

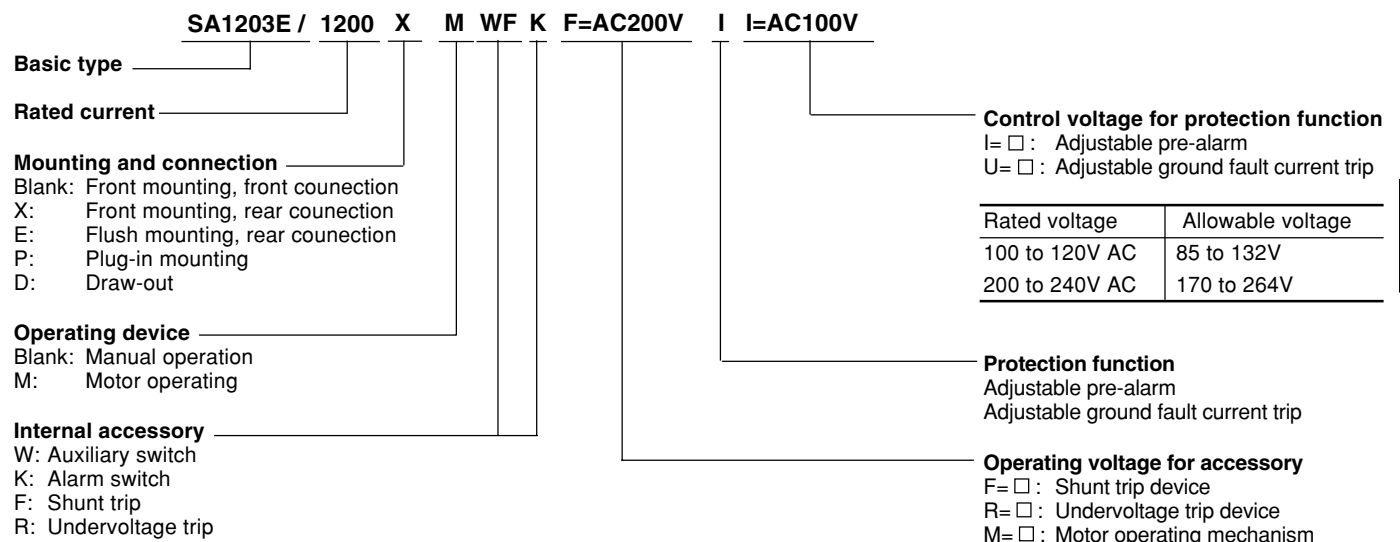
## Solid-state trip types, SA1000E, 1200E, 1600E

### ■ Features

- **Equipped with a load current pre-trip alarm**  
Constantly monitors the load current, and outputs an alarm when the set current is exceeded.
- **Adjustable rated current**  
The rated current is easy to vary in 5 to 6 steps using an adjustment dial.
- **Wide-range-adjustable trip characteristics**  
The current and time for instantaneous tripping and short-/long-time delay tripping can be set by the user.
- **Adjustable ground fault tripping determinate and set a current level for ground fault detection in the ranging between 10% to 40% of the rated CT current.**



### ■ Type number nomenclature



### ■ Ordering information

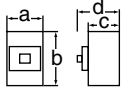
Specify the following:

1. Type number

# Molded Case Circuit Breakers

## Solid-state trip types

### ■ S series

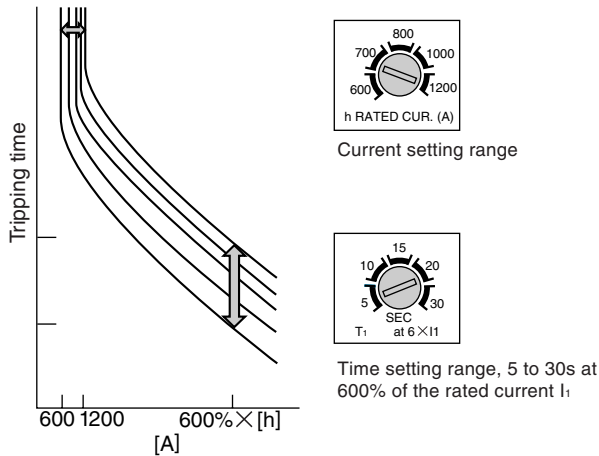
Frame		1000A		1200A		1600A		
Pole		3	4	3	4	3	4	
Type		SA1003E	SA1004E	SA1203E	SA1204E	SA1603E	SA1604E	
Rated current(A)		Adjustable 500—600—700—800 —900—1000		Adjustable 600—700—800—1000 —1200		Adjustable 800—900—1000—1200 —1400—1600		
Rated insulation voltage(V)		AC DC	690 —	690 —	690 —	690 —	690 —	
Rated breaking capacity (kA)	JIS C8370 (sym)	550V AC 460V AC 220V AC 250V DC	50 65 100 —	50 65 100 —	50 65 100 —	65 85 130 —	65 85 130 —	
	IEC 60947-2 (Icu/Ics) BS 4752 (sym)*	690V AC 660V AC 600V AC 500V AC 440V AC 400V AC 230V AC 250V DC	25/19 25/19 25/19 45/34 65/49 65/49 100/75 —	25/19 25/19 25/19 45/34 65/49 65/49 100/75 —	25/19 25/19 25/19 45/34 65/49 65/49 100/75 —	45/34 45/34 45/34 65/49 85/64 85/64 125/94 —	45/34 45/34 45/34 65/49 85/64 85/64 125/94 —	
Dimensions (mm)		a	210	280	210	280	210	280
		b	370		370		370	
		c	120		120		140	
		d	171		171		191	
Protection function	Long-time delay tripping time (s)	5-30 (at 6In) (Adjustable)						
	Short-time delay tripping current (A)	2In-10In (Adjustable)						
	Short-time delay tripping time (s)	0.1-0.3 (Adjustable)						
	Instantaneous tripping current (kA)	3.0-12 (Adjustable)		3.75-15 (Adjustable)		4.8-19.2 (Adjustable)		
	Ground fault current tripping or pre-alarm	●		●		●		
Mass(kg) Front mounting, front connection		22	28	22	28	27	35	
Tripping device		Solid-state		Solid-state		Solid-state		
Trip button		Provided		Provided		Provided		
Mounting	Front mounting, front connection	No mark	●	●	● Bar stud	●	●	
	Front mounting, rear connection	X	● Bar Stud	●	● Bar stud	●	● Bar stud	
	Flush mounting, rear connection	E	● Bar Stud	●	●	●	● Bar stud	
	Plug-in mounting	P	—	—	—	—	—	
Internal accessories	Auxiliary switch	W	●	●	●	●	●	
	Alarm switch	K	●	●	●	●	●	
	Shunt trip	F	●	●	●	●	●	
	Undervoltage trip	R	●	●	●	●	●	
External accessories	Motor operating mechanism	M	●	●	●	●	●	
	Lead-wire terminal block	—	●	●	●	●	●	

Note: \* For SA1200E and SA1600E

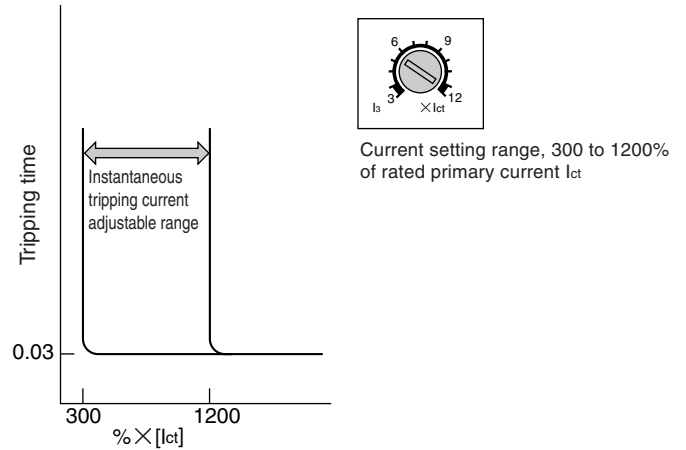
● Available — Not available

## Protection function

### • Long-time delay tripping (Rated current adjustable)

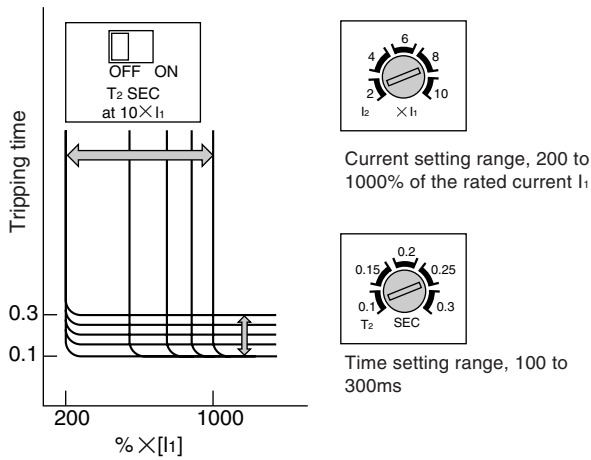


### • Adjustable instantaneous tripping

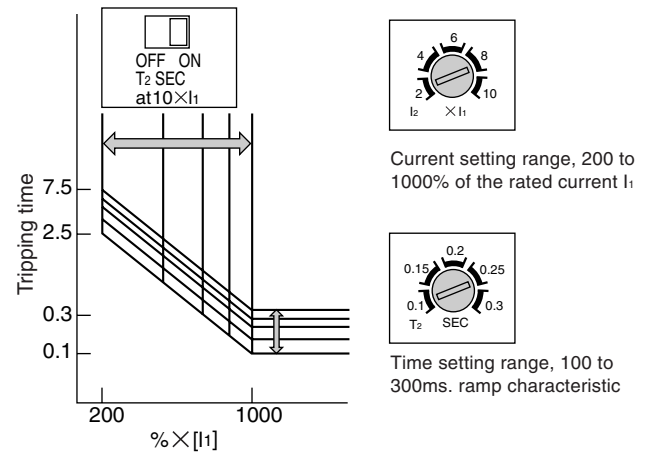


### • Adjustable short-time delay tripping

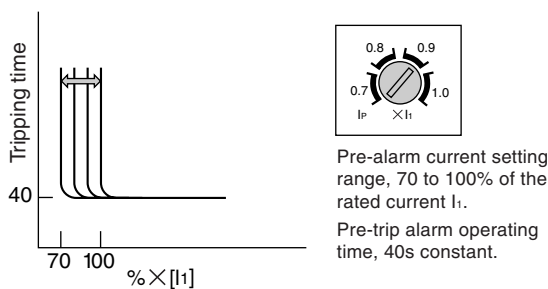
Coordination with solid-state trip type MCCB



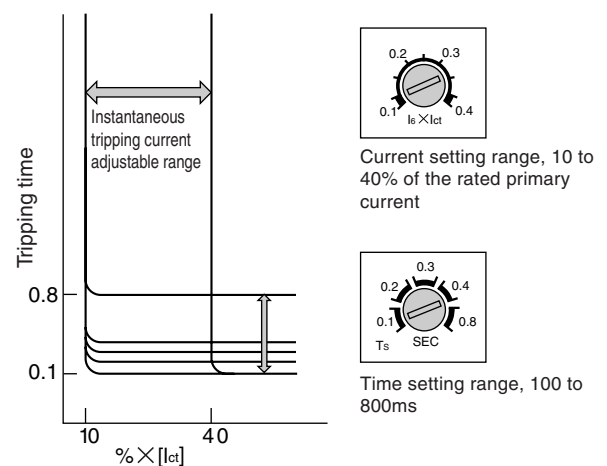
Coordination with thermal-magnetic trip type MCCB



### • Adjustable pre-trip alarm



### • Adjustable ground fault tripping

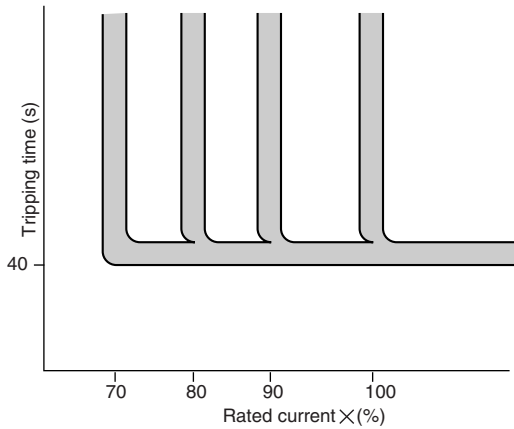


# Molded Case Circuit Breakers

## Solid-state trip types

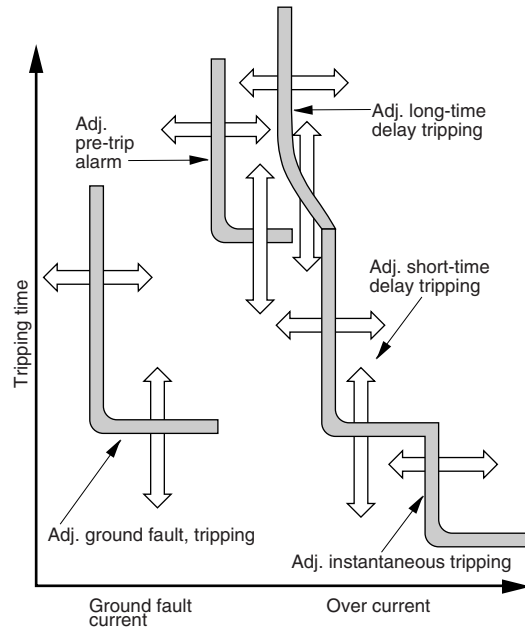
### ■ Pre-trip alarm function

Constantly monitors the load current, and outputs an alarm when it exceeds the set current. Helpful for preventive maintenance and power management. The pre-trip alarm operates via an LED on the breaker surface and a contact output. Separate power supply is necessary. The pre-trip alarm setting range allows adjustment to 70, 80, 90, or 100% of the rated current.

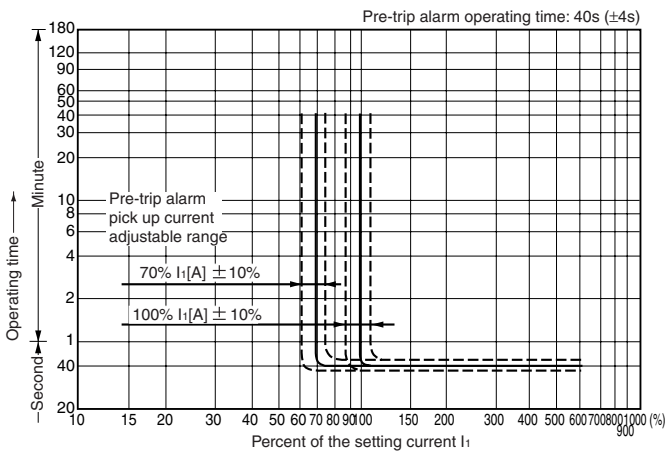


### ■ Multi protection function

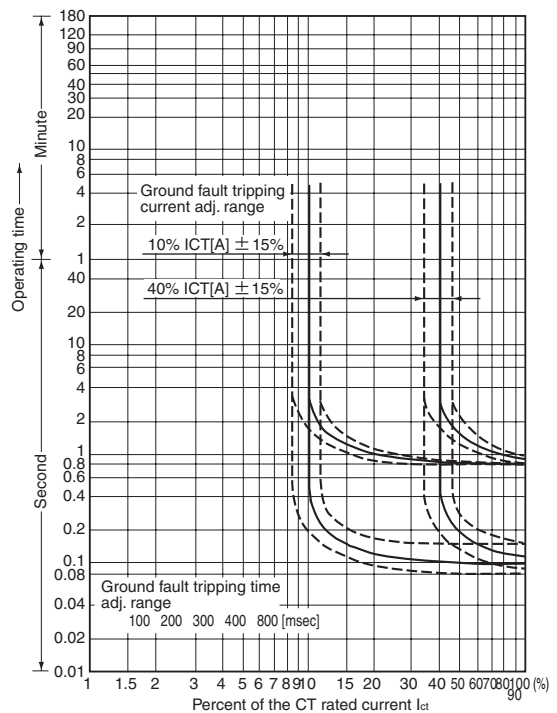
Wide-range-adjustable trip characteristics with high precision. Either ground fault tripping or the pre-trip alarm can be selected as an option (not both).



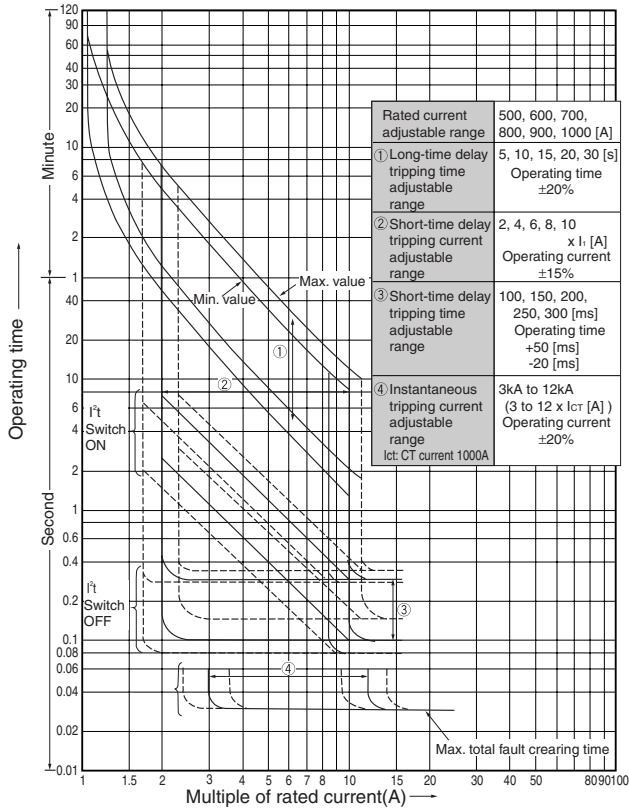
### • Pre-trip alarm characteristics



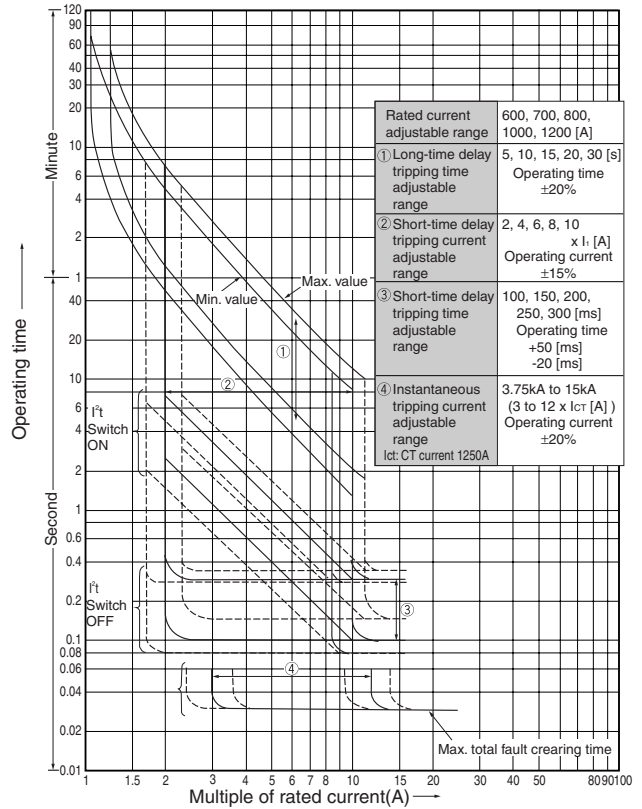
### • Ground fault tripping characteristics



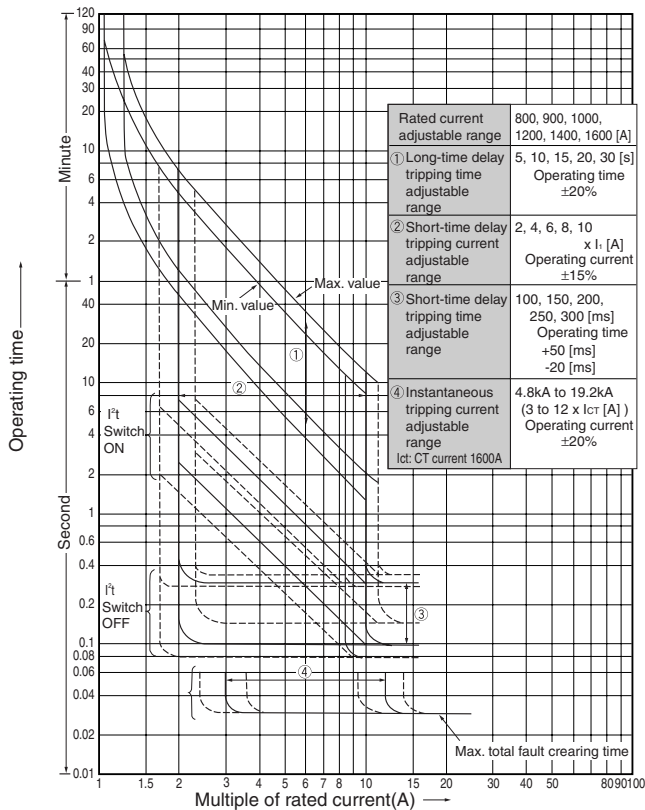
■ Operating characteristic  
SA1000E



SA1200E



SA1600E



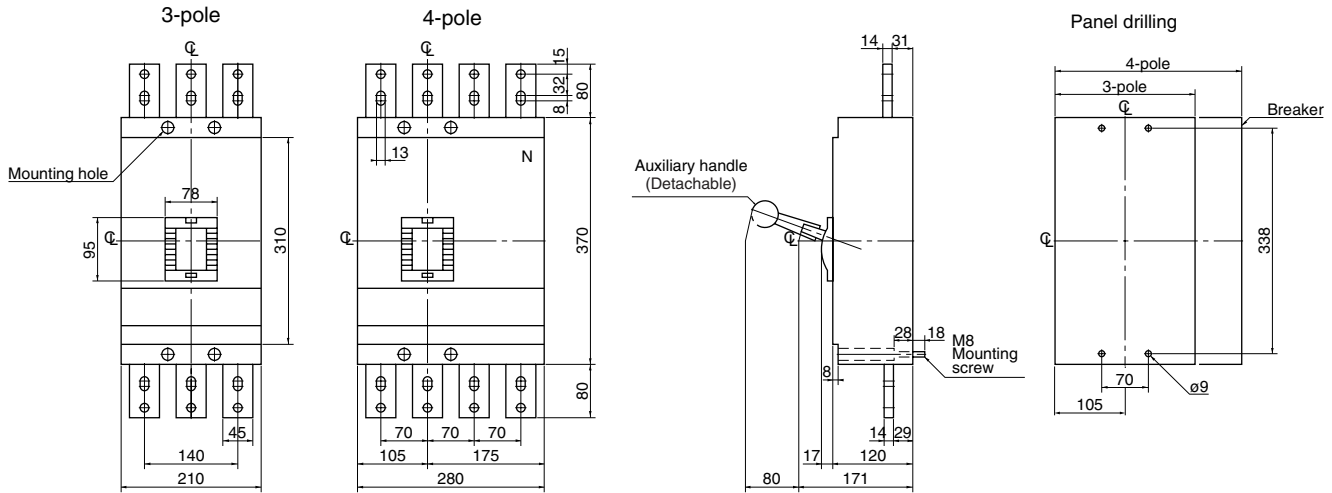
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## Solid-state trip types

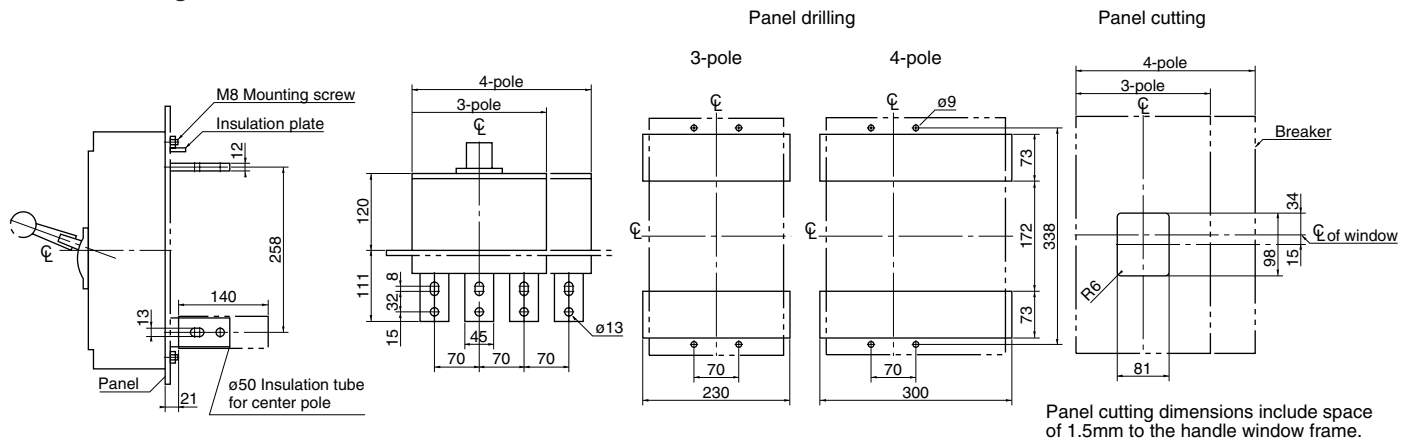
### ■ Dimensions, mm

#### SA1000E, 1200E

#### Front mounting, front connection

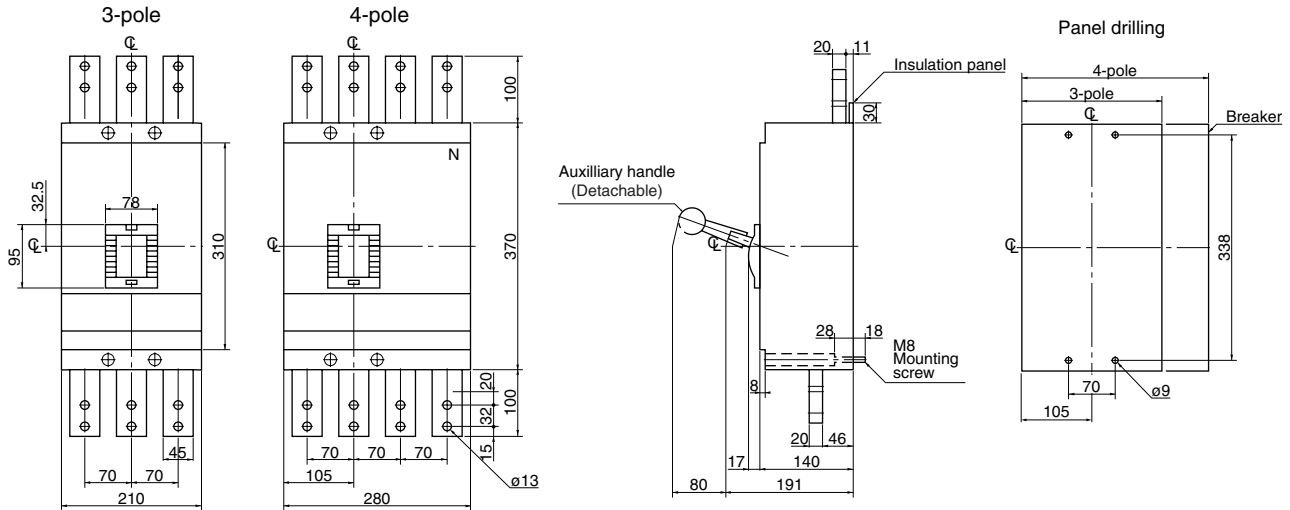


#### Front mounting, rear connection

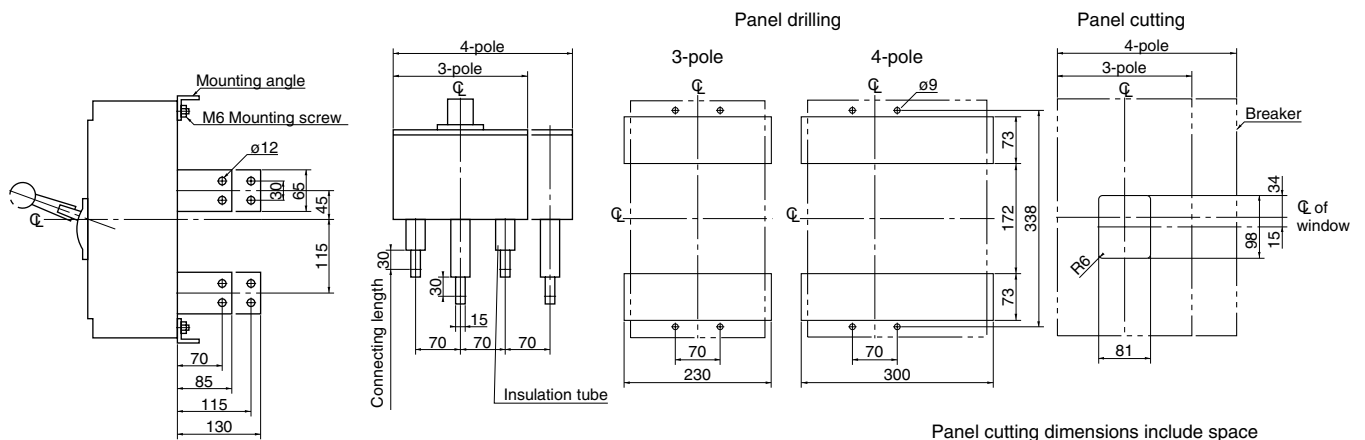


■ Dimensions, mm  
SA1600E

Front mounting, front connection



Front mounting, rear connection



Panel cutting dimensions include space of 1.5mm to the handle window frame.