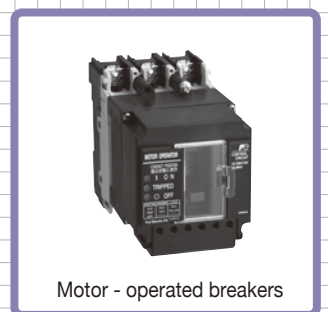


■ EARTH LEAKAGE
CIRCUIT BREAKERS

■ EARTH LEAKAGE
PROTECTIVE RELAYS



LOW
VOLTAGE
EQUIPMENT
Up to 600 Volts

INDIVIDUAL CATALOG 07
from D&C CATALOG 20th Edition

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



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



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.

Usefulness

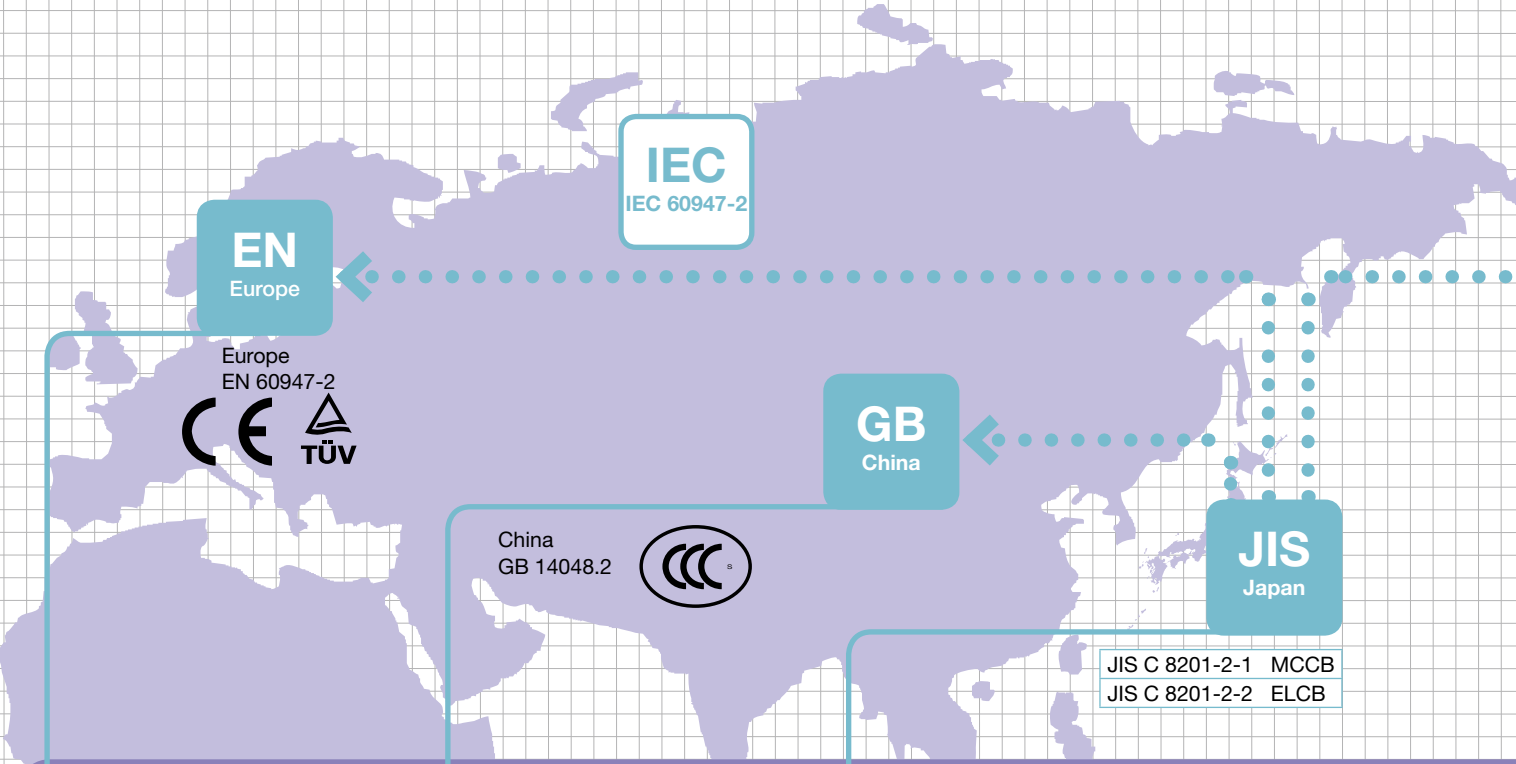
Leading the way in user-friendliness



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)



G-TWIN

CCC model

- GB 14048.2 (China)
- CCC approved



G-TWIN

JIS model

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



G-TWIN

CE marking (TÜV) + CCC approved + JIS

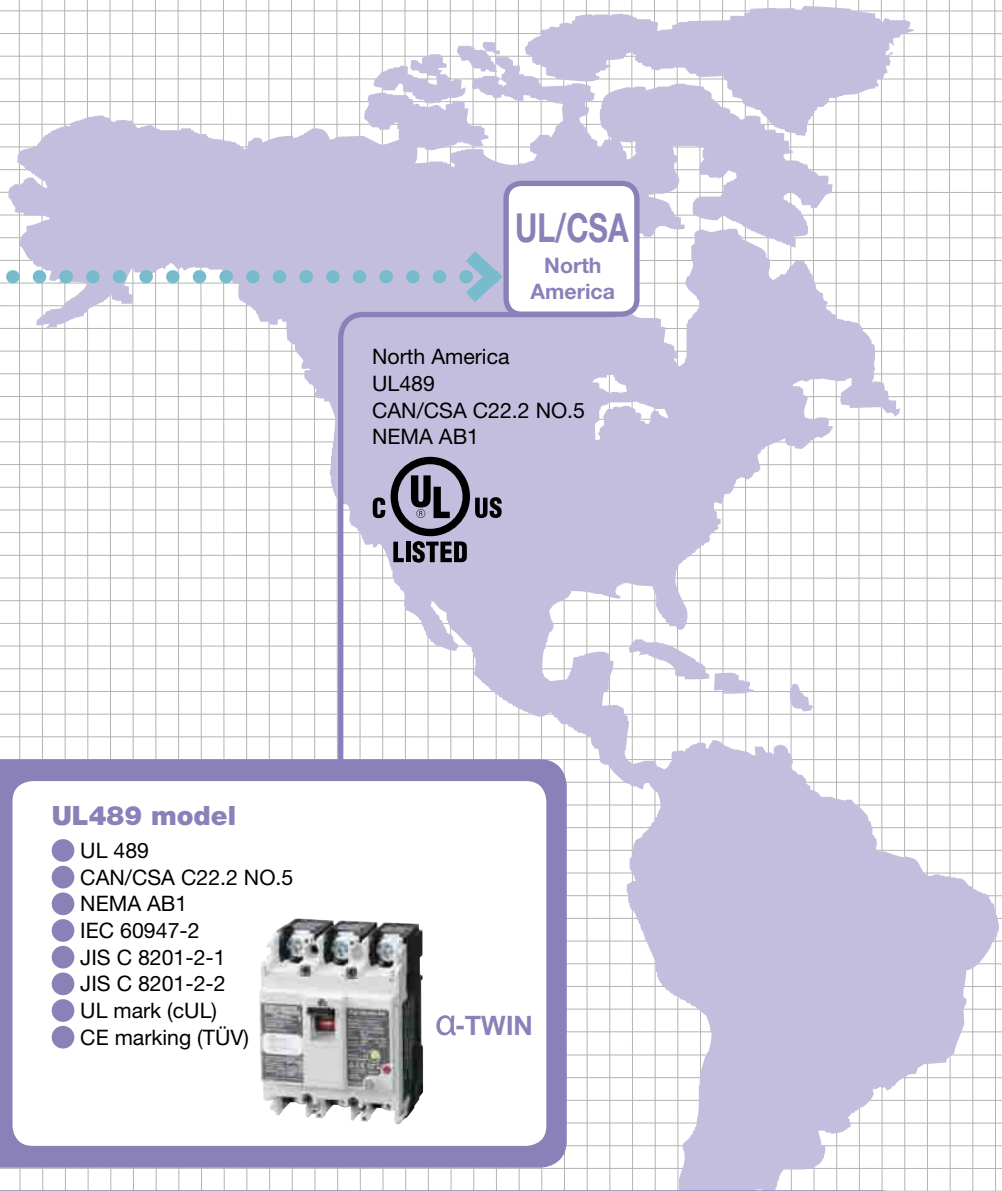
G-TWIN Standard series



- 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
----	----	----	-----	-----	-----	-----	-----	-----	-----



UL/CSA
North America

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



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)



G-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 dimensions

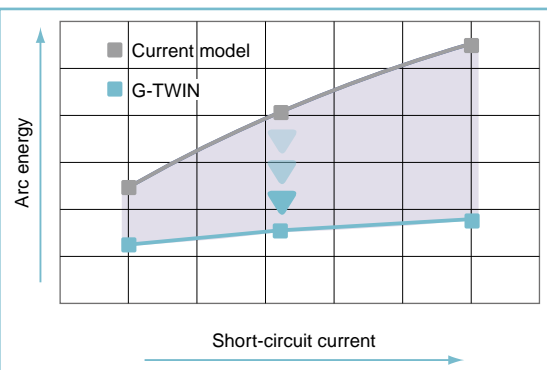


MCCB

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)

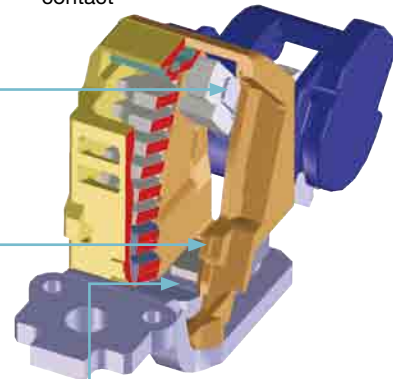
Decrease by 30%!

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

Moving contact cover

- Arcing prevention at the bottom of moving contact



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

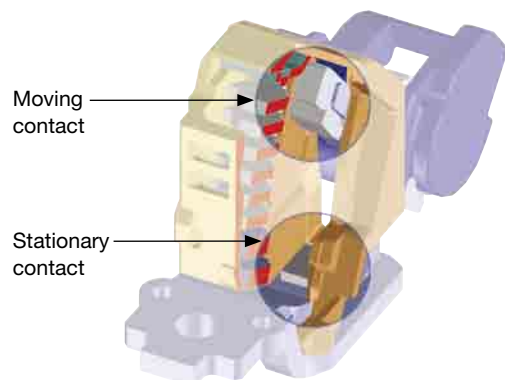
The G-TWIN Series is designed to lower environmental impact.

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 (Cr⁶⁺-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



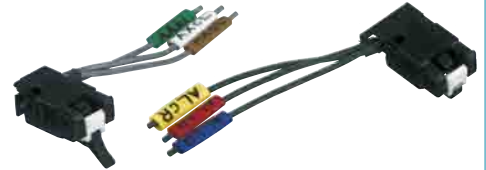
ELCB



Shunt trip device



Undervoltage trip device



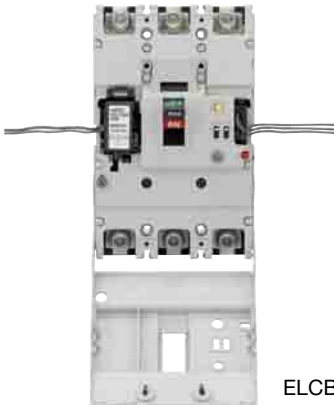
Auxiliary switch

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

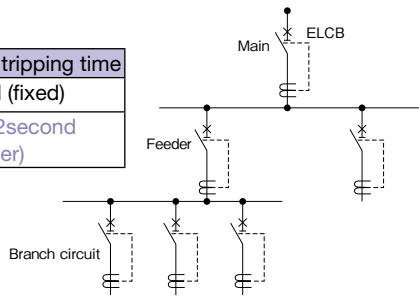
Easier protection coordination

Four-step changeover switch
($I \Delta n$ and tripping time setting)

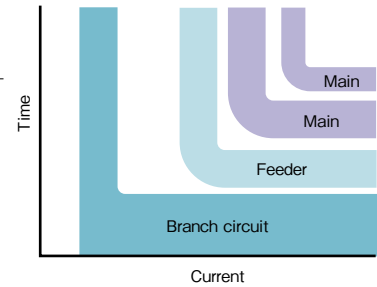
	$I \Delta n$ (Change over type)	Maximum tripping time
Q-TWIN	100/200/500mA	0.1second (fixed)
G-TWIN	100/300/500/1000mA	0.1/0.4/1/2second (changeover)

NEW

Ground fault current protection coordination can be taken easily.



Instantaneous and Time delay type operating characteristic



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

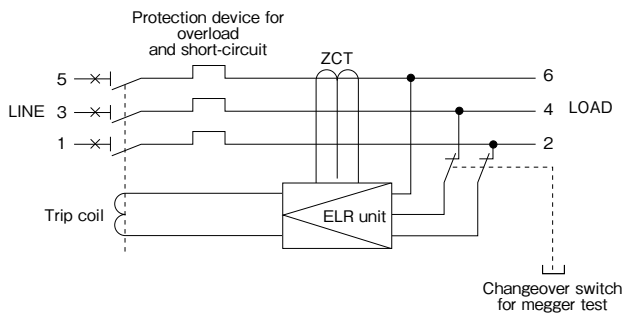
The revised IEC60947-2 stipulates that the ELCB should trip when earth-leakage occurs even in phase loss state in three-phase system. The G-TWIN Series meets this requirement.

Adoption of changeover switch for dielectric test

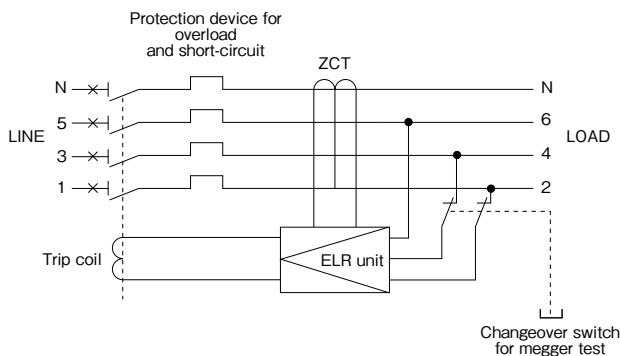
High workability can be obtained since the removal of ELCB wiring is not required at dielectric test during inspection (Adopted for 125AF or more).

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).

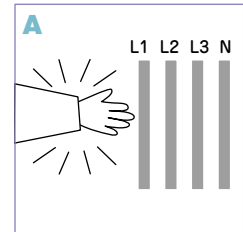
Measures of protection against electrical shock

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.

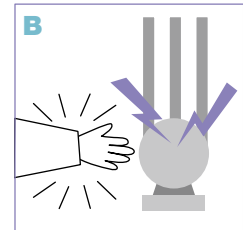


B. Protection against indirect contact

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.

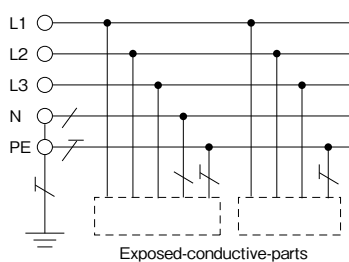
As one of the protective measures, depending on the condition in TT or TN-S system, the automatic cutoff of power supply with ELCB is specified in IEC60364-4-41.

For the details of the installation systems and how to apply ELCB, please refer to the following chart and flowchart.

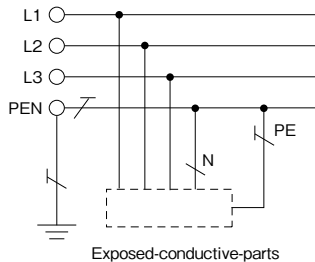


Types of installation systems in IEC 60364

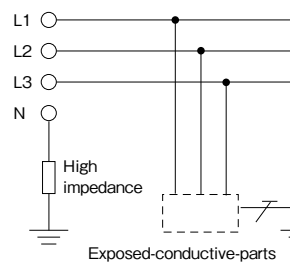
TN-S System



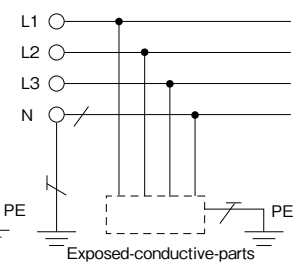
TN-C System



IT System



TT System



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

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.

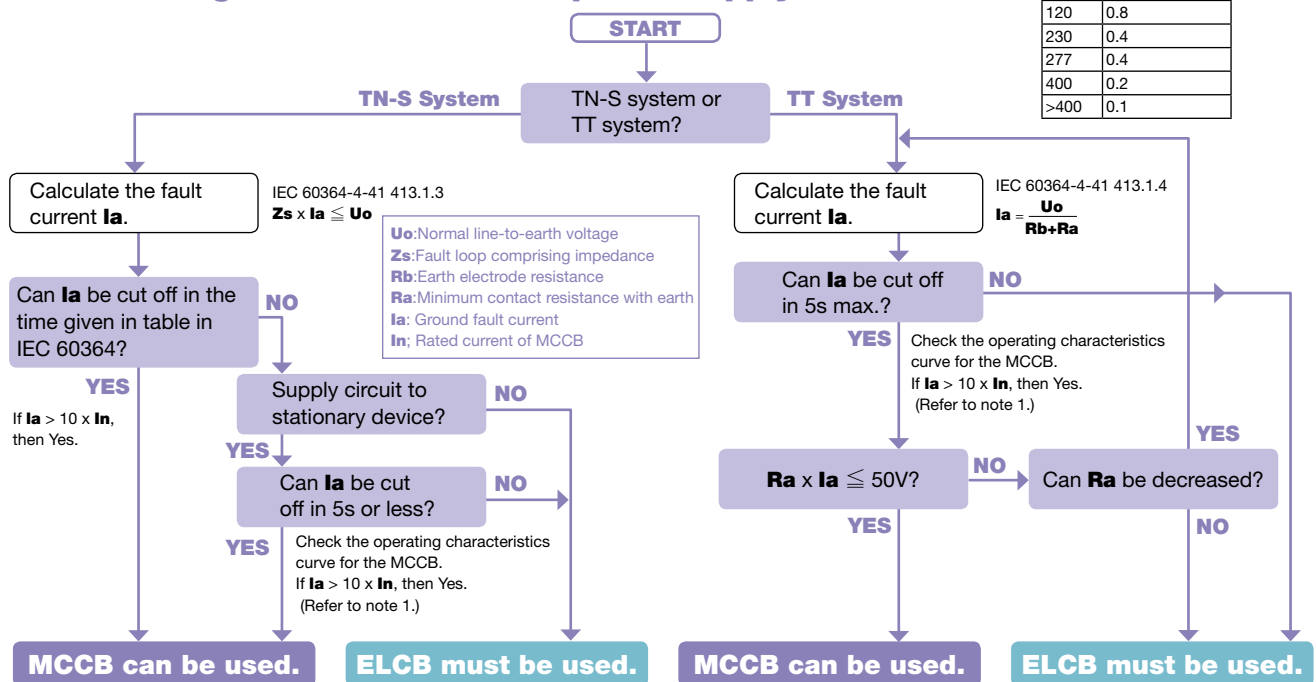
(Ground faults cannot be detected.)

2: An IT system is a non-grounded system, and so ELCB cannot be used. (Ground faults cannot be detected.)

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

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

U ₀ (V)	Breaking time (s)
120	0.8
230	0.4
277	0.4
400	0.2
>400	0.1



ELCB is not applicable for TN-C.

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



Earth Leakage Circuit Breakers

G-TWIN series


Type of ELCBs

■ Type of ELCBs

G-TWIN Series


Line protection	Page	Feature	Type
	07/04	<ul style="list-style-type: none"> Models from 3A to 800A ELCB and MCCB have 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 Breaking capacity ② Pole ③ Rated current ④ Rated sensitive current ⑤ 32 A 2P 003=3A A=15mA 50 E 3P · B=30mA 63 J 4P · C=100mA 100 S · J=Changeover type 125 R 800=800A K=Changeover type 160 H 250 400 630 800
	07/18	<ul style="list-style-type: none"> 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 Breaking capacity ② Pole ③ Rated current ④ Rated sensitive current ⑤ 32 E 3P 0P7=0.7A B=30mA 50 J · C=100mA 63 S · J=Changeover type 100 R · K=Changeover type 125 225=225A 250
UL489 Listed	07/13	<ul style="list-style-type: none"> 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 Breaking capacity ② Pole ③ Rated current ④ Rated sensitive current ⑤ 50 E 2P 003=3A B=30mA 100 J 3P · D=50mA 125 S · K=Changeover type 250 R · 400 H 630=630A 630

HG Series

Line protection	Page	Feature	Type
	07/88	<ul style="list-style-type: none"> Models from 15A to 225A 	HG ①② B/ ③④ AF ① Pole ② Rated current ③ Rated sensitive current ⑤ 5=50AF 3=3P 15=15A 30MA=30mA fixed 10=10AF : CO=Changeover type 20=225AF 225=225A

Earth Leakage Protective Relays

BRR,RRD,EL Series

	Page	Feature	Type
	07/105	Relay and sensor-Unit type <ul style="list-style-type: none"> BRR series Relay and sensor-Separate type <ul style="list-style-type: none"> RRD series EL series 	BRR ①② N (H) RRD ①② Sensor hole ① Sensitive current ② Sensor hole ① Pole ② 0=φ 10mm 1=30mA 25=φ 25mm P0=Pass-through type 1=φ 25mm 9=100mA 40=φ 40mm 2=φ 40mm 2=200mA 60=φ 60mm 4=400A 5=500mA 90=φ 90mm (Rated current) 120=φ 120mm EL ①② Sensor hole ① Pole ② Rated current ① Pole ② 25=φ 25mm P0=Pass-through type 6A=600A Z3=3Pole 40=φ 40mm 8A=800A Z4=4Pole 60=φ 60mm 10A=1000A 90=φ 90mm 12A=1200A 120=φ 120mm

Earth Leakage Circuit Breakers

G-TWIN series

Type of ELCBs

Rated interrupting capacity IEC60947-2	lcu (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	lcu (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 lcu (kA)	Current (A)						
	15	30	50	60	100	125	225
65							

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

07

07

Earth Leakage Circuit Breakers Earth Leakage Protective Relays



		Page
<hr/>		
Earth Leakage Circuit Breakers		
G-TWIN series		
	List of products	07/1
	Type number nomenclature	07/2
	Quick reference guide	07/4
	Mounting modifications	07/22
	Terminal connection	07/24
	Wire size and terminal	07/25
	Type number	07/29
	Arc space	07/35
	Dimensions	07/36
	Characteristic curves	07/51
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HG series		
	List of products	07/1
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	Mounting modifications	07/89
	Terminal connection	07/90
	Type number nomenclature	07/91
	Type number	07/92
	Dimensions	07/93
	Characteristic curves	07/94
	Accessories	07/95
<hr/>		
Earth Leakage Protective Relays		
	Description/Selection guide	07/105
	Type number nomenclature/Specifications	07/106
	Wire size	07/107
	Dimensions	07/112
	Wiring diagrams	07/115
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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.

Earth Leakage Circuit Breakers

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

Earth Leakage Circuit Breakers

G-TWIN series

Type number nomenclature

■ Type number nomenclature

EW **250** **EA** **G** - **3P** **225** **B** **X**

Series _____
EW: G-TWIN series ELCB

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 I_{cu} (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)

Code	Terminal position		Applicable breaker type		
	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	-	●	●

Mounting and connection

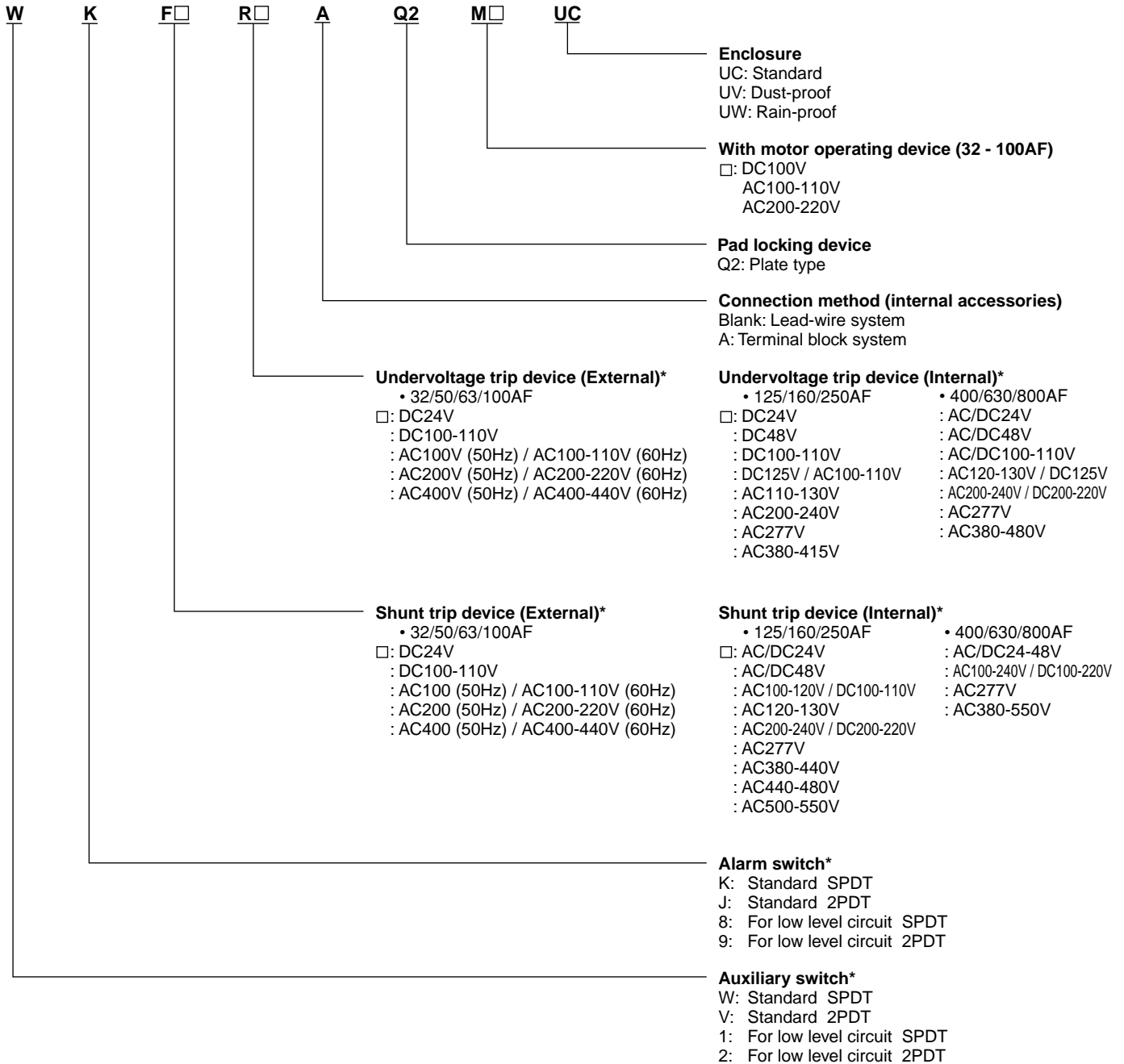
• Standard type

- Blank: Front mounting, front connection
- X: Front mounting, rear connection
- E: Flush mounting, rear connection
- Y: Flush mounting, top & bottom connection
- P: Plug-in mounting

Earth Leakage Circuit Breakers

G-TWIN series

Type number nomenclature



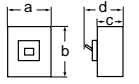
* For the available configuration of accessory, see page 07/62.

Earth Leakage Circuit Breakers

G-TWIN series

Quick reference guide

■ 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			
Conforming to standards	CE Marking		● (TÜV)	● (TÜV)	● (TÜV)	● (TÜV)	
	CCC certificate		●	●	●	●	
	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		BP	○	○	○	○	
Earth		BL	○	○	○	○	
Handle locking cover		L1	○	○	○	○	
Flat terminal		SS	○	○	○	○	
Block terminal		SL	–	–	–	–	

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

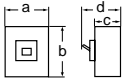
Rated voltage (V)	Operational voltage range (V)
100–230	80–264
100–230–440	80–484

Earth Leakage Circuit Breakers

G-TWIN series

Quick reference guide

■ 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		
Rated impulse withstand voltage			Uimp(kV)		2.5	4	6	6	
Isolation compliant			●		●	●	●		
Rated voltage Ue (AC V)			100-230		100-230-440		100-230-440		
Rated sensitive current (mA)			15, 30, 100		15, 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	-		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	2.5/2		5/3		10/5	
			200V	2.5/2		5/3		10/5	
			100V	2.5/2		5/3		10/5	
		GB14048.2	AC	400V	-		2.5/2		7.5/4
230V	2.5/2		5/3		10/5		25/13		
Conforming to standards	CE Marking		● (TÜV)		● (TÜV)		● (TÜV)		
	CCC certificate		●		●		●		
	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		0.6		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 ○: Available -: Not available ▲: Factory-mounted accessory
 Note: *1 Electrical Appliance and Material Safety Law of Japan

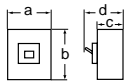
Rated voltage (V)	Operational voltage range (V)
100-230	80-264
100-230-440	80-484

Earth Leakage Circuit Breakers

G-TWIN series

Quick reference guide

■ 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
Conforming to standards	CE Marking		● (TÜV)	● (TÜV)	● (TÜV)	
	CCC certificate		●	●	●	
	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 ○: Available -: Not available ▲: Factory-mounted accessory
 Note: *1 Electrical Appliance and Material Safety Law of Japan

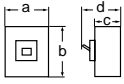
Rated voltage (V)	Operational voltage range (V)
100-230	80-264
100-230-440	80-484

Earth Leakage Circuit Breakers

G-TWIN series

Quick reference guide

■ G-TWIN Standard Series

Ampere frame			100A			
Type			EW100AAG		EW100EAG	
Pole			3		2	
Rated current	Reference amb. temp. (40°C)	In(A)	60, 63, 75, 100		50, 60, 63, 75, 100	
Rated impulse withstand voltage		Uimp(kV)	4		6	
Isolation compliant			●		●	
Rated voltage Ue (AC V)			100-230		100-230	
Rated sensitive current (mA)			30, 100/200/500 changeover		30, 100/200 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	–	–	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
Conforming to standards	CE Marking		● (TÜV)		● (TÜV)	
	CCC certificate		●		●	
	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
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 ○: Available –: Not available ▲: Factory-mounted accessory
 Note: *1 Electrical Appliance and Material Safety Law of Japan

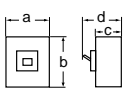
Rated voltage (V)	Operational voltage range (V)
100–230	80–264
100–230–440	80–484

Earth Leakage Circuit Breakers

G-TWIN series

Quick reference guide

■ 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		
Conforming to standards	CE Marking		● (TÜV)		● (TÜV)		● (TÜV)	
	CCC certificate		●		●		●	
	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	BTCS	○	○	○	○	○	○	
Terminal cover Long	BTCL	○	○	○	○	○	○	
Insulation barrier Interphase	BP	○	○	○	○	○	○	
Handle locking cover	L1	○	○	○	○	○	○	
Flat terminal	SS	○	○	○	○	○	○	
Block terminal	SL	○	○	○	○	○	○	

●: Approved ○: Available —: Not available ▲: Factory-mounted accessory
 Note: *1 Electrical Appliance and Material Safety Law of Japan

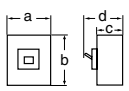
Rated voltage (V)	Operational voltage range (V)
100-230-440	80-484

Earth Leakage Circuit Breakers

G-TWIN series

Quick reference guide

■ G-TWIN Standard Series

Ampere frame		160A									
Type		EW160EAG		EW160JAG		EW160SAG		EW160RAG			
Pole		3		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				
Conforming to standards	CE Marking certified (TÜV)		● (TÜV)		● (TÜV)		● (TÜV)		● (TÜV)		
	CCC certificate		●		●		●		●		
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 BTCS	○	○	○	○	○	○	○	○		
Terminal cover	Long BTCL	○	○	○	○	○	○	○	○		
Insulation barrier	Interphase BP	○	○	○	○	○	○	○	○		
Handle locking cover	L1	○	○	○	○	○	○	○	○		
Flat terminal	SS	○	○	○	○	○	○	○	○		
Block terminal	SL	○	○	○	○	○	○	○	○		

●: Approved ○: Available —: Not available ▲: Factory-mounted accessory
 Note: *1 Electrical Appliance and Material Safety Law of Japan

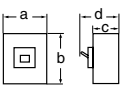
Rated voltage (V)	Operational voltage range (V)
100-230-440	80-484

Earth Leakage Circuit Breakers

G-TWIN series

Quick reference guide

■ 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		
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	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			
Conforming to standards	CE Marking		● (TÜV)		● (TÜV)		● (TÜV)			
	CCC certificate		●		●		●			
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 ○: Available —: Not available ▲: 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

Earth Leakage Circuit Breakers

G-TWIN series

Quick reference guide

■ G-TWIN Standard Series

Ampere frame		400A							
Type		EW400EAG		EW400SAG		EW400RAG		EW400HAG	
Pole		3		3		3		4	
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					
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		

Conforming to standards	CE Marking	● (TÜV)	● (TÜV)	● (TÜV)	● (TÜV)
	CCC certificate	●	●	●	●

Dimensions (mm)		a	140	140	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	5.8	7.8	5.8	7.8
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Tripping device	Thermal-magnetic					
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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 ○: Available -: Not available ▲: 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

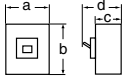
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Earth Leakage Circuit Breakers

G-TWIN series

Quick reference guide

■ 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
	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
			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
Conforming to standards	CE Marking	● (TÜV)	● (TÜV)	● (TÜV)	● (TÜV)	● (TÜV)	● (TÜV)		
	CCC certificate	●	●	●	●	●	●		
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 ○: Available –: Not available ▲: Factory-mounted accessory

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

*2 Standard provided

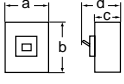
Rated voltage (V)	Operational voltage range (V)
100–230–440	80–484

Earth Leakage Circuit Breakers

G-TWIN series

Quick reference guide

■ 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			
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
Conforming to standards	CE Marking		● (TÜV)		● (TÜV) ● (TÜV)	
	CCC certificate		●		● ●	
	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 ○: Available –: Not available
 Note: *1 Electrical Appliance and Material Safety Law of Japan
 *2 Standard provided

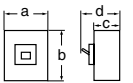
Rated voltage (V)	Operational voltage range (V)
100–230	80–264
240	80–264
100–230–440	80–484

Earth Leakage Circuit Breakers

G-TWIN series

Quick reference guide

■ 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
	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
Conforming to standards	CE Marking	● (TÜV)	● (TÜV)
	CCC certificate	●	●
	UL Listed (NEMA AB1)	●	●
	Electrical Appliance and Material Safety Law *1	● (except for 125A)	● (except for 125A)
Dimensions (inch(mm))		a	3.543 (90)
		b	6.732 (171)
		c	2.677 (68)
		d	3.740 (95)
			1.3
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 ○: Available -: Not available

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

*2 Standard provided

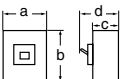
Rated voltage (V)	Operational voltage range (V)
240-480	80-504
100-230-440	80-484

Earth Leakage Circuit Breakers

G-TWIN series

Quick reference guide

■ 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
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
	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	
Conforming to standards	CE Marking		● (TÜV)
	CCC certificate		●
	UL Listed (NEMA AB1)		●
Dimensions (inch(mm))		a	4.134 (105)
		b	7.126 (181)
		c	2.677 (68)
		d	3.740 (95)
			4.134 (105)
Mass (kg)			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 ○: Available -: Not available
Note: *1 Standard provided

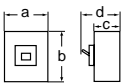
Rated voltage (V)	Operational voltage range (V)
240-480	80-504
100-230-440	80-484

Earth Leakage Circuit Breakers

G-TWIN series

Quick reference guide

■ 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		
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
	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
	Conforming to standards	CE Marking		● (TÜV)	● (TÜV)	● (TÜV)
CCC certificate		●	●	●		
UL Listed (NEMA AB1)		●	●	●		
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	□	–	–	–		
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 ○: Available –: Not available ▲: Factory-mounted accessory

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

Earth Leakage Circuit Breakers

G-TWIN series

Quick reference guide

■ 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
	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	
Conforming to standards	CE Marking		● (TÜV)	
	CCC certificate		●	
	UL Listed (NEMA AB1)		●	
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 ○: Available -: Not available ▲: Factory-mounted accessory

Note: *1 Breakers for 630A cannot be manufactured with block terminals.

*2 Block terminals are not available.

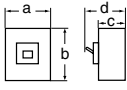
Rated voltage (V)	Operational voltage range (V)
240-480	80-504
100-230-440	80-484

Earth Leakage Circuit Breakers

G-TWIN series

Quick reference guide

■ 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
Conforming to standards	CE Marking		●	●	
	CCC certificate		●	●	
	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 & 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	BTCS	○	○	○	
Terminal cover Long	BTCL	○	○	○	
Insulation barrier Interphase	BP	○	○	○	
Insulation barrier Earth	BL	○	○	○	
Handle locking cover	L1	○	○	○	
Flat terminal	SS	○	○	○	
Block terminal	SL	-	-	-	

● : Approved ○ : Available - : Not available ▲ : Factory-mounted accessory

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

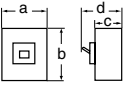
Rated voltage (V)	Operational voltage range (V)
100-230-440	80-484

Earth Leakage Circuit Breakers

G-TWIN series

Quick reference guide

■ 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	
	GB14048.2	AC	400V 2.5/2	7.5/4
			230V 5/3	10/5
Conforming to standards	CE Marking		●	●
	CCC certificate		●	●
	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		
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	BTCS	○	○	
Terminal cover Long	BTCL	○	○	
Insulation barrier Interphase	BP	○	○	
Insulation barrier Earth	BL	○	○	
Handle locking cover	L1	○	○	
Flat terminal	SS	○	○	
Block terminal	SL	-	-	

●: Approved ○: Available -: Not available ▲: 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

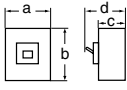
07

Earth Leakage Circuit Breakers

G-TWIN series

Quick reference guide

■ G-TWIN Standard Series / Motor protection

Ampere frame		63A		100A			
Type		EW63EAM		EW63SAM			
Pole		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			
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	10/5	
			415V	2.5/2	7.5/4	10/5	
		GB14048.2	AC	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
	Conforming to standards	CE Marking		●	●	●	
		CCC certificate		●	●	●	
		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		
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 & 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	BTCS	○	○	○		
Terminal cover	Long	BTCL	○	○	○		
Insulation barrier	Interphase	BP	○	○	○		
Insulation barrier	Earth	BL	○	○	○		
Handle locking cover		L1	○	○	○		
Flat terminal		SS	○	○	○		
Block terminal		SL	-	-	-		

●: Approved ○: Available -: Not available ▲: Factory-mounted accessory

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

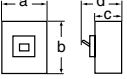
Rated voltage (V)	Operational voltage range (V)
100-230-440	80-484

Earth Leakage Circuit Breakers

G-TWIN series

Quick reference guide

■ 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)	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/lcs (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		
	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	
				400V	30/15	50/25	18/9	30/15	50/25
				230V	50/25	100/50	36/18	50/25	100/50
Conforming to standards	CE Marking	●	●	●	●	●			
	CCC certificate	●	●	●	●	●			
	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 & bottom 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	BTCS	○	○	○	○	○			
Terminal cover Long	BTCL	○	○	○	○	○			
Insulation barrier Interphase	BP	○	○	○	○	○			
Insulation barrier Earth	BL	○	○	○	○	○			
Handle locking cover	L1	○	○	○	○	○			
Flat terminal	SS	○	○	○	○	○			
Block terminal	SL	—	—	—	—	—			

●: Approved ○: Available —: Not available

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

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

Earth Leakage Circuit Breakers

G-TWIN series

Mounting modifications

■ Mounting modifications

• Standard series

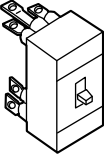
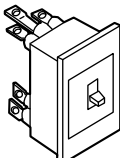
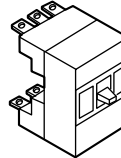
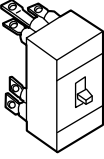
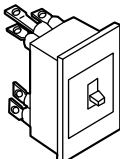
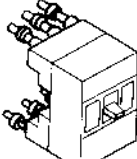
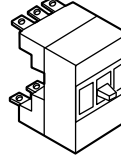
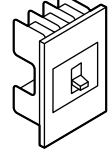
Standard type FUJI breakers are front mounting with front connections. The standard breaker can easily be modified to become front mounting rear connection type, flush mounting type and plug-in type. The additional parts such as insulation bases, barriers, covers and similar parts are added as required.

Front mounting
Front connection



BASIC DESIGN



Additional main parts	Front mounting Rear connection (X type)	Additional main parts	Flush mounting Rear connection (E type)	Additional main parts	Plug-in mounting (P type)
Bar stud terminal 	EW32 EW50 EW63 EW100	Bar stud terminal 	EW32 EW50 EW63 EW100	Bar stud terminal 	EW32 EW50 EW63 EW100
Bar stud terminal 	EW125 EW160 EW250 EW400 EW630 EW800 Each stud can be turned by 90°	Bar stud terminal 	EW125 EW160 EW250 EW400 EW630 EW800 Each stud can be turned by 90°	Round stud terminal 	EW125
		Additional main parts	Flush mounting Top and bottom connection (Y type)	Bar stud terminal 	EW160 EW250 EW400 EW630 EW800 Each stud can be turned by 90°
		Decorative flush plate 	EW32 EW50 EW63 EW100		

• Global series

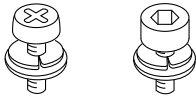
Front mounting
Front connection



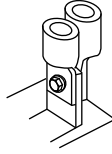
BASIC DESIGN



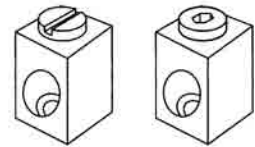
Screw



Flat terminal



Block terminal



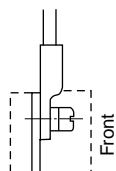
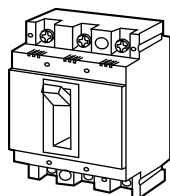
Earth Leakage Circuit Breakers

G-TWIN series

Terminal connection

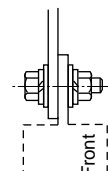
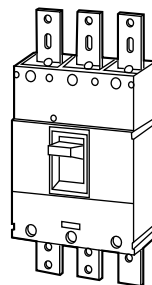
■ Terminal connection/Front mounting, front connection

• 32AF to 100AF

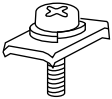


Flat terminal

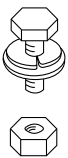
• 400AF to 800AF



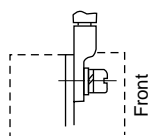
Flat terminal

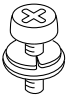
Self lifting screw	Breaker type	Tightening torque (N•m)	Size
	EW32 EW50 EW100*	2.3 to 2.8	M5 × 14
	EW63 EW100	5.5 to 7.5	M8 × 15

* Breaker of rated current : 50A

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

• 125AF to 250AF

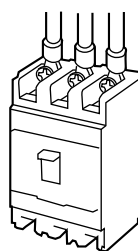
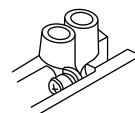


Pan-head screw	Breaker type	Tightening torque (N•m)	Size (mm)
	EW125	5.5 to 7.5	M8 × 16
	EW160 EW250	8.0 to 13.0	M8 × 16

Type of connection/up to 250AF

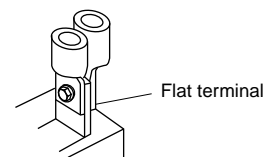
Front mounting front connection

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.

Earth Leakage Circuit Breakers

G-TWIN series

Wire size and terminal

■ Wire size and crimp terminal

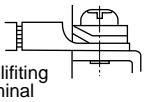
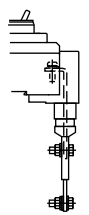
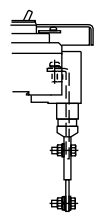
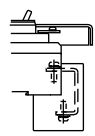
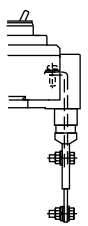
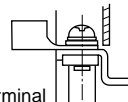


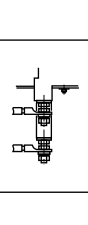
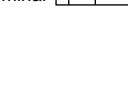
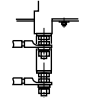
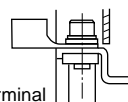
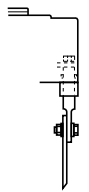
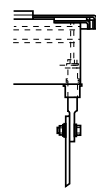
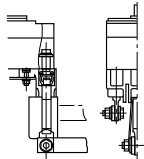



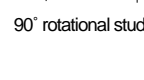
The following is the size recommendations for crimp terminals.

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

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-lifting terminal				
EW63 EW100					
EW125					
EW160 EW250					
EW400 EW630 EW800					

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Earth Leakage Circuit Breakers

G-TWIN series

Wire size and terminal

■ 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.

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 mm².

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

Code	Terminal position		Applicable breaker type		
	Line	Load	EW50, 100	EW125, 250	EW400, 630, 800
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	—	●	●

Precautions

- Two wires of different sizes cannot be connected to the same block terminal.
- 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			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.			
EW50RAGU	3	R2-5	R2-5M	2-S5, 2-5	14AWG	2.3-2.8	Cross/straight slotted pan-head screw M5 x 14
	5		R2-5				
	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.

Earth Leakage Circuit Breakers

G-TWIN series

Wire size and terminal

• 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	
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	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
EW125RAGU	20	5.5-S8, R5.5-8	R3.5-8, R5.5-8	3.5-8, 5.5-8	12AWG			
	30				R5.5-8			
	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	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
EW250RAGU	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	250	150-12	R150-12		250MCM	45 (40 to 50)	43.5 (39.2 to 48)	Hexagon head bolt M12 x 35
EW400RAGU	300	180-12	R180-12		350MCM			
EW400HAGU	350	325-12	R325-12N		500MCM			
	400	325-12 R80-12	R325-12N R80-12		500MCM 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)

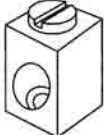
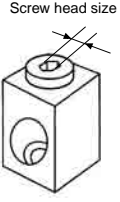
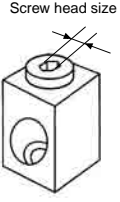
07

Earth Leakage Circuit Breakers

G-TWIN series

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 20 30 40 50 60 75 100 125	14AWG 12AWG 10AWG 8AWG 6AWG 4AWG 3AWG 1AWG	5.8 (5.8 to 6.4)	Slotted set screw	
EW250JAGU EW250RAGU	125 150 175 200 225 250	1AWG 1/0AWG 2/0AWG 3/0AWG 4/0AWG 250MCM	23 (23 to 25.3)	Hexagon socket head setscrew: 8 mm (5/16 inch)	
EW400SAGU EW400RAGU EW400HAGU	250 300 350 400	250MCM 350MCM 500MCM 3/0AWG(x2)	43.5 (43.5 to 48)	Hexagon socket head setscrew: 9.53 mm (3/8 inch)	
EW630RAGU	500 600	250MCM(x2) 350MCM(x2)	31.9 (31.9 to 35.1) 31.1 (31.1 to 34.2)	Hexagon socket head setscrew: 8 mm (5/16 inch) Hexagon socket head setscrew: 8 mm (5/16 inch)	

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

Earth Leakage Circuit Breakers G-TWIN series Type number/Line protection

■ 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 bottom	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

Earth Leakage Circuit Breakers

G-TWIN series

Type number/Line protection

● 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	EW32SAG-3P050■□		
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■□		

* See page 07/29.

Earth Leakage Circuit Breakers G-TWIN series Type number/Line protection

● 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		
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		
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		
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		
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		

* See page 07/29.

Earth Leakage Circuit Breakers

G-TWIN series

Type number/Line protection

● 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■□		

* See page 07/29.

Earth Leakage Circuit Breakers G-TWIN series Type number/Line protection

■ 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 S4, S5, S6, S7, S8
	20	EW125JAGU-3P020	■ □	
	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	
150		EW250JAGU-3P150	■ □	
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	■ □	

* See page 07/29.

● 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	
20		EW125RAGU-3P020	■ □	
30		EW125RAGU-3P030	■ □	
40		EW125RAGU-3P040	■ □	
50		EW125RAGU-3P050	■ □	
60		EW125RAGU-3P060	■ □	
75		EW125RAGU-3P075	■ □	
250	125	EW250RAGU-3P125	■ □	B, K Blank, SB, SF, S3 S4, S5, S6, S7, S8
	150	EW250RAGU-3P150	■ □	
	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

Code	Terminal position		Breaker type		
	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	-	●	●

Earth Leakage Circuit Breakers

G-TWIN series

Type number/Motor protection

■ 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 <input type="checkbox"/>	B, C	Blank, X, E, Y, P
	2.6	EW32EAM-3P2P6 <input type="checkbox"/>		
	4	EW32EAM-3P004 <input type="checkbox"/>		
	5	EW32EAM-3P005 <input type="checkbox"/>		
	8	EW32EAM-3P008 <input type="checkbox"/>		
	10	EW32EAM-3P010 <input type="checkbox"/>		
	16	EW32EAM-3P016 <input type="checkbox"/>		
	24	EW32EAM-3P024 <input type="checkbox"/>		
32	EW32EAM-3P032 <input type="checkbox"/>			
50	45	EW50EAM-3P045 <input type="checkbox"/>	B, K	Blank, X, E, Y, P
63	63	EW63EAM-3P063 <input type="checkbox"/>	B, K	Blank, X, E, Y, P
100	63	EW100EAM-3P063 <input type="checkbox"/>	B, K	Blank, X, E, Y, P
	75	EW100EAM-3P075 <input type="checkbox"/>		
	90	EW100EAM-3P090 <input type="checkbox"/>		
	100	EW100EAM-3P100 <input type="checkbox"/>		
250	125	EW250EAM-3P125 <input type="checkbox"/>	B, K	Blank, X, E, P
	150	EW250EAM-3P150 <input type="checkbox"/>		
	175	EW250EAM-3P175 <input type="checkbox"/>		
	225	EW250EAM-3P225 <input type="checkbox"/>		

● 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 <input type="checkbox"/>	B, K	Blank, X, E, P
	90	EW125JAM-3P090 <input type="checkbox"/>		
250	125	EW250JAM-3P125 <input type="checkbox"/>	B, K	Blank, X, E, P
	150	EW250JAM-3P150 <input type="checkbox"/>		
	175	EW250JAM-3P175 <input type="checkbox"/>		
	225	EW250JAM-3P225 <input type="checkbox"/>		

* See page 07/29.

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

● 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 <input type="checkbox"/>	B, K	Blank, X, E, Y, P		
	1.4	EW32SAM-3P1P4 <input type="checkbox"/>				
	2	EW32SAM-3P002 <input type="checkbox"/>				
	2.6	EW32SAM-3P2P6 <input type="checkbox"/>				
	4	EW32SAM-3P004 <input type="checkbox"/>				
	5	EW32SAM-3P005 <input type="checkbox"/>				
	8	EW32SAM-3P008 <input type="checkbox"/>				
	10	EW32SAM-3P010 <input type="checkbox"/>				
	12	EW32SAM-3P012 <input type="checkbox"/>				
	16	EW32SAM-3P016 <input type="checkbox"/>				
	24	EW32SAM-3P024 <input type="checkbox"/>				
	32	EW32SAM-3P032 <input type="checkbox"/>				
	50	0.7			EW50SAM-3P0P7 <input type="checkbox"/>	B, K
1.4		EW50SAM-3P1P4 <input type="checkbox"/>				
2		EW50SAM-3P002 <input type="checkbox"/>				
2.6		EW50SAM-3P2P6 <input type="checkbox"/>				
4		EW50SAM-3P004 <input type="checkbox"/>				
5		EW50SAM-3P005 <input type="checkbox"/>				
8		EW50SAM-3P008 <input type="checkbox"/>				
10		EW50SAM-3P010 <input type="checkbox"/>				
12		EW50SAM-3P012 <input type="checkbox"/>				
16		EW50SAM-3P016 <input type="checkbox"/>				
63	24	EW50SAM-3P024 <input type="checkbox"/>	B, K	Blank, X, E, Y, P		
	32	EW50SAM-3P032 <input type="checkbox"/>				
	40	EW50SAM-3P040 <input type="checkbox"/>				
	45	EW50SAM-3P045 <input type="checkbox"/>				
	63	EW63SAM-3P063 <input type="checkbox"/>				

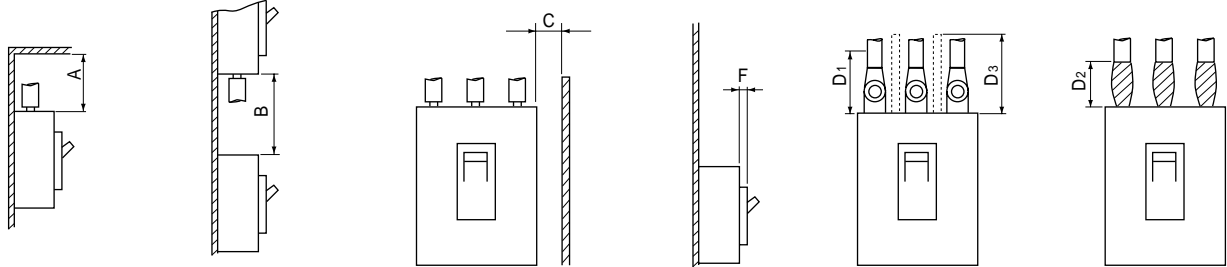
● RAM series, 3-pole IEC/EN/GB/JIS conformed

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

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

Earth Leakage Circuit Breakers G-TWIN series Arc space

■ Arc space, mm



Frame size	ELCB basic type	Ceiling distance		Vertical distance		Side plate distance		Front plate distance				Taping		Barrier
		A		B		C		Painted		No painted		Crimp type terminal lug D1	Bus-bar D2	
		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	

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Earth Leakage Circuit Breakers

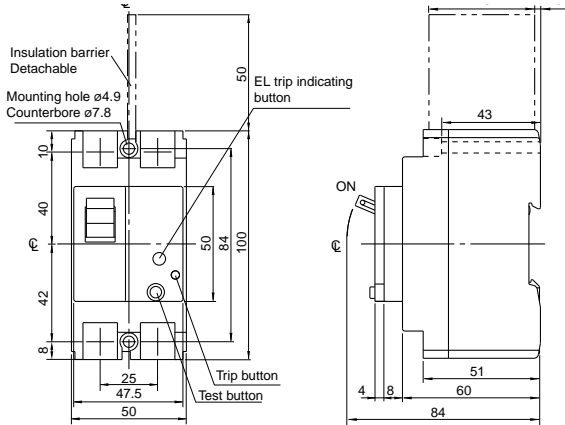
G-TWIN series

Dimensions / Standard

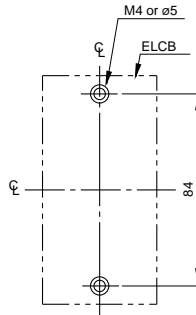
■ Dimensions, mm

● Front mounting, front connection

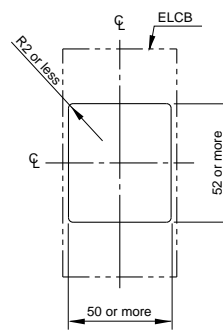
EW32□-2P, EW50□-2P



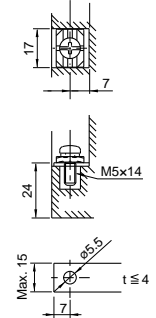
Panel drilling



Front panel cutting

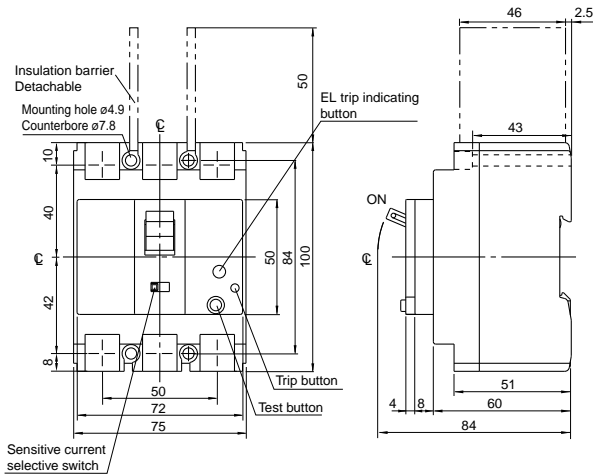


Terminal section

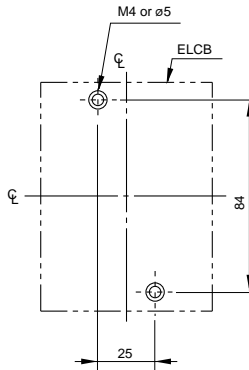


Insulation barriers
Standard provided: EW50SAG, EW50RAG
Optional: EW32AAG, EW50EAG

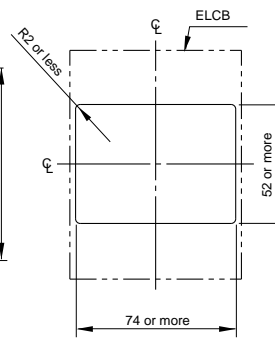
EW32□-3P, EW50□-3P



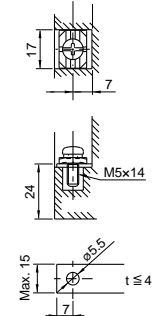
Panel drilling



Front panel cutting

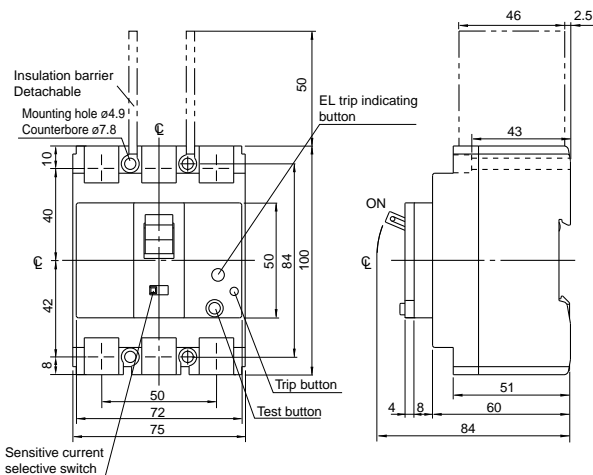


Terminal section

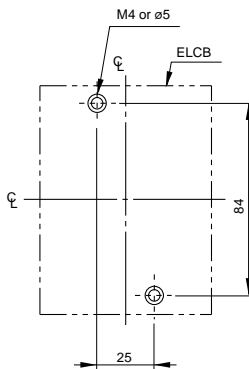


Insulation barriers
Standard provided: EW50SAG, EW50RAG
Optional: EW32AAG, EW32SAG, EW50EAG

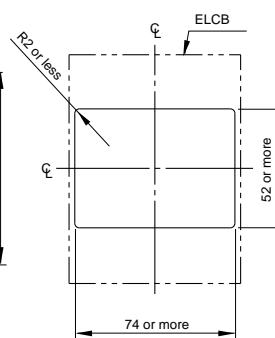
EW63□-3P



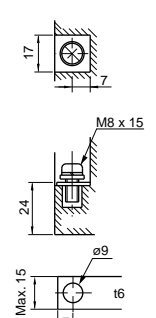
Panel drilling



Front panel cutting



Terminal section



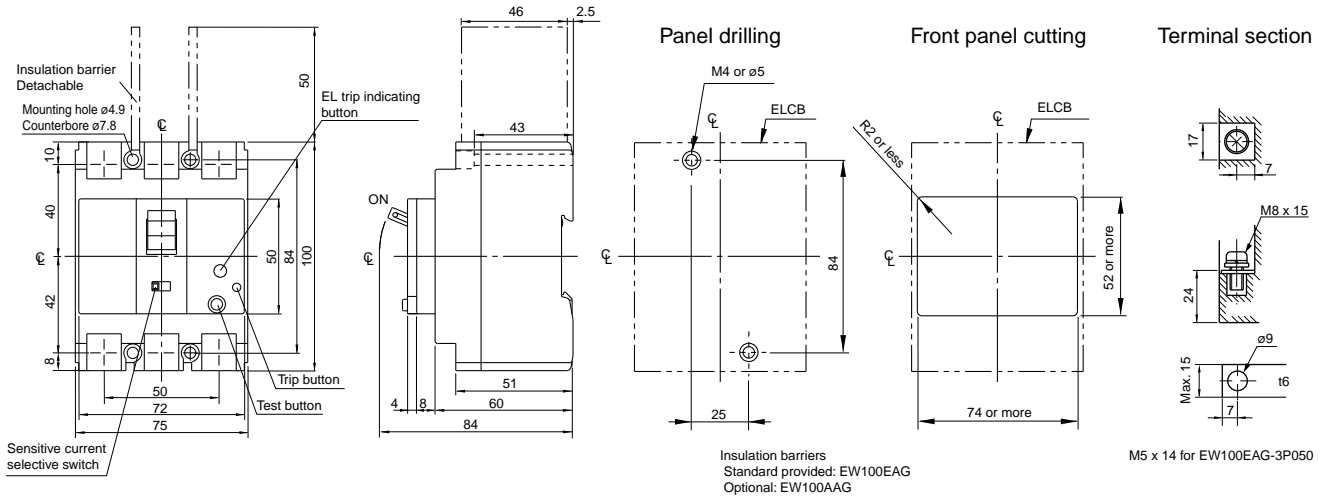
Earth Leakage Circuit Breakers

G-TWIN series

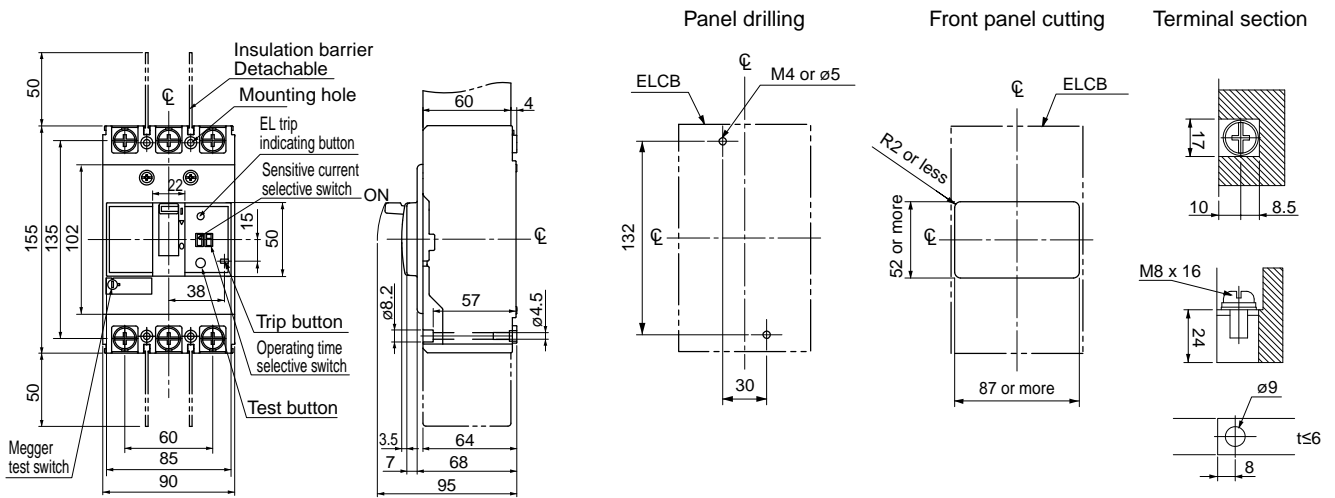
Dimensions / Standard

- Dimensions, mm
- Front mounting, front connection

EW100□-2P, 3P



EW125□-3P



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Earth Leakage Circuit Breakers

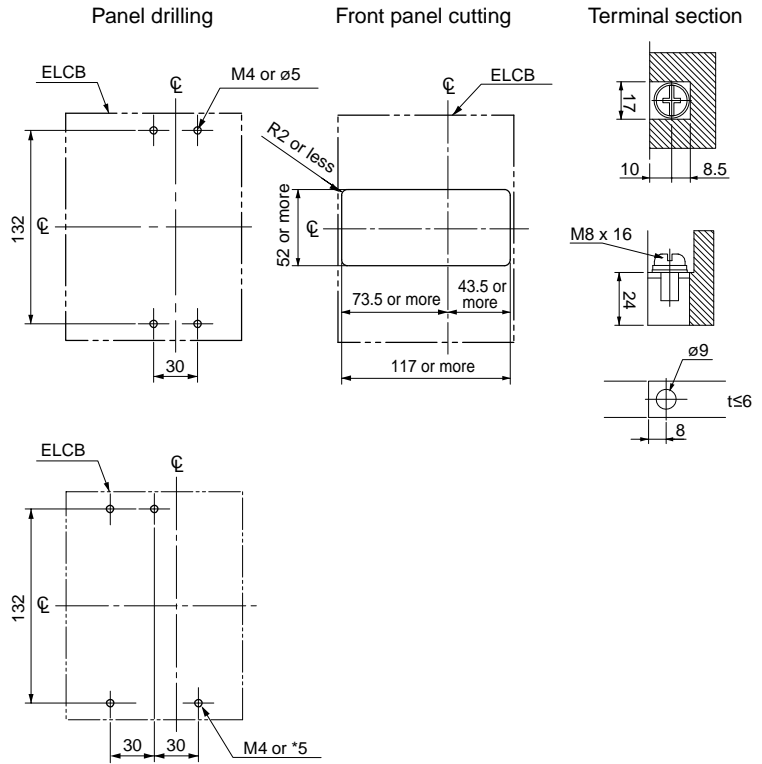
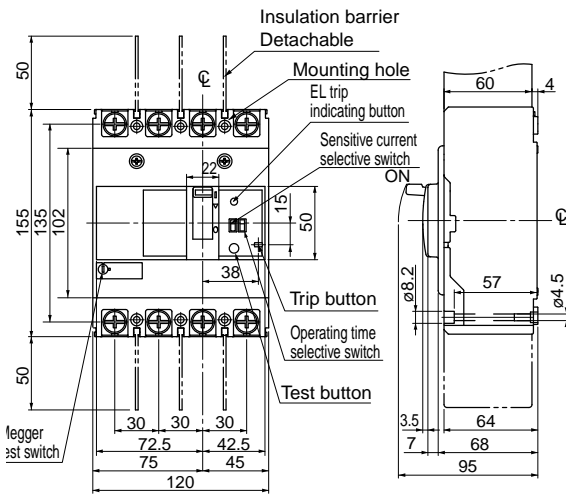
G-TWIN series

Dimensions / Standard

■ Dimensions, mm

● Front mounting, front connection

EW125□-4P



For N, V type handle

Earth Leakage Circuit Breakers

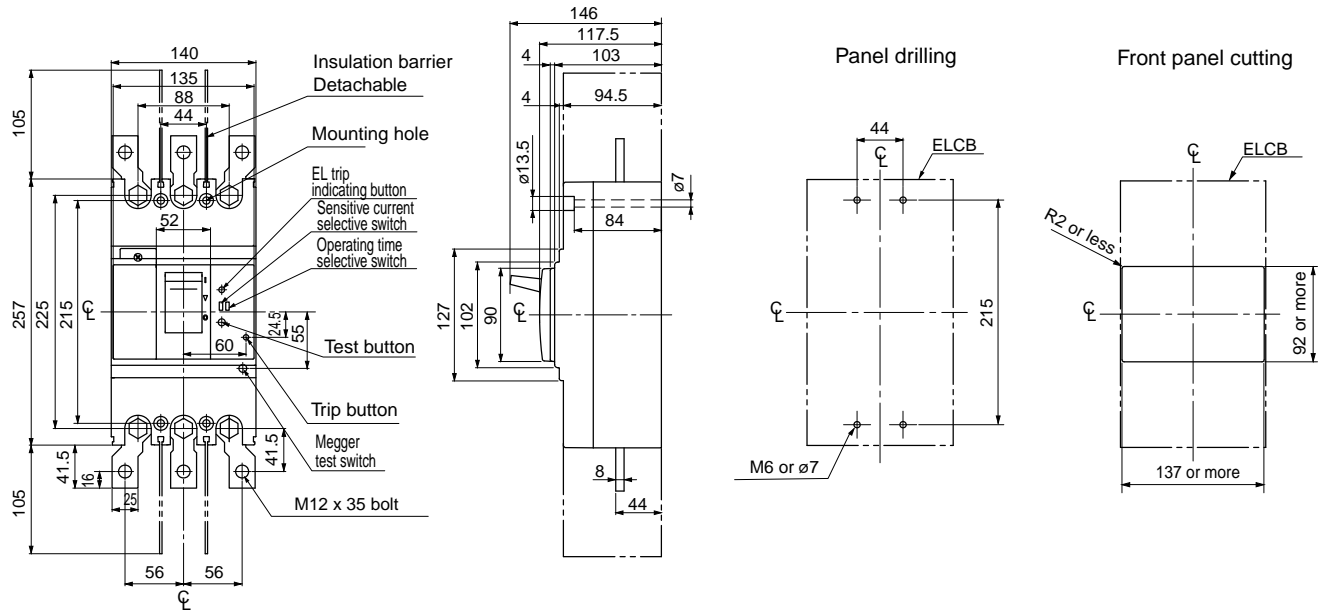
G-TWIN series

Dimensions / Standard

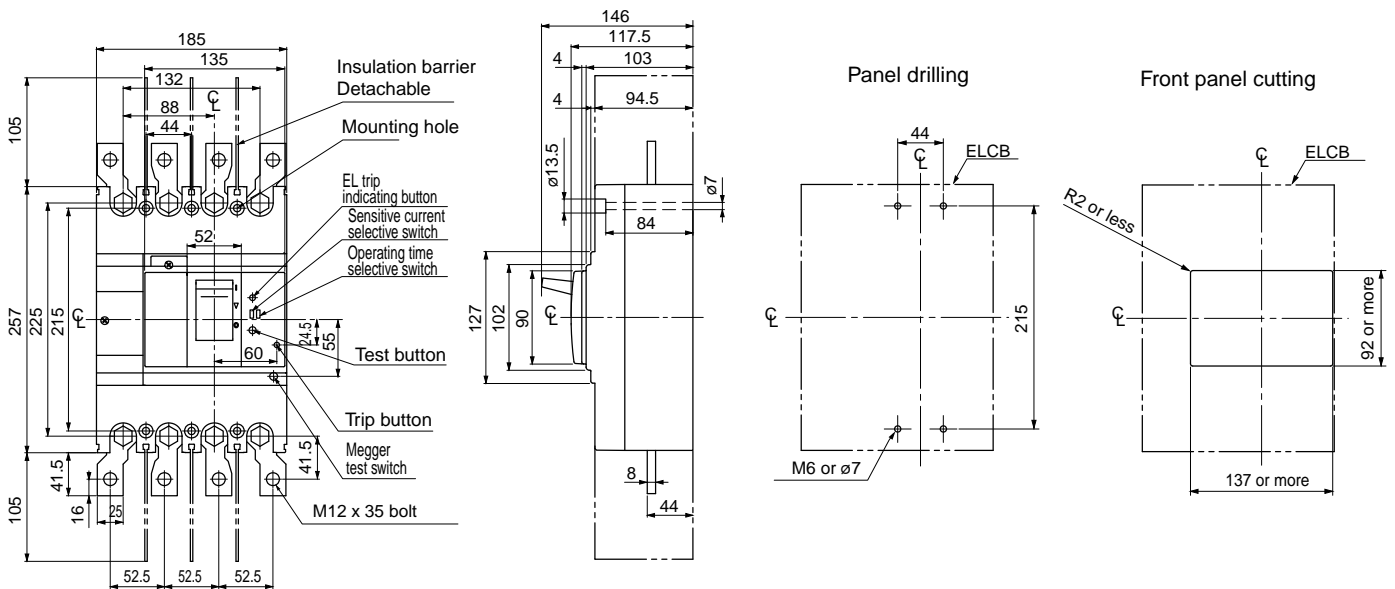
■ Dimensions, mm

- Front mounting, front connection

EW400□-3P



EW400□-4P

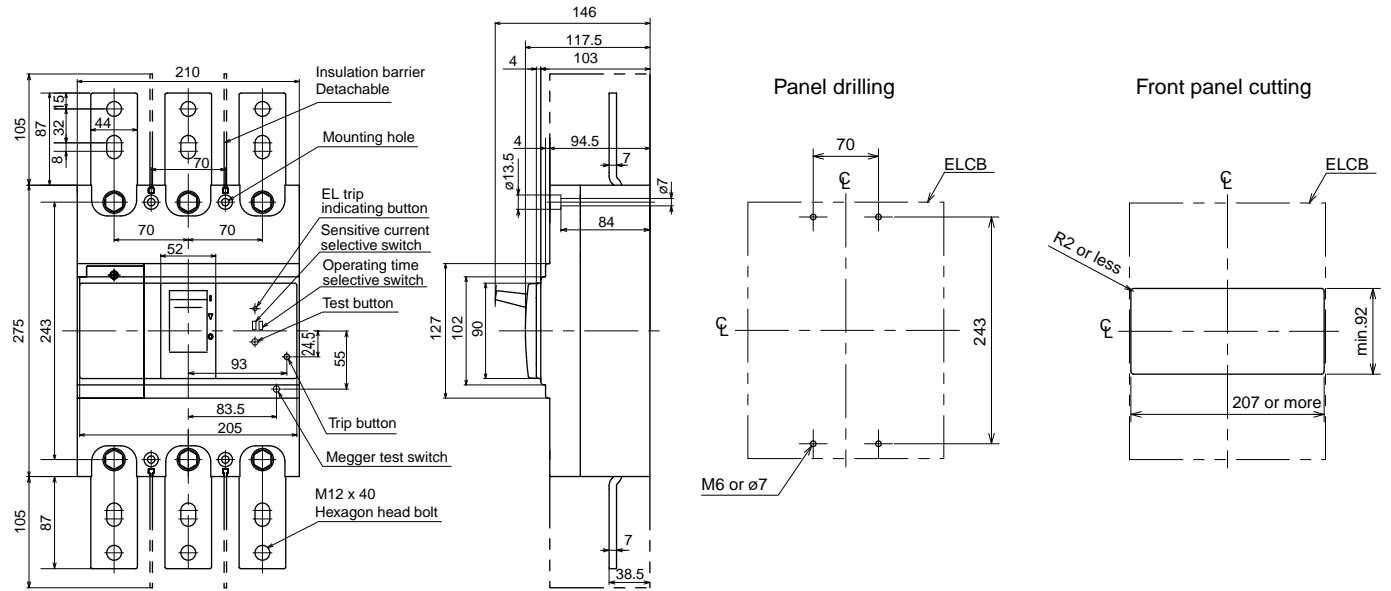


Earth Leakage Circuit Breakers G-TWIN series Dimensions / Standard

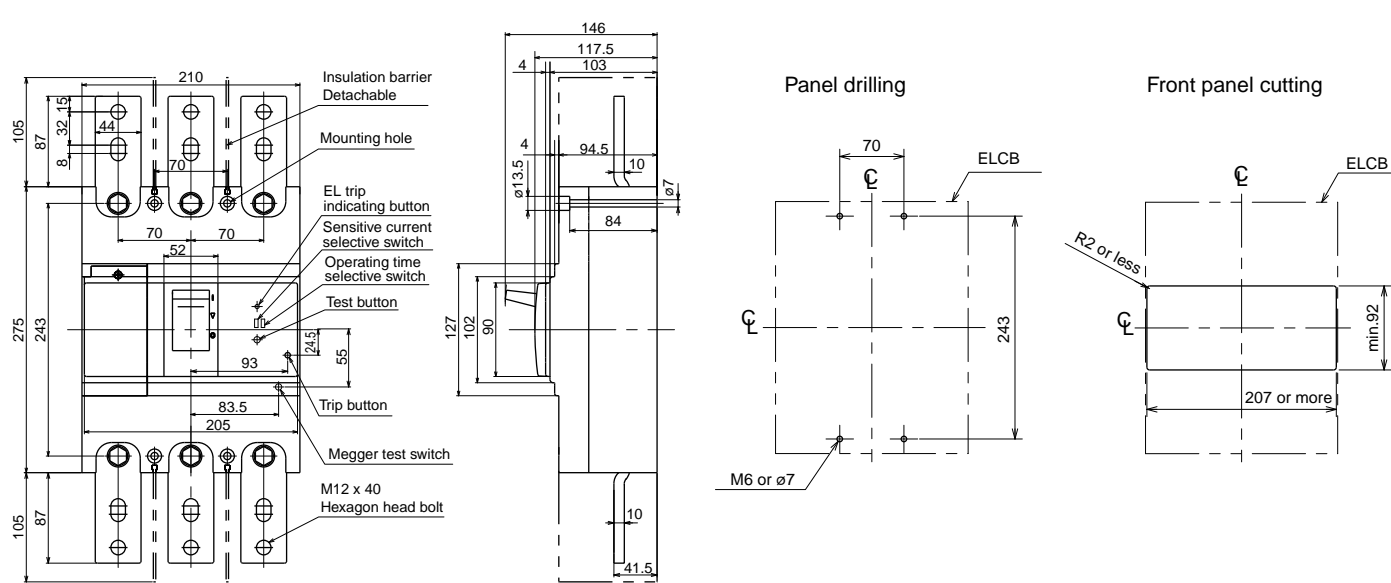
■ Dimensions, mm

● Front mounting, front connection

EW630□-3P



EW800□-3P



07

Earth Leakage Circuit Breakers

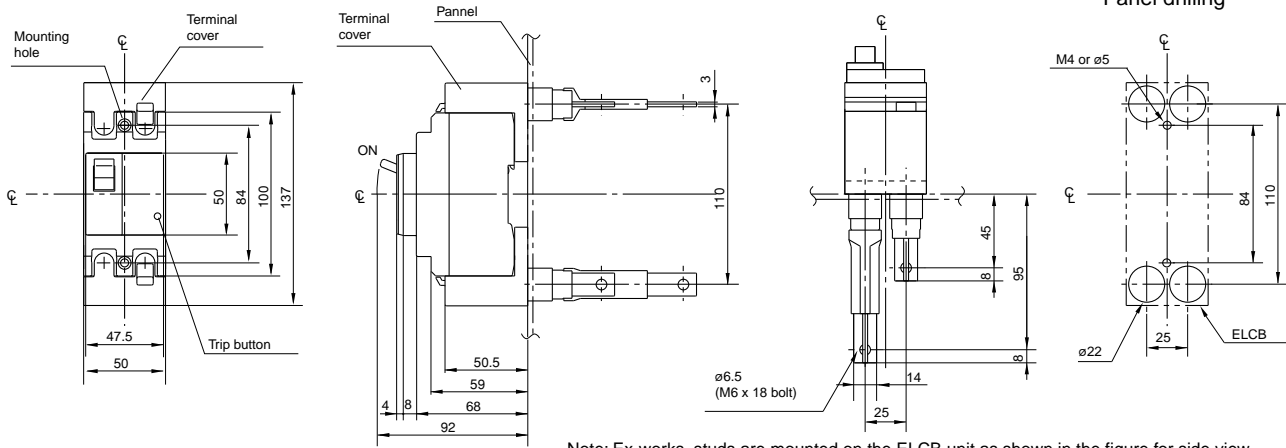
G-TWIN series

Dimensions / Standard

■ Dimensions, mm

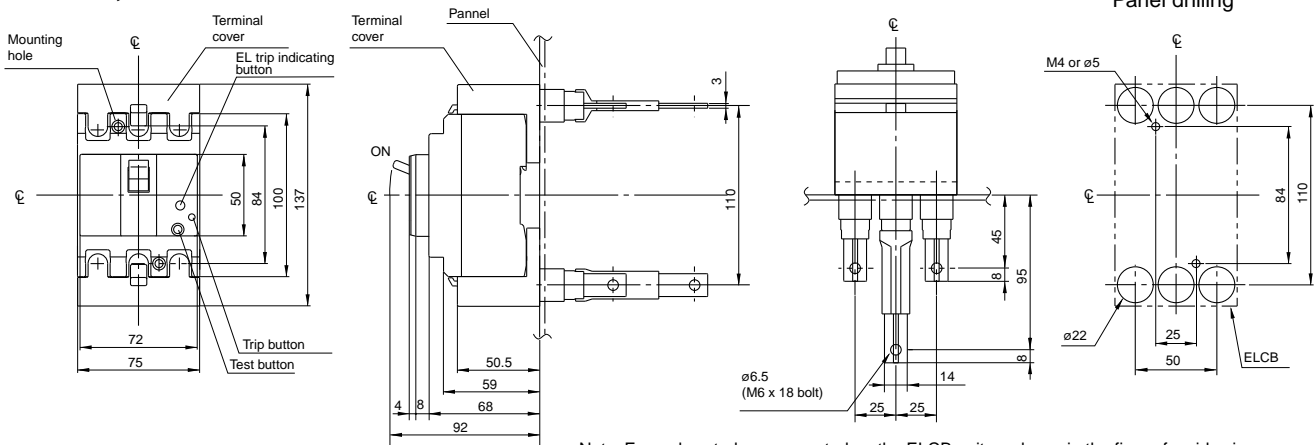
● Front mounting, rear connection (type X)

EW32□-2P, EW50□-2P



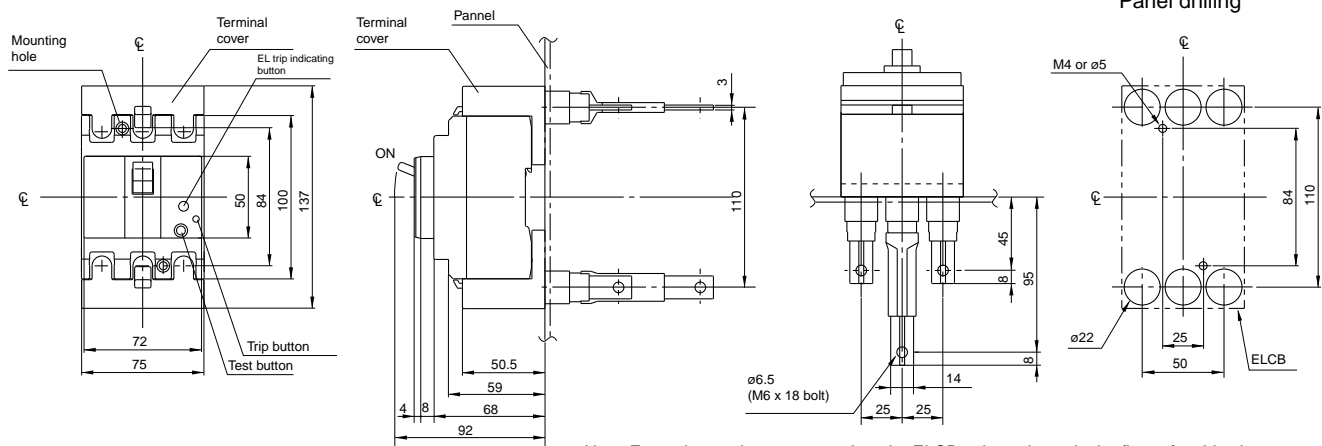
Note: Ex-works, studs are mounted on the ELCB unit as shown in the figure for side view.
 •Studs for line side terminal : Mounted horizontally.
 •Studs for load-side terminal : Mounted vertically.
 Each stud can be turned by 90°.

EW32□-3P, EW50□-3P



Note: Ex-works, 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



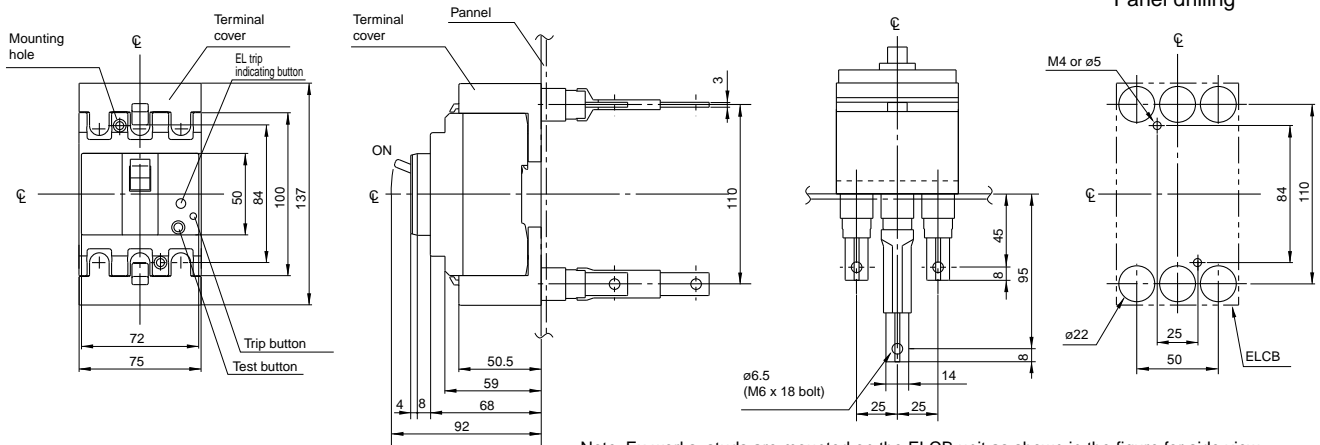
Note: Ex-works, studs are mounted on the ELCB unit as shown in the figure for side view.
 •Studs for line side terminal : Mounted horizontally.
 •Studs for load-side terminal : Mounted vertically.
 Each stud can be turned by 90°.
 2-pole breaker is supplied in 3-pole frame with current carrying parts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

Earth Leakage Circuit Breakers G-TWIN series Dimensions / Standard

■ Dimensions, mm

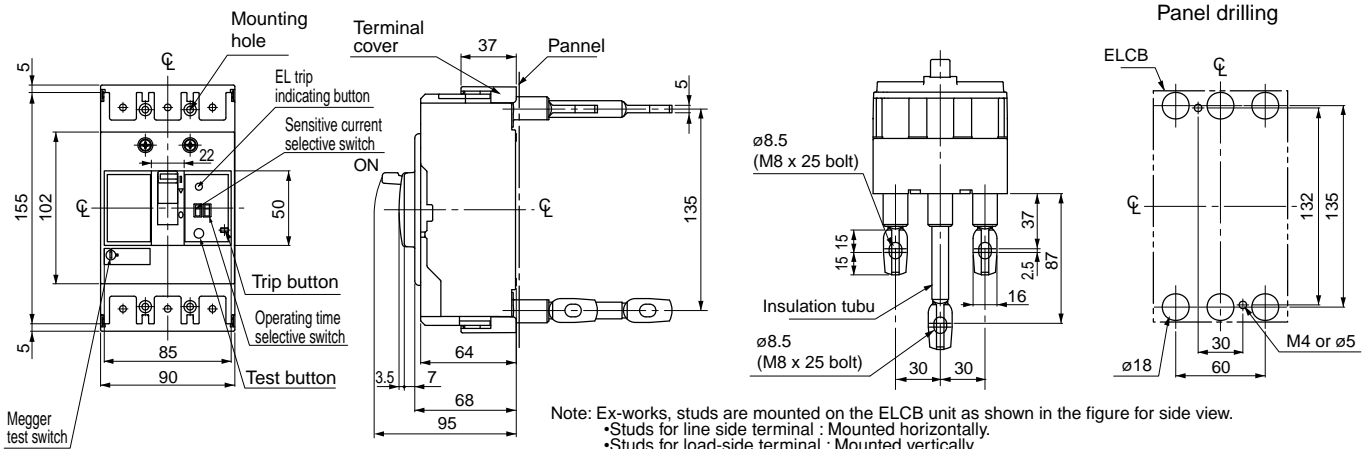
● Front mounting, rear connection (type X)

EW100□-2P,3P



Note: Ex-works, 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: Ex-works, 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°.

Earth Leakage Circuit Breakers

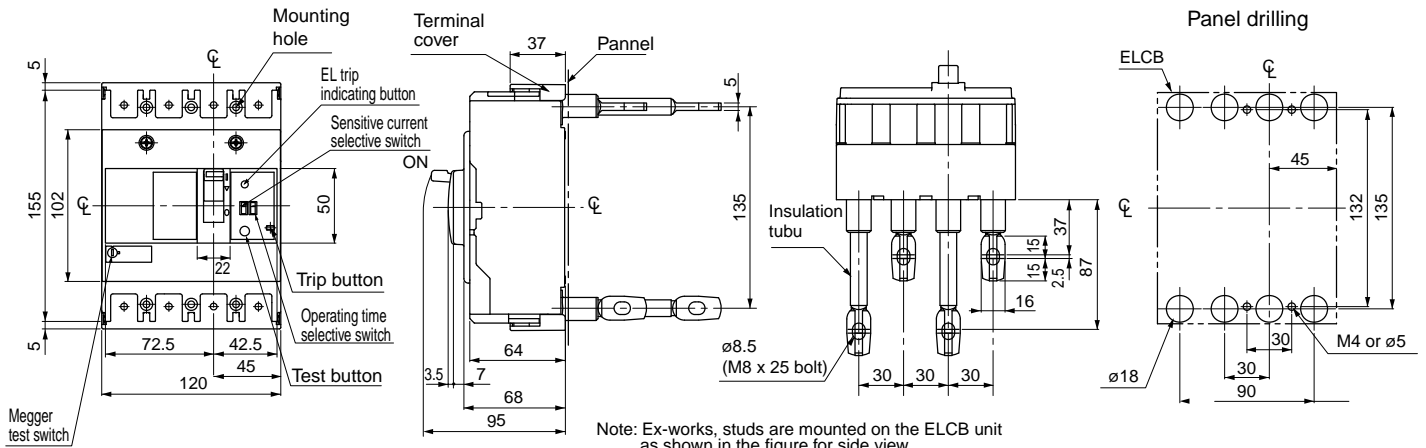
G-TWIN series

Dimensions / Standard

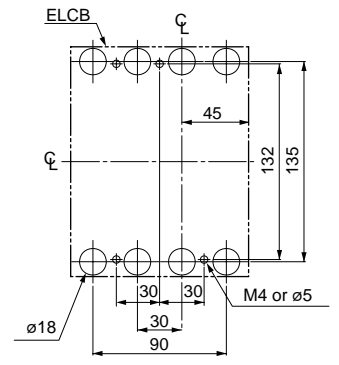
■ Dimensions, mm

● Front mounting, rear connection (type X)

EW125□-4P



Note: Ex-works, 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°.



For V, N type handle

Earth Leakage Circuit Breakers

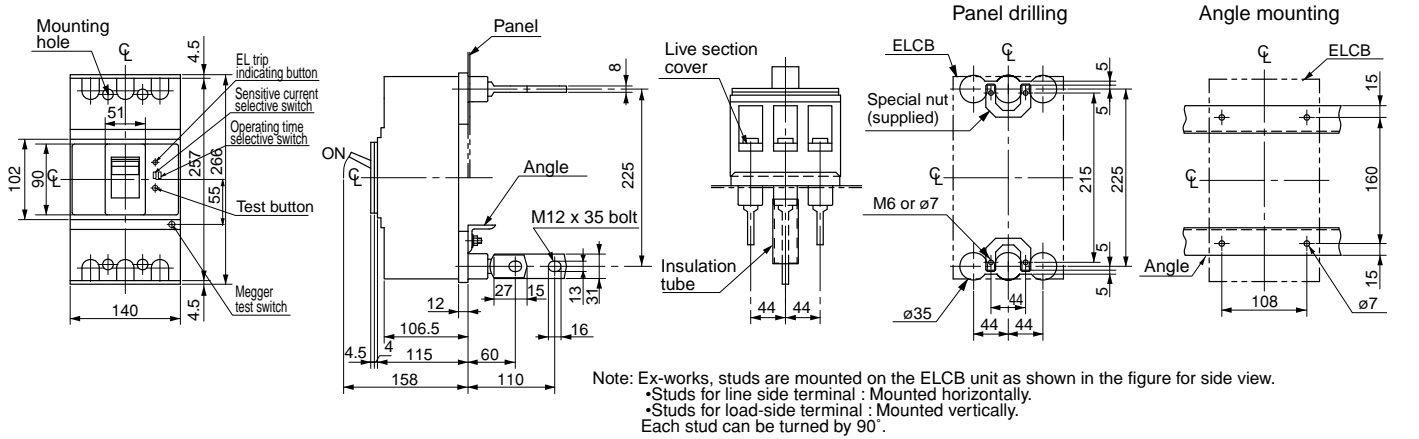
G-TWIN series

Dimensions / Standard

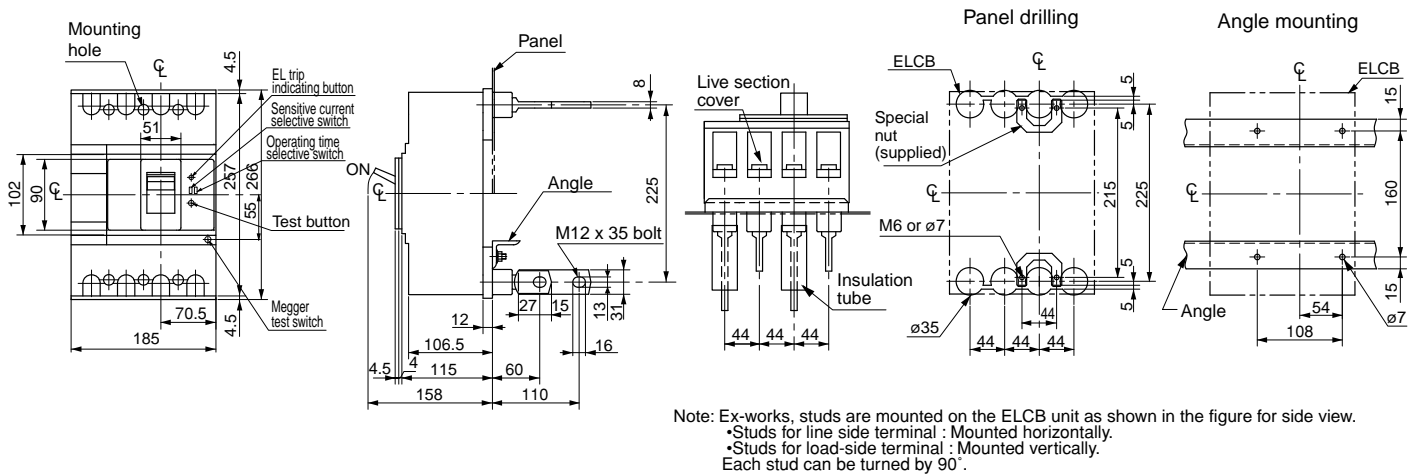
■ Dimensions, mm

● Front mounting, rear connection (type X)

EW400□-3P



EW400□-4P



Earth Leakage Circuit Breakers

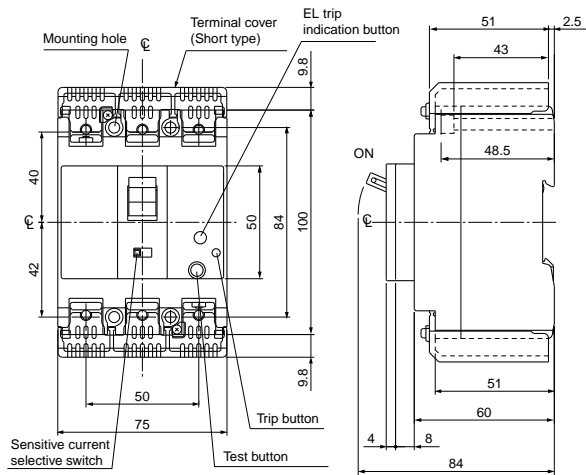
G-TWIN series

Dimensions / Global

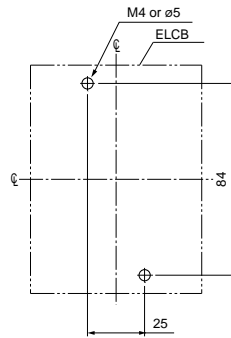
■ Dimensions, mm

- Front mounting, front connection

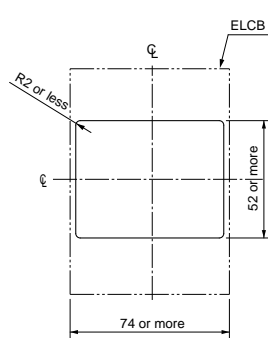
EW50RAGU-3P



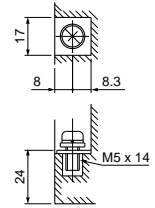
Panel drilling



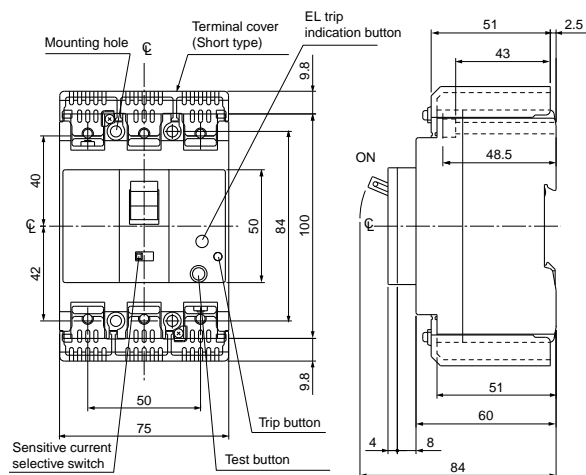
Front panel cutting



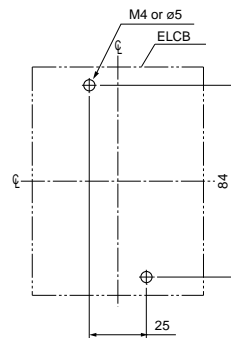
Terminal section



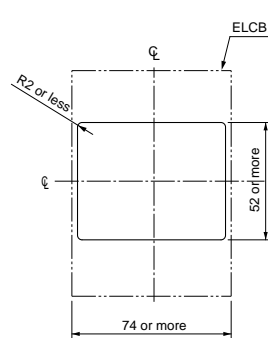
EW100EAGU-2P, -3P



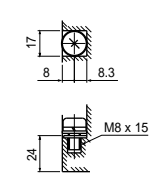
Panel drilling



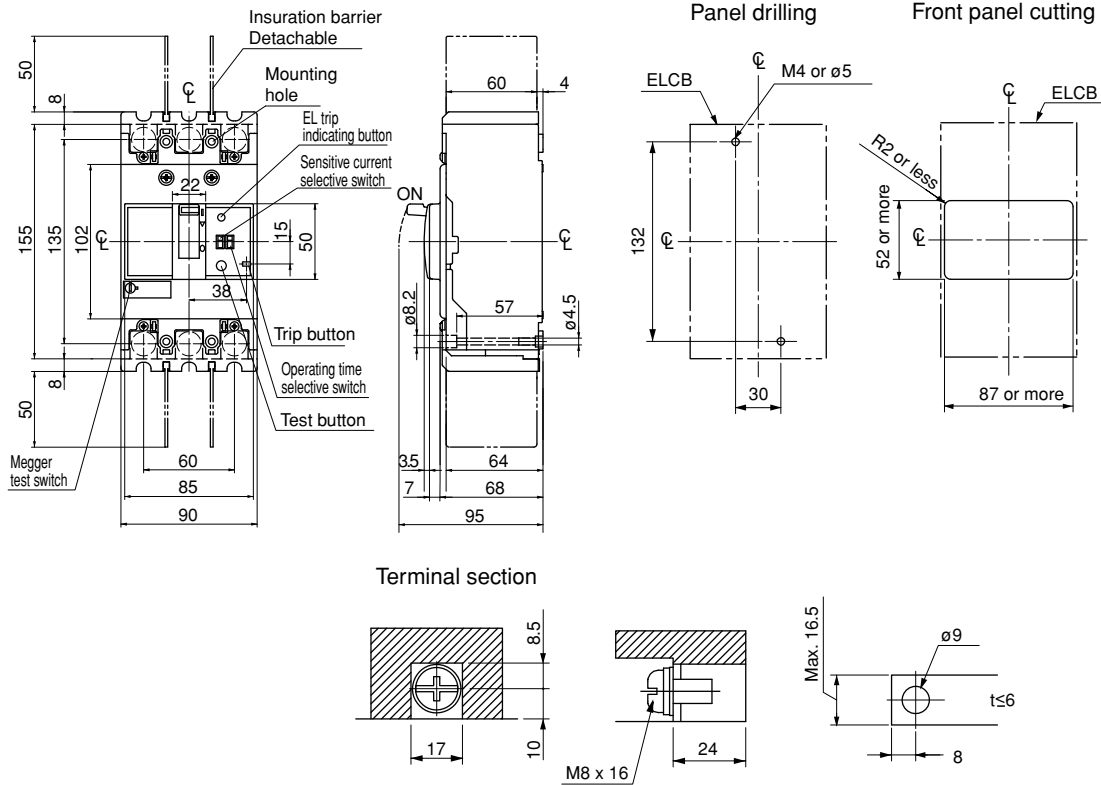
Front panel cutting



Terminal section

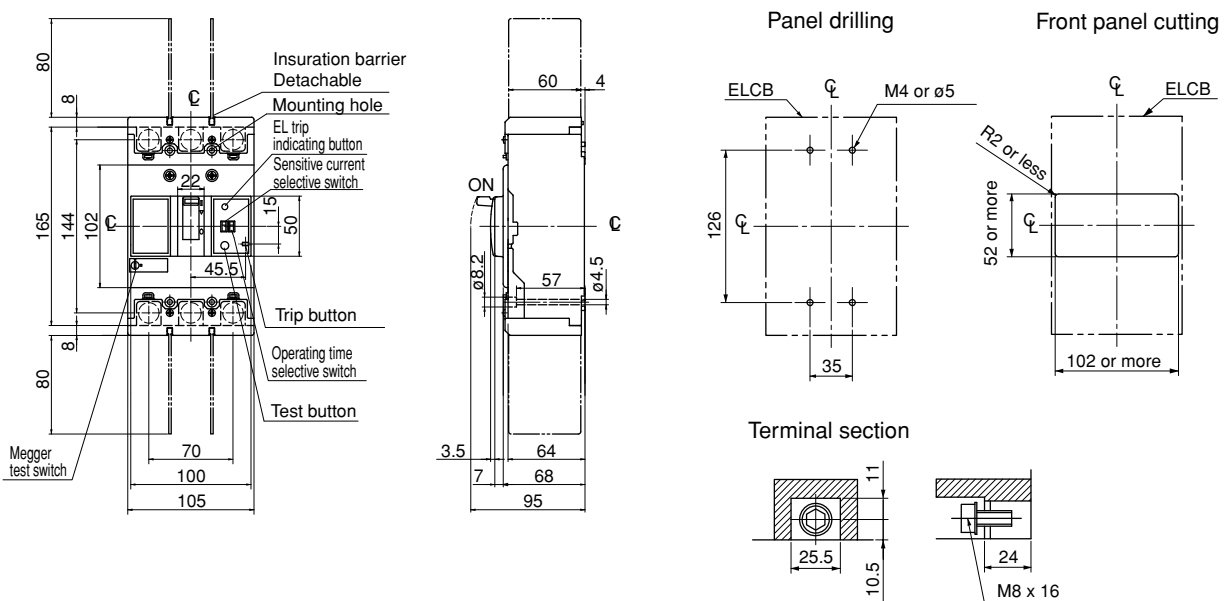


- Dimensions, mm
 - Front mounting, front connection
- EW125□U-3P**



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EW250□U-3P



Earth Leakage Circuit Breakers

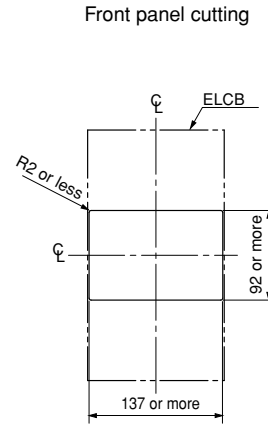
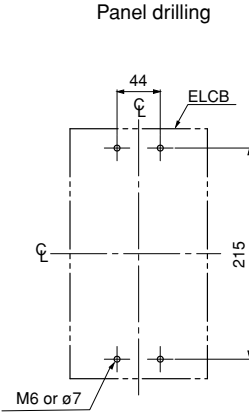
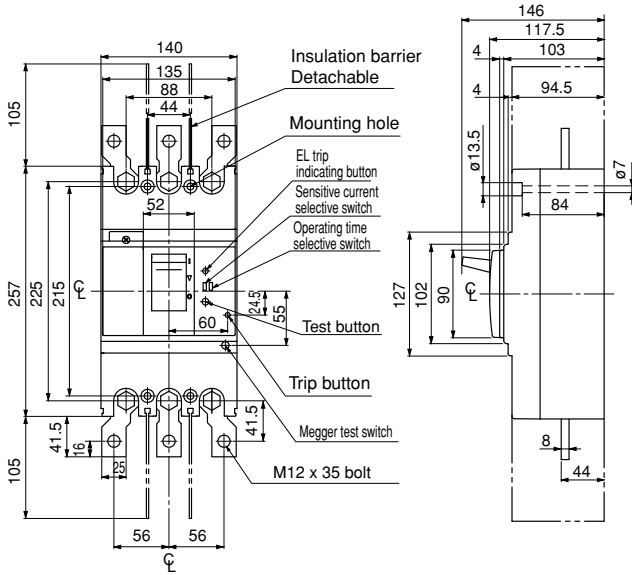
G-TWIN series

Dimensions / Global

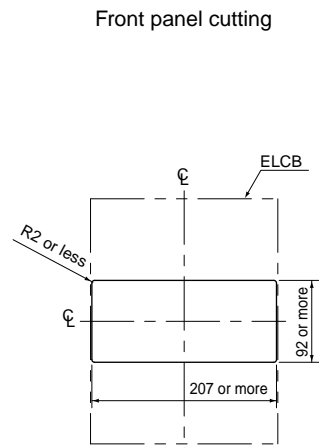
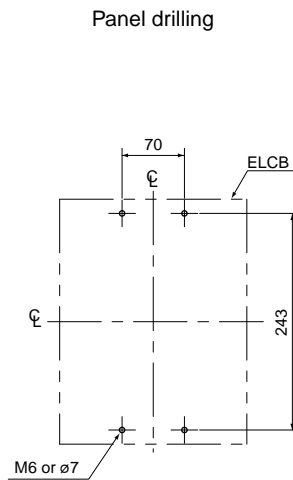
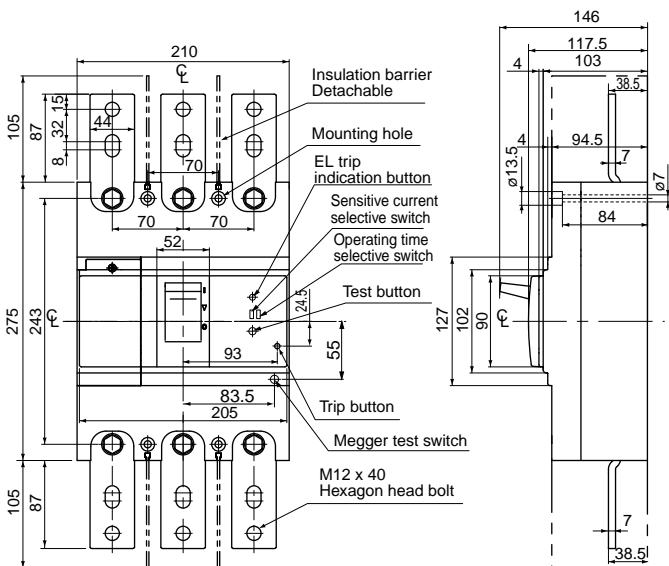
■ Dimensions, mm

● Front mounting, front connection

EW400□U-3P

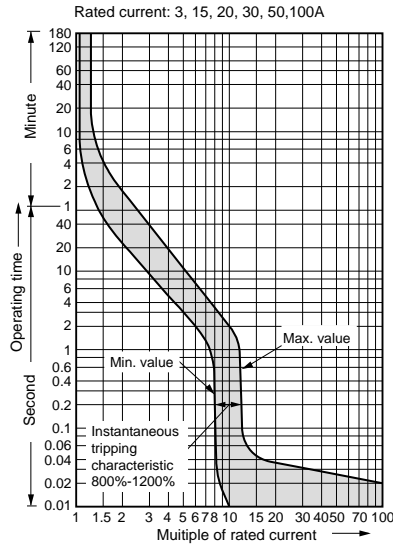
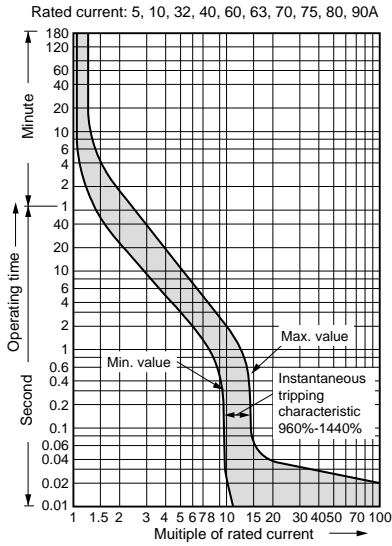


EW630□U-3P

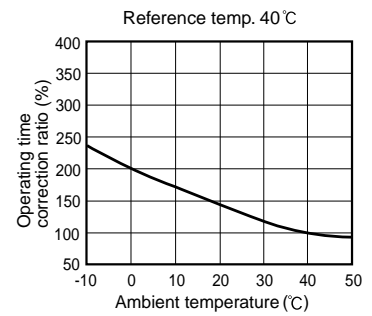


Earth Leakage Circuit Breakers G-TWIN series Characteristic curves

■ Characteristic curves / Line protection EW32/50/63/100

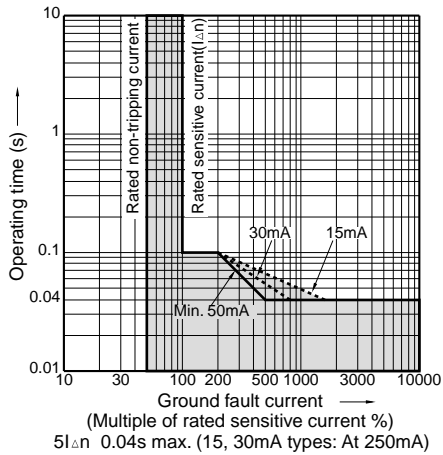


Temperature correction curve



Earth leakage tripping

EW32/50/63/100A



Earth Leakage Circuit Breakers

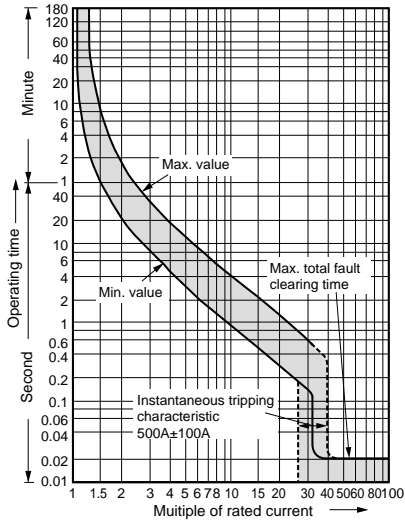
G-TWIN series

Characteristic curves

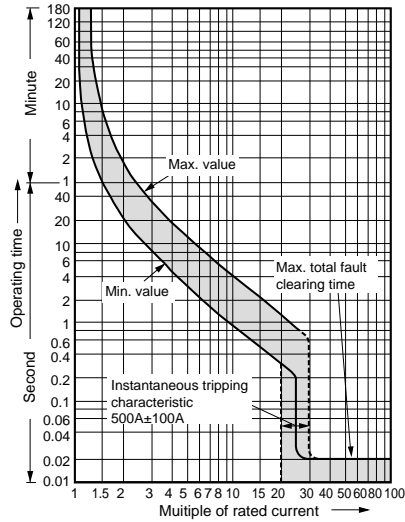
■ Characteristic curves / Line protection

EW125

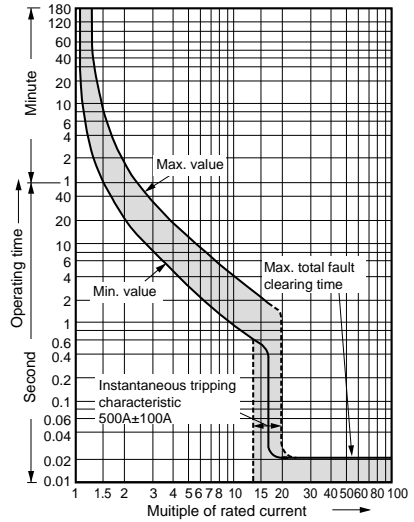
• 15A



• 20A



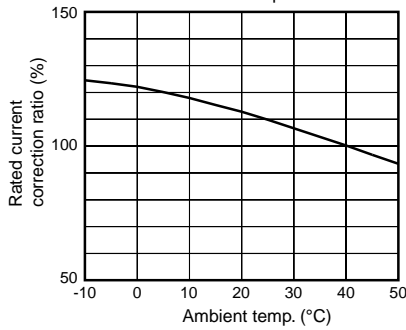
• 30A



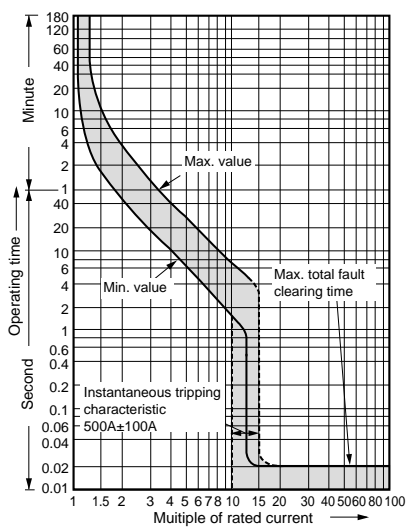
Temperature correction curve

• 15-30A

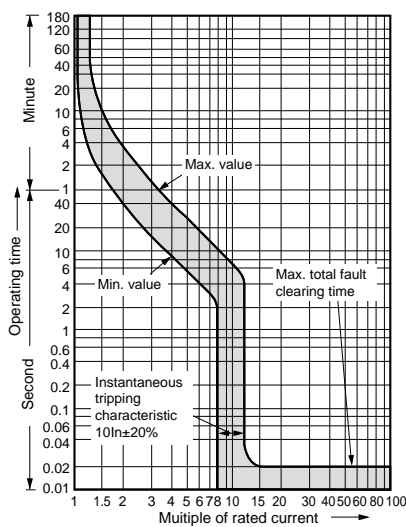
Reference temp. 40°C



• 40A



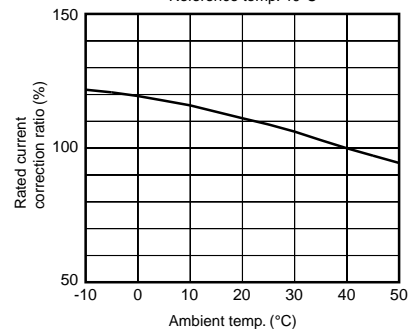
• 50-125A



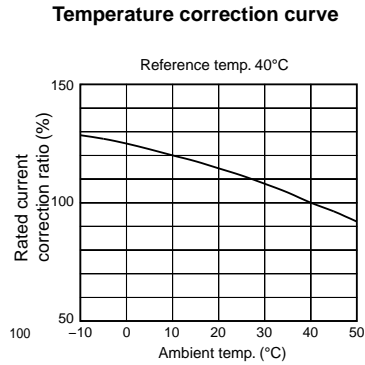
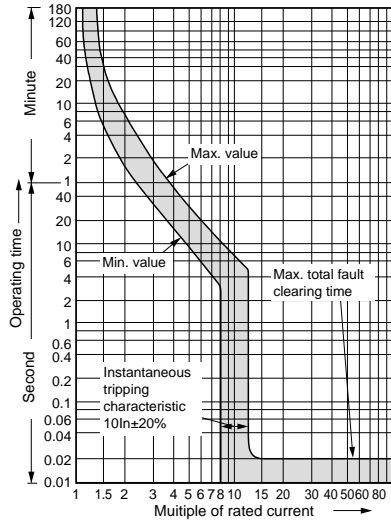
Temperature correction curve

• 40-125A

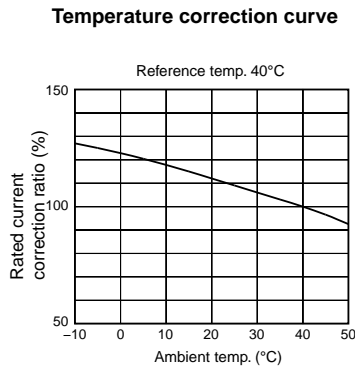
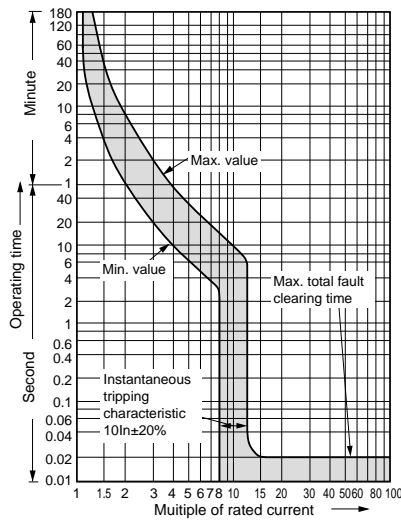
Reference temp. 40°C



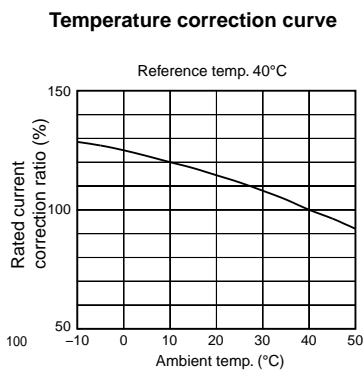
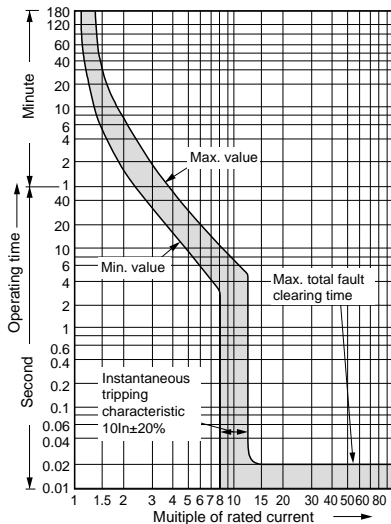
■ Characteristic curves / Line protection
EW160/250



EW400



EW630



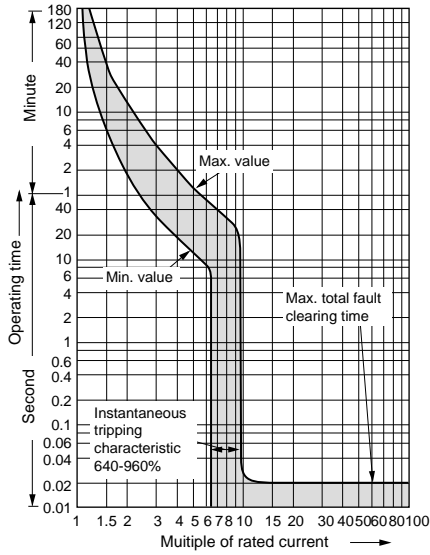
Earth Leakage Circuit Breakers

G-TWIN series

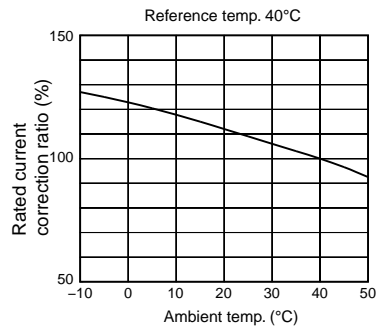
Characteristic curves

■ Characteristic curves / Line protection

EW800



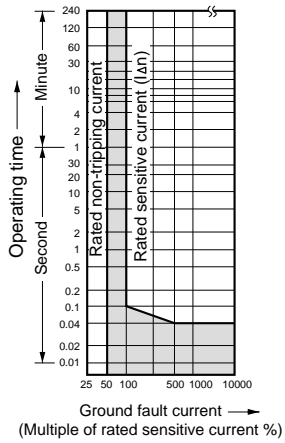
Temperature correction curve



Earth leakage tripping

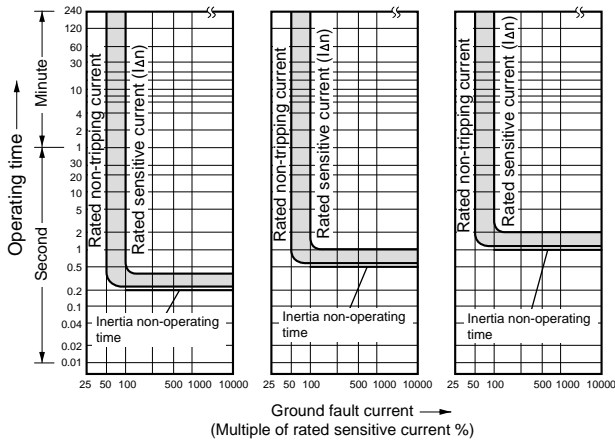
EW125/160/250/400/630/800

Instantaneous trip type



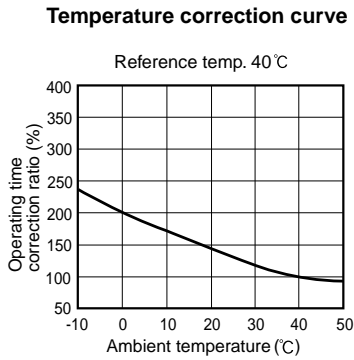
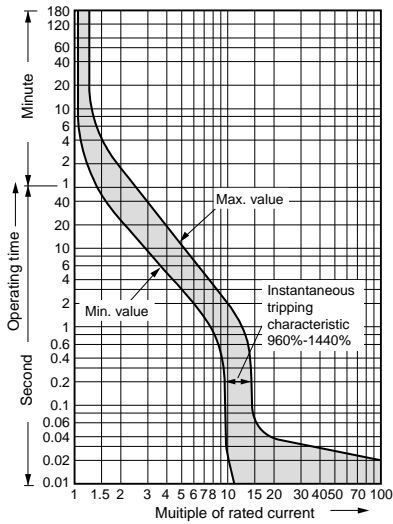
Time-delay trip type

Max. operating time: 0.4s Max. operating time: 1s Max. operating time: 2s



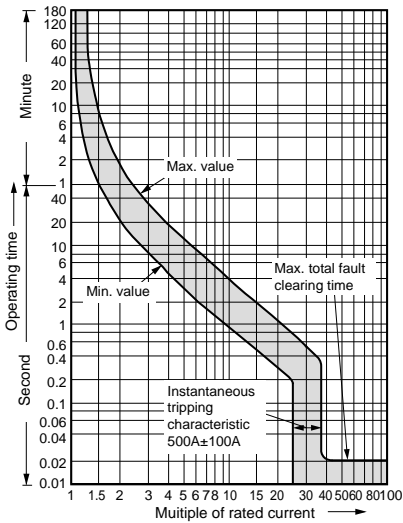
Earth Leakage Circuit Breakers G-TWIN series Characteristic curves

■ Characteristic curves / Motor protection EW32/50/63/100

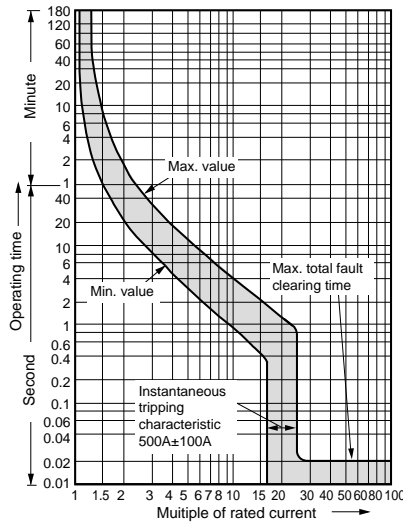


EW125

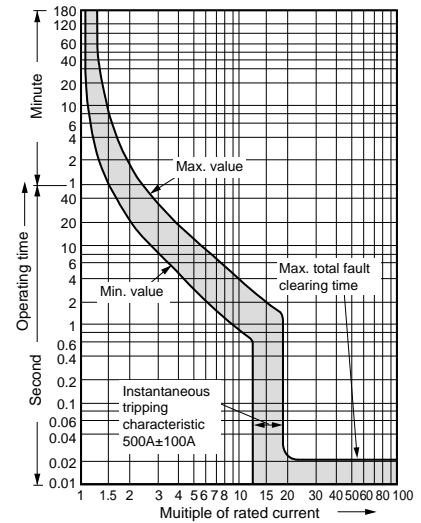
• 16A



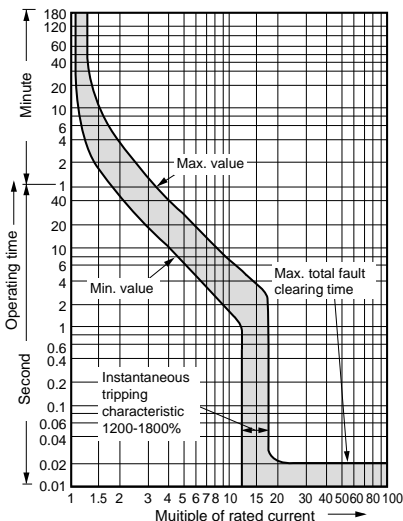
• 24A



• 32A

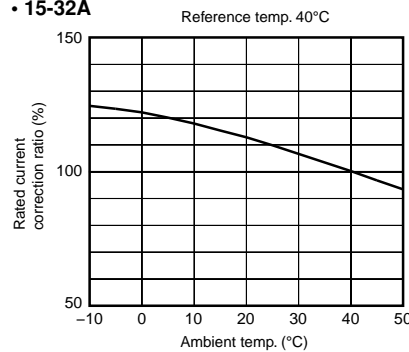


• 40-90A

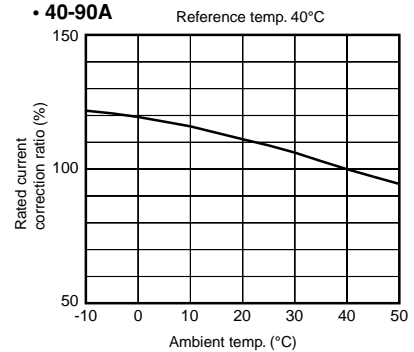


Temperature correction curve

• 15-32A



• 40-90A



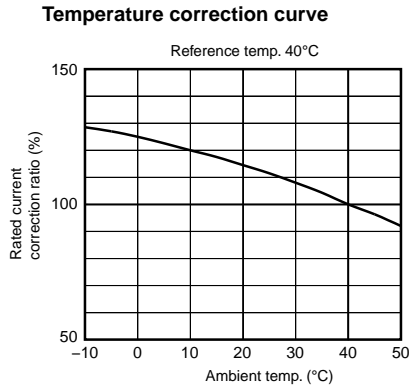
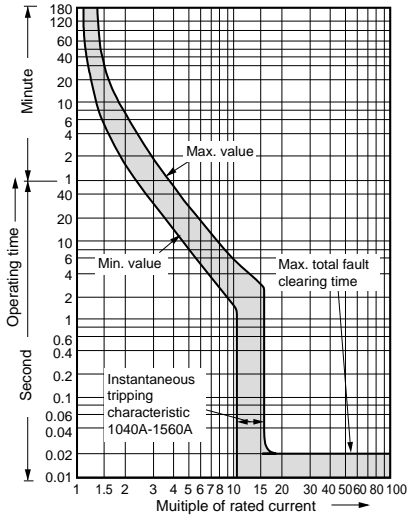
Earth Leakage Circuit Breakers

G-TWIN series

Characteristic curves

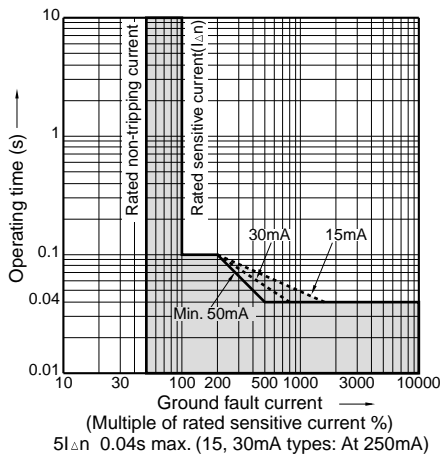
■ Characteristic curves / Motor protection

EW250

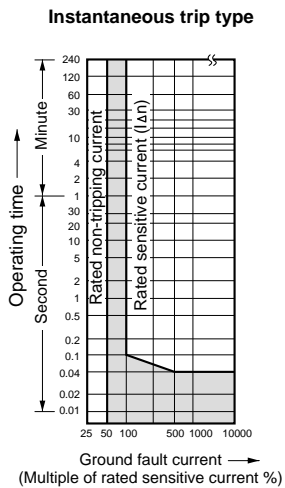


Earth leakage tripping

EW32/50/63

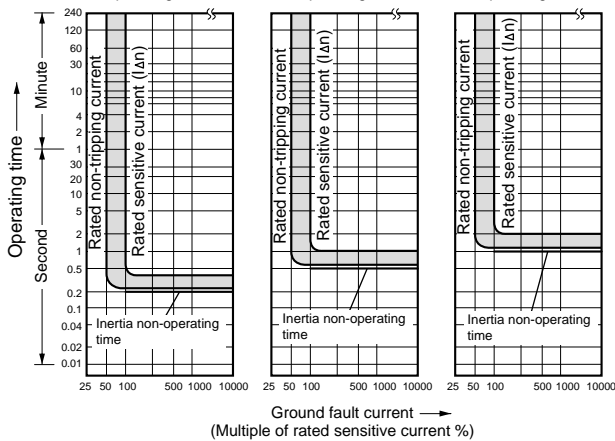


EW125/250



Time-delay trip type

Max. operating time: 0.4s Max. operating time: 1s Max. operating time: 2s



■ Variation of internal accessory
 • 32 to 100AF

Auxiliary switch (Type W)



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

Alarm switch (Type K)

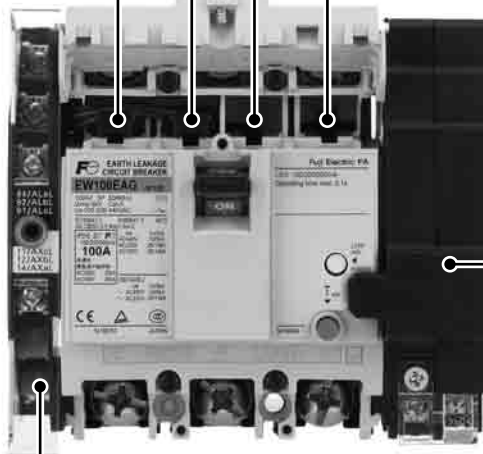


This switch can be connected to a warning lamp or buzzer to indicate when the breaker has been tripped.
 See page 07/63.

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.

Earth Leakage Circuit Breakers

G-TWIN series

Accessories

■ 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)

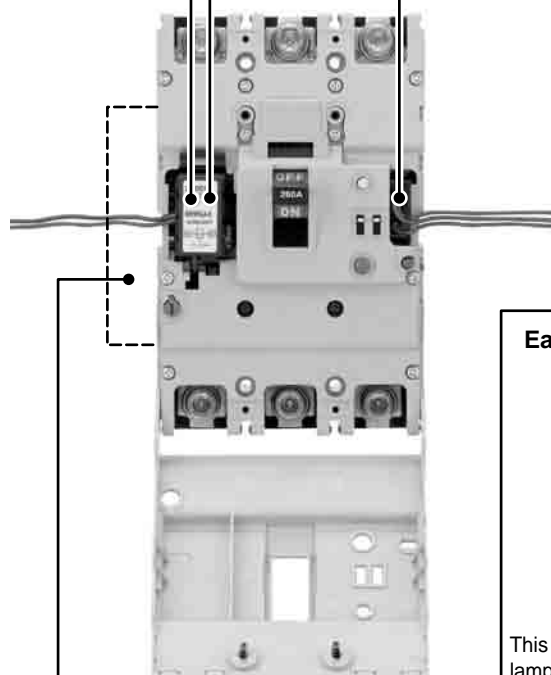


The purpose of this accessory is to trip the breaker from a distance.
See page 07/64.

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)

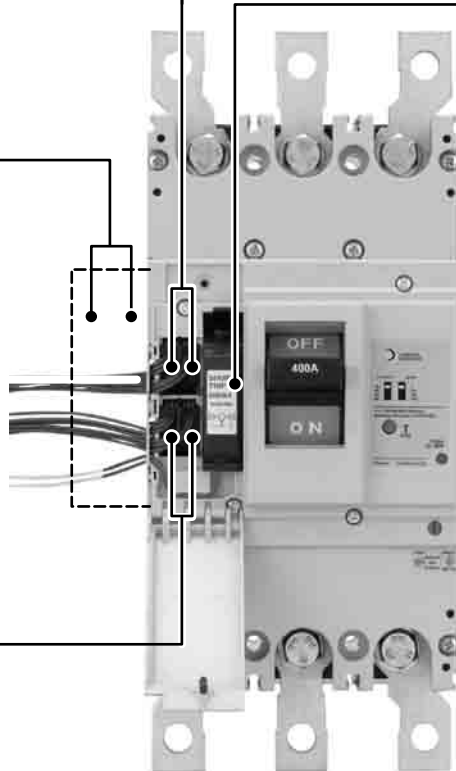


The device is designed to protect circuits from harmful voltage drops. It can also be used for remote control purposes. The trip operates when the voltage drops to less than 70% of nominal coil rating, and the breaker cannot be reset until the voltage recovers 85% of its normal rating. See page 07/65.

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)

Earth Leakage Circuit Breakers

G-TWIN series

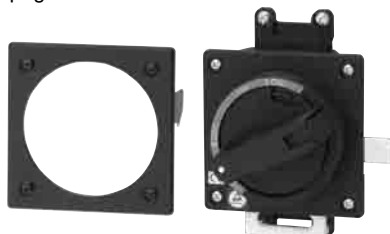
Accessories

■ Variation of external accessory

External operating handles

• N-type

See page 07/74.



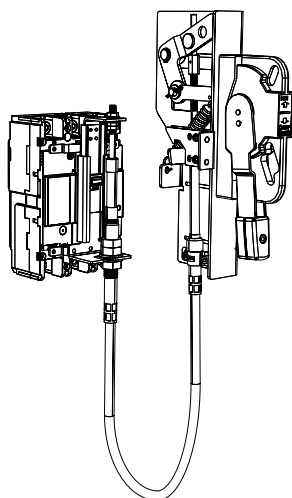
• V-type

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.

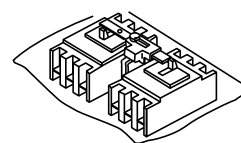
Steel enclosures

See page 07/83.



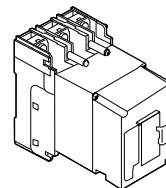
Mechanical interlock device

See page 07/70.



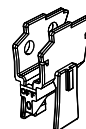
Motor-operating mechanism

See page 07/69.



Handle locking cover (L1)

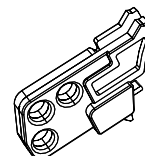
See page 07/87.



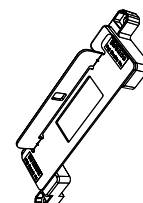
Padlocking device

See page 07/87.

• Cap type (Q1, QN)



• Plate type (Q2)



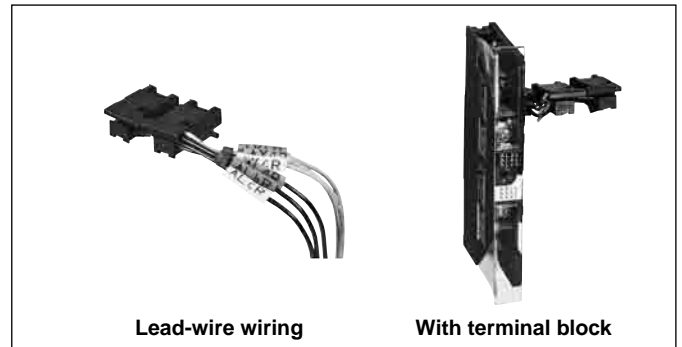
Earth Leakage Circuit Breakers

G-TWIN series

Internal accessories

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.



Terminal number of internal accessory

Accessory		32 – 250AF		400 – 800AF
		Left side mounting	Right side mounting	Left side mounting
Auxiliary switch	SPDT: W (1)*			
	2PDT: V (2)*			
Alarm switch	SPDT: K (8)*			
	2PDT: J (9)*			
Shunt trip device : F	With 1NO contact to prevent coil burn-out			—
	Continuous rating	—		
Undervoltage trip device : R				
Earth alarm switch (125 to 800AF)				

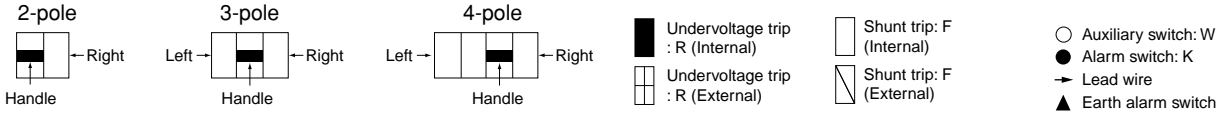
Note: * () Code of Low level circuit

Earth Leakage Circuit Breakers

G-TWIN series

Internal accessories

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
Auxiliary switch SPDT: W (1)*					
Alarm switch SPDT: K (8)*					
Shunt trip: F					
Undervoltage trip: R					
W+K (1+8)					
Auxiliary 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)					
K+F (8+F)					
K+R (8+R)					
W+K+F (1+8+F)					
W+K+R (1+8+R)					
V+F (2+F)					
V+R (2+R)					
J+F (9+F)					
J+R (9+R)					
V+K+F (2+8+F)					
V+K+R (2+8+R)					
W+J+F (1+9+F)					
W+J+R (1+9+R)					
V+J+F (2+9+F)					
V+J+R (2+9+R)					
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
Auxiliary switch	Trip	
	SPDT: W (1)	
	2PDT: V (2)	
Alarm switch	Trip	
	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			
Standard type	125 AC	5	–	125 AC	5	5V DC 160mA 30V DC 30mA
	250 AC	5	–	250 AC	3	
	–	–	–	30 DC	4	
	125 DC	–	0.6	125 DC	0.4	
Low level circuit	250 DC	–	0.3	250 DC	0.2	5V DC 1mA
	–	–	–	30 DC	0.1	

• 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 30V DC 30mA
		48	5	5	48	2.5	1	
		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

Earth Leakage Circuit Breakers

G-TWIN series

Internal accessories

■ Rating of shunt trip (F)

ELCB type	Installation	AC		DC		Code	Time rating of coil	Opening 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	FDC24V		
		–	–	100-110	23	FDC100-110V		
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.

Earth Leakage Circuit Breakers

G-TWIN series

Internal accessories

■ Type number

Internal accessories (Sold separately)

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

Accessory	Type				Operating voltage					
	Lead wire system		Terminal block system							
	Left side	Right side	Left side	Right side						
Auxiliary switch	BZ6WL10C	BZ6WR10C	BZ6WL10CA	BZ6WR10CA	/					
Auxiliary switch (low 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	/					BZ6F210C	100V AC 50Hz/100-110V AC 60Hz			
					BZ6F110C	110V AC 50Hz/100-127V AC 60Hz				
					BZ6F710C	200V AC 50Hz/200-220V AC 60Hz				
					BZ6F410C	220V AC 50Hz/220-240V AC 60Hz				
					BZ6F510C	230V AC 50Hz/230-240V AC 60Hz				
					BZ6FB10C	240V AC 50Hz				
					BZ6F010C	380V AC 50Hz 380-415V AC 60Hz				
					BZ6F810C	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								

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

Accessory	Type				Operating voltage
	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	BZ6WKL10CAU	BZ6WKR10CAU	
Auxiliary switch + Alarm switch (low level circuit)	BZ6WDKDL10CU	BZ6WDKDR10CU	BZ6WDKDL10CAU	BZ6WDKDR10CAU	
Shunt trip device	-	-	-	BZ6F210CAU	
	-	-	-	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

07

Earth leakage Circuit Breakers

G-TWIN series

Internal accessories

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

Accessory	Type				Operating voltage
	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 devices	BW9RGAR	-	BW9RGAR-A	
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 voltage
	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 devices	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	0.1s	15s per on-off operation	500VA	1.2
	100/110V AC 200/220V AC				1.3

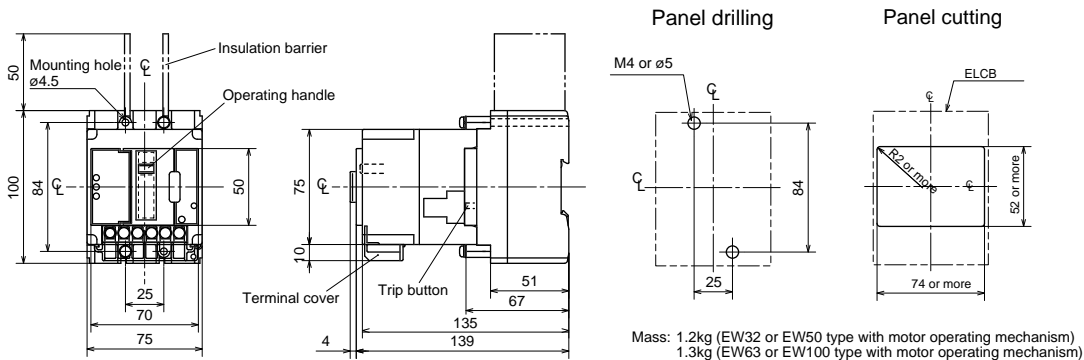
■ **Ordering information**

Specify the following:

1. Type number
2. Motor operating voltage

■ **Dimensions, mm / Front mounting, front connection**

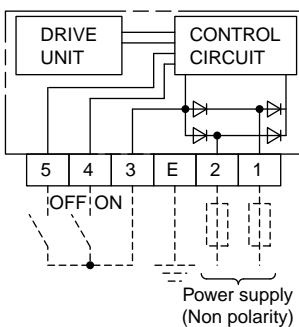
EW32□-3P, EW50□-3P, EW63□-3P, EW100□-2P, EW100□-3P



- 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



Earth leakage Circuit Breakers

G-TWIN series

External accessories

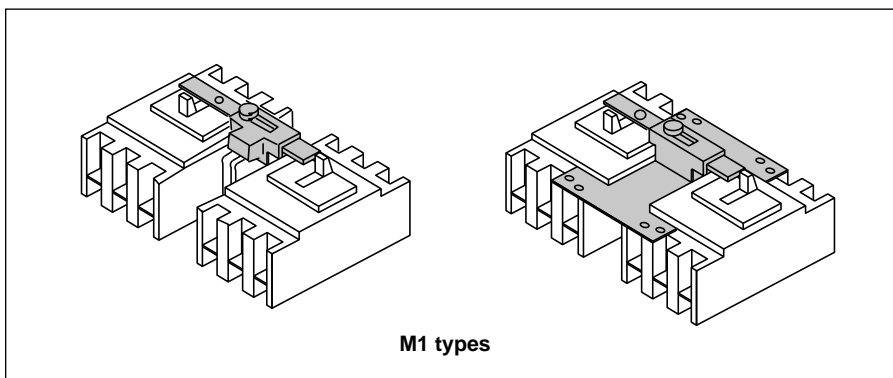
Mechanical interlocking devices

■ Description

These interlocking devices are mounted on the two separate breakers to prevent them from both being closed at the same time. A sliding mechanism that can be locked with a padlock is used. (The padlock is not included.)

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.

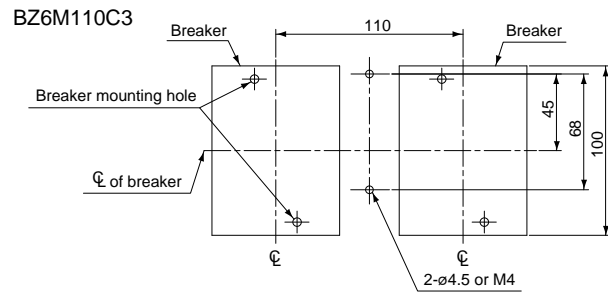
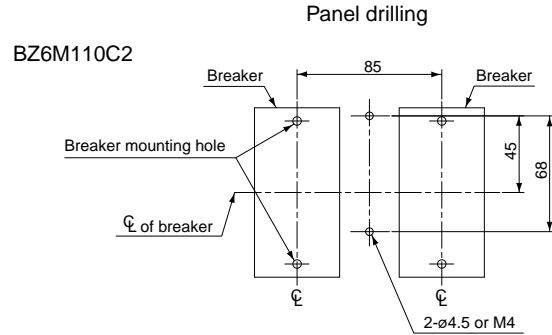
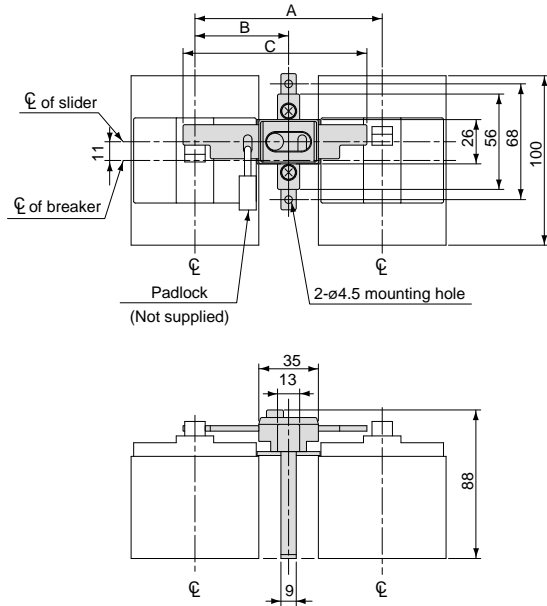


■ Type and applicable breakers

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

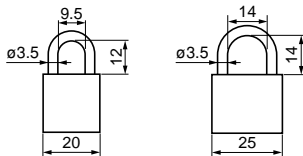
Earth leakage Circuit Breakers G-TWIN series External accessories

■ Dimensions, mm
• 32AF to 100AF



Type	Dimensions, mm			Mass (kg)
	A	B	C	
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.

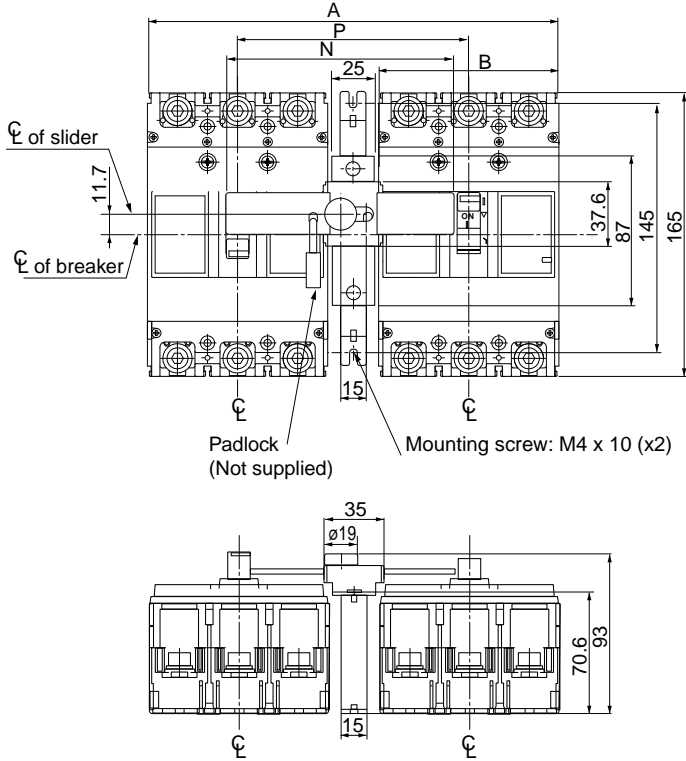


Earth leakage Circuit Breakers

G-TWIN series

External accessories

■ Dimensions, mm
• 125AF to 250AF



Panel drilling

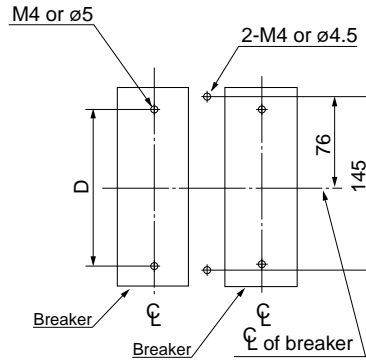


Fig.1

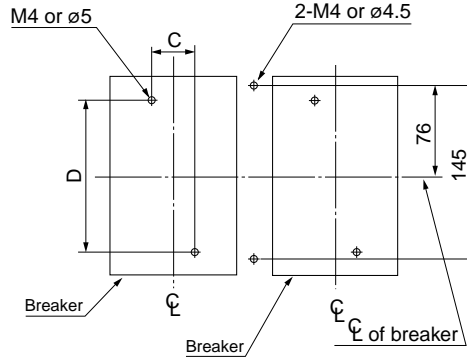


Fig.2

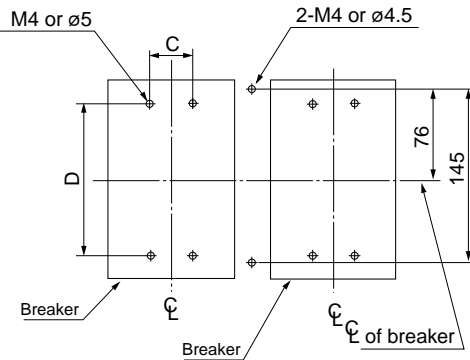


Fig.3

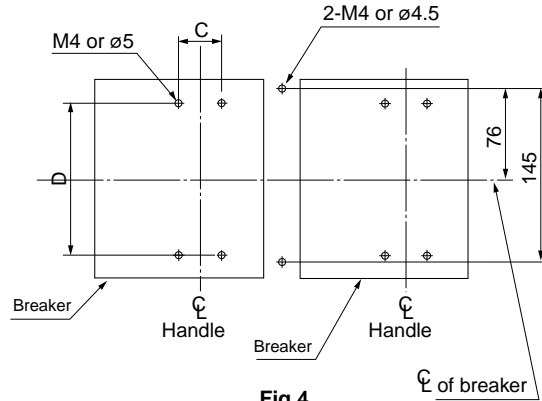
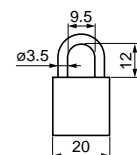


Fig.4

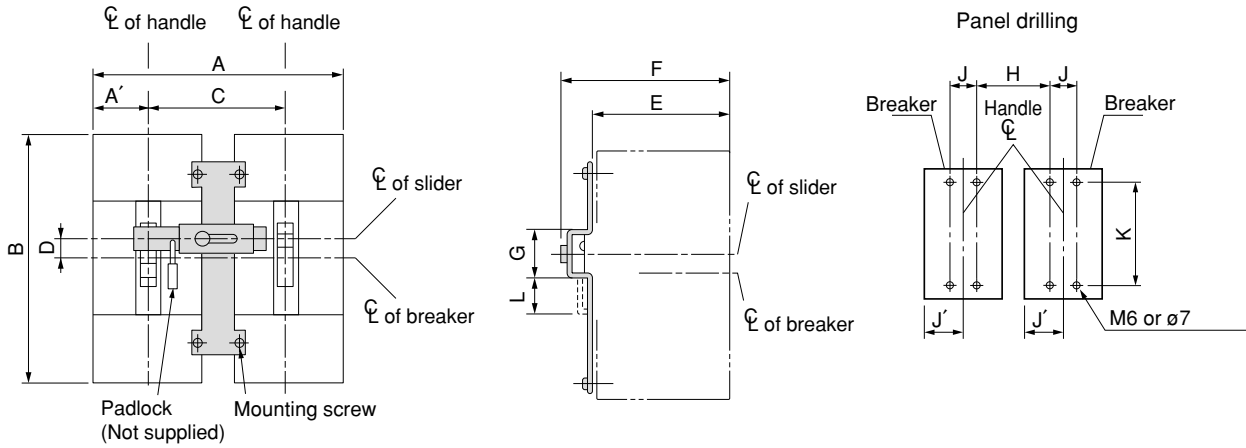
Type	Dimensions, mm						Panel Drilling	Mass(Kg)
	P	N	A	B	C	D		
BW9M1CA-2	90	88	150	60	-	132	Fig.1	
BW9M1CA-3	120	118	210	90	30	132	Fig.2	
BW9M1CA-4	150	148	270	102	30	132	Fig.4	
BW9M1GA-3	135	133	240	105	35	126	Fig.3	
BW9M1GA-4	170	168	310	140	35	126	Fig.4	

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.



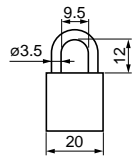
Earth leakage Circuit Breakers G-TWIN series External accessories

■ 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.



Earth leakage Circuit Breakers

G-TWIN series

External accessories

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

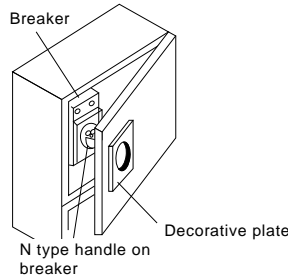
The V type handle may be fitted to breakers of up to 800AF. A separately sold extension shaft provides distance adjustment between the handle and breaker. Conformed to EN60947-1 isolation function. Available for EN60204-1 power breaking device. Conformed to UL489 (File No.E93289)

F type handle

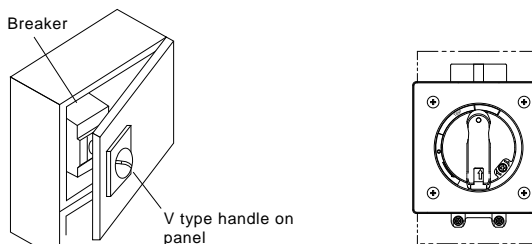
The F type handle may be fitted to breakers of 125 to 400AF. It is a flange type handle, which is commonly used in the North American market. The drive section of the breaker and the external operating handle are connected with an optional cable. Positioning between the breaker and the external operating handle is not required. Conformed to UL489 (File No.E93289)



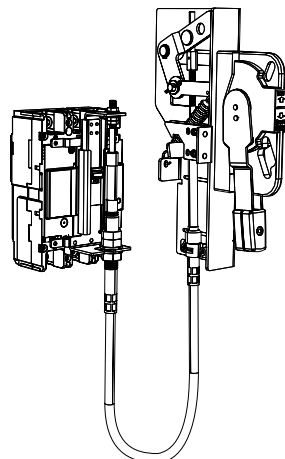
N type handles



V type handles



F type handles



N type handles

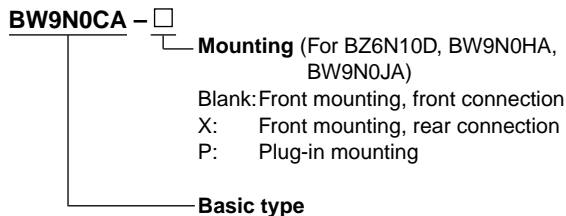
ELCB	N type handle
EW32	BZ6N10D
EW50	
EW63	
EW100	
EW125	BW9N0CA
EW160	BW9N0GA
EW250	
EW400	BW9N0HA
EW630	BW9N0JA
EW800	

V type handles

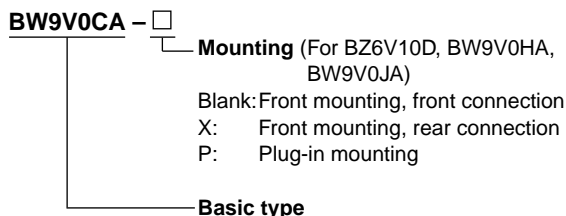
ELCB	V type handle
EW32	BZ6V10D
EW50	
EW63	
EW100	
EW125	BW9V0CA
EW160	BW9V0GA
EW250	
EW400	BW9V0HA
EW630	BW9V0JA
EW800	

■ **Type number nomenclature**

• **N type handle**



• **V type handle**

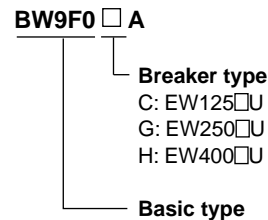


Note:
To order a V handle for front-mounting rear connection breakers, add "-X" to the type number; for plug-in mounting breakers, add "-P" to the type number.

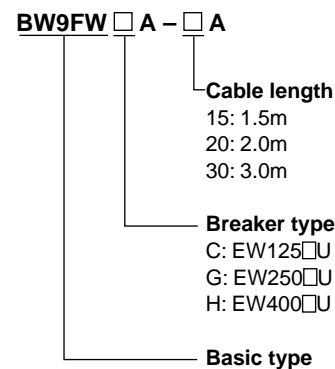
F type handles

ELCB	F type handle
EW125	BW9F0CA
EW250	BW9F0GA
EW400	BW9F0HA

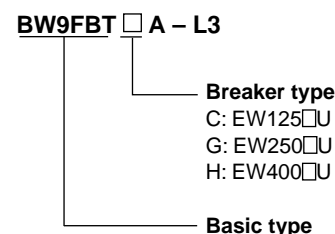
• **F type handle**



Cable (For F type)



Terminal cover (For F type)



Earth leakage Circuit Breakers

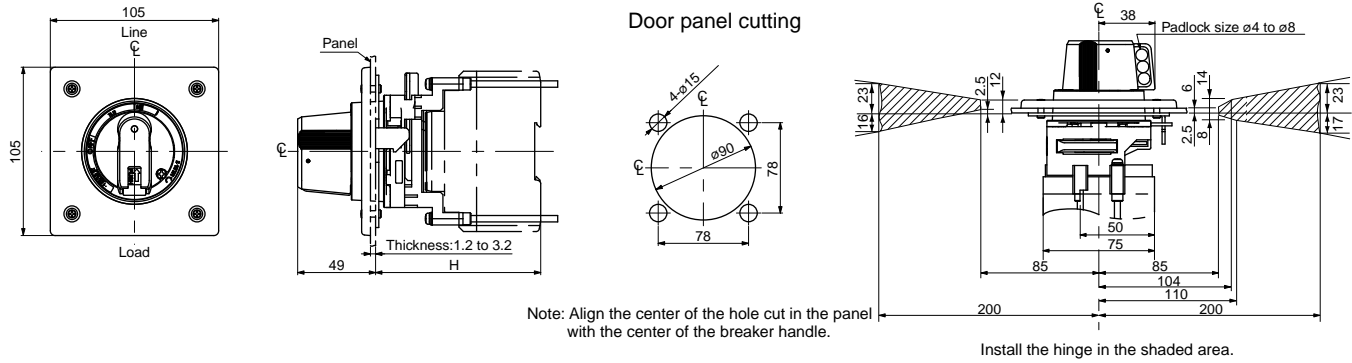
G-TWIN series

External accessories

■ Dimensions, mm

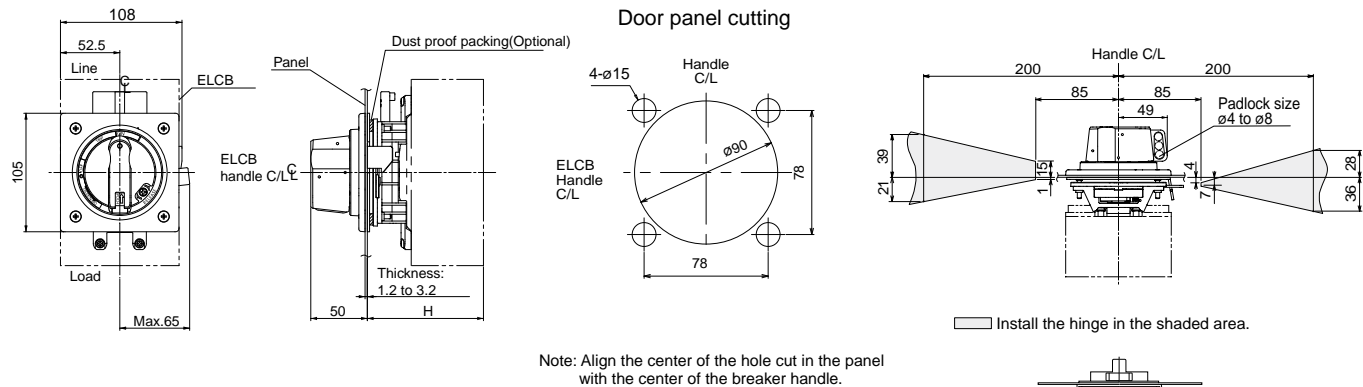
N type handle

• BZ6N10D




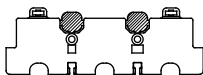
ELCB	Handle type	Dust proof packing	Mounting screw	H (mm)	Mass (kg)
EW32	BZ6N10D	Provided	M4 x 85	103±2	0.47
EW50	BZ6N10D-X	Provided	Contact FUJI.	111±2	
EW63	BZ6N10D-P			111±2	
EW100					

• BW9N0CA, BW9N0GA



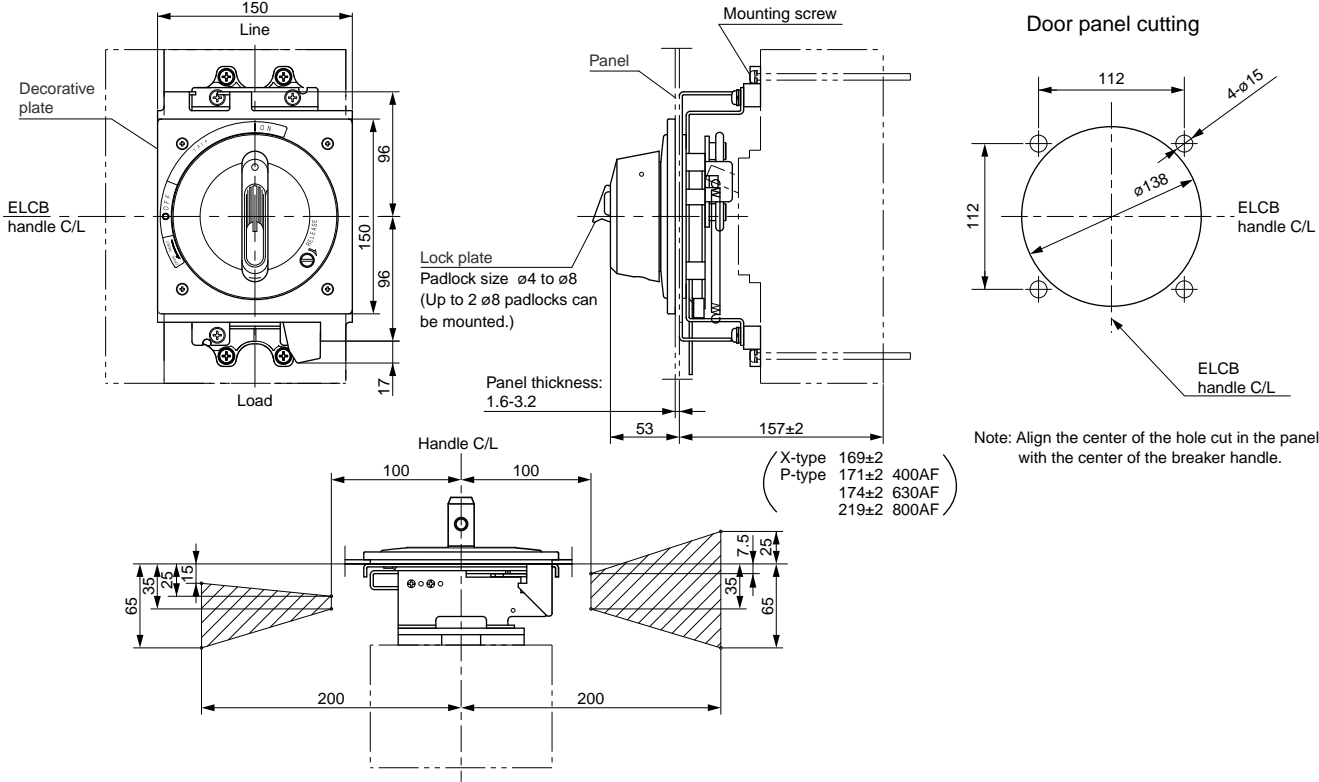
ELCB	Handle type	Dust proof packing	Mounting screw	H (mm)	Mass (kg)
EW125	BW9N0CA	BZ-NP-1C	M4 x 85	103±2	0.56
EW160	BW9N0GA *1	BZ-NP-1C	M4 x 85	103±2	
EW250					

- 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.



Earth leakage Circuit Breakers G-TWIN series External accessories

• **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.

Earth leakage Circuit Breakers

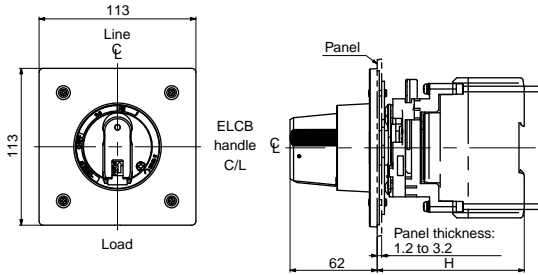
G-TWIN series

External accessories

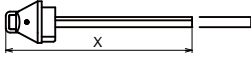
■ Dimensions, mm

V type handle

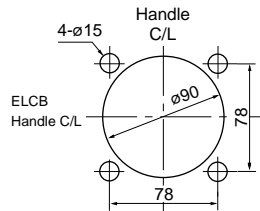
• BW6V10D



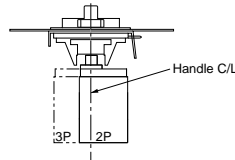
Optional shaft BZ6VS1D
 $X = H - 105$



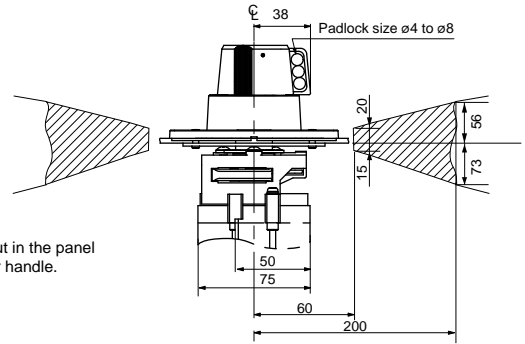
Door panel cutting



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

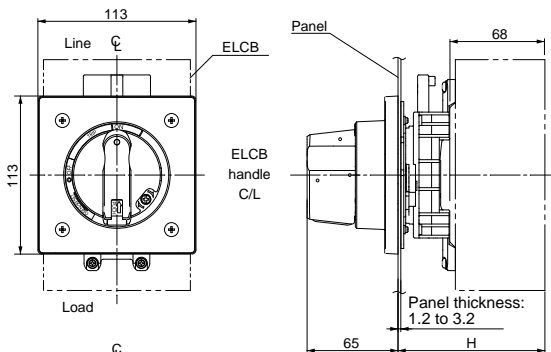


Door hinge installation area

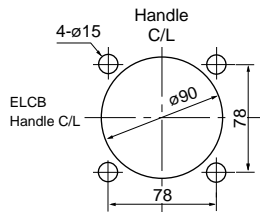


Install the door hinge in the shaded area.

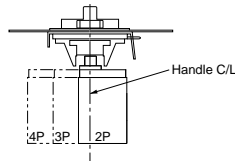
• BW9V0CA, BW9V0GA



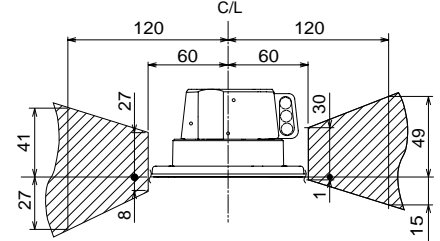
Door panel cutting



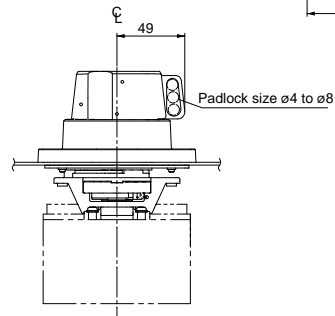
Note: Align the center of the hole cut in the panel with the center of the breaker handle.



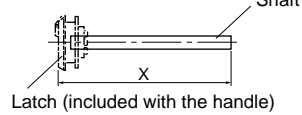
Door hinge installation area



Install the door hinge in the shaded area.



Optional shaft BW9VSG0
 $X = H - 95$



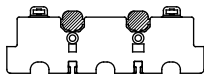
Earth leakage Circuit Breakers

G-TWIN series

External accessories

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.

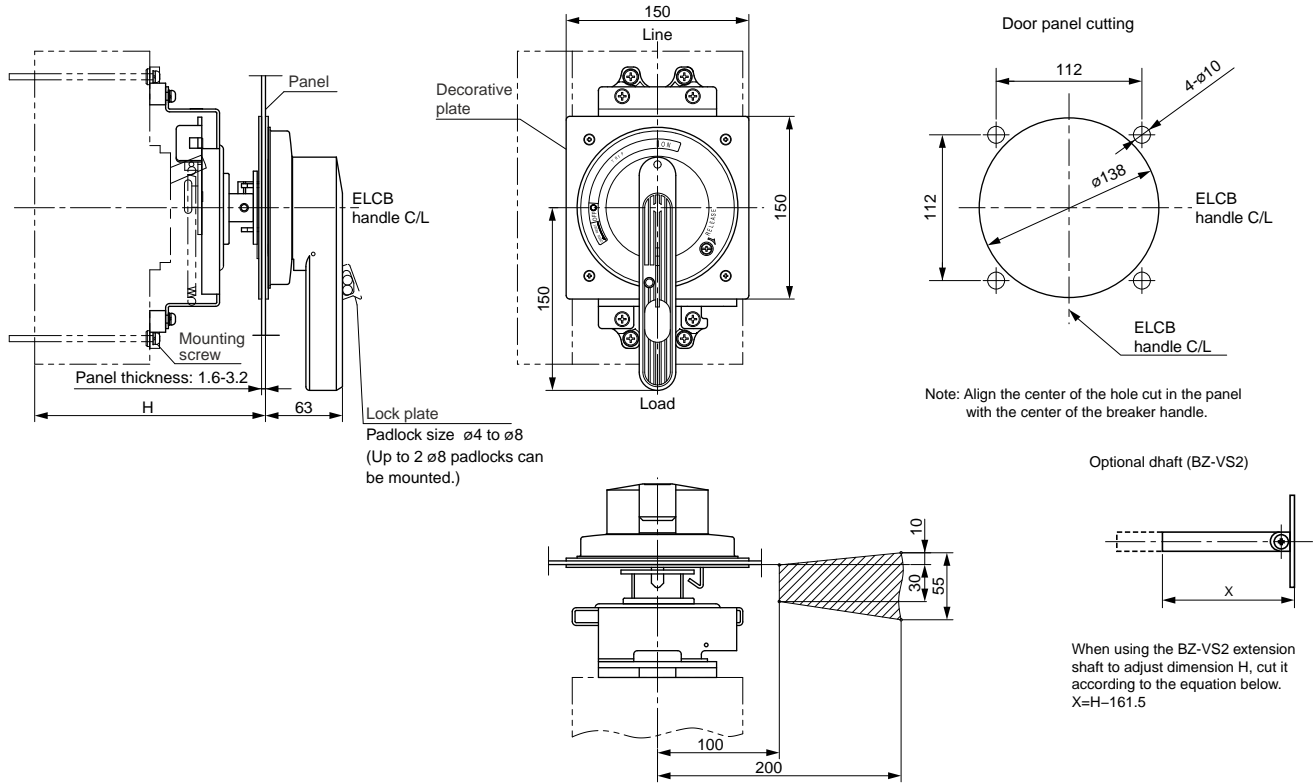


Earth leakage Circuit Breakers

G-TWIN series

External accessories

• BW9V0HA, BW9V0JA



Install the door hinge in the shaded area.

ELCB	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	BZ-VS2	190±2	250±2	202 to 250	2.2
	BW9V0JA-X		202±2	262±2	214 to 262	
	BW9V0JA-P		207±2	267±2	219 to 269	
EW800	BW9V0JA	BZ-VS2	190±2	250±2	202 to 250	2.2
	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.

Earth leakage Circuit Breakers

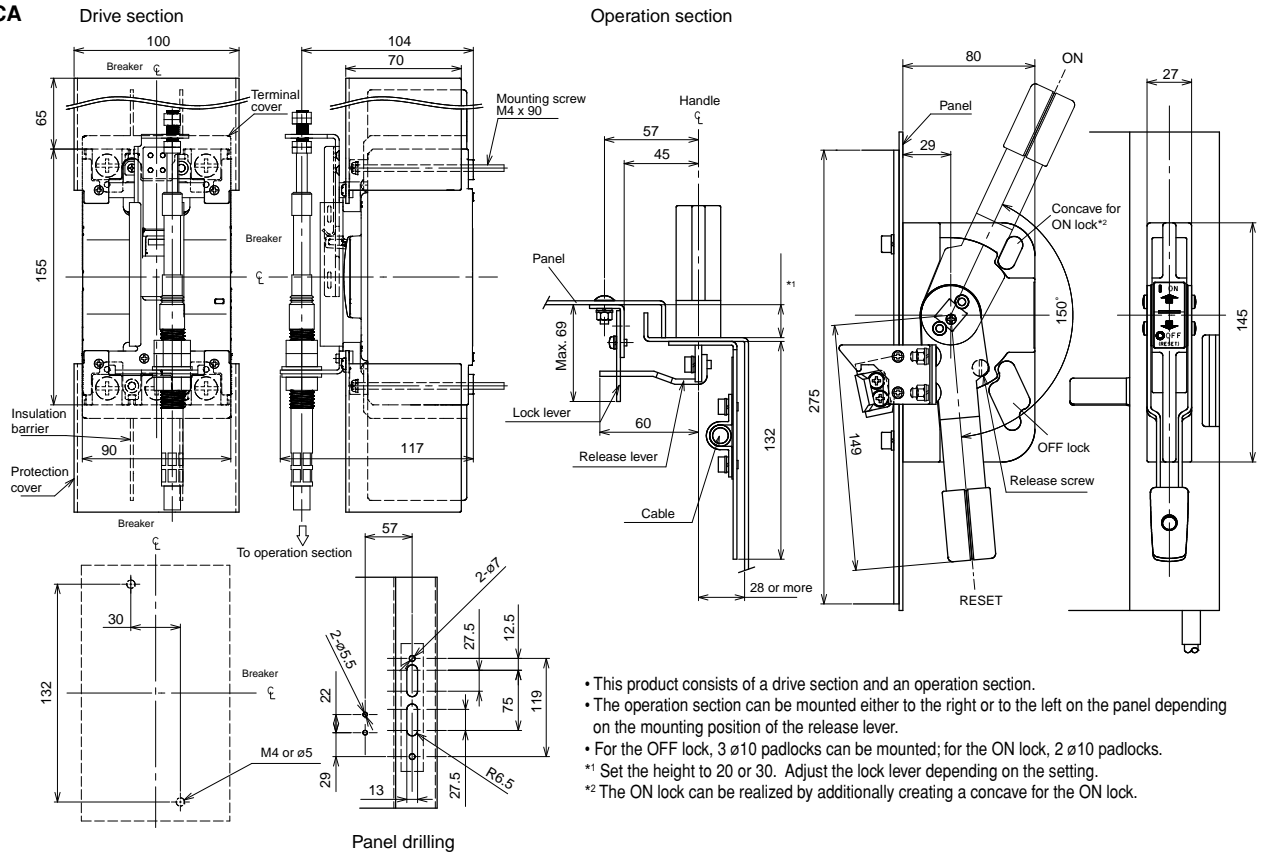
G-TWIN series

External accessories

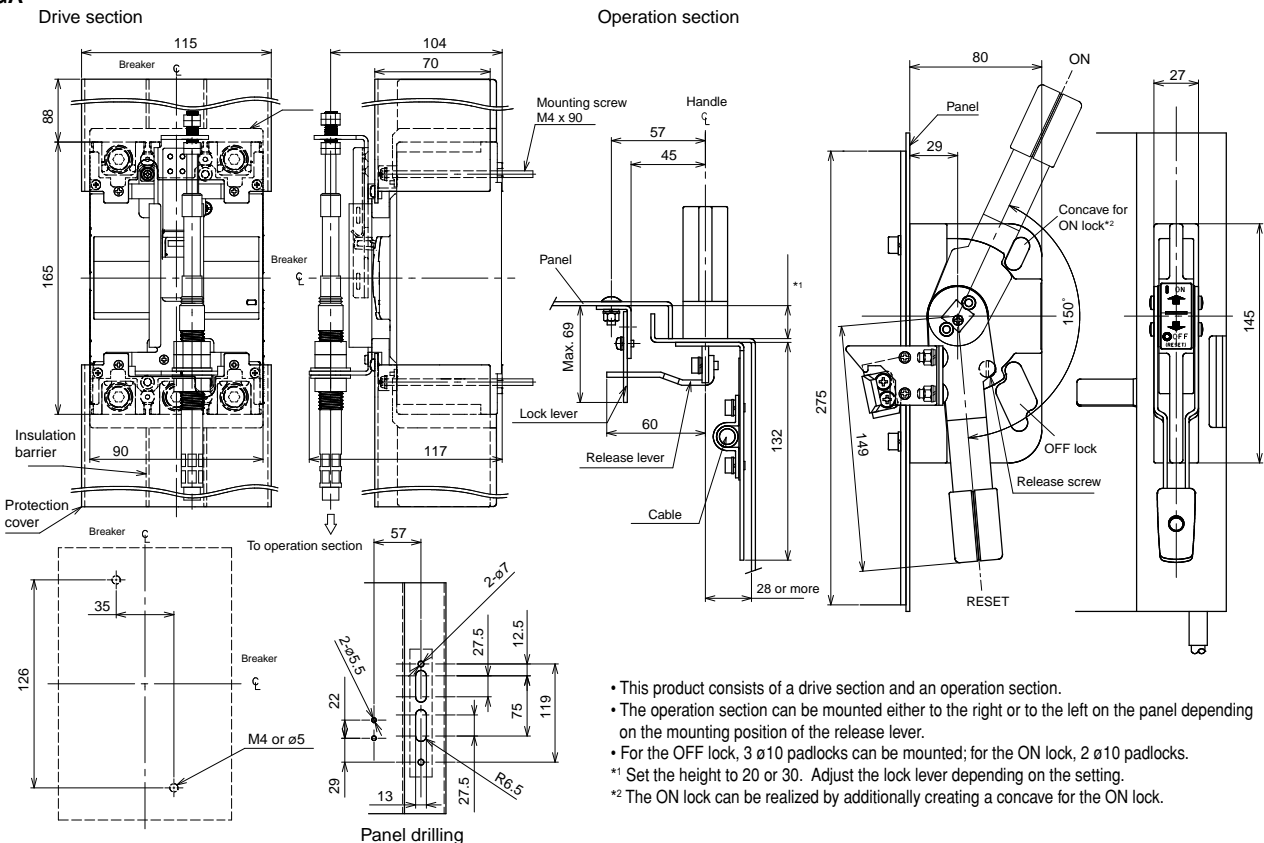
■ Dimensions, mm

F type handle

• BW9F0CA



• BW9F0GA



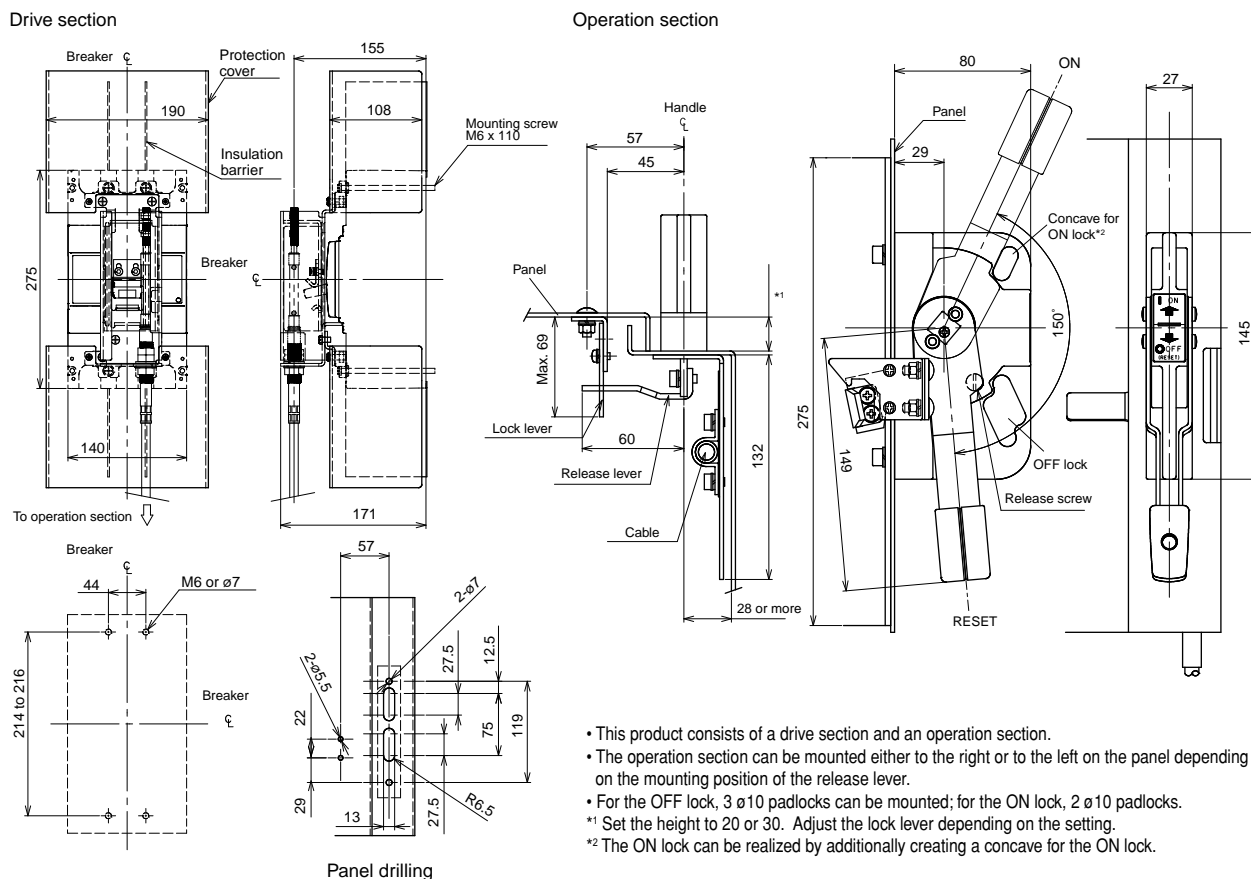
07

Earth leakage Circuit Breakers

G-TWIN series

External accessories

• BW9F0HA



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.



■ Type of enclosures

ELCB	Enclosure		
	Standard *1	With V-type handle Dust-proof *1*2	Rain-proof *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

Earth leakage Circuit Breakers

G-TWIN series

External accessories

■ Dimensions, mm

Fig.1 Standard

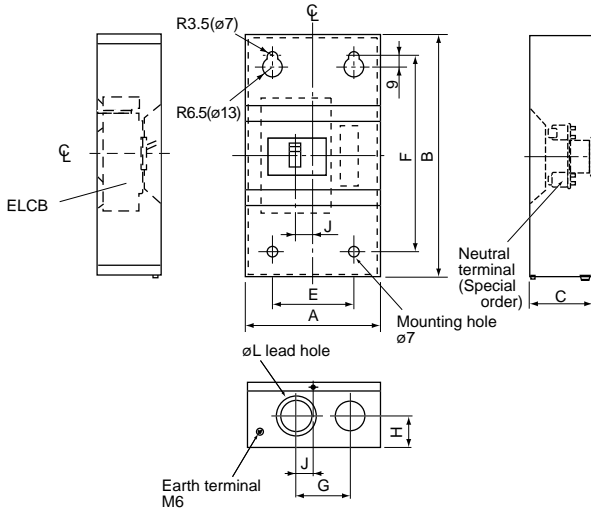


Fig.2 With V type handle
BW9UVBA-3A, BW9UVBA-3B
BW9UVCA-3, BW9UVGA-3

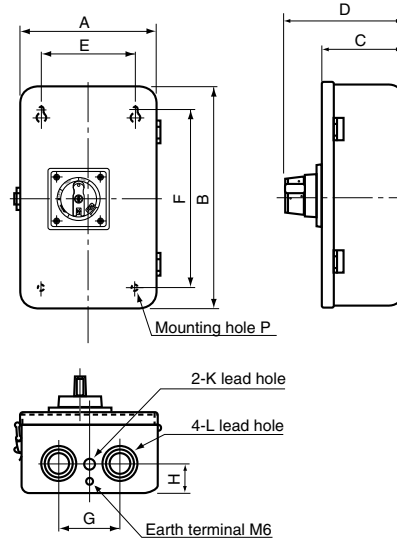
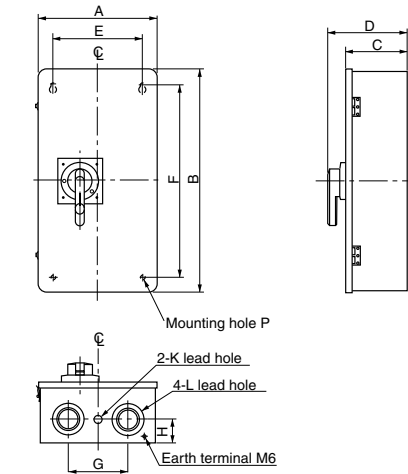
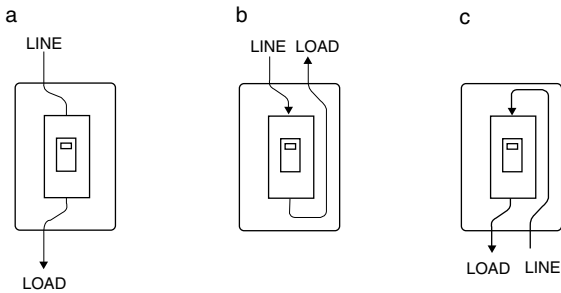


Fig.3. With V type handle
BW9UVHA-3, BW9UVJA-3



■ 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			200	320	95	—	120	240	80	40	25	—	ø45, ø30	—		
BZ6C25C3			200	320	103	—	120	240	80	40	25	—	ø45, ø30	—		
BW9UCCA-3			360	—	—	—	280	—	—	—	—	—	—	ø55, ø40	—	
BW9UCGA-3			400	750	175	—	300	650	200	80	100	—	—	ø106, ø78, ø63	—	
BZ-C60B																
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	3		400	750	206	269	300	650	200	80	—	ø28	ø63, ø78, ø106	ø12		
BW9UVHA-3																
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

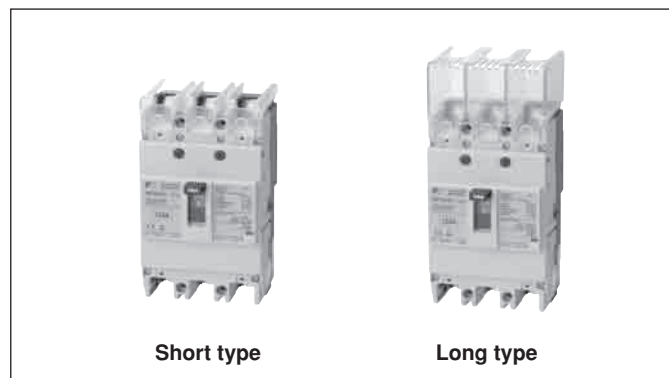
Long type: BW9BT □ A-L □

- Crimp connection use


● 630, 800AF

Long type: BW9BTJA-L □

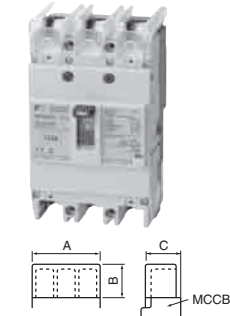
- Transparent




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	<ul style="list-style-type: none"> • 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

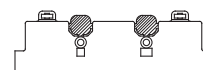
Type		No. of poles	ELCB	Dimensions (mm)			Packing quantity	Appearance
Transparent	Gray			A	B	C		
BW9BTAA-S2	BW9BTAA-S2W	2	EW32□-2P EW50□-2P	50	10	53	2	<ul style="list-style-type: none"> • Preventing exposure of live section when amplifier's terminals are connected • Snap-on mounting 
BW9BTAA-S3	BW9BTAA-S3W	2, 3	EW32□-3P EW50□-3P EW63□-3P EW100□-2P EW100□-3P	75	10	53	2	
BW9BTCA-S3P20	BW9BTCA-S3WP20	3	EW125□-3P	90	8	66.5	2	
BW9BTCA-S4P20	BW9BTCA-S4WP20	4	EW125□-4P	120	8	66.5	2	
BW9BTGA-S3P20 * ¹	BW9BTGA-S3WP20 * ¹	3	EW160□-3P EW250□-3P	105	8	66.5	2	
BW9BTGA-S4P20 * ¹	BW9BTGA-S4WP20 * 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 mm² are not available.

*³ This type of cover can be mounted on the 400AF when flat terminals are not used.



Earth leakage Circuit Breakers

G-TWIN series

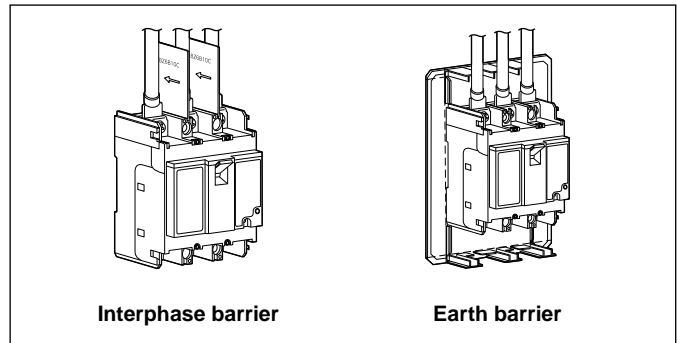
External accessories

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.

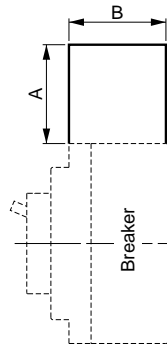
The earth barrier is used to increase the insulation with the mounting plate surface when two crimp terminals are wired. Installation of these barriers after wiring is possible even when an external accessory is installed.



Interphase barrier

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

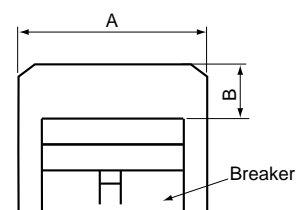
Interphase barrier



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

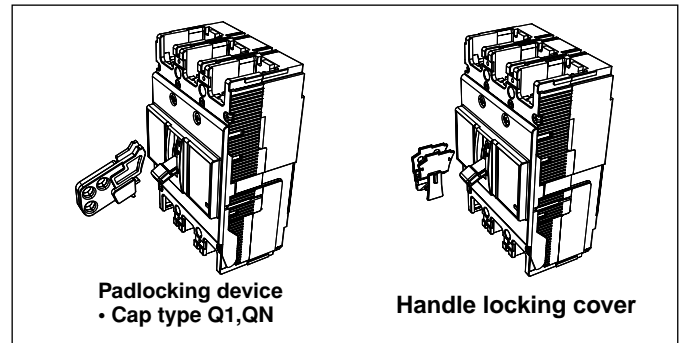
■ **Description**

• **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.



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

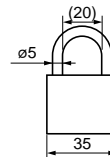
Notes:

*1 Specify Locks when ordering the Breaker. (▲: Factory-mounted)

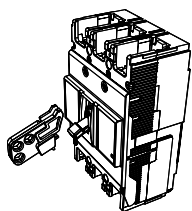
*2 ON and OFF locking is possible.

*3 If a padlock is required, use a commercially available padlock with the dimensions shown in the diagram at the right.

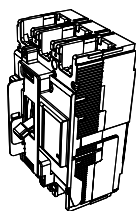
*4 Three padlocks with shackles *3 to 8 mm in diameter can be attached.



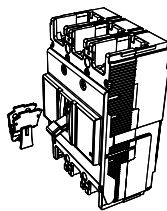
Padlocking device
• Cap type Q1



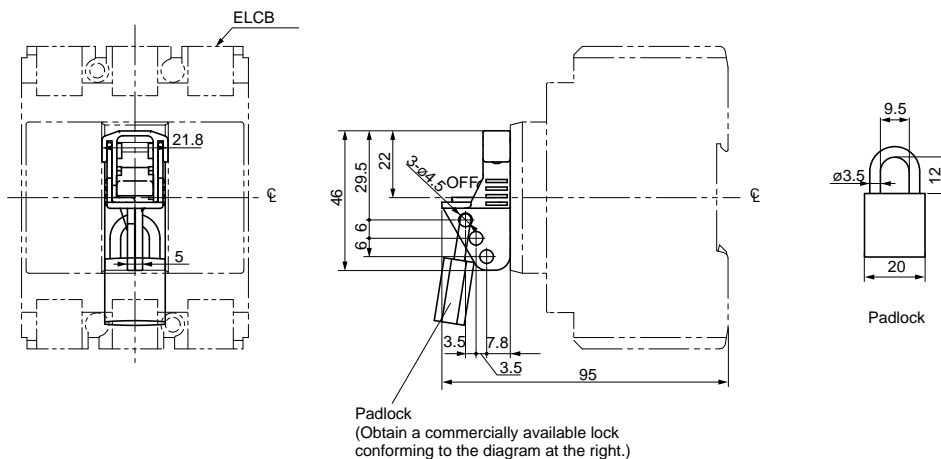
• Plate type Q2



Handle locking cover



Q1: BZ6L10CA (OFF-locking Padlocking device)

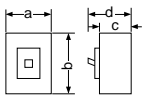


Earth Leakage Circuit Breakers

HG series

Quick reference guide

■ 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)	440V AC	65	65	65
[JIS C 8201-2-2 Ann.2]	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)		a 90 b 155 c 82 d 104	90 155 82 104	105 165 99 127
Page 07/00				
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

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.

● Available – Not available ▲ Factory-mounted accessory

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

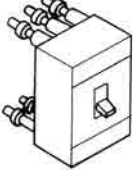
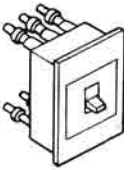
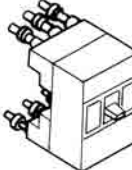
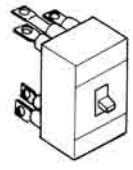
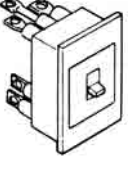
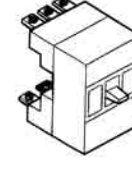
■ Mounting modifications

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

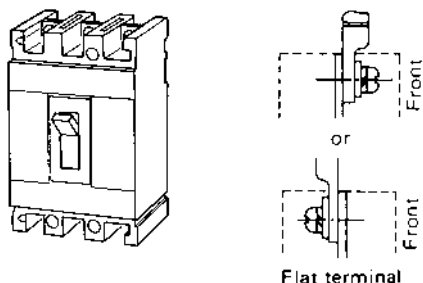
Earth Leakage Circuit Breakers



HG series

Terminal connection

■ Terminal connection

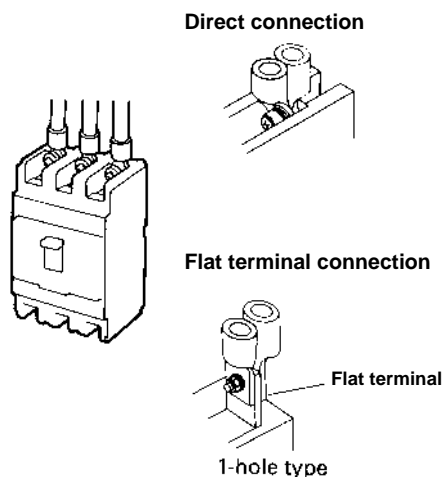
Front mounting, front connection



	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



Flat terminals/1-hole type

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

■ Wire size and crimp terminal

The following is the size recommendations for crimp terminals.

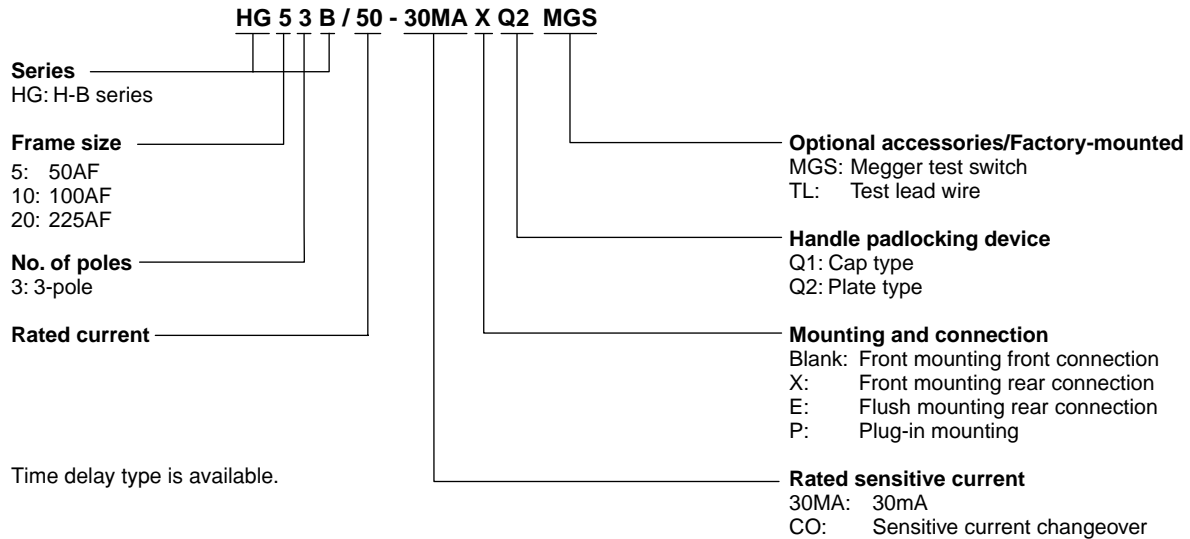
Crimp terminal R: JIS C2805
 CB: JEM-1399
 JST: Product of Japan Crimp Terminal Co., Ltd.
 F: FUJI special crimp terminal

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	60.57 96.3	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	

Earth Leakage Circuit Breakers

HG series

Type number nomenclature



• 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.

Earth Leakage Circuit Breakers

HG series

Type number

Earth leakage + Overcurrent + Short-circuit protection type

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

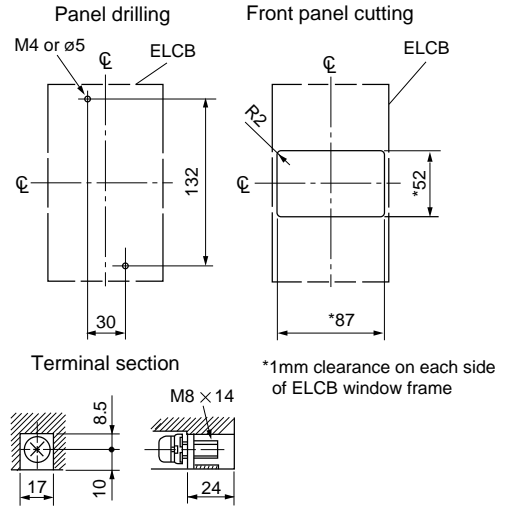
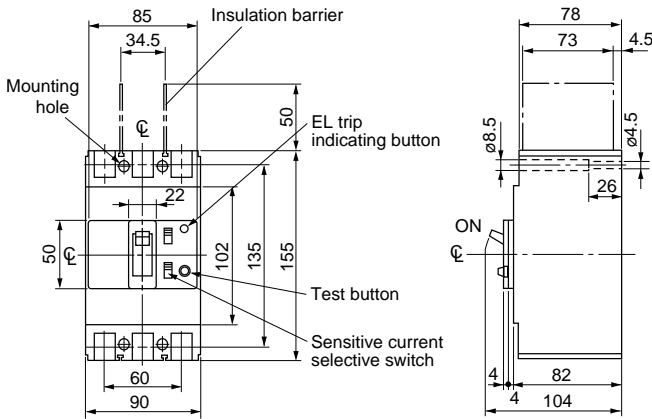
Breaker ampere frame	Rated current (A)	Sensitive current 30mA	Sensitive current 100/200/500mA selectable	<input type="checkbox"/> : Available mounting and connection
		Type	Type	
50	15	HG53B/15-30MA <input type="checkbox"/>	HG53B/15-CO <input type="checkbox"/>	Blank, X, E, P
	20	HG53B/20-30MA <input type="checkbox"/>	HG53B/20-CO <input type="checkbox"/>	
	30	HG53B/30-30MA <input type="checkbox"/>	HG53B/30-CO <input type="checkbox"/>	
	40	HG53B/40-30MA <input type="checkbox"/>	HG53B/40-CO <input type="checkbox"/>	
	50	HG53B/50-30MA <input type="checkbox"/>	HG53B/50-CO <input type="checkbox"/>	
100	15	HG103B/15-30MA <input type="checkbox"/>	HG103B/15-CO <input type="checkbox"/>	Blank, X, E, P
	20	HG103B/20-30MA <input type="checkbox"/>	HG103B/20-CO <input type="checkbox"/>	
	30	HG103B/30-30MA <input type="checkbox"/>	HG103B/30-CO <input type="checkbox"/>	
	40	HG103B/40-30MA <input type="checkbox"/>	HG103B/40-CO <input type="checkbox"/>	
	50	HG103B/50-30MA <input type="checkbox"/>	HG103B/50-CO <input type="checkbox"/>	
	60	HG103B/60-30MA <input type="checkbox"/>	HG103B/60-CO <input type="checkbox"/>	
	75	HG103B/75-30MA <input type="checkbox"/>	HG103B/75-CO <input type="checkbox"/>	
100	HG103B/100-30MA <input type="checkbox"/>	HG103B/100-CO <input type="checkbox"/>		
225	125	HG203B/125-30MA <input type="checkbox"/>	HG203B/125-CO <input type="checkbox"/>	Blank, X, E, P
	150	HG203B/150-30MA <input type="checkbox"/>	HG203B/150-CO <input type="checkbox"/>	
	175	HG203B/175-30MA <input type="checkbox"/>	HG203B/175-CO <input type="checkbox"/>	
	200	HG203B/200-30MA <input type="checkbox"/>	HG203B/200-CO <input type="checkbox"/>	
	225	HG203B/225-30MA <input type="checkbox"/>	HG203B/225-CO <input type="checkbox"/>	

Mounting	Connection	<input type="checkbox"/>
Front	Front	Blank
Front	Rear	X
Flush	Rear	E
Plug-in		P

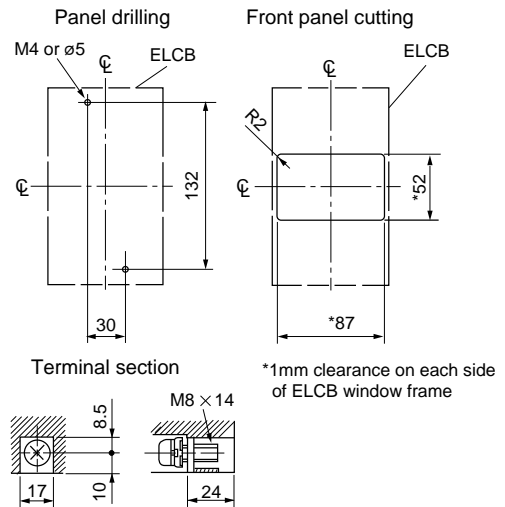
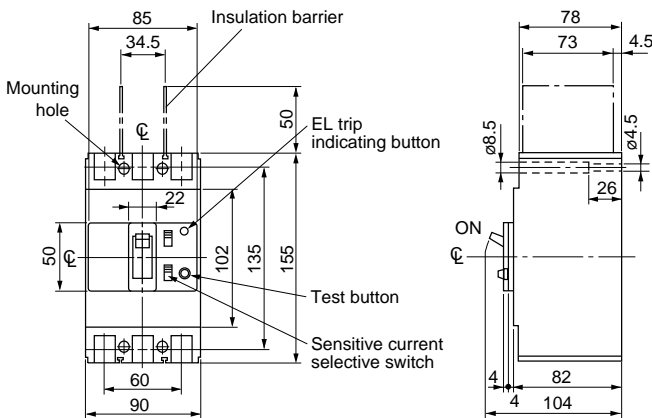
Earth Leakage Circuit Breakers HG series Dimensions

- Dimensions, mm
- Front mounting, rear connection (type X)

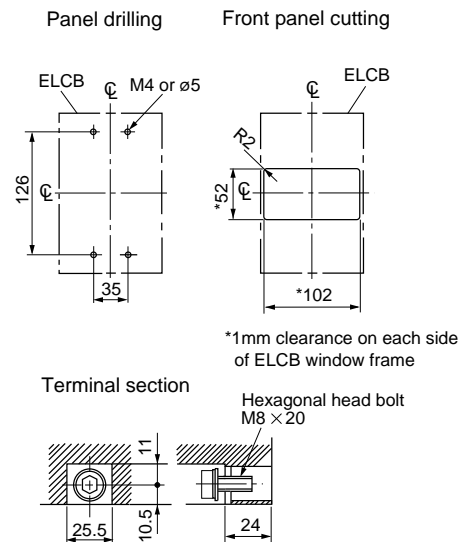
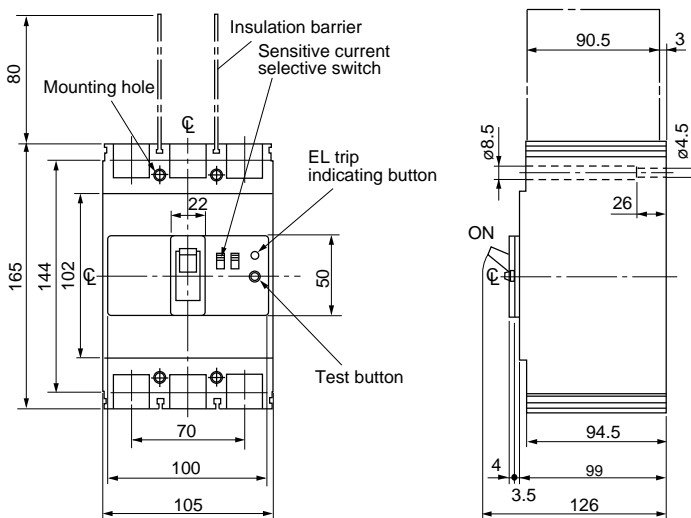
HG53B



HG103B



HG203B



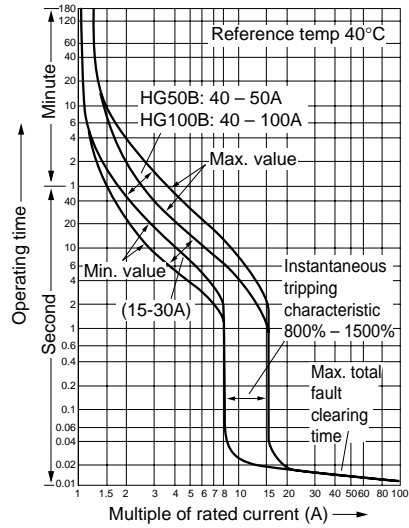
Earth Leakage Circuit Breakers

HG series

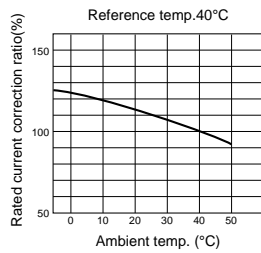
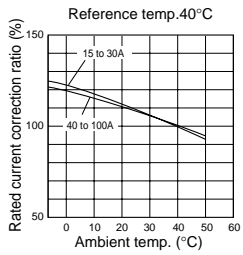
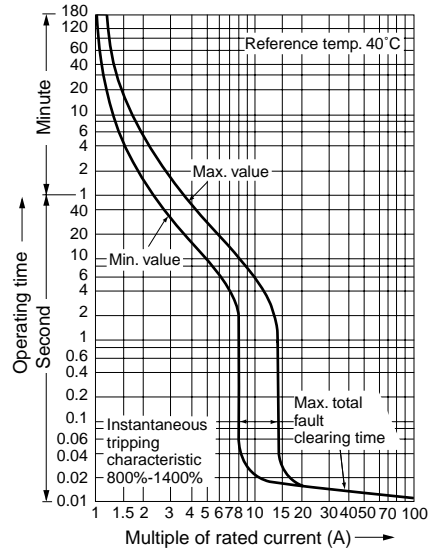
Characteristic curves

■ Characteristic curves/2, 3-pole

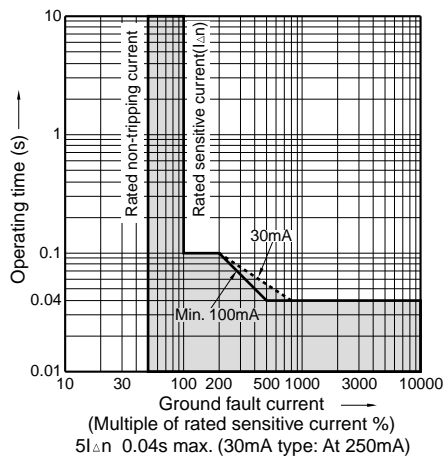
HG50B, HG100B



HG225B

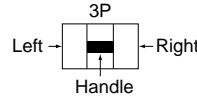


Earth leakage tripping



■ Available configurations

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



- Auxiliary switch: W
- Alarm switch: 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.

■ 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
	AC		DC		
H and L series	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

Earth Leakage Circuit Breakers

HG series

Accessories

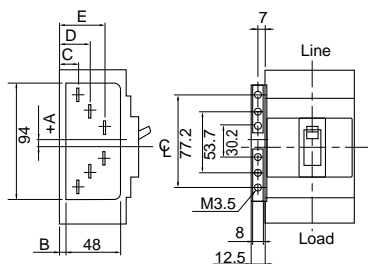
■ Lead wire specifications

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

■ Terminal block specifications

ELCB	Terminal screw	Dimensions (mm)				
		A	B	C	D	E
HG53B	M3.5	+4.7	24.9	41.8	54.2	66.5
HG103B						
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 $\phi 1.6$ mm solid wire or 2mm² stranded wire.



External operating handles

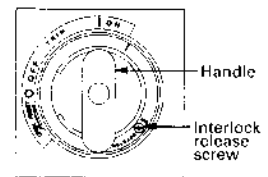
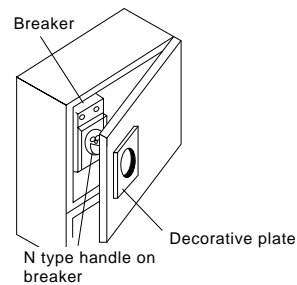
■ Description

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.

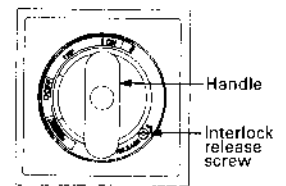
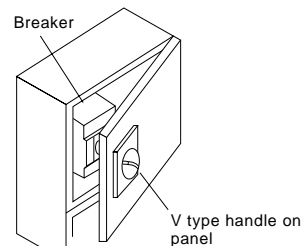
ELCB	N type handle
HG53B	BZ-N35B
HG103B	
HG203B	BZ-N50C



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.

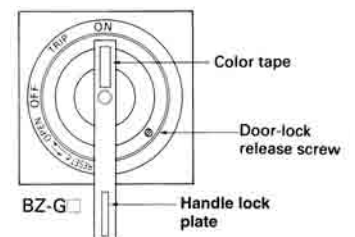
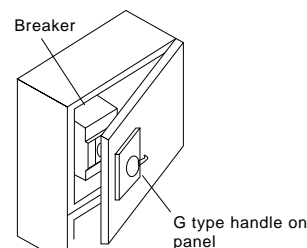
ELCB	V type handle
HG53B	—
HG103B	—
HG203B	BZ-V50C



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	—	—



Earth Leakage Circuit Breakers

HG series

Accessories

N type operating handles

■ Type number nomenclature

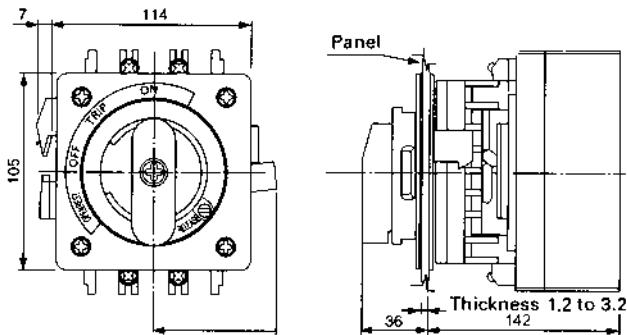
BZ - N □ C T - R

- 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.

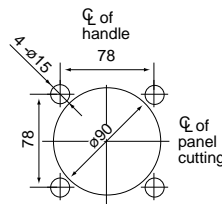
■ Dimensions, mm

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

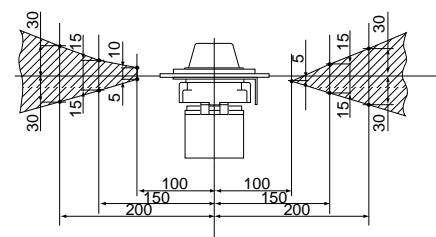


Mass: 0.62kg

Door panel cutting

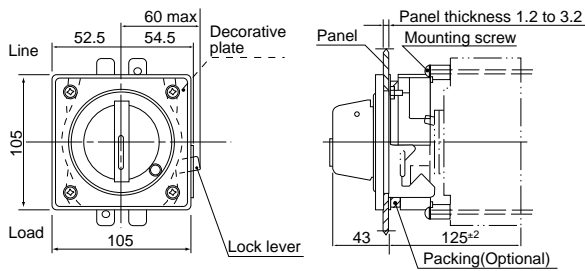


Door hinge installation area



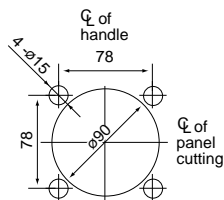
Install the door hinge in the shaded area.

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

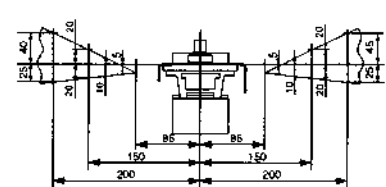


Mass: 0.45kg

Door panel cutting



Door hinge installation area

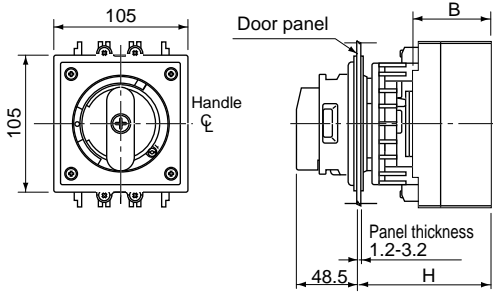


Install the door hinge in the shaded area.

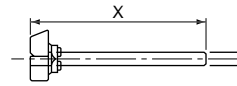
Dimensions for reference only. Confirm before construction begins.

■ Dimensions, mm

BZ-V50C

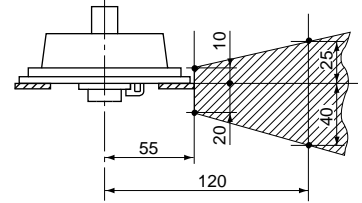


Optional shaft BZ-VS1
 $X = H - 96$



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/B can be installed			
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.

Earth Leakage Circuit Breakers

HG series

Accessories

G type operating handles

■ Operating instructions

1. ELCB operation

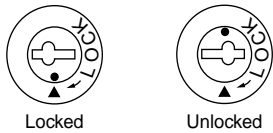
- Close the door and turn the handle to the ON position and the breaker will be positioned at ON.
- When the breaker is interrupted automatically the handle will move to the TRIP position.
- To reset move the handle to the RESET position.

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

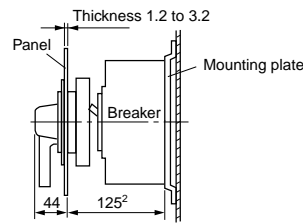
BZ-G35C

1. Drilling and cutting of the door panel

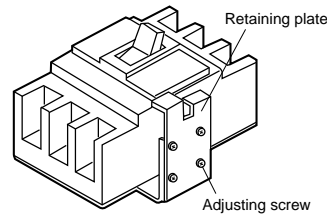
Drill and cut the door panel as shown in the drawing.

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.

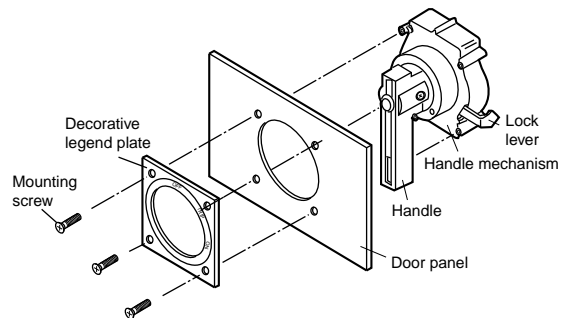


Mount the breaker and the retaining plate commonly to the panel board.



3. Fitting decorative plate and handle

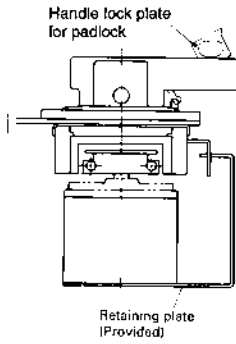
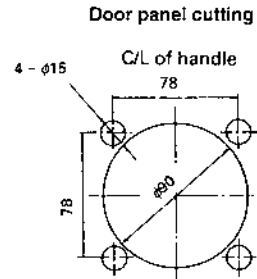
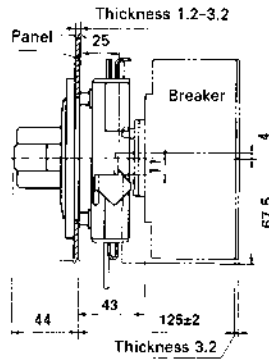
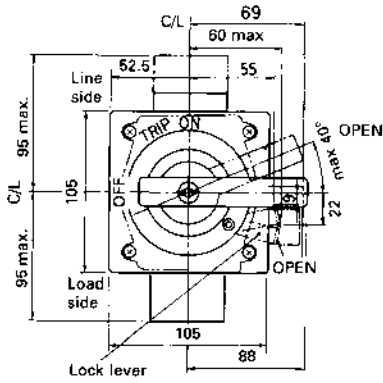
Fit the decorative plate and handle mechanism to the door panel by means of the mounting screws as shown in the illustration.



4. Adjusting the retaining plate

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

■ Dimensions, mm
BZ-G35C, BZ-G35C-K



Earth Leakage Circuit Breakers

HG series

Accessories

Pressed steel enclosures

■ Type of enclosures

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

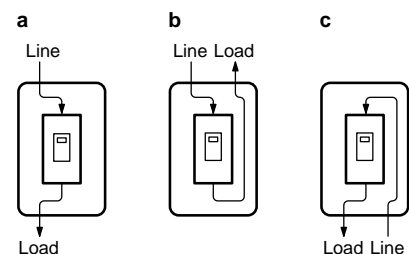
■ Ordering information

Specify the following:

1. Type number of enclosures

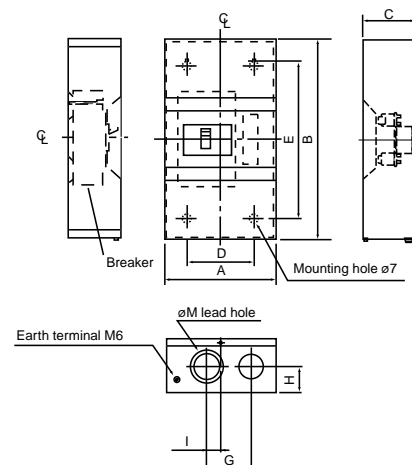


■ Connection method diagrams



■ 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

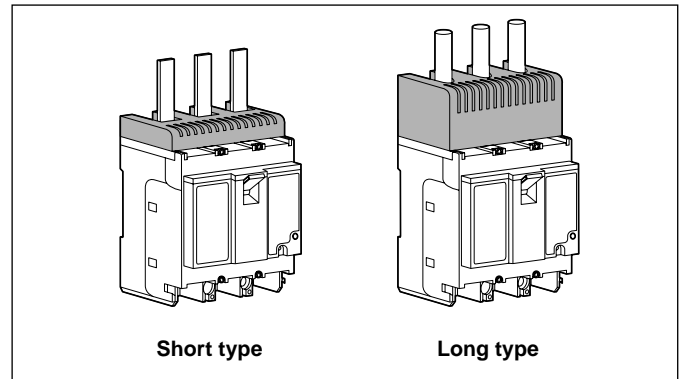
These terminal covers are used as guards to prevent accidental touch with live line terminations. These terminal covers can be fitted to either line or load side.

Short type BZ-TS

- Snap-on fitting
- Transparent, sealing possible

Long type BZ-TB

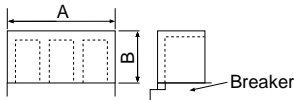
- Crimp connection use
- Transparent, sealing possible



■ Type of terminal cover

ELCB type	Terminal cover	A (mm)	B (mm)	Mass (g)	Terminal cover	A (mm)	B (mm)	Mass (g)
HG53B	Short type BZ-TS35B	90	10	60	Long type 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.

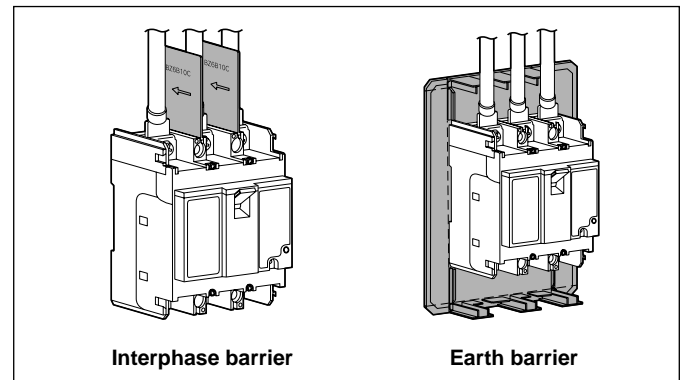
● Interphase barrier

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

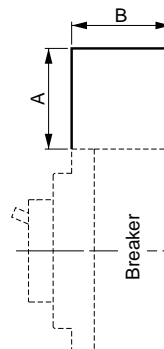
● Earth barrier

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

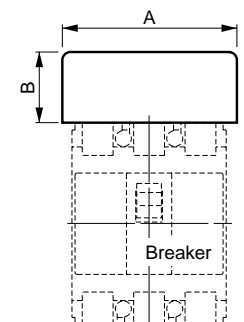
Note: * The value in parentheses is the dimensions after the barrier is cut.



Interphase barrier



Earth barrier



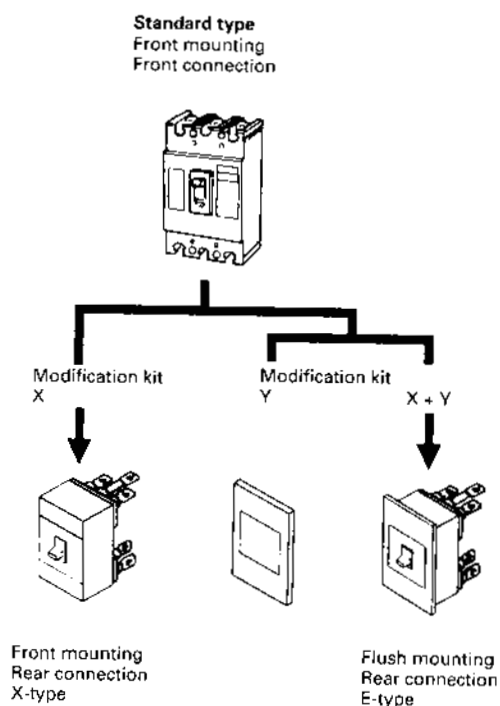
Earth Leakage Circuit Breakers

HG series

Accessories

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

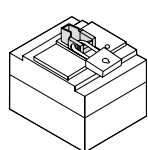
ELCB	Front mounting, front connection (Flat terminal)		Front mounting, rear connection (X type)		Flush mounting, rear connection (E type)	
	Kit type	Mass (kg)	Kit type	Mass (kg)	Kit type	Mass (kg)
HG53B	BZ-S35B-1003	0.35	BZ-X35B-1003	0.63	BZ-E35B-1003	1.11
HG103B						
HG203B	BZ-S50B-2253	0.5	BZ-X50B-2253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

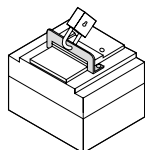
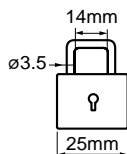


Plate type Q2

Padlock/Not supplied



Handle locking covers

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

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

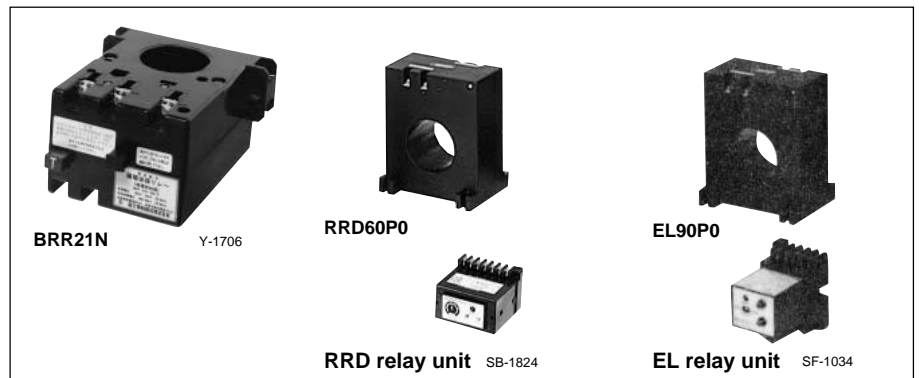
BRR/Pass-through type

- 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)	100/200, 200/500, 500/1000								100/200, 200/500, 500/1000				
Time-delay type 0.2 to 2 sec. adjustable													
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.

Earth Leakage Protective Relays BRR, RRD, and EL types

■ 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 ϕ =0.3–0.4) (L/R=7ms)			
				415V AC	240V AC	120V AC	24V DC
BRR01N, 09N 11N, 19N	1NO * SPDT	3A 3A	10A (at 240V AC)	– –	1A 1A	1A 1A	– –
BRR21N, 29N, 22N, 25N BRR42H, 45H	SPDT	5A	10A (at 240V AC)	2.5A	5A	5A	2A
EL 120/240V AC 415V AC	SPDT 1NO	5A 3A	10A 6A	– 2A	3A 3A	3A 3A	2A 2A
RRD 120/240V AC 415V AC	2PDT SPDT	5A 5A	10A 6A	– 2.5A	3A 3A	3A 3A	2A 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		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 BBR45H-44S		

Notes: *1 Using IV 600V cable.

*2 Non-tripping current is 0.5 times sensitive current.

*3 100/110V or 200/220V is available.

■ Wire size

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

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

Conforming to JIS C 3307.

Earth Leakage Protective Relays

RRD series

■ 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, pass-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.

07

Earth Leakage Protective Relays EL types

■ Specifications/EL type

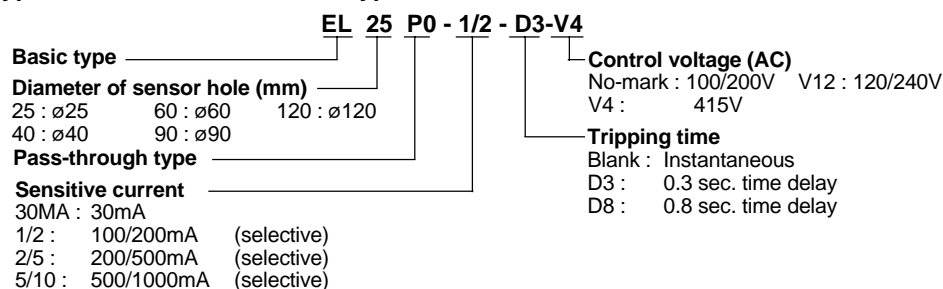
Series	Rated current *1 (A)	Sensor hole (mm)	Rated sensitive current *2 (mA)	Control voltage *3 (V AC)	Tripping time (sec)	120/240V	415V		
						Type	Type		
EL Instan- taneous	2-wire: 162 3-wire: 115 4-wire: 115	ø25	30 100/200 200/500 500/1000	120/240 415	0.1	EL25P0-30MA-V12 EL25P0-1/2-V12 EL25P0-2/5-V12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

Notes: *1 Using IV 600V cable. (See page 07/107 for reference.)

*3 100/110V or 200/220V is available.

*2 Non tripping current is 0.5 times sensitive current.

● Type number nomenclature, ELtype

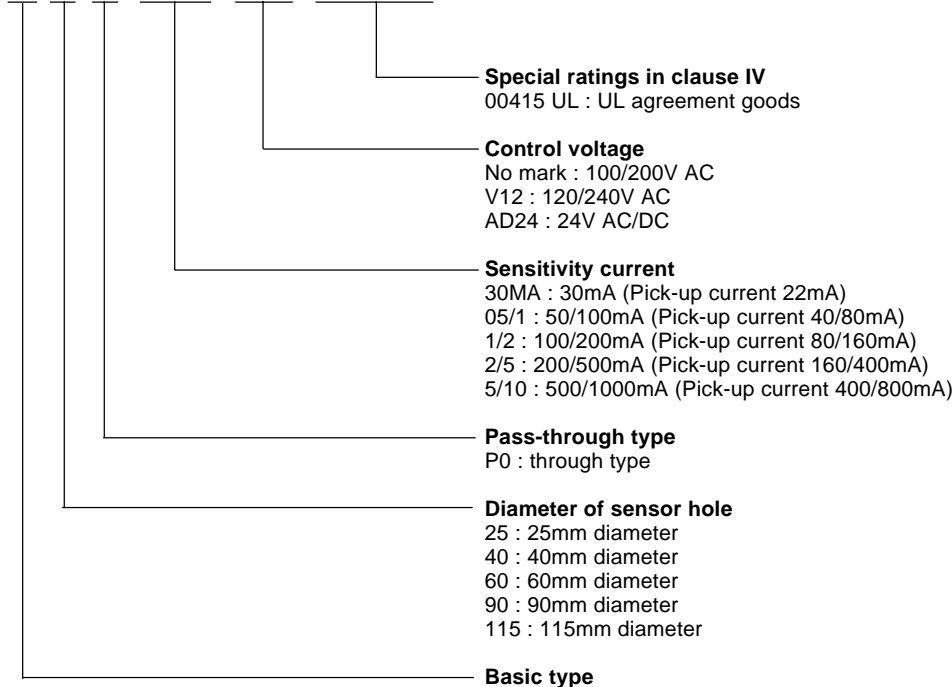


■ Specifications/EL type, UL 1053 recognized [UL File No. E176596]

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	EL25P0-30MA-00415UL	EL25P0-30MA-V12-00415UL
					EL25P0-05/1-AD24-00415UL	EL25P0-05/1-00415UL	EL25P0-05/1-V12-00415UL
					EL25P0-1/2-AD24-00415UL	EL25P0-1/2-00415UL	EL25P0-1/2-V12-00415UL
					EL25P0-2/5-AD24-00415UL	EL25P0-2/5-00415UL	EL25P0-2/5-V12-00415UL
					EL25P0-5/10-AD24-00415UL	EL25P0-5/10-00415UL	EL25P0-5/10-V12-00415UL
	ø40	30 50/100 100/200 200/500 500/1000			EL40P0-30MA-AD24-00415UL	EL40P0-30MA-00415UL	EL40P0-30MA-V12-00415UL
					EL40P0-05/1-AD24-00415UL	EL40P0-05/1-00415UL	EL40P0-05/1-V12-00415UL
					EL40P0-1/2-AD24-00415UL	EL40P0-1/2-00415UL	EL40P0-1/2-V12-00415UL
					EL40P0-2/5-AD24-00415UL	EL40P0-2/5-00415UL	EL40P0-2/5-V12-00415UL
					EL40P0-5/10-AD24-00415UL	EL40P0-5/10-00415UL	EL40P0-5/10-V12-00415UL
	ø60	30 50/100 100/200 200/500 500/1000			EL60P0-30MA-AD24-00415UL	EL60P0-30MA-00415UL	EL60P0-30MA-V12-00415UL
					EL60P0-05/1-AD24-00415UL	EL60P0-05/1-00415UL	EL60P0-05/1-V12-00415UL
					EL60P0-1/2-AD24-00415UL	EL60P0-1/2-00415UL	EL60P0-1/2-V12-00415UL
					EL60P0-2/5-AD24-00415UL	EL60P0-2/5-00415UL	EL60P0-2/5-V12-00415UL
					EL60P0-5/10-AD24-00415UL	EL60P0-5/10-00415UL	EL60P0-5/10-V12-00415UL
	ø90	30 50/100 100/200 200/500 500/1000			EL90P0-30MA-AD24-00415UL	EL90P0-30MA-00415UL	EL90P0-30MA-V12-00415UL
					EL90P0-05/1-AD24-00415UL	EL90P0-05/1-00415UL	EL90P0-05/1-V12-00415UL
					EL90P0-1/2-AD24-00415UL	EL90P0-1/2-00415UL	EL90P0-1/2-V12-00415UL
					EL90P0-2/5-AD24-00415UL	EL90P0-2/5-00415UL	EL90P0-2/5-V12-00415UL
					EL90P0-5/10-AD24-00415UL	EL90P0-5/10-00415UL	EL90P0-5/10-V12-00415UL
	ø115	30 50/100 100/200 200/500 500/1000			EL115P0-30MA-AD24-00415UL	EL115P0-30MA-00415UL	EL115P0-30MA-V12-00415UL
					EL115P0-05/1-AD24-00415UL	EL115P0-05/1-00415UL	EL115P0-05/1-V12-00415UL
					EL115P0-1/2-AD24-00415UL	EL115P0-1/2-00415UL	EL115P0-1/2-V12-00415UL
					EL115P0-2/5-AD24-00415UL	EL115P0-2/5-00415UL	EL115P0-2/5-V12-00415UL
					EL115P0-5/10-AD24-00415UL	EL115P0-5/10-00415UL	EL115P0-5/10-V12-00415UL

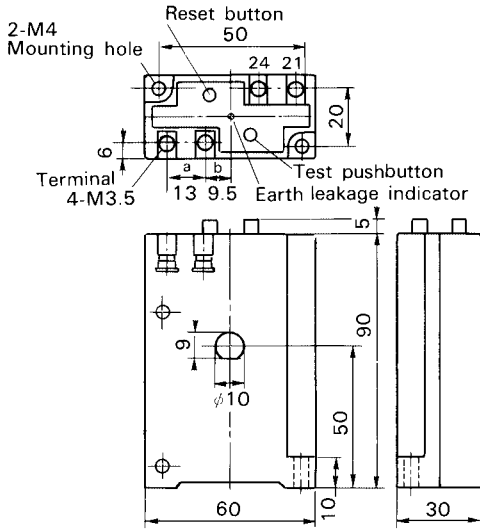
● Type number nomenclature, EL type, UL 1053 recognized

EL 25 P0 - 30MA - AD24 - 00415 UL

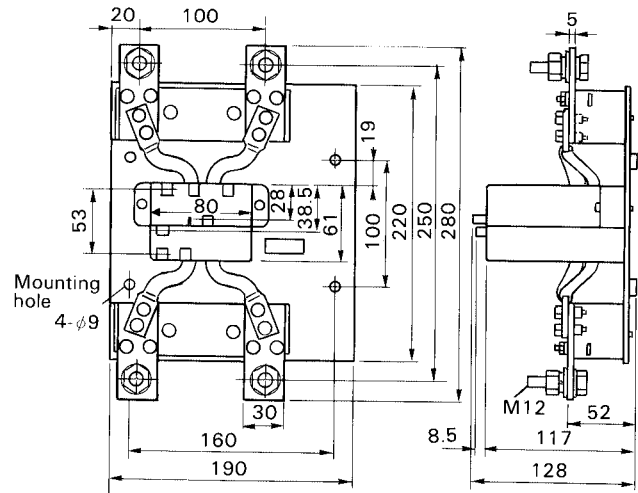


Earth Leakage Protective Relays BRR type

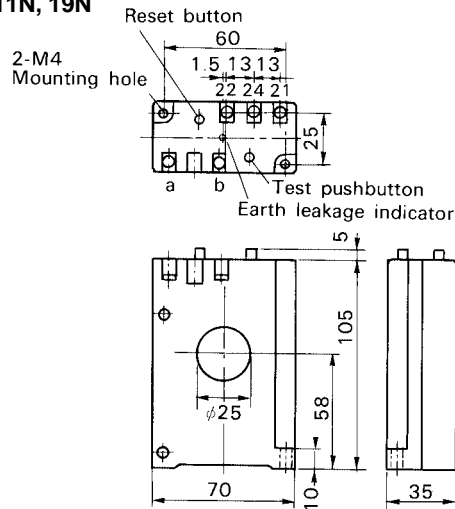
■ Dimensions, mm BRR01N, 09N



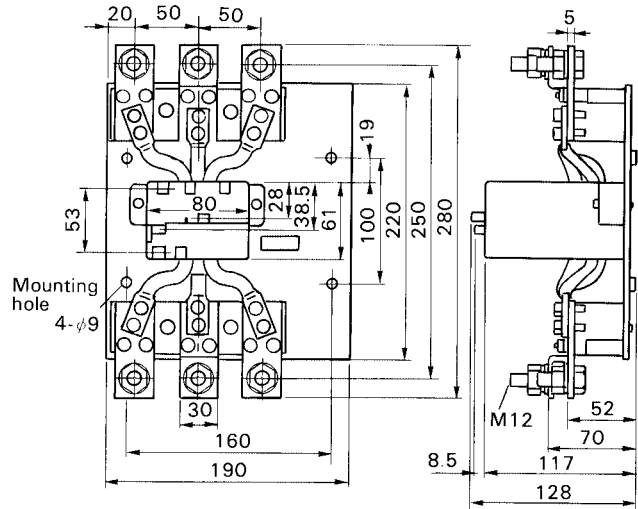
BRR42H, 45H 2-pole



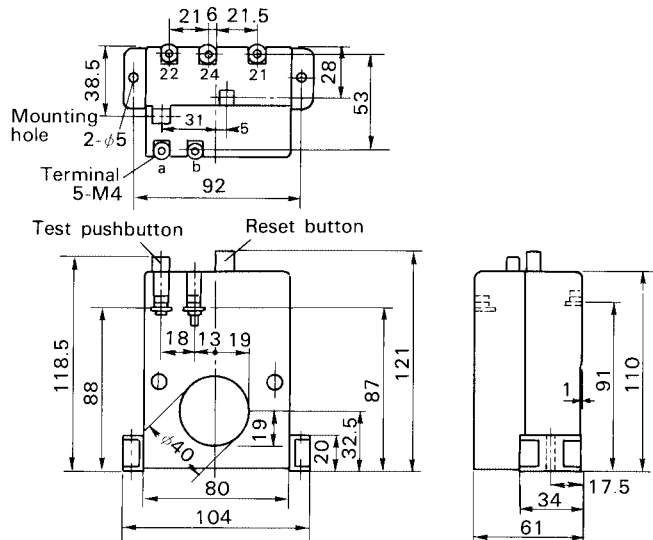
BRR11N, 19N



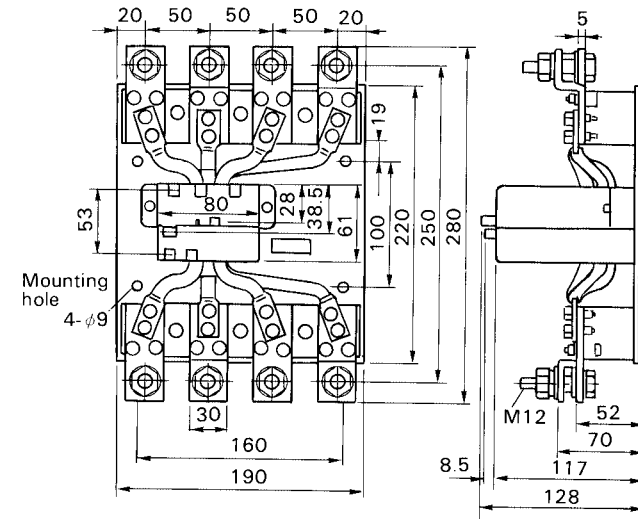
3-pole



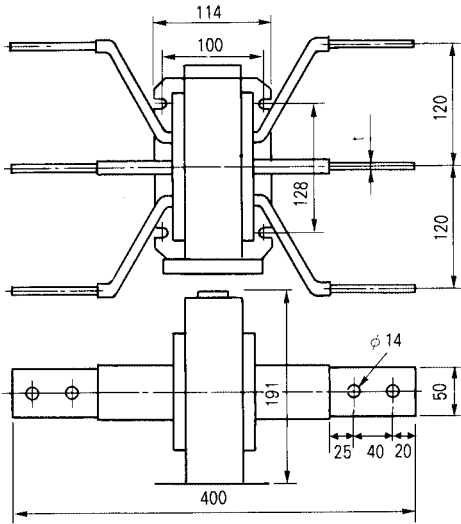
BRR21N, 29N, 22N, 23N, 25N



4-pole

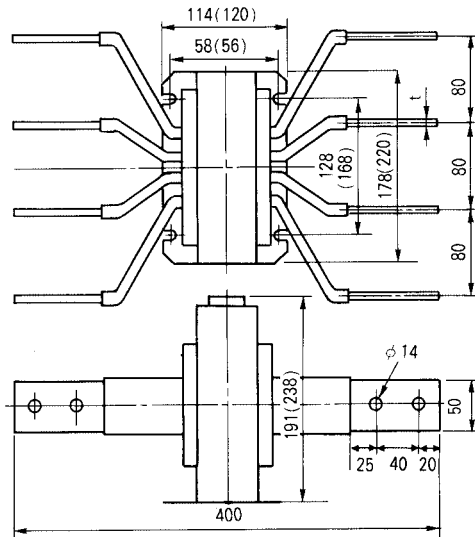


■ Dimensions, mm
RRD6AZ3, 8AZ3, 10AZ3



t RRD6AZ3: 6
RRD8AZ3: 8
RRD10AZ3: 12

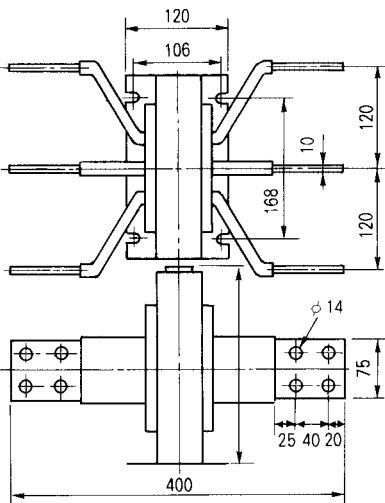
RRD6AZ4, 8AZ4, 10AZ4



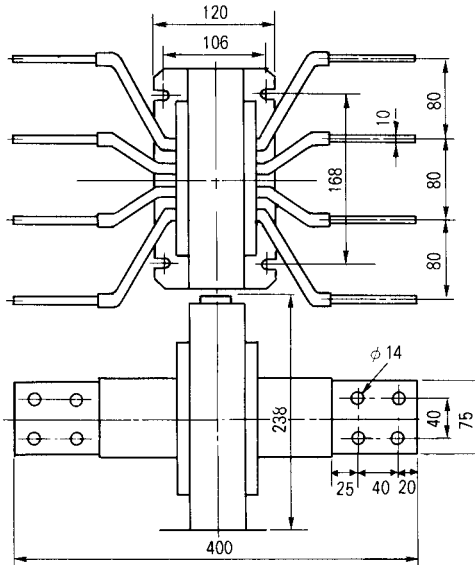
t RRD6AZ4: 6
RRD8AZ4: 8
RRD10AZ4: 12

(): For RRD10AZ4

RRD12AZ3

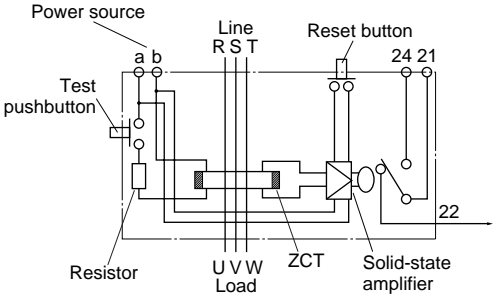


RRD12AZ4

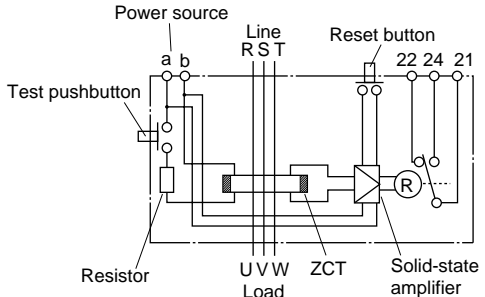


07

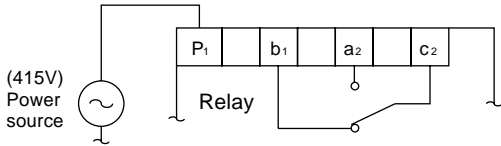
■ Wiring diagrams
BRR01N, 09N



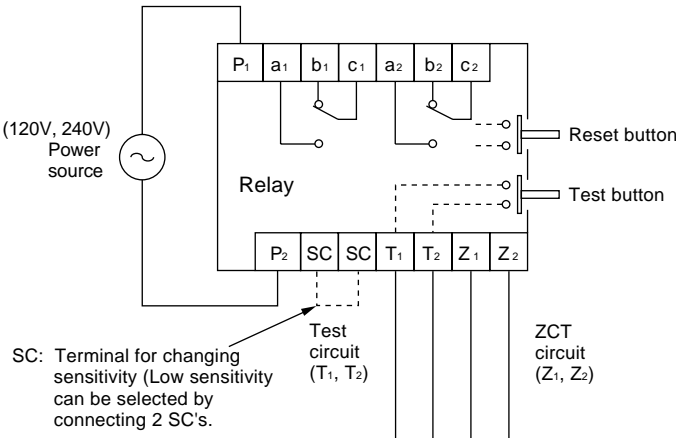
BRR11N, 19N, 21N, 29N, 22N, 23N, 25N
BRR42H, 45H



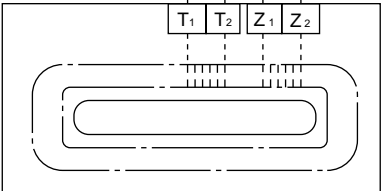
RRD type
● Where SPDT is selected.



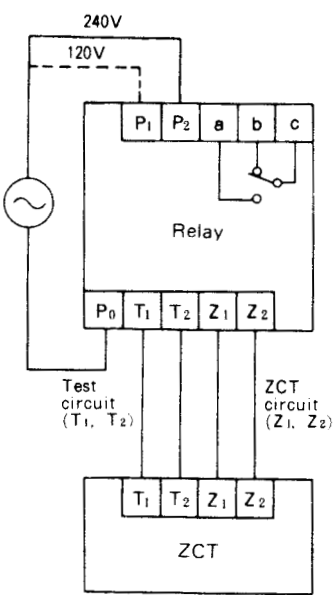
● Where 2PDT is selected.



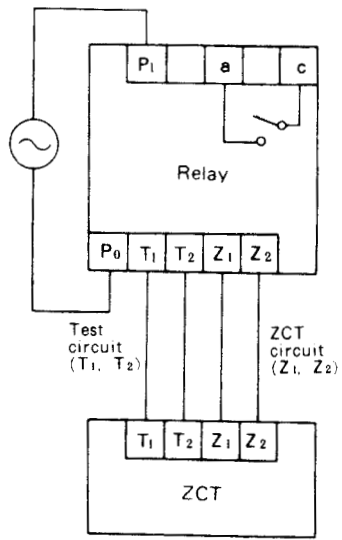
Sensor



EL type
100/200V, 120/240V



415V



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Except to the extent otherwise provided for in the Conditions of Sale issued by Fuji Electric FA, Fuji Electric FA warrants that the Fuji Electric FA products identified in this catalog shall be free from significant defects in materials and workmanship provided the product has not been: 1) repaired or altered by others than Fuji Electric FA; 2) subjected to negligence, accident, misuse, or damage by circumstances beyond Fuji Electric FA's control; 3) improperly operated, maintained or stored; or 4) used in other than normal use or service. This warranty shall apply only to defects appearing within one (1) year from the date of shipment by Fuji Electric FA, and in such case, only if such defects are reported to Fuji Electric FA within thirty (30) days of discovery by purchaser. Such notice should be submitted in writing to Fuji Electric FA at 5-7, Nihonbashi Odemma-cho, Chuo-ku, Tokyo, Japan. The sole and exclusive remedy with respect to the above warranty whether such claim is based on warranty, contract, negligence, strict liability or any other theory, is limited to the repair or replacement of such product or, at Fuji Electric FA's option reimbursement by Fuji Electric FA of the purchase price paid to Fuji Electric FA for the particular product. **Fuji Electric FA does not make any other representations or warranties, whether oral or in writing, expressed or implied, including but not limited to any warranty regarding merchantability or fitness for a particular purpose.** Except as provided in the Conditions of Sale, no agent or representative of Fuji Electric FA is authorized to modify the terms of this warranty in writing or orally.

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Caution "Safety precautions"

- Operate (keep) in the environment specified in the operating instructions and manual. High temperature, high humidity, condensation, dust, corrosive gases, oil, organic solvents, excessive vibration or shock might cause electric shock, fire, erratic operation or failure.
- Follow the regulations of industrial wastes when the product is to be discarded.
- The products covered in this catalog have not been designed or manufactured for use in equipment or systems which, in the event of failure, can lead to loss of human life.
- If you intend to use the products covered in this catalog for special applications, such as for nuclear energy control, aerospace, medical, or transportation, please consult our Fuji Electric FA agent.
- Be sure to provide protective measures when using the product covered in these catalogs in equipment which, in the event of failure, may lead to loss of human life or other grave results.
- Follow the directions of the operating instructions when mounting the product.

D&C CATALOG DIGEST INDEX

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Thermal Overload Relays, Solid-state Contactors

02 Manual Motor Starters and Contactors
Combination Starters

03 Industrial Relays, Industrial Control Relays
Annunciator Relay Unit, Time Delay Relays

04 Pushbuttons, Selector Switches, Pilot Lights
Rotary Switches, Cam Type Selector Switches
Panel Switches, Terminal Blocks, Testing Terminals

05 Limit Switches, Proximity Switches
Photoelectric Switches

06 Molded Case Circuit Breakers
Air Circuit Breakers

07 Earth Leakage Circuit Breakers
Earth Leakage Protective Relays

08 Circuit Protectors
Low Voltage Current-Limiting Fuses

09 Measuring Instruments, Arresters, Transducers
Power Factor Controllers
Power Monitoring Equipment (F-MPC)

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Noise Suppression Filters
Control Power Transformers

HIGH VOLTAGE PRODUCTS Up to 36kV

11 Disconnecting Switches, Power Fuses
Air Load Break Switches
Instrument Transformers — VT, CT

12 Vacuum Circuit Breakers, Vacuum Magnetic Contactors
Protective Relays

INDIVIDUAL CATALOG 07

from D&C CATALOG 20th Edition

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