

CP30F circuit protectors

■ Description

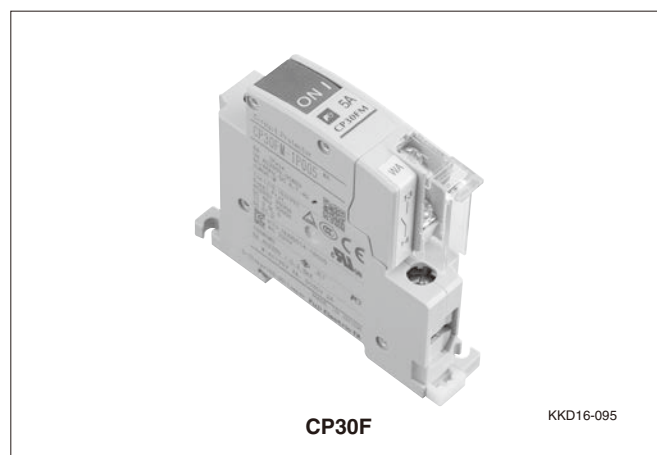
Full Model Change for CP-F Series model circuit protector in conformity with Japanese and major overseas standards.
No terminal cover required - Finger protection (IP20 equivalent) design.

■ Features

- Ultra-slim 17.5 mm per pole width
- Multi standard
UL1077
CSA C22.2 No.235
EN60934/IEC60934
GB17701
KC60934
- AC/DC compatible (1P and 2P)
- Screw lift-up terminals offer finger protection (IP20 equivalent) structure without terminal cover
- Revised terminal arrangement of auxiliary circuit improves ease of wiring
- Auxiliary/alarm switch (1NO or 1NC) can be integrated (1P: 1 switch, 2P, 3P: 2 switches), standard types provided with terminal cover for auxiliary circuit

■ Specifications

Type		CP30F□-1P	CP30F□-2P	CP30F□-3P
No. of poles		1	2	3
Rated insulation voltage (V)		250 V AC (50/60 Hz) 65 V DC compatible	250 V AC (50/60 Hz) 125 V DC compatible	250 V AC (50/60 Hz) AC only
Rated current (A)		0.1, 0.3, 0.5, 1, 2, 3, 5, 7, 10, 15, 20, 25, 30		
Rated breaking capacity	250 V AC	2,500 A	2,500 A	2,500 A
	125 V DC	—	2,500 A	—
	65 V DC	2,500 A	—	—
Operating characteristic (AC/DC compatible)		Long time delay (S), medium time delay (M) and instantaneous (I) types		
Tripping mechanism		Hydraulic magnetic type		
Reference temperature		+40°C		
Operational ambient temperature		-10 to +60°C (storage: -40 to +60°C)		
Make/break durability		10,000 operations min. (rated current supplied)		
Terminal	Main circuit	M5 screw (over 20 A)/M4 screw (up to 20 A): screw lift-up		
	Auxiliary circuit	M3.5 screw: self-lifting		
Mounting method	Front mounting type	M4 screw/IEC35 mm rail compatible		
Accessories (optional)	Auxiliary switch	Can be integrated: 1NO or 1NC contact (low-level circuit type acceptable)		
	Alarm switch	Can be integrated: 1NO or 1NC contact (low-level circuit type acceptable)		
	Delay device	Can be integrated: (long time delay and medium time delay) AC only		
Dimensions (W x L x H)		17.5 x 73 x 66.3	35 x 73 x 66.3	52.5 x 73 x 66.3
Standard conformity and certification		     		



Circuit Protectors

CP30F

■ Type number nomenclature

		CP	30	F	M	-	1P	005	WA	D		
Basic type											Delay device	
Code	Product classification										Code	Description
CP	Circuit protector										Blank	Without delay device
Frame											D	With delay device
Code	Description										Accessories	
30	30AF										Description	Contact arrangement
Breaking capacity classification												Auxiliary switch
Code	Breaking capacity										Without auxiliary or alarm switch	-
F	2.5 kA										Standard load	Auxiliary switch x1
Operating characteristic												
Code	Description											Alarm switch x1
S	Long time delay											
M	Medium time delay											Auxiliary switch x2
I	Instantaneous											
No. of poles												
Code	Description											Auxiliary switch x1
1P	1-pole											Alarm switch x1
2P	2-pole											
3P	3-pole											
Rated current												Low level circuit
Example: 0.1A: 0P1 5A: 005 10A: 010												
												Alarm switch x1
												Auxiliary switch x2
												Auxiliary switch x1
												Alarm switch x1

Description		Contact arrangement		Code
		Auxiliary switch	Alarm switch	
Without auxiliary or alarm switch		-	-	
Standard load	Auxiliary switch x1	1NO	-	WA
		1NC	-	WB
	Alarm switch x1	-	1NO	KA
		-	1NC	KB
Low level circuit	Auxiliary switch x2	2NO	-	VAVA
		2NC	-	VBVB
		1NO1NC	-	VAVB
	Auxiliary switch x1 Alarm switch x1	1NO	1NO	WAKA
		1NO	1NC	WAKB
		1NC	1NO	WBKA
		1NC	1NC	WBKB
	Auxiliary switch x1	1NO	-	W1A
		1NC	-	W1B
	Alarm switch x1	-	1NO	K1A
		-	1NC	K1B
	Auxiliary switch x2	2NO	-	V1AV1A
		2NC	-	V1BV1B
		1NO1NC	-	V1AV1B
	Auxiliary switch x1 Alarm switch x1	1NO	1NO	W1AK1A
		1NO	1NC	W1AK1B
		1NC	1NO	W1BK1A
		1NC	1NC	W1BK1B

■ Combination

		Series	Operating characteristic		No. of poles	Rated current	Accessory										Delay device	Applied circuit
					1P 2P 3P		※1 W K W1 K1 WW W1W1 WK W1K1										*2 D	AC/DC compatible
	C P 3				○ ○ ○												○ ○	○
No. of poles	1		○ ○ ○		— —	○	○ ○ ○ ○ ○ ○	x	x	x	x						○ ○	○
	2		○ ○ ○		—	○	○ ○ ○ ○ ○ ○										○ ○	○
	3		○ ○ ○			○	○ ○ ○ ○ ○ ○										○ ○	AC only
Series	F																	
Operating characteristic	S		— —			○	○ ○ ○ ○ ○ ○ ○ ○										○ ○ *3	○
	M		—			○	○ ○ ○ ○ ○ ○ ○ ○										○ △ *3	○
	I					○	○ ○ ○ ○ ○ ○ ○ ○										○ x	○

*1 : Not designated (no auxiliary or alarm switch)

*2 : Not designated (no delay device)

*3 : Only AC dedicated products are equipped with a delay device.

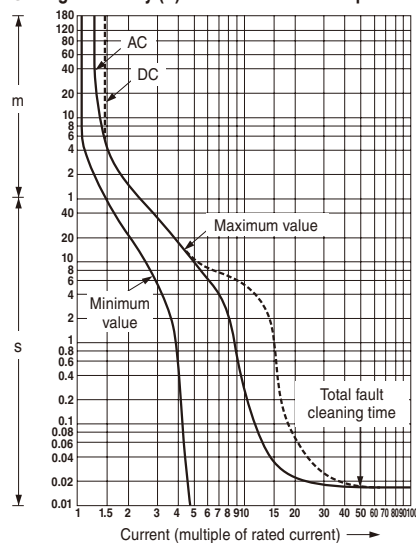
○ : Standard (manufacturable)

△ : Non-standard (Manufacturable only when specified at time of order.)

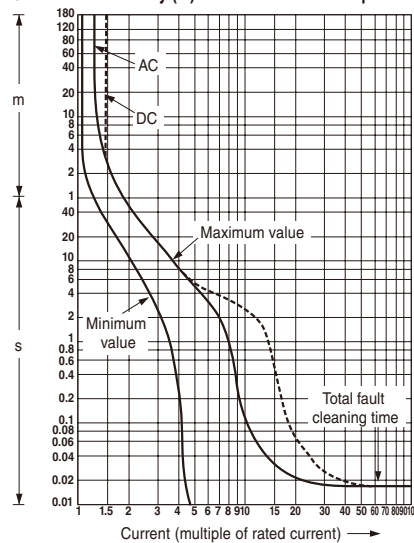
x : Not manufacturable

■ Operating characteristic curves

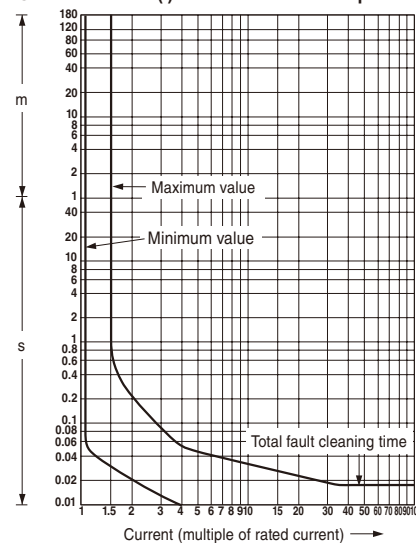
● Long time delay (S) AC 50/60 Hz / DC compatible



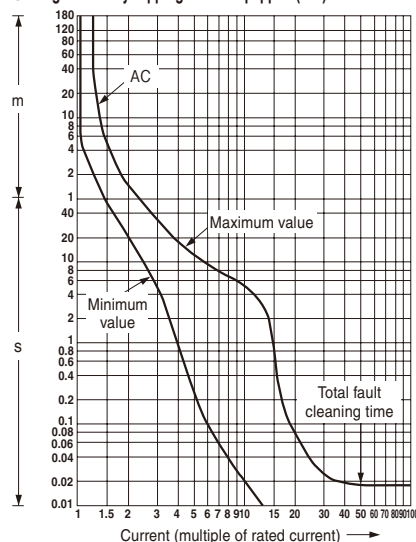
● Medium time delay (M) AC 50/60 Hz / DC compatible



● Instantaneous (I) AC 50/60 Hz / DC compatible

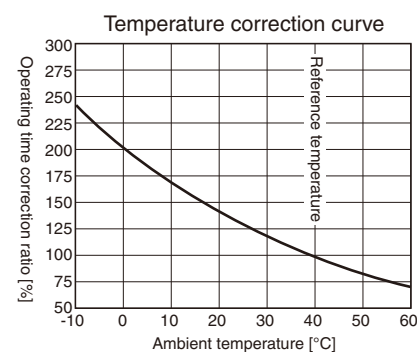


● Long-time delay tripping device equipped (S/D) AC dedicated



● Ambient temperature correction curve

The standard ambient temperature of the operating time shall be 40°C. The operating time at other temperatures is the value corrected based on the ambient temperature correction curve. The operating time of the instantaneous type is not influenced by the ambient temperature. The instantaneous type generates a gentle moaning sound at a rated current of around 80% or higher, but this has no impact on performance.



■ Inter-terminal resistance and power consumption

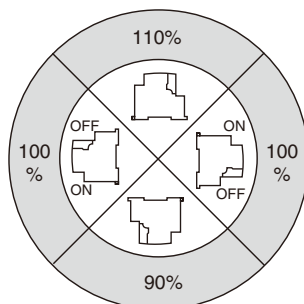
at 25°C

Rated current (A)	(mΩ)	Power consumption (W)/phase
0.1	117606.3	1.2
0.3	12335.6	1.1
0.5	4001.0	1.0
1	1081.2	1.1
2	252.9	1.0
3	111.7	1.0
5	45.2	1.1
7	23.7	1.2
10	14.3	1.4
15	6.8	1.5
20	4.8	1.9
25	3.5	2.2
30	2.8	2.5

Resistance tolerance 0.1A to 1A : ±10%
2 to 7A : ±30%
10 to 30A : ±50%

■ Mounting posture

The operating current will differ depending on the mounting angle. Use it after correcting the rated current in accordance with the criteria in the below table.

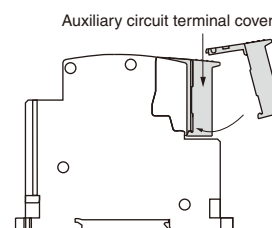


(Note) 100% when mounting as described below.

ON OFF
OFF ON

■ Auxiliary circuit terminal cover mounting method

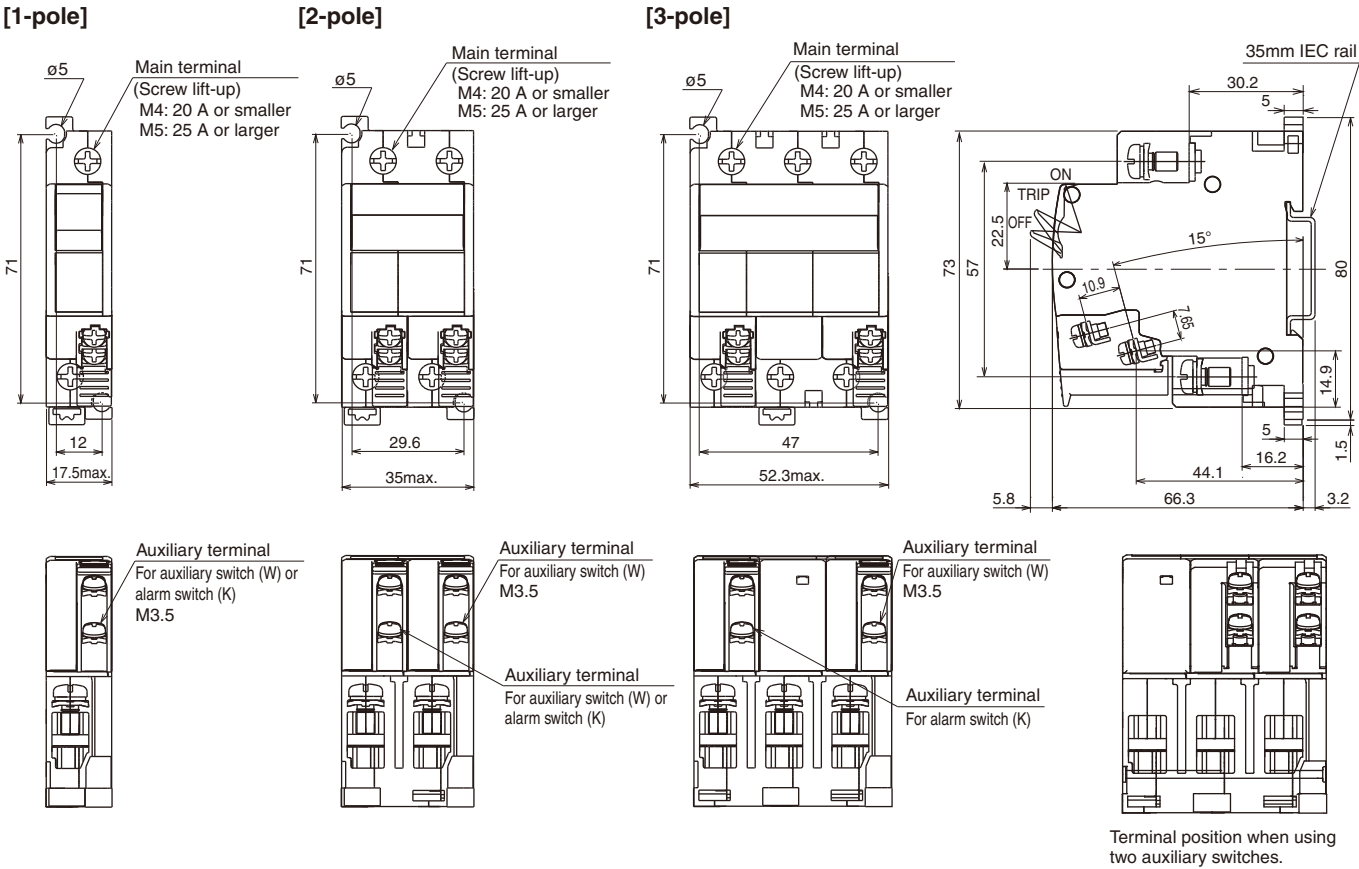
Mount it by following the procedures in the below figure.



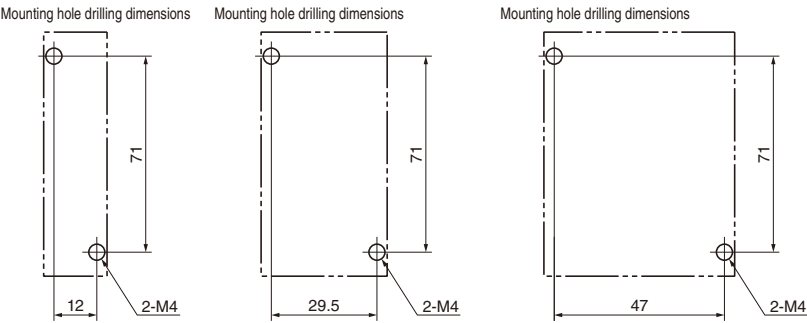
Circuit Protectors
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■ Dimensions, mm

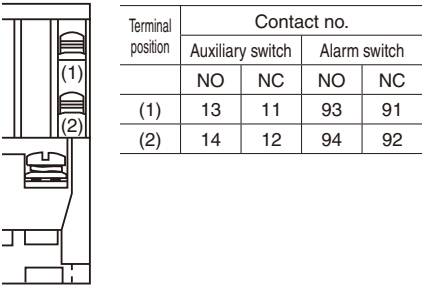
B2



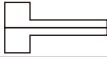
Hole drilling dimensions

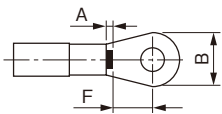


Auxiliary terminal position and contact no.



■ Connectable wires and applicable crimp terminals

		Terminal screw	Connectable wire sizes	Applicable ring tongue terminal		B dimensions	F dimensions	Tightening torque (N•m)
				Size	Amount			
Main terminal	20A or less	Square washer equipped self-lifting screw (M4)	0.25 to 6.64mm ²	R1.25-4 to R5.5-4	1		9.7mm or less 6.3mm or more (Note 3)	1.2 to 1.5
					2			
	25A or more	Square washer equipped self-lifting screw (M5)	1.25 to 6.64mm ²	R1.25-5 to R5.5-5	1			2.0 to 2.5
					2			
Auxiliary terminal	W, W1 K, K1	Square washer equipped self-lifting screw (M3.5)	0.5 to 2mm ²	R1.25-3.5 to R2-3.5	1		6.6mm or less 4.7mm or more (Note 3)	0.8 to 1.0
					2			

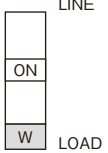
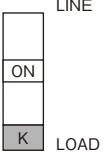
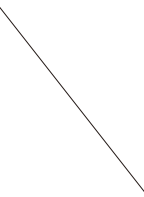
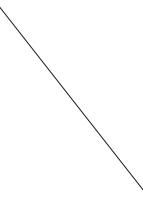
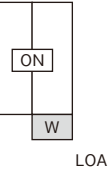
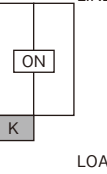
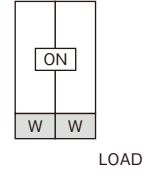
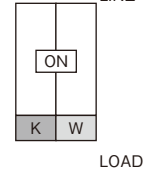
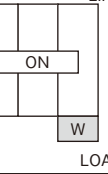
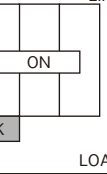
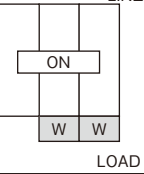
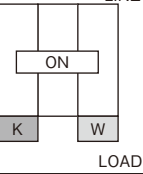


(Note 1) Connect it using a crimp terminal. Contact us if you need to tighten the wires directly.

(Note 2) In the case of a single connection, connect it so that the caulking portion of the wire is in the upper position (handle side) as shown in the above figure.

(Note 3) Includes wire caulking protrusion amount A.

■ Auxiliary and alarm switch mounting specification

	Standard		Nonstandard		Remarks
	W (W1)	K (K1)	WW (W1W1)	WK (W1K1)	
1P					Symbols in parentheses are for low level circuits.
2P					
3P					The mounting position of the auxiliary/alarm switch is as shown in the figure on the left.

Circuit Protectors

CP30F

■ Accessories

● Auxiliary switch (W)

The auxiliary switch operates in conjunction with the switching of the circuit protector and is used for purposes such as electrical indication of the ON-OFF state of the circuit protector.

● Alarm switch (K)

The alarm switch operates only when the circuit protector is automatically interrupted and electrically indicates the automatic breaking.

* For low level circuits, auxiliary and alarm switches with high contact reliability can be produced. (W1, K1)

● Auxiliary and alarm switch ratings [W, K]

	125 V AC	250 V AC	30 V DC	60 V DC
Resistive load	3 A	1 A	2 A	1A
Inductive load	1 A	0.5 A	1 A	0.5 A
Minimum load	5 V, 100mA (approx. 0.5 W)			

(Note1) Inductive load: power factor 0.7 or higher, time constant 7 ms or smaller

● Auxiliary and alarm switch ratings [W1, K1]

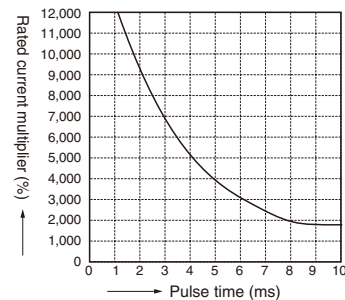
	30 V DC
Resistive load	0.1 A
Minimum load	6 V, 5 mA (approx. 0.03 W)

(Note3) The auxiliary and alarm switches operate in conjunction with the main contact of the circuit protector as shown in the table below.

Main contact operation	ON	OFF	Trip (automatic interruption)
Auxiliary switch	NO contact 13 ——— 14	13 ——— 14	
	NC contact 11 ——— 12	11 ——— 12	
Alarm switch	NO contact 93 ——— 94	93 ——— 94	
	NC contact 91 ——— 92	91 ——— 92	

■ Delay device

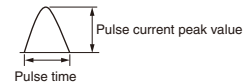
An extremely large inrush current will be temporarily generated when turning ON the switch of transformer and lamp loads. A delay device is a device that does not malfunction when an inrush current is generated, but rather, correctly cuts off subsequent overcurrent loads within the specified operating characteristics. The circuit protector will not operate even when a pulse is generated with a pulse-width of 8 ms at a current of about 20 times that of the rated current (peak value). This only applies to AC.



Note1. Rated current multiplier (%)

$$\frac{\text{Pulse current peak value}}{\text{Circuit protector rated current value}}$$

Note2. Pulse current waveform
 Sine wave pulse or parabolic pulse (non-repeating pulse)



■ Compliance standard

Country	International organization	Europe	Certification authority	U.S.	Canada	China	South Korea	Japan	
Standard	IEC	CE mark	TÜV (Germany)	UL	CSA	GB	KC	JIS	Electrical Appliances and Materials Safety Act

Circuit Protectors CP31, CP31D, CP32D

B

CP31, CP31D, CP32D circuit protectors

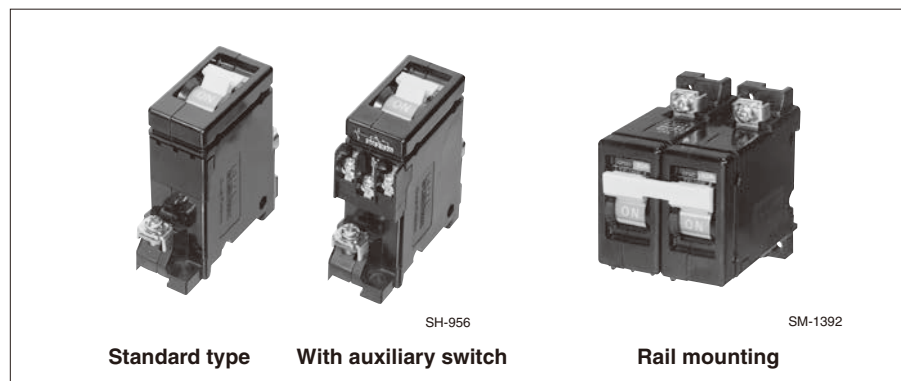
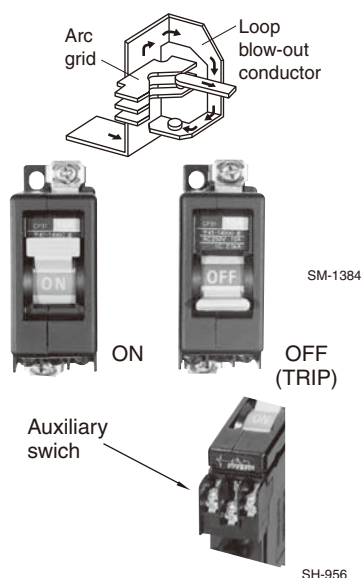
250V AC 0.3A to 30A
50V DC 0.3A to 30A

■ Description

The CP31 and CP32 have a similar functions to a molded case circuit breaker and they can be used for normal switching ON and OFF operations while breaking both overload and short-circuit currents. They are available in two time-current versions—an instantaneous and a time-delay version. A suitable type should be selected to match the thermal and permissible current requirements. These are recommended for sequential control circuits, motor control circuits, solenoid-operated valves, heaters and solid-state applications.

■ Features

- Excellent arc interruption
Since the arc extinguisher uses a loop blow-out system the arc is rapidly extinguished.
- Highly visible handle indication ON shows red and OFF or TRIP blue.
- When positioned at ON the operating handle is completely housed inside the molded case and does not protrude.
This helps to prevent erroneous operation.
- Trip-free mechanism
- Also available with auxiliary switch SPDT.
- Two time-current versions—
instantaneous operation and a time delay type. Select the model best suited to your protection needs.
- CP31D and CP32D types are of front and rail dual mounting.



■ Time-delay tripping type

Rated current (A)	CP31 (1-pole) Front mounting Type	Rail mounting Type	CP31D (1-pole) Type	CP32D (2-pole) Type
0.3	CP31/0.3	CP31/0.3X	CP31D/0.3	CP32D/0.3
0.5	CP31/0.5	CP31/0.5X	CP31D/0.5	CP32D/0.5
1	CP31/1	CP31/1X	CP31D/1	CP32D/1
2	CP31/2	CP31/2X	CP31D/2	CP32D/2
3	CP31/3	CP31/3X	CP31D/3	CP32D/3
5	CP31/5	CP31/5X	CP31D/5	CP32D/5
7	CP31/7	CP31/7X	CP31D/7	CP32D/7
10	CP31/10	CP31/10X	CP31D/10	CP32D/10
15	CP31/15	CP31/15X	CP31D/15	CP32D/15
20	CP31/20	CP31/20X	CP31D/20	CP32D/20
25	CP31/25	CP31/25X	CP31D/25	CP32D/25
30	CP31/30	CP31/30X	CP31D/30	CP32D/30

■ Typical applications

These CP31 and CP32 protectors are used for normal on-off switching of the power supply while also providing overload protection of the load circuits.

Time-delay tripping type

- Control circuits
- Solenoid valves and motor circuits
- Heater circuits

Instantaneous tripping type

- Semiconductor circuits
- SCR (Silicon controlled rectifier) and triac circuits
- Computer peripheral equipment

■ Type number nomenclature

CP 3 1 □ □ / □ X W DC	
Basic type	Applied circuit
Frame size	Blank: AC 3: 30A DC: DC
Number of poles	Optional accessory
1: 1-pole 2: 2-pole (CP32D)	Blank: Without auxiliary switch W: With auxiliary switch
Rated breaking capacity	Mounting and connection (CP31 only) *
Blank: 2.5kA at 250V AC 1.5kA at 50V DC D: 1kA at 250V AC 1kA at 50V DC	Blank: Front mounting front connection X: Rail mounting
Operating characteristics	Rated current
Blank: Time-delay tripping I: Instantaneous tripping S: Long time-delay tripping (AC circuit only)	0.3: 0.3A 0.5: 0.5A 1: 1A 2: 2A 3: 3A 5: 5A 7: 7A 10: 10A 15: 15A 20: 20A 25: 25A 30: 30A

* One and the same CP31D and CP32D can be used for both front mounting and rail mounting.

Circuit Protectors CP31, CP31D, CP32D

■ Operation

The operation of the magnetic overload release of the CP31, CP31D and CP32D circuit protectors are as shown in the sectional diagram Fig. 1. The magnetic tripping element of the circuit protector is simple—a solenoid coil wound around a hermetically-sealed non-magnetic cylinder containing a spring-loaded movable iron core and a silicon fluid.

When currents less than the rated value flow no movement occurs in either the armature or iron core. However, when a sustained overcurrent occurs the magnetic field is increased. This causes the iron core to move along the cylinder. Once the core reaches the opposite end of the cylinder the armature is attracted which causes the protector to trip as shown in Fig. 2 and 3. When a short circuit occurs the magnetic flux produced in the coil alone is strong enough to attract the armature regardless of core position. This causes circuit to be interrupted instantaneously. (Fig. 4)

Fig. 1 Normal load

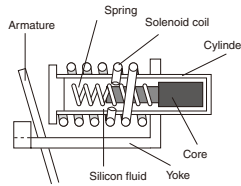


Fig. 2 Overcurrent

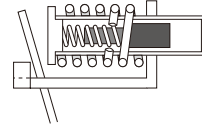


Fig. 3 Overcurrent trip

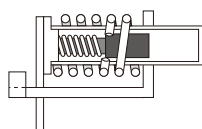
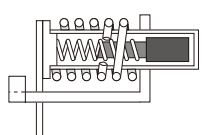
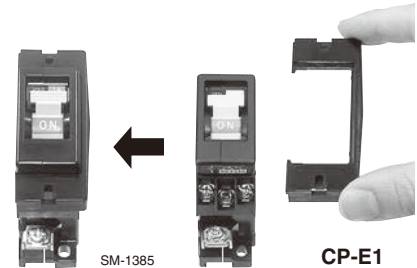


Fig. 4 Short-circuit current trip



■ **Adaptor for flush mounting/CP-E1**
These circuit protectors can be modified for flush mounting use by a snap-fitting adaptor CP-E1.



Flush mounting

Front mounting

■ **Snap-on mounting terminal covers**

For main terminal: CP-T1

For auxiliary terminal: CP-T2

■ Specifications

Description	CP31	CP31D	CP32D
Pole	1-pole	1-pole	2-pole
Frame size	30 Amps.	30 Amps.	
Rated insulation voltage (Ui)	250V AC, 50V DC	250V AC, 50V DC	
Rated operational voltage (Ue)	250V AC, 50V DC	250V AC, 50V DC	
Rated current	0.3, 0.5, 1, 2, 3, 5, 7, 10, 15, 20, 25, 30A	0.3, 0.5, 1, 2, 3, 5, 7, 10, 15, 20, 25, 30A	
Rated breaking capacity	2500A at 250V AC 1500A at 50V DC	1000A at 250V AC 1000A at 50V DC	
Operating characteristic	Time-delay tripping Instantaneous tripping Long time delay tripping	Time-delay tripping Instantaneous tripping Long time delay tripping	
Ambient temperature	−10°C to +60°C	−10°C to +60°C	
Dielectric strength	2000V AC 1min.	2000V AC 1min.	
Mechanical durability	10000 operations	6000 operations	
Electrical durability	10000 operations	6000 operations	
Mass	Approx. 100g	Approx. 100g (1-pole), 200g (2-pole)	

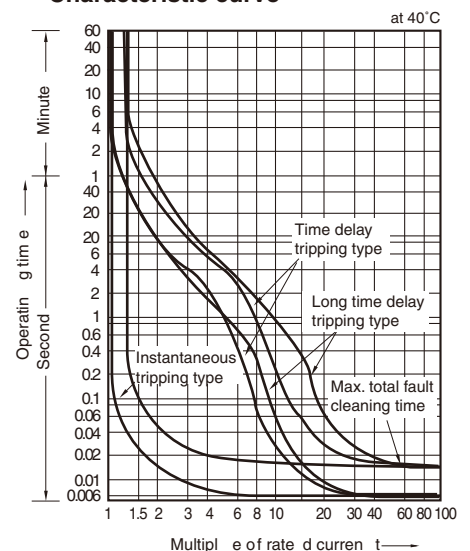
Note: Specify DC only when ordering circuit protectors for DC circuits.

■ Auxiliary switch

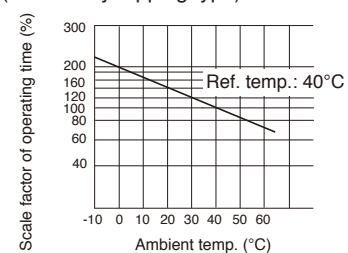
Main contact	Auxiliary contact
ON 	
OFF or Trip 	

Auxiliary contact ratings	
250V AC	Resistive load: 1A Inductive load: 0.5A
125V AC	Resistive load: 3A Inductive load: 1A
50V DC	Resistive load: 1A Inductive load: 0.5A
30V DC	Resistive load: 2A Inductive load: 1A

■ Characteristic curve



Ambient temperature compensation (Time delay tripping type)



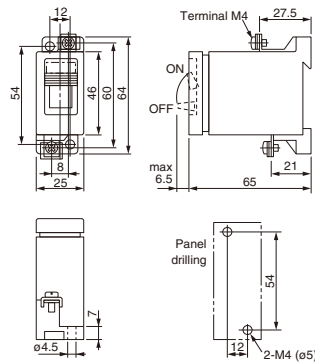
Circuit Protectors CP31, CP31D, CP32D

B

■ Dimensions, mm

• CP31

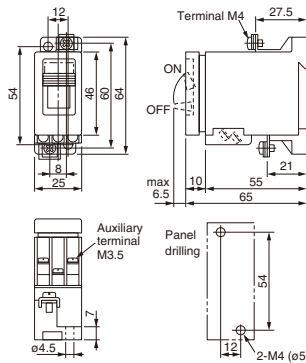
Front mounting type



Mass: Approx. 100g

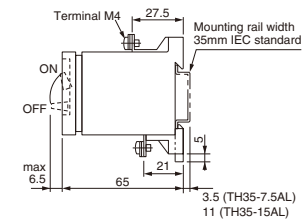
• CP31/W

With auxiliary switch



• CP31/X

Rail mounting type



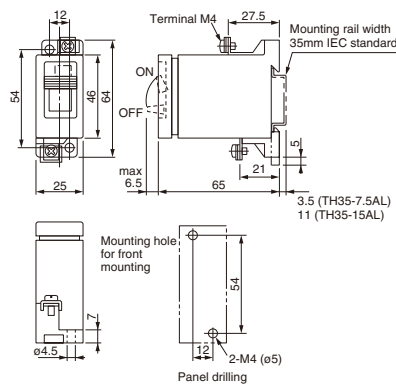
Mounting rail length: 900mm

Type	Material	Mounting pitch (Screw size)
TH35-7.5AL	Aluminium	200mm (M5)
TH35-15AL	Aluminium	400mm (M5)

Clamp TS-XT

• CP31D

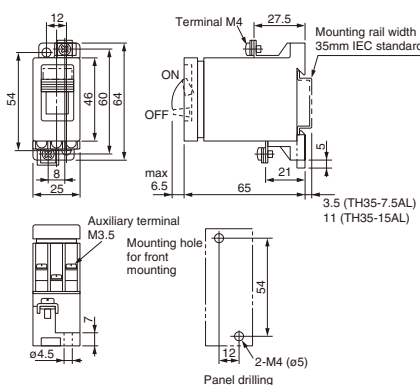
Front mounting/Rail mounting type



Mass: Approx. 100g

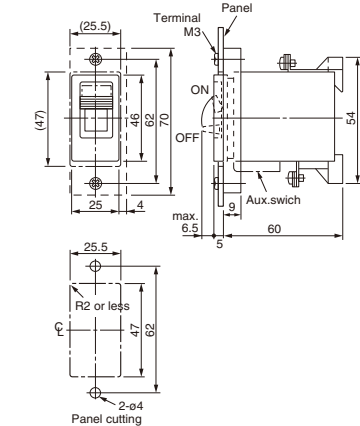
• CP31D/W

With auxiliary switch



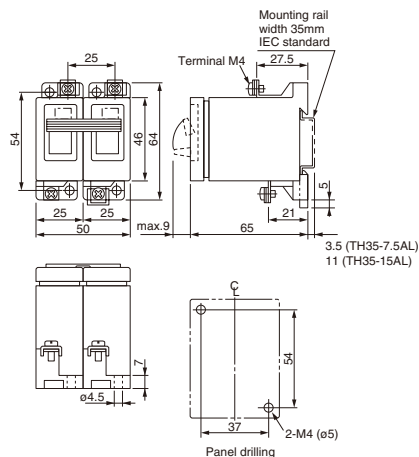
• CP31, CP31D

Flush mounting type



• CP32D

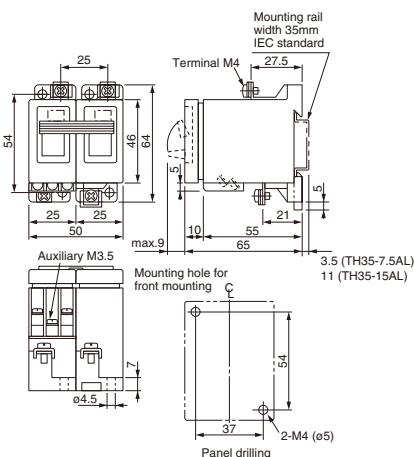
Front mounting/Rail mounting type



Mass: Approx. 200g

• CP32D/W

With auxiliary switch



Size of conductors

Type of terminal	Main terminal	Auxiliary terminal
Terminal screw*	M4	M3.5
Connectable wire sizes	1.25–5.5mm ²	1.25–2mm ²
Max. width of applicable crimp terminal	9.8mm (R1.25–4 to R5.5–4)	6.8mm (R2–3.5)
Tightening torque	1.0–1.3N·m	0.8–0.9N·m

Note: * Terminal screws are the self-lifting to facilitate wiring.

■ Ordering information

Specify the following:

1. Type number

Circuit Protectors

CP31P, 32P, 33P

CP-P circuit protectors

250V AC 0.3A to 25A

65V DC 0.3A to 25A

■ Description

CP-P circuit protectors are ideal for electronic circuit protection. The space required per pole is approximately 30% less than that for CP-E models allowing significant space savings. Application at any one of 12 rated currents in the range 0.3A to 25A is possible. CP-P circuit protectors have been approved by  and TÜV Standards.

■ Features

- The mounting space is approximately 30% less than that required with CP-E models, and the width per pole has been reduced by approximately 15%.
- Conforms to IEC Standards. (Conforms to CE markings.)
-  and TÜV approved.
- Operated with an easy-to-use toggle handle.
- Male tab soldering, and right angle terminals are available.

■ Standards

 (File No.E96846)

TÜV (IEC)(R9750278)

■ Accessories

• Auxiliary switch (Type W)

This switch is used for indicator lamp or control circuit.

• Alarm switch (Type K)

This switch can be connected to a warning lamp or buzzer to indicate when the circuit protector has been tripped.

Auxiliary and alarm switches for low level circuit are also available on request.

(Type W1, K1)

Ratings of auxiliary and alarm switches

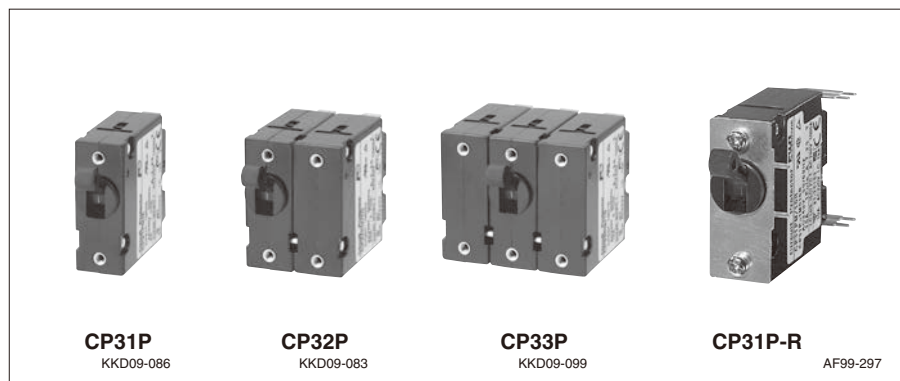
Standard type (Type W, K)

250V AC	Resistive load: 3A
	Inductive load: 2A
125V AC	Resistive load: 3A
	Inductive load: 2A
30V DC	Resistive load: 3A
	Inductive load: 2A

Minimum permissible load

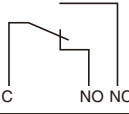
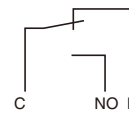
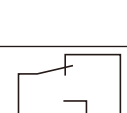
For low level circuit (Type W1, K1)

24V DC	1mA
12V DC	2mA
6V DC	5mA



■ Specifications

Type	CP31P	CP32P	CP33P	CP31P-R
Pole	1-pole	2-pole	3-pole	1-pole
Rated insulation voltage (Ui)	250V AC 50/60Hz, 65V DC			
Rated operational voltage (Ue)	240V AC, 60V DC			
Rated current	0.3, 0.5, 0.75, 1, 2, 3, 5, 7.5, 10, 15, 20, 25A			
Rated breaking capacity	1000A at 240V AC 1000A at 60V DC			
Operating characteristic	Long time delay, Medium time delay Short time delay, Instantaneous tripping			
Tripping mechanism	Hydraulic-magnetic			
Ambient temperature	-10°C to +60°C			
Electrical durability	10000 operations			
Terminals	Main circuit Auxiliary circuit	Tab Soldering		Right angle Right angle
Accessories	Auxiliary switch (W, W1) Alarm switch (K, K1)	Available Available		
Mass (Approx.)	40g	85g	130g	40g

Main contact	Auxiliary switch	Alarm switch
ON		
OFF		
TRIP		

■ Versions

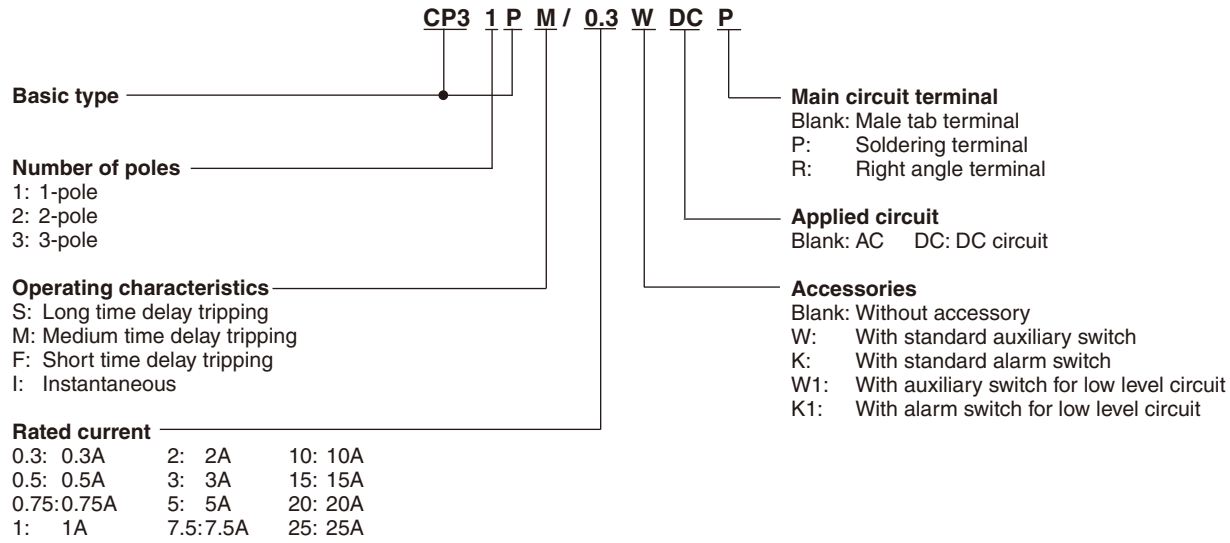
	Operating characteristic	CP31P (1-pole) Type	CP32P (2-pole) Type	CP33P (3-pole) Type
Applied circuit AC	Long time Medium time Short time Instantaneous	CP31PS/□■ CP31PM/□■ CP31PF/□■ CP31PI/□■	CP32PS/□■ CP32PM/□■ CP32PF/□■ CP32PI/□■	CP33PS/□■ CP33PM/□■ CP33PF/□■ CP33PI/□■
Applied circuit DC	Long time Medium time Short time Instantaneous	CP31PS/□DC■ CP31PM/□DC■ CP31PF/□DC■ CP31PI/□DC■	CP32PS/□DC■ CP32PM/□DC■ CP32PF/□DC■ CP32PI/□DC■	CP33PS/□DC■ CP33PM/□DC■ CP33PF/□DC■ CP33PI/□DC■
With standard auxiliary switch	Long time Medium time Short time Instantaneous	CP31PS/□W■ CP31PM/□W■ CP31PF/□W■ CP31PI/□W■	CP32PS/□W■ CP32PM/□W■ CP32PF/□W■ CP32PI/□W■	CP33PS/□W■ CP33PM/□W■ CP33PF/□W■ CP33PI/□W■
Applied circuit DC	Long time Medium time Short time Instantaneous	CP31PS/□WDC■ CP31PM/□WDC■ CP31PF/□WDC■ CP31PI/□WDC■	CP32PS/□WDC■ CP32PM/□WDC■ CP32PF/□WDC■ CP32PI/□WDC■	CP33PS/□WDC■ CP33PM/□WDC■ CP33PF/□WDC■ CP33PI/□WDC■
With standard alarm switch	Long time Medium time Short time Instantaneous	CP31PS/□K■ CP31PM/□K■ CP31PF/□K■ CP31PI/□K■	CP32PS/□K■ CP32PM/□K■ CP32PF/□K■ CP32PI/□K■	CP33PS/□K■ CP33PM/□K■ CP33PF/□K■ CP33PI/□K■
Applied circuit DC	Long time Medium time Short time Instantaneous	CP31PS/□KDC■ CP31PM/□KDC■ CP31PF/□KDC■ CP31PI/□KDC■	CP32PS/□KDC■ CP32PM/□KDC■ CP32PF/□KDC■ CP32PI/□KDC■	CP33PS/□KDC■ CP33PM/□KDC■ CP33PF/□KDC■ CP33PI/□KDC■
With auxiliary switch for low level circuit	Long time Medium time Short time Instantaneous	CP31PS/□W1■ CP31PM/□W1■ CP31PF/□W1■ CP31PI/□W1■	CP32PS/□W1■ CP32PM/□W1■ CP32PF/□W1■ CP32PI/□W1■	CP33PS/□W1■ CP33PM/□W1■ CP33PF/□W1■ CP33PI/□W1■
Applied circuit DC	Long time Medium time Short time Instantaneous	CP31PS/□W1DC■ CP31PM/□W1DC■ CP31PF/□W1DC■ CP31PI/□W1DC■	CP32PS/□W1DC■ CP32PM/□W1DC■ CP32PF/□W1DC■ CP32PI/□W1DC■	CP33PS/□W1DC■ CP33PM/□W1DC■ CP33PF/□W1DC■ CP33PI/□W1DC■
With alarm switch for low level circuit	Long time Medium time Short time Instantaneous	CP31PS/□K1■ CP31PM/□K1■ CP31PF/□K1■ CP31PI/□K1■	CP32PS/□K1■ CP32PM/□K1■ CP32PF/□K1■ CP32PI/□K1■	CP33PS/□K1■ CP33PM/□K1■ CP33PF/□K1■ CP33PI/□K1■
Applied circuit DC	Long time Medium time Short time Instantaneous	CP31PS/□K1DC■ CP31PM/□K1DC■ CP31PF/□K1DC■ CP31PI/□K1DC■	CP32PS/□K1DC■ CP32PM/□K1DC■ CP32PF/□K1DC■ CP32PI/□K1DC■	CP33PS/□K1DC■ CP33PM/□K1DC■ CP33PF/□K1DC■ CP33PI/□K1DC■

Notes : □ Enter the rated current in the □ mark of the type number. 0.3A: 0.3, 0.5A: 0.5 ----- 25A: 25

■ Enter the main circuit terminal in the ■ mark.

Circuit Protectors CP31P, 32P, 33P

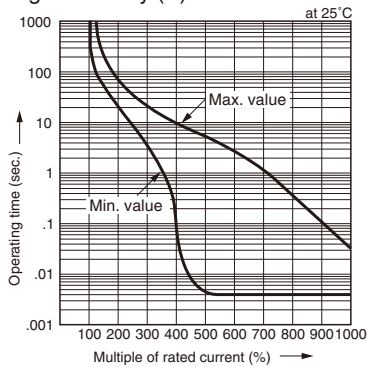
■ Type number nomenclature



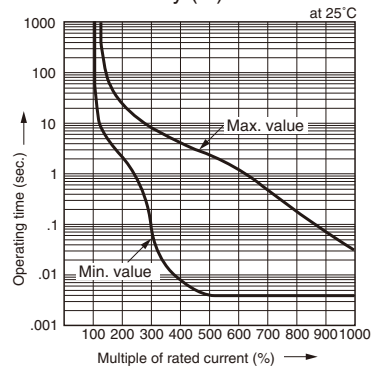
■ Characteristic curves

AC circuit

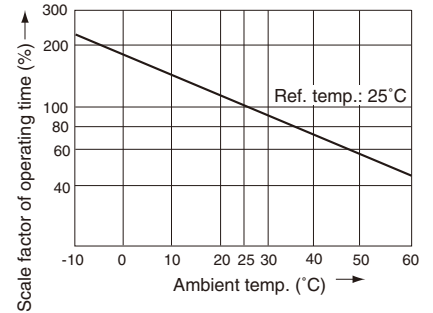
Long time delay (S)



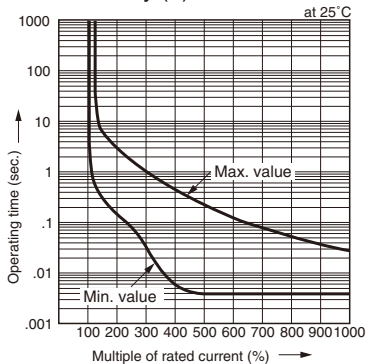
Medium time delay (M)



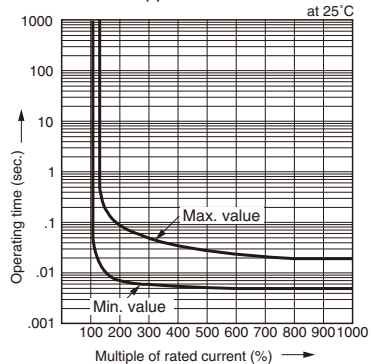
Ambient temperature compensation



Short time delay (F)



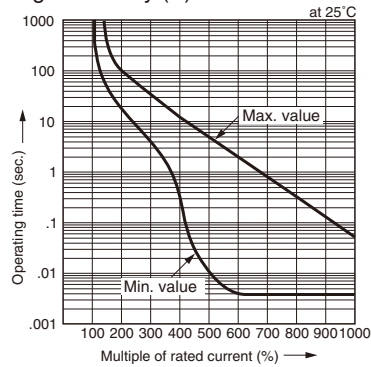
Instantaneous (I)



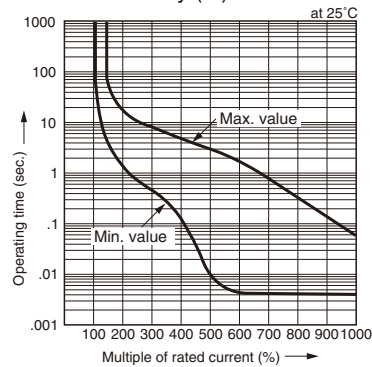
■ Characteristic curves

DC circuit

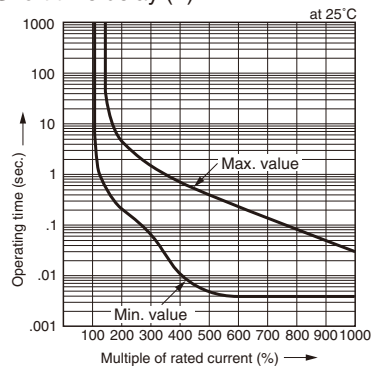
Long time delay (S)



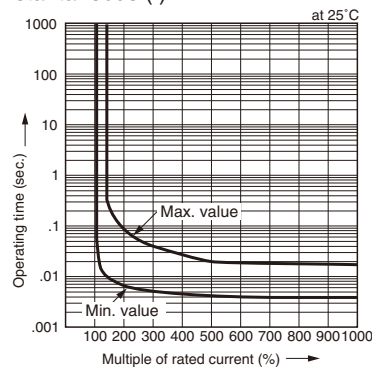
Medium time delay (M)



Short time delay (F)



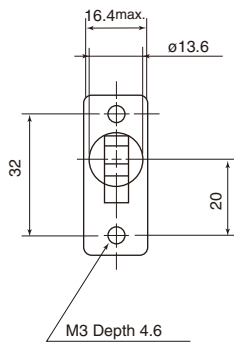
Instantaneous (I)



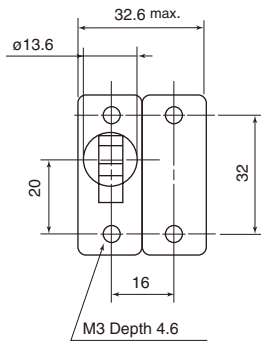
Circuit Protectors CP31P, 32P, 33P

■ Dimensions, mm

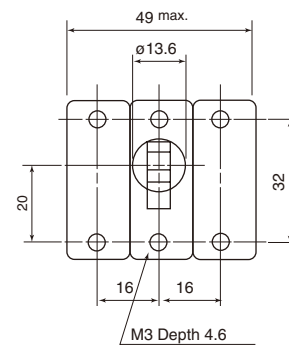
1-pole



2-pole

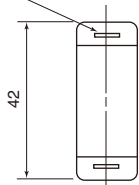


3-pole



Series trip

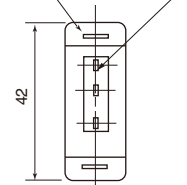
Main terminal
Thickness: 0.8 Width: 6.3



View from back

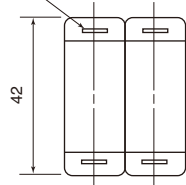
With auxiliary or alarm switch

Main terminal
Thickness: 0.8, width: 6.3
Aux. terminal
Thickness: 1 Width: 2.8



Series trip

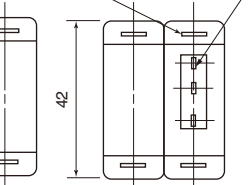
Main terminal
Thickness: 0.8 Width: 6.3



View from back

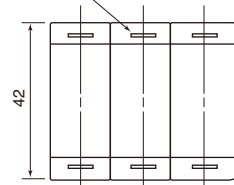
With auxiliary or alarm switch

Main terminal
Thickness: 0.8 Width: 6.3
Aux. terminal
Thickness: 1, width: 2.8



Series trip

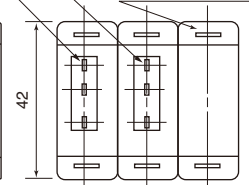
Main terminal
Thickness: 0.8 Width: 6.3



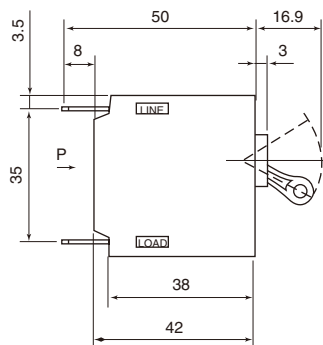
View from back

With auxiliary or alarm switch

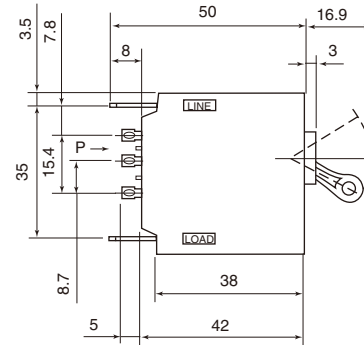
Aux. terminal (for aux. switch)
Thickness: 1 Width: 2.8
Aux. terminal (for alarm)
Thickness: 1 Width: 2.8
Main terminal
Thickness: 0.8 Width: 6.3



Series trip

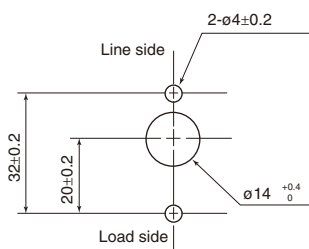


With auxiliary or alarm switch

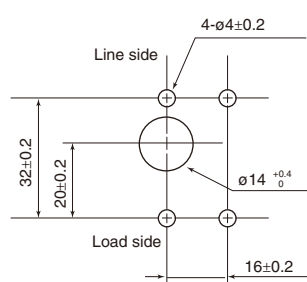


Panel drilling

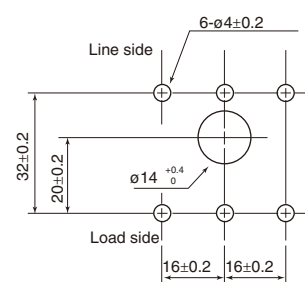
1-pole



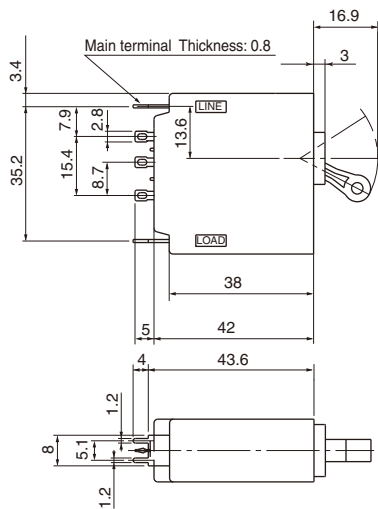
2-pole



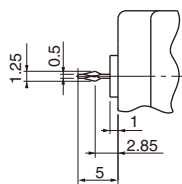
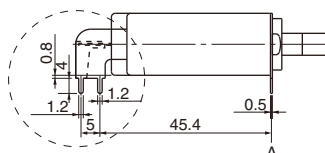
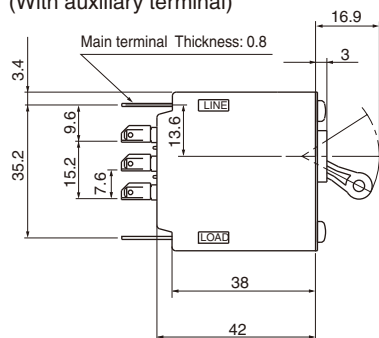
3-pole



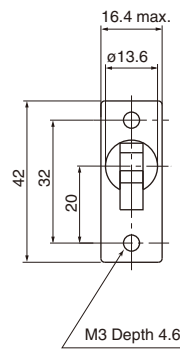
■ Dimensions, mm

Soldering terminal
(With auxiliary terminal)

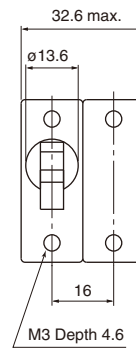
Aux. terminal

Right angle terminal
(With auxiliary terminal)

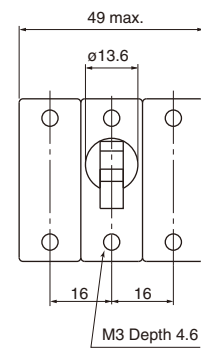
1-pole



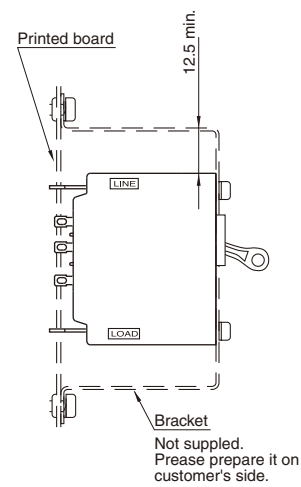
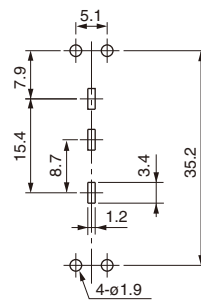
2-pole



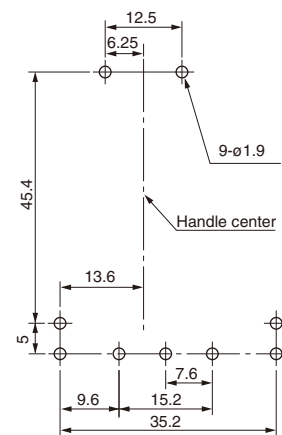
3-pole



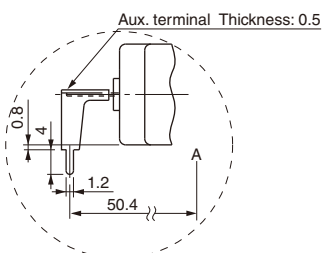
Panel drilling (1-pole)



Panel drilling



Aux. terminal (Enlarged)



Circuit Protectors

CP51B, 52B, 53B

50A frame size circuit protectors

250V AC 0.3A to 50A

65V DC 0.3A to 50A

■ Features

- Available with ratings from 0.3A to 50A.
- Conforms to IEC Standards. (Conforms to CE markings.)
-  and TÜV approved.
- Rated breaking capacity of 1,500A at 240V AC.
- Stud terminals used.

■ Standards

 (File No.E96846)

TÜV (IEC)(R9750278)

■ Accessories

• Auxiliary switch (Type W)

This switch is used for ON-OFF lamp indicator or control circuit.

• Alarm switch (Type K)

This switch can be connected to a warning lamp or buzzer to indicate when the circuit protector has been tripped.

Auxiliary and alarm switch for low level circuit are also available on request. (Type W1, K1)

Ratings of auxiliary and alarm switches

Standard type (Type W, K)

250V AC	Resistive load: 3A Inductive load: 2A
125V AC	Resistive load: 3A Inductive load: 2A
30V DC	Resistive load: 3A Inductive load: 2A

Minimum permissible load

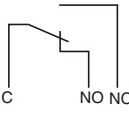
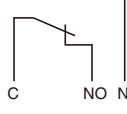
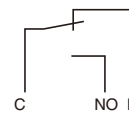
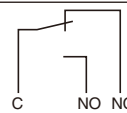
Low level circuit (Type W1, K1)

24V DC	1mA
12V DC	2mA
6V DC	5mA



■ Specifications

Type	CP51B	CP52B	CP53B
Pole	1-pole	2-pole	3-pole
Rated insulation voltage (Ui)	250V AC 50/60Hz, 65V DC		
Rated operational voltage (Ue)	240V AC, 60V DC		
Rated current	0.3, 0.5, 0.75, 1, 2, 3, 5, 7.5, 10, 15, 20, 25, 30, 40, 50A		
Rated breaking capacity	1500A at 240V AC 1000A at 60V DC		
Operating characteristic	Long time delay, Medium time delay Short time delay, Instantaneous tripping		
Tripping mechanism	Hydraulic-magnetic		
Ambient temperature	-10°C to +60°C		
Electrical durability	10000 operations		
Terminals	Main circuit Auxiliary circuit	Round stud Soldering	
Accessories	Auxiliary switch (W, W1) Alarm switch (K, K1)	Available Available	
Mass (Approx.)	80g	180g	280g

Main contact	Auxiliary switch/W	Alarm switch/K
ON		
OFF		
TRIP		

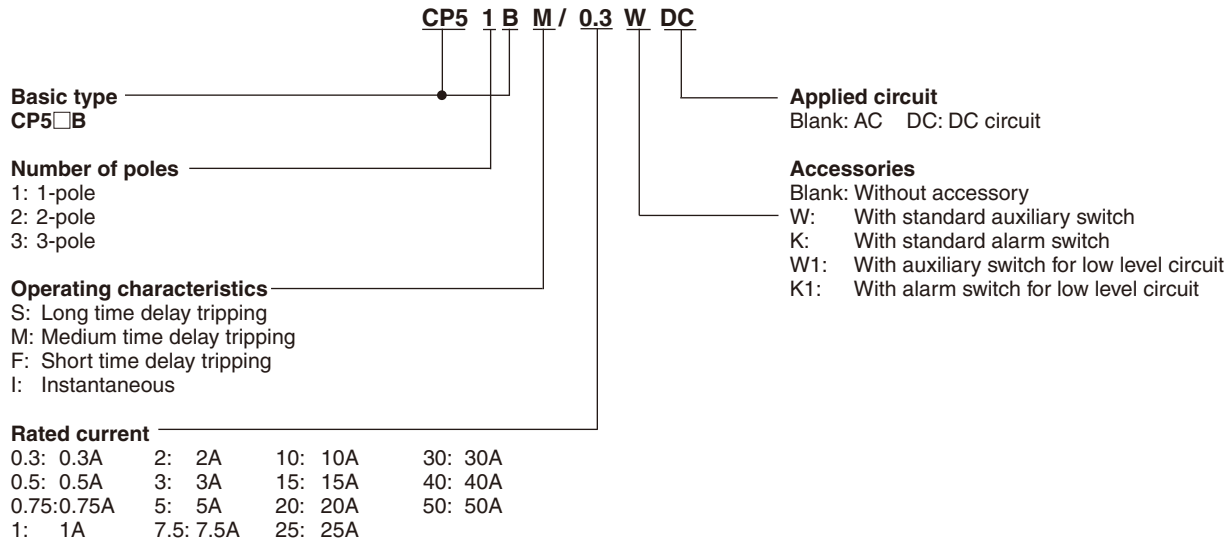
■ Versions

	Operating characteristic	CP51B (1-pole) Type	CP52B (2-pole) Type	CP53B (3-pole) Type
Applied circuit AC	Long time Medium time Short time Instantaneous	CP51BS/□ CP51BM/□ CP51BF/□ CP51BI/□	CP52BS/□ CP52BM/□ CP52BF/□ CP52BI/□	CP53BS/□ CP53BM/□ CP53BF/□ CP53BI/□
Applied circuit DC	Long time Medium time Short time Instantaneous	CP51BS/□DC CP51BM/□DC CP51BF/□DC CP51BI/□DC	CP52BS/□DC CP52BM/□DC CP52BF/□DC CP52BI/□DC	CP53BS/□DC CP53BM/□DC CP53BF/□DC CP53BI/□DC
With standard auxiliary switch	Long time Medium time Short time Instantaneous	CP51BS/□W CP51BM/□W CP51BF/□W CP51BI/□W	CP52BS/□W CP52BM/□W CP52BF/□W CP52BI/□W	CP53BS/□W CP53BM/□W CP53BF/□W CP53BI/□W
Applied circuit DC	Long time Medium time Short time Instantaneous	CP51BS/□WDC CP51BM/□WDC CP51BF/□WDC CP51BI/□WDC	CP52BS/□WDC CP52BM/□WDC CP52BF/□WDC CP52BI/□WDC	CP53BS/□WDC CP53BM/□WDC CP53BF/□WDC CP53BI/□WDC
With standard alarm switch	Long time Medium time Short time Instantaneous	CP51BS/□K CP51BM/□K CP51BF/□K CP51BI/□K	CP52BS/□K CP52BM/□K CP52BF/□K CP52BI/□K	CP53BS/□K CP53BM/□K CP53BF/□K CP53BI/□K
Applied circuit DC	Long time Medium time Short time Instantaneous	CP51BS/□KDC CP51BM/□KDC CP51BF/□KDC CP51BI/□KDC	CP52BS/□KDC CP52BM/□KDC CP52BF/□KDC CP52BI/□KDC	CP53BS/□KDC CP53BM/□KDC CP53BF/□KDC CP53BI/□KDC
With auxiliary switch for low level circuit	Long time Medium time Short time Instantaneous	CP51BS/□W1 CP51BM/□W1 CP51BF/□W1 CP51BI/□W1	CP52BS/□W1 CP52BM/□W1 CP52BF/□W1 CP52BI/□W1	CP53BS/□W1 CP53BM/□W1 CP53BF/□W1 CP53BI/□W1
Applied circuit DC	Long time Medium time Short time Instantaneous	CP51BS/□W1DC CP51BM/□W1DC CP51BF/□W1DC CP51BI/□W1DC	CP52BS/□W1DC CP52BM/□W1DC CP52BF/□W1DC CP52BI/□W1DC	CP53BS/□W1DC CP53BM/□W1DC CP53BF/□W1DC CP53BI/□W1DC
With alarm switch for low level circuit	Long time Medium time Short time Instantaneous	CP51BS/□K1 CP51BM/□K1 CP51BF/□K1 CP51BI/□K1	CP52BS/□K1 CP52BM/□K1 CP52BF/□K1 CP52BI/□K1	CP53BS/□K1 CP53BM/□K1 CP53BF/□K1 CP53BI/□K1
Applied circuit DC	Long time Medium time Short time Instantaneous	CP51BS/□K1DC CP51BM/□K1DC CP51BF/□K1DC CP51BI/□K1DC	CP52BS/□K1DC CP52BM/□K1DC CP52BF/□K1DC CP52BI/□K1DC	CP53BS/□K1DC CP53BM/□K1DC CP53BF/□K1DC CP53BI/□K1DC

Note : □ Enter the rated current in the □ mark of the type number. 0.3A: 0.3, 0.5A: 0.5 ----- 50A: 50

Circuit Protectors CP51B, 52B, 53B

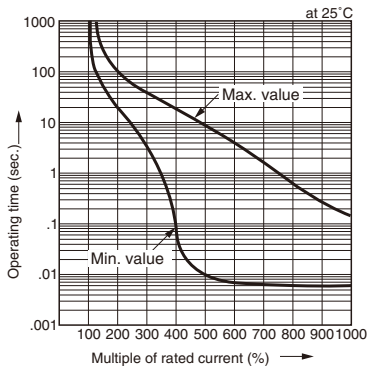
■ Type number nomenclature



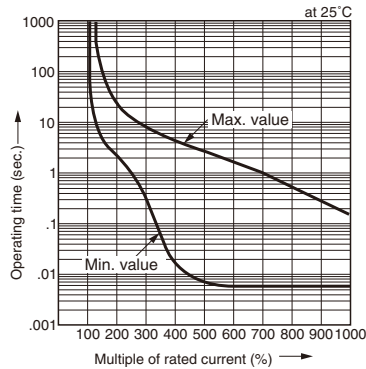
■ Characteristic curves

AC circuit

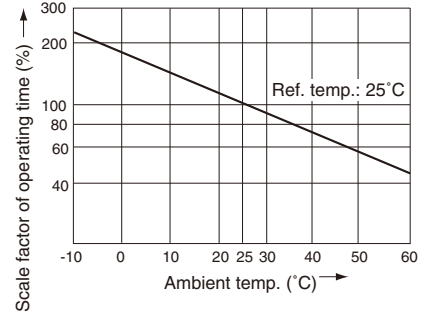
Long time delay (S)



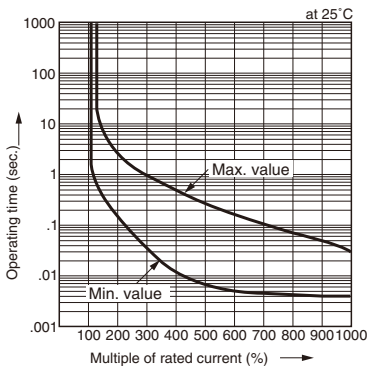
Medium time delay (M)



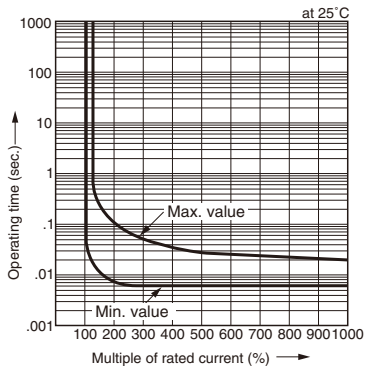
Ambient temperature compensation



Short time delay (F)



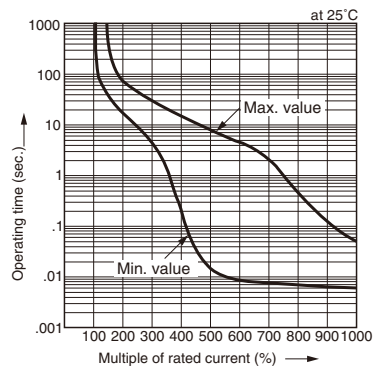
Instantaneous (I)



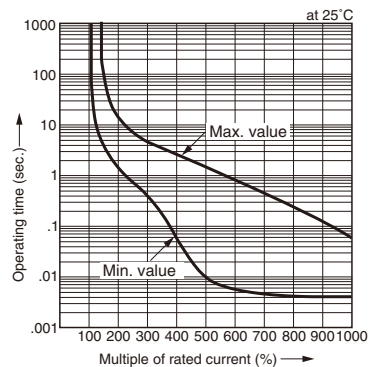
■ Characteristic curves

DC circuit

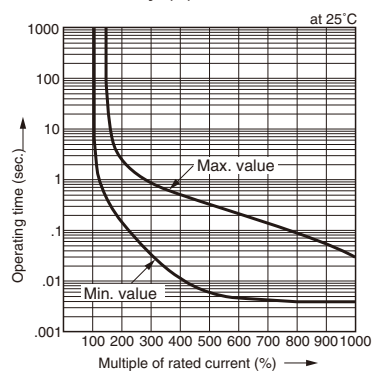
Long time delay (S)



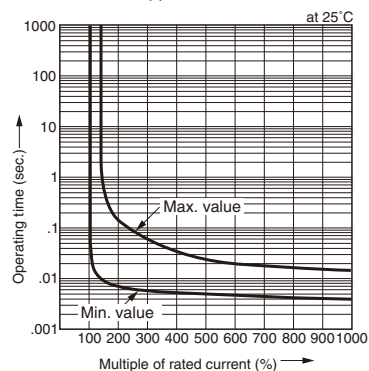
Medium time delay (M)



Short time delay (F)



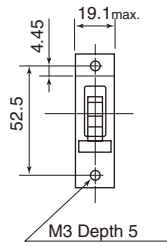
Instantaneous (I)



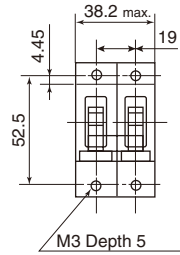
Circuit Protectors CP51B, 52B, 53B

■ Dimensions, mm

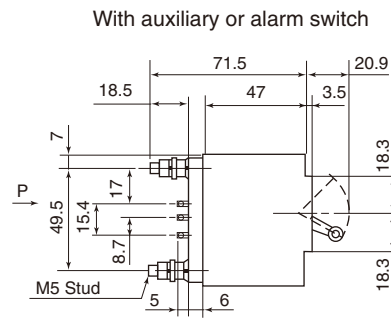
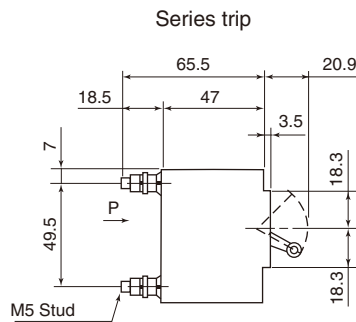
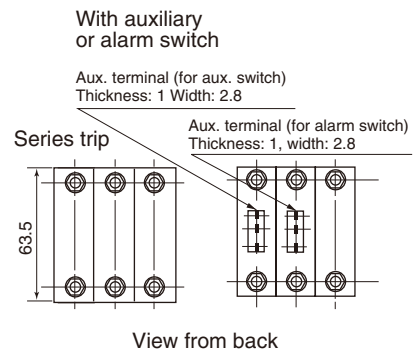
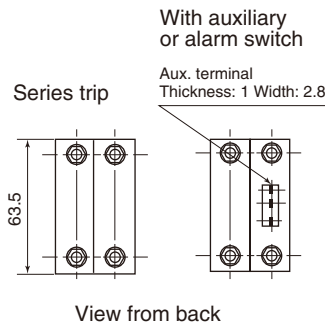
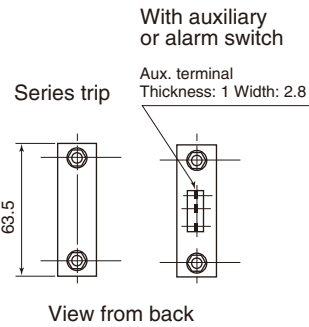
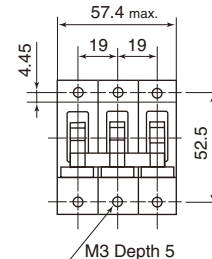
1-pole



2-pole

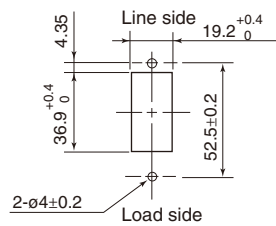


3-pole

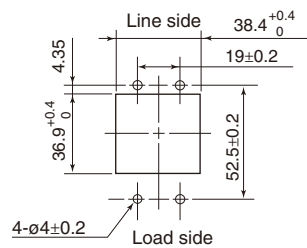


Panel drilling

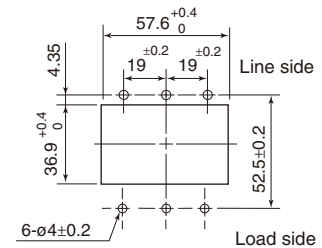
1-pole



2-pole



3-pole



Circuit Protectors

CP31E, 32E, 33E, 34E, 31V, 32V, 33V, 34V

CP-E and CP-V circuit protectors

250V AC 0.05A to 30A
65V DC 0.05A to 30A

Description

CP-E, CP-V circuit protectors have been specially developed for computers, communication equipment and peripheral applications. In these situations power irregularities can lead to serious and expensive damage, and reliable protective equipment is required. FUJI circuit protectors meet this need. These protectors are available with ratings from 50mA to 30A. They are widely used in FA, office machinery, communication equipment and industrial computer-controlled equipment. They are also suitable for extremely severe service since they can withstand mechanical shocks up to 981m/s².

Features

- Available in instantaneous, short time, medium time and long time delay types, thus making them suitable for a wide range of electronic applications.
- Also available in types having inertia delay characteristics. These do not trip due to inrush current.
- For internal circuits, series trip, shunt trip, relay trip and switch types are available.
- Circuit protectors with an auxiliary and alarm switch are also available.
- Single pole to 3-pole CP types can be operated with a single handle. Handle holes are easily made in panels.
- Widths down to 19mm.

Standards

UL: CP-E, CP-V (File No. E96846), (File No. E83461 for switch type), Socket CP-S (E96846SP, E83461, LR67978 (CSA C22.2 No.14))
TUV (IEC): CP-V(R50064785)

Accessories

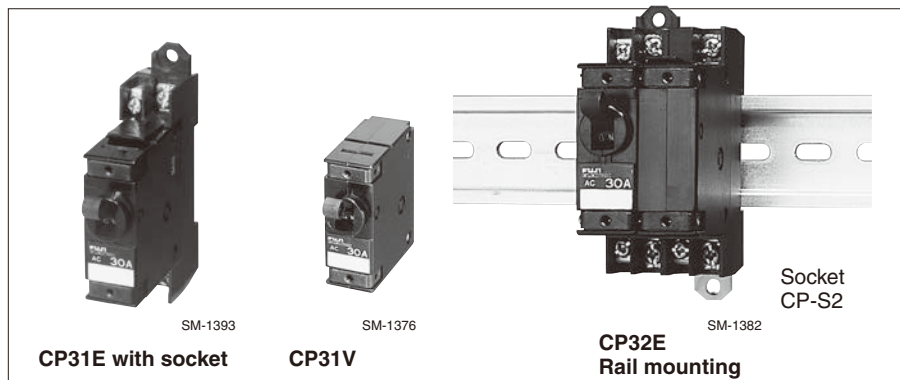
Auxiliary switch (Type W)

This switch is used for indicator lamp or control circuit.

Alarm switch (Type K)

This switch can be connected to a warning lamp or buzzer to indicate when the circuit protector has been tripped.

Auxiliary (W1) and alarm (K1) switch for low level circuit are also available on request.



Specifications

Type	CP31E, V	CP32E, V	CP33E, V	CP34E, V
Pole	1-pole	2-pole	3-pole	4-pole
Rated insulation voltage (Ui)	250V AC 50/60Hz, 65V DC			
Rated operational voltage (Ue)	250V AC 50/60Hz, 60V DC			
Rated current	0.05, 0.1, 0.25, 0.5, 0.75, 1, 2, 2.5, 3, 5, 7.5, 10, 15, 20, 25, 30A			
Rated breaking capacity	1000A at 250V AC 1000A at 60V DC			
Operating characteristic	Long time delay, Medium time delay Short time delay, Instantaneous tripping			
Tripping mechanism	Hydraulic-magnetic			
Ambient temperature	-10°C to +60°C			
Electrical durability	10000 operations			
Terminals	Main circuit Auxiliary circuit	Tab, screw, printed board Tab, printed board		
Accessories	Auxiliary switch (W, W1) Alarm switch (K, K1) Inertia delay device (D)	Available Available Available		
Mass (Approx.)	60g	120g	180g	240g

Ratings of auxiliary and alarm switches

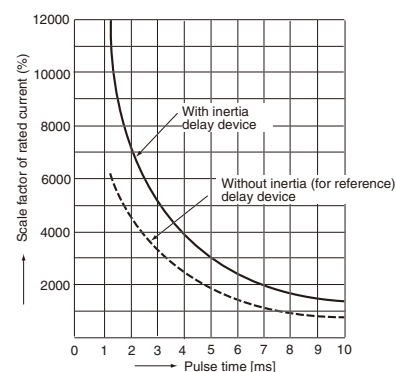
250V AC	Resistive load: 3A Inductive load: 2A
125V AC	Resistive load: 5A Inductive load: 3A
60V DC	Resistive load: 1A Inductive load: 0.5A
30V DC	Resistive load: 4A Inductive load: 3A

Inertia delay device (Type D)

When a circuit carrying loads such as transformers or lamps is closed, an extremely large inrush current flows. This inertia delay device is designed to prevent the circuit protector from operating erroneously due to such inrush current and to carry out an interruption within the prescribed operating characteristics in the face of an overcurrent.

For instance, the following graph explains that the protector does not operate even when a pulse current of approx. 18 times (peak value) rated current with a pulse width of 8ms flows.

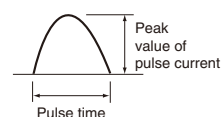
Inertia delay characteristics



- Scale factor of the rated current (%)

$$\frac{\text{Peak value of pulse current}}{\text{Rated current for protector}} \times 100$$

- Waveform of pulse current: Sinusoidal wave or parabolic pulse



Circuit Protectors

CP31E, 32E, 33E, 34E

■ Versions

Internal circuit	Operating characteristics	CP31E (1-pole) Type	CP32E (2-pole) Type	CP33E (3-pole) Type	CP34E (4-pole) Type
Series trip type	Long time Medium time Short time Instantaneous	CP31E/ ☐ CP31EM/ ☐ CP31EF/ ☐ CP31EI/ ☐	CP32E/ ☐ CP32EM/ ☐ CP32EF/ ☐ CP32EI/ ☐	CP33E/ ☐ CP33EM/ ☐ CP33EF/ ☐ CP33EI/ ☐	CP34E/ ☐ CP34EM/ ☐ CP34EF/ ☐ CP34EI/ ☐
Series trip type With inertia delay device	Long time Medium time Short time Instantaneous	CP31E/ ☐ D CP31EM/ ☐ D CP31EF/ ☐ D —	CP32E/ ☐ D CP32EM/ ☐ D CP32EF/ ☐ D —	CP33E/ ☐ D CP33EM/ ☐ D CP33EF/ ☐ D —	CP34E/ ☐ D CP34EM/ ☐ D CP34EF/ ☐ D —
Series trip type With auxiliary switch	Long time Medium time Short time Instantaneous	CP31E/ ☐ W CP31EM/ ☐ W CP31EF/ ☐ W CP31EI/ ☐ W	CP32E/ ☐ W CP32EM/ ☐ W CP32EF/ ☐ W CP32EI/ ☐ W	CP33E/ ☐ W CP33EM/ ☐ W CP33EF/ ☐ W CP33EI/ ☐ W	CP34E/ ☐ W CP34EM/ ☐ W CP34EF/ ☐ W CP34EI/ ☐ W
Series trip type With auxiliary switch and inertia delay device	Long time Medium time Short time Instantaneous	CP31E/ ☐ WD CP31EM/ ☐ WD CP31EF/ ☐ WD —	CP32E/ ☐ WD CP32EM/ ☐ WD CP32EF/ ☐ WD —	CP33E/ ☐ WD CP33EM/ ☐ WD CP33EF/ ☐ WD —	CP34E/ ☐ WD CP34EM/ ☐ WD CP34EF/ ☐ WD —
Series trip type With alarm switch	Long time Medium time Short time Instantaneous	CP31E/ ☐ K CP31EM/ ☐ K CP31EF/ ☐ K CP31EI/ ☐ K	CP32E/ ☐ K CP32EM/ ☐ K CP32EF/ ☐ K CP32EI/ ☐ K	CP33E/ ☐ K CP33EM/ ☐ K CP33EF/ ☐ K CP33EI/ ☐ K	CP34E/ ☐ K CP34EM/ ☐ K CP34EF/ ☐ K CP34EI/ ☐ K
Series trip type With alarm switch and inertia delay device	Long time Medium time Short time Instantaneous	CP31E/ ☐ KD CP31EM/ ☐ KD CP31EF/ ☐ KD —	CP32E/ ☐ KD CP32EM/ ☐ KD CP32EF/ ☐ KD —	CP33E/ ☐ KD CP33EM/ ☐ KD CP33EF/ ☐ KD —	CP34E/ ☐ KD CP34EM/ ☐ KD CP34EF/ ☐ KD —
Shunt trip type	Long time Medium time Short time Instantaneous	CP31E2/ ☐ CP31E2M/ ☐ CP31E2F/ ☐ CP31E2I/ ☐	CP32E2/ ☐ CP32E2M/ ☐ CP32E2F/ ☐ CP32E2I/ ☐	CP33E2/ ☐ CP33E2M/ ☐ CP33E2F/ ☐ CP33E2I/ ☐	CP34E2/ ☐ CP34E2M/ ☐ CP34E2F/ ☐ CP34E2I/ ☐
Shunt trip type With inertia delay device	Long time Medium time Short time Instantaneous	CP31E2/ ☐ D CP31E2M/ ☐ D CP31E2F/ ☐ D —	CP32E2/ ☐ D CP32E2M/ ☐ D CP32E2F/ ☐ D —	CP33E2/ ☐ D CP33E2M/ ☐ D CP33E2F/ ☐ D —	CP34E2/ ☐ D CP34E2M/ ☐ D CP34E2F/ ☐ D —
Relay trip type (Current trip)	Long time Medium time Short time Instantaneous	CP31E3/ ☐ CP31E3M/ ☐ CP31E3F/ ☐ CP31E3I/ ☐	CP32E3/ ☐ CP32E3M/ ☐ CP32E3F/ ☐ CP32E3I/ ☐	CP33E3/ ☐ CP33E3M/ ☐ CP33E3F/ ☐ CP33E3I/ ☐	CP34E3/ ☐ CP34E3M/ ☐ CP34E3F/ ☐ CP34E3I/ ☐
Relay trip type With inertia delay device	Long time Medium time Short time Instantaneous	CP31E3/ ☐ D CP31E3M/ ☐ D CP31E3F/ ☐ D —	CP32E3/ ☐ D CP32E3M/ ☐ D CP32E3F/ ☐ D —	CP33E3/ ☐ D CP33E3M/ ☐ D CP33E3F/ ☐ D —	CP34E3/ ☐ D CP34E3M/ ☐ D CP34E3F/ ☐ D —
Switch type		CP31E4/30	CP32E4/30	CP33E4/30	CP34E4/30
Switch type With auxiliary switch		CP31E4/30W	CP32E4/30W	CP33E4/30W	CP34E4/30W
Relay trip type (Shunt trip)		CP31E5/30	CP32E5/30	CP33E5/30	CP34E5/30
Dual coil type	Long time Medium time Short time Instantaneous	CP31E6/ ☐ CP31E6M/ ☐ CP31E6F/ ☐ CP31E6I/ ☐	CP32E6/ ☐ CP32E6M/ ☐ CP32E6F/ ☐ CP32E6I/ ☐	CP33E6/ ☐ CP33E6M/ ☐ CP33E6F/ ☐ CP33E6I/ ☐	CP34E6/ ☐ CP34E6M/ ☐ CP34E6F/ ☐ CP34E6I/ ☐
Dual coil type With inertia delay device	Long time Medium time Short time Instantaneous	CP31E6/ ☐ D CP31E6M/ ☐ D CP31E6F/ ☐ D —	CP32E6/ ☐ D CP32E6M/ ☐ D CP32E6F/ ☐ D —	CP33E6/ ☐ D CP33E6M/ ☐ D CP33E6F/ ☐ D —	CP34E6/ ☐ D CP34E6M/ ☐ D CP34E6F/ ☐ D —

Notes: ☐ Enter the rated current in the ☐ mark of the type number.

0.05A: 0.05, 0.1A: 0.1, 0.25A: 0.25.....30A: 30

• When ordering types with auxiliary switch (W1) or alarm switch (K1), add suffix to type number.

Circuit Protectors

CP31V, 32V, 33V, 34V

B

■ Versions

Internal circuit	Operating characteristics	CP31V (1-pole) Type	CP32V (2-pole) Type	CP33V (3-pole) Type	CP34V (4-pole) Type
Series trip type	Long time Medium time Short time Instantaneous	CP31V/ ☐ CP31VM/ ☐ CP31VF/ ☐ CP31VI/ ☐	CP32V/ ☐ CP32VM/ ☐ CP32VF/ ☐ CP32VI/ ☐	CP33V/ ☐ CP33VM/ ☐ CP33VF/ ☐ CP33VI/ ☐	CP34V/ ☐ CP34VM/ ☐ CP34VF/ ☐ CP34VI/ ☐
Series trip type With inertia delay device	Long time Medium time Short time Instantaneous	CP31V/ ☐ D CP31VM/ ☐ D CP31VF/ ☐ D —	CP32V/ ☐ D CP32VM/ ☐ D CP32VF/ ☐ D —	CP33V/ ☐ D CP33VM/ ☐ D CP33VF/ ☐ D —	CP34V/ ☐ D CP34VM/ ☐ D CP34VF/ ☐ D —
Series trip type With auxiliary switch	Long time Medium time Short time Instantaneous	CP31V/ ☐ W CP31VM/ ☐ W CP31VF/ ☐ W CP31VI/ ☐ W	CP32V/ ☐ W CP32VM/ ☐ W CP32VF/ ☐ W CP32VI/ ☐ W	CP33V/ ☐ W CP33VM/ ☐ W CP33VF/ ☐ W CP33VI/ ☐ W	CP34V/ ☐ W CP34VM/ ☐ W CP34VF/ ☐ W CP34VI/ ☐ W
Series trip type With auxiliary switch and inertia delay device	Long time Medium time Short time Instantaneous	CP31V/ ☐ WD CP31VM/ ☐ WD CP31VF/ ☐ WD —	CP32V/ ☐ WD CP32VM/ ☐ WD CP32VF/ ☐ WD —	CP33V/ ☐ WD CP33VM/ ☐ WD CP33VF/ ☐ WD —	CP34V/ ☐ WD CP34VM/ ☐ WD CP34VF/ ☐ WD —
Series trip type With alarm switch	Long time Medium time Short time Instantaneous	CP31V/ ☐ K CP31VM/ ☐ K CP31VF/ ☐ K CP31VI/ ☐ K	CP32V/ ☐ K CP32VM/ ☐ K CP32VF/ ☐ K CP32VI/ ☐ K	CP33V/ ☐ K CP33VM/ ☐ K CP33VF/ ☐ K CP33VI/ ☐ K	CP34V/ ☐ K CP34VM/ ☐ K CP34VF/ ☐ K CP34VI/ ☐ K
Series trip type With alarm switch and inertia delay device	Long time Medium time Short time Instantaneous	CP31V/ ☐ KD CP31VM/ ☐ KD CP31VF/ ☐ KD —	CP32V/ ☐ KD CP32VM/ ☐ KD CP32VF/ ☐ KD —	CP33V/ ☐ KD CP33VM/ ☐ KD CP33VF/ ☐ KD —	CP34V/ ☐ KD CP34VM/ ☐ KD CP34VF/ ☐ KD —
Shunt trip type	Long time Medium time Short time Instantaneous	CP31V2/ ☐ CP31V2M/ ☐ CP31V2F/ ☐ CP31V2I/ ☐	CP32V2/ ☐ CP32V2M/ ☐ CP32V2F/ ☐ CP32V2I/ ☐	CP33V2/ ☐ CP33V2M/ ☐ CP33V2F/ ☐ CP33V2I/ ☐	CP34V2/ ☐ CP34V2M/ ☐ CP34V2F/ ☐ CP34V2I/ ☐
Shunt trip type With inertia delay device	Long time Medium time Short time Instantaneous	CP31V2/ ☐ D CP31V2M/ ☐ D CP31V2F/ ☐ D —	CP32V2/ ☐ D CP32V2M/ ☐ D CP32V2F/ ☐ D —	CP33V2/ ☐ D CP33V2M/ ☐ D CP33V2F/ ☐ D —	CP34V2/ ☐ D CP34V2M/ ☐ D CP34V2F/ ☐ D —
Switch type		CP31V4/30	CP32V4/30	CP33V4/30	CP34V4/30
Switch type With auxiliary switch		CP31V4/30W	CP32V4/30W	CP33V4/30W	CP34V4/30W

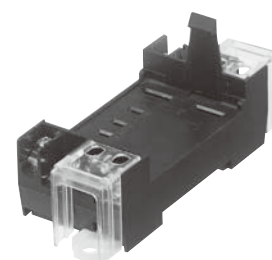
Notes: ☐ Enter the rated current in the ☐ mark of the type number.

0.05A: 0.05, 0.1A: 0.1, 0.25A: 0.25.....30A: 30

• When ordering types with auxiliary switch (W1) or alarm switch (K1), add suffix to type number.

■ Sockets (CP3□E only)

No. of poles	Circuit protector Type	Auxiliary contact	Alarm contact	Socket Type	Terminal cover Type
1-pole	CP31E, 31E4	—	—	CP-S1	CP-T3
	CP31E/ W, 31E4/ W	1NO	—	CP-S1A	
		1NC	—	CP-S1B	
	CP31E/K	—	1NC	CP-S1A	
		—	1NO	CS-S1B	
2-pole	CP32E, 32E4	—	—	CP-S2	
	CP32E/W, 32E4/W	SPDT	—	CP-S2C	
	CP32E/K	—	SPDT		



AF91-566

Circuit Protectors

CP31E, 32E, 33E, 34E, 31V, 32V, 33V, 34V

■ Type number nomenclature

CP3 1 E 2 M / □ W D DC N (AC 200V)

Basic type

CP3□E (c Δ _{us}), CP3□V (c Δ _{us} IEC)

Number of poles

1: 1-pole 3: 3-pole
2: 2-pole 4: 4-pole

Internal circuit

Blank: Series trip type
2: Shunt trip type
3: Relay trip type (Current trip) *
4: Switch type
5: Relay trip type (Shunt trip) *
6: Dual coil *

* for CP3□E only

Operating characteristics

Blank: Long time delay
M: Medium time delay
F: Short time delay
I: Instantaneous

Rated current

0.05: 0.05A	2: 2A	10: 10A
0.1: 0.1A	2.5: 2.5A	15: 15A
0.25: 0.25A	3: 3A	20: 20A
0.5: 0.5A	5: 5A	25: 25A
0.75: 0.75A	7.5: 7.5A	30: 30A
1: 1A		

Rated tripping voltage

(for CP3□E5 and CP3□E6 only)

- Relay trip type (shunt trip type) / CP3□E5
200V, 100V, 48V, 24V AC 50/60Hz or DC
- Dual coil type / CP3□E6
100V, 50V, 32V, 24V, 12V, 6V AC 50/60Hz or DC

Main terminal

Blank: Tab terminal
N: Screw terminal (series trip type and switch type)
P: Printed board type (CP3□E only)

Circuit voltage

Blank: AC circuit
DC: DC circuit

Inertia delay device

Blank: Without inertia delay device
D: With inertia delay device
(Except instantaneous type)

Accessories

Blank: Without accessories
W: With standard auxiliary switch
(For series and switch types)
W1: With auxiliary switch for low level circuit
K: With standard alarm switch (For series type)
K1: With alarm switch for low level circuit

■ Ordering information

Specify the following:

1. Type number
(Including rated tripping voltage)

Circuit Protectors

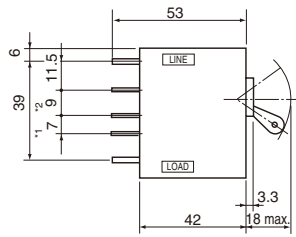
CP31E, 32E, 33E, 34E, 31V, 32V, 33V, 34V

■ Dimensions, mm

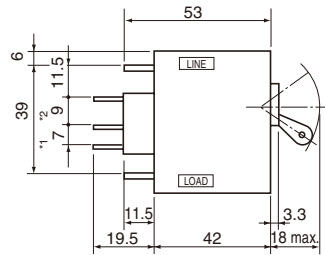
• Series trip and switch types

Tab terminal

CP31E, CP31E4



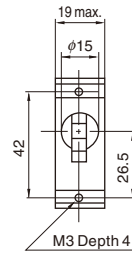
CP31V, CP31V4



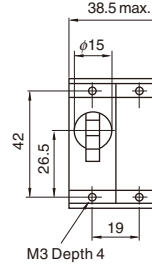
*1 With auxiliary switch (W1), With alarm switch (K1) : 6

*2 With auxiliary switch (W1), With alarm switch (K1) : 10

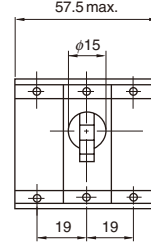
1-pole



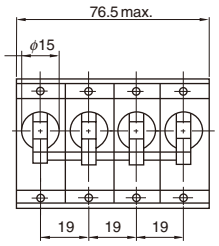
2-pole



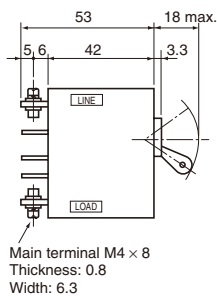
3-pole



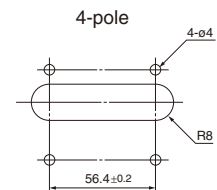
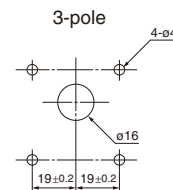
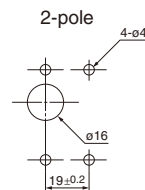
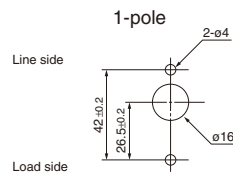
4-pole



Screw terminal

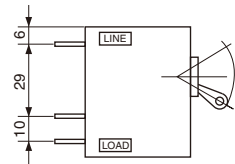


Panel drilling



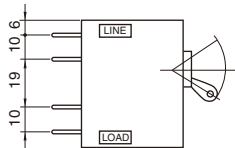
• Shunt trip type

Tab terminal

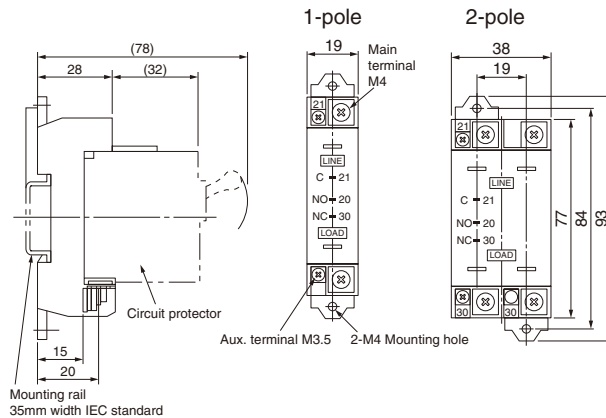


• Relay trip type (CP-E only)

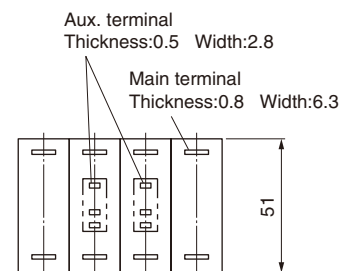
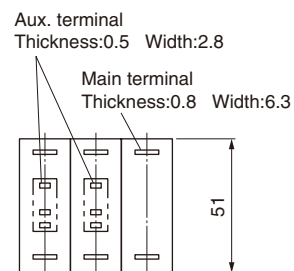
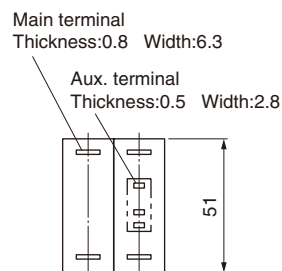
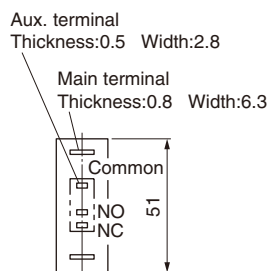
Tab terminal



Socket for rail mounting (CP-E/Series trip and switch types)



Terminal arrangement

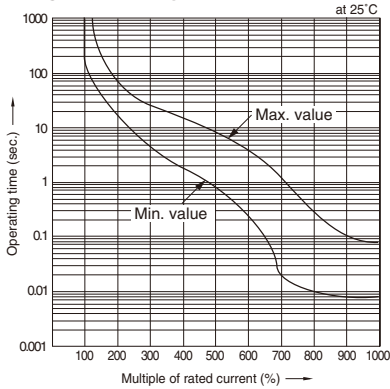


Circuit Protectors CP31E, 32E, 33E, 34E, 31V, 32V, 33V, 34V

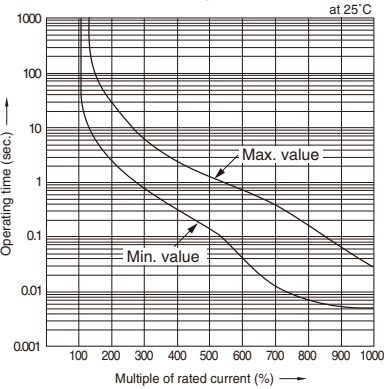
■ Characteristic curves

AC circuit

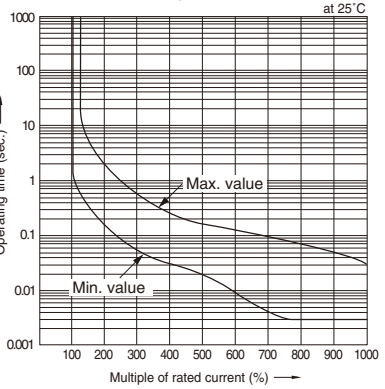
Long time delay (S)



Medium time delay (M)

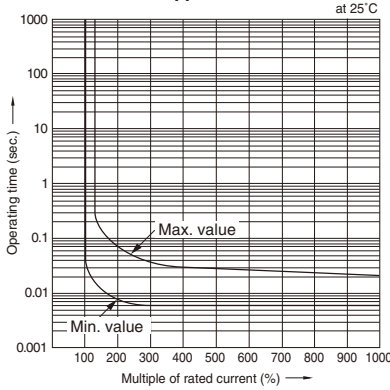


Short time delay (F)



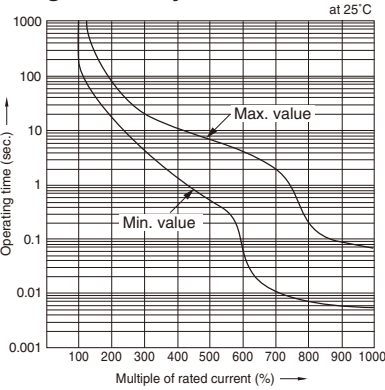
AC circuit

Instantaneous (I)

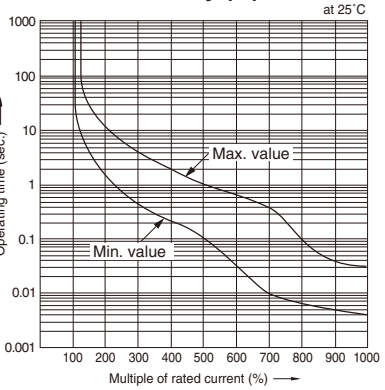


DC circuit

Long time delay

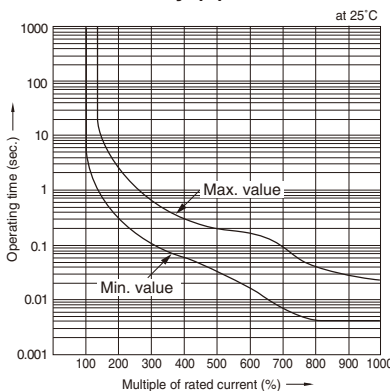


Medium time delay (M)

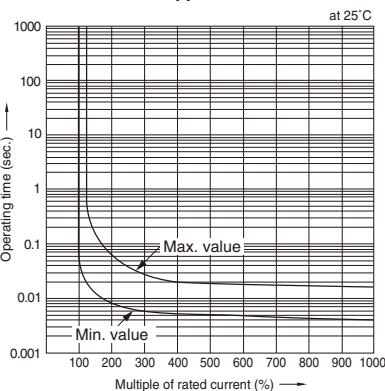


DC circuit

Short time delay (F)



Instantaneous (I)



Ambient temperature compensation

