e-Front runners

FUJI ELECTRIC

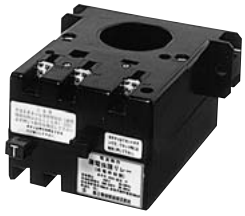
EARTH LEAKAGE CIRCUIT BREAKERS

SG series

Motor-operated breakers

EG series

Protective relays
BRR, RRD, EL



HG series

4-pole
SG and EG series

Handle-operated type

LOW VOLTAGE EQUIPMENT
Up to 600 Volts

INDIVIDUAL CATALOG

from D&C CATALOG 19th Edition
Revised

07

D & C CATALOG DIGEST INDEX

07 Earth Leakage Circuit Breakers
Earth Leakage Protective Relays

MINIMUM ORDERS
Orders amounting to **less than ¥10,000** net per order will be charged as ¥10,000 net per order plus freight and other charges.

WEIGHTS AND DIMENSIONS
Weights and dimensions appearing in this catalog are the best information available at the time of going to press. FUJI ELECTRIC FA has a policy of continuous product improvement, and design changes may make this information out of date.
Please confirm such details before planning actual construction.

INFORMATION IN THIS CATALOG IS SUBJECT TO CHANGE WITHOUT NOTICE.

■ Description

Now, ELCB's and MCCB's rated at 30AF (ampere frame) to 800AF share the same frame sizes and dimensions. FUJI has expanded its line up of 30AF to 800AF α-TWIN Breaker models.
Standardized dimensions ease panel design and manufacture. " α-TWIN series" Models 30AF to 225AF (EG and SG series) are 60mm deep and require a panel cutout height of 52mm. Models 400AF to 800AF are 103mm deep and require a panel cutout height of 92mm.
With standardized modular construction, FUJI α-TWIN Breakers cut panel manufacturing costs.

■ Features

• Highly sensitive leakage current device
FUJI's specially designed earth leakage tripping device uses a solid-state amplifier, which are highly efficient and quickly respond to ground faults.
Moreover, there is a wide variety of tripping sensitivities to choose to suit different protection purposes. Standard tripping values are 15mA, 30mA, 100mA, 200mA and 500mA.

• ELCB for many applications
FUJI manufacture many types of ELCB's to satisfy a multitude of purposes. The SG series are the standard type, HG series are high breaking capacity type and the EG the economy type. ELCB's are available in single-phase 2-wire, single-phase 3-wire, three-phase 3-wire and three-phase 4-wire versions.

• Easy to install and maintenance free
The unit is installed and wired in exactly the same way as any other MCCB. FUJI ELCB's are available in a wide voltage ranges (100–230 or 100–230–440 Volts). Insulation testing between phases is easily carried out by simply switching the ELCB to OFF (the control power source must be disconnected).

• Testing procedures
All the ELCB's are provided with test buttons. Simply press button to check operation of the tripping device as instructed in operation manual.

• Ambient temperature
The ELCB's rated current is calibrated for an ambient temperature of 40°C. If the ambient temperature differs greatly from 40°C, it is necessary to compensate the rated current or operating time according to the ambient temperature calibration curve.

• Time delay type
Time delay type (...D) has been added to the EG, SG and HG series. These are mainly used as main circuit breakers. Since they trip later than the breakers at the end of the line, protective coordination can be carried out more easily.
For further information, contact FUJI.

• Conforming to international standards
The α-TWIN series conforms to IEC and EN standards, and features cUL and CCC.

■ Variety of ELCB's

Choose from a wide variety of models—from economical to high-performance.
Three series of α-TWIN Breakers ensure the best choice for the application: the economical E series, the standard S series, and the high-performance, high-breaking capacity H series. The E series line-up of compact, economical ELCB is best for circuits with relatively low short-circuit currents. The S series new and unique current-liminting mechanism provides a surprisingly high breaking capacity for a compact breaker. The H series features an excellent current-limiting mechanism and an enhanced method of arc-extinguishing to achieve a higher breaking capacity than the E and S series.

SG, EG and HG series

The SG, EG and HG series have electric device provided with ICs and can be applied to a wide variety of voltages. The 2-pole breakers can be used within the range of rated voltage of 100–230 volts and the 3-pole breakers within the range of 100–230–440 volts. The SG and EG are available with ratings between 30AF and 800AF.
The HG series are available with ratings between 50AF and 800AF.
SG series of over 30AF, HG and EG series of over 50AF are also available in the sensitive current changeover type.

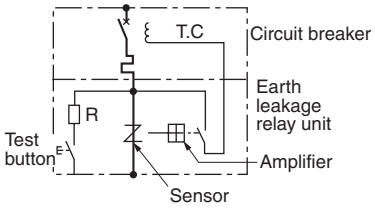
SG series – 3-phase 4-wire

The SG series 4-pole ELCB is a standard 3-pole ELCB to which a fourth neutral pole has been added. It has been designed for 3-phase 4-wire power systems. 100A, 225A and 400A frame sizes are available. SG104H and SG204H have a high breaking capacity of 85kA at 200V AC. They are ideally suited for main breakers in distribution circuits. The earth leakage tripping device is a solid-state type. The breaker is so designed that the neutral pole makes the first contact on closing, and the last break when opening so reducing the possibility of incorrect or careless operation.

Motor protection ELCB

FUJI ELCB's are designed to eliminate erroneous operations due to the rush current produced at the time of starting the motor. They will trip in the face of sustained overcurrent when the integrated bimetal relay has operated.

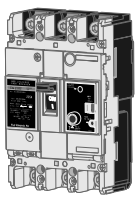
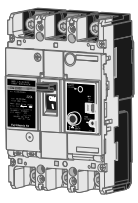
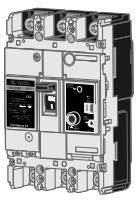
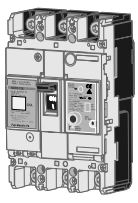
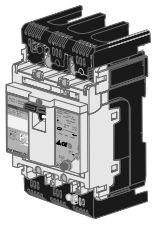
■ Wiring diagram (skelton)



■ Modifications

Mounting modifications
FUJI SG, EG and HG series ELCB's are normally supplied as front mounting front connection type. However, they are also available either as X-type (front mounting rear connection), E-type (flush mounting) or P-type (plug-in mounting).

Accessories-modifications
FUJI ELCB's can be supplied with accessories such as alarm switch, auxiliary switch or shunt trip device, which are customer-mountable or factory-mounted.
For details see page *07/68.*

CE marking			UL approved	
Line protection		Motor protection	UL489 approved line protection	
SG series	**EG series**	**SG, EG series**	**SG-UL series**	**EG-UL series**
Standard	Economical	Standard, economical		
				

■ Varieties of ELCBs

Line protection

Series	Pole	Standard	Ampere frame							
			30	50	60	100	225	400	600	800
SG	3	IEC 60947-2 JIS C8201-2	SG33C□-CE	SG53C□-CE SG53RC□-CE	SG63C□-CE SG63RC□-CE	SG103C□-CE SG103RC□-CE	SG203C□-CE SG203RC□-CE	SG403C□-CE		
	3	JIS C8371						SG403RC	SG603RC	SG803RC
EG	2	IEC 60947-2 JIS C8201-2	EG32AC□-CE	EG52AC□-CE		EG102C□-CE				
	3		EG33AC□-CE EG33C□-CE	EG53AC□-CE EG53C□-CE	EG63C□-CE	EG103AC□-CE EG103C□-CE	EG203C□-CE	EG403C□-CE		
	3	JIS C8371							EG603C	EG803C
HG	3	JIS C8371		HG53B		HG103B	HG203B	HG403B	HG603B	HG803B
SG	4					SGa104A SG104H	SGa204A SG204H	SGa404A		
EG	4					EG104A				

Motor protection

Series	Pole	Standard	Ampere frame				
			30	50	60	100	225
SG	3	IEC 60947-2 JIS C8201-2	SG33CM□-CE	SG53CM□-CE	SG63CM□-CE	SG103CM□-CE SG103RCM□-CE	SG203CM□-CE SG203RCM□-CE
EG	3	IEC 60947-2 JIS C8201-2	EG33CM□-CE	EG53CM□-CE	EG63CM□-CE	EG103CM□-CE	EG203CM□-CE

UL489 Listed

Series	Pole	Standard	Ampere frame			
			50	100	225	400
SG	3	UL489 IEC 60947-2 JIS C8201-2	SG53RCUL	SG103CUL	SG203CUL	SG403CUL
EG	2	UL489 IEC 60947-2 JIS C8201-2	–	EG102CUL	–	–
	3		–	EG103CUL	–	–

Note: Type number with "□-CE" indicates the IEC and CE marking conformed model, but type number without "□-CE" indicates also the same.

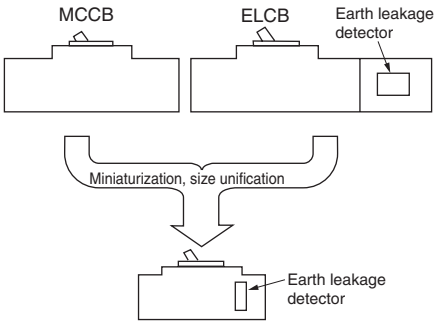
■ Description

Today's industries have introduced advanced information systems and automated systems to increase efficiency.
These systems rely on a stable supply of electrical power. The reliability, operational ease, and cost effectiveness of these power supplies must improved. Earth leakage circuit breakers must also be more compact with improved reliability. They need to be economical to reduce the overall distribution panel cost.
The new FUJI ELCB has been developed to meet these expectations and requirements. Now, for the first time, FUJI ELCB and MCCB of the same rating are the same size, a long-awaited development in the manufacture of low-voltage distribution board.

■ Features

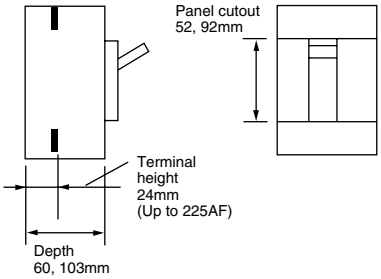
• Standardized ELCB and MCCB outline dimensions

FUJI α-TWIN breakers feature compact and modular construction. The ELCB's and MCCB's of the same rating, from 30AF to 800AF, are the same size.



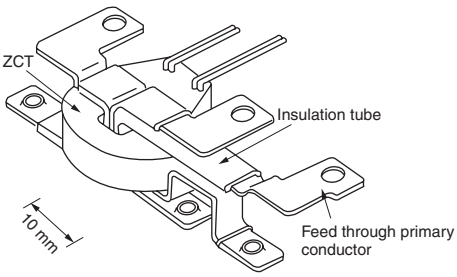
• Standardized modular construction

Having circuit breakers of the same basic dimensions promote modular designs. New α-TWIN ELCB's are available in two standard depths: 60 and 103mm, choose it from two front panel cutout height of 52mm or 92mm. The center of the window frame is positioned at the center of the circuit breaker. These design features enable a radical reduction in the number of mounting patterns.



• Ultra-small leakage detector and trip unit

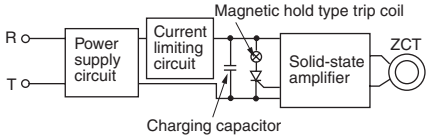
The leakage detector is equipped with a new, thin, high-performance ZCT with uniform magnetic characteristics. The new ZCT allows a compact leakage detector with stable balancing characteristics to be manufactured.



• Simple and highly reliable electronic circuit

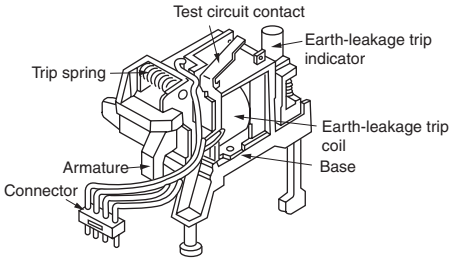
Very stable operation across a wide voltage range has been obtained with a highly reliable dedicated IC which is operated with minute currents and a FUJI designed power circuit.

100V/ 240V/440V circuit



• Small, high-efficiency trip unit

A small, highly efficient trip coil which operates with a small tripping current and has a strong driving force has been developed with a CAD (Computer Aided Design) based method of magnetic field analysis.



• One ELCB can be used with circuit voltages of 100–230–440V AC (high-speed type)

Easy selection of ELCB and great flexibility in meeting specification changes.
Selection of the proper ELCB is made easier because of the wide voltage range of one unit, (100–230–440V AC). Changes in specifications can also be made more easily with such a wide voltage range.

• Three-step, sensitivity to fault currents (100/200/500mA)

A three-step change (100/200/500mA) in the rated sensitivity to fault currents has widened the range of application. This allows full compliance with changes in specifications.

• Easily interchangeable ELCB and MCCB

The ELCB and MCCB allow the designer to quickly alter distribution panel and facility design when specifications are changed.
The ELCB and MCCB can be easily replaced by each other because their sizes and basic specifications are the same.

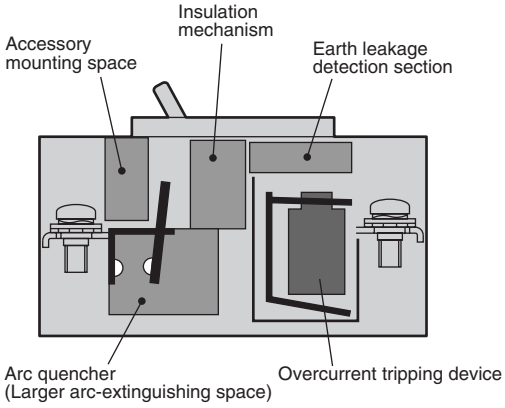
■ **Construction**

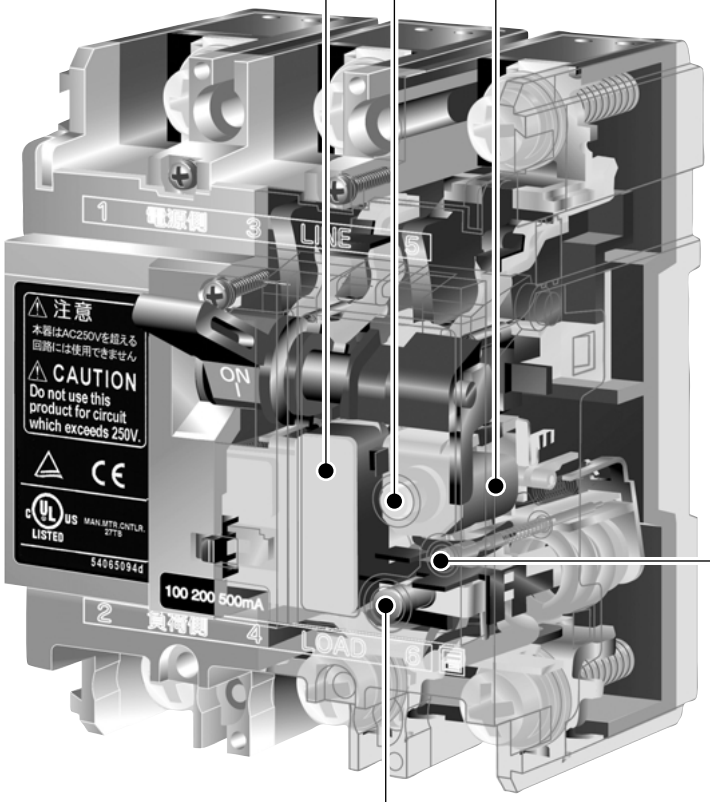
Tripping indication button

When the breaker opens due to an earth leakage current the trip indication button pops out to indicate that an earth leakage has occurred.

ELR unit with less wiring

A unit construction for the ELR and greater wiring efficiency has boosted connection reliability.



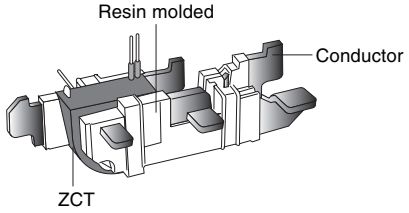


Trip button

The ELCB can be mechanically tripped externally.

Solid-state insulation ZCT

Insulation has been strengthened by using resin to mold the main circuit conductor and ZCT into an integrated unit.



Test button

The sensitive trip mechanism operation can be checked at any time by simply pressing the test button.

07

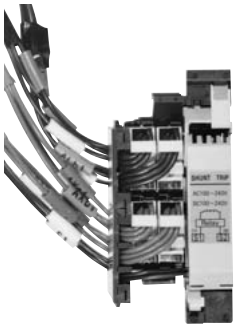
■ Internal and external accessories
A wider range of customer-mountable accessories
The range of cassette-type internal accessories has been greatly expanded for α-TWIN ELCBs. This speeds up and simplifies customer response to specification changes. All accessories shown here can be mounted by the customer except for motor operating mechanism and plate type padlocking device.

Wide variety of internal accessory combinations
Up to two auxiliary switches, two alarm switches, and one shunt trip device or undervoltage trip device quickly snap on or in.

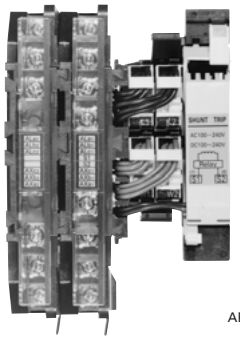
Quick and easy mounting
No need to open breaker cover to mount accessories. Internal accessories easily snap into a pocket at the left of the breaker window frame.

No adjustments
Accessory mounting is quick and easy — accessories adjust automatically at the correct position when mounted.

Two ways to connect — lead wires or terminal blocks
• Lead wire types
Leads are marked with to indicate the correct terminal number of the accessory — incorrect wiring is minimized. To make wiring easy and prevent to incorrect connection, the lead wires are provided with color coated tube and marking on it.


AF93-82

• Terminal block types
Terminal blocks are mounted on the side of the breaker case. Blocks are only 12.5 or 19mm thick, minimizing panel mounting space. Installed lead wires are parallel to the side of the case.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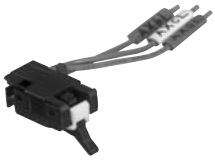
Alarm switch

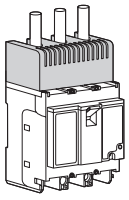
Auxiliary switch



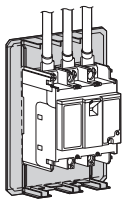
Undervoltage trip device
Shunt trip device

Terminal block

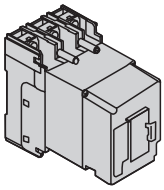
Terminal covers
Long type
Short type



Insulation barriers
Interphase barrier
Earth barrier



Motor operating mechanism



Mechanical interlocking device

Steel enclosure

Handle padlocking device
Handle locking cover

Operating handles
N type
V type

Modification kits
For front mounting, rear connection
For plug-in mounting
For flush mounting, rear connection

■ Breaking capacities

Earth leakage + Overcurrent + Short-circuit protection

• IEC 60947-2, JIS C8201-2 IEC and CE marking conformed

Series	Breaker ampere frame	Breaker type	Pole	Rated current (A)	Rated voltage (V AC)	Sensitive current (mA)	Breaking capacity (kA) (Icu/Ics) 100V	230V	400V	440V
SG	30	**SG33C□-CE**	3	3, 5, 10, 15, 20, 30	100–440	30, 100/200/500	5/3	5/3	2.5/2	2.5/2
	50	**SG53C□-CE**	3	5, 10, 15, 20, 30, 40, 50	100–440	30, 100/200/500	10/5	10/5	7.5/4	7.5/4
	50	**SG53RC□-CE**	3	10, 15, 20, 30, 40, 50	100–440	30, 100/200/500	25/13	25/13	10/5	10/5
	60	**SG63C□-CE**	3	60	100–440	30, 100/200/500	10/5	10/5	7.5/4	7.5/4
	60	**SG63RC□-CE**	3	60	100–440	30, 100/200/500	25/13	25/13	10/5	10/5
	100	**SG103C□-CE**	3	15, 20, 30, 40, 50, 60, 75, 100	100–440	30, 100/200/500	50/25	50/25	30/8	25/7
	100	**SG103RC□-CE**	3	15, 20, 30, 40, 50, 60, 75, 100	100–440	30, 100/200/500	100/50	100/50	50/13	50/13
	225	**SG203C□-CE**	3	125, 150, 175, 200, 225	100–440	30, 100/200/500	50/25	50/25	30/8	25/7
	225	**SG203RC□-CE**	3	125, 150, 175, 200, 225	100–440	30, 100/200/500	100/50	100/50	50/13	50/13
	400	**SG403C□-CE**	3	250, 300, 350, 400	100–440	30, 100/200/500	50/25	50/25	35/18	35/18
EG	30	**EG32AC□-CE**	2	5, 10, 15, 20, 30	100–230	15, 30, 100	2.5/2	2.5/2	–	–
	30	**EG33AC□-CE**	3	5, 10, 15, 20, 30	100–230	15, 30, 100	2.5/2	2.5/2	–	–
	30	**EG33C□-CE**	3	5, 10, 15, 20, 30	100–440	15, 30, 100	5/3	2.5/2	1.5/1	1.5/1
	50	**EG52AC□-CE**	2	5, 10, 15, 20, 30, 40, 50	100–230	15, 30, 100	2.5/2	2.5/2	–	–
	50	**EG53AC□-CE**	3	5, 10, 15, 20, 30, 40, 50	100–230	15, 30, 100	2.5/2	2.5/2	–	–
	50	**EG53C□-CE**	3	5, 10, 15, 20, 30, 40, 50	100–440	15, 30, 100/200	5/3	5/3	2.5/2	2.5/2
	60	**EG63C□-CE**	3	60	100–440	15, 30, 100/200	5/3	5/3	2.5/2	2.5/2
	100	**EG103AC□-CE**	3	60, 75, 100	100–230	30, 100/200	5/3	5/3	–	–
	100	**EG102C□-CE**	2	50, 60, 75, 100	100–230	30, 100/200	10/5	10/5	–	–
	100	**EG103C□-CE**	3	50, 60, 75, 100	100–440	30, 100/200/500	25/13	25/13	10/5	10/5
	225	**EG203C□-CE**	3	125, 150, 175, 200, 225	100–440	30, 100/200/500	35/18	35/18	18/5	15/4
	400	**EG403C□-CE**	3	250, 300, 350, 400	100–440	30, 100/200/500	35/18	35/18	25/13	25/13

Breaking capacities

■ Breaking capacities

Earth leakage + Overcurrent + Short-circuit protection type

• JIS C8371

Series	Breaker ampere frame	Breaker type	Pole	Rated current (A)	Rated voltage (V AC)	Sensitive current (mA)	Breaking capacity (kA) sym. 100V	200V	415V
SG	400	**SG403RC**	3	250, 300, 350, 400	100-415	30, 100/200/500	85	85	50
	600	**SG603RC**	3	500, 600	100-415	100/200/500	85	85	50
	800	**SG803RC**	3	700, 800	100-415	100/200/500	85	85	50
	100	**SGa104A**	4	40, 50, 60, 75, 100	200-415	30, 100/200/500	–	50	25
	100	**SG104H**	4	50, 60, 75, 100	200-415	30, 100/200/500	–	85	42
	225	**SGa204A**	4	125, 150, 175, 200, 225	200-415	30, 100/200/500	–	42	25
	225	**SG204H**	4	125, 150, 175, 200, 225	200-415	30, 100/200/500	–	85	42
	400	**SGa404A**	4	250, 300, 350, 400	200-415	30, 100/200/500	–	42	25
EG	100	**EG104A**	*	30, 40, 50, 60, 75, 100	380-415	30, 100, 300, 500	–	–	14
	600	**EG603C**	3	500, 600	100-415	100/200/500	50	50	35
	800	**EG803C**	3	700, 800	100-415	100/200/500	50	50	35
HG	50	**HG53B**	3	15, 20, 30, 40, 50	100-415	30, 100/200/500	100	100	65
	100	**HG103B**	3	15, 20, 30, 40, 50, 60, 75, 100	100-415	30, 100/200/500	100	100	65
	225	**HG203B**	3	125, 150, 175, 200, 225	100-415	30, 100/200/500	100	100	65
	400	**HG403B**	3	250, 300, 350, 400	100-415	30, 100/200/500	125	125	65
	600	**HG603B**	3	500, 600	100-415	100/200/500	125	125	65
	800	**HG803B**	3	700, 800	100-415	100/200/500	125	125	65

Note: * 3P+1N, neutral phase cannot be made or broken.

• UL489 Listed

Breaker ampere frame	Breaker type	Pole	Rated current (A)	Rated voltage (V AC)	Sensitive current (mA)	Breaking capacity (kA) 240V
50	**SG53RCUL**	3	3, 5, 10, 15, 20, 30, 40, 50	100–440	30, 100/200/500	14
100	**EG102CUL**	2	60, 70, 75, 80, 90, 100	100–440	30, 100/200	14
100	**EG103CUL**	3	60, 70, 75, 80, 90, 100	100–440	30, 100/200/500	14
100	**SG103CUL**	3	32, 40, 50, 60, 75, 100	100–440	30, 100/200/500	35
225	**SG203CUL**	3	125, 150, 175, 200, 225	100–440	30, 100/200/500	35
400	**SG403CUL**	3	250, 300, 350, 400	100–440	30, 100/200/500	42

■ SG series IEC and CE marking conformed types

Frame			30A	50A	
Pole			3	3	3
Type		Instantaneous trip type	**SG33C□-CE**	**SG53C□-CE**	**SG53RC□-CE**
		Time delay trip type	–	–	–
Phase and wire			3ø3W 1ø3W 1ø2W	3ø3W 1ø3W 1ø2W	3ø3W 1ø3W 1ø2W
Rated voltage (V AC)		Instantaneous trip type	100–230–440	100–230–440	100–230–440
[IEC 60947-2/JIS C 8201-2]		Time delay trip type	–	–	–
Rated current (A)			3, 5, 10, 15, 20, 30	5, 10, 15, 20, 30, 40, 50	10, 15, 20, 30, 40, 50
Frequency (Hz)			50/60	50/60	50/60
Instantaneous trip type		Rated sensitive current (mA)	30, 100/200/500	30, 100/200/500	30, 100/200/500
		Tripping time (s)	0.1	0.1	0.1
Rated breaking capacity(kA)		440V AC	2.5/2	7.5/4	10/5
[IEC 60947-2/JIS C 8201-2]		400V AC	2.5/2	7.5/4	10/5
(Icu/Ics) *1		230V AC	5/3	10/5	25/13
		100V AC	5/3	10/5	25/13
Instantaneous trip type [UL508]	Rated operating voltage (V AC)		240	240	240
	Rated sensitive current IΔn (mA)		30, 100/200/500	30, 100/200/500	30, 100/200/500
		Page 07/28			
	Pick-up current [UL1053]		0.7 x Rated sensitive current	0.7 x Rated sensitive current	
Tripping time (s) [UL1053]			0.1	0.1	0.1
Dimensions (mm)		a	75	75	75
		b	100	100	100
Page 07/45		c	60	60	60
		d	84	84	84
Mass (kg) Front mounting type			0.6	0.6	0.6
Front mounting, front connection		No-mark	●	●	●
Front mounting, rear connection		X	●	●	●
Flush mounting, rear connection		E	●	●	●
Flush mounting, top & bottom connection		Y	●	●	●
Plug-in mounting		P	●	●	●
IEC 35mm wide rail mounting			●	●	●
Internal accessories					
Alarm switch		K	BZ6K□10C	BZ6K□10C	BZ6K□10C
Alarm switch with terminal block		KA	BZ6K□10CA	BZ6K□10CA	BZ6K□10CA
Auxiliary switch		W	BZ6W□10C	BZ6W□10C	BZ6W□10C
Auxiliary switch with terminal block		WA	BZ6W□10CA	BZ6W□10CA	BZ6W□10CA
Undervoltage trip		R	BZ6R□10C	BZ6R□10C	BZ6R□10C
Shunt trip		F	BZ6F□10C	BZ6F□10C	BZ6F□10C
Test lead wire		TL	▲	▲	▲
Megger test switch		MGS	–	–	–
External accessories					
Motor operating mechanism		M	▲	▲	▲
Handle padlocking device	Cap type	Q1	–	–	–
	Plate type	Q2	▲	▲	▲
Mechanical interlocking device		M1	BZ6M110C3	BZ6M110C3	BZ6M110C3
		M2	BZ6M210C3	BZ6M210C3	BZ6M210C3
		M3	BZ6M310C3	BZ6M310C3	BZ6M310C3
Operating handle N-type		N	BZ6N10C	BZ6N10C	BZ6N10C
Operating handle V-type		V	BZ6V10C	BZ6V10C	BZ6V10C
Steel enclosure	Direct operating	C	BZ6C10C3	BZ6C10C3	BZ6C10C3
Dustproof steel enclosure	Handle operating	CV	BZ6CV10C	BZ6CV10C	BZ6CV10C
Rainproof steel enclosure	Handle operating	CW	BZ6CW10C	BZ6CW10C	BZ6CW10C
Terminal cover	Short	TS	BZ6TS10C3	BZ6TS10C3	BZ6TS10C3
Terminal cover	Long	TB	BZ6TB10C3	BZ6TB10C3	BZ6TB10C3
Insulation barrier	Interphase *2	B	BZ6B10C	BZ6B10C	BZ6B10C
Insulation barrier	Earth	BL	BZ6BL10C3	BZ6BL10C3	BZ6BL10C3
Handle locking cover		L	BZ6L10C	BZ6L10C	BZ6L10C
Flat terminal		S	BZ6S10C503	BZ6S10C503	BZ6S10C503

Notes: *1 Icu: Rated ultimate short-circuit breaking capacity
Ics: Rated service short-circuit breaking capacity
*2 Interphase insulation barriers are standard provided for the front mounting type breakers of 50AF and over.

● Available – Not available ▲ Factory-mounted accessory

Rated voltage (V)	Operational voltage range (V)
100–230–440	80–484

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■ SG series IEC and CE marking conformed types

Frame			60A		100A	
Pole			3	3	3	3
Type	Instantaneous trip type		**SG63C□-CE**	**SG63RC□-CE**	**SG103C□-CE**	**SG103RC□-CE**
	Time delay trip type		–	–	–	–
Phase and wire			3ø3W 1ø3W 1ø2W	3ø3W 1ø3W 1ø2W	3ø3W 1ø3W 1ø2W	3ø3W 1ø3W 1ø2W
Rated voltage (V AC)	Instantaneous trip type		100–230–440	100–230–440	100–230–440	100–230–440
[IEC 60947-2/JIS C 8201-2]	Time delay trip type		–	–	–	–
Rated current (A)			60	60	15, 20, 30, 40, 50, 60, 75, 100	
Frequency (Hz)			50/60	50/60	50/60	50/60
Instantaneous trip type	Rated sensitive current (mA)		30, 100/200/500	30, 100/200/500	30, 100/200/500	30, 100/200/500
	Tripping time (s)		0.1	0.1	0.1	0.1
Rated breaking capacity(kA)		440V AC	7.5/4	10/5	25/7	50/13
[IEC 60947-2/JIS C 8201-2]		400V AC	7.5/4	10/5	30/8	50/13
(Icu/Ics) *1		230V AC	10/5	25/13	50/25	100/50
		100V AC	10/5	25/13	50/25	100/50
Instantaneous trip type [UL508]	Rated operating voltage (V AC)		240	240	–	–
	Rated sensitive current IΔn (mA) *Page 07/28*		30, 100/200/500	30, 100/200/500	–	–
	Pick-up current [UL1053]		0.7 x Rated sensitive current		–	–
Tripping time (s) [UL1053]			0.1	0.1	–	–
Dimensions (mm)		a	75	75	90	90
		b	100	100	155	155
Page 07/45		c	60	60	60	60
		d	84	84	82	82
Mass (kg) Front mounting type			0.6	0.6	1.3	1.3
Front mounting, front connection		No-mark	●	●	●	●
Front mounting, rear connection		X	●	●	●	●
Flush mounting, rear connection		E	●	●	●	●
Flush mounting, top & bottom connection		Y	●	●	–	–
Plug-in mounting		P	●	●	●	●
IEC 35mm wide rail mounting			●	●	–	–
Internal accessories						
Alarm switch		K	BZ6K□10C	BZ6K□10C	BZ6K□30C	BZ6K□30C
Alarm switch with terminal block		KA	BZ6K□10CA	BZ6K□10CA	▲	▲
Auxiliary switch		W	BZ6W□10C	BZ6W□10C	BZ6W□30C	BZ6W□30C
Auxiliary switch with terminal block		WA	BZ6W□10CA	BZ6W□10CA	▲	▲
Undervoltage trip		R	BZ6R□10C	BZ6R□10C	▲	▲
Shunt trip		F	BZ6F□10C	BZ6F□10C	▲	▲
Test lead wire		TL	▲	▲	▲	▲
External accessories						
Motor operating mechanism		M	▲	▲	▲	▲
Handle padlocking device	Cap type	Q1	–	–	–	–
	Plate type	Q2	▲	▲	–	–
Mechanical interlocking device		M1	BZ6M110C3	BZ6M110C3	–	–
		M2	BZ6M210C3	BZ6M210C3	–	–
		M3	BZ6M310C3	BZ6M310C3	–	–
Operating handle N-type		N	BZ6N10C	BZ6N10C	BZ-N30C	BZ-N30C
Operating handle V-type		V	BZ6V10C	BZ6V10C	BZ6V30C	BZ6V30C
Steel enclosure	Direct operating	C	BZ6C10C3	BZ6C10C3	BZ6C30C3	BZ6C30C3
Dustproof steel enclosure	Handle operating	CV	BZ6CV10C	BZ6CV10C	BZ-CV30C	BZ-CV30C
Rainproof steel enclosure	Handle operating	CW	BZ6CW10C	BZ6CW10C	BZ-CW30C	BZ-CW30C
Terminal cover	Short	TS	BZ6TS10C3	BZ6TS10C3	BZ-TS30B-3	BZ-TS30B-3
Terminal cover	Long	TB	BZ6TB10C3	BZ6TB10C3	BZ-TB30B-3	BZ-TB30B-3
Insulation barrier	Interphase *2	B	BZ6B10C	BZ6B10C	BZ-B30B	BZ-B30B
Insulation barrier	Earth	BL	BZ6BL10C3	BZ6BL10C3	BZ-BL35B	BZ-BL35B
Handle locking cover		L	BZ6L10C	BZ6L10C	BZ6L30C	BZ6L30C
Flat terminal		S	BZ6S10C1003	BZ6S10C1003	BZ-S35B-1003	BZ-S35B-1003

Notes: *1 Icu: Rated ultimate short-circuit breaking capacity
Ics: Rated service short-circuit breaking capacity
*2 Interphase insulation barriers are standard provided for the front mounting type breakers of 50AF and over.

● Available – Not available ▲ Factory-mounted accessory

Rated voltage (V)	Operational voltage range (V)
100–230–440	80–484

■ SG series IEC and CE marking conformed types

Frame			225A		400A
Pole			3	3	3
Type	Instantaneous trip type		**SG203C□-CE**	**SG203RC□-CE**	**SG403C□-CE**
	Time delay trip type		–	–	–
Phase and wire			3ø3W 1ø3W 1ø2W	3ø3W 1ø3W 1ø2W	3ø3W 1ø3W 1ø2W
Rated voltage (V AC) [IEC 60947-2/JIS C 8201-2]	Instantaneous trip type		100–230–440	100–230–440	100–230–440
	Time delay trip type		–	–	–
Rated current (A)			125, 150, 175, 200, 225	125, 150, 175, 200, 225	250, 300, 350, 400
Frequency (Hz)			50/60	50/60	50/60
Instantaneous trip type	Rated sensitive current (mA)		30, 100/200/500	30, 100/200/500	30, 100/200/500
	Tripping time (s)		0.1	0.1	0.1
Rated breaking capacity(kA) [IEC 60947-2/JIS C 8201-2] (Icu/Ics) *1		440V AC	25/7	50/13	35/18
		400V AC	30/8	50/13	35/18
		230V AC	50/25	100/50	50/25
		100V AC	50/25	100/50	50/25
Instantaneous trip type [UL508]	Rated operating voltage (V AC)		–	–	–
	Rated sensitive current IΔn (mA)		–	–	–
	Pick-up current [UL1053]		–	–	–
Tripping time (s) [UL1053]			–	–	–
Dimensions (mm)		a	105	105	140
		b	165	165	257
Page 07/46		c	60	60	103
		d	84	84	146
Mass (kg) Front mounting type			1.5	1.5	5.6
Front mounting, front connection		No-mark	●	●	●
Front mounting, rear connection		X	●	●	●
Flush mounting, rear connection		E	●	●	●
Flush mounting, top & bottom connection		Y	–	–	–
Plug-in mounting		P	●	●	●
IEC 35mm wide rail mounting			–	–	–
Internal accessories					
Alarm switch		K	BZ6K□40C	BZ6K□40C	BZ-K70B
Alarm switch with terminal block		KA	▲	▲	BZ-K70BA
Auxiliary switch		W	BZ6W□40C	BZ6W□40C	BZ-W70B
Auxiliary switch with terminal block		WA	▲	▲	BZ-W70BA
Undervoltage trip		R	▲	▲	BZ-R70B-□
Shunt trip		F	▲	▲	BZ-F70B-□
Test lead wire		TL	▲	▲	▲
Megger test switch		MGS	–	–	–
External accessories					
Motor operating mechanism		M	▲	▲	▲
Handle padlocking device	Cap type	Q1	–	–	–
	Plate type	Q2	–	–	▲
Mechanical interlocking device		M1	–	–	BZ-M160C
		M2	–	–	BZ-M260C
		M3	–	–	BZ-M360C
Operating handle N-type		N	BZ-N40C	BZ-N40C	BZ-N60C
Operating handle V-type		V	BZ6V40C	BZ6V40C	BZ6V60C
Steel enclosure	Direct operating	C	BZ-C40B	BZ-C40B	BZ-C60B
Dustproof steel enclosure	Handle operating	CV	BZ-CV40C	BZ-CV40C	BZ-CV60C
Rainproof steel enclosure	Handle operating	CW	BZ-CW40C	BZ-CW40C	BZ-CW60C
Terminal cover	Short	TS	BZ-TS40B	BZ-TS40B	–
Terminal cover	Long	TB	BZ-TB40B	BZ-TB40B	BZ-TB60B
Insulation barrier	Interphase *2	B	BZ-B40B	BZ-B40B	B-43A
Insulation barrier	Earth	BL	BZ-BL40B	BZ-BL40B	–
Handle locking cover		L	BZ6L40C	BZ6L40C	BZ-L70B
Flat terminal		S	BZ-S50B-2253	BZ-S50B-2253	–

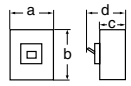
Notes: *1 Icu: Rated ultimate short-circuit breaking capacity
Ics: Rated service short-circuit breaking capacity
*2 Interphase insulation barriers are standard provided for the front mounting type breakers of 50AF and over.

● Available – Not available ▲ Factory-mounted accessory

Rated voltage (V)	Operational voltage range (V)
100–230–440	80–484

07

SG series

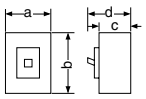
Frame			400A	600A	800A
Pole			3	3	3
Type	Instantaneous trip type		**SG403RC**	**SG603RC**	**SG803RC**
	Time delay trip type		SG403RCD	SG603RCD	SG803RCD
Phase and wire			3ø3W 1ø3W 1ø2W	3ø3W 1ø3W 1ø2W	3ø3W 1ø3W 1ø2W
Rated voltage (V AC) [JIS C 8371]	Instantaneous trip type		100–200–415	100–200–415	100–200–415
	Time delay trip type		200–415	200–415	200–415
Rated current (A)			250, 300, 350, 400	500, 600	700, 800
Frequency (Hz)			50/60	50/60	50/60
Instantaneous trip type	Rated sensitive current (mA)		30, 100/200/500	100/200/500	100/200/500
	Tripping time (s)		0.1	0.1	0.1
Time delay trip type	Rated sensitive current (mA)		100/200/500	100/200/500	100/200/500
	Tripping time (s)		0.3/0.8/2	0.3/0.8/2	0.3/0.8/2
	Inertia non-tripping time (s) [2IΔn]		0.15/0.4/1	0.15/0.4/1	0.15/0.4/1
Rated breaking capacity(kA) [JIS C 8371] sym.		415V AC	50	50	50
		200V AC	85	85	85
		100V AC	85	85	85
Instantaneous trip type [UL508]	Rated operating voltage (V AC)		–	–	–
	Rated sensitive current IΔn (mA)		–	–	–
	Pick-up current [UL1053]		–	–	
Dimensions (mm) Page 07/46		a	140	210	210
		b	257	275	275
		c	103	103	103
		d	146	146	146
Mass (kg) Front mounting type			5.6	10	10
Front mounting, front connection		No-mark	●	●	●
Front mounting, rear connection		X	●	●	●
Flush mounting, rear connection		E	●	●	●
Flush mounting, top & bottom connection		Y	–	–	–
Plug-in mounting		P	●	●	●
IEC 35mm wide rail mounting			–	–	–
Internal accessories					
Alarm switch		K	BZ-K70B	BZ-K70B	BZ-K70B
Alarm switch with terminal block		KA	BZ-K70BA	BZ-K70BA	BZ-K70BA
Auxiliary switch		W	BZ-W70B	BZ-W70B	BZ-W70B
Auxiliary switch with terminal block		WA	BZ-W70BA	BZ-W70BA	BZ-W70BA
Undervoltage trip		R	BZ-R70B-□	BZ-R70B-□	BZ-R70B-□
Shunt trip		F	BZ-F70B-□	BZ-F70B-□	BZ-F70B-□
Test lead wire		TL	▲	▲	▲
Megger test switch		MGS	▲	▲	▲
External accessories					
Motor operating mechanism		M	▲	▲	▲
Handle padlocking device	Cap type	Q1	▲	▲	▲
	Plate type	Q2	▲	▲	▲
Mechanical interlocking device		M1	BZ-M160C	BZ-M170C	BZ-M170C
		M2	BZ-M260C	BZ-M270C	BZ-M270C
		M3	BZ-M360C	BZ-M370C	BZ-M370C
Operating handle N-type		N	BZ-N60C	BZ-N70C	BZ-N70C
Operating handle V-type		V	BZ6V60C	BZ6V70C	BZ6V70C
Steel enclosure	Direct operating	C	BZ-C60B	BZ-C70B	BZ-C70B
Dustproof steel enclosure	Handle operating	CV	BZ-CV60C	BZ-CV70C	BZ-CV70C
Rainproof steel enclosure	Handle operating	CW	BZ-CW60C	–	–
Terminal cover	Short	TS	–	–	–
Terminal cover	Long	TB	BZ-TB60B	BZ-TB70B	BZ-TB60B
Insulation barrier	Interphase *1	B	B-43A	B-43A	B-43A
Insulation barrier	Earth	BL	–	–	–
Handle locking cover		L	BZ-L70B	BZ-L70B	BZ-L70B
Flat terminal		S	–	–	–

● Available – Not available ▲ Factory-mounted accessory

Notes: *1 Interphase insulation barriers are standard provided for the front mounting type breakers of 50AF and over.

Rated voltage (V)	Operational voltage range (V)
100–200–415	80–484
200–415	160–484

■ SG series/4-pole

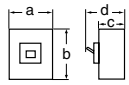
Frame		100A		225A		400A
Pole		4		4		4
Type		**SGa104A**	**SG104H**	**SGa204A**	**SG204H**	**SGa404A**
Phase and wire		3ø4W		3ø4W		3ø4W
Rated current (Amps) Ambient temp.: 40°C		40, 50, 60, 75, 100	50, 60, 75, 100	125, 150, 175, 200, 225		250, 300, 350, 400
Rated voltage (Volts)		200-415		200-415		200-415
Rated sensitive current (mA)		30, 100/200/500		30, 100/200/500		30, 100/200/500
Tripping time (sec)		0.1		0.1		0.1
Rated breaking capacity (kA) sym.	415V AC	25	42	25	42	25
	200V AC	50	85	42	85	42
Earth leakage tripping device		Solid-state		Solid-state		Solid-state
Overcurrent tripping device		Thermal-magnetic		Thermal-magnetic		Thermal-magnetic
Dimensions (mm)  *Page 07/48*	a	140		185		185
	b	230		350		350
	c	86		103		103
	d	109		134		134
Mass (kg) Front mounting type		3.2		8.7		11.3
Front mounting, front connection	No-mark	●		●		●
rear connection	X	●		●		●
Flush mounting, rear connection	E	●		●		●
top & bottom connection	Y	–		–		–
Plug-in mounting	P	–		–		–
Alarm switch	K	▲		▲		▲
Auxiliary switch	W	▲		▲		▲
Undervoltage trip	R	–		–		–
Shunt trip	F	–		–		–
Test lead wire	TL	▲		▲		▲
Megger test switch	MGS	▲		▲		▲
Earth leakage indication contact	EAL	–		–		–
Motor operating mechanism	M*	▲		▲		▲
Padlocking device	Q	▲		▲		▲
Mechanical interlocking device	M1	–		–		–
Operating handle N-type	N	N-13EA		N-23EA		N-23EA
Operating handle G-type	G	G-12A		G-22A		G-22A
Steel enclosure	C	–		–		–
Steel enclosure with G-type handle	CG	–		–		–
Terminal cover Inside panel use	A1	A1-14		–		–
Terminal cover Outside panel use	T1	–		–		–
Insulation barrier Interphase	B	–		B-44A		B-44A
Insulation barrier Earth	BL	–		–		–

● Available – Not available Factory-mounted accessory

Note: • Time delay trip types are also available on request.
* For motor-operated breaker, sensitive current and tripping time are fixed. Specify the sensitive current and tripping time when ordering.

Rated voltage (V)	Operational voltage range (V)
200–415	160–484

■ EG series IEC and CE marking conformed types

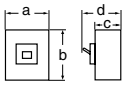
Frame			30A			50A	
Pole			2	3	3	2	3
Type	Instantaneous trip type		**EG32AC□-CE**	**EG33AC□-CE**	**EG33C□-CE**	**EG52AC□-CE**	**EG53AC□-CE**
	Time delay trip type		–	–	–	–	–
Phase and wire			1ø2W	3ø3W 1ø3W 1ø2W	3ø3W 1ø3W 1ø2W	1ø2W	3ø3W 1ø3W 1ø2W
Rated voltage (V AC) [IEC 60947-2/JIS C 8201-2]	Instantaneous trip type		100–230	100–230	100–230–440	100–230	100–230
	Time delay trip type		–	–	–	–	–
Rated current (A)			5, 10, 15, 20, 30			5, 10, 15, 20, 30, 40, 50	
Rated frequency (Hz)			50/60	50/60	50/60	50/60	50/60
Instantaneous trip type	Rated sensitive current (mA)		15, 30, 100	15, 30, 100	15, 30, 100	15, 30, 100	15, 30, 100
	Tripping time (s)		0.1	0.1	0.1	0.1	0.1
Rated breaking capacity(kA) [IEC 60947-2/JIS C 8201-2] (Icu/Ics) *1		440V AC	–	–	1.5/1	–	–
		400V AC	–	–	1.5/1	–	–
		230V AC	2.5/2	2.5/2	2.5/2	2.5/2	2.5/2
		100V AC	2.5/2	2.5/2	5/3	2.5/2	2.5/2
Instantaneous trip type [UL508]	Rated operating voltage (V AC)		240	240	240	240	240
	Rated sensitive current IΔn(mA) *Page 07/29*		15, 30, 100	15, 30, 100	15, 30, 100	15, 30, 100	15, 30, 100
	Pick-up current [UL1053]		0.7 x Rated sensitive current			0.7 x Rated sensitive current	
Tripping time (s) [UL1053]			0.1	0.1	0.1	0.1	0.1
Dimensions (mm) *Page 07/49*		a	50	75	75	50	75
		b	100	100	100	100	100
		c	60	60	60	60	60
		d	84	84	84	84	84
Mass (kg) Front mounting type			0.4	0.6	0.6	0.4	0.6
Front mounting, front connection		No-mark	●	●	●	●	●
Front mounting, rear connection		X	●	●	●	●	●
Flush mounting, rear connection		E	●	●	●	●	●
Flush mounting, top & bottom connection		Y	●	●	●	●	●
Plug-in mounting		P	●	●	●	●	●
IEC 35mm wide rail mounting			●	●	●	●	●
Internal accessories							
Alarm switch		K	BZ6KR10C	BZ6K□10C	BZ6K□10C	BZ6KR10C	BZ6K□10C
Alarm switch with terminal block		KA	BZ6KR10CA	BZ6K□10CA	BZ6K□10CA	BZ6KR10CA	BZ6K□10CA
Auxiliary switch		W	BZ6WR10C	BZ6W□10C	BZ6W□10C	BZ6WR10C	BZ6W□10C
Auxiliary switch with terminal block		WA	BZ6WR10CA	BZ6W□10CA	BZ6W□10CA	BZ6WR10CA	BZ6W□10CA
Undervoltage trip		R	BZ6R□10C	BZ6R□10C	BZ6R□10C	BZ6R□10C	BZ6R□10C
Shunt trip		F	BZ6F□10C	BZ6F□10C	BZ6F□10C	BZ6F□10C	BZ6F□10C
Test lead wire		TL	▲	▲	▲	▲	▲
Megger test switch		MGS	▲	–	–	▲	–
External accessories							
Motor operating mechanism		M	–	▲	▲	–	▲
Handle padlocking device	Cap type	Q1	–	–	–	–	–
	Plate type	Q2	▲	▲	▲	▲	▲
Mechanical interlocking device		M1	BZ6M110C2	BZ6M110C3	BZ6M110C3	BZ6M110C2	BZ6M110C3
		M2	BZ6M210C2	BZ6M210C3	BZ6M210C3	BZ6M210C2	BZ6M210C3
		M3	BZ6M310C2	BZ6M310C3	BZ6M310C3	BZ6M310C2	BZ6M310C3
Operating handle N-type		N	BZ6N10C	BZ6N10C	BZ6N10C	BZ6N10C	BZ6N10C
Operating handle V-type		V	BZ6V10C	BZ6V10C	BZ6V10C	BZ6V10C	BZ6V10C
Steel enclosure	Direct operating	C	BZ6C10C2	BZ6C10C3	BZ6C10C3	BZ6C10C2	BZ6C10C3
Dustproof steel enclosure	Handle operating	CV	BZ6CV10C	BZ6CV10C	BZ6CV10C	BZ6CV10C	BZ6CV10C
Rainproof steel enclosure	Handle operating	CW	BZ6CW10C	BZ6CW10C	BZ6CW10C	BZ6CW10C	BZ6CW10C
Terminal cover	Short	TS	BZ6TS10C2	BZ6TS10C3	BZ6TS10C3	BZ6TS10C2	BZ6TS10C3
Terminal cover	Long	TB	BZ6TB10C2	BZ6TB10C3	BZ6TB10C3	BZ6TB10C2	BZ6TB10C3
Insulation barrier	Interphase *2	B	BZ6B10C	BZ6B10C	BZ6B10C	BZ6B10C	BZ6B10C
Insulation barrier	Earth	BL	BZ6BL10C2	BZ6BL10C3	BZ6BL10C3	BZ6BL10C2	BZ6BL10C3
Handle locking cover		L	BZ6L10C	BZ6L10C	BZ6L10C	BZ6L10C	BZ6L10C
Flat terminal		S	BZ6S10C502	BZ6S10C503	BZ6S10C503	BZ6S10C502	BZ6S10C503

● Available – Not available ▲ Factory-mounted accessory

Notes: *1 Icu: Rated ultimate short-circuit breaking capacity
Ics: Rated service short-circuit breaking capacity
*2 Interphase insulation barriers are standard provided for the front mounting type breakers of 50AF and over. Except for EG50AC

Rated voltage (V)	Operational voltage range (V)
100–230	80–264
100–230–440	80–484

■ EG series IEC and CE marking conformed types

Frame			50A	60A	100A		
Pole			3	3	3	2	3
Type	Instantaneous trip type		**EG53C□-CE**	**EG63C□-CE**	**EG103AC□-CE**	**EG102C□-CE**	**EG103C□-CE**
	Time delay trip type		–	–	–	–	–
Phase and wire			3ø3W 1ø3W 1ø2W	3ø3W 1ø3W 1ø2W	3ø3W 1ø3W 1ø2W	1ø2W	3ø3W 1ø3W 1ø2W
Rated voltage (V AC) [IEC 60947-2/JIS C 8201-2]	Instantaneous trip type		100–230–440	100–230–440	100–230	100–230	100–230–440
	Time delay trip type		–	–	–	–	–
Rated current (A)			5,10,15,20,30,40,50	60	60, 75, 100	50, 60, 75, 100	
Rated frequency (Hz)			50/60	50/60	50/60	50/60	50/60
Instantaneous trip type	Rated sensitive current (mA)		15, 30, 100/200	15, 30, 100/200	30, 100/200	30, 100/200	30, 100/200/500
	Tripping time (s)		0.1	0.1	0.1	0.1	0.1
Rated breaking capacity(kA) [IEC 60947-2/JIS C 8201-2] (Icu/Ics) *1		440V AC	2.5/2	2.5/2	–	–	10/5
		400V AC	2.5/2	2.5/2	–	–	10/5
		230V AC	5/3	5/3	5/3	10/5	25/13
		100V AC	5/3	5/3	5/3	10/5	25/13
Instantaneous trip type [UL508]	Rated operating voltage (V AC)		240	240	240	240	240
	Rated sensitive current IΔn(mA) *Page 07/29*		15, 30, 100/200	15, 30, 100/200	30, 100/200	30, 100/200	30, 100/200/500
	Pick-up current [UL1053]		0.7 x Rated sensitive current		0.7 x Rated sensitive current		
Tripping time (s) [UL1053]			0.1	0.1	0.1	0.1	0.1
Dimensions (mm) *Page 07/49* 		a	75	75	75	75	75
		b	100	100	100	100	100
		c	60	60	60	60	60
		d	84	84	84	84	84
Mass (kg) Front mounting type			0.6	0.6	0.6	0.55	0.6
Front mounting, front connection		No-mark	●	●	●	●	●
Front mounting, rear connection		X	●	●	●	●	●
Flush mounting, rear connection		E	●	●	●	●	●
Flush mounting, top & bottom connection		Y	●	●	●	●	●
Plug-in mounting		P	●	●	●	●	●
IEC 35mm wide rail mounting			●	●	●	●	●
Internal accessories							
Alarm switch		K	BZ6K□10C	BZ6K□10C	BZ6K□10C	BZ6K□10C	BZ6K□10C
Alarm switch with terminal block		KA	BZ6K□10CA	BZ6K□10CA	BZ6K□10CA	BZ6K□10CA	BZ6K□10CA
Auxiliary switch		W	BZ6W□10C	BZ6W□10C	BZ6W□10C	BZ6W□10C	BZ6W□10C
Auxiliary switch with terminal block		WA	BZ6W□10CA	BZ6W□10CA	BZ6W□10CA	BZ6W□10CA	BZ6W□10CA
Undervoltage trip		R	BZ6R□10C	BZ6R□10C	BZ6R□10C	BZ6R□10C	BZ6R□10C
Shunt trip		F	BZ6F□10C	BZ6F□10C	BZ6F□10C	BZ6F□10C	BZ6F□10C
Test lead wire		TL	▲	▲	▲	▲	▲
Megger test switch		MGS	–	–	–	▲	–
External accessories							
Motor operating mechanism		M	▲	▲	▲	▲	▲
Handle padlocking device	Cap type	Q1	–	–	–	–	–
	Plate type	Q2	▲	▲	▲	▲	▲
Mechanical interlocking device		M1	BZ6M110C3	BZ6M110C3	BZ6M110C3	BZ6M110C3	BZ6M110C3
		M2	BZ6M210C3	BZ6M210C3	BZ6M210C3	BZ6M210C3	BZ6M210C3
		M3	BZ6M310C3	BZ6M310C3	BZ6M310C3	BZ6M310C3	BZ6M310C3
Operating handle N-type		N	BZ6N10C	BZ6N10C	BZ6N10C	BZ6N10C	BZ6N10C
Operating handle V-type		V	BZ6V10C	BZ6V10C	BZ6V10C	BZ6V10C	BZ6V10C
Steel enclosure	Direct operating	C	BZ6C10C3	BZ6C10C3	BZ6C25C3	BZ6C25C3	BZ6C25C3
Dustproof steel enclosure	Handle operating	CV	BZ6CV10C	BZ6CV10C	BZ6CV25C	BZ6CV25C	BZ6CV25C
Rainproof steel enclosure	Handle operating	CW	BZ6CW10C	BZ6CW10C	BZ6CW25C	BZ6CW25C	BZ6CW25C
Terminal cover	Short	TS	BZ6TS10C3	BZ6TS10C3	BZ6TS10C3	BZ6TS10C3	BZ6TS10C3
Terminal cover	Long	TB	BZ6TB10C3	BZ6TB10C3	BZ6TB10C3	BZ6TB10C3	BZ6TB10C3
Insulation barrier	Interphase *2	B	BZ6B10C	BZ6B10C	BZ6B10C	BZ6B10C	BZ6B10C
Insulation barrier	Earth	BL	BZ6BL10C3	BZ6BL10C3	BZ6BL10C3	BZ6BL10C3	BZ6BL10C3
Handle locking cover		L	BZ6L10C	BZ6L10C	BZ6L10C	BZ6L10C	BZ6L10C
Flat terminal		S	BZ6S10C503	BZ6S10C1003	BZ6S10C1003	BZ6S10C1002	BZ6S10C1003

● Available – Not available ▲ Factory-mounted accessory

Notes: *1 Icu: Rated ultimate short-circuit breaking capacity
Ics: Rated service short-circuit breaking capacity
*2 Interphase insulation barriers are standard provided for the front mounting type breakers of 50AF and over. Except for EG50AC and EG100AC

Rated voltage (V)	Operational voltage range (V)
100–230	80–264
100–230–440	80–484

■ EG series IEC and CE marking conformed types

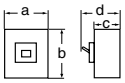
Frame			225A	400A
Pole			3	3
Type	Instantaneous trip type		**EG203C□-CE**	**EG403C□-CE**
	Time delay trip type		–	–
Phase and wire			3ø3W 1ø3W 1ø2W	3ø3W 1ø3W 1ø2W
Rated voltage (V AC) [IEC 60947-2/JIS C 8201-2]	Instantaneous trip type		100–230–440	100–230–440
	Time delay trip type		–	–
Rated current (A)			125, 150, 175, 200, 225	250, 300, 350, 400
Rated frequency (Hz)			50/60	50/60
Instantaneous trip type	Rated sensitive current (mA)		30, 100/200/500	30, 100/200/500
	Tripping time (s)		0.1	0.1
Rated breaking capacity(kA) [IEC 60947-2/JIS C 8201-2] (Icu/Ics) *1		440V AC	15/4	25/13
		400V AC	18/5	25/13
		230V AC	35/18	35/18
		100V AC	35/18	35/18
Instantaneous trip type [UL508]	Rated operating voltage (V AC)		–	–
	Rated sensitive current IΔn (mA)		–	–
	Pick-up current [UL1053]		–	–
Tripping time (s) [UL1053]			–	–
Dimensions (mm)		a	105	140
		b	165	257
Page 07/50		c	60	130
		d	84	146
Mass (kg) Front mounting type			1.5	5.6
Front mounting, front connection		No-mark	●	●
Front mounting, rear connection		X	●	●
Flush mounting, rear connection		E	●	●
Flush mounting, top & bottom connection		Y	–	–
Plug-in mounting		P	●	●
IEC 35mm wide rail mounting			–	–
Internal accessories				
Alarm switch		K	BZ6K□40C	BZ-K70B
Alarm switch with terminal block		KA	▲	BZ-K70BA
Auxiliary switch		W	BZ6W□40C	BZ-W70B
Auxiliary switch with terminal block		WA	▲	BZ-W70BA
Undervoltage trip		R	▲	BZ-R70B-□
Shunt trip		F	▲	BZ-F70B-□
Test lead wire		TL	▲	▲
Megger test switch		MGS	–	–
External accessories				
Motor operating mechanism		M	▲	▲
Handle padlocking device	Cap type	Q1	–	▲
	Plate type	Q2	▲	▲
Mechanical interlocking device		M1	–	BZ-M160C
		M2	–	BZ-M260C
		M3	–	BZ-M360C
Operating handle N-type		N	BZ-N40C	BZ-N60C
Operating handle V-type		V	BZ6V40C	BZ6V60C
Steel enclosure	Direct operating	C	BZ-C40B-3	BZ-C60B-3
Dustproof steel enclosure	Handle operating	CV	BZ-CV40C	BZ-CV60C
Rainproof steel enclosure	Handle operating	CW	BZ-CW40C	BZ-CW60C
Terminal cover	Short	TS	BZ-TS40B	–
Terminal cover	Long	TB	BZ-TB40B	BZ-TB60B
Insulation barrier	Interphase *2	B	BZ-B40B	B-43A
Insulation barrier	Earth	BL	BZ-BL40B	–
Handle locking cover		L	BZ6L40C	BZ-L70B
Flat terminal		S	BZ-S50B-2253	–

Notes: *1 Icu: Rated ultimate short-circuit breaking capacity
Ics: Rated service short-circuit breaking capacity
*2 Interphase insulation barriers are standard provided for the front mounting type breakers of 50AF and over.

● Available – Not available ▲ Factory-mounted accessory

Rated voltage (V)	Operational voltage range (V)
100–230–440	80–484

■ EG series

Frame			600A	800A
Pole			3	3
Type		Instantaneous trip type	**EG603C**	**EG803C**
		Time delay trip type	EG603CD	EG803CD
Phase and wire			3ø3W 1ø3W 1ø2W	3ø3W 1ø3W 1ø2W
Rated voltage (V AC) [JIS C 8371]		Instantaneous trip type	100–200–415	100–200–415
		Time delay trip type	200–415	200–415
Rated current (A)			500, 600	700, 800
Rated frequency (Hz)			50/60	50/60
Instantaneous trip type	Rated sensitive current (mA)		100/200/500	100/200/500
	Tripping time (s)		0.1	0.1
Time delay trip type	Rated sensitive current (mA)		100/200/500	100/200/500
	Tripping time (s)		0.3/0.8/2	0.3/0.8/2
	Inertia non-tripping time (s) [2IΔn]		0.15/0.4/1	0.15/0.4/1
Rated breaking capacity(kA) [JIS C 8371] sym.		415V AC	35	35
		200V AC	50	50
		100V AC	50	50
Instantaneous trip type [UL508]	Rated operating voltage (V AC)		–	–
	Rated sensitive current IΔn (mA)		–	–
	Pick-up current [UL1053]		–	–
Tripping time (s) [UL1053]			–	–
Dimensions (mm) Page 07/51 		a	210	210
		b	275	275
		c	103	103
		d	146	146
Mass (kg) Front mounting type			10	10
Front mounting, front connection		No-mark	●	●
Front mounting, rear connection		X	●	●
Flush mounting, rear connection		E	●	●
Flush mounting, top & bottom connection		Y	–	–
Plug-in mounting		P	●	●
IEC 35mm wide rail mounting			–	–
Internal accessories				
Alarm switch		K	BZ-K70B	BZ-K70B
Alarm switch with terminal block		KA	BZ-K70BA	BZ-K70BA
Auxiliary switch		W	BZ-W70B	BZ-W70B
Auxiliary switch with terminal block		WA	BZ-W70BA	BZ-W70BA
Undervoltage trip		R	BZ-R70B-□	BZ-R70B-□
Shunt trip		F	BZ-F70B-□	BZ-F70B-□
Test lead wire		TL	▲	▲
Megger test switch		MGS	▲	▲
External accessories				
Motor operating mechanism		M	▲	▲
Handle padlocking device	Cap type	Q1	▲	▲
	Plate type	Q2	▲	▲
Mechanical interlocking device		M1	BZ6M170C	BZ6M170C
		M2	BZ-M270C	BZ-M270C
		M3	BZ-M370C	BZ-M370C
Operating handle N-type		N	BZ-N70C	BZ-N70C
Operating handle V-type		V	BZ6V70C	BZ6V70C
Steel enclosure	Direct operating	C	BZ-C70B	BZ-C70B
Dustproof steel enclosure	Handle operating	CV	BZ-CV70C	BZ-CV70C
Rainproof steel enclosure	Handle operating	CW	–	–
Terminal cover	Short	TS	–	–
Terminal cover	Long	TB	BZ-TB70B	BZ-TB70B
Insulation barrier	Interphase *1	B	B-43A	B-43A
Insulation barrier	Earth	BL	–	–
Handle locking cover		L	BZ-L70B	BZ-L70B
Flat terminal		S	–	–

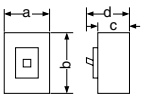
Notes: *1 Interphase insulation barriers are standard provided for the front mounting type breakers of 50AF and over.

● Available – Not available ▲ Factory-mounted accessory

Rated voltage (V)	Operational voltage range (V)
100–200–415	80–484

07

■ EG series/3P+1N

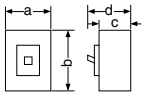
Frame			100A
Pole			4
Type			**EG104A**
Phase and wire			3ø4W
Rated current (A)	Ambient temp.: 40°C		30, 40, 50, 60, 75, 100
Rated voltage (V)			380-415
Rated sensitive current (mA)			30, 100, 300, 500
Tripping time (s)			0.1
Rated breaking capacity (kA) (sym)		415V AC 200V AC	14 –
Earth leakage tripping device			Solid-state
Overcurrent tripping device			Hydraulic-magnetic
Dimensions (mm) *Page 07/51*		a b c d	120 200 60 80
Mass (kg)	Front mounting type		1.8
Front mounting, front connection		No-mark	●
	rear connection	X	–
Flush mounting, rear connection		E	–
	top & bottom connection	Y	–
Plug-in mounting		P	–
Alarm switch		K	–
Auxiliary switch		W	–
Undervoltage trip		R	–
Shunt trip		F	–
Test lead wire		TL	–
Megger test switch		MGS	–
Earth leakage indication contact		EAL	–
Motor operating mechanism		M*	–
Padlocking device		Q	–
Mechanical interlocking device		M1	–
Operating handle N-type		N	N-6EA
Operating handle G-type		G	G-5A
Steel enclosure		C	–
Steel enclosure with G-type handle		CG	–
Terminal cover	Inside panel use	A1	–
Terminal cover	Outside panel use	T1	–
Insulation barrier	Interphase	B	–
Insulation barrier	Earth	BL	–

● Available – Not available ▲ Factory-mounted accessory

Note: * For motor-operated breaker, sensitive current and tripping time are fixed. Specify the sensitive current and tripping time when ordering.

Rated voltage (V)	Operational voltage range (V)
380–415	304–484

■ HG series/3-pole

Frame			50A	100A	225A
Pole			3	3	3
Type	Instantaneous trip type		**HG53B**	**HG103B**	**HG203B**
	Time delay trip type		HG53BD	HG103BD	HG203BD
Phase and wire			3ø3W, 1ø3W, 1ø2W	3ø3W, 1ø3W, 1ø2W	3ø3W, 1ø3W, 1ø2W
Rated current (A)	Ambient temp.: 40°C		15, 20, 30, 40, 50	15, 20, 30, 40, 50, 60, 75, 100	125, 150, 175, 200, 225
Rated voltage (V AC)	Instantaneous trip type		100–200–415	100–200–415	100–200–415
[JIS C 8371]	Time delay trip type		200–415	200–415	200–415
Instantaneous trip type	Rated sensitive current (mA)		30, 100/200/500	30, 100/200/500	30, 100/200/500
	Tripping time (s)		0.1	0.1	0.1
Time delay trip type	Rated sensitive current (mA)		100/200/500	100/200/500	100/200/500
	Tripping time (s)		0.3/0.8/2	0.3/0.8/2	0.3/0.8/2
	Inertia non-tripping time (s) [2IΔn]		0.15/0.4/1	0.15/0.4/1	0.15/0.4/1
Rated breaking capacity (kA) sym. [JIS C 8371]		415V AC	65	65	65
		200V AC	100	100	100
		100V AC	100	100	100
Earth leakage tripping device			Solid-state	Solid-state	Solid-state
Overcurrent tripping device			Thermal-magnetic	Thermal-magnetic	Thermal-magnetic
Dimensions (mm) *Page 07/52*		a	90	90	105
		b	155	155	165
		c	82	82	99
		d	104	104	127
Mass (kg)	Front mounting type		2.3	2.3	3,3
Front mounting, front connection		No-mark	●	●	●
rear connection		X	●	●	●
Flush mounting, rear connection		E	●	●	●
top & bottom connection		Y	–	–	–
Plug-in mounting		P	●	●	●
Alarm switch		K	▲	▲	▲
Auxiliary switch		W	▲	▲	▲
Undervoltage trip		R	–	–	–
Shunt trip		F	–	–	–
Test lead wire		TL	▲	▲	▲
Megger test switch		MGS	▲	▲	▲
Earth leakage indication contact		EAL	–	–	–
Motor operating mechanism		M*	▲	▲	▲
Padlocking device		Q	▲	▲	▲
Mechanical interlocking device		M1	BZ-M130C-3	BZ-M130C-3	BZ-M140C
Operating handle N-type		N	BZ-N35B	BZ-N35B	BZ-N50C
Operating handle V-type		V	–	–	BZ-V50C
Operating handle G-type		G	BZ-G35C	BZ-G35C	–
Steel enclosure		C	BZ-C35B	BZ-C35B	BZ-C50B
Steel enclosure with G-type handle		CG	(CG-type BZ-CG35B)	(CG-type BZ-CG35B)	–
Terminal cover	Short	TS	BZ-TS35B	BZ-TS35B	BZ-TS50B
Terminal cover	Long	TB	BZ-TB35B	BZ-TB35B	BZ-TB50B
Insulation barrier	Interphase	B	BZ-B35B	BZ-B35B	BZ-B50B
Insulation barrier	Earth	BL	BZ-BL35B	BZ-BL35B	BZ-BL50B

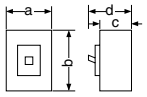
● Available – Not available ▲ Factory-mounted accessory

Notes: • Terminal covers (Height: 5mm) are standard provided for the X and P mounting types of 50AF to 225AF.
• Time delay trip types are also available on request.
* For motor-operated breaker, sensitive current and tripping time are fixed. Specify the sensitive current and tripping time when ordering.

Rated voltage (V)	Operational voltage range (V)
100–200–415	80–484

07

■ HG series/3-pole

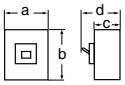
Frame			400A	600A	800A
Pole			3	3	3
Type	Instantaneous trip type		**HG403B**	**HG603B**	**HG803B**
	Time delay trip type		HG403BD	HG603BD	HG803BD
Phase and wire			3ø3W, 1ø3W, 1ø2W	3ø3W, 1ø3W, 1ø2W	3ø3W, 1ø3W, 1ø2W
Rated current (Amps) Ambient temp.: 40°C			250, 300, 350, 400	500, 600	700, 800
Rated voltage (Volts)			100–200–415	100–200–415	100–200–415
			200–415	200–415	200–415
Instantaneous trip type	Rated sensitive current (mA)		30, 100/200/500	100/200/500	100/200/500
	Tripping time (sec)		0.1	0.1	0.1
Time delay trip type	Rated sensitive current (mA)		100/200/500	100/200/500	100/200/500
	Tripping time (s)		0.3/0.8/2	0.3/0.8/2	0.3/0.8/2
	Inertia non-tripping time (s) [2IΔn]		0.15/0.4/1	0.15/0.4/1	0.15/0.4/1
Rated breaking capacity (kA) sym.		415V AC	65	65	65
		200V AC	125	125	125
		100V AC	125	125	125
Earth leakage tripping device			Solid-state	Solid-state	Solid-state
Overcurrent tripping device			Thermal-magnetic	Thermal-magnetic	Thermal-magnetic
Dimensions (mm)  Page 07/53		a	140	210	210
		b	257	275	275
		c	103	103	103
		d	146	146	146
Mass (kg)	Front mounting type		5.6	10	10
Applicable wire size (Max. mm^2)			325	325	325
Front mounting, front connection		No-mark	●	●	●
rear connection		X	●	●	●
Flush mounting, rear connection		E	●	●	●
top & bottom connection		Y	–	–	–
Plug-in mounting		P	●	●	●
Alarm switch		K	BZ-K70B	BZ-K70B	BZ-K70B
Auxiliary switch		W	BZ-W70B	BZ-W70B	BZ-W70B
Undervoltage trip		R	BZ-R70B-□	BZ-R70B-□	BZ-R70B-□
Shunt trip		F	BZ-F70B-□	BZ-F70B-□	BZ-F70B-□
Test lead wire		TL	▲	▲	▲
Megger test switch		MGS	▲	▲	▲
Earth leakage indication contact		EAL	▲	▲	▲
Motor operating mechanism		M*	▲	▲	▲
Padlocking device		Q	▲	▲	▲
Mechanical interlocking device		M1	BZ-M160C	BZ-M170C	BZ-M170C
Operating handle N-type		N	BZ-N60C	BZ-N70C	BZ-N70C
Operating handle V-type		V	BZ-V60C	BZ-V70C	BZ-V70C
Steel enclosure		C	BZ-C60B	BZ-C70B	BZ-C70B
Steel enclosure with V-type handle		CV	BZ-CV60C	BZ-CV70C	BZ-CV70C
Terminal cover	Short	TS	–	–	–
Terminal cover	Long	TB	BZ-TB60B	BZ-TB70B	BZ-TB70B
Insulation barrier	Interphase	B	B-43A	B-43A	B-43A
Insulation barrier	Earth	BL	–	–	–

● Available – Not available ▲ Factory-mounted accessory

Note: * For motor-operated breaker, sensitive current and tripping time are fixed. Specify the sensitive current and tripping time when ordering.

Rated voltage (V)	Operational voltage range (V)
100–200–415	80–484

■ SG series IEC and CE marking conformed types

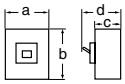
Frame			30A	50A	60A	100A
Pole			3	3	3	3
Type	Instantaneous trip type		**SG33CM□-CE**	**SG53CM□-CE**	**SG63CM□-CE**	**SG103CM□-CE**
	Time delay trip type		–	–	–	–
Phase and wire			3ø3W 1ø3W 1ø2W	3ø3W 1ø3W 1ø2W	3ø3W 1ø3W 1ø2W	3ø3W 1ø3W 1ø2W
Rated voltage (V AC)	Instantaneous trip type		100–230–440	100–230–440	100–230–440	100–230–440
[IEC 60947-2/JIS C 8201-2]	Time delay trip type		–	–	–	–
Rated current (A) Ambient temp.: 40°C for general use 45°C for marine use			0.7, 1.4, 2, 2.6, 4, 5, 8, 10, 12, 16, 24, 32	0.7, 1.4, 2, 2.6, 4, 5, 8, 10, 12, 16, 24, 32, 40, 45	60	75, 90
Frequency (Hz)			50/60	50/60	50/60	50/60
Instantaneous trip type	Rated sensitive current (mA)		30, 100/200/500	30, 100/200/500	30, 100/200/500	30, 100/200/500
	Tripping time (s)		0.1	0.1	0.1	0.1
Rated breaking capacity(kA)		440V AC	2.5/2	7.5/4	7.5/4	25/7
[IEC 60947-2/JIS C 8201-2]		400V AC	2.5/2	7.5/4	7.5/4	30/8
(Icu/Ics) *1		230V AC	5/3	10/5	10/5	50/25
		100V AC	5/3	10/5	10/5	50/25
Dimensions (mm) 		a	75	75	75	90
		b	100	100	100	155
Page 07/45		c	60	60	60	60
		d	84	84	84	82
Mass (kg) Front mounting type			0.6	0.6	0.6	1.3
Front mounting, front connection		No-mark	●	●	●	●
Front mounting, rear connection		X	●	●	●	●
Flush mounting, rear connection		E	●	●	●	●
Flush mounting, top & bottom connection		Y	●	●	●	–
Plug-in mounting		P	●	●	●	●
IEC 35mm wide rail mounting			●	●	●	–
Internal accessories						
Alarm switch		K	BZ6K□10C	BZ6K□10C	BZ6K□10C	BZ6K□30C
Alarm switch with terminal block		KA	BZ6K□10CA	BZ6K□10CA	BZ6K□10CA	BZ6K□30CA
Auxiliary switch		W	BZ6W□10C	BZ6W□10C	BZ6W□10C	BZ6W□30C
Auxiliary switch with terminal block		WA	BZ6W□10CA	BZ6W□10CA	BZ6W□10CA	BZ6W□30CA
Undervoltage trip		R	BZ6R□10C	BZ6R□10C	BZ6R□10C	▲
Shunt trip		F	BZ6F□10C	BZ6F□10C	BZ6F□10C	▲
Test lead wire		TL	▲	▲	▲	▲
External accessories						
Motor operating mechanism		M	▲	▲	▲	▲
Handle padlocking device	Cap type	Q1	–	–	–	–
	Plate type	Q2	▲	▲	▲	–
Mechanical interlocking device		M1	BZ6M110C3	BZ6M110C3	BZ6M110C3	BZ6M130C3
		M2	BZ6M210C3	BZ6M210C3	BZ6M210C3	BZ-M230C-3
		M3	BZ6M310C3	BZ6M310C3	BZ6M310C3	BZ-M330C-3
Operating handle N-type		N	BZ6N10C	BZ6N10C	BZ6N10C	BZ-N30C
Operating handle V-type		V	BZ6V10C	BZ6V10C	BZ6V10C	BZ6V30C
Steel enclosure	Direct operating	C	BZ6C10C3	BZ6C10C3	BZ6C10C3	BZ6C30C3
Dustproof steel enclosure	Handle operating	CV	BZ6CV10C	BZ6CV10C	BZ6CV10C	BZ-CV30C
Rainproof steel enclosure	Handle operating	CW	BZ6CW10C	BZ6CW10C	BZ6CW10C	BZ-CW30C
Terminal cover	Short	TS	BZ6TS10C3	BZ6TS10C3	BZ6TS10C3	BZ-TS30B-3
Terminal cover	Long	TB	BZ6TB10C3	BZ6TB10C3	BZ6TB10C3	BZ-TB30B-3
Insulation barrier	Interphase *2	B	BZ6B10C	BZ6B10C	BZ6B10C	BZ-B30B
Insulation barrier	Earth	BL	BZ6BL10C3	BZ6BL10C3	BZ6BL10C3	BZ-BL35B
Handle locking cover		L	BZ6L10C	BZ6L10C	BZ6L10C	BZ6L30C
Flat terminal		S	BZ6S10C503	BZ6S10C503	BZ6S10C1003	BZ-S35B-1003

Notes: *1 Icu: Rated ultimate short-circuit breaking capacity
Ics: Rated service short-circuit breaking capacity
*2 Interphase insulation barriers are standard provided for the front mounting type breakers of 50AF and over.

● Available – Not available ▲ Factory-mounted accessory

Rated voltage (V)	Operational voltage range (V)
100–230–440	80–484

■ SG series IEC and CE marking conformed types

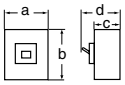
Frame			100A	225A	
Pole			3	3	3
Type	Instantaneous trip type		**SG103RCM□-CE**	**SG203CM□-CE**	**SG203RCM□-CE**
	Time delay trip type		–	–	–
Phase and wire			3ø3W 1ø3W 1ø2W	3ø3W 1ø3W 1ø2W	3ø3W 1ø3W 1ø2W
Rated voltage (V AC)	Instantaneous trip type		100–230–440	100–230–440	100–230–440
[IEC 60947-2/JIS C 8201-2]	Time delay trip type		–	–	–
Rated current (A) Ambient temp.: 40°C for general use 45°C for marine use			45, 60, 75, 90	125, 150, 175, 225	125, 150, 175, 225
Rated frequency (Hz)			50/60	50/60	50/60
Instantaneous trip type	Rated sensitive current (mA)		30, 100/200/500	30, 100/200/500	30, 100/200/500
	Tripping time (s)		0.1	0.1	0.1
Rated breaking capacity(kA)		440V AC	50/13	25/7	50/13
[IEC 60947-2/JIS C 8201-2]		400V AC	50/13	30/8	50/13
(Icu/Ics) *1		230V AC	100/50	50/25	100/50
		100V AC	100/50	50/25	100/50
Dimensions (mm)  *Page 07/46*		a	90	105	105
		b	155	165	165
		c	60	60	60
		d	82	84	84
Mass (kg) Front mounting type			1.3	1.5	1.5
Front mounting, front connection		No-mark	●	●	●
Front mounting, rear connection		X	●	●	●
Flush mounting, rear connection		E	●	●	●
Flush mounting, top & bottom connection		Y	–	–	–
Plug-in mounting		P	●	●	●
IEC 35mm wide rail mounting			–	–	–
Internal accessories					
Alarm switch		K	BZ6K□30C	BZ6K□40C	BZ6K□40C
Alarm switch with terminal block		KA	BZ6K□30CA	BZ6K□40CA	BZ6K□40CA
Auxiliary switch		W	BZ6W□30C	BZ6W□40C	BZ6W□40C
Auxiliary switch with terminal block		WA	BZ6W□30CA	BZ6W□40CA	BZ6W□40CA
Undervoltage trip		R	▲	▲	▲
Shunt trip		F	▲	▲	▲
Test lead wire		TL	▲	▲	▲
External accessories					
Motor operating mechanism		M	▲	▲	▲
Handle padlocking device	Cap type	Q1	–	–	–
	Plate type	Q2	–	–	–
Mechanical interlocking device		M1	BZ6M130C3	BZ6M140C	BZ6M140C
		M2	BZ-M230C-3	BZ-M240C	BZ-M240C
		M3	BZ-M330C-3	BZ-M340C	BZ-M340C
Operating handle N-type		N	BZ-N30C	BZ-N40C	BZ-N40C
Operating handle V-type		V	BZ6V30C	BZ6V40C	BZ6V40C
Steel enclosure	Direct operating	C	BZ6C30C3	BZ-C40B	BZ-C40B
Dustproof steel enclosure	Handle operating	CV	BZ-CV30C	BZ-CV40C	BZ-CV40C
Rainproof steel enclosure	Handle operating	CW	BZ-CW30C	BZ-CW40C	BZ-CW40C
Terminal cover	Short	TS	BZ-TS30B-3	BZ-TS40B	BZ-TS40B
Terminal cover	Long	TB	BZ-TB30B-3	BZ-TB40B	BZ-TB40B
Insulation barrier	Interphase *2	B	BZ-B30B	BZ-B40B	BZ-B40B
Insulation barrier	Earth	BL	BZ-BL35B	BZ-BL40B	BZ-BL40B
Handle locking cover		L	BZ6L30C	BZ6L40C	BZ6L40C
Flat terminal		S	BZ-S35B-1003	BZ-S50B-2253	BZ-S50B-2253

Notes: *1 Icu: Rated ultimate short-circuit breaking capacity
Ics: Rated service short-circuit breaking capacity
*2 Interphase insulation barriers are standard provided for the front mounting type breakers of 50AF and over.

● Available – Not available ▲ Factory-mounted accessory

Rated voltage (V)	Operational voltage range (V)
100–230–440	80–484

■ EG series IEC and CE marking conformed types

Frame			30A	50A	60A	100A	225A
Pole			3	3	3	3	3
Type	Instantaneous trip type		**EG33CM□-CE**	**EG53CM□-CE**	**EG63CM□-CE**	**EG103CM□-CE**	**EG203CM□-CE**
	Time delay trip type		–	–	–	–	–
Phase and wire			3ø3W 1ø3W 1ø2W	3ø3W 1ø3W 1ø2W	3ø3W 1ø3W 1ø2W	3ø3W 1ø3W 1ø2W	3ø3W 1ø3W 1ø2W
Rated voltage (V AC)	Instantaneous trip type		100–230–440	100–230–440	100–230–440	100–230–440	100–230–440
[IEC 60947-2/JIS C 8201-2]	Time delay trip type		–	–	–	–	–
Rated current (A) Ambient temp.: 40°C for general use 45°C for marine use			1.4, 2.6, 4, 5, 8, 10, 16, 24, 32	45	60	60, 75, 90	125, 150, 175, 225
Rated frequency (Hz)			50/60	50/60	50/60	50/60	50/60
Instantaneous trip type	Rated sensitive current (mA)		30, 100	30, 100/200	30, 100/200	30, 100/200/500	30, 100/200/500
	Tripping time (s)		0.1	0.1	0.1	0.1	0.1
Rated breaking capacity(kA)		440V AC	1.5/1	2.5/2	2.5/2	10/5	15/4
[IEC 60947-2/JIS C 8201-2]		400V AC	1.5/1	2.5/2	2.5/2	10/5	18/5
(Icu/Ics) *1		230V AC	2.5/2	5/3	5/3	25/13	35/18
		100V AC	5/3	5/3	5/3	25/13	35/18
Dimensions (mm)		a	75	75	75	75	105
		b	100	100	100	100	165
Page 07/49		c	60	60	60	60	60
		d	84	84	84	84	84
Mass (kg) Front mounting type			0.6	0.6	0.6	0.6	1.5
Front mounting, front connection		No-mark	●	●	●	●	●
Front mounting, rear connection		X	●	●	●	●	●
Flush mounting, rear connection		E	●	●	●	●	●
Flush mounting, top & bottom connection		Y	●	●	●	●	–
Plug-in mounting		P	●	●	●	●	●
IEC 35mm wide rail mounting			●	●	●	●	–
Internal accessories							
Alarm switch		K	BZ6K□10C	BZ6K□10C	BZ6K□10C	BZ6K□10C	BZ6K□40C
Alarm switch with terminal block		KA	BZ6K□10CA	BZ6K□10CA	BZ6K□10CA	BZ6K□10CA	▲
Auxiliary switch		W	BZ6W□10C	BZ6W□10C	BZ6W□10C	BZ6W□10C	BZ6W□40C
Auxiliary switch with terminal block		WA	BZ6W□10CA	BZ6W□10CA	BZ6W□10CA	BZ6W□10CA	▲
Undervoltage trip		R	BZ6R□10C	BZ6R□10C	BZ6R□10C	BZ6R□10C	▲
Shunt trip		F	BZ6F□10C	BZ6F□10C	BZ6F□10C	BZ6F□10C	▲
Test lead wire		TL	▲	▲	▲	▲	▲
Megger test switch		MGS	–	–	–	–	–
External accessories							
Motor operating mechanism		M	▲	▲	▲	▲	▲
Handle padlocking device	Cap type	Q1	–	–	–	–	–
	Plate type	Q2	▲	▲	▲	▲	–
Mechanical interlocking device		M1	BZ6M110C3	BZ6M110C3	BZ6M110C3	BZ6M110C3	–
		M2	BZ6M210C3	BZ6M210C3	BZ6M210C3	BZ6M210C3	–
		M3	BZ6M310C3	BZ6M310C3	BZ6M310C3	BZ6M310C3	–
Operating handle N-type		N	BZ6N10C	BZ6N10C	BZ6N10C	BZ6N10C	BZ6N40C
Operating handle V-type		V	BZ6V10C	BZ6V10C	BZ6V10C	BZ6V10C	BZ6V40C
Steel enclosure	Direct operating	C	BZ6C10C3	BZ6C10C3	BZ6C10C3	BZ6C25C3	BZ-C40B
Dustproof steel enclosure	Handle operating	CV	BZ6CV10C	BZ6CV10C	BZ6CV10C	BZ6CV25C	BZ-CV40C
Rainproof steel enclosure	Handle operating	CW	BZ6CW10C	BZ6CW10C	BZ6CW10C	BZ6CW25C	BZ-CW40C
Terminal cover	Short	TS	BZ6TS10C3	BZ6TS10C3	BZ6TS10C3	BZ6TS10C3	BZ-TS40B
Terminal cover	Long	TB	BZ6TB10C3	BZ6TB10C3	BZ6TB10C3	BZ6TB10C3	BZ-TB40B
Insulation barrier	Interphase *2	B	BZ6B10C	BZ6B10C	BZ6B10C	BZ6B10C	BZ-B40B
Insulation barrier	Earth	BL	BZ6BL10C3	BZ6BL10C3	BZ6BL10C3	BZ6BL10C3	BZ-BL40B
Handle locking cover		L	BZ6L10C	BZ6L10C	BZ6L10C	BZ6L10C	BZ6L40C
Flat terminal		S	BZ6S10C503	BZ6S10C503	BZ6S10C1003	BZ6S10C1003	BZ-S50B-2253

Notes: *1 Icu: Rated ultimate short-circuit breaking capacity
Ics: Rated service short-circuit breaking capacity
*2 Interphase insulation barriers are standard provided for the front mounting type breakers of 50AF and over.

● Available – Not available ▲ Factory-mounted accessory

Rated voltage (V)	Operational voltage range (V)
100–230–440	80–484

■ SG series UL489 Listed

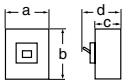
Frame			50A	100A	225A	400A
Pole			3	3	3	3
Type	Instantaneous trip type		**SG53RCUL**	**SG103CUL**	**SG203CUL**	**SG403CUL**
	Time delay trip type		–	–	–	–
Phase and wire			3ø3W 1ø3W 1ø2W	3ø3W 1ø3W 1ø2W	3ø3W 1ø3W 1ø2W	3ø3W 1ø3W 1ø2W
Rated voltage (V AC) [IEC 60947-2/JIS C 8201-2]	Instantaneous trip type		100–230–440	100–230–440	100–230–440	100–230–440
	Time delay trip type		–	–	–	–
Rated current (A)			3, 5, 10, 15, 20, 30, 40, 50	32, 40, 50, 60, 75, 100	125, 150, 175, 200, 225	250, 300, 350, 400
Frequency (Hz)			50/60	50/60	50/60	50/60
Instantaneous trip type	Rated sensitive current (mA)		30, 100/200/500	30, 100/200/500	30, 100/200/500	30, 100/200/500
	Tripping time (s)		0.1	0.1	0.1	0.1
Rated breaking capacity (kA)	UL489 [cUL]	240V AC	14	35	35	42
	IEC 60947-2	440V AC	10/5	25/7	25/7	35/18
	[Icu/Ics] *1	400V AC	10/5	30/8	30/8	35/18
	JIS C 8201-2	230V AC	25/13	50/13	50/13	50/25
		100V AC	25/13	50/13	50/13	50/25
Dimensions (mm)		a	75	90	105	140
		b	120	155	165	257
Page 07/54		c	60	60	65	103
		d	84	82	84	146
Mass (kg) Front mounting type			0.6	1.3	1.5	5.6
Connecting terminal	Screw		●	●	●	–
	Flat		●	●	●	●
	Block		–	●	●	●
Internal accessories						
Alarm switch		K	BZ6K□10CU	BZ6K□30CU	BZ6K□40CU	▲
Alarm switch with terminal block		KA	BZ6K□10CAU	▲	▲	▲
Auxiliary switch		W	BZ6W□10CU	BZ6W□30CU	BZ6W□40CU	▲
Auxiliary switch with terminal block		WA	BZ6W□10CAU	▲	▲	▲
Undervoltage trip with terminal block		RA	BZ6R□10CAU	▲	▲	▲
Shunt trip with terminal block		FA	BZ6F□10CAU	▲	▲	▲
Test lead wire		TL	▲	▲	▲	▲
Megger test switch		MGS	–	–	–	–
External accessories						
Handle padlocking device	Cap type	Q1	–	–	–	▲
Operating handle N-type		N	BZ6N10CP	BZ6N30CP	BZ6N40CP	BZ6N60CP
Operating handle V-type		V	BZ6V10C	BZ6V30C	BZ6V40C	BZ6V60C
Terminal cover	Short	TS	Provided	BZ-TS30B-3	BZ-TS40B	–
Terminal cover	Long	TB	BZ6TB10C3U	BZ-TB30B-3	BZ-TB40B	BZ-TB60B
Terminal cover	For flat terminal	TL	–	BZ-TL30B-3	BZ-TL40B	–
Insulation barrier	Interphase *2	B	–	BZ6B30CU	BZ6B40CU	B-43A
Handle locking cover		L	BZ6L10C	BZ6L30C	BZ6L40C	BZ-L70B
Flat terminal		S	BZ-SU20B	BZ6SU35B	BZ6SU50B	–
Block terminal			–	BZ6TA100	BZ6TA225	–

Notes: *1 Icu: Rated ultimate short-circuit breaking capacity
Ics: Rated service short-circuit breaking capacity
*2 Interphase insulation barriers are standard provided for the front mounting type breakers of 50AF and over.

● Available – Not available ▲ Factory-mounted accessory

Rated voltage (V)	Operational voltage range (V)
100–230–440	80–484

■ EG series UL489 Listed

Frame			100A	
Pole			2	3
Type	Instantaneous trip type		**EG102CUL**	**EG103CUL**
	Time delay trip type		–	–
Phase and wire			1ø2W	3ø3W 1ø3W 1ø2W
Rated voltage (V AC) [IEC 60947-2/JIS C 8201-2]	Instantaneous trip type		100–230-440	100–230–440
	Time delay trip type		–	–
Rated current (A)			60, 70, 75, 80, 90, 100	60, 70, 75, 80, 90, 100
Rated frequency (Hz)			50/60	50/60
Instantaneous trip type	Rated sensitive current (mA)		30, 100/200	30, 100/200/500
	Tripping time (s)		0.1	0.1
Rated breaking capacity (kA)	UL489 [cUL]	240V AC	14	14
	IEC 60947-2	440V AC	–	10/5
	[Icu/Ics] *1	400V AC	–	10/5
	JIS C 8201-2	230V AC	10/5	25/13
		100V AC	10/5	25/13
Dimensions (mm)  *Page 07/55*		a	75	75
		b	120	120
		c	60	60
		d	84	84
Mass (kg) Front mounting type			0.6	0.6
Connecting terminal	Screw		●	●
	Flat		●	●
	Block		–	–
Internal accessories				
Alarm switch		K	BZ6K□10CU	BZ6K□10CU
Alarm switch with terminal block		KA	BZ6K□10CAU	▲
Auxiliary switch		W	BZ6W□10CU	BZ6W□10CU
Auxiliary switch with terminal block		WA	BZ6W□10CAU	▲
Undervoltage trip with terminal block		RA	BZ6R□10CAU	BZ6R□10CAU
Shunt trip with terminal block		FA	BZ6F□10CAU	BZ6F□10CAU
Test lead wire		TL	▲	▲
Megger test switch		MGS	–	–
External accessories				
Handle padlocking device Cap type		Q1	–	–
Operating handle N-type		N	BZ6N10CP	BZ6N10CP
Operating handle V-type		V	BZ6V10C	BZ6V10C
Terminal cover Short		TS	Provided	Provided
Terminal cover Long		TB	BZ6TB10C3U	BZ6TB10C3U
Terminal cover For flat terminal		TL	–	–
Insulation barrier Interphase *2		B	–	–
Handle locking cover		L	BZ6L10C	BZ6L10C
Flat terminal		S	BZ-SU20B	BZ-SU20B
Block teminal			–	–

Notes: *1 Icu: Rated ultimate short-circuit breaking capacity
Ics: Rated service short-circuit breaking capacity
*2 Interphase insulation barriers are standard provided for the front mounting type breakers of 50AF and over. Except for EG50AC and EG100AC

● Available – Not available ▲ Factory-mounted accessory

Rated voltage (V)	Operational voltage range (V)
100–230–440	80–484

07

■ Circuit configuration and breaker application for control panels of industrial machinery in North America.

● UL508A (Industrial control panels) requirements

1. The requirements of NFPA70 (NEC), NFPA79, and applicable UL standards must be satisfied.
2. Positioning of protective equipment

• Install branch circuit protection (BCP) for the main circuit at the point of electrical inlet.
• Use equipment that is UL508 listed as applicable to each kind of loads, installed under appropriate load conditions, as protective equipment for load circuits used in branch circuits downstream from the BCP.

UL508/Group Installation, which combines UL489 Listed SG/EG-UL series and UL508 Listed Manual Motor Controllers (MMCs), complies with the UL508A requirements for North American industrial control panels.

● Application of UL489 Listed SG/EG-UL series and UL508 Listed MMCs (Group installation)

1. For group installations, if the UL489 Listed SG/EG-UL series is installed at the power inlet point (upstream) and any of the following conditions is satisfied in the circuit, a UL508 Listed MMC can be used as a downstream multi-circuit protective device. (In accordance with NEC430.53.)

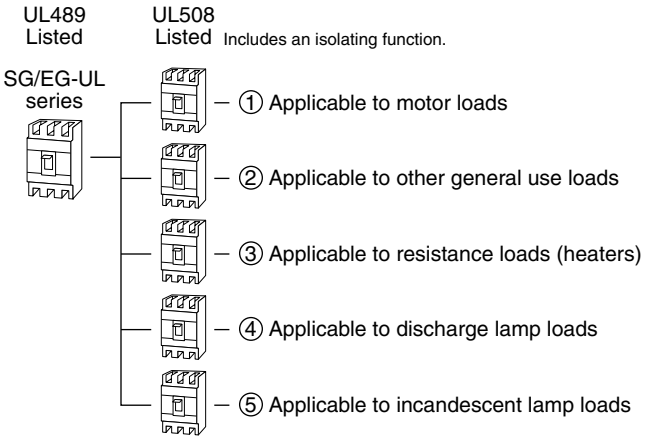
a. No conductor to the motor shall have an ampacity less than that of the branch-circuit conductors.
b. No conductor to the motor shall have an ampacity less than one-third than of the branch-circuit conductors, the conductors to the motor overload device being not more than 7.5m(25ft) long and being protected from physical damage.
c. Conductors from the branch-circuit short-circuit and ground-fault protective device to a listed manual motor controller shall be permitted to have an ampacity not less than 1/10 the rating or setting of the branch-circuit short-circuit and ground-fault protective device. The conductors from the branch-circuit short-circuit and ground-fault protective device to the controller shall (1) be suitably protected from physical damage and enclosed either by an enclosed controller or by a raceway and shall be not more than 3m(10ft) long or (2) shall have an ampacity not less than that of the branch circuit conductors.

2. The UL508 Listed MMC also has UL508 Group Installation certification.

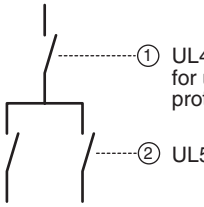
3. See NEC 430.53 for detail.

4. Refer to the table on the next page for breaking capacity of the UL508 Listed Group Installation when making your selection.

Item NEC430.53 Group Installation



■ Group Installation



● 240V AC for UL508 Listed MMC (② in figure) combined with UL489 Listed MCCB (+ UL1053) (① in figure)

② UL508 Listed MMCs	① UL489 Listed MCCBs (+ UL1053)					
	SA53RCUL SG53RCUL	SA103CUL SA103RCUL EA103CUL EG103CUL	SA203CUL SA203RCUL SG103CUL	SA403CUL SA403RCUL SG203CUL	SA603RCUL	SA803RCUL
SA30C	5kA	5kA	5kA	5kA	–	–
SA50C	10kA	10kA	10kA	10kA	–	–
SA50RC	25kA	25kA	25kA	25kA	–	–
SA60C	10kA	10kA	10kA	10kA	10kA	10kA
SA60RC	25kA	25kA	25kA	25kA	25kA	25kA
EA30AC	5kA	5kA	5kA	5kA	–	–
EA50AC	5kA	5kA	5kA	5kA	–	–
EA50C	5kA	5kA	5kA	5kA	–	–
EA60C	5kA	5kA	5kA	5kA	5kA	5kA
EA100AC	5kA	5kA	5kA	5kA	5kA	5kA
EA100C	25kA	25kA	25kA	25kA	25kA	25kA

● 480V AC for UL508 Listed MMC (② in figure) combined with UL489 Listed MCCB (+ UL1053) (① in figure)

② UL508 Listed MMCs	① UL489 Listed MCCBs (+ UL1053)				
	SA103RCUL	SA203RCUL	SA403RCUL	SA603RCUL	SA803RCUL
SA30C	5kA	5kA	5kA	–	–
SA50C	10kA	10kA	10kA	–	–
SA50RC	10kA	10kA	10kA	–	–
SA60C	10kA	10kA	10kA	10kA	10kA
SA60RC	10kA	10kA	10kA	10kA	10kA
EA50C	5kA	5kA	5kA	–	–
EA60C	5kA	5kA	5kA	5kA	5kA
EA100C	10kA	10kA	10kA	10kA	10kA

● 240V AC for UL508 Listed MMC + UL1053 (② in figure) combined with UL489 Listed MCCB (+ UL1053) (① in figure)

② UL508 Listed MMCs + UL1053	① UL489 Listed MCCBs (+ UL1053)					
	SA53RCUL SG53RCUL	SA103CUL SA103RCUL EA103CUL EG103CUL	SA203CUL SA203RCUL SG103CUL	SA403CUL SA403RCUL SG203CUL	SA603RCUL	SA803RCUL
SG33C	5kA	5kA	5kA	5kA	–	–
SG53C	10kA	10kA	10kA	10kA	–	–
SG53RC	25kA	25kA	25kA	25kA	–	–
SG63C	10kA	10kA	10kA	10kA	10kA	10kA
SG63RC	25kA	25kA	25kA	25kA	25kA	25kA
EG32AC, EG33AC	5kA	5kA	5kA	5kA	–	–
EG33C	5kA	5kA	5kA	5kA	–	–
EG52AC, EG53AC	5kA	5kA	5kA	5kA	–	–
EG53C	5kA	5kA	5kA	5kA	–	–
EG63C	5kA	5kA	5kA	5kA	5kA	5kA
EG102AC, EG103AC	5kA	5kA	5kA	5kA	5kA	5kA
EG103C	25kA	25kA	25kA	25kA	25kA	25kA

■ **SG series** **UL/cUL508 Listed** (File No. E216772)

Frame			30A					50A												
Type	Instantaneous trip type		**SG33C□-CE**					**SG53C□-CE**							**SG53RC□-CE**						
	Time delay trip type		–					–							–						
Phase and wire			3ø3W, 1ø3W, 1ø2W					3ø3W, 1ø3W, 1ø2W							3ø3W, 1ø3W, 1ø2W						
Pole			3					3							3						
Rated operating voltage (V AC)			240					240							240						
Max. motor rating (HP) UL508 [cUL] *1	Rated current (A)		5	10	15	20	30	5	10	15	20	30	40	50	5	10	15	20	30	40	50
	3-phase 3-pole type only	220-240V AC	0.5	1	2	2	3	0.5	1	2	2	3	5	7.5	0.5	1	2	2	3	5	7.5
CSA C22.2 No. 14	Single-phase	220-240V AC	1/6	1/3	3/4	1	2	1/6	1/3	3/4	1	2	3	3	1/6	1/3	3/4	1	2	3	3
Load (A) UL508 [cUL] CSA C22.2 No. 14	Resistance *2		3, 5, 10, 15, 20, 30					5, 10, 15, 20, 30, 40, 50							10, 15, 20, 30, 40, 50						
	Discharge lamp *3		1.5, 2.5, 5, 7.5, 10, 15					2.5, 5, 7.5, 10, 15, 20, 25							5, 7.5, 10, 15, 20, 25						
	Incandescent lamp *2		3, 5, 10, 15, 20, 30					5, 10, 15, 20, 30, 40, 50							10, 15, 20, 30, 40, 50						
	Others *2		3, 5, 10, 15, 20, 30					5, 10, 15, 20, 30, 40, 50							10, 15, 20, 30, 40, 50						
Instantaneous trip type	Rated operating voltage (V AC)		240					240							240						
	Rated sensitive current IΔn (mA) [UL508] [cUL]		30, 100/200/500					30, 100/200/500							30, 100/200/500						
	Pick-up current [UL1053]		0.7 x Rated sensitive current																		
Tripping time (s) [UL1053]			0.1					0.1							0.1						

Frame			60A	
Type	Instantaneous trip type		**SG63C□-CE**	**SG63RC□-CE**
	Time delay trip type		–	–
Phase and wire			3ø3W, 1ø3W, 1ø2W	3ø3W, 1ø3W, 1ø2W
Pole			3	3
Rated operating voltage (V AC)			240	240
Max. motor rating (HP) UL508 [cUL] *1	Rated current (A)		60	60
	3-phase 3-pole type only	220-240V AC	10	10
CSA C22.2 No. 14	Single-phase	220-240V AC	5	5
Load (A) UL508 [cUL] CSA C22.2 No. 14	Resistance *2		60	60
	Discharge lamp *3		30	30
	Incandescent lamp *2		60	60
	Others *2		60	60
Instantaneous trip type	Rated operating voltage (V AC)		240	240
	Rated sensitive current IΔn (mA) [UL508] [cUL]		30, 100/200/500	30, 100/200/500
	Pick-up current [UL1053]		0.7 x Rated sensitive current	0.7 x Rated sensitive current
Tripping time (s) [UL1053]			0.1	0.1

Note: *1 The performance of UL508 approved models is indicated as applicable motor rating (HP), and the detection current of UL1053 approved models is indicated as the pick-up current value (70% of I n).
*2 Rated current x 1
*3 Rated current x 1/2

■ EG series UL/cUL508 Listed (File No. E216772)

Frame		30A													
Type	Instantaneous trip type	**EG32AC□-CE**					**EG33AC□-CE**				**EG33C□-CE**				
Phase and wire		1ø2W					3ø3W, 1ø3W, 1ø2W								
Pole		2					3				3				
Rated operating voltage (V AC)		240					240				240				
Max. motor rating (HP) UL508 [cUL] *1	Rated current (A)	5	10	15	20	30	5	10	15		20	30			
	3-phase 220-240V AC 3-pole type only	–	–	–	–	–	0.5	1	2		2	3			
CSA C22.2 No. 14	Single-phase 220-240V AC	1/6	1/3	3/4	1	2	1/6	1/3	3/4		1	2			
Load (A) UL508 [cUL] CSA C22.2 No. 14	Resistance *2	5, 10, 15, 20, 30													
	Discharge lamp *3	2.5, 5, 7.5, 10, 15													
	Incandescent lamp *2	5, 10, 15, 20, 30													
	Others *2	5, 10, 15, 20, 30													
Instantaneous trip type	Rated operating voltage (V AC)	240					240								
	Rated sensitive current IΔn (mA) [UL508] [cUL]	15, 30, 100					15, 30, 100								
	Pick-up current [UL1053]	0.7 x Rated sensitive current													
Tripping time (s) [UL1053]		0.1					0.1								

Frame		50A														
Type	Instantaneous trip type	**EG52AC□-CE**							**EG53AC□-CE**					**EG53C□-CE**		
Phase and wire		1ø2W							3ø3W, 1ø3W, 1ø2W							
Pole		2							3					3		
Rated operating voltage (V AC)		240							240					240		
Max. motor rating (HP) UL508 [cUL] *1	Rated current (A)	5	10	15	20	30	40	50	5	10	15	20	30	40	50	
	3-phase 220-240V AC 3-pole type only	–	–	–	–	–	–	–	0.5	1	2	2	3	5	7.5	
CSA C22.2 No. 14	Single-phase 220-240V AC	1/6	1/3	3/4	1	2	3	3	1/6	1/3	3/4	1	2	3	3	
Load (A) UL508 [cUL] CSA C22.2 No. 14	Resistance *2	5, 10, 15, 20, 30, 40, 50														
	Discharge lamp *3	2.5, 5, 7.5, 10, 15, 20, 25														
	Incandescent lamp *2	5, 10, 15, 20, 30, 40, 50														
	Others *2	5, 10, 15, 20, 30, 40, 50														
Instantaneous trip type	Rated operating voltage (V AC)	240							240					240		
	Rated sensitive current IΔn (mA) [UL508] [cUL]	15, 30, 100							15, 30, 100					15, 30,100		
	Pick-up current [UL1053]	0.7 x Rated sensitive current														
Tripping time (s) [UL1053]		0.1							0.1					0.1		

Frame		60A				100A										
Type	Instantaneous trip type	**EG63C□-CE**				**EG103AC□-CE**				**EG102C□-CE**				**EG103C□-CE**		
Phase and wire		3ø3W, 1ø3W, 1ø2W				3ø3W, 1ø3W, 1ø2W				1ø2W				3ø3W, 1ø3W, 1ø2W		
Pole		3				3				2				3		
Rated operating voltage (V AC)		240				240				240				240		
Max. motor rating (HP) UL508 [cUL] *1	Rated current (A)	60				60	75	100		50	60	75	100	50	60	75	100
	3-phase 220-240V AC 3-pole type only	10				10	10	15		–	–	–	–	7.5	10	10	15
CSA C22.2 No. 14	Single-phase 220-240V AC	5				5	5	7.5		3	5	5	7.5	3	5	5	7.5
Load (A) UL508 [cUL] CSA C22.2 No. 14	Resistance *2	60				60, 75, 100				50, 60, 75, 100							
	Discharge lamp *3	30				30, 37.5, 50				25, 30, 37.5, 50							
	Incandescent lamp *2	60				60, 75, 100				50, 60, 75, 100							
	Others *2	60				60, 75, 100				50, 60, 75, 100							
Instantaneous trip type	Rated operating voltage (V AC)	240				240				240				240		
	Rated sensitive current IΔn (mA) [UL508] [cUL]	15, 30, 100/200				30, 100/200				30, 100/200				30, 100/200/500		
	Pick-up current [UL1053]	0.7 x Rated sensitive current														
Tripping time (s) [UL1053]		0.1				0.1				0.1				0.1		

Note: *1 The performance of UL508 approved models is indicated as applicable motor rating (HP), and the detection current of UL1053 approved models is indicated as the pick-up current value (70% of I n).
*2 Rated current x 1
*3 Rated current x 1/2

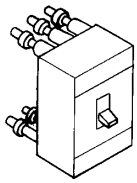
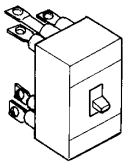
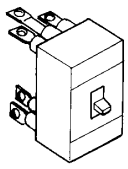
Mounting modifications

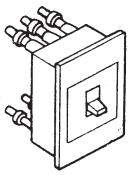
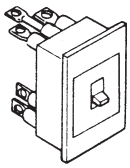
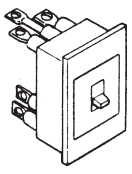
■ Mounting modifications

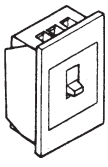
Standard type FUJI breakers are front mounting with front connections. The standard breaker can easily be modified to become front mounting rear connection type, flush mounting type and plug-in type. The additional parts such as insulation bases, barriers, covers and similar parts are added as required.

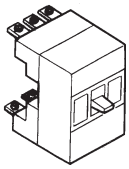
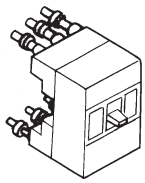
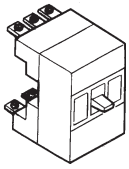
Standard type
Front mounting
Front connection

BASIC DESIGN

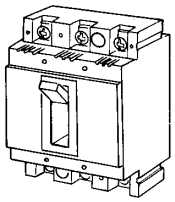
Additional main parts	Front mounting Rear connection (X type)
Round stud terminal 	HG50B HG100B
Bar stud terminal 	SG30C EG30C SG50C EG30AC SG50RC EG50C SG60C EG50AC SG60RC EG60C EG100C EG100AC
Bar stud terminal 	SG100C EG225C HG225B SG100RC EG400C HG400B SG225C EG600C HG600B SG225RC EG800C HG800B SG400C SG400RC SG600RC SG800RC Bar studs can be turned by 90˚.

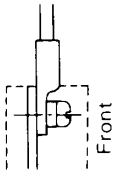
Additional main parts	Flush mounting Rear connection (E type)
Round stud terminal 	HG50B HG100B
Bar stud terminal 	SG30C EG30C SG50C EG30AC SG50RC EG50C SG60C EG50AC SG60RC EG60C EG100C EG100AC
Bar stud terminal 	SG100C EG225C HG225B SG100RC EG400C HG400B SG225C EG600C HG600B SG225RC EG800C HG800B SG400C SG400RC SG600RC SG800RC Bar studs can be turned by 90˚.

Additional main parts	Flush mounting Top and bottom connection (Y type)
	SG30C EG30C SG50C EG30AC SG50RC EG50C SG60C EG50AC SG60RC EG60C EG100C EG100AC

Additional main parts	Plug-in mounting (P type)
Bar stud terminal 	SG30C EG30C SG50C EG30AC SG50RC EG50C SG60C EG50AC SG60RC EG60C EG100C EG100AC
Round stud terminal 	SG100C HG50B SG100RC HG100B
Bar stud terminal 	SG225C EG225C HG225B SG225RC EG400C HG400B SG400C EG600C HG600B SG400RC EG800C HG800B SG600RC SG800RC Bar studs can be turned by 90˚.

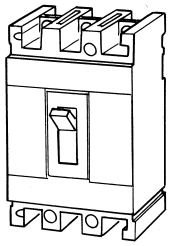
■Terminal connection/Front mounting, front connection

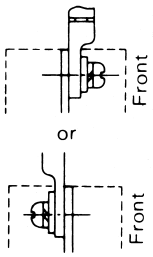




Flat terminal

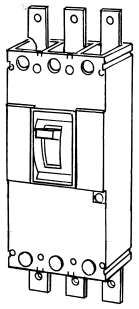
	Breaker type	Size
Self lifting screw	SG30C, SG50C, SG50RC EG30AC, EG30C, EG50AC, EG50C	M5 x 14
Pan head screw	SG60C, SG60RC EG60C, EG100AC, EG100C	M8 x 15

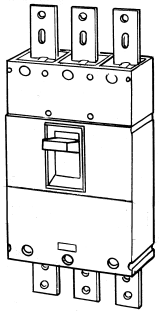


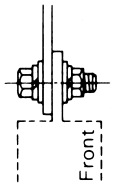


Flat terminal

	Breaker type	Size
Pan head screw 	SG100C, SG100RC HG50B, HG100B	M8 x 14
Hexagonal socket head bolt 	SG225C, SG225RC EG225C	M8 x 16
	HG225B	M8 x 20







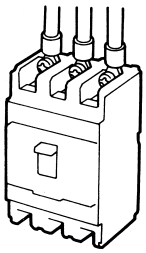
Flat terminal

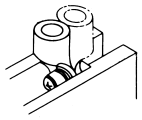
	Breaker type		Size
Hexagonal head bolt 	SG400C SG400RC HG400B	EG400C	M12 x 35
	SG600RC SG800RC HG600B	EG600C EG800C HG800B	M12 x 40

■ Type of connection

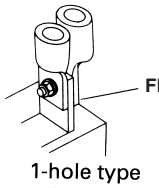
Front mounting front connection

Direct connection





Flat terminal connection



1-hole type

Flat terminals/1-hole type

Breaker type	Type of flat terminal
SG33C, SG53C, SG53RC EG33AC, EG33C, EG53AC, EG53C	**BZ6S10C503**
SG63C, SG63RC EG63C, EG103C, EG103AC	**BZ6S10C1003**
SG103C, SG103RC HG53B, HG103B	**BZ-S35B-1003**
SG203C, SG203RC EG203C HG203B	**BZ-S50B-2253**

Wire size and terminal

■ Wire size and crimp terminal

The following is the size recommendations for crimp terminals.

Crimp terminal
R: JIS C2805
CB: JEM-1399
JST: Product of Japan Crimp Terminal Co., Ltd.
F: FUJI special crimp terminal

Ampere frame	ELCB type	Wire size (mm^2)										
		1.04 | 2.63	2.63 | 6.64	6.64 | 10.52	10.52 | 16.78	16.78 | 26.66	26.66 | 42.42	42.42 | 60.57	96.3 | 117.2	117.2 | 152.05	192.6 | 242.27	242.27 | 325
30	SG30C EG30AC, EG30C	R2-5	R5.5-5	R8-5	R14-5							
50	SG50C, SG50RC EG50AC, EG50C	R2-5	R5.5-5	R8-5	R14-5							
	HG50B	R2-8	R5.5-8	R8-8	R14-8	JST22-S8						
60	SG60C, SG60RC EG60C	R2-8	R5.5-8	R8-8	R14-8	JST22-S8						
100	SG100C, SG100RC HG100B	R2-8	R5.5-8	R8-8	R14-8	R22-8	JST38-S8	CB60-8				
	EG100AC EG100C	R2-8	R5.5-8	R8-8	R14-8	JST22-S8	JST38-S8	F60-8				
225	SG225C, SG225RC EG225C HG225B				R14-8	R22-8	R38-8	R60-8	CB100-8	CB150-8		
400	SG400C, SG400RC EG400C, HG400B						R38-12	R60-12	R100-12	R150-12	R200-12	JST325-12
600	SG600RC, EG600C HG600B								R100-12	R150-12	R200-12	JST325-12
800	SG800RC, EG800C HG800B								R100-12	R150-12	R200-12	JST325-12

Block terminal connection (For UL Listed)

ELCB type	Rated current (A)	Connectable wire size (AWG)	Tightening torque (N·m)	Type of screw head and size (mm)
SG100CUL	32	10AWG	5.8 (5.8 to 6.4)	Slotted screw head
	40	8AWG		
	45	8AWG		
	50	8AWG		
	60	6AWG		
	75	4AWG		
	100	3AWG		
SG225CUL	125	1AWG	23 (23 to 25.3)	Hexagonal socket head bolt 6.35mm (1/4 inch)
	150	1/0AWG		
	175	2/0AWG		
	200	3/0AWG		
	225	4/0AWG		

Notes: • AWG is abbreviation of "American Wire Gauge" and the UL approved wire unit.
• The allowable temperature of wire is 75°C. (UL CSA approved)

Crimp terminal connection (For UL Listed)

ELCB type	Rated current (A)	Applicable crimp terminal								Connectable wire size (AWG)		Tightening torque (N•m)	Type of screw head and size (mm)
		J.S.T. Mfg. Co., Ltd		Aikoku Kogyo K.K.		Nichifu Co., Ltd.		Daido Solderless Terminal Mfg. Co., Ltd.					
		60°C wire	75°C wire	60°C wire	75°C wire	60°C wire	75°C wire	60°C wire	75°C wire	60°C wire	75°C wire		
SG50RCUL	3		R2-5		R2-5						14AWG	2.3-2.8	Cross-recessed pan-head screw M5 x 14
	5												
	10												
	15												
	20		R5.5-5		R5.5-5						12AWG		
	30										10AWG		
	40		R8-5		R8-5						8AWG		
	50												
EG100CUL	60		R14-8		R14-8						6AWG	5.5-7.5	Cross-recessed pan-head screw M8 x 14
	75		22-S8		22-8						4AWG		
	100		38-S8		38-S8						3AWG		
SG100CUL	32	R5.5-8	R5.5-8	R5.5-8	R5.5-8	R5.5-8	R5.5-8	R5.5-8	R5.5-8	10AWG	10AWG	5.8 (5.3-6.4)	Cross-recessed pan-head screw M8 x 14
	40	R8-8	R8-8	R8-8	R8-8	R8-8	R8-8	R8-8	R8-8	8AWG	8AWG		
	45	R14-8	R14-8	R14-8	R14-8	R14-8	R14-8	R14-8	R14-8	6AWG	6AWG		
	50												
	60	22-S8		22-8		22-S8		22-S8		4AWG			
	70		22-S8		22-8		22-S8		22-S8		4AWG		
	75							38-S8		3AWG			
	80												
	90	38-S8	38-S8	38-S8	38-S8	38-S8	38-S8		38-S8	2AWG	3AWG		
	100									1AWG			
SG225CUL	125		38-S8		38-S8		R38-S8		38-S8		1AWG	10.5 (8-13)	Hexagonal socket head bolt M8 x 16
	150		R60-8		R60-8		R60-8		60-8		1/0AWG		
	175		70-8				R70-8		70-8		2/0AWG		
	200		CB80-S8						CB80-S8		3/0AWG		
	225		CB100-S8						CB100-8		4/0AWG		

Notes: • AWG is abbreviation of "American Wire Gauge" and the UL approved wire unit.
• The allowable temperature of wire is 75°C. (UL and CSA approved)

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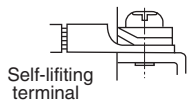
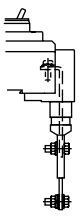
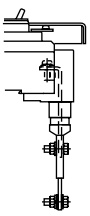
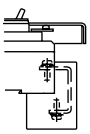
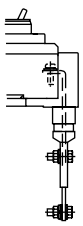
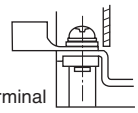
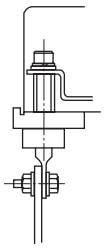
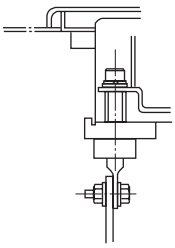
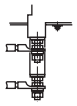
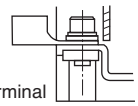
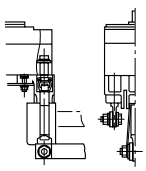
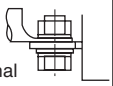
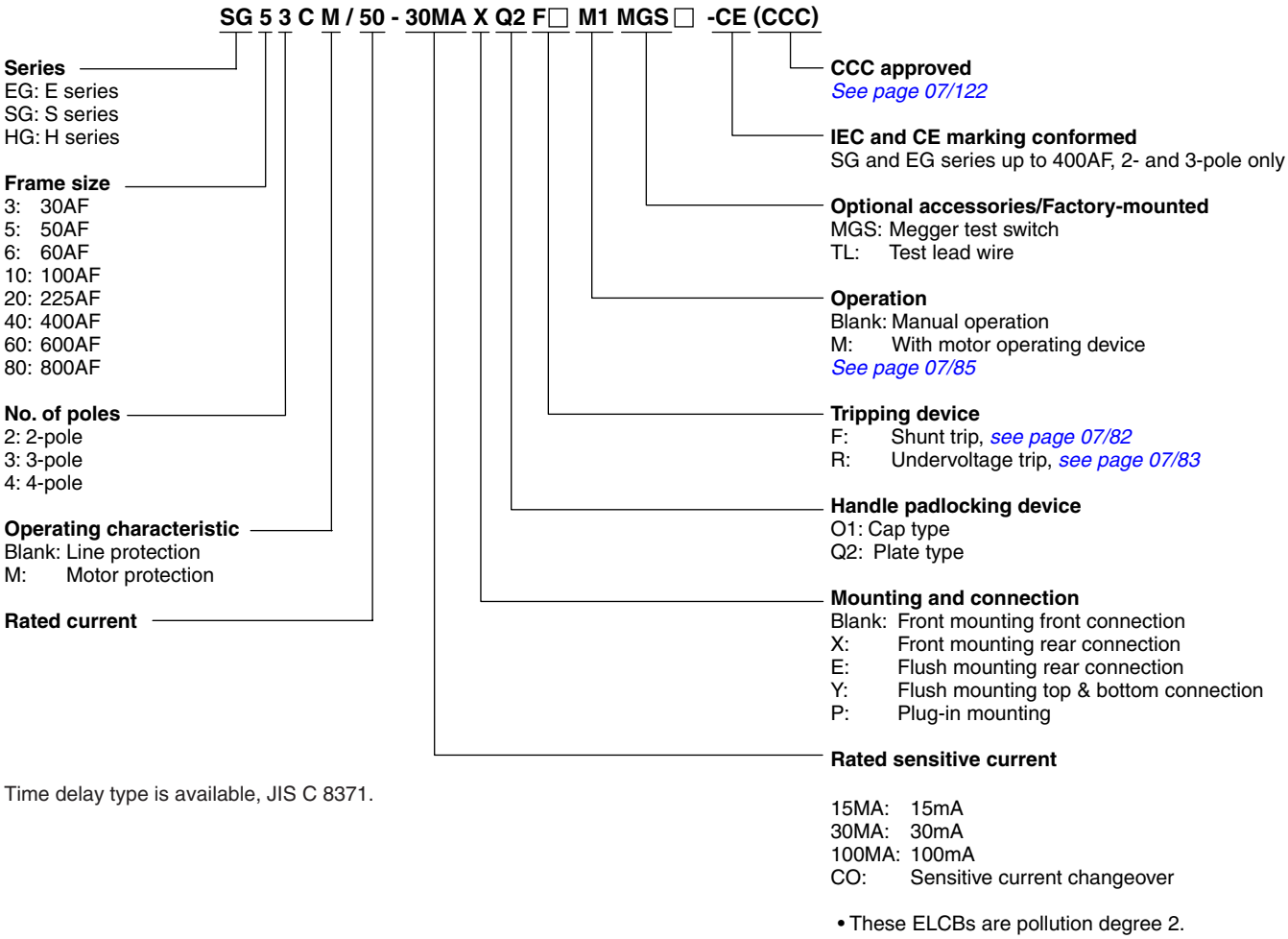
■ Breaker termination

ELCB type	Front connection	Rear connection **X**	Flush mounting **E**	**Y**	Plug-in mounting **P**
SG30C, SG50C, SG50RC EG50C EG30AC, EG30C, EG50AC (Front connection type only)					
SG60C, SG60RC EG60C, EG100C EG100AC (Front connection type only)					
SG100C, SG100RC				—	
SG225C, SG225RC EG225C					
SG400C, SG400RC SG600RC, SG800RC EG400C, EG600C, EG800C					

Type number nomenclature

■ Type number nomenclature



Time delay type is available, JIS C 8371.

• These ELCBs are pollution degree 2.

■ Ordering information

Specify the following:
1. Type number of ELCB including factory-mounted optional accessories
2. Type number of customer-mountable optional accessories

■ Customer-mountable optional accessories/Sold separately

Internal accessories

Auxiliary switch, alarm switch, shunt trip device (except for SG100, SG225, EG225), undervoltage trip device (except for SG100, SG225, EG225), terminal block

External accessories

Operating handles (N, V and G-type), terminal covers, insulation barrier, steel enclosures, handle locking covers, kits for mounting modification, flat terminal, mechanical interlock device

■ Factory-mounted optional accessories

External accessories
Handle padlocking devices/Q1 and Q2, motor-operating mechanism/M, megger test switch/MGS, test lead wire/TL

Further information: See pages 07/68.

■ Type number nomenclature / UL489 approved

EG 10 3 C UL / 100 - 30MA L1 Q1

Series
EG: E series
SG: S series

Frame size
5: 50AF
10: 100AF
20: 225AF

No. of poles
2: 2-pole
3: 3-pole

UL489 approved

Handle padlocking device

Terminal*
See the table below.

Rated sensitive current
30MA: 30mA
CO: Sensitive current changeover

Rated current

*** Combination of terminals**

Code	Terminal position		Applicable ELCB type		
	Line side	Load side	SG53RCUL EG102CUL EG103CUL	SG103CUL SG203CUL	SG403CUL
Blank	Screw	Screw	●	●	–
L1	Flat terminal	Flat terminal	●	●	●
L3	Screw	Flat terminal	●	●	–
L4	Flat terminal	Screw	●	●	–
L5	Screw	Block terminal	–	●	–
L6	Block terminal	Screw	–	●	–
L7	Flat terminal	Block terminal	–	●	●
L8	Block terminal	Flat terminal	–	●	●

●: Available –: Not available

Note: •When using both a flat terminal and terminal cover for SG103CUL and 203CUL, the terminal cover for the flat terminal is required.
•For SG50RCUL and EG100CUL, use an insulation barriersupplied. Terminal cover is not available.

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■ Ordering information

Specify the following:
1. Type number of ELCB including factory-mounted optional accessories
2. Type number of customer-mountable optional accessories

■ Customer-mountable optional accessories/Sold separately

Internal accessories
Auxiliary switch, alarm switch, shunt trip device, undervoltage trip device, terminal block

External accessories
Operating handles (N and V-type), terminal covers, insulation barrier, steel enclosures, handle locking covers, kits for mounting modification, flat terminal, mechanical interlock device

Type number
Line protection

Earth leakage + Overcurrent + Short-circuit protection type

■ SG series/3-pole IEC and CE marking conformed

Breaker ampere frame	Rated current (A)	Sensitive current 30mA Type	Sensitive current 100/200/500mA selectable Type	□ : Available mounting and connection
30	3	**SG33C/3-30MA□-CE**	**SG33C/3-CO□-CE**	Blank, X, E, Y, P
	5	**SG33C/5-30MA□-CE**	**SG33C/5-CO□-CE**	
	10	**SG33C/10-30MA□-CE**	**SG33C/10-CO□-CE**	
	15	**SG33C/15-30MA□-CE**	**SG33C/15-CO□-CE**	
	20	**SG33C/20-30MA□-CE**	**SG33C/20-CO□-CE**	
	30	**SG33C/30-30MA□-CE**	**SG33C/30-CO□-CE**	
50	5	**SG53C/5-30MA□-CE**	**SG53C/5-CO□-CE**	Blank, X, E, Y, P
	10	**SG53C/10-30MA□-CE**	**SG53C/10-CO□-CE**	
	15	**SG53C/15-30MA□-CE**	**SG53C/15-CO□-CE**	
	20	**SG53C/20-30MA□-CE**	**SG53C/20-CO□-CE**	
	30	**SG53C/30-30MA□-CE**	**SG53C/30-CO□-CE**	
	40	**SG53C/40-30MA□-CE**	**SG53C/40-CO□-CE**	
	50	**SG53C/50-30MA□-CE**	**SG53C/50-CO□-CE**	
	10	**SG53RC/10-30MA□-CE**	**SG53RC/10-CO□-CE**	Blank, X, E, Y, P
	15	**SG53RC/15-30MA□-CE**	**SG53RC/15-CO□-CE**	
	20	**SG53RC/20-30MA□-CE**	**SG53RC/20-CO□-CE**	
	30	**SG53RC/30-30MA□-CE**	**SG53RC/30-CO□-CE**	
	40	**SG53RC/40-30MA□-CE**	**SG53RC/40-CO□-CE**	
	50	**SG53RC/50-30MA□-CE**	**SG53RC/50-CO□-CE**	
60	60	**SG63C/60-30MA□-CE**	**SG63C/60-CO□-CE**	Blank, X, E, Y, P
	60	**SG63RC/60-30MA□-CE**	**SG63RC/60-CO□-CE**	Blank, X, E, Y, P
100	15	**SG103C/15-30MA□-CE**	**SG103C/15-CO□-CE**	Blank, X, E, P
	20	**SG103C/20-30MA□-CE**	**SG103C/20-CO□-CE**	
	30	**SG103C/30-30MA□-CE**	**SG103C/30-CO□-CE**	
	40	**SG103C/40-30MA□-CE**	**SG103C/40-CO□-CE**	
	50	**SG103C/50-30MA□-CE**	**SG103C/50-CO□-CE**	
	60	**SG103C/60-30MA□-CE**	**SG103C/60-CO□-CE**	
	75	**SG103C/75-30MA□-CE**	**SG103C/75-CO□-CE**	
	100	**SG103C/100-30MA□-CE**	**SG103C/100-CO□-CE**	
	15	**SG103RC/15-30MA□-CE**	**SG103RC/15-CO□-CE**	Blank, X, E, P
	20	**SG103RC/20-30MA□-CE**	**SG103RC/20-CO□-CE**	
	30	**SG103RC/30-30MA□-CE**	**SG103RC/30-CO□-CE**	
	40	**SG103RC/40-30MA□-CE**	**SG103RC/40-CO□-CE**	
	50	**SG103RC/50-30MA□-CE**	**SG103RC/50-CO□-CE**	
	60	**SG103RC/60-30MA□-CE**	**SG103RC/60-CO□-CE**	
	75	**SG103RC/75-30MA□-CE**	**SG103RC/75-CO□-CE**	
	100	**SG103RC/100-30MA□-CE**	**SG103RC/100-CO□-CE**	
225	125	**SG203C/125-30MA□-CE**	**SG203C/125-CO□-CE**	Blank, X, E, P
	150	**SG203C/150-30MA□-CE**	**SG203C/150-CO□-CE**	
	175	**SG203C/175-30MA□-CE**	**SG203C/175-CO□-CE**	
	200	**SG203C/200-30MA□-CE**	**SG203C/200-CO□-CE**	
	225	**SG203C/225-30MA□-CE**	**SG203C/225-CO□-CE**	
	125	**SG203RC/125-30MA□-CE**	**SG203RC/125-CO□-CE**	Blank, X, E, P
	150	**SG203RC/150-30MA□-CE**	**SG203RC/150-CO□-CE**	
	175	**SG203RC/175-30MA□-CE**	**SG203RC/175-CO□-CE**	
	200	**SG203RC/200-30MA□-CE**	**SG203RC/200-CO□-CE**	
	225	**SG203RC/225-30MA□-CE**	**SG203RC/225-CO□-CE**	
400	250	**SG403C/250-30MA□-CE**	**SG403C/250-CO□-CE**	Blank, X, E, P
	300	**SG403C/300-30MA□-CE**	**SG403C/300-CO□-CE**	
	350	**SG403C/350-30MA□-CE**	**SG403C/350-CO□-CE**	
	400	**SG403C/400-30MA□-CE**	**SG403C/400-CO□-CE**	

Mounting	Connection	□
Front	Front	Blank
Front	Rear	X
Flush	Rear	E
Flush	Top and bottom	Y
Plug-in		P

Earth leakage + Overcurrent + Short-circuit protection type

■ SG series/3-pole JIS C8371

Breaker ampere frame	Rated current (A)	Sensitive current 30mA	Sensitive current 100/200/500mA selectable	□ : Available mounting and connection
		Type	Type	
400	250 300 350 400	**SG403RC/250-30MA□** **SG403RC/300-30MA□** **SG403RC/350-30MA□** **SG403RC/400-30MA□**	**SG403RC/250-CO□** **SG403RC/300-CO□** **SG403RC/350-CO□** **SG403RC/400-CO□**	Blank, X, E, P
600	500 600	–	**SG603RC/500-CO□** **SG603RC/600-CO□**	Blank, X, E, P
800	700 800	–	**SG803RC/700-CO□** **SG803RC/800-CO□**	Blank, X, E, P

■ SG series/4-pole JIS C8371

Breaker ampere frame	Rated current (A)	Sensitive current 30mA	Sensitive current 100/200/500mA selectable	□ : Available mounting and connection
		Type	Type	
100	40 50 60 75 100	**SGa104A/40-30MA□** **SGa104A/50-30MA□** **SGa104A/60-30MA□** **SGa104A/75-30MA□** **SGa104A/100-30MA□**	**SGa104A/40-CO□** **SGa104A/50-CO□** **SGa104A/60-CO□** **SGa104A/75-CO□** **SGa104A/100-CO□**	Blank, X, E
100	50 60 75 100	**SG104H/50-30MA□** **SG104H/60-30MA□** **SG104H/75-30MA□** **SG104H/100-30MA□**	**SG104H/50-CO□** **SG104H/60-CO□** **SG104H/75-CO□** **SG104H/100-CO□**	Blank, X, E
225	125 150 175 200 225	**SGa204A/125-30MA□** **SGa204A/150-30MA□** **SGa204A/175-30MA□** **SGa204A/200-30MA□** **SGa204A/225-30MA□**	**SGa204A/125-CO□** **SGa204A/150-CO□** **SGa204A/175-CO□** **SGa204A/200-CO□** **SGa204A/225-CO□**	Blank, X, E
225	125 150 175 200 225	**SG204H/125-30MA□** **SG204H/150-30MA□** **SG204H/175-30MA□** **SG204H/200-30MA□** **SG204H/225-30MA□**	**SG204H/125-CO□** **SG204H/150-CO□** **SG204H/175-CO□** **SG204H/200-CO□** **SG204H/225-CO□**	Blank, X, E
400	250 300 350 400	**SGa404A/250-30MA□** **SGa404A/300-30MA□** **SGa404A/350-30MA□** **SGa404A/400-30MA□**	**SGa404A/250-CO□** **SGa404A/300-CO□** **SGa404A/350-CO□** **SGa404A/400-CO□**	Blank, X, E

Mounting	Connection	□
Front	Front	Blank
Front	Rear	X
Flush	Rear	E
Plug-in		P

Earth leakage + Overcurrent + Short-circuit protection type

■ EG series/2-pole IEC and CE marking conformed

Breaker ampere frame	Rated current (A)	Sensitive current 15mA	Sensitive current 30mA	Sensitive current 100mA	□ : Available mounting and connection
		Type	Type	Type	
30	5	**EG32AC/5-15MA□-CE**	**EG32AC/5-30MA□-CE**	**EG32AC/5-100MA□-CE**	Blank, X, E, Y, P
	10	**EG32AC/10-15MA□-CE**	**EG32AC/10-30MA□-CE**	**EG32AC/10-100MA□-CE**	
	15	**EG32AC/15-15MA□-CE**	**EG32AC/15-30MA□-CE**	**EG32AC/15-100MA□-CE**	
	20	**EG32AC/20-15MA□-CE**	**EG32AC/20-30MA□-CE**	**EG32AC/20-100MA□-CE**	
	30	**EG32AC/30-15MA□-CE**	**EG32AC/30-30MA□-CE**	**EG32AC/30-100MA□-CE**	
50	5	**EG52AC/5-15MA□-CE**	**EG52AC/5-30MA□-CE**	**EG52AC/5-100MA□-CE**	Blank, X, E, Y, P
	10	**EG52AC/10-15MA□-CE**	**EG52AC/10-30MA□-CE**	**EG52AC/10-100MA□-CE**	
	15	**EG52AC/15-15MA□-CE**	**EG52AC/15-30MA□-CE**	**EG52AC/15-100MA□-CE**	
	20	**EG52AC/20-20MA□-CE**	**EG52AC/20-30MA□-CE**	**EG52AC/20-100MA□-CE**	
	30	**EG52AC/30-15MA□-CE**	**EG52AC/30-30MA□-CE**	**EG52AC/30-100MA□-CE**	
	40	**EG52AC/40-15MA□-CE**	**EG52AC/40-30MA□-CE**	**EG52AC/40-100MA□-CE**	
	50	**EG52AC/50-15MA□-CE**	**EG52AC/50-30MA□-CE**	**EG52AC/50-100MA□-CE**	
100				Sensitive current 100/200mA selectable	Blank, X, E, Y, P
	50	–	**EG102C/50-30MA□-CE**	**EG102C/50-CO□-CE**	
	60	–	**EG102C/60-30MA□-CE**	**EG102C/60-CO□-CE**	
	75	–	**EG102C/75-30MA□-CE**	**EG102C/75-CO□-CE**	
	100	–	**EG102C/100-30MA□-CE**	**EG102C/100-CO□-CE**	

Mounting	Connection	□
Front	Front	Blank
Front	Rear	X
Flush	Rear	E
Flush	Top and bottom	Y
Plug-in		P

Earth leakage + Overcurrent + Short-circuit protection type

■ EG series/3-pole IEC and CE marking conformed

Breaker ampere frame	Rated current (A)	Sensitive current 15mA	Sensitive current 30mA	Sensitive current 100mA	□ : Available mounting and connection
		Type	Type	Type	
30	5	**EG33AC/5-15MA□-CE**	**EG33AC/5-30MA□-CE**	**EG33AC/5-100MA□-CE**	Blank, X, E, Y, P
	10	**EG33AC/10-15MA□-CE**	**EG33AC/10-30MA□-CE**	**EG33AC/10-100MA□-CE**	
	15	**EG33AC/15-15MA□-CE**	**EG33AC/15-30MA□-CE**	**EG33AC/15-100MA□-CE**	
	20	**EG33AC/20-15MA□-CE**	**EG33AC/20-30MA□-CE**	**EG33AC/20-100MA□-CE**	
	30	**EG33AC/30-15MA□-CE**	**EG33AC/30-30MA□-CE**	**EG33AC/30-100MA□-CE**	
	5	**EG33C/5-15MA□-CE**	**EG33C/5-30MA□-CE**	**EG33C/5-100MA□-CE**	Blank, X, E, Y, P
	10	**EG33C/10-15MA□-CE**	**EG33C/10-30MA□-CE**	**EG33C/10-100MA□-CE**	
	15	**EG33C/15-15MA□-CE**	**EG33C/15-30MA□-CE**	**EG33C/15-100MA□-CE**	
	20	**EG33C/20-20MA□-CE**	**EG33C/20-30MA□-CE**	**EG33C/20-100MA□-CE**	
	30	**EG33C/30-15MA□-CE**	**EG33C/30-30MA□-CE**	**EG33C/30-100MA□-CE**	
50	5	**EG53AC/5-15MA□-CE**	**EG53AC/5-30MA□-CE**	**EG53AC/5-100MA□-CE**	Blank, X, E, Y, P
	10	**EG53AC/10-15MA□-CE**	**EG53AC/10-30MA□-CE**	**EG53AC/10-100MA□-CE**	
	15	**EG53AC/15-15MA□-CE**	**EG53AC/15-30MA□-CE**	**EG53AC/15-100MA□-CE**	
	20	**EG53AC/20-15MA□-CE**	**EG53AC/20-30MA□-CE**	**EG53AC/20-100MA□-CE**	
	30	**EG53AC/30-15MA□-CE**	**EG53AC/30-30MA□-CE**	**EG53AC/30-100MA□-CE**	
	40	**EG53AC/40-15MA□-CE**	**EG53AC/40-30MA□-CE**	**EG53AC/40-100MA□-CE**	
	50	**EG53AC/50-15MA□-CE**	**EG53AC/50-30MA□-CE**	**EG53AC/50-100MA□-CE**	
				Sensitive current 100/200mA selectable	Blank, X, E, Y, P
	5	**EG53C/5-15MA□-CE**	**EG53C/5-30MA□-CE**	**EG53C/5-CO□-CE**	
	10	**EG53C/10-15MA□-CE**	**EG53C/10-30MA□-CE**	**EG53C/10-CO□-CE**	
	15	**EG53C/15-15MA□-CE**	**EG53C/15-30MA□-CE**	**EG53C/15-CO□-CE**	
	20	**EG53C/20-15MA□-CE**	**EG53C/20-30MA□-CE**	**EG53C/20-CO□-CE**	
	30	**EG53C/30-15MA□-CE**	**EG53C/30-30MA□-CE**	**EG53C/30-CO□-CE**	
	40	**EG53C/40-15MA□-CE**	**EG53C/40-30MA□-CE**	**EG53C/40-CO□-CE**	
	50	**EG53C/50-15MA□-CE**	**EG53C/50-30MA□-CE**	**EG53C/50-CO□-CE**	
60				Sensitive current 100/200mA selectable	Blank, X, E, Y, P
	60	**EG63C/60-15MA□-CE**	**EG63C/60-30MA□-CE**	**EG63C/60-CO□-CE**	
100				Sensitive current 100/200mA selectable	Blank, X, E, Y, P
	60	–	**EG103AC/60-30MA□-CE**	**EG103AC/60-CO□-CE**	
	75	–	**EG103AC/75-30MA□-CE**	**EG103AC/75-CO□-CE**	
	100	–	**EG103AC/100-30MA□-CE**	**EG103AC/100-CO□-CE**	
				Sensitive current 100/200/500mA selectable	Blank, X, E, Y, P
	50	–	**EG103C/50-30MA□-CE**	**EG103C/50-CO□-CE**	
	60	–	**EG103C/60-30MA□-CE**	**EG103C/60-CO□-CE**	
	75	–	**EG103C/75-30MA□-CE**	**EG103C/75-CO□-CE**	
	100	–	**EG103C/100-30MA□-CE**	**EG103C/100-CO□-CE**	
225				Sensitive current 100/200/500mA selectable	Blank, X, E, P
	125	–	**EG203C/125-30MA□-CE**	**EG203C/125-CO□-CE**	
	150	–	**EG203C/150-30MA□-CE**	**EG203C/150-CO□-CE**	
	175	–	**EG203C/175-30MA□-CE**	**EG203C/175-CO□-CE**	
	200	–	**EG203C/200-30MA□-CE**	**EG203C/200-CO□-CE**	
	225	–	**EG203C/225-30MA□-CE**	**EG203C/225-CO□-CE**	
400				Sensitive current 100/200/500mA selectable	Blank, X, E, P
	250	–	**EG403C/250-30MA□-CE**	**EG403C/250-CO□-CE**	
	300	–	**EG403C/300-30MA□-CE**	**EG403C/300-CO□-CE**	
	350	–	**EG403C/350-30MA□-CE**	**EG403C/350-CO□-CE**	
	400	–	**EG403C/400-30MA□-CE**	**EG403C/400-CO□-CE**	

Mounting	Connection	□
Front	Front	Blank
Front	Rear	X
Flush	Rear	E
Flush	Top and bottom	Y
Plug-in		P

Earth leakage + Overcurrent + Short-circuit protection type

■ EG series/3-pole JIS C8371

Breaker ampere frame	Rated current (A)	Sensitive current 100/200/500mA selectable Type	□ : Available mounting and connection
600	500 600	**EG603C/500-CO□** **EG603C/600-CO□**	Blank, X, E, P
800	700 800	**EG803C/700-CO□** **EG803C/800-CO□**	Blank, X, E, P

Mounting	Connection	□
Front	Front	Blank
Front	Rear	X
Flush	Rear	E
Flush	Top and bottom	Y
Plug-in		P

■ EG series/4-pole (3P+1N) JIS C8371

Front mounting, front connection

Breaker ampere frame	Rated current (A)	Sensitive current 30mA Type	Sensitive current 100mA Type	Sensitive current 300mA Type	Sensitive current 500mA Type
100	30	**EG104A/30-30MA**	**EG104A/30-100MA**	**EG104A/30-300MA**	**EG104A/30-500MA**
	40	**EG104A/40-30MA**	**EG104A/40-100MA**	**EG104A/40-300MA**	**EG104A/40-500MA**
	50	**EG104A/50-30MA**	**EG104A/50-100MA**	**EG104A/50-300MA**	**EG104A/50-500MA**
	60	**EG104A/60-30MA**	**EG104A/60-100MA**	**EG104A/60-300MA**	**EG104A/60-500MA**
	75	**EG104A/75-30MA**	**EG104A/75-100MA**	**EG104A/75-300MA**	**EG104A/75-500MA**
	100	**EG104A/100-30MA**	**EG104A/100-100MA**	**EG104A/100-300MA**	**EG104A/100-500MA**

Earth leakage + Overcurrent + Short-circuit protection type

■ HG series/3-pole JIS C8371

Breaker ampere frame	Rated current (A)	Sensitive current 30mA Type	Sensitive current 100/200/500mA selectable Type	□ : Available mounting and connection
50	15	**HG53B/15-30MA□**	**HG53B/15-CO□**	Blank, X, E, P
	20	**HG53B/20-30MA□**	**HG53B/20-CO□**	
	30	**HG53B/30-30MA□**	**HG53B/30-CO□**	
	40	**HG53B/40-30MA□**	**HG53B/40-CO□**	
	50	**HG53B/50-30MA□**	**HG53B/50-CO□**	
100	15	**HG103B/15-30MA□**	**HG103B/15-CO□**	Blank, X, E, P
	20	**HG103B/20-30MA□**	**HG103B/20-CO□**	
	30	**HG103B/30-30MA□**	**HG103B/30-CO□**	
	40	**HG103B/40-30MA□**	**HG103B/40-CO□**	
	50	**HG103B/50-30MA□**	**HG103B/50-CO□**	
	60	**HG103B/60-30MA□**	**HG103B/60-CO□**	
	75	**HG103B/75-30MA□**	**HG103B/75-CO□**	
	100	**HG103B/100-30MA□**	**HG103B/100-CO□**	
225	125	**HG203B/125-30MA□**	**HG203B/125-CO□**	Blank, X, E, P
	150	**HG203B/150-30MA□**	**HG203B/150-CO□**	
	175	**HG203B/175-30MA□**	**HG203B/175-CO□**	
	200	**HG203B/200-30MA□**	**HG203B/200-CO□**	
	225	**HG203B/225-30MA□**	**HG203B/225-CO□**	
400	250	**HG403B/250-30MA□**	**HG403B/250-CO□**	Blank, X, E, P
	300	**HG403B/300-30MA□**	**HG403B/300-CO□**	
	350	**HG403B/350-30MA□**	**HG403B/350-CO□**	
	400	**HG403B/400-30MA□**	**HG403B/400-CO□**	
600	500	–	**HG603B/500-CO□**	Blank, X, E, P
	600	–	**HG603B/600-CO□**	
800	700	–	**HG803B/700-CO□**	Blank, X, E, P
	800	–	**HG803B/800-CO□**	

Mounting	Connection	□
Front	Front	Blank
Front	Rear	X
Flush	Rear	E
Plug-in		P

■ **SG series, 3-pole IEC and CE marking conformed**

Breaker ampere frame	Motor capacity (kW) 200/220V	400/440V	Rated current (A)	Sensitive current 30mA	Sensitive current 100/200/500mA selectable	□: Available mounting and connection
30	—	0.2	0.7	**SG33CM/0.7-30MA□-CE**	**SG33CM/0.7-CO□-CE**	Blank, X, E, Y, P
	0.2	0.4	1.4	**SG33CM/1.4-30MA□-CE**	**SG33CM/1.4-CO□-CE**	
	—	0.75	2	**SG33CM/2-30MA□-CE**	**SG33CM/2-CO□-CE**	
	0.4	—	2.6	**SG33CM/2.6-30MA□-CE**	**SG33CM/2.6-CO□-CE**	
	0.75	1.5	4	**SG33CM/4-30MA□-CE**	**SG33CM/4-CO□-CE**	
	—	2.2	5	**SG33CM/5-30MA□-CE**	**SG33CM/5-CO□-CE**	
	1.5	3.7	8	**SG33CM/8-30MA□-CE**	**SG33CM/8-CO□-CE**	
	2.2	—	10	**SG33CM/10-30MA□-CE**	**SG33CM/10-CO□-CE**	
	—	5.5	12	**SG33CM/12-30MA□-CE**	**SG33CM/12-CO□-CE**	
	3.7	7.5	16	**SG33CM/16-30MA□-CE**	**SG33CM/16-CO□-CE**	
	5.5	11	24	**SG33CM/24-30MA□-CE**	**SG33CM/24-CO□-CE**	
	7.5	15	32	**SG33CM/32-30MA□-CE**	**SG33CM/32-CO□-CE**	
50	—	0.2	0.7	**SG53CM/0.7-30MA□-CE**	**SG53CM/0.7-CO□-CE**	Blank, X, E, Y, P
	0.2	0.4	1.4	**SG53CM/1.4-30MA□-CE**	**SG53CM/1.4-CO□-CE**	
	—	0.75	2	**SG53CM/2-30MA□-CE**	**SG53CM/2-CO□-CE**	
	0.4	—	2.6	**SG53CM/2.6-30MA□-CE**	**SG53CM/2.6-CO□-CE**	
	0.75	1.5	4	**SG53CM/4-30MA□-CE**	**SG53CM/4-CO□-CE**	
	—	2.2	5	**SG53CM/5-30MA□-CE**	**SG53CM/5-CO□-CE**	
	1.5	3.7	8	**SG53CM/8-30MA□-CE**	**SG53CM/8-CO□-CE**	
	2.2	—	10	**SG53CM/10-30MA□-CE**	**SG53CM/10-CO□-CE**	
	—	5.5	12	**SG53CM/12-30MA□-CE**	**SG53CM/12-CO□-CE**	
	3.7	7.5	16	**SG53CM/16-30MA□-CE**	**SG53CM/16-CO□-CE**	
	5.5	11	24	**SG53CM/24-30MA□-CE**	**SG53CM/24-CO□-CE**	
	7.5	15	32	**SG53CM/32-30MA□-CE**	**SG53CM/32-CO□-CE**	
	—	18.5	40	**SG53CM/40-30MA□-CE**	**SG53CM/40-CO□-CE**	
	11	22	45	**SG53CM/45-30MA□-CE**	**SG53CM/45-CO□-CE**	
60	15	30	60	**SG63CM/60-30MA□-CE**	**SG63CM/60-CO□-CE**	Blank, X, E, Y, P
100	18.5	37	75	**SG103CM/75-30MA□-CE**	**SG103CM/75-CO□-CE**	Blank, X, E, P
	22	45	90	**SG103CM/90-30MA□-CE**	**SG103CM/90-CO□-CE**	
	11	22	45	**SG103RCM/45-30MA□-CE**	**SG103RCM/45-CO□-CE**	
	15	30	60	**SG103RCM/60-30MA□-CE**	**SG103RCM/60-CO□-CE**	
	18.5	37	75	**SG103RCM/75-30MA□-CE**	**SG103RCM/75-CO□-CE**	
	22	45	90	**SG103RCM/90-30MA□-CE**	**SG103RCM/90-CO□-CE**	
225	30	55	125	**SG203CM/125-30MA□-CE**	**SG203CM/125-CO□-CE**	Blank, X, E, P
	37	75	150	**SG203CM/150-30MA□-CE**	**SG203CM/150-CO□-CE**	
	45	90	175	**SG203CM/175-30MA□-CE**	**SG203CM/175-CO□-CE**	
	55	110	225	**SG203CM/225-30MA□-CE**	**SG203CM/225-CO□-CE**	
	30	55	125	**SG203RCM/125-30MA□-CE**	**SG203RCM/125-CO□-CE**	
	37	75	150	**SG203RCM/150-30MA□-CE**	**SG203RCM/150-CO□-CE**	
	45	90	175	**SG203RCM/175-30MA□-CE**	**SG203RCM/175-CO□-CE**	
	55	110	225	**SG203RCM/225-30MA□-CE**	**SG203RCM/225-CO□-CE**	

■ **EG series, 3-pole IEC and CE marking conformed**

Breaker ampere frame	Motor capacity (kW) 200/220V	400/440V	Rated current (A)	Sensitive current 30mA	Sensitive current 100mA	□ : Available mounting and connection
30	0.2	0.4	1.4	**EG33CM/1.4-30MA□-CE**	**EG33CM/1.4-100MA□-CE**	Blank, X, E, Y, P
	0.4	—	2.6	**EG33CM/2.6-30MA□-CE**	**EG33CM/2.6-100MA□-CE**	
	0.75	1.5	4	**EG33CM/4-30MA□-CE**	**EG33CM/4-100MA□-CE**	
	1	2.2	5	**EG33CM/5-30MA□-CE**	**EG33CM/5-100MA□-CE**	
	1.5	3.7	8	**EG33CM/8-30MA□-CE**	**EG33CM/8-100MA□-CE**	
	2.2	—	10	**EG33CM/10-30MA□-CE**	**EG33CM/10-100MA□-CE**	
	3.7	7.5	16	**EG33CM/16-30MA□-CE**	**EG33CM/16-100MA□-CE**	
	5.5	11	24	**EG33CM/24-30MA□-CE**	**EG33CM/24-100MA□-CE**	
	7.5	15	32	**EG33CM/32-30MA□-CE**	**EG33CM/32-100MA□-CE**	
50					Sensitive current 100/200mA	
	11	22	45	**EG53CM/45-30MA□-CE**	**EG53CM/45-CO□-CE**	Blank, X, E, Y, P
60					Sensitive current 100/200mA	
	15	30	60	**EG63CM/60-30MA□-CE**	**EG63CM/60-CO□-CE**	Blank, X, E, Y, P
100					Sensitive current 100/200/500mA	
	15	30	60	**EG103CM/60-30MA□-CE**	**EG103CM/60-CO□-CE**	Blank, X, E, Y, P
	18.5	37	75	**EG103CM/75-30MA□-CE**	**EG103CM/75-CO□-CE**	
	22	45	90	**EG103CM/90-30MA□-CE**	**EG103CM/90-CO□-CE**	
225					Sensitive current 100/200/500mA	
	30	55	125	**EG203CM/125-30MA□-CE**	**EG203CM/125-CO□-CE**	Blank, X, E, P
	37	75	150	**EG203CM/150-30MA□-CE**	**EG203CM/150-CO□-CE**	
	45	90	175	**EG203CM/175-30MA□-CE**	**EG203CM/175-CO□-CE**	
	55	110	225	**EG203CM/225-30MA□-CE**	**EG203CM/225-CO□-CE**	

Earth leakage + Overcurrent + Short-circuit protection type

■ EG series, 2-pole UL489 approved

Breaker ampere frame	Rated current (A)	Sensitive current 30mA	Sensitive current 100/200mA selectable
100	60	**EG102CUL/60-30MA**	**EG102CUL/60-CO**
	70	**EG102CUL/70-30MA**	**EG102CUL/70-CO**
	75	**EG102CUL/75-30MA**	**EG102CUL/75-CO**
	80	**EG102CUL/80-30MA**	**EG102CUL/80-CO**
	90	**EG102CUL/90-30MA**	**EG102CUL/90-CO**
	100	**EG102CUL/100-30MA**	**EG102CUL/100-CO**

Earth leakage + Overcurrent + Short-circuit protection type

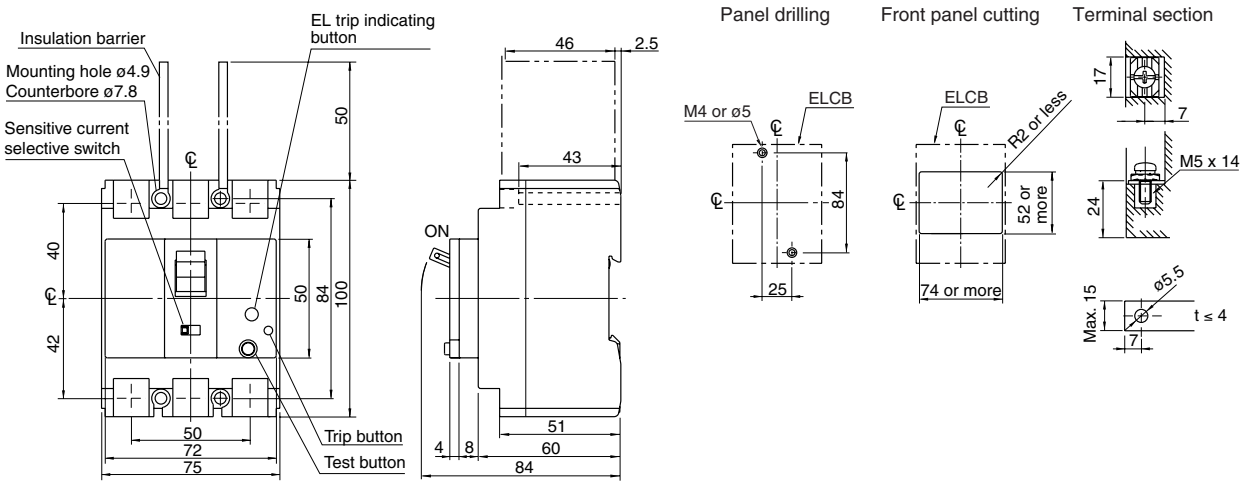
■ SG and EG series, 3-pole UL489 approved

Breaker ampere frame	Rated current (A)	Sensitive current 30mA	Sensitive current 100/200/500mA selectable
50	3	**SG53RCUL/3-30MA**	**SG53RCUL/3-CO**
	5	**SG53RCUL/5-30MA**	**SG53RCUL/5-CO**
	10	**SG53RCUL/10-30MA**	**SG53RCUL/10-CO**
	15	**SG53RCUL/15-30MA**	**SG53RCUL/15-CO**
	20	**SG53RCUL/20-30MA**	**SG53RCUL/20-CO**
	30	**SG53RCUL/30-30MA**	**SG53RCUL/30-CO**
	40	**SG53RCUL/40-30MA**	**SG53RCUL/40-CO**
	50	**SG53RCUL/50-30MA**	**SG53RCUL/50-CO**
100	32	**SG103CUL/32-30MA**	**SG103CUL/32-CO**
	40	**SG103CUL/40-30MA**	**SG103CUL/40-CO**
	50	**SG103CUL/50-30MA**	**SG103CUL/50-CO**
	60	**SG103CUL/60-30MA**	**SG103CUL/60-CO**
	75	**SG103CUL/75-30MA**	**SG103CUL/75-CO**
	100	**SG103CUL/100-30MA**	**SG103CUL/100-CO**
200	125	**SG203CUL/125-30MA**	**SG203CUL/125-CO**
	150	**SG203CUL/150-30MA**	**SG203CUL/150-CO**
	175	**SG203CUL/175-30MA**	**SG203CUL/175-CO**
	200	**SG203CUL/200-30MA**	**SG203CUL/200-CO**
	225	**SG203CUL/225-30MA**	**SG203CUL/225-CO**
400	250	**SG403CUL/250-30MA**	**SG403CUL/250-CO**
	300	**SG403CUL/300-30MA**	**SG403CUL/300-CO**
	350	**SG403CUL/350-30MA**	**SG403CUL/350-CO**
	400	**SG403CUL/400-30MA**	**SG403CUL/400-CO**
100	60	**EG103CUL/60-30MA**	**EG103CUL/60-CO**
	70	**EG103CUL/70-30MA**	**EG103CUL/70-CO**
	75	**EG103CUL/75-30MA**	**EG103CUL/75-CO**
	80	**EG103CUL/80-30MA**	**EG103CUL/80-CO**
	90	**EG103CUL/90-30MA**	**EG103CUL/90-CO**
	100	**EG103CUL/100-30MA**	**EG103CUL/100-CO**

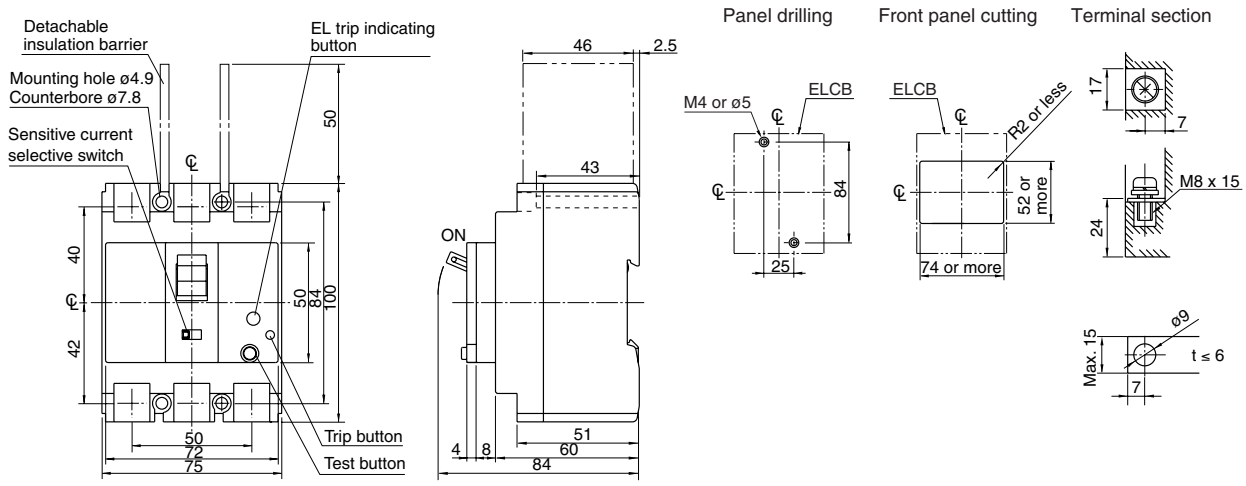
■ Dimensions, mm

● Front mounting, front connection

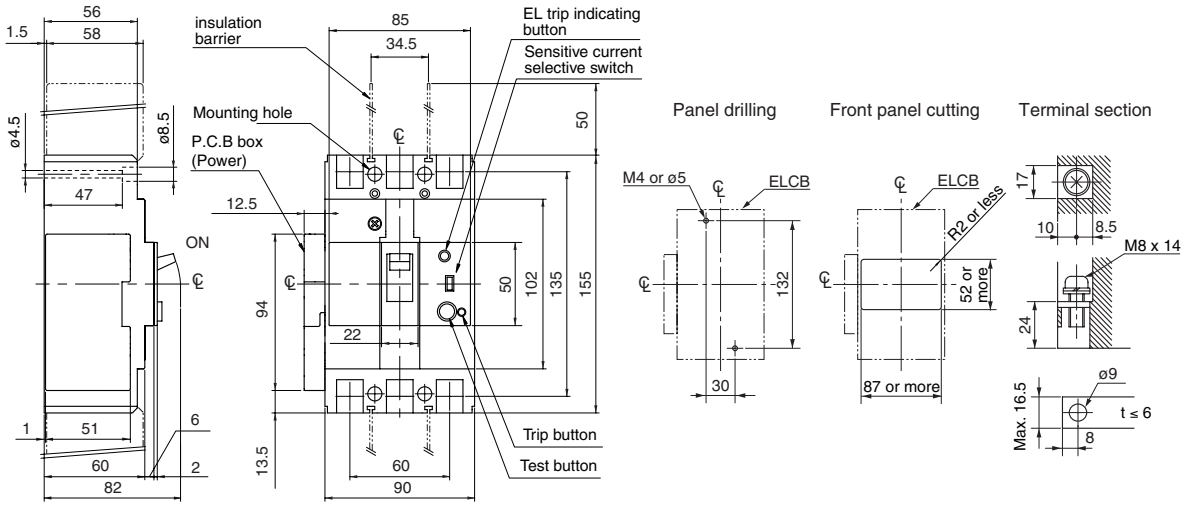
SG33C □ -CE, 53C □ -CE, 53RC □ -CE



SG63C □ -CE, 63RC □ -CE



SG103C □ -CE



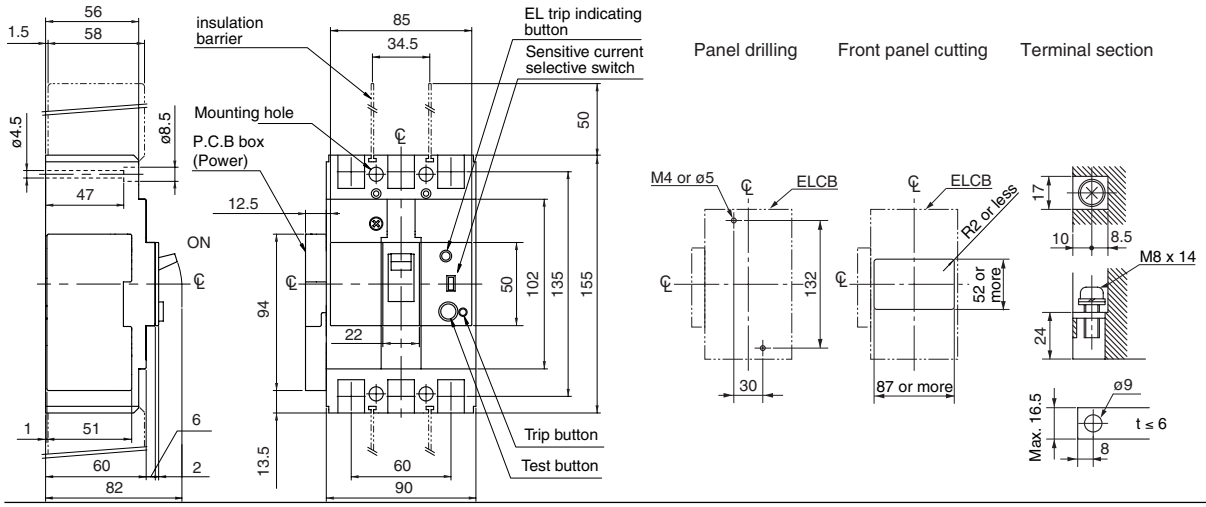
07

Dimensions
SG series/3-pole

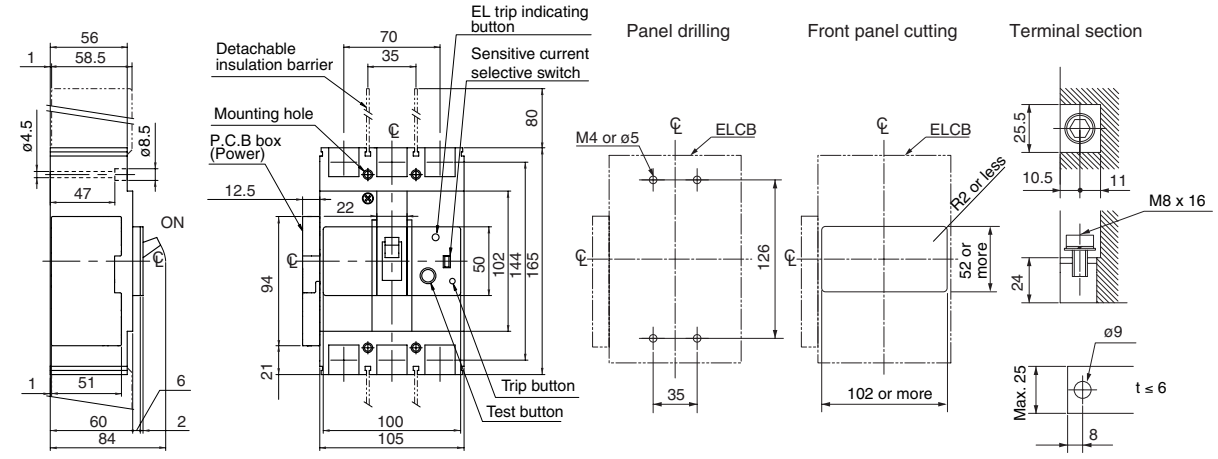
■ Dimensions, mm

● Front mounting, front connection

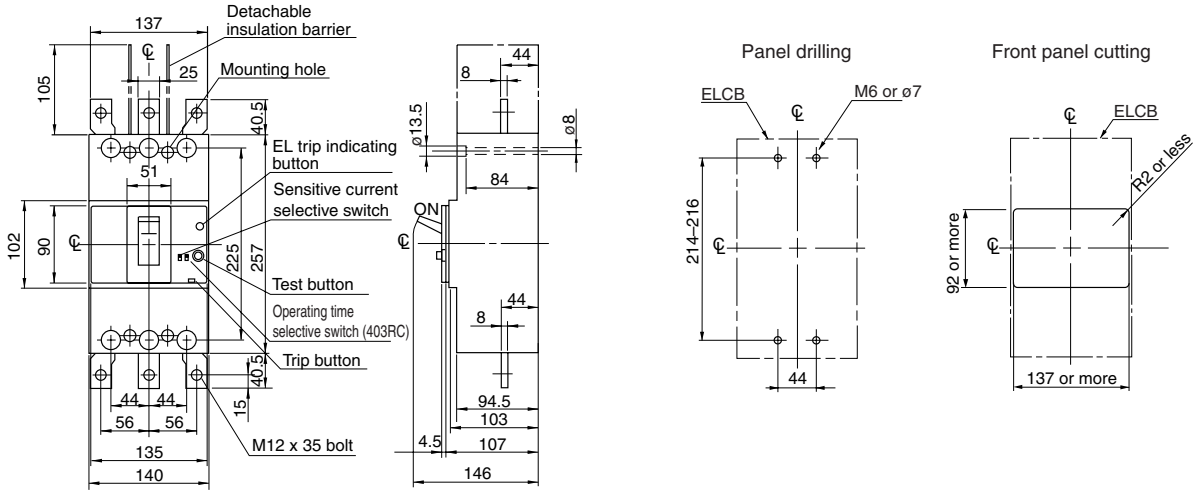
SG103RC □ -CE



SG203C □ -CE, 203RC □ -CE



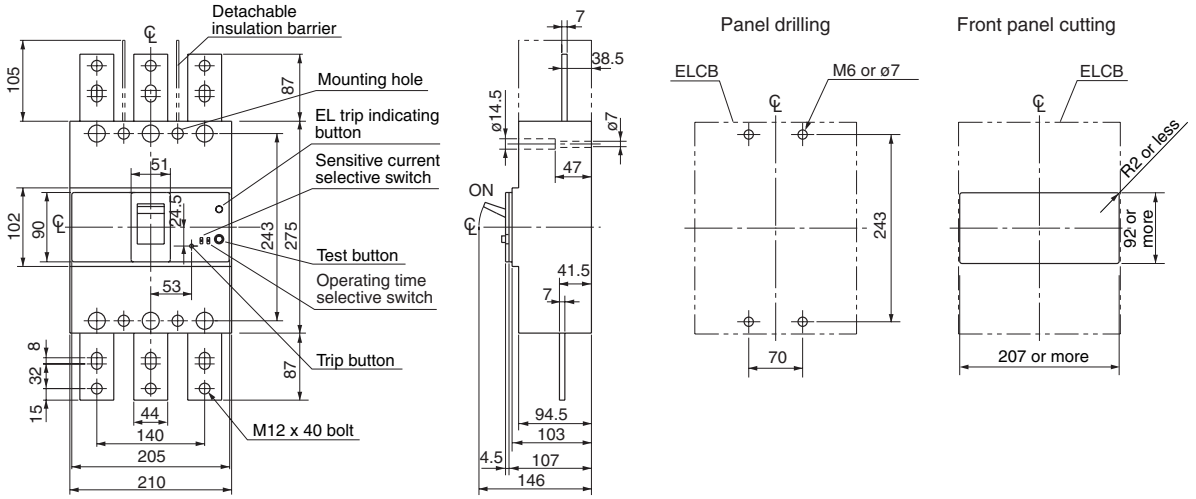
SG403C □ -CE



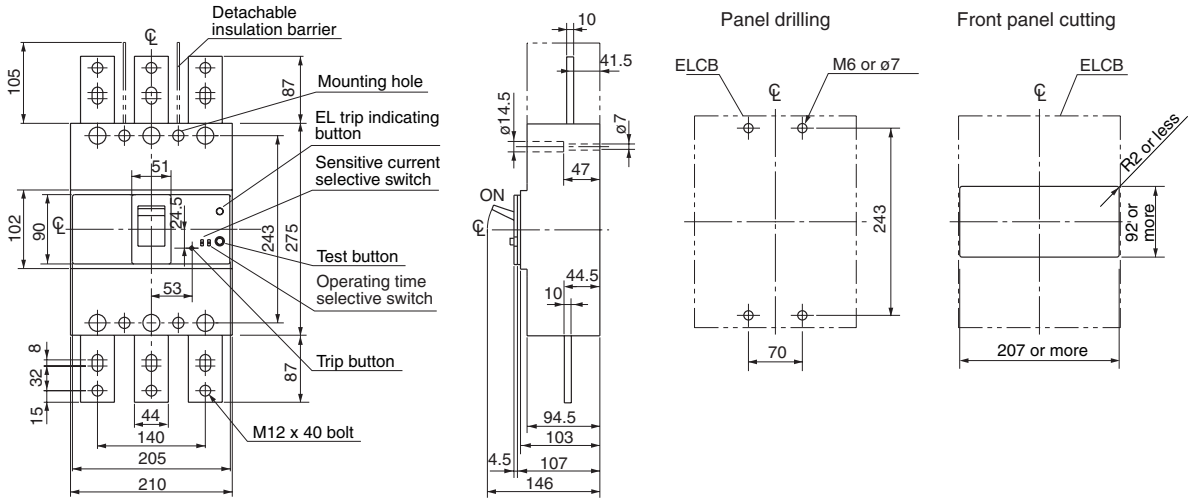
■ **Dimensions, mm**

● **Front mounting, front connection**

SG603RC



SG803RC

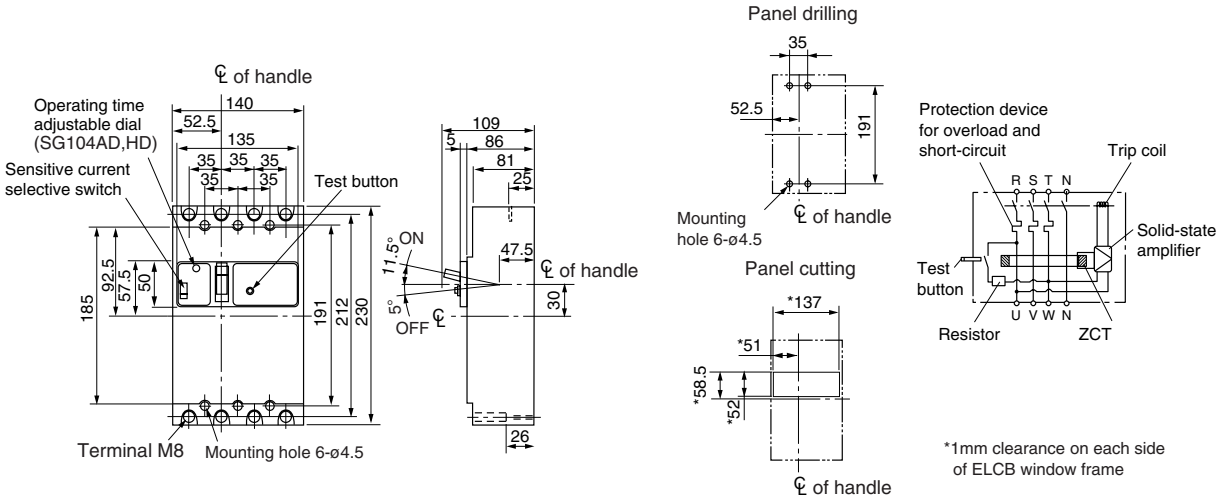


07

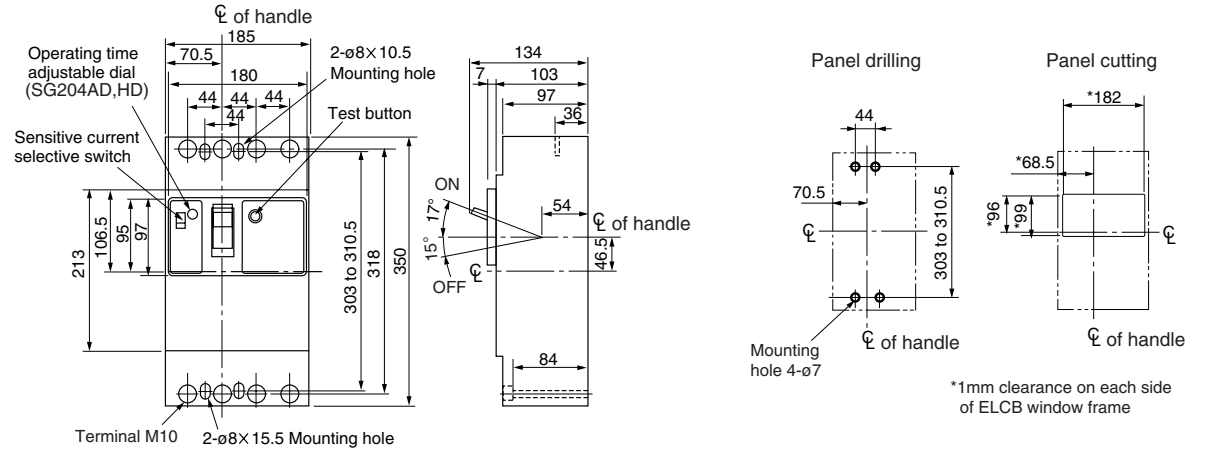
■ Dimensions, mm

● Front mounting, front connection

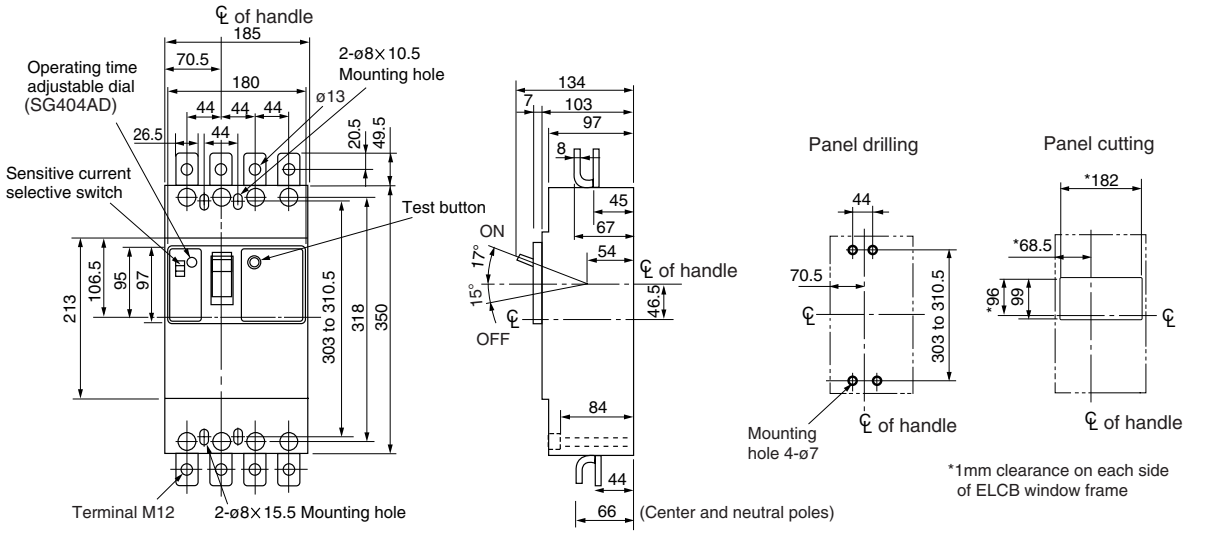
SGa104A, 104H



SGa204A, 204H



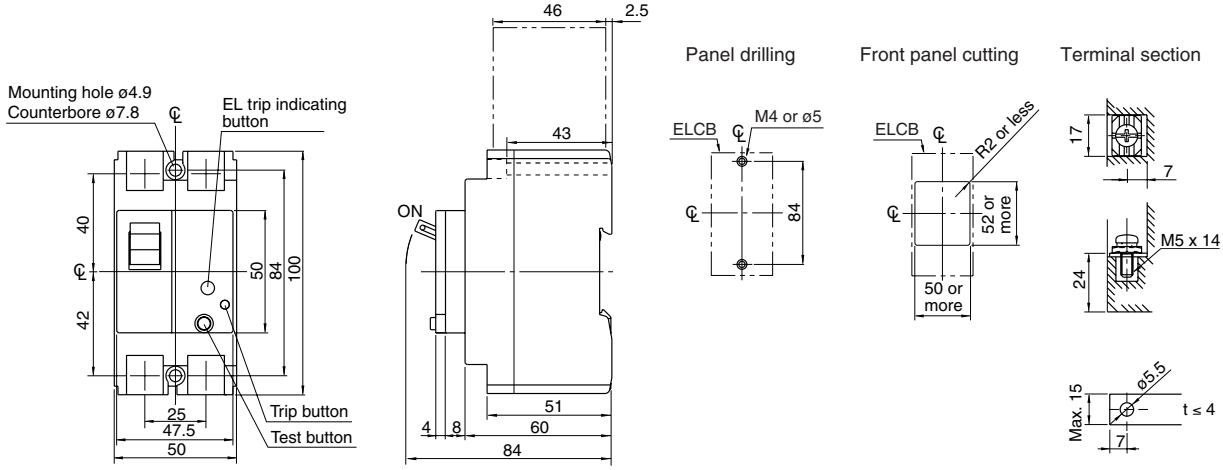
SGa404A



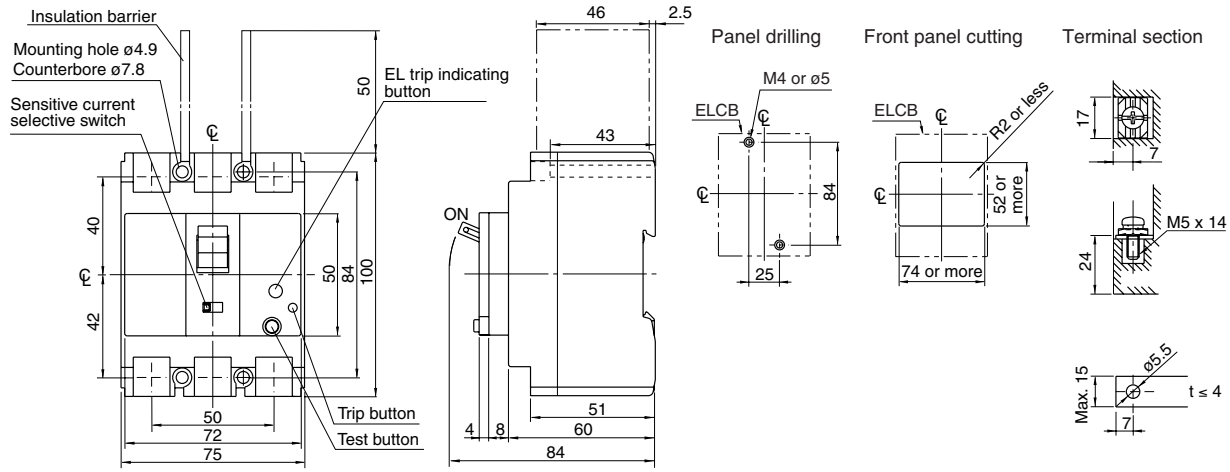
■ Dimensions, mm

● Front mounting, front connection

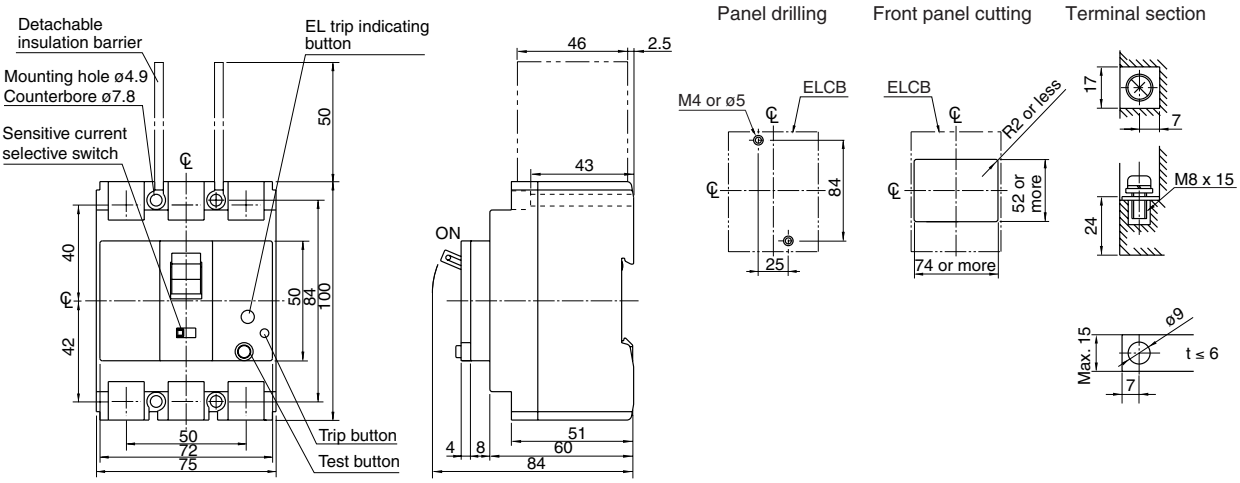
EG32AC □ -CE, 52AC □ -CE



EG33AC □ -CE, 53AC □ -CE, 33C □ -CE, 53C □ -CE



EG63C □ -CE

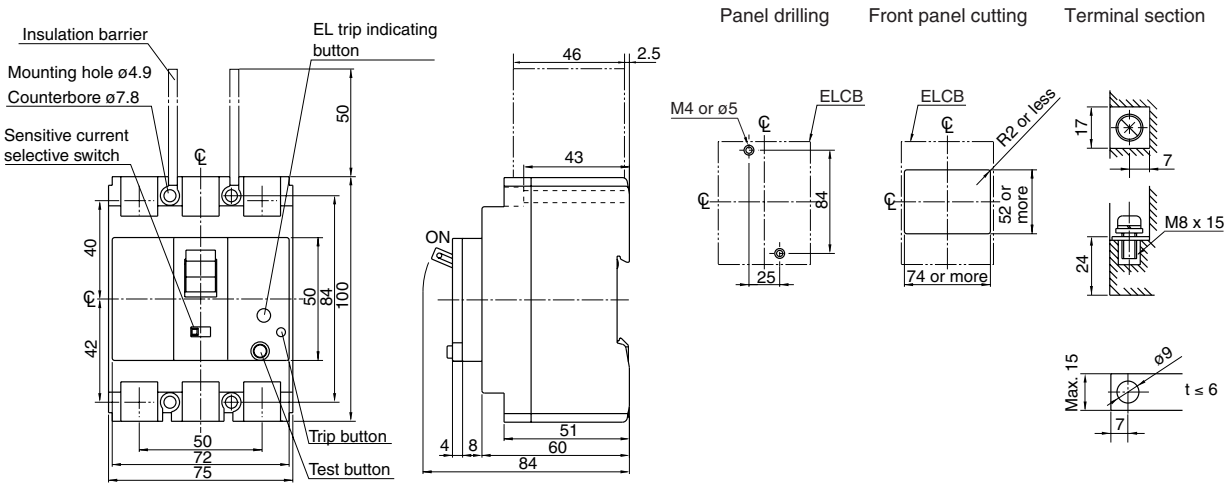


Dimensions
EG series/2, 3-pole

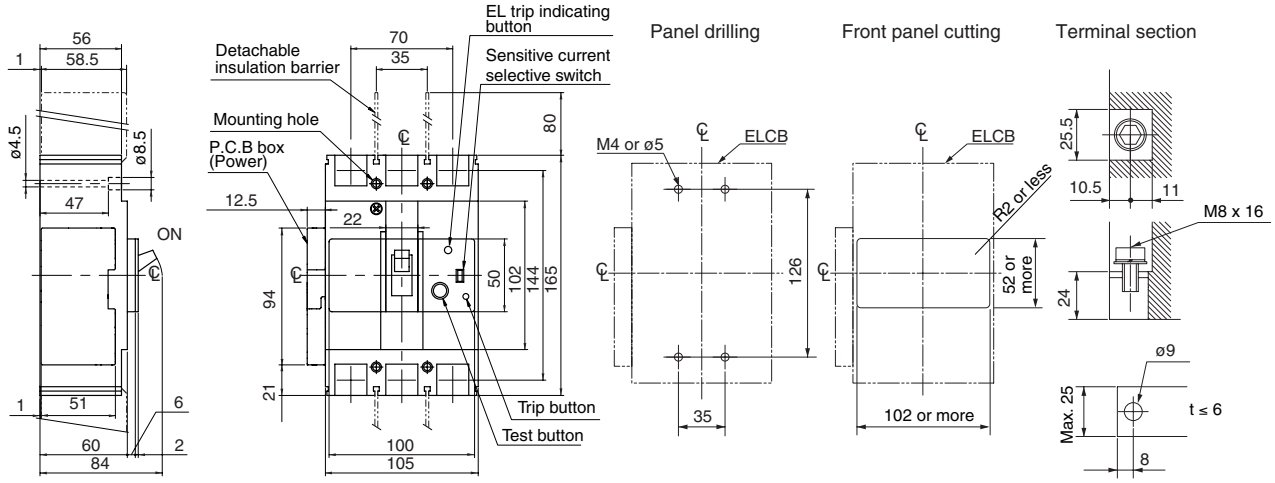
■ Dimensions, mm

● Front mounting, front connection

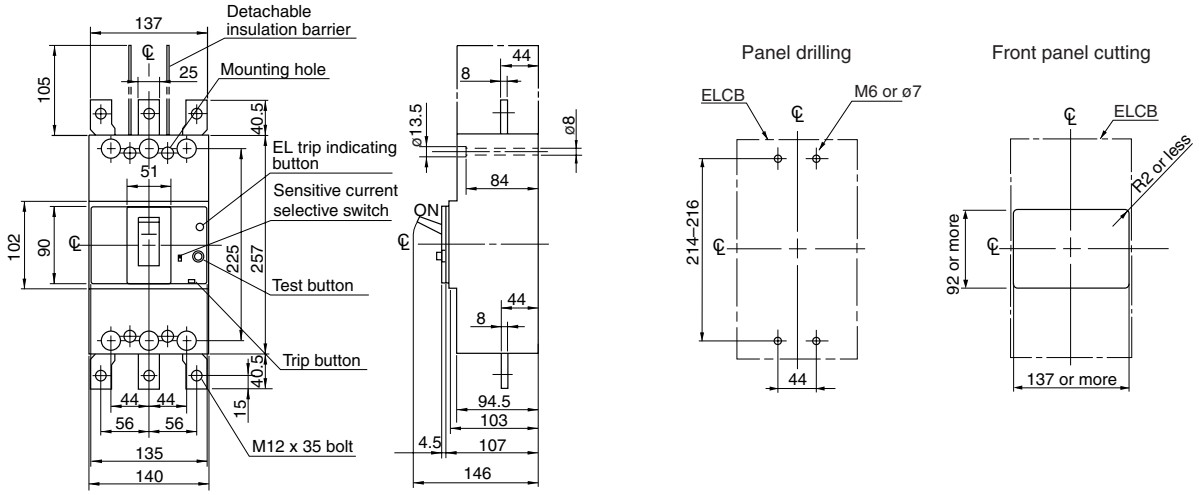
EG103AC □ -CE, 102C □ -CE, 103C □ -CE



EG203C □ -CE



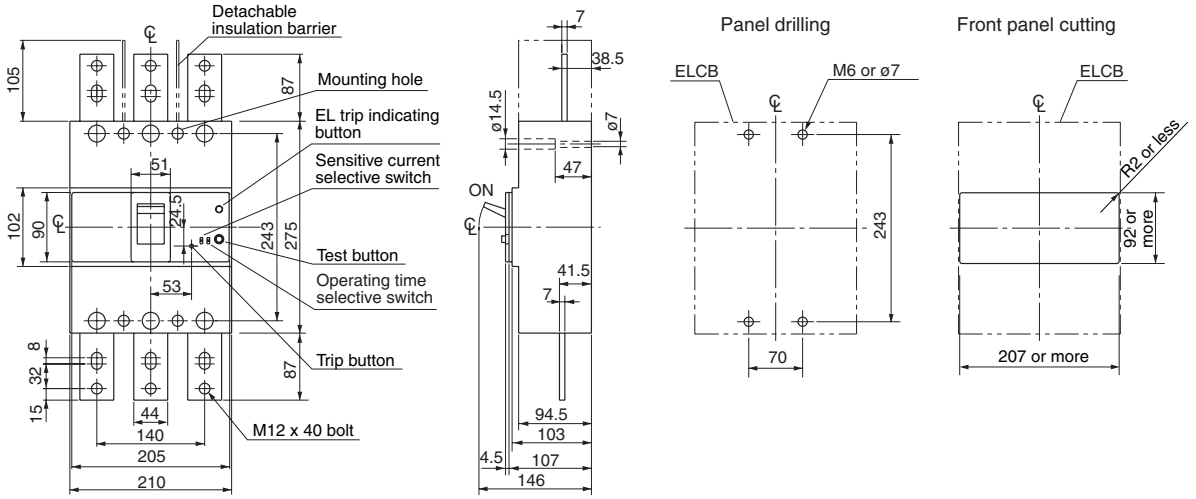
EG403C □ -CE



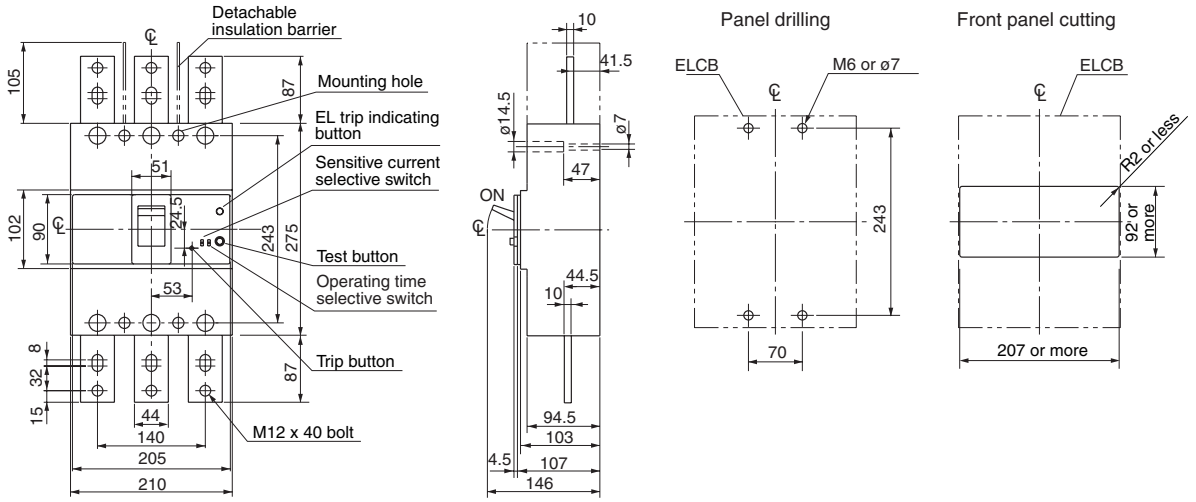
■ Dimensions, mm

● Front mounting, front connection

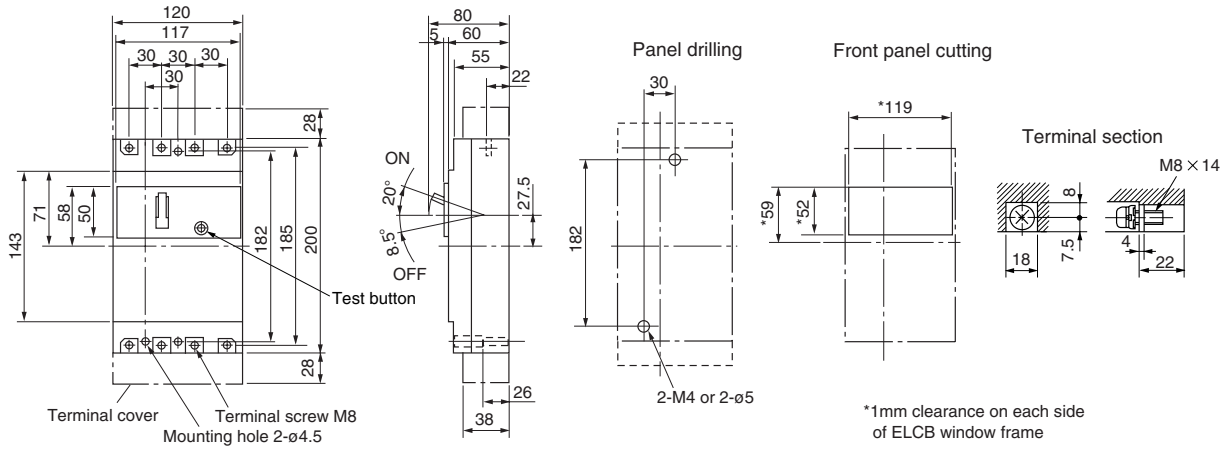
EG603C



EG803C



EG104A



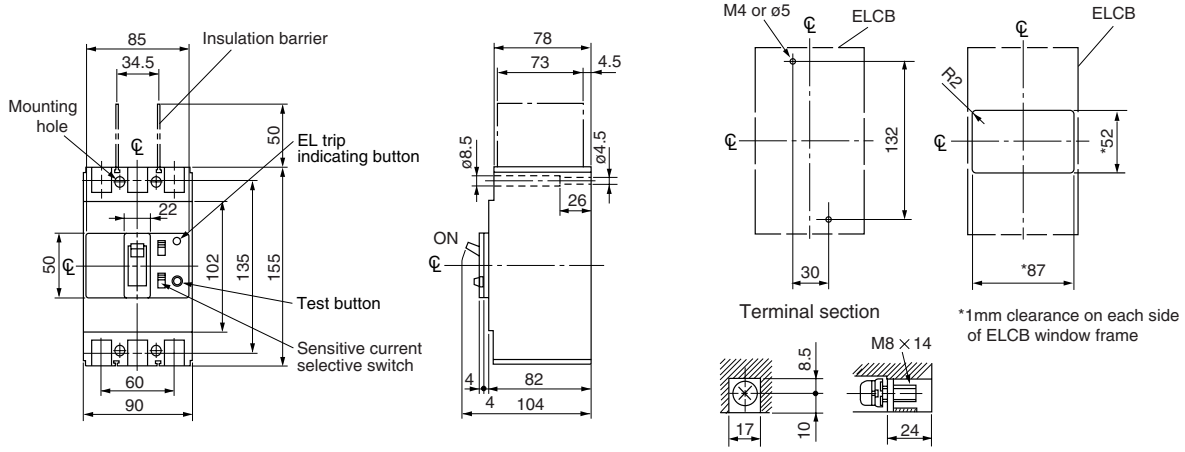
07

Dimensions
HG series/3-pole

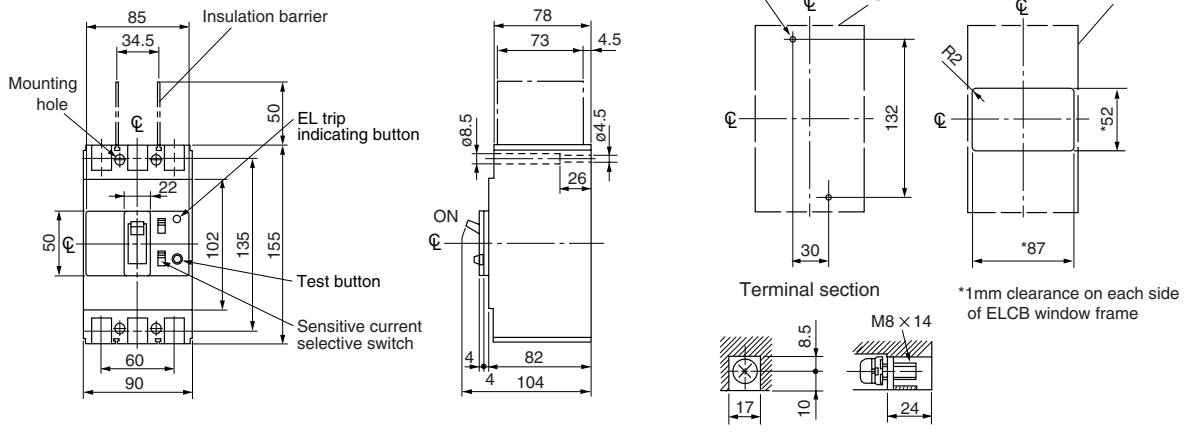
■ Dimensions, mm

● Front mounting, rear connection (type X)

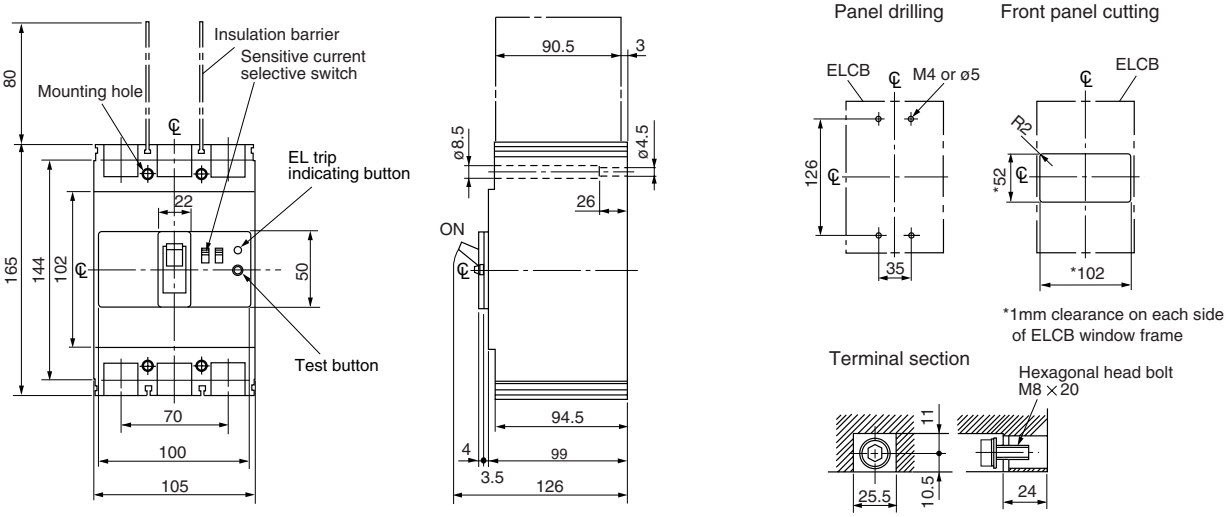
HG53B



HG103B



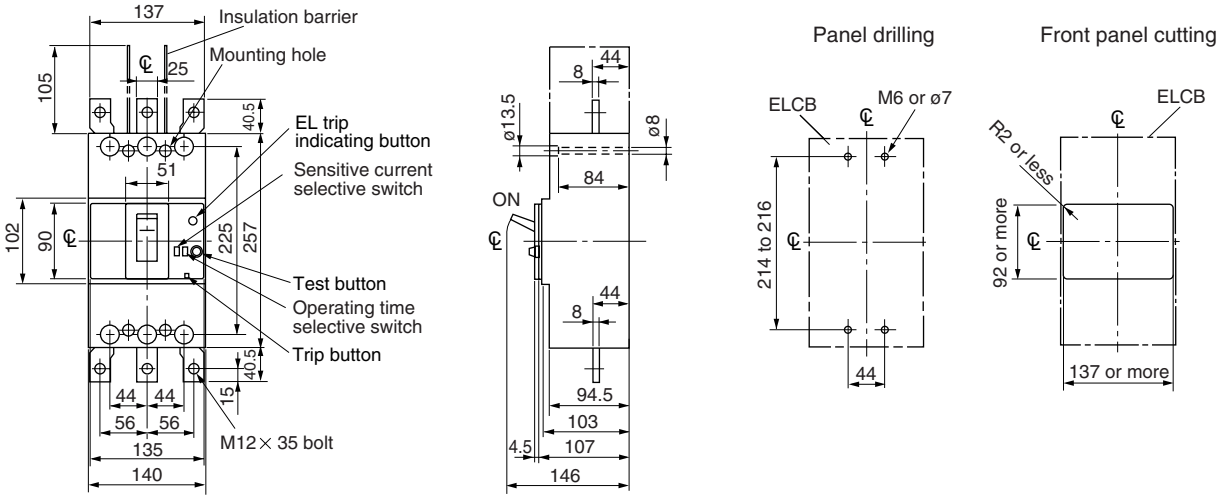
HG203B



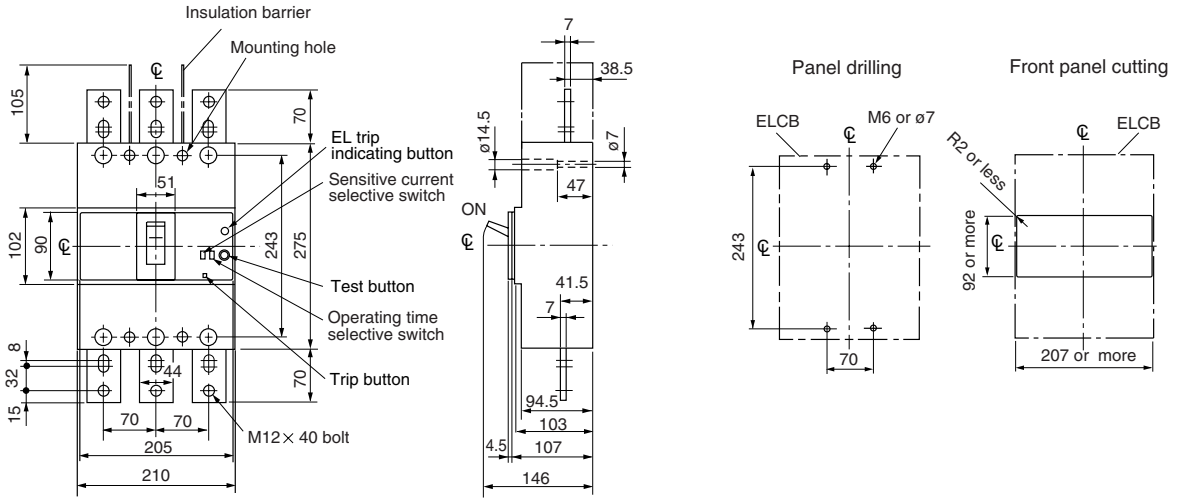
■ Dimensions, mm

● Front mounting, front connection

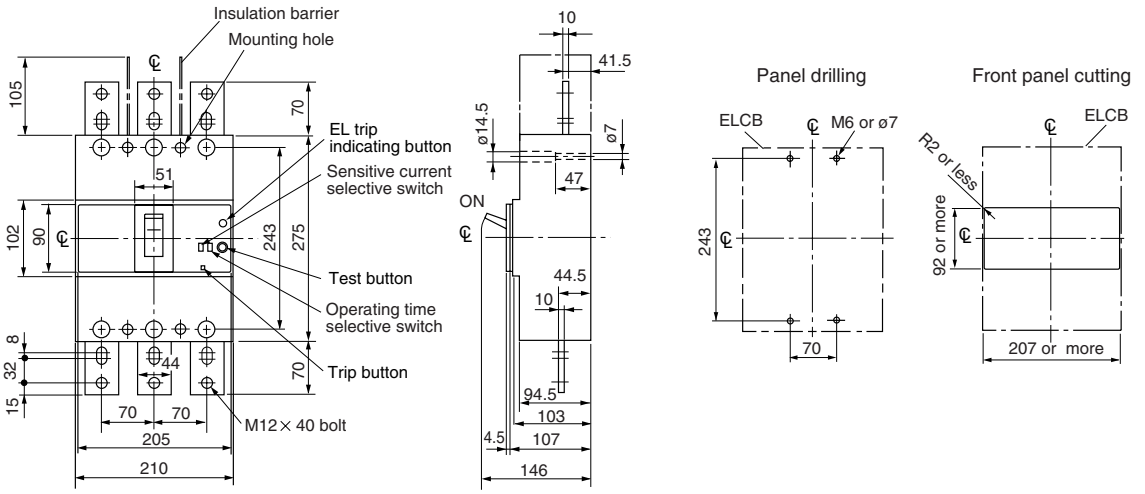
HG403B



HG603B



HG803B



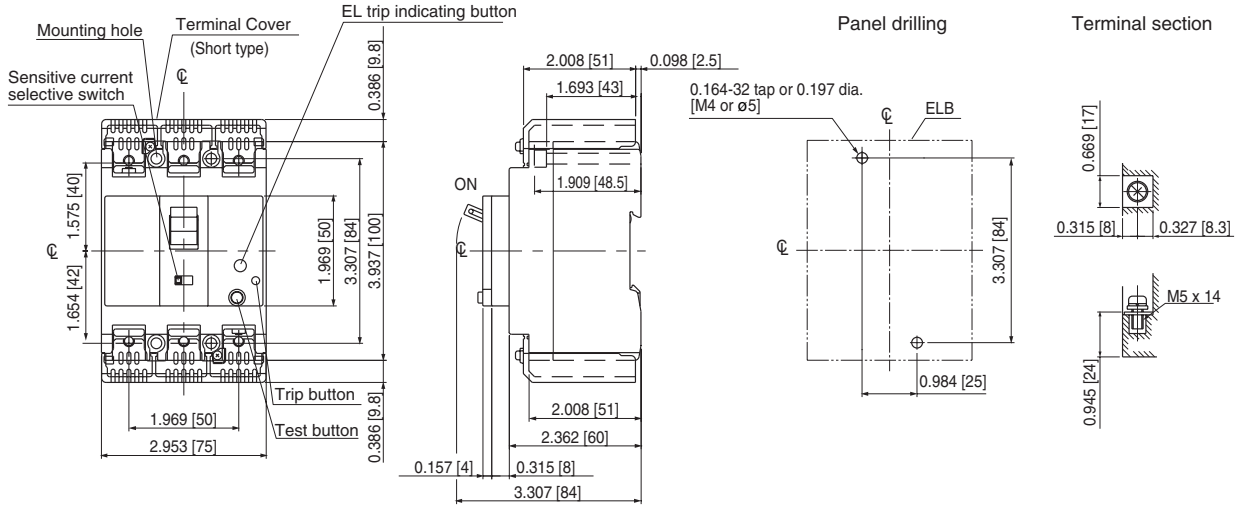
07

Dimensions
UL Listed

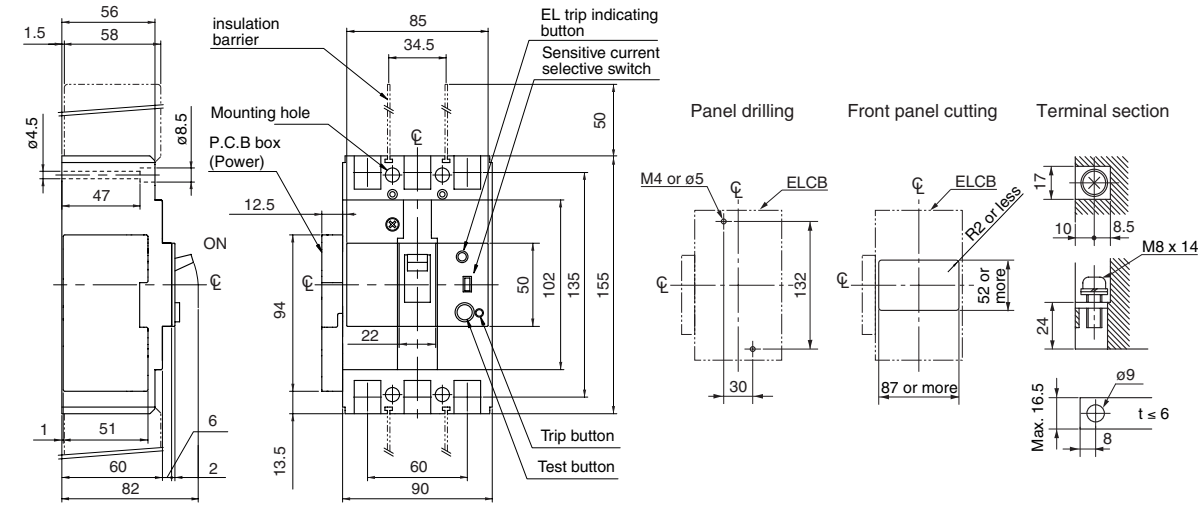
■ Dimensions, inch [mm]

● Front mounting, front connection

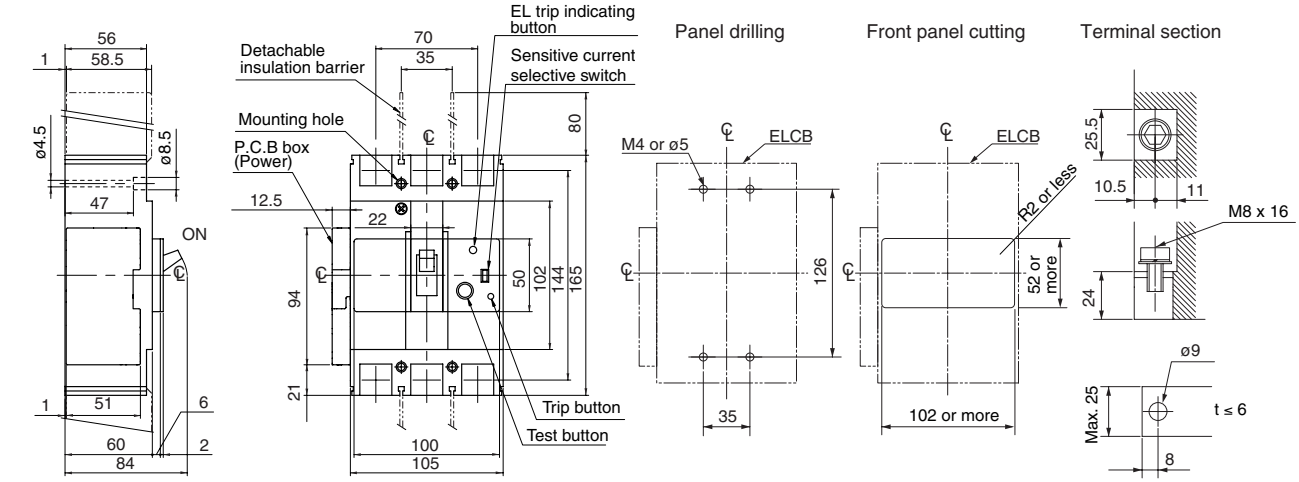
SG53RCUL



SG103CUL



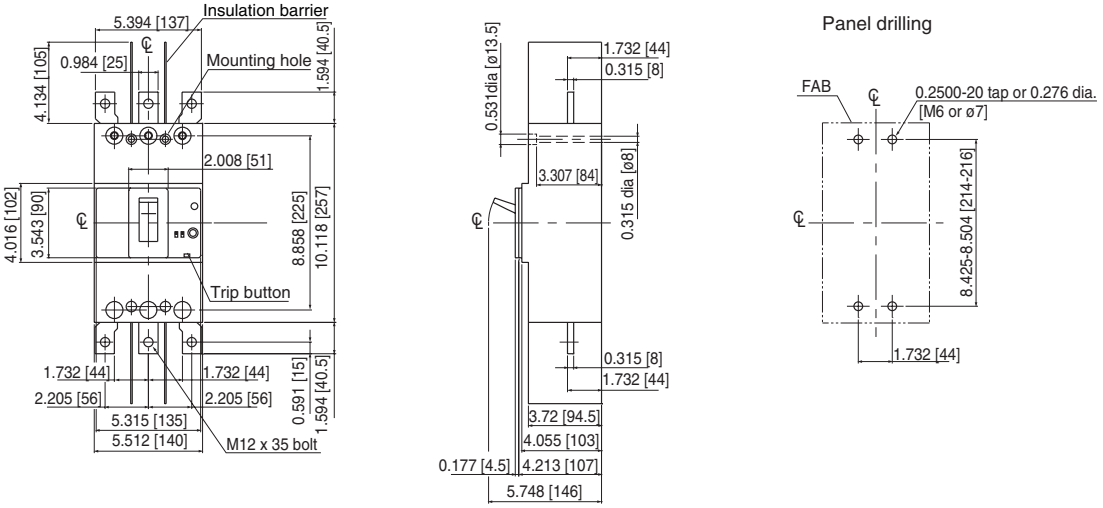
SG203CUL



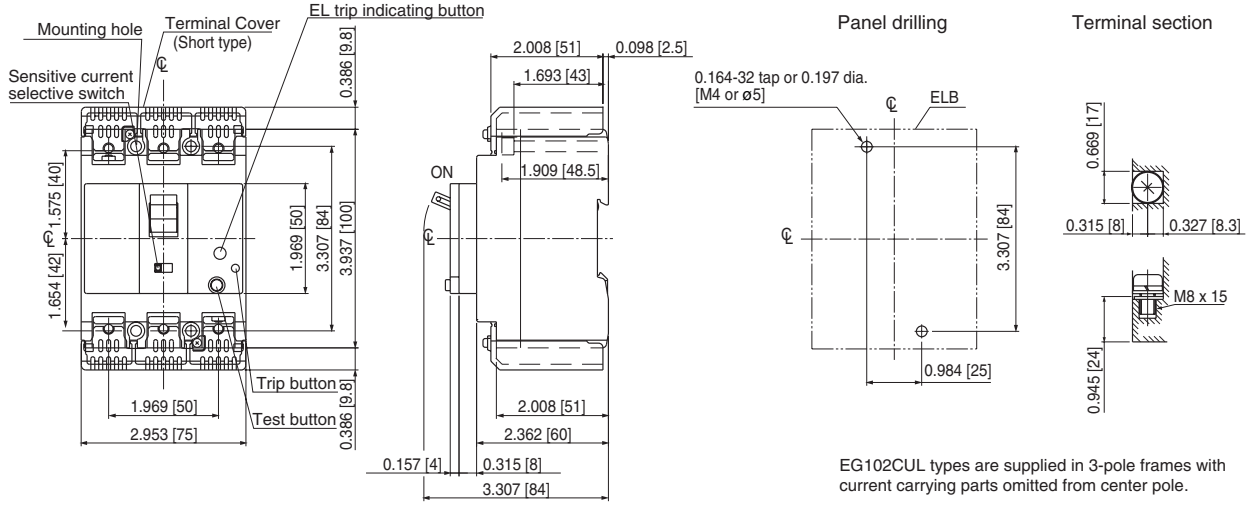
■ Dimensions, inch [mm]

● Front mounting, front connection

SG403CUL



EG102CUL, 103CUL

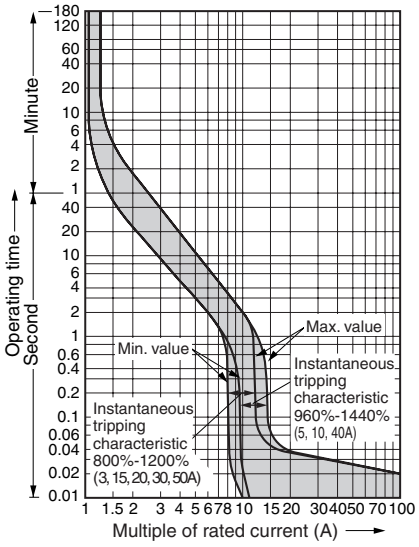


EG102CUL types are supplied in 3-pole frames with current carrying parts omitted from center pole.

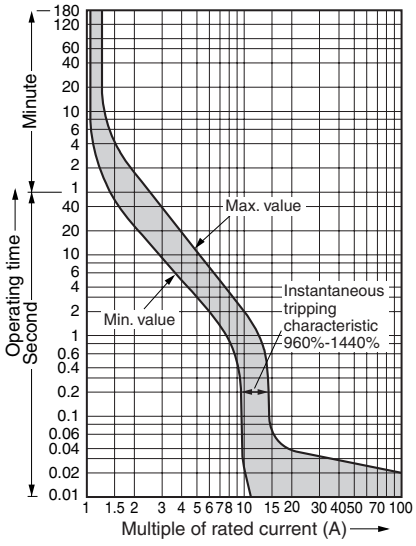
■ Characteristic curves/2, 3-pole

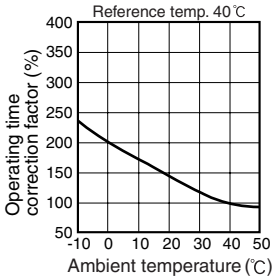
SG30C, SG50C, SG50RC

Line protection

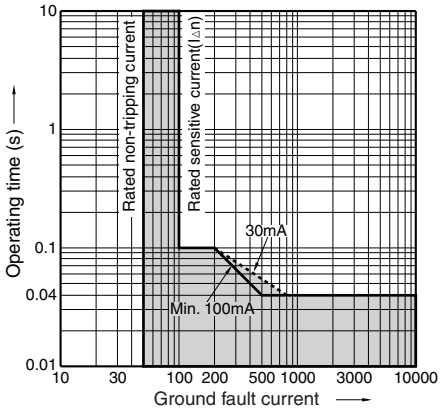


Motor protection





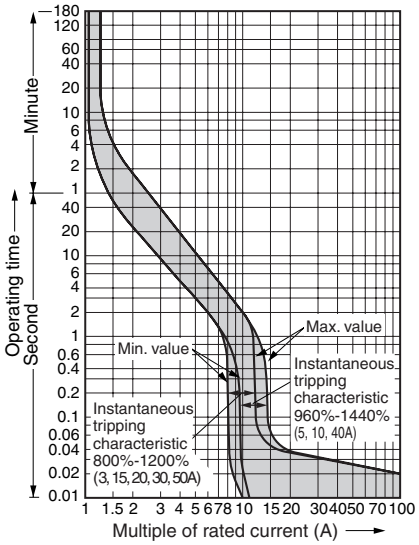
Earth leakage tripping



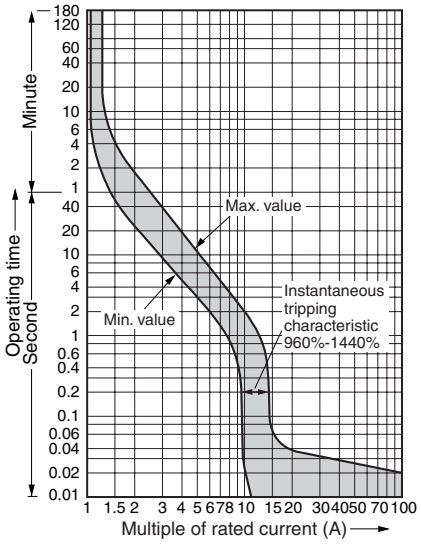
5I△n 0.04s max. (30mA type: At 250mA)

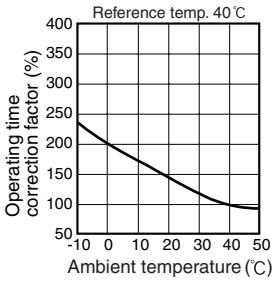
EG30AC, EG30C, EG50AC, EG50C

Line protection

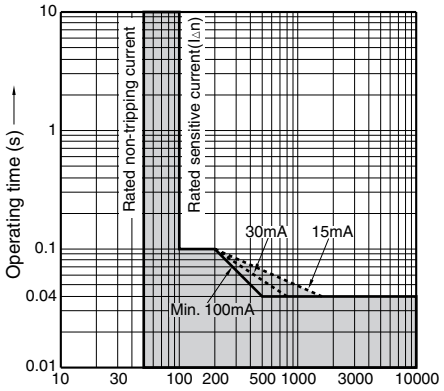


Motor protection





Earth leakage tripping

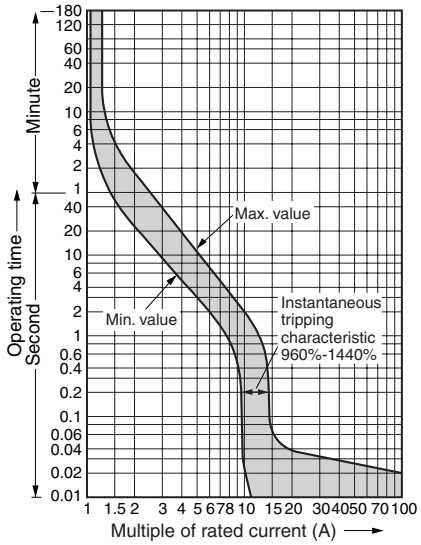


5I△n 0.04s max. (15, 30mA types: At 250mA)

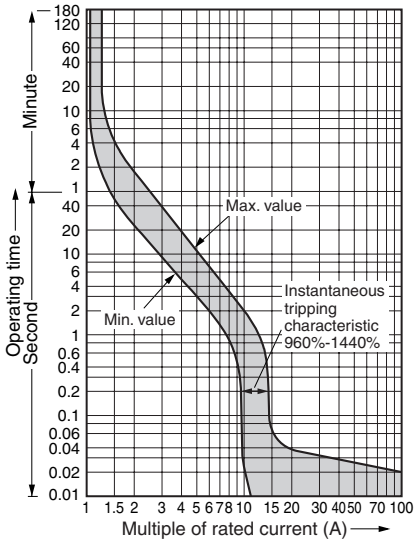
■ Characteristic curves/2, 3-pole

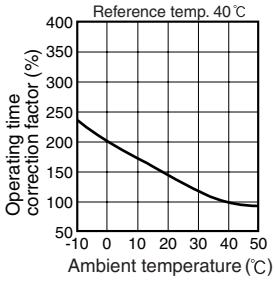
SG60C, SG60RC, EG60C

Line protection

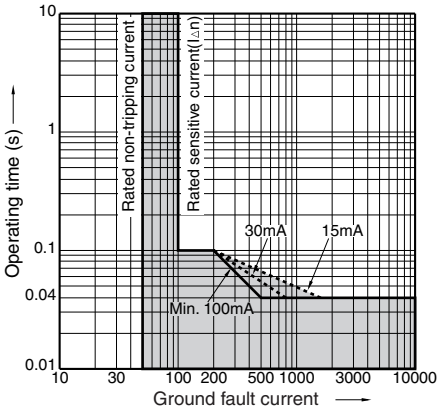


Motor protection





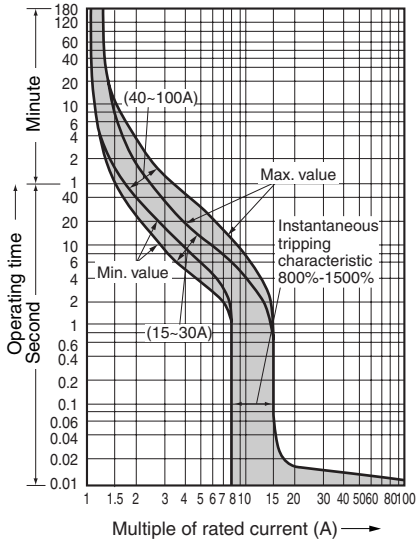
Earth leakage tripping



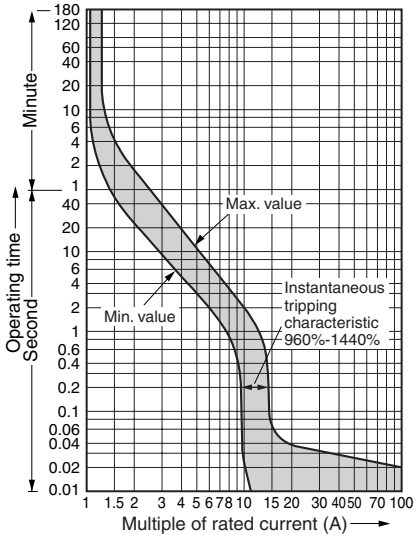
5I△n 0.04s max. (15, 30mA types: At 250mA)

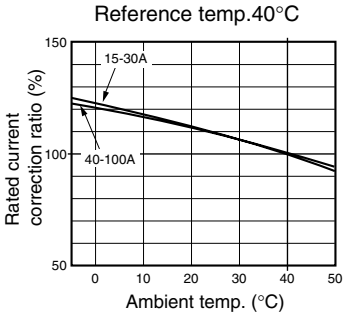
SG100C

Line protection

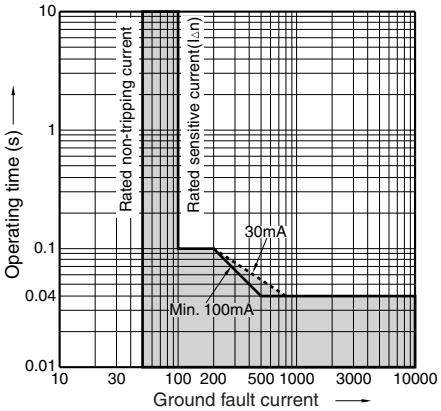


Motor protection





Earth leakage tripping



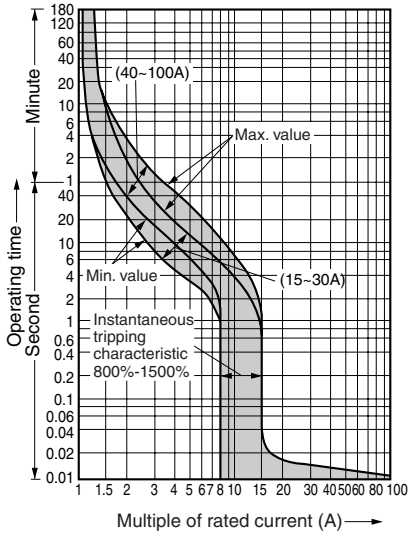
5I△n 0.04s max. (30mA type: At 250mA)

07

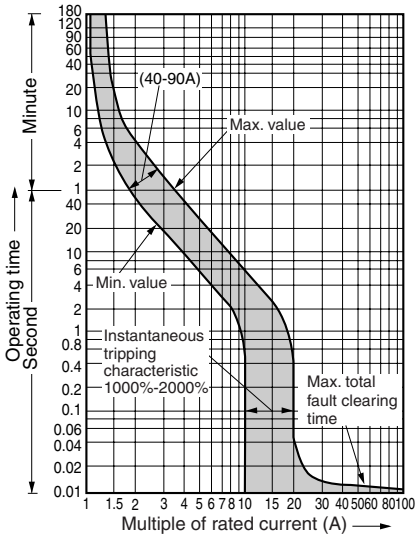
■ Characteristic curves/2, 3-pole

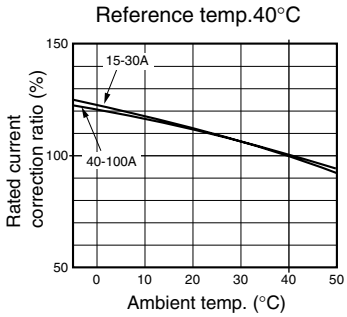
SG100RC

Line protection

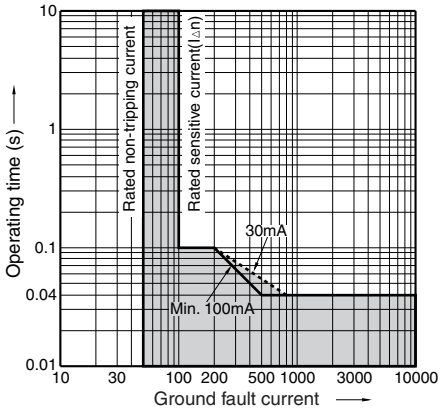


Motor protection





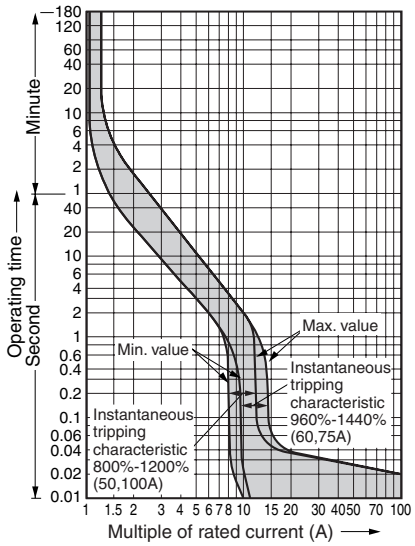
Earth leakage tripping



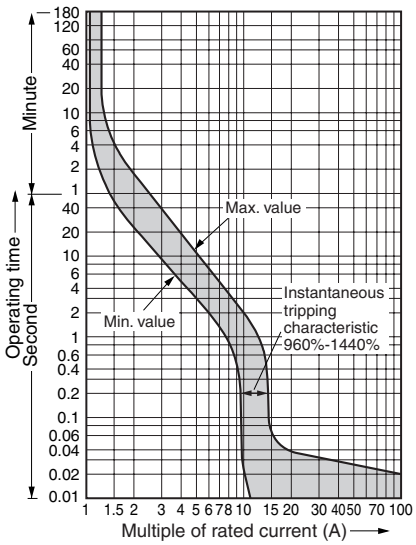
5I△n 0.04s max. (30mA type: At 250mA)

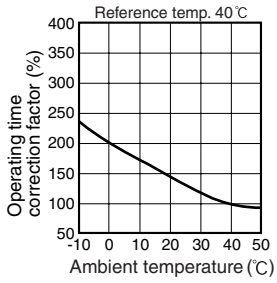
EG100AC, EG100C

Line protection

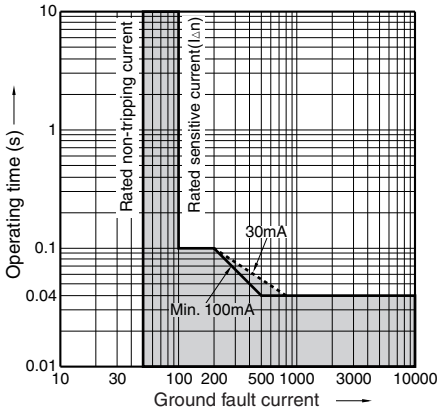


Motor protection





Earth leakage tripping

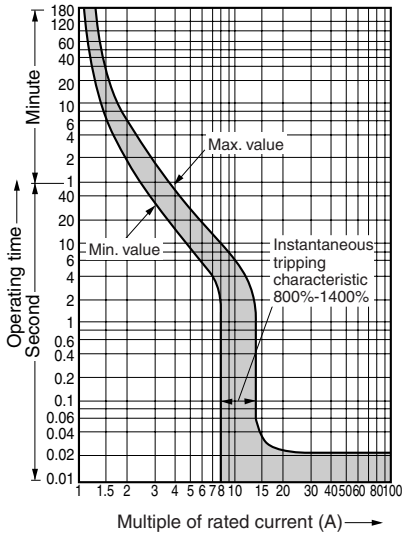


5I△n 0.04s max. (30mA type: At 250mA)

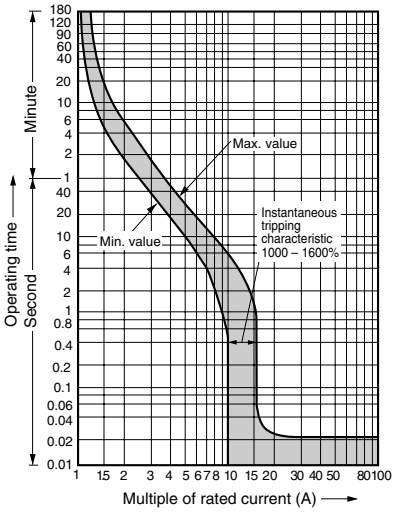
■ Characteristic curves/2, 3-pole

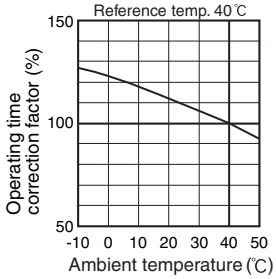
SG225C, SG225RC

Line protection

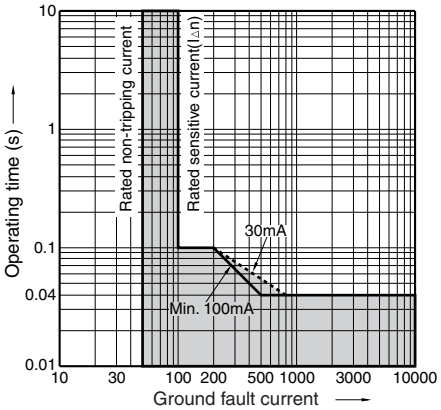


Motor protection





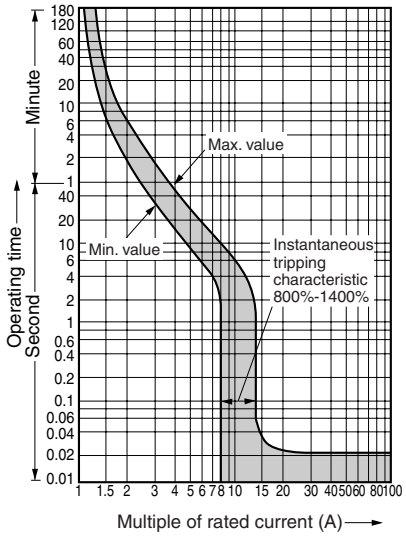
Earth leakage tripping



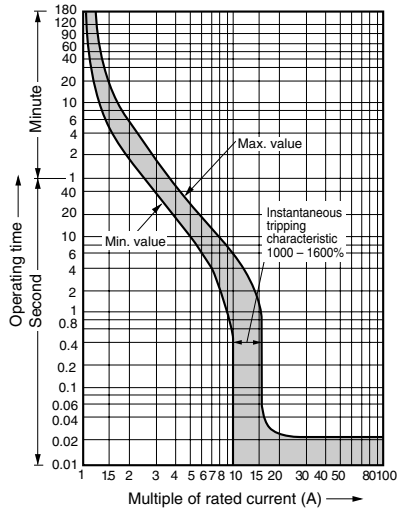
5I△n 0.04s max. (30mA type: At 250mA)

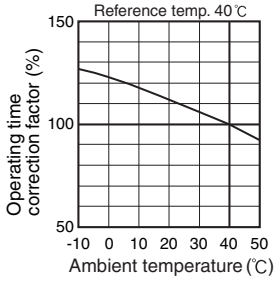
EG225C

Line protection

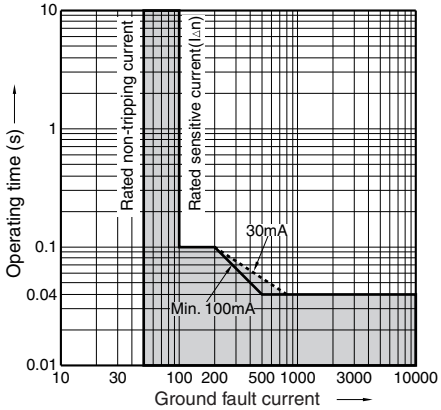


Motor protection





Earth leakage tripping

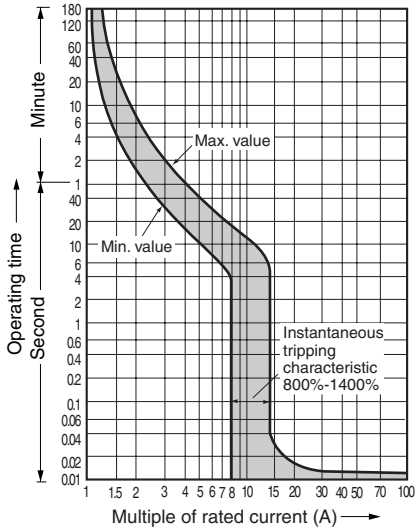


5I△n 0.04s max. (30mA type: At 250mA)

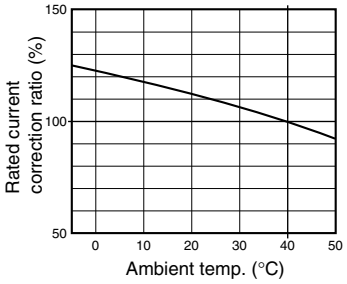
07

■ Characteristic curves/2, 3-pole

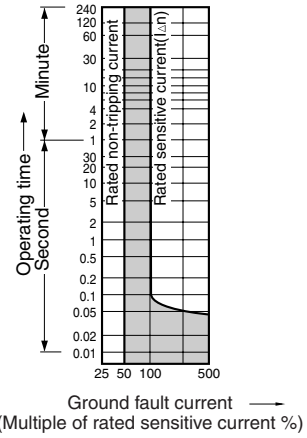
SG400C, SG400RC, EG400C



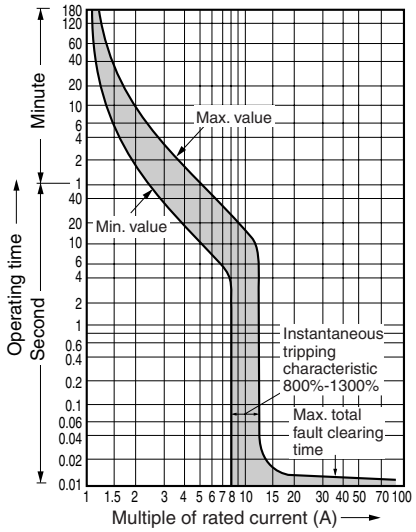
Reference temp.40°C



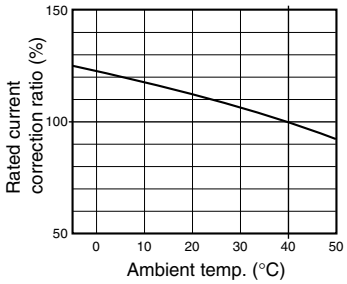
Earth leakage tripping



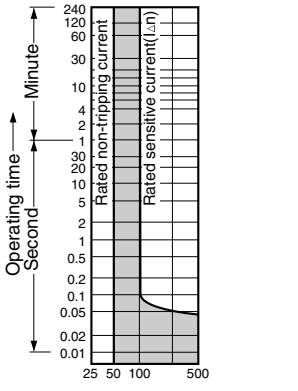
SG600RC, EG600C



Reference temp.40°C

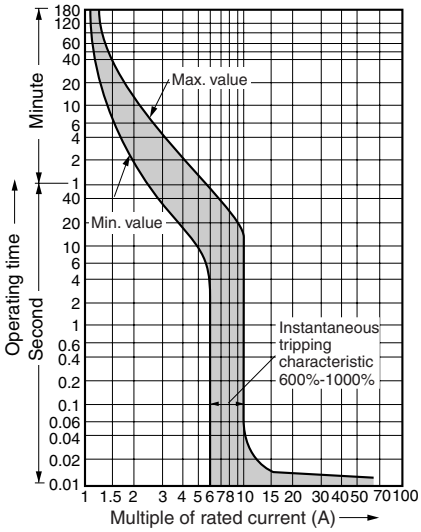


Earth leakage tripping

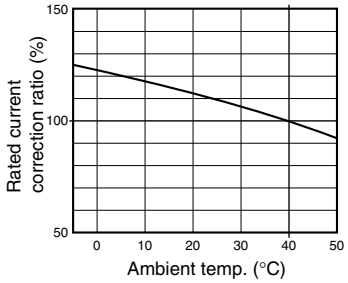


■ Characteristic curves/2, 3-pole

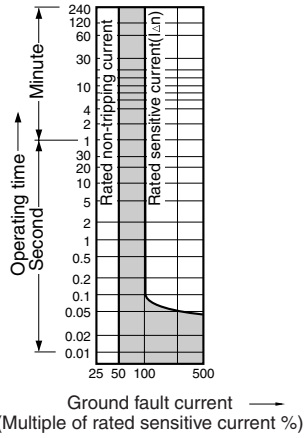
SG800RC, EG800C



Reference temp.40°C



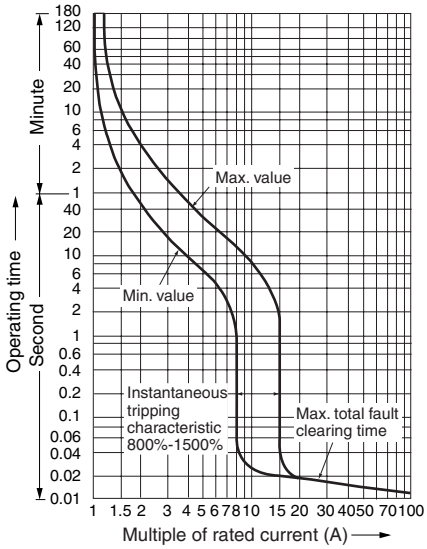
Earth leakage tripping

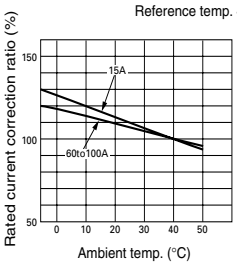


07

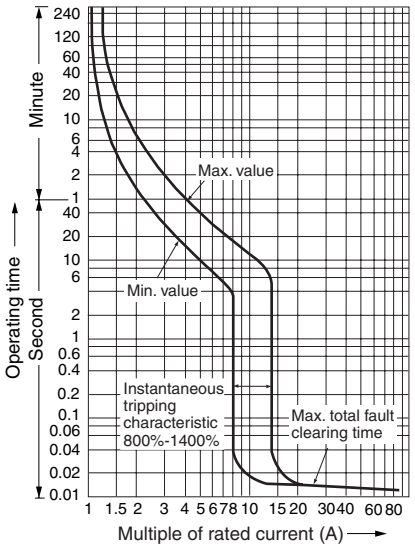
■ Characteristic curves/4-pole

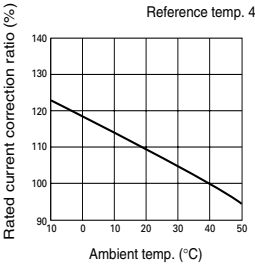
SGa104A, SG104H



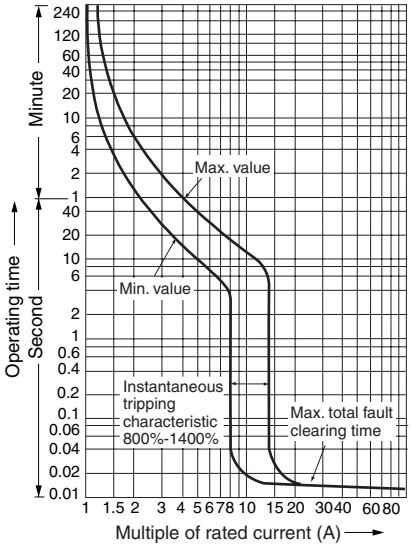


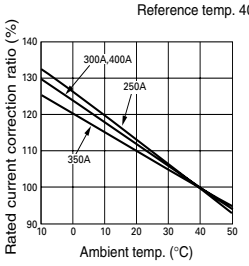
SGa204A, SG204H



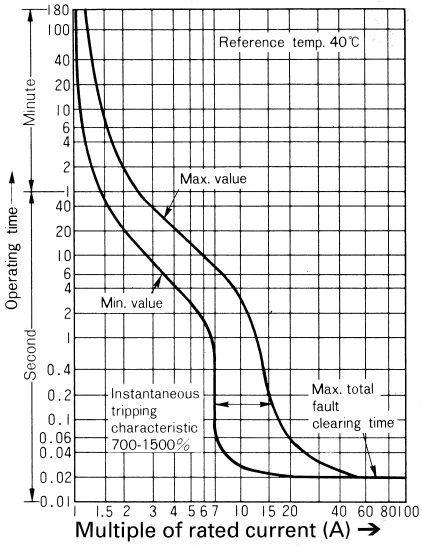


SGa404A

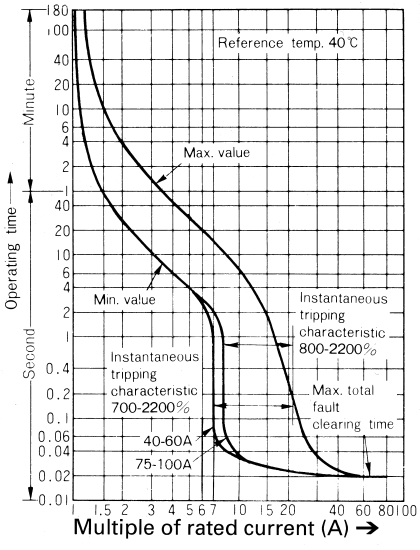




EG104A
Rated current 30A

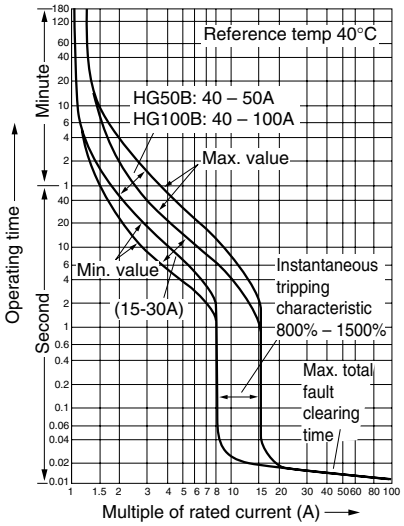


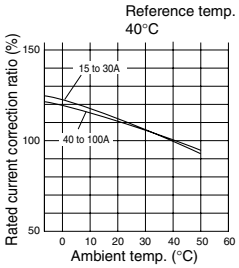
Rated current 40A-100A



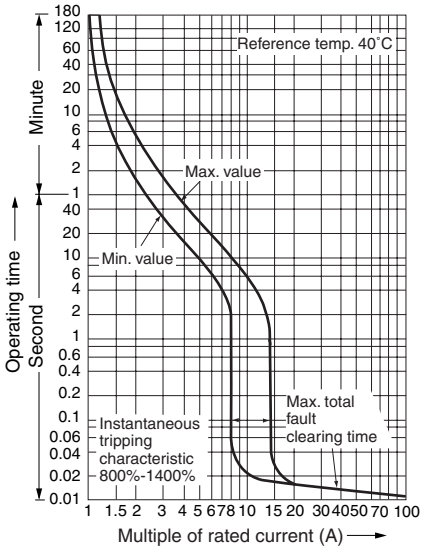
■ Characteristic curves/2, 3-pole

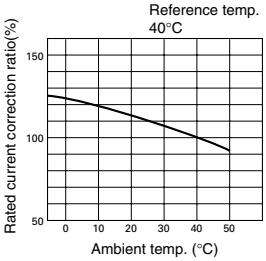
HG50B, HG100B



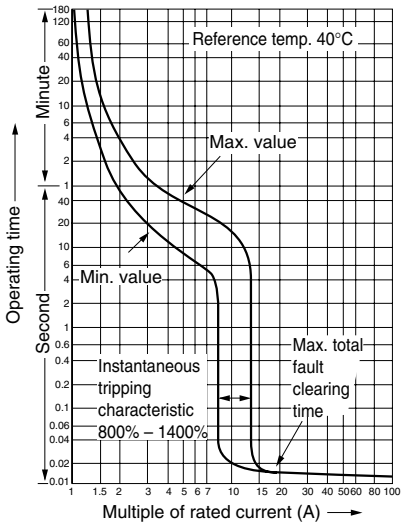


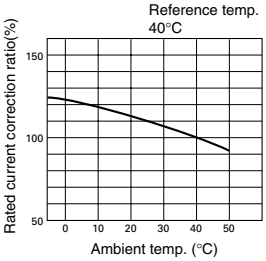
HG225B





HG400B



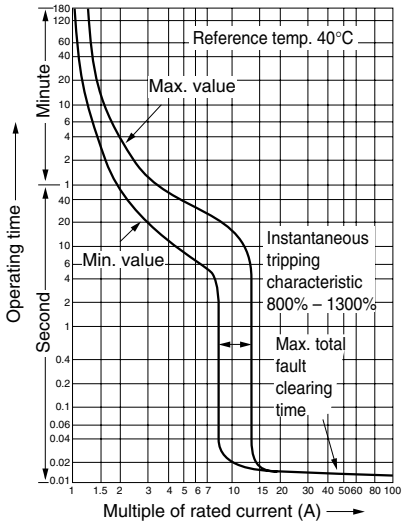


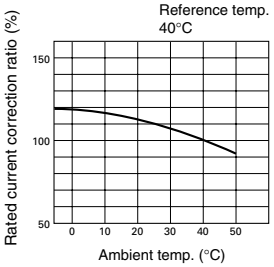
07

Characteristic curves
HG series

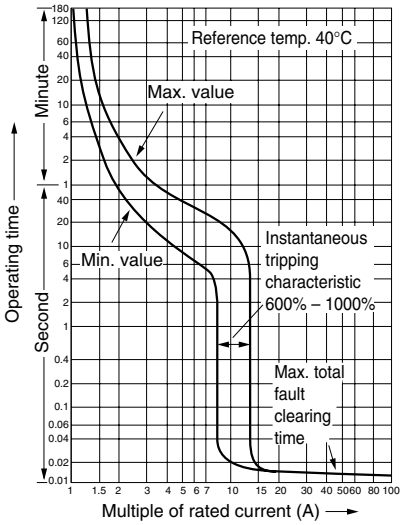
■ Characteristic curves/2, 3-pole

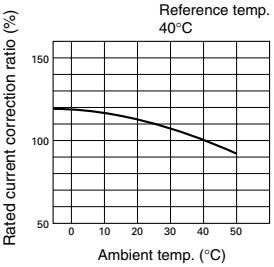
HG600B





HG800B

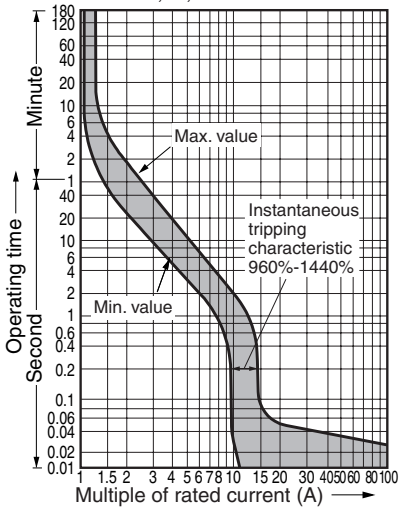




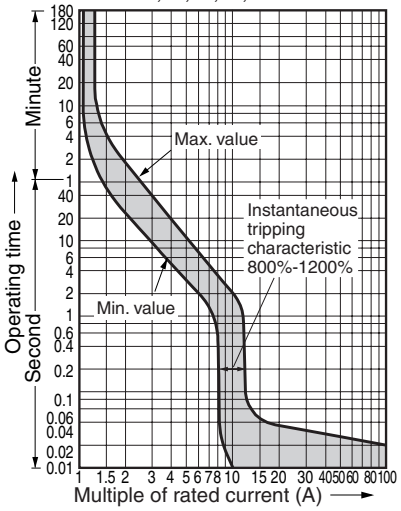
■ Characteristic curves/3-pole

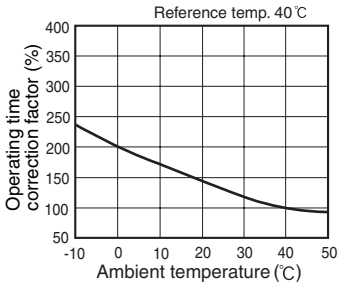
SG53RCUL

Rated current : 5,10,40A

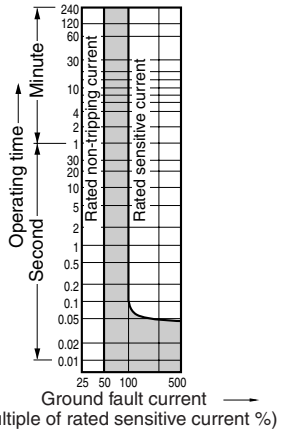


Rated current : 3,15,20,30,50A

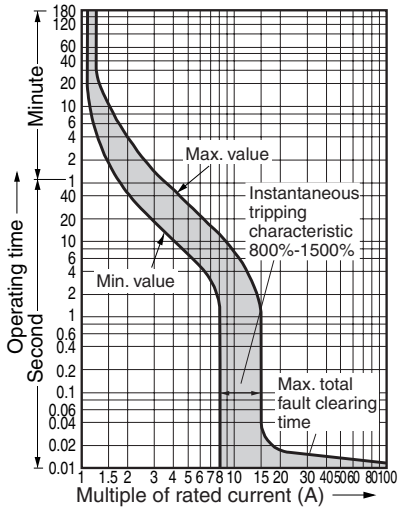


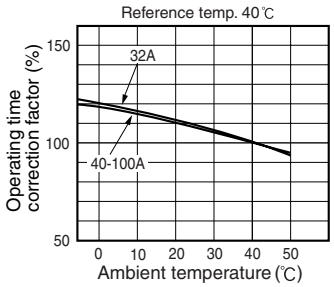


Earth leakage tripping



SG103CUL



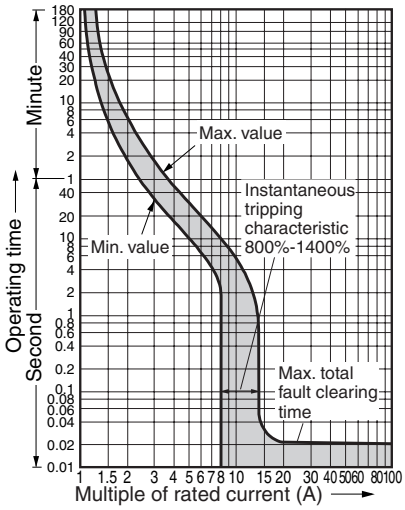


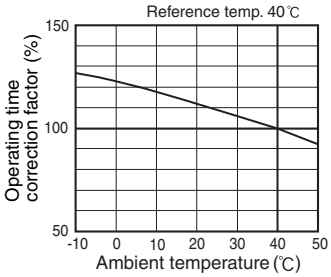
07

Characteristic curves
UL Listed

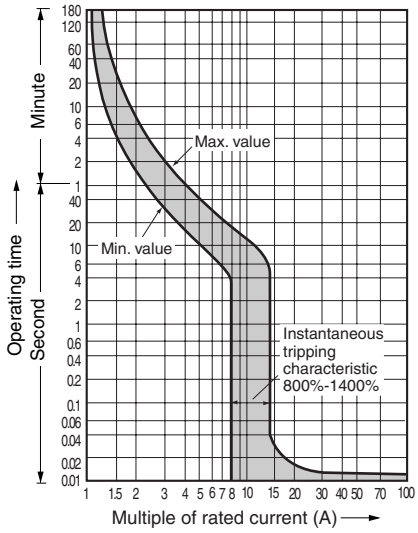
■ Characteristic curves/3-pole

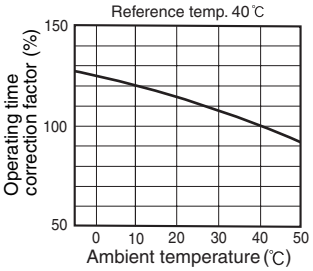
SG203CUL





SG403CUL

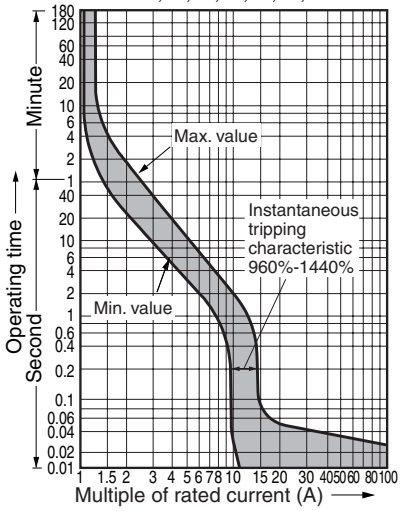




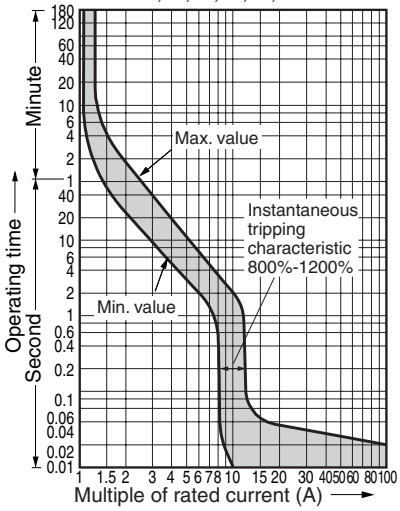
■ Characteristic curves/3-pole

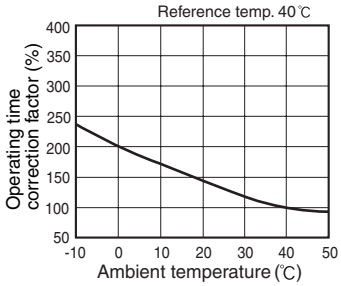
EG102CUL, EG103CUL

Rated current : 5,10,40,60,70,80,90A



Rated current : 3,15,20,30,50,100A

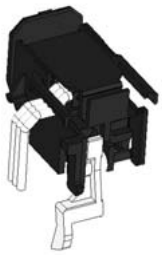




07

Variation of internal accessory

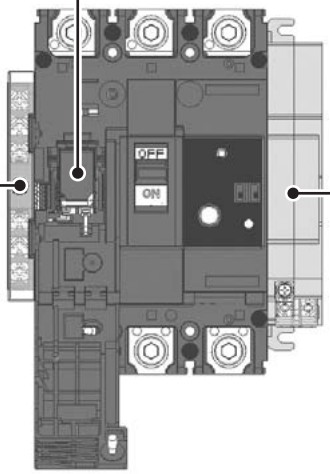
Auxiliary switch (Type W)



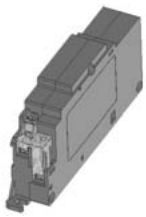
This switch is used for indicator lamp or control circuit.

Alarm switch (Type K)

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

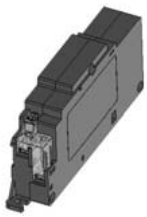


Shunt trip device (Type F)



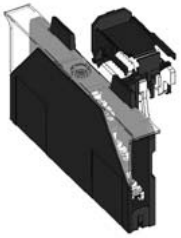
The purpose of this accessory is to trip the breaker from a distance.

Undervoltage trip device (Type R)



The device is designed to protect circuits from harmful voltage drops.
It can also be used for remote control purposes. The trip operates when the voltage drops to less than 70% of nominal coil rating, and the breaker cannot be reset until the voltage recovers 85% of its normal rating.

Terminal block (Type A)



A wiring terminal for internal accessories (Order with W, K or F)

Test lead wire (Type TL)

Trips the ELCB with a contact signal for electrical operation test.

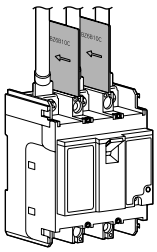
Megger test switch (Type MGS)

Interlocked with the main contact of the ELCB. When the handle is turned OFF, the control circuit is automatically isolated, enabling megger testing between phases on the load side.

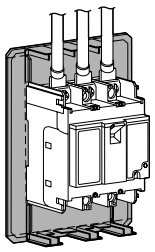
Variation of external accessory

Insulation barriers

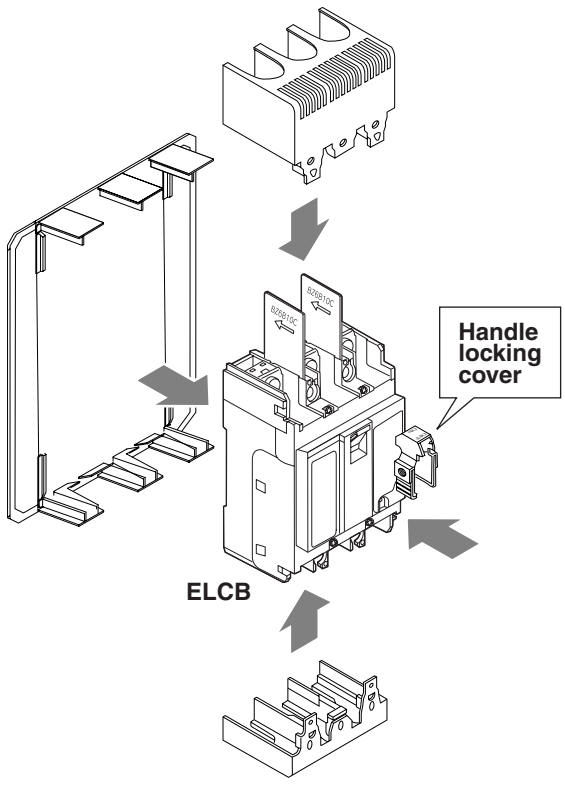
The interphase barrier reinforces the insulation between terminals, while the earth barrier increases the insulation between the terminal and the mounting panel.
See page 07/106



Interface barrier

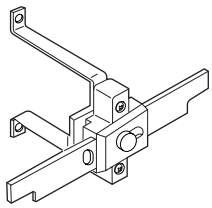


Earth barrier



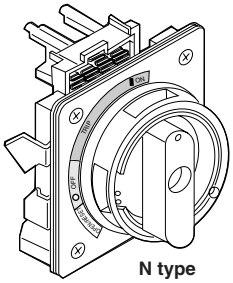
Mechanical interlock device

The mechanical interlock device can be mounted onto two separate breakers to maintain a mutual ON or OFF condition. The device can also be locked with a padlock.
See page 07/88

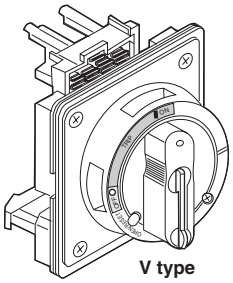


External operating handles

There are two handles available in the series: the V type handle on panel mount and the N type handle on breaker mount. An extension shaft (sold separately) for the V type handle allows the distance between the handle and the breaker to be adjusted. The protective structure of the V type handle operation section conforms to IP54. Both handle types can be locked with a padlock conforming to IEC 60204-1. The panel cutout dimensions are the same for both handles.
See page 07/91



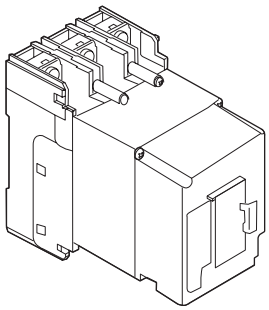
N type



V type

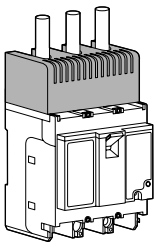
Motor-operating mechanism

A new drive structure in the motor operating mechanism speeds up drive operation to drastically reduce ON/OFF switching time from 2s to 0.1s.
See page 07/85

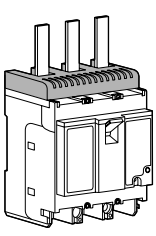


Terminal covers

Finger protection guards against shock from accidentally touching live terminals.
Two types of terminal covers are available–long type and short type.
See page 07/105



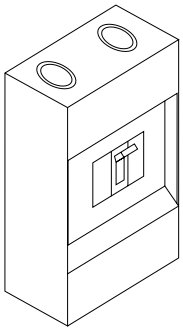
Long type



Short type

Steel enclosures

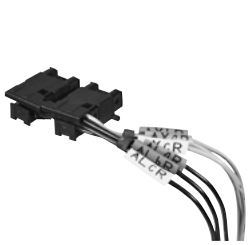
Enclosures are available in three types–two with V-type handle which allows the operation from the outside, and other direct operating.
See page 07/103



Internal accessories

Terminal blocks for internal accessories

- It indicates the terminal No. of internal accessory. The connection method of internal accessory is lead-wire system and terminal block system.
- Specify the connection method when ordering. It is lead-wire system unless specified.
- The lead wires are pulled out and terminal blocks are attached on the same side of the internal accessory will be attached
- For the available configuration of internal accessory, see page 07/72.



Lead-wire wiring

With terminal block

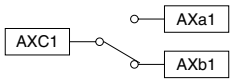
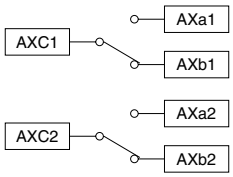
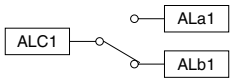
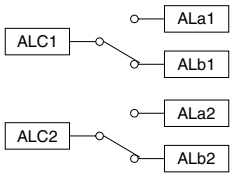
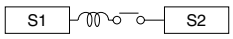
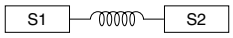
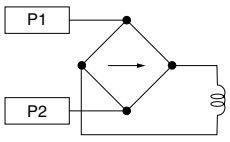
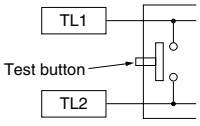
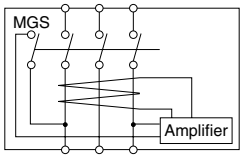
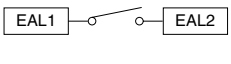
● IEC and CE marking conformed type

Accessory		30 – 225AF		400 – 800AF
		Left side mounting	Right side mounting	Left side mounting
Auxiliary switch	SPDT: W	11 12 14 AXcL AXbL AXaL	21 22 24 AXcR AXbR AXaR	11 12 14 AXc AXb AXa
	2PDT: W2	11 12 14 AXcL AXbL AXaL	21 22 24 AXcR AXbR AXaR	11 12 14 AXc AXb AXa 21 22 24 AXc AXb AXa
Alarm switch	SPDT: K	91 92 94 ALcL ALbL ALaL	01 02 04 ALcR ALbR ALaR	91 92 94 ALc ALb ALa
	2PDT: K2	91 92 94 ALcL ALbL ALaL	01 02 04 ALcR ALbR ALaR	91 92 94 ALc ALb ALa 01 02 04 ALc ALb ALa
Shunt trip device : F	With 1NO contact to prevent coil burn-out	C2 C1 S2 S1		
	Continuous rating	C2 C1 S2 S1		
Undervoltage trip device : R		U< D2 D1 P2 P1		
Test lead wire : TL		TL1 Test button TL2		
Megger test switch : MGS		MGS Amplifier		
Earth leakage indication contact : EAL				EAL1 — EAL2

Notes:
- The voltage is applied to the lead wires.
- Use a switch for the test button whose rating is more than the main circuit voltage and making/breaking current is higher than 1A.
- Do not share the switch for the test button with other ELCB.

ELCB's status	ON, OFF, Over current trip	Earth leakage trip
Contact	OFF	ON

● **HG50B, HG100B and HG225B types**

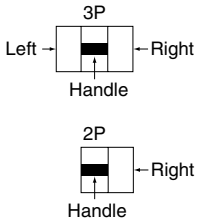
Accessory		Terminal number
Auxiliary switch	SPDT: W	
	2PDT: W2	
Alarm switch	SPDT: K	
	2PDT: K2	
Shunt trip device : F	With 1NO contact to prevent coil burn-out	
	Continuous rating	
Undervoltage trip device : R		
Test lead wire : TL		 Notes: • The voltage is applied to the lead wires. • Use a switch for the test button whose rating is more than the main circuit voltage and making/breaking current is higher than 1A. • Do not share the switch for the test button with other ELCB.
Megger test switch : MGS		
Earth leakage indication contact : EAL		 ELCB's status: ON, OFF, Over current trip / Earth leakage trip Contact: OFF / ON

07

■ Available configurations

ELCB							
	SG series	–	**SG33C SG53C SG53RC SG63C SG63RC**	**SG103C SG103RC SG203C SG203RC**	–	**SG403C SG403RC SG603RC SG803RC**	**SGa104A SG104H SGa204A SG204H SGa404A**
	EG series	**EG32AC EG52AC**	**EG33AC EG53AC EG33C EG53C EG63C EG103AC EG102C EG103C**	**EG203C**	–	**EG403C EG603C EG803C**	–
	HG series	–	–	–	**HG53B HG103B HG203B**	**HG403B HG603B HG803B**	–
Pole		2	2, 3	3	3	3	4
Auxiliary switch SPDT W							
Ararm switch SPDT K							
Shunt trip F							
Undervoltage R							
W2							
W+K							
W2+K							
K2							
W+K2							
W2+K2							
W+F							
W2+F							
W+R							
W2+R							
K+F							
K+R							
W+K+F							
W+K+R							
K2+F							
K2+R							
W2+K+F							
W2+K+R							
W+K2+F							
W+K2+R							
W2+K2+F							
W2+K2+R							
Megger test switch MGS							
Test lead TL							

ELCB				
	SG series	–	**SG33C SG53C SG53RC SG63C SG63RC**	**SG103C SG103RC SG203C SG203RC**
	EG series	**EG32AC EG52AC**	**EG33AC EG53AC EG33C EG53C EG63C EG103AC EG102C EG103C**	**EG203C**
Pole		2	2, 3	3
Megger test switch MGS				
MGS+W				
MGS+K				
MGS+W+K				
MGS+R				
MGS+W+R				
MGS+K+R				
MGS+W+K+R				
Test lead TL				
TL+W				
TL+K				
TL+W+K				



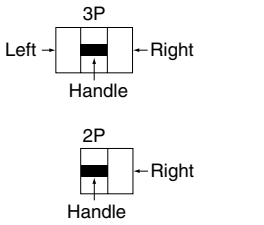
■ Undervoltage trip: R
▨ Shunt trip: F (External mounting method)
○ Auxiliary switch: W
● Alarm switch: K
☒ Megger test switch: MGS
➡ Test lead: TL

Notes: • If you install the auxiliary switch "W" and the alarm switch "K" closely side-by-side, add suffix "B" to the type number when ordering. Example: WB or KB
• The installation of the megger-test switch uses the space of auxiliary switch(W).
Therefore, one auxiliary switch will be subtracted from the number of combinations of the above tables.

■ UL type available configurations

ELCB	SG series	**SG53RCUL ***	**SG103CUL** **SG203CUL**	**SG403CUL**
	EG series	**EG102CUL *** **EG103CUL ***	–	–
Pole		2, 3	3	3
Auxiliary switch SPDT W				
Ararm switch SPDT K				
Shunt trip F				
Undervoltage R				
W2				
W+K				
W2+K				
K2				
W+K2				
W2+K2				
W+F				
W+R				
W2+R				
K+F				
K+R				
K2+R				
W+K+F				
W+K+R				
W2+K+R				
W+K2+R				
W2+K2+R				

Note: * Terminal block connection is standard method.



■ Undervoltage trip: R

Shunt trip: F
(External mounting method)

○ Auxiliary switch: W

● Alarm switch: K

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Internal accessories

■ Type number nomenclature of internal accessory

• Up to 225AF

BZ6 WK L 10C A (CCC)

Optional accessories

Type of accessories
W: Auxiliary switch
WD: Aux. switch for low level circuit
K: Alarm switch
KD: Alarm switch for low level circuit
WK: Aux. and alarm switches
WDKD: Aux. and alarm switches for low level circuit
F☐: Shunt trip device
R☐: Undervoltage trip device

☐ Operating voltage code
See page 07/82

Terminal block installation position
L : Left side of breaker
R : Right side of breaker

(CCC): CCC approved

Wiring
Blank : Lead-wire wiring
A : With terminal block

Applicable breakers
10C : Up to SG60RC, SG60C, EG100AC, EG100C
30C : SG100C, SG100RC
40C : SG225C, SG225RC, EG225C

• 400AF

BZ - WKF 70B - 24 - A (CCC)

Optional accessories

Type of accessories
W : Auxiliary switch
K : Alarm switch
F : Shunt trip device
R : Undervoltage trip device

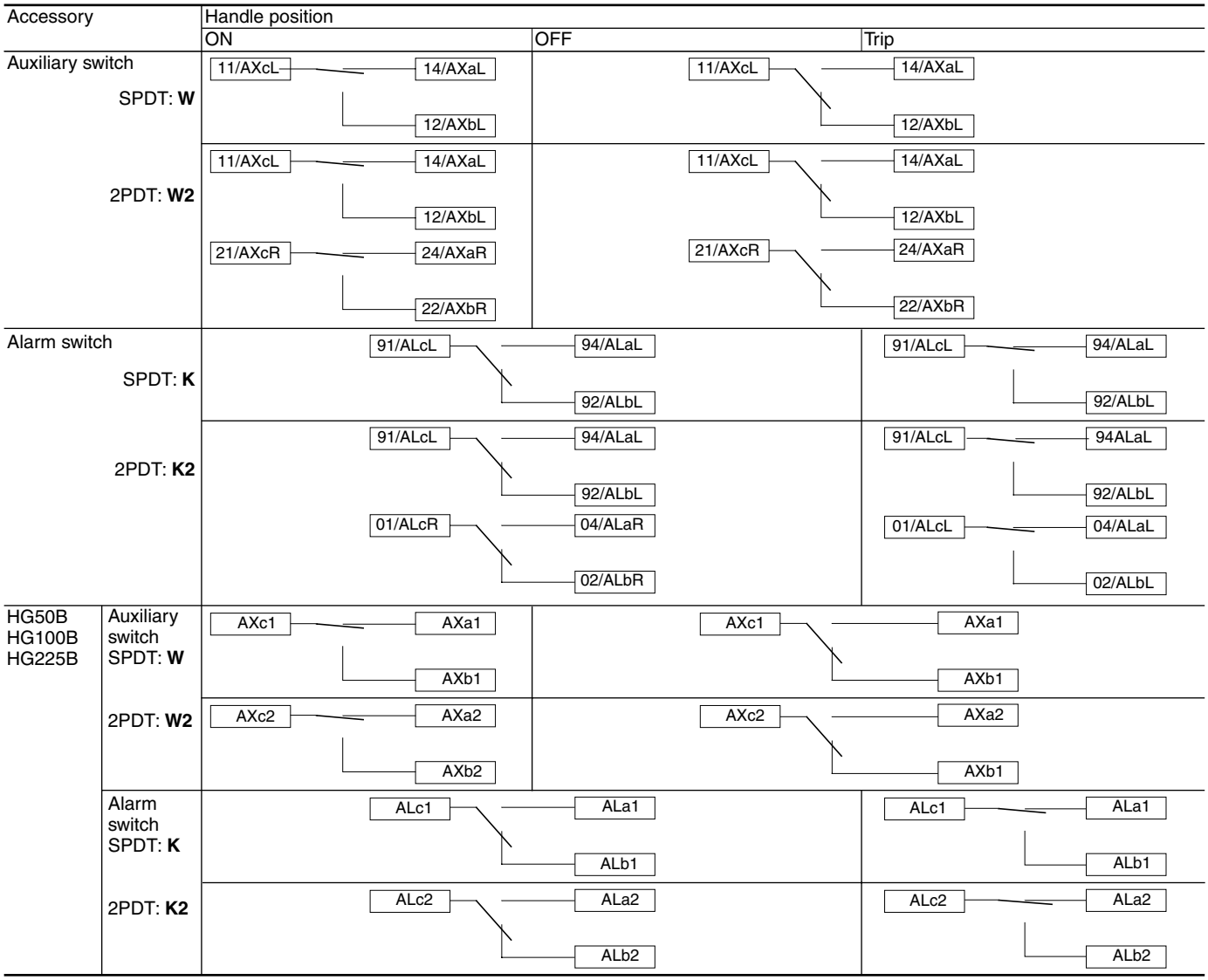
Applicable breakers
70B : SG400C, EG400C

(CCC): CCC approved

Wiring
Blank : Lead-wire wiring
A : With terminal block

Operating voltage code
See page 07/82

■ Operation of auxiliary switches(W) and alarm switches(K)



Note: ▭ Ring mark indication

07

■ Ratings of auxiliary switches(W) and alarm switches(K)

● Standard type

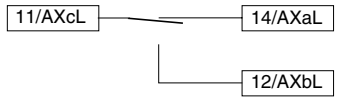
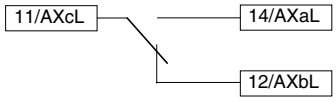
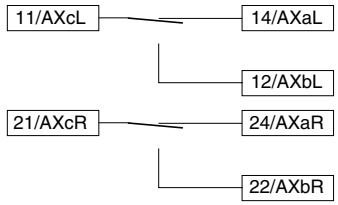
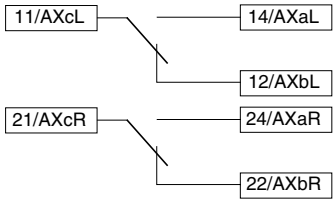
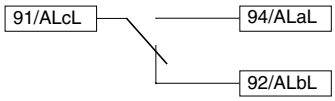
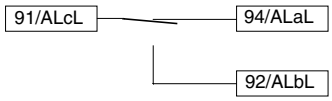
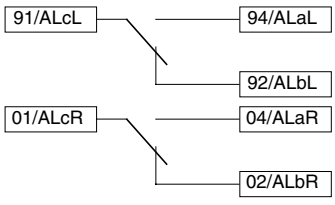
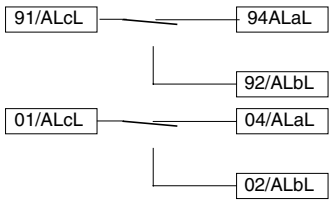
ELCB			AC			DC			Minimum load current
SG series	EG series	HG series	Voltage (V)	Make/break current (A)		Voltage (V)	Make/break current (A)		
				Res. load	Ind. load		Res. load	Ind. load	
SG30C **SG50C** **SG50RC** **SG60C** **SG60RC**	**EG30AC** **EG30C** **EG50AC** **EG50C** **EG60C** **EG100AC** **EG100C**	**–**	125	5 (5)	4 (5)	30	3 (3)	2 (3)	5V DC 160mA 30V DC 30mA
			250	5 (5)	4 (5)	125	0.6 (0.6)	0.4 (0.6)	
						250	0.3 (0.3)	0.2 (0.3)	
–	–	**HG50B**	125	5 (3)	4 (2)	30	3 (2)	2 (1)	
		HG100B	250	5 (2)	4 (1)	125	0.4 (0.4)	0.2 (0.1)	
		HG225B	500	2	1	250	0.2	0.1	
SG100C **SG100RC** **SG225C** **SG225RC**	**EG225C**	**–**	125	5 (2)	2 (2)	30	4 (1)	3 (1)	
			250	3 (1)	1 (1)	125	0.4 (0.5)	0.4 (0.5)	
						250	0.2 (0.2)	0.2 (0.2)	
SG400C **SG400RC** **SG600RC** **SG800RC**	**EG400C** **EG600C** **EG800C**	**HG400B** **HG600B** **HG800B**	125	5	4	30	3	2	
			250	5	4	125	0.4	0.2	
			500	2	1	250	0.2	0.1	

Note: ( ) Reference value for IEC60947-5-1 or JIS C8201-5-1

● For low level circuit

ELCB			DC		Minimum load current
SG series	EG series	HG series	Voltage (V)	Make/break current (A)	
SG30C **SG50C** **SG50RC** **SG60C** **SG60RC**	**EG30AC** **EG30C** **EG50AC** **EG50C** **EG60C** **EG100AC** **EG100C**	**–**	30	0.1	5V DC 1mA 30V DC 1mA
–	–	**HG50B** **HG100B** **HG225B**	30	0.1 (Res. load)	
SG100C **SG100RC** **SG225C** **SG225RC**	**EG225C**	**–**	30	0.1	
SG400C **SG400RC** **SG600RC** **SG800RC**	**EG400C** **EG600C** **EG800C**	**HG400B** **HG600B** **HG800B**	30	0.1	

■ Operation of auxiliary switches(W) and alarm switches(K)

Accessory	Handle position		
	ON	OFF	Trip
Auxiliary switch SPDT: **W**			
2PDT: **W2**			
Alarm switch SPDT: **K**			
2PDT: **K2**			

Note: ▭ Ring mark indication

■ Ratings of auxiliary switches(W) and alarm switches(K)

● Standard type

ELCB		AC		DC		Minimum load current
SG series	EG series	Voltage (V)	Make/break current (A)	Voltage (V)	Make/break current (A)	
SG50RCUL	**EG100CUL**	120	3.6	125	0.55	5V DC 160mA 30V DC 30mA
		240	1.8	250	0.27	
SG100CUL **SG225CUL**	–	120	5			
		240	3			
SG400CUL	–	120	5			
		240	5			

● Low level circuit

ELCB		DC		Minimum load current
SG series	EG series	Voltage (V)	Make/break current (A)	
SG50RCUL	**EG100CUL**	30	0.1	5V DC 1mA 30V DC 1mA
SG100CUL **SG225CUL**	–	30	0.1	
SG400CUL	–	30	0.1	

■ Rating of shunt trip (F)

● IEC and CE marking conformed

Applicable breaker type			Power consumption				Time rating of coil	Operating time (ms)
SG series	EG series	HG series	AC		DC			
			V	VA	V	W		
SG30C SG50C SG50RC SG60C SG60RC	EG30AC EG30C EG50AC EG50C EG60C EG100AC EG100C	–	100(50Hz)/100-110(60Hz)	16	–	–	Continuous	7-13
			200(50Hz)/200-220(60Hz)	16	–	–		
			400(50Hz)/400-440(60Hz)	22	–	–		
			–	–	24	36		
			–	–	100-110	23		
SG100C SG100RC SG225C SG225RC	EG225C	–	100(50Hz)/100-110(60Hz)	200	–	–	Continuous	7-13
			200(50Hz)/200-220(60Hz)	150	–	–		
			400(50Hz)/400-440(60Hz)	200	–	–		
			–	–	100-110	200		
SG400C SG400RC SG600RC SG800RC	EG400C EG600C EG800C	HG400B HG600B HG800B	24-48 (50/60Hz)	2	24-48	2	Continuous	8-20
			100-240 (50/60Hz)	3	100-220	3		
			380-550 (50/60Hz)	4	–	–		

Note: Allowable voltage function AC voltage: 85% to 110% of coil rated voltage
DC voltage: 75% to 125% of coil rated voltage

● UL Listed

Applicable breaker type			Power consumption				Time rating of coil	Operating time (ms)
SG series	EG series	HG series	AC		DC			
			V	VA	V	W		
SG50RCUL	EG100CUL	–	100(50Hz)/100-110(60Hz)	16	–	–	Continuous	7-13
			200(50Hz)/200-220(60Hz)	16	–	–		
			400(50Hz)/400-440(60Hz)	22	–	–		
SG100CUL SG225CUL	–	–	100(50Hz)/100-110(60Hz)	200	–	–	Continuous	7-13
			200(50Hz)/200-220(60Hz)	150	–	–		
			400(50Hz)/400-440(60Hz)	200	–	–		
SG400RCUL	–	–	24-48 (50/60Hz)	2	24-48	2	Continuous	8-20
			100-240 (50/60Hz)	3	100-220	3		

■ Rating of undervoltage trip (R)

● IEC and CE marking conformed

Applicable breaker type			Power consumption				Operating voltage
SG series	EG series	HG series	AC		DC		
			V	VA	V	W	
SG30C SG50C SG50RC SG60C SG60RC	EG30AC EG30C EG50AC EG50C EG60C EG100AC EG100C	–	100(50Hz)/100-110(60Hz)	2.8	–	–	Tripping voltage: 70 to 35% of coil rating voltage Closing voltage: 85% or more of coil rating voltage
			200(50Hz)/200-220(60Hz)	3.4	–	–	
			400(50Hz)/400-440(60Hz)	4.4	–	–	
			–	–	100-110	2.86	
SG100C SG100RC SG225C SG225RC	EG225C	–	100(50Hz)/100-110(60Hz)	200	–	–	
			200(50Hz)/200-220(60Hz)	150	–	–	
			400(50Hz)/400-440(60Hz)	200	–	–	
			–	–	100-110	200	
SG400C SG400RC SG600RC SG800RC	EG400C EG600C EG800C	HG400B HG600B HG800B	24 (50/60Hz)	2	24	2	
			48 (50/60Hz)	2	48	2	
			100-110 (50/60Hz)	3	100-110	3	
			200-240 (50/60Hz)	3	200-220	3	
			380-480 (50/60Hz)	4	–	–	

Note: Specify the operating voltage when ordering.

● UL Listed

Applicable breaker type			Power consumption				Operating voltage
SG series	EG series	HG series	AC		DC		
			V	VA	V	W	
SG50RCUL	EG100CUL	–	100(50Hz)/100-110(60Hz)	3	–	–	Tripping voltage: 70 to 35% of coil rating voltage Closing voltage: 85% or more of coil rating voltage
			200(50Hz)/200-220(60Hz)	3	–	–	
			400(50Hz)/400-440(60Hz)	4	–	–	
SG100CUL SG225CUL	–	–	–	–	100-110	200	
			100(50Hz)/100-110(60Hz)	200	–	–	
			200(50Hz)/200-220(60Hz)	150	–	–	
			400(50Hz)/400-440(60Hz)	200	–	–	
SG400RCUL	–	–	24 (50/60Hz)	2	24	2	
			48 (50/60Hz)	2	48	2	
			100-110 (50/60Hz)	3	100-110	3	
			200-240 (50/60Hz)	3	200-220	3	

■ Dimensions, mm
shunt trip device "F" and undervoltage trip device "R"

SG series	EG series	Fig.	Mass (kg)
SG30C SG50C, SG50RC SG60C, SG60RC	EG30AC, EG33C EG50AC, EG50C EG60C EG100AC, EG100C	Fig.1	0.15
SG100C, SG100RC	–	Fig.2	0.17
SG225C, SG225RC	EG225C	Fig.3	

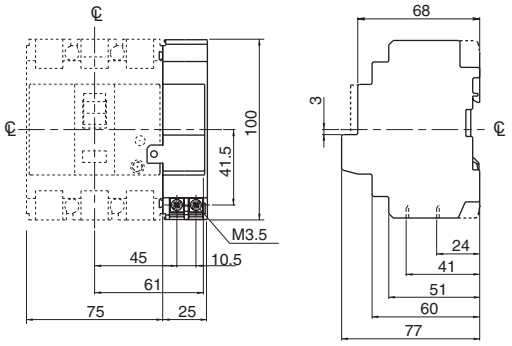


Fig.1

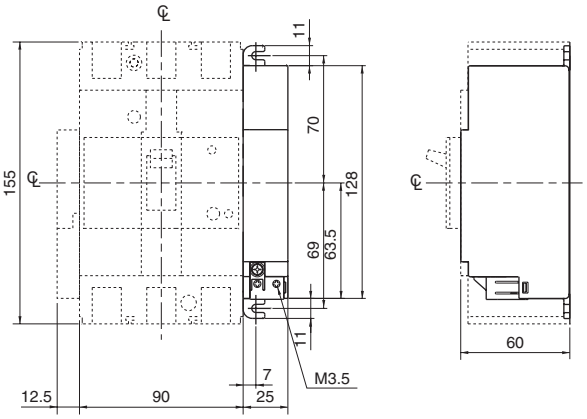


Fig.2

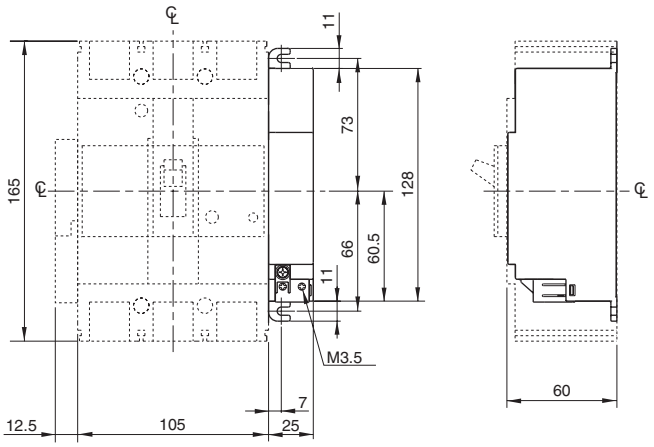


Fig.3

■ Lead wire specifications

● IEC and CE marking conformed

SG series	EG series	HG series	Wire size	Wire length
SG30C SG50C, SG50RC SG60C, SG60RC	EG30AC, EG30C EG50AC, EG50C EG60C EG100AC, EG100C	–	AWG22 (0.4mm^2)	500mm
SG100C, SG100RC SG225C, SG225RC SG400C SG400RC SG600RC SG800RC	EG225C EG400C EG600C EG800C	HG50B HG100B HG225B HG400B HG600B HG800B	0.5mm^2	500mm

● UL Listed

SG series	EG series	HG series	Wire size	Wire length
SG50RCUL SG100CUL SG225CUL SG400CUL	EG100CUL	–	20AWG	500mm

■ Terminal block specifications

ELCB			Terminal	Dimensions (mm)									
SG series	EG series	HG series	screw	Fig.	A	B	C	D	E	F	G	H	I
SG30C SG50C, SG50RC SG60C, SG60RC	EG30AC, EG30C EG50AC, EG50C EG60C EG100AC, EG100C	–	M3.5	Fig.1	0	9	23.5	36	48.5	–	–	–	–
SG50RCUL	EG100CUL	–		Fig.2	0	9	23.5	36	48.5	–	–	–	–
SG100C, SG100CUL SG100RC	–	–		Fig.3	-17	4	19	31	43.5	–	–	–	–
SG225C, SG225CUL SG225RC	EG225C	–			-14.5	4	19	31	43.4				
–	–	HG50B HG100B		Fig.4	+4.7	24.9	41.8	54.2	66.5				
–	–	HG225B			+0.2	34.9	51.8	64.2	76.5				
SG400C, SG400CUL SG400RC	EG400C	HG400B		Fig.5	-6.5	–	–	–	–	76.5	–	–	–
SG600RC SG800RC	EG600C EG800C	HG600B HG800B								85.5	–	–	–

Note: The applicable wire size for the lead terminal block is either ø1.6mm solid wire or 2mm^2 stranded wire.

Fig.1

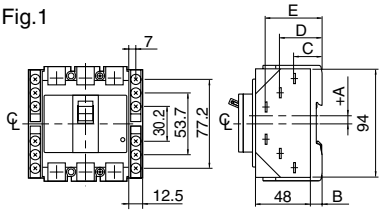


Fig.2

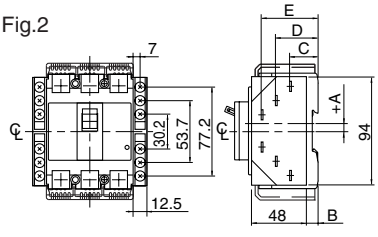


Fig.3

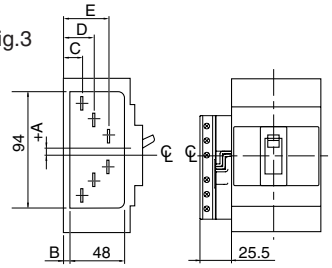


Fig.4

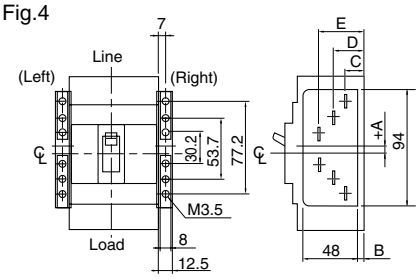
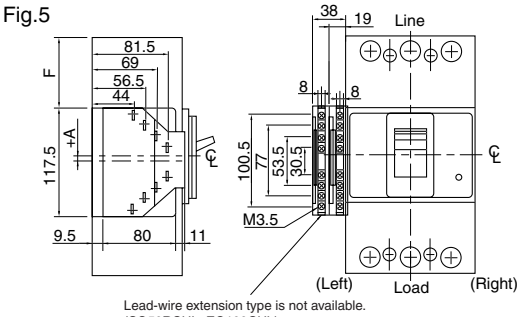


Fig.5



Lead-wire extension type is not available.
(SG50RCUL, EG100CUL)

Internal accessories

■ Type number

● Auxiliary switches (W) and alarm switches (K)

ELCB type			Auxiliary	Mass (kg)	Alarm	Mass (kg)	Auxiliary + Alarm	Mass (kg)
SG series	EG series	HG series						
SG30C *	EG30AC *, EG30C *	–	**BZ6W□10C**	0.01	**BZ6K□10C**	0.01	**BZ6WK□10C**	0.02
SG50C *, SG50RC *	EG50AC *, EG50C *		**BZ6W□10CA**	0.04	**BZ6K□10CA**	0.04	**BZ6WK□10CA**	0.08
SG60C *, SG60RC *	EG60C *							
	EG100AC *, EG100C *							
SG100C, SG100RC	–	–	**BZ6W□30C**	0.02	**BZ6K□30C**	0.02	**BZ6WK□30C**	0.04
			▲	0.05	▲	0.05	▲	0.07
SG225C, SG225RC	EG225C	–	**BZ6W□40C**	0.02	**BZ6K□40C**	0.02	**BZ6WK□40C**	0.04
			▲	0.05	▲	0.05	▲	0.07
–	–	HG53B	▲	0.05	▲	0.05	▲	0.07
		HG103B						
		HG203B						
SG400C, SG400RC	EG400C	HG403B	**BZ-W70B**	0.02	**BZ-K70B**	0.02	**BZ-WK70B**	0.04
SG600RC	EG600C	HG603B	**BZ-W70B-A**	0.11	**BZ-K70B-A**	0.11	**BZ-WK70B-A**	0.13
SG800RC	EG800C	HG803B						

Notes: • Auxiliary switch and alarm switch for low level circuit are also available on request, in this case add **D** to the type number when ordering. Example: WD, KD
• Replace the □ mark by the **R** when an auxiliary switch or an alarm switch is mounted on right hand side of the breaker. Enter the **L** when it is mounted on left hand side of the breaker.
* 2-pole types are mountable on right side only.

▲ Factory-mounted accessory

● Shunt trip devices (F)

ELCB type			Operating voltage		Type number	With terminal block
SG series	EG series	HG series	Code	Voltage		
SG30C	EG30AC, EG33C	–	**2**	100V AC 50Hz, 100-110V AC 60Hz	BZ6F210C	BZ6F210CA
SG50C, SG50RC	EG50AC, EG50C		**1**	110V AC 50Hz, 110-127V AC 60Hz	BZ6F110C	BZ6F110CA
SG60C, SG60RC	EG60C		**7**	200V AC 50Hz, 200-220V AC 60Hz	BZ6F710C	BZ6F710CA
	EG100A		**4**	220V AC 50Hz, 220-240V AC 60Hz	BZ6F410C	BZ6F410CA
	EG100AC, EG100C		**5**	230V AC 50Hz, 230-240V AC 60Hz	BZ6F510C	BZ6F510CA
			B	240V AC 50Hz	BZ6FB10C	BZ6FB10CA
			0	380V AC 50Hz, 380-415V AC 60Hz	BZ6F010C	BZ6F010CA
			8	400V AC 50Hz, 400-440V AC 60Hz	BZ6F810C	BZ6F810CA
			M	24V DC	▲	▲
			L	100-110V DC	▲	▲
SG100C, SG100RC	–	–	**M**	24V DC	▲	▲
			2	100V AC 50Hz, 100-110V AC 60Hz	▲	▲
			L	100-110V DC	▲	▲
			4	200-240V AC 50/60Hz	▲	▲
			C	380-440V AC 50/60Hz	▲	▲
SG225C, SG225RC	EG225C	–	**M**	24V DC	▲	▲
			2	100V AC 50Hz, 100-110V AC 60Hz	▲	▲
			L	100-110V DC	▲	▲
			1	110-130V AC 50/60Hz	▲	▲
			4	200-240V AC 50/60Hz	▲	▲
			C	380-480V AC 50/60Hz	▲	▲
SG400C, SG400RC	EG400C	HG403B	**24**	24-48V AC 50/60Hz, 24-48V DC	BZ-F70B-24	BZ-F70B-24A
SG600RC	EG600C	HG603B	**100**	100-240V AC 50/60Hz, 100-220V 50/60Hz	BZ-F70B-100	BZ-F70B-100A
SG800RC	EG800C	HG803B	**380**	380-450V AC 50/60Hz	BZ-F70B-380	BZ-F70B-380A

Notes: • Specify operating voltage when ordering.
• Terminal block is provided as standard.

▲ Factory-mounted accessory

● Undervoltage trip devices (R)

ELCB type			Operating voltage		Type number	Mass (kg)
SG series	EG series	HG series	Code	Voltage		
SG30C	EG30AC, EG30C	–	**F**	24V DC	BZ6RF10C	0.14
SG50C, SG50RC	EG50AC, EG50C		**2**	100V AC 50Hz, 100-110V AC 60Hz	BZ6R210C	0.14
SG60C, SG60RC	EG60C		**T**	100-110V DC	BZ6RT10C	0.14
	EG100AC, EG100C		**1**	110V AC 50Hz, 110-127V AC 60Hz	BZ6R110C	0.14
			W	200V AC 50Hz, 200-220V AC 60Hz	BZ6RW10C	0.14
			4	220V AC 50Hz, 220-240V AC 60Hz	BZ6R410C	0.14
			5	230V AC 50Hz, 230-240V AC 60Hz	BZ6R510C	0.14
			8	240V AC 50Hz	BZ6R810C	0.14
			0	380V AC 50Hz, 380-415V AC 60Hz	BZ6R010C	0.14
			9	400V AC 50Hz, 400-440V AC 60Hz	BZ6R910C	0.14
SG100C, SG100RC	EG225C	–	**F**	24V DC	▲	0.18
SG225C, SG225RC			**2**	100V AC 50Hz, 100-110V AC 60Hz	▲	0.18
			T	100-110V DC	▲	0.18
			4	200V AC 50Hz/200-220V AC 60Hz	▲	0.18
			C	400V AC 50Hz/400-440V AC 60Hz	▲	0.18
SG400C, SG400RC	EG400C	HG403B	**R**	24V AC 50/60Hz, 24V DC	BZ-R70B-24	0.06
SG600RC	EG600C	HG603B	**S**	48V AC 50/60Hz, 48V DC	BZ-R70B-48	0.06
SG800RC	EG800C	HG803B	**X**	100-110V AC 50/60Hz, 100-110V DC	BZ-R70B-100	0.06
			U	200-240V AC 50/60Hz, 200-220V DC	BZ-R70B-200	0.06
			E	380-480V AC 50/60Hz	BZ-R70B-380	0.06

Notes: • Specify operating voltage when ordering.
• Terminal block is provided as standard.

▲ Factory-mounted accessory

● UL type Auxiliary switches (W) and alarm switches (K)

ELCB type		Type number		
		Auxiliary switch / W	Alarm switch / K	Auxiliary switch + Alarm switch / WK
SG series	EG series	SPDT	SPDT	
SG53RCUL	EG100CUL	**BZ6W□10CU**	**BZ6K□10CU**	**BZ6WK□10CU**
		BZ6W□10CAU	**BZ6K□10CAU**	**BZ6WK□10CAU**
		(With terminal block)	(With terminal block)	(With terminal block)

● UL type Shunt trip devices (F)

ELCB type		Rated voltage	Type number	
SG series	EG series		Lead wire	With terminal block
SG53RCUL	EG102CUL	100V AC 50Hz/100-110V AC 60Hz	–	**BZ6F210CAU**
	EG103CUL	200V AC 50Hz/200-220V AC 60Hz	–	**BZ6F710CAU**
		400V AC 50Hz/400-440V AC 60Hz	–	**BZ6F810CAU**

● UL type Undervoltage trip devices (R)

ELCB type		Rated voltage	Type number
SG series	EG series		With terminal block
SG53RCUL	EG102CUL	100V AC 50Hz/100-110V AC 60Hz	**BZ6R210CAU**
	EG103CUL	200V AC 50Hz/200-220V AC 60Hz	**BZ6RW10CAU**
		400V AC 50Hz/400-440V AC 60Hz	**BZ6R910CAU**

Internal accessories

● Internal accessories (optional) for 400AF to 800AF

Accessory type	Auxiliary switch W	Auxiliary switch W2	Alarm switch K	Alarm switch K2	Shunt trip F	Undervoltage trip R	Number of terminal blocks	Mass (kg) w/lead wire	Mass (kg) w/terminal block
BZ-W70B-□	●						1	0.05	0.14
BZ-K70B-□			●				1	0.05	0.14
BZ-F70B-■-□					●		1	0.09	0.18
BZ-R70B-■-□						●	1	0.09	0.18
BZ-W270B-□		●					2	0.07	0.25
BZ-WK70B-□	●		●				1	0.07	0.16
BZ-W2K70B-□		●	●				2	0.09	0.27
BZ-K270B-□				●			2	0.07	0.25
BZ-WK270B-□	●			●			2	0.09	0.27
BZ-W2K270B-□		●		●			2	0.11	0.29
BZ-WF70B-■-□	●				●		1	0.11	0.20
BZ-W2F70B-■-□		●			●		2	0.13	0.31
BZ-WR70B-■-□	●					●	1	0.11	0.20
BZ-W2R70B-■-□		●				●	2	0.13	0.31
BZ-KF70B-■-□			●		●		1	0.11	0.20
BZ-KR70B-■-□			●			●	1	0.11	0.20
BZ-WKF70B-■-□	●		●		●		1	0.13	0.22
BZ-WKR70B-■-□	●		●			●	1	0.13	0.22
BZ-K2F70B-■-□				●	●		2	0.13	0.31
BZ-K2R70B-■-□				●		●	2	0.13	0.31
BZ-W2KF70B-■-□		●	●		●		2	0.15	0.33
BZ-W2KR70B-■-□		●	●			●	2	0.15	0.33
BZ-WK2F70B-■-□	●			●	●		2	0.15	0.33
BZ-WK2R70B-■-□	●			●		●	2	0.15	0.33
BZ-W2K2F70B-■-□		●		●	●		2	0.17	0.35
BZ-W2K2R70B-■-□		●		●		●	2	0.17	0.35

Notes: ● Indicates the mountable accessories.
- Replace the mark ■ by the operating voltage of shunt trip or undervoltage trip device.
- Replace the mark □ by the **A** suffix for terminal block type, **blank** for lead-wire connection type.

● Operating voltage for 400AF to 800AF

BZ - WKF 70B - 100 - A

Type of accessory
Operating voltage
Terminal

Operating voltage	Shunt trip			Undervoltage trip				
	24/48V AC/DC	100-240V AC 100-220V DC	380-550V AC	24V AC/DC	48V AC/DC	100-110V AC/DC	200-240V AC 200-220V DC	380-480V AC
Code	24	100	380	24	48	100	200	380

■ Ordering information

Specifty the following.
1. Type number
2. Lead-wire connection or terminal block type

Motor-operated breakers

■ Description

The breaker is fitted with a motor operating mechanism which enables ON, OFF and RESET operations to be carried out electronically by remote control.
4-pole motor operated breakers are also available.


AF02-54


CP-1214

100 to 225AF


AF93-403

400AF and larger, 4-pole

■ Types and ratings

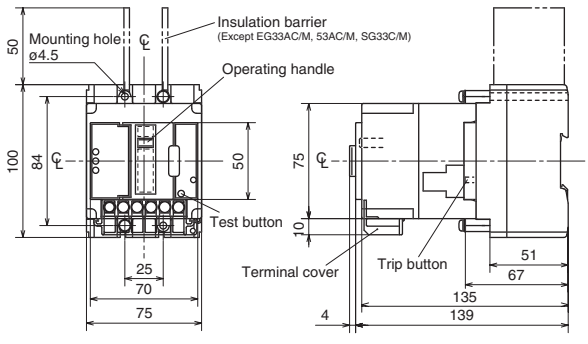
SG series	EG series	Motor rating			Power source capacity
		Operating voltage	Operating time	Time rating	
SG33C/M **SG53C/M, 53RC/M** **SG63C/M, 63RC/M**	**EG33AC/M, 33C/M** **EG53AC/M, 53C/M** **EG63C/M** **EG102C/M, 103AC/M, 103C/M**	100V DC 100/110V AC 200/220V AC	0.1s	15s per on-off operation	500VA
SG103C/M **SG103RC/M**		24V DC 48V DC 100V DC 100/110V AC 200/220V AC	2s	30s	50VA
SG203C/M **SG203RC/M**	**EG203C/M**		2.5s	30s	50VA
SG403C/M **SG403RC/M** **SG603RC/M** **SG803RC/M**	**EG403C/M** **EG603C/M** **EG803C/M**	100/110V DC 100/110V AC 200/220V AC	2s	30s	100VA at 100/110V DC, 100/110V AC 200VA at 200/220V AC

■ Ordering information

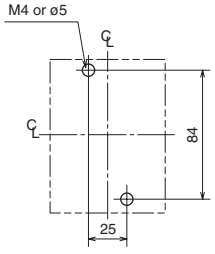
Specify the following:
1. Type number
2. Motor operating voltage

■ Dimensions, mm / Front mounting, front connection

SG33C/M, SG53C/M, SG53RC/M, SG63C/M, SG63RC/M
EG33AC/M, EG33C/M, EG53AC/M, EG53C/M, EG63C/M, EG102C/M, EG103C/M



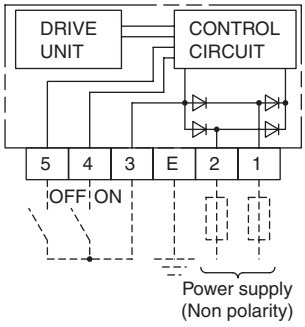
Panel drilling



Notes: • Trip button operation can be carried out at right side of the breaker.
• IEC 35mm rail is not available.

■ Wiring diagrams

100/110V AC, 200/220V AC, 100V DC

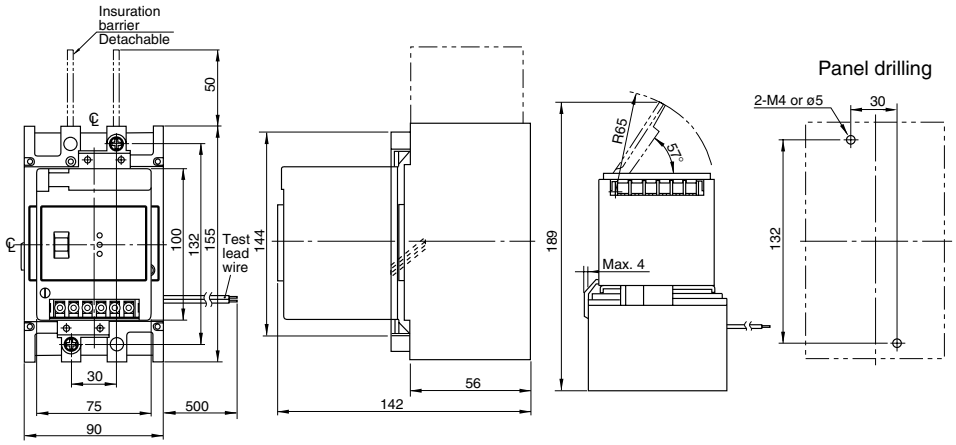


07

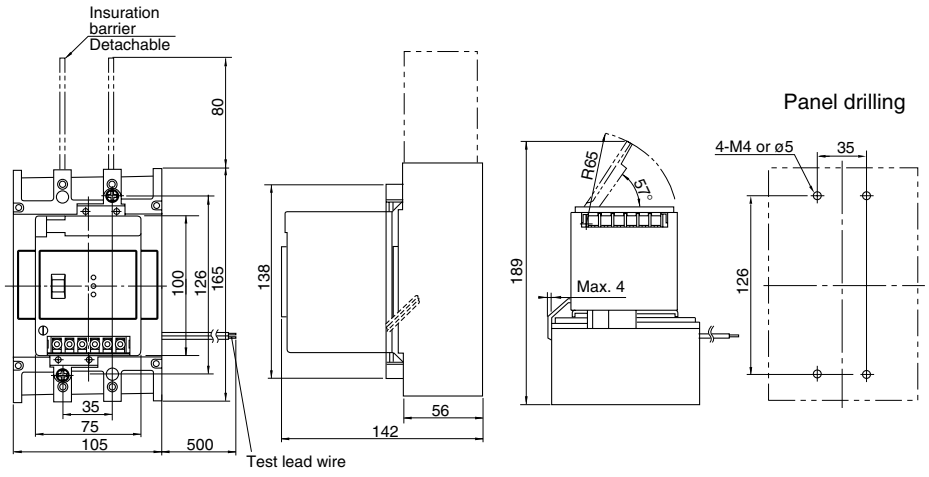
External accessories
Motor-operated breakers

■ Dimensions, mm / Front mounting, front connection

SG103RC/M, SG103C/M



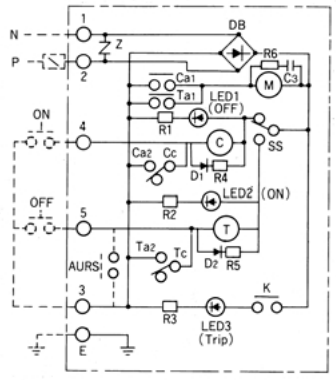
SG203C/M, SG203RC/M
EG203C/M



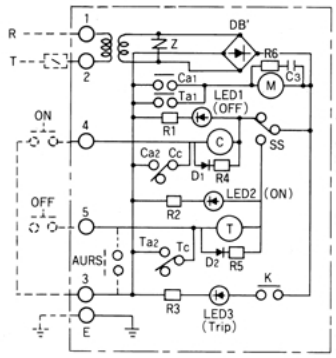
Note: Interphase insulation barriers are standard provided for the front mounting type breakers of 50AF to 225AF.

■ Wiring diagrams

24V DC, 48V DC, 100V DC



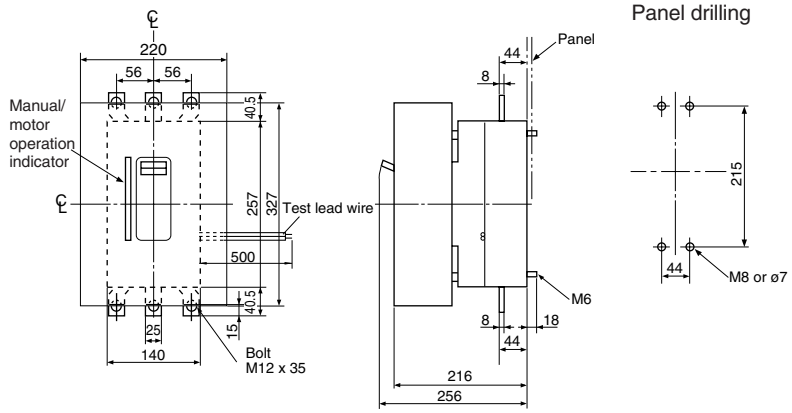
100/110V AC, 200/220V AC



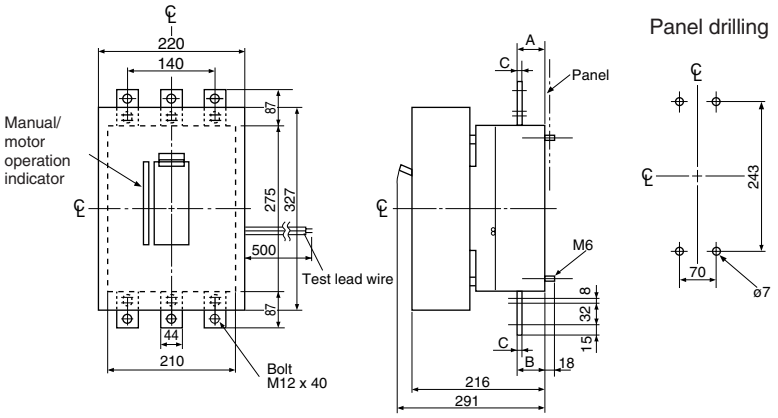
C : Control relay for breaker closing
T : Control relay for breaker open
M : Motor
Ca1-Cc : Relay terminal number for closing
Ta1-Tc : Relay terminal number for open
: Diode
Z : Z-trap (Surge absorber)
SS : ON/OFF changeover switch
E, 1-5 : Terminal number for external wire connection
: Resistor : LED
: Silicon diode
: Transformer
: Capacitor
AURS : Automatic reset switch (supplied on request)

■ Dimensions, mm/Front mounting, front connection

SG403C/M, SG403RC/M
EG403C/M



SG603RC/M, SG803RC/M
EG603C/M, EG803C/M

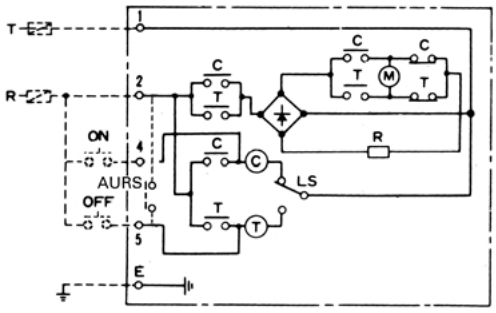


Amp. frame	A (line side)	B (load side)	C
600AF	38.5	41.5	7
800AF	41.5	44.5	10

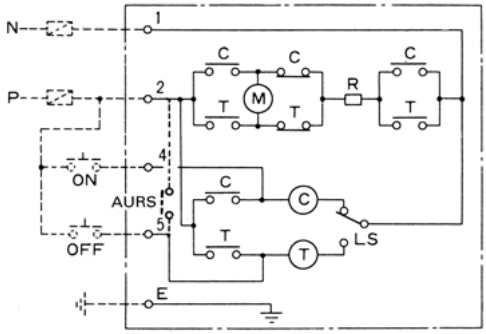
Dimensions for reference only. Confirm before construction begins.

■ Wiring diagrams/400 to 800AF

100/110V AC, 200/220V AC, 50/60Hz



100/110V DC



C : Control relay for breaker closing R : Resistor
T : Control relay for breaker open LS : Limit switch
M : Motor
AURS: Automatic reset switch
(supplied on request)

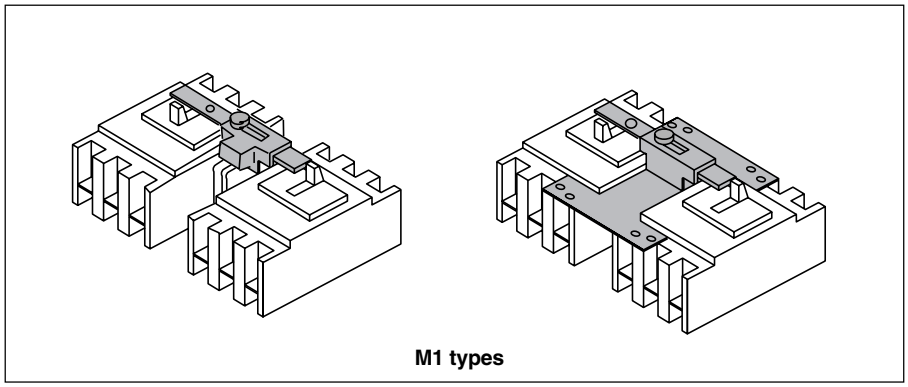
Type (ELCB with motor operating mechanism)	Mass (kg)
SG33C/M, SG53C/M, SG53RC/M EG33AC/M, EG33C/M, EG53AC/M, EG53C/M	1.2
SG63C/M, SG63RC/M EG63C/M, EG102C/M, EG103AC/M, EG103C/M	1.3
SG103C/M	2.1
SG103RC/M	2.2
SG203C/M, SG203RC/M EG203C/M	2.3
SG403C/M, SG403RC/M, EG403C/M	14.2
SG603RC/M, EG603C/M	17.5
SG803RC/M, EG803C/M	18.5

External accessories
Mechanical interlocking device

Mechanical interlocking devices

■ Description

These interlocking devices are mounted on the two separate breakers to prevent them from both being closed at the same time.
They employ a slide method and are operated manually.
These interlocking devices is possible to lock with a padlock (not supplied).
They are designed for use when changing over power supplies.
These can be mounted to 3 types of breakers: front-mounting front-connection type, front-mounting rear-connection type (type X), and plug-in mounting type (type P).
Interlock devices for flush mounting type breakers (type E, Y) are also available.



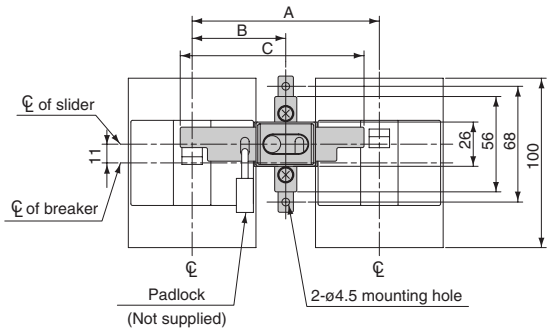
M1 types

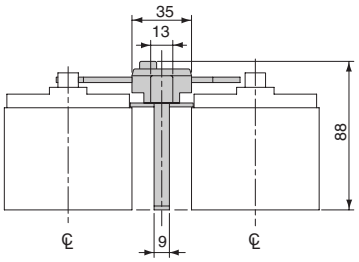
■ Types and applicable breakers

Type	Breaker type SG series	EG series
BZ6M110C2		EG32AC EG52AC
BZ6M110C3	SG33C SG53C, SG53RC SG63C, SG63RC	EG33AC, EG33C EG53AC, EG53C EG63C EG102C EG103AC, EG103C
BZ-M160C	SG403C, SG403RC	EG403C
BZ-M170C	SG603RC SG803RC	EG603C EG803C

■ **Dimensions, mm**

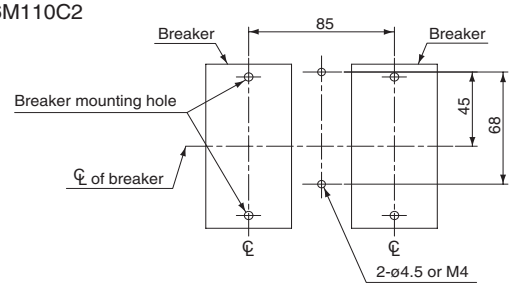
• **30AF to EG100AF**



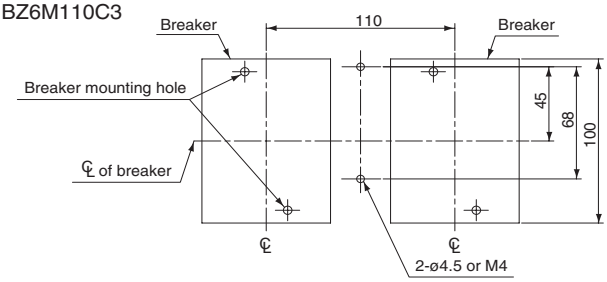


Panel drilling

BZ6M110C2

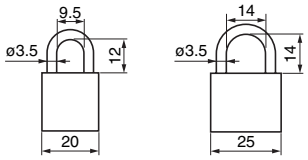


BZ6M110C3



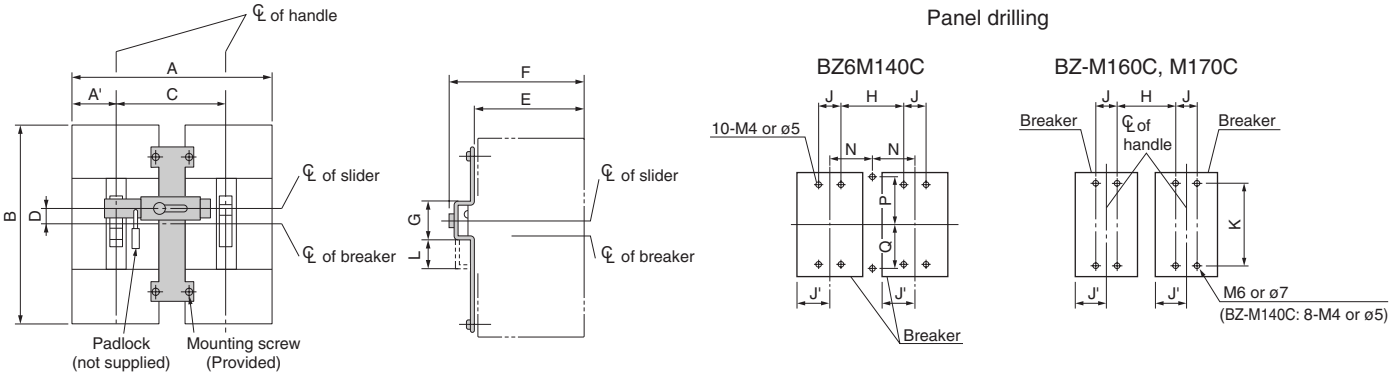
Type	Breaker type SG series	Breaker type EG series	Dimensions, mm A	B	C	Mass (kg)
BZ6M110C2		EG32AC EG52AC	85	42.5	83	0.11
BZ6M110C3	SG33C SG53C SG63C SG53RC SG63RC	EG33AC EG33C EG53AC EG53C EG63C EG102C EG103AC EG103C	110	55	108	0.12

Notes: • BZ6M110C2 is not available for padlock.
• Applicable padlock(ø3.5) dimensions, mm



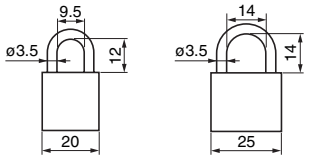
External accessories
Mechanical interlocking device

■ Dimensions, mm



Type	Breaker type SG series	Breaker type EG series	Dimensions, mm A (A')	B	C	D	E	F	G	H	J (J')	K	L	Mass (kg)
BZ-M160C	SG403C SG403RC	EG403C	355 (70)	257	215	0	94.5	126	54.5	171	44 (70)	215	38	0.56
BZ-M170C	SG603RC SG803RC	EG603C EG803C	500 (105)	275	290	20	94.5	126	54.5	220	70 (105)	243	38	0.64

Note: Applicable padlock(ø3.5) dimensions, mm



External operating handles

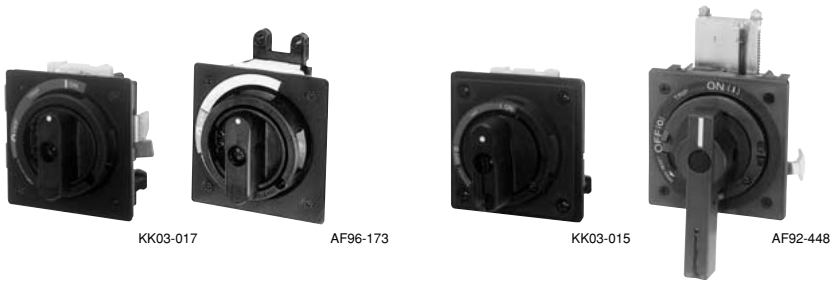
■ Description

Earth leakage circuit breaker handles are generally directly manual-operated but when mounted in motor control centers or on control panels they are sometimes required to be operated externally. To meet such applications FUJI offers the following three types of handles.

N type handle
This type has a knob handle directly attached to the breaker. It is easily fitted by cutting a hole in the panel, which is provided with a door interlock. They may be fitted to all breakers up to 800 ampere frame sizes. N type handles for SG/EG30AF to EG100AF are UL508 listed.

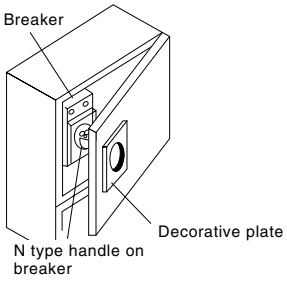
V type handle
The V type handle may be fitted to breakers of up to 800AF.
A separately sold extension shaft (BZ-VS1)provides distance adjustment between the handle and breaker.
Conformed to EN60947-1 isolation function.
Available for EN60204-1 power breaking device.

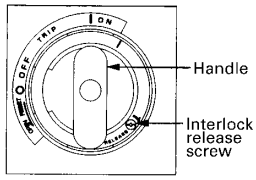
G type handle
The G type handle is mounted on the panel, and also has a door-interlock. G type handle with a cylinder lock key is also available on request.
G type handle with a padlockable handle lock plate is standard provided for circuit breaker of up to 225AF, and is optional for 400AF and larger.



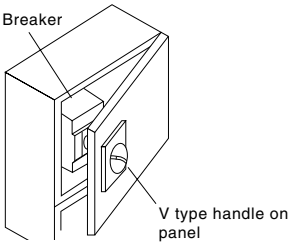
BZ6N10C **BZ-N□C** **N type handles**
BZ6V10C **V type handle**
BZ-G10B **G type handle**

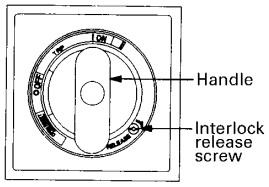
N type handles BZ-N□C



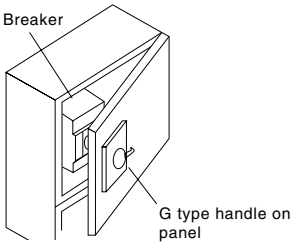


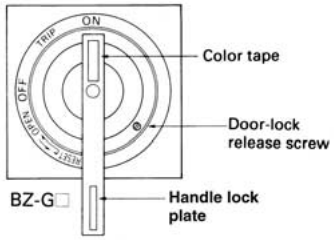
V type handles BZ6V□C





G type handles BZ-G10B





07

External accessories
Operating handles

● For α-TWIN breakers up to 800AF

N type handles

SG series	EG series	N type handle
SG33C SG53C SG53RC SG63C SG63RC	EG32AC, 33AC, 33C EG52AC, 53AC, 53C EG63C EG103AC, 102C, 103C	**BZ6N10C** UL508 (File No. E216772)
SG103C SG103RC	–	**BZ-N30C**
SG203C SG203RC	EG203C	**BZ-N40C**
SG403C SG403RC	EG403C	**BZ-N60C**
SG603RC SG803RC	EG603C EG803C	**BZ-N70C**

SG series	EG series	N type handle UL489 (File No. E93289)
SG53RCUL	EG102CUL, 103CUL	**BZ6N10CP**
SG103CUL	–	**BZ6N30CP**
SG203CUL	–	**BZ6N40CP**
SG403CUL	–	**BZ6N60CP**

Notes: • N type handles for up to 800AF can be padloked. Padlock is not provided.
• N type handles are not CE marked.

V type handles

SG series	EG series	V type handle
SG33C SG53C SG53RC SG63C SG63RC SG53RCUL	EG32AC, 33AC, 33C EG52AC, 53AC, 53C EG63C EG103AC, 102C, 103C EG102CUL, 103CUL	**BZ6V10C** UL489 (File No. E93289)
SG103C SG103CUL SG103RC	–	**BZ6V30C** UL489 (File No. E93289)
SG203C SG203CUL SG203RC	EG203C	**BZ6V40C** UL489 (File No. E93289)
SG403C SG403CUL SG403RC	EG403C	**BZ6V60C** UL489 (File No. E93289)
SG603RC SG803RC	EG603C EG803C	**BZ6V70C** UL489 (File No. E93289)

● For breakers other than α-TWIN series

N type handles

SG series	EG series	HG series	N type handle
–	–	HG53B HG103B	**BZ-N35B**
–	–	HG203B	**BZ-N50C**
–	–	HG403B	**BZ-N60C**
–	–	HG603B HG803B	**BZ-N70C**
SGa104A, 104H	–	–	**N-13EA**
SGa204A, 204H SGa404A	–	–	**N-23EA**
–	EG104A	–	**N-6EA**

V type handles

HG series	V type handle
HG203B	**BZ-V50C**
HG403B	**BZ-V60C**
HG603B, HG803B	**BZ-V70C**

G type handles

Type	Standard	Cylinder key type
HG53B, 103B	**BZ-G35C**	**BZ-G35C-K**
SGa104A, 104H	**G-12A**	**G-12A-K**
SGa204A, 204H SGa404A	**G-22A**	**G-22A-K**
EG104A	**G-5A**	**G-5A-K**

N type operating handles

■ Operating instructions

1. ELCB operation

- Close the door with the handle in the OFF position. Turn the handle to the ON position and the ELCB will be ON.
- Turn the handle to the OFF position and ELCB will be OFF.
- When the breaker trips, the handle moves to the TRIP position. To reset, move the handle to the RESET position.

2. Door locking

- The door cannot be opened when the handle is in the ON, OFF or TRIP position, and can be opened only when the handle is in the OPEN position.
- The breaker cannot be ON when the door is open.
- If it is necessary to open the door with the breaker closed, turn the doorclose lock release screw counterclockwise using a screwdriver.

3. Handle locking

The handle can be locked in either the ON or OFF position when a padlock (not supplied) is used. Pull out the handle lock plate and fit your padlock to the plate. If the breaker trips while it is locked in the ON position, the handle moves to the TRIP position.

■ Installation

● BZ6N10C to BZ-N40C

1. Drilling and cutting the door

Drill and cut the door. The dimensions for drilling and cutting are the same whether the ELCB is installed horizontally or vertically.

2. Preparing a base plate (Fig. 1)

Prepare a base plate to adjust breaker mounting position (base plate: not supplied). Front mounting, front connection type breakers can only be suitable for this handle. Drill the breaker mounting holes on the base plate.

3. Fitting the N-handle mechanism and ELCB to the base plate (Fig. 1)

Commonly tighten the N-handle body and ELCB to the base plate with the mounting screws. For N10C to N30C, tighten two mounting screws on a diagonal line, and for N40C, tighten four mounting screws. Assemble the driving unit so that the breaker handle engages the N handle arm. (Fig. 4)

4. Mounting the decorative plate

Mount the decorative plate and the retaining plate to the door with screws provided. (Fig. 2)

Adjust the position of the handle unit so that it does not tilt against the breaker. (Fig. 3)

Fig. 1

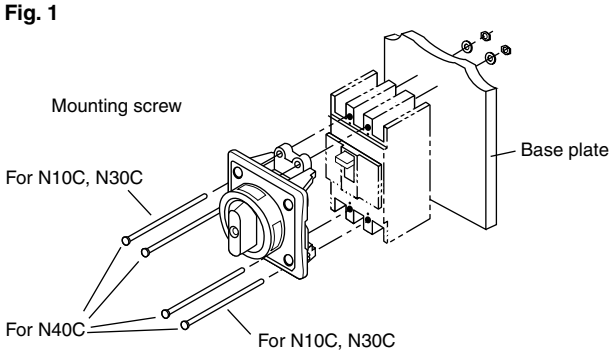


Fig. 2

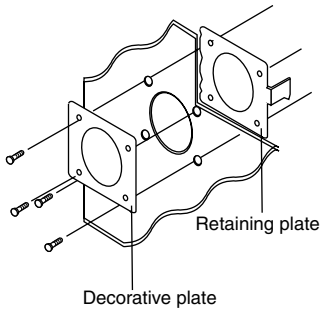


Fig. 3

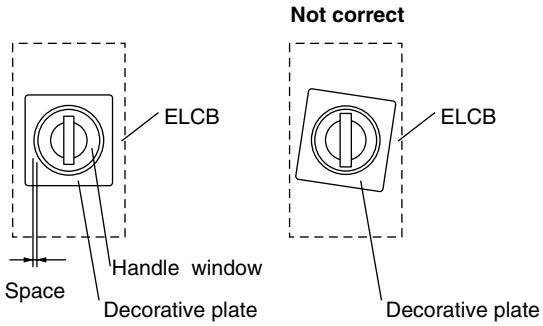
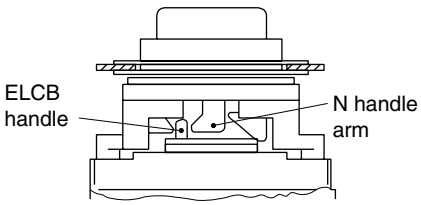


Fig. 4



07

External accessories
N type operating handles

■ Installation

● BZ-N60C, BZ-N70C

1. Drilling and cutting the door

Drill and cut the door. The dimensions for drilling and cutting are the same whether the ELCB is installed horizontally or vertically.

2. Preparing a base plate (Fig. 1)

Prepare a base plate to adjust breaker mounting position (base plate: not supplied). Front mounting, front connection type breakers can only be suitable for this handle. Drill the breaker mounting holes on the base plate.

3. Fitting the N-handle mechanism and ELCB to the base plate (Fig. 1)

Commonly tighten the N-handle body and ELCB to the base plate with the four mounting screws. Assemble the driving unit so that the breaker handle engages the N handle arm. (Fig. 4)

4. Mounting the decorative plate

Mount the decorative plate and the retaining plate to the door with screws provided. (Fig. 2)

Adjust the position of the handle unit so that it does not tilt against the breaker. (Fig. 3)

Fig. 1

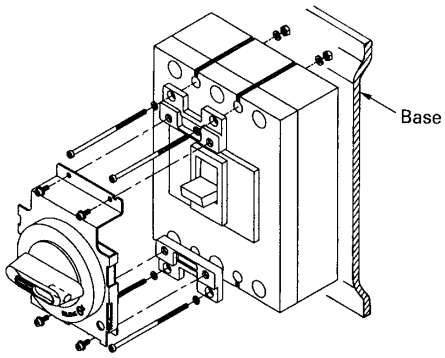


Fig. 2

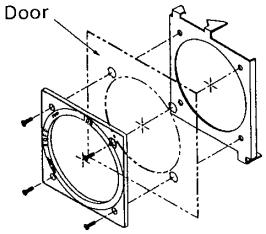


Fig. 3

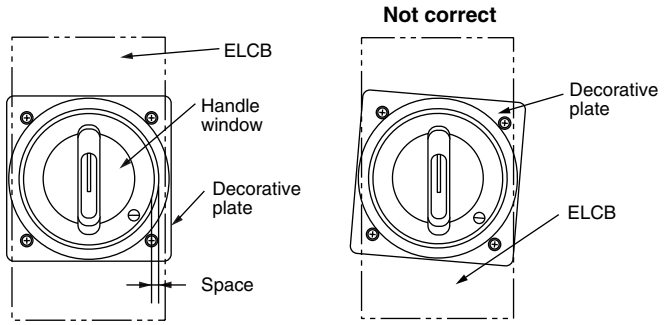
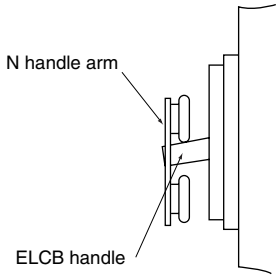


Fig. 4



■ Type number nomenclature

BZ – N□ C T – R

Installation
Blank: Vertically
R: Horizontally, right line side
L: Horizontally, left line side

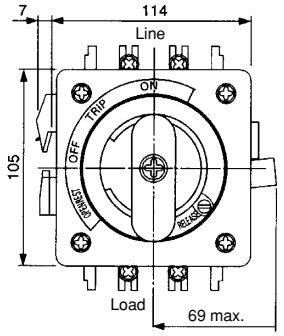
Door locking device
Blank: Provided
T: Not provided

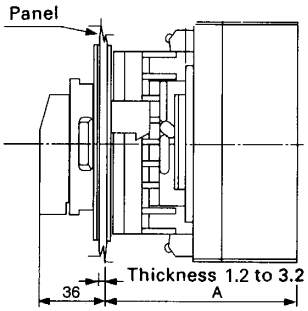
Basic type
BZ6N10C
BZ-N□C
N-□EA

Note:
To order an N handle for front-mounting rear connection breakers, add "-X" to the type number, for plug-in mounting breakers, add "-P" to the type number.

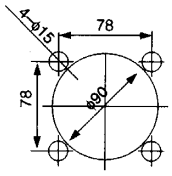
■ **Dimensions, mm**

BZ6N10C to BZ-N50C (Dust proof paking: BZ-NP-1C, optional)

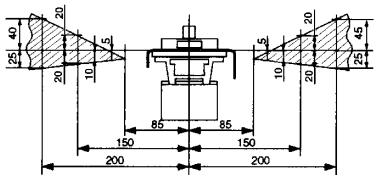




Door panel cutting

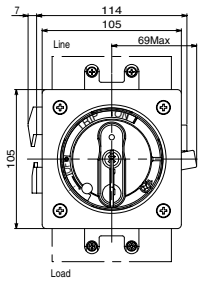


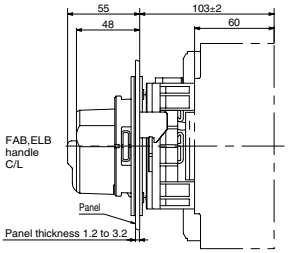
Door hinge installation area



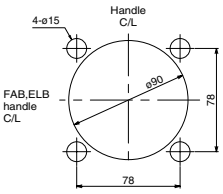
Install the door hinge in the shaded area.

BZ6N10CP, BZ6N30CP, BZ6N40CP (Dust proof paking: BZ-NP-1C, optional)

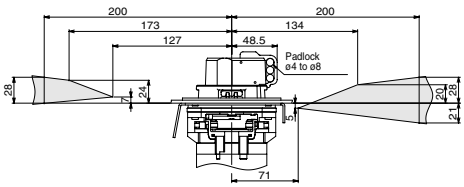




Door panel cutting



Door hinge installation area

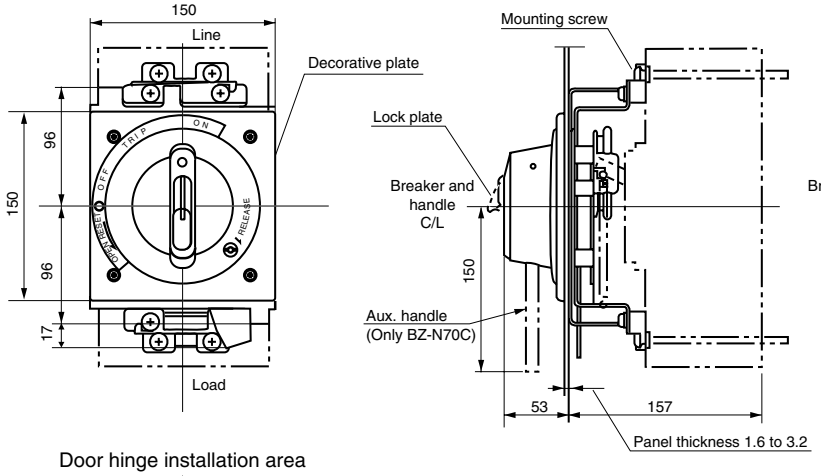


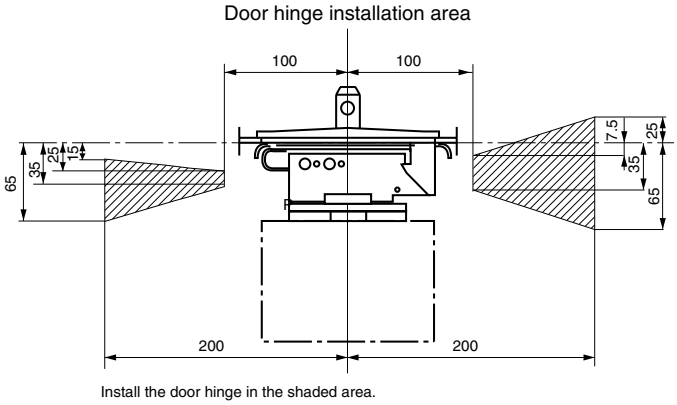
Breaker type	Handle type	A	Mounting screw	Mass (kg)
SG30C, SG50C, 50RC, SG60C, 60RC SG50RCUL EG30AC, 30C, EG50AC, 50C, EG60C EG100AC, 100C, 100CUL	BZ6N10C BZ6N10CP	103	M4 × 80	0.47
SG100C, 100RC, 100CUL	BZ-N30C BZ6N30CP	103	M4 × 85	0.56

Breaker type	Handle type	A	Mounting screw	Mass (kg)
EG225C SG225C, 225RC, 225CUL	BZ-N40C BZ-N40CP	103	M4 × 85	0.56
HG225B	BZ-N50C	142	M4 × 125	0.62

External accessories
N type operating handles

BZ-N60C, BZ-N70C, BZ-N60CP, BZ-N70CP (Dust proof packing: BZ-NP-2, optional)





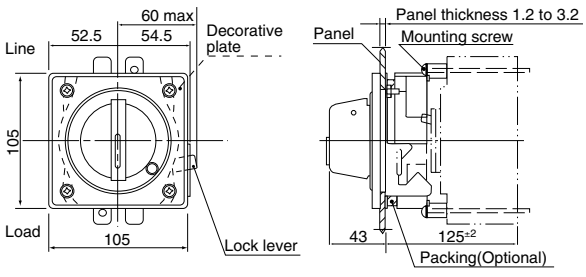
Notes:
1. The N type handles are used with front mounting front connection type breakers. They are normally installed vertically. However, it is possible to install them horizontally if required. In this case please specify so in your order.
(Example) Specify as follows:
BZ-N□C-R..... Installed horizontally, the line positioned on the right side.
BZ-N□C-L.....Installed horizontally, the line positioned on the left side.

2. Breakers use different size screws for the P-type (Plug-in) breakers

Breaker type	Handle type	Mounting screw	Mass (kg)
SG400C, SG400RC SG400CUL EG400C HG400B	BZ-N60C BZ-N60CP	M6 x 110	1.9
SG600RC, SG800RC EG600C, EG800C HG600B, HG800B	BZ-N70C BZ-N70CP	M6 x 110	1.9

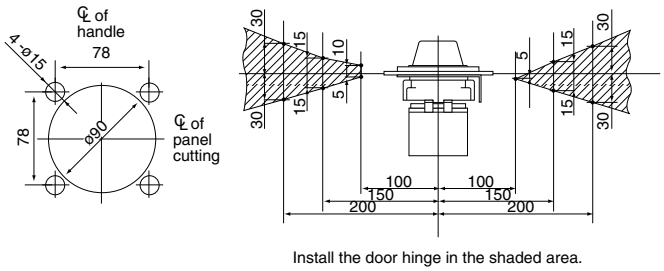
■ Dimensions, mm

BZ-N35B (Dust proof packing: BZ-NP-1, optional)



Mass: 0.45kg

Door panel cutting



Dimensions for refernce only. Confirm before construction begins.

Dimensions of N type handles for 4-pole: Contact FUJI.

V type operating handles, up to 225AF

■ Operating instructions

1. ELCB operation

- Close the door and turn the handle to the ON position and the breaker will be positioned at ON.
- When the breaker is interrupted automatically the handle will move to the TRIP position.
- To reset move the handle to the RESET position.

2. Door panel locking

- Turn the handle to the RESET position and the lock mechanism will be released thus allowing the door to be opened.
- The door cannot be opened when the breaker is positioned at ON.

3. Handle locking

The padlock can lock the handle in the OFF position.

- Locking ELCB with the door open : Fig.1
- Locking ELCB with the door closed : Fig.2

Pull out the lock plate and lock the padlock.

4. Interlock release

This type is provided with an interlock release screw. Turn this screw if it is necessary to open the door in the ON position. This release the lock and allows the door to be opened. When reclosing the door, make sure the handle of the breaker coincides with the position (ON or OFF) of the external handle position.

■ Installation

BZ6V10C to V50C

1. Drilling and cutting of the door panel

Drill and cut the door panel as shown in the drawing.

2. Mounting of the ELCB

The distance between the backside of the door panel and breaker mounting plate should be the dimension "H" shown in the drawing below.

H dimensions, mm (Fig.3)

- BZ6V10C: 105
- BZ6V30C: 105
- BZ6V40C: 105
- BZ-V50C: 144

3. Mounting the driving unit

- Set the breaker handle to the OFF position. Assemble the driving unit so that the breaker handle engages the V handle arm. (Fig.4)
- Secure the driving unit and breaker together to the mounting plate by tightening the four attached mounting screws. (Fig.5)

4. Mounting the handle unit

- Put the handle unit, cover holder, packing, and retainer in front of and behind the panel and tighten the screws temporarily as shown in Fig.6. Adjust the position of the handle unit so that it does not tilt against the breaker. (Fig.7)
- Put the handle of the handle unit in the OFF position and close the door. Check that the shaft engages the latch when the door closes. (Fig.8)

Fig. 1

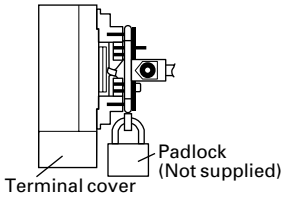


Fig. 2

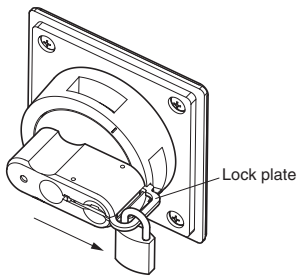


Fig. 3

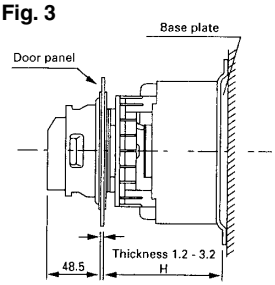


Fig. 4

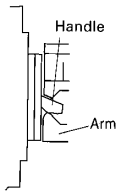


Fig. 5

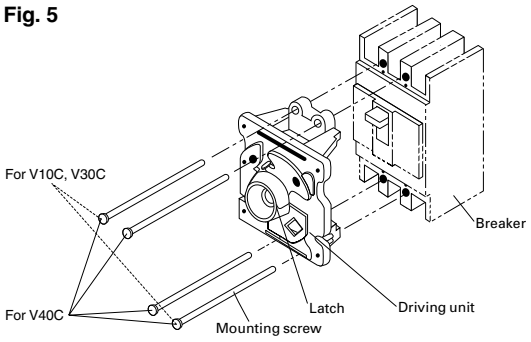


Fig. 6

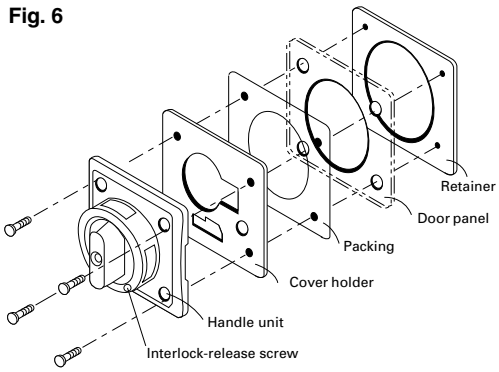


Fig. 7

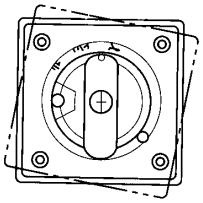
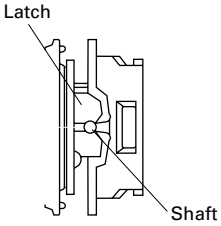


Fig. 8

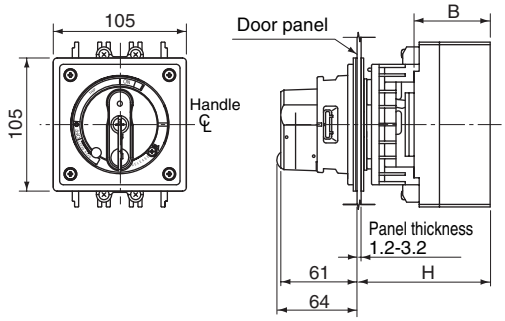


07

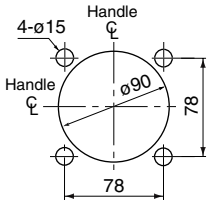
External accessories
V type operating handles

■ Dimensions, mm

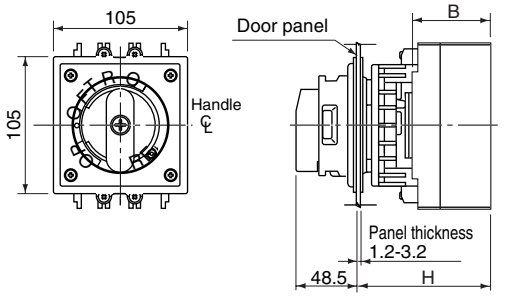
BZ6V10C, 6V30C, 6V40C



Door panel cutting

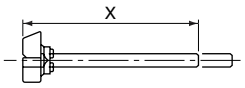


BZ-V40V, V50C



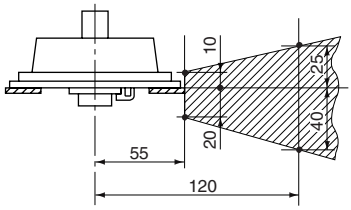
Optional shaft BZ-VS1

X = H - 96



The distance between the handle and breaker can be shortened by cutting the optional shaft.

Door hinge installation area



Install the door hinge in the shaded area.

Breaker type			Handle type	Standard type H	With the optional shaft (X=154)			Mounting screw	Mass (kg)
SG series	EG series	HG series			H	Area in which the hinge with H can be installed	B		
SG30C SG50C SG50RC SG60C SG60RC SG50RCUL	EG30AC EG30C EG50AC EG50C EG60C EG100AC EG100C EG100CUL	–	**BZ6V10C**	105	250	142 to 250	60	M4 x 80	0.64
SG100C SG100RC SG100CUL	–	–	**BZ6V30C**	105	250	142 to 250	60	M4 x 85	0.67
SG225C SG225RC SG225CUL	EG225C	–	**BZ6V40C**	105	250	142 to 250	60	M4 x 85	0.67
–	–	HG225B	**BZ-V50C**	144	289	181 to 289	99	M4 x 125	0.67

Notes:
- Handle protection degree IP54 (IEC60529, JIS C 0920)
- The handle cannot hold the door.

V type operating handles, 400AF to 800AF

■ Operating instructions

1. ELCB operation

- Close the door and turn the handle to the ON position and the ELCB will be positioned at ON.
- When the ELCB is interrupted automatically the handle will move to the TRIP position.
- To reset move the handle to the RESET position.

2. Door panel locking

- Turn the handle to the RESET position and the lock mechanism will be released thus allowing the door to be opened.
- The door cannot be opened when the breaker is positioned at ON.

3. Handle locking

The padlock can lock the handle in the OFF position.

- Locking ELCB with the door open: Fig. 1
- Locking ELCB with the door closed: FIg. 2

4. Interlock release

This type is provided with an interlock release screw. Turn this screw if it is necessary to open the door at the ON position. This releases the lock and allows the door to be opened. When reclosing the door, make sure the handle of the breaker coincides with the position (ON or OFF) of the external handle position.

■ Installation

BZ6V60C, 70C

1. Drilling and cutting of the door panel

Drill and cut the door panel as shown in the drawing.

2. Mounting of the ELCB

The distance between the backside of the door panel and ELCB mounting plate should be the dimension as shown in Fig.3.

3. Mounting the driving unit

- Set the ELCB handle to the OFF position. Assemble the driving unit so that the ELCB handle engages the V handle arm. (Fig. 4)
- Secure the driving unit and ELCB together to the mounting plate by tightening the four attached mounting screws. (Fig. 5)

4. Mounting the handle unit

- Put the handle unit, packing and retainer in front of and behind the door panel and tighten the screws temporarily as shown in Fig.6. Adjust the position of the handle unit so that it does not tilt against the ELCB. (Fig. 7)
- Put the handle of the handle unit at OFF position and check the latch engages the keeper and close the door while holding the handle unit cover by hand.
  Final tightening the screws should be performed as keep the engaging position. (Fig. 8)

Fig. 1

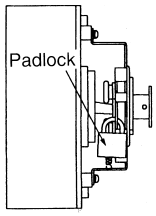


Fig. 2

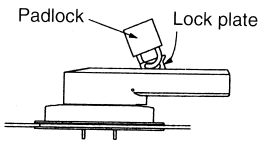


Fig. 3

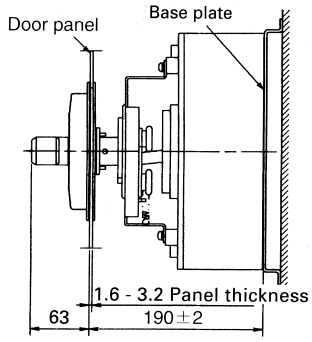


Fig. 4

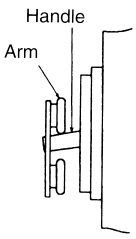


Fig. 5

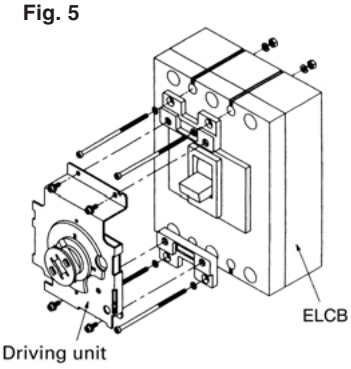


Fig. 6

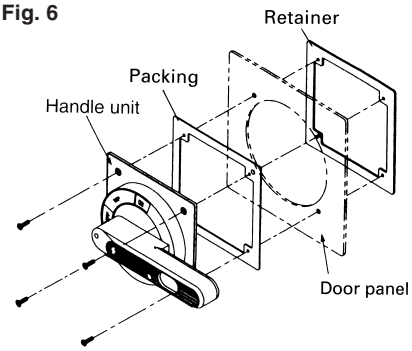


Fig. 7

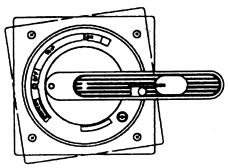
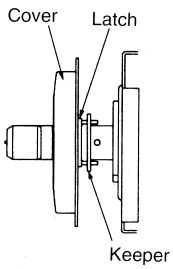


Fig. 8



■ Type number nomenclature

BZ6V □ C – □

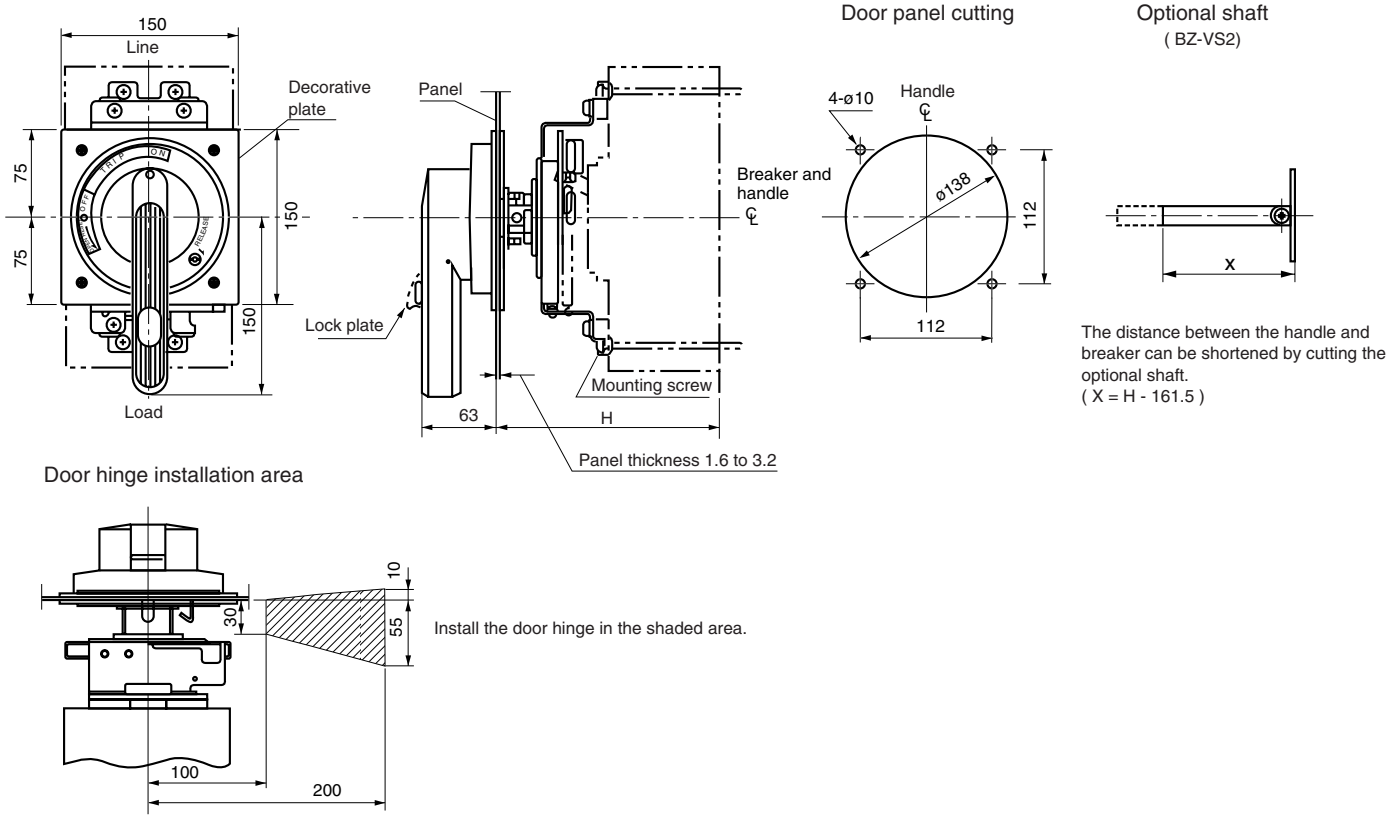
Mounting
Blank: Front mounting, front connection
X: Front mounting, rear connection
P: Plug-in mounting

Basic type
BZ6V□C
BZ-V□C

Note:
To order a V handle for front-mounting rear connection breakers, add "-X" to the type number; for plug-in mounting breakers, add "-P" to the type number.

External accessories
V type operating handles

■ Dimnsions, mm
BZ6V60C, 6V70C, BZ-V60C, V70C



Breaker			Handle type	Standard type	With the optional shaft		Mass (kg)
SG series	EG series	HG series		H	H	Area in which the hinge with H can be installed	
SG400C SG400RC SG400CUL	EG400C	–	**BZ6V60C**	190±2	250±2	202 to 250	2.2
–	–	HG400B	**BZ-V60C**				2.2
SG600RC SG800RC	EG600C EG800C	–	**BZ6V70C**				2.2
–	–	HG600B HG800B	**BZ-V70C**				2.2

Notes:
- Handle protection degree IP54 (IEC60529, JIS C0920).
- The handle cannot hold the door.
- Breakers use different size screws for the X type (rear connection) or P-type (Pulg-in) breakers.

G type operating handles

■ Operating instructions

1. ELCB operation

- Close the door and turn the handle to the ON position and the breaker will be positioned at ON.
- When the breaker is interrupted automatically the handle will move to the TRIP position.
- To reset move the handle to the RESET position.

2. Door panel locking

- Turn the handle to the OPEN position and the lock mechanism will be released thus allowing the door to be opened.
- The door cannot be opened when the breaker is positioned at ON.

3. Handle locking

The cylinder key can lock the handle in either the ON or OFF position. Even if it is locked at the ON position when the breaker trips, the handle will indicate TRIP.

Locked Unlocked

4. Interlock release

This type is provided with an interlock release screw. Turn this screw if it is necessary to open the door at the ON position. This releases the lock and allows the door to be opened. When reclosing the door make sure the handle of the breaker coincides with the position (ON or OFF) of that of the external handle.

■ Type number nomenclature

BZ–G□C–K

Key
Blank: Without key
K: With cylinder key
Q: With padlocking device

Basic type
BZ-G□C
G-□A

■ Installation

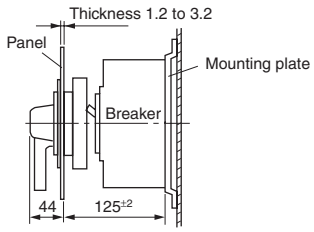
BZ–G35C

1. Drilling and cutting of the door panel

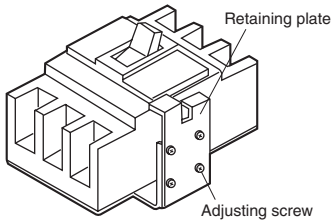
Drill and cut the door panel as shown in the drawing.

2. Mounting of the ELCB

The distance between the backside of the door panel and breaker mounting plate should be 125mm as shown in the drawing below.

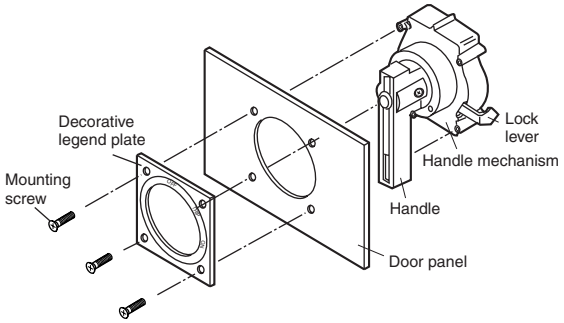


Mount the breaker and the retaining plate commonly to the panel board.



3. Fitting decoratire plate and handle

Fit the decorative plate and handle mechanism to the door panel by means of the mounting screws as shown in the illustration.



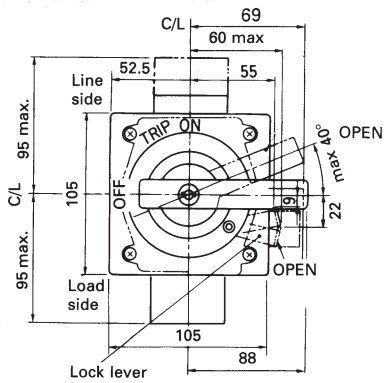
4. Adjusting the retaining plate

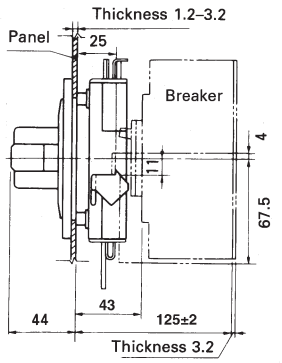
Adjust the height of the retaining plate by means of adjusting screws.

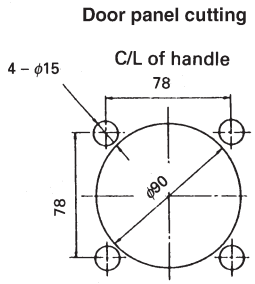
External accessories
G type operating handles

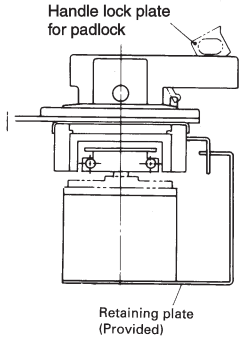
■ Dimensions, mm

BZ-G35C, BZ-G35C-K



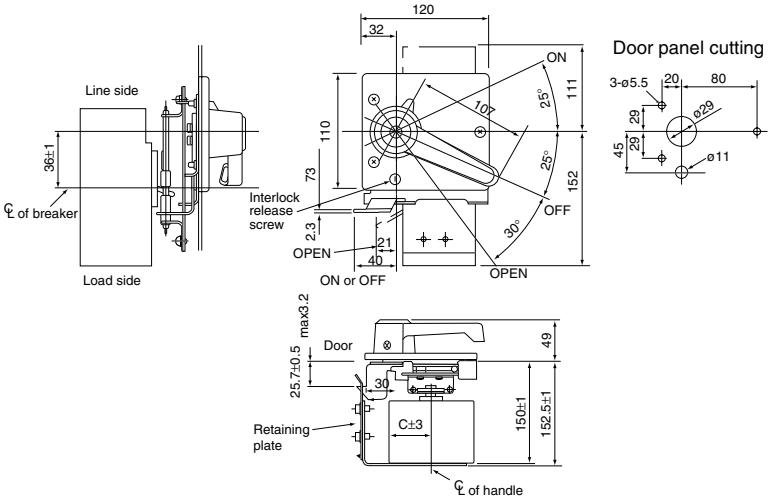






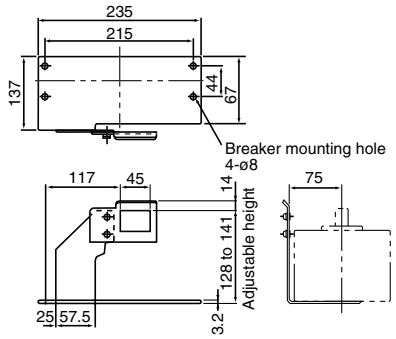
Mass: 1.2kg

G-22A, G-22A-K



Retaining plate and supporter (Sold separately)

H-2



Pressed steel enclosures

■ Description

BZ-type enclosures are available in three types — two with V and G-type handle which allows the operation from the outside and other with the operating handle of the breaker extending from it to allow it to be directly switched ON or OFF from outside the enclosure.
Enclosures with V and G-type handles are provided with a door interlocking mechanism which prevents the door from being opened in the ON condition.
Knockout holes for wiring use are provided as shown in the diagram.
(For G-type handles, contact FUJI.)


AF90-780


AF96-175


CP97-2636

Standard **Dustproof** **Rainproof**

■ Type of enclosures

Breaker type			Enclosure		
SG series	EG series	HG series	Standard	With V type handle Dustproof IP40	Rainproof IP54 *
–	EG32AC EG52AC	–	**BZ6C10C2**	**BZ6CV10C**	**BZ6CW10C**
SG33C SG53C, SG53RC SG63C, SG63RC	EG33AC, EG33C EG53AC, EG53C EG63C	–	**BZ6C10C3**	**BZ6CV10C**	**BZ6CW10C**
–	EG102C EG103C, EG103AC	–	**BZ6C25C3**	**BZ6CV25C**	**BZ6CW25C**
SG103C, SG103RC	–	–	**BZ6C30C3**	**BZ-CV30C**	**BZ-CW30C**
–	–	HG53B HG103B	**BZ-C35B**	**–**	**–**
SG203C, SG203RC	EG203C	–	**BZ-C40B**	**BZ-CV40C**	**BZ-CW40C**
–	–	HG203B	**BZ-C50B**	**–**	**–**
SG403C, SG403RC	EG403C	HG403B	**BZ-C60B**	**BZ-CV60C**	**BZ-CW60C**
SG603RC SG803RC	EG603C EG803C	HG603B HG803B	**BZ-C70B**	**BZ-CV70C**	**–**

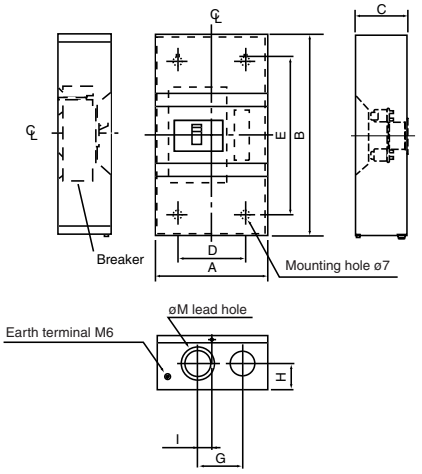
■ Ordering information

Specify the following:
1. Type number of enclosures

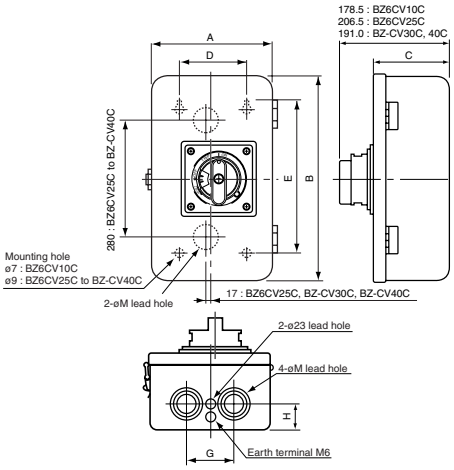
External accessories
Steel enclosures

■ Dimensions, mm

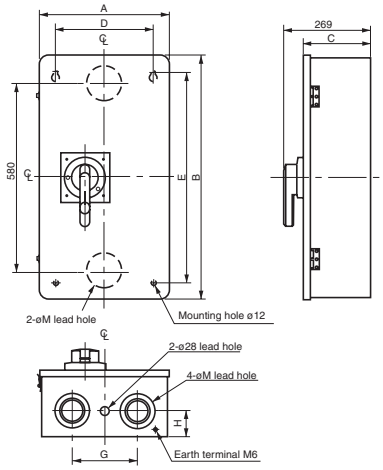
Standard



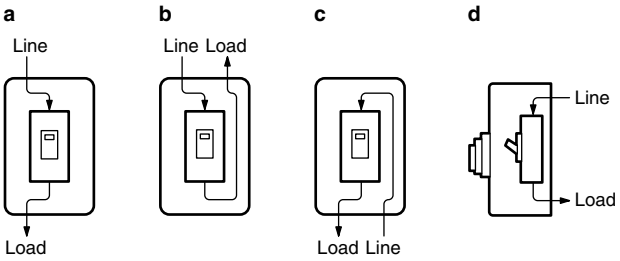
With V type handle
BZ6CV10C to BZ-CV40C



BZ-CV60C, 70C



■ Connection method diagrams

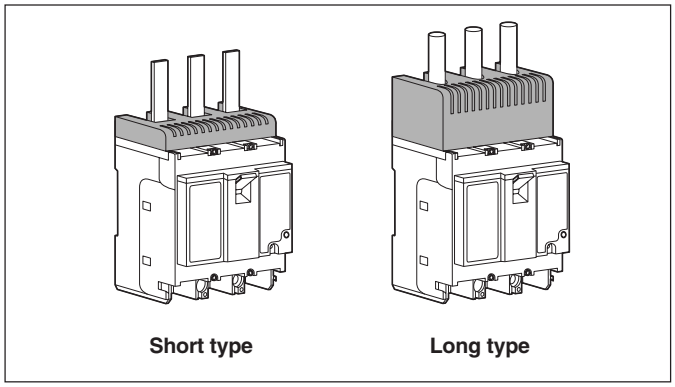


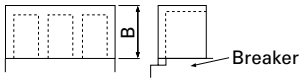
Type	Connection	A	B	C	D	E	G	H	I	M (Ø)	Mass (kg)
BZ6C10C2	a, b, c	135	225	95	90	170	65	40	25	22, 35	1.35
BZ6C10C3											1.35
BZ6C25C3		200	320	95	120	240	80	40	25	30, 45	2.31
BZ6C30C3		200	320	95	120	240	80	40	25	30, 45	2.37
BZ-C35B		200	320	120	120	240	80	40	25	30, 45	2.68
BZ-C40B		200	360	95	120	280	80	45	25	40, 55	2.53
BZ-C50B		200	360	140	120	280	80	45	25	40, 55	3.09
BZ-C60B		400	750	175	300	650	200	80	100	63, 78, 106	19.3
BZ-C70B											19.3
BZ6CV10C		180	300	114	100	220	70	40	100	28, 35, 43	0.64
BZ6CV25C	a, b, c, d	250	400	142	170	320	110	50	100	35, 52, 63	6.40
BZ-CV30C											6.40
BZ-CV40C											6.53
BZ-CV60C		400	750	206	300	650	200	80	100	63, 78, 106	21.7
BZ-CV70C											21.7

Terminal covers

■ **Description**
These terminal covers are used as guards to prevent accidental touch with live line terminations.
These terminal covers can be fitted to either line or load side.

● **Up to 225AF**
Short type BZ-TS
• Snap-on fitting
• Transparent and black (BZ6TS10C only), sealing possible
Long type BZ-TB
• Crimp connection use
• Transparent and black (BZ6TB10C only), sealing possible
● **400AF and larger**
Long type BZ-TB
• Transparent





Packing quantity : 2 pcs.

Breaker type SG series	EG series	HG series	Terminal cover Short type	B dimension (mm)	Mass (g)	Terminal cover Long type	B dimension (mm)	Mass (g)
–	EG32AC EG52AC	–	**BZ6TS10C2** (Black) **BZ6TSH10C2** (Transparent)	10	25	**BZ6TB10C2** (Black) **BZ6TBH10C2** (Transparent)	40	68
SG33C SG53C, SG53RC SG63C, SG63RC	EG33AC, EG33C EG53AC, EG53C EG63C EG102C EG103AC, EG103C	–	**BZ6TS10C3** (Black) **BZ6TSH10C3** (Transparent)	10	32	**BZ6TB10C3** (Black) **BZ6TBH10C3** (Transparent)	40	87
SG103C, SG103RC	–	–	**BZ-TS30B-3**	10	43	**BZ-TB30B-3**	40	86
–	–	HG53B HG103B	**BZ-TS35B**	10	60	**BZ-TB35B**	40	122
SG203C, SG203RC	EG203C	–	**BZ-TS40B**	10	60	**BZ-TB40B**	50	107
–	–	HG203B	**BZ-TS50B**	10	76	**BZ-TB50B**	40	175
SG403C, SG403RC	EG403C	HG403B	**–**	–	–	**BZ-TB60B**	116	549
SG603RC SG803RC	EG603C EG803C	HG603B HG803B	**–**	–	–	**BZ-TB70B**	135	568

Breaker type SG series	Terminal cover Long type	B dimension (mm)	Mass (g)
SGa104A, SGa104H	**A1-14**	28	60

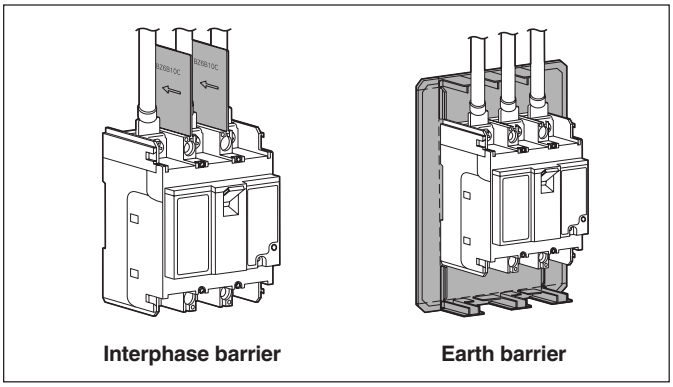
UL Listed

Breaker type SG series	EG series	Terminal cover Short type	Mass (g)	Terminal cover Long type	Mass (g)	Terminal cover For flat terminal	Mass (g)
SG53RCUL	EG102CUL EG103CUL	**BZ6TS10C3U** (Black)*	33.5	**BZ6TB10C3U** (Black)	38.5	**–**	–
SG103CUL		**BZ-TS30B-3**	43	**BZ-TB30B-3**	86	**BZ-TL30B-3**	110
SG203CUL		**BZ-TS40B**	60	**BZ-TB40B**	107	**BZ-TL40B**	150
SG403CUL		**–**	–	**BZ-TB60B**	549	**–**	–

Note: * Standard-provided

External accessories
Insulation barriers

Insulation barriers



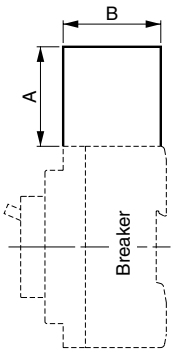
■ Description

The interphase barriers are provided on frame size of 30AF to 400AF breakers for front mounting. The barriers are installed in the molded slots between terminals.
The earth barrier is used to increase the insulation with the mounting plate surface when two crimp terminals are wired. Installation of these barriers after wiring is possible even when an external accessory is installed.

● Interphase barrier

Breaker type			Interphase barrier				
			Type	Dimensions, mm		Packing quantity	Mass (g)
SG series	EG series	HG series		A	B		
–	EG32AC EG52AC EG102C	–	**BZ6B10C**	50	49	4	23
SG33C SG53C, 53RC SG63C, 63RC	EG33AC, 33C EG53AC, 53C EG63C EG103AC, 103C	–					
SG103C, 103RC	–	–	**BZ-B30B**	50	51	4	29
SG103CUL	–	–	**BZ6B30CU**	50	58	4	31
–	–	HG53B HG103B	**BZ-B35B**	50	73	4	38
SG203C, 203RC	EG203C	–	**BZ-B40B**	80	52	4	48
SG203CUL	–	–	**BZ6B40CU**	80	58.5	4	52
–	–	HG203B	**BZ-B50B**	80	90.5	4	82
SG403C, 403RC, 403CUL SG603RC SG803RC	EG403C EG603C EG803C	HG403B HG603B HG803B	**B-43A**	105	95	4	131
SGa204A, 204H SGa404A	–	–	**B-44A**	105	95	6	195

Interphase barrier

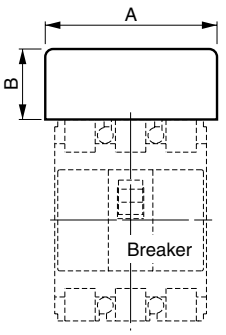


● Earth barrier

Breaker type			Earth barrier				
			Type	Dimensions, mm*		Packing quantity	Mass (g)
SG series	EG series	HG series		A	B		
–	EG32AC EG52AC	–	**BZ6BL10C2**	100 (50, 75)	43 (30)	2	33
SG33C SG53C, 53RC SG63C, 63RC	EG33AC, 33C EG53AC, 53C EG63C EG102C EG103AC, 103C	–	**BZ6BL10C3**	125 (75, 100)	43 (30)	2	41
SG103C, 103RC	–	HG53B HG103B	**BZ-BL35B**	130 (90, 110)	70 (40)	2	16
SG203C, 203RC	EG203C	–	**BZ-BL40B**	190 (105, 147)	100 (50, 72)	2	48
–	–	HG203B	**BZ-BL50B**	190 (105, 147)	100 (50, 72)	2	48

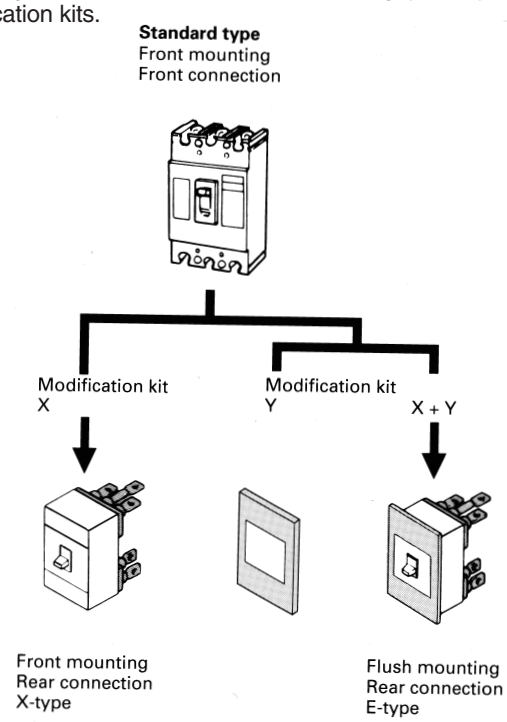
Note: * The value in parentheses is the dimensions after the barrier is cut.

Earth barrier



Mounting modification kits

Standard type breakers are front mounting front connections. The standard breaker can easily be modified to become front mounting rear connection and flush mounting types by using the modification kits.



Modification kits

● **For front mounting, front connection** (Flat terminal)

Breaker type	Kit type For 2-pole	For 3-pole
SG30C, 50C, 50RC EG30C, 30AC, 50AC, 50C	**BZ6S10C502**	**BZ6S10C503**
SG60C, 60RC EG60C,100AC, 100C	–	**BZ6S10C1003**
SG100C, 100RC HG50B, 100B	–	**BZ-S35B-1003**
SG225C, 225RC EG225C HG225B	–	**BZ-S50B-2253**

Note: BZ6S10C502 for EG102C/50, BZ6S10C503 for EG103C/50

UL Listed/Flat terminals

Breaker type	Kit type
SG53RCUL	**BZ-SU20B**
EG102CUL, 103CUL	**BZ-SU25B**
SG103CUL	**BZ6SU35B**
SG203CUL	**BZ6SU50B**

UL Listed/Block terminals

Breaker type	Kit type
SG103CUL	**BZ6TA100**
SG203CUL	**BZ6TA225B**

● **For front mounting, rear connection** (X type)

Breaker type	Kit type For 2-pole	For 3-pole
SG30C, 50C, 50RC EG30C, 30AC, 50AC, 50C	**BZ6X10C502**	**BZ6X10C503**
SG60C, 60RC EG60C,100AC, 100C	–	**BZ6X10C1003**
SG100C, 100RC	–	**BZ-X30C1003**
SG225C, 225RC EG225C	–	**BZ-X40B-2253**
SG400C, 400RC EG400C	–	**BZ-X60B-4003**
HG50B, 100B	–	**BZ-X35B-1003**
HG225B	–	**BZ-X50B-2253**

Note: BZ6X10C502 for EG102C/50, BZ6X10C503 for EG103C/50

● **For flush mounting, rear connection** (E type)

Breaker type	Kit type For 2-pole	For 3-pole
SG30C, 50C, 50RC EG30C, 30AC, 50AC, 50C	**BZ6E10C502**	**BZ6E10C503**
SG60C, 60RC EG60C,100AC, 100C	–	**BZ6E10C1003**
SG100C, 100RC	–	**BZ6E30C1003**
SG225C, 225RC EG225C	–	**BZ6E40B2253**
HG50B, 100B	–	**BZ-E35B-1003**
HG225B	–	**BZ-E50B-2253**
SG400C, 400RC EG400C	–	**BZ-E60B-4003**

● **For flush mounting, top and bottom connection** (Y type)

Breaker type	Kit type For 2-pole	For 3-pole
SG30C, 50C, 50RC EG30C, 30AC, 50AC, 50C	**BZ6Y10C502**	**BZ6Y10C503**
SG60C, 60RC EG60C,100AC, 100C	–	**BZ6Y10C1003**

Accessories
Mounting modification kits and padlocking device

■ Mass

For front mounting, front connection (S type)		For front mounting, rear connection (X type)		For flush mounting, rear connection (E type)	
Kit type	Mass (kg)	Kit type	Mass (kg)	Kit type (g)	Mass (kg)
BZ6S10C502	0.1	BZ6X10C502	0.3	BZ6E10C502	0.44
BZ6S10C503	0.15	BZ6X10C503	0.43	BZ6E10C503	0.59
BZ6S10C1003	0.35	BZ6X10C1003	0.43	BZ6E10C1003	0.59
BZ-S35B-1003	0.35	BZ-X30C-1003	0.63	BZ6E30C1003	1.07
BZ-S50B-2253	0.5	BZ-X40B-2253	0.77	BZ6E40B2253	1.42
BZ-SU20B	0.1	BZ-X60B-4003	2.71	BZ-E35B-1003	1.11
BZ-SU25B	0.2				
BZ6SU35B	0.2	BZ-X35B-1003	0.63	BZ-E50B-2253	1.27
BZ6SU50B	0.25				
		BZ-X50B-2253	0.80	BZ-E60B-4003	3.67

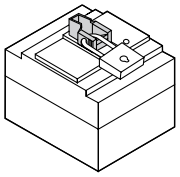
■ **Padlocking device** (UL not approved)

Breaker handles can be fitted with locks. The handle can be locked at either the ON or OFF position. If an overcurrent flows, the breaker trips even when the handle is kept locking. Add the suffix Q1 or Q2 to the ELCB type number to order the padlocking device (not sold separately).

Q1 : Cap type Q2 : Plate type

Applicable padlocking device

SG series	EG series	HG series
SG30C	EG30C	HG50B
SG50C	EG30AC	HG100B
SG50RC	EG50C	HG225B
SG60C	EG50AC	
SG60RC	EG60C	HG400B
SG100C		HG600B
SG100RC	EG100C	HG800B
SG225C	EG100AC	
SG225RC	EG225C	
SG400C	EG400C	
SG400RC	EG600C	
SG600RC	EG800C	
SG800RC		



Cap type Q1*

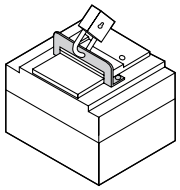


Plate type Q2

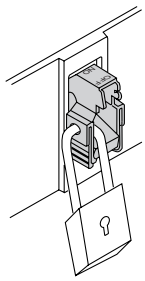
A padlock is not provided.

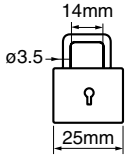
■ Handle locking covers

Breaker type	Handle locking cover
SG30C, 50C, 50RC, 50RCUL, 60C, 60RC EG30AC, 30C, 50AC, 50C, 60C, 100AC, 100C, 100CUL	**BZ6L10C**
SG100C, 100RC, 100CUL	**BZ6L30C**
SG225C, 225RC, 225CUL EG225C	**BZ6L40C**
HG225B	**BZ-L50B**
SG400C, SG400RC, SG400CUL, SG600RC, SG800RC EG400C, EG600C, EG800C	**BZ-L70B**

Handle locking cover is required when using the Q1 type for SG and EG series of 30 to 225AF.

Handle locking cover**: BZ6L10C**

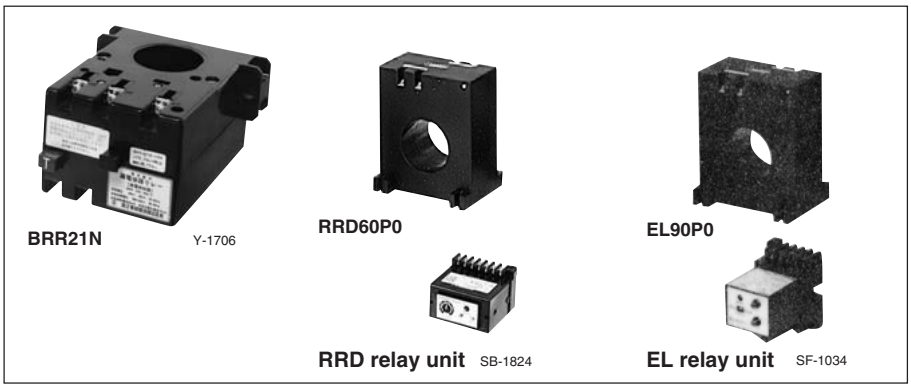




Earth leakage protective relays

■ Description

In the earth leakage relay the breaking mechanism is omitted from the ELCB, and the ZCT and earth leakage tripping device are integrated into a common body. These relays are available in both instantaneous and time-delay versions. Generally these relays are used in conjunction with MCCB's, ACB's and motor starters.



Relay and sensor–Unit type
BRR/Pass-through type

- Instantaneous trip
- Solid-state tripping device
- Sensitive current: 30, 100, 200mA 500mA
- Control voltage: Up to 415V AC

Relay and sensor–Separate type
RRD/Pass-through type

- Time-delay trip
- Solid-state tripping device
- Sensitive current: 100/200, 200/500mA 500/1000mA
- Control voltage: Up to 415V AC

EL/Pass-through type

- Instantaneous or time-delay trip
- Solid-state tripping device
- Sensitive current: 30, 100/200, 200/500mA 500/1000mA
- Control voltage: Up to 415V AC
- Easily modified from front mounting to flush mounting

■ Selection guide

● BRR(Unit type)/Solid-state tripping device

Type		BRR01N	BRR09N	BRR11N	BRR19N	BRR21N	BRR29N	BRR22N	BRR25N
Sensor hole	(mm)	ø10		ø25		ø40			
Main circuit voltage	(V AC)	Max. 600							
Control voltage *	(V AC)	120, 240		120, 240		120, 240, 415			
Rated sensitive current	(mA)	30	100	30	100	30	100	200	500
Mass	(kg)	0.12		0.2		0.52			

Type		BRR42H	BRR45H
No. of poles		2, 3, 4	
Main circuit voltage	(V AC)	Max. 600	
Rated current	(A)	400	
Control voltage *	(V AC)	120, 240, 415	
Rated sensitive current	(mA)	200	500
Mass	(kg)	2-pole: 3.0, 3-pole: 3.3, 4-pole: 3.6	

● RRD(Separate type)/Solid-state tripping device

Type		RRD6AZ□		RRD8AZ□		RRD10AZ□		RRD12AZ□		RRD25P0	RRD40P0	RRD60P0	RRD90P0	RRD120P0
No. of poles or sensor hole	(mm)	3	4	3	4	3	4	3	4	ø25	ø40	ø60	ø90	ø120
Main circuit voltage	(V AC)	Max. 600								Max. 600				
Rated current	(A)	600		800		1000		1200		–				
Control voltage *	(V AC)	120, 240, 415								120, 240, 415				
Rated sensitive current (mA)	Time-delay type 0.2 to 2 sec. adjustable	100/200, 200/500, 500/1000								100/200, 200/500, 500/1000				
Mass/Relay+Sensor	(kg)	8.1	12.0	9.3	14.6	12.0	16.0	15.7	25.4	0.7	1.2	1.8	2.6	7.0

Note: * 100/110V or 200/220V is available.

■ Selection guide

● EL (Separate type)/Solid-state tripping device

Type			EL25P0	EL40P0	EL60P0	EL90P0	EL120P0
Sensor hole		(mm)	ø25	ø40	ø60	ø90	ø120
Main circuit voltage		(V AC)	Max. 600				
Control voltage		(V AC)	100/200, 120/240, 415				
Rated sensitive current (mA)	Instantaneous		30, 100/200, 200/500 500/1000			100/200, 200/500 500/1000	
	Time-delay type		100/200, 200/500, 500/100 (Tripping time: 0.3 or 0.8 sec. fixed)				
Mass/Relay+Sensor (kg)			0.3	0.85	1.45	2.25	6.6

■ Auxiliary contact ratings

Type		Contact arrangement	Thermal current	Making current	Breaking current (cos ø=0.3–0.4) 415V AC	240V AC	120V AC	(L/R=7ms) 24V DC
BRR01N, 09N		1NO *	3A	10A (at 240V AC)	–	1A	1A	–
11N, 19N		SPDT	3A		–	1A	1A	–
BRR21N, 29N, 22N, 25N BRR42H, 45H		SPDT	5A	10A (at 240V AC)	2.5A	5A	5A	2A
EL	120/240V AC	SPDT	5A	10A	–	3A	3A	2A
	415V AC	1NO	3A	6A	2A	3A	3A	2A
RRD	120/240V AC	2PDT	5A	10A	–	3A	3A	2A
	415V AC	SPDT	5A	6A	2.5A	3A	3A	2A

Note: * Also available with SPDT contact.

■ Type number nomenclature, BRR unit type

BRR 2 1 N-0 24 S

Protection
S : Without enclosure (standard)

Control voltage (AC)
1 : 100/110V 12 : 120V
2 : 200/220V 2 : 240V
4 : 415V

Poles
N-0 : Pass-through type
H-2 : 2-pole with conductor and terminal assembly
H-3 : 3-pole with conductor and terminal assembly
H-4 : 4-pole with conductor and terminal assembly

Sensitive current
1 : 30mA
9 : 100mA
2 : 200mA
5 : 500mA

Rated current
0 : Pass-through type ø10
1 : Pass-through type ø25
2 : Pass-through type ø40
4 : 400A

Basic type

■ Specifications/BRR type

Series	Rated current *1 (A)	Sensor hole or No. of poles	Rated sensitive current *2 (mA)	Control voltage *3 (V AC)	Tripping time (sec)	Type
BRR	2-wire: 37 3-wire: 37 4-wire: 27	ø10mm	30	120 240	0.1	**BRR01N-012S** **BRR01N-024S**
			100	120 240		**BRR09N-012S** **BRR09N-024S**
	2-wire: 162 3-wire: 115 4-wire: 115	ø25mm	30	120 240		**BRR11N-012S** **BRR11N-024S**
			100	120 240		**BRR19N-012S** **BRR19N-024S**
	2-wire: 344 3:wire: 298 4-wire: 257	ø40mm	30	120 240 415		**BRR21N-012S** **BRR21N-024S** **BBR21N-04S**
			100	120 240 415		**BRR29N-012S** **BRR29N-024S** **BBR29N-04S**
			200	120 240 415		**BRR22N-012S** **BRR22N-024S** **BBR22N-04S**
			500	120 240 415		**BRR25N-012S** **BRR25N-024S** **BBR25N-04S**
	400	2-pole	200	120 240 415	0.1	**BRR42H-212S** **BRR42H-224S** **BBR42H-24S**
			500	120 240 415		**BRR45H-212S** **BRR45H-224S** **BBR45H-24S**
		3-pole	200	120 240 415		**BRR42H-312S** **BRR42H-324S** **BBR42H-34S**
			500	120 240 415		**BRR45H-312S** **BRR45H-324S** **BBR45H-34S**
		4-pole	200	120 240 415		**BRR42H-412S** **BRR42H-424S** **BBR42H-44S**
			500	120 240 415		**BRR45H-412S** **BRR45H-424S** **BRR45H-44S**

Notes: *1 Using IV 600V cable.
*2 Non-tripping current is 0.5 times sensitive current.
*3 100/110V or 200/220V is available.

■ Wire size

ZCT sensing hole diameter and applicable cable(IV 600V)

Diameter (mm)	Wire 2-wire	3-wire	4-wire
10	3.5mm^2	3.5mm^2	2mm^2
25	38mm^2	22mm^2	22mm^2
40	125mm^2	100mm^2	80mm^2
60	325mm^2	200mm^2	200mm^2
90, 120	500mm^2	500mm^2	500mm^2

Conforming to JIS C 3307.

■ Specifications/RRD type, with conductors

Series	Rated current (A)	No. of poles	Rated sensitive current *1 (mA)	Control voltage *2 (V AC)	Tripping time (sec)	Type
RRD	600	3-pole: 3 4-pole: 4 Replace the□ mark in the type number by the code shown below.	100/200	120 240 415	0.2–2 adjustable	**RRD6AZ□-1/2-V12** **RRD6AZ□-1/2-V24** **RRD6AZ□-1/2-V4**
			200/500	120 240 415		**RRD6AZ□-2/5-V12** **RRD6AZ□-2/5-V24** **RRD6AZ□-2/5-V4**
			500/1000	120 240 415		**RRD6AZ□-5/10-V12** **RRD6AZ□-5/10-V24** **RRD6AZ□-5/10-V4**
	800		100/200	120 240 415		**RRD8AZ□-1/2-V12** **RRD8AZ□-1/2-V24** **RRD8AZ□-1/2-V4**
			200/500	120 240 415		**RRD8AZ□-2/5-V12** **RRD8AZ□-2/5-V24** **RRD8AZ□-2/5-V4**
			500/1000	120 240 415		**RRD8AZ□-5/10-V12** **RRD8AZ□-5/10-V24** **RRD8AZ□-5/10-V4**
	1000		100/200	120 240 415		**RRD10AZ□-1/2-V12** **RRD10AZ□-1/2-V24** **RRD10AZ□-1/2-V4**
			200/500	120 240 415		**RRD10AZ□-2/5-V12** **RRD10AZ□-2/5-V24** **RRD10AZ□-2/5-V4**
			500/1000	120 240 415		**RRD10AZ□-5/10-V12** **RRD10AZ□-5/10-V24** **RRD10AZ□-5/10-V4**
	1200		100/200	120 240 415		**RRD12AZ□-1/2-V12** **RRD12AZ□-1/2-V24** **RRD12AZ□-1/2-V4**
			200/500	120 240 415		**RRD12AZ□-2/5-V12** **RRD12AZ□-2/5-V24** **RRD12AZ□-2/5-V4**
			500/1000	120 240 415		**RRD12AZ□-5/10-V12** **RRD12AZ□-5/10-V24** **RRD12AZ□-5/10-V4**

Notes: *1 The rated sensitive current can be selected by jumper connection.
Non-tripping current 0.5 times sensitive current.
*2 100/110V or 200/220V is available.

● Type number nomenclature, RRD type

RRD 40 P0 - 2/5 -V2

Control voltage (AC)
V1 : 100/110V V4 : 415V V24 : 240V
V2 : 200/220V V12 : 120V

Sensitive current (selective)
1/2 : 100/200mA
2/5 : 200/500mA 5/10 : 500/1000mA

Poles
P0 : Pass-through type
Z3 : 3-pole with conductor
Z4 : 4-pole with conductor

Dia. of sensor hole or rated current
25 : ø25 6A : 600A
40 : ø40 8A : 800A
60 : ø60 10A : 1000A
90 : ø90 12A : 1200A
120 : ø120

Basic type

■ Specifications/RRD, poss-through type

Series	Rated current *1 (A)	Sensor hole (mm)	Rated sensitive current *2 (mA)	Control voltage *3 (V AC)	Tripping time (sec)	Type
RRD	2-wire: 162 3-wire: 115 4-wire: 115	ø25	100/200	120 240 415	0.2–2 adjustable	**RRD25P0-1/2-V12** **RRD25P0-1/2-V24** **RRD25P0-1/2-V4**
			200/500	120 240 415		**RRD25P0-2/5-V12** **RRD25P0-2/5-V24** **RRD25P0-2/5-V4**
			500/1000	120 240 415		**RRD25P0-5/10-V12** **RRD25P0-5/10-V24** **RRD25P0-5/10-V4**
	2-wire: 344 3-wire: 298 4-wire: 257	ø40	100/200	120 240 415		**RRD40P0-1/2-V12** **RRD40P0-1/2-V24** **RRD40P0-1/2-V4**
			200/500	120 240 415		**RRD40P0-2/5-V12** **RRD40P0-2/5-V24** **RRD40P0-2/5-V4**
			500/1000	120 240 415		**RRD40P0-5/10-V12** **RRD40P0-5/10-V24** **RRD40P0-5/10-V4**
	2-wire: 650 3-wire: 469 4-wire: 469	ø60	100/200	120 240 415		**RRD60P0-1/2-V12** **RRD60P0-1/2-V24** **RRD60P0-1/2-V4**
			200/500	120 240 415		**RRD60P0-2/5-V12** **RRD60P0-2/5-V24** **RRD60P0-2/5-V4**
			500/1000	120 240 415		**RRD60P0-5/10-V12** **RRD60P0-5/10-V24** **RRD60P0-5/10-V4**
	2-wire: 842 3-wire: 842 4-wire: 842	ø90	100/200	120 240 415		**RRD90P0-1/2-V12** **RRD90P0-1/2-V24** **RRD90P0-1/2-V4**
			200/500	120 240 415		**RRD90P0-2/5-V12** **RRD90P0-2/5-V24** **RRD90P0-2/5-V4**
			500/1000	120 240 415		**RRD90P0-5/10-V12** **RRD90P0-5/10-V24** **RRD90P0-5/10-V4**
	2-wire: 842 3-wire: 842 4-wire: 842	ø120	100/200	120 240 415		**RRD120P0-1/2-V12** **RRD120P0-1/2-V24** **RRD120P0-1/2-V4**
			200/500	120 240 415		**RRD120P0-2/5-V12** **RRD120P0-2/5-V24** **RRD120P0-2/5-V4**
			500/1000	120 240 415		**RRD120P0-5/10-V12** **RRD120P0-5/10-V24** **RRD120P0-5/10-V4**

Notes: *1 Using IV 600V cable. *(See page 07/111 for reference.)*
*2 The rated sensitive current can be selected by jumper connection.
Non-tripping current 0.5 times sensitive current.
*3 100/110V or 200/220V is available.

■ Specifications/EL type

Series	Rated current *1 (A)	Sensor hole (mm)	Rated sensitive current *2 (mA)	Control voltage *3 (V AC)	Tripping time (sec)	120/240V Type	415V Type
EL Instan-taneous	2-wire: 162 3-wire: 115 4-wire: 115	ø25	30 100/200 200/500 500/1000	120/240 415	0.1	**EL25P0-30MA-V12** **EL25P0-1/2-V12** **EL25P0-2/5-V12** **EL25P0-5/10-V12**	**EL25P0-30MA-V4** **EL25P0-1/2-V4** **EL25P0-2/5-V4** **EL25P0-5/10-V4**
	2-wire: 344 3-wire: 298 4-wire: 257	ø40	30 100/200 200/500 500/1000			**EL40P0-30MA-V12** **EL40P0-1/2-V12** **EL40P0-2/5-V12** **EL40P0-5/10-V12**	**EL40P0-30MA-V4** **EL40P0-1/2-V4** **EL40P0-2/5-V4** **EL40P0-5/10-V4**
	2-wire: 650 3-wire: 469 4-wire: 469	ø60	30 100/200 200/500 500/1000			**EL60P0-30MA-V12** **EL60P0-1/2-V12** **EL60P0-2/5-V12** **EL60P0-5/10-V12**	**EL60P0-30MA-V4** **EL60P0-1/2-V4** **EL60P0-2/5-V4** **EL60P0-5/10-V4**
	2-wire: 842 3-wire: 842 4-wire: 842	ø90	100/200 200/500 500/1000			**EL90P0-1/2-V12** **EL90P0-2/5-V12** **EL90P0-5/10-V12**	**EL90P0-1/2-V4** **EL90P0-2/5-V4** **EL90P0-5/10-V4**
	2-wire: 842 3-wire: 842 4-wire: 842	ø120	100/200 200/500 500/1000			**EL120P0-1/2-V12** **EL120P0-2/5-V12** **EL120P0-5/10-V12**	**EL120P0-1/2-V4** **EL120P0-2/5-V4** **EL120P0-5/10-V4**
EL Time delay	2-wire: 162 3-wire: 115 4-wire: 115	ø25	100/200 200/500 500/1000	120/240 415	0.3	**EL25P0-1/2-D3-V12** **EL25P0-2/5-D3-V12** **EL25P0-5/10-D3-V12**	**EL25P0-1/2-D3-V4** **EL25P0-2/5-D3-V4** **EL25P0-5/10-D3-V4**
	2-wire: 344 3-wire: 298 4-wire: 257	ø40	100/200 200/500 500/1000			**EL40P0-1/2-D3-V12** **EL40P0-2/5-D3-V12** **EL40P0-5/10-D3-V12**	**EL40P0-1/2-D3-V4** **EL40P0-2/5-D3-V4** **EL40P0-5/10-D3-V4**
	2-wire: 650 3-wire: 469 4-wire: 469	ø60	100/200 200/500 500/1000			**EL60P0-1/2-D3-V12** **EL60P0-2/5-D3-V12** **EL60P0-5/10-D3-V12**	**EL60P0-1/2-D3-V4** **EL60P0-2/5-D3-V4** **EL60P0-5/10-D3-V4**
	2-wire: 842 3-wire: 842 4-wire: 842	ø90	100/200 200/500 500/1000			**EL90P0-1/2-D3-V12** **EL90P0-2/5-D3-V12** **EL90P0-5/10-D3-V12**	**EL90P0-1/2-D3-V4** **EL90P0-2/5-D3-V4** **EL90P0-5/10-D3-V4**
	2-wire: 842 3-wire: 842 4-wire: 842	ø120	100/200 200/500 500/1000			**EL120P0-1/2-D3-V12** **EL120P0-2/5-D3-V12** **EL120P0-5/10-D3-V12**	**EL120P0-1/2-D3-V4** **EL120P0-2/5-D3-V4** **EL120P0-5/10-D3-V4**
	2-wire: 162 3-wire: 115 4-wire: 115	ø25	100/200 200/500 500/1000	120/240 415	0.8	**EL25P0-1/2-D8-V12** **EL25P0-2/5-D8-V12** **EL25P0-5/10-D8-V12**	**EL25P0-1/2-D8-V4** **EL25P0-2/5-D8-V4** **EL25P0-5/10-D8-V4**
	2-wire: 344 3-wire: 298 4-wire: 257	ø40	100/200 200/500 500/1000			**EL40P0-1/2-D8-V12** **EL40P0-2/5-D8-V12** **EL40P0-5/10-D8-V12**	**EL40P0-1/2-D8-V4** **EL40P0-2/5-D8-V4** **EL40P0-5/10-D8-V4**
	2-wire: 650 3-wire: 469 4-wire: 469	ø60	100/200 200/500 500/1000			**EL60P0-1/2-D8-V12** **EL60P0-2/5-D8-V12** **EL60P0-5/10-D8-V12**	**EL60P0-1/2-D8-V4** **EL60P0-2/5-D8-V4** **EL60P0-5/10-D8-V4**
	2-wire: 842 3-wire: 842 4-wire: 842	ø90	100/200 200/500 500/1000			**EL90P0-1/2-D8-V12** **EL90P0-2/5-D8-V12** **EL90P0-5/10-D8-V12**	**EL90P0-1/2-D8-V4** **EL90P0-2/5-D8-V4** **EL90P0-5/10-D8-V4**
	2-wire: 842 3-wire: 842 4-wire: 842	ø120	100/200 200/500 500/1000			**EL120P0-1/2-D8-V12** **EL120P0-2/5-D8-V12** **EL120P0-5/10-D8-V12**	**EL120P0-1/2-D8-V4** **EL120P0-2/5-D8-V12** **EL120P0-5/10-D8-V4**

Notes: *1 Using IV 600V cable. *(See page 07/111 for reference.)*
*2 Non tripping current is 0.5 times sensitive current.
*3 100/110V or 200/220V is available.

● Type number nomenclature, ELtype

EL 25 P0 - 1/2 - D3 V4

Basic type

Diameter of sensor hole (mm)
25 : ø25 60 : ø60 120 : ø120
40 : ø40 90 : ø90

Pass-through type

Sensitive current
30MA : 30mA
1/2 : 100/200mA (selective)
2/5 : 200/500mA (selective)
5/10 : 500/1000mA (selective)

Control voltage (AC)
No-mark : 100/200V V12 : 120/240V
V4 : 415V

Tripping time
Blank : Instantaneous
D3 : 0.3 sec. time delay
D8 : 0.8 sec. time delay

■ Specifications/EL type, UL 1053 recognized [UL File No. E176596]

Series	Sensor hole (mm)	Rated sensitive current (mA)	Control voltage	Tripping time (sec)	Type		
					24 VAC/DC Control	100/200 VAC Control	120/240 VAC Control
EL	ø25	30 50/100 100/200 200/500 500/1000	24 VAC/DC 100/200 VAC 120/240 VAC	0.1	**EL25P0-30MA-AD24-00415UL** **EL25P0-05/1-AD24-00415UL** **EL25P0-1/2-AD24-00415UL** **EL25P0-2/5-AD24-00415UL** **EL25P0-5/10-AD24-00415UL**	**EL25P0-30MA-00415UL** **EL25P0-05/1-00415UL** **EL25P0-1/2-00415UL** **EL25P0-2/5-00415UL** **EL25P0-5/10-00415UL**	**EL25P0-30MA-V12-00415UL** **EL25P0-05/1-V12-00415UL** **EL25P0-1/2-V12-00415UL** **EL25P0-2/5-V12-00415UL** **EL25P0-5/10-V12-00415UL**
	ø40	30 50/100 100/200 200/500 500/1000			**EL40P0-30MA-AD24-00415UL** **EL40P0-05/1-AD24-00415UL** **EL40P0-1/2-AD24-00415UL** **EL40P0-2/5-AD24-00415UL** **EL40P0-5/10-AD24-00415UL**	**EL40P0-30MA-00415UL** **EL40P0-05/1-00415UL** **EL40P0-1/2-00415UL** **EL40P0-2/5-00415UL** **EL40P0-5/10-00415UL**	**EL40P0-30MA-V12-00415UL** **EL40P0-05/1-V12-00415UL** **EL40P0-1/2-V12-00415UL** **EL40P0-2/5-V12-00415UL** **EL40P0-5/10-V12-00415UL**
	ø60	30 50/100 100/200 200/500 500/1000			**EL60P0-30MA-AD24-00415UL** **EL60P0-05/1-AD24-00415UL** **EL60P0-1/2-AD24-00415UL** **EL60P0-2/5-AD24-00415UL** **EL60P0-5/10-AD24-00415UL**	**EL60P0-30MA-00415UL** **EL60P0-05/1-00415UL** **EL60P0-1/2-00415UL** **EL60P0-2/5-00415UL** **EL60P0-5/10-00415UL**	**EL60P0-30MA-V12-00415UL** **EL60P0-05/1-V12-00415UL** **EL60P0-1/2-V12-00415UL** **EL60P0-2/5-V12-00415UL** **EL60P0-5/10-V12-00415UL**
	ø90	30 50/100 100/200 200/500 500/1000			**EL90P0-30MA-AD24-00415UL** **EL90P0-05/1-AD24-00415UL** **EL90P0-1/2-AD24-00415UL** **EL90P0-2/5-AD24-00415UL** **EL90P0-5/10-AD24-00415UL**	**EL90P0-30MA-00415UL** **EL90P0-05/1-00415UL** **EL90P0-1/2-00415UL** **EL90P0-2/5-00415UL** **EL90P0-5/10-00415UL**	**EL90P0-30MA-V12-00415UL** **EL90P0-05/1-V12-00415UL** **EL90P0-1/2-V12-00415UL** **EL90P0-2/5-V12-00415UL** **EL90P0-5/10-V12-00415UL**
	ø115	30 50/100 100/200 200/500 500/1000			**EL115P0-30MA-AD24-00415UL** **EL115P0-05/1-AD24-00415UL** **EL115P0-1/2-AD24-00415UL** **EL115P0-2/5-AD24-00415UL** **EL115P0-5/10-AD24-00415UL**	**EL115P0-30MA-00415UL** **EL115P0-05/1-00415UL** **EL115P0-1/2-00415UL** **EL115P0-2/5-00415UL** **EL115P0-5/10-00415UL**	**EL115P0-30MA-V12-00415UL** **EL115P0-05/1-V12-00415UL** **EL115P0-1/2-V12-00415UL** **EL115P0-2/5-V12-00415UL** **EL115P0-5/10-V12-00415UL**

● Type number nomenclature, EL type, UL 1053 recognized

EL 25 P0 - 30MA - AD24 - 00415 UL

Special ratings in clause IV
00415 UL : UL agreement goods

Control voltage
No mark : 100/200V AC
V12 : 120/240V AC
AD24 : 24V AC/DC

Sensitivity current
30MA : 30mA (Pick-up current 22mA)
05/1 : 50/100mA (Pick-up current 40/80mA)
1/2 : 100/200mA (Pick-up current 80/160mA)
2/5 : 200/500mA (Pick-up current 160/400mA)
5/10 : 500/1000mA (Pick-up current 400/800mA)

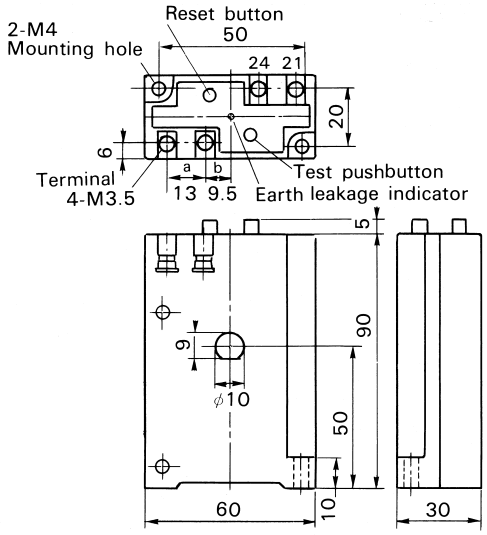
Pass-through type
P0 : through type

Diameter of sensor hole
25 : 25mm diameter
40 : 40mm diameter
60 : 60mm diameter
90 : 90mm diameter
115 : 115mm diameter

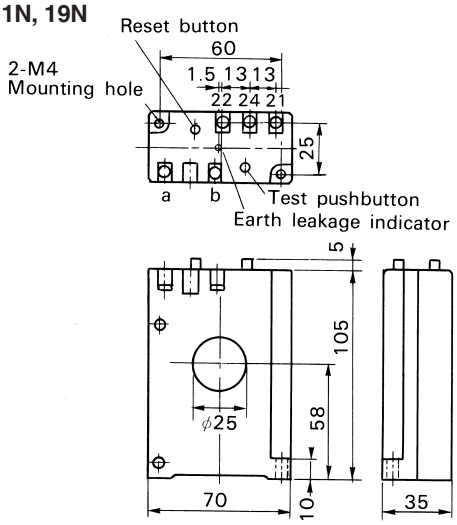
Basic type

■ Dimensions, mm

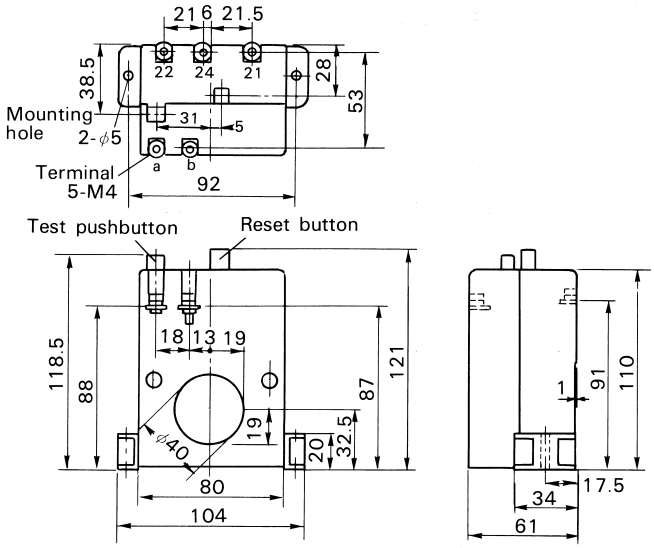
BRR01N, 09N



BRR11N, 19N

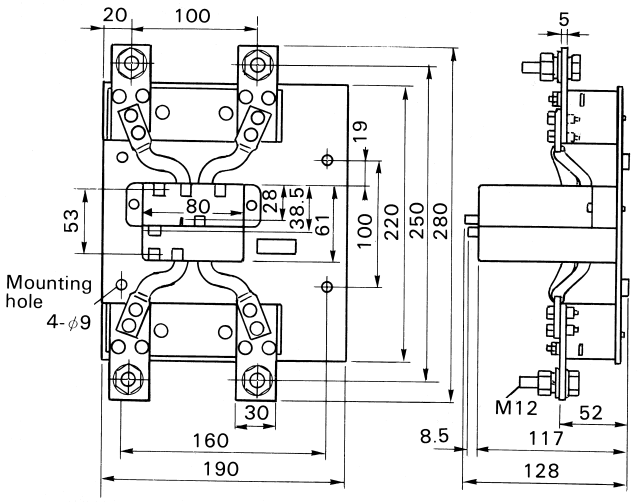


BRR21N, 29N, 22N, 23N, 25N

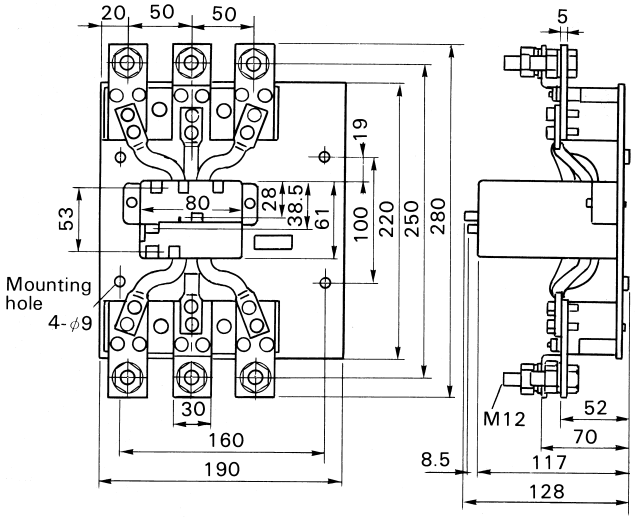


BRR42H, 45H

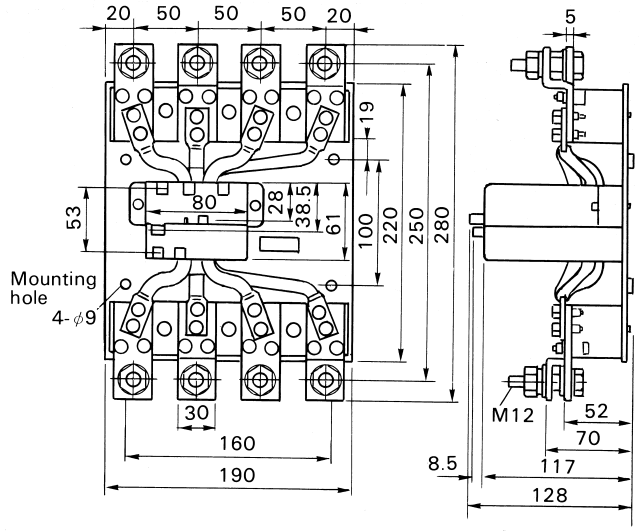
2-pole



3-pole

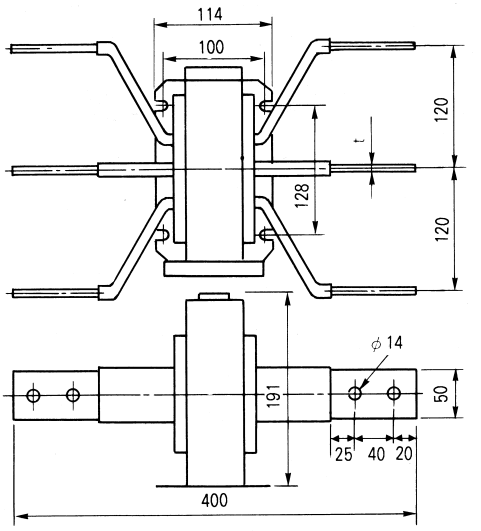


4-pole



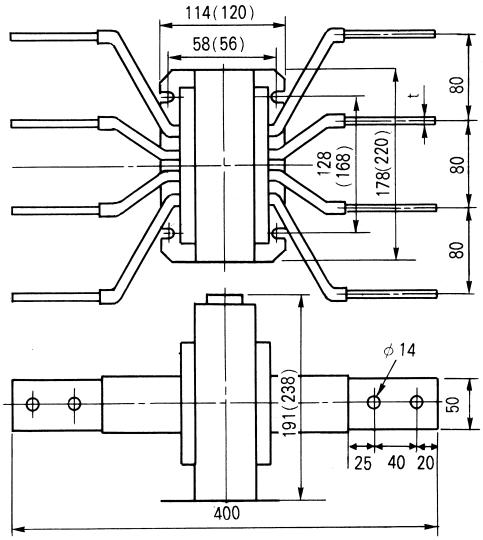
■ **Dimensions, mm**

RRD6AZ3, 8AZ3, 10AZ3



t RRD6AZ3: 6
RRD8AZ3: 8
RRD10AZ3: 12

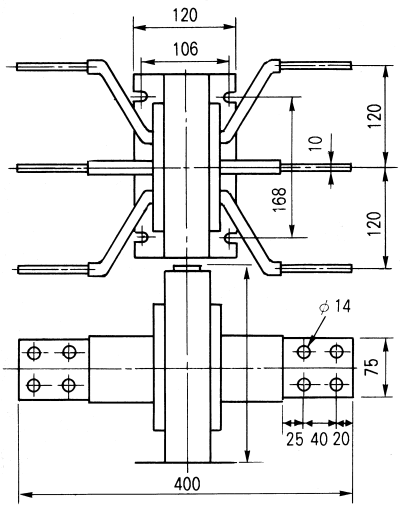
RRD6AZ4, 8AZ4, 10AZ4



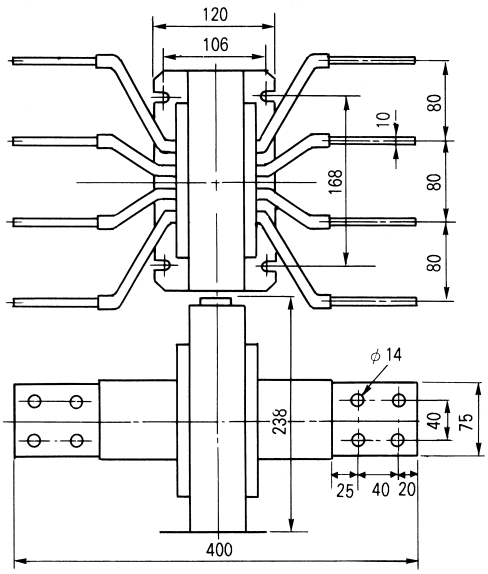
t RRD6AZ4: 6
RRD8AZ4: 8
RRD10AZ4: 12

( ) : For RRD10AZ4

RRD12AZ3



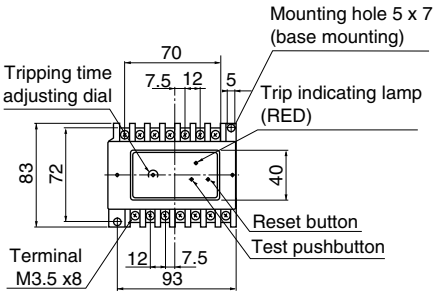
RRD12AZ4

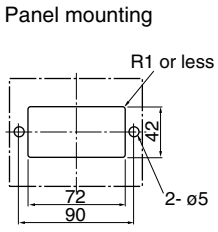


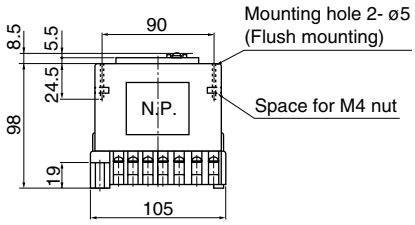
07

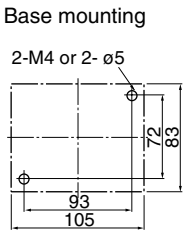
■ Dimensions, mm

Relay RRD type

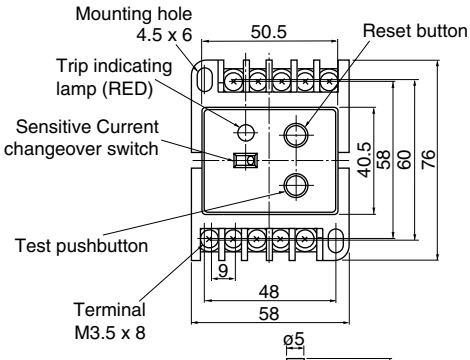


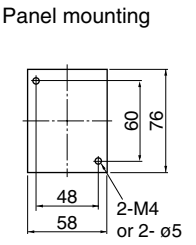


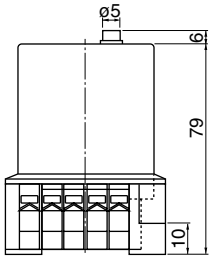


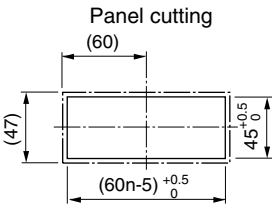


Relay EL type



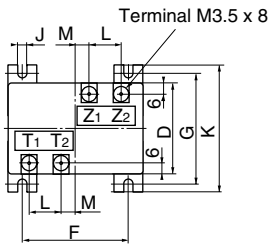


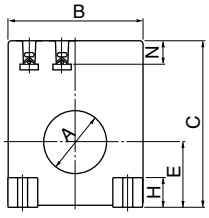




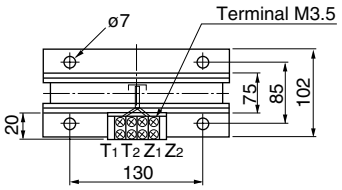
Note: When flush mounting type is required, an adaptor EL-E is needed. (Sold separately)

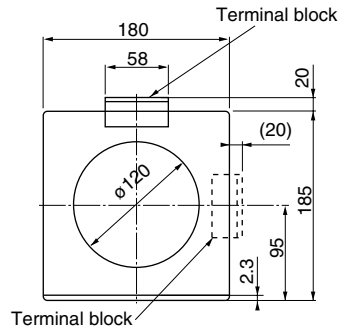
Sensors
RRD25, 40, 60, 90P0
EL25, 40, 60, 90P0





RRD120, EL120P0

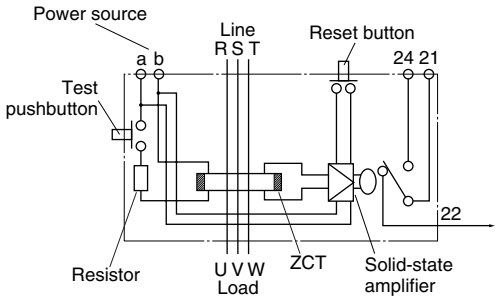




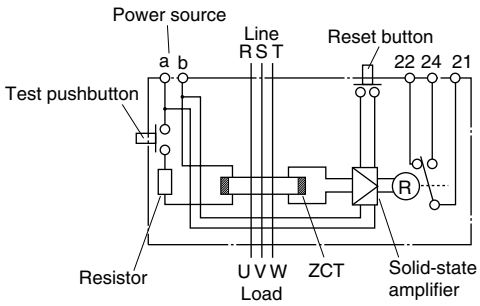
Type	A	B	C	D	E	F	G	H	J	K	L	M	N
RRD25	ø25	55	72	29	28	40	42	10	5	54	13	7	7
EL25	ø25	55	72	29	28	40	42	10	5	54	13	7	7
RRD40	ø40	90	115	62	45	70	75	18	5	90	22	8	18
EL40	ø40	90	115	62	45	70	75	18	5	90	22	8	18
RRD60	ø60	120	145	62	60	100	75	18	6	90	22	8	18
EL60	ø60	120	145	62	60	100	75	18	6	90	22	8	18
RRD90	ø90	160	185	66	80	125	88	22	7	110	22	8	18
EL90	ø90	160	185	66	80	125	88	22	7	110	22	8	18

■ Wiring diagrams

BRR01N, 09N

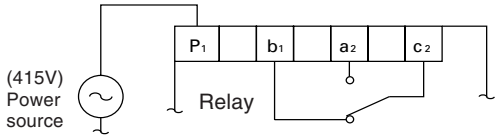


BRR11N, 19N, 21N, 29N, 22N, 23N, 25N
BRR42H, 45H

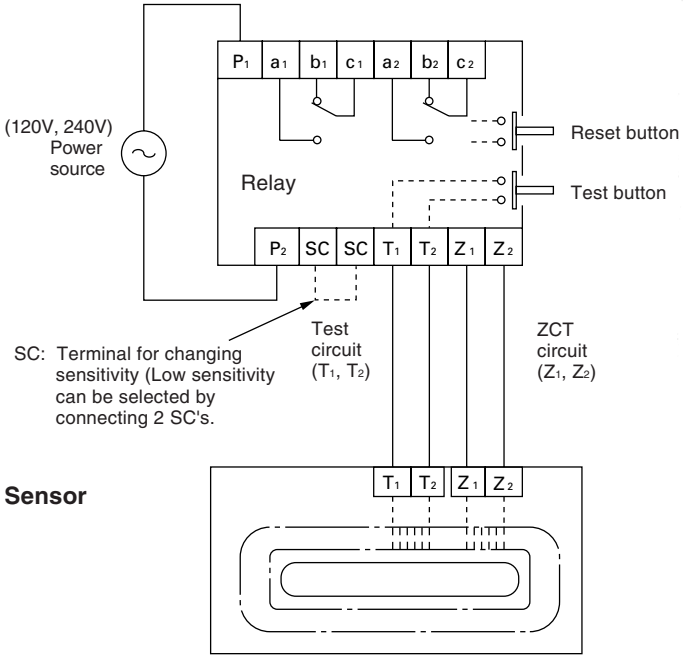


RRD type

● **Where SPDT is selected.**



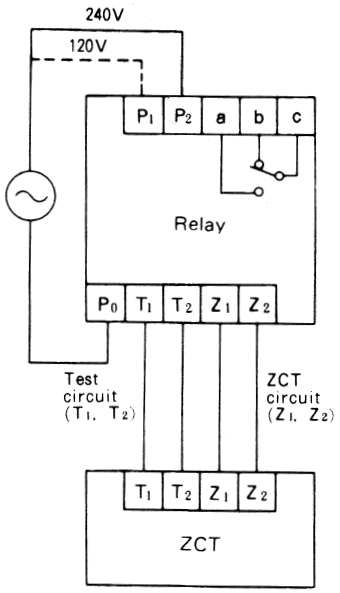
● **Where 2PDT is selected.**



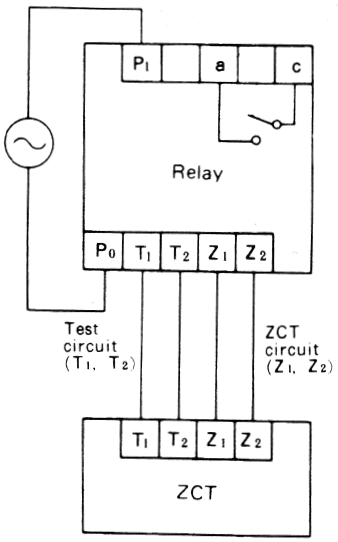
Sensor

EL type

100/200V, 120/240V



415V



07

■ ELCB should always be included in the following types of electrical installations

1. Where there is danger of people coming in contact with live conductors.
2. Where line voltage to ground exceeds 150V AC.
3. Inside buildings in which are stored inflammable or explosive materials.
4. Where heating elements are embedded in concrete.
5. Where heating panels or pipes, or portable heaters are installed.
6. Where heating elements are installed in the ground or in water or mud.
7. In underwater lighting system for swimming pool use.
8. Where portable electrical equipment and tools are used.
9. Where electrical equipment is used in dangerous locations, such as in water, wet place, on metal platforms, etc.
10. Where emergency or temporary wiring is installed, such as flood-lighting, temporary traffic signals or signs, etc.

■ Check points for selecting ELCB

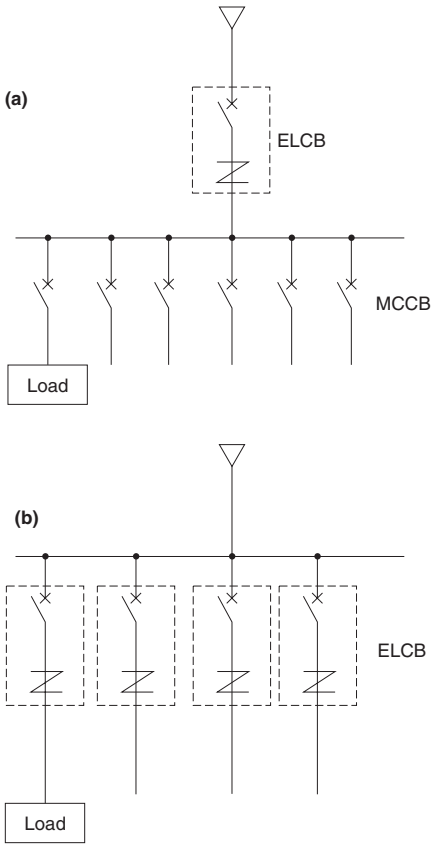
1. Sensitivity current
2. Earth fault current breaking capacity
3. Short-circuit breaking capacity
4. Operating time
5. Selective protective coordination
6. Rated voltage and frequency
7. Rated current
8. Detecting device

■ Selection of sensitivity current

• Appropriate sensitivity current should be selected after considering the application purpose.
Select ELCB with a sensitivity of less than 30mA where risk of human life is present and between 200mA and 500mA for protection against fire due to electrical leakage.

• Protection system
ELCB are generally arranged in one of the following ways.
(a) In this case a wide range of protection can be achieved economically using a single ELCB unit. However, if an earth fault occurs in only one branch of the circuit the main ELCB will trip and all feeders will stop. It will take time to isolate and repair the trouble.
Also, in any circuit there will be a minute earth leakage. The more complicated the electrical wiring system the greater the accumulated effect of leakage current. Consequently, if a too sensitive ELCB is selected there is the possibility of mistripping because of this effect. Generally, taking the case of a 30mA ELCB, constantly leaking current, in some cases, would trip the breaker in the circuit of motor load over 50A or in the circuit of lamp load over 100A. However the 30mA ELCB will normally be suitable for home or small shop use.

(b) In this system an ELCB is provided to each branch feeder. This system will cost more because of the greater number of ELCB's but since only the circuit where the earth fault occurs trips the other feeders will not be affected by the outage. This system is to be preferred where there is danger to life from electric shock using high sensitivity current type ELCB.



■ Breaking capacity and short circuit protection

● Earth fault current breaking capacity

ELCB detects earth fault current and breaks the circuit. Select an ELCB which has an adequate breaking capacity as well as the appropriate earth fault current expected to occur in the circuit. The earth fault current values are determined according to the circuit voltage (Voltage to ground) and resistance. In some cases a massive earth fault current, which could have a value as much as the short circuit current, could flow.

● Short-circuit breaking capacity

Besides earth fault current and overcurrent the short-circuit current flows into the ELCB. Thus it is necessary to consider its magnitude. Generally the breaking capacity of an ELCB tends to be less than a corresponding MCCB. In case the short-circuit current is too big for the ELCB to handle it is necessary to install back-up protection using MCCB, fuse or similar devices.
To determine short-circuit currents please refer to FUJI with details of your application.

● SG and EG series

This series provides protection in three ways, against earth fault current, overcurrent and short-circuit current.

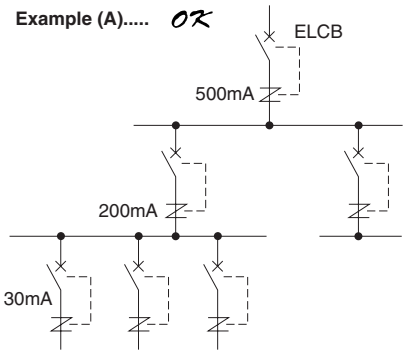
■ ELCB operating time

The safe limit of current time that a human being can withstand is 30mA sec. Thus an ELCB for shock protection must satisfy operating time less than 30mA sec/total current through body (mA). So, assuming that the resistance of a human body is 500 and the voltage to ground 200V the body current will be $\frac{200V}{500}$ =400mA
Hence the ELCB must operate within $\frac{30mA \cdot S}{400mA}$ =0.075 s.
FUJI ELCB's meet this requirement and so ensure complete and certain safety in operation.

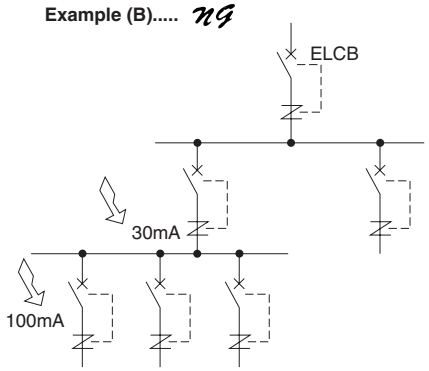
■ Selective earth-fault current breaking coordination

Where several ELCB's are provided between the power source and branch load, consideration must be given to the appropriate selection of operating time and sensitivity current. In case the sensitivity current of the branch circuit ELCB is higher than that of the main circuit ELCB, mistripping may occur because selective protective coordination is lost as is seen in example (B). Therefore the arrangement given in example (A) could be employed. That is, the less sensitive ELCB should be positioned nearest to the power source.

Example (A)..... *OK*

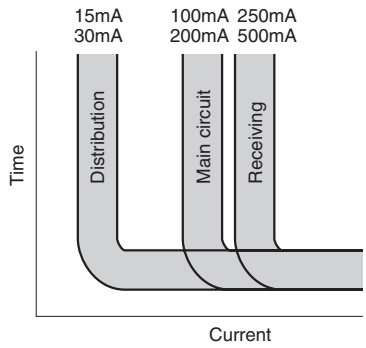


Example (B)..... *NG*

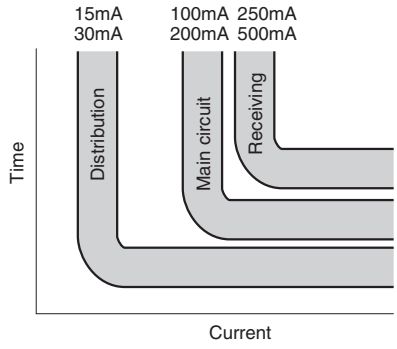


However, using this method perfect earth fault protection cannot be expected. This is because even if the ELCB's are installed according to their sensitivities, i.e., 500mA, 200mA, 30mA, the operating times are the same. Consequently, if the earth fault should occur in branch load the main circuit ELCB might trip. Thus the nearer an ELCB is positioned to the power source the slower its operating time should be.
In order to meet this requirement FUJI can supply earth leakage protective relays provided with a time delay function. Since its operating time is adjustable between 0.2 and 2 seconds it facilitates the selection protective coordination of systems of all kinds. These protective relays are generally installed in main circuits in combination with MCCB.

Instantaneous type operating characteristic



Time delay type operating characteristic



■ Rated voltage

When selecting solid-state amplifier type ELCB's make sure that a correct rated voltage is chosen. This is not necessary in the case of the permanent magnet ELCB, since in this case no outside control source is required.

■ Rated current

FUJI ELCB's are calibrated for ambient temperature of 40°C. Overheating may be expected if ELCB's are used at their maximum rated current at ambient temperatures exceeding 40°C. Select a rated current with a suitable allowance. The load should be around 80% of the rated current.

■ CCC approved

● ELCB types

Series	AF	2-pole	3-pole	Rated breaking current [kA]		Certificate No.
				Ue: 230V	Ue: 400V	
SG	30	–	SG33C	5	2.5	2004010307138024
		–	SG33CM	5	2.5	
	50	–	SG53C	10	7.5	2004010307138031
		–	SG53CM	10	7.5	
		–	SG53RC	25	10	2004010307138026
	60	–	SG63C	10	7.5	2004010307138033
		–	SG63CM	10	7.5	
		–	SG63RC	25	10	2004010307138027
	100	–	SG103C	50	25	2005010307140481
		–	SG103CM	50	25	
		–	SG103RC	100	50	2004010307138030
		–	SG103RCM	100	50	
	225	–	SG203C	50	25	2004010307138035
		–	SG203CM	50	25	
		–	SG203RC	100	50	
		–	SG203RCM	100	50	
	400	–	SG403C	50	35	2004010307138029
		–	SG403RC	85	50	
EG	30	EG32AC	EG33AC	2.5	–	2004010307138037
		–	EG33C	2.5	1.5	2004010307138028
		–	EG33CM	2.5	1.5	
	50	EG52AC	EG53AC	2.5	–	2004010307138037
		–	EG53C	5	2.5	2004010307138024
		–	EG53CM	5	2.5	
	60	–	EG63C	5	2.5	2004010307138036
		–	EG63CM	5	2.5	
	100	–	EG103AC	5	–	2004010307138038
		EG102C	–	10	–	2004010307138025
		–	EG103C	25	10	2004010307138027
		–	EG103CM	25	10	
	225	–	EG203C	35	15	2005010307140482
		–	EG203CM	35	15	
	400	–	EG403C	35	25	2004010307138029

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07 INDIVIDUAL CATALOG

from D&C CATALOG 19th Edition Revised

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