e-Front runners

G-TWIN Standard
2-pole

G-TWIN Standard
3-pole

G-TWIN Standard
4-pole

G-TWIN Global
3-pole

- EARTH LEAKAGE CIRCUIT BREAKERS
- EARTH LEAKAGE PROTECTIVE RELAYS

Handle - operated type

LOW VOLTAGE EQUIPMENT
Up to 600 Volts

HG Series

Motor - operated breakers

INDIVIDUAL CATALOG 07

from D&C CATALOG 20th Edition

01 02 03 04 05 06 **07** 08 09 10 11 12

Fuji Electric FA Components & Systems Co., Ltd.

The Twin Breakers have advanced to an entirely new stage.

Conforming to IEC & local Standards

Conforming to certifications and standards in major world markets

Expanded frame sizes in G-TWIN Global Series

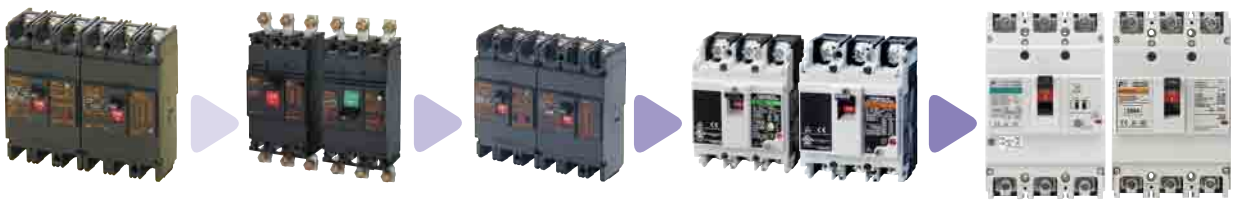
G-TWIN
Standard series
ELCB

G-TWIN
Global series
ELCB

Compact & High performance

Compact models with unified dimensions meeting UL489 480V and IEC 440V requirements

GLOBAL TWIN History



1990 TWIN Breaker | 1992 Super TWIN | 1995 Super 60 | 2001 α -TWIN | **2006 G-TWIN**

FUJI MCCB and ELCB

GLOBAL TWIN

Ecology

Lower environmental impact
Advanced green engineering and energy-saving support
Conforming to the RoHS Directive

G-TWIN
Standard series
ELCB

G-TWIN
Global series
ELCB

Usefulness

Leading the way in user-friendliness

Fuji Electric launched the Twin Breaker Series to world markets in 1990, in which molded case circuit breaker (MCCB) and earth leakage circuit breaker (ELCB) types were unified in external dimensions for the first time in the world. The Twin Breaker Series was highly evaluated and gained strong support, and the concept of Twin Breakers was established as Japan's de facto standards for MCCBs and ELCBs.

In 1992, Fuji Electric released the Super Twin Breaker Series, which enabled user installation of internal accessories for the first time in Japan.

In 1995, Fuji Electric released the Super 60 Series and advanced modularization via uniform external dimensions. In 2001, Fuji Electric launched the α -Twin Series to further advance the miniaturization and modularization of economic types with 100A frame or less as Japan's first multi-standard circuit breakers satisfying domestic and international standards. Since then, Fuji Electric has been making further product improvements by predicting market trends.

In recent years, market globalization has increasingly accelerated.

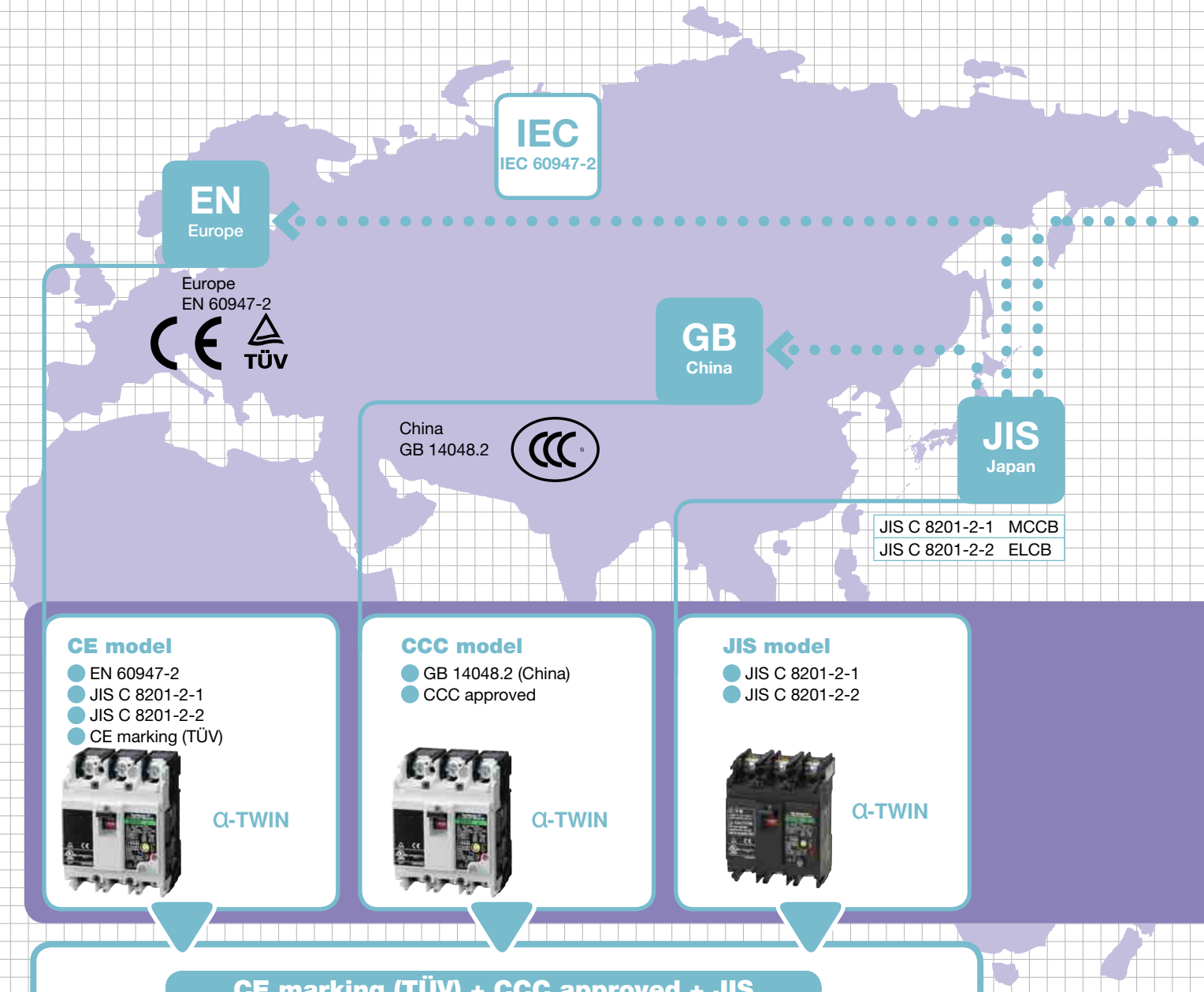
At the end of 2004, the Japanese Industrial Standards (JIS) were aligned with the IEC standards, and the globalization in this field has been further accelerated.

Based on the Twin Breaker Series, Fuji Electric has expanded the range of its products conforming to and approved by international standards for global markets, always advanced the innovative development of fundamental technologies in response to the market demand, and developed the G-TWIN Series of MCCBs and ELCBs.

GLOBAL-TWIN

Conforming to IEC & local Standards

The G-TWIN series is a global breaker series that satisfies all major standards.



CE model

- EN 60947-2
- JIS C 8201-2-1
- JIS C 8201-2-2
- CE marking (TÜV)

α-TWIN

CCC model

- GB 14048.2 (China)
- CCC approved

α-TWIN

JIS model

- JIS C 8201-2-1
- JIS C 8201-2-2

α-TWIN

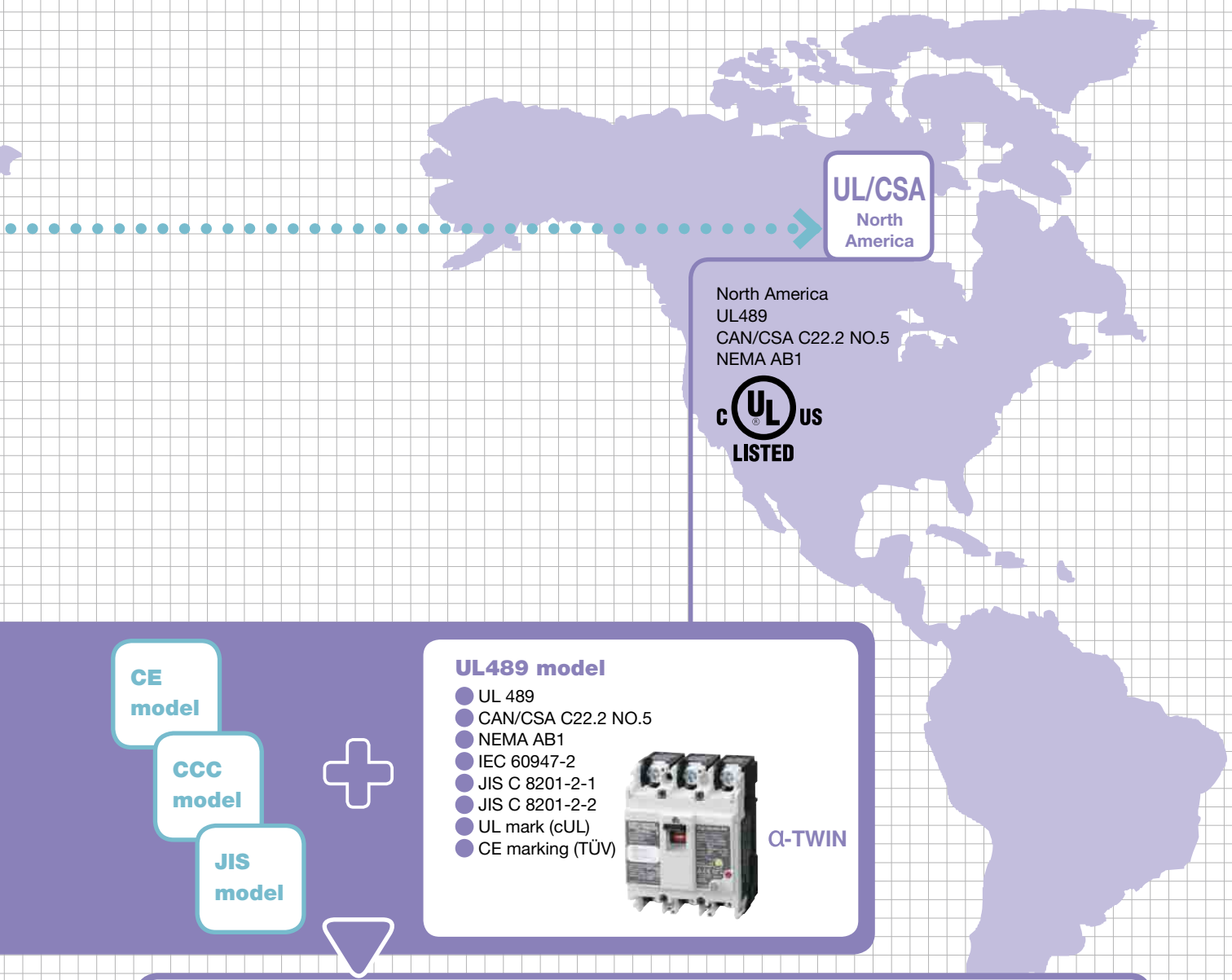
CE marking (TÜV) + CCC approved + JIS

G-TWIN Standard series

- IEC 60947-2
- EN 60947-2 (CE marking)
- GB 14048.2 (CCC)
- JIS C 8201-2-1
- JIS C 8201-2-2

Ampere frame size (AF)

32	50	63	100	125	160	250	400	630	800



North America
UL489
CAN/CSA C22.2 NO.5
NEMA AB1

c UL us
LISTED

CE model

CCC model

JIS model

UL489 model

- UL 489
- CAN/CSA C22.2 NO.5
- NEMA AB1
- IEC 60947-2
- JIS C 8201-2-1
- JIS C 8201-2-2
- UL mark (cUL)
- CE marking (TÜV)

α-TWIN

UL mark (cUL) + CE marking (TÜV) + CCC approved + JIS

G-TWIN Global series

- IEC 60947-2
- EN 60947-2 (CE marking)
- GB 14048.2 (CCC)
- JIS C 8201-2-1
- JIS C 8201-2-2
- UL 489
- CAN/CSA C22.2 NO.5
- NEMA AB1

Ampere frame size (AF)

50	100	125	250	400	630	800

GLOBAL-TWIN ELCB

Compact models with unified dimensions
meeting UL489 480V and IEC 440V requirements

Compact & High performance

Compact size meeting UL489 480V requirements & same dimensions as MCCB

ELCB
Rated voltage 480V
(W105 x H181 x D68 mm)

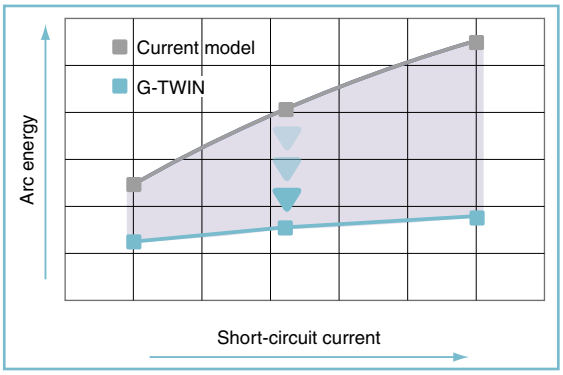
Same dimentions

MCCB
Rated voltage 480V
(W105 x H181 x D68 mm)

Technical innovation

Arc and gas flow control technology

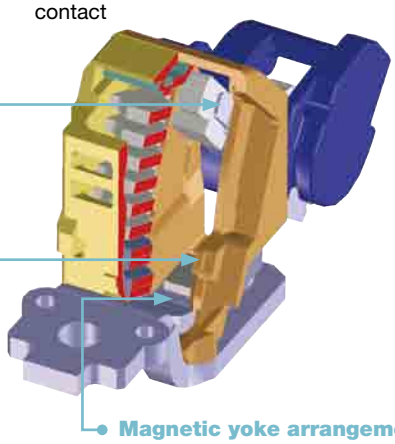
Effect of “ablation breaking technology”



Rated voltage 480V
BW250RAGU
(W105 x H181 x D68 mm)

Decrease by 30%!

Moving contact cover
- Arcing prevention at the bottom of moving contact



Narrow slit resin
- Increased arc voltage due to narrow slit effect
- Increased arc voltage and high-speed moving contact opening by ablation effect
- Suppression of internal pressure rise by adjusting the narrow slit width

Magnetic yoke arrangement
- An increase in the repulsion force of the moving contact at initiation of contact opening

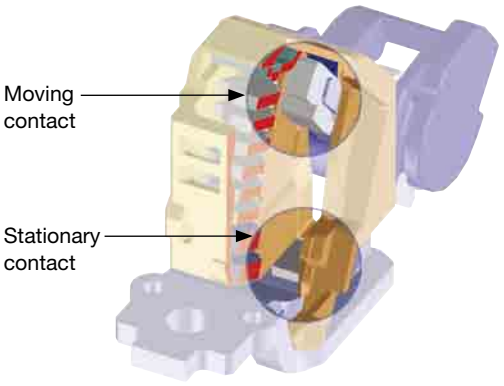
Ecology

Advanced environmental technology Conforming to the RoHS Directive

The G-TWIN Series is designed to lower environmental impact.

Recycling
- For easier recycling, all major parts are marked with the names of the materials used.

Conforming to the RoHS Directive
- Lead-free (Pb-free) solder is used.
- Free of hexavalent chromium (Cr^{6+}-free) (125 to 800AF)



Cadmium-free contact material

Usefulness

Leading the way in user-friendliness

Unifying and reducing the types of internal accessories

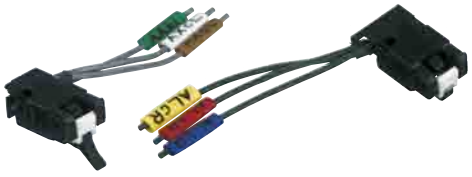
32~100AF

- Internal and external accessories
  A wider range of customer-mountable accessories


ELCB


Shunt trip device


Undervoltage trip device


Auxiliary switch

Alarm switch

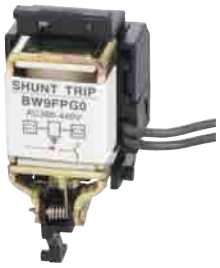
125~250AF

- Sharing internal accessories of 125/160/250AF breakers.

Number of types of internal accessories

AF	α-TWIN	G-TWIN
125	8	8
160/250	8	


ELCB



Shunt trip device

Undervoltage trip device


Auxiliary switch


Alarm switch


Earth Alarm switch

400~800AF

- The number of types of internal accessories of 400/630/800AF has been significantly reduced.

Number of types of internal accessories

AF	α-TWIN	G-TWIN
400	26	6
630		
800		


ELCB


Shunt trip device


Undervoltage trip device


Auxiliary switch


Alarm switch

GLOBAL-TWIN ELCB

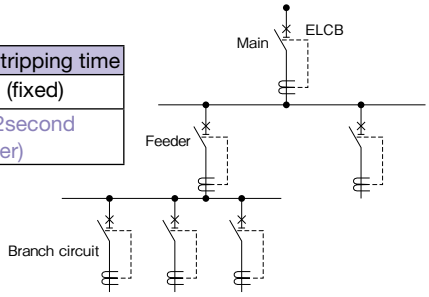
Newly developed earth leakage detection circuit

Easier protection coordination

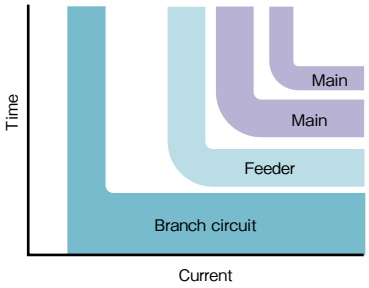
Four-step changeover switch
(I ⊿n and tripping time setting)

	I ⊿n (Change over type)	Maximum tripping time
α-TWIN	100/200/500mA	0.1second (fixed)
NEW G-TWIN	100/300/500/1000mA	0.1/0.4/1/2second (changeover)

Ground fault current protection coordination can be taken easily.



Instantaneus and
Time delay type
oprerating characteristic



New three-phase power supply circuit functions in phase-loss state

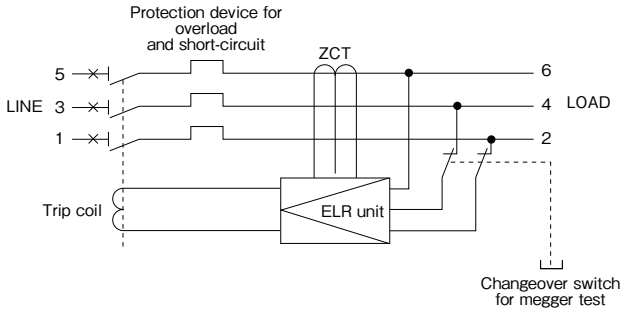
The revised IEC60947-2 stipulates that the ELCB should trip when earth-leakage occurs even in phase loss state in three-phase system. The G-TWIN Series meets this requirement.

Adoption of changeover switch for dielectric test

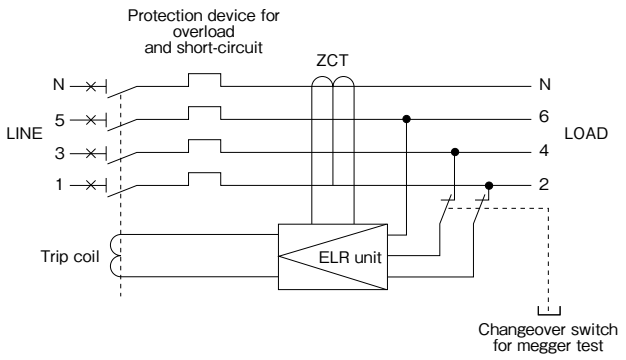
High workability can be obtained since the removal of ELCB wiring is not required at dielectric test during inspection (Adopted for 125AF or more).

ELCB internal wiring diagram

3-pole



4-pole



World first !

Why ELCB?

Purpose of ELCB installation

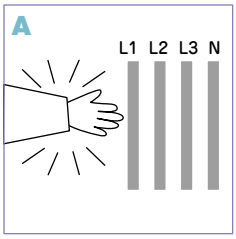
Prevention of hazards and damage (such as electrical shock, electrical fire, and device damage) that may occur in electrical equipment (as stipulated in IEC 60364).

Measures of protection against electrical shock

Protection against electric shock (Protective measures are specified in IEC60364-4-41)

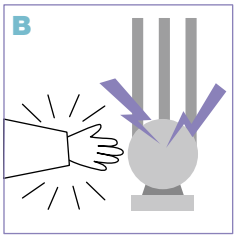
A. Protection against direct contact

Protection of persons from hazards (i.e., electrical shock) that may occur due to touching charged parts of electrical equipment.
Use of ELCB with rated sensitive current not exceeding 30mA is recommended as the additional protective device.



B. Protection against indirect contact

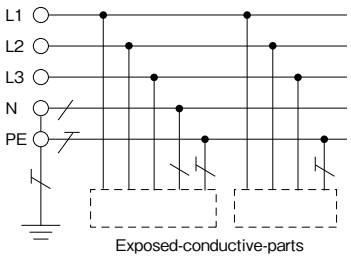
Protection of persons from electrical shock that may occur due to touching exposed conductive parts (such as metal frame of the device) when a fault occurs in electrical equipment.
As one of the protective measures, depending on the condition in TT or TN-S system, the automatic cutoff of power supply with ELCB is specified in IEC60364-4-41.
For the details of the installation systems and how to apply ELCB, please refer to the following chart and flowchart.



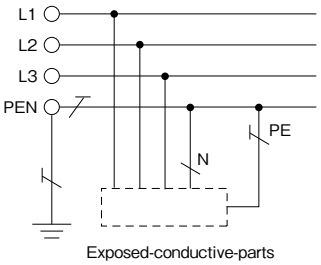
Note 1: A TN-C system has a PEN conductor installed that combines neutral line N and protective conductor PE, and so ELCB cannot be used. (Ground faults cannot be detected.)
Note 2: An IT system is a non-grounded system, and so ELCB cannot be used. (Ground faults cannot be detected.)

Types of installation systems in IEC 60364

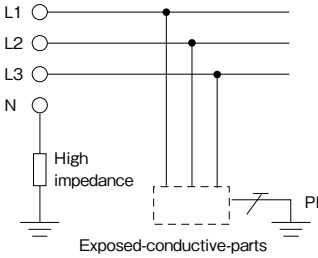
TN-S System



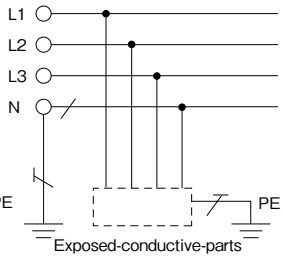
TN-C System



IT System



TT System

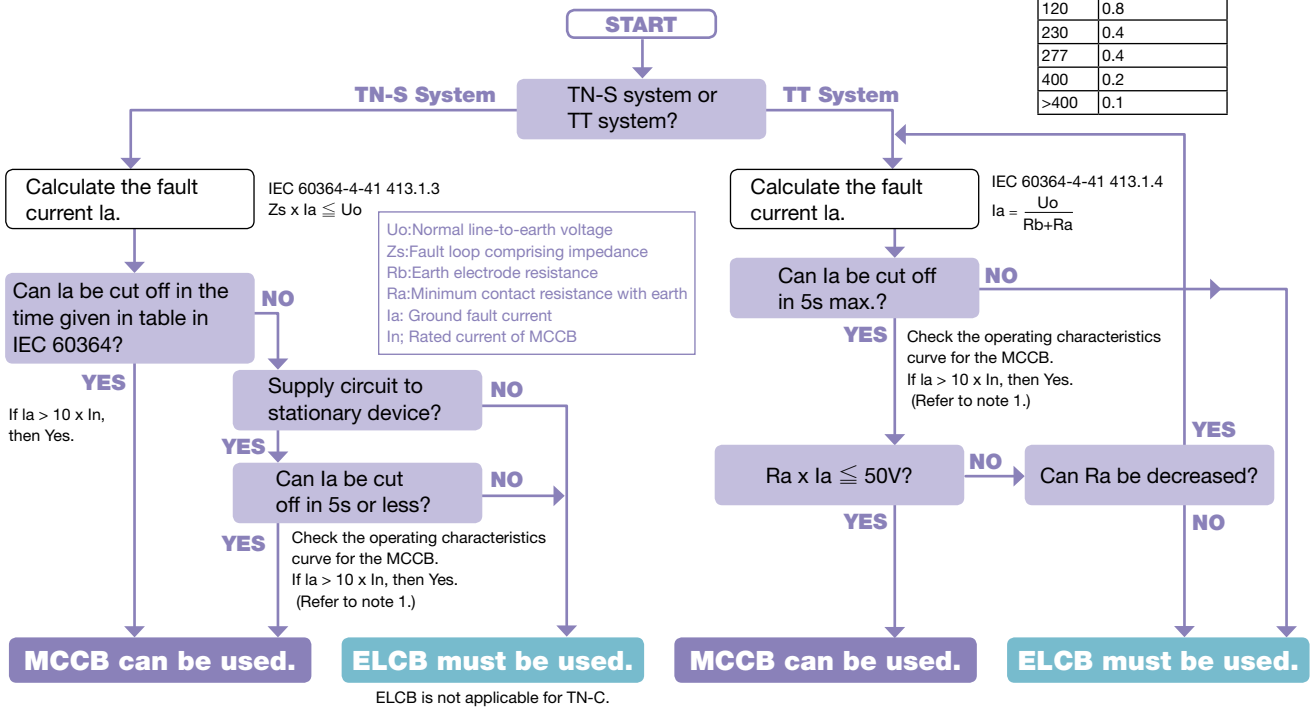


L1, L2, L3: Voltage poles, N: Neutral line, PE: Protective conductor

Flowchart for considering protection against indirect contact using automatic cutoff of power supply

Max. breaking time in TN system (IEC 60364, table 41A)

Uo(V)	Breaking time (s)
120	0.8
230	0.4
277	0.4
400	0.2
>400	0.1



Note 1: The formula 10 x In is a rough guide to the current value for the overcurrent trip device to automatically cut off in 5s or less.

■ Type of ELCBs

G-TWIN Series

Line protection	Page	Feature	Type
	07/04	· Models from 3A to 800A · ELCB and MCCB are the same dimensions. · Conforming to international standard IEC/EN(CE)/GB(CCC)/JIS · Most accessories can be installed by the user.	EW ①② A G- ③④⑤ AF ①: 32, 50, 63, 100, 125, 160, 250, 400, 630, 800 Breaking capacity ②: A, E, J, S, R, H Pole ③: 2P, 3P, 4P Rated current ④: 003=3A, ·, ·, ·, 800=800A Rated sensitive current ⑤: A=15mA, B=30mA, C=100mA, J=Changeover type, K=Changeover type
Motor-protection	**Page**	**Feature**	**Type**
	07/18	· Models from 0.7A to 225A · Line & Motor protection · Conforming to international standard IEC/EN(CE)/GB(CCC)/JIS	EW ①② A M- ③④⑤ AF ①: 32, 50, 63, 100, 125, 250 Breaking capacity ②: E, J, S, R Pole ③: 3P Rated current ④: 0P7=0.7A, ·, ·, ·, 225=225A Rated sensitive current ⑤: B=30mA, C=100mA, J=Changeover type, K=Changeover type
UL489Listed	**Page**	**Feature**	**Type**
	07/13	· Models from 3A to 630A · Conforming to international standard UL/CSA/IEC/EN(CE)/GB(CCC)/JIS	EW ①② A G U- ③④⑤ AF ①: 50, 100, 125, 250, 400, 630 Breaking capacity ②: E, J, S, R, H Pole ③: 2P, 3P Rated current ④: 003=3A, ·, ·, ·, 630=630A Rated sensitive current ⑤: B=30mA, D=50mA, K=Changeover type

HG Series

Line protection	Page	Feature	Type
	07/88	· Models from 15A to 225A	HG ①② B/ ③④ AF ①: 5=50AF, 10=10AF, 20=225AF Pole ②: 3=3P Rated current ③: 15=15A, :, 225=225A Rated sensitive current ⑤: 30MA=30mA fixed, CO=Changeover type

Earth Leakage Protective Relays
BRR,RRD,EL Series

	Page	Feature	Type
 	07/105	Relay and sensor-Unit type · BRR series Relay and sensor-Separate type · RRD series · EL series	BRR ①② N (H) Sensor hole ①: 0=φ10mm, 1=φ25mm, 2=φ40mm, 4=400A (Rated current) Sensitive current ②: 1=30mA, 9=100mA, 2=200mA, 5=500mA RRD ①② Sensor hole ①: 25=φ25mm, 40=φ40mm, 60=φ60mm, 90=φ90mm, 120=φ120mm Pole ②: P0=Pass-through type Rated current ①: 6A=600A, 8A=800A, 10A=1000A, 12A=1200A Pole ②: Z3=3Pole, Z4=4Pole EL ①② Sensor hole ①: 25=φ25mm, 40=φ40mm, 60=φ60mm, 90=φ90mm, 120=φ120mm Pole ②: P0=Pass-through type

Rated interrupting capacity IEC60947-2	Icu (kA)	Current (A) 3	5	10	15	32	50	63	100	125	160	250	400	630	800
440VAC	1.5		■	■	■	■									
	2.5		■	■	■	■	■	■	■						
	7.5		■	■	■	■	■	■							
	10			■	■	■	■	■	■						
	18									■	■	■			
	30				■	■	■	■	■	■	■	■	■	■	■
	36				■	■	■	■	■	■	■	■	■	■	■
	50				■	■	■	■	■	■	■	■	■	■	■
	70											■	■	■	■

Rated interrupting capacity IEC60947-2	Icu (kA)	Current (A) 0.7	1.4	10	16	32	63	90	100	125	225
440VAC	1.5		■	■	■	■					
	2.5		■	■	■	■	■				
	7.5		■	■	■	■	■				
	10			■	■	■	■	■	■		
	18								■	■	■
	30				■	■	■	■	■	■	■
	50				■	■	■	■	■	■	■

Rated interrupting capacity UL489	(kA)	Current (A) 3	15	32	50	63	100	125	250	400	630	800
480VAC	30		■	■	■	■	■	■	■			
	35								■	■		
	50		■	■	■	■	■	■	■	■	■	■
	65								■	■		
240VAC	14		■	■	■	■	■					
	50		■	■	■	■	■	■	■			
	100		■	■	■	■	■	■	■	■	■	■

Rated interrupting capacity Icu (kA)	Current (A) 15	30	50	60	100	125	225
65		■	■	■	■	■	

Type	Dimensions of sensor hole (mm) 10	25	40	60	90	120	Rated current (A) 400	600	800	1000	1200
BRR		■	■				■				
EL			■	■	■	■					
RRD			■	■	■	■		■	■	■	■

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.

List of products

■ G-TWIN Standard Series (IEC/EN/GB/JIS conformed)

Line protection

• 2-pole

AC230V (Icu)	EW32	EW50	EW100
2.5kA	AAG-2P	AAG-2P	
10kA			EAG-2P

• 3-pole

AC415V (Icu)	EW32	EW50	EW63	EW100	EW125	EW160	EW250	EW400	EW630	EW800
1.5kA	EAG-3P									
2.5kA	SAG-3P	EAG-3P	EAG-3P							
7.5kA		SAG-3P	SAG-3P							
10kA		RAG-3P	RAG-3P	EAG-3P						
18kA						EAG-3P	EAG-3P			
30kA					JAG-3P	JAG-3P	JAG-3P	EAG-3P		
36kA					SAG-3P	SAG-3P	SAG-3P	SAG-3P	EAG-3P	EAG-3P
50kA					RAG-3P	RAG-3P	RAG-3P	RAG-3P	RAG-3P	RAG-3P
70kA								HAG-3P	HAG-3P	HAG-3P

• 4-pole

AC415V (Icu)	EW125	EW160	EW250	EW400
30kA	JAG-4P	JAG-4P	JAG-4P	
36kA	SAG-4P	SAG-4P	SAG-4P	
50kA	RAG-4P	RAG-4P	RAG-4P	RAG-4P
70kA				HAG-4P

Motor protection

• 3-pole

AC415V (Icu)	EW32	EW50	EW63	EW100	EW125	EW250
1.5kA	EAM-3P					
2.5kA	SAM-3P	EAM-3P	EAM-3P			
7.5kA		SAM-3P	SAM-3P			
10kA				EAM-3P		
18kA						EAM-3P
30kA					JAM-3P	JAM-3P
50kA					RAM-3P	RAM-3P

■ G-TWIN Global Series (IEC/EN/GB/JIS/UL/CSA conformed)

Line protection

• 2-pole

AC230V (Icu)	EW100
10kA	EAGU-2P

• 3-pole

AC415V (Icu)	EW50	EW100	EW125	EW250	EW400	EW630
10kA	RAGU-3P	EAGU-3P				
30kA			JAGU-3P	JAGU-3P		
36kA					SAGU-3P	
50kA			RAGU-3P	RAGU-3P	RAGU-3P	RAGU-3P
70kA					HAGU-3P	

■ HG Series

Line protection (3-pole)

AC415V (Icu)	50AF	100AF	225AF
65kA	HG53B	HG103B	HG203B

■ Type number nomenclature

EW 250 EA G □ - 3P 225 B X

Series
EW: G-TWIN series

Frame size
32: 32AF 63: 63AF 125: 125AF 250: 250AF 630: 630AF
50: 50AF 100: 100AF 160: 160AF 400: 400AF 800: 800AF

Breaking capacity

	Rated breaking capacity Icu (440V AC) *(at 230V AC)									
	32AF	50AF	63AF	100AF	125AF	160AF	250AF	400AF	630AF	800AF
AA	2.5kA*	2.5kA*	–	5kA*	–	–	–	–	–	–
EA	1.5kA	2.5kA	2.5kA	10kA	–	18kA	18kA	30kA	36kA	36kA
JA	–	–	–	–	30kA	30kA	30kA	–	–	–
SA	2.5kA	7.5kA	7.5kA	–	36kA	36kA	36kA	36kA	–	–
RA	–	10kA	10kA	–	50kA	50kA	50kA	50kA	50kA	50kA
HA	–	–	–	–	–	–	–	70kA	70kA	70kA

Model
G: Line protection M: Motor protection

G-TWIN series
Blank: Standard U: Global

No. of poles
2P: 2-pole 3P: 3-pole 4P: 4-pole

Rated current
See page 07/29.

Rated sensitive current
A: 15mA J: 100/300/500/1000mA
B: 30mA K: 100/200mA
C: 100mA 100/200/500mA
D: 50mA 100/200/500/1000mA

Terminal combination (Global type)

	Terminal position		Applicable breaker type		
Code	Line	Load	EW50, 100	EW125, 250	EW400, 630
Blank	Screw	Screw	●	●	–
Blank	Flat teminal	Flat teminal	–	–	●
SB	Block terminal	Block terminal	–	●	●
SF	Flat teminal	Flat teminal	●	●	–
S3	Screw	Flat terminal	●	●	–
S4	Flat teminal	Screw	●	●	–
S5	Screw	Block terminal	–	●	–
S6	Block terminal	Screw	–	●	–
S7	Flat teminal	Block terminal	–	●	●
S8	Block terminal	Flat terminal	–	●	●

Mounting and connection
• Standard type
Blank: Front mounting front connection
X: Front mounting rear connection
E: Flush mounting rear connection
Y: Flush mounting , top & buttom connection
P: Plug-in mounting

W K F□ R□ A Q2 M□ UC

Enclosure
UC: Standardproof
UV: Dustproof
UW: Rainproof

Operating device (32 - 100AF)
□: DC100V
AC100-110V
AC200-220V

Pad locking device
Q2: Plate type

Connection method (internal accessories)
Blank: Lead-wire system
A: Terminal block system

Undervoltage trip device (External)*
• 32/50/63/100AF
□: DC24V
: DC100-110V
: AC100V (50Hz) / AC100-110V (60Hz)
: AC200V (50Hz) / AC200-220V (60Hz)
: AC400V (50Hz) / AC400-440V (60Hz)

Undervoltage trip device (Internal)*

• 125/160/250AF	• 400/630/800AF
□: DC24V	: AC/DC24V
: DC48V	: AC/DC48V
: DC100-110V	: AC/DC100-110V
: DC125V / AC100-110V	: AC120-130V / DC125V
: AC110-130V	: AC200-240V / DC200-220V
: AC200-240V	: AC277V
: AC277V	: AC380-480V
: AC380-415V	

Shunt trip device (External)*
• 32/50/63/100AF
□: DC24V
: DC100-110V
: AC100 (50Hz) / AC100-110V (60Hz)
: AC200 (50Hz) / AC200-220V (60Hz)
: AC400 (50Hz) / AC400-440V (60Hz)

Shunt trip device (Internal)*

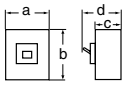
• 125/160/250AF	• 400/630/800AF
□: AC/DC24V	: AC/DC24-48V
: AC/DC48V	: AC100-240V / DC100-220V
: AC100-120V / DC100-110V	: AC277V
: AC120-130V	: AC380-550V
: AC200-240V / DC200-220V	
: AC277V	
: AC380-440V	
: AC440-480V	
: AC500-550V	

Alarm switch*
K: Standard SPDT
J: Standard 2PDT
8: For low level circuit SPDT
9: For low level circuit 2PDT

Auxiliary switch*
W: Standard SPDT
V: Standard 2PDT
1: For low level circuit SPDT
2: For low level circuit 2PDT

* For the available configuration of accessory, see page 07/62.

■ G-TWIN Standard Series

Ampere frame				32A			
Type				**EW32AAG**		**EW32EAG**	**EW32SAG**
Pole				2	3	3	3
Rated current Reference amb. temp. (40°C)		In(A)		5, 10, 15, 20, 30, 32	5, 10, 15, 20, 30, 32	5, 10, 15, 20, 30, 32	3, 5, 10, 15, 20, 30, 32
Rated impulse withstand voltage		Uimp(kV)		2.5	4	4	4
Isolation compliant				○	○	○	○
Rated voltage Ue (AC V)				100-230	100-230	100-230-440	100-230-440
Rated sensitive current (mA)				15, 30, 100	15, 30, 100	15, 30, 100	30, 100/200/500 changeover
Tripping time (s)				0.1 or less	0.1 or less	0.1 or less	0.1 or less
Rated breaking capacity Icu/Ics (kA)	IEC 60947-2 EN 60947-2 JIS C 8201-2-2	AC	440V	–	–	1.5/1	2.5/2
			415V	–	–	1.5/1	2.5/2
			400V	–	–	1.5/1	2.5/2
			380V	–	–	1.5/1	2.5/2
			230V	2.5/2	2.5/2	2.5/2	5/3
			200V	2.5/2	2.5/2	2.5/2	5/3
			100V	2.5/2	5/3	5/3	5/3
	GB14048.2	AC	400V	–	–	1.5/1	2.5/2
			230V	2.5/2	2.5/2	2.5/2	5/3
Standard certified	CE Marking certified (TÜV)			○	○	○	○
	CCC approved			○	○	○	○
	Electrical Appliance and Material Safety Law *1			○	○	○	○
Dimensions (mm) 			a	50	75	75	75
			b	100		100	100
			c	60		60	60
			d	84		84	84
Mass (kg)				0.4	0.5	0.5	0.6
Tripping device				Hydraulic-magnetic			
Front mounting, front connection			No-mark	○	○	○	○
Front mounting, rear connection			X	○	○	○	○
Flush mounting, front connection			E	○	○	○	○
Flush mounting, top & bottom connection			Y	○	○	○	○
Plug-in mounting			P	○	○	○	○
IEC 35mm wide rail mounting			No-mark	○	○	○	○
Internal accessories			Page 07/57				
Alarm switch			K	○	○	○	○
Auxiliary switch			W	○	○	○	○
Undervoltage trip			R	○	○	○	○
Shunt trip			F	○	○	○	○
Earth alarm switch			L	–	–	–	–
External accessories			Page 07/60				
Handle padlocking device	Cap type		QN	○	○	○	○
Handle padlocking device	Plate type		Q2	▲	▲	▲	▲
Operating handle	N-type		N	○	○	○	○
Operating handle	V-type		V	○	○	○	○
Terminal cover	Short		BT□S	○	○	○	○
Terminal cover	Long		BT□L	○	○	○	○
Insulation barrier	Interphase*2		BP	○	○	○	○
	Earth		BL	○	○	○	○
Handle locking cover			L1	○	○	○	○
Flat terminal			SS	○	○	○	○
Block terminal			SL	–	–	–	–

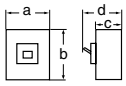
○: Approved –: Not approved ▲: Factory-mounted accessory

Note: *1 Electrical Appliance and Material Safety Law of Japan

*2 Interphase insulation barriers are standard provided for the front mounting type breakers of 50AF and over. Except for EW50AAG

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

■ G-TWIN Standard Series

Ampere frame				50A				
Type				**EW50AAG**		**EW50EAG**	**EW50SAG**	**EW50RAG**
Pole				2	3	3	3	3
Rated current Reference amb. temp. (40°C)		In(A)		5, 10, 15, 20, 30, 32, 40, 50		5, 10, 15, 20, 30, 32, 40, 50	5, 10, 15, 20, 30, 32, 40, 50	10, 15, 20, 30, 32, 40, 50
Rated impulse withstand voltage		Uimp(kV)		2.5	4	6	6	6
Isolation compliant				○		○	○	○
Rated voltage Ue (AC V)				100-230		100-230-440	100-230-440	100-230-440
Rated sensitive current (mA)				15, 30, 100		15, 30, 100/200 changeover	30, 100/200/500 changeover	30, 100/200/500 changeover
Tripping time (s)				0.1 or less		0.1 or less	0.1 or less	0.1 or less
Rated breaking capacity Icu/Ics (kA)	IEC 60947-2 EN 60947-2 JIS C 8201-2-2	AC	440V	–		2.5/2	7.5/4	10/5
			415V	–		2.5/2	7.5/4	10/5
			400V	–		2.5/2	7.5/4	10/5
			380V	–		2.5/2	7.5/4	10/5
			230V	2.5/2		5/3	10/5	25/13
			200V	2.5/2		5/3	10/5	25/13
			100V	2.5/2	5/3	5/3	10/5	25/13
	GB14048.2	AC	400V	–		2.5/2	7.5/4	10/5
			230V	2.5/2		5/3	10/5	25/13
Standard certified	CE Marking certified (TÜV)			○		○	○	○
	CCC approved			○		○	○	○
	Electrical Appliance and Material Safety Law *1			○		○	○	○
Dimensions (mm) 			a	50	75	75	75	75
			b	100		100	100	100
			c	60		60	60	60
			d	84		84	84	84
Mass (kg)				0.4	0.6	0.6	0.6	0.6
Tripping device				Hydraulic-magnetic				
Front mounting, front connection			No-mark	○		○	○	○
Front mounting, rear connection			X	○		○	○	○
Flush mounting, front connection			E	○		○	○	○
Flush mounting, top & bottom connection			Y	○		○	○	○
Plug-in mounting			P	○		○	○	○
IEC 35mm wide rail mounting			No-mark	○		○	○	○
Internal accessories			Page 07/57					
Alarm switch			K	○		○	○	○
Auxiliary switch			W	○		○	○	○
Undervoltage trip			R	○		○	○	○
Shunt trip			F	○		○	○	○
Earth alarm switch			L	–		–	–	–
External accessories			Page 07/60					
Handle padlocking device Cap type			QN	○		○	○	○
Handle padlocking device Plate type			Q2	▲		▲	▲	▲
Operating handle N-type			N	○		○	○	○
Operating handle V-type			V	○		○	○	○
Terminal cover Short			BT□S	○		○	○	○
Terminal cover Long			BT□L	○		○	○	○
Insulation barrier Interphase*2			BP	○		○	○	○
Earth			BL	○		○	○	○
Handle locking cover			L1	○		○	○	○
Flat terminal			SS	○		○	○	○
Block terminal			SL	–		–	–	–

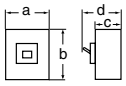
○: Approved –: Not approved ▲: Factory-mounted accessory

Note: *1 Electrical Appliance and Material Safety Law of Japan

*2 Interphase insulation barriers are standard provided for the front mounting type breakers of 50AF and over. Except for EW50AAG

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

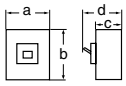
■ G-TWIN Standard Series

Ampere frame				63A		
Type				**EW63EAG**	**EW63SAG**	**EW63RAG**
Pole				3	3	3
Rated current Reference amb. temp. (40°C)		In(A)		60, 63	60, 63	60, 63
Rated impulse withstand voltage		Uimp(kV)		6	6	6
Isolation compliant				○	○	○
Rated voltage Ue (AC V)				100-230-440	100-230-440	100-230-440
Rated sensitive current (mA)				15, 30, 100/200 changeover	30, 100/200/500 changeover	30, 100/200/500 changeover
Tripping time (s)				0.1 or less	0.1 or less	0.1 or less
Rated breaking capacity Icu/Ics (kA)	IEC 60947-2 EN 60947-2 JIS C 8201-2-2	AC	440V	2.5/2	7.5/4	10/5
			415V	2.5/2	7.5/4	10/5
			400V	2.5/2	7.5/4	10/5
			380V	2.5/2	7.5/4	10/5
			230V	5/3	10/5	25/13
			200V	5/3	10/5	25/13
			100V	5/3	10/5	25/13
	GB14048.2	AC	400V	2.5/2	7.5/4	10/5
			230V	5/3	10/5	25/13
Standard certified	CE Marking certified (TÜV)			○	○	○
	CCC approved			○	○	○
	Electrical Appliance and Material Safety Law *1			○	○	○
Dimensions (mm) 			a	75	75	75
			b	100	100	100
			c	60	60	60
			d	84	84	84
Mass (kg)				0.6	0.6	0.6
Tripping device				Hydraulic-magnetic		
Front mounting, front connection			No-mark	○	○	○
Front mounting, rear connection			X	○	○	○
Flush mounting, front connection			E	○	○	○
Flush mounting, top & bottom connection			Y	○	○	○
Plug-in mounting			P	○	○	○
IEC 35mm wide rail mounting			No-mark	○	○	○
Internal accessories			Page 07/57			
Alarm switch			K	○	○	○
Auxiliary switch			W	○	○	○
Undervoltage trip			R	○	○	○
Shunt trip			F	○	○	○
Earth alarm switch			L	–	–	–
External accessories			Page 07/60			
Handle padlocking device Cap type			QN	○	○	○
Handle padlocking device Plate type			Q2	▲	▲	▲
Operating handle N-type			N	○	○	○
Operating handle V-type			V	○	○	○
Terminal cover Short			BT□S	○	○	○
Terminal cover Long			BT□L	○	○	○
Insulation barrier Interphase			BP	○	○	○
Earth			BL	○	○	○
Handle locking cover			L1	○	○	○
Flat terminal			SS	○	○	○
Block terminal			SL	–	–	–

○: Approved –: Not approved ▲: Factory-mounted accessory
Note: *1 Electrical Appliance and Material Safety Law of Japan

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

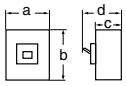
■ G-TWIN Standard Series

Ampere frame				100A		
Type				**EW100AAG**	**EW100EAG**	
Pole				3	2	3
Rated current Reference amb. temp. (40°C)		In(A)		60, 63, 75, 100	50, 60, 63, 75, 100	50, 60, 63, 75, 100
Rated impulse withstand voltage		Uimp(kV)		4	4	6
Isolation compliant				○	○	○
Rated voltage Ue (AC V)				100-230	100-230	100-230-400
Rated sensitive current (mA)				30, 100/200/500 changeover	30, 100/200 changeover	30, 100/200/500 changeover
Tripping time (s)				0.1 or less	0.1 or less	0.1 or less
Rated breaking capacity Icu/Ics (kA)	IEC 60947-2 EN 60947-2 JIS C 8201-2-2	AC	440V	–	–	10/5
			415V	–	–	10/5
			400V	–	–	10/5
			380V	–	–	10/5
			230V	5/3	10/5	25/13
			200V	5/3	10/5	25/13
			100V	5/3	10/5	25/13
	GB14048.2	AC	400V	–	–	10/5
			230V	5/3	10/5	25/13
Standard certified	CE Marking certified (TÜV)			○	○	○
	CCC approved			○	○	○
	Electrical Appliance and Material Safety Law *1			○	○	○
Dimensions (mm) 			a	75	75	75
			b	100	100	100
			c	60	60	60
			d	84	84	84
Mass (kg)				0.6	0.6	0.6
Tripping device				Thermal -magnetic		
Front mounting, front connection			No-mark	○	○	○
Front mounting, rear connection			X	○	○	○
Flush mounting, front connection			E	○	○	○
Flush mounting, top & bottom connection			Y	○	○	○
Plug-in mounting			P	○	○	○
IEC 35mm wide rail mounting			No-mark	○	○	○
Internal accessories			Page 07/57			
Alarm switch			K	○	○	○
Auxiliary switch			W	○	○	○
Undervoltage trip			R	○	○	○
Shunt trip			F	○	○	○
Earth alarm switch			L	–	–	–
External accessories			Page 07/60			
Handle padlocking device Cap type			QN	○	○	○
Handle padlocking device Plate type			Q2	▲	▲	▲
Operating handle N-type			N	○	○	○
Operating handle V-type			V	○	○	○
Terminal cover Short			BT□S	○	○	○
Terminal cover Long			BT□L	○	○	○
Insulation barrier Interphase			BP	○	○	○
Earth			BL	○	○	○
Handle locking cover			L1	○	○	○
Flat terminal			SS	○	○	○
Block terminal			SL	–	–	–

○: Approved –: Not approved ▲: Factory-mounted accessory
Note: *1 Electrical Appliance and Material Safety Law of Japan

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

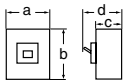
■ G-TWIN Standard Series

Ampere frame				125A					
Type				**EW125JAG**		**EW125SAG**		**EW125RAG**	
Pole				3	4	3	4	3	4
Rated current Reference amb. temp. (40°C)	In(A)			15, 20, 30, 40, 50, 60, 75, 100, 125					
Rated impulse withstand voltage	Uimp(kV)			6		6		6	
Isolation compliant				○		○		○	
Rated voltage Ue (AC V)				100-230-440					
Type of earth leakage trip action				AC type					
Instantaneous trip type	Rated sensitive current (mA)			30					
	Tripping time (s)			0.1 or less					
Instantaneous/time-delay trip type	Rated sensitive current (mA)			100/300/500/1000 changeover					
	Tripping time (s)			0.1/0.4/1/2 changeover					
	Inertia non-tripping time (s) (2IΔn)			0/0.2/0.5/1					
Rated breaking capacity Icu/Ics (kA)	IEC60947-2 EN60947-2 JISC8201-2-2	AC	440V	30/15		36/18		50/25	
			415V	30/15		36/18		50/25	
			400V	30/15		36/18		50/25	
			380V	30/15		36/18		50/25	
			230V	50/25		85/43		100/50	
			200V	50/25		85/43		100/50	
			100V	50/25		85/43		100/50	
	GB14048.2	AC	400V	30/15		36/18		50/25	
			230V	50/25		85/43		100/50	
Standard certified	CE Marking certified (TÜV)			○		○		○	
	CCC approved			○		○		○	
	Electrical Appliance and Material Safety Law *1			○ (except for 125A)		○ (except for 125A)		○ (except for 125A)	
Dimensions (mm) 			a	90	120	90	120	90	120
			b	155		155		155	
			c	68		68		68	
			d	95		95		95	
Mass (kg)				1.3	1.7	1.2	1.6	1.3	1.7
Tripping device				Thermal-magnetic					
Front mounting, front connection			No-mark	○	○	○	○	○	○
Front mounting, rear connection			X	○	○	○	○	○	○
Flush mounting, front connection			E	○	○	○	○	○	○
Plug-in mounting			P	○	–	○	–	○	–
Internal accessories			Page 07/58						
Alarm switch			K	○	○	○	○	○	○
Auxiliary switch			W	○	○	○	○	○	○
Undervoltage trip			R	○	○	○	○	○	○
Shunt trip			F	○	○	○	○	○	○
Earth alarm switch			L	○	○	○	○	○	○
External accessories			Page 07/60						
Handle padlocking device Cap type			Q1	○	○	○	○	○	○
Handle padlocking device Plate type			Q2	○	○	○	○	○	○
Operating handle N-type			N	○	○	○	○	○	○
Operating handle V-type			V	○	○	○	○	○	○
Terminal cover Short			BT□S	○	○	○	○	○	○
Terminal cover Long			BT□L	○	○	○	○	○	○
Insulation barrier Interphase			BP	○	○	○	○	○	○
Handle locking cover			L1	○	○	○	○	○	○
Flat terminal			SS	○	○	○	○	○	○
Block terminal			SL	○	○	○	○	○	○

○: Approved –: Not approved ▲: Factory-mounted accessory
Note: *1 Electrical Appliance and Material Safety Law of Japan

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

■ G-TWIN Standard Series

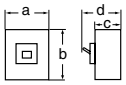
Ampere frame				160A						
Type				**EW160EAG**	**EW160JAG**		**EW160SAG**		**EW160RAG**	
Pole				3	3	4	3	4	3	4
Rated current Reference amb. temp. (40°C)		In(A)		125, 150, 160						
Rated impulse withstand voltage		Uimp(kV)		6	6		6		6	
Isolation compliant				○	○		○		○	
Rated voltage Ue (AC V)				100-230-440						
Type of earth leakage trip action				AC type						
Instantaneous trip type	Rated sensitive current (mA)			30						
	Tripping time (s)			0.1 or less						
Instantaneous/time-delay trip type	Rated sensitive current (mA)			100/300/500/1000 changeover						
	Tripping time (s)			0.1/0.4/1/2 changeover						
	Inertia non-tripping time (s) (2IΔn)			0/0.2/0.5/1						
Rated breaking capacity Icu/Ics (kA)	IEC60947-2 EN60947-2 JISC8201-2-2	AC	440V	18/9	30/15		36/18		50/25	
			415V	18/9	30/15		36/18		50/25	
			400V	18/9	30/15		36/18		50/25	
			380V	18/9	30/15		36/18		50/25	
			230V	36/18	50/25		85/43		100/50	
			200V	36/18	50/25		85/43		100/50	
			100V	36/18	50/25		85/43		100/50	
	GB14048.2	AC	400V	18/9	30/15		36/18		50/25	
			230V	36/18	50/25		85/43		100/50	
Standard certified	CE Marking certified (TÜV)			○	○		○		○	
	CCC approved			○	○		○		○	
Dimensions (mm)			a	105	105	140	105	140	105	140
			b	165	165		165		165	
			c	68	68		68		68	
			d	95	95		95		95	
Mass (kg)				1.8	1.8	2.3	1.8	2.3	1.8	2.3
Tripping device				Thermal-magnetic						
Front mounting, front connection			No-mark	○	○	○	○	○	○	○
Front mounting, rear connection			X	○	○	○	○	○	○	○
Flush mounting, front connection			E	○	○	○	○	○	○	○
Plug-in mounting			P	○	○	–	○	–	○	–
Internal accessories			Page 07/58							
Alarm switch			K	○	○	○	○	○	○	○
Auxiliary switch			W	○	○	○	○	○	○	○
Undervoltage trip			R	○	○	○	○	○	○	○
Shunt trip			F	○	○	○	○	○	○	○
Earth alarm switch			L	○	○	○	○	○	○	○
External accessories			Page 07/60							
Handle padlocking device	Cap type		Q1	○	○	○	○	○	○	○
Handle padlocking device	Plate type		Q2	○	○	○	○	○	○	○
Operating handle	N-type		N	○	○	○	○	○	○	○
Operating handle	V-type		V	○	○	○	○	○	○	○
Terminal cover	Short		BT□S	○	○	○	○	○	○	○
Terminal cover	Long		BT□L	○	○	○	○	○	○	○
Insulation barrier	Interphase		BP	○	○	○	○	○	○	○
Handle locking cover			L1	○	○	○	○	○	○	○
Flat terminal			SS	○	○	○	○	○	○	○
Block terminal			SL	○	○	○	○	○	○	○

○: Approved –: Not approved ▲: Factory-mounted accessory
Note: *1 Electrical Appliance and Material Safety Law of Japan

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

07

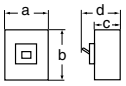
■ G-TWIN Standard Series

Ampere frame				250A						
Type				**EW250EAG**	**EW250JAG**		**EW250SAG**		**EW250RAG**	
Pole				3	3	4	3	4	3	4
Rated current Reference amb. temp. (40°C)		In(A)		175, 200, 225, 250		175,200,225	175,200,225,250	175,200,225	175,200,225,250	175,200,225
Rated impulse withstand voltage		Uimp(kV)		6	6		6		6	
Isolation compliant				○	○		○		○	
Rated voltage Ue (AC V)				100-230-440						
Type of earth leakage trip action				AC type						
Instantaneous trip type	Rated sensitive current (mA)			30						
	Tripping time (s)			0.1 or less						
Instantaneous/time-delay trip type	Rated sensitive current (mA)			100/300/500/1000 changeover						
	Tripping time (s)			0.1/0.4/1/2 changeover						
	Inertia non-tripping time (s) (2IΔn)			0/0.2/0.5/1						
Rated breaking capacity Icu/Ics (kA)	IEC60947-2 EN60947-2 JISC8201-2-2	AC	440V	18/9	30/15		36/18		50/25	
			415V	18/9	30/15		36/18		50/25	
			400V	18/9	30/15		36/18		50/25	
			380V	18/9	30/15		36/18		50/25	
			230V	36/18	50/25		85/43		100/50	
			200V	36/18	50/25		85/43		100/50	
			100V	36/18	50/25		85/43		100/50	
	GB14048.2	AC	400V	18/9	30/15		36/18		50/25	
			230V	36/18	50/25		85/43		100/50	
Standard certified	CE Marking certified (TÜV)			○	○		○		○	
	CCC approved			○	○		○		○	
Dimensions (mm) 			a	105	105	140	105	140	105	140
			b	165	165		165		165	
			c	68	68		68		68	
			d	95	95		95		95	
Mass (kg)				1.8	1.8	2.3	1.8	2.3	1.8	2.3
Tripping device				Thermal-magnetic						
Front mounting, front connection			No-mark	○	○	○	○	○	○	○
Front mounting, rear connection			X	○	○	○	○	○	○	○
Flush mounting, front connection			E	○	○	○	○	○	○	○
Plug-in mounting			P	○	○	–	○	–	○	–
Internal accessories			Page 07/58							
Alarm switch			K	○	○	○	○	○	○	○
Auxiliary switch			W	○	○	○	○	○	○	○
Undervoltage trip			R	○	○	○	○	○	○	○
Shunt trip			F	○	○	○	○	○	○	○
Earth alarm switch			L	○	○	○	○	○	○	○
External accessories			Page 07/60							
Handle padlocking device Cap type			Q1	○	○	○	○	○	○	○
Handle padlocking device Plate type			Q2	○	○	○	○	○	○	○
Operating handle N-type			N	○	○	○	○	○	○	○
Operating handle V-type			V	○	○	○	○	○	○	○
Terminal cover Short			BT□S	○	○	○	○	○	○	○
Terminal cover Long			BT□L	○	○	○	○	○	○	○
Insulation barrier Interphase			BP	○	○	○	○	○	○	○
Handle locking cover			L1	○	○	○	○	○	○	○
Flat terminal			SS	○	○	○	○	○	○	○
Block terminal			SL	○	○	○	○	○	○	○

○: Approved –: Not approved ▲: Factory-mounted accessory
Note: *1 Electrical Appliance and Material Safety Law of Japan

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

■ G-TWIN Standard Series

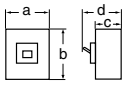
Ampere frame				400A								
Type				**EW400EAG**	**EW400SAG**		**EW400RAG**		**EW400HAG**	
Pole				3	3	4	3	4	3	4
Rated current Reference amb. temp. (40°C)			In(A)	250, 300, 350, 400						
Rated impulse withstand voltage			Uimp(kV)	6	6		6		6	
Isolation compliant				○	○		○		○	
Rated voltage Ue (AC V)			IEC	100-230-440						
			UL	200-480						
Type of earth leakage trip action				AC type						
Instantaneous trip type	Rated sensitive current (mA)			30						
	Tripping time (s)			0.1 or less						
Instantaneous/time-delay trip type	Rated sensitive current (mA)			100/300/500/1000 changeover						
	Tripping time (s)			0.1/0.4/1/2 changeover						
	Inertia non-tripping time (s) (2IΔn)			0/0.2/0.5/1						
Rated breaking capacity Icu/Ics (kA)	IEC60947-2 EN60947-2 JISC8201-2-2	AC	440V	30/15	36/18		50/25		70/35	
			415V	30/15	36/18		50/25		70/35	
			400V	30/15	36/18		50/25		70/35	
			380V	30/15	36/18		50/25		70/35	
			230V	50/25	85/43		100/50		125/63	
			200V	50/25	85/43		100/50		125/63	
			100V	50/25	85/43		100/50		125/63	
	GB14048.2	AC	400V	30/15	36/18		50/25		70/35	
			230V	50/25	85/43		100/50		125/63	
Standard certified	CE Marking certified (TÜV)			○	○		○		○	
	CCC approved			○	○		○		○	
Dimensions (mm) 			a	140	140	185	140	185	140	185
			b	257	257		257		257	
			c	103	103		103		103	
			d	146	146		146		146	
Mass (kg)				5.8	5.8	7.8	5.8	7.8	5.8	7.8
Tripping device				Thermal-magnetic						
Front mounting, front connection			No-mark	○	○	○	○	○	○	○
Front mounting, rear connection			X	○	○	○	○	○	○	○
Flush mounting, front connection			E	○	○	○	○	○	○	○
Plug-in mounting			P	○	○	–	○	–	○	–
Internal accessories			Page 07/59							
Alarm switch			K	○	○	○	○	○	○	○
Auxiliary switch			W	○	○	○	○	○	○	○
Undervoltage trip			R	○	○	○	○	○	○	○
Shunt trip			F	○	○	○	○	○	○	○
Earth alarm switch			L	▲	▲	▲	▲	▲	▲	▲
External accessories			Page 07/60							
Handle padlocking device Cap type			QN	○	○	○	○	○	○	○
Handle padlocking device Plate type			Q2	○	○	○	○	○	○	○
Operating handle N-type			N	○	○	○	○	○	○	○
Operating handle V-type			V	○	○	○	○	○	○	○
Terminal cover Short			BT□S	○	○	○	○	○	○	○
Terminal cover Long			BT□L	○	○	○	○	○	○	○
Insulation barrier Interphase			BP	○	○	○	○	○	○	○
Handle locking cover			L1	○	○	○	○	○	○	○
Flat terminal			SS	○*2	○*2	○*2	○*2	○*2	○*2	○*2
Block terminal			SL	○	○	○	○	○	○	○

○: Approved –: Not approved ▲: Factory-mounted accessory
Note: *1 Electrical Appliance and Material Safety Law of Japan
*2 Standard provided

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

07

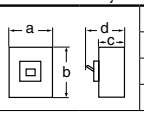
■ G-TWIN Standard Series

Ampere frame				630A			800A		
Type				**EW630EAG**	**EW630RAG**	**EW630HAG**	**EW800EAG**	**EW800RAG**	**EW800HAG**
Pole				3	3	3	3	3	3
Rated current Reference amb. temp. (40°C)		In(A)		500, 600, 630			700, 800		
Rated impulse withstand voltage		Uimp(kV)		6	6	6	6	6	6
Isolation compliant				○	○	○	○	○	○
Rated voltage Ue (AC V)				100-230-440					
Type of earth leakage trip action				AC type					
Instantaneous/time-delay trip type	Rated sensitive current (mA)			100/300/500/1000 changeover					
	Tripping time (s)			0.1/0.4/1/2 changeover					
	Inertia non-tripping time (s) (2IΔn)			0/0.2/0.5/1					
Rated breaking capacity Icu/Ics (kA)	IEC60947-2 EN60947-2 JISC8201-2-2	AC	440V	36/18	50/25	70/35	36/18	50/25	70/35
			415V	36/18	50/25	70/35	36/18	50/25	70/35
			400V	36/18	50/25	70/35	36/18	50/25	70/35
			380V	36/18	50/25	70/35	36/18	50/25	70/35
			230V	50/25	100/50	125/63	50/25	100/50	125/63
			200V	50/25	100/50	125/63	50/25	100/50	125/63
			100V	50/25	100/50	125/63	50/25	100/50	125/63
	GB14048.2	AC	400V	36/18	50/25	70/35	36/18	50/25	70/35
			230V	50/25	100/50	125/63	50/25	100/50	125/63
Standard certified	CE Marking certified (TÜV)			○	○	○	○	○	○
	CCC approved			○	○	○	○	○	○
Dimensions (mm) 			a	210	210	210	210	210	210
			b	275	275	275	275	275	275
			c	103	103	103	103	103	103
			d	146	146	146	146	146	146
Mass (kg)				9.1	9.1	9.1	9.6	9.6	9.6
Tripping device				Thermal-magnetic					
Front mounting, front connection			No-mark	○	○	○	○	○	○
Front mounting, rear connection			X	○	○	○	○	○	○
Flush mounting, front connection			E	○	○	○	○	○	○
Plug-in mounting			P	○	○	○	○	○	○
Internal accessories			Page 07/59						
Alarm switch			K	○	○	○	○	○	○
Auxiliary switch			W	○	○	○	○	○	○
Undervoltage trip			R	○	○	○	○	○	○
Shunt trip			F	○	○	○	○	○	○
Earth alarm switch			L	▲	▲	▲	▲	▲	▲
External accessories			Page 07/60						
Handle padlocking device	Cap type		QN	○	○	○	○	○	○
Handle padlocking device	Plate type		Q2	○	○	○	○	○	○
Operating handle	N-type		N	○	○	○	○	○	○
Operating handle	V-type		V	○	○	○	○	○	○
Terminal cover	Short		BT□S	○	○	○	○	○	○
Terminal cover	Long		BT□L	○	○	○	○	○	○
Insulation barrier	Interphase		BP	○	○	○	○	○	○
Handle locking cover			L1	○	○	○	○	○	○
Flat terminal			SS	○*2	○*2	○*2	○*2	○*2	○*2
Block terminal			SL	○	○	○	○	○	○

○: Approved –: Not approved ▲: Factory-mounted accessory
Note: *1 Electrical Appliance and Material Safety Law of Japan
*2 Standard provided

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

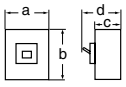
■ G-TWIN Global Series

Ampere frame				50A	100A	
Type				**EW50RAGU**	**EW100EAGU**	
Pole				3	2	3
Rated current Reference amb. temp. (40°C)		In(A)		3, 5, 10, 15, 20, 30, 32, 40, 50	60, 63, 70, 75, 80, 90, 100	
Rated impulse withstand voltage		Uimp(kV)		6	4	6
Isolation compliant				○	○	○
Rated voltage Ue (AC V)		IEC		100-230-440	100-230	100-230-440
		UL		240	240	240
Rated sensitive current (mA)				30, 50, 100/200/500 changeover	30, 100/200 changeover	30, 50, 100/200/500 changeover
Tripping time (s)				0.1 or less	0.1 or less	0.1 or less
Rated breaking capacity	IEC 60947-2 EN 60947-2 JIS C 8201-2-2 Icu/Ics (kA)	AC	440V	10/5	7.5/4	10/5
			415V	10/5	7.5/4	10/5
			400V	10/5	7.5/4	10/5
			380V	10/5	7.5/4	10/5
			230V	25/13	7.5/4	25/13
			200V	25/13	7.5/4	25/13
			100V	25/13	10/5	25/13
	GB14048.2 Icu/Ics(kA)	AC	400V	10/5	7.5/4	10/5
			230V	25/13	10/5	25/13
	UL489 CAN/CSA C22.2 NO.5 (kA)	AC	480V/Δ	–	–	–
			480V/Y	–	–	–
			240V	14	14	14
Standard certified	CE Marking			○	○	○
	CCC approved			○	○	○
	UL Listed (NEMA AB1)			○	○	○
	Electrical Appliance and Material Safety Law *1			○	○	○
Dimensions (inch(mm))			a	2.953 (75)	2.953 (75)	2.953 (75)
			b	4.724 (120)	4.724 (120)	4.724 (120)
			c	2.362 (60)	2.362 (60)	2.362 (60)
			d	3.307 (84)	3.307 (84)	3.307 (84)
Mass (kg)				0.6	0.6	0.6
Tripping device				Hydraulic-magnetic		
Connecting terminal			Page 07/26			
Screw			S□	○	○	○
Flat				○	○	○
Block				–	–	–
Internal accessories			Page 07/57			
Alarm switch			K	○	○	○
Auxiliary switch			W	○	○	○
Undervoltage trip			R	○	○	○
Shunt trip			F	○	○	○
Earth alarm switch			L	–	–	–
External accessories			Page 07/60			
Operating handle N-type			N	○	○	○
Operating handle V-type			V	○	○	○
Terminal cover Short			BT□S	○*2	○	○
Terminal cover Long			BT□L	○	○	○
Insulation barrier Interphase			BP	○	○	○

○: Approved –: Not approved
Note: *1 Electrical Appliance and Material Safety Law of Japan
*2 Standard provided

Rated voltage (V)	Operational voltage range (V)
100–230	80–264
240	80–264
100–230–440	80-484

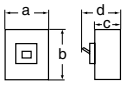
■ G-TWIN Global Series

Ampere frame				125A	
Type				**EW125JAGU**	**EW125RAGU**
Pole				3	3
Rated current Reference amb. temp. (40°C)		In(A)		15, 20, 30, 40, 50, 60, 75, 100, 125	
Rated impulse withstand voltage		Uimp(kV)		6	6
Isolation compliant				○	○
Rated voltage Ue (AC V)		IEC		100-230-440	
		UL		240-480	
Type of earth leakage trip action				AC type	
Instantaneous trip type	Rated sensitive current (mA)			30	
	Tripping time (s)			0.1 or less	
Instantaneous/time-delay trip type	Rated sensitive current (mA)			100/200/500/1000 changeover	
	Tripping time (s)			0.1/0.4/1/2 changeover	
	Inertia non-tripping time (s) (2IΔn)			0/0.2/0.5/1	
Rated breaking capacity	IEC60947-2 EN60947-2 JISC8201-2-2 Icu/Ics (kA)	AC	440V	30/15	50/25
			415V	30/15	50/25
			400V	30/15	50/25
			380V	30/15	50/25
			230V	50/25	100/50
			200V	50/25	100/50
			100V	50/25	100/50
	GB14048.2 Icu/Ics (kA)	AC	400V	30/15	50/25
			230V	50/25	100/50
	UL489 CAN/CSA C22.2 NO.5 (kA)	AC	480V/Δ	30	50
			480V/Y	30	50
			240V	50	100
Standard certified	CE Marking certified (TÜV)			○	○
	CCC approved			○	○
	UL approved			○	○
	Electrical Appliance and Material Safety Law *1			○ (except for 125A)	○ (except for 125A)
Dimensions (inch(mm)) 			a	3.543 (90)	3.543 (90)
			b	6.732 (171)	6.732 (171)
			c	2.677 (68)	2.677 (68)
			d	3.740 (95)	3.740 (95)
Mass (kg)				1.3	1.3
Tripping device				Thermal-magnetic	
Connecting terminal		Page 07/26			
Screw		S□		○	○
Flat				○	○
Block				○	○
Internal accessories		Page 07/58			
Alarm switch		K		○	○
Auxiliary switch		W		○	○
Undervoltage trip		R		○	○
Shunt trip		F		○	○
Earth alarm switch		L		○	○
External accessories		Page 07/60			
Operating handle N-type		N		○	○
Operating handle V-type		V		○	○
Operating handle F-type		F		○	○
Terminal cover Short		BT□S		○ *2	○ *2
Terminal cover Long		BT□L		○	○
Insulation barrier Interphase		BP		○	○

○: Approved –: Not approved
Note: *1 Electrical Appliance and Material Safety Law of Japan
*2 Standard provided

Rated voltage (V)	Operational voltage range (V)
240–480	80–504
100–230–440	80-484

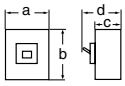
■ G-TWIN Global Series

Ampere frame				250A	
Type				**EW250JAGU**	**EW250RAGU**
Pole				3	3
Rated current Reference amb. temp. (40°C)		In(A)		125, 150, 160, 175, 200, 225, 250	
Rated impulse withstand voltage		Uimp(kV)		6	6
Isolation compliant				○	○
Rated voltage Ue (AC V)		IEC		100-230-440	
		UL		240-480	
Type of earth leakage trip action				AC type	
Instantaneous trip type	Rated sensitive current (mA)			30	
	Tripping time (s)			0.1 or less	
Instantaneous/time-delay trip type	Rated sensitive current (mA)			100/200/500/1000 changeover	
	Tripping time (s)			0.1/0.4/1/2 changeover	
	Inertia non-tripping time (s) (2IΔn)			0/0.2/0.5/1	
Rated breaking capacity	IEC60947-2 EN60947-2 JISC8201-2-2 Icu/Ics (kA)	AC	440V	30/15	50/25
			415V	30/15	50/25
			400V	30/15	50/25
			380V	30/15	50/25
			230V	50/25	100/50
			200V	50/25	100/50
			100V	50/25	100/50
	GB14048.2 Icu/Ics (kA)	AC	400V	30/15	50/25
			230V	50/25	100/50
	UL489 CAN/CSA C22.2 NO.5 (kA)	AC	480V/Δ	30	50
			480V/Y	30	50
			240V	50	100
Standard certified	CE Marking certified (TÜV)			○	○
	CCC approved			○	○
	UL approved			○	○
Dimensions (inch(mm)) 			a	4.134 (105)	4.134 (105)
			b	7.126 (181)	7.126 (181)
			c	2.677 (68)	2.677 (68)
			d	3.740 (95)	3.740 (95)
Mass (kg)				1.8	1.8
Tripping device				Thermal-magnetic	
Connecting terminal		Page 07/26			
Screw		S□		○	○
Flat				○	○
Block				○	○
Internal accessories		Page 07/58			
Alarm switch		K		○	○
Auxiliary switch		W		○	○
Undervoltage trip		R		○	○
Shunt trip		F		○	○
Earth alarm switch		L		○	○
External accessories		Page 07/60			
Operating handle N-type		N		○	○
Operating handle V-type		V		○	○
Operating handle F-type		F		○	○
Terminal cover Short		BT□S		○ *1	○ *1
Terminal cover Long		BT□L		○	○
Insulation barrier Interphase		BP		○	○

○: Approved –: Not approved
Note: *1 Standard provided

Rated voltage (V)	Operational voltage range (V)
240–480	80–504
100–230–440	80-484

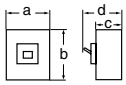
■ G-TWIN Global Series

Ampere frame				400A		
Type				**EW400SAGU**	**EW400RAGU**	**EW400HAGU**
Pole				3	3	3
Rated current Reference amb. temp. (40°C)		In(A)		250, 300, 350, 400		
Rated impulse withstand voltage		Uimp(kV)		6	6	6
Isolation compliant				○	○	○
Rated voltage Ue (AC V)		IEC		100-230-440		
		UL		240-480		
Type of earth leakage trip action				AC type		
Instantaneous trip type	Rated sensitive current (mA)			30		
	Tripping time (s)			0.1 or less		
Instantaneous/time-delay trip type	Rated sensitive current (mA)			100/200/500/1000 changeover		
	Tripping time (s)			0.1/0.4/1/2 changeover		
	Inertia non-tripping time (s) (2IΔn)			0/0.2/0.5/1		
Rated breaking capacity	IEC60947-2 EN60947-2 JISC8201-2-2 Icu/Ics (kA)	AC	440V	36/18	50/25	70/35
			415V	36/18	50/25	70/35
			400V	36/18	50/25	70/35
			380V	36/18	50/25	70/35
			230V	85/43	100/50	125/63
			200V	85/43	100/50	125/63
			100V	85/43	100/50	125/63
	GB14048.2 Icu/Ics (kA)	AC	400V	36/18	50/25	70/35
			230V	85/43	100/50	125/63
	UL489 CAN/CSA C22.2 NO.5 (kA)	AC	480V/Δ	35	50	65 (with block terminal: 50)
			480V/Y	35	50	65 (with block terminal: 50)
			240V	50	100	100
Standard certified	CE Marking certified (TÜV)			○	○	○
	CCC approved			○	○	○
	UL approved			○	○	○
Dimensions (inch(mm)) 			a	5.512 (140)	5.512 (140)	5.512 (140)
			b	10.12 (257)	10.12 (257)	10.12 (257)
			c	4.055 (103)	4.055 (103)	4.055 (103)
			d	5.748 (146)	5.748 (146)	5.748 (146)
Mass (kg)				6.3	6.3	6.3
Tripping device				Thermal-magnetic		
Connecting terminal			Page 07/26			
Screw			S□	–	–	–
Flat				○	○	○
Block				○	○	○
Internal accessories			Page 07/58			
Alarm switch			K	○	○	○
Auxiliary switch			W	○	○	○
Undervoltage trip			R	○	○	○
Shunt trip			F	○	○	○
Earth alarm switch			L	▲	▲	▲
External accessories			Page 07/60			
Operating handle N-type			N	○	○	○
Operating handle V-type			V	○	○	○
Operating handle F-type			F	○	○	○
Terminal cover Short			BT□S	○	○	○
Terminal cover Long			BT□L	○	○	○
Insulation barrier Interphase			BP	○	○	○

○: Approved –: Not approved ▲: Factory-mounted accessory

Rated voltage (V)	Operational voltage range (V)
240–480	80–504
100–230–440	80-484

■ G-TWIN Global Series

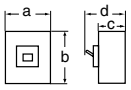
Ampere frame				630A
Type				**EW630RAGU**
Pole				3
Rated current Reference amb. temp. (40°C)		In(A)		500, 600, 630*1
Rated impulse withstand voltage		Uimp(kV)		6
Isolation compliant				○
Rated voltage Ue (AC V)		IEC		100-230-440
		UL		240-480
Instantaneous/time-delay trip type	Rated sensitive current (mA)			100/200/500/1000 changeover
	Tripping time (s)			0.1/0.4/1/2 changeover
	Inertia non-tripping time (s) (2IΔn)			0/0.2/0.5/1
Rated breaking capacity	IEC60947-2 EN60947-2 JISC8201-2-2 Icu/Ics (kA)	AC	440V	50/25
			415V	50/25
			400V	50/25
			380V	50/25
			230V	100/50
			200V	100/50
			100V	100/50
	GB14048.2 Icu/Ics (kA)	AC	400V	50/25
			230V	100/50
	UL489 CAN/CSA C22.2 NO.5 (kA)	AC	480V/Δ	50
			480V/Y	50
			240V	100
Standard certified	CE Marking certified (TÜV)			○
	CCC approved			○
	UL approved			○
Dimensions (inch(mm)) 			a	8.268 (210)
			b	10.83 (275)
			c	4.055 (103)
			d	5.748 (146)
Mass (kg)				10.2
Tripping device				Thermal-magnetic

Connecting terminal	Page 07/27	
Screw	S□	–
Flat		○
Block		○
Internal accessories	Page 07/59	
Alarm switch	K	○*2
Auxiliary switch	W	○*2
Undervoltage trip	R	○*2
Shunt trip	F	○*2
Earth alarm switch	L	▲
External accessories	Page 07/60	
Operating handle N-type	N	○
Operating handle V-type	V	○
Terminal cover Short	BT□S	○
Terminal cover Long	BT□L	○
Insulation barrier Interphase	BP	○

○: Approved –: Not approved ▲: Factory-mounted accessory
Note: *1 Breakers for 630A cannot be manufactured with block terminals.
*2 Block terminals are not available.

Rated voltage (V)	Operational voltage range (V)
240–480	80–504
100–230–440	80-484

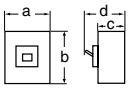
■ G-TWIN Standard Series / Motor protection

Ampere frame				32A	
Type				**EW32EAM**	**EW32SAM**
Pole				3	3
Rated current Reference amb. temp. (40°C)		In(A)		1.4, 2.6, 4, 5, 8, 10, 16, 24, 32	0.7, 1.4, 2, 2.6, 4, 5, 8, 10, 12, 16, 24, 32
Rated impulse withstand voltage		Uimp(kV)		4	4
Isolation compliant				○	○
Rated voltage Ue(AC V)				100-230-440	100-230-440
Rated sensitive current (mA)				30, 100	30, 100/200/500 changeover
Tripping time (s)				0.1 or less	0.1 or less
Rated breaking capacity Icu/Ics (kA)	IEC 60947-2 EN 60947-2 JIS C 8201-2-2	AC	440V	1.5/1	2.5/2
			415V	1.5/1	2.5/2
			400V	1.5/1	2.5/2
			380V	1.5/1	2.5/2
			230V	2.5/2	5/3
			200V	2.5/2	5/3
			100V	5/3	5/3
	GB14048.2	AC	400V	1.5/1	2.5/2
			230V	2.5/2	5/3
Standard certified	CE Marking			○	○
	CCC approved			○	○
	Electrical Appliance and Material Safety Law*1			○	○
Dimensions (mm)			a	75	75
			b	100	100
			c	60	60
			d	84	84
Mass (kg)				0.5	0.5
Tripping device				Hydraulic-magnetic	Hydraulic-magnetic
Front mounting, front connection			No-mark	○	○
Front mounting, rear connection			X	○	○
Flush mounting, front connection			E	○	○
Flush mounting, top & buttom connection			Y	○	○
Plug-in mounting			P	○	○
IEC 35mm wide rail mounting			No-mark	○	○
Internal accessories			Page 07/57		
Alarm switch			K	○	○
Auxiliary switch			W	○	○
Undervoltage trip			R	○	○
Shunt trip			F	○	○
Earth alarm switch			L	–	–
External accessories			Page 07/60		
Handle padlocking device Cap type			QN	○	○
Handle padlocking device Plate type			Q2	▲	▲
Operating handle N-type			N	○	○
Operating handle V-type			V	○	○
Terminal cover Short			BT□S	○	○
Terminal cover Long			BT□L	○	○
Insulation barrier Interphase *3			BP	○	○
Insulation barrier Earth			BL	○	○
Handle locking cover			L1	○	○
Flat terminal			SS	○	○
Block terminal			SL	–	–

○ : Approved – : Not approved ▲ : Factory-mounted accessory
Note: *1 Electrical Appliance and Material Safety Law of Japan

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

■ G-TWIN Standard Series / Motor protection

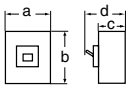
Ampere frame				50A	
Type				**EW50EAM**	**EW50SAM**
Pole				3	3
Rated current Reference amb. temp. (40°C)		In(A)		45	0.7, 1.4, 2, 2.6, 4, 5, 8, 10, 12, 16, 24, 32, 40, 45
Rated impulse withstand voltage		Uimp(kV)		4	6
Isolation compliant				○	○
Rated voltage Ue (AC V)				100-230-440	100-230-440
Rated sensitive current (mA)				30, 100/200 changeover	30, 100/200/500 changeover
Tripping time (s)				0.1 or less	0.1 or less
Rated breaking capacity Icu/Ics (kA)	IEC 60947-2 EN 60947-2 JIS C 8201-2-2	AC	440V	2.5/2	7.5/4
			415V	2.5/2	7.5/4
			400V	2.5/2	7.5/4
			380V	2.5/2	7.5/4
			230V	5/3	10/5
			200V	5/3	10/5
			100V	5/3	10/5
	GB14048.2	AC	400V	2.5/2	7.5/4
			230V	5/3	10/5
Standard certified	CE Marking			○	○
	CCC approved			○	○
	Electrical Appliance and Material Safety Law*1			○	○
Dimensions (mm)			a	75	75
			b	100	100
			c	60	60
			d	84	84
Mass (kg)				0.6	0.6
Tripping device				Hydraulic-magnetic	Hydraulic-magnetic
Front mounting, front connection			No-mark	○	○
Front mounting, rear connection			X	○	○
Flush mounting, front connection			E	○	○
Flush mounting, top & buttom connection			Y	○	○
Plug-in mounting			P	○	○
IEC 35mm wide rail mounting			No-mark	○	○
Internal accessories			Page 07/57		
Alarm switch			K	○	○
Auxiliary switch			W	○	○
Undervoltage trip			R	○	○
Shunt trip			F	○	○
Earth alarm switch			L	–	–
External accessories			Page 07/60		
Handle padlocking device Cap type			QN	○	○
Handle padlocking device Plate type			Q2	▲	▲
Operating handle N-type			N	○	○
Operating handle V-type			V	○	○
Terminal cover Short			BT□S	○	○
Terminal cover Long			BT□L	○	○
Insulation barrier Interphase *3			BP	○	○
Insulation barrier Earth			BL	○	○
Handle locking cover			L1	○	○
Flat terminal			SS	○	○
Block terminal			SL	–	–

○ : Approved – : Not approved ▲ : Factory-mounted accessory
Note: *1 Electrical Appliance and Material Safety Law of Japan

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

07

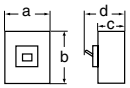
■ G-TWIN Standard Series / Motor protection

Ampere frame				63A		100A
Type				**EW63EAM**	**EW63SAM**	**EW100EAM**
Pole				3	3	3
Rated current Reference amb. temp. (40°C)		In(A)		63	63	63, 75, 90
Rated impulse withstand voltage		Uimp(kV)		6	6	6
Isolation compliant				○	○	○
Rated voltage Ue (AC V)				100-230-440	100-230-440	100-230-440
Rated sensitive current (mA)				30, 100/200 changeover	30, 100/200/500 changeover	30, 100/200/500 changeover
Tripping time (s)				0.1 or less	0.1 or less	0.1 or less
Rated breaking capacity Icu/Ics (kA)	IEC 60947-2 EN 60947-2 JIS C 8201-2-2	AC	440V	2.5/2	7.5/4	10/5
			415V	2.5/2	7.5/4	10/5
			400V	2.5/2	7.5/4	10/5
			380V	2.5/2	7.5/4	10/5
			230V	5/3	10/5	25/13
			200V	5/3	10/5	25/13
			100V	5/3	10/5	25/13
	GB14048.2	AC	400V	2.5/2	7.5/4	10/5
			230V	5/3	10/5	25/13
Standard certified	CE Marking			○	○	○
	CCC approved			○	○	○
	Electrical Appliance and Material Safety Law *1			○	○	○
Dimensions (mm)			a	75	75	75
			b	100	100	100
			c	60	60	60
			d	84	84	84
Mass (kg)				0.6	0.6	0.6
Tripping device				Hydraulic-magnetic	Hydraulic-magnetic	Hydraulic-magnetic
Front mounting, front connection			No-mark	○	○	○
Front mounting, rear connection			X	○	○	○
Flush mounting, front connection			E	○	○	○
Flush mounting, top & buttom connection			Y	○	○	○
Plug-in mounting			P	○	○	○
IEC 35mm wide rail mounting			No-mark	○	○	○
Internal accessories			Page 07/57			
Alarm switch			K	○	○	○
Auxiliary switch			W	○	○	○
Undervoltage trip			R	○	○	○
Shunt trip			F	○	○	○
Earth alarm switch			L	–	–	–
External accessories			Page 07/60			
Handle padlocking device Cap type			QN	○	○	○
Handle padlocking device Plate type			Q2	▲	▲	▲
Operating handle N-type			N	○	○	○
Operating handle V-type			V	○	○	○
Terminal cover Short			BT□S	○	○	○
Terminal cover Long			BT□L	○	○	○
Insulation barrier Interphase *3			BP	○	○	○
Insulation barrier Earth			BL	○	○	○
Handle locking cover			L1	○	○	○
Flat terminal			SS	○	○	○
Block terminal			SL	–	–	–

○ : Approved – : Not approved ▲ : Factory-mounted accessory
Note: *1 Electrical Appliance and Material Safety Law of Japan

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

■ G-TWIN Standard Series / Motor protection

Ampere frame				125A		250A		
Type				**EW125JAM**	**EW125RAM**	**EW250EAM**	**EW250JAM**	**EW250RAM**
Pole				3	3	3	3	3
Rated current Reference amb. temp. (40°C)		In(A)		16, 24, 32, 40, 45, 60, 75, 90		125, 150, 175, 225		
Rated impulse withstand voltage		Uimp(kV)		6	6	6	6	6
Isolation compliant				○	○	○	○	○
Rated voltage Ue (AC V)				100-230-440	100-230-440	100-230-440	100-230-440	100-230-440
Type of earth leakage trip action				AC type		AC type		
Instantaneous trip type	Rated sensitive current (mA)			30		30		
	Tripping time (s)			0.1 or less		0.1 or less		
Instantaneous/ time-delay trip type	Rated sensitive current (mA)			100/200/500/1000 changeover		100/200/500/1000 changeover		
	Tripping time (s)			0.1/0.4/1/2 changeover		0.1/0.4/1/2 changeover		
	Inertia non-tripping time (s) (2IΔn)			0/0.2/0.5/1		0/0.2/0.5/1		
Rated breaking capacity Icu/Ics (kA)	IEC 60947-2 EN 60947-2 JIS C 8201-2-2	AC	440V	30/15	50/25	18/9	30/15	50/25
			415V	30/15	50/25	18/9	30/15	50/25
			400V	30/15	50/25	18/9	30/15	50/25
			380V	30/15	50/25	18/9	30/15	50/25
			230V	50/25	100/50	36/18	50/25	100/50
			200V	50/25	100/50	36/18	50/25	100/50
			100V	50/25	100/50	36/18	50/25	100/50
	GB14048.2	AC	400V	30/15	50/25	18/9	30/15	50/25
			230V	50/25	100/50	36/18	50/25	100/50
Standard certified	CE Marking			○	○	○	○	○
	CCC approved			○	○	○	○	○
	Electrical Appliance and Material Safety Law*1			○	○	–	–	–
Dimensions (mm) 			a	90	90	105	105	105
			b	155	155	165	165	165
			c	68	68	68	68	68
			d	95	95	95	95	95
Mass (kg)				1.3	1.3	1.8	1.8	1.8
Tripping device				Thermal-magnetic	Thermal-magnetic	Thermal-magnetic	Thermal-magnetic	Thermal-magnetic
Front mounting, front connection			No-mark	○	○	○	○	○
Front mounting, rear connection			X	○	○	○	○	○
Flush mounting, front connection			E	○	○	○	○	○
Flush mounting, top & buttom connection			Y	○	○	○	○	○
Plug-in mounting			P	○	○	○	○	○
Internal accessories			Page 07/58					
Alarm switch			K	○	○	○	○	○
Auxiliary switch			W	○	○	○	○	○
Undervoltage trip			R	○	○	○	○	○
Shunt trip			F	○	○	○	○	○
Earth alarm switch			L	○	○	○	○	○
External accessories			Page 07/60					
Handle padlocking device Cap type			Q1	○	○	○	○	○
Handle padlocking device Plate type			Q2	○	○	○	○	○
Operating handle N-type			N	○	○	○	○	○
Operating handle V-type			V	○	○	○	○	○
Terminal cover Short			BT□S	○	○	○	○	○
Terminal cover Long			BT□L	○	○	○	○	○
Insulation barrier Interphase *3			BP	○	○	○	○	○
Insulation barrier Earth			BL	○	○	○	○	○
Handle locking cover			L1	○	○	○	○	○
Flat terminal			SS	○	○	○	○	○
Block terminal			SL	–	–	–	–	–

○ : Approved – : Not approved
Note: *1 Electrical Appliance and Material Safety Law of Japan

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

07

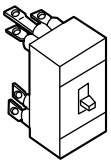
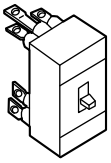
■ Mounting modifications

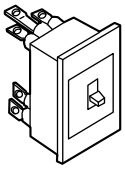
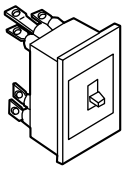
• Standard series

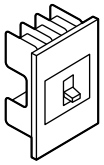
Standard type FUJI breakers are front mounting with front connections. The standard breaker can easily be modified to become front mounting rear connection type, flush mounting type and plug-in type. The additional parts such as insulation bases, barriers, covers and similar parts are added as required.

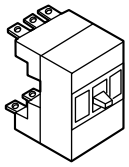
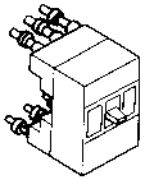
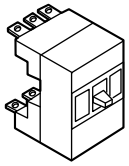
Front mounting
Front connection

BASIC DESIGN

Additional main parts	Front mounting Rear connection (X type)
Bar stud terminal 	EW32 EW50 EW63 EW100
Bar stud terminal 	EW125 EW160 EW250 EW400 EW630 EW800 Each stud can be turned by 90°

Additional main parts	Flush mounting Rear connection (E type)
Bar stud terminal 	EW32 EW50 EW63 EW100
Bar stud terminal 	EW125 EW160 EW250 EW400 EW630 EW800 Each stud can be turned by 90°

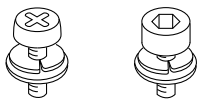
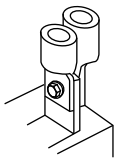
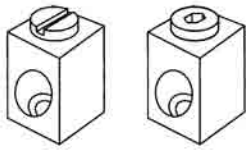
Additional main parts	Flush mounting Top and bottom connection (Y type)
Decorative flush plate 	EW32 EW50 EW63 EW100

Additional main parts	Plug-in mounting (P type)
Bar stud terminal 	EW32 EW50 EW63 EW100
Round stud terminal 	EW125
Bar stud terminal 	EW160 EW250 EW400 EW630 EW800 Each stud can be turned by 90°

• **Global series**

Front mounting
Front connection

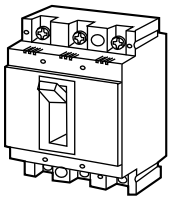
BASIC DESIGN

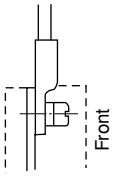
Screw	Flat terminal	Block terminal
		

Terminal connection

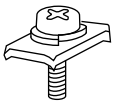
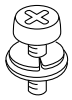
■ Terminal connection/Front mounting, front connection

• 32AF to 100AF



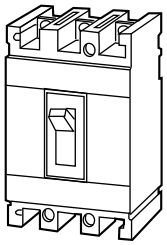


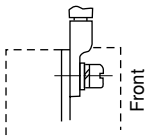
Flat terminal

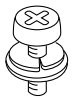
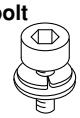
Self lifting screw	Breaker type	Tightening torque (N•m)	Size
	EW32 EW50 EW100*	2.3 to 2.8	M5 × 14
Pan-head screw 	EW63 EW100	5.5 to 7.5	M8 × 15

* Breaker of rated current : 50A

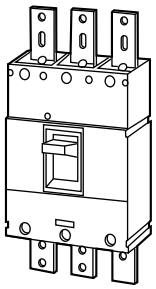
• 125AF to 250AF

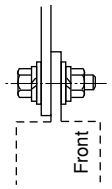




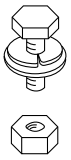
Pan-head screw	Breaker type	Tightening torque (N•m)	Size (mm)
	EW125	5.5 to 7.5	M8 × 16
Hexagonal socket head bolt 	EW160 EW250	8.0 to 13.0	M8 × 16

• 400AF to 800AF



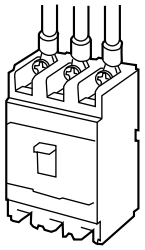


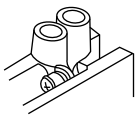
Flat terminal

Hexagonal head bolt	Breaker type	Tightening torque (N•m)	Size (mm)
	EW400	40 to 50	M12 × 35
	EW630 EW800	40 to 50	M12 × 40

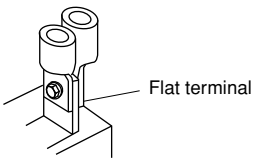
Type of connection/up to 250AF
Front mounting front connection

Direct connection





Flat terminal connection
Flat terminals are required.



Flat bar studs/1-hole type

Breaker type	Pole	Type of flat terminal
EW32 EW50	2 3	**BZ6S10C502** **BZ6S10C503**
EW63 EW100*	2 3	**BZ6S10C1002** **BZ6S10C1003**
EW125	3 4	**BW9SS0CA-3** **BW9SS0CA-4**
EW160 EW250	3 4	**BW9SS0GA-3** **BW9SS0GA-4**

* EW100 breaker of rated current 50A: BZ6S10C502 or 503.

■ Wire size and crimp terminal

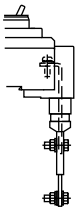
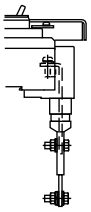
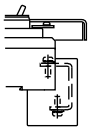
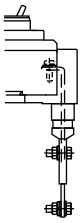
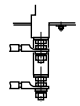
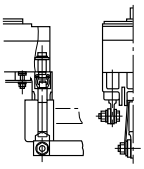
The following is the size recommendations for crimp terminals.

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

Ampere frame	Breaker	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
32	EW32	R2-5	R5.5-5	R8-5	R14-5							
50	EW50	R2-5	R5.5-5	R8-5	R14-5							
63	EW63	R2-8	R5.5-8	R8-8	R14-8	JST22-S8						
100	EW100	R2-8	R5.5-8	R8-8	R14-8	JST22-S8	JST38-S8					
125	EW125	R2-8	R5.5-8	R8-8	R14-8	R22-8	JST38-S8	CB60-8				
160 250	EW160 EW250					R22-8	R38-8	R60-8	CB100-8			
400	EW400						R38-12	R60-12	R100-12	R150-12	R200-12	JST325-12
630	EW630								R100-12	R150-12	R200-12	JST325-12
800	EW800								R100-12	R150-12	R200-12	JST325-12

■ Breaker termination

• Standard

ELCB type	Front connection	Rear connection **X**	Flush mounting **E**	**Y**	Plug-in mounting **P**
EW32 EW50	Self-lifiting terminal				
EW63 EW100	Flat terminal				
EW125		90˚ rotational stud	90˚ rotational stud	—	
EW160 EW250	Flat terminal				
EW400 EW630 EW800	Flat terminal				90˚ rotational stud

07

■ Notes on wiring (global series)

Notes on connecting wires (conductors)

- Connect wires to the UL breaker according to NEC (National Electric Code) or CEC (Canadian Electrical Code) Part 1.
- Use 75°C copper wires for wiring. UL-certified or CSA-certified wires are recommended.
- If a large current (for example, a short-circuit current) flows, it causes a huge electromagnetic force between wires. Therefore, be sure to secure the wires sufficiently.
- Re-tighten terminal screws periodically.

	Terminal position		Applicable breaker type		
Code	Line	Load	EW50, 100	EW125, 250	EW400, 630, 800
Blank	Screw	Screw	●	●	–
Blank	Flat teminal	Flat teminal	–	–	●
SB	Block terminal	Block terminal	–	●	●
SF	Flat teminal	Flat teminal	●	●	–
S3	Screw	Flat terminal	●	●	–
S4	Flat teminal	Screw	●	●	–
S5	Screw	Block terminal	–	●	–
S6	Block terminal	Screw	–	●	–
S7	Flat teminal	Block terminal	–	●	●
S8	Block terminal	Flat terminal	–	●	●

Block terminal connection

- Choose from the stranded wires shown in Table.

Wire size: AWG or MCM [mm^2]	No. of wires stranded
14 to 2 [2.1 to 33.6]	7
1 to 4/0 [42.4 to 107.2]	19
250 to 500 [127 to 250]	37

Values in [ ] are those converted from AWG or MCM sizes to mm^2.

* See the instruction manual that comes with the breaker for more details.

Precautions

- Two wires, regardless of whether they are of the same size or different sizes, cannot be connected to block terminals.
- Be sure to use stranded wires according to Table "Number of wires stranded."
- Multi-conductor wires cannot be connected.
- Do not solder wires together.

Wire size and crimp terminal

• Crimp terminal connection

ELCB	Rated current (A)	Applicable crimp terminal 75˚C wire			Connectable wire size (AWG)	Tightening torque (N•m)	Type of screw head and size (mm)
		J.S.T Mfg. Co., Ltd.	Nichifu Co., Ltd.	Daido Solderless Terminal Mfg. Co., Ltd.	75˚C wire		
EW50RAGU	3	R2-5	R2-5M R2-5	2-S5, 2-5	14AWG	2.3-2.8	Cross/straight slotted pan-head screw M5 x 14
	5						
	10						
	15						
	20	R5.5-5	R3.5-5S, R3.5-5L, 5.5-6N, R5.5-5S, R5.5-5	3.5-5, 5.5-S5, 5.5-5, 5.5-L5	12AWG		
	30				10AWG		
	40	R8-5	R8-5S, R8-5	8-S5, 8-5	8AWG		
	50						
EW100EAGU	60	R14-8	R14-8S, R14-8	R14-S8, R14-8	6AWG	5.5-7.5	Cross/straight slotted pan-head screw M8 x 15
	75	22-S8	R22-8S, R22-8	R22-S8, 22-8	4AWG		
	100	38-S8	R38-8S	38-S8	3AWG		
EW125JAGU EW125RAGU	15	R2-8	R2-8	2-8, 2-B8	14AWG	5.8 (5.3-6.4)	Cross/straight slotted pan-head screw M8 x 16
	20	5.5-S8, R5.5-8	R3.5-8, R5.5-8	3.5-8, 5.5-8	12AWG		
	30		R5.5-8	5.5-8	10AWG		
	40	8-8NS, R8-8	R8-8	8-8	8AWG		
	50						
	60	14-8NS, 14-S8, R14-8	R14-8S, R14-8	14-S8, 14-8	6AWG		
	70	22-S8, R22-8, CB22-S8	R22-8S, R22-8, CB22-8S	22-S8, 22-8, CB22-8	4AWG		
	75						
	80						
	90	38-S8	R38-8S	38-S8	3AWG		
	100						
	125				1AWG		
EW250JAGU EW250RAGU	125	38-S8, R38-8	R38-8S, R38-8	38-S8, 38-8	1AWG	10.5 (8-13)	Hexagon socket head bolt M8 x 16
	150	60-S8, R60-8	R60-8, CB60-8, CB60-8S	60-8, CB60-8	1/0AWG		
	175	70-8	R70-8	70-8	2/0AWG		
	200	CB80-S8		CB80-8	3/0AWG		
	225	CB100-S8		CB100-8	4/0AWG		
	250	CB150-S8	CB150-8	CB150-8	250MCM		

Notes: • AWG/MCM is the UL approved wire unit.
• The allowable temperature of wire is 75˚C. (UL CSA approved)
• Be sure to use UL-certified or CSA-certified crimp tools commercially available.

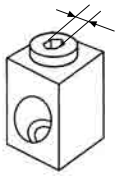
• Flat terminal connection

ELCB	Rated current (A)	Applicable crimp terminal 75˚C wire			Connectable wire size (AWG)	Tightening torque (N•m)		Type of screw head and size (mm)
		J.S.T Mfg. Co., Ltd.	Nichifu Co., Ltd.	Daido Solderless Terminal Mfg. Co., Ltd.	75˚C wire	Wire side	MCCB side	
EW50RAGU	3	R2-5	R2-5M R2-5	2-S5, 2-5	14AWG	3.5 to 4.5	2.3 to 2.8	Hexagon socket head bolt M5 x 16
	5							
	10							
	15							
	20	R5.5-5	R3.5-5S, R3.5-5L, 5.5-6N. R5.5-5S, R5.5-5	3.5-5, 5.5-S5 5.5-5, 5.5-L5	12AWG			
	30				10AWG			
	40	R8-5	R8-5S, R8-5	8-S5, 8-5	8AWG			
	50							
EW100EAGU	60	R14-8	R14-8S, R14-8	R14-S8, R14-8	6AWG	8 to 10	5.5 to 7.5	Hexagon socket head bolt M8 x 22
	75	22-S8	R22-8S, R22-8	R22-S8, 22-8	4AWG			
	100	38-S8	R38-8S	38-S8	3AWG			
EW125JAGU EW125RAGU	15	R2-8	R2-8	2-8, 2-B8	14AWG	9 (8 to 10)	5.8 (5.3 to 6.4)	Cross/straight slotted pan-head screw M8 x 16
	20	5.5-S8, R5.5-8	R3.5-8, R5.5-8	3.5-8, 5.5-8	12AWG			
	30		R5.5-8	5.5-8	10AWG			
	40	8-8NS, R8-8	R8-8	8-8	8AWG			
	50							
	60	14-8NS, 14-S8, R14-8	R14-8S, R14-8	14-S8, 14-8	6AWG			
	75	22-S8, R22-8, CB22-S8	R22-8S, R22-8, CB22-8S	22-S8, 22-8, CB22-8	4AWG			
	100	38-S8	R38-8S	38-S8	3AWG			
	125				1AWG			
EW250JAGU EW250RAGU	125	38-S8, R38-8	R38-8S, R38-8	38-S8, 38-8	1AWG	9 (8 to 10)	10.5 (8 to 13)	Hexagon socket head bolt M8 x 16
	150	60-S8, R60-8	R60-8, CB60-8, CB60-8S	60-8, CB60-8	1/0AWG			
	175	70-8	R70-8	70-8	2/0AWG			
	200	CB80-S8		CB80-8	3/0AWG			
	225	CB100-S8		CB100-8	4/0AWG			
	250	CB150-S8	CB150-8	CB150-8	250MCM			
EW400SAGU EW400RAGU EW400HAGU	250	150-12	R150-12		250MCM	45 (40 to 50)	43.5 (39.2 to 48)	Hexagon head bolt M12 x 35
	300	180-12	R180-12		350MCM			
	350	325-12	R325-12N		500MCM			
	400	325-12	R325-12N		500MCM			
		R80-12	R80-12		3/0AWG(x2)			
EW630RAGU	500	R150-12		R150-12	250MCM(x2)	47.04 (42.4 to 51.7)	47.04 (42.4 to 51.7)	Hexagon head bolt M12 x 40
	600	180-12		R180-12	350MCM(x2)			
	630	325-12	R325-12N	R325-12 □	500MCM(x2)			

Notes: • AWG/MCM is the UL approved wire unit.
• The allowable temperature of wire is 75˚C. (UL CSA approved)

Wire size and terminal

• Block terminal connection

ELCB	Rated current (A)	Connectable wire size (AWG)	Tightening torque (N•m)	Type of screw head and size (mm)	Figure
EW125JAGU EW125RAGU	15	14AWG	5.8 (5.8 to 6.4)	Slotted set screw	
	20	12AWG			
	30	10AWG			
	40	8AWG			
	50				
	60	6AWG			
	75	4AWG			
	100	3AWG			
	125	1AWG			
EW250JAGU EW250RAGU	125	1AWG	23 (23 to 25.3)	Hexagon socket head setscrew: 8 mm (5/16 inch)	Screw head size 
	150	1/0AWG			
	175	2/0AWG			
	200	3/0AWG			
	225	4/0AWG			
	250	250MCM			
EW400SAGU EW400RAGU EW400HAGU	250	250MCM	43.5 (43.5 to 48)	Hexagon socket head setscrew: 9.53 mm (3/8 inch)	
	300	350MCM			
	350	500MCM			
	400	3/0AWG(x2)	31.9 (31.9 to 35.1)	Hexagon socket head setscrew: 8 mm (5/16 inch)	
EW630RAGU	500	250MCM(x2)	31.1 (31.1 to 34.2)	Hexagon socket head setscrew: 8 mm (5/16 inch)	
	600	350MCM(x2)			

Notes: • AWG/MCM is the UL approved wire unit.
• The allowable temperature of wire is 75˚C. (UL CSA approved)

■ Type number, Standard series (Line protection)

● AAG series, 2-pole IEC/EN/GB/JIS conformed

Breaker ampere frame	Rated current (A)	Type	■: Rated sensitive current	□: Available mounting and connection
32	5	EW32AAG-2P005■□	A, B, C	Blank, X, E, Y, P
	10	EW32AAG-2P010■□		
	15	EW32AAG-2P015■□		
	20	EW32AAG-2P020■□		
	30	EW32AAG-2P030■□		
	32	EW32AAG-2P032■□		
50	5	EW50AAG-2P005■□	A, B, C	Blank, X, E, Y, P
	10	EW50AAG-2P010■□		
	15	EW50AAG-2P015■□		
	20	EW50AAG-2P020■□		
	30	EW50AAG-2P030■□		
	32	EW50AAG-2P032■□		
	40	EW50AAG-2P040■□		
	50	EW50AAG-2P050■□		

● EAG series, 2-pole IEC/EN/GB/JIS conformed

Breaker ampere frame	Rated current (A)	Type	■: Rated sensitive current	□: Available mounting and connection
100	50	EW100EAG-2P050■□	B, K	Blank, X, E, Y, P
	60	EW100EAG-2P060■□		
	63	EW100EAG-2P063■□		
	75	EW100EAG-2P075■□		
	100	EW100EAG-2P100■□		

● AAG series, 3-pole IEC/EN/GB/JIS conformed

Breaker ampere frame	Rated current (A)	Type	■: Rated sensitive current	□: Available mounting and connection
32	5	EW32AAG-3P005■□	A, B, C	Blank, X, E, Y, P
	10	EW32AAG-3P010■□		
	15	EW32AAG-3P015■□		
	20	EW32AAG-3P020■□		
	30	EW32AAG-3P030■□		
	32	EW32AAG-3P032■□		
50	5	EW50AAG-3P005■□	A, B, C	Blank, X, E, Y, P
	10	EW50AAG-3P010■□		
	15	EW50AAG-3P015■□		
	20	EW50AAG-3P020■□		
	30	EW50AAG-3P030■□		
	32	EW50AAG-3P032■□		
	40	EW50AAG-3P040■□		
	50	EW50AAG-3P050■□		
100	60	EW100AAG-3P060■□	B, K	Blank, X, E, Y, P
	63	EW100AAG-3P063■□		
	75	EW100AAG-3P075■□		
	100	EW100AAG-3P100■□		

● JAG series, 3-pole IEC/EN/GB/JIS conformed

Breaker ampere frame	Rated current (A)	Type	■: Rated sensitive current	□: Available mounting and connection
125	15	EW125JAG-3P015■□	B, J	Blank, X, E, P
	20	EW125JAG-3P020■□		
	30	EW125JAG-3P030■□		
	40	EW125JAG-3P040■□		
	50	EW125JAG-3P050■□		
	60	EW125JAG-3P060■□		
	75	EW125JAG-3P075■□		
	100	EW125JAG-3P100■□		
	125	EW125JAG-3P125■□		
160	125	EW160JAG-3P125■□	B, J	Blank, X, E, P
	150	EW160JAG-3P150■□		
	160	EW160JAG-3P160■□		
250	175	EW250JAG-3P175■□	B, J	Blank, X, E, P
	200	EW250JAG-3P200■□		
	225	EW250JAG-3P225■□		
	250	EW250JAG-3P250■□		

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

Rated sensitive current	■
15mA	A
30mA	B
100mA	C
50mA	D
100/300/500/1000mA changeover	J
100/200mA, 100/200/500mA changeover	K
100/200/500/1000mA changeover	K

● **EAG series, 3-pole IEC/EN/GB/JIS conformed**

Breaker ampere frame	Rated current (A)	Type	■: Rated sensitive current	□: Available mounting and connection
32	5	EW32EAG-3P005■□	A, B, C	Blank, X, E, Y, P
	10	EW32EAG-3P010■□		
	15	EW32EAG-3P015■□		
	20	EW32EAG-3P020■□		
	30	EW32EAG-3P030■□		
	32	EW32EAG-3P032■□		
50	5	EW50EAG-3P005■□	A, B, K	Blank, X, E, Y, P
	10	EW50EAG-3P010■□		
	15	EW50EAG-3P015■□		
	20	EW50EAG-3P020■□		
	30	EW50EAG-3P030■□		
	32	EW50EAG-3P032■□		
	40	EW50EAG-3P040■□		
	50	EW50EAG-3P050■□		
63	60	EW63EAG-3P060■□	A, B, K	Blank, X, E, Y, P
	63	EW63EAG-3P063■□		
100	50	EW100EAG-3P050■□	B, K	Blank, X, E, Y, P
	60	EW100EAG-3P060■□		
	63	EW100EAG-3P063■□		
	75	EW100EAG-3P075■□		
	100	EW100EAG-3P100■□		
160	125	EW160EAG-3P125■□	B, J	Blank, X, E, P
	150	EW160EAG-3P150■□		
	160	EW160EAG-3P160■□		
250	175	EW250EAG-3P175■□	B, J	Blank, X, E, P
	200	EW250EAG-3P200■□		
	225	EW250EAG-3P225■□		
	250	EW250EAG-3P250■□		
400	250	EW400EAG-3P250■□	B, J	Blank, X, E, P
	300	EW400EAG-3P300■□		
	350	EW400EAG-3P350■□		
	400	EW400EAG-3P400■□		
630	500	EW630EAG-3P500■□	J	Blank, X, E, P
	600	EW630EAG-3P600■□		
	630	EW630EAG-3P630■□		
800	700	EW800EAG-3P700■□	J	Blank, X, E, P
	800	EW800EAG-3P800■□		

● **SAG series, 3-pole IEC/EN/GB/JIS conformed**

Breaker ampere frame	Rated current (A)	Type	■: Rated sensitive current	□: Available mounting and connection
32	3	EW32SAG-3P003■□	B, K	Blank, X, E, Y, P
	5	EW32SAG-3P005■□		
	10	EW32SAG-3P010■□		
	15	EW32SAG-3P015■□		
	20	EW32SAG-3P020■□		
	30	EW32SAG-3P030■□		
	32	EW32SAG-3P032■□		
50	5	EW50SAG-3P005■□	B, K	Blank, X, E, Y, P
	10	EW50SAG-3P010■□		
	15	EW50SAG-3P015■□		
	20	EW50SAG-3P020■□		
	30	EW50SAG-3P030■□		
	32	EW50SAG-3P032■□		
	40	EW50SAG-3P040■□		
	50	EW50SAG-3P050■□		
63	60	EW63SAG-3P060■□	B, K	Blank, X, E, Y, P
	63	EW63SAG-3P063■□		
125	15	EW125SAG-3P015■□	B, J	Blank, X, E, P
	20	EW125SAG-3P020■□		
	30	EW125SAG-3P030■□		
	40	EW125SAG-3P040■□		
	50	EW125SAG-3P050■□		
	60	EW125SAG-3P060■□		
	75	EW125SAG-3P075■□		
	100	EW125SAG-3P100■□		
	125	EW125SAG-3P125■□		
160	125	EW160SAG-3P125■□	B, J	Blank, X, E, P
	150	EW160SAG-3P150■□		
	160	EW160SAG-3P160■□		
250	175	EW250SAG-3P175■□	B, J	Blank, X, E, P
	200	EW250SAG-3P200■□		
	225	EW250SAG-3P225■□		
	250	EW250SAG-3P250■□		
400	250	EW400SAG-3P250■□	B, J	Blank, X, E, P
	300	EW400SAG-3P300■□		
	350	EW400SAG-3P350■□		
	400	EW400SAG-3P400■□		

● RAG series, 3-pole IEC/EN/GB/JIS conformed

Breaker ampere frame	Rated current (A)	Type	■: Rated sensitive current	□: Available mounting and connection
50	10	EW50RAG-3P010■□	B, K	Blank, X, E, Y, P
	15	EW50RAG-3P015■□		
	20	EW50RAG-3P020■□		
	30	EW50RAG-3P030■□		
	32	EW50RAG-3P032■□		
	40	EW50RAG-3P040■□		
	50	EW50RAG-3P050■□		
63	60	EW63RAG-3P060■□	B, K	Blank, X, E, Y, P
	63	EW63RAG-3P063■□		
125	15	EW125RAG-3P015■□	B, J	Blank, X, E, P
	20	EW125RAG-3P020■□		
	30	EW125RAG-3P030■□		
	40	EW125RAG-3P040■□		
	50	EW125RAG-3P050■□		
	60	EW125RAG-3P060■□		
	75	EW125RAG-3P075■□		
	100	EW125RAG-3P100■□		
	125	EW125RAG-3P125■□		
160	125	EW160RAG-3P125■□	B, J	Blank, X, E, P
	150	EW160RAG-3P150■□		
	160	EW160RAG-3P160■□		
250	175	EW250RAG-3P175■□	B, J	Blank, X, E, P
	200	EW250RAG-3P200■□		
	225	EW250RAG-3P225■□		
	250	EW250RAG-3P250■□		
400	250	EW400RAG-3P250■□	B, J	Blank, X, E, P
	300	EW400RAG-3P300■□		
	350	EW400RAG-3P350■□		
	400	EW400RAG-3P400■□		
630	500	EW630RAG-3P500■□	J	Blank, X, E, P
	600	EW630RAG-3P600■□		
	630	EW630RAG-3P630■□		
800	700	EW800RAG-3P700■□	J	Blank, X, E, P
	800	EW800RAG-3P800■□		

● HAG series, 3-pole IEC/EN/GB/JIS conformed

Breaker ampere frame	Rated current (A)	Type	■: Rated sensitive current	□: Available mounting and connection
400	250	EW400HAG-3P250■□	B, J	Blank, X, E, P
	300	EW400HAG-3P300■□		
	350	EW400HAG-3P350■□		
	400	EW400HAG-3P400■□		
630	500	EW630HAG-3P500■□	J	Blank, X, E, P
	600	EW630HAG-3P600■□		
	630	EW630HAG-3P630■□		
800	700	EW800HAG-3P700■□	J	Blank, X, E, P
	800	EW800HAG-3P800■□		

● JAG series, 4-pole IEC/EN/GB/JIS conformed

Breaker ampere frame	Rated current (A)	Type	■: Rated sensitive current	□: Available mounting and connection
125	15	EW125JAG-4P015■□	B, J	Blank, X, E
	20	EW125JAG-4P020■□		
	30	EW125JAG-4P030■□		
	40	EW125JAG-4P040■□		
	50	EW125JAG-4P050■□		
	60	EW125JAG-4P060■□		
	75	EW125JAG-4P075■□		
	100	EW125JAG-4P100■□		
	125	EW125JAG-4P125■□		
160	125	EW160JAG-4P125■□	B, J	Blank, X, E
	150	EW160JAG-4P150■□		
	160	EW160JAG-4P160■□		
250	175	EW250JAG-4P175■□	B, J	Blank, X, E
	200	EW250JAG-4P200■□		
	225	EW250JAG-4P225■□		
	250	EW250JAG-4P250■□		

● SAG series, 4-pole IEC/EN/GB/JIS conformed

Breaker ampere frame	Rated current (A)	Type	■: Rated sensitive current	□: Available mounting and connection
125	15	EW125SAG-4P015■□	B, J	Blank, X, E
	20	EW125SAG-4P020■□		
	30	EW125SAG-4P030■□		
	40	EW125SAG-4P040■□		
	50	EW125SAG-4P050■□		
	60	EW125SAG-4P060■□		
	75	EW125SAG-4P075■□		
	100	EW125SAG-4P100■□		
	125	EW125SAG-4P125■□		
160	125	EW160SAG-4P125■□	B, J	Blank, X, E
	150	EW160SAG-4P150■□		
	160	EW160SAG-4P160■□		
250	175	EW250SAG-4P175■□	B, J	Blank, X, E
	200	EW250SAG-4P200■□		
	225	EW250SAG-4P225■□		

● **RAG series, 4-pole IEC/EN/GB/JIS conformed**

Breaker ampere frame	Rated current (A)	Type	■: Rated sensitive current	□: Available mounting and connection
125	15	EW125RAG-4P015■□	B, J	Blank, X, E
	20	EW125RAG-4P020■□		
	30	EW125RAG-4P030■□		
	40	EW125RAG-4P040■□		
	50	EW125RAG-4P050■□		
	60	EW125RAG-4P060■□		
	75	EW125RAG-4P075■□		
	100	EW125RAG-4P100■□		
	125	EW125RAG-4P125■□		
160	125	EW160RAG-4P125■□	B, J	Blank, X, E
	150	EW160RAG-4P150■□		
	160	EW160RAG-4P160■□		
250	175	EW250RAG-4P175■□	B, J	Blank, X, E
	200	EW250RAG-4P200■□		
	225	EW250RAG-4P225■□		
400	250	EW400RAG-4P250■□	B, J	Blank, X, E
	300	EW400RAG-4P300■□		
	350	EW400RAG-4P350■□		
	400	EW400RAG-4P400■□		

● **HAG series, 4-pole IEC/EN/GB/JIS conformed**

Breaker ampere frame	Rated current (A)	Type	■: Rated sensitive current	□: Available mounting and connection
400	250	EW400HAG-4P250■□	B, J	Blank, X, E
	300	EW400HAG-4P300■□		
	350	EW400HAG-4P350■□		
	400	EW400HAG-4P400■□		

■ Type number, Global series (Line protection)

● EAGU series, 2-pole UL489 Listed

Breaker ampere frame	Rated current (A)	Type	■: Rated sensitive current	□: Available mounting and connection
100	60	EW100EAGU-2P060■□	B, K	Blank, SF, S3, S4
	63	EW100EAGU-2P063■□		
	70	EW100EAGU-2P070■□		
	75	EW100EAGU-2P075■□		
	80	EW100EAGU-2P080■□		
	90	EW100EAGU-2P090■□		
	100	EW100EAGU-2P100■□		

● EAGU series, 3-pole UL489 Listed

Breaker ampere frame	Rated current (A)	Type	■: Rated sensitive current	□: Available mounting and connection
100	60	EW100EAGU-3P060■□	B,D, K	Blank, SF, S3, S4
	63	EW100EAGU-3P063■□		
	70	EW100EAGU-3P070■□		
	75	EW100EAGU-3P075■□		
	80	EW100EAGU-3P080■□		
	90	EW100EAGU-3P090■□		
	100	EW100EAGU-3P100■□		

● JAGU series, 3-pole UL489 Listed

Breaker ampere frame	Rated current (A)	Type	■: Rated sensitive current	□: Available mounting and connection
125	15	EW125JAGU-3P015■□	B, K	Blank, SB, SF, S3
	20	EW125JAGU-3P020■□		S4, S5, S6, S7, S8
	30	EW125JAGU-3P030■□		
	40	EW125JAGU-3P040■□		
	50	EW125JAGU-3P050■□		
	60	EW125JAGU-3P060■□		
	75	EW125JAGU-3P075■□		
	100	EW125JAGU-3P100■□		
	125	EW125JAGU-3P125■□		
250	125	EW250JAGU-3P125■□	B, K	Blank, SB, SF, S3
	150	EW250JAGU-3P150■□		S4, S5, S6, S7, S8
	160	EW250JAGU-3P160■□		
	175	EW250JAGU-3P175■□		
	200	EW250JAGU-3P200■□		
	225	EW250JAGU-3P225■□		
	250	EW250JAGU-3P250■□		

● SAGU series, 3-pole UL489 Listed

Breaker ampere frame	Rated current (A)	Type	■: Rated sensitive current	□: Available mounting and connection
400	250	EW400SAGU-3P250■□	B, K	Blank, SB, S7, S8
	300	EW400SAGU-3P300■□		
	350	EW400SAGU-3P350■□		
	400	EW400SAGU-3P400■□		

● RAGU series, 3-pole UL489 Listed

Breaker ampere frame	Rated current (A)	Type	■: Rated sensitive current	□: Available mounting and connection
50	3	EW50RAGU-3P003■□	B, D, K	Blank, SF, S3, S4
	5	EW50RAGU-3P005■□		
	10	EW50RAGU-3P010■□		
	15	EW50RAGU-3P015■□		
	20	EW50RAGU-3P020■□		
	30	EW50RAGU-3P030■□		
	32	EW50RAGU-3P032■□		
	40	EW50RAGU-3P040■□		
	50	EW50RAGU-3P050■□		
125	15	EW125RAGU-3P015■□	B, K	Blank, SB, SF, S3
	20	EW125RAGU-3P020■□		S4, S5, S6, S7, S8
	30	EW125RAGU-3P030■□		
	40	EW125RAGU-3P040■□		
	50	EW125RAGU-3P050■□		
	60	EW125RAGU-3P060■□		
	75	EW125RAGU-3P075■□		
	100	EW125RAGU-3P100■□		
	125	EW125RAGU-3P125■□		
250	125	EW250RAGU-3P125■□	B, K	Blank, SB, SF, S3
	150	EW250RAGU-3P150■□		S4, S5, S6, S7, S8
	160	EW250RAGU-3P160■□		
	175	EW250RAGU-3P175■□		
	200	EW250RAGU-3P200■□		
	225	EW250RAGU-3P225■□		
	250	EW250RAGU-3P250■□		
400	250	EW400RAGU-3P250■□	B, K	Blank, SB, S7, S8
	300	EW400RAGU-3P300■□		
	350	EW400RAGU-3P350■□		
	400	EW400RAGU-3P400■□		
630	500	EW630RAGU-3P500■□	K	Blank, SB, S7, S8
	600	EW630RAGU-3P600■□		
	630	EW630RAGU-3P630■□		

● HAGU series, 3-pole UL489 Listed

Breaker ampere frame	Rated current (A)	Type	■: Rated sensitive current	□: Available mounting and connection
400	250	EW400HAGU-3P250■□	B, K	Blank, SB, S7, S8
	300	EW400HAGU-3P300■□		
	350	EW400HAGU-3P350■□		
	400	EW400HAGU-3P400■□		

Terminal combination

□:	Terminal position		Breaker type		
Code	Line	Load	EW50, 100	EW125,250	EW400,630
Blank	Screw	Screw	●	●	–
Blank	Flat terminal	Flat terminal	–	–	●
SB	Block terminal	Block terminal	–	●	●
SF	Flat terminal	Flat terminal	●	●	–
S3	Screw	Flat terminal	●	●	–
S4	Flat terminal	Screw	●	●	–
S5	Screw	Block terminal	–	●	–
S6	Block terminal	Screw	–	●	–
S7	Flat terminal	Block terminal	–	●	●
S8	Block terminal	Flat terminal	–	●	●

■ Type number, Standard series (Motor protection)

● EAM series, 3-pole IEC/EN/GB/JIS conformed

Breaker ampere frame	Rated current (A)	Type	■: Rated sensitive current	□: Available mounting and connection
32	1.4	EW32EAM-3P1P4■□	B, C	Blank, X, E, Y, P
	2.6	EW32EAM-3P2P6■□		
	4	EW32EAM-3P004■□		
	5	EW32EAM-3P005■□		
	8	EW32EAM-3P008■□		
	10	EW32EAM-3P010■□		
	16	EW32EAM-3P016■□		
	24	EW32EAM-3P024■□		
	32	EW32EAM-3P032■□		
50	45	EW50EAM-3P045■□	B,K	Blank, X, E, Y, P
63	63	EW63EAM-3P063■□	B,K	Blank, X, E, Y, P
100	63	EW100EAM-3P063■□	B,K	Blank, X, E, Y, P
	75	EW100EAM-3P075■□		
	90	EW100EAM-3P090■□		
	100	EW100EAM-3P100■□		
250	125	EW250EAM-3P125■□	B,K	Blank, X, E, P
	150	EW250EAM-3P150■□		
	175	EW250EAM-3P175■□		
	225	EW250EAM-3P225■□		

● JAM series, 3-pole IEC/EN/GB/JIS conformed

Breaker ampere frame	Rated current (A)	Type	■: Rated sensitive current	□: Available mounting and connection
125	75	EW125JAM-3P075■□	B,K	Blank, X, E, P
	90	EW125JAM-3P090■□		
250	125	EW250JAM-3P125■□	B,K	Blank, X, E, P
	150	EW250JAM-3P150■□		
	175	EW250JAM-3P175■□		
	225	EW250JAM-3P225■□		

● SAM series, 3-pole IEC/EN/GB/JIS conformed

Breaker ampere frame	Rated current (A)	Type	■: Rated sensitive current	□: Available mounting and connection
32	0.7	EW32SAM-3P0P7■□	B,K	Blank, X, E, Y, P
	1.4	EW32SAM-3P1P4■□		
	2	EW32SAM-3P002■□		
	2.6	EW32SAM-3P2P6■□		
	4	EW32SAM-3P004■□		
	5	EW32SAM-3P005■□		
	8	EW32SAM-3P008■□		
	10	EW32SAM-3P010■□		
	12	EW32SAM-3P012■□		
	16	EW32SAM-3P016■□		
	24	EW32SAM-3P024■□		
	32	EW32SAM-3P032■□		
50	0.7	EW50SAM-3P0P7■□	B,K	Blank, X, E, Y, P
	1.4	EW50SAM-3P1P4■□		
	2	EW50SAM-3P002■□		
	2.6	EW50SAM-3P2P6■□		
	4	EW50SAM-3P004■□		
	5	EW50SAM-3P005■□		
	8	EW50SAM-3P008■□		
	10	EW50SAM-3P010■□		
	12	EW50SAM-3P012■□		
	16	EW50SAM-3P016■□		
	24	EW50SAM-3P024■□		
	32	EW50SAM-3P032■□		
	40	EW50SAM-3P040■□		
	45	EW50SAM-3P045■□		
63	63	EW63SAM-3P063■□	B,K	Blank, X, E, Y, P

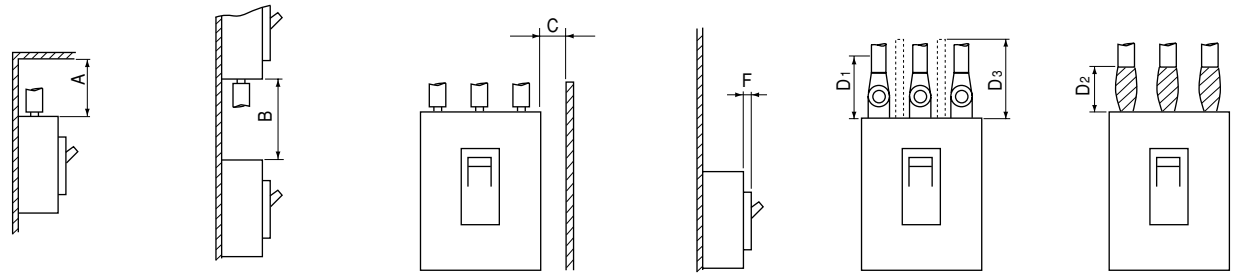
● RAM series, 3-pole IEC/EN/GB/JIS conformed

Breaker ampere frame	Rated current (A)	Type	■: Rated sensitive current	□: Available mounting and connection
125	45	EW125RAM-3P045■□	B,K	Blank, X, E, P
	60	EW125RAM-3P060■□		
	75	EW125RAM-3P075■□		
	90	EW125RAM-3P090■□		
250	125	EW250RAM-3P125■□	B,K	Blank, X, E, P
	150	EW250RAM-3P150■□		
	175	EW250RAM-3P175■□		
	225	EW250RAM-3P225■□		

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

Rated sensitive current	■
30mA	B
100mA	C
100/200mA changeover	K
100/200/500mA changeover	K
100/200/500/1000mA changeover	K

■ **Arc space, mm**

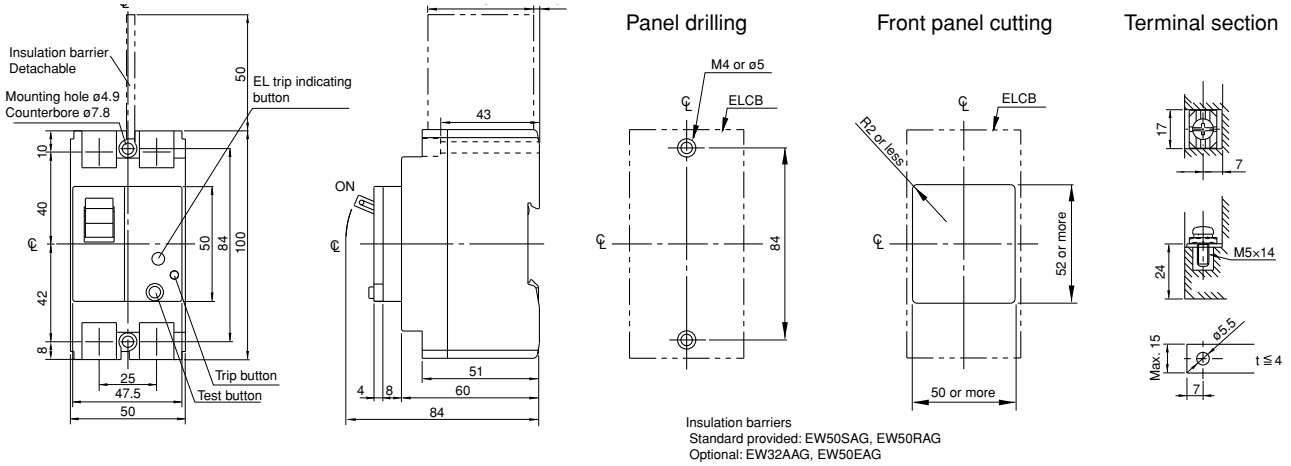


Frame size	ELCB basic type	Ceiling distance A		Vertical distance B		Side plate distance C		Front plate distance Painted F		Front plate distance No painted F		Taping Crimp type terminal lug D1	Taping Bus-bar D2	Barrier D3
		440V	230V	440V	230V	440V	230V	440V	230V	440V	230V			
32A	EW32A	–	10	–	10	–	10	–	0	–	0	Exposed live part dimension +20	10	10
	EW32E	10	10	30	10	20	15	0	0	0	0		30	30
	EW32S	10	10	30	30	20	15	0	0	0	0		30	30
50A	EW50A	–	10	–	10	–	10	–	0	–	0		10	10
	EW50E	10	10	30	30	25	15	0	0	0	0		30	30
	EW50S	30	10	40	40	25	15	0	0	0	0		30	30
	EW50R	50	25	50	50	25	15	0	0	10	5		50	50
63A	EW63E	10	10	30	30	25	15	0	0	0	0		30	30
	EW63S	30	10	40	40	25	15	0	0	0	0		30	30
	EW63R	50	25	50	50	25	15	0	0	10	5		50	50
100A	EW100A	–	10	–	20	–	15	–	0	–	0		50	50
	EW100E	50	25	50	50	25	15	0	0	10	5		50	50
125A	EW125J	40	40	50	50	25	20	0	0	10	5		50	50
	EW125S	40	40	60	60	25	20	5	0	10	5		50	50
	EW125R	40	40	60	60	25	20	5	0	10	5		50	50
160A	EW160E	40	40	50	50	50	15	0	0	10	5		80	80
	EW160J	40	40	60	60	50	20	0	0	10	5		80	80
	EW160S	40	40	80	80	50	20	5	0	10	10		80	80
	EW160R	40	40	80	80	50	20	5	0	10	10		80	80
250A	EW250E	40	40	50	50	50	15	0	0	10	5		80	80
	EW250J	40	40	60	60	50	20	0	0	10	5		80	80
	EW250S	40	40	80	80	50	20	5	0	10	10		80	80
	EW250R	40	40	80	80	50	20	5	0	10	10		80	80
400A	EW400E	100	80	100	80	50	20	0	0	10	5		100	100
	EW400S	100	80	100	80	50	20	0	0	10	5		100	100
	EW400R	100	80	100	80	80	40	5	0	20	10		100	100
	EW400H	100	80	100	80	80	40	5	0	20	10		100	100
630A	EW630E	100	80	100	80	80	40	0	0	10	5		100	100
	EW630R	100	80	100	80	80	40	5	0	20	10		100	100
	EW630H	120	100	120	100	80	40	5	0	20	10		120	120
800A	EW800E	100	80	100	80	80	40	0	0	10	5		100	100
	EW800R	100	80	100	80	80	40	5	0	20	10		100	100
	EW800H	120	100	120	100	80	40	5	0	20	20		120	120

■ **Dimensions, mm**

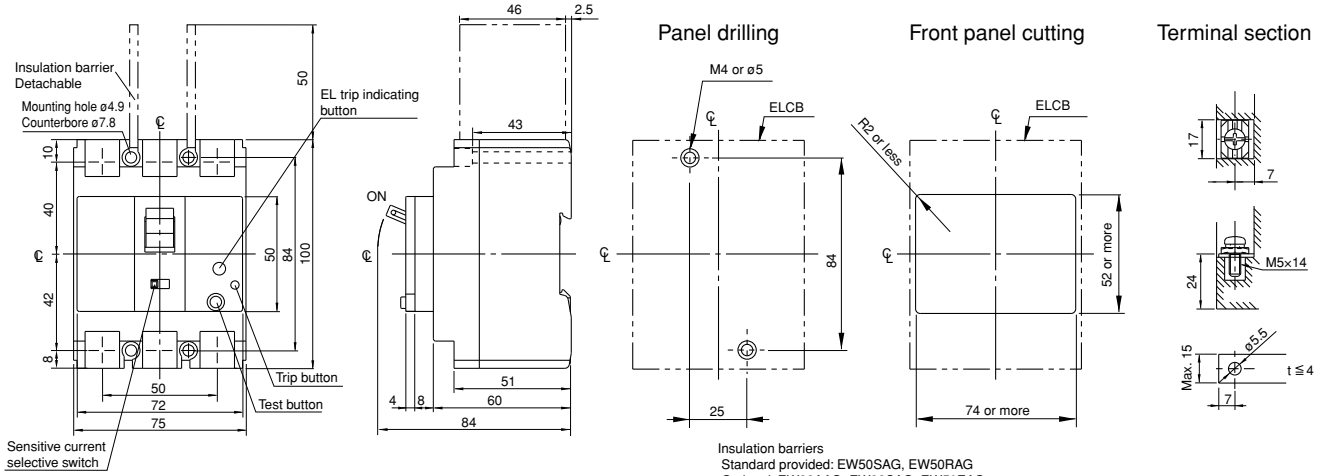
● **Front mounting, front connection**

EW32□-2P, EW50□-2P



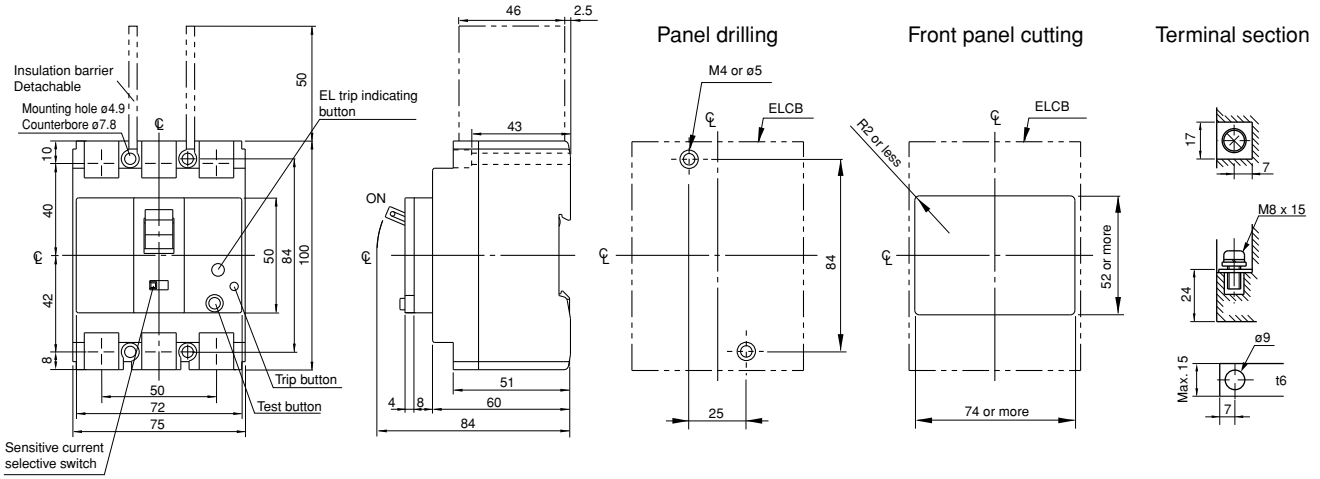
Insulation barriers
Standard provided: EW50SAG, EW50RAG
Optional: EW32AAG, EW50EAG

EW32□-3P, EW50□-3P



Insulation barriers
Standard provided: EW50SAG, EW50RAG
Optional: EW32AAG, EW32SAG, EW50EAG

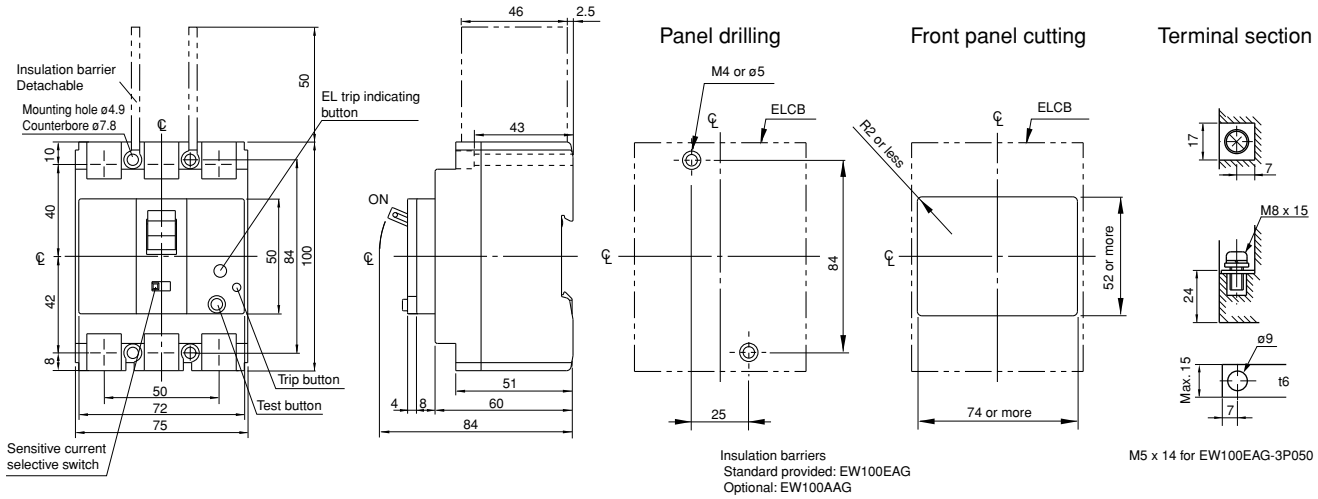
EW63□-3P



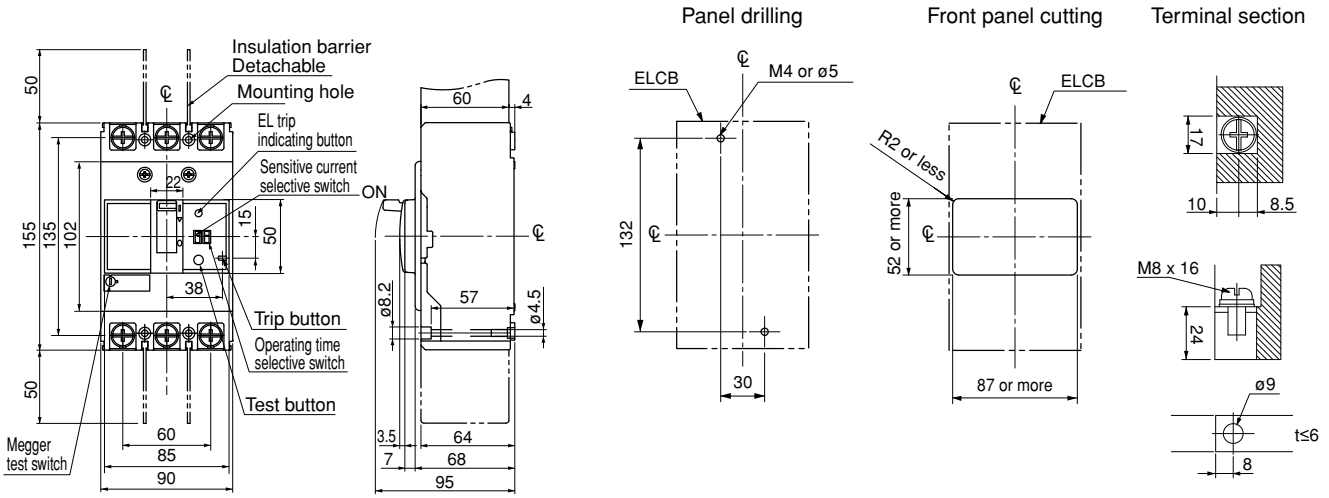
■ Dimensions, mm

● Front mounting, front connection

EW100□-2P, 3P



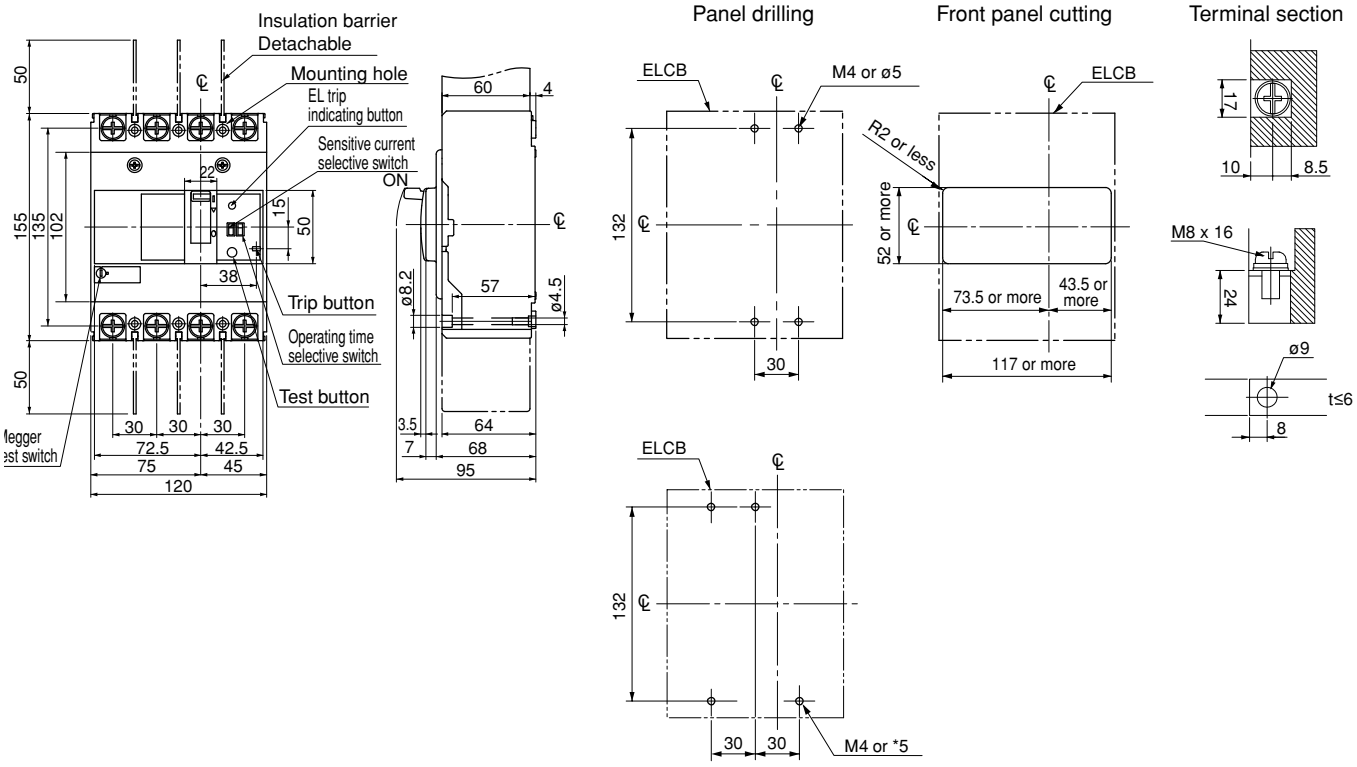
EW125□-3P



■ **Dimensions, mm**

● **Front mounting, front connection**

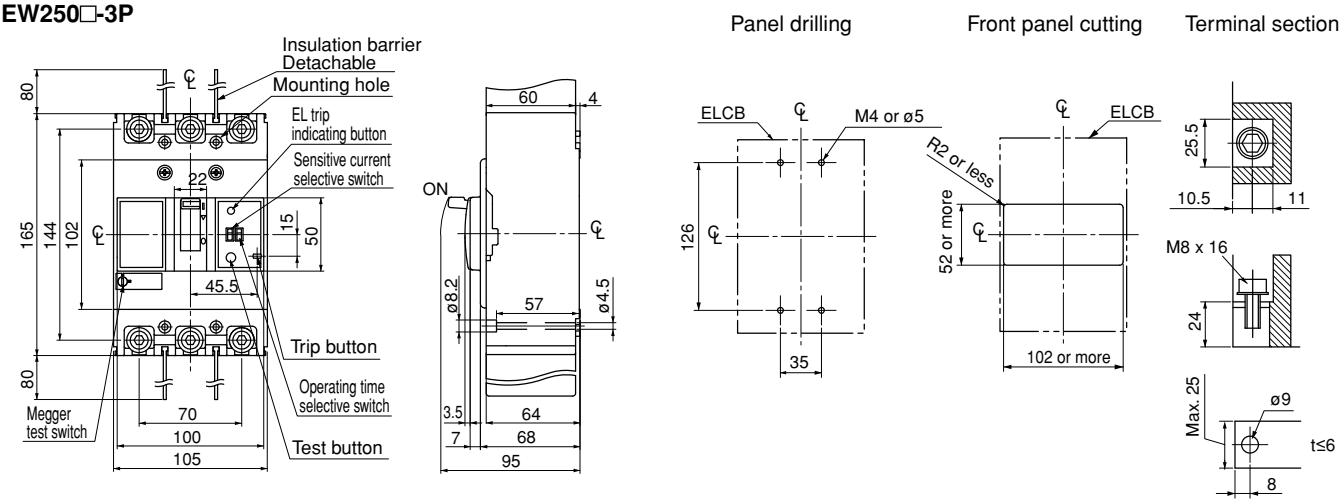
EW125□-4P



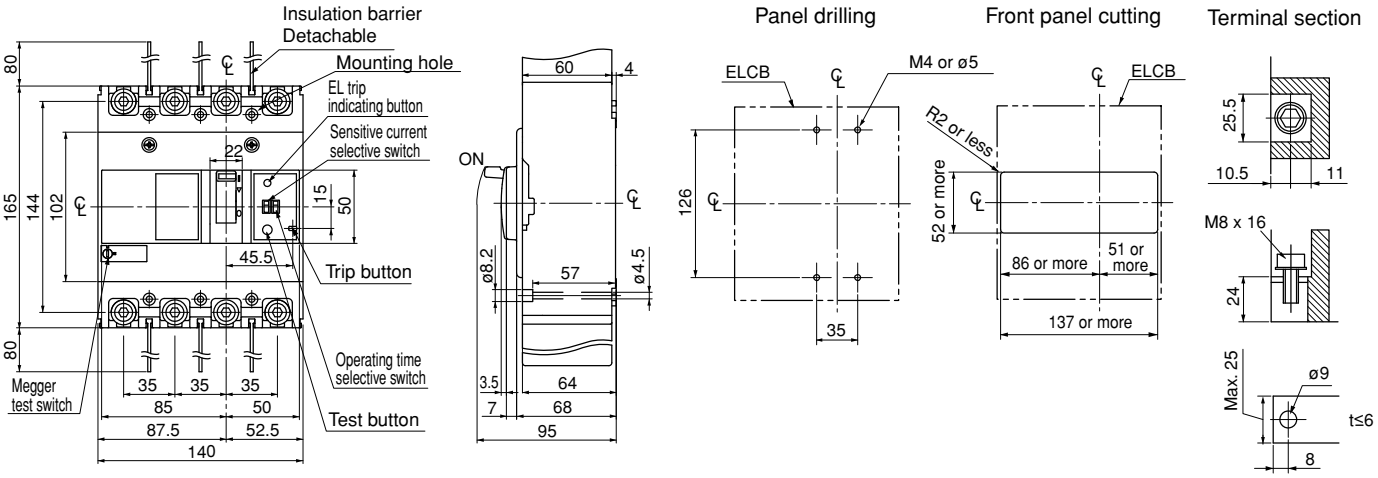
■ **Dimensions, mm**

● **Front mounting, front connection**

EW160□-3P
EW250□-3P



EW160□-4P
EW250□-4P

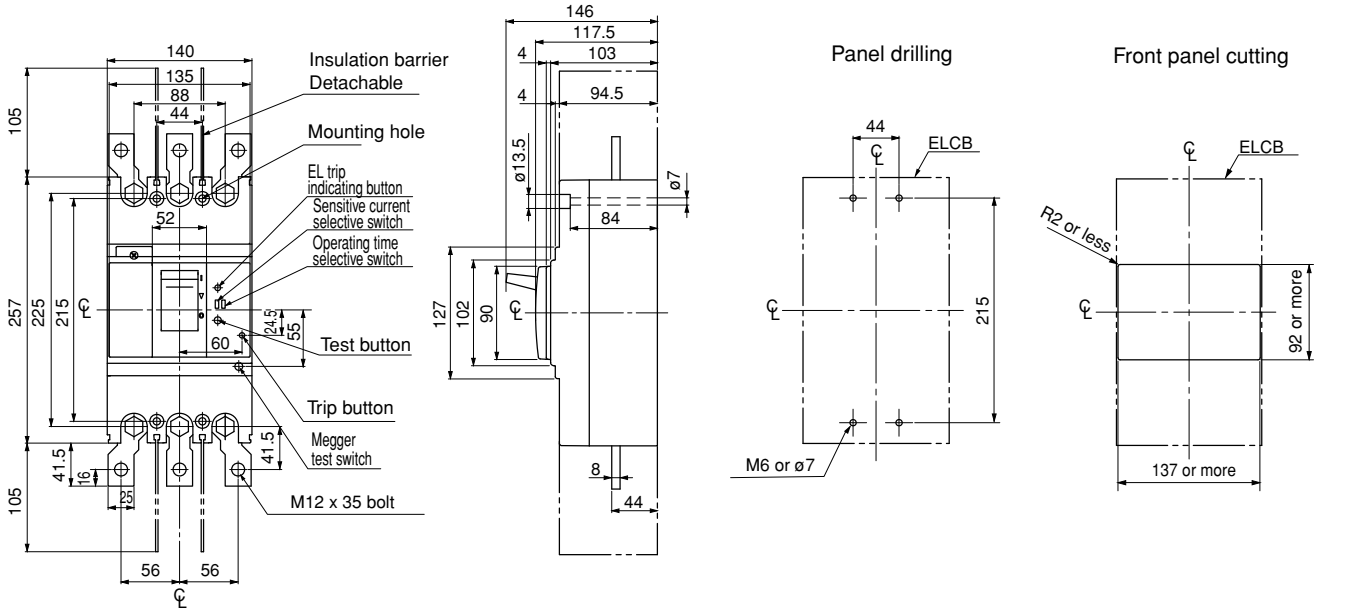


07

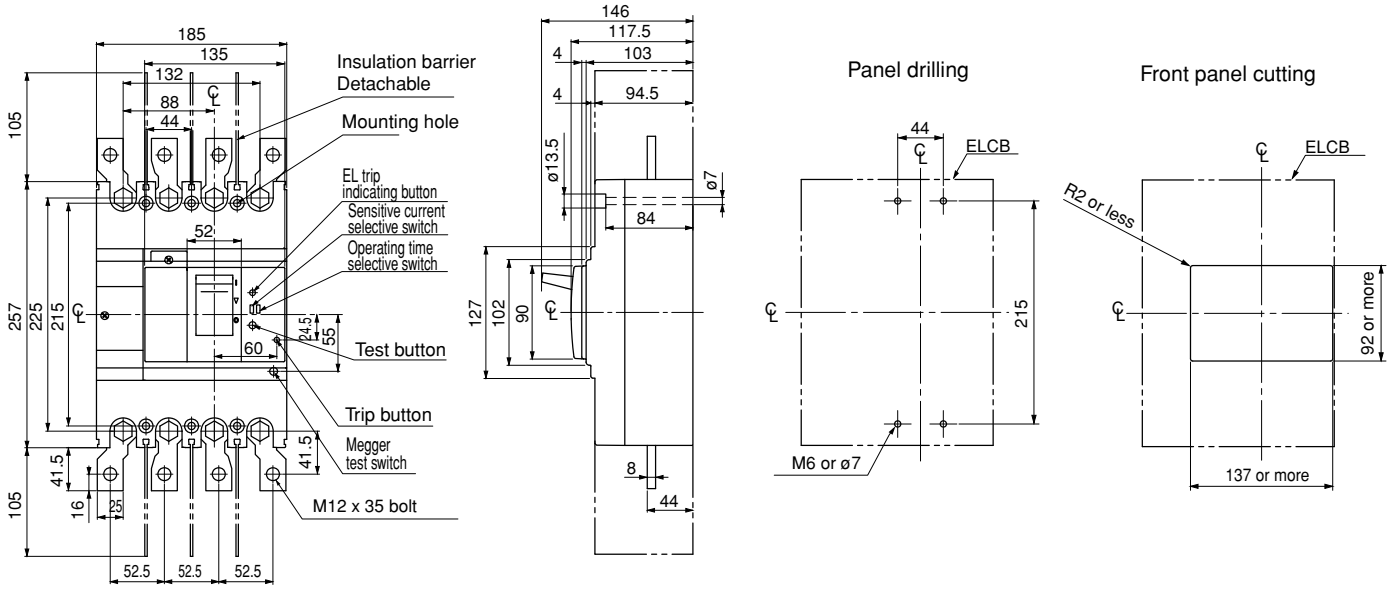
■ **Dimensions, mm**

● **Front mounting, front connection**

EW400□-3P



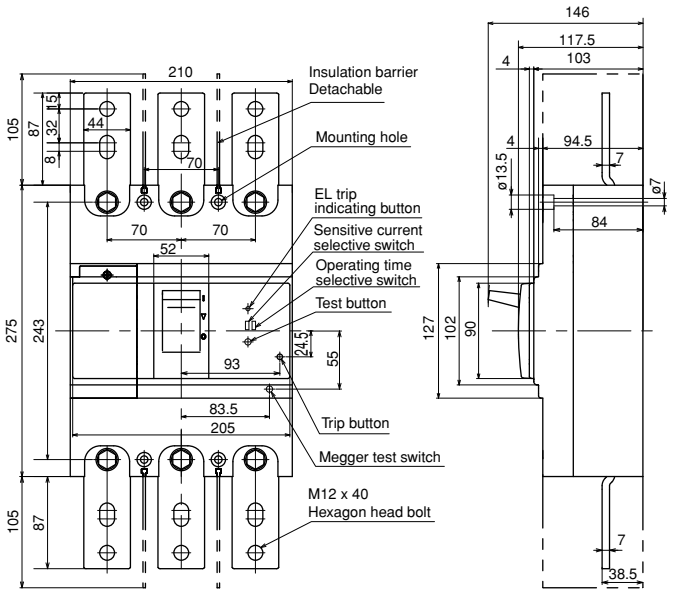
EW400□-4P

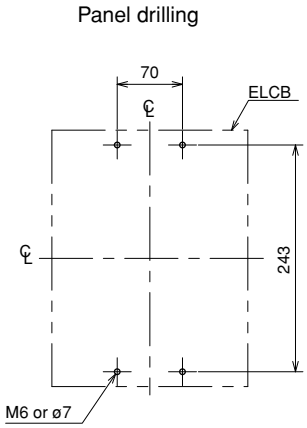


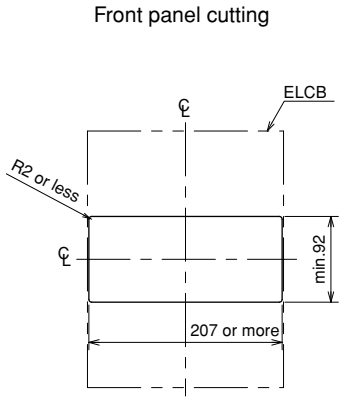
■ **Dimensions, mm**

● **Front mounting, front connection**

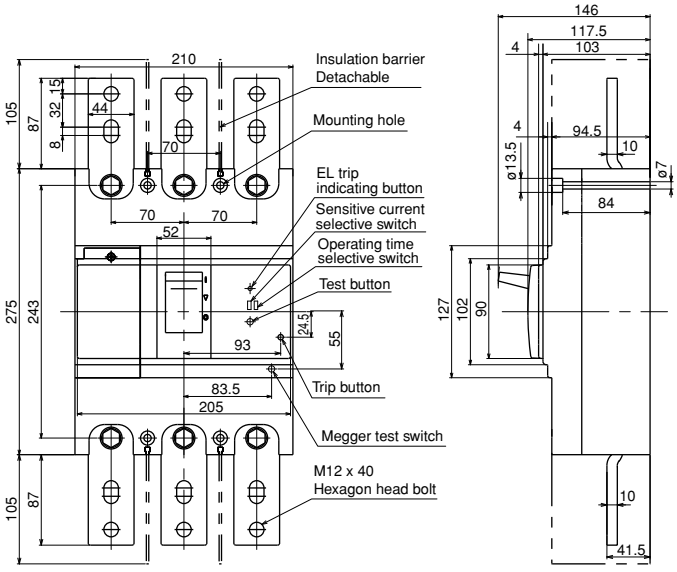
EW630□-3P

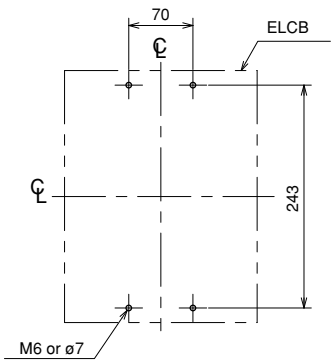


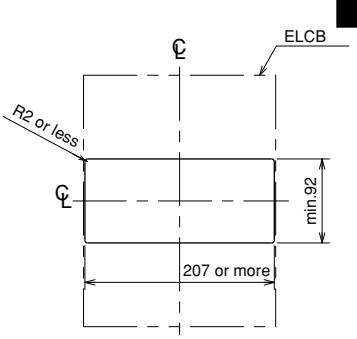




EW800□-3P





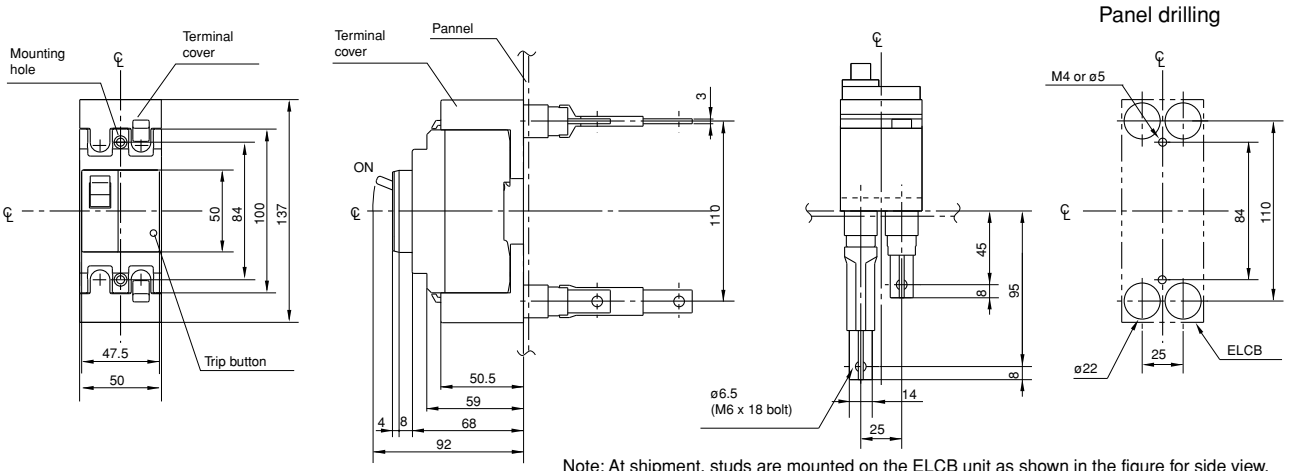


07

■ Dimensions, mm

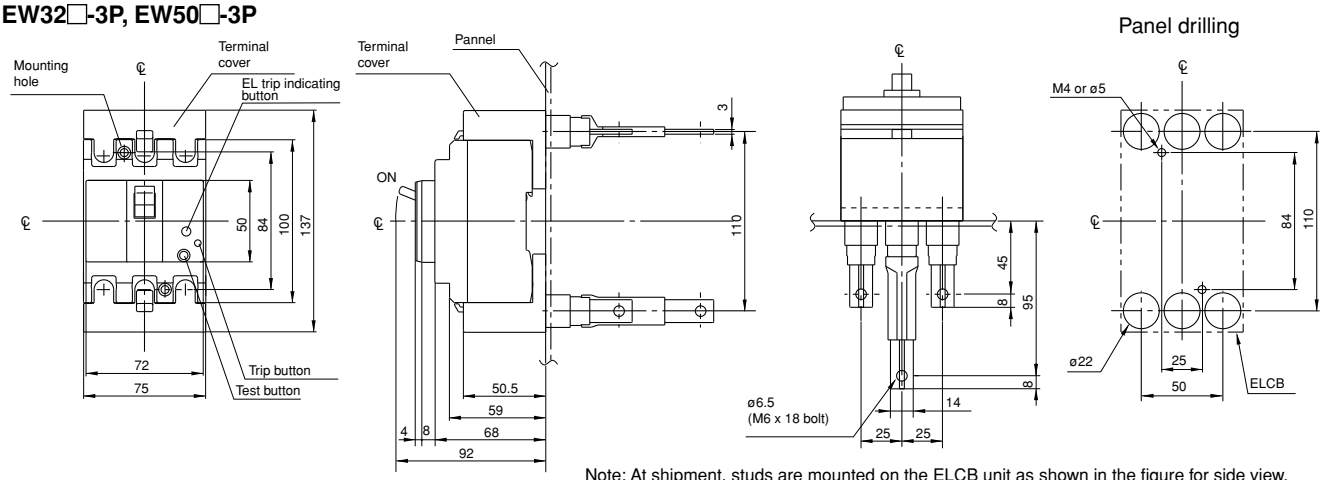
● Front mounting, rear connection (type X)

EW32□-2P, EW50□-2P



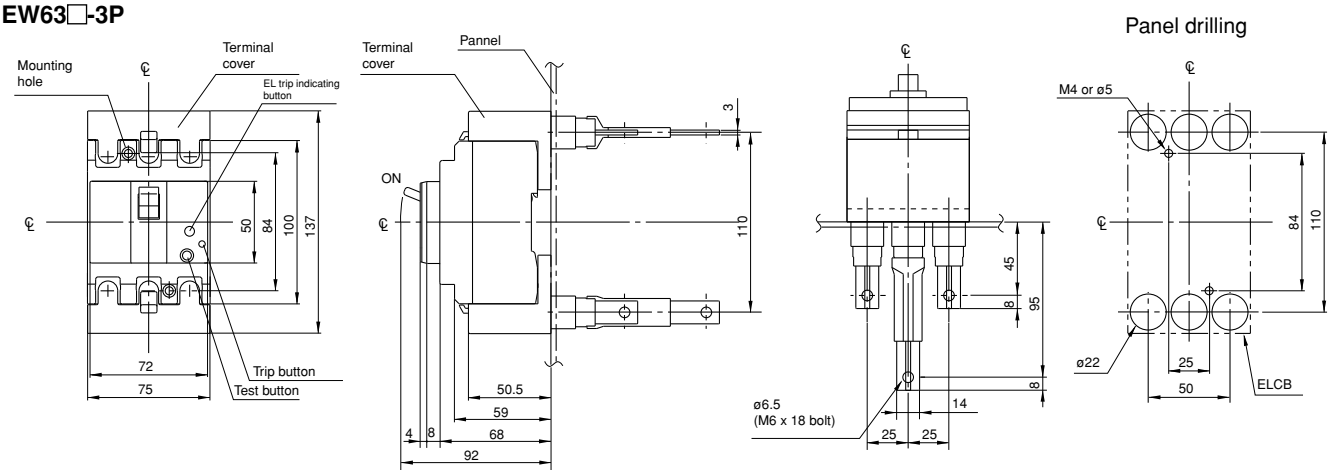
Note: At shipment, studs are mounted on the ELCB unit as shown in the figure for side view.
•Studs for line side terminal : Mounted horizontally.
•Studs for load-side terminal : Mounted vertically.
Each stud can be turned by 90˚.

EW32□-3P, EW50□-3P



Note: At shipment, studs are mounted on the ELCB unit as shown in the figure for side view.
•Studs for line side terminal : Mounted horizontally.
•Studs for load-side terminal : Mounted vertically.
Each stud can be turned by 90˚.
2-pole breaker is supplied in 3-pole frame with current carrying parts omitted from center pole.

EW63□-3P

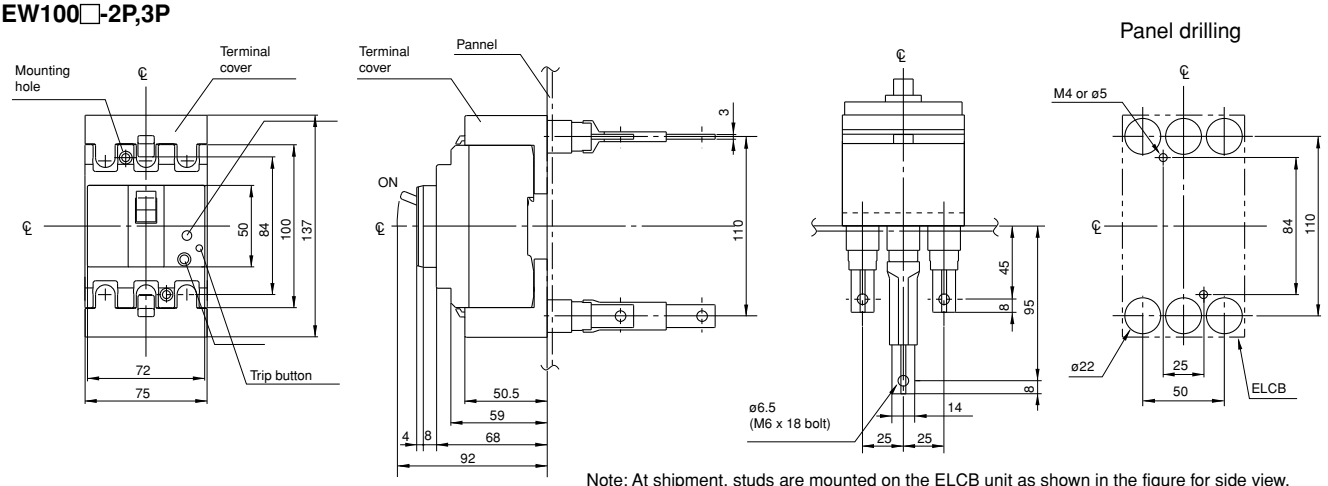


Note: At shipment, studs are mounted on the ELCB unit as shown in the figure for side view.
•Studs for line side terminal : Mounted horizontally.
•Studs for load-side terminal : Mounted vertically.
Each stud can be turned by 90˚.
2-pole breaker is supplied in 3-pole frame with current carrying parts omitted from center pole.

■ Dimensions, mm

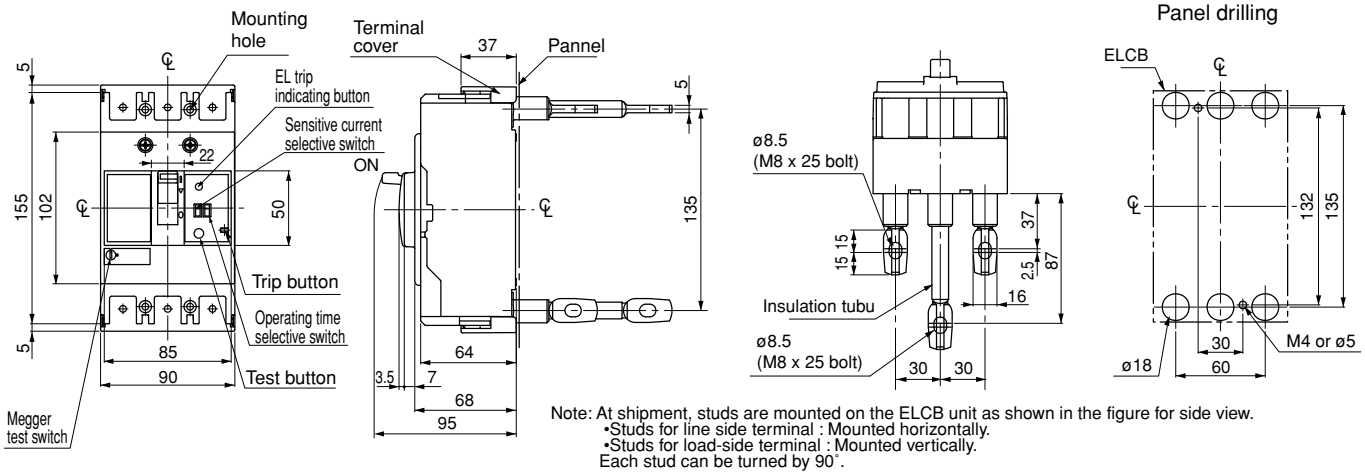
● Front mounting, rear connection (type X)

EW100□-2P,3P



Note: At shipment, studs are mounted on the ELCB unit as shown in the figure for side view.
•Studs for line side terminal : Mounted horizontally.
•Studs for load-side terminal : Mounted vertically.
Each stud can be turned by 90˚.
2-pole breaker is supplied in 3-pole frame with current carrying parts omitted from center pole.

EW125□-3P

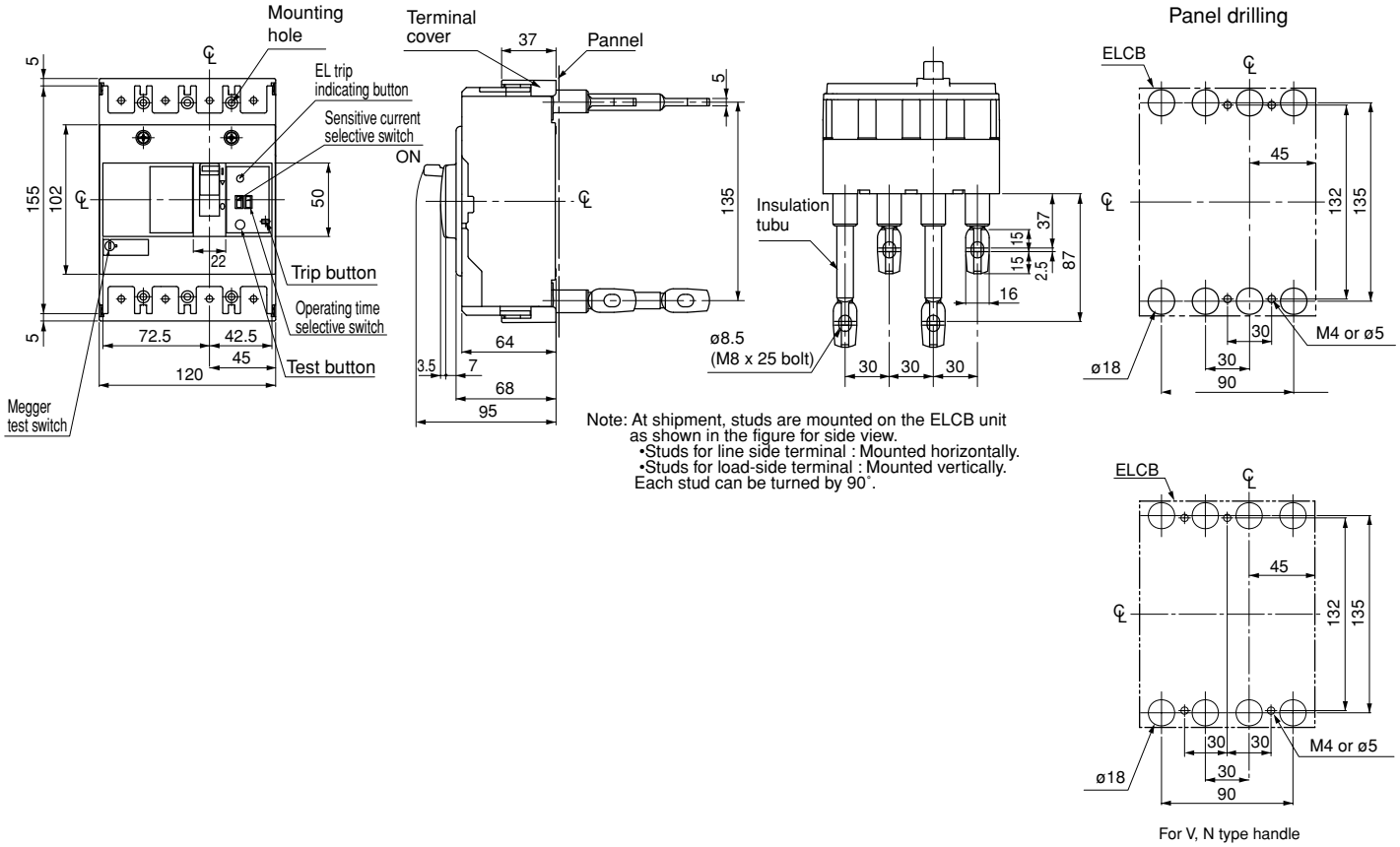


Note: At shipment, studs are mounted on the ELCB unit as shown in the figure for side view.
•Studs for line side terminal : Mounted horizontally.
•Studs for load-side terminal : Mounted vertically.
Each stud can be turned by 90˚.

■ **Dimensions, mm**

● **Front mounting, rear connection (type X)**

EW125□-4P

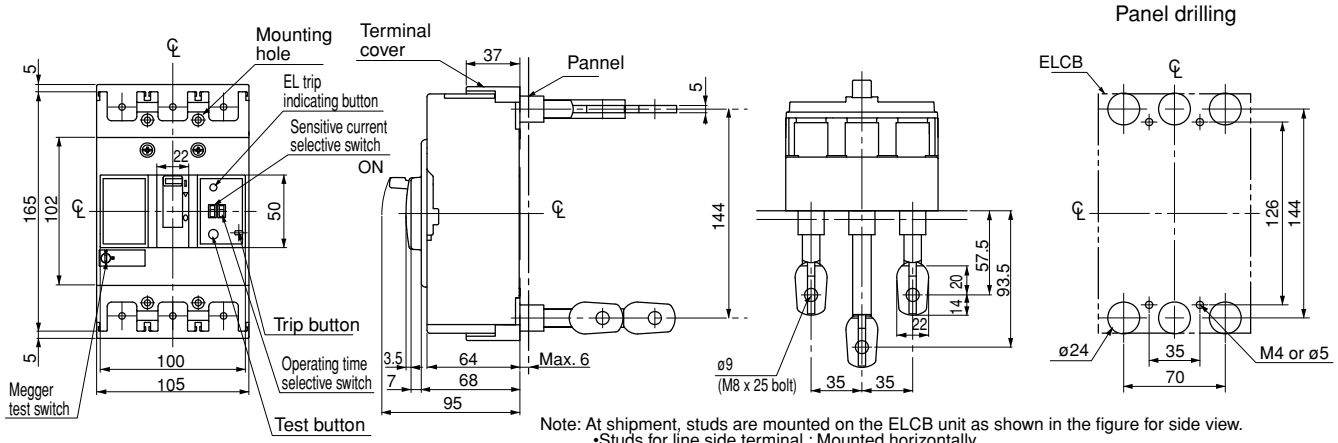


Note: At shipment, studs are mounted on the ELCB unit as shown in the figure for side view.
•Studs for line side terminal : Mounted horizontally.
•Studs for load-side terminal : Mounted vertically.
Each stud can be turned by 90˚.

■ **Dimensions, mm**

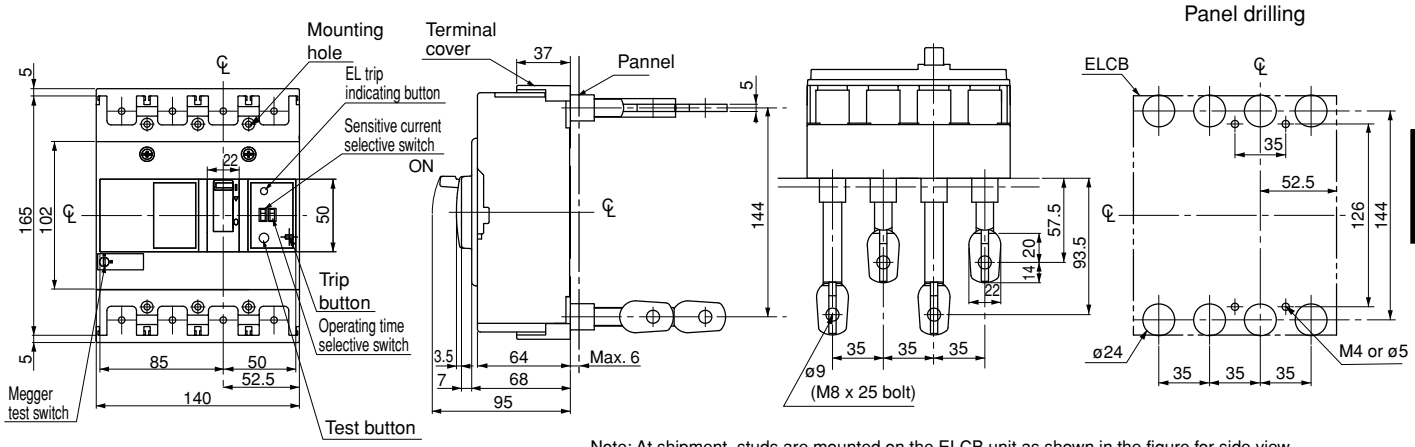
● **Front mounting, rear connection (type X)**

EW160□-3P
EW250□-3P



Note: At shipment, studs are mounted on the ELCB unit as shown in the figure for side view.
•Studs for line side terminal : Mounted horizontally.
•Studs for load-side terminal : Mounted vertically.
Each stud can be turned by 90˚.

EW160□-4P
EW250□-4P

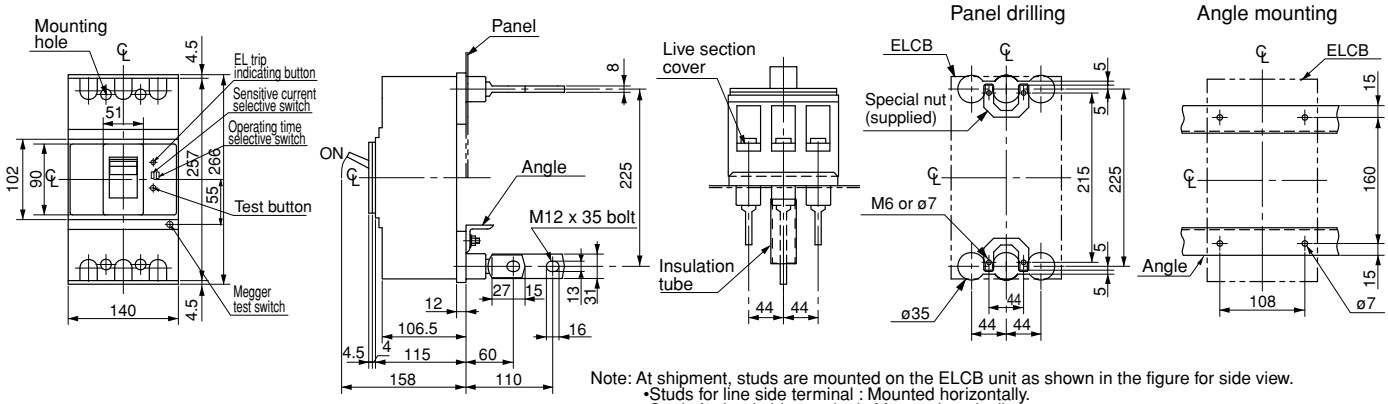


Note: At shipment, studs are mounted on the ELCB unit as shown in the figure for side view.
•Studs for line side terminal : Mounted horizontally.
•Studs for load-side terminal : Mounted vertically.
Each stud can be turned by 90˚.

■ **Dimensions, mm**

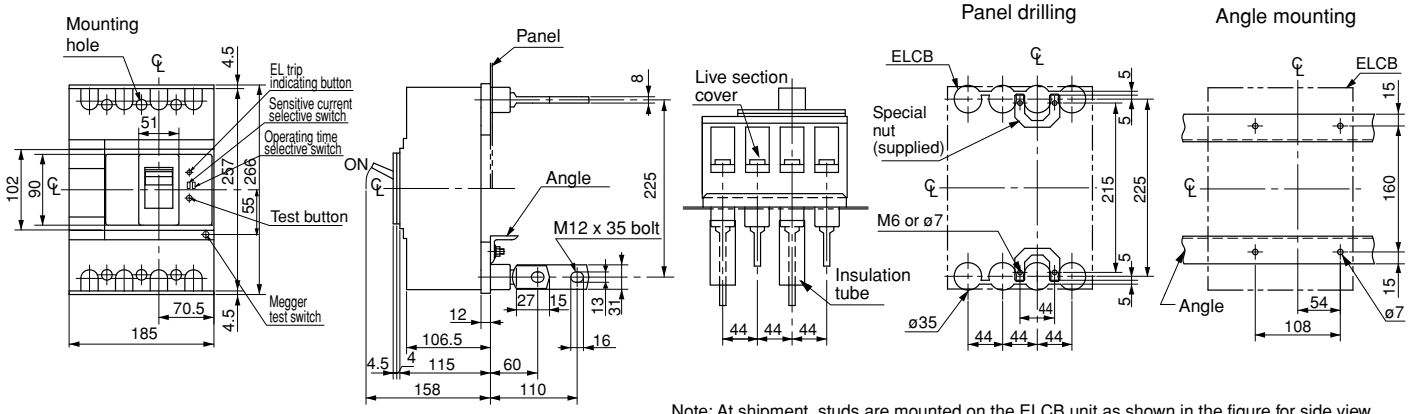
● **Front mounting, rear connection (type X)**

EW400□-3P



Note: At shipment, studs are mounted on the ELCB unit as shown in the figure for side view.
•Studs for line side terminal : Mounted horizontally.
•Studs for load-side terminal : Mounted vertically.
Each stud can be turned by 90˚.

EW400□-4P

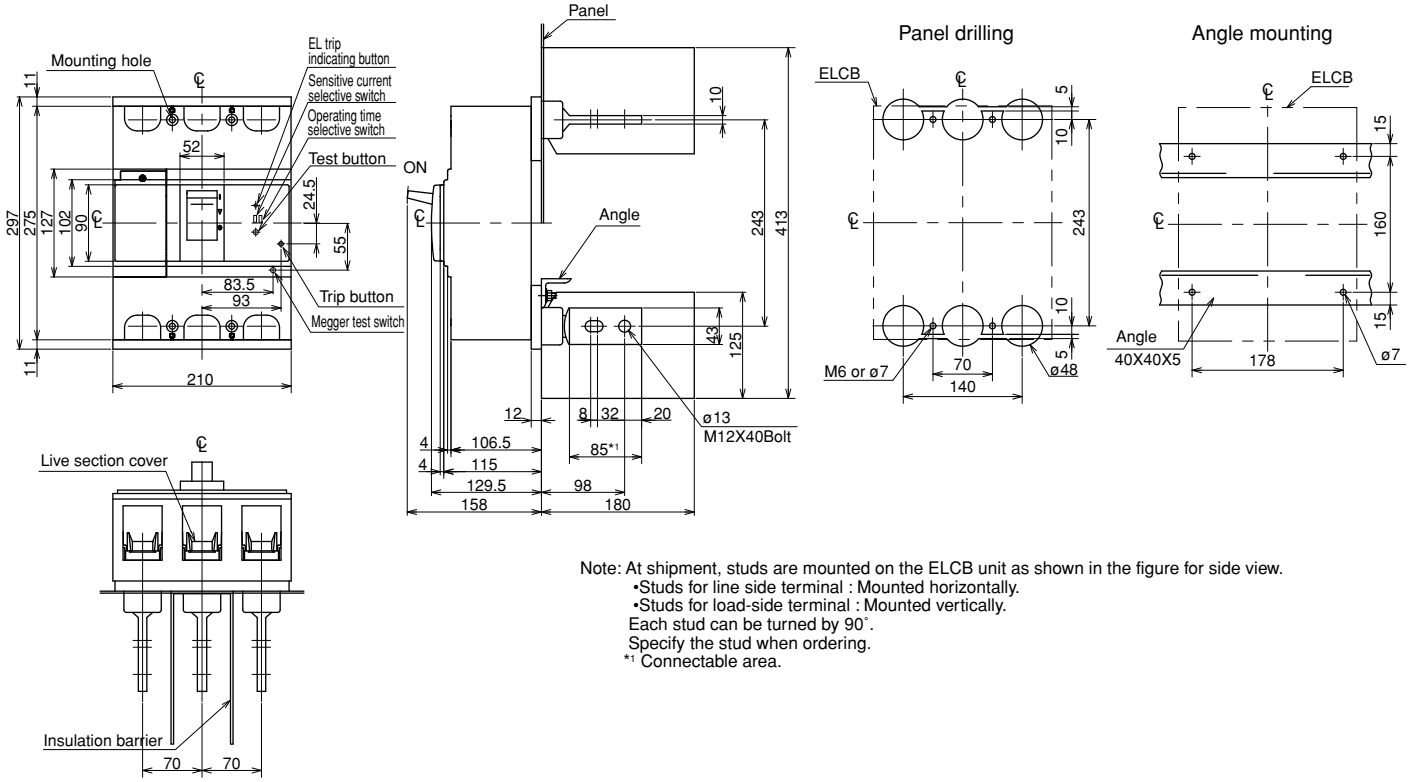


Note: At shipment, studs are mounted on the ELCB unit as shown in the figure for side view.
•Studs for line side terminal : Mounted horizontally.
•Studs for load-side terminal : Mounted vertically.
Each stud can be turned by 90˚.

■ Dimensions, mm

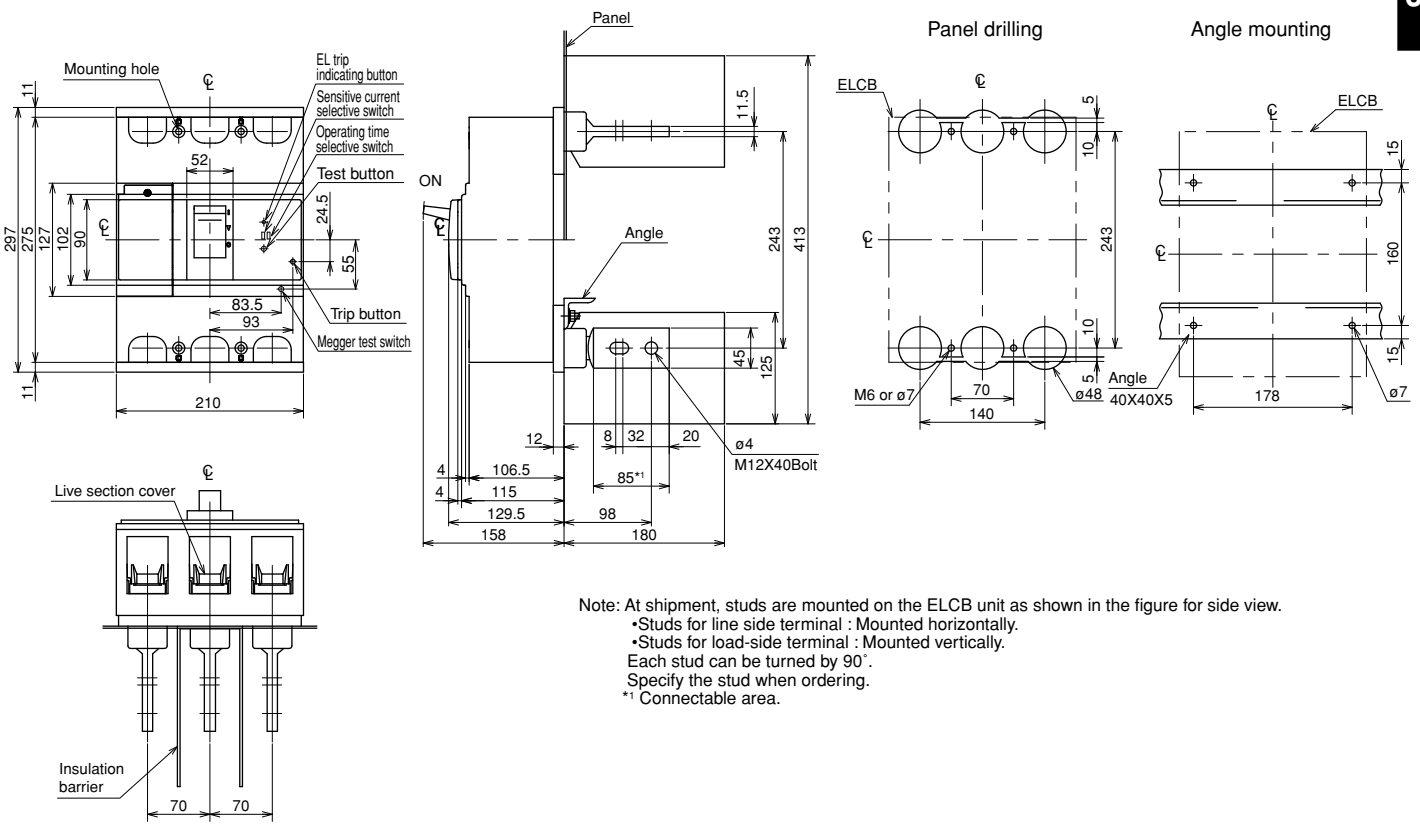
● Front mounting, rear connection (type X)

EW630□-3P



Note: At shipment, studs are mounted on the ELCB unit as shown in the figure for side view.
•Studs for line side terminal : Mounted horizontally.
•Studs for load-side terminal : Mounted vertically.
Each stud can be turned by 90˚.
Specify the stud when ordering.
*1 Connectable area.

EW800□-3P



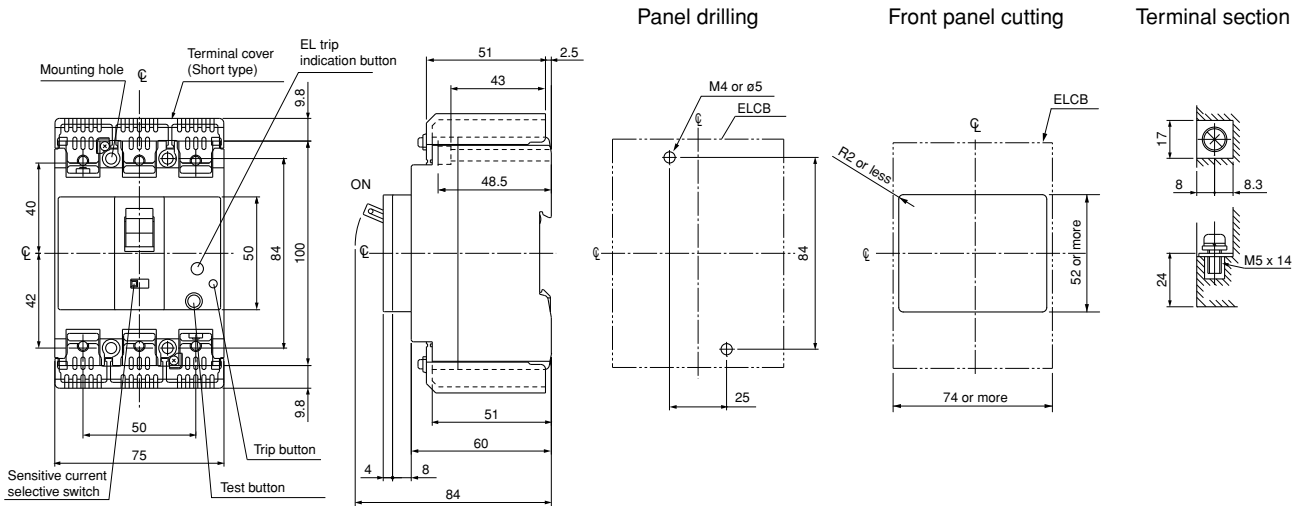
Note: At shipment, studs are mounted on the ELCB unit as shown in the figure for side view.
•Studs for line side terminal : Mounted horizontally.
•Studs for load-side terminal : Mounted vertically.
Each stud can be turned by 90˚.
Specify the stud when ordering.
*1 Connectable area.

07

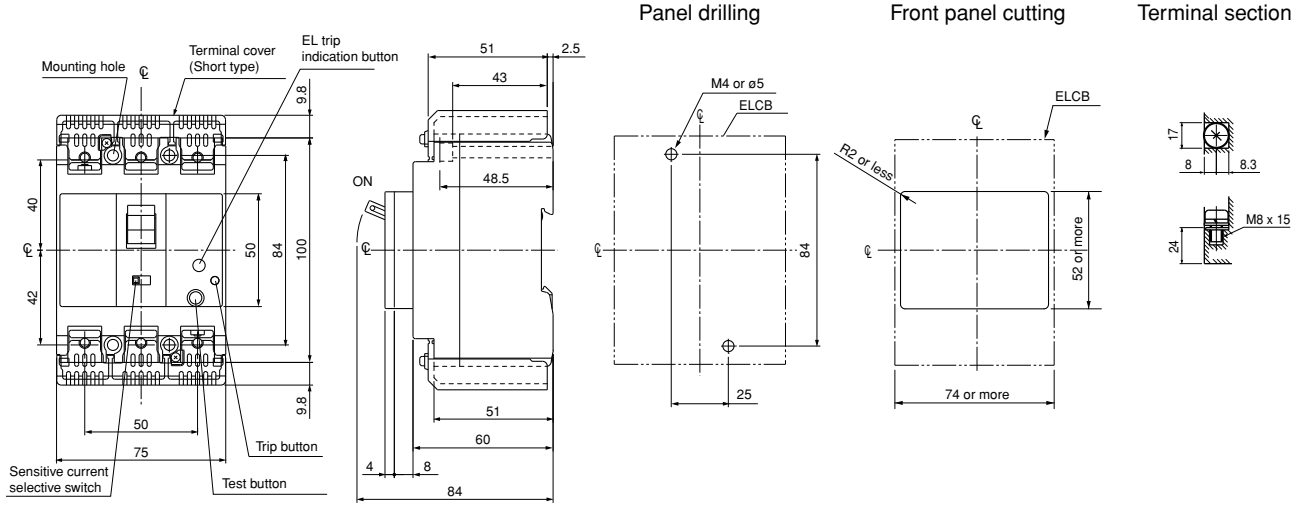
■ **Dimensions, mm**

● **Front mounting, front connection**

EW50RAGU-3P



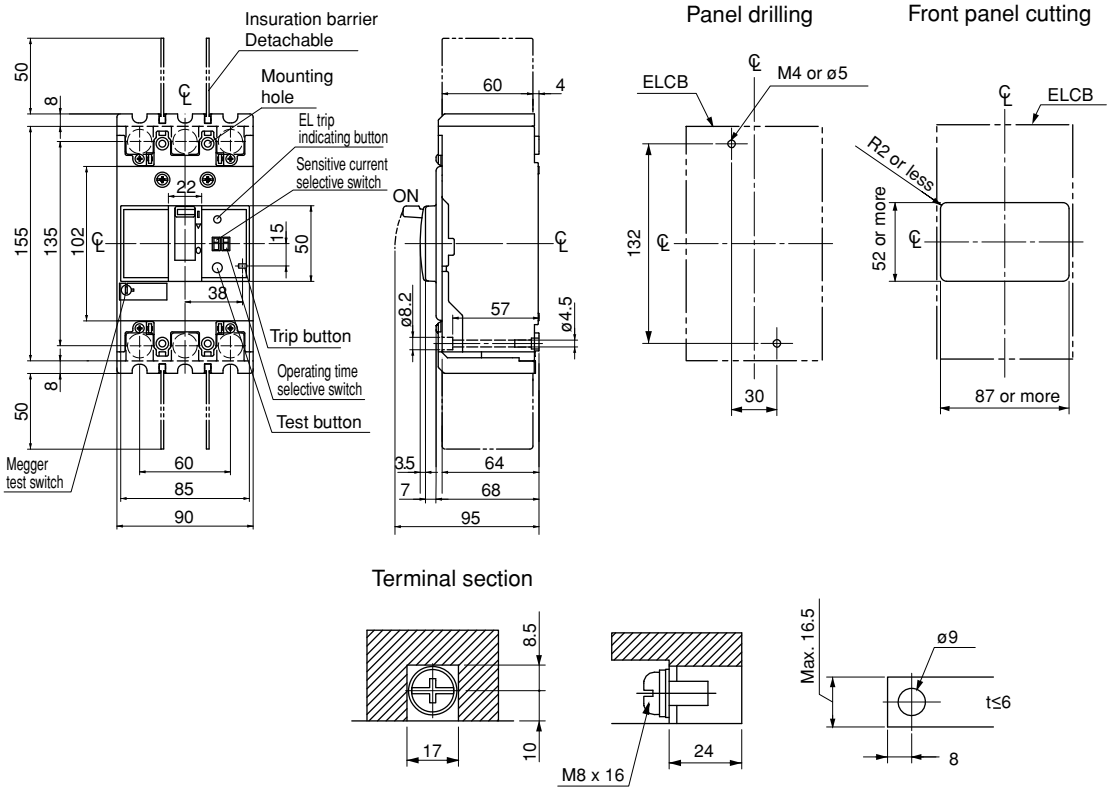
EW100EAGU-2P, -3P



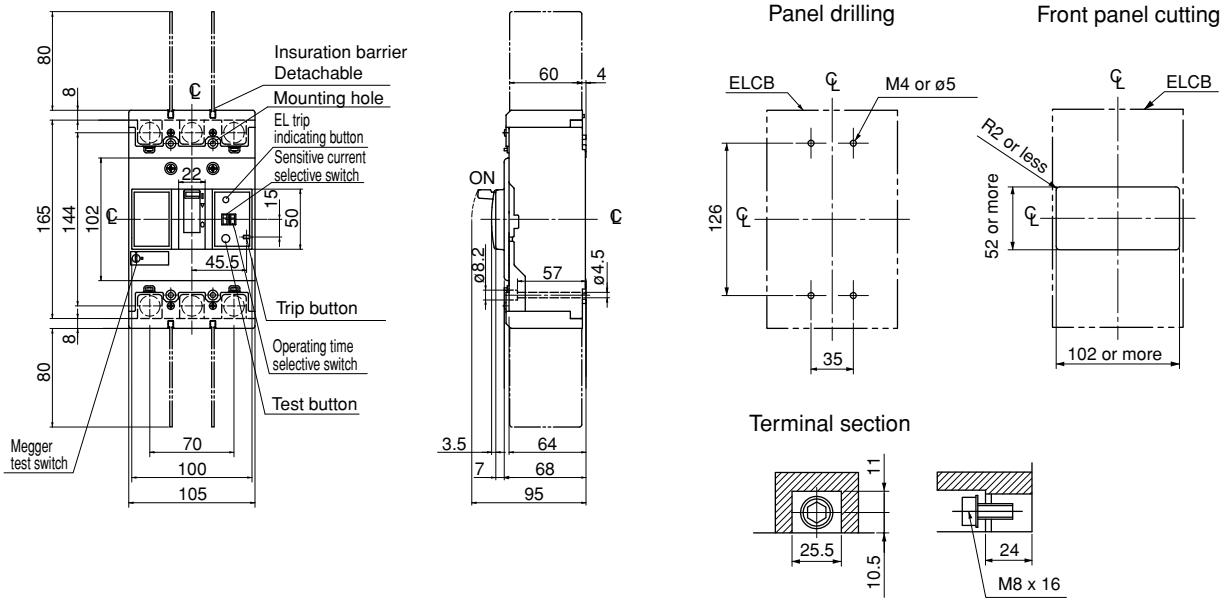
■ **Dimensions, mm**

● **Front mounting, front connection**

EW125□U-3P



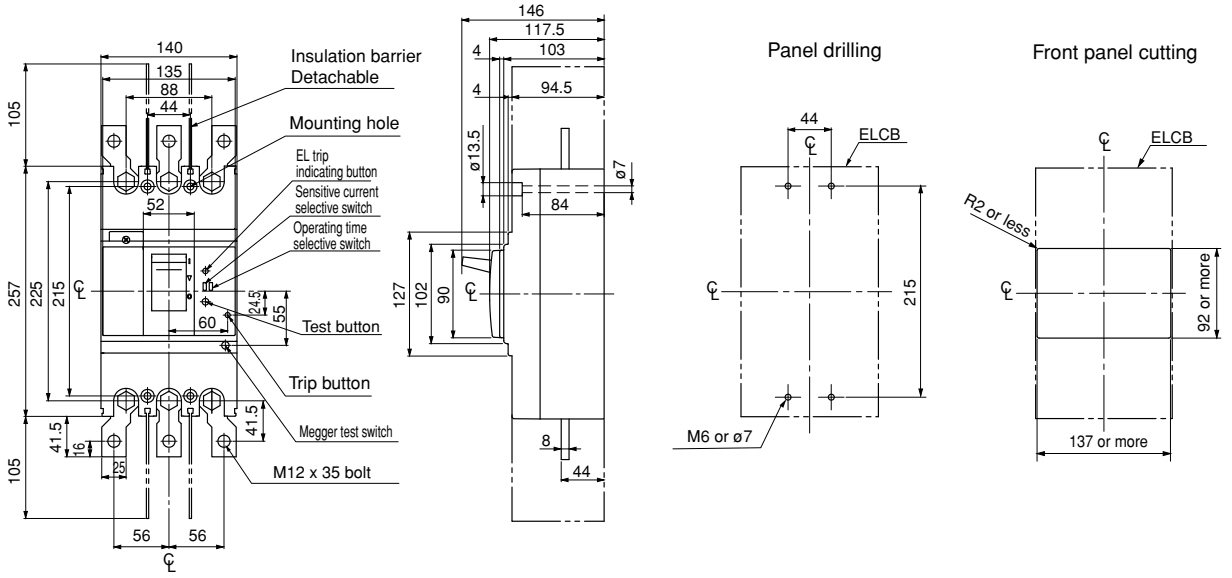
EW250□U-3P



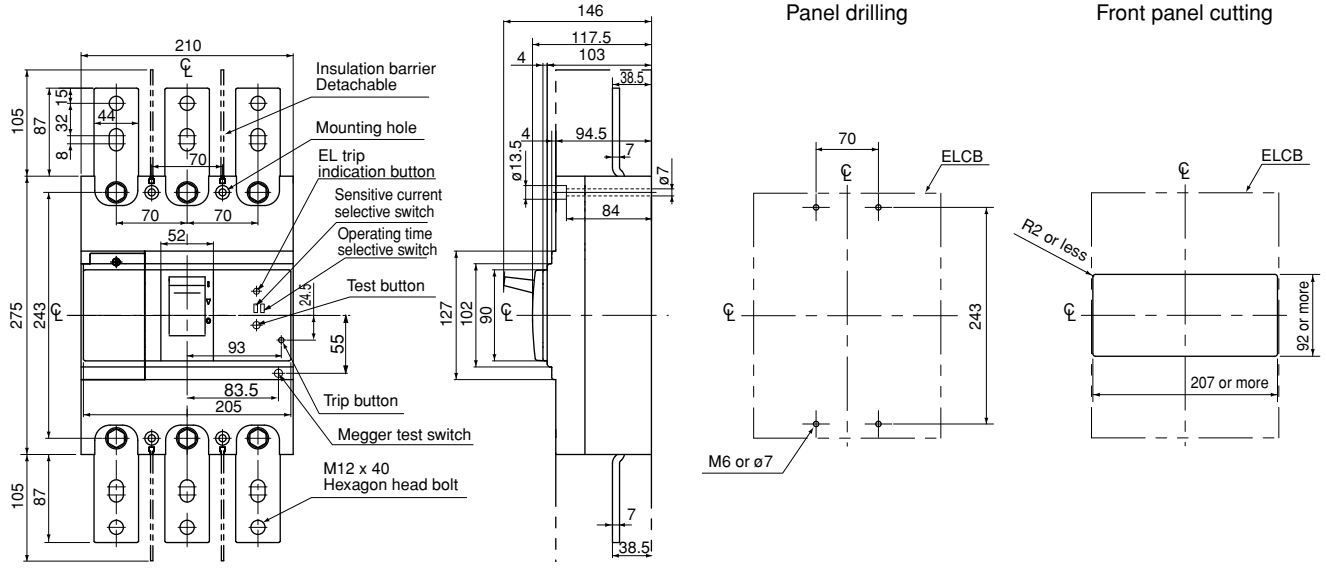
■ **Dimensions, mm**

● **Front mounting, front connection**

EW400□U-3P



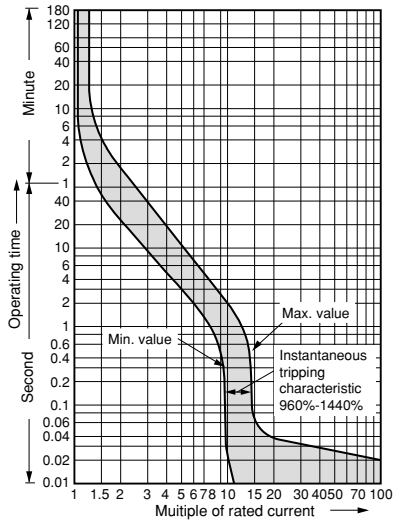
EW630□U-3P



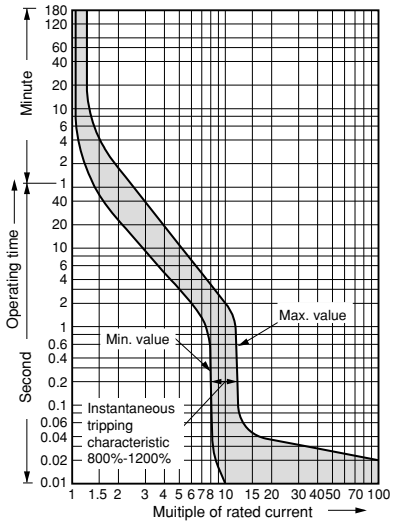
■ Characteristic curves / Line protection

EW32/50/63/100

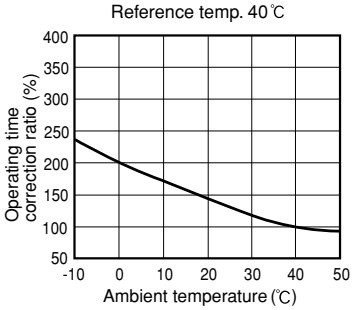
Rated current: 5, 10, 32, 40, 60, 63, 70, 75, 80, 90A



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

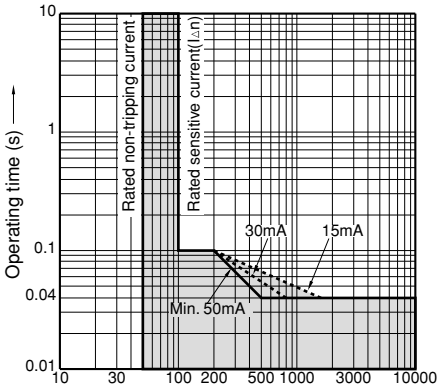


Temperature correction curve



Earth leakage tripping

EW32/50/63/100A



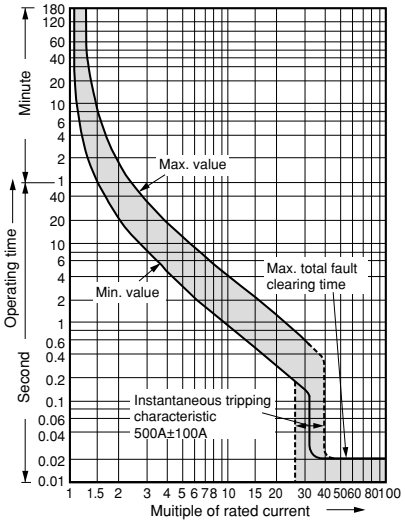
5I△n 0.04s max. (15, 30mA types: At 250mA)

07

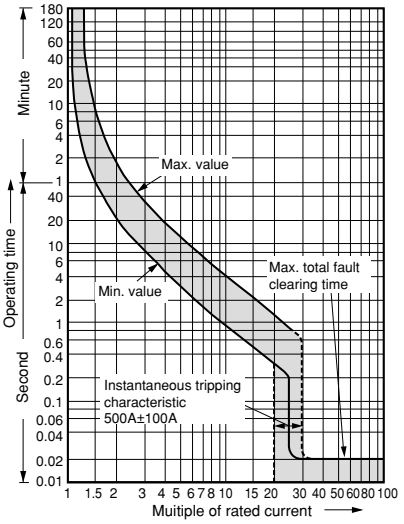
■ Characteristic curves / Line protection

EW125

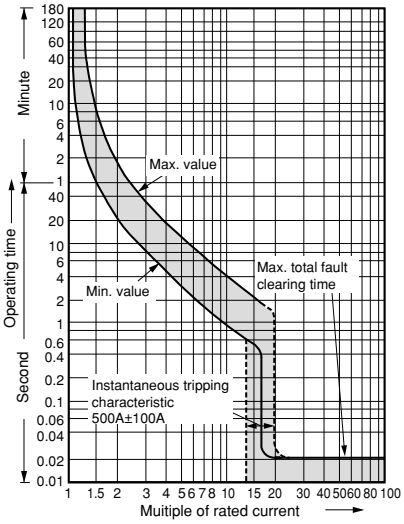
• 15A



• 20A

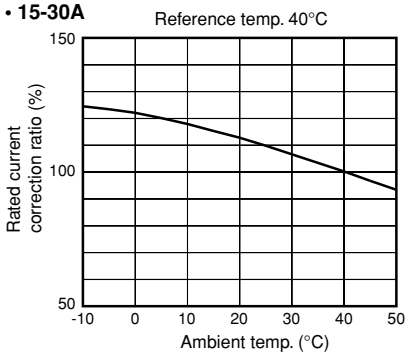


• 30A

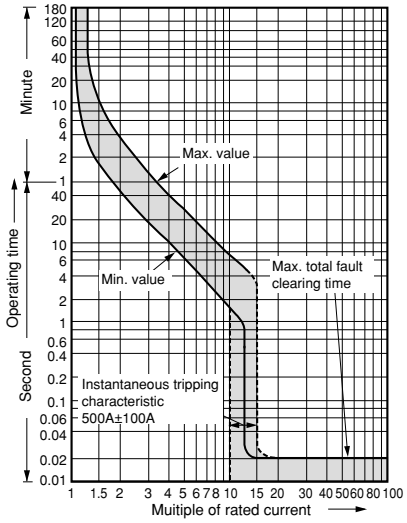


Temperature correction curve

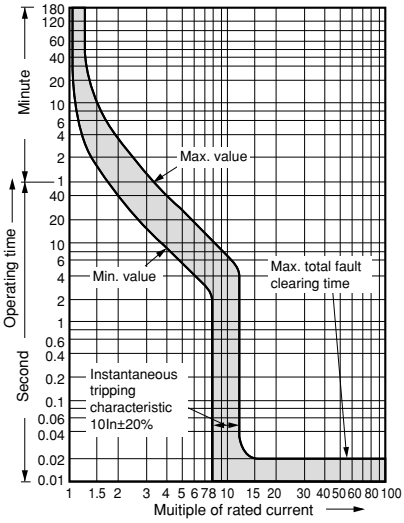
• 15-30A



• 40A

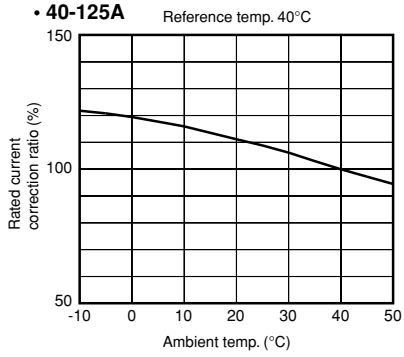


• 50-125A



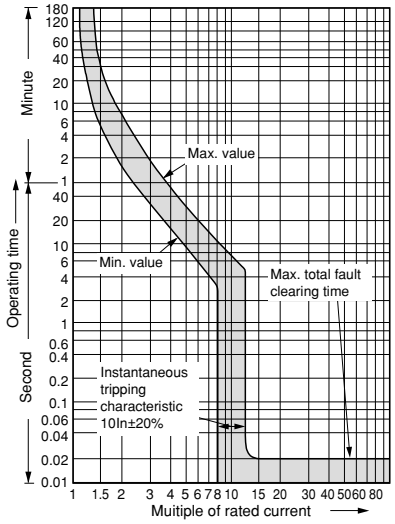
Temperature correction curve

• 40-125A

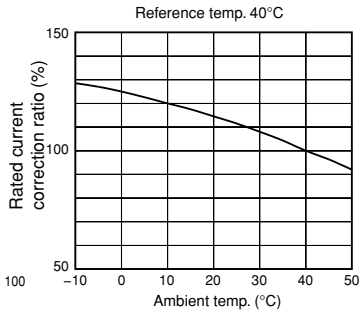


■ Characteristic curves / Line protection

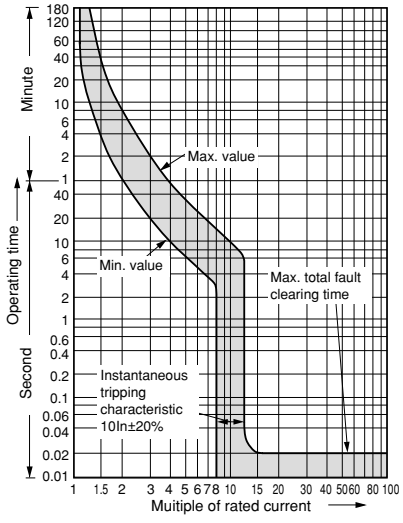
EW160/250



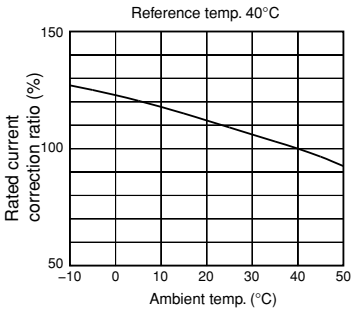
Temperature correction curve



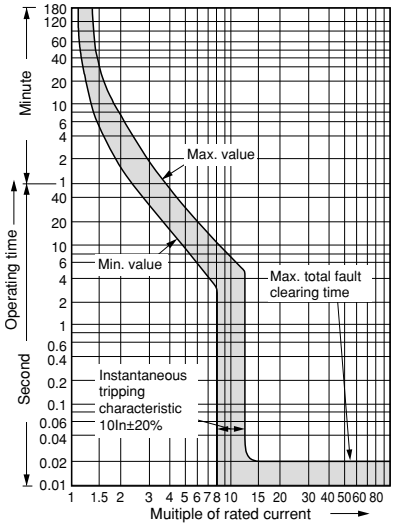
EW400



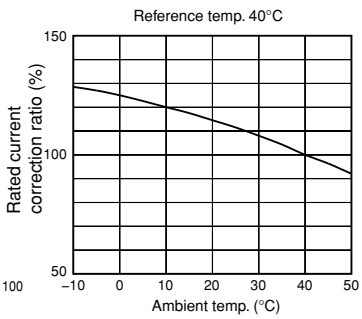
Temperature correction curve



EW630



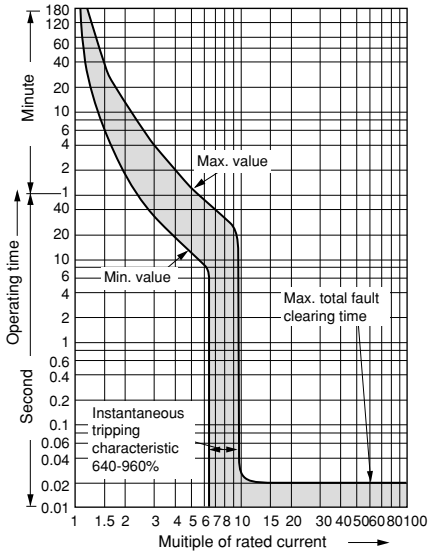
Temperature correction curve



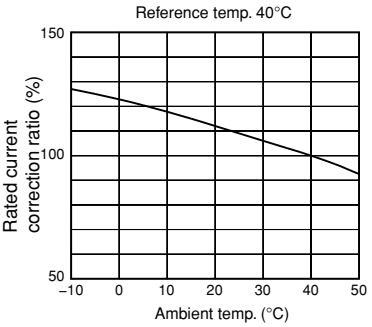
07

■ Characteristic curves / Line protection

EW800



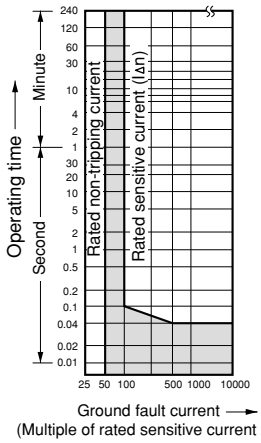
Temperature correction curve



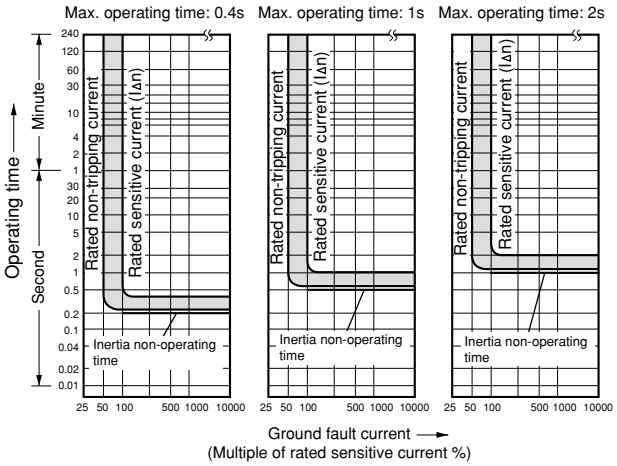
Earth leakage tripping

EW125/160/250/400/630/800

Instantaneous trip type

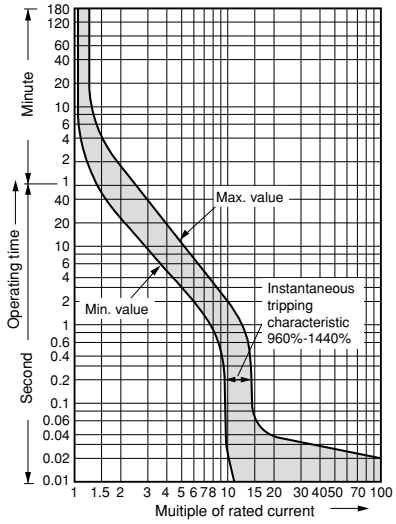


Time-delay trip type

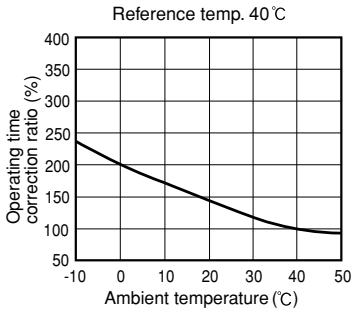


■ Characteristic curves / Motor protection

EW32/50/63/100

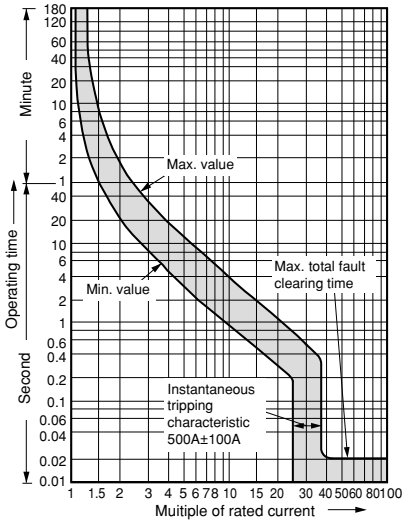


Temperature correction curve

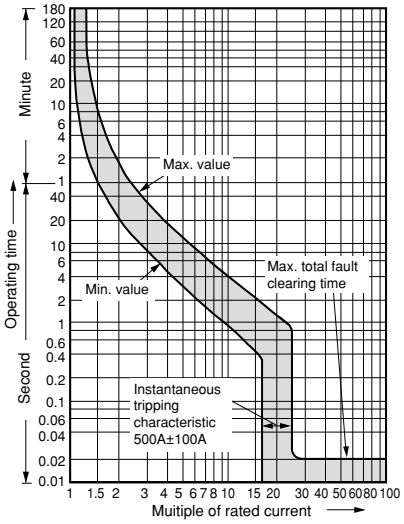


EW125

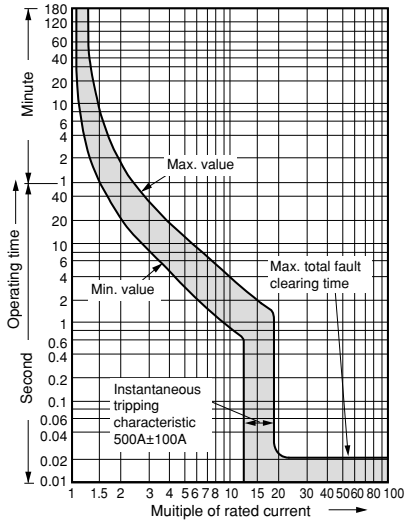
• 16A



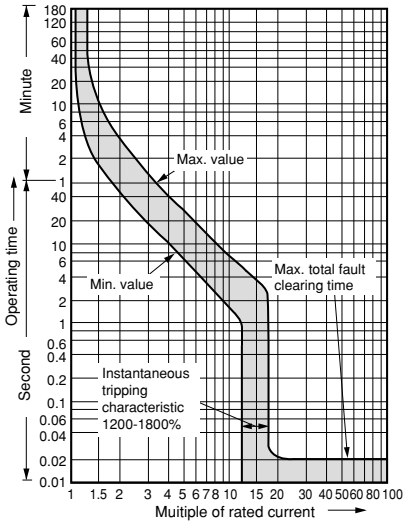
• 24A



• 32A

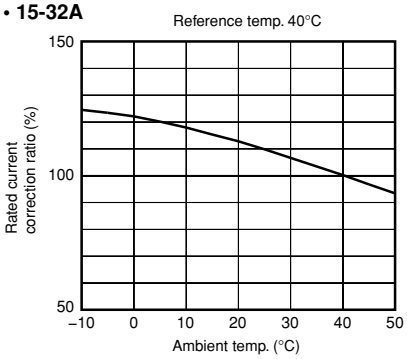


• 40-90A

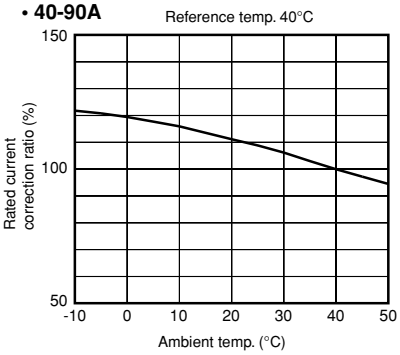


Temperature correction curve

• 15-32A



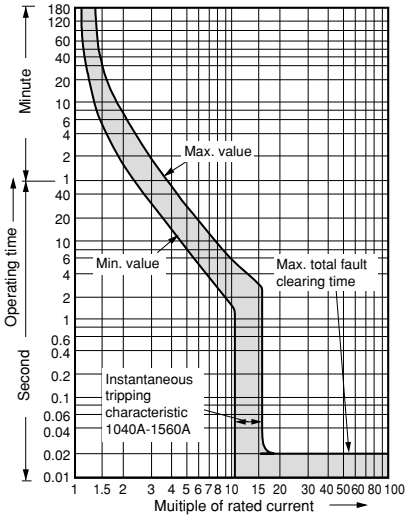
• 40-90A



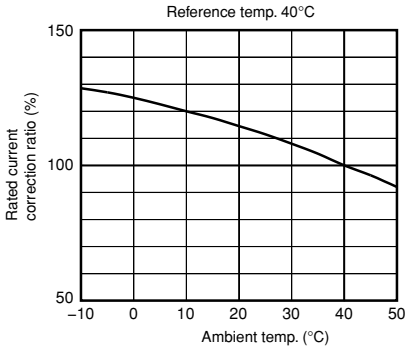
07

■ Characteristic curves / Motor protection

EW250

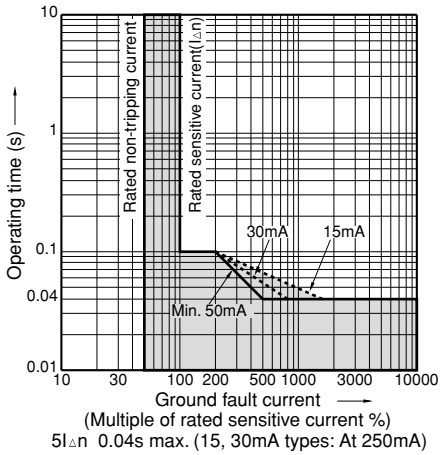


Temperature correction curve



Earth leakage tripping

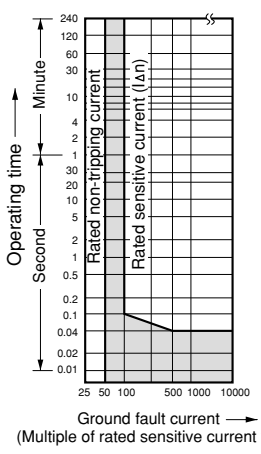
EW32/50/63



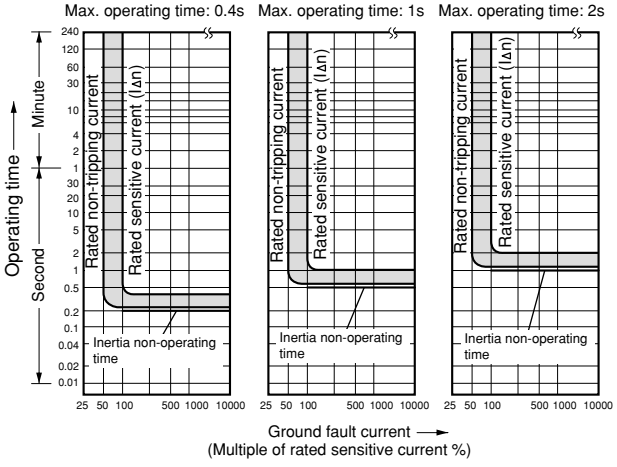
5I△n 0.04s max. (15, 30mA types: At 250mA)

EW125/250

Instantaneous trip type



Time-delay trip type



■ **Variation of internal accessory**

• **32 to100AF**

Auxiliary switch (Type W)

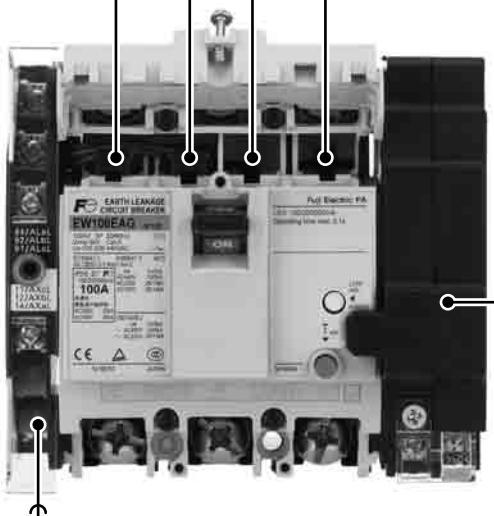
This switch is used for indicator lamp or control circuit.
See page 07/63.

Alarm switch (Type K)

This switch can be connected to a warning lamp or buzzer to indicate when the breaker has been tripped.
See page 07/63.

Shunt trip device (Type F)

The purpose of this accessory is to trip the breaker from a distance.
See page 07/64.



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.
See page 07/65.

Terminal block (Type A)

A wiring terminal for internal accessories (Order with W, K or F)
See page 07/66.

■ Variation of internal accessory

• 125 to 250AF

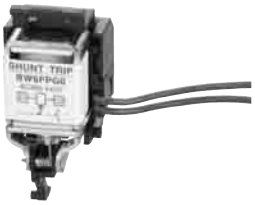
Auxiliary switch (Type W)

This switch is used for indicator lamp or control circuit.
See page 07/63.

Alarm switch (Type K)

This switch can be connected to a warning lamp or buzzer to indicate when the breaker has been tripped.
See page 07/63.

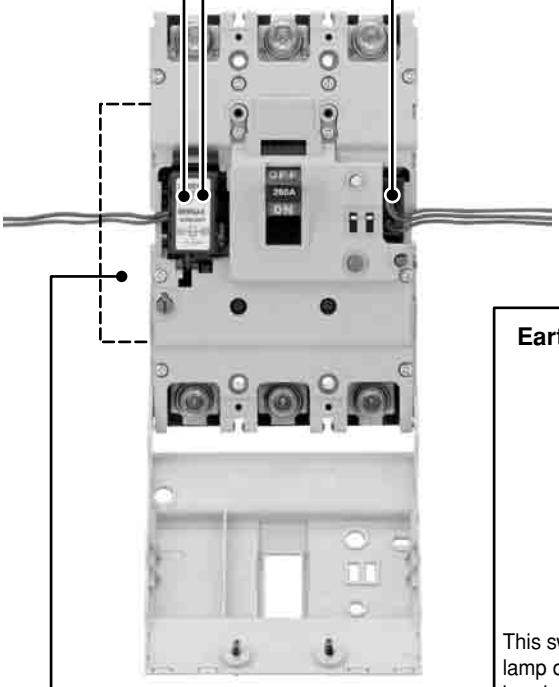
Shunt trip device (Type F)



The purpose of this accessory is to trip the breaker from a distance.
See page 07/64.

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.
See page 07/65.



Earth alarm switch (Type L)

This switch can be connected to a warning lamp or buzzer to indicate when the breaker has been tripped by leakage current.
See page 07/63.

Terminal block (Type A)

A wiring terminal for internal accessories (Factory-mounted)
See page 07/66.

■ **Variation of internal accessory**

• **400 to 800AF**

Alarm switch (Type K)

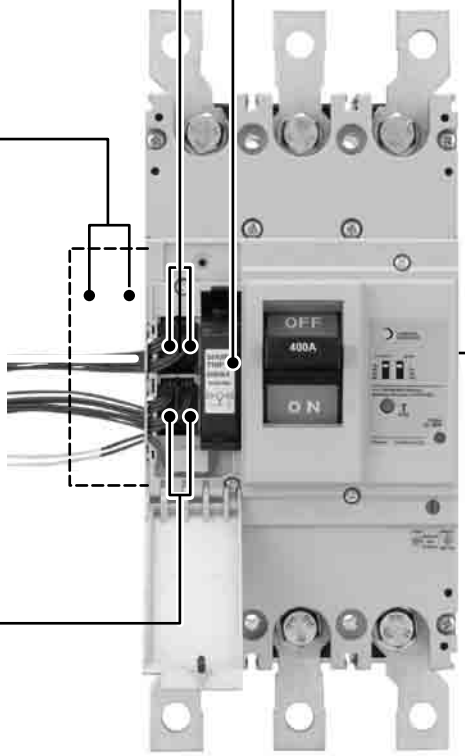
This switch can be connected to a warning lamp or buzzer to indicate when the breaker has been tripped.
See page 07/63.

Shunt trip device (Type F)

The purpose of this accessory is to trip the breaker from a distance.
See page 07/64.

Terminal block (Type A)

A wiring terminal for internal accessories (Factory-mounted)
See page 07/66.



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.
See page 07/65.

Auxiliary switch (Type W)

This switch is used for indicator lamp or control circuit.
See page 07/63.

Earth alarm switch (Type L)

This switch can be connected to a warning lamp or buzzer to indicate when the breaker has been tripped by leakage current.
See page 07/63. (Factory-mounted)

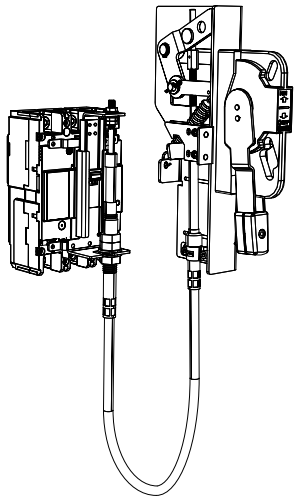
■ Variation of external accessory

External operating handles

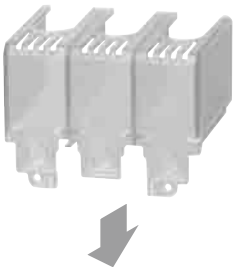
• **N-type**
See page 07/74.

• **V-type**
See page 07/74.

• **F-type**
See page 07/74.



Terminal cover
Long type
See page 07/85.

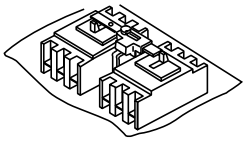


Interphase barrier
See page 07/86.

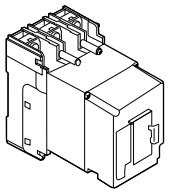
Terminal cover
Short type
See page 07/85.

Steel enclosures
See page 07/83.

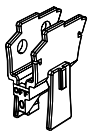
Mechanical interlock device
See page 07/70.



Motor-operating mechanism
See page 07/69.

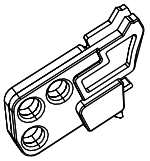


Handle locking cover (L1)
See page 07/87.

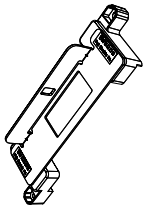


Padlocking device
See page 07/87.

• **Cap type (Q1, QN)**



• **Plate type (Q2)**



■ Terminal blocks for auxiliary circuit

- It indicates the terminal No. of internal accessory.The connection method of internal accessory is lead-wire system and terminal block system.
- For the available configuration of internal accessory, *see page 07/62.*

Lead-wire wiring

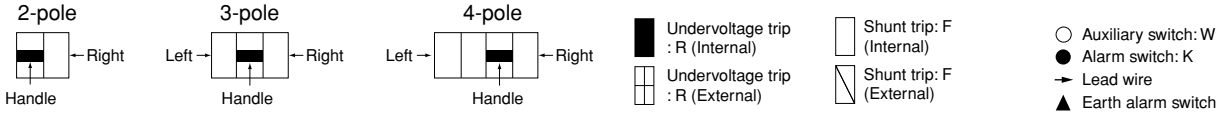
With terminal block

• Terminal number of internal accessory

Accessory		32 – 250AF		400 – 800AF
		Left side mounting	Right side mounting	Left side mounting
Auxiliary switch	SPDT: W (1)*	11 12 14 AXcL AXbL AXaL	21 22 24 AXcR AXbR AXaR	11 12 14 AXc AXb AXa
	2PDT: V (2)*	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 (8)*	91 92 94 ALcL ALbL ALaL	01 02 04 ALcR ALbR ALaR	91 92 94 ALc ALb ALa
	2PDT: J (9)*	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		
Earth alarm switch (125 to 800AF)		71 72 74		

Note: * ( ) Code of Low level circuit

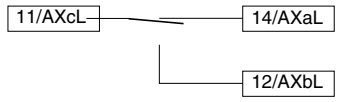
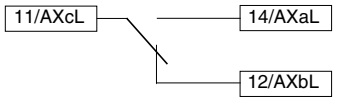
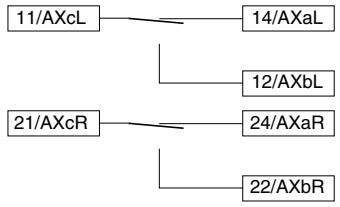
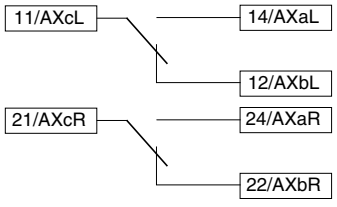
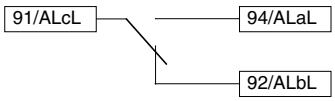
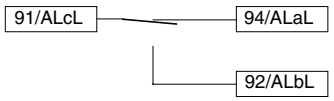
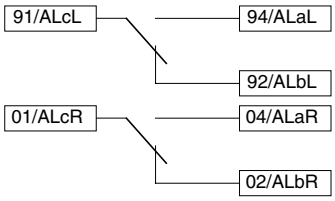
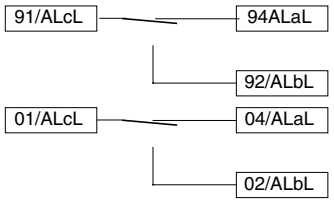
■ Available configurations



ECCB	**EW32AAG-2P** **EW50AAG-2P**	**EW32□-3P** **EW50□-3P** **EW63□-3P** **EW100□-2P** **EW100□-3P**	**EW125** **EW160** **EW250**		**EW400** **EW630** **EW800**
Pole	2	2, 3	3	4	3, 4
Auxliary switch SPDT: W (1)*					
Alarm switch SPDT: K (8)*					
Shunt trip: F					
Undervoltage trip: R					
W+K (1+8)					
Auxliary switch 2PDT: V (2)					
Alarm switch 2PDT: J (9)					
V+K (2+8)					
W+J (1+9)					
V+J (2+9)					
W+F (1+F)					
W+R (1+R)		*2			
K+F (8+F)					
K+R (8+R)		*2			
W+K+F (1+8+F)					
W+K+R (1+8+R)		*2			
V+F (2+F)					
V+R (2+R)		*2 *1			
J+F (9+F)					
J+R (9+R)		*2 *1			
V+K+F (2+8+F)					
V+K+R (2+8+R)		*2 *1			
W+J+F (1+9+F)					
W+J+R (1+9+R)		*2 *1			
V+J+F (2+9+F)					
V+J+R (2+9+R)		*2 *1			
L					

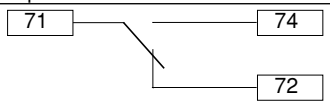
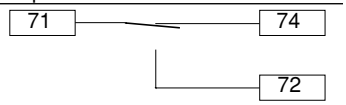
Notes: •The above table is applied to front mounting type, rear mounting type, flush mounting type, and plug-in mounting type.
• Terminal block is attached on the same side of the accessory.
• ( ) Code of low level circuit □:See page 07/2.

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

Accessory	Handle position		
	ON	OFF	Trip
Auxiliary switch SPDT: **W** **(1)**			
2PDT: **V** **(2)**			
Alarm switch SPDT: **K** **(8)**			
2PDT: **J** **(9)**			

Note: ▭ Ring mark indication
( ) Code of low level circuit

■ Operation of earth alarm switch (L)

Accessory	Handle position	
	ON/OFF/Overcurrent trip	EL trip
Earth alarm switch L		

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

• 32-100AF

	IEC60947-5-1			NECA C4505		Minimum load current
	Voltage (V)	Make/break current (A)		Voltage (V)	Make/break current (A)	
		AC 15	DC 13		Res. load	
Standard type	125 AC	5	–	125 AC	5	5V DC 160mA
	250 AC	5	–	250 AC	3	30V DC 30mA
	–	–	–	30 DC	4	
	125 DC	–	0.6	125 DC	0.4	
	250 DC	–	0.3	250 DC	0.2	
Low level circuit	–	–	–	30 DC	0.1	5V DC 1mA

• 125-800AF

	Rated thermal current (A)	Rated operational current (A)						Minimum load current
		AC			DC			
		Rated operational Voltage (V)	Res. load	Ind. load	Rated operational Voltage (V)	Res. load	Ind. load	
Standard type	5	24	5	5	24	4	3	5V DC 160mA
		48	5	5	48	2.5	1	30V DC 30mA
		125	5	3	125	0.4	0.4	
		250	3	2	250	0.2	0.2	
Low level circuit	0.1	30	0.1	–	30	0.1	–	5V DC 1mA

■ **Rating of shunt trip (F)**

ELCB type	Installation	AC		DC		Code	Time rating of coil	Opearting time (ms)
		V	VA	V	W			
EW32 **EW50** **EW63** **EW100**	External	100(50Hz)/ 100-110(60Hz)	16	–	–	FAC100V(50Hz)/ 100-110V(60Hz)	Continuous	7-13
		200(50Hz)/ 200-220(60Hz)	16	–	–	FAC200V(50Hz)/ 200-220V(60Hz)		
		400(50Hz)/ 400-440(60Hz)	22	–	–	FAC400V(50Hz)/ 400-440V(60Hz)		
		–	–	24	36	DC24V		
		–	–	100-110	23	FDC100-110V	Continuous (With 1NO contact to prevent coil burn-out)	
EW125 **EW160** **EW250**	Internal	24	50	24	50	FAC/DC24V	Continuous (With 1NO contact to prevent coil burn-out)	13-21
		48	50	48	50	FAC/DC48V		
		100-120	50	100-110	50	FAC100-120V/ DC100-110V		
		120-130	50	–	–	FAC120-130V		
		200-240	50	200-220	50	FAC200-240V/ DC200-220V		
		277	50	–	–	FAC277V		
		380-440	50	–	–	FAC380-440V		
		440-480	50	–	–	FAC440-480V		
		500-550	50	–	–	FAC500-550V		
EW400 **EW630** **EW800**	Internal	24-48	2	24-48	2	FAC/DC24-48V	Continuous	8-20
		100-240	3	100-220	3	FAC100-240V/ DC100-220V		
		277	3	–	–	FAC277V		
		380-550	4	–	–	FAC380-550V		

Note: The operating tripping voltage range for shunt trip devices is 70% to 110% of the rated operating voltage.

■ **Rating of undervoltage trip (R)**

ELCB type	Installation	AC		DC		Code
		V	VA	V	W	
EW32 *2 **EW50** *2 **EW63** *2 **EW100** *2	External	100 (50Hz)/ 100-110(60Hz)	2.8	–	–	RAC100V(50Hz)/ 100-110V(60Hz)
		200 (50Hz)/ 200-220 (60Hz)	3.4	–	–	RAC200V(50Hz)/ 200-220V(60Hz)
		400 (50Hz)/ 400-440 (60Hz)	4.4	–	–	RAC400V(50Hz)/ 400-440V(60Hz)
		–	–	24	40	RDC24V
				100-110		RDC100-110V
EW125 *1 **EW160** *1 **EW250** *1	Internal	–	–	24	5	RDC24V
		–	–	48	5	RDC48V
		–	–	100-110	5	RDC100-110V
		–	–	125	5	RDC125V
		100-110	5	–	–	RAC100-110V
		110-130	5	–	–	RAC110V-130V
		200-240	5	–	–	RAC200-240V
		277	5	–	–	RAC277V
		380-415	5	–	–	RAC380-415V
		440-480	5	–	–	RAC440V-480V
EW400 *2 **EW630** *2 **EW800** *2	Internal	24	2	24	2	RAC/DC24V
		48	2	48	2	RAC/DC48V
		100-110	3	100-110	3	RAC/DC100-110V
		120-130	3	125	3	RAC120-130V/DC125V
		200-240	3	200-220	3	RAC200-240V/DC200-220V
		277	3	–	–	RAC277V
		380-480	4	–	–	RAC380-480V

Notes: • The operating voltages of undervoltage tripping devices are as follows:
Tripping voltage: 35% to 70% of rated voltage, closing voltage: 85% to 110% of rated voltage.

*1 Reset-allowed type: When the breaker handle is in the OFF or RESET state, tripping does not occur even if the R coil is not energized. Turning ON with the R coil not energized causes normal tripping.

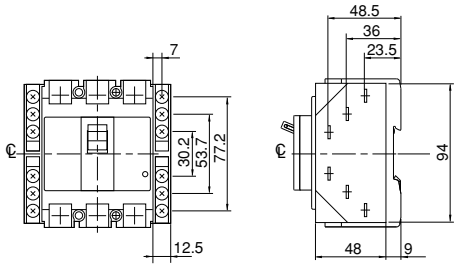
*2 Reset-prohibited type: When the R coil is not energized, reset operation cannot reset the tripped breaker to the OFF state.

■ Lead wire specification

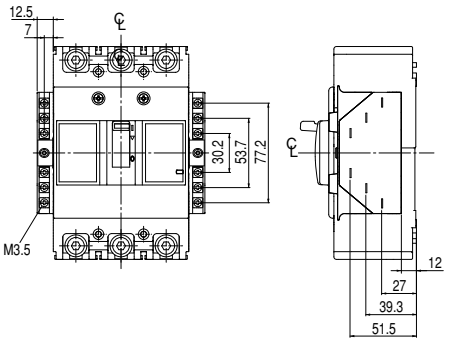
AF		Pole	wire size	Wire length
32 to 100AF	Standard	2P, 3P	0.4mm^2 (AWG22)	Ca 500mm
	Global		0.5mm^2 (AWG20)	
125 to 250AF		2P, 3P	0.5mm^2 (AWG20)	
		4P		
400 to 800AF		2P, 3P	0.5mm^2 (AWG20)	Ca 500mm
		4P		Ca 400 to 450mm

■ Terminal blocks

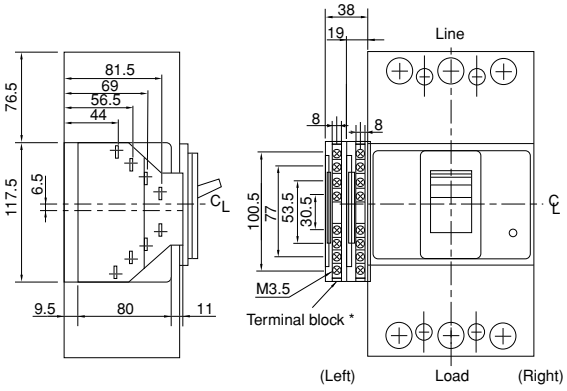
32AF, 50AF, 63AF, 100AF



125AF, 160AF, 250AF



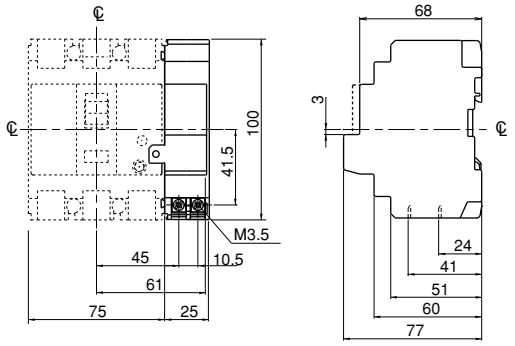
400AF, 630AF, 800AF



Notes:
* If the chosen combination has more than 8 terminals, 2 terminal blocks are mounted.
• Mount the terminal block on the surface on which the accessories are mounted. See the table of the combinations of internal accessories on pages XX. for information on the accessory mounting position.
• Available wire: Solid wire: 1.6ø Stranded wire: 2mm^2
• Terminal blocks are available as factory mounted only.

■ Undervoltage trip device, Shunt trip device

32AF, 50AF, 63AF, 100AF



Mass: 0.15kg

■ Type number

Internal accessories (Sold separately)

• 32, 50, 63, 100AF IEC/EN/GB/JIS conformed

Accessory	Type				Operating voltge
	Lead wire system		Terminal block system		
	Left side	Right side	Left side	Right side	
Auxiliary switch	**BZ6WL10C**	**BZ6WR10C**	**BZ6WL10CA**	**BZ6WR10CA**	
Auxiliary switch (lowz level circuit)	**BZ6WDL10C**	**BZ6WDR10C**	**BZ6WDL10CA**	**BZ6WDR10CA**	
Alarm switch	**BZ6KL10C**	**BZ6KR10C**	**BZ6KL10CA**	**BZ6KR10CA**	
Alarm switch (low level circuit)	**BZ6KDL10C**	**BZ6KDR10C**	**BZ6KDL10CA**	**BZ6KDR10CA**	
Auxiliary switch + Alarm switch	**BZ6WKL10C**	**BZ6WKR10C**	**BZ6WKL10CA**	**BZ6WKR10CA**	
Auxiliary switch + Alarm switch (low level circuit)	**BZ6WDKDL10C**	**BZ6WDKDR10C**	**BZ6WDKDL10CA**	**BZ6WDKDR10CA**	
Shunt trip device				**BZ6F210CA**	100V AC 50Hz/100-110V AC 60Hz
				BZ6F110CA	110V AC 50Hz/100-127V AC 60Hz
				BZ6F710CA	200V AC 50Hz/200-220V AC 60Hz
				BZ6F410CA	220V AC 50Hz/220-240V AC 60Hz
				BZ6F510CA	230V AC 50Hz/230-240V AC 60Hz
				BZ6FB10CA	240V AC 50Hz
				BZ6F010CA	380V AC 50Hz 380-415V AC 60Hz
				BZ6F810CA	400V AC 50Hz 400-440V AC 60Hz
Undervoltage trip device				**BZ6R210C**	100V AC 50Hz/100-110V AC 60Hz
				BZ6R110C	110V AC 50Hz/110-127V AC 60Hz
				BZ6RW10C	200V AC 50Hz/200-220V AC 60Hz
				BZ6R410C	220V AC 50Hz/220-240V AC 60Hz
				BZ6R510C	230V AC 50Hz/230-240V AC 60Hz
				BZ6R810C	240V AC 50Hz
				BZ6R010C	380V AC 50Hz 380-415V AC 60Hz
				BZ6R910C	400V AC 50Hz 400-440V AC 60Hz
				BZ6RF10C	24V DC
				BZ6RT10C	100-110V DC

07

• 32, 50, 63, 100AF IEC/EN/GB/JIS/UL/CSA conformed

Accessory	Type				Operating voltge
	Lead wire system		Terminal block system		
	Left side	Right side	Left side	Right side	
Auxiliary switch	**BZ6WL10CU**	**BZ6WR10CU**	**BZ6WL10CAU**	**BZ6WR10CAU**	
Auxiliary switch (low level circuit)	**BZ6WDL10CU**	**BZ6WDR10CU**	**BZ6WDL10CAU**	**BZ6WDR10CAU**	
Alarm switch	**BZ6KL10CU**	**BZ6KR10CU**	**BZ6KL10CAU**	**BZ6KR10CAU**	
Alarm switch (low level circuit)	**BZ6KDL10CU**	**BZ6KDR10CU**	**BZ6KDL10CAU**	**BZ6KDR10CAU**	
Auxiliary switch + Alarm switch	**BZ6WKL10CU**	**BZ6WKR10CU**	**BZ6WKL10CA**	**BZ6WKR10CAU**	
Auxiliary switch + Alarm switch (low level circuit)	**BZ6WDKDL10CU**	**BZ6WDKDR10CU**	**BZ6WDKDL10CAU**	**BZ6WDKDR10CAU**	
Shunt trip device	–	–	–	**BZ6F210CAU**	100V AC 50Hz/100-110V AC 60Hz
	–	–	–	**BZ6F710CAU**	200V AC 50Hz/200-220V AC 60Hz
	–	–	–	**BZ6F810CAU**	400V AC 50Hz/400-440V AC 60Hz
Undervoltage trip device	–	–	–	**BZ6R210CAU**	100V AC 50Hz/100-110V AC 60Hz
	–	–	–	**BZ6RW10CAU**	110V AC 50Hz/110-127V AC 60Hz
	–	–	–	**BZ6R910CAU**	200V AC 50Hz/200-220V AC 60Hz

• 125, 160, 250AF IEC/EN/GB/JIS/UL/CSA conformed

Accessory	Type				Operating voltge
	Lead wire system		Terminal block system		
	Left side	Right side	Left side	Right side *	
Auxiliary switch	**BW9W1SG0**	**BW9W1SG0-R**	**BW9W1SG0-A**	–	–
Auxiliary switch (low level circuit)	**BW9W1DG0**	**BW9W1DG0-R**	**– ***		
Alarm switch	**BW9K1SG0**	**BW9K1SG0-R**	**BW9K1SG0-A**		
Alarm switch (low level circuit)	**BW9K1DG0**	**BW9K1DG0-R**	**– ***		
Auxiliary switch + Alarm switch	**BW9WKSG0**	**BW9WK1SG0-R**	**BW9WKSG0-A**		
Auxiliary switch + Alarm switch (low level circuit)	**BW9WKDG0**	**BW9WK1DG0-R**	**– ***		
Earth alarm switch	–	**BW9L1SGA**	–		
Shunt trip device	**BW9FRG0**	**BW9FRG0**	**BW9FRG0-A**		24V AC/DC
	BW9FSG0	**BW9FSG0**	**BW9FSG0-A**		48V AC/DC
	BW9FAG0	**BW9FAG0**	**BW9FAG0-A**		100-120V AC/100-110V DC
	BW9F1G0	**BW9F1G0**	**BW9F1G0-A**		120-130V AC
	BW9FKG0	**BW9FKG0**	**BW9FKG0-A**		200-240V AC/200-220V DC
	BW9FBG0	**BW9FBG0**	**BW9FBG0-A**		277V AC
	BW9FPG0	**BW9FPG0**	**BW9FPG0-A**		380-440V AC
	BW9FHG0	**BW9FHG0**	**BW9FHG0-A**		440-480V AC
	BW9FJG0	**BW9FJG0**	**BW9FJG0-A**		500-550V AC
Undervoltage trip devics	**BW9RGAR**	–	**BW9RGAR-A**		24V DC
	BW9RGAS		**BW9RGAS-A**		48V DC
	BW9RGAL		**BW9RGAL-A**		100-110V DC
	BW9RGA5		**BW9RGA5-A**		125V DC
	BW9RGAA		**BW9RGAA-A**		100-110V AC
	BW9RGAT		**BW9RGAT-A**		110-130V AC
	BW9RGAK		**BW9RGAK-A**		200-240V AC
	BW9RGAB		**BW9RGAB-A**		277V AC
	BW9RGAP		**BW9RGAP-A**		380-415V AC
	BW9RGAH		**BW9RGAH-A**		440-480V AC

Note: * Factory-mounted

• 400, 630, 800AF IEC/EN/GB/JIS/UL/CSA conformed

Accessory	Type		Operating voltge
	Lead wire system	Terminal block system *	
	Left side		
Auxiliary switch x 1	**BW9W1SHA**	–	–
Auxiliary switch x 2	**BW9W2SHA**		
Auxiliary switch (low level circuit) x 1	**BW9W1DHA**		
Auxiliary switch (low level circuit) x 2	**BW9W2DHA**		
Alarm switch x 1	**BW9K1SHA**		
Alarm switch x 2	**BW9K2SHA**		
Alarm switch (low level circuit) x 1	**BW9K1DHA**		
Alarm switch (low level circuit) x 2	**BW9K2DHA**		
Shunt trip device	**BW9FHA-R**		24-48V AC/DC
	BW9FHA-A		100-240V AC/100-220V DC
	BW9FHA-B		277V AC
	BW9FHA-P		380-550V AC
Undervoltage trip devics	**BW9RHA-R**		24V AC/DC
	BW9RHA-S		48V AC/DC
	BW9RHA-A		100-110 AC/DC
	BW9RHA-1		120-130V AC/125V DC
	BW9RHA-K		200-240V AC/200-220V DC
	BW9RHA-B		277V AC
	BW9RHA-P		380-480V AC

Note: * Factory-mounted

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.

The breakers do not conform to IEC and EN standard.

■ Type and ratings

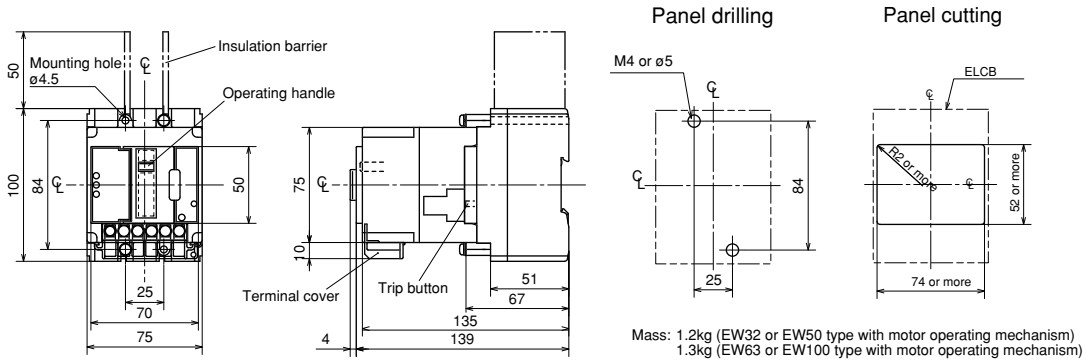
ELCB type	Motor rating			Power source capacity	Mass (kg)
	Operating voltage	Operating time	Time rating		
EW32□-3P□M, EW50□-3P□M, EW63□-3P□M, EW100□-2P□M, EW100□-3P□M	100V DC 100/110V AC 200/220V AC	0.1s	15s per on-off operation	500VA	1.2 1.3

■ Ordering information

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

■ Dimensions, mm / Front mounting, front connection

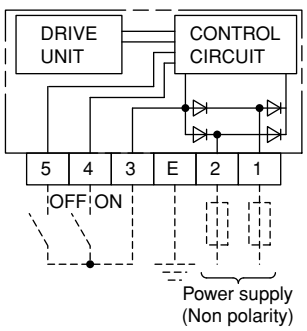
EW32□-3P, EW50□-3P, EW63□-3P, EW100□-2P, EW100□-3P



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

■ Wiring diagrams

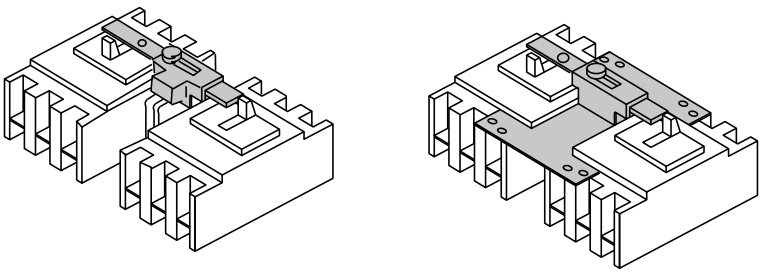
100/110V AC, 200/220V AC, 100V DC



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.



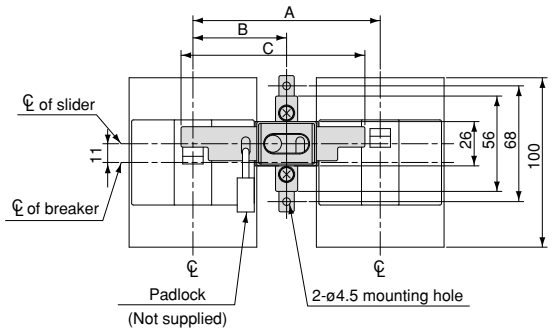
M1 types

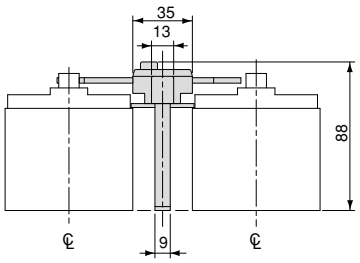
■ Type and applicable breakers

Type	Breaker type
BZ6M110C2	EW32AAG-2P, EW50AAG-2P
BZ6M110C3	EW32□-3P, EW50□-3P, EW63□-3P, EW100□-2P, EW100□-3P
BW9M1CA-3	EW125□-3P
BW9M1CA-4	EW125□-4P
BW9M1GA-3	EW250□-3P
BW9M1GA-4	EW250□-4P
BW9M1HA-3	EW400□-3P
BW9M1HA-4	EW400□-4P
BW9M1JA-3	EW630□-3P, EW800□-3P

■ Dimensions, mm

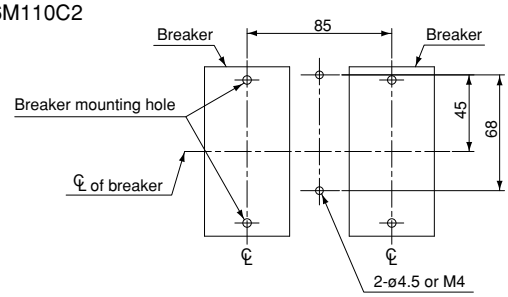
• 32AF to 100AF



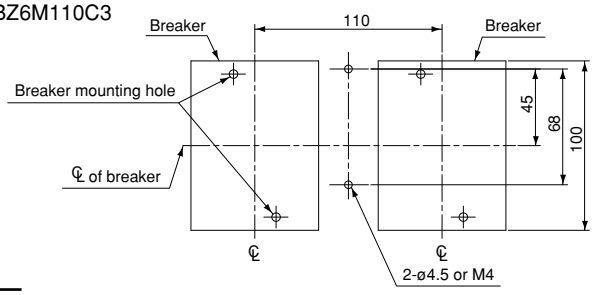


Panel drilling

BZ6M110C2

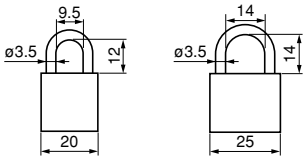


BZ6M110C3



Type	Dimensions, mm A	B	C	Mass (kg)
BZ6M110C2	85	42.5	83	0.11
BZ6M110C3	110	55	108	0.12

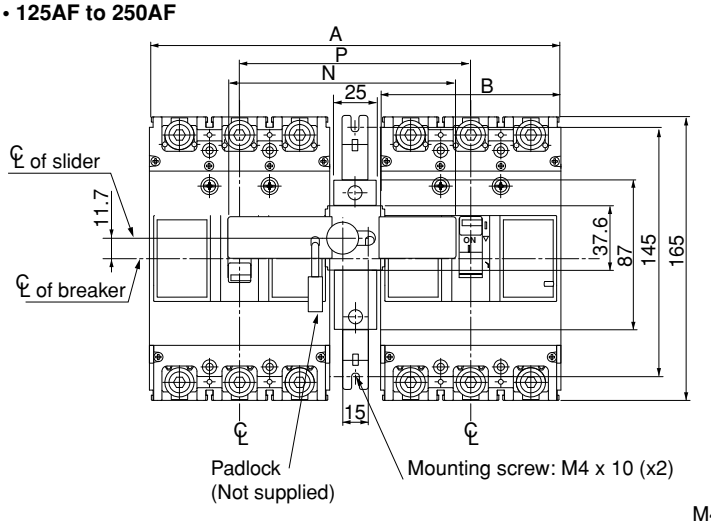
Notes: • BZ6M110C2 is not available for padlock.
• Applicable padlock(ø3.5) dimensions, mm
• External installation forms F and R are not applicable to the ELCB on the left of the diagram.



07

■ Dimensions, mm

• 125AF to 250AF



Panel drilling

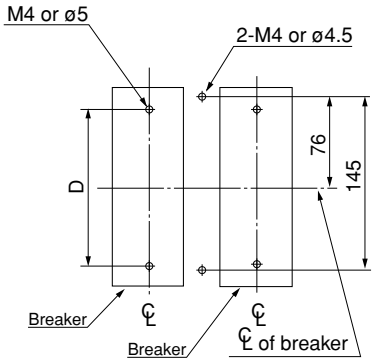
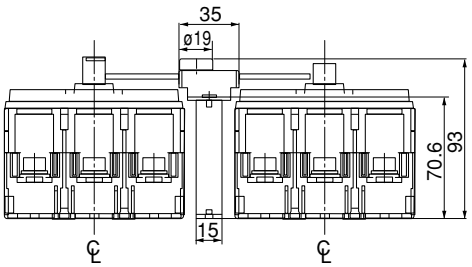


Fig.1



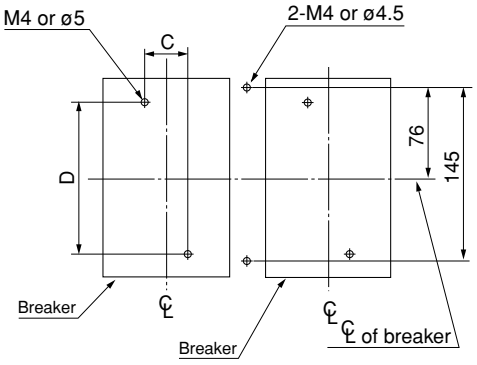


Fig.2

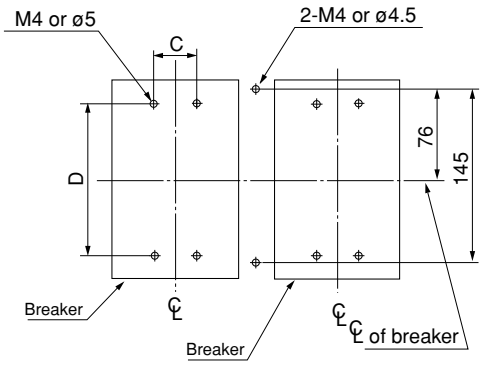


Fig.3

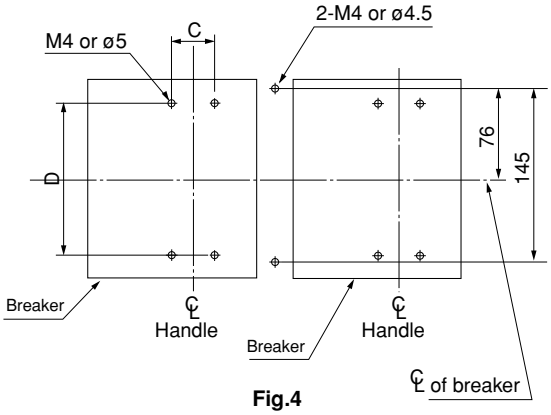
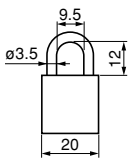


Fig.4

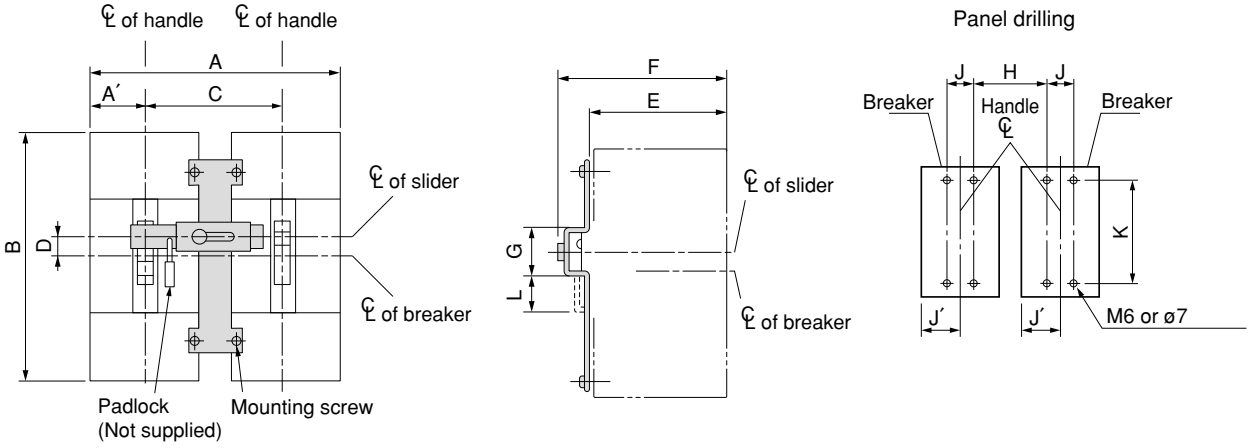
Type	Dimensions, mm						Panel Drilling	Mass(Kg)
	P	N	A	B	C	D		
BW9M1CA-2	90	88	150	60	–	132	Fig.1	
BW9M1CA-3	120	118	210	90	30	132	Fig.2	
BW9M1CA-4	150	148	270	102	30	132	Fig.4	
BW9M1GA-3	135	133	240	105	35	126	Fig.3	
BW9M1GA-4	170	168	310	140	35	126	Fig.4	

Notes: • The dimensions and Breaker mounting holes for back surface mounting are different from those given above. Inquire for details.
• If a padlock is required, use a commercially available padlock with the dimensions shown in the diagram at the right.
• External installation forms F and R are not applicable to the ELCB on the left of the diagram.



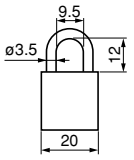
■ Dimensions, mm

• 400AF to 800AF



Type	Dimensions, mm											Mass(Kg)
	A (A')	B	C	D	E	F	G	H	J (J')	K	L	
BW9M1HA-3	355 (70)	257	215	20	94.5	132.5	54.5	171	44 (70)	215	38	
BW9M1HA-4	470 (140)	257	260	20	94.5	132.5	54.5	216	44 (140)	215	38	
BW9M1JA-3	500 (105)	275	290	20	94.5	132.5	54.5	220	70 (105)	243	38	

Notes: • The dimensions and Breaker mounting holes for back surface mounting are different from those given above. Inquire for details.
• If a padlock is required, use a commercially available padlock with the dimensions shown in the diagram at the right.
• External installation forms F and R are not applicable to the ELCB on the left of the diagram.



External operating handles

■ Description

Molded case 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.
Conformed to EN60947-1 isolation function.
Available for EN60204-1 power breaking device.
Conformed to UL489 (File No.E93289)

V type handle
The V type handle may be fitted to breakers of up to 800AF.
A separately sold extension shaft provides distance adjustment between the handle and breaker.
Conformed to EN60947-1 isolation function.
Available for EN60204-1 power breaking device.
Conformed to UL489 (File No.E93289)

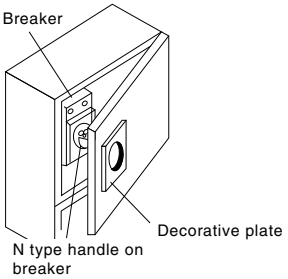
F type handle
The F type handle may be fitted to breakers of 125 to 400AF.
It is a flange type handle, which is commonly used in the North American market.
The drive section of the breaker and the external operating handle are connected with an optional cable.
Positioning between the breaker and the external operating handle is not required.

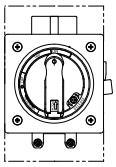
Conformed to UL489 (File No.E93289)

BW9N0CA
N type handles

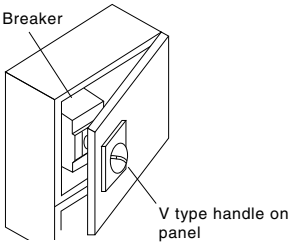
BW9V0CA
V type handle

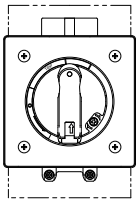
N type handles



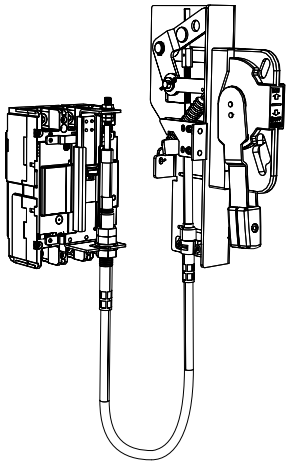


V type handles





F type handles



N type handles

ELCB	N type handle
EW32 EW50 EW63 EW100	**BZ6N10D**
EW125	**BW9N0CA**
EW160 EW250	**BW9N0GA**
EW400	**BW9N0HA**
EW630 EW800	**BW9N0JA**

V type handles

ELCB	V type handle
EW32 EW50 EW63 EW100	**BZ6V10D**
EW125	**BW9V0CA**
EW160 EW250	**BW9V0GA**
EW400	**BW9V0HA**
EW630 EW800	**BW9V0JA**

F type handles

ELCB	F type handle
EW125	**BW9F0CA**
EW250	**BW9F0GA**
EW400	**BW9F0HA**

■ Type number nomenclature

• N type handle

BW9N0CA – □

- **Mounting** (For BZ6N10D, BW9N0HA, BW9N0JA)
  - Blank: Front mounting, front connection
  - X: Front mounting, rear connection
  - P: Plug-in mounting
- **Basic type**

• V type handle

BW9V0CA – □

- **Mounting** (For BZ6V10D, BW9V0HA, BW9V0JA)
  - Blank: Front mounting, front connection
  - X: Front mounting, rear connection
  - P: Plug-in mounting
- **Basic type**

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.

• F type handle

BW9F0 □ A

- **Breaker type**
  - C: EW125□U
  - G: EW250□U
  - H: EW400□U
- **Basic type**

Cable (For F type)

BW9FW □ A – □ A

- **Cable length**
  - 15: 1.5m
  - 20: 2.0m
  - 30: 3.0m
- **Breaker type**
  - C: EW125□U
  - G: EW250□U
  - H: EW400□U
- **Basic type**

Terminal cover (For F type)

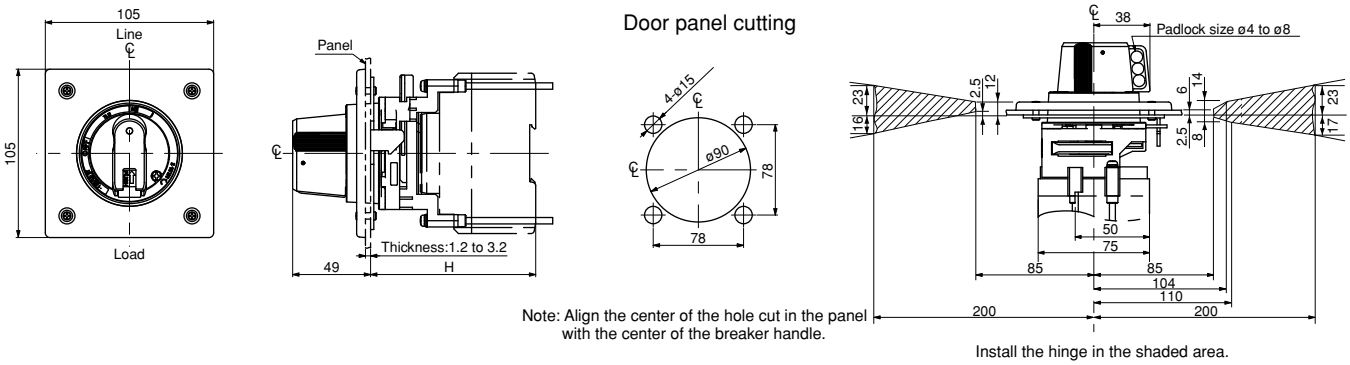
BW9FBT □ A – L3

- **Breaker type**
  - C: EW125□U
  - G: EW250□U
  - H: EW400□U
- **Basic type**

■ Dimensions, mm

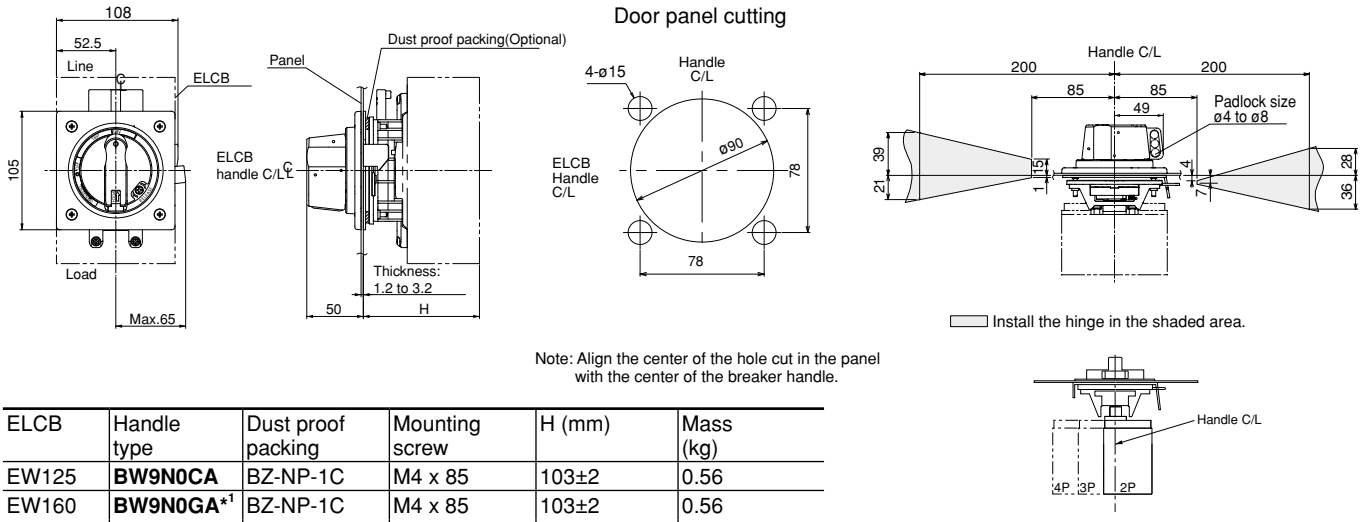
N type handle

• BZ6N10D



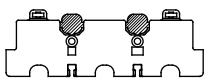
ELCB	Handle type	Dust proof packing	Mounting screw	H (mm)	Mass (kg)
EW32	**BZ6N10D**	Provided	M4 x 85	103±2	0.47
EW50	**BZ6N10D-X**	Provided	Contact FUJI.	111±2	
EW63	**BZ6N10D-P**			111±2	
EW100					

• BW9N0CA, BW9N0GA

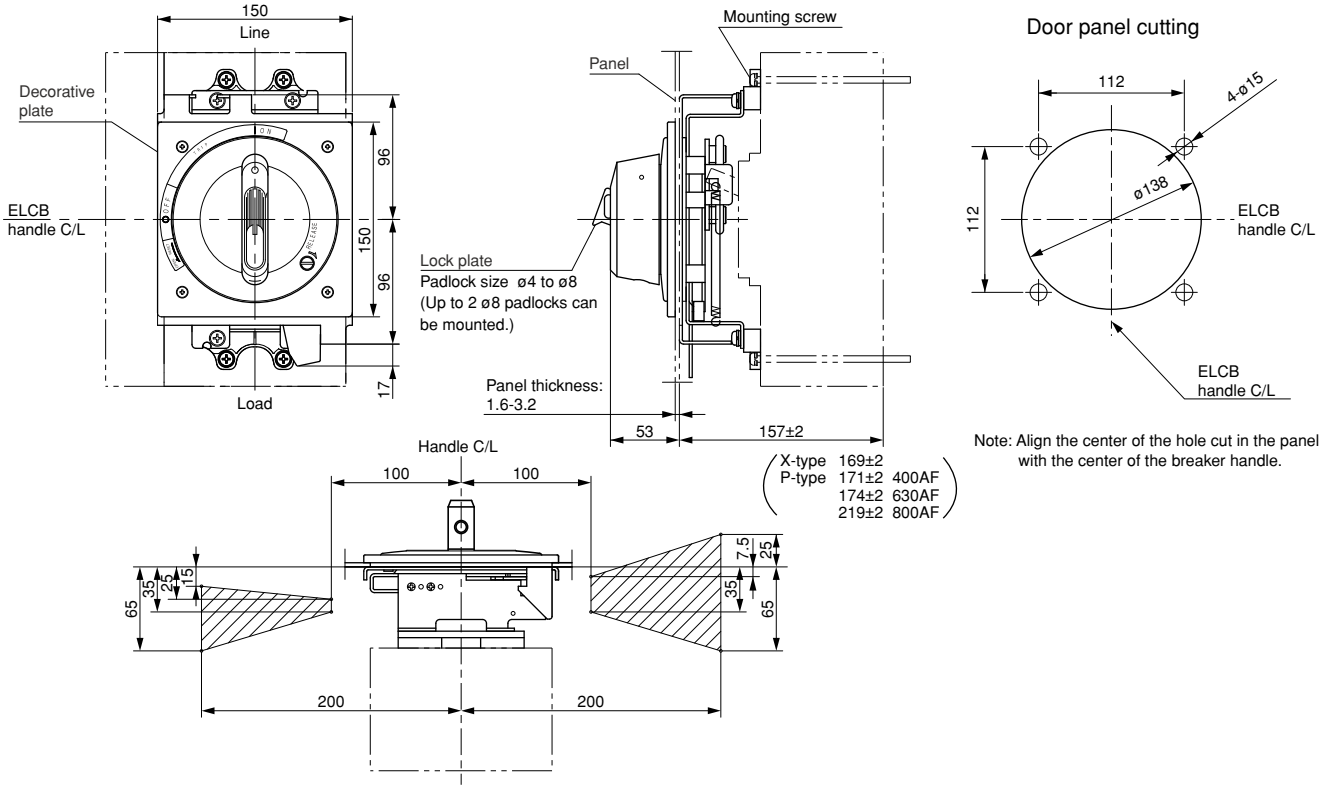


ELCB	Handle type	Dust proof packing	Mounting screw	H (mm)	Mass (kg)
EW125	**BW9N0CA**	BZ-NP-1C	M4 x 85	103±2	0.56
EW160	**BW9N0GA**[*1]	BZ-NP-1C	M4 x 85	103±2	0.56
EW250					

Notes: • The handle lock bars do not hold the entire door. Obtain a support bracket for the panel separately.
• Remove the handle lock bar before opening the door. (Turn the handle in the open direction.)
The lock bar will be damaged if the door is opened with force while the lock bar is engaged.
• Engage the door interlock securely before turning ON the power.
[*1] The terminal cover will cover the mounting screws for the Breaker. When attaching the terminal cover, a portion of the terminal cover will need to be removed.
Remove portion ▨ in the following diagram.



• **BW9N0HA, BW9N0JA**



Install the door hinge in the shaded area.

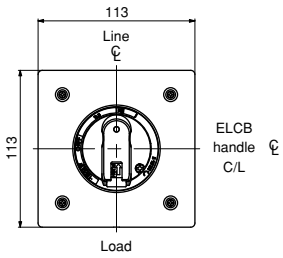
ELCB	Handle type	Dust proof packing	Mounting screw	Mass (kg)
EW400	**BW9N0HA** **BW9N0HA-X** **BW9N0HA-P**	BZ-NP-2	M6 x 110 M6 x 115 Contact FUJI.	1.9
EW630 EW800	**BW9N0JA** **BW9N0JA-X** **BW9N0JA-P**	BZ-NP-2	M6 x 110 M6 x 115 Contact FUJI.	1.9

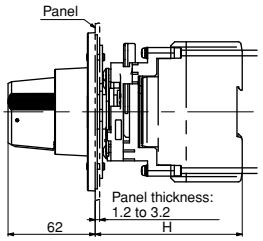
Notes: • The handle lock bars do not hold the entire door. Obtain a support bracket for the panel separately.
• Remove the handle lock bar before opening the door. (Turn the handle in the open direction.)
The lock bar will be damaged if the door is opened with force while the lock bar is engaged.
• Engage the door interlock securely before turning ON the power.
• Not available for side mounting.

■ Dimensions, mm

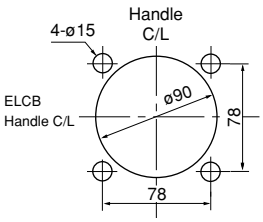
V type handle

• BW6V10D

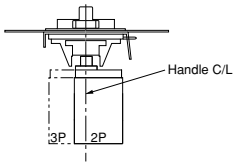




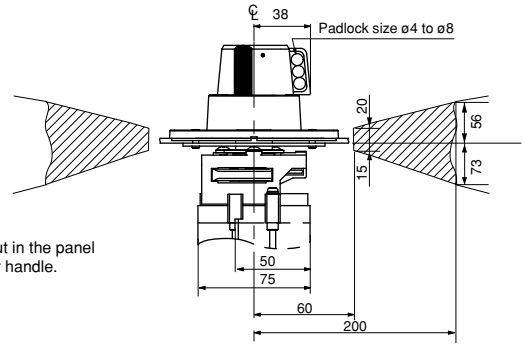
Door panel cutting



Note: Align the center of the hole cut in the panel with the center of the breaker handle.

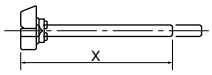


Door hinge installation area

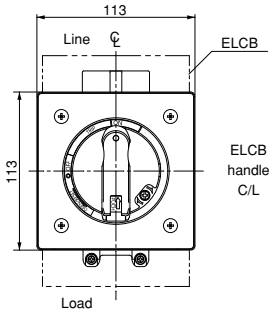


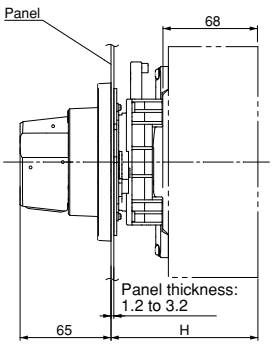
Install the door hinge in the shaded area.

Optional shaft BZ6VS1D
X = H - 105

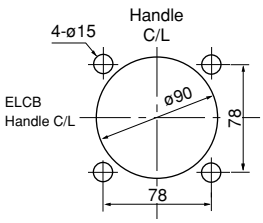


• BW9V0CA, BW9V0GA

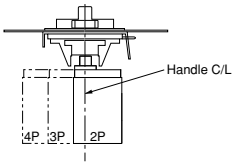




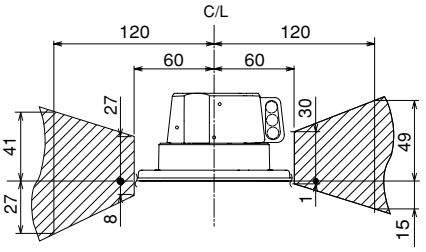
Door panel cutting



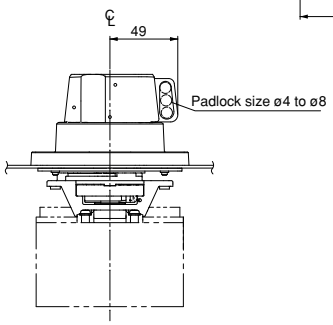
Note: Align the center of the hole cut in the panel with the center of the breaker handle.



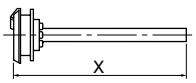
Door hinge installation area



Install the door hinge in the shaded area.

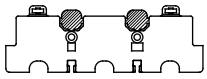


Optional shaft BW9VSG0
X = H - 95

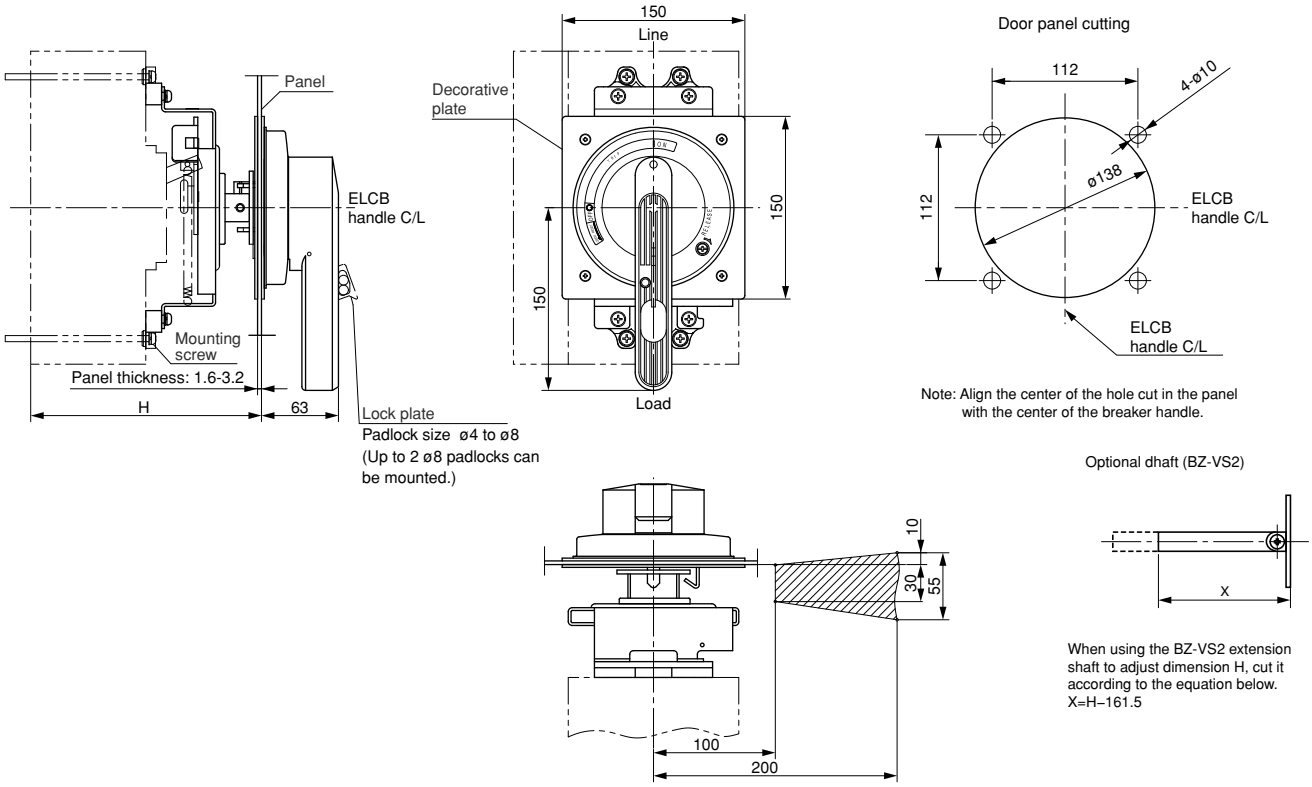


ELCB	Handle type	Optional shaft	Standard type H	With the optional shaft (X=154)		Mounting screw	Mass (kg)
				H	Area in which the hinge with H can be installed		
EW32 EW50 EW63 EW100	**BZ6V10D**	BZ6VS1D	105±2	250±2	140 to 250	M4 x 80	0.64
	BZ6V10D-X		113±2	258±2	150 to 258	Contact FUJI.	0.64
	BZ6V10D-P		113±2	258±2	150 to 258	Contact FUJI.	0.64
EW125	**BW9V0CA**	BW9VSG0	105±2	250±2	140 to 250	M4 x 85	0.67
EW160 EW250	**BW9V0GA**[*1]		105±2	250±2	140 to 250	M4 x 85	0.67

Notes: • The handle lock bars do not hold the entire door. Obtain a support bracket for the panel separately.
• Remove the handle lock bar before opening the door. (Turn the handle in the open direction.)
The lock bar will be damaged if the door is opened with force while the lock bar is engaged.
• Engage the door interlock securely before turning ON the power.
• Not available for side mounting.
[*1] The terminal cover will cover the mounting screws for the Breaker. When attaching the terminal cover, a portion of the terminal cover will need to be removed. Remove portion A in the following diagram.



• BW9V0HA, BW9V0JA



Install the door hinge in the shaded area.

EWCB	Handle type	Optional shaft	Standard type H	With the optional shaft (X=154)		Mass (kg)
				H	Area in which the hinge with H can be installed	
EW400	**BW9V0HA**	BZ-VS2	190±2	250±2	202 to 250	2.2
	BW9V0HA-X		202±2	262±2	214 to 262	
	BW9V0HA-P		204±2	264±2	216 to 264	
EW630	**BW9V0JA**		190±2	250±2	202 to 250	
	BW9V0JA-X		202±2	262±2	214 to 262	
	BW9V0JA-P		207±2	267±2	219 to 269	
EW800	**BW9V0JA**		190±2	250±2	202 to 250	
	BW9V0JA-X		202±2	262±2	214 to 262	
	BW9V0JA-P		252±2	312±2	264 to 312	

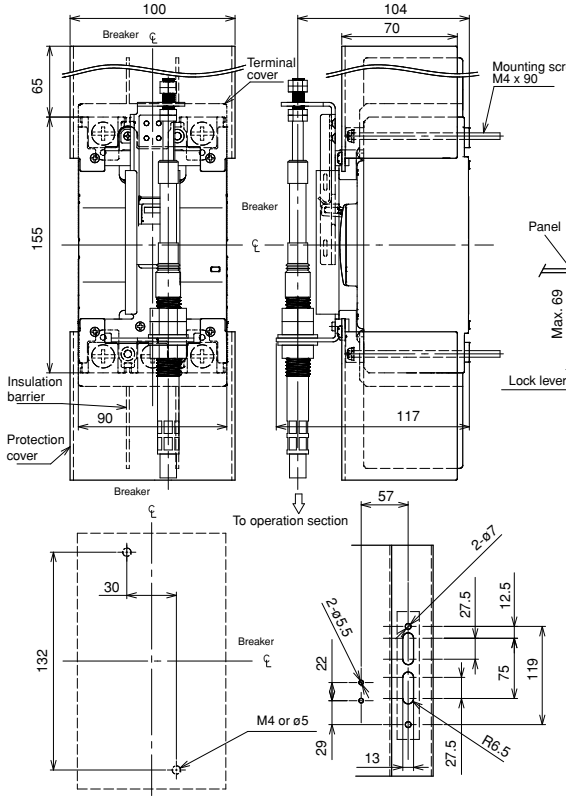
Notes: • The handle lock bars do not hold the entire door. Obtain a support bracket for the panel separately.
• Remove the handle lock bar before opening the door. (Turn the handle in the open direction.)
The lock bar will be damaged if the door is opened with force while the lock bar is engaged.
• Engage the door interlock securely before turning ON the power.
• Not available for side mounting.

■ Dimensions, mm

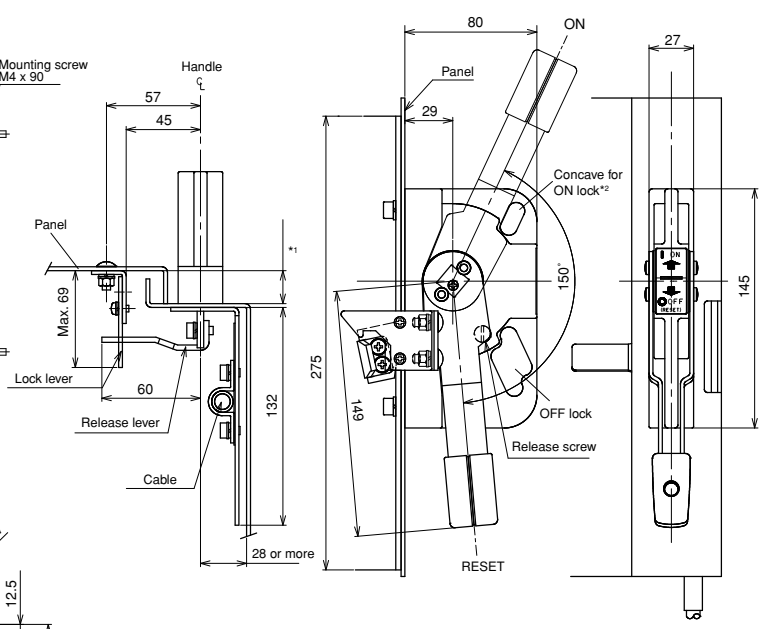
F type handle

• BW9F0CA

Drive section



Operation section



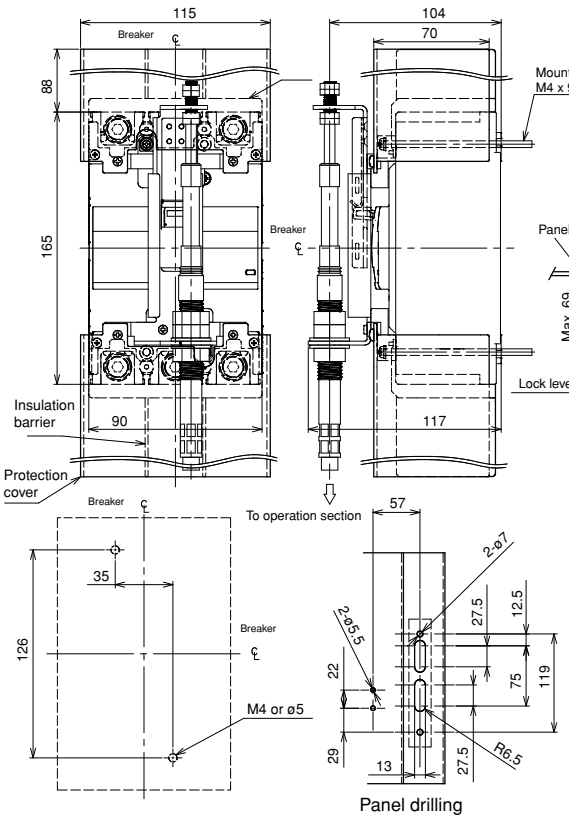
- This product consists of a drive section and an operation section.
- The operation section can be mounted either to the right or to the left on the panel depending on the mounting position of the release lever.
- For the OFF lock, 3 ø10 padlocks can be mounted; for the ON lock, 2 ø10 padlocks.

*1 Set the height to 20 or 30. Adjust the lock lever depending on the setting.
*2 The ON lock can be realized by additionally creating a concave for the ON lock.

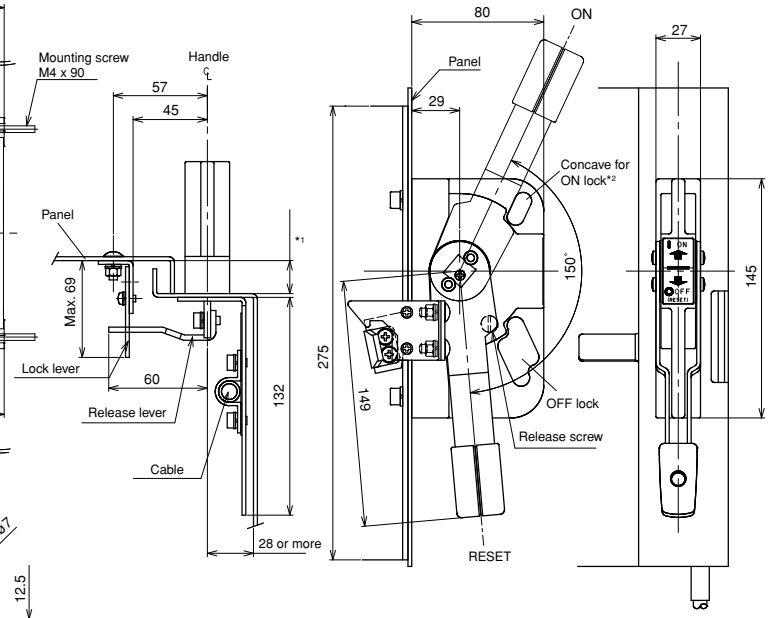
Panel drilling

• BW9F0GA

Drive section



Operation section



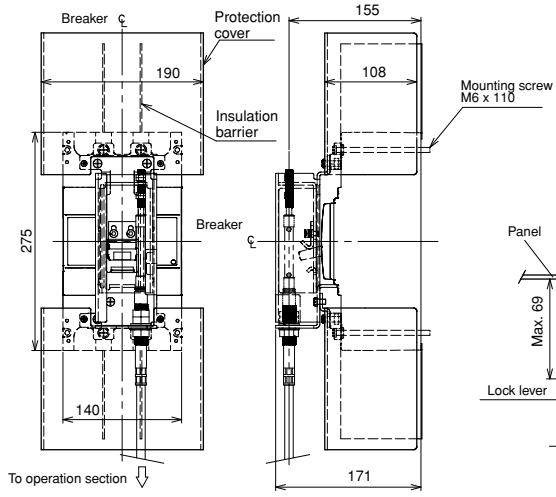
- This product consists of a drive section and an operation section.
- The operation section can be mounted either to the right or to the left on the panel depending on the mounting position of the release lever.
- For the OFF lock, 3 ø10 padlocks can be mounted; for the ON lock, 2 ø10 padlocks.

*1 Set the height to 20 or 30. Adjust the lock lever depending on the setting.
*2 The ON lock can be realized by additionally creating a concave for the ON lock.

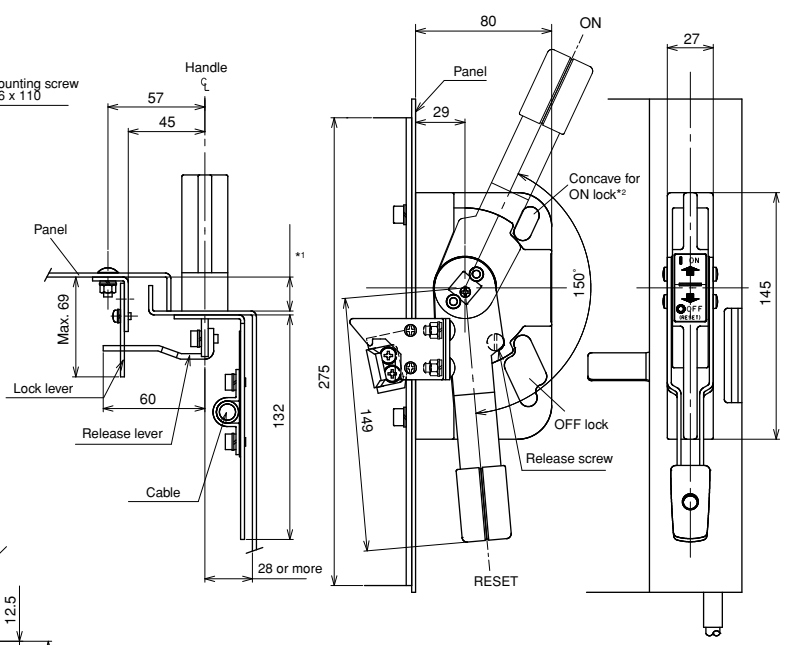
Panel drilling

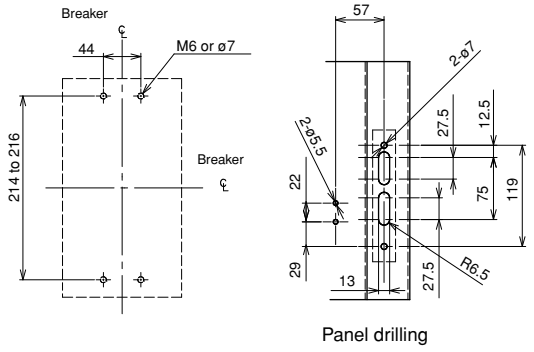
• BW9F0HA

Drive section



Operation section





Panel drilling

- This product consists of a drive section and an operation section.
- The operation section can be mounted either to the right or to the left on the panel depending on the mounting position of the release lever.
- For the OFF lock, 3 ø10 padlocks can be mounted; for the ON lock, 2 ø10 padlocks.

*1 Set the height to 20 or 30. Adjust the lock lever depending on the setting.

*2 The ON lock can be realized by additionally creating a concave for the ON lock.

ELCB *	Handle type	Cable		Terminal cover
		Type	Length (m)	
EW125JAGU-3P EW125RAGU-3P	**BW9F0CA**	**BW9FWCA-15A** **BW9FWCA-20A** **BW9FWCA-30A**	1.5 2.0 3.0	**BW9FBTCA-L3**
EW250JAGU-3P EW250RAGU-3P	**BW9F0GA**	**BW9FWGA-15A** **BW9FWGA-20A** **BW9FWGA-30A**	1.5 2.0 3.0	**BW9FBTGA-L3**
EW400SAGU-3P EW400RAGU-3P EW400HAGU-3P	**BW9F0HA**	**BW9FWHA-15A** **BW9FWHA-20A** **BW9FWHA-30A**	1.5 2.0 3.0	**BW9FBTHA-L3**

Note: * Not available for BW125JAGU-2P

Steel enclosures

■ Description

Steel enclosures are available in three types — two with V-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-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.

Standard

Dustproof
AF96-175

Rainproof
CP97-2636

■ Type of enclosures

ELCB	Enclosure		
	Standard *1	With V-type handle Dustproof *1*2	Rainproof *1*2
EW32 EW50 EW63	**BZ6C10C2** *3 **BZ6C10C3**	**BW9UVBA-3A** *3	**BW9UWBA-3A** *3
EW100	**BZ6C25C2** *3 **BZ6C25C3** *3	**BW9UVBA-3B** *3	**BW9UWBA-3B** *3
EW125	**BW9UCCA-2** **BW9UCCA-3**	**BW9UVCA-3**	**BW9UWCA-3**
EW250	**BW9UCGA-3**	**BW9UVGA-3**	**BW9UWGA-3**
EW400	**BZ-C60B**	**BW9UVHA-3**	**BW9UWHA-3**
EW630 EW800	**BZ-C70B**	**BW9UVJA-3**	**–**

*1 No models are available for four-pole products.
*2 The appearance of dust-proof and rain-proof models differs from the photograph (400A frames and higher).
*3 Combination with external accessories(R) is not possible.

■ Ordering information

Specify the following:
1. Type number of enclosures

■ Dimensions, mm

Fig.1 Standard

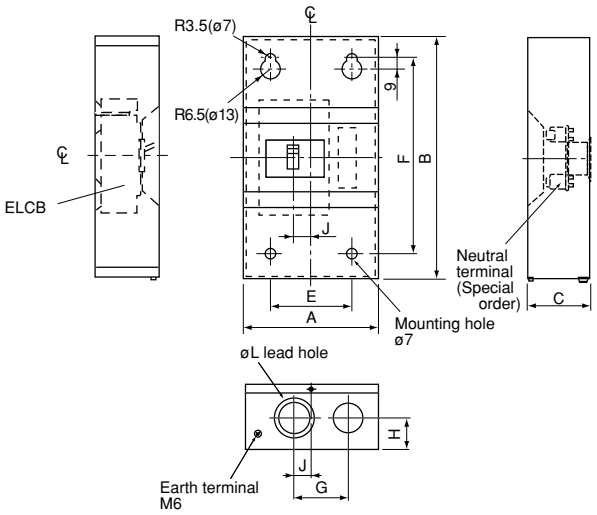


Fig.2 With V type handle
BW9UVBA-3A, BW9UVBA-3B
BW9UVCA-3, BW9UVGA-3

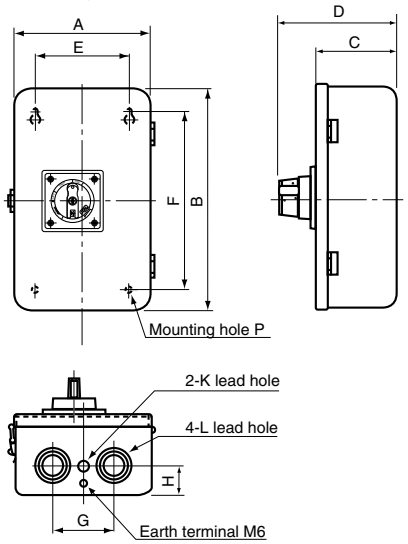
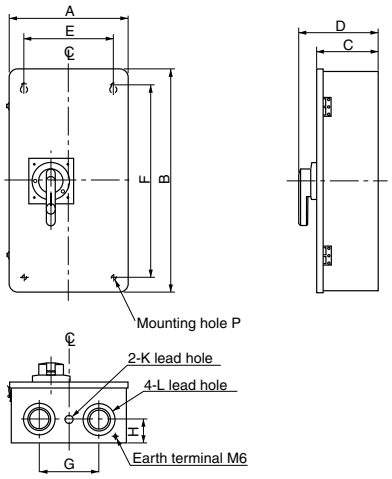
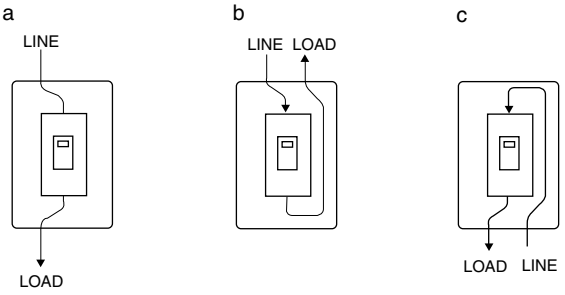


Fig3. With V type handle
BW9UVHA-3, BW9UVJA-3



■ Connection method diagrams



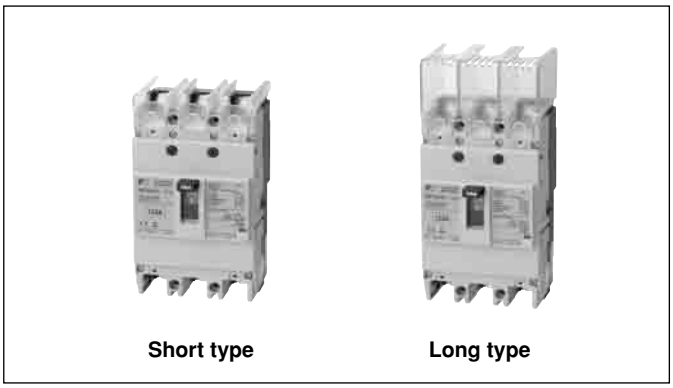
Type	Connection	Fig.	A	B	C	D	E	F	G	H	J	K	L	P
BZ6C10C2	a, b, c	1	135	225	95	–	90	170	65	40	25	–	ø35, ø22	–
BZ6C10C3														
BZ6C25C3			200	320	95	–	120	240	80	40	25	–	ø45, ø30	–
BW9UCCA-3			200	320	103	–	120	240	80	40	25	–	ø45, ø30	–
BW9UCGA-3				360				280		45			ø55, ø40	
BZ-C60B			400	750	175	–	300	650	200	80	100	–	ø106, ø78, ø63	–
BZ-C70B														
BW9UVBA-3A		2	180	300	114	178.5	100	220	70	40	–	–	ø28, ø35, ø43	ø7
BW9UVBA-3B			250	400	142	206.5	170	320	110	50	–	ø23	ø35, ø52, ø63	ø9
BW9UVCA-3						207								
BW9UVGA-3														
BW9UVHA-3		3	400	750	206	269	300	650	200	80	–	ø28	ø63, ø78, ø106	ø12
BW9UVJA-3														

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 400AF**
Short type: BW9BT ☐ A-S ☐
• Snap-on fitting
Long type: BW9BT ☐ A-L ☐
• Crimp connection use

● **630, 800AF**
Long type: BW9BTJA-L ☐
• Transparent



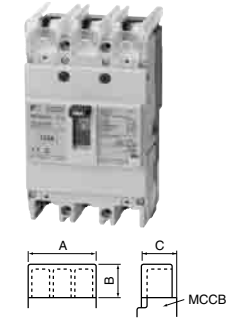
Short type **Long type**

Long type

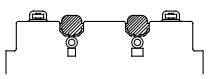
Type		No. of poles	ELCB	Dimensions (mm)			Packing quantity	Appearance
Transparent	Gray			A	B	C		
BW9BTAA-L2	**BW9BTAA-L2W**	2	EW32☐-2P EW50☐-2P	50	40	53	2	• Preventing exposure of live section when amplifier's terminals are connected • Snap-on mounting
BW9BTAA-L3	**BW9BTAA-L3W**	2, 3	EW32☐-3P EW50☐-3P EW63☐-3P EW100☐-2P EW100☐-3P	75	40	53	2	
BW9BTCA-L3	**BW9BTCA-L3W**	3	EW125☐-3P	90	40	66.5	2	
BW9BTCA-C3 (For Flat terminal)	**–**	3	EW125☐-3P	90	60	66.5	2	
BW9BTCA-L4	**BW9BTCA-L4W**	4	EW125☐-4P	120	40	66.5	2	
BW9BTGA-L3 *1	**BW9BTGA-L3W** *1	3	EW160☐-3P EW250☐-3P	105	50	66.5	2	
BW9BTGA-L4 *1	**BW9BTGA-L4W** *1	4	EW160☐-4P EW250☐-4P	140	50	66.5	2	
BW9BTGA-C3 (For Flat terminal)	**–**	3	BW250☐-3P	105	75	66.5	2	
BW9BTHA-L3 *2	**BW9BTHA-L3W** *1	3	EW400☐-3P	172	110	98	2	
BW9BTHA-L4 *2	**–**	4	EW400☐-4P	220	110	98	2	
BW9BTJA-L3	**BW9BTJA-L3W**	3	EW630☐-3P EW800☐-3P	230	135	97.5	2	

Short type

Type		No. of poles	ELCB	Dimensions (mm)			Packing quantity	Appearance
Transparent	Gray			A	B	C		
BW9BTAA-S2	**BW9BTAA-S2W**	2	EW32☐-2P EW50☐-2P	50	10	53	2	• Preventing exposure of live section when amplifier's terminals are connected • Snap-on mounting
BW9BTAA-S3	**BW9BTAA-S3W**	2, 3	EW32☐-3P EW50☐-3P EW63☐-3P EW100☐-2P EW100☐-3P	75	10	53	2	
BW9BTCA-S3	**BW9BTCA-S3W**	3	EW125☐-3P	90	8	66.5	2	
BW9BTCA-S4	**BW9BTCA-S4W**	4	EW125☐-4P	120	8	66.5	2	
BW9BTGA-S3 *1	**BW9BTGA-S3W** *1	3	EW160☐-3P EW250☐-3P	105	8	66.5	2	
BW9BTGA-S4 *1	**BW9BTGA-S4W** *1	4	EW160☐-4P EW250☐-4P	140	8	66.5	2	
BW9BTHA-S3 *3	**BW9BTHA-S3W** *2	2, 3	EW400☐-2P EW400☐-3P	140	65	98	2	
BW9BTHA-S4 *3	**BW9BTHA-S4W** *2	4	EW400☐-4P	185	65	98	2	

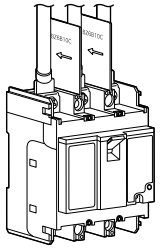


Notes: • A gray-white terminal cover comes standard with the Global Series 125AF and 250AF.
*1 When using the external operating handle, part of the terminal cover (▨) must be cut away.
*2 Crimp terminals for 325 mm^2 are not available.
*3 This type of cover can be mounted on the 400AF when flat terminals are not used.

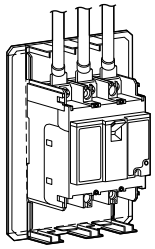


Insulation barriers

■ **Description**
The interphase barriers are provided on frame size of 32AF to 800AF 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

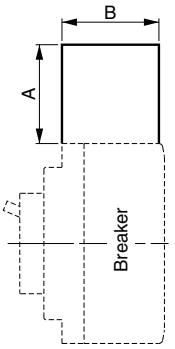


Earth barrier

Interphase barrier

ELCB	Interphase barrier				
	Type	Dimensions (mm)		Packing quantity	Mass (g)
		A	B		
EW32 EW50 EW63 EW100	**BZ6B10C**	50	49	4	23
EW125	**BW9BPCA**	50	60	2	15
EW160 EW250	**BW9BPGA**	80	60	2	25
EW400 EW630 EW800	**B-43A**	105	95	4	130

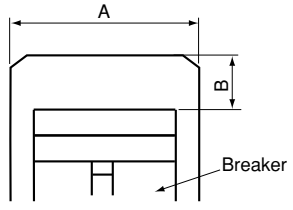
Interphase barrier



Earth barrier

ELCB	Earth barrier				
	Type	Dimensions (mm)		Packing quantity	Mass (g)
		A	B		
EW32□-2P EW50□-2P	**BZ6BL10C2**	100 (50, 75)*1	43 (30)*1	1	33
EW32□-3P EW50□-3P EW63□-3P EW100□-2P EW100□-3P	**BZ6BL10C3**	125 (75, 100)*1	43 (30)*1	1	41

Earth barrier



Note: *1 Can be cut to dimensions

Padlocking device and handle locking cover

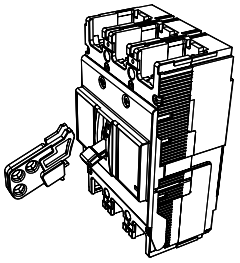
■ Description

• Padlocking device

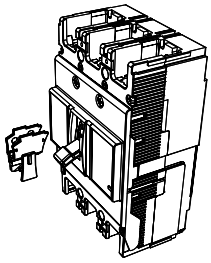
These padlocking device lock the Breaker handle in the OFF position. Use a commercially available padlock with a shackle diameter of 3.5 to 5mm (5mm for the BZ6L10CA).

• Handle locking covers (Order Separately)

These simple handle locking covers can be easily installed by the user. Tripping is possible while the Breaker is locked ON.



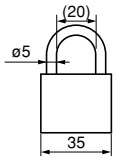
Padlocking device
• Cap type Q1,QN



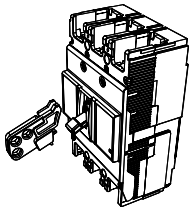
Handle locking cover

ELCB	Padlocking device			Handle locking cover
	Q1: Cap type	QN: Scissors type	Q2: Plate type	
EW32 EW50 EW63 EW100	**BZ6L10CA**	–	▲ *1*3	**BZ6L10C**
EW125 EW160 EW250	**BW9Q1CA** *4		**BW9Q2CA** **BW9Q2GA**	**BW9L1CA**
EW400 EW630 EW800	▲ *1	**BW9QNHA** *2	**BW9Q2HA** **BW9Q2JA**	**BW9L1HA**

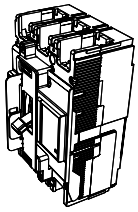
Notes:
*1 Specify Locks when ordering the Breaker. (▲: Factory-mounted)
*2 ON and OFF locking is possible.
*3 If a padlock is required, use a commercially available padlock with the dimensions shown in the diagram at the right.
*4 Three padlocks with shackles from 3.5 to 8 mm in diameter can be attached.



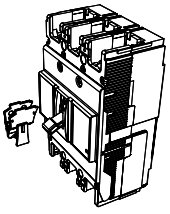
Padlocking device
• Cap type Q1



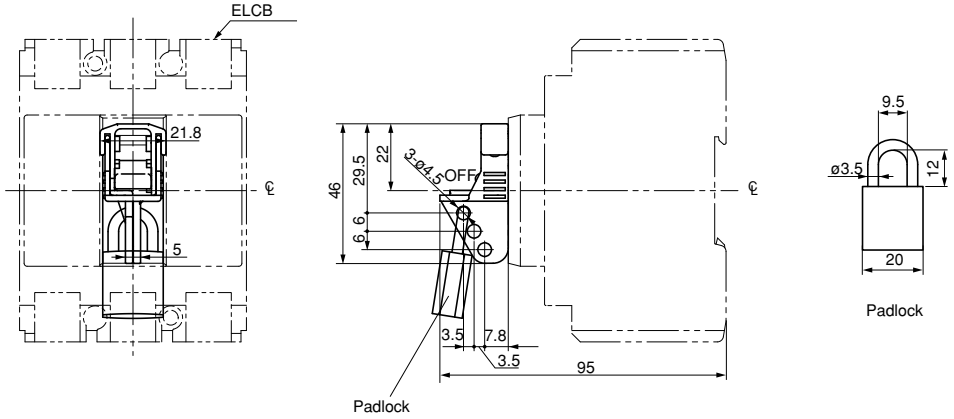
• Plate type Q2



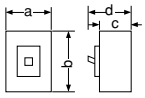
Handle locking cover



Q1: BZ6L10CA (OFF-locking Padlocking device)



■ HG series/Line protection

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	100–230–440	100–230–440	100–230–440
[JIS C 8201-2-2 Ann.2]		Time delay trip type	200–440	200–440	200–440
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) [JIS C 8201-2-2 Ann.2]		440V AC	65	65	65
		415V AC	65	65	65
		400V 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 07/00*		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	▲	▲	▲
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.

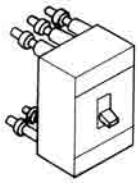
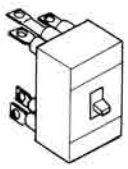
Rated voltage (V)	Operational voltage range (V)
100–200–415	80–484
200-440	160-484

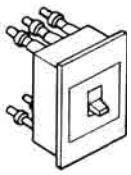
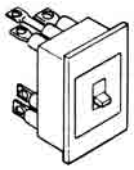
■ Mounting modifications

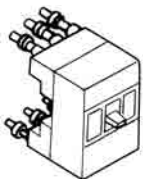
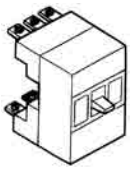
Standard type FUJI breakers are front mounting with front connections. The standard breaker can easily be modified to become front mounting rear connection type, flush mounting type and plug-in type. The additional parts such as insulation bases, barriers, covers and similar parts are added as required.

Standard type
Front mounting
Front connection

BASIC DESIGN

Additional main parts	Front mounting Rear connection (X type)
Round stud terminal 	HG53B HG103B
Bar stud terminal 	HG203B Bar studs can be turned by 90˚.

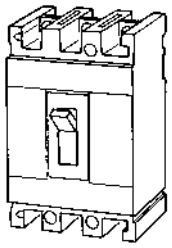
Additional main parts	Flush mounting Rear connection (E type)
Round stud terminal 	HG53B HG103B
Bar stud terminal 	HG203B Bar studs can be turned by 90˚.

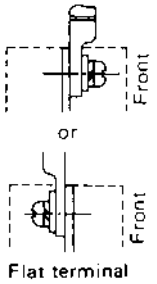
Additional main parts	Plug-in mounting (P type)
Round stud terminal 	HG53B HG103B
Bar stud terminal 	HG203B Bar studs can be turned by 90˚.

Terminal connection

■ Terminal connection

Front mounting, front connection

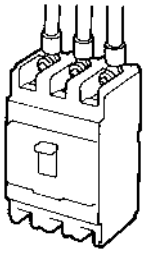




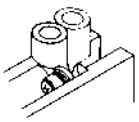
	Breaker type	Size
Pan head screw 	HG53B, HG103B	M8 x 14
Hexagonal socket head bolt 	HG203B	M8 x 20

■ Type of connection

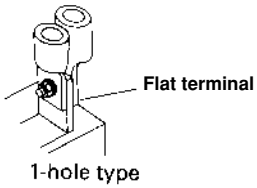
Front mounting front connection



Direct connection



Flat terminal connection



Flat terminals/1-hole type

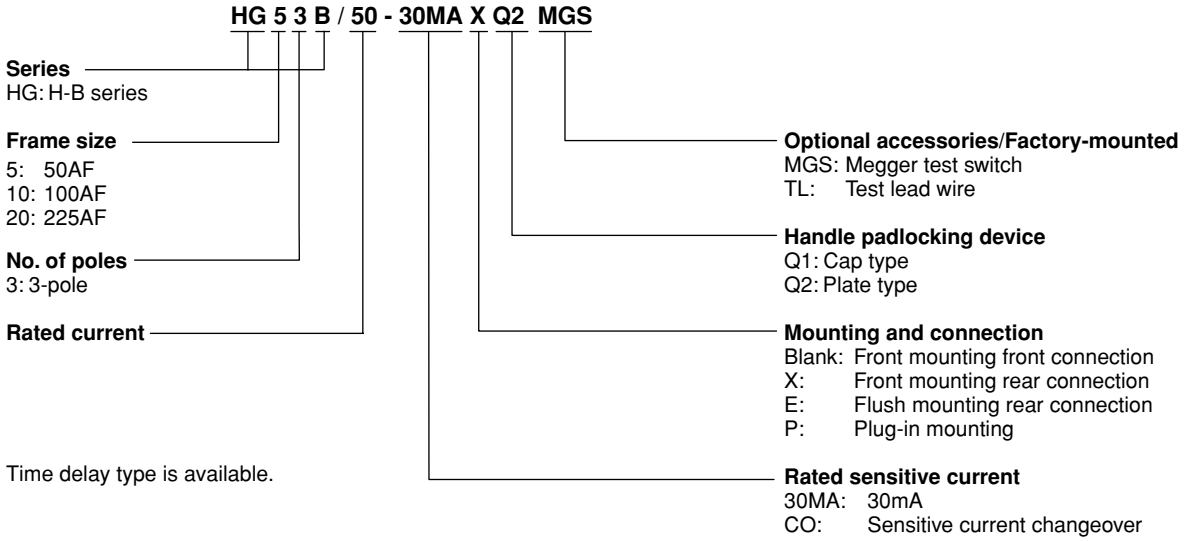
Breaker type	Type of flat terminal
HG53B, HG103B HG203B	**BZ-S35B-1003** **BZ-S50B-2253**

■ 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		
50	HG53B	R2-8	R5.5-8	R8-8	R14-8	JST22-S8						
100	HG103B	R2-8	R5.5-8	R8-8	R14-8	R22-8	JST38-S8	CB60-8				
225	HG203B				R14-8	R22-8	R38-8	R60-8	CB100-8	CB150-8		



• 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, 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 07/95.

HG series
Type number

Earth leakage + Overcurrent + Short-circuit protection type

■ HG series/3-pole JIS C8201-2-2 Ann2.

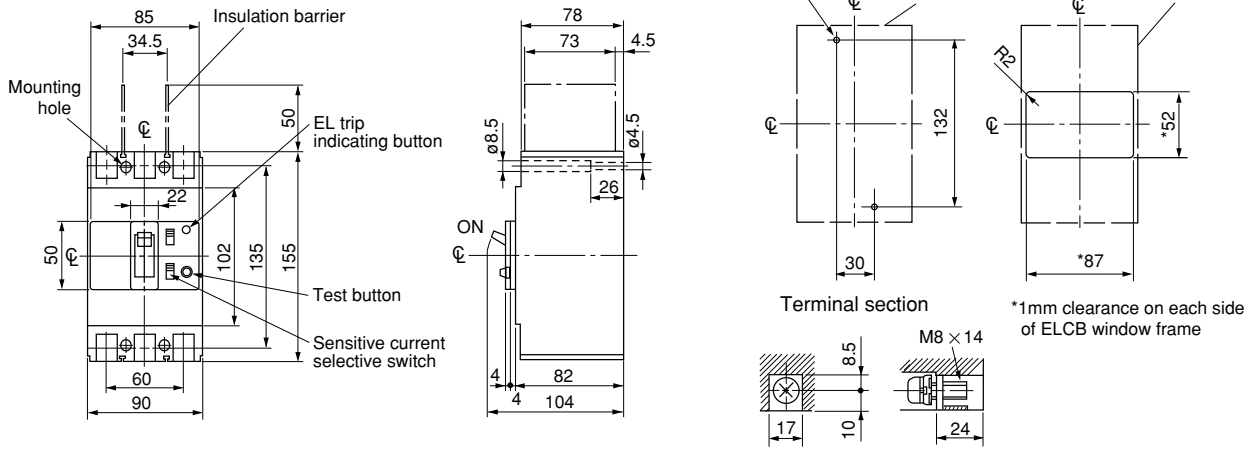
Breaker ampere frame	Rated current (A)	Sensitive current 30mA Type	Sensitive current 100/200/500mA selectable Type	□ : Available mounting and connection
50	15	**HG53B/15-30MA□**	**HG53B/15-CO□**	Blank, X, E, P
	20	**HG53B/20-30MA□**	**HG53B/20-CO□**	
	30	**HG53B/30-30MA□**	**HG53B/30-CO□**	
	40	**HG53B/40-30MA□**	**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□**	

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

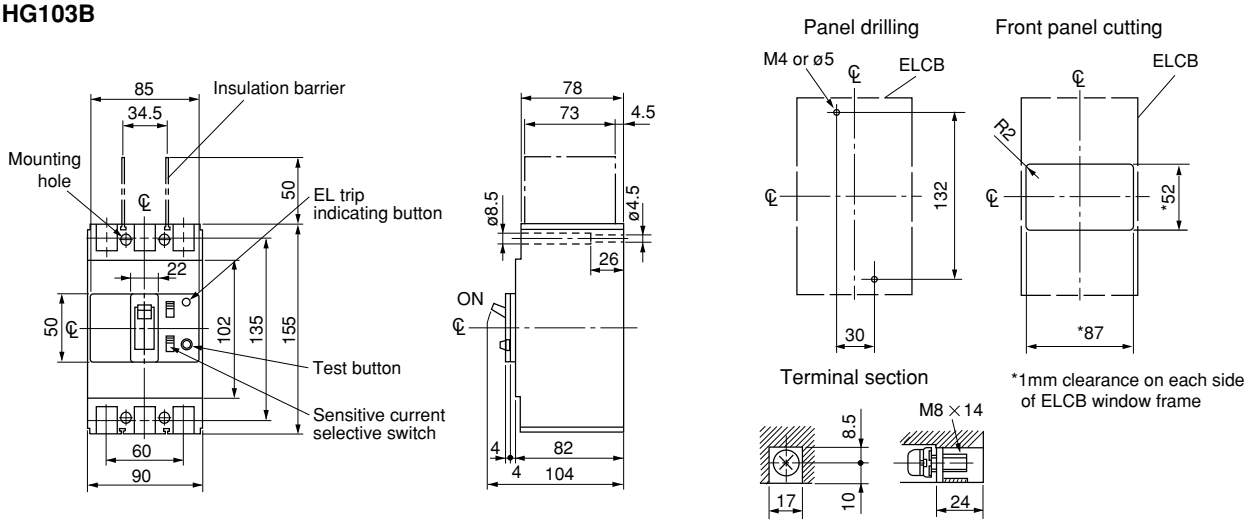
■ **Dimensions, mm**

● **Front mounting, rear connection (type X)**

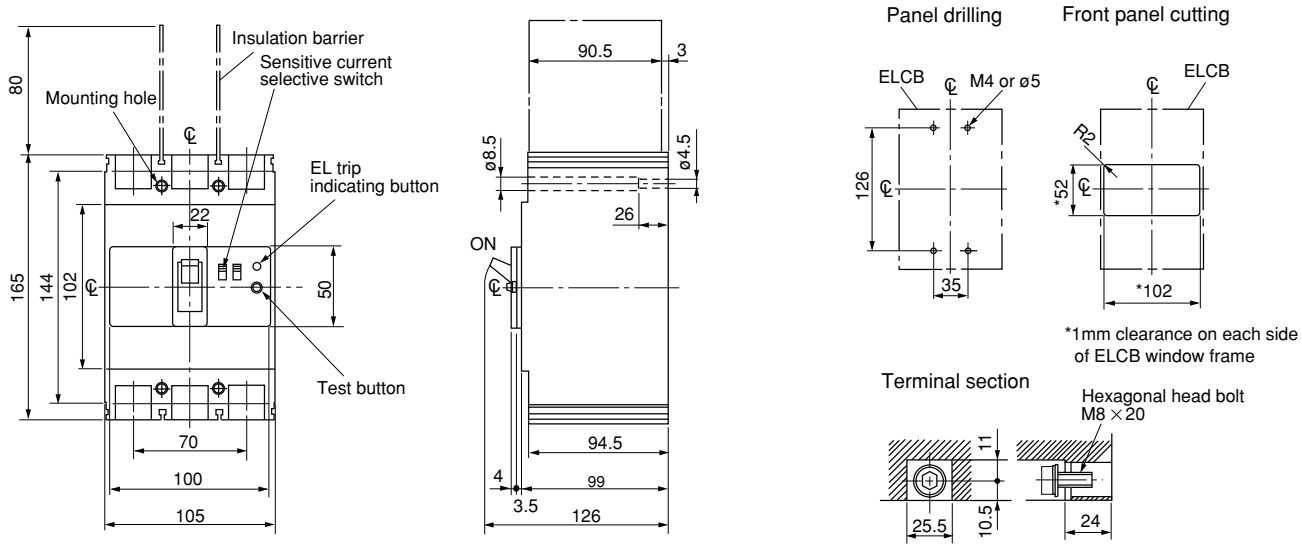
HG53B



HG103B



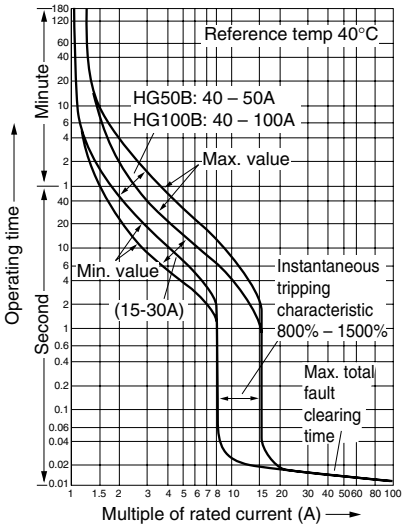
HG203B

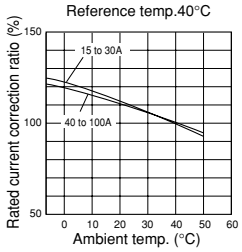


Characteristic curves

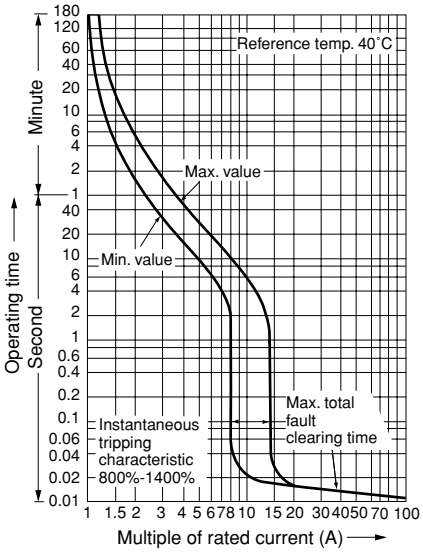
■ Characteristic curves/2, 3-pole

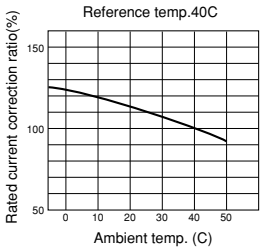
HG50B, HG100B



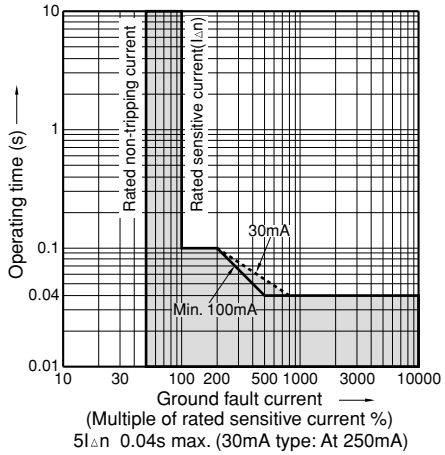


HG225B



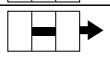


Earth leakage tripping

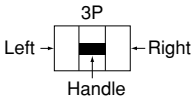


5I△n 0.04s max. (30mA type: At 250mA)

■ Available configurations

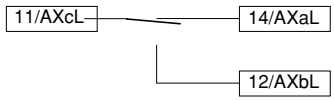
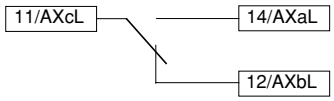
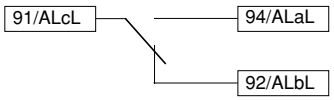
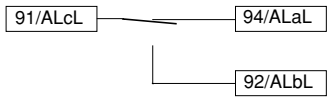
ELCB HG series	**HG53B** **HG103B** **HG203B**
Pole	3
Auxiliary switch SPDT W	
Ararm switch SPDT K	
W+K	
Megger test switch MGS	
Test lead TL	

Notes: • 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.



○ Auxiliary switch: W
● Alarm switch: K
☒ Megger test switch: MGS
➡ Test lead: TL

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

Accessory	Handle position		
	ON	OFF	Trip
Auxiliary switch SPDT: **W**			
Alarm switch SPDT: **K**			

Note: ▭ Ring mark indication

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

● Standard type

Applicable breaker type	Rated operating current (A) IEC60947-5-1, JIS C8201-5-1				Minimum load current
H and L series	AC		DC		
	Voltage (V)	AC15 Ind. load	Voltage (V)	DC14 Ind. load	
HG53B	125	2	125	0.5	5V DC 160mA
HG103B **HG203B**	250	1	250	0.2	30V DC 30mA

● For low level circuit

ELCB	DC		Minimum load current
HG series	Voltage (V)	Make/break current (A)	
HG53B **HG103B** **HG203B**	30	0.1 (Res. load)	5V DC 1mA 30V DC 1mA

07

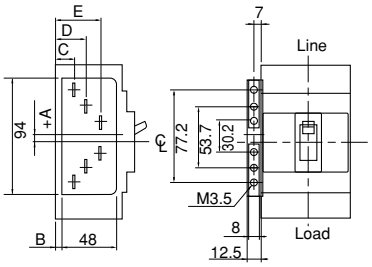
■ Lead wire specifications

HG series	Wire size	Wire length
HG53B HG103B HG203B	0.5mm^2	500mm

■ Terminal block specifications

ELCB	Terminal screw	Dimensions (mm) A	B	C	D	E
HG53B HG103B	M3.5	+4.7	24.9	41.8	54.2	66.5
HG203B	M3.5	+0.2	34.9	51.8	64.2	76.5

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



External operating handles

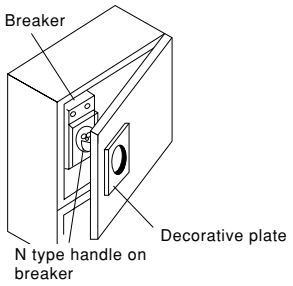
■ Description

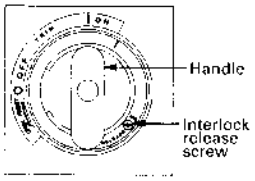
Earth leakage circuit breaker handles are generally directly manual-operated but when mounted in motor control centers or on control panels they are sometimes required to be operated externally. To meet such applications FUJI offers the following three types of handles.

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.

ELCB	N type handle
HG53B	**BZ-N35B**
HG103B	
HG203B	**BZ-N50C**

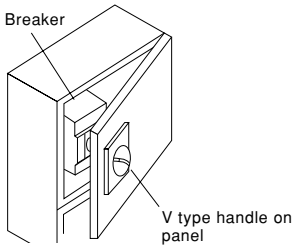


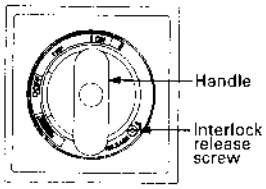


V type handle

The V type handle may be fitted to type HG203B.
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.

ELCB	V type handle
HG53B	–
HG103B	–
HG203B	**BZ-V50C**

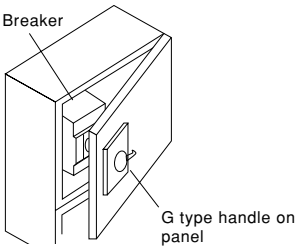


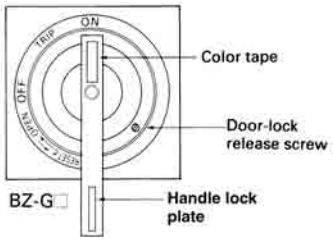


G type handle

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 HG53B and HG103B.

ELCB	G type handle	
	Standard type	Cylinder key type
HG53B	**BZ-G35C**	**BZ-G35C-K**
HG103B		
HG203B	–	–





07

N type operating handles

■ Type number nomenclature

BZ – N□C T – R

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

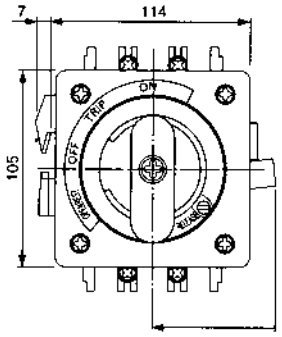
Door locking device
Blank: Provided
T: Not provided

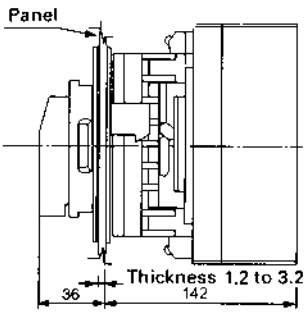
Basic type

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.

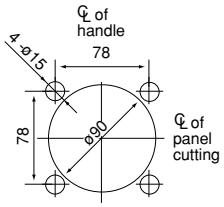
■ Dimensions, mm

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

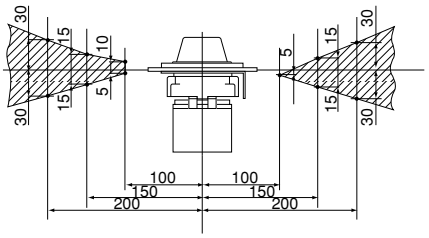




Door panel cutting



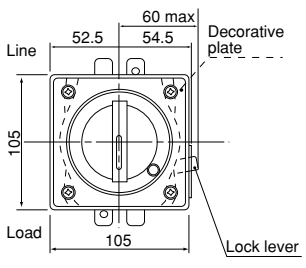
Door hinge installation area

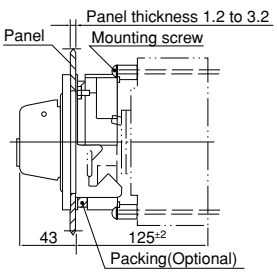


Install the door hinge in the shaded area.

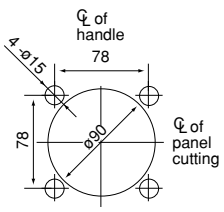
Mass: 0.62kg

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

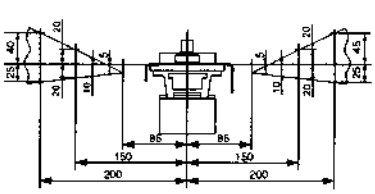




Door panel cutting



Door hinge installation area



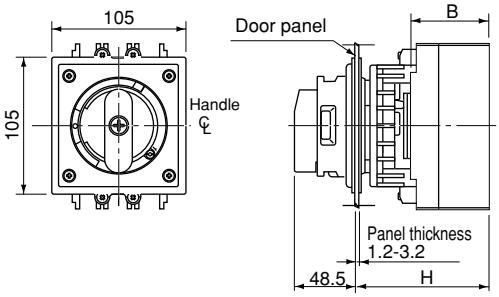
Install the door hinge in the shaded area.

Mass: 0.45kg

Dimensions for refernce only. Confirm before construction begins.

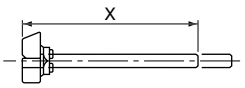
■ Dimensions, mm

BZ-V50C



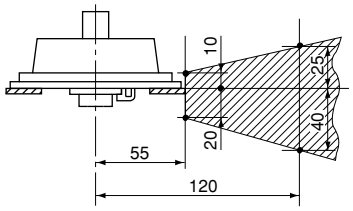
Optional shaft BZ-VS1

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.

ELCB	Handle type	Standard type H	With the optional shaft (X=154)			Mounting screw	Mass (kg)
			H	Area in which the hinge with H can be installed	B		
HG203B	**BZ-V50C**	144	289	181 x 289	99	M4 x 125	0.67

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

07

G type operating handles

■ Operating instructions

1. ELCB operation

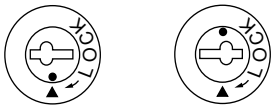
- Close the door and turn the handle to the ON position and the breaker will be positioned at ON.
- When the breaker is interrupted automatically the handle will move to the TRIP position.
- To reset move the handle to the RESET position.

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.



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

■ Installation

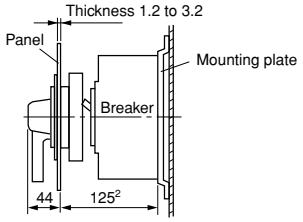
BZ–G35C

1. Drilling and cutting of the door panel

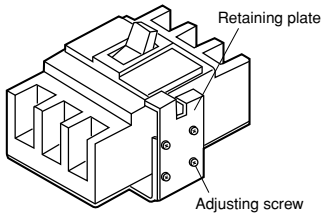
Drill and cut the door panel as shown in the drawing.

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.

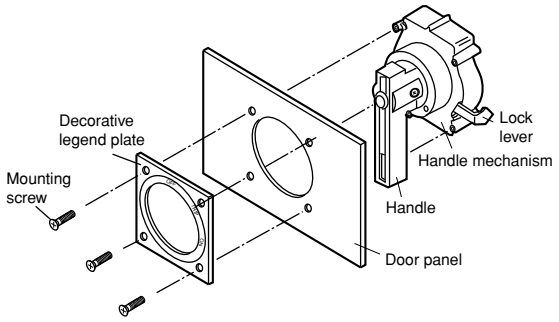


Mount the breaker and the retaining plate commonly to the panel board.



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.

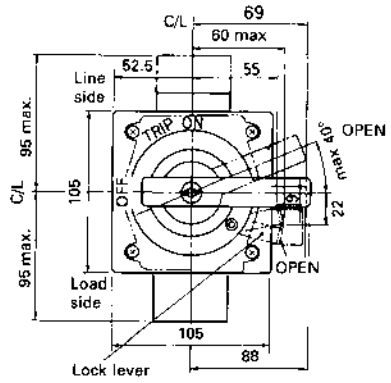


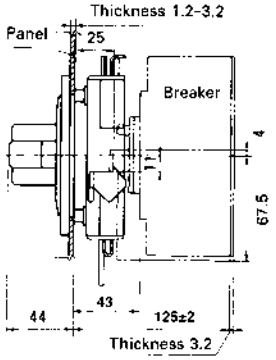
4. Adjusting the retaining plate

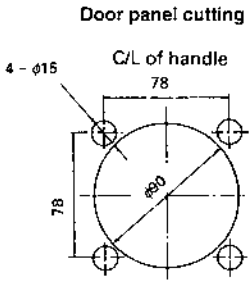
Adjust the height of the retaining plate by means of adjusting screws.

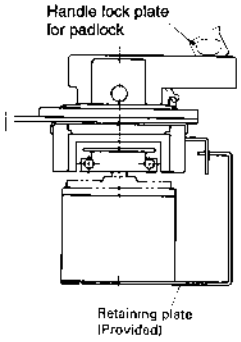
■ **Dimensions, mm**

BZ-G35C, BZ-G35C-K









07

Pressed steel enclosures

■ Type of enclosures

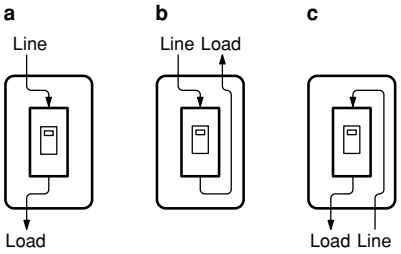
ELCB type	Enclosure (Standard)
HG53B	**BZ-C35B**
HG103B	**BZ-C35B**
HG203B	**BZ-C50B**

Standard

■ Ordering information

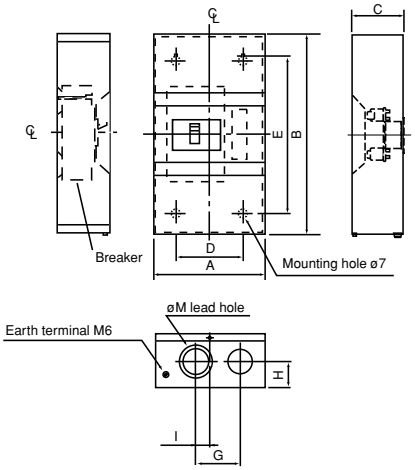
Specify the following:
1. Type number of enclosures

■ Connection method diagrams



■ Dimensions, mm

Standard



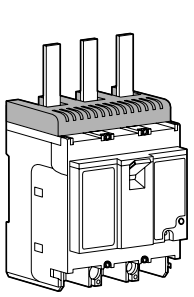
Type	Connection	A	B	C	D	E	G	H	I	M (ø)	Mass (kg)
BZ-C35B	a, b, c	200	320	120	120	240	80	40	25	30, 45	2.7
BZ-C50B		200	360	140	120	280	80	45	25	40, 55	3.1

Terminal covers

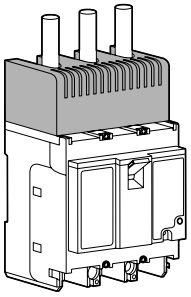
■ **Description**
These terminal covers are used as guards to prevent accidental touch with live line terminations.
These terminal covers can be fitted to either line or load side.

Short type BZ-TS
- Snap-on fitting
- Transparent, sealing possible

Long type BZ-TB
- Crimp connection use
- Transparent, sealing possible



Short type

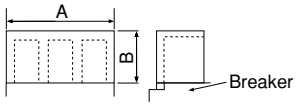


Long type

■ **Type of terminal cover**

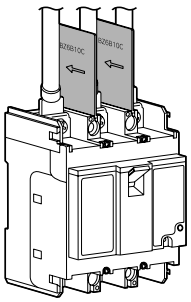
ELCB type	Teminal cover Short type	A (mm)	B (mm)	Mass (g)	Teminal cover Long type	A (mm)	B (mm)	Mass (g)
HG53B	**BZ-TS35B**	90	10	60	**BZ-TB35B**	90	40	122
HG103B								
HG203B	**BZ-TS50B**	105	10	76	**BZ-TB50B**	105	40	175

Packing quantity: 2 pcs.

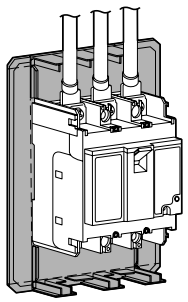


Insulation barriers

■ **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

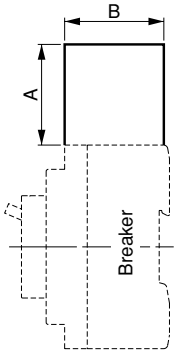


Earth barrier

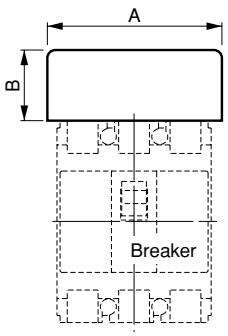
● **Interphase barrier**

ELCB type	Interphase barrier				
	Type	Dimensons, mm		Packing quantity	Mass (g)
		A	B		
HG53B	**BZ-B35B**	50	73	4	38
HG103B					
HG203B	**BZ-B50B**	80	90.5	4	82

Interphase barrier



Earth barrier



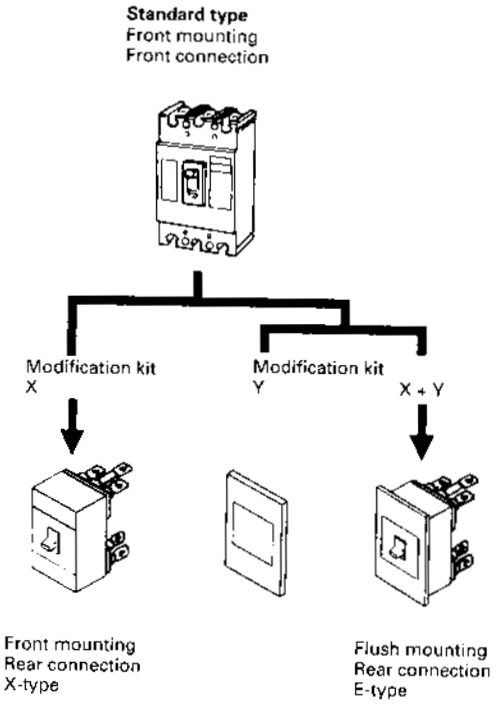
● **Earth barrier**

ELCB type	Interphase barrier				
	Type	Dimensons, mm*		Packing quantity	Mass (g)
		A	B		
HG53B	**BZ-BL35B**	130	70	2	16
HG103B		(90, 110)	(40)		
HG203B	**BZ-BL50B**	190 (105, 147)	100 (50, 72)	2	48

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

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

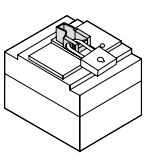
ELCB	Front mounting, front connection (Flat terminal)		Front mounting, rear connection (X type)		Flush mounting, rear connection (E type)	
	Kit type	Mass (kg)	Kit type	Mass (kg)	Kit type	Mass (kg)
HG53B	**BZ-S35B-1003**	0.35	**BZ-X35B-1003**	0.63	**BZ-E35B-1003**	1.11
HG103B						
HG203B	**BZ-S50B-2253**	0.5	**BZ-X50B-2253**	0.80	**BZ-E50B-2253**	1.27

■ Padlocking device

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



Cap type Q1*

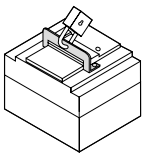
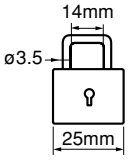


Plate type Q2

Padlock/Not supplied



■ Handle locking covers

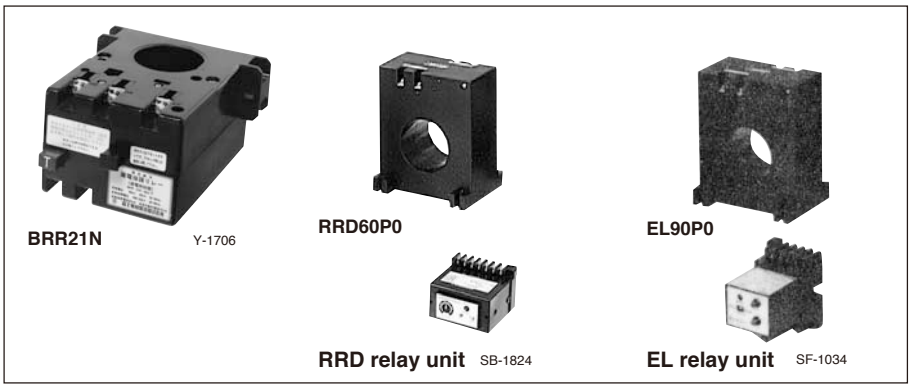
For HG53B, HG103B: **BZ-L35B**
For HG203B: **BZ-L50B**

A padlock is not provided.

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) (L/R=7ms) 415V AC	240V AC	120V AC	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	3.5mm²	3.5mm²	2mm²
25	38mm²	22mm²	22mm²
40	125mm²	100mm²	80mm²
60	325mm²	200mm²	200mm²
90, 120	500mm²	500mm²	500mm²

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 07/107 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 Instantaneous	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 07/107 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)

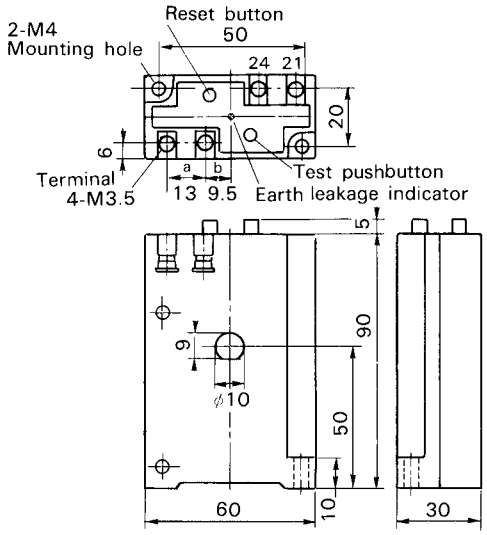
Pass-through type
P0 : through type

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

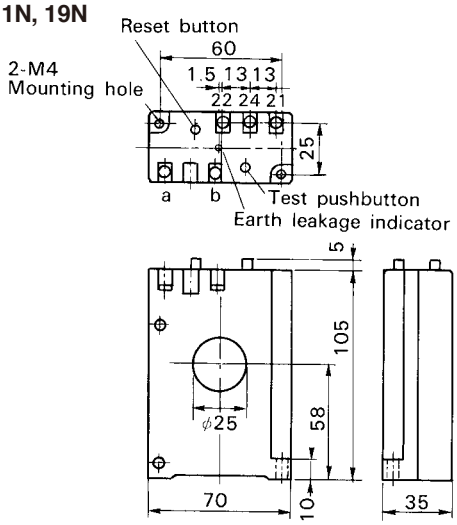
Basic type

■ Dimensions, mm

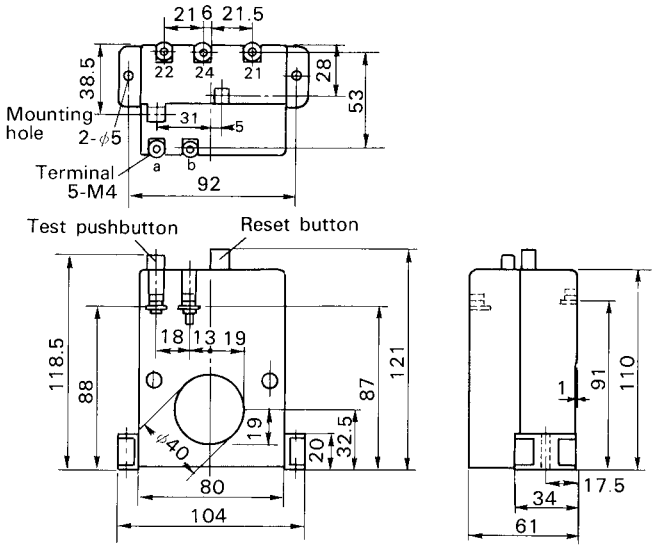
BRR01N, 09N



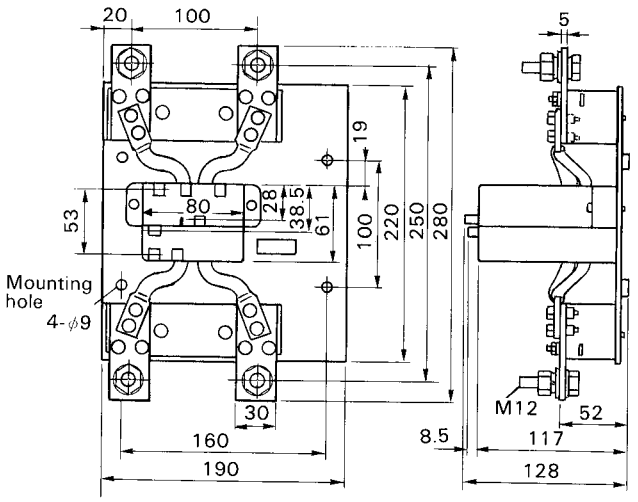
BRR11N, 19N



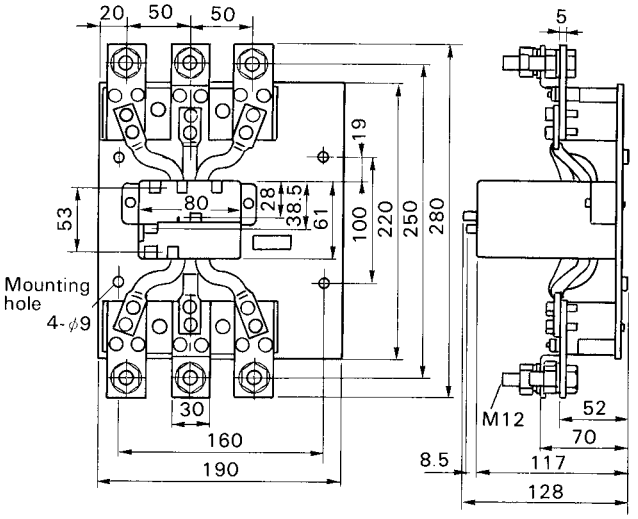
BRR21N, 29N, 22N, 23N, 25N



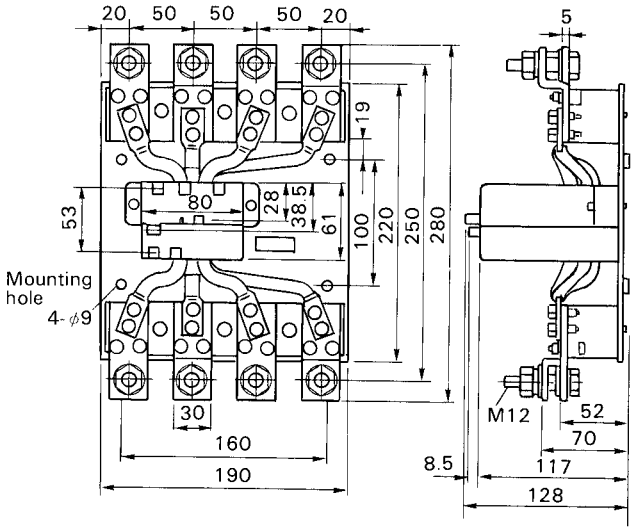
BRR42H, 45H
2-pole



3-pole

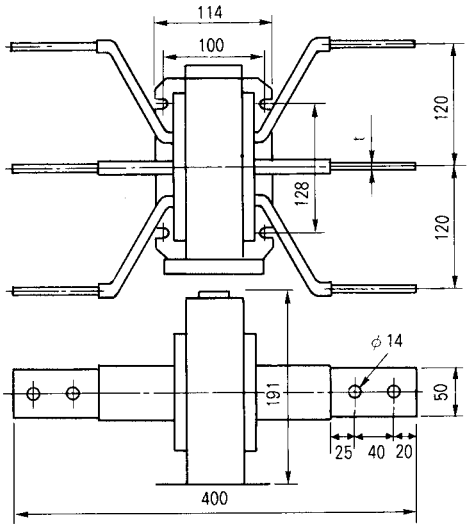


4-pole



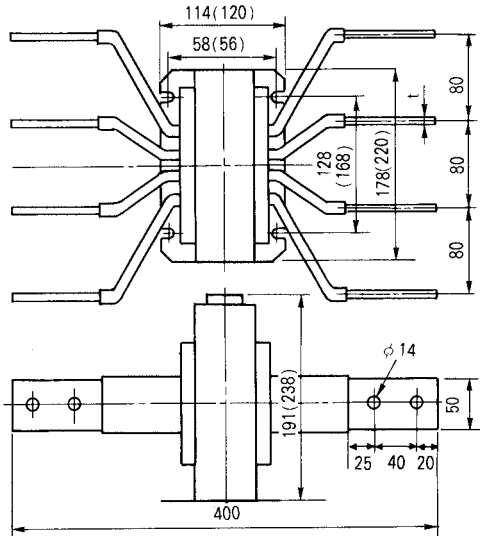
■ **Dimensions, mm**

RRD6AZ3, 8AZ3, 10AZ3



t RRD6AZ3: 6
RRD8AZ3: 8
RRD10AZ3: 12

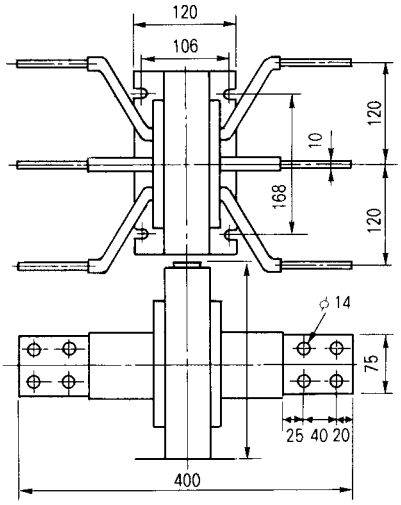
RRD6AZ4, 8AZ4, 10AZ4



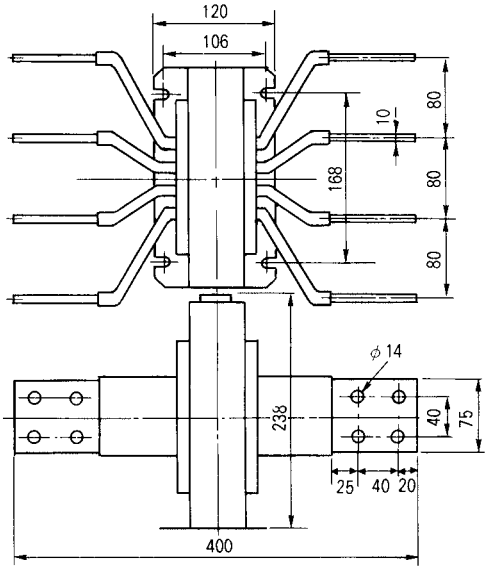
t RRD6AZ4: 6
RRD8AZ4: 8
RRD10AZ4: 12

( ) : For RRD10AZ4

RRD12AZ3

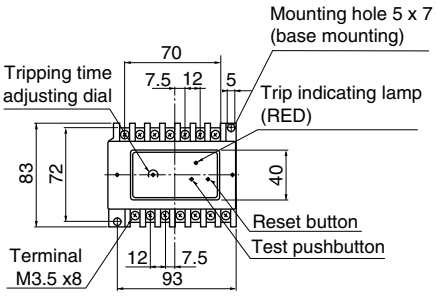


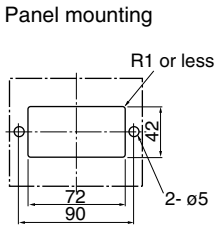
RRD12AZ4

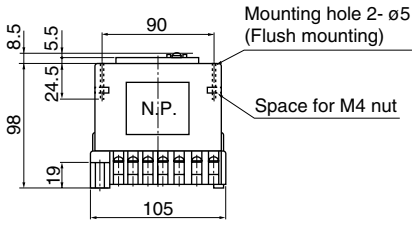


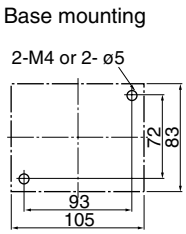
■ Dimensions, mm

Relay RRD type

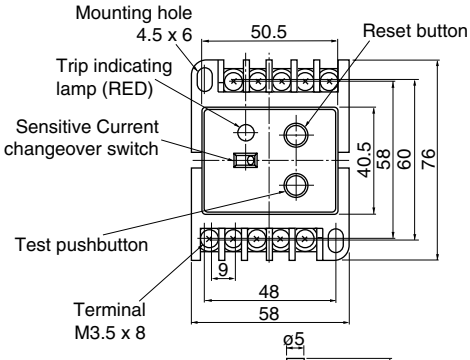


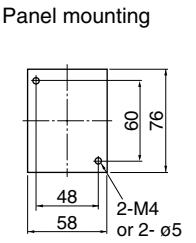


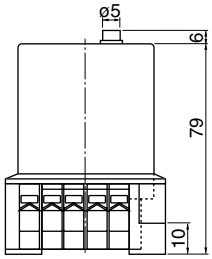


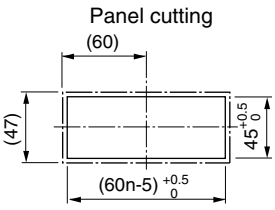


Relay EL type



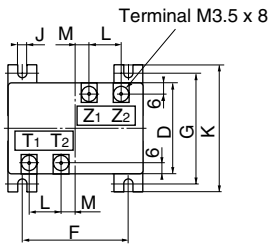


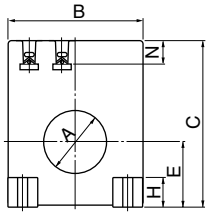




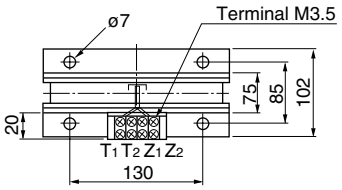
Note: When flush mounting type is required, an adaptor EL-E is needed. (Sold separately)

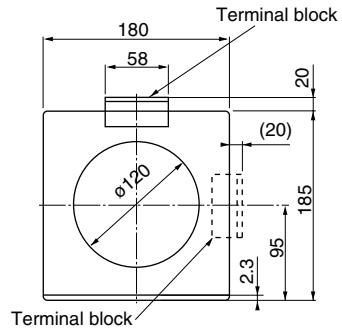
Sensors
RRD25, 40, 60, 90P0
EL25, 40, 60, 90P0





RRD120, EL120P0

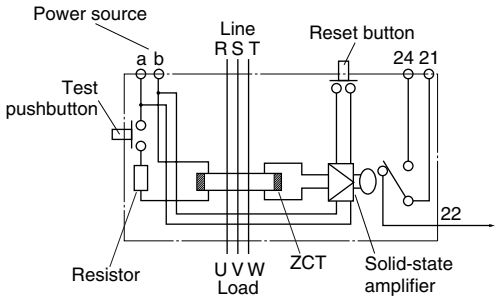




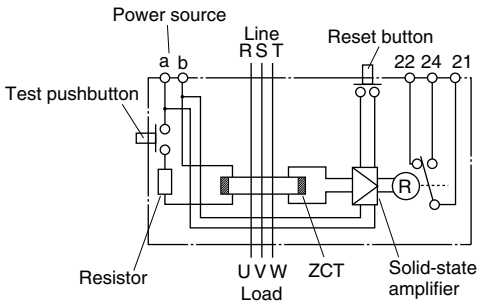
Type	A	B	C	D	E	F	G	H	J	K	L	M	N
RRD25	ø25	55	72	29	28	40	42	10	5	54	13	7	7
EL25	ø25	55	72	29	28	40	42	10	5	54	13	7	7
RRD40	ø40	90	115	62	45	70	75	18	5	90	22	8	18
EL40	ø40	90	115	62	45	70	75	18	5	90	22	8	18
RRD60	ø60	120	145	62	60	100	75	18	6	90	22	8	18
EL60	ø60	120	145	62	60	100	75	18	6	90	22	8	18
RRD90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

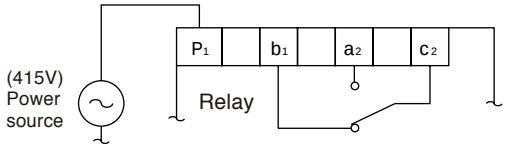


BRR11N, 19N, 21N, 29N, 22N, 23N, 25N
BRR42H, 45H

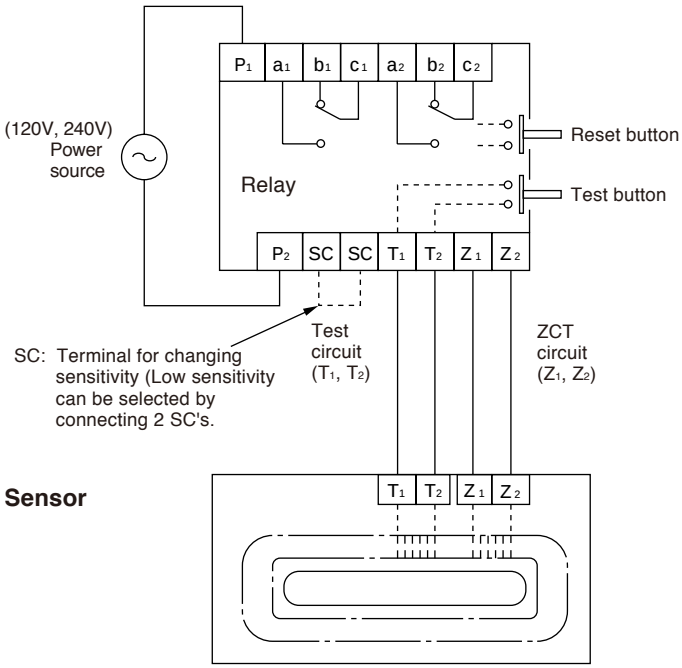


RRD type

● **Where SPDT is selected.**



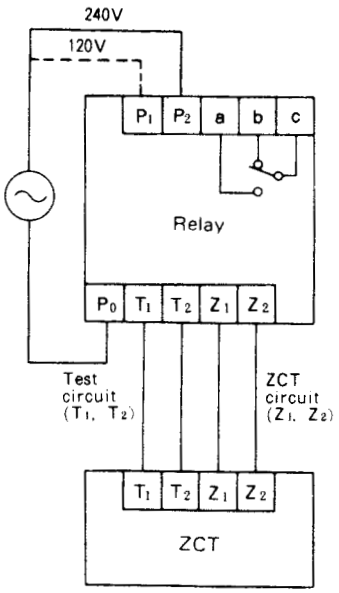
● **Where 2PDT is selected.**



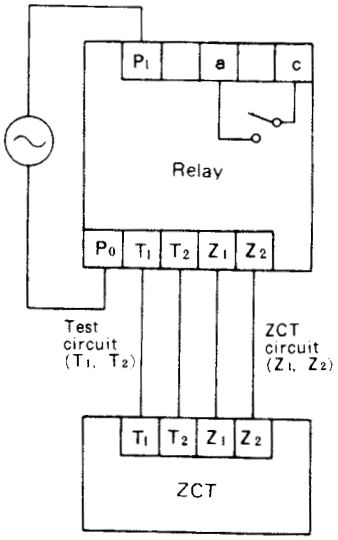
Sensor

EL type

100/200V, 120/240V



415V



07

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- Follow the directions of the operating instructions when mounting the product.

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from D&C CATALOG 20th Edition

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2010-04 PDF FIS DEC2007