25 AD plates	SDS	CHI 48 LS	
---	------------	-----------	--

with Schuko® socket 16A and 2 seats for: CR 09 AD, CR 15 AD, CR 25 AD plates			CHSDS
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Kit for control equipment

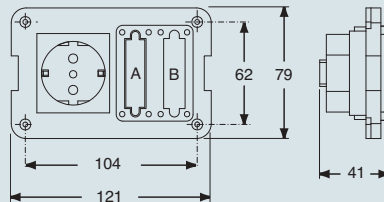
For machinery or command equipment that need connection with programming and control electronic devices.

The kit includes the Schuko® socket and 2 seats for the CR...AD plates (not included) for D-SUB inserts (not included).

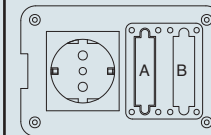
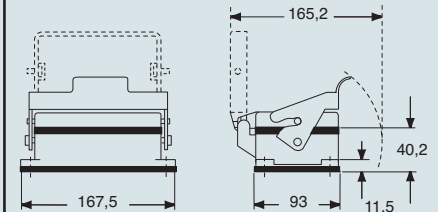
Personal computers, notebooks or printers can be power supplied using a 16A socket.

Monitors, printers and other peripheral devices may be interfaced using D-SUB connectors

dimensions in mm



dimensions in mm



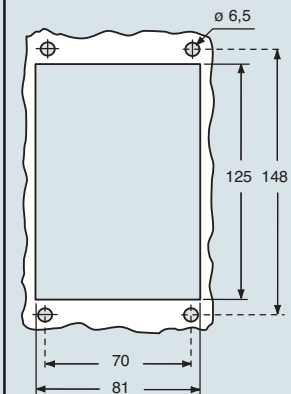
Closed seat "A" for use with one insert only. The closing is achieved by means of a plastic membrane that can easily be removed if the second seat is required.

CR.. AD plates to be ordered separately

CR...AD plates usable

part No.	
CR 09 AD	for 1 D-SUB insert 9 poles (not included)
CR 15 AD	for 1 D-SUB insert 15 poles (not included)
CR 25 AD	for 1 D-SUB insert 25 poles (not included)

housing panel cut-out in mm



dimensions shown are not binding and may be changed without notice

enclosures:

- size "44.27" from page 240
- size "57.27" from page 244
- size "77.27" from page 250
- size "104.27" from page 258

24 pole closure or reduction plate



extraction tool for MIXO BUS connectors

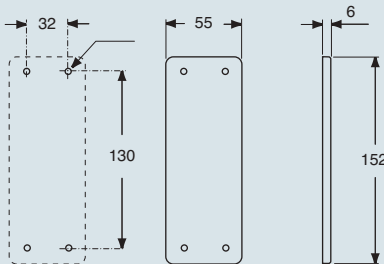


description	part No.	part No.
in autoextinguishing thermoplastic resin with gasket in vinyl-nitrile elastomer	CRH 24	
in self-extinguishing thermoplastic resin with gasket in vinyl-nitrile elastomer - for bulkhead mounting housings * size "44.27" - for bulkhead mounting housings * size "57.27" - for bulkhead mounting housings * size "77.27" - for bulkhead mounting housings * size "104.27"	CRZ 06 CRZ 10 CRZ 16 CRZ 24	
for the extraction of the BUS shielded connectors from the MIXO BUS insert		CX BES

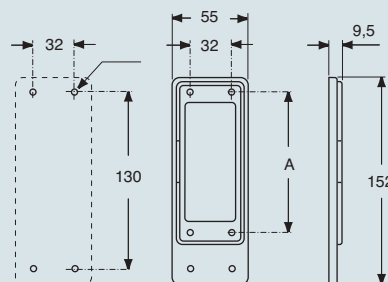
* Cannot be used with T-TYPE series and IP68 series

dimensions in mm

CRH 24



CRZ



CRZ	A
06	70
10	83
16	103
24	130

dimensions shown are not binding and may be changed without notice

enclosures:
size "21.21"

page:

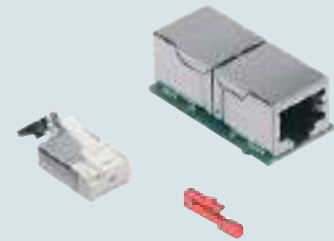
insulating type 526 - 527
(CK IN, CKG/MKG VN/VAN)

metallic type 528 - 529
(CKAX I, CKAG/MKAG V/VA)

IP68 416 - 418
(CGK I, CGK/MGK V)

adaptor for RJ45 connectors

RJ45 connectors



description	part No.	part No.
without RJ45 connector (to be ordered separately) - adaptor for RJ45 female connector in fixed enclosures	CJ KF	
- RJ45 female connector with 8 data contacts - RJ45 female connector with 8 data contacts / 2 power contacts		CX 8 JF * CX 8/2 JF *
without RJ45 connector (to be ordered separately) - adaptor for RJ45 male connector ¹⁾	CJ KM	
- RJ45 male connector with 4 data contacts - RJ45 male connector with 4 data contacts / 2 power contacts - RJ45 male connector with 6 data contacts / 2 power contacts - RJ45 male connector with 8 data contacts - RJ45 male connector, 4 data contacts cat. 5e profiNET®		CX 4 JM CX 4/2 JM CX 6/2 JM CX 8 JM CX 4E JM

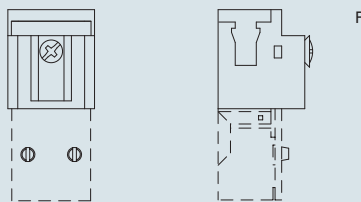
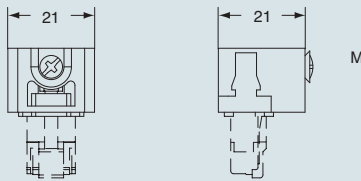
¹⁾ to be used with hoods

* 4 pole version on request, part No. **CX 4 JF** and **CX 4/2 JF** with "crossover" link

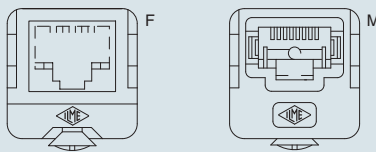
RJ45 connector features:

- RJ45 insert, Class 5 Ethernet
- rated current: 2,1A at 70 °C
- rated voltage: 50VDC / 35VAC
- IDC terminals:
- for 0,22 mm² (AWG 24/7) data contacts **CX 4 JM**
- for 0,14 mm² (AWG 26/7) or 0,22 mm² (AWG 24/7) data contacts **CX 4/2 JM**
- for 0,34 mm² (AWG 22/7) or 0,38 mm² (AWG 22/19) power contacts
- for 0,14 mm² (AWG 26/7) data contacts **CX 6/2 JM**
- for 0,25 mm² (AWG 23/19) power contacts
- for 0,14 mm² (AWG 26/7) data contacts **CX 8 JM**
- for 0,34 mm² (AWG 22/7) data contacts **CX 4E JM**
- /7 = 7-strands wire
- /19 = 19-strands wire
- Ø_{max} insulating conductors 1 mm (data), 1,4 mm (power and CX 4E JM)
- Ø_{max} complete cable 7 mm (CX 8 JM: 6,9 mm)
- temperature range: from -40°C to 120 °C
- nickel plated brass screening
- insert coding pin: **CR KC**
- self-extinguishing properties: to UL 94V-0
- crimp pliers: **CJPZY**
- screened cable stripper: **CJST**
- for crimping a male connector, see the crimp tool section page 553

dimensions in mm
CJ KF, CJ KM

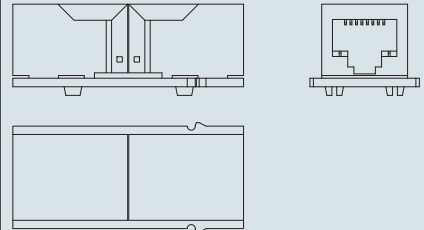


contacts side (front view)

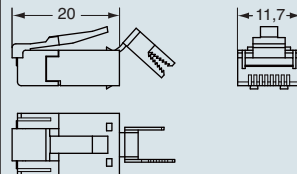


dimensions in mm

CX 4 JF, CX 4/2 JF, CX 8 JF, CX 8/2 JF



CX 4 JM, CX 4E JM, CX 4/2 JM, CX 6/2 JM, CX 8 JM



How to use CR KC coding pins

dimensions shown are not binding
and may be changed without notice

- IP65 / IP67 degree of protection (EN 60529)
- insert RJ45, Class 5 Ethernet
- rated current: 2.1A at 70 °C
- rated voltage: 50V DC / 35V AC
- temperature limit: -40 °C, +120 °C
- nickel-plated brass screening
- insert code pin: CR KC
- self-extinguishing: UL 94V-0
- insulating enclosures in black self-extinguishing thermoplastic material
- hoods with cable gland
- female insert with two connected entries

IP65 / IP67 connector in bulkhead housing, female inserts

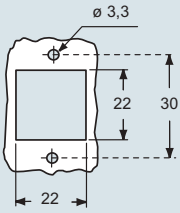


patch cord with 2 RJ45 connectors, male inserts

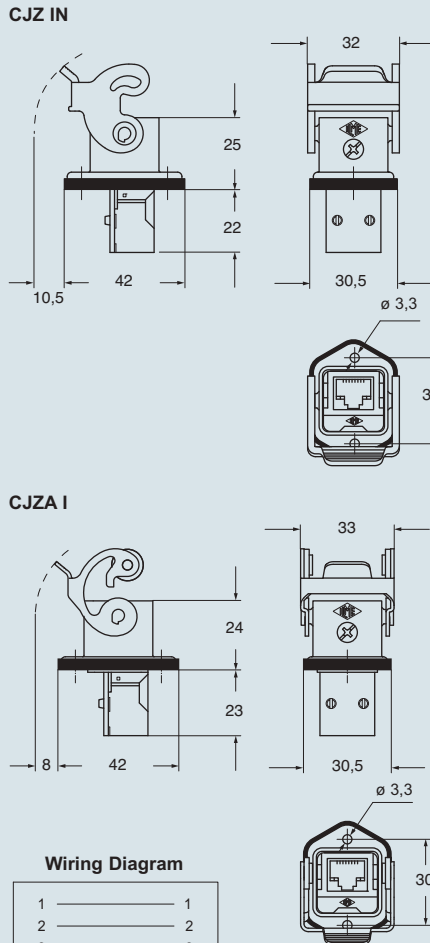


description	part No.	part No.	(L) metre
connector in insulating enclosure and insert with 8 data contacts	CJZ 8 IN		
connector in metal enclosure and insert with 8 data contacts	CJZA 8 I		
RJ45 connector 8 data contacts, in insulating enclosure		CWK 2 J2M8 CWK 5 J2M8 CWK 10 J2M8	2 5 10
RJ45 connector 8 data contacts, in metal enclosure		CWKA 2 J2M8 CWKA 5 J2M8 CWKA 10J2M8	2 5 10

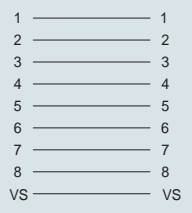
panel cut-out for bulkhead mounting housings in mm



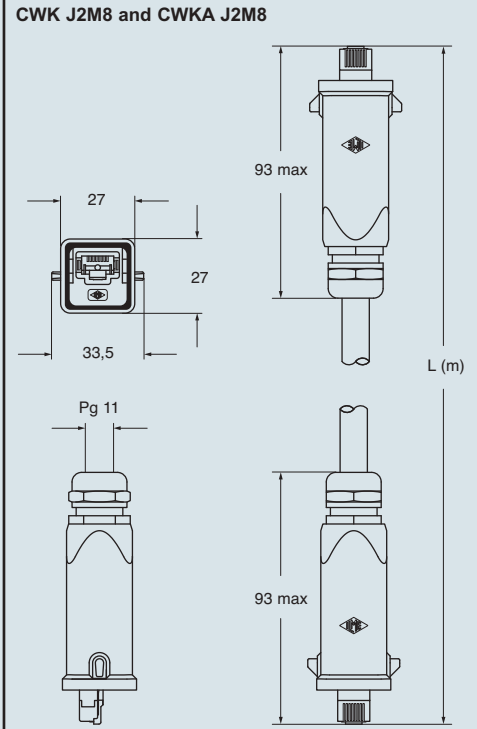
dimensions in mm



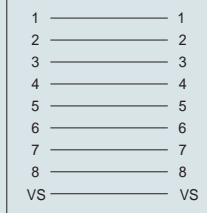
Wiring Diagram



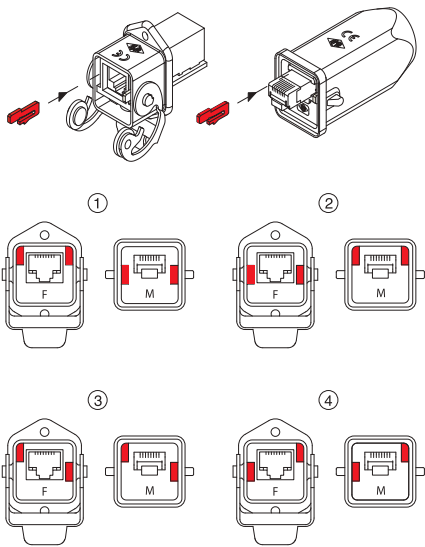
dimensions in mm



Wiring Diagram



CR KC code pins



dimensions shown are not binding and may be changed without notice

Allows two complete portable RJ45 connectors to be joined, IP65/IP67 version

**insulated version coupling,
for RJ45 connectors**

**metal version coupling,
for RJ45 connectors**



description	part No.	part No.
-------------	----------	----------

- female RJ45 coupling, 8 data contacts
- female RJ45 coupling, 8 data contacts / 2 power contacts

CYG 8 JF *
CYG 8/2 JF *

- female RJ45 coupling, 8 data contacts
- female RJ45 coupling, 8 data contacts / 2 power contacts

CYG 8 JFA *
CYG 8/2 JFA *

RJ45 connector features:

- RJ45, Class 5 connector
- nominal current: 2.1A at 70 °C
- nominal voltage: 50VDC / 35VAC
- temperature range: from -40 °C to +120 °C
- nickel plated brass screening
- insert coding pin: **CR KC**
- self-extinguishing properties: to UL 94V-0
- die cast zinc alloy metal enclosures
- black self-extinguishing thermoplastic insulated enclosures.

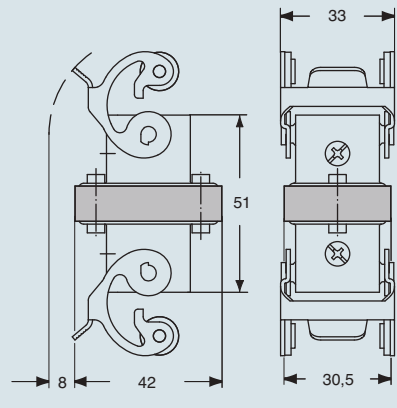
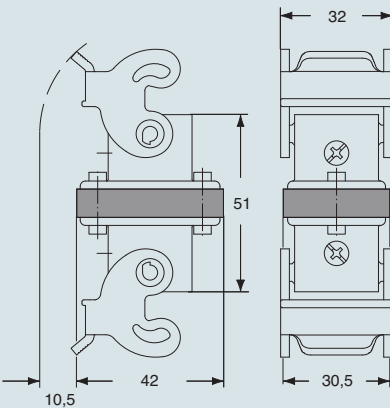
* 4 pole version on request, part No. **CYG 4 JF, CYG 4/2 JF, CYG 4 JFA and CYG 4/2 JFA** with "crossover" link

dimensions in mm

dimensions in mm

CYG 4 JF, CYG 4/2 JF, CYG 8 JF, CYG 8/2 JF

CYG 4 JFA, CYG 4/2 JFA, CYG 8 JFA, CYG 8/2 JFA

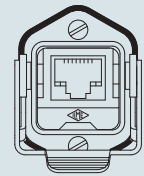
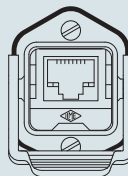


contacts side (front view)

contacts side (front view)

side with reference arrow ▲

side with reference arrow ▲



dimensions shown are not binding
and may be changed without notice

enclosures: size "21.21" page:

insulating type 526 - 527
(CK IN, CKG/MKG VN/VAN *)

metallic type
(CKAX I, CKAX/MKAX IAP/AP/VG) 223 and 528
(CKAG/MKAG V/VA *) 529

IP68 416 - 418
(CGK I, CGK/MGK IAP, CGK/MGK V)

* angled enclosures cannot be used with CX 8 J6IM

- characteristics according to EN 61984:
- 1A 50V 0,8kV 3**
- insulation resistance: $\geq 10 \text{ G}\Omega$
- made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- temperature range: from $-40 \text{ }^\circ\text{C}$ to $+70 \text{ }^\circ\text{C}$
- we recommend to fix the cable with cable tie

**adapters for RJ45 male connectors,
RJ45 female connectors**



NEW

**RJ45 male connectors,
crimp IDC termination**



NEW

description	part No.	part No.
<ul style="list-style-type: none"> - socket insert with 1 RJ45 female connector, - plug inserts for 1 RJ45 male crimp connector, 8 data contacts (without RJ45 connector, to be ordered separately) - plug insert for 1 RJ45 male IDC connector, 8 data contacts (without RJ45 connector, to be ordered separately) 	<p>CJK 8FT CJK 8MT</p> <p>CJK 8IMT</p>	<p>CX 8 J6M CX 8 J6IM</p>
<p>CJK 8FT technical data:</p> <ul style="list-style-type: none"> - RJ45 female insert, Cat. 6 Class E_A (Telegärtner) - shielding housing: zinc diecast - housing finish: nickel-plated - current carrying capacity at 50 °C: 1A - adequate for Power over Ethernet: PoE according to IEEE 802.3af - connectors: IEC 60603-7-5 - adequate for 10 Gigabit Ethernet: 10 Gigabit Ethernet acc. to IEEE 802.3an - custom-designed cabling systems: PROFINET Installation Guideline - generic cabling systems: ANSI/TIA/EIA-568-C.2 ISO/IEC 11801 EN50173-1 ISO/IEC 24702 EN 61918 - class E_A (channel): ISO/IEC 11801, EN 50173-1 <p>CX 8 J6M technical data:</p> <ul style="list-style-type: none"> - RJ45 male crimp connectors Cat. 6_A (Telegärtner) - crimp pliers: CJPZ T - screened cable stripper: CJST - Cu-conductor diameter solid: 0,40 - 0,51 mm (AWG 26/1 - 24/1) stranded: 0,46 - 0,61 mm (AWG 27/7 - 24/7) - insulation diameter: 0,85 - 1,05 mm - cable diameter: 5,0 - 7,0 mm - connectors: IEC 60603-7-5 - 10 Gigabit Ethernet acc. to IEEE 802.3an: adequate for 10 Gigabit Ethernet - category 6_A: ISO/IEC 11801; EN 50173-1 - class E_A: ISO/IEC 11801; EN 50173-1 - category 6_A: ANSI/TIA/EIA-568-C.2 <p>CX 8 J6IM technical data:</p> <ul style="list-style-type: none"> - RJ45 male IDC connectors Cat. 6 Class E_A (Telegärtner) - Cu-conductor diameter solid: 0,41 - 0,64 mm (AWG 26/1 - 22/1) stranded: 0,48 - 0,76 mm (AWG 26/7 - 22/7) - insulation diameter: 0,85 - 1,6 mm - cable diameter: 5,5 - 8,5 mm - connectors: IEC 60603-7-5 - category 6_A: ISO/IEC 11801; DIN EN 50173-1 - wrenches pliers for CX 8 J6IM: CJPW K - 10 Gigabit Ethernet acc. to IEEE 802.3an: adequate for 10 Gigabit Ethernet - category 6_A: ISO/IEC 11801; EN 50173-1 - class E_A: ISO/IEC 11801; EN 50173-1 - category 6_A: ANSI/TIA/EIA-568-C.2 - custom-designed cabling systems: according to PROFINET Installation Guideline 	<p>dimensions in mm</p> <p>CJK 8FT</p> <p>CJK 8MT¹⁾</p> <p>CJK 8IMT¹⁾</p> <p>¹⁾ to be used with hoods</p>	<p>dimensions in mm</p> <p>CX 8 J6M (can be used with CJK 8MT)</p> <p>CX 8 J6IM (can be used with CJK 8IMT)</p> <p>How to use CR KC coding pins</p>

with 2 RJ45 male connectors



NEW

description	part No.	(L) meter
RJ45 male connector with 8 data contacts	CW 1 J2M87	1
	CW 2 J2M87	2
	CW 3 J2M87	3
	CW 5 J2M87	5
	CW 7.5 J2M87	7,5
	CW 10 J2M87	10
	CW 15 J2M87	15

RJ45 patch cord technical data (Telegärtner):

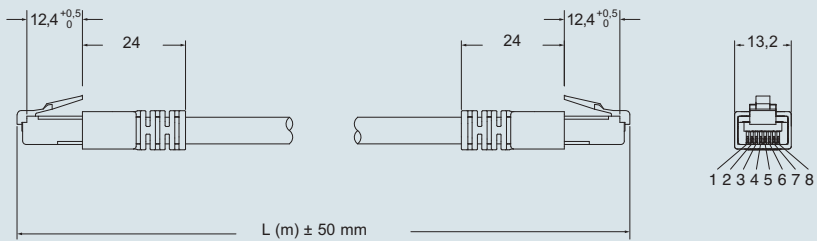
- S/FTP Cat. 7 PUR
- temperature range: from -40 °C + +75 °C
- nickel plated brass screening
- green RAL 6018 colour

Can be used with:

- MIXO RJ45 CX 01 J8M male inserts
- CJK 8MT adaptors

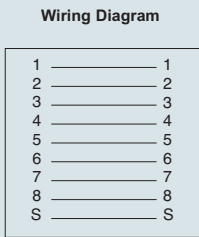
dimensions in mm

CW...J2M87



CJK 8MT male assembly

CJK 8FT to be used in VG or IAP enclosures



dimensions shown are not binding and may be changed without notice

CLK series

Main features

Adaptor CLK 04 SC

The new adaptor **CLK 04 SC** enables use of **fibre optic SC contacts**, up to 4 SC contacts per connector, for indoor or outdoor heavy duty industrial applications, with ILME connector enclosures size "21.21" series **CKA** (IP66/IP67, metallic, both C-TYPE, grey-painted, for normal environments, and W-TYPE black-painted, for aggressive environments, only the hood models provided with sealing gasket), series **CGK/ MGK** (IP66/IP68, metallic, either Pg or metric-threaded cable outlet) and series **CK** (IP66/IP67, insulating, only the hood models provided with sealing gasket).

The **fibre optic SC contacts** (genderless, to be purchased separately) are available both for multi-mode fibres (50/125 µm or 62,5/125 µm) and single-mode fibre (9/125 µm). The fibre optic SC contacts are also available for the hard-clad silica (HCS) or polymer-clad fibre (PCF) 200/230 µm fibre optic cables and for the less demanding, with shorter transmission distance covered, but more cost effective POF Ø 1 mm applications, available with crimp technique version (crimping tool required).

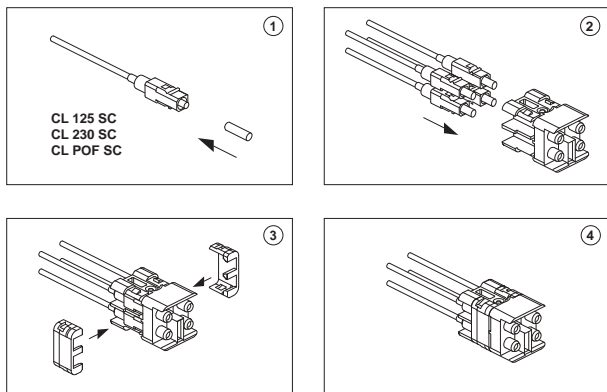
NOTE

Due to the higher skill and training required to produce an effectively performing fibre optic junction for a single-mode type fibre-optic cable than for a multi-mode one, dedicated contacts for single-mode are available only upon request. Contact our Commercial Department for a quotation. It is more practical in such case to equip the CLK 04 SC adaptor with ready-to-use fibre optic patch cords. Quick assembly technique version (tool-less) for POF Ø 1 mm cables are also available only upon request, please send inquiry to our Commercial Department.

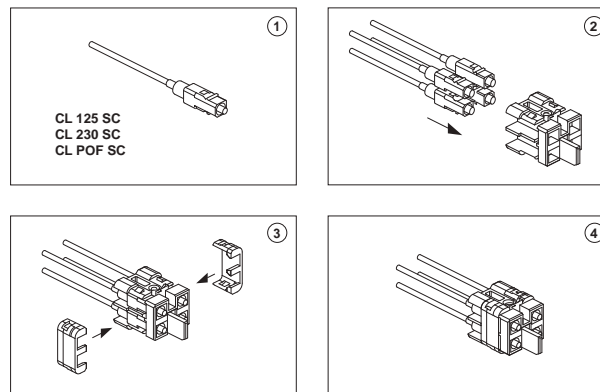
The female adaptor inserts are provided with 4 **ceramic** (zirconia) type **split alignment sleeves**, for minimal insertion loss (e.g. critical network connections) and best suitable for single-mode F/O cable connections. As optional accessory, **metallic** (phosphor bronze) **split alignment sleeves** are also available for more durable (less prone to cracking) applications, but less demanding precision alignment, thus most suitable for multi-mode fibre applications.

Part No. of adaptor inserts		CLK 04 SC
No. of seats/poles	seats for optical contacts	2
ambient temperature limit (°C)	min	-40
	max	+70
degree of protection	with enclosures (according to type)	IP66/IP67, IP66/IP68, IP69K
conductor connections		crimp
mechanical endurance (rating cycles)		≥ 500
self-extinguishing capacity UL 94		V0

FEMALE



MALE



enclosures: page:
size "21.21"

insulating type 526 - 527
(CK IN, CKG/MKG VN)

metallic type
(CKAX I, CKAX/MKAX IAP/AP/VG) 223 and 528
(CKAG/MKAG V) 529

IP68 416 - 418
(CGK I, CGK/MGK IAP, CGK/MGK V)

adaptor insert for SC connectors



NEW

crimp FO contacts



NEW

description	part No.	part No.
-------------	----------	----------

adaptor insert with seats for 4 SC contacts
- female insert, with ceramic sleeve
- female insert, with metallic sleeve
- male insert

CLK 04 SCF
CLK 04 SCF-H
CLK 04 SCM

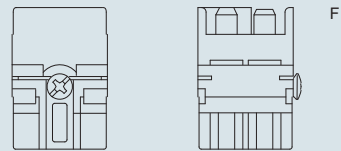
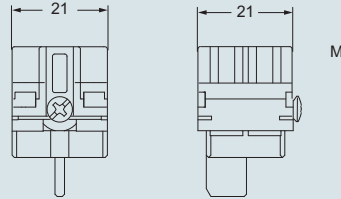
SC contact for GI FIBRE 50/125 µm or 62.5/125 µm
SC contact for 1 mm Ø POF

CL 125 SC
CL POF SC

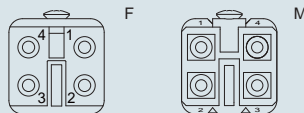
- adaptor insert fitted with fixing screw and gasket, suitable for installation in enclosures
- adaptor insert designed to be used with SC contacts
- SC contact for SI FIBRE (HCS®) 200/230 µm: **CL 230 SC** (on request)
- base equipment for SC contact GI FIBRE: **CLKZ 125 SC**
If this application is required, please contact ILME SpA.
- supplementary set for POF: **CLKZ POF**
(to be ordered with CLKZ 125 SC)
If this application is required, please contact ILME SpA.

dimensions in mm

CLK 04 SCF, CLK 04 SCM

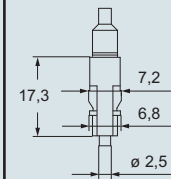


contacts side (front view)

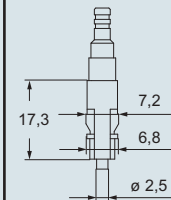


dimensions in mm

CL 125 SC



CL POF SC



dimensions shown are not binding
and may be changed without notice

SC duplex patch cord



NEW

SC duplex patch cord



NEW

description	SC duplex patch cord		SC duplex patch cord	
	part No.	(L) meter	part No.	(L) meter
SC duplex patch cord, GL fibre E9/125 (YELLOW)	CW 1 SC9	1		
	CW 2 SC9	2		
	CW 3 SC9	3		
	CW 5 SC9	5		
	CW 10 SC9	10		
SC duplex patch cord, GL fibre G50/125 (ORANGE)			CW 1 SC50	1
			CW 2 SC50	2
			CW 3 SC50	3
			CW 5 SC50	5
			CW 10 SC50	10
SC duplex connector, GL fibre G62,5/125 (ORANGE)			CW 1 SC62	1
			CW 2 SC62	2
			CW 3 SC62	3
			CW 5 SC62	5
			CW 10 SC62	10

- operating temperature: from -5 °C + +55 °C
- storage temperature: from -30 °C + +70 °C
- installation temperature: from -5 °C + +50 °C
- flame retardancy: IEC 60332-1
- halogen-free acc. to: IEC 60754-2.

Accessories

dimensions shown are not binding and may be changed without notice

CX BD series

Main features

To be able to use round shielded connectors series MIXO BUS (multiaxial, for balanced cables with multiple pairs) or coaxial connectors (for coaxial cables) even in compact enclosures size "21.21" **CKA/MKA** or **CGK/MGK**, it is necessary to purchase the new **adaptor insert CX 1/2 BD**.

This insert can be used to assemble MIXO coaxial connectors part No. **CX 01 BM/BF** for coaxial cables with a typical impedance of 75 Ω and **CX 01 BCM/BCF** for coaxial cables with a typical impedance of 50 Ω, or **MIXO BUS CX 04 BM/BF** multiaxial shielded connectors with 4 poles + shield and the new **CX 08 BM/BF** shielded connectors with 8 poles + shield, in addition to providing **seats for 2 additional optional contacts** series CD for the connection of a SELV (very low safety voltage) supply line. The connector section of this adaptor has rated values compliant with

standard EN 61984 and equivalent to **10A 50V 0.8kV**.

Adaptor insert **CX 1/2 BDM/BDF** is fitted with multiaxial and coaxial MIXO BUS shielded connectors and is designed to be used only with the models specified below of the following enclosures: **CKA/MKA** (IP66/IP67) or **CGK/MGK** (IP66/IP68) **with gasket**. The cable shielding is electrically separated from the earthing connection of the metal enclosure. If used with MIXO BUS CX 04 BM/BF shielded connectors, the connector is able to support all field bus protocols with 4 conductors.

MIXO BUS multiaxial and coaxial connectors are compatible with shielded cables with a section ranging from 3 mm and 9,5 mm.

The operating temperature for connectors resulting from the use of CX 1/2 BD adaptor inserts is -40 °C / +70 °C.

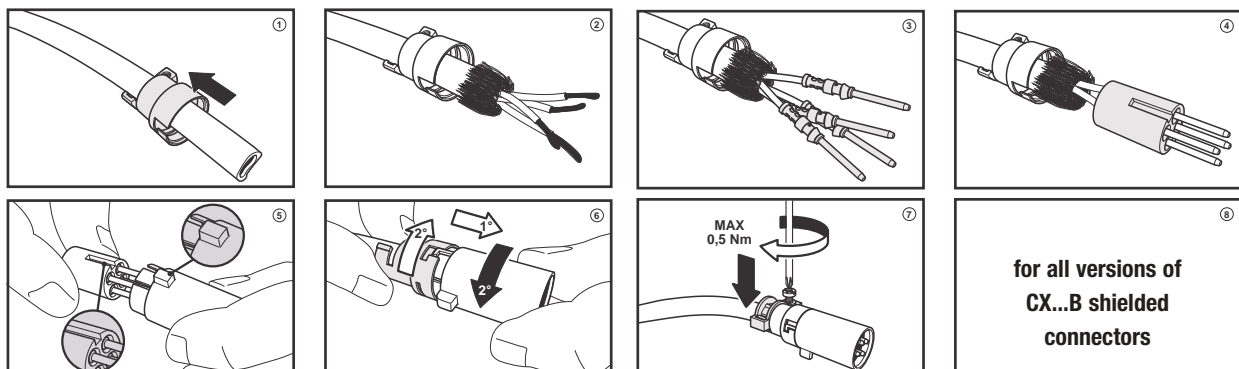
Part No. of adaptor inserts		CX 1/2 BD
No. of seats/poles	seats for shielded connector ¹⁾	1
	seats for auxiliary contacts	2
rated current ²⁾	shielded connector	depending on type: 5A, 10A, 16A
	auxiliary contacts	10A
EN 61984 pollution degree 3	rated voltage	50V
	rated impulse withstand voltage	0.8kV
	pollution degree	3
UL 1977 / CSA C22.2 N°187.3	rated voltage (a.c./d.c.)	50V
contact resistance	shielded connector	depending on the type of contact used
	auxiliary contacts	≤ 3 mΩ
insulation resistance		≥ 10 GΩ
ambient temperature limit (°C)	min	-40
	max	+70
degree of protection	with enclosures (according to type)	IP66/IP67, IP66/IP68, IP69K
	without enclosures	IP20
conductor connections		crimp
conductor section	shielded connector (mm ² /AWG)	depending on the type of contact used
	auxiliary contacts (mm ²)	0,14÷2,5
	auxiliary contacts (AWG)	26÷14
conductors stripping length		depending of contact
mechanical endurance (rating cycles)		≥ 500
self-extinguishing capacity UL 94		V0

1) Depending on the selected shielded connector, which must be ordered separately, the number of poles + shield could be 1 (coaxial connectors), 4 (4-way multiaxial connector for 2 pairs) or 8 (8-way multiple connector, for example for 4 pairs).

2) It is generally necessary to refer to the loading curves of the inserts to determine the actual operating current limit for a specific ambient temperature.

These curves are not required for MIXO BUS / coaxial shielded connectors, because these are signal connectors designed to be used by the transmission protocols to transmit currents in fractions of amperes.

The current capacity specified is the maximum current traditionally assigned to contacts, not the one assigned to the shielded connector when in use.



enclosures:
size "21.21"

page:

metallic type

(CKAX I, CKAX/MKAX IAP/AP/VG) 223 and 528
(CKAG/MKAG V) 529

IP68 416 - 418
(CGK I, CGK/MGK IAP, CGK/MGK V)

adaptor insert for shielded connectors



10A crimp contacts, silver or gold plated



description	part No.	part No.	part No.
-------------	----------	----------	----------

adaptor insert with seats for 1 shielded connector + 2 aux contacts 10A
- female insert, 1 seat for BUS connector and 2 seats for 10A female contacts (CDF)
- male insert, 1 seat for BUS connector and 2 seats for 10A male contacts (CDM)

CX 1/2 BDF

CX 1/2 BDM

10A female contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

10A male contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

silver plated

CDFA 0.3
CDFA 0.5
CDFA 0.7
CDFA 1.0
CDFA 1.5
CDFA 2.5

gold plated 1)

CDFD 0.3
CDFD 0.5
CDFD 0.7
CDFD 1.0
CDFD 1.5
CDFD 2.5

CDMA 0.3
CDMA 0.5
CDMA 0.7
CDMA 1.0
CDMA 1.5
CDMA 2.5

CDMD 0.3
CDMD 0.5
CDMD 0.7
CDMD 1.0
CDMD 1.5
CDMD 2.5

- characteristics according to EN 61984:
adaptor insert CX 1/2 BD (2 aux contacts)
10A 50V 0.8kV 3

- certifications: cUL (UL for USA and Canada)
- for contact crimping, see the crimp tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548

- extraction tool for BUS/coax shielded connectors from adaptor insert CX 1/2 BD part No. CX BES see page 502

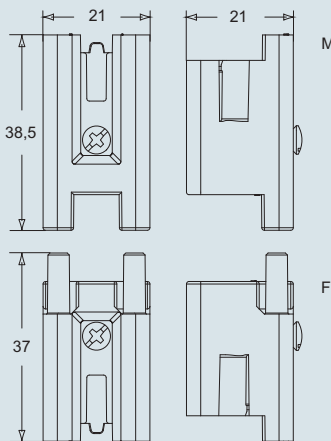
- contact resistance adaptor insert, 2 aux contacts: ≤ 3 mΩ

- adaptor insert fitted with fixing screw and gasket, suitable for installation in enclosures

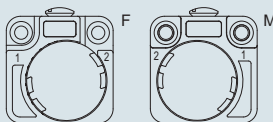
- adaptor insert designed to be used with CX 01 BF/M, CX 04 BF/M; CX 08 BF/M and CX01 BCF/M shielded connectors

dimensions in mm

CX 1/2 BDF, CX 1/2 BDM

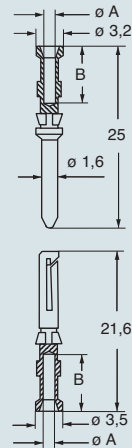


contacts side (front view)



dimensions in mm

CDF and CDM



CDF and CDM contacts

conductor section mm ²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

dimensions shown are not binding and may be changed without notice

- characteristics according to EN 61984: shielded connector **10A 50V 0,8kV 3**
- for contact crimping, see the crimp tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- extraction tool for BUS/coax shielded connectors from adaptor insert CX 1/2 BD part No. CX BES see page 502
- contact resistance shielded connector CX 04 B: $\leq 3 \text{ m}\Omega$
coaxial connector CX 01 B: $\leq 3 \text{ m}\Omega$
- coaxial connector CX 01 B **cables with a typical impedance of 75 Ω**
- CX 04 B multiaxial connector for STP cables with 2 pairs and terminations compliant with EN 50173-1 Cat. 5 (100 MHz), compatible with 4-wire field bus protocols

shielded connectors



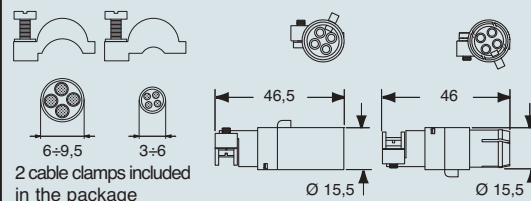
10A crimp contacts, silver or gold plated



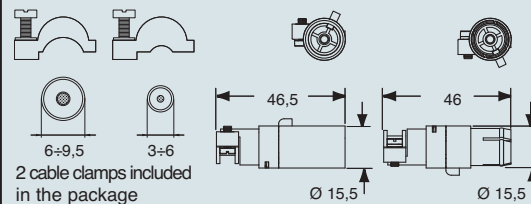
description	part No.	part No.	part No.
shielded BUS multi axial connectors, 4 poles + shield - female insert, 4 contact seats 10A (CDF) + shield - male insert, 4 contact seats 10A (CDM) + shield	CX 04 BF CX 04 BM		
shielded BUS coaxial connectors, 1 pole + shield - female insert, 1 contact seat 10A (CDF) + shield - male insert, 1 contact seat 10A (CDM) + shield	CX 01 BF CX 01 BM		
10A female contacts 0,14-0,37 mm ² AWG 26-22 identification No. 1 0,5 mm ² AWG 20 identification No. 2 0,75 mm ² AWG 18 identification No. ② 1 mm ² AWG 18 identification No. 3 1,5 mm ² AWG 16 identification No. 4 2,5 mm ² AWG 14 identification No. 5		silver plated	gold plated 1)
10A male contacts 0,14-0,37 mm ² AWG 26-22 identification No. 1 0,5 mm ² AWG 20 identification No. 2 0,75 mm ² AWG 18 identification No. ② 1 mm ² AWG 18 identification No. 3 1,5 mm ² AWG 16 identification No. 4 2,5 mm ² AWG 14 identification No. 5		CDMA 0.3 CDMA 0.5 CDMA 0.7 CDMA 1.0 CDMA 1.5 CDMA 2.5	CDMD 0.3 CDMD 0.5 CDMD 0.7 CDMD 1.0 CDMD 1.5 CDMD 2.5

dimensions in mm

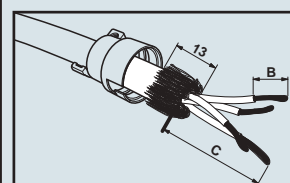
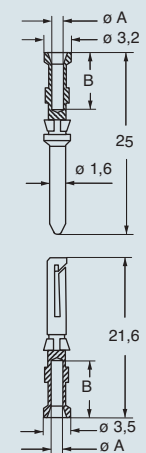
CX 04 BF, CX 04 BM



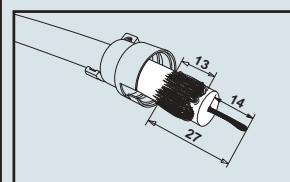
CX 01 BF, CX 01 BM



CDF and CDM



cable clamp	C (mm)
3÷6	20
6÷9,5	25



CDF and CDM contacts

conductor section	conductor slot	conductors stripping length
mm ²	Ø A (mm)	B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

dimensions shown are not binding and may be changed without notice

- characteristics according to EN 61984:
CX 08 B shielded connector
5A 50V 0,8kV 3
- contact resistance
CX 08 B shielded connector: $\leq 4 \text{ m}\Omega$
- max. \varnothing of insulation for contacts CI series (CX 08 B shielded connector): 2,4 mm
- for crimp 5A contacts CI series using: CIPZ D crimping tool + CITP D turret head
- insertion / removal tool contacts CI series: part No CIES

shielded connectors



5A crimp contacts, gold plated

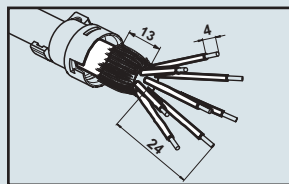
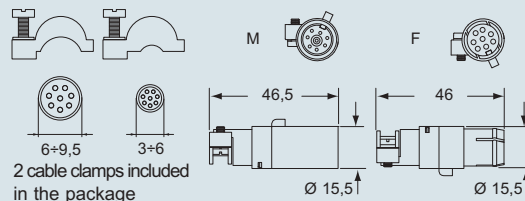


description	part No.	part No.
shielded BUS multi axial connectors, 8 poles + shield - female insert, 8 contact seats 5A (CIF) + shield - male insert, 8 contact seats 5A (CIM) + shield	CX 08 BF CX 08 BM	
5A female crimp contacts 0,08-0,21 mm ² AWG 28-24 0,13-0,33 mm ² AWG 26-22 0,33-0,52 mm ² AWG 22-20		CIFD 0.2 CIFD 0.3 CIFD 0.5
5A male crimp contacts 0,08-0,21 mm ² AWG 28-24 0,13-0,33 mm ² AWG 26-22 0,33-0,52 mm ² AWG 22-20		CIMD 0.2 CIMD 0.3 CIMD 0.5

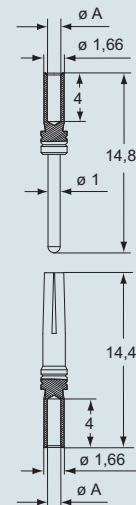
gold plated

dimensions in mm

CX 08 BF, CX 08 BM



CIF and CIM



CIF, CIM contacts

conductor section mm ²	conductor slot $\varnothing A$ (mm)	conductors stripping length (mm)
0,08-0,21	0,64	4
0,13-0,33	0,90	4
0,33-0,52	1,12	4

dimensions shown are not binding and may be changed without notice

- characteristics according to EN 61984:

- CX 01 BC shielded connector

16A 50V 0,8kV 3

- for information on the crimping of contacts series CC (CX 01 BC shielded connector) and on the insertion / removal tools, see the section related to crimping tools (16A contacts, CCF and CCM series) on pages 534, 538, 544, 546, 548

- contact resistance

CX 01 BC shielded connector: $\leq 1\text{ m}\Omega$

- CX 01 BC shielded connector for **cable with a typical impedance of 50 Ω**

shielded connectors



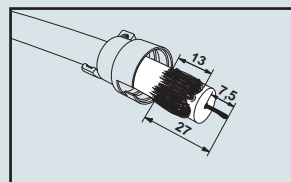
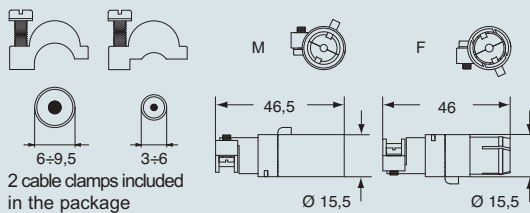
16A crimp contacts, silver or gold plated



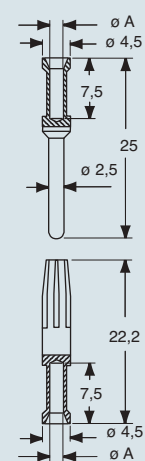
description	part No.	part No.	part No.
shielded BUS coaxial connectors, 1 pole + shield - female insert, 1 contact seat 16A (CCF) + shield - male insert, 1 contact seat 16A (CCM) + shield	CX 01 BCF CX 01 BCM		
16A female contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves		silver plated	gold plated 1)
16A male contacts 0,14-0,37 mm ² AWG 26-22 three grooves 0,5 mm ² AWG 20 with no grooves 0,75 mm ² AWG 18 one groove (back side) 1 mm ² AWG 18 one groove 1,5 mm ² AWG 16 two grooves 2,5 mm ² AWG 14 three grooves 3 mm ² AWG 12 one wide groove 4 mm ² AWG 12 with no grooves		silver plated	gold plated 1)

dimensions in mm

CX 01 BCF, CX 01 BCM



CCF and CCM



CCF and CCM contacts

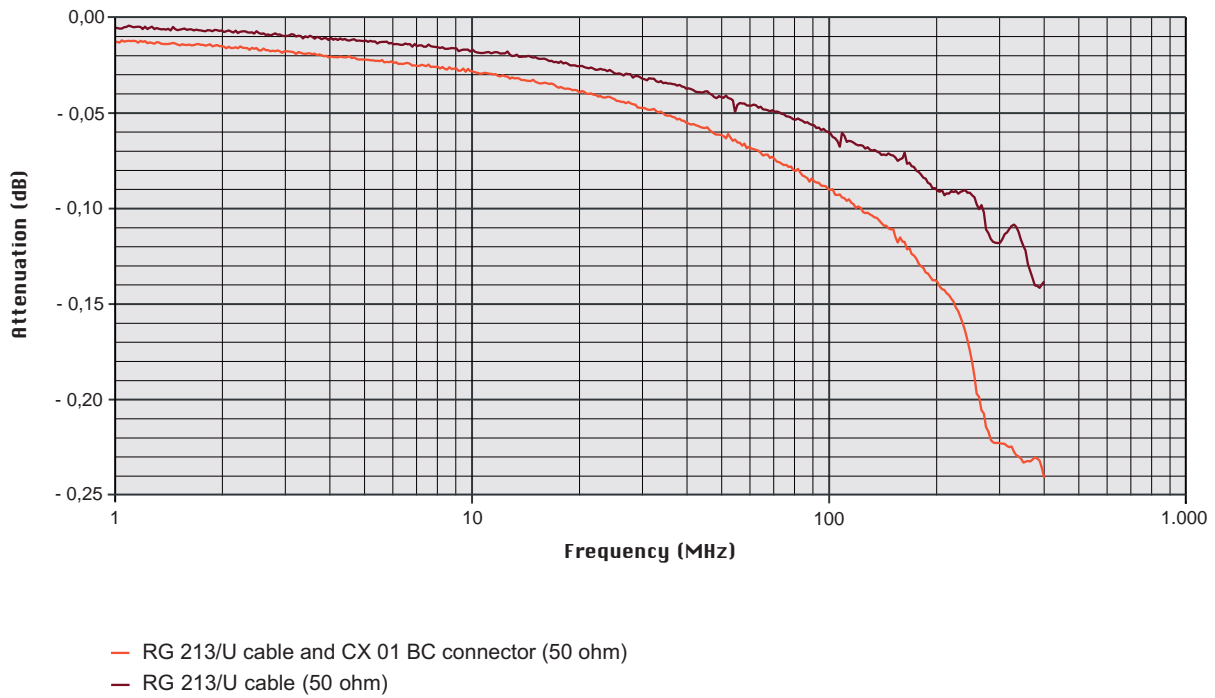
conductor section	conductor slot	conductors stripping length
mm ²	Ø A (mm)	(mm)
0.14-0.37	0.9	7.5
0.5	1.1	7.5
0.75	1.3	7.5
1.0	1.45	7.5
1.5	1.8	7.5
2.5	2.2	7.5
3	2.55	7.5
4	2.85	7.5

1) basic or high thickness gold plating page 481

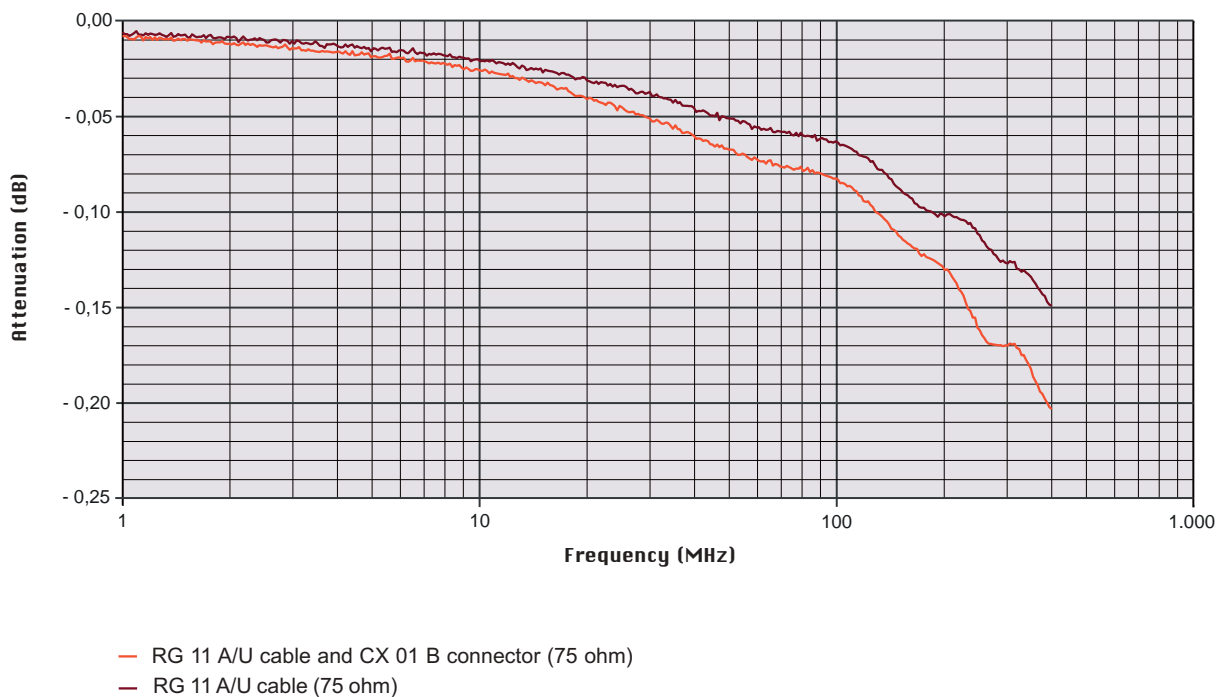
dimensions shown are not binding and may be changed without notice

Test performed in accordance with IEC/EN 60512-25-2 (2002), 4.1.3.2 (coaxial cable only) and 4.2.2.2 (coaxial cable and connector).

**Attenuation (insertion loss)
50 ohm coaxial connector (CX 01 BCF / BCM)**



**Attenuation (insertion loss)
75 ohm coaxial connector (CX 01 BF / BM)**





DESINA®

Main features

Connectors compliant with DESINA® standard

DESINA® (which stands for **DE**centralised and Standardised **IN**stallation technology) is an innovative installation concept behind a study headed by the German manufacturers of machine tools association (VDW), with the co-operation of users (including German automotive manufacturers) and component manufacturers, which has led to the introduction of a specification aimed to standardise electrical, hydraulic and pneumatic components and their interconnection on common platform for CNC controlled machine tools and manufacturing lines.

In the last few years, the DESINA® specification has been successfully enclosed in the ISO TC 184/SC 1 "Industrial automation systems and integration / Physical device control" as an ISO standard.

This work has recently been completed, and the following standards have now become available:

ISO 23570-1 Industrial automation systems and integration – Distributed installation in industrial applications: Part 1 – Sensors and actuators.

ISO 23570-2 Industrial automation systems and integration – Distributed installation in industrial applications: Part 2 – Hybrid communication bus.

ISO 23570-3 Industrial automation systems and integration – Distributed installation in industrial applications: Part 3 – Power distribution bus.

Normally, production systems are controlled by various field buses available on the market such as PROFIBUS, CAN, INTERBUS, etc. DESINA® decentralised approach and interface and connector standardisation, which allows a single distributed control system to be independent from the bus communication protocol selected by the final user, ensure lower installation costs.

The availability of diagnostic capabilities in all the system components ensures a speedier diagnosis in the event of faults and an easier and quicker reset operation, which may be carried out by less specialised staff. DESINA® connection topology requires a **control bus** and a **power bus**.

The hybrid (optical/electrical) control bus provides a serial connection for the devices by using a cable consisting of two fibre optics and four power lines. The devices are fitted with 2 hybrid connectors (and matching flush mounted enclosures) for bus entry and exit. The hybrid connectors include an interface circuit which

turns the TX electrical signal to optical signal with TTL levels and the RX signal from optical to electrical signal with TTL levels.

In other words, the interface is independent from the selected field bus protocol, and simply converts the electrical signals into optical signals and vice versa; by doing so, the physical connection between the devices can be used for different bus protocols and can reach a 50 m range by using POF plastic fibres or 300 m by using HCS® fibreglass (Hard Clad Silica – Spectran Corporation registered trademark). The highest baud rate is 12 Mbit/s, compatible with the most advanced field buses.

Another variance is also available, which is based on transmitting data on a pair of screened copper cables (instead of fibre optics); in this case, however, the system can only be used for PROFIBUS or CAN buses with RS 485 TX signals.

In both cases, the connector is fitted with housings for 5, 10A auxiliary contacts (CD series crimp contacts), which allow all connected devices to receive a permanent direct voltage of 24V (to supply circuits) and a 24V non permanent power supply (only used to open the contactors after operating an emergency switch or a safety switch), as well as a contact available for an optional earth.

The **power bus** provides a serial connection for drives, controls and power supplies and, more specifically, is suitable to supply power to motors and to their control units.

The standard connector to control motors is the **CQM/F 08** which, with 8 poles + ⊕ 16A 500V, and CC series crimp contacts, not only provides a power connection, but also connects the motor brake and safety thermistor.

Another variant is available in the same sizes as the enclosure: **CQM/F 04/2** featuring 4 poles + ⊕ 40A 400/690V and 2, 10A 250V auxiliaries.

For the motor side connection, the connector **CNEM/F 10** (10P + ⊕ 16A 500V 6kV 3, with screw terminals) should be used; with the option to make a star or a delta connection on the connector, the **CSSM/F 10** connector (10P + ⊕ 16A 500V 6kV 3, with spring terminals, two per pole) should be used.

ILME connectors are manufactured to DESINA® specifications and in compliance with ISO 23570-2 and 23570-3 standards.



DESINA®

Main features

Hybrid socket and plug connectors for field buses compliant with DESINA® specifications and with ISO 23570-2 standard

The hybrid connectors for field buses are listed below:

- optical field bus **plug**
- optical field bus **socket**

electrical auxiliary female contacts

- CXL 2/4 PF** (for plastic fibre optics POF)
- CXL 2/4 PFH** (for glass fibre optics HCS®)
- CXL 2/4 SF**

electrical auxiliary male contacts

- CXL 2/4 PM** (for plastic fibre optics POF)
- CXL 2/4 PMH** (for glass fibre optics HCS®)
- CXL 2/4 SM**

The hybrid inserts for **socket** type optical field buses can only be fitted inside **fixed enclosures**. The **plug** types, on the other hand, can only be fitted inside **portable enclosures**.

The enclosures and matching accessories available are listed below:

Construction details

- fixed, flush mounted enclosure:
- portable, straight enclosures:
- portable, angled enclosures:
- cover:

Material: PLASTIC

- CK 03 IN**
- CKG 03 VN** (Pg 11)
- MKG VN20** (M20)
- CKG 03 VAN** (Pg 11)
- MKG VAN20** (M20)
- CKG 03 CN**

Material: METAL

- CKAX 03 I**
- CKAG 03 V** (Pg 11)
- MKAG V20** (M20)
- CKAG 03 VA** (Pg 11)
- MKAG VA20** (M20)
- CKAG 03 C**

The portable enclosures and the covers are fitted with an additional seal in order to achieve **IP65/IP67** (IEC/EN 60529) protection rating. With these accessories, the enclosures achieve **IP69K** protection rating (tightness to pressurised hot water jets) established by the German standard DIN 40050-9 for use on board of road vehicles, currently being approved to be included in ISO standards and being studied by IEC.

1 Specifications

1.1 Interface

hybrid electrical-optical connector insert consisting of 2 connectors for fibre optics and 4 contacts for electrical wires; an interface circuit built into the optical socket converts the electrical signals into optical signals and vice versa.

1.2 Optical parts

- transmitter (T): Agilent (HP) Versatile Link HFBR-1525, or equivalent
 - receiver (R): Agilent (HP) Versatile Link HFBR-2525, or equivalent
 - male optical contact: Agilent (HP) Versatile Link HFBR-4531, or equivalent, Simplex snap-in type (without crimping) for POF plastic fibre optics; HFBR-4521, or equivalent, crimp contact, for HCS® glass fibre optics
- note: POF is a plastic fibre optic with a 1000 µm diameter for red light and wavelength = 660 nm.
HCS® is a Hard Clad Silica glass fibre optic with a 200 µm diameter for red light with wavelength = 660 nm.

Optical parts: laser class I

1.3 Electrical contacts

4 maximum current 10A, gold or silver plated brass crimp contacts, cable section 0,14...2,5 mm² (CD series); live wire end female. Nominal voltage 24V.

Electrical data in compliance with EN 61984: **10A 25V 0.8kV 3**

1.4 Protection ratings:

IP65 / IP67 compliant with EN 60529 (if a cable clamp with IP67 protection rating is used)
IP69K compliant with DIN 40050-9 (with suitable cable clamp)

1.5 Temperature range: -40 °C / +70 °C

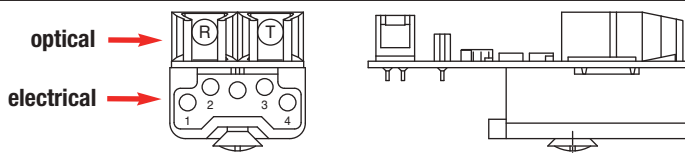
1.6 Data transmission/reception rate (Data rate): up to 12 Mbit/s

2 Designation of auxiliary electrical contacts

designation of auxiliary electrical contacts (male and female) in the hybrid socket connector with optical TX system:

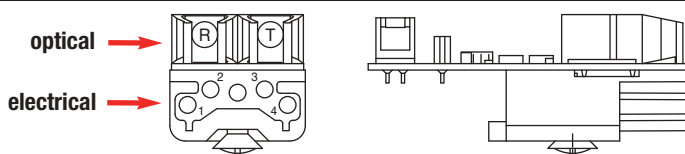
Socket connector with male auxiliary electrical contacts CXL 2/4 SM

Pos.	Function
1:	+ 24V not switched
2:	0V (reference for contact 1)
3:	0V (reference for contact 4)
4:	+ 24V switched



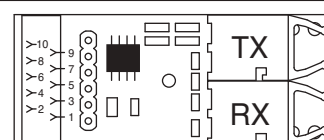
Socket connector with female auxiliary electrical contacts CXL 2/4 SF

Pos.	Function
1:	+ 24V not switched
2:	0V (reference for contact 1)
3:	0V (reference for contact 4)
4:	+ 24V switched



Insulation displacement connector (IDC) for ribbon flat cable on printed circuit

Pos.	Function	Pos.	Function
1:	earth	6:	TXD
2:	RXD	7:	earth
3:	RXD	8:	+5V DC
4:	earth	9:	+5V DC
5:	TXD	10:	earth



The contacts in the hybrid socket connector are numbered in a clockwise direction. With reference to this, the contacts in the field bus hybrid plug connector are numbered anticlockwise.
"R" Data reception (beam exit)
"T" Data transmission (beam entry).

DESINA®

Main features

Socket and plug connectors for power buses compliant with DESINA® specifications and with ISO 23570-3 standard

The connector inserts on the power bus for a motor controller are as follows:

- **CQM 08** plug
- **CQF 08** socket

The connector inserts for the motor controller may be fitted inside the following enclosures:
Construction details

- | | |
|----------------------------------|-------------------------|
| - flush mounted fixed enclosure: | CQ 08 I |
| - portable straight enclosure: | CQ 08 V (Pg 21) |
| - portable angled enclosure: | CQ 08 VA (Pg 16) |
| - socket cover: | CQ 08 C |
| - plug cover: | CQ 08 CA |

The enclosures ensure **IP65/IP67** protection rating (IEC/EN 60529) as well as **IP69K** protection rating (tightness to pressurised hot water jets) required by the DIN 40050-9 German standard for use on board of road vehicles, currently being approved as ISO standard and being studied by IEC.

1 Specifications

1.1 Connection

9 contacts (8 + ⊕)

The male connectors (plugs) are used for termination of connecting cables; the female connectors (sockets) are fitted on the motor controller.

1.2 Electrical contacts

9 maximum current 10A, gold or silver plated crimp contacts, cable section 0,5...2,5 mm² (20 AWG -14 AWG) CC series.

1.3 Protection ratings:

IP65 / IP67 compliant with EN 60529 standard (if a cable clamp with IP67 protection rating is used)
IP69K compliant with DIN 40050-9 standard (with suitable cable clamp)

1.4 Temperature range:

-40 °C / +125 °C

1.5 Electrical data

compliant with EN 61984: **16A 500V 6kV 3**

1.6 Self extinguishing properties

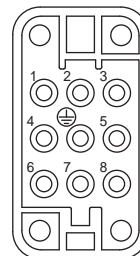
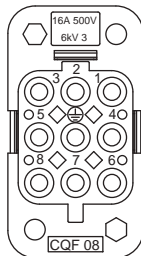
94V-0 compliant with UL 94 standard

glow-wire 960 °C compliant with IEC/EN 60695-2-11 standard

2 Designation of contacts

The designation of contacts for motor controller outlet is as follows:

contact	designation
1	live L1
2	
3	live L3
4	brake (0 V)
5	temperature sensor
6	brake (+24V c.c.)
7	live L2
8	temperature sensor
PE	earth



Socket and plug connectors for power buses in compliance with DESINA® specifications and with ISO 23570-3 standard

The connector inserts on the power bus for a motor controller are as follows:

- **CQM 08** plug
- **CQF 08** socket

These connector inserts can be fitted inside the following enclosures:
Construction details

- | | |
|----------------------------------|-------------------------|
| - flush mounted fixed enclosure: | CQ 08 I |
| - portable straight enclosure: | CQ 08 V (Pg 21) |
| - portable angled enclosure: | CQ 08 VA (Pg 16) |
| - socket cover: | CQ 08 C |
| - plug cover: | CQ 08 CA |

The enclosures ensure **IP65/IP67** protection ratings (IEC/EN 60529) as well as **IP69K** protection rating (tightness to pressurised hot water jets) required by DIN 40050-9 German standard for use on board of road vehicles, currently being approved as ISO standard and being studied by IEC.

1 Specifications

1.1 Connection

5 (4 + ⊕) power contacts + 2 auxiliary contacts

The male connectors (plugs) are used for termination of connecting cables; the female connectors (sockets) are fitted on the motor controller.

1.2 Electrical contacts:

5 maximum current 40A (3P+N+⊕) gold or silver plated crimp contacts, cable section 1,5...6 mm² (16 AWG -10 AWG) CX series.
2 maximum current 10A, gold or silver plated crimp contacts, cable section 0,14...2,5 mm² (26 AWG -14 AWG) CD series.

1.3 Protection ratings:

IP65 / IP67 compliant with standard EN 60529 (if a cable clamp with IP67 protection rating is used)
IP69K compliant with DIN 40050-9 standard (with suitable cable clamp)

1.4 Temperature range:

-40 °C / +125 °C

1.5 Electrical data

compliant with EN 61984: **40A 400/690V 6kV 3**.

DESINA®

Main features

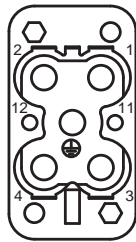
1.6 Self extinguishing properties

94V-0 compliant with UL 94 standard
 glow-wire 960 °C compliant with IEC/EN 60695-2-11 standard

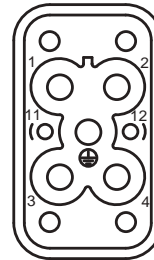
2 Designation of contacts

The designation of contacts for motor controller outlet is as follows:

contact	designation
1	live L1
1	live L1
2	live L2
3	live L3
4	neutral
PE	earth
11	aux
12	aux



F



M

Socket and plug connectors for power buses compliant with DESINA® specifications and with ISO 23570-3 standard

The connector inserts on the power bus for a motor controller are as follows:

	screw type with cover	spring type dual terminal for pole
- plug	CNEM 10 T	CSSM 10
- socket	CNEF 10 T	CSSF 10

To be installed in the enclosures illustrated in this catalogue or equivalent, with single lever (directed towards the motor).

The enclosures ensure **IP65/IP67** protection rating (IEC/EN 60529) as well as **IP69K** protection rating (tightness to pressurised hot water jets) required by the DIN 40050-9 German standard for use on board of road vehicles, currently being approved as ISO standard and being studied by IEC.

1 Specifications

1.1 Connection

10 contacts + ⊕

1.2 Electrical contacts

10 screw type contacts (CNE series) or spring type (CSS series), maximum current 16A, silver plated, wire section 0,5...2,5 mm² (20 AWG -14 AWG)

1.3 Protection ratings

IP65 / IP67 compliant with EN 60529 standard (if a cable clamp with IP67 protection rating is used)

IP69K compliant with DIN 40050-9 standard (with suitable cable clamp)

1.4 Temperature range

-40 °C / +125 °C

1.5 Electrical data

compliant with EN 61984: **16A 500V 6kV 3**

1.6 Self extinguishing properties

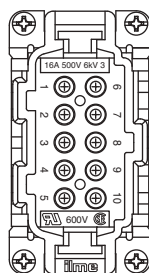
94V-0 compliant with UL 94 standard

glow-wire 960 °C compliant with IEC/EN 60695-2-11 standard

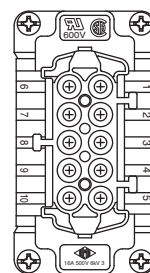
2 Designation of contacts

The designation of contacts for motor connector is as follows:

contact	designation
1	winding U1 - L1
2	winding V1 - L2
3	winding W1 - L3
4	brake (0 V)
5	brake (+24V cc)
6	winding W2
7	winding U2
8	winding V2
9	temperature sensor
10	temperature sensor
PE	earth



F



M



DESINA®

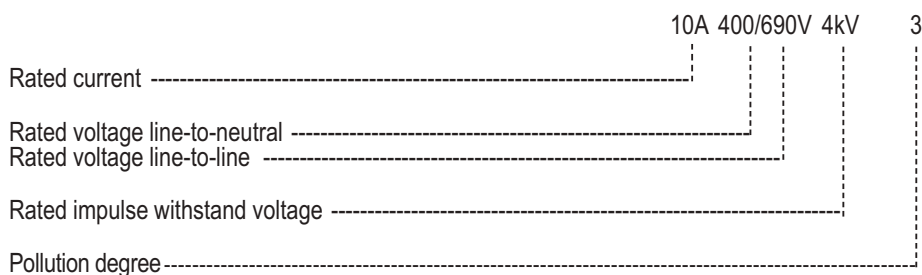
Feature of inserts for multipole connectors

inserts series	No. of poles	auxiliary contacts	EN 61984 (2001-11) pollution degree 3			EN 61984 (2001-11) pollution degree 2			certification UL/CSA
			rated voltage	rated impulse withstand voltage	pollution degree	rated voltage	rated impulse withstand voltage	pollution degree	
code	main contacts		rated voltage AC or DC						
CXL 2/4	2		contacts for plastic fibre optics (POF) Ø 1mm						
		4 (+⊕)	25V	0,8kV	3				50V
CXL 2/4...H	2		contacts for HCS® fibre optics ø 200 µm						
		4 (+⊕)	25V	0,8kV	3				50V
CQ 08	8 (+⊕)	---	500V	6kV	3	400/690V	6kV	2	600V
CQ 04/2	4	---	400/690V	6kV	3				600V
		2	250V	4kV	3				600V
CNE	10 (+⊕)	---	500V	6kV	3	400/690V	6kV	2	600V

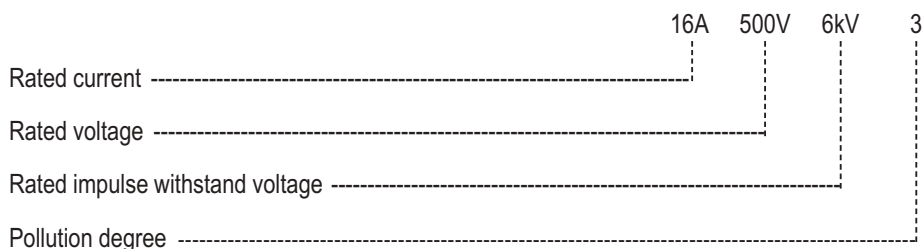
Nominal Data

Nominal data complies with requirements of EN 61984 standard.

Marking example to be applied only in a mains power supply with insulated neutral or with neutral to earth in a corner (see Table 5, EN 61984):



Marking example to be applied in any mains power supplies, including those with insulated neutral and the delta power supplies with earth in a corner (see Table 5, EN 61984):



DESINA®

Feature of inserts for multipole connectors

inserts series	max rated current ¹⁾	contact resistance mΩ	insulation resistance GΩ	ambient temperature limit (°C)		protection rating		wirer connection ²⁾					certifications	
				min	max	with enclosures	without enclosures	screw	spring	connection block at 45°	crimp	snap-in		
CXL 2/4	---	---	---	-40	+70	IP65/IP67	IP20						✓	cUL ^{A)} , UL, EAC
	10A	3 mΩ	10 GΩ	-40	+70	IP65/IP67	IP20					✓		
CXL 2/4...H	---	---	---	-40	+70	IP65/IP67	IP20						✓	cUL ^{A)} , UL, EAC
	10A	3 mΩ	10 GΩ	-40	+70	IP65/IP67	IP20					✓		
CQ 08	16A	1 mΩ	10 GΩ	-40	+125	IP65/IP67	IP20						✓	cUL ^{A)} , CSA, CCC, EAC
CQ 04/2	40A	0,3 mΩ	10 GΩ	-40	+125	IP65/IP67	IP20						✓	cUL ^{A)} , CSA, EAC
	10A	3 mΩ	10 GΩ	-40	+125	IP65/IP67	IP20						✓	
CNE	16A	1 mΩ	10 GΩ	-40	+125	IP65	IP20	✓						dUL ^{A)} , CSA, CCC, GL, EAC

1) See the insert load curves to establish the actual maximum operating current according to the ambient temperature

2) For the wire electrical connection data, see from page 30

A) UL for USA and Canada

10A max contacts - CD serie

conductor section (mm ²)	AWG	identification number
0,14 - 0,37	26 - 22	
0,5	20	
0,75	18	
1	18	
1,5	16	
2,5	14	

Contacts can be supplied in the silver or gold plated version

40A max contacts - CX serie

conductor section (mm ²)	AWG	identification
1,5	16	hole Ø 1,75 mm
2,5	14	hole Ø 2,25 mm
4	12	hole Ø 2,85 mm
6	10	hole Ø 3,5 mm

Contacts are supplied in the silver plated version only

16A max contacts - CC serie

conductor section (mm ²)	AWG	throat identification
0,14 - 0,37	26 - 22	
0,5	20	
0,75	18	
1	18	
1,5	16	
2,5	14	
3,0	12	
4	12	

Contacts can be supplied in the silver or gold plated version.

Male contacts can also be supplied in the "advanced" version and iron/constantan contacts for thermocouples type J.

enclosures:
 size "21.21" page :
 insulating type 526 - 527
 metallic type 528 - 529



inserts, crimp connections



10A crimp contacts silver and gold plated



description	part No.	part No.	part No.
inserts for fixed enclosures, complete with electro-optical interface* without contacts (to be ordered separately) socket inserts for female contacts plug inserts for male contacts	CXL 2/4 SF CXL 2/4 SM		
without electro-optical interface for fixed enclosures without contacts (to be ordered separately) socket inserts for female contacts plug inserts for male contacts	CXL SF CXL SM		
10A female contacts 0,14-0,37 mm ² AWG 26-22 identification No. 1 0,5 mm ² AWG 20 identification No. 2 0,75 mm ² AWG 18 identification No. ② 1 mm ² AWG 18 identification No. 3 1,5 mm ² AWG 16 identification No. 4 2,5 mm ² AWG 14 identification No. 5		CDFA 0.3 CDFA 0.5 CDFA 0.7 CDFA 1.0 CDFA 1.5 CDFA 2.5	CDFD 0.3 CDFD 0.5 CDFD 0.7 CDFD 1.0 CDFD 1.5 CDFD 2.5
10A male contacts 0,14-0,37 mm ² AWG 26-22 identification No. 1 0,5 mm ² AWG 20 identification No. 2 0,75 mm ² AWG 18 identification No. ② 1 mm ² AWG 18 identification No. 3 1,5 mm ² AWG 16 identification No. 4 2,5 mm ² AWG 14 identification No. 5		CDMA 0.3 CDMA 0.5 CDMA 0.7 CDMA 1.0 CDMA 1.5 CDMA 2.5	CDMD 0.3 CDMD 0.5 CDMD 0.7 CDMD 1.0 CDMD 1.5 CDMD 2.5

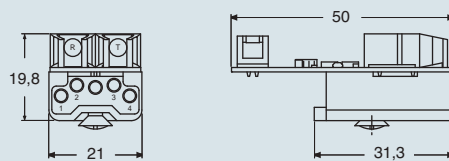
silver plated

gold plated 1)

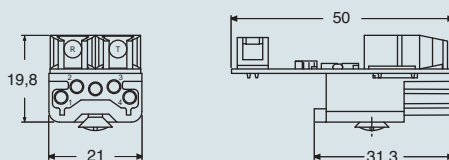
* fitted with IDC connector for TTL to bus connection ribbon cable

dimensions in mm

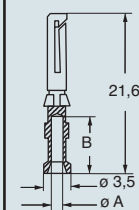
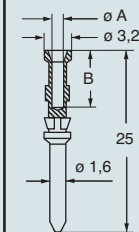
CXL 2/4 SM



CXL 2/4 SF



dimensions in mm



CDF and CDM contacts

conductor section mm ²	conductor slot diameter A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

dimensions shown are not binding and may be changed without notice

Accessories



enclosures:
 size "21.21" page :
 insulating type 526 - 527
 metallic type 528 - 529



**inserts, snap-in (POF)
 or crimp (HCS®) optical connection
 electrical crimp connection**



**10A crimp contacts
 silver and gold plated**



description	part No.	part No.	part No.
-------------	----------	----------	----------

inserts for portable enclosures with:
 4 + 1 crimp 1,5 mm² contacts (included)
 + 2 snap on contacts for 1 mm¹ plastic (POF) fibre optics
 socket inserts with CDFA 1.5 female contacts
 plug inserts with CDMA 1.5 male contacts

**CXL 2/4 PF
 CXL 2/4 PM**

inserts for portable enclosures with:
 4 + 1 crimp 1,5 mm² contacts (included)
 + 2 crimp contacts for 0,2 mm² HCS® fibre optics
 socket inserts with CDFA 1.5 female contacts
 plug inserts with CDMA 1.5 male contacts

**CXL 2/4 PFH
 CXL 2/4 PMH**

inserts for portable enclosures with:
 4 + 1 crimp contacts (not included – CDF and CDM series)
 + 2 snap on or HCS® fibre optic contacts (not included)¹⁾
 socket inserts with female contacts
 plug inserts with male contacts

**CXL PF
 CXL PM**

10A female contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

10A male contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

CDFA 0.3	silver plated	CDFD 0.3	gold plated 1)
CDFA 0.5		CDFD 0.5	
CDFA 0.7		CDFD 0.7	
CDFA 1.0		CDFD 1.0	
CDFA 1.5		CDFD 1.5	
CDFA 2.5		CDFD 2.5	
CDMA 0.3		CDMD 0.3	
CDMA 0.5		CDMD 0.5	
CDMA 0.7		CDMD 0.7	
CDMA 1.0		CDMD 1.0	
CDMA 1.5		CDMD 1.5	
CDMA 2.5		CDMD 2.5	

® HARD CLAD SILICA (SpecTran Corporation registered trademark)

dimensions in mm

dimensions in mm

¹⁾ for POF fibre preparation, the polishing kit Agilent HFBR-4593 (CXL POL) is available on request

²⁾ for HCS® connection preparation, the Crimp & Clear cabling kit (without glue or polishing kit) for simplex connectors for 200/300 μm HCS® fibre optics is available on request.

The (CXL KCC) kit consists of:

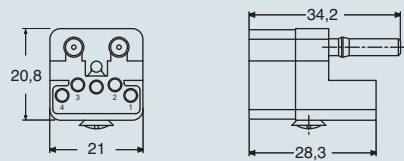
- No. 1 scissors for kevlar cutting
- No. 1 cable stripper
- No. 1 fibre stripper
- No. 1 calibrated pliers
- No. 1 precision fibre optics cutter with diamond blade.

All accessories are stored in a hard carrying case

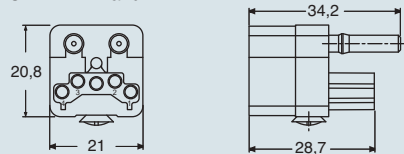
³⁾ see data on page 519

- temperature range: from -40°C to +70°C
- for crimp contacts, see the crimp tools section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548

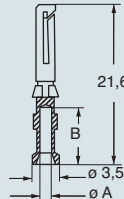
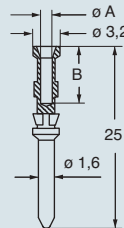
CXL 2/4 PM and PMH



CXL 2/4 PF and PFH



- 8 mm wire stripping
- POF 7 mm fibre stripping



CDF and CDM contacts

conductor section	conductor slot	conductors stripping length
mm ²	ø A (mm)	B (mm)
0,14-0.37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

dimensions shown are not binding and may be changed without notice



inserts:	page:
CJ KF	503
CJ K8FT	506
CLK 04 SC	509
CXL 2/4 SF.....	524
CXL 2/4 SM.....	524
CXL SF.....	524
CXL SM.....	524

bulkhead mounting housings

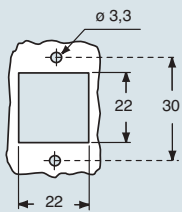


cover



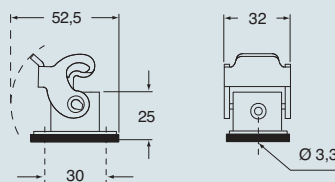
description	part No.	part No.
with lever	CK 03 IN (black)	
with pegs and gasket		CKG 03 CN (black)

panel cut-out for enclosures, in mm



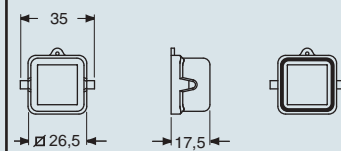
dimensions in mm

CK IN

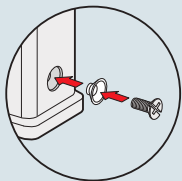


dimensions in mm

CKG CN



Note:
CXL, CJ K and CLK inserts are already supplied with seal and screw, which ensure IP66/IP67 protection rating.



CAUS® Type 4/4X/12

dimensions shown are not binding and may be changed without notice



inserts:	page:
CJ KM	503
CJK 8MT	506
CJK 8IMT *	506
CLK 04 SC *	509
CXL 2/4 PF	525
CXL 2/4 PFH	525
CXL 2/4 PM	525
CXL 2/4 PMH	525
CXL PF	525
CXL PM	525

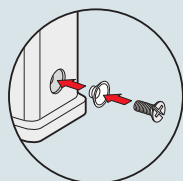
* cannot be used with angled enclosures
(part No. CKAG 03 VA / MKAG VA20)

hoods



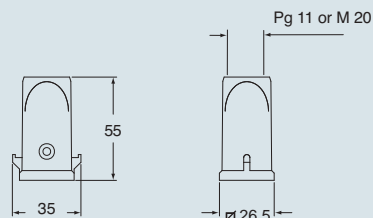
description	part No. (entry - Pg 11)	part No. (entry - M 20)
with pegs and gasket, top entry	CKG 03 VN (black)	MKG VN20 (black)
with pegs and gasket, side entry	CKG 03 VAN (black)	MKG VAN20 (black)

Note:
CXL, CJ K and CLK inserts are already supplied with seal and screw, which ensure IP66/IP67 protection rating.

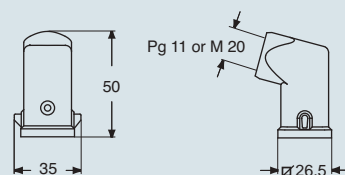


dimensions in mm

CKG VN and MKG VN



CKG VAN and MKG VAN



CALUS® Type 4/4X/12

dimensions shown are not binding
and may be changed without notice



inserts:	page:
CJ KF	503
CJ K8FT	506
CLK 04 SC	509
CX 1/2 BD	512
CXL 2/4 SF.....	524
CXL 2/4 SM.....	524
CXL SF.....	524
CXL SM.....	524

bulkhead mounting housings cover



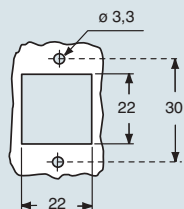
bulkhead mounting housings with cover



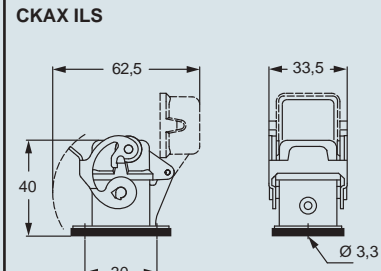
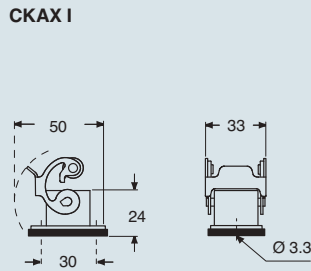
NEW

description	part No.	part No.
with stainless steel lever	CKAX 03 I	
with pegs and gasket	CKAG 03 C	
with stainless steel lever, for female inserts		CKAX 03 ILS

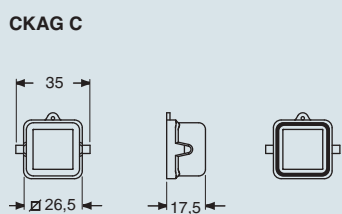
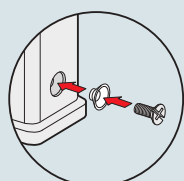
panel cut-out for enclosures, in mm



dimensions in mm



Note:
CXL, CX 1/2 BD, CJ K and CLK inserts are already supplied with seal and screw, which ensure IP66/IP67 protection rating



CAUS Type 4/4X/12

dimensions shown are not binding and may be changed without notice

Accessories



inserts:	page:
CJ KM	503
CJK 8MT	506
CJK 8IMT *	506
CLK 04 SC *	509
CX 1/2 BD *	512
CXL 2/4 PF	525
CXL 2/4 PFH	525
CXL 2/4 PM	525
CXL 2/4 PMH	525
CXL PF	525
CXL PM	525

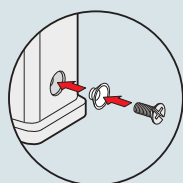
* cannot be used with angled enclosures
(part No. CKAG 03 VA / MKAG VA20)

hoods



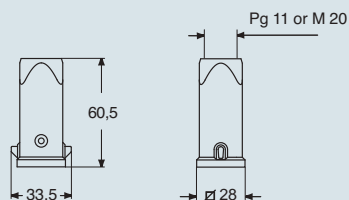
description	part No. (entry - Pg 11)	part No. (entry - M 20)
with pegs and gasket, top entry	CKAG 03 V	MKAG V20
with pegs and gasket, side entry	CKAG 03 VA	MKAG VA20

Note:
CXL, CX 1/2 BD, CJ K and CLK inserts are already supplied with seal and screw, which ensure IP66/IP67 protection rating

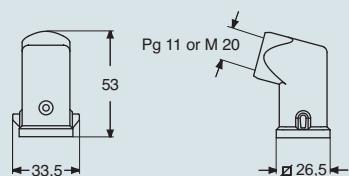


dimensions in mm

CKAG V and MKAG V

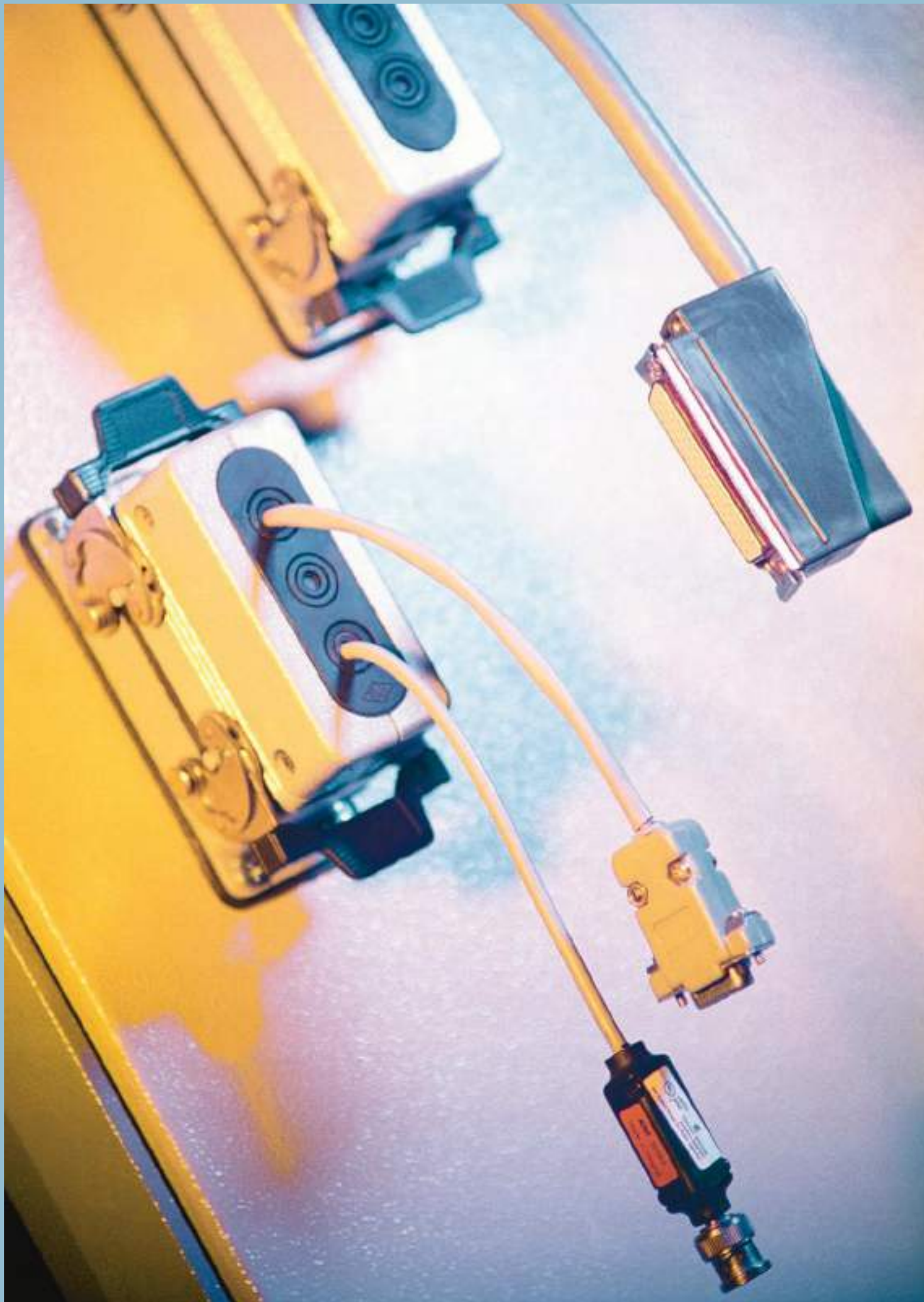


CKAG VA and MKAG VA



CAUS® Type 4/4X/12

dimensions shown are not binding
and may be changed without notice



Crimping tools

Tools and accessories for crimp contacts

The crimping concept

The crimp connection is an irreversible connection between one or two conductors and a crimp contact. The crimp connection is obtained by pinching or pressing the contact metal - or shaft - firmly with the crimping tool.

A good crimp connection is provided by a suitable combination between the crimping base, the crimping part of the contact metal, i.e. the crimp contact, firmly with and the section of the conductor.

These comments refer to crimped connections carried out with copper flexible conductors in class 5 (flexible) or 6 (extra flexible) according to standards IEC 60228 and IEC 60228-A (Italian standard CEI 20-29).

Solid copper conductors (class 1) or in other materials (aluminium, iron, etc) often require special precautions for contacts and for crimping tools, to be agreed with the manufacturer. The main technical advantages provided by crimping connections over soldered connections are:

- The process does not use heat and does not require materials.
- Perfect connection is acquired that is intrinsic with cold soldering.
- No degradation of the elastic characteristics of the female contacts (a problem that arises with soldering temperatures).
- No health risks connected with the use of heavy metals or fumes generated from the soldering process.
- Preservation of the conductor's flexibility immediately upon connection.
- No conductors with burned, discoloured or overheated insulating material.
- Excellent reproducibility of the performances of the electrical and mechanical connections.
- Facilitated production controls.

Other advantages obtained by crimping connections over screw terminal connections are:

- Less drop of currency in the connector contacts.
- High stability in time even in the presence of vibrations.
- High duration in presence of corrosion (gastight).
- Individual insertion of the contacts in the connector (it is possible to eliminate unnecessary contacts).
- Less time required for connection.
- Possibility of pre-production of the terminated conductors with crimp contacts.
- Easy substitution of individual contacts during maintenance.
- Possibility of selectively isolating the circuits during maintenance via the extraction of the contacts from the connector.

The crimped connections for wire sections up to 10 mm² are covered by the EN 60352-2:2006 European standard equivalent to the IEC 60352-2 Issue 2 (2006-02) international standard.

The **EN 60352-2** standard also includes a practical guide, which lists the following main points.

The quality of a crimped connection is mainly affected by the quality of materials used and by the condition of the crimp contact (in particular the crimp shaft) and wire surfaces.

To ensure a good quality crimped connection, an essential parameter is the wire mechanical retention in the contact. The standard makes a distinction between the closed crimp shaft, inherently stronger, and the open crimp shaft. ILME crimp contacts are closed crimp shaft contacts, with inspection hole which ensures a higher mechanical performance compared to the open shaft crimp contacts, such as better mechanical sturdiness and stability during operation.

They have been machine turned, thus ensuring a better electrical performance (better conductivity). 2002 Amendment 2 of the previous IEC standard issue controversially unified the minimum resistance to tensile stress values established for open shaft contacts (curve B of old Figure 5) and closed shaft contacts (curve A of old Figure 5) by lowering them to the

values (shown in curve B), which can be achieved by open shaft crimp contacts. This has controversially relaxed the suitability requirements both for closed crimp shaft, typically large, machine turned and for crimp tools specially made for these contacts. Several industries continue to prefer the higher performance ensured by closed shaft crimp contacts, the only ones to ensure the higher resistance to tensile stress values believed to be essential for the most demanding industrial applications. Therefore, ILME continues to refer to curve A of Figure 5 illustrated in the EN 60352-2 (1994) standard: ILME closed shaft crimp contacts, used with flexible copper wires, featuring a section included in the ranges shown and correctly crimped with the recommended tools, ensure breakage resistant connections at least equal to the values shown in the table shown below (for reference, the corresponding R_f/S unified tensile stress load value is also shown [N/mm²]).

Section S		Resistance to traction R _t (N)	R _f /S (N/mm ²)
AWG	mm ²		
26	0,12	18	150
-	0,14	21	150
24	0,22	33	150
-	0,25	37,5	150
22	0,32	48	150
-	0,37	55,5	150
20	(0,6)	75	150
-	0,75	112,5	150
18	(0,82)	125	150
-	1	150	150
16	(1,3)	195	150
-	1,5	220	147
14	(2,1)	300	143
-	2,5	325	130
12	(3,3)	430	130
-	4	500	125
10	(5,3)	635	120
-	6	650	108
7	10	1000	100
		(1300)	(130)
-	16	1650	103
-	25	2300	92
-	35	2800	80
-	50	3300	66
-	70	3900	56

NOTE - For 10 mm² wire sections, the resistance to tensile stress shown in *italics* are those specified in the NF F 61-030 standard (for 10 mm², the value in brackets).

The basic criteria used for the resistance to tensile stress values required by EN 60352-2 standard is that such resistance is at least equal to 60% of the breakage unified load of the same annealed copper wire.

This applies to wire sections up to about 1,5 mm²; above this section, the ratio is slightly lower as retention is also affected by friction, which increases linearly with the housing diameter, whilst the section increases by the square.

IEC/EN 60352-2 standard, which targets the electronics industry, restricts its requirements to crimp connections for wires with a maximum section of 10 mm². For sections higher than 10 mm², up to 70 mm², the standard to refer to is the NF F 61-030 (1989) French standard which relates to electrical connectors to be used on board of railway rolling stock, in particular for large crimp contacts, such as those manufactured by ILME.

NOTE - Alternatively, for wire sections between 35 mm² and 300 mm², EN 61238-1:2003 standard can be referred to. This standard requires constant R_f/S values equal to 60 N/mm², lower than those established by the above mentioned French standard.

Crimping tools

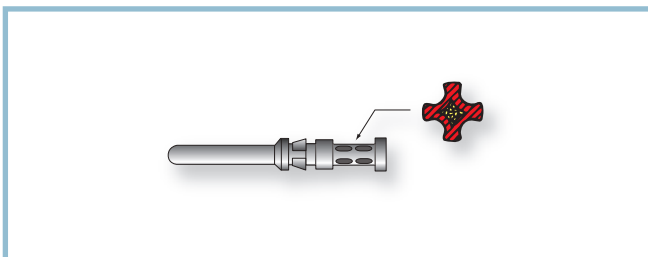
Tools and accessories for crimp contacts

Selecting the crimping tool and relevant controls

When you have selected quality crimp contacts and conductors, the next step and most important step is to select the correct work tool. The practical guide of standard EN 60352-2 provides the following recommendations on the subject. They list some of the ideal requirements for crimping tools, some optional characteristics, but, above all, they provide a preview of the indispensable controls:

- a) The crimping tools and the contacts used must be supplied by the same manufacturer, otherwise the user must assume all responsibility for the quality and reliability of the crimp connections.
- b) The crimping tools must function correctly and provide a correct crimp without damage to the pin or the component to crimp.
- c) In order to obtain a reliable crimp connection, a crimping device with a mechanism that controls the entire crimping cycle must be used. At the end of the crimping cycle the handles and the ratchet must return to the open position.
- d) In all cases the crimping operation must be made in one single phase, with no further interventions.
- e) The removable parts of the tool such as the crimping dies and the locators must be designed in such a way as to make it possible to be inserted within the tool only in the correct manner.
- f) The tools must be supplied with the appropriate means for a correct positioning of the pins to be crimped and of the conductors during crimping.
- g) The tools must be designed in such a way so that only the necessary adjustments may be made.
- h) The action of the tool must be such that both the pin to be crimped and the fixture of the isolation (when present) are respectively crimped or compressed with a single action.
- i) The design of the tool must ensure that the dies for a particular tool may be interchangeable within tools of the same type. If they are not interchangeable, the identification of tools for which they are suitable must be marked on the dies.
- j) The tools may be designed so as to produce a marking or coding of the die on the pin to be crimped so that the crimping may be checked for verification of the correct die.
- k) The design of the tool must allow the verification of the dies with gauges to measure wear. The gauge verification method must be that specified by the manufacturer of the tools.

With suitable flexible copper conductors, the crimping tool proposed by ILME gives 8 impression crimp (see figure) in conformity with standard EN 60352-2. Periodic control of the wear of the crimping matrixes can be carried out with the appropriate "go - no go" gauges (purchased separately). For extra operational details, consult the following pages on tools, and the relevant instruction sheets and/or use and maintenance manuals.



The manual and automatic crimping tools selected by ILME are carefully designed to ensure symmetrical deformation of the crimping area of the contact and wire, by means of their own, internal high pressure forming parts. The positioner ensures that the wire and crimp contact meet in the appropriate part of the tool. Sprung mechanisms built into the tools ensure that the contacts are not inserted in the tool before the indenters are fully open, and that the tool does not open before the crimping process has been completed.

The **CCPZ MIL** (for 10A and 16A crimp contacts) and **CXPZ D** (for 40A crimp contacts) manual crimping tools are suitable for use when compressed air sources are unavailable, for low or medium-low work loads. The **CCPZ RN** (for 10A, 16A and 40A crimp contacts) manual crimping tool is also suitable for low or medium-low work loads. The **CCPZP** pneumatic crimping bench tool without automatic positioner (for 10A and 16A crimp contacts) is suitable for use in the workshop (where compressed air is available) for high or medium-high work loads. Using the same manual crimping tool turrets it is possible to change rapidly from crimping on male contacts to crimping on female contacts of the same series (10A and 16A). The **CCPZPA** pneumatic crimping bench tool with automatic positioner (for 10A and 16A crimp contacts) is suitable for workshop jobs (where compressed air is available) for medium-high or high work loads. It is recommended in particular for crimping high quantities of contacts that are the same type or have the same section, thus saving a significant amount of time thanks to automatic operation and reduced operator fatigue. Where the type or kind of contact must be changed frequently, it is preferred to use the version without automatic positioner.

The **CXPZP D** pneumatic crimping bench tool without automatic positioner (for 40A crimp contacts) is suitable for use in the workshop (where compressed air is available) for high or medium-high work loads. By using the same positioners as those of manual crimper CXPZ D, the size of a contact can be rapidly changed with one of the same type. However, the positioner must be changed in order to change over from male to female contacts.

The semiautomatic stripping-crimping machine, type **ZFU-CD**, is suitable to be used in workshops (where an electrical or pneumatic power supply is available) and for heavy work loads. It enables to produce large amounts of crimped connections in less time because of the possibility of simultaneously carrying out stripping and crimping operations. The contact and tool replacement operations, which are minimized because of the preset programs that can be stored and customized by the user, require the production to be programmed to reduce downtime. When a sequential processing is required despite the economic advantages offered by the above-described solution, it is preferable to use pneumatic bench pliers without the above-described positioner or one of the manual pliers.

In any case, the quality of the results from the crimping tools, combined with the ILME crimp contacts, is identical and at the highest market levels, exceeding the requirements of the standard EN 60352-2.

Although the crimping appliances and tools suggested here include a set of control automatisms and mechanisms, which prevent the chief misunderstandings and errors, the operator is advised to always take care not to work in inappropriate conditions.

Crimping tools

Crimping

The crimping operation

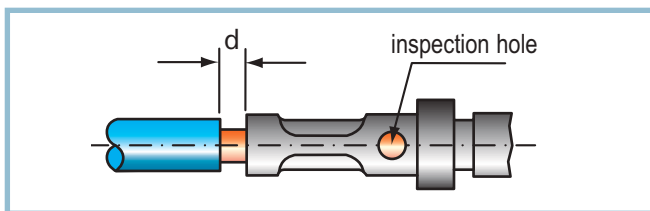
The practical guide in standard EN 60352-2 supplies further general information regarding crimp contacts for multipole connectors.

1. Insertion of the conductor in the crimp contacts

The conductor must be correctly positioned in the pin to be crimped. The crimping indentations must be correctly positioned on the foot to be crimped. There must be sufficient space, in conformity with the manufacturer's instructions, between the end of the insulating material of the conductor and the pin to be crimped ("d").

As a general rule, the stripping length is equal to the pin insertion depth + 1 mm (for sections up to 1 mm²) and + 2 mm (for sections from 1 to 10 mm²) *. When using closed crimp pins with an inspection hole, the crimp conductor must be visible through the inspection holes.

* Keeping the conductor strands visible above the contact collar enables you to check correct stripping, i.e. make sure no strands have been cut. This also ensures a certain flexibility for the connection, by not transmitting to the contact any flexure stresses caused by installation. However, in practice, some operators give priority to insulation, by reducing to zero the gap between cable insulation and the contact collar.



2. Insertion of crimped contacts in the connector insert

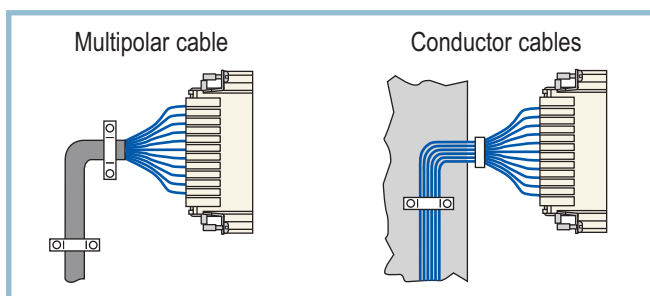
It is recommended that the crimped contacts be perfectly straight and inserted within the contact slots in a single operation and without excessive force until a clicking sound is heard. The correct retention of the contact should be verified with a light pulling of the wire. Non alignment of the crimped contacts must be avoided because this could cause possible loosening of the retention springs and consequently jeopardise the retention of the contact in the insert. For small section conductors ($\leq 0,35 \text{ mm}^2$) or for specific application, the use of the insertion tool specified by the manufacturer is recommended.

3. Removal of inserted contacts

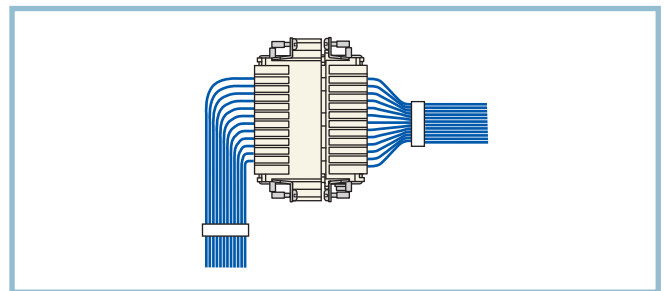
In the case of incorrect insertion or wiring substitution, inserted contacts may only be removed using the removal tools specified by the manufacturer.

4. Mounting and flexure of multiwired bundles or multipolar cables with crimp contacts

Bundles of conductors or multipolar cables with crimp contacts for multipole connectors must not cause stress to the inserted contacts with their weight as this would cause the contacts to bend over to the coupling area of the connectors and consequently damage them. The connectors must therefore be provided with cable clamps or the conductor bundles or multipolar cables must be mounted as described in the figures herebelow.

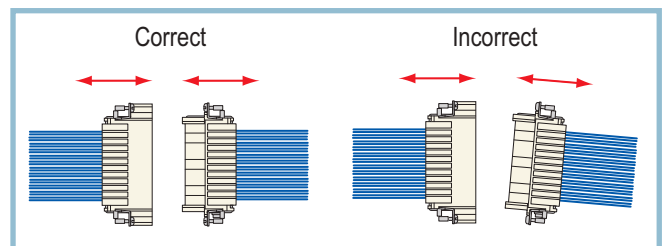


If the conductor bundles or the multipolar cables have to be immediately folded over on the back of the connector insert, it is recommended not to use any mechanical force in the axial direction with respect to the coupled contacts. The figure herebelow shows a correct bending and clamping of the multiwire bundles using the crimp contacts.



5. Coupling and uncoupling of multipolar connectors with crimp contacts

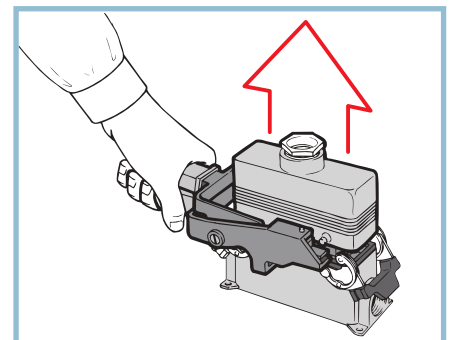
In order to prevent stress on the crimp contacts, the connectors must be coupled and uncoupled in the axial direction with respect to the contacts, without touching the conductor bundles or cables. Standard DIN 43652 (incorporated into specification EN 175301-801) that applies to the ILME inserts of the CD series (this recommendation is also valid for the CDD series) prescribes a maximum deflection from the axis of $\pm 5^\circ$ on the greater side and $\pm 2^\circ$ on the smaller side.



To keep the play within this limit, especially during the uncoupling phase, guide pins CRM and CRF may be used. The use of ILME pliers (code number CPES) is recommended for the uncoupling operations for CD inserts (64 poles) and CDD inserts (108 poles). The pliers work on the fulcrum and lever principle and perform the following main tasks:

- I - Reduce effort and coupling times to the minimum, even when working in the most impractical and inaccessible points.
- II - Perform the uncoupling of multipolar connectors in full conformity of standard DIN 43652 (now EN 175301-801).

The pliers allow the extraction of the inserts to be made perfectly axially with respect to the contacts, evenly distributing the pressure on four points (housing pins).



for contacts of insert series:	page:
CD (10A)	53-61
CDD (10A)	67-74
CDC (16A)	99-103
CCE (16A)	110-115
CQE (16A)	138-143
CQEE (16A)	146-147
CMCE (16A)	148-160
CQ (10A/16A)	165-168
CX 8/24 (16A/10A)	169
CX 6/36 * (10A)	170
CX 12/2 * (10A)	171
CX 6/6 * (16A)	175
MIXO (10A/16A)	185-203

* the underlined polarities indicate those contacts that require the tools shown in this page

manual crimping tool turret heads - gauge



insertion tool - removal tools - replacement tip



description	part No.	part No.
crimping tool for 10A and 16A contacts DANIELS AF8 model (turret excluded)	CCPZ MIL	
turret heads (see note) - for 10A contacts (CDF and CDM series) - for 16A contacts (CCF and CCM series)	CCTP 10 CCTP 16	
"go / no go" control gauge to verify indenter closure (see note)	CCPNP	
insertion tool for insertion of the contacts into the inserts for crimped contacts up to 0.75 mm ²		CCINA
removal tools for the extraction of contacts from the inserts - for 10A contacts ¹⁾ - for 16A contacts ²⁾		CCES CQES
replacement tip for CCES removal tool		CCPR RN

- ¹⁾ for CQ, CD, CDD, CX inserts (10A auxiliary contacts) and MIXO module (10A)
²⁾ for CQ, CQE, CQEE, CCE, CMCE inserts (excluded 16+2), MIXO module (16A), CX6/6 (16A) and CDC. For CMCE (16+2), CX inserts (contacts 16A insert CX 8/24) using a flat 3 mm screwdriver.

Notes:

Positioning turret

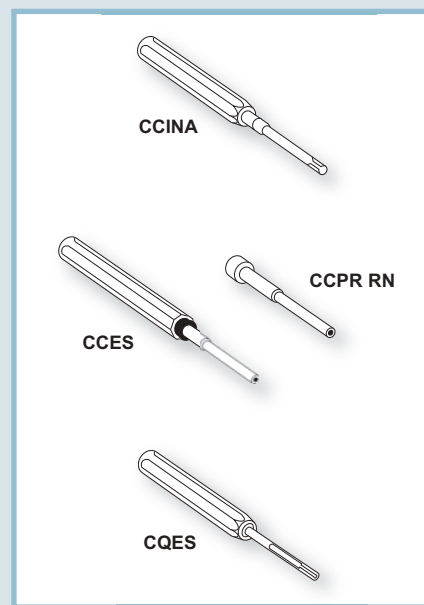
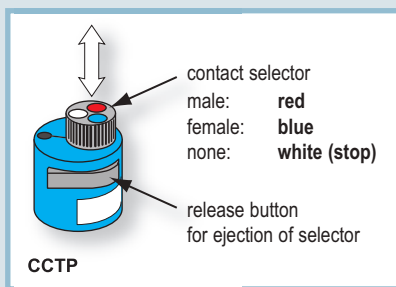
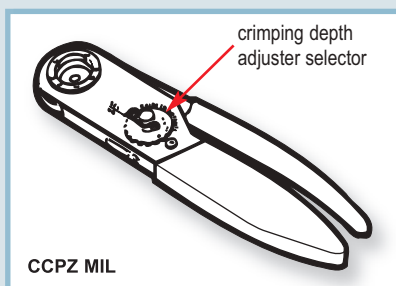
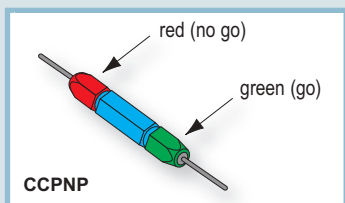
conforms to international standard MIL-C-22520/1

- An interchangeable and indispensable accessory of the CCPZ MIL crimping tool, it precisely positions the contact where crimping is performed. Each series of contacts requires its own turret.

"go / no go" control gauge

conforms with international standard MIL-C-22520/3

- A tool used to periodically check that the crimping tool meets standard requirements.



CCMA - CCFA CCMD - CCFD		0,14	0,25	0,34	0,5	0,75	1,0	1,5	2,5	3,0	4,0	conductor section
red	blue	mm ²	mm ²	mm ²	mm ²	mm ²	mm ²	mm ²	mm ²	mm ²	mm ²	AWG
male	female	26	24	22	20	18	17	16	14	12	12	
0,3	0,3	5	5	6								
0,5	0,5		6	7								
0,7	0,7			6	7							
1,0	1,0			6	7	7						
1,5	1,5				6	7	7	8				
2,5	2,5					6	7	7	7			
3,0	3,0						6	7	7			
4,0	4,0								7	8		

crimping depth
adjuster selector
CCTP 16

CDMA - CDFA CDMD - CDFD		0,14	0,25	0,34	0,5	0,75	1,0	1,5	2,5	conductor section
red	blue	mm ²	mm ²	mm ²	mm ²	mm ²	mm ²	mm ²	mm ²	AWG
male	female	26	24	22	20	18	17	16	14	
0,3	0,3	5	5	6						
0,5	0,5			6						
0,7	0,7				6					
1,0	1,0					6				
1,5	1,5						7			
2,5	2,5							7		

crimping depth
adjuster selector
CCTP 10

General specifications

The CCPZ MIL crimping tool conforms to the international standard MIL-C-22520/1. Crimping is performed with 8 pressure points. The tool is equipped with a geared mechanism to control the complete crimping cycle.

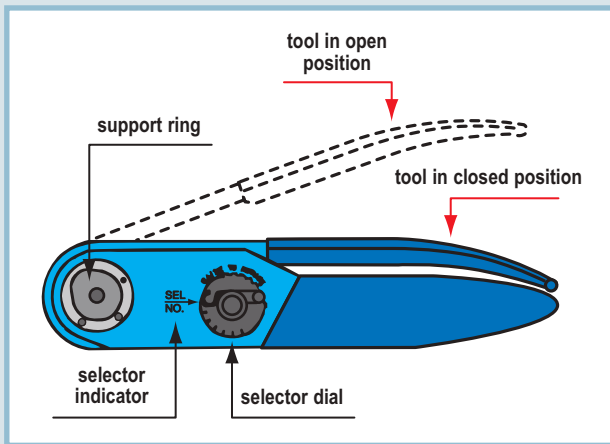
The tool must be equipped with an interchangeable turret (CCTP) according to the series of contacts to be crimped.

Crimping range

Wire section: dimension from 0,12 mm² (26 AWG) to 4 mm² (12 AWG).

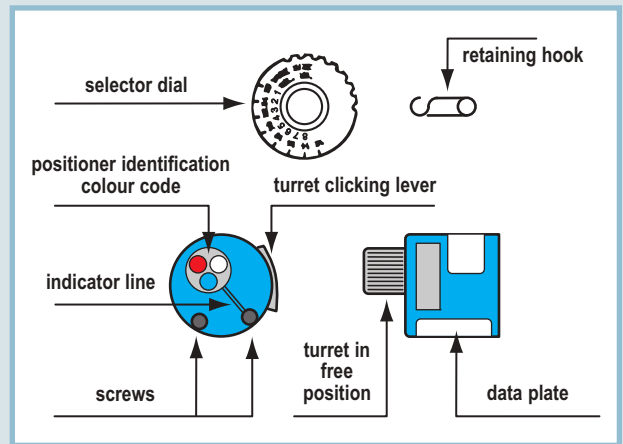
Caution!

The handle of the tool must be in the open position when the turret is installed, disassembled or opened. If not, the turret and the crimping tool may be damaged.



CCTP turret installation

1. The crimping tool must be in the open position.
2. Press the clicking lever that releases the turret in the adjustment position.
3. Position the previously selected CCTP turret on the support ring located on the crimping tool (matching the special pin on the base of the turret with the corresponding hole on the support ring), aligning the tapped holes with the socket head screws.
4. With the CCTP turret positioned against the support ring, tighten the socket head screws with the 3.5 mm Allen wrench (supplied with the kit).
5. Refer to the data plate on the CCTP turret. From the colour code column, select the colour of the positioner that corresponds to the appropriate code and dimension of the contact to be crimped.
6. With the CCTP turret in the adjustment position, turn the turret until the colour-coded positioner is aligned with the indicator line. Press the turret until it clicks into the connected position.
7. Refer to the data plate on the CCTP turret. From the column indicating the proper conductor section, determine the number that corresponds to the contact being used.
8. Remove the retaining hook from the crimping tool selector dial. Lift the selector dial and turn it until the selector number is aligned with the indicator (SEL.NO.). Replace the retaining hook (if necessary).



Crimping instructions

1. Insert the contact and the prepared conductor through the opening of the indenter in the turret positioner.
2. Tighten the crimping tool handle until the stop gear is released. The tool will return to the open position.
3. Check the position of the crimping on the contact crimping foot. Ideally, the crimping should be between the inspection hole and the top edge of the crimping foot. The head of the contact should not be squared and the inspection hole should be intact.

Crimping tool maintenance

No maintenance is required. However, it is good practice to keep the indenter tips free from residual deposits of the coloured band (some types of crimp contacts as per MIL standards are identified by coloured bands in the crimping area) and any other debris. A metal brush may be used for this purpose.

The following is strongly recommended:

1. DO NOT immerse the tools in a solution to clean them.
2. DO NOT brush oil in the tools to lubricate them.
3. DO NOT try to disassemble the tool or repair it.

This is a high-precision manual crimping tool and must be used as such. For automatic crimping operations refer to the CCPZP and/or CCPZPA crimping tool models.

Removing the CCTP turret

With the crimping tool in the open position, to disassemble the turret, loosen the socket head screws using the 3.5 mm Allen wrench (supplied with the kit). After the threads are released from the support ring, pull off the turret with a straight movement.

Instructions to check calibration

The operations to check the crimping tool must be carried out with the selector dial in position 4 and the CCPNP gauge. **ATTENTION! Do not crimp the gauge.**

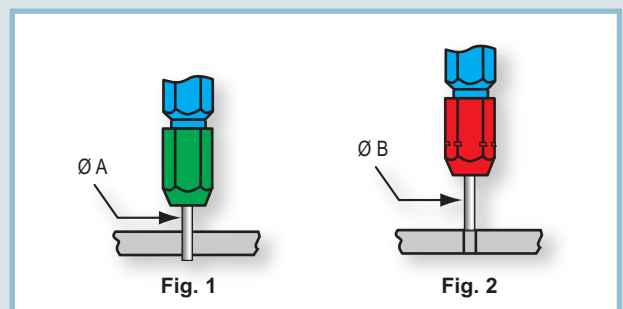
Calibration check

Put the crimping tool in the completely closed position.

“GO” - Insert the end (green) of the gauge as shown (Fig. 1). The gauge must pass freely between the indenter tips.

“NO GO” - Insert the end (red) of the gauge as shown (Fig. 2). The gauge should not pass through the opening.

Gauge	tool selector pos. No.	Ø A ± 0,00254 mm (GO) green	Ø B ± 0,00254 mm (NO GO) red
CCPNP	4	0,991 (mm)	1,118 (mm)



for contacts of insert series: page:
CX 6/36 * (40A) 170
CX 12/2 * (40A) 171
MIXO (40A) 184-188

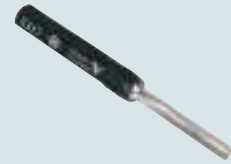
* the underlined polarities indicate those contacts that require the tools shown in this page

***) On request is possible to supply the pneumatic crimping tool version (part. No. **CXPZP D**), please contact us for further details.

manual crimping tool **) turret heads - gauge



removal tool



description

part No.

part No.

crimping tool for **40A**
DANIELS M309 model (turret excluded)

CXPZ D

turret heads (see note)
- for male contacts **40A**
- for female contacts **40A**

CXTP 40 M
CXTP 40 F

"go / no go" control gauge
to verify indenter closure (see note)

CXPNP

removal tool
for the extraction of contacts from the inserts
- for **40A** contacts

CXES

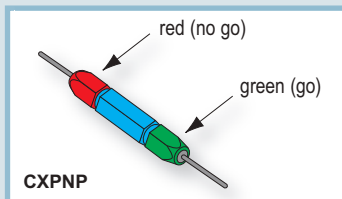
Notes:

Positioning turret

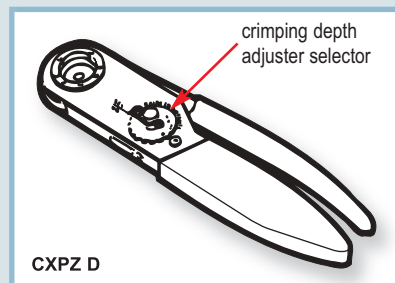
- An interchangeable and indispensable accessory of the CXPZ D crimping tool, it precisely positions the contact where crimping is performed. Each series of contacts (male or female) requires its own turret.

"go / no go" control gauge

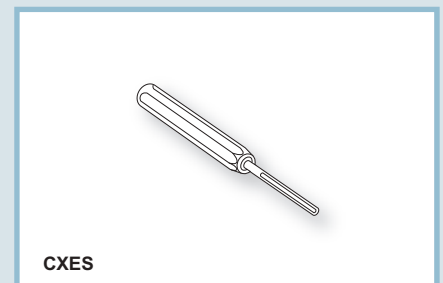
- A tool used to periodically check that the crimping tool meets standard requirements.



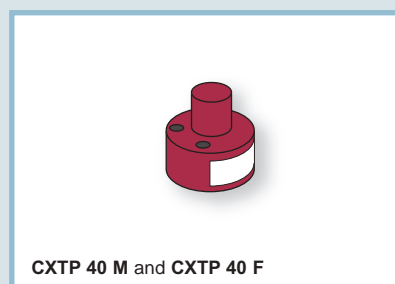
) On request is possible to supply the pneumatic crimping tool version (part. No. **CXPZP D), please contact us for further details.



CXPZ D



CXES



CXTP 40 M and CXTP 40 F

General specifications

The CXPZ D crimping tool performed with 8 pressure points. The tool is equipped with a geared mechanism to control the complete crimping cycle.

The tool must be equipped with an interchangeable turret (CXTP) according to the series of contacts to be crimped.

Crimping range

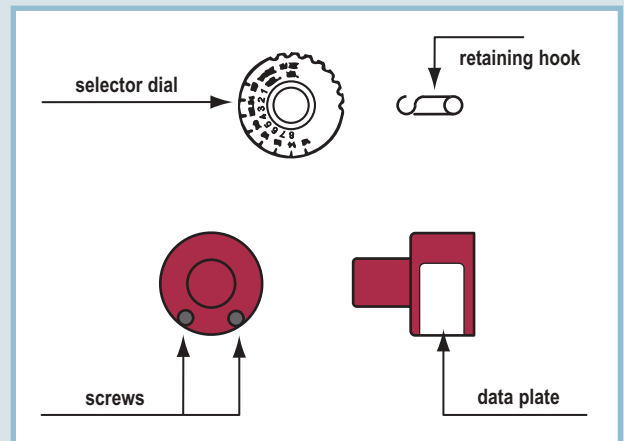
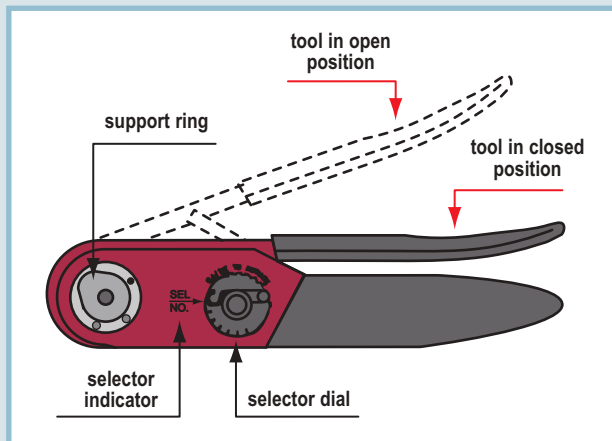
Wire section:
dimension from 1,5 mm² (16 AWG) to 6 mm² (10 AWG)

Caution!

The handle of the tool must be in the open position when the turret is installed, disassembled or opened. If not, the turret and the crimping tool may be damaged.

CXTP turret installation

1. The crimping tool must be in the open position.
2. Choose the turret to be used, according to the contacts that should be crimped (male or female).
3. Position the previously selected CXTP turret on the support ring located on the crimping tool (matching the special pin on the base of the turret with the corresponding hole on the support ring), aligning the tapped holes with the socket head screws.
4. With the CXTP turret positioned against the support ring, tighten the socket head screws with the 3.5 mm Allen wrench (supplied with the kit).
5. Refer to the data plate on the CXTP turret. From the column indicating the proper conductor section, determine the number that corresponds to the contact being used.
6. Remove the retaining hook from the crimping tool selector dial. Lift the selector dial and turn it until the selector number is aligned with the indicator (SEL.NO.). Replace the retaining hook (if necessary).



Crimping instructions

1. Insert the contact and the prepared conductor through the opening of the indenter in the turret positioner.
2. Tighten the crimping tool handle until the stop gear is released. The tool will return to the open position.
3. Check the position of the crimping on the contact crimping foot. Ideally, the crimping should be between the inspection hole and the top edge of the crimping foot. The head of the contact should not be squared and the inspection hole should be intact.

Crimping tool maintenance

No maintenance is required. However, it is good practice to keep the indenter tips free from residual deposits of the coloured band (some types of crimp contacts as per MIL standards are identified by coloured bands in the crimping area) and any other debris. A metal brush may be used for this purpose.

The following is strongly recommended:

1. DO NOT immerse the tools in a solution to clean them.
2. DO NOT brush oil in the tools to lubricate them.
3. DO NOT try to disassemble the tool or repair it.

This is a high-precision manual crimping tool and must be used as such.

Removing the CXPT turret

With the crimping tool in the open position, to disassemble the turret, loosen the socket head screws using the 3.5 mm Allen wrench (supplied with the kit). After the threads are released from the support ring, pull off the turret with a straight movement.

Instructions to check calibration

The operations to check the crimping tool must be carried out with the selector dial in position 4 and the CCPNP gauge. **ATTENTION! Do not crimp the gauge.**

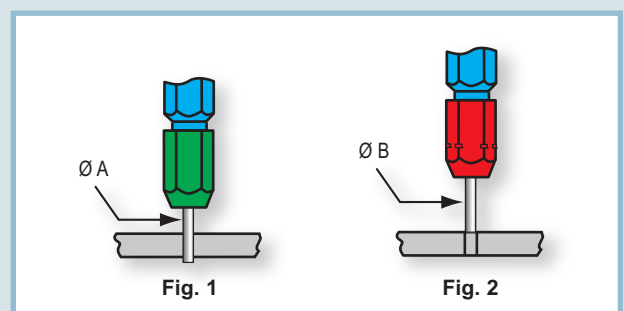
Calibration check

Put the crimping tool in the completely closed position.

“GO” - Insert the end (green) of the gauge as shown (Fig. 1). The gauge must pass freely between the indenter tips.

“NO GO” - Insert the end (red) of the gauge as shown (Fig. 2). The gauge should not pass through the opening.

Gauge	tool selector pos. No.	Ø A ± 0,00254 mm (GO) green	Ø B ± 0,00254 mm (NO GO) red
CXPNP	4	1,549 (mm)	1,676 (mm)



for contacts of insert series:	page:
CD (10A)	53-61
CDD (10A)	67-74
CDC (16A)	99-103
CCE (16A)	110-115
CQE (16A)	138-143
CQEE (16A)	146-147
CMCE (16A)	148-160
CQ (10A/16A)	165-168
CX 8/24 (16A/10A)	169
CX 6/36 (40A/10A)	170
CX 12/2 (40A/10A)	171
CX 6/6 * (16A)	175
MIXO (40A/16A/10A)	184-203

* the underlined polarities indicate those contacts that require the tools shown in this page

manual crimping tool gauge



insertion tool - removal tools - replacement tip



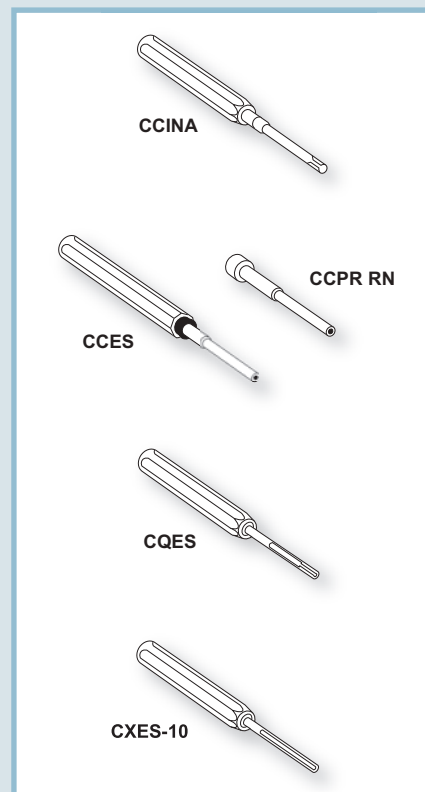
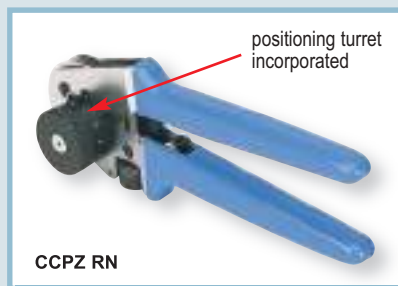
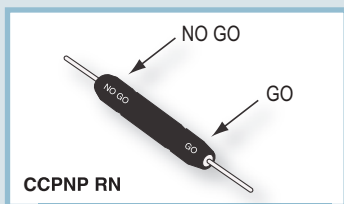
description	part No.	part No.
crimping tool for 10A, 16A and 40A contacts RENNSTEIG model (turret included)	CCPZ RN	
"go / no go" control gauge to verify indenter closure (see note)	CCPNP RN	
insertion tool for insertion of the contacts into the inserts for crimped contacts up to 0.75 mm ²		CCINA
removal tools for the extraction of contacts from the inserts - for 10A contacts ¹⁾ - for 16A contacts ²⁾ - for 40A contacts ³⁾ and cables Ø < 5 mm - for 40A contacts ⁴⁾ and cables Ø < 7.5 mm		CCES CQES CXES CXES-10
replacement tip for CCES removal tool		CCPR RN

- 1) for CQ, CD, CDD, CX inserts (10A auxiliary contacts) and MIXO module (10A)
- 2) for CQ, CQE, CQEE, CCE, CMCE inserts (excluded 16+2), MIXO module (16A), CX6/6 (16A) and CDC. For CMCE (16+2), CX inserts (contacts 16A insert CX 8/24) using a flat 3 mm screwdriver.
- 3) for CX inserts (40A contacts) and MIXO module (40A)
- 4) for MIXO module CX 03 4B and contacts 10 mm²

Notes:

"go / no go" control gauge

- A tool used to periodically check that the crimping tool meets standard requirements.



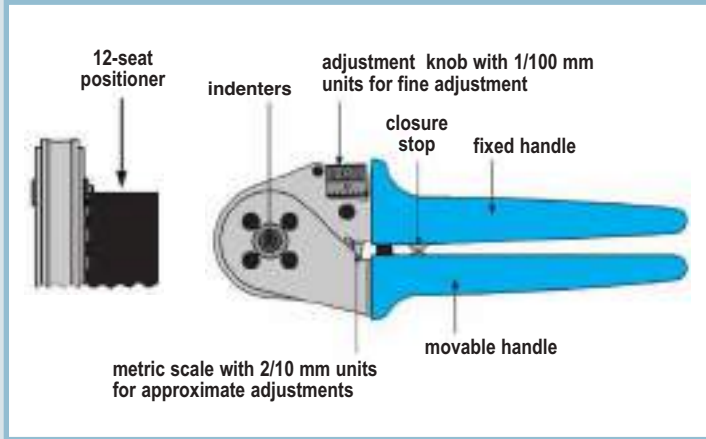
Crimping tools

General specifications

The CCPZ RN crimping tool crimps with 8 pressure points, obtaining similar results to the prescriptions of standard MIL-C-22520/1. The tool has a geared mechanism for controlling the complete crimping cycle, and houses a positioning turret with 12 positions, six of which can be used for positioning the ILME male and female crimping contacts of series CD (10A max), CC (16A max) and CX (40A max).

Crimping range

Wire section: dimension from 0,14 mm² (26 AWG) to 10 mm² (8 AWG)

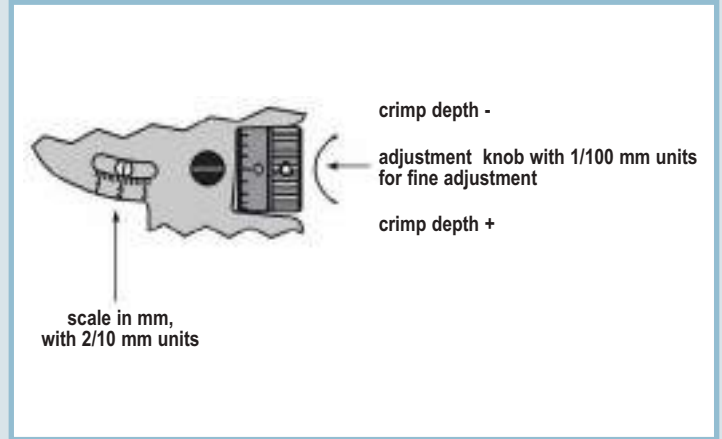


Adjustment of crimp depth

Crimp depth to be adjusted as follows: the adjustment knob should be turned clockwise to reduce crimping depth, and anti-clockwise to increase it.

Adjustment tolerances:

- 1 scale mark on the knob = adjustment of 1/100 mm (0,01 mm);
- 1 complete rotation of knob = adjustment of 2/10 mm (0,2 mm, this indication can be read on the knob and on the approximate scale);
- 5 knob rotations = adjustment of 1,0 mm (this indication can be read on the scale).



Description of tool

Crimping tool components: a first mobile handle, with a precision stop mechanism with teeth and an opening limiting guide; a second fixed handle with metric scale (units of 2/10 mm); an adjustment system with fine step adjustments of 1/100 mm; four indenters; a 12-seat positioner, fully rotating through 360° for accurate positioning of contacts. A reference table engraved on the tool surface provides the positioner (POS) number and crimping depth (SET) to select according to the type and size of the ILME contact (the crimping tool can be set to any crimping depth which may be required by the contact manufacturer).

Crimping instructions

The reference matrix on the crimping tool indicates the correct seat of the positioner (POS M1, F2, M3, F4, M5, F6) to select, and the crimping depth (SET) to adjust for the contact to be crimped. The contact is inserted through the crimper entry hole on the opposite side of the positioner. The contact is closed by closing the handles in the first stop position, in order to prevent the contact coming out off the crimper and to facilitate fitting the conductor in the contact. The precision stop mechanism with teeth ensures consistently precise crimps, by forcing the crimper to close completely and finish the crimping cycle before the crimper can be re-opened.

Adjustment tool

Positioner seat = M1 (male) - F2 (female)		
CDMA/D (male)	Section (mm ²)	Crimp depth (mm)
GDFA/D (female)	0,14	1,3
	0,25	
	0,37	
	0,5	
0,7	0,75	1,55
1,0	1,0	1,55
1,5	1,5	1,55
2,5	2,5	1,55

Positioner seat = M3 (male) - F4 (female)		
CCMA/D (male)	Section (mm ²)	Crimp depth (mm)
CCFA/D (female)	0,14	1,2
	0,25-0,37	1,3
0,5	0,5	1,55
0,7	0,75	1,55
1,0	1,0	1,55
1,5	1,5	1,8
2,5	2,5	1,8
3,0	3,0	1,9
4,0	4,0	2,0

Positioner seat = M4 (male) - F6 (female)		
CXMA/D (male)	Section (mm ²)	Crimp depth (mm)
CXFA/D (female)	1,5	1,55
	2,5	1,8
	4,0	2,0
	6,0	2,5
	10,0	2,3

Maintenance and repair

Keep the crimping tool clean and store it correctly when not in use. The joints need to be lubricated periodically, and the pin stop circular clips must always stay in position. This is a high precision crimping tool and must be used as such.

Calibration check

The crimping tool is adjusted in the manufacturer's plant. To ensure correct calibration, we advise you to check the tool with a gauge every working day.

This is easily done with the CCPNP RN cylindrical gauge in the 2,0 mm Ø position.

ATTENTION! Do not crimp the gauge.

Crimping depth of 2 mm can be adjusted with the adjustment knob (scale marked on "2", screw indicator on "0" as shown in the above figure).

Put the crimping tool in the completely position.

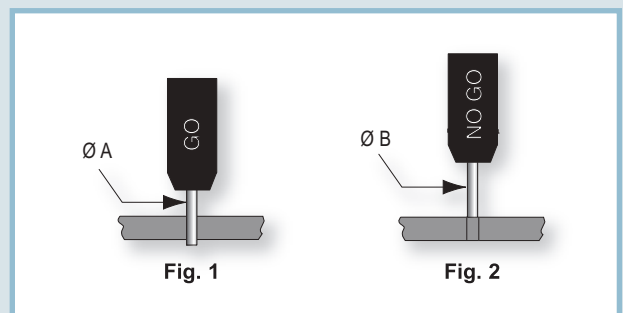
"GO" - Insert the end of the gauge as shown (Fig. 1).

The gauge must pass freely between the indenter tips.

"NO GO" - Insert the end of the gauge as shown (Fig. 2).

The gauge should not pass through the opening.

Gauge	tool selector pos. No.	Ø A GO	Ø B NO GO
CCPNP RN	2	1,94 (mm)	2,06 (mm)



for contacts of insert series: page:
MIXO (CI contacts, 25 poles) 196
MIXO (CI contacts, 8 poles) 198 and 514

**manual crimping tool
 turret head**



insertion / removal tool



description	part No.	part No.
crimping tool for CI contacts DANIELS AFM8 model (turret excluded)	CIPZ D	
turret head - for CI contacts (CIFD and CIMD series)	CITP D	
insertion tool: for insertion of the contacts into the inserts, and removal tool: for the extraction of contacts from the inserts - for CI contacts (CIFD and CIMD series)		CIES

N.B.:
CITP D turret head (to be ordered separately)

for contacts of insert series:
MIXO (D-SUB)

page:
 206

**manual crimping tool
 turret head**

insertion / removal tool



description

part No.

part No.

crimping tool for **5A** contacts
 DANIELS AFM8 model (turret excluded)

CIPZ D

turret head
 - for **5A** D-SUB contacts (CIVFD and CIVMD series)

CIVTP D

insertion tool:
 for insertion of the contacts into the inserts, and
 removal tool:
 for the extraction of contacts from the inserts
 - for **5A** D-SUB contacts (CIVFD and CIVMD series)

CIVES

N.B.:
CIVTP D turret head (to be ordered separately)

for contacts of insert series: page:
CX 6/6 (100A) 175
MIXO (200A/100A/70A) 180-183

manual crimping tool crimp matrixes



removal tool



description	part No.	part No.
crimping tool for 70A/100A/200A series contacts basic tool mod. CEMBRE HT 45 excluding crimp matrixes and locators	CPPZ C *	
crimp matrixes - for CX7 contacts with 10 mm ² (AWG 8 - 7) section - for CX7 contacts with 16 mm ² (AWG 6 - 5) section - for CX7 contacts with 25 mm ² (AWG 4 - 3) section	CGD 10 C CGD 16 C CGD 25 C	
crimp matrixes - for CG contacts with 16 mm ² (AWG 6 - 5) section - for CG contacts with 25 mm ² (AWG 4 - 3) section - for CG contacts with 35 mm ² (AWG 2) section	CGD 16 C CGD 25 C CGD 35 C	
crimp matrixes - for CY contacts section 16 mm ² (AWG 6) - for CY contacts section 25 mm ² (AWG 4) and section 35 mm ² (AWG 2) - for CY contacts section 50 mm ² (AWG 1) - for CY contacts section 70 mm ² (AWG 2/0)	CGD 25 C CYD 35 C CYD 50 C CYD 70 C	
locator - for CX7 contacts - for CG contacts - for CY contacts	CX7PZ LOC CGPZ LOC CYPZ LOC	
removal tool for 70A CX7 series contact		C7ES

NOTE:
For **CGMA 35** and **CGFA 35** contacts, and their corresponding **CGD 35 C** matrix pair, the contact may be inserted even after closing the head.

* Part No. **CCPZ CF:**
Manual crimping tool carrying case (CGPZ VLG) complete with crimp matrixes (CGD/CYD), locator (CX7PZ LOC, CGPZ LOC, CYPZ LOC) and removal tool (C7ES).

part No.	punching	contacts	mm ²	AWG min (mm ²)	AWG max (mm ²)
CGD 10 C	ME 2	CX7MA 10, CX7FA 10	10	8 (8,4)	7 (10,6)
CGD 16 C	ME 3	CX7MA 16, CX7FA 16	16	6 (13,3)	5 (16,8)
CGD 25 C	ME 5	CX7MA 25, CX7FA 25	25	4 (21,2)	3 (26,7)

part No.	punching	contacts	mm ²	AWG min (mm ²)	AWG max (mm ²)
CGD 10 C	ME 2	CGMA 10, CGFA 10	10	8 (8,4)	7 (10,6)
CGD 16 C	ME 3	CGMA 16, CGFA 16 CGT 16	16	6 (13,3)	5 (16,8)
CGD 25 C	ME 5	CGMA 25, CGFA 25	25	4 (21,2)	3 (26,7)
CGD 35 C	ME 7	CGMA 35, CGFA 35	35	-	2 (33,6)

part No.	punching	contacts	mm ²	AWG (mm ²)
CGD 25 C	ME 5	CYMA 16, CYFA 16	16	6 (13,3)
CYD 35 C	ME 9	CYMA 25, CYFA 25 CYMA 35, CYFA 35	25 35	4 (21,2) 2 (33,6)
CYD 50 C	ME 12	CYMA 50, CYFA 50	50	1 (42,4)
CYD 70 C	ME 17	CYMA 70, CYFA 70	70	2/0 (67,4)

Crimping tools

General specifications

The **CPPZ C** crimping tool are a hydraulically operated tool suitable for manually crimping contact series (70A/100A/200A max) removable crimp contacts which may be used in **MIXO** series type **CX7, CG, CY** and **CGT 16** adaptor.

By using a suitable, hexagonal footprint crimp matrix pair, these pliers allow crimped connections to be made which conform to the highest quality standards.

The main features of these pliers are listed below:

- Scope of application: suitable for crimping wire terminals for up to 150 mm² flexible copper wires.
- Force developed: 50 kN (6 tons)
- Nominal operating pressure: 600 bar (8.600 psi)
- Dimensions: length 346 mm (13,6")
 - width (locked moving handle) 130 mm (5,1")
 - width (free moving handle) 250 mm (9,8")
- Weight: (without matrixes and without ILME locator) 2,0 kg (4,4 lbs)
- Recommended oil: AGIP ARNICA 32 or SHELL TELLUS OIL TX 32 or equivalent
- Other features: please read the user and maintenance manual supplied with the tool.

The pliers are equipped with a locator specifically designed for ILME CX7, CG and CY series crimp contacts already fitted on the moving part of the pliers head by means of the Allen screw provided.

This locator is available on request if it needs replacing.

NOTE: It is possible to use the CPPZ C pliers with the CX7 70A, CG 100A and CY 200A contact series, by simply fitting the CY7PZ LOC, CGPZ LOC or CYPZ LOC locator and crimping matrixes to be purchased separately.

WARNING: For crimping the CGT 16 adaptor, the crimp locating operation must be carried out by the user.

User instructions

1) Preliminary operations

According to requirements, the pliers can be fitted with one or more pairs of crimp matrixes selected from the matrixes listed in the catalogue, to crimp the contacts shown in the table page 542.

NOTE:

The crimp contacts are only suitable for crimping flexible copper wires featuring a nominal section shown in the table with the crimp matrixes shown in the table. Any contacts – wires – matrixes combination which does not conform to these instructions is not physically possible (ex: using 35 mm² contacts with CGD 25 C matrixes is not possible because the pliers head would not close) or produces non conforming crimped connections or not usable in the MIXO series.

Open the tool head by moving the matrix supporting hook (22) outwards until the matrix support (21) is released.

With reference to Figures 1 and 2, select a pair of matrixes suitable to the type of contact and insert them in the housings: one in the matrix support (21), the other one in the matrix pusher support (26). (NB: the two matrixes of each pair are the same). Insert the contact by resting it in the locator with the tip forward, then close the head. The contact crimp housing will be accessible in the mouth between the matrixes.

Remove the moving handle (36) by removing the handle locking belt from the handle. Before carrying out the next operations, make sure the head is fully closed to avoid damages.

The pliers head can rotate by 180° in relation to the body, thus allowing the operator to work in the most comfortable position.

WARNING: do not force the head by trying to rotate it when the tool is under pressure.

2) Approaching the matrixes

If possible closing the dies, rest the pliers head on a work top, then move the moving handle to start moving the matrixes closer to the contact, then carry on moving them until the contact is locked between the matrixes.

Push the correctly stripped and suitable long (15 mm) wire all the way in the contact (or the CGT adaptor) crimp housing by carefully checking that the braids are fully compacted, are not damaged and, above all, are all fully inserted.

Correctly pushing the contact in the locator ensures that the matrixes are exactly in the right area to compress (the contact crimp shaft centre). Make sure that the locator is free from any residue which would alter the position of the contact.

For crimping the CGT 16 earth adaptor, manually locate the area to be crimped between the matrixes. If necessary, re-open the matrixes by following the instructions described in paragraph 4 and reposition the contact.

3) Crimping

Continue to operate the moving handle (pumping): the piston will gradually move forward until the matrixes come into contact.

Continue the pumping action until the maximum pressure valve clicks in.

4) Releasing the dies

Fully press the pressure release lever (50) located on the pliers pumping body until the piston goes back and the matrixes open.

To remove the crimped contact, re-open the pliers head.

5) Storage

Fully return the piston as described in paragraph 4, then lock the moving handle in position by using the belt provided.

Cleaning and maintenance

The tool is very sturdy and does not require any special care; a correct operation is ensured by following a few simple precautions.

The tool is supplied with a user and maintenance manual, which gives all detailed instructions. Read this manual before use.

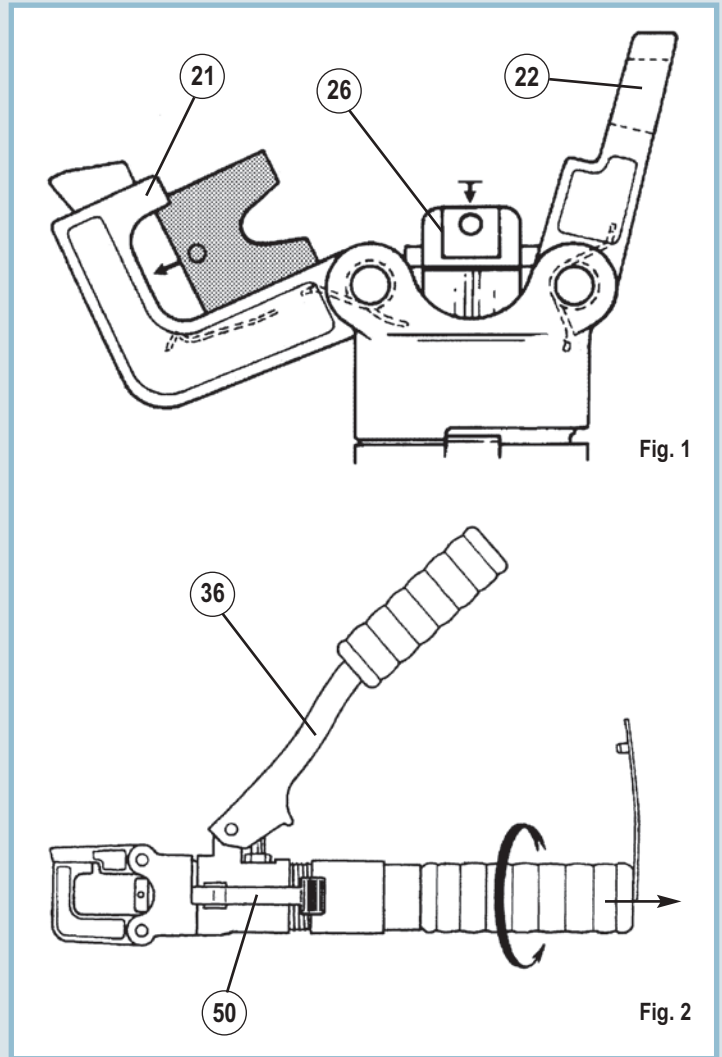


Fig. 1

Fig. 2

CGPZ VLG carrying case



- for CPPZ * crimping tool
- dimensions 445 x 290 x h 95 mm
- weight 1,2 kg
- houses 20 pairs of matrixes

* to store the CPPZ crimping tool inside the carrying case, turn the pliers head by 180° so that the locator becomes visible.

for contacts of insert series:	page:
CD (10A)	53-61
CDD (10A)	67-74
CDC (16A)	99-103
CCE (16A)	110-115
CQE (16A)	138-143
CQEE (16A)	146-147
CMCE (16A)	148-160
CQ (10A/16A)	165-168
CX 8/24 (16A/10A)	169
CX 6/36 * (10A)	170
CX 12/2 * (10A)	171
CX 6/6 * (16A)	175
MIXO (10A/16A)	185-203

* the underlined polarities indicate those contacts that require the tools shown in this page

pneumatic crimping tool turret heads - gauge



insertion tool - removal tools - replacement tip



description	part No.	part No.
pneumatic crimping tool for 10A and 16A contacts model DANIELS WA27F (turret excluded)	CCPZP	
turret heads (see note) - for 10A contacts (CDF and CDM series) - for 16A contacts (CCF and CCM series)	CCTP 10 CCTP 16	
support for CCPZP pneumatic crimping tool	CCSPZP	
pneumatic foot valve	CCVPP	
"go / no go" control gauge to verify indenter closure (see note)	CCPNP	
insertion tool for insertion of the contacts into the inserts for crimped contacts up to 0.75 mm ²		CCINA
removal tools for the extraction of contacts from the inserts - for 10A contacts ¹⁾ - for 16A contacts ²⁾		CCES CQES
replacement tip for CCES removal tool		CCPR RN

¹⁾ for CQ, CD, CDD, CX inserts (10A auxiliary contacts) and MIXO module (10A)
²⁾ for CQ, CQE, CQEE, CCE, CMCE inserts (excluded 16+2), MIXO module (16A), CX6/6 (16A) and CDC. For CMCE (16+2), CX inserts (contacts 16A insert CX 8/24) using a flat 3 mm screwdriver.

Notes:

Positioning turret

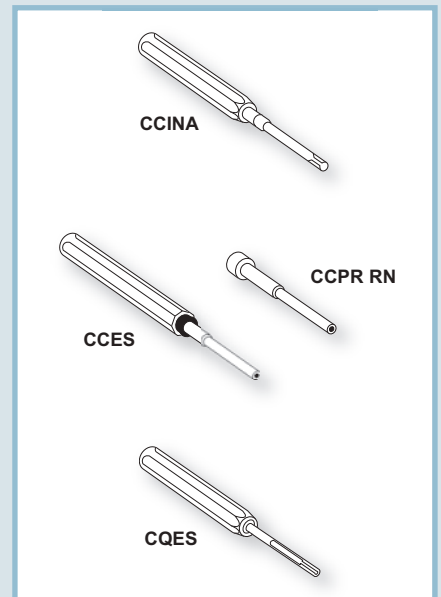
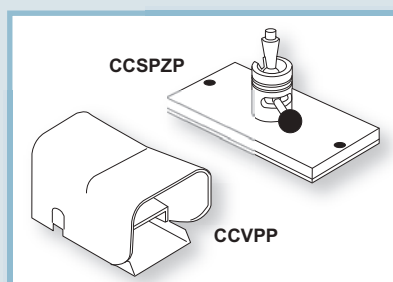
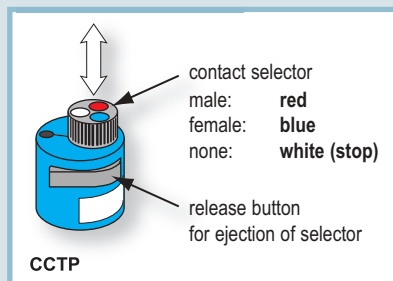
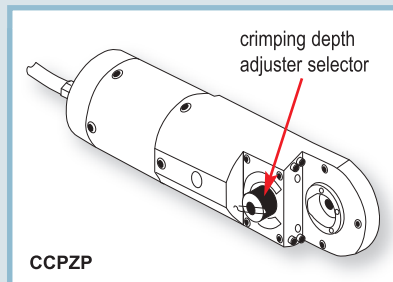
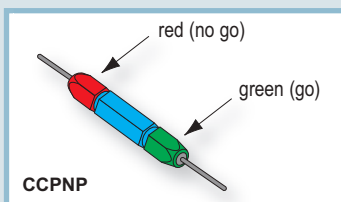
conforms to international standard MIL-C-22520/1

- An interchangeable and indispensable accessory of the CCPZP crimping tool, it precisely positions the contact where crimping is performed. Each series of contacts requires its own turret.

"go / no go" control gauge

conforms to international standard MIL-C-22520/3

- A tool used to periodically check that the crimping tool meets standard requirements.



Crimping tools

General specifications

This is the pneumatic version of the crimping tool. Crimping is performed with 8 pressure points. The tool is equipped with a geared mechanism to control the complete crimping cycle.

The tool must be equipped with an interchangeable turret (CCTP) according to the series of contacts to be crimped.

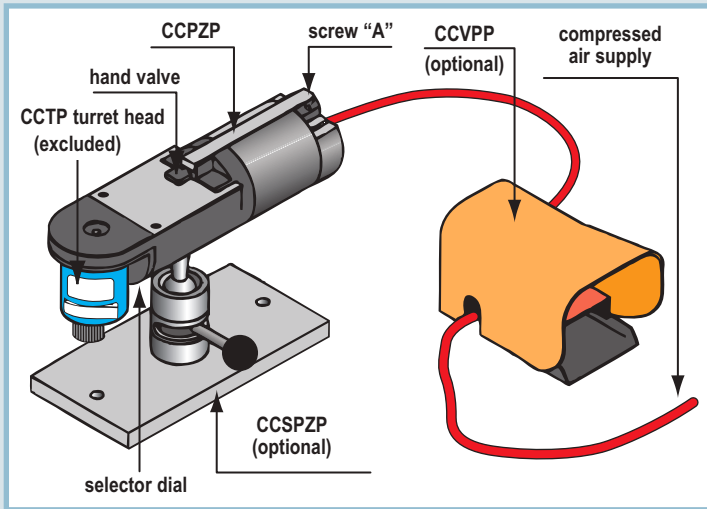
It is possible to use a hand valve (located on the crimping tool) or a foot valve (optional). The tool operating pressure is 5,5 - 8,3 bar. It is recommended to utilise a lubrication, adjustment and air filtering unit.

Crimping range

Wire section: dimension from 0.12 mm² (26 AWG) to 4 mm² (12 AWG).

Operation with foot valve (optional)

Connect the foot valve between the compressed air source and the tool air inlet. Lower the hand valve and stop it in the lowered position with the stop screw (A) using a 1,5 mm Allen wrench.



Checking the crimping complete cycle control mechanism

Correct operation can be checked based on the following procedure:

1. Install a CCTP turret.
2. Reduce the pressure to 1 bar.
3. Using a contact that corresponds to the installed turret, with size 0,5, and a wire with section 0.5 mm², use the crimping tool, referring to the crimping instructions. The indenters will not reach the fully closed position and the contact will be internally blocked if the geared mechanism is operating correctly.
4. To release the partially crimped contact, increase the air pressure of the line to 5,5 - 8,3 bar and again use the crimping tool. It will then complete the crimping, allowing the indenters to return to the fully open position.

Crimping instructions

1. Insert the contact and the prepared conductor through the opening of the indenter in the turret positioner.
2. Activate the hand valve or the optional foot valve. Once crimping has been completed, the tool will return to the open position.
3. Check the position of the crimping on the contact crimping foot. Ideally, the crimping should be between the inspection hole and the top edge of the crimping foot. The head of the contact should not be squared and the inspection hole should be intact.

Crimping tool maintenance

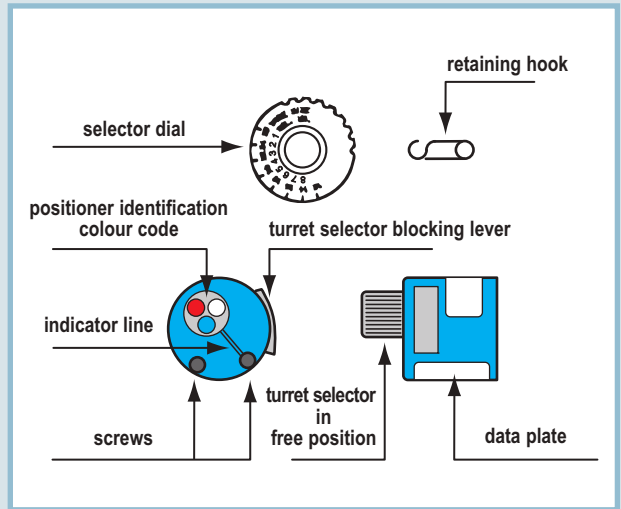
No maintenance is required. However, it is good practice to keep the indenter tips free from residual deposits of the coloured band (some types of crimp contacts as per MIL standards are identified by coloured bands in the crimping area) and any other debris. A metal brush may be used for this purpose. The following is strongly recommended:

1. DO NOT immerse the tools in a solution to clean them.
2. DO NOT brush oil in the tools to lubricate them.
3. DO NOT try to disassemble the tool or repair it.

This is a high-precision crimping tool and must be used as such.

CCTP turret installation

1. Position the previously selected CCTP turret on the support ring located on the crimping tool (matching the special pin on the base of the turret with the corresponding hole on the support ring), aligning the tapped holes with the socket head screws.
2. With the CCTP turret positioned against the support ring, tighten the socket head screws with the 3.5 mm Allen wrench (supplied with the kit).
3. Refer to the data plate on the CCTP turret. From the colour code column, select the colour of the positioner that corresponds to the appropriate code and dimension of the contact to be crimped.
4. With the CCTP turret in the adjustment position, turn the turret selector until the colour-coded positioner is aligned with the indicator line. Press the turret until it clicks into the connected position.
5. Refer to the data plate on the CCTP turret. From the column indicating the proper conductor section, determine the number that corresponds to the contact being used.
6. Remove the retaining hook from the crimping tool selector dial. Lift the selector dial and turn it until the selector number is aligned with the indicator (SEL.NO.). Replace the retaining hook (if necessary).



Removing the CCTP turret

With the crimping tool in the open position, to disassemble the turret, loosen the socket head screws using the 3,5 mm Allen wrench (supplied with the kit). After the threads are released from the support ring, pull off the turret with a straight movement.

Releasing a partially crimped contact

- To release a partially crimped contact, do the following:
1. Increase the air pressure to 8.5 bar and use the crimping tool. If the increase in air pressure does not release the contact, do the following.
 2. Turn the selector dial clockwise to the highest lockable setting (the selector dial must be in the blocked position before continuing). Use the crimping tool.
 3. If it does not release after several attempts, contact the ILME offices.

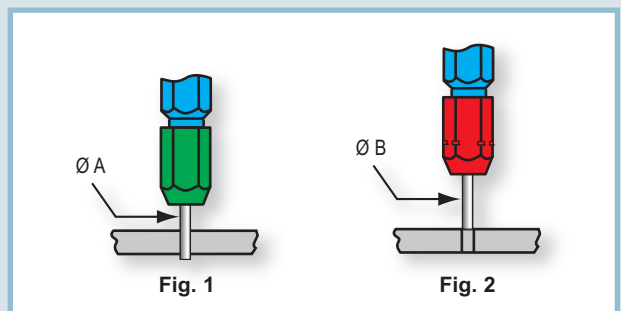
Instructions to check calibration

The operations to check the crimping tool must be carried out with the selector dial in position 4 and the CCPNP gauge. **CAUTION! Do not crimp the gauge.**

Calibration check

Put the crimping tool in the completely closed position.
 "GO" - Insert the end (green) of the gauge as shown (Fig. 1). The gauge must pass freely between the indenter tips.
 "NO GO" - Insert the end (red) of the gauge as shown (Fig. 2). The gauge should not pass through the opening.

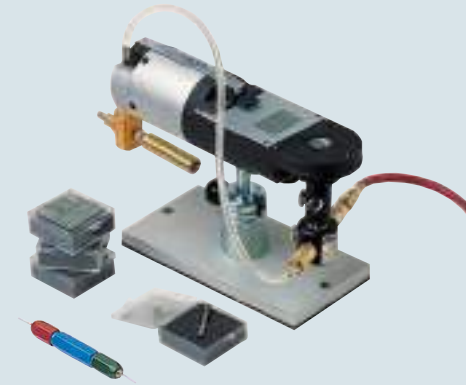
Gauge	tool selector pos. No.	Ø A ± 0,00254 mm (GO) green	Ø B ± 0,00254 mm (NO GO) red
CCPNP	4	0,991 (mm)	1,118 (mm)



for contacts of insert series:	page:
CD (10A)	53-61
CDD (10A)	67-74
CDC (16A)	99-103
CCE (16A)	110-115
CQE (16A)	138-143
CQEE (16A)	146-147
CMCE (16A)	148-160
CQ (10A/16A)	165-168
CX 8/24 (16A/10A)	169
CX 6/36 * (10A)	170
CX 12/2 * (10A)	171
CX 6/6 * (16A)	175
MIXO (10A/16A)	185-203

* the underlined polarities indicate those contacts that require the tools shown in this page

pneumatic crimping tool with automatic positioner - inserts - gauge



insertion tool - removal tools - replacement tip



description	part No.	part No.
crimping tool with automatic positioner model DANIELS WA27FAP (inserts excluded)	CCPZPA	
positioner inserts (see note) - male contacts 10A (CDM series) - female contacts 10A (CDF series) - male contacts 16A (CCM series) - female contacts 16A (CCF series)	CCTPADM CCTPADF CCTPACM CCTPACF	
"go / no go" control gauge to verify indenter closure (see note)	CCPNP	
insertion tool for insertion of the contacts into the inserts for crimped contacts up to 0.75 mm ²		CCINA
removal tools for the extraction of contacts from the inserts - for 10A contacts ¹⁾ - for 16A contacts ²⁾		CCES CQES
replacement tip for CCES removal tool		CCPR RN

- ¹⁾ for CQ, CD, CDD, CX inserts (10A auxiliary contacts) and MIXO module (10A)
²⁾ for CQ, CQE, CQEE, CCE, CMCE inserts (excluded 16+2), MIXO module (16A), CX6/6 (16A) and CDC. For CMCE (16+2), CX inserts (contacts 16A insert CX 8/24) using a flat 3 mm screwdriver.

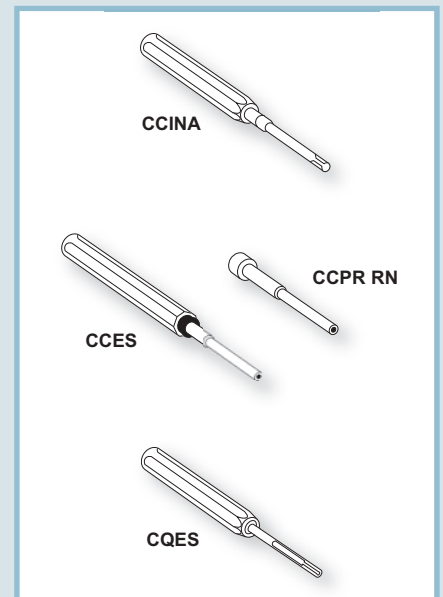
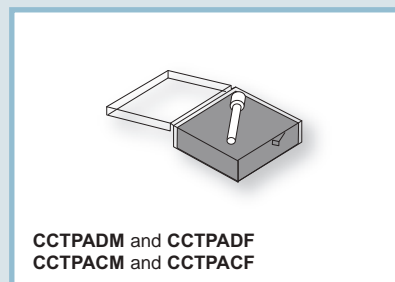
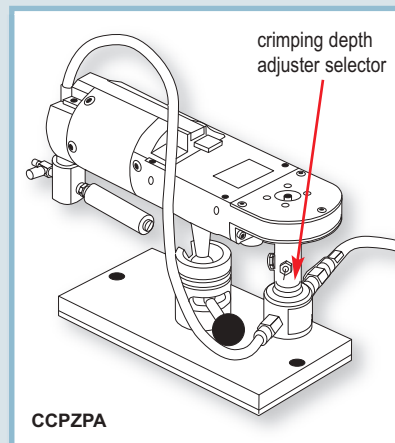
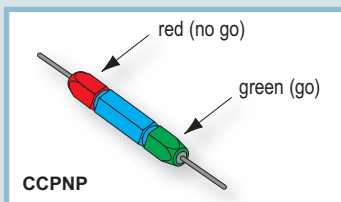
Notes:

Positioner inserts

- Interchangeable and indispensable accessories of the CCPZPA crimping tool precisely position the contact where crimping is performed. Each contact requires its own positioner insert selected according to the type of contact (10A or 16A) and the kind (male or female).

"go / no go" control gauge

conforms with international standard MIL-C-22520/3
 - A tool used to periodically check that the crimping tool meets standard requirements.



Crimping tools

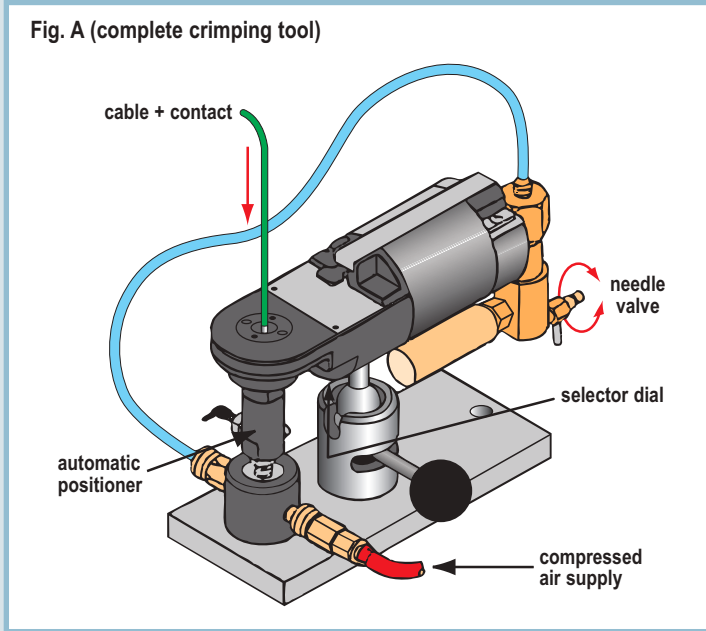
General specifications

This is the pneumatic version of the manual crimping tool. Crimping is performed with 8 pressure points. The tool is equipped with a geared mechanism to control the complete crimping cycle. Thanks to the automatic positioner it is possible to crimp simply by inserting the uncrimped contact + wire into the tool crimping cavity. **It is also necessary to order the interchangeable positioner inserts relative to the series of contacts to be crimped.** The tool operating pressure is 5,5 - 8,3 bar. It is recommended to utilise a lubrication, adjustment and air filtering unit.

Crimping range

Wire section: dimension from 0,12 mm² (26 AWG) to 4 mm² (12 AWG).

Fig. A (complete crimping tool)



Checking the crimping complete cycle control mechanism

Correct operation can be checked based on the following procedure:

1. Reduce the pressure to 1 bar.
2. Using a contact that corresponds to the installed positioner, with size 0,5, and a wire with section 0,5 mm², use the crimping tool, referring to the crimping instructions. The indenters will not reach the fully closed position and the contact will be internally blocked if the geared mechanism is operating correctly.
3. To release the partially crimped contact, increase the air pressure of the line to 5,5 - 8,3 bar and again use the crimping tool. It will then complete the crimping, allowing the indenters to return to the fully open position.

Crimping instructions

1. To obtain the suitable selector number, refer to the data plate located on the cover of the positioner insert case, and adjust the selector dial as specified.
2. Insert the contact and the prepared conductor through the opening of the indenter in the crimping tool casing (Fig. A).
3. Exert slight pressure until the crimping tool automatically crimps the contact. **CAUTION: Wire sections less than 0,34 mm² (24 AWG) up to 0,08 mm² (28 AWG) or equivalent are not sufficiently rigid, so that it may be rather difficult to push the contact + wire.**
4. Check the position of the crimping on the contact crimping foot. Ideally, the crimping should be between the inspection hole and the top edge of the crimping foot. The head of the contact should not be squared and the inspection hole should be intact.

Crimping tool maintenance

No maintenance is required. However, it is good practice to keep the indenter tips free from residual deposits of the coloured band (some types of crimp contacts as per MIL standards are identified by coloured bands in the crimping area) and any other debris. A metal brush may be used for this purpose. The following is strongly recommended:

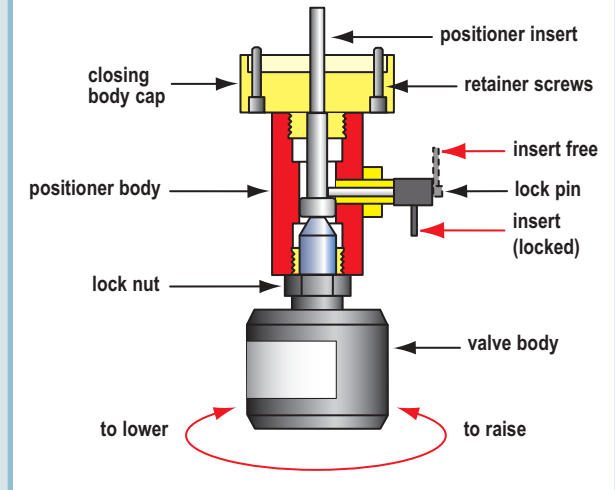
1. DO NOT immerse the tools in a solution to clean them.
2. DO NOT brush oil in the tools to lubricate them.
3. DO NOT try to disassemble the tool or repair it.

This is a high-precision crimping tool and must be used as such.

Installation or replacement of a positioner insert

1. Disconnect the workshop compressed air source.
2. Disconnect the air hoses from the automatic positioner (rapid connectors).
3. Remove the connection screws, using the 3,5 mm Allen wrench (supplied with the kit), to separate the automatic positioner from the crimping tool.
4. Unscrew the positioner closing housing.
5. Install or replace the proper positioner insert in the positioner housing, replacing the underlying spring.
6. Reverse the operations, as described from point 4 to point 1.

Fig. B (automatic positioner)



Crimping position adjustment (Fig. B)

1. Release the automatic positioner from the crimping tool body (see points 1 and 2 "Installation replacement of a positioner insert").
2. While holding the positioner body in position using a 19 mm wrench, loosen the lock nut with a 14 mm wrench.
3. Push the positioner insert toward the bottom and lock it using the lock pin.
4. If the pin doesn't lock, unscrew the valve body toward the bottom.
5. With the pin locked, tighten the valve body toward the top until it strikes against the positioner insert.
6. While maintaining that position, tighten the lock nut.
7. Replace and connect the positioner on the crimping tool.
8. Release the lock pin in the "free" position.

Instructions to check calibration

The operations to check the crimping tool must be carried out with the selector dial in position 4 and the CCPNP gauge. **CAUTION! Do not crimp the gauge.**

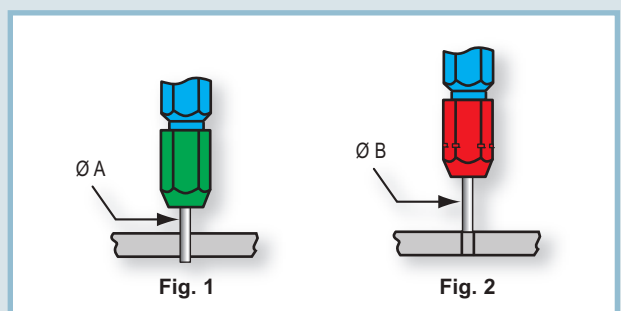
Calibration check

1. Disconnect the compressed air.
2. Push the positioner insert toward the bottom and lock it using the lock pin.
3. Reconnect the compressed air.
4. Turn the needle valve counterclockwise to open the air supply (Fig. A).
5. The indenters will extend and remain in the extracted position until the valve is closed.
6. Check using the gauge, referring to the "go / no go" instructions reported below.
7. When the calibration check has been completed, close the needle valve turning it clockwise (Fig. A).
8. Put the lock pin in the "free" position.

"GO" - Insert the end (green) of the gauge as shown (Fig. 1). The gauge must pass freely between the indenter tips.

"NO GO" - Insert the end (red) of the gauge as shown (Fig. 2). The gauge should not pass through the opening.

Gauge	tool selector pos. No.	Ø A ± 0,00254 mm (GO) green	Ø B ± 0,00254 mm (NO GO) red
CCPNP	4	0,991 (mm)	1,118 (mm)



for contacts of insert series:	page:
CD (10A)	53-61
CDD (10A)	67-74
CDC (16A)	99-103
CCE (16A)	110-115
CQE (16A)	138-143
CQEE (16A)	146-147
CMCE (16A)	148-160
CQ (10A/16A)	165-168
CX 8/24 (16A/10A)	169
CX 6/36 * (10A)	170
CX 12/2 * (10A)	171
CX 6/6 * (16A)	175
MIXO (10A/16A)	185-203

* the underlined polarities indicate those contacts that require the tools shown in this page

stripping - crimping machine



insertion tool - removal tools - replacement tip



description	part No.	part No.
stripping, crimping machine Zoller+Fröhlich AM-03 Universal model	ZFU-CD	
insertion tool for insertion of the contacts into the inserts for crimped contacts up to 0.75 mm ²		CCINA
removal tools for the extraction of contacts from the inserts - for 10A contacts 1) - for 16A contacts 2)		CCES CQES
replacement tip for CCES removal tool		CCPR RN

1) for CQ, CD, CDD, CX inserts (10A auxiliary contacts) and MIXO module (10A)

2) for CQ, CQE, CQEE, CCE, CMCE inserts (excluded 16+2), MIXO module (16A). For CX 6/6 (16A) and CDC, CMCE (16+2), CX inserts (16A contacts CX 8/24 insert) a 3 mm flat screwdriver should be used

Technical specifications

Drive	electro-pneumatic
Electric feeder	230V/50Hz
Absorbed power	120VA
Fuse (on the system filter module)	2 x 2 A mT
Air operating pressure	5.5 bar
Air consumption	2 nl/cycle
Flexible conductors in conformity with	IEC 60228 class 5
Rated section	0,34-2,5 mm ² (22 AWG-14 AWG)
Feeding length	52 mm
Contacts	loose, turned
Contact breaker	see list of tools
Feeding	vibrating conveyor
Crimping form	4/8 ratchets
Cycle time	2,5 s - 3 s
Continuous sound level	< 70 dB (A)
Dimensions (l x d x h)	(530 x 500 x 480) mm
Colour	blue, RAL 5012
Weight	40 Kg

Tools list

contacts	CD... (10A max)						CC... (16A max)				
conductor section (mm ²)	0,34	0,5	0,75	1,0	1,5	2,5	0,5	0,75	1,0	1,5	2,5
AWG (approximate)	22	20	18	18	16	14	20	18	18	16	14
feeding bowl/male	A						B (M)				
feeding bowl/female							B (F)				
feeding tube	A						B				
wire holder	0,34	0,5-1,5		2,5			0,5-1,5		2,5		
starting unit	AB						AB				
stripping blades	V-shaped blades						V-shaped blades				
rear blade spacers	0,5 mm / 1,0 mm						0,5 mm / 1,0 mm				
left/right											
contact holder / pins	A (M)						B				
contact holder / bushes	A (F)										
contact stop	A						B				

Preset stripping and contact crimping programs

	CD... (10A max)						CC... (16A max)				
conductor section (mm ²)	0,34	0,5	0,75	1,0	1,5	2,5	0,5	0,75	1,0	1,5	2,5
AWG (approximate)	22	20	18	18	16	14	20	18	18	16	14
Program number	1A	2A	3A	4A	5A	6A	7B	8B	9B	10B	11B
stripping position (mm)	0,75	1,00	1,20	1,30	1,40	1,70	1,00	1,20	1,30	1,40	1,70
crimping position	1,30	1,35	1,40	1,50	1,55	1,60	1,40	1,40	1,50	1,55	1,70

Supplied with the following accessories:

- 1 vibrating conveyor feeder bowl for CD contact series
- 1 vibrating conveyor feeder bowl for male CC contact series
- 1 vibrating conveyor feeder bowl for female CC contact series
- 1 feeder tube (contact passage from vibrating conveyor to machine) for CD contact series
- 1 feeder tube (contact passage from vibrating conveyor to machine) for CC contact series
- 1 contact holder (in crimping position) for male CD contact series
- 1 contact holder (in crimping position) for female CD contact series
- 1 contact holder (in crimping position) for CC contact series
- 1 contact stop for CD contact series
- 1 contact stop for CC contact series
- 1 wire holder for 0.34 mm² cables
- 1 wire holder for 0.5 to 1.5 mm² cables
- 1 wire holder for 2.5 mm² cables
- 1 "GO / NO GO" control gauge
- 1 Allen wrench for setup operations
- 1 set of spacers to regulate the stripping length
- 1 removal tool to extract contacts from the crimping chamber

General specifications

The Zoller+Fröhlich AM-03 Universal stripping-crimping machine is a semi-automatic, electro-pneumatically operated bench machine used to quickly and reliably strip flexible copper wires and to crimp loose, turned crimp male and female, **CD** series (10A max) and **CC** series (16A max) contacts in a single run.

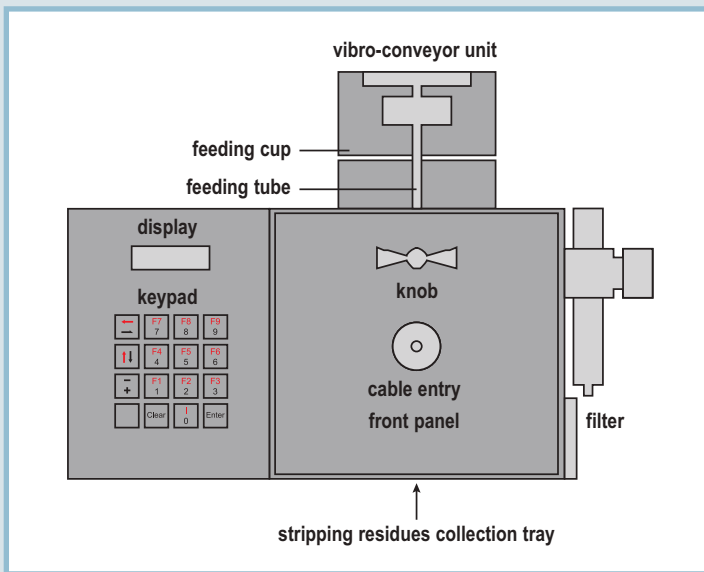
The contacts are automatically fed by means of a vibro-conveyor unit fitted on the top section of the machine.

The machine carries out the crimping operation with four, eight pressure point indenters, in compliance with the requirements set out in the MIL-C-22520/1 standard. The stripping depth and crimping depth adjustment is controlled by a software controlled motor. Up to 50 different combinations may be stored and retrieved from the program; these combinations are useful, for example, to meet different requirements related to the wire insulator type and thickness.

The adjustment and programming operations are carried out by using the keypad located on the front panel. The LCD display shows all the functions, the main information and any errors.

The machine is fitted with devices used to check that the crimping cycle has been completed.

The general safety instructions described in the machine user and maintenance manual must be followed and the use of the machine should only be restricted to qualified and trained personnel.



Crimping range

Wire section: from 0,34 mm² (AWG 26) to 2,5 mm² (AWG 14).

Description of the machine

To ensure a correct operation, the machine must be positioned on a hard bench, which does not amplify the effects of the internal movements occurring inside the machine. The machine consists of a vibrator which loads the contacts, of a tube which feeds the contacts and of a motorised wire stripping and contact crimping unit.

For each type and size of contact, the machine is provided with a factory stored preset program (see the machine user manual), which may be customised at any time. The program allows the user to: load, edit and save a program, as well as check/edit the stripping length and depth and the crimping depth.

Warning: when the machine is switched on, the working program is always the last program used.

The machine electronics adjustment is carried out by means of the keypad.

Select one of the 12 programs (see table on page 548) according to the contact used *. Each program stores the stripping and crimping depth.

The stripping depth is the measurement in mm of how much the stripping blades must penetrate the insulator to strip it off, and depends on the type of cable used.

The crimping depth is the measurement in mm of how much the four indenters must penetrate the contact at the end of the crimping operation.

This depth depends on the size and shape of the contact (crimp shaft thickness) and determines the quality of the crimping operation in terms of gas tightness and resistance to tensile stress.

* Note:

The machine also has a 12C program suitable for 10A, 2,5 mm² crimp contacts with 6 mm stripping length.

This program is therefore unsuitable for ILME CD series contacts (stripping length 8 mm).

Operational setups

The tool carrier carriage may be accessed by opening the front door, by anticlockwise rotation of the knob, which releases the pressure from all the valves.

For tool selection, see table on page 548.

- For CD series male and female crimp contacts (10A max), the feeding cup A must be fitted onto the machine, whilst for CC series crimp contacts (16A max) feeding cup B (M) for male contacts and B (F) for female contacts must be used.
- The feeding tubes to be fitted are A for CD series contacts and B for CC series contacts respectively.
- The wire holders which support the wire during the stripping stage feature three different sizes for CD contacts and two sizes for CC contacts.
- The contact holders are two (A (M) for male contacts and A (F) for female contacts) for CD series contacts, according to the different rear diameter between male and female contacts in this series, whilst there is only one holder (B) for CC series contacts.
- The contact holder is A for CD series contacts and B for CC series contacts.

Feeding the wire

The wire must be cut straight and the single braids must not be bent or pulled apart; in particular, the first 4cm must be perfectly straight.

Checking the stripping depth:

The machine can be operated simply as a stripping machine by disabling the crimping operation.

Please refer to the machine user manual.

Maintenance and repairs

Stripping residues collection tray: empty the tray approximately every 2000 cycles (the frequency depends on the sizes of the stripped wire and on the stripping length).

Pneumatically controlled maintenance unit: regularly drain any water that may have collected. The trap may be cleaned with water. To remove the trap, simply disconnect the air supply. The filter unit may be unscrewed for cleaning purposes, then immersed in a cleaning agent (such as petrol or oil), thoroughly washed and dried.

Checking the calibration values

The correct calibration of the machine must be periodically checked by using the "GO / NO GO" caliper supplied as standard with the machine, by following the procedure described in the machine user and maintenance manual.

for contacts series: page:
CX PLF/PLM 209
CX MLF/MLM 209

manual crimping tool



polishing disc - polish paper - removal tool jacket stripper and fibre stripper cable cutter



description	part No.	part No.
crimping tool for POF CX PL and MOST CX ML contacts RENNSTEIG model *	CLPZ R	
polishing disc (RATIOPLAST 910 PS 0SC 00 001) - for POF ** and MOST *** contacts		CLDL
polish paper: - grain size 1000 (RATIOPLAST 910 PB 001 00 001) - grain size 4000 (RATIOPLAST 910 PB 001 40 250)		CLC1 CLC4
removal tool for the extraction of contacts from the CX L inserts		CLES
- jacket stripper (RATIOPLAST 910 AZ 001 00 PA1) for POF ** and MOST *** fibre optic with PA jacket - fibre stripper (RATIOPLAST 910 AB 001 00 001) for POF ** fibre optic		CLSG CLSP
cable cutter (RATIOPLAST 910 SW 001 00 001) for Ø 2,3 mm max, for POF ** and MOST *** fibre optic		CLTE

* on request tool **CLPZ** RATIOPLAST 910 CZ 001 00 008 for contacts POF **/MOST *** crimping on the back
**** POF = POLYMER OPTICAL FIBRE**
***** MOST = MEDIA ORIENTED SYSTEM TRANSPORT**

- Note:**
as alternative to crimping please use glue UHU PLUS ENDFEST 300 (BICOMPONENT), part No. "CL GL" (provide a strain relief by cable glands)
1) mix the two components on a sheet (just a drop/each)
2) the stripped ca. 5 mm POF ** (that means the inner fibre) has to be dipped in the glue (just 5 mm)
3) the POF ** has to be pushed now in the contact/ferrule
4) min. one night to hard/dry the glue
5) finally the POF ** has to be polished (polishing disc)



Crimping tools

General specifications

Strip the fibre about 12 mm for male contact and about 15 mm for female contact (see Figures 1 and 2).

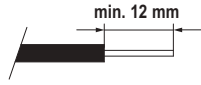


Fig. 1 - Example of cable stripping for male crimp contact

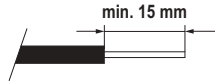


Fig. 2 - Example of cable stripping for female crimp contact

Crimping instructions

- The data sheet for crimping tool **CLPZ R** explains how the crimping tool works and how to adjust the crimping depth and locator for the contacts to be crimped. Position the turret on 3, push and turn of 90° the knob of turret. Adjust the crimping depth on 2 (unscrew the allen screw, after adjusting refix the screw).
- For the female contact: unscrew the back of the contact, pull out the internal central part; on Figure 3 is indicated the crimping area (front part of contact).
- For male contact: crimp the front part of contact.
- Push the stripped fiber as far as possible into the contact sleeve so that it protrudes approx. 1 mm from the tip of the contact.



Back of contact



Contact/fibre crimping area

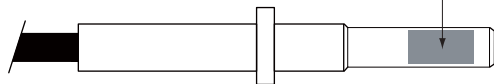


Fig. 3 - Female contact/fibre crimping area

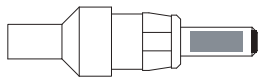


Fig. 4 - Male contact/fibre crimping area

- Insert the contact together with the fibre optic cable as far as possible into the crimping opening of the crimping tool (**CLPZ R**, see Figure 5) while applying gentle pressure to the fibre optic cable and connector, close the tool until you hear it disengages.

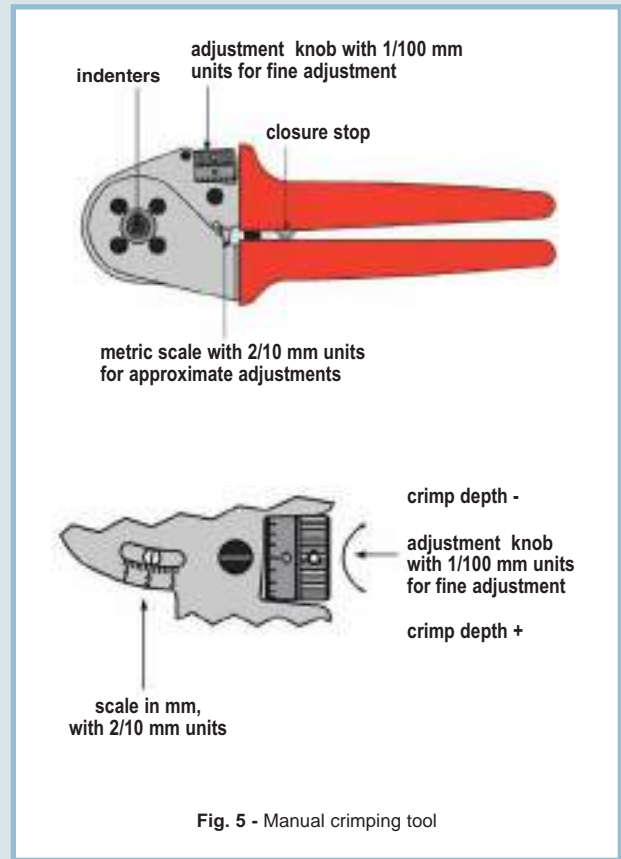


Fig. 5 - Manual crimping tool

Finishing the front surface

- Insert the contact into the polishing disc (**CLDL**) as shown in Figure 6.
- Work on a smooth surface (such as a sheet of glass), use grade 1000 polishing paper to grind off the protruding fibre and polish it with grade 4000 polishing paper.
- Wipe away any residue remaining after grinding.
- The best optical attenuation values are achieved when a wet grinding method is used.

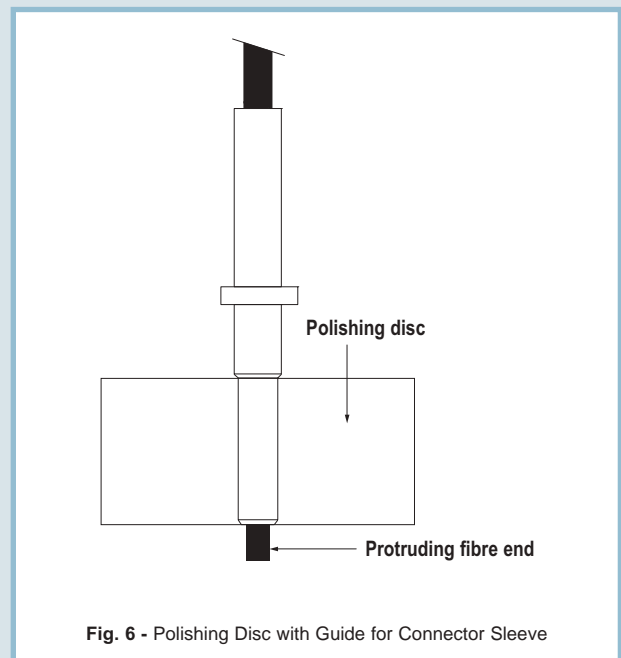


Fig. 6 - Polishing Disc with Guide for Connector Sleeve

Final mounting instructions

- Screw the back female part contact.
- Put inside the insert CX 04 LF/ CX 04 LM.

for contacts series:	page:
CX 50 F/M	210
CX 75 F/M	210

manual crimping tool



removal tool



description	part No.	part No.
crimping tool for CX 50 F/M and CX 75 F/M coaxial contacts	COPZ	
removal tool for the extraction of contacts from the CX L inserts		CLES

Crimping instructions

- 1) Strip the cable as per drawing (page 210).
- 2) Crimp the central contact of coaxial connector in the correct crimping area with the position 0,7 of crimping tool COPZ.
- 3) Insert the central contact in the coaxial connector, put the braid shield around the back cylinder of contact.
- 4) Insert the brass back end on the braid shield.
- 5) Crimp the ferrule with position 3,25 of crimping tool COPZ.

We recommend the use of code pins CRF CX / CRM CX.

As alternative to crimping, it is possible to solder the central contact.

Crimping tools



CX 50 F/M and CX 75 F/M coaxial contacts

for contacts series:

CJ (RJ45)
MIXO (RJ45)

page:
 503
 202-203

manual crimp pliers



screened cable stripper



description	part No.	part No.
RJ45 CJ series plug insert crimp pliers basic tool YAMAICHI Y-ContTool-11 mod. with plug insert inserter	CJPZ Y	
Y-ContTool-20 cable stripper cuts the cable sheath and releases the wires in a single operation		CJST

How to use the RJ45 plug insert crimp pliers

Crimping tools

inserts:
MIXO (RJ45) CX 8 J6M

page:
 200

manual crimp pliers

shielded cable stripper

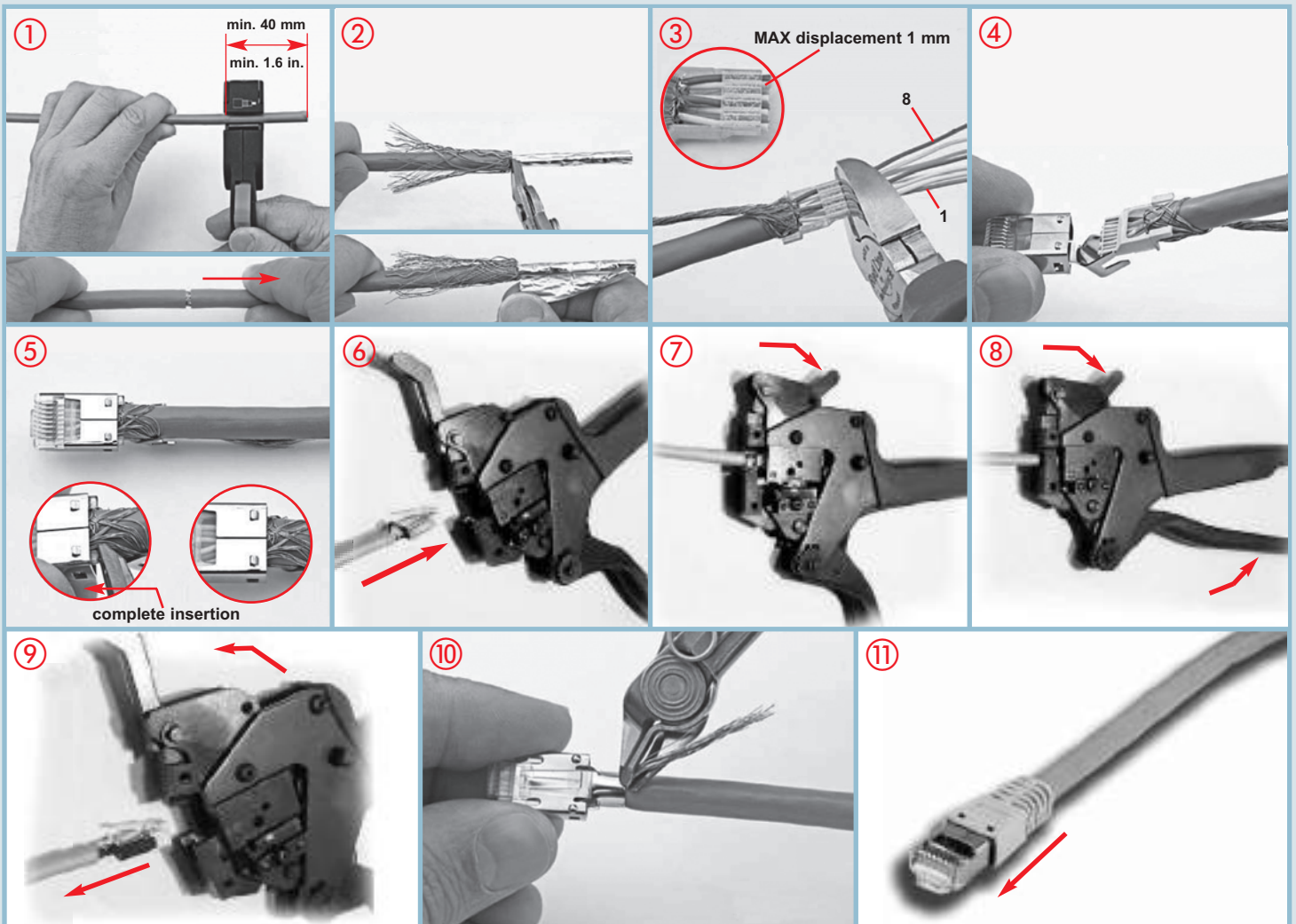


description
 RJ45 CJ series plug insert crimp pliers
 cable stripper
 cuts the cable sheath and
 releases the wires in a single operation

part No.
CJPZ T

part No.
CJST

How to use the RJ45 plug insert crimp pliers



Crimping tools

inserts: MIXO (RJ45) CX 8 J6IM
page: 200

manual IDC pliers

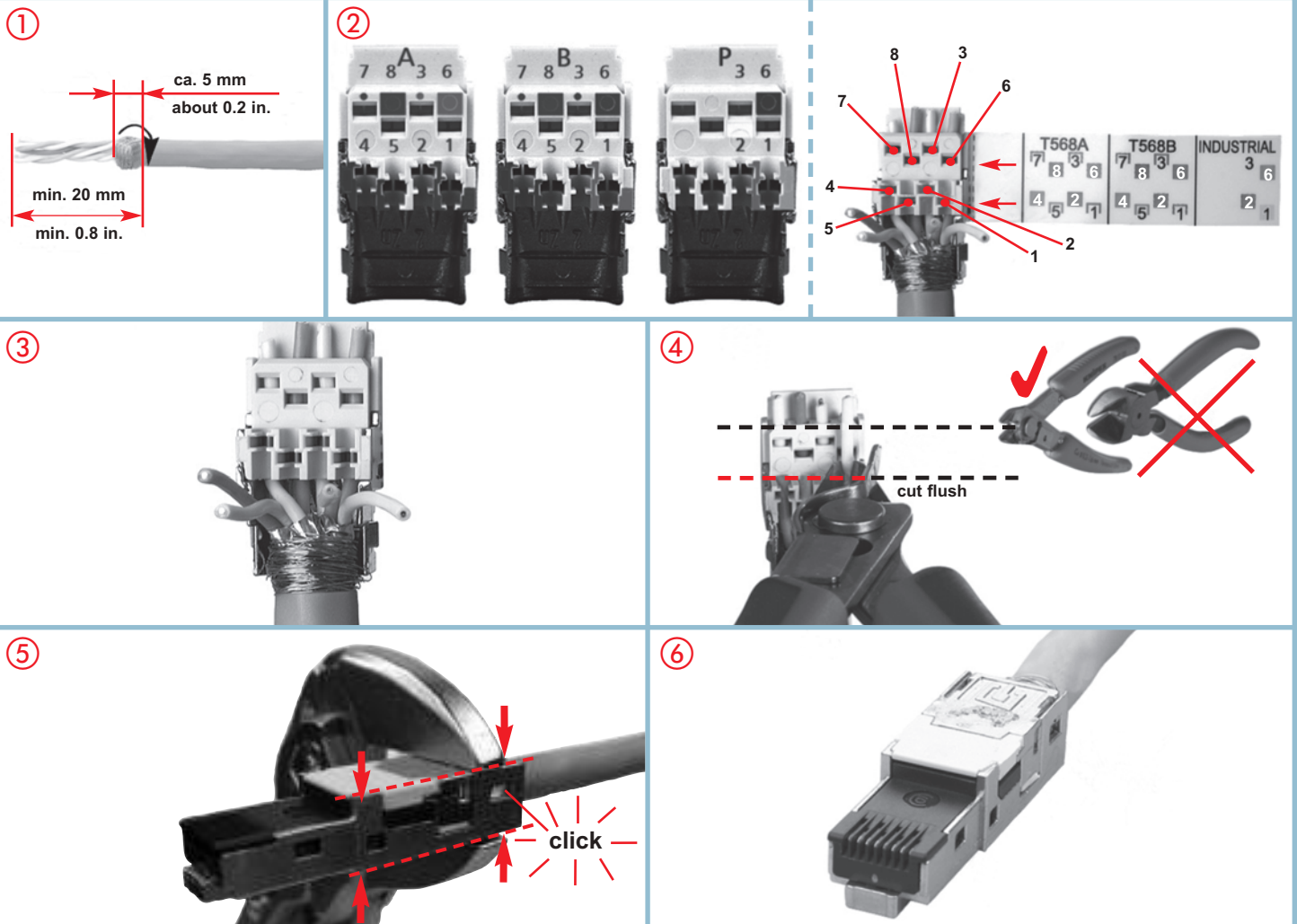


description

part No.

wrenches pliers for CX 8 J6IM

CJPW K



RJ45 PIN No.	Connection		Application					
	Colour Code T568		DIN 47100	Industrial PROFINET	10BT/100BT	1 Gigabit 10 Gigabit Ethernet	Token Ring ISDN/So	Upo/TEL
	A	B						
1	WH-GN	WH-OG	WH	YE	•	•		
2	GN	OG	BN	OG	•	•		
3	WH-OG	WH-GN	GN	WH	•	•	•	
4	BU	BU	YE	-		•	•	•
5	WH-BU	WH-BU	GY	-		•	•	•
6	OG	GN	PK	BU	•	•	•	
7	WH-BN	WH-BN	BU	-		•	•	
8	BN	BN	RD	-		•		

Legend

BN = brown
BU = blue
GN = green
GY = grey
OG = orange
PK = pink
RD = red
WH = white
YE = yellow

general

Load curves

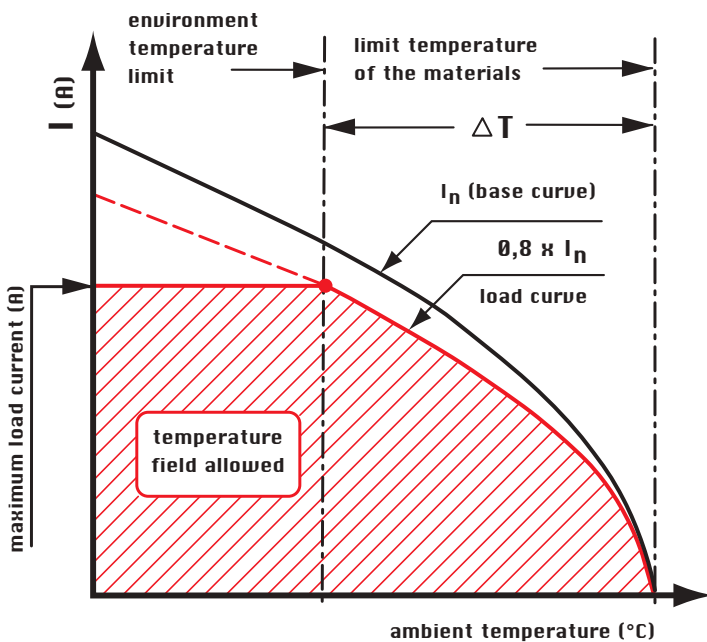
The permitted current carrying capacity for connectors is variable: it becomes lower with the increase of the number of poles and of the ambient temperature in which the connector is installed and it depends upon the thermal properties of the material used for the contacts and the insulating parts including those of the type of conductor used.

The current carrying capacity is obtained from the load curves which are constructed according to standard IEC 60512-5-2 for currents circulating simultaneously in all poles.

The limit current curves express current values that determine the achievement of the upper limit temperature of the materials. The choice of the permanent load applicable on the contacts must be made within the field of operation possible delimited by the above mentioned curves.

Since use of connectors at the limit values of their characteristics is not recommended, the **base curve** is de-rated. The reduction of the load currents to 80% defines the correction curve where both the maximum permissible contact resistances and the inaccuracy of the temperature measurements are sufficiently taken into consideration. The correction curve represents the final **limit current curve (load curve)** as defined by standard IEC 60512-5-2. It therefore bears in consideration the differences between the various connector inserts, as well as errors in the temperature measurements.

All the load curves presented here below include the correction.



Legend:

Maximum load current (A):

value for which the connector reaches the upper limit temperature of the material at the corresponding ambient temperature intersected on the load curve.

Upper limit temperature of the materials:

value determined by the characteristics of the material used. The sum of the environmental temperature and the increase of the Δt (temperature rise) caused by the current flow must not exceed the limit temperature of the materials.

Environment temperature limit:

the environmental conditions must not exceed this value. It may be known and determines the maximum load current, or it may be directly obtained from the load curve.

Base curve:

set of current and temperature values obtained from laboratory tests and influenced by the connector's characteristics (number of poles, construction shape, thermal conductivity of the materials, etc.) and the cross-section of the conductor used.

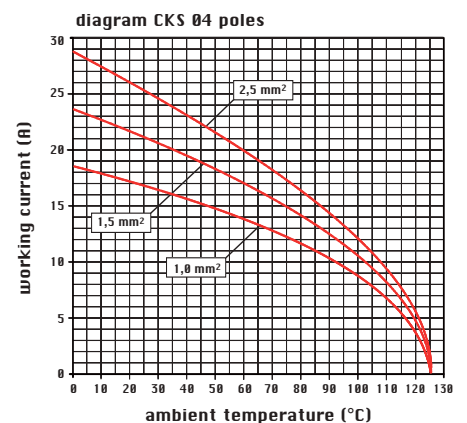
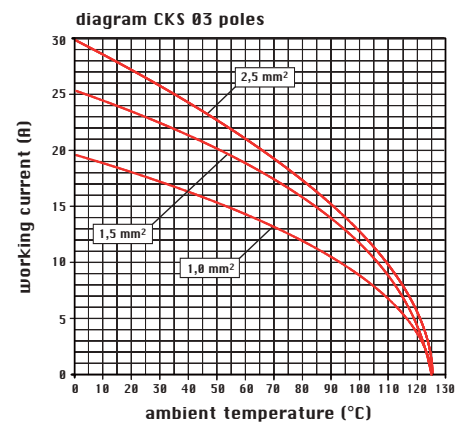
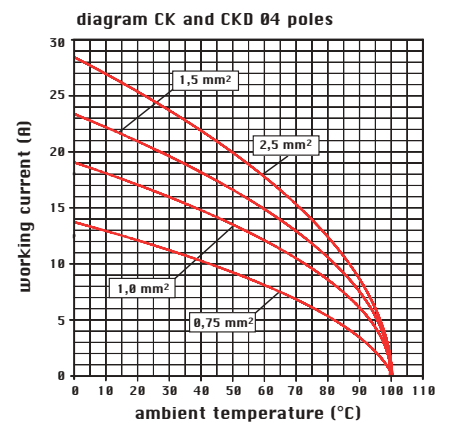
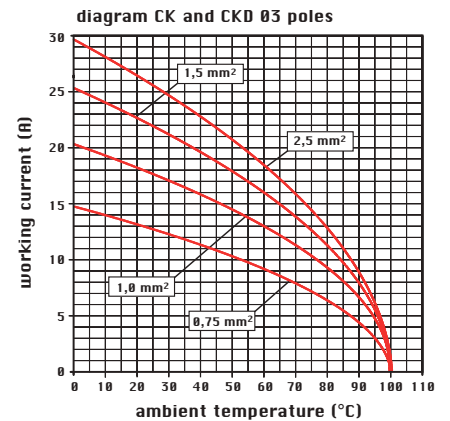
Load curve (limit current curve):

obtained from the base curve via the safety coefficient.

ΔT (temperature rise): temperature rise produced by a permanent current circulating through all the poles of a connector coupling; difference between the upper limit temperature of the material and the ambient temperature obtained on the limit current curve.

**CK and CKD series
CKS series**

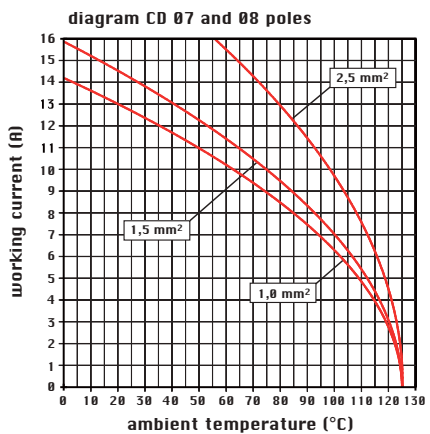
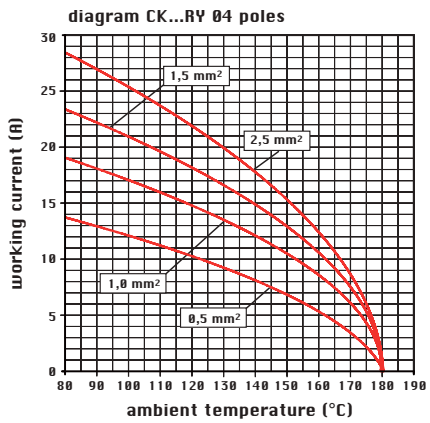
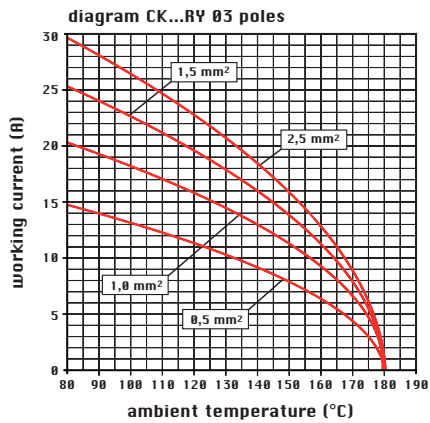
curves



Load curves

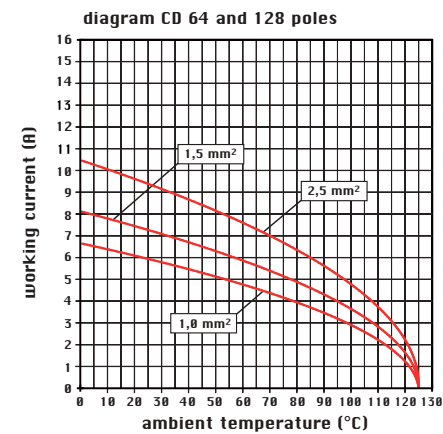
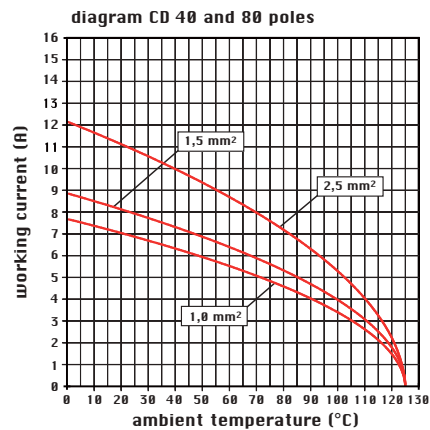
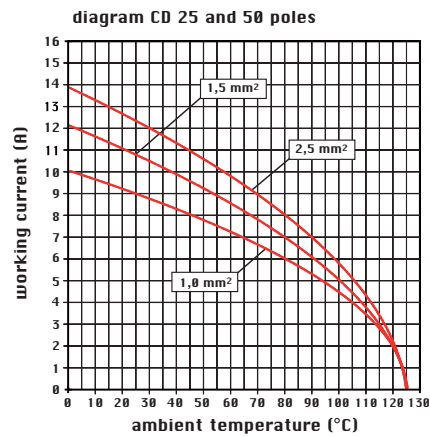
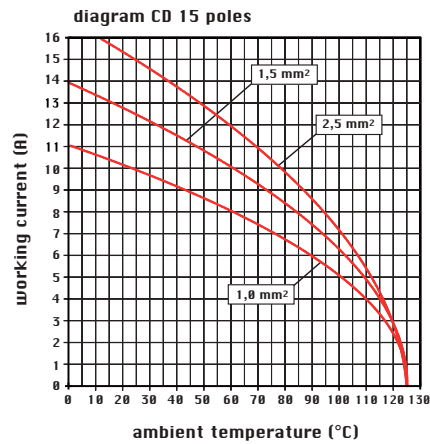
CK...RY series
CD series

curves



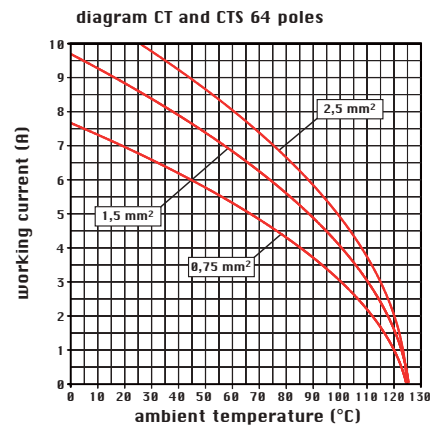
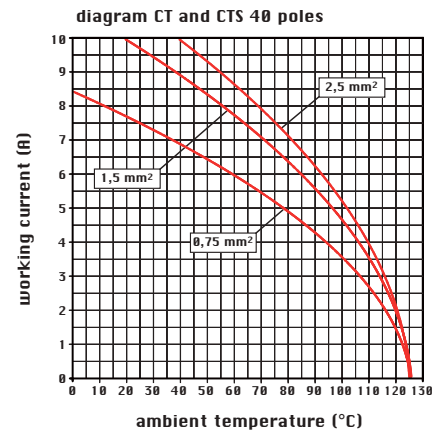
CD series

curves



CT and CTS (10A) series

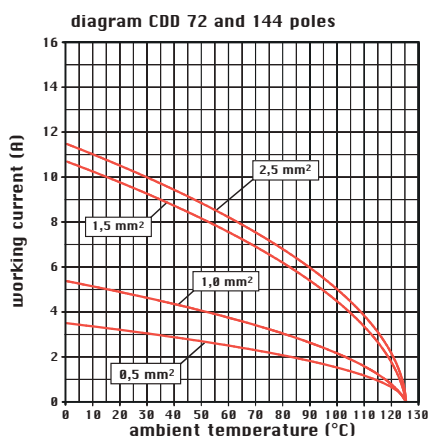
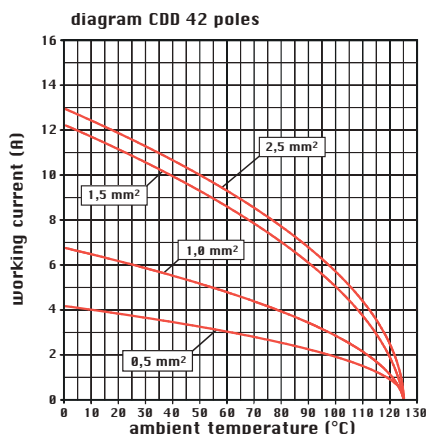
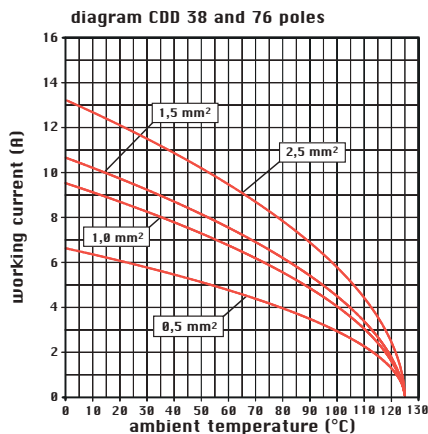
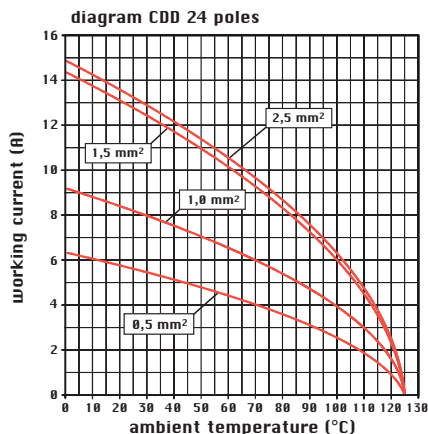
curves





CDD series

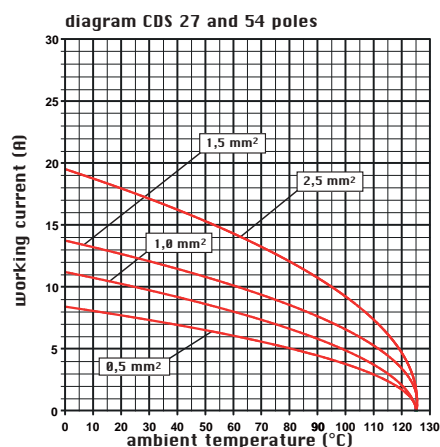
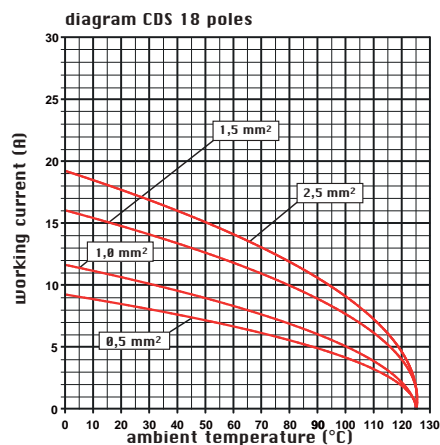
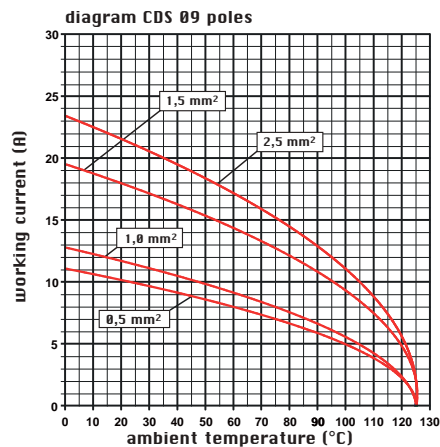
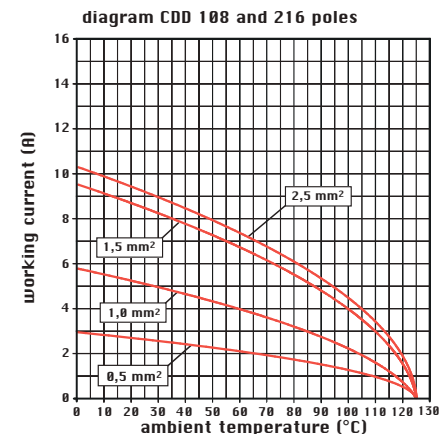
curves



CDD series

CDS series

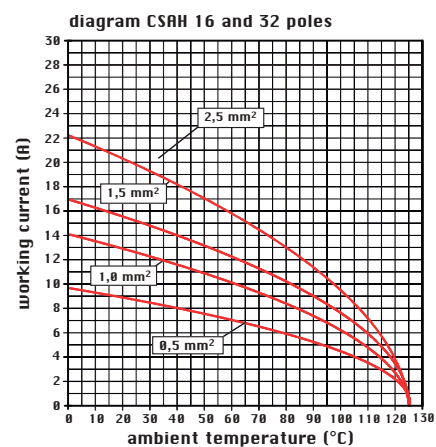
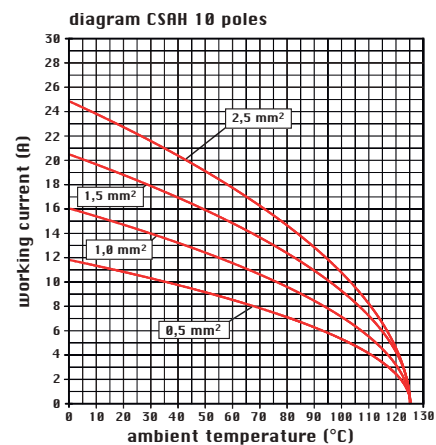
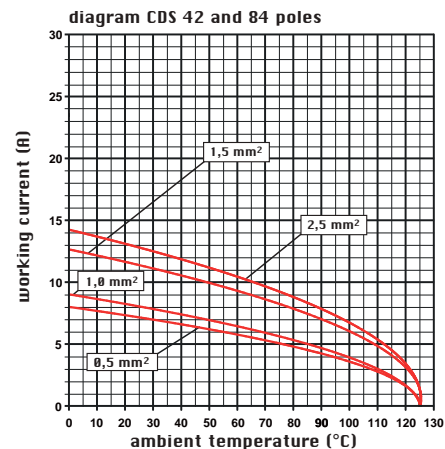
curves



CDS series

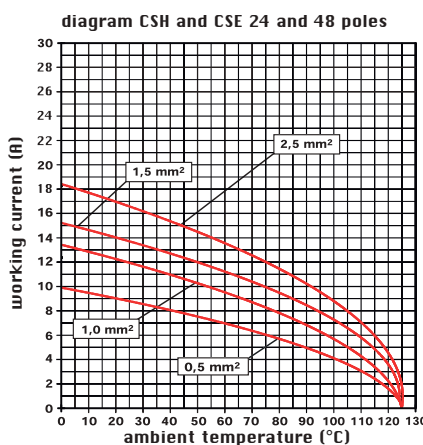
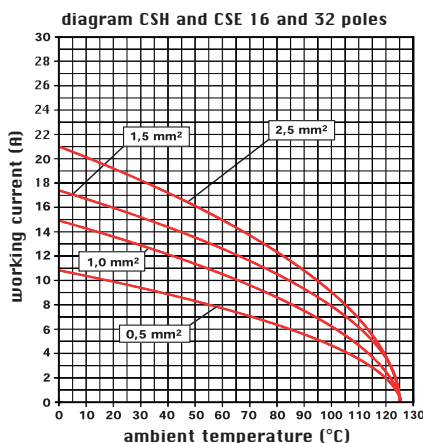
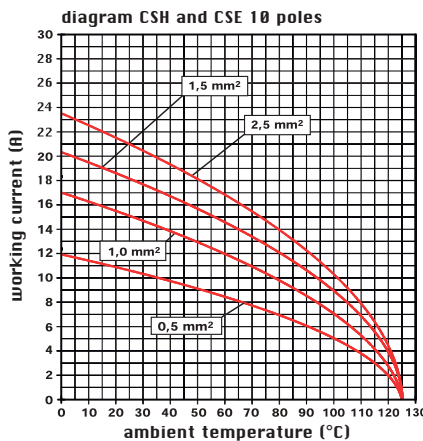
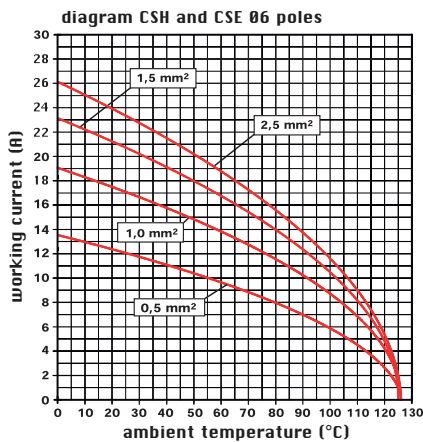
CSAH series

curves



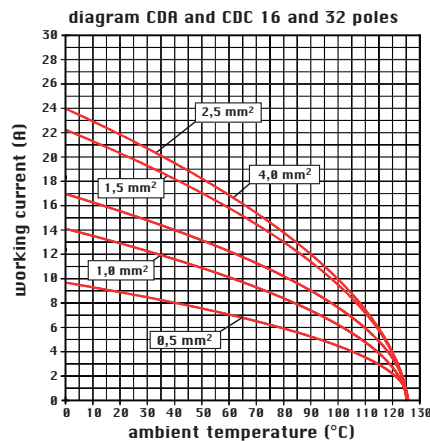
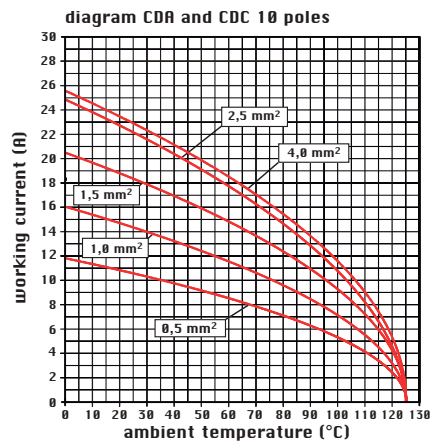
CSH and CSE series

curves



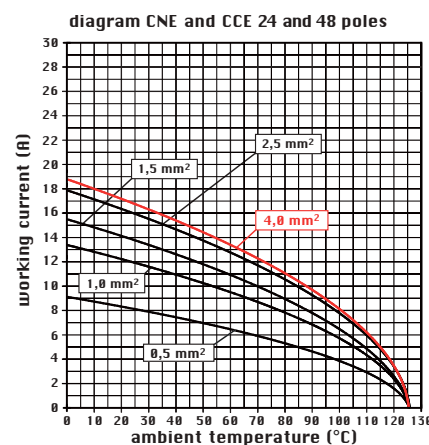
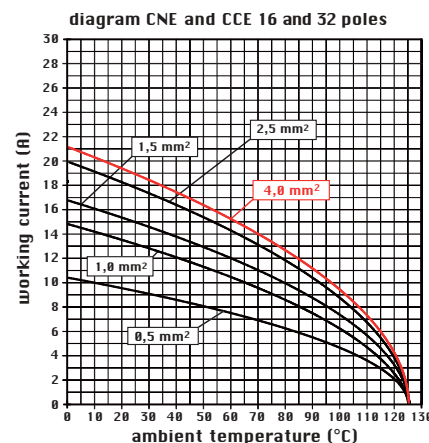
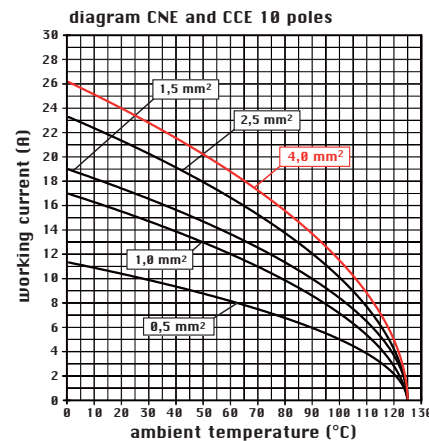
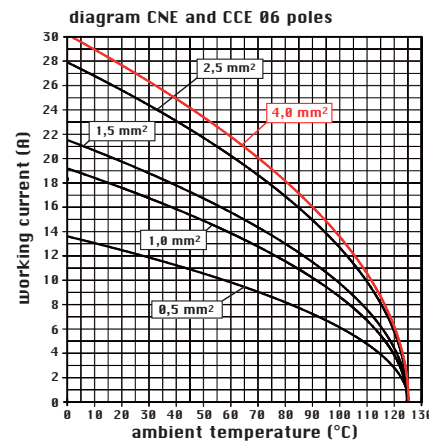
CDA and CDC series

curves



CNE and CCE series

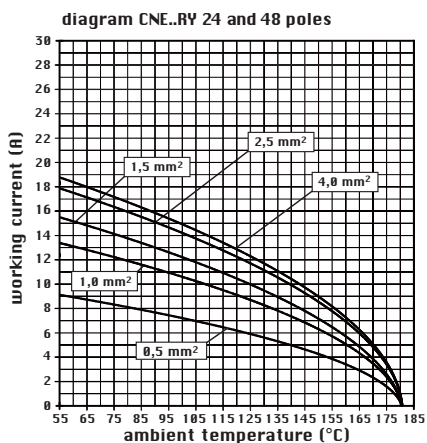
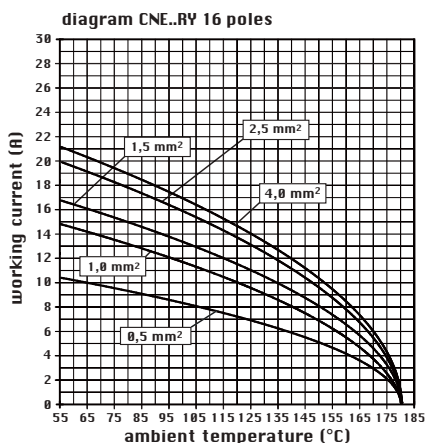
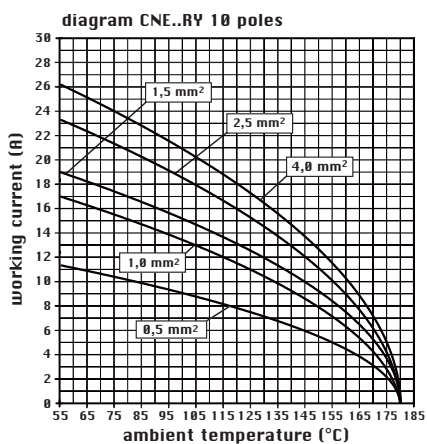
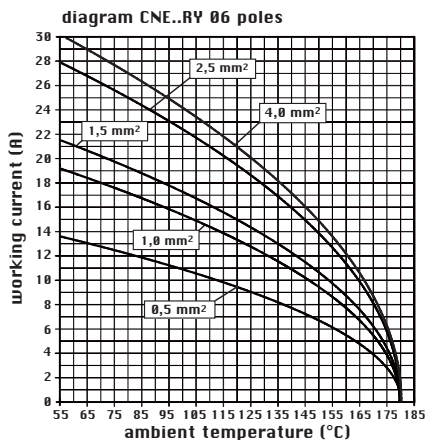
curves





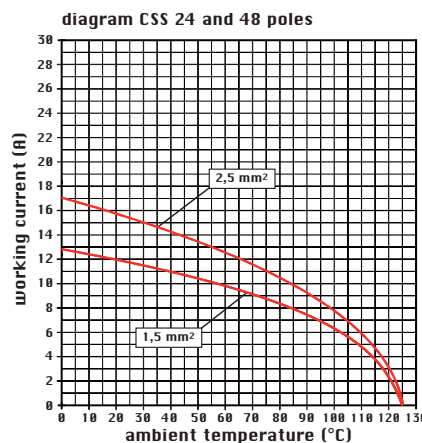
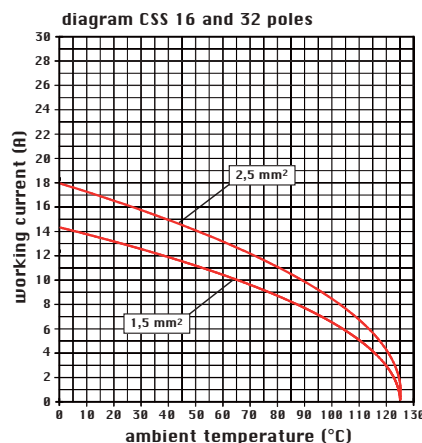
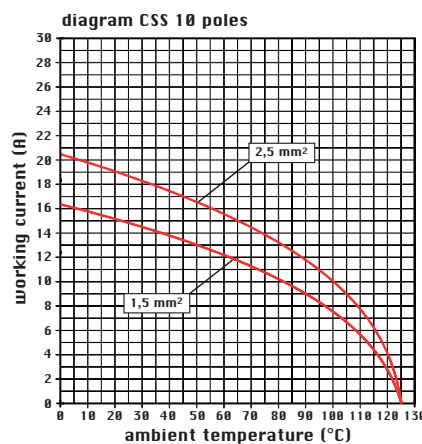
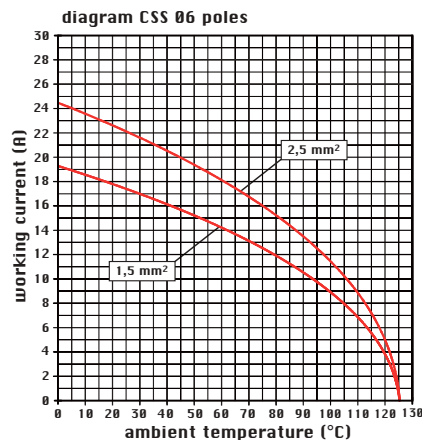
CNE..RY series

curves



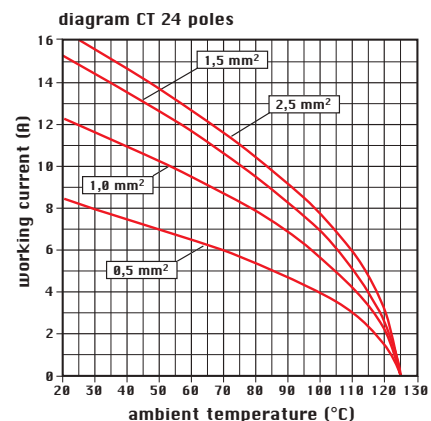
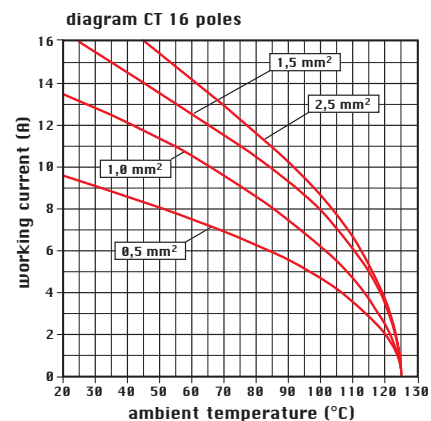
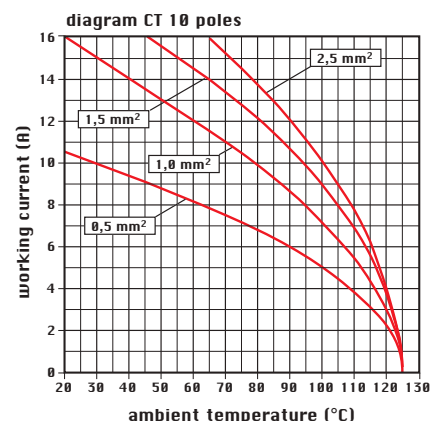
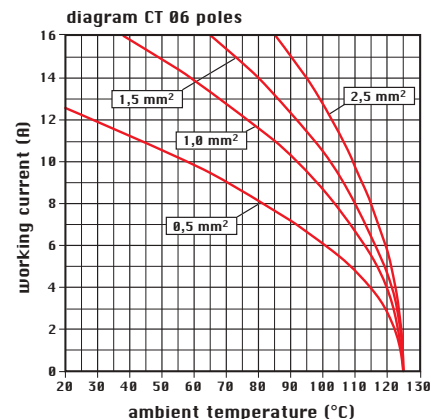
CSS series

curves



CT (16A) series

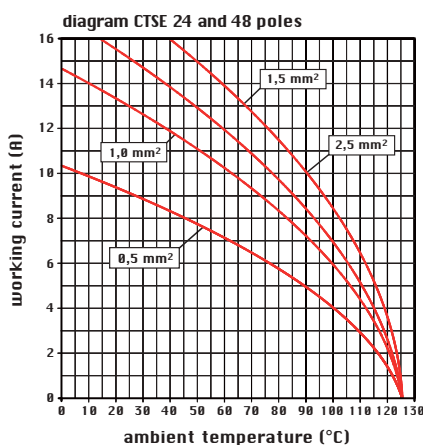
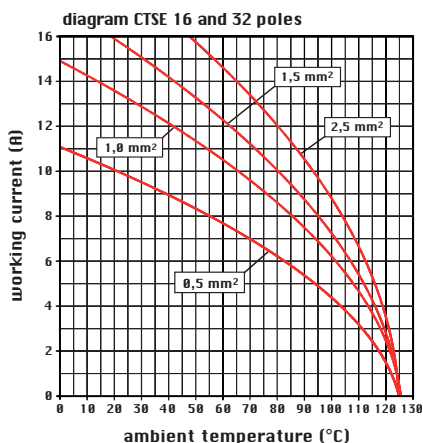
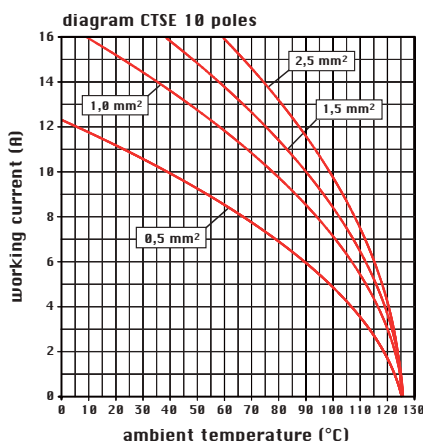
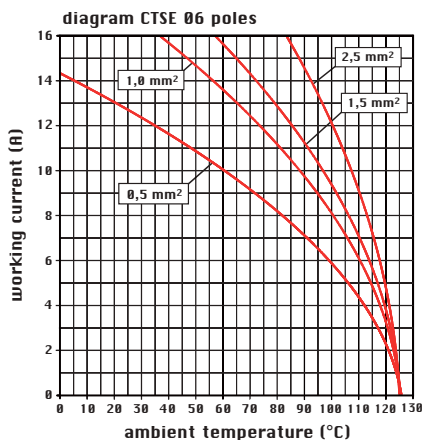
curves





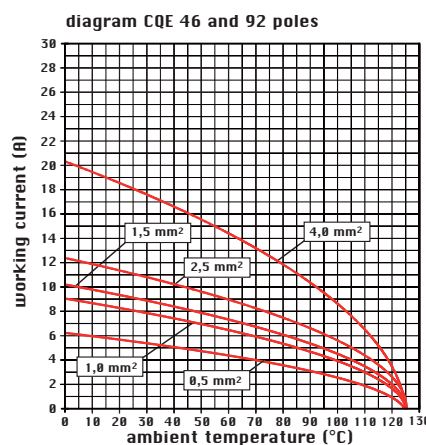
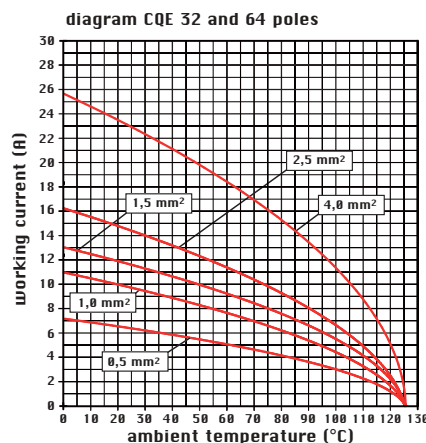
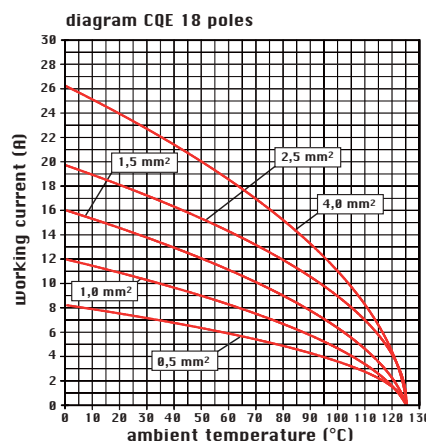
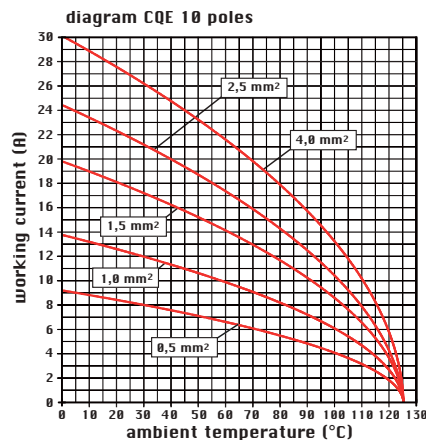
CTSE (16A) series

curves



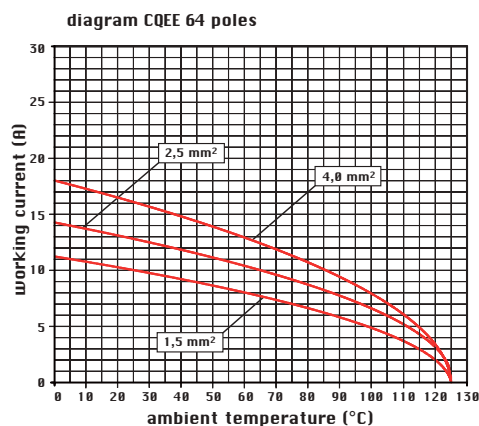
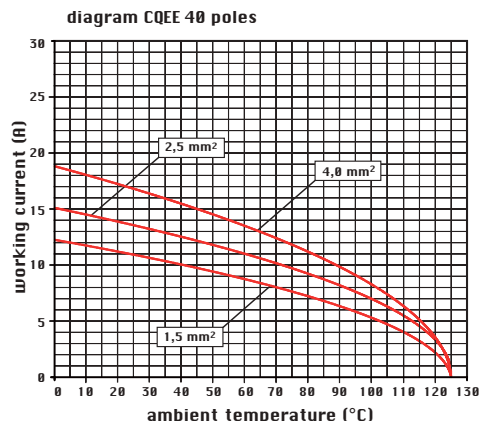
CQE series

curves



CQEE series

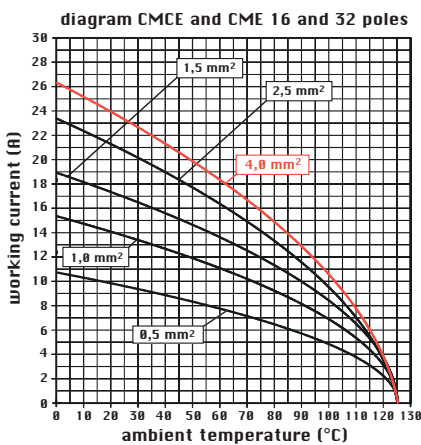
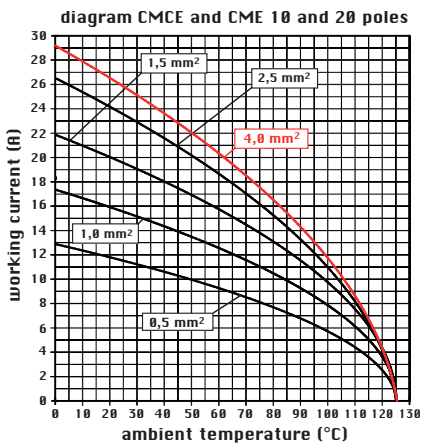
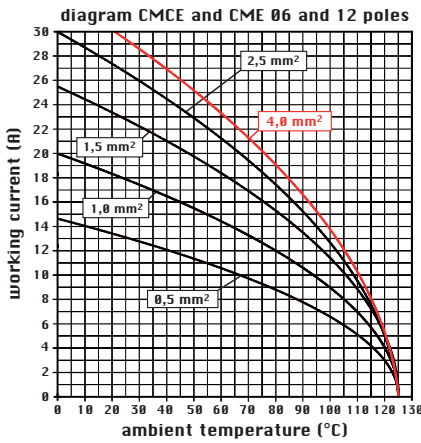
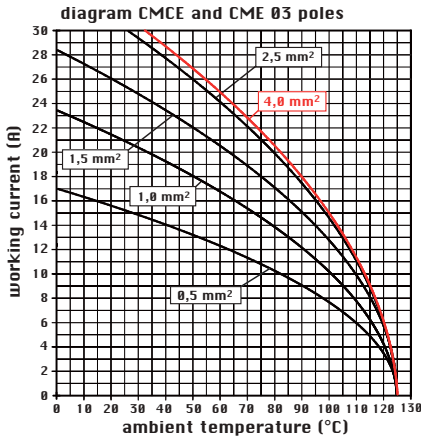
curves



Load curves

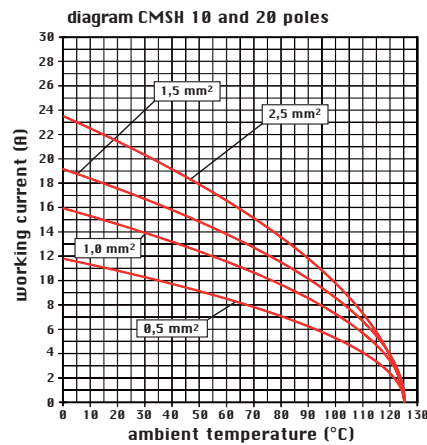
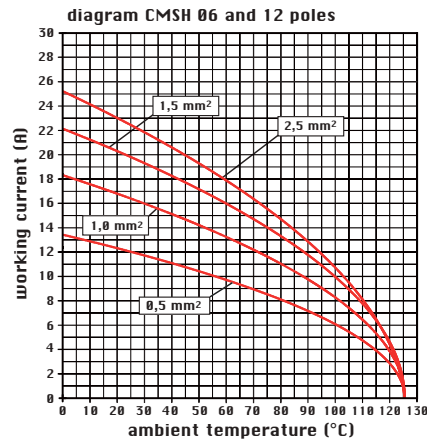
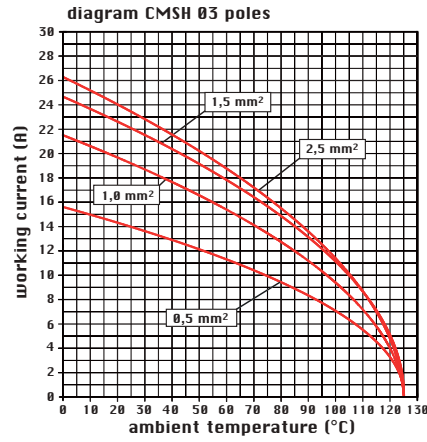
CMCE and CME series

curves



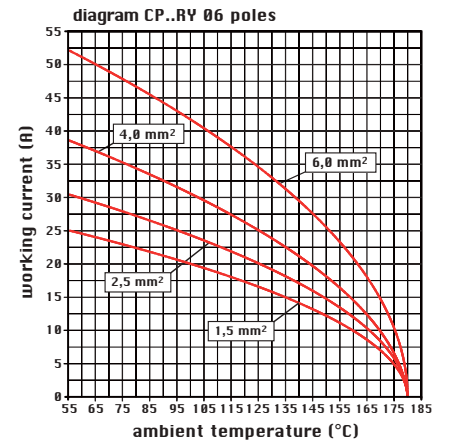
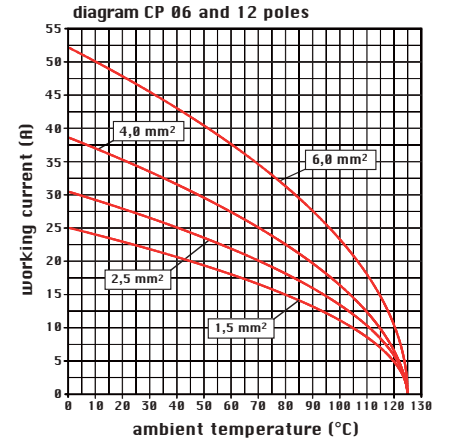
CMSH series

curves



CP series
CP..RY series

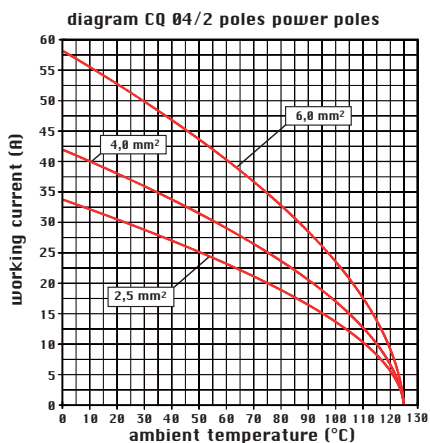
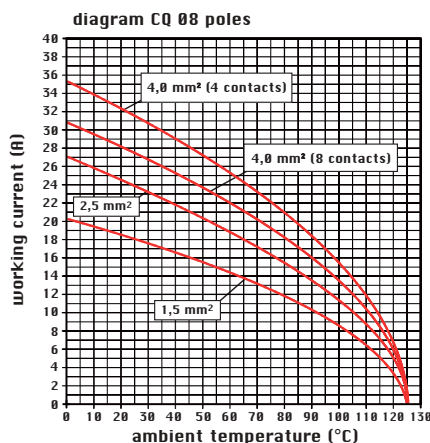
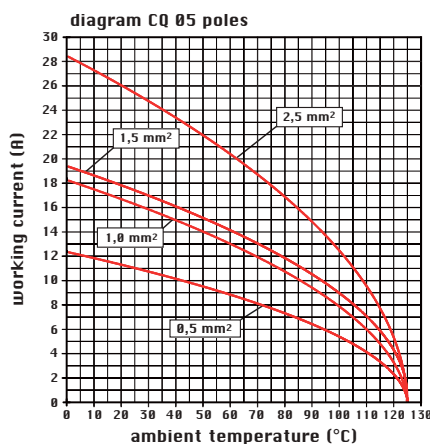
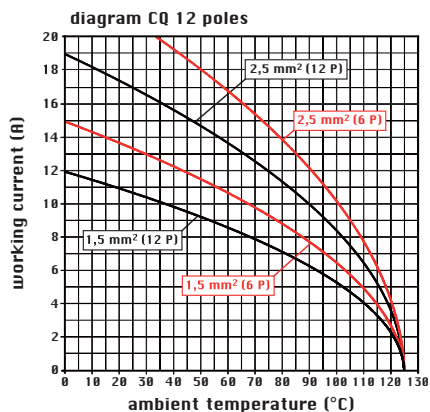
curves





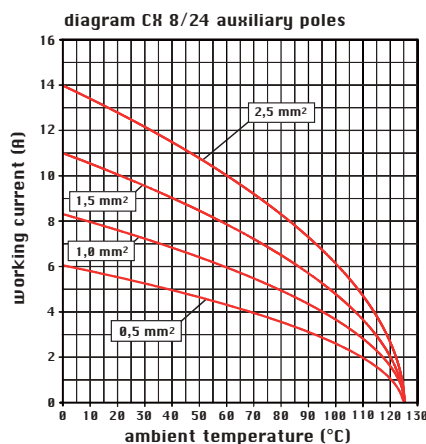
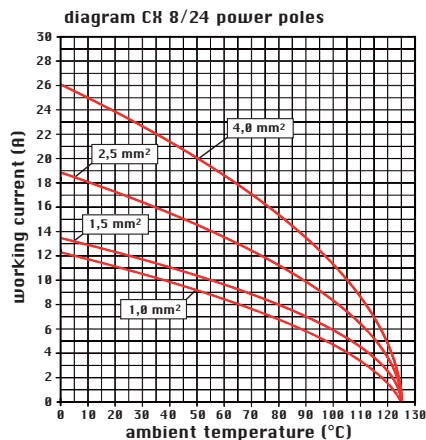
CQ series

curves



CX 8/24 series
CX 6/36 series

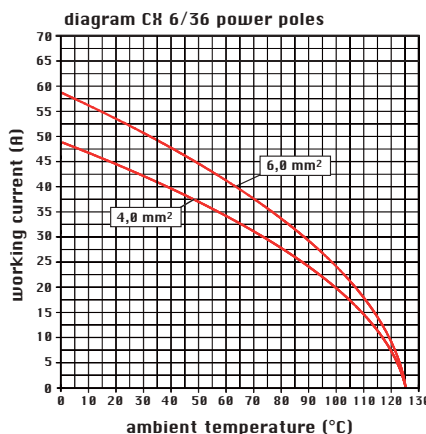
curves



Note: for connector with power poles and auxiliary poles simultaneously loaded in the combinations

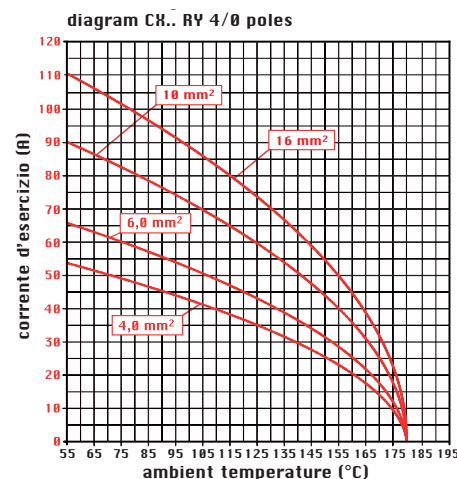
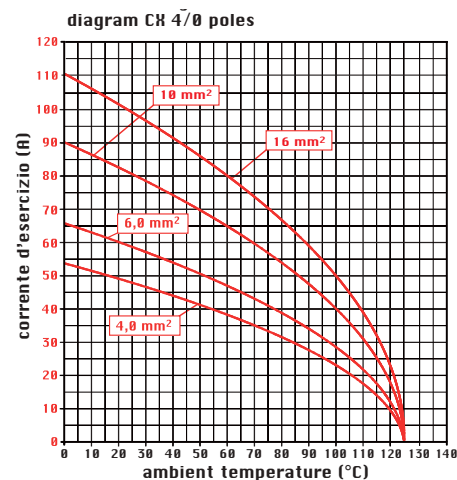
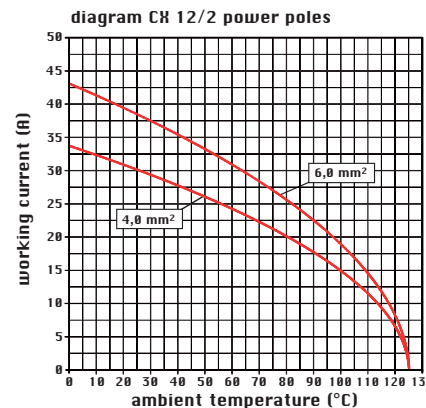
power poles	auxiliary poles
4,0 mm ²	2,5 mm ²
2,5 mm ²	1,5 mm ²
1,5 mm ²	1,0 mm ²
1,0 mm ²	0,5 mm ²

with power / auxiliary current ratios = 1,6 / 1



CX 12/2 series
CX 4/0 and CX 4/0 RY series

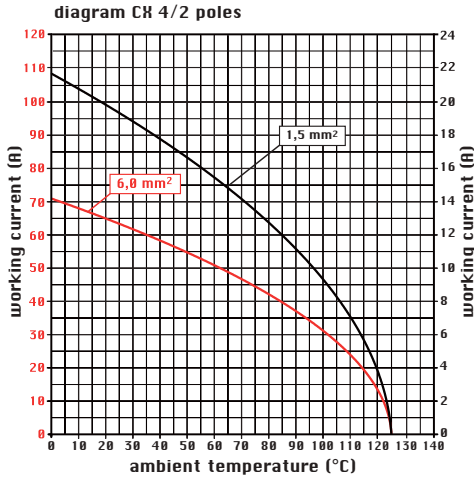
curves



Load curves

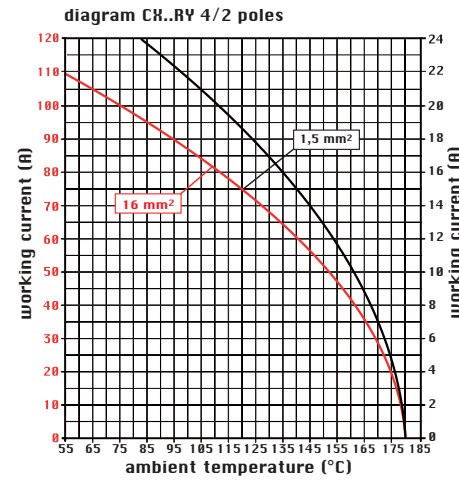
CX 4/2 series

curves



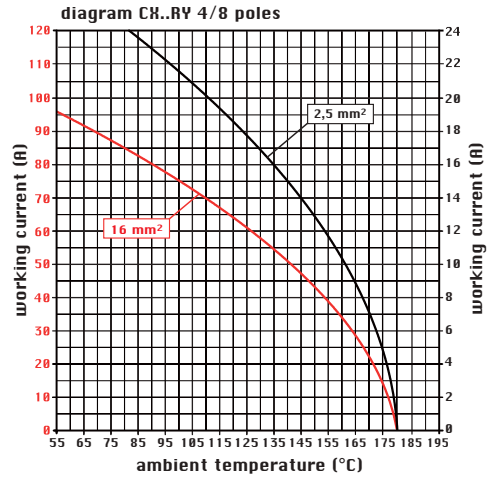
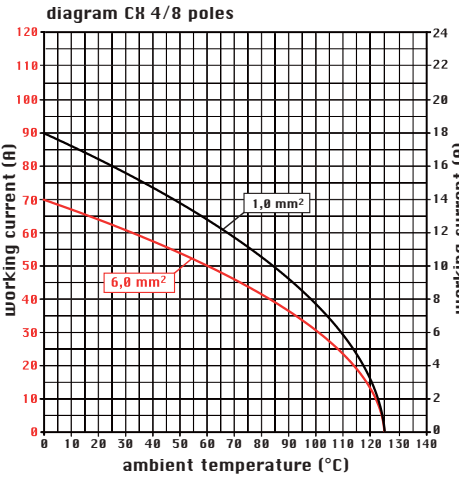
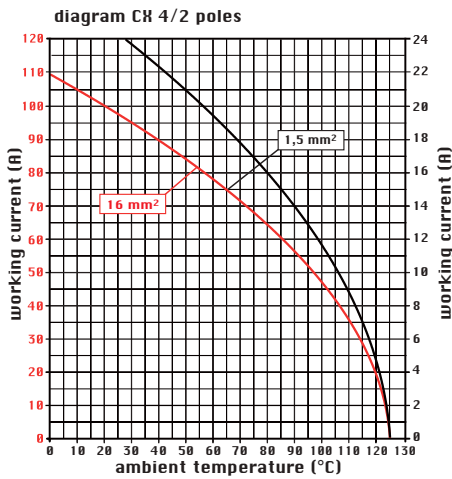
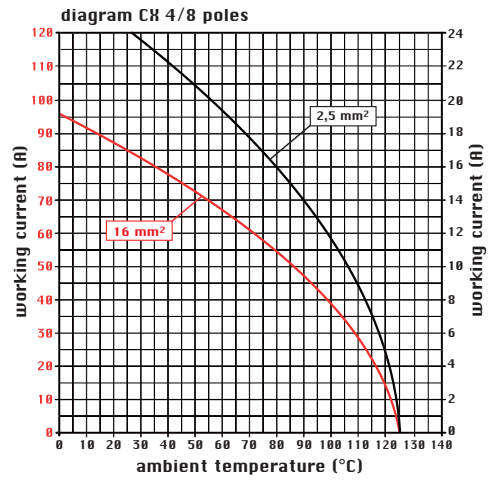
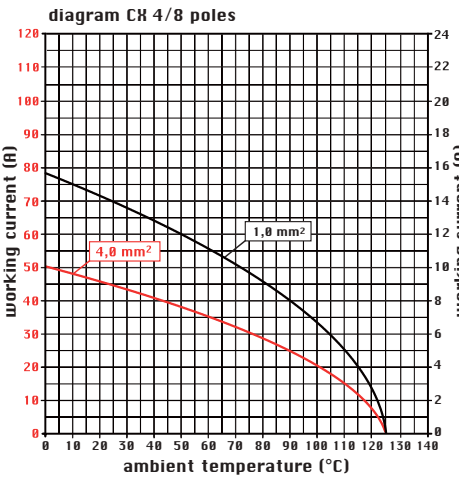
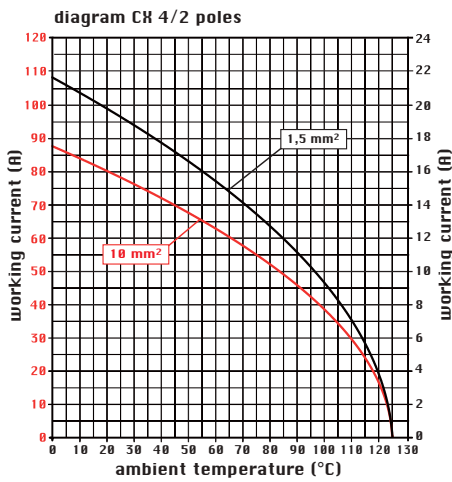
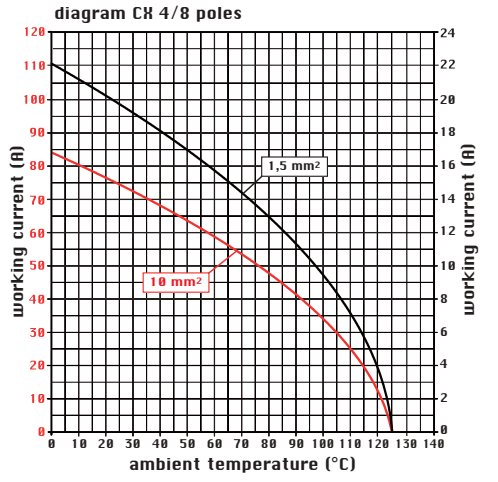
CX 4/2 RY series
CX 4/8 series

curves



CX 4/8 series
CX 4/8 RY series

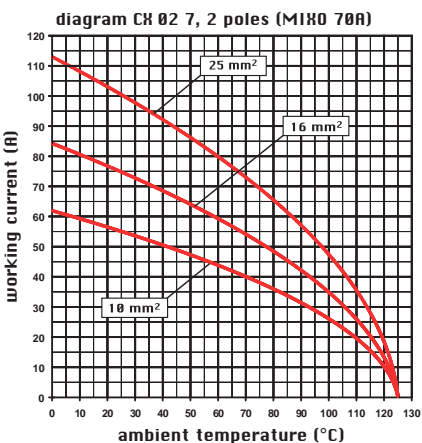
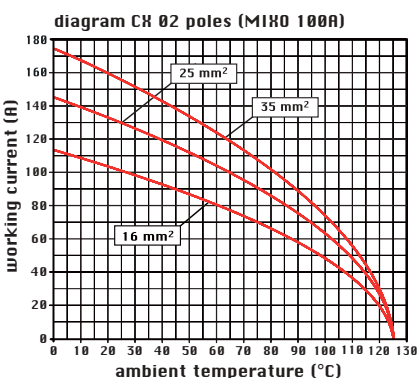
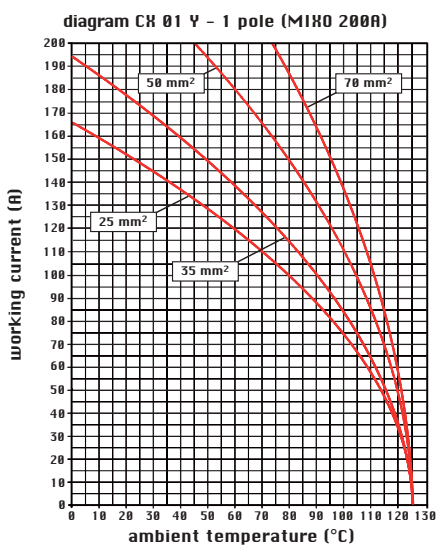
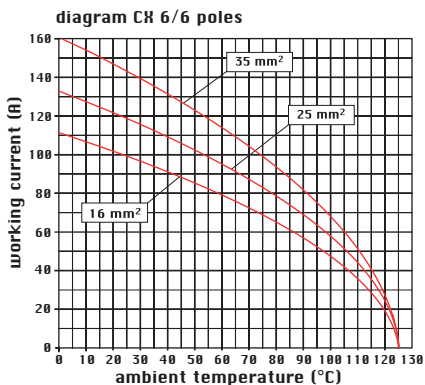
curves





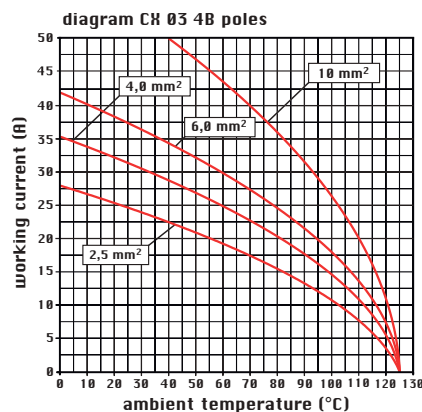
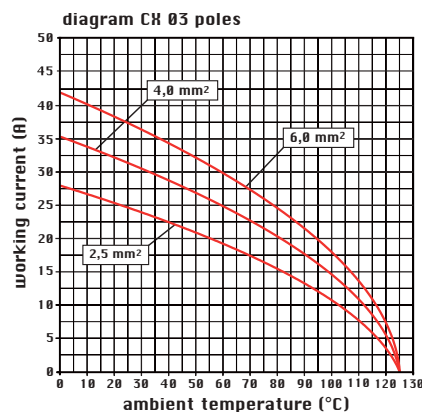
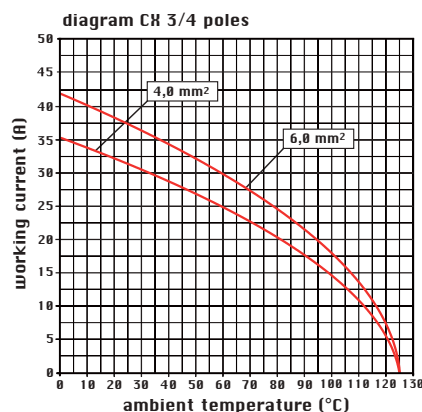
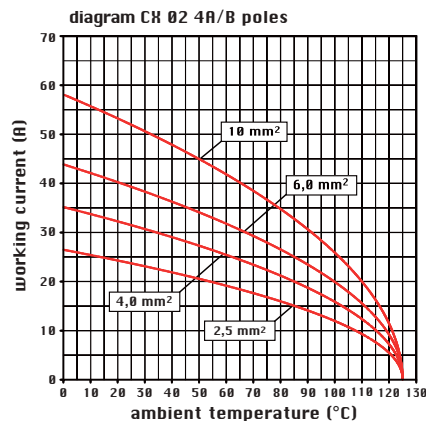
CX 6/6 series
MIXO (CX 01, CX 02) series

curves



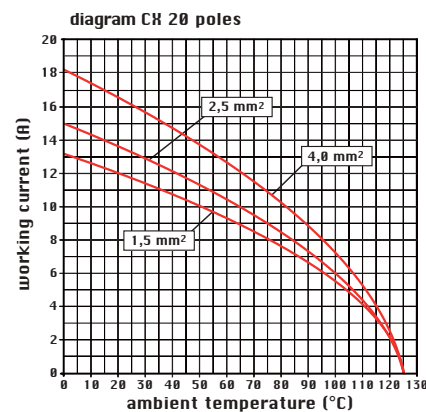
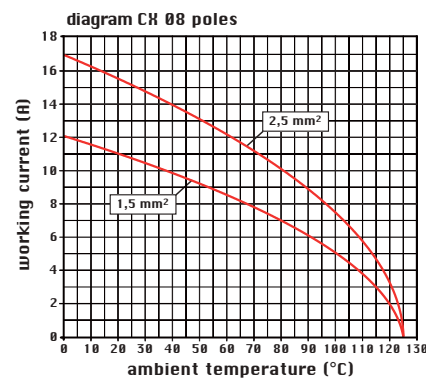
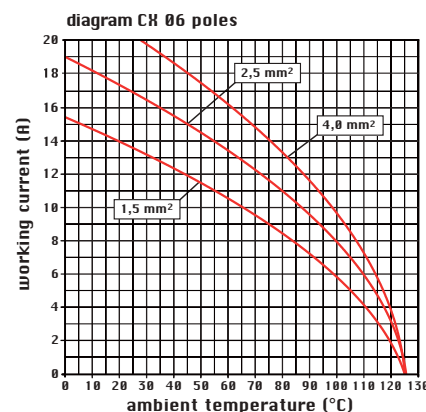
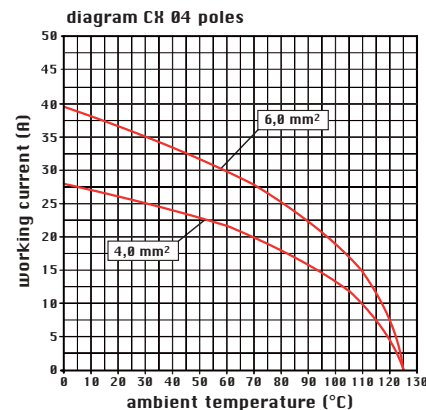
MIXO (CX 02 4A/B, CX 3/4, CX 03, CX 03 4B) series

curves



MIXO (CX 04, CX 06, CX 08, CX 20) series

curves



Load curves



MIXO (CX 05, CX 12, CX 17, CX 25) series

curves

diagram CX 05 poles

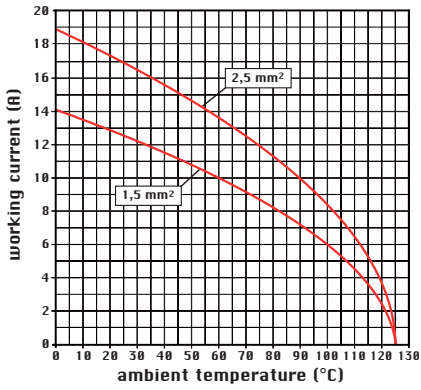


diagram CX 12 poles

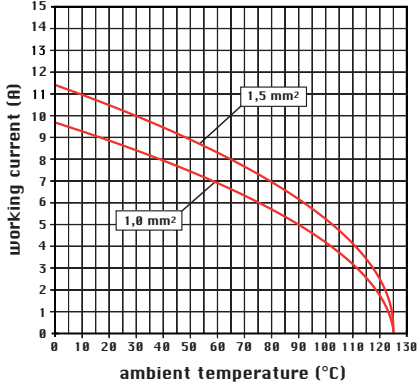


diagram CX 17 poles

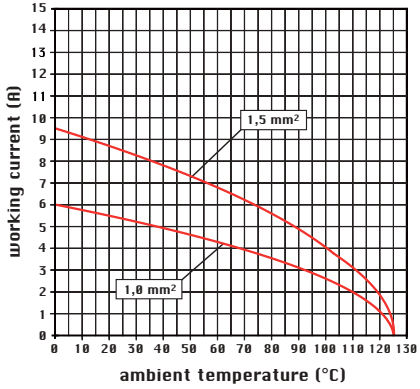
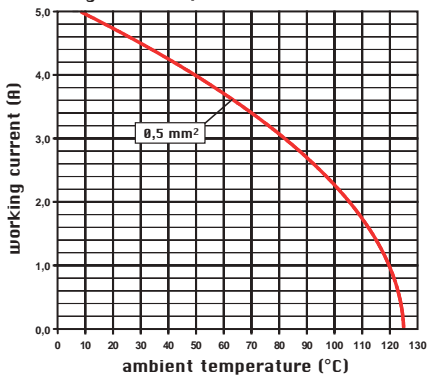
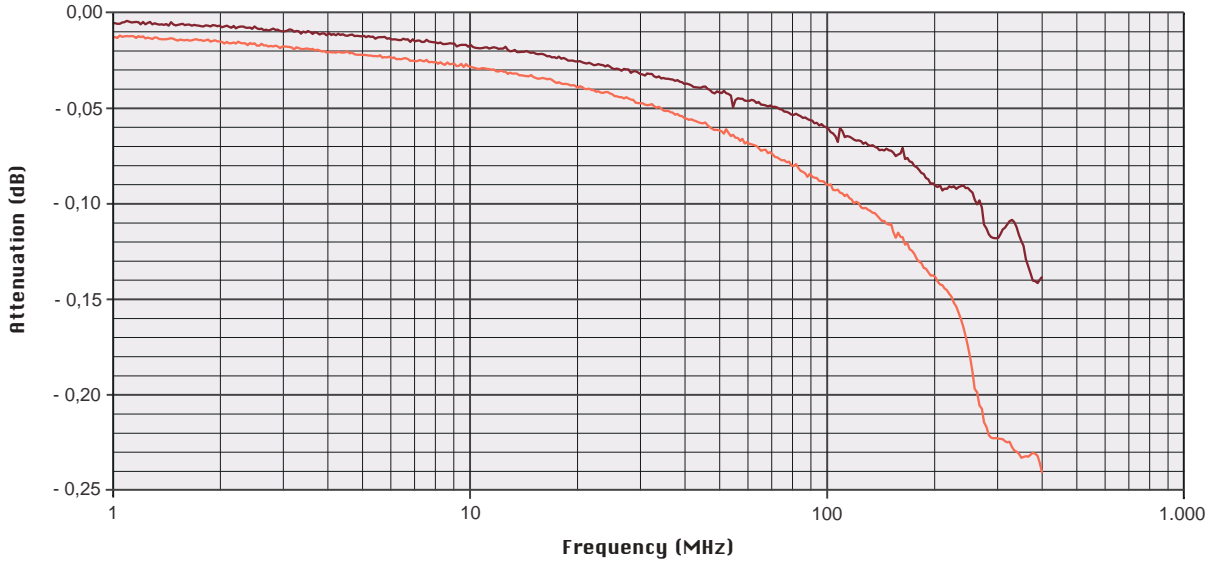


diagram CX 25 poles



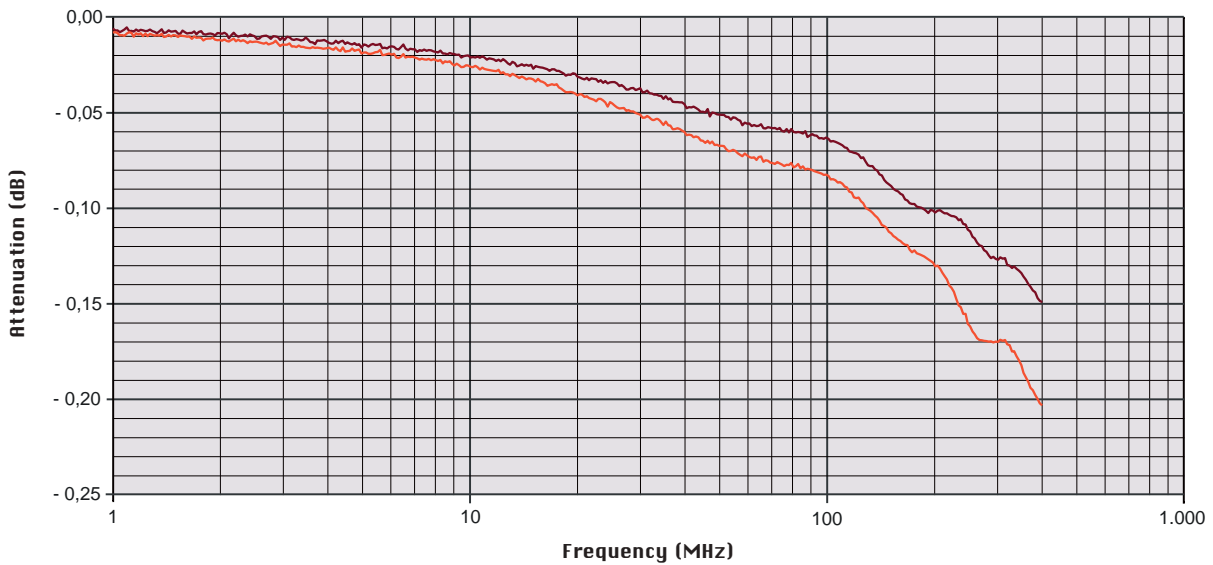
Test performed in accordance with IEC/EN 60512-25-2 (2002), 4.1.3.2 (coaxial cable only) and 4.2.2.2 (coaxial cable and connector).

**Attenuation (insertion loss)
50 ohm coaxial connector (CX 01 BCF / BCM)**



- RG 213/U cable and CX 01 BC connector (50 ohm)
- RG 213/U cable (50 ohm)

**Attenuation (insertion loss)
75 ohm coaxial connector (CX 01 BF / BM)**



- RG 11 A/U cable and CX 01 B connector (75 ohm)
- RG 11 A/U cable (75 ohm)



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C7 10 FL	278	CAO 24 X	266	CAP 16.29	251
C7 16 FL	278	CAO 24 X29	266	CAP 24 CP	259
C7 24 FL	278	CAO 24 YX21	411	CAP 24 CP2	259
C7AP 06 L	274	CAO 24 YX29	411	CAP 24 CP229	259
C7AP 06 L2	274	CAO 24.21	260	CAP 24 CP29	259
C7AP 06 L229	274	CAO 24.29	260	CAP 24 CS	259
C7AP 06 L29	274	CAO 50 X	239	CAP 24 CS2	259
C7AP 10.21	275	CAO 50 X29	239	CAP 24 CS229	259
C7AP 10.221	275	CAO 50.21	238	CAP 24 CS29	259
C7AP 10.229	275	CAO 50.29	238	CAP 24 G36	467
C7AP 10.29	275	CAOR 06 L21	398	CAP 24 L	259
C7AP 16.21	276	CAOR 10.21	399	CAP 24 L2	259
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C7AP 24.21	277	CAOS 16.29	394	CAP 24 LS2	259
C7AP 24.221	277	CAOS 24.29	395	CAP 24 LS229	259
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C7AP 24.29	277	CAOW 10.21	374	CAP 24 YC229	410
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C7P 06 L2	274	CAP 06 L29	241	CAPR 24.21	401
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CAC 24 L	468	CAP 10 CS29	245	CAV 06 YX21	405
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CAC 32 L	468	CAP 10 L2	245	CAV 10 G	248
CAC 48 L	468	CAP 10 L229	245	CAV 10 G29	248
CAC 50	468	CAP 10 L29	245	CAV 10 L21	246
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CAO 06 YX29	405	CAP 16 CP2	251	CAV 16 G	255
CAO 10 L21	246	CAP 16 CP229	251	CAV 16 G29	255
CAO 10 L29	246	CAP 16 CP29	251	CAV 16 L21	252
CAO 10 X	249	CAP 16 CS	251	CAV 16 L29	252
CAO 10 X29	249	CAP 16 CS2	251	CAV 16 LG21	255
CAO 10 YX21	407	CAP 16 CS229	251	CAV 16 LG29	255
CAO 10 YX29	407	CAP 16 CS29	251	CAV 16 X	256
CAO 10.21	246	CAP 16 L	251	CAV 16 X29	256
CAO 10.29	246	CAP 16 L2	251	CAV 16 YX21	409
CAO 16 L21	252	CAP 16 L229	251	CAV 16 YX29	409
CAO 16 L29	252	CAP 16 L29	251	CAV 16.21	252
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CAV 24 YX21	411	CCFD 2.5	99*	CDAM 10	98
CAV 24 YX29	411	CCFD 3.0	99*	CDAM 16	100-102
CAV 24.21	260	CCFD 4.0	99*	CDAM 16 N	102
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CCEF 24 N	115	CCMF 0.3	479	CDFA 0.7	53*
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* These items are also shown in various sections throughout the catalogue.



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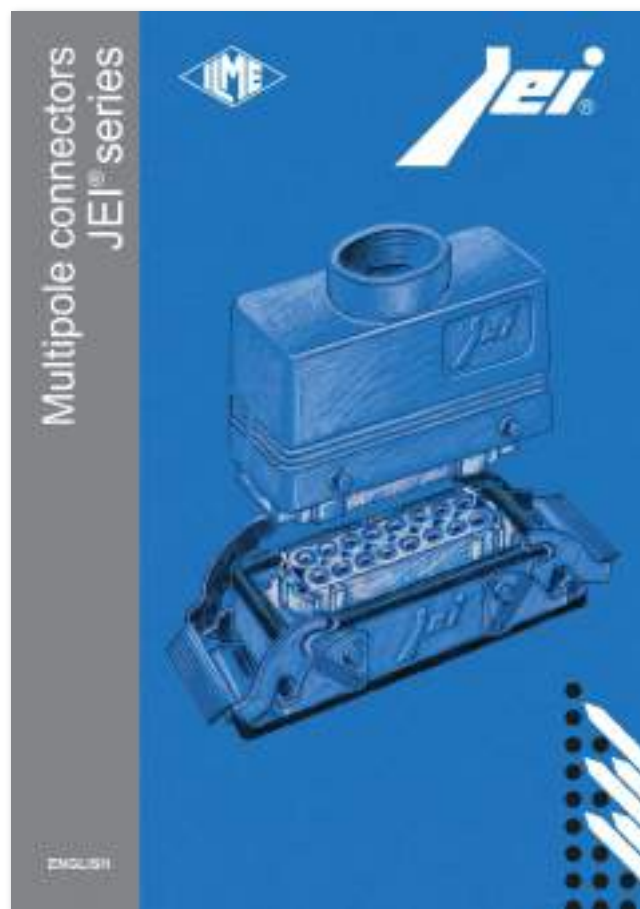
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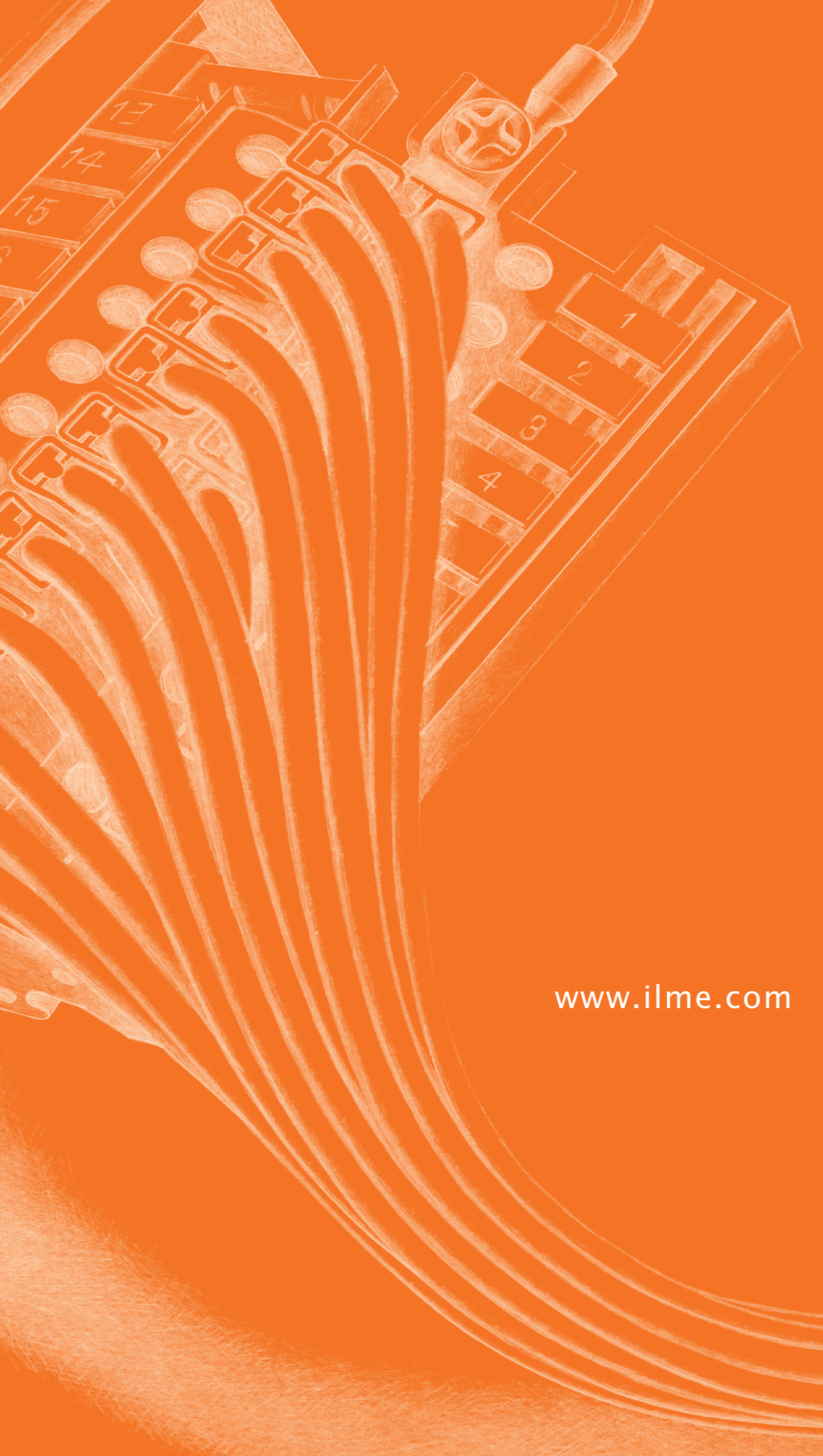
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