

Standard\_ IEC60898-1



### Technical Data

#### Electrical Features

Rated current In	1,2,3,4,5,6,8,10,13,16,20,25,32,40,50,63A
Poles	1P, 1P+N, 2P, 3P, 3P+N,4P
Rated voltage Ue	240/415V~
Insulation voltage Ui	500V
Rated frequency	50/60Hz
Rated breaking capacity	6,000A
Energy limiting class	3
Rated impulse withstand voltage(1.5/50) Uimp	4,000V
Dielectric test voltage at ind. Freq. for 1 min	2kV
Pollution degree	2
Thermo-magnetic release characteristic	B,C,D

#### Mechanical Features

Electrical life	8,000 Cycles
Mechanical life	20,000 Cycles
Contact position indicator	Yes
Protection degree	IP20
Reference temperature for setting of thermal element	30°C
Ambient temperature (with daily average ≤35°C)	-5°C~+40°C
Storage temperature	-25°C~+70°C

#### Installation

Terminal connection type	Cable/Pin-type busbar/U-type busbar
Terminal size top/bottom for cable	25mm <sup>2</sup> 18-3AWG
Terminal size top/bottom for busbar	25mm <sup>2</sup> 18-3AWG
Tightening torque	2.5Nm 22In-lbs
Mounting	On DIN rail EN60715(35mm) by means of fast clip device
Connection	From top and bottom

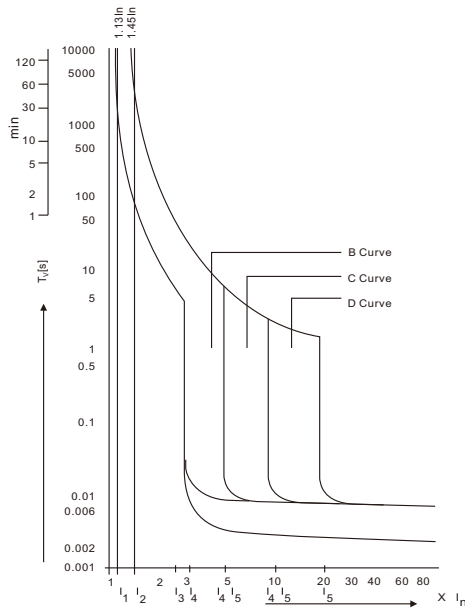
#### Combination With Accessories

Auxiliary contact	CABH-OF
Alarm contact	CABH-FB
Shunt release	CABH-MX
Over/Under voltage release	CABH-MV+MN

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## MCB Characteristics

### Characteristics Curves



As per IEC60898	Thermal Tripping		Magnetic Tripping			
	No tripping current	Tripping current $I_2$	Time Limits t	Hold current $I_4$	Trip current $I_5$	Time Limits t
B Curve	$1.13 \times I_N$	$1.45 \times I_N$	$\geq 1h$ $< 1h$	$3 \times I_N$	$5 \times I_N$	$\geq 0.1s$ $< 0.1s$
C Curve	$1.13 \times I_N$	$1.45 \times I_N$	$\geq 1h$ $< 1h$	$5 \times I_N$	$10 \times I_N$	$\geq 0.1s$ $< 0.1s$
D Curve	$1.13 \times I_N$	$1.45 \times I_N$	$\geq 1h$ $< 1h$	$10 \times I_N$	$20 \times I_N$	$\geq 0.1s$ $< 0.1s$

### Tripping Characteristics

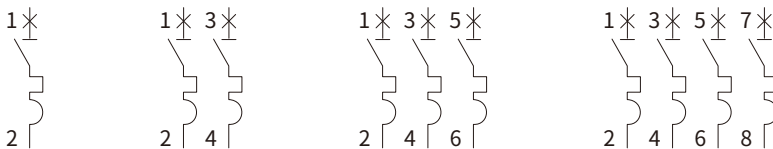
Based on the Tripping Characteristics, MCB are available in “B”, “C” and “D” curve to suit different types of applications.

“B” Curve for protection of electrical circuits with equipment that does not cause surge current (lighting and distribution circuits) Short circuit release is set to (3-5)In.

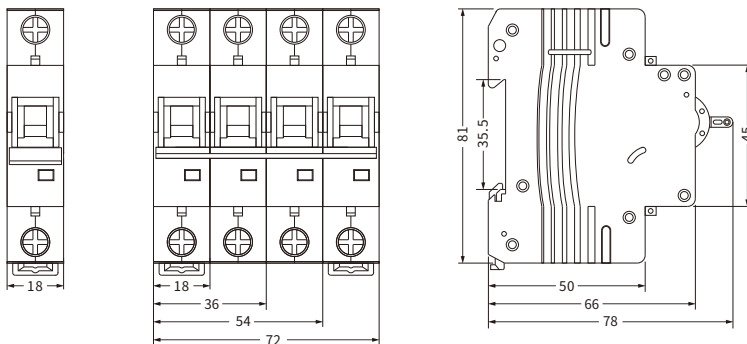
“C” Curve for protection of electrical circuits with equipment that cause surge current (inductive loads and motor circuits) Short circuit release is set to (5-10)In.

“D” Curve for protection of electrical circuits with cause high inrush current ,typically 12-15 times the thermal rated current (transformes, x-ray machines etc,)Short circuit release is set to (10-20)In.

### Circuit Diagram



### Overall and Installation Dimension(mm)



Standard\_ IEC60947-2



### Technical Data

#### Electrical Features

Rated current $I_n$	1,2,3,4,5,6,8,10,13,16,20,25,32,40,50,63A
Poles	1P, 2P, 4P
Rated voltage $U_e$	1P(250V), 2P(500V), 4P(1000V)
Rated breaking capacity	6,000/10,000A
Rated impulse withstand voltage(1.5/50) $U_{imp}$	4,000V
Dielectric test voltage at ind. Freq. for 1 min	2kV
Pollution degree	2
Thermo-magnetic release characteristic	C (7~10) $I_n$

#### Mechanical Features

Electrical life	4,000 Cycles
Mechanical life	10,000 Cycles
Contact position indicator	Yes
Protection degree	IP20
Reference temperature for setting of thermal element	30°C
Ambient temperature (with daily average $\leq 35^\circ\text{C}$ )	-5°C~+40°C
Storage temperature	-25°C~+70°C

#### Installation

Terminal connection type	Cable/Pin-type busbar/U-type busbar
Terminal size top/bottom for cable	25mm <sup>2</sup> 18-3AWG
Terminal size top/bottom for busbar	25mm <sup>2</sup> 18-3AWG
Tightening torque	2.5Nm 22In-lbs
Mounting	On DIN rail EN60715(35mm) by means of fast clip device
Connection	According to the wiring diagram

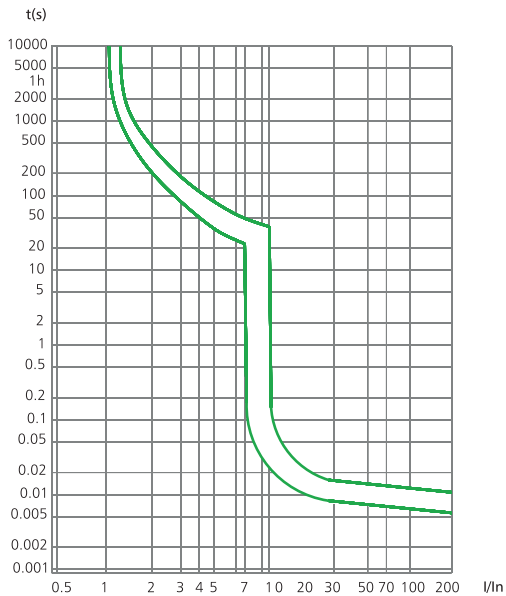
#### Combination with accessories

Auxiliary contact	CABH-OF
Alarm contact	CABH-FB
Shunt release	CABH-MX
Over/Under voltage release	CABH-MV+MN

Standard\_ IEC60947-2

## MCB Characteristics

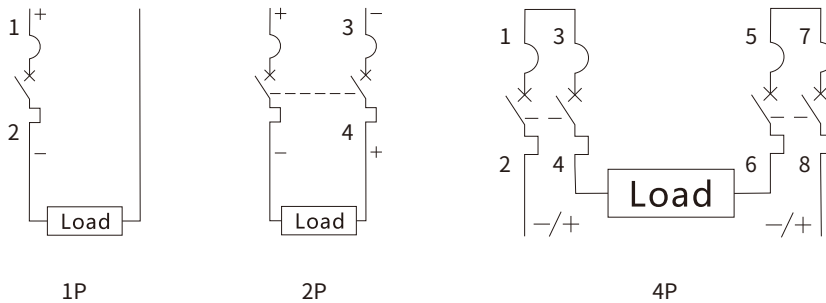
### Characteristics Curves



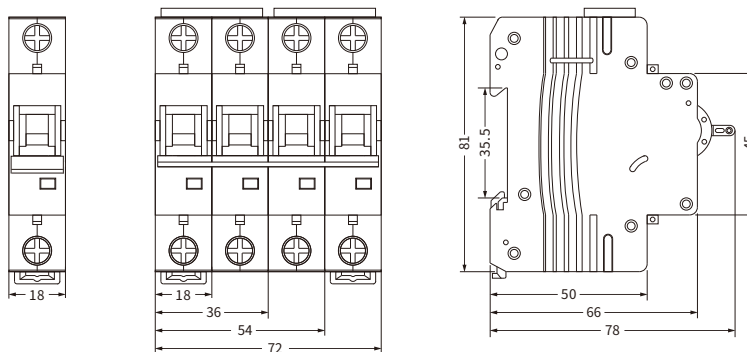
Test	Test current	Initial state	Time limit for tripping or not tripping	Expected result	Remarks
a	1.05In	Cold state a	$t \leq 1h$	Not tripping	
b	1.30In	Right after test number a	$t < 1h$	Tripping	The current is rising within 5s
c	7In	Cold state a	$0.2s < t < 15s$ ( $I_n \leq 32A$ ) $0.2s < t \leq 30s$ ( $I_n > 32A$ )	Tripping	
d	10In	Cold state a		Tripping	

Note: The terminology "Cold state" means that the test is performed at the base calibration temperature with no load prior to the test.

### Circuit Diagram



### Overall and Installation Dimension(mm)



Standard\_ IEC61643-11



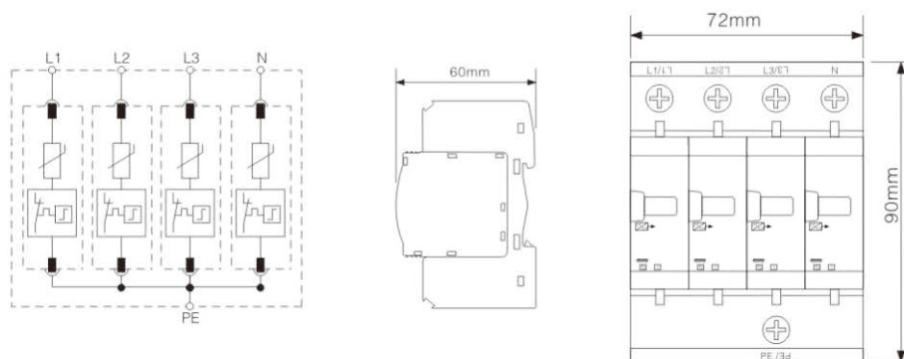
### Functions and application fields

Surge protection device CAU4-10 and CAU4-20 are designed in accordance with the requirements of IEC61643-11 and GB18802. They are suitable for 48-62Hz low-voltage power supply systems. They are voltage-limiting surge protection device. The remarkable characteristics of these products are low output residual voltage and response time fast, especially when the lightning surge passes through the surge protection device, the subsequent current will not appear. When the surge protection device fails due to overheating, overcurrent, or breakdown which caused by lightning strikes, the built-in failure trip device can automatically disconnect it from the power grid. The product has been tested to meet the requirements of IEC61643-11 and GB18802. It is D grade.

CAU4-10 and CAU4-20 are suitable for the lightning protection of sensitive electronic equipment in buildings, can be used as the third-level power line surge protector.

### Installation

CAU4-10 and CAU4-20 can be easily installed on 35mm rail in any distribution box. Using the new integrated base, the module can be 180° positive and negative installed according to the needs of the construction site, which can be met in different occasions.



Standard\_ IEC61643-11

### Warning

The product does not require daily maintenance, but the lightning protection module needs to be checked regularly every year. If you find that the color of the fault indication window changes from green to red, please contact our company, so that we can deal with it in time, relieve your worries and protect your safety.

Characteristic	Advantages of use
Metal oxide varistor	The surge protection device can cope with frequent actions and has a long life
Pluggable components	The surge protection device can be plugged in and out with electricity, which is convenient for testing or replacement
The grounding jumper has been connected inside the base	The grounding mark is clear and the installation is simple
Deterioration window indicator	The working state of the surge protection device is clear
Built-in instantaneous over-current short-circuit device	100% quality control, safety use

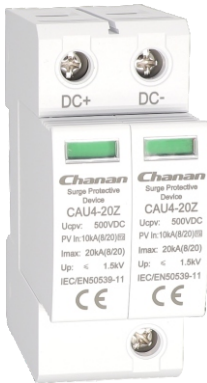
### Technical Parameter

Model		CAU4-20				CAU4-10			
Maximum continuous operating voltage	Uc AC	320V~	385V~	420V~	440V~	320V~	385V~	420V~	440V~
	Uc DC	420V~	505V~	585V~	625V~	420V~	505V~	585V~	625V~
Lightning protection zone	LPZ	2→3				2→3			
Demand level	-According to DIN VDE 0675 Part 6(Draft 11.89)A1,A2	D grade				D grade			
	-According to IEC 61643-1	Type 2				Type 2			
Testing standard		IEC 61643-1				IEC 61643-1			
		GB18802.1				GB18802.1			
Nominal discharge current (8/20 μs)	In	10kA				5kA			
Maximum discharge current (8/20 μs)	Imax	20kA				10kA			
Voltage protection level	Up at In	≤1.3kV	≤1.5kV	≤1.6kV	≤1.8kV	≤1.0kV	≤1.2kV	≤1.5kV	≤1.7kV
Response time	tA	<25ns				<25ns			
Response time		125 A gl/gG				100 A gl/gG			
Cross sectional area of connecting line		2.5-35mm <sup>2</sup> (Single strand, multiple strands)							
		2.5-25mm <sup>2</sup> (Multi-stranded cord, connecting end plus sheath)							
Installation		Install on 35mm rail(conform to EN50022)							
Protection level		IP 20							
Operating temperature range	°C	-40°C to +80°C							

### NPE Modular

Model		N-PE
Nominal voltage	Un	230 V/49-62Hz
Insulation resistance at 100V	Rins	>10GΩ
Impulse current test (10/350 μs) - lightning parameters according to IEC 62305-1		
Peak current	limp	12.5kA
Quantity of electric charge	Q	6As
Unit energy	W/R	120 kJ/Ω
Maximum discharge current (8/20 μs)	Imax	40 kA
Voltage protection level	Up	< 1.2kA
Response time	tA	< 100ns
Subsequent current at Uc	If	100 Arms
Temperature range	°C	-40°C to +80°C

Standard\_ IEC50539-11

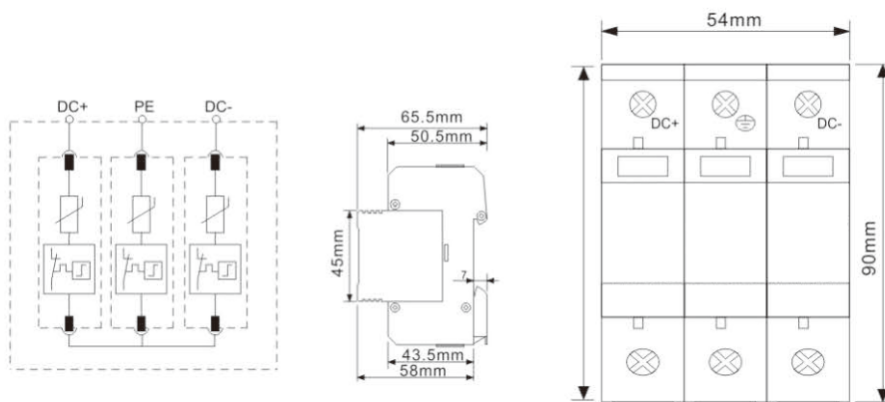


### Functions and application fields

The DC surge protection device CAU4-40Z is suitable for solar photovoltaic system. It is a voltage limiting surge protection device which is used to prevent lightning overvoltage and transient overvoltage from damaging the DC power supply system of photovoltaic power generation. It is a special-purpose surge protection device for solar energy to protect the overvoltage of DC power supply system. It has common mode protection of positive and negative to ground and differential mode protection of positive to negative, it can ensure the most suitable lightning protection for DC module inverter, and can also be equipped with remote signal alarm function according to the needs (remote signal status: normal: 1, 3 NC, fault: 1, 3 NO). The remarkable characteristics of the DC surge protection device is low output residual voltage and fast response time, especially when the lightning surge passes through the surge protection device, the subsequent current will not appear. When the surge protection device fails due to overheating, overcurrent, or breakdown which caused by lightning strikes, the built-in failure trip device can automatically disconnect it from the power grid. It is C grade.

### Installation

CAU4-40Z can be easily installed on 35mm rail in any distribution box.



Standard\_ IEC50539-11

### Warning

The product does not require daily maintenance, but the lightning protection module needs to be checked regularly every year. If you find that the color of the fault indication window changes from green to red, please contact our company, so that we can deal with it in time, relieve your worries and protect your safety.

Characteristic	Advantages of use
Metal oxide varistor	The surge protection device can cope with frequent actions and has a long life
Pluggable components	The surge protection device can be plugged in and out with electricity, which is convenient for testing or replacement
Deterioration window indicator	The working state of the surge protection device is clear
Built-in instantaneous over-current short-circuit device	100% quality control, safety use
Exquisite craftsmanship	It can work in acid, alkali, dust, salt spray and humid environment for a long time

### Technical Parameter

Model	CAU4-40Z									
Maximum continuous operating voltage	Un DC	12V~	24V~	48V~	100V~	500V~	800V~	1000V~	1500V~	
Lightning protection zone	LPZ	1→2								
Demand level	-According to DIN VDE 0675 Part 6(Draft 11.89)A1,A2	C grade								
	-According to IEC 61643-1	Type 2								
Testing standard		IEC 61643-1								
		GB18802.1								
Nominal discharge current (8/20 μs)	In	20kA								
Maximum discharge current (8/20 μs)	I <sub>max</sub>	40kA								
Voltage protection level	Up at In	≤150V	≤200V	≤460V	≤800V	≤2.0kV	≤2.8kV	≤3.0kV	≤3.5kV	
Response time	tA	<25ns								
Response time		125 A gI/gG								
Cross sectional area of connecting line		2.5-35mm <sup>2</sup> (Single strand, multiple strands)								
		2.5-25mm <sup>2</sup> (Multi-stranded cord, connecting end plus sheath)								
Installation		Install on 35mm rail(conform to EN50022)								
Protection level		IP 20								
Operating temperature range	°C	-40°C to +80°C								



Standard\_ IEC62208



## Description

The Distribution Box is used for Terminal power distributing system

The Distribution Box are completed with Din-rail 35mm and Neutral Terminal (Selectable)

Electrical Rating	100A/single phase,63A/three phase,240/415V AC 50/60Hz
Protection Degree	IP65
Material	Shell: ABS
	Door: Transparent PC
Method of Installation	Surface-Mounted

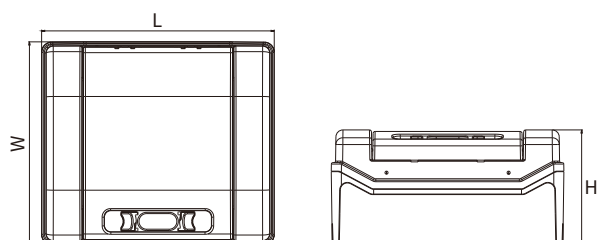
## Type of open door from right to left Without Neutral Terminal Model

Model No.		Ways	Dimension(mm)			Qty/CTN
PC	Code		L	W	H	Pcs
CADB4P4R	604241	4	231	166	113	30
CADB4P6R	604242	6	231	202	113	20
CADB4P8R	604243	8	231	238	118	20
CADB4P9R	604244	9	219	200	102	20
CADB4P12R	604245	12	246	310	148	20
CADB4P18R	604246	18	286	418	148	20
CADB4P24R	604247	24	436	310	148	10

## With Neutral Terminal Model






Model No.		Ways	Dimension(mm)			Qty/CTN
PC	Code		L	W	H	Pcs
CADB4P4RT	604211	4	231	166	113	30
CADB4P6RT	604212	6	231	202	113	20
CADB4P8RT	604213	8	231	238	118	20
CADB4P9RT	604214	9	219	200	102	20
CADB4P12RT	604215	12	246	310	148	20
CADB4P18RT	604216	18	286	418	148	20
CADB4P24RT	604217	24	436	310	148	10

## Overall and Installation Dimension(mm)



Standard\_ IEC60269-6

### Technical Data

Model					
	CAF1-10PV-10	CAF1-10PVH-10	CAF1-10PV-14	CAF1-15PV-10L	CAF1-15PV-14L
Rated Voltage	1000VDC		1000VDC	1500VDC	1500VDC
Rated Current	32A		32A	25A	50A
Size of Fuse Link	10x38mm		14x51mm	10x85mm	14x85mm
Class of Operation	gPV		gPV	gPV	gPV
Mechanical Life	500		500	500	500
Product Width	18mm		27mm	22mm	22mm
Tightening Torque	2.5Nm 14In-lbs	2.5Nm 14In-lbs	2.5Nm 14In-lbs	2.5Nm 14In-lbs	2.5Nm 14In-lbs
Terminal size for Cable	6mm <sup>2</sup> 18-5AWG	6mm <sup>2</sup> 18-5AWG	10mm <sup>2</sup> 18-5AWG	10mm <sup>2</sup> 18-5AWG	10mm <sup>2</sup> 18-5AWG
Ambient temperature (with daily average ≤ 35°C)	-5°C~+40°C				
Storage Temperature	-25°C~+70°C				
Standard:	IEC60269-6				
Mounting	On DIN rail EN60715(35mm) by means of fast clip device				





### Product Selection Guide

CAF1-10PV-10	
CA	Company Code
F	Fuse Base
1	Design No.
10	DC Voltage Grade (10: 1000VDC, 15: 1500VDC)
X	Blank: Without Lamp, X : With Lamp
PV	For Solar DC system, PV: General type, PVH: High encloser type (for CAF1-10PVH-10 new type only)
10	Fitting to Size of Fuse link (10: for 10x38mm 1000V, 14: for 14x51mm 1000V, 10L: for 10x85mm 1500V, 14L: for 14x85mm 1500V)

Reference No.	DC Voltage Grade	Size of Fuse Link	Current Rating for Fuse Link
CAF1-10PV-10	1000VDC	10x38mm	1,2,3,4,5,6,8,10,12,15,16,20,25,30,32A
CAF1-10PVH-10	1000VDC	10x38mm	1,2,3,4,5,6,8,10,12,15,16,20,25,30,32A
CAF1-10PV-14	1000VDC	14x51mm	8,10,12,15,16,20,25,30,32A
CAF1-15PV-10L	1500VDC	10x85mm	2,3,4,5,6,8,10,12,15,16,20,25A
CAF1-15PV-14L	1500VDC	14x85mm	8,10,12,15,16,20,25,30,32,35,40,45,50A

Standard\_ IEC60269

### Technical Data

Model				
	CAFL10D10	CAFL10D14	CAFL15D10L	CAFL15D14L
Size	10x38mm	14x51mm	10x85mm	14x85mm
Rated Voltage	1000VDC	1000VDC	1500VDC	1500VDC
Rated Current	1-32A	8-32A	2-25A	8-50A
Class of Operation	gPV	gPV	gPV	gPV
Breaking capacity	20KA	20KA	20KA	20KA
Standard:	IEC60269			

### Product Selection Guide

#### CAFL-10D10L16

CA Company Code

FL Fuse Link

10 DC Voltage Grade (10:1000VDC,15:1500VDC)

D For Solar DC system

10L Size of Fuse link (10: 10x38mm 1000V, 14: 14x51mm 1000V, 10L: 10x85mm 1500V, 14L: 14x85mm 1500V)

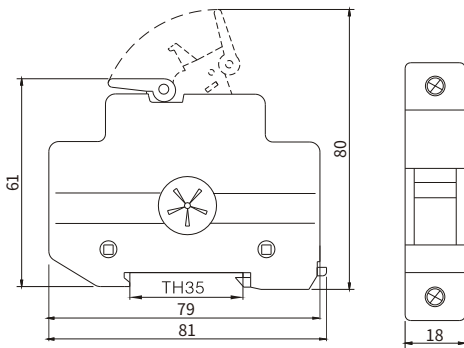
16 Current Rating (01,02...40,50A)

Current Rating	Reference No. for Fuse Link			
	Voltage Grade and Size of Fuse Link			
	CAFL10D10 1000VDC 10x38mm	CAFL10D14 1000VDC 14x51mm	CAFL15D10L 1500VDC 10x85mm	CAFL15D14L 1500VDC 14x85mm
1A	CAFL10D1001			
2A	CAFL10D1002		CAFL15D10L02	
3A	CAFL10D1003		CAFL15D10L03	
4A	CAFL10D1004		CAFL15D10L04	
5A	CAFL10D1005		CAFL15D10L05	
6A	CAFL10D1006		CAFL15D10L06	
8A	CAFL10D1008	CAFL10D1408	CAFL15D10L08	CAFL15D14L08
10A	CAFL10D1010	CAFL10D1410	CAFL15D10L10	CAFL15D14L10
12A	CAFL10D1012	CAFL10D1412	CAFL15D10L12	CAFL15D14L12
15A	CAFL10D1015	CAFL10D1415	CAFL15D10L15	CAFL15D14L15
16A	CAFL10D1016	CAFL10D1416	CAFL15D10L16	CAFL15D14L16
20A	CAFL10D1020	CAFL10D1420	CAFL15D10L20	CAFL15D14L20
25A	CAFL10D1025	CAFL10D1425	CAFL15D10L25	CAFL15D14L25
30A	CAFL10D1030	CAFL10D1430		CAFL15D14L30
32A	CAFL10D1032	CAFL10D1432		CAFL15D14L32
35A				CAFL15D14L35
40A				CAFL15D14L40
45A				CAFL15D14L45
50A				CAFL15D14L50

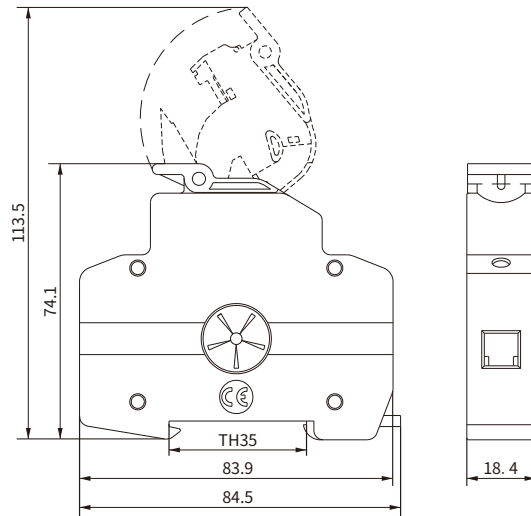
Standard\_ IEC60269-6

## Overall and Installation Dimension(mm)

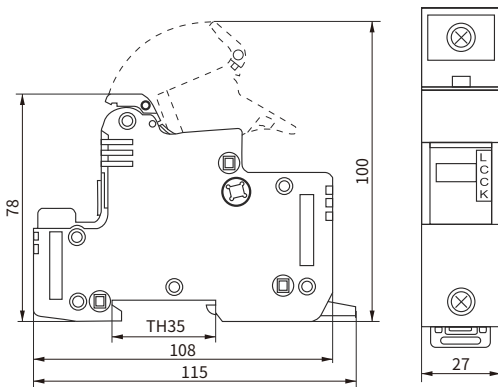
CAF1-10(X)PV-10



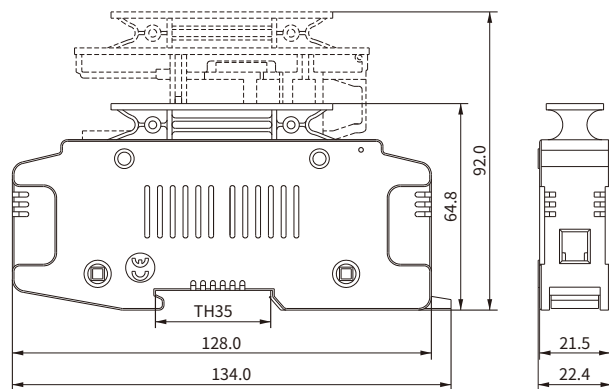
CAF1-10(X)PVH-10



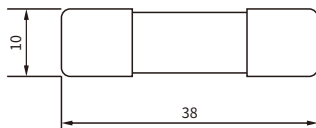
CAF1-10(X)PV-14



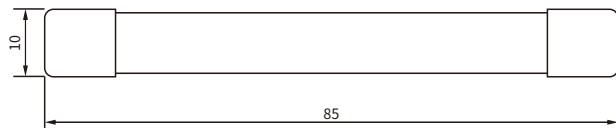
CAF1-15(X)PV-10L/CAF1-15(X)PV-14L



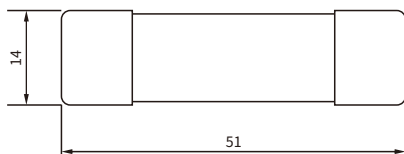
CAFL10D10



CAFL15D10L



CAFL10D14



CAFL15D14L

