

Molded Case Circuit Breakers

List of products

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

Line protection

AC415V Icu	BW32	BW50	BW63	BW100	BW125	BW160	BW250	BW400	BW630	BW800
1.5kA	AAG	AAG		AAG						
2.5kA	SAG	EAG	EAG							
7.5kA		SAG	SAG							
10kA		RAG	RAG	EAG						
18kA						EAG	EAG			
30kA					JAG	JAG	JAG	EAG		
36kA					SAG	SAG	SAG	SAG	EAG	EAG
50kA					RAG	RAG	RAG	RAG	RAG	RAG
65kA		HAG*			HAG*		HAG*			
70kA								HAG	HAG	HAG

Note: * There are no performance indications for GB standards for the BW50HAG, BW125HAG, and BW250HAG.

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

Line protection

AC415V Icu	BW50	BW100	BW125	BW250	BW400	BW630	BW800
10kA	RAGU	EAGU					
18kA				EAGU			
30kA			JAGU	JAGU	EAGU		
36kA					SAGU		
50kA			RAGU	RAGU	RAGU	RAGU	RAGU
70kA					HAGU	HAGU	HAGU

■ S, H Series

Line protection

AC415V Icu	50AF	100AF	225AF	400AF	600AF	800AF	1000AF	1200AF	1600AF
65kA	H52BA H53BA	H102BA H103BA	H202BA H203BA				SA1003E SA1004E	SA1203E SA1204E	
85kA		H103R	H203R						SA1603E SA1604E
125kA				H403R	H603R	H803R			

■ F Series

Distribution Breakers

AC240V Icu	50AF	100AF
3kA	F51B F52B F53B	F102B F103B

Motor protection

AC415V Icu	BW32	BW50	BW63	BW100	BW125	BW250
1.5kA	AAM					
2.5kA	SAM	EAM	EAM			
7.5kA		SAM	SAM			
10kA		RAM		EAM		
18kA						EAM
30kA					JAM	JAM
50kA					RAM	RAM

■ BW0 Series (IEC/EN/GB conformed)

Line protection

AC415V Icu	100AF	160AF	250AF
15kA	BW103E0		
18kA		BW162E0 BW163E0	BW252E0 BW253E0
25kA		BW162J0 BW163J0	BW252J0 BW253J0
30kA	BW102S0 BW103S0		
36kA		BW162S0 BW163S0	BW252S0 BW253S0

■ H Series

Motor protection

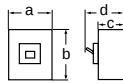
AC415V Icu	50AF
65kA	H53BAM

Molded Case Circuit Breakers

G-TWIN series

Quick reference guide

■ G-TWIN Standard Series

Ampere frame			32A			
Type			BW32AAG		BW32SAG	
Pole			2	3	2	3
Rated current Reference amb. temp. (40°C)		In(A)	3, 5, 10, 15, 20, 30, 32			
Rated impulse withstand voltage		Uimp(kV)	6		6	
Isolation compliant			●		●	
Rated insulation voltage Ui (V)		AC	500		690	
		DC	—		250* ¹	
Rated breaking capacity Icu/Ics (kA)	IEC 60947-2 EN 60947-2 JIS C 8201-2-1	AC	500V	—		1.5/1
			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
			240V	2.5/2		5/3
			230V	2.5/2		5/3
			250V	—		2.5/2* ¹
	GB14048.2	AC	400V	1.5/1		2.5/2
			230V	2.5/2		5/3
Conforming to standards	CE Marking		● (TÜV)		● (TÜV)	
	CCC certificate		●		●	
	Electrical Appliance and Material Safety Law <PS>E ^{*2}		●		●	
Dimensions (mm) 		a	50	75	50	75
		b	100		100	
		c	60		60	
		d	84		84	
Mass (kg)			0.4	0.5	0.4	0.5
Tripping device			Hydraulic-magnetic			
Front mounting, front connection						

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

Note: ^{*1} Specify DC only when ordering circuit breakers for DC circuit.

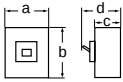
^{*2} Electrical Appliance and Material Safety Law of Japan

Molded Case Circuit Breakers

G-TWIN series

Quick reference guide

■ G-TWIN Standard Series

Ampere frame			50A										
Type			BW50AAG		BW50EAG		BW50SAG		BW50RAG		BW50HAG		
Pole			2	3	2	3	2	3	2	3	2	3	
Rated current Reference amb. temp. (40°C)		In(A)	5, 10, 15, 20, 30, 32, 40, 50						10, 15, 20, 30, 32, 40, 50		15, 20, 30, 40, 50		
Rated impulse withstand voltage		Uimp(kV)	6		6		6		6		6		
Isolation compliant			●		●		●		●		●		
Rated insulation voltage Ui (V)		AC	500		690		690		690		690		
		DC	—		250* ¹		250* ¹		250* ¹		250		
Rated breaking capacity Icu/Ics (kA)	IEC 60947-2 EN 60947-2 JIS C 8201-2-1	AC	500V	—		1.5/1		5/3		7.5/4		25/7	
			440V	1.5/1		2.5/2		7.5/4		10/5		65/17	
			415V	1.5/1		2.5/2		7.5/4		10/5		65/17	
			400V	1.5/1		2.5/2		7.5/4		10/5		65/17	
			380V	1.5/1		2.5/2		7.5/4		10/5		65/17	
			240V	2.5/2		5/3		10/5		25/13		125/63	
			230V	2.5/2		5/3		10/5		25/13		125/63	
		DC	250V	—		2.5/2* ¹		5/3* ¹		5/3* ¹		40/20	
	GB14048.2	AC	400V	1.5/1		2.5/2		7.5/4		10/5		—	
			230V	2.5/2		5/3		10/5		25/13		—	
Conforming to standards	CE Marking		● (TÜV)		● (TÜV)		● (TÜV)		● (TÜV)		●		
	CCC certificate		●		●		●		●		—		
	Electrical Appliance and Material Safety Law <PS>E ²		●		●		●		●		●		
Dimensions (mm) 			a	50	75	50	75	50	75	50	75	90	
			b	100		100		100		100		155	
			c	60		60		60		60		68	
			d	84		84		84		84		95	
Mass (kg)			0.4	0.5	0.4	0.5	0.4	0.5	0.4	0.5	1.0	1.2	
Tripping device			Hydraulic-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	○	○	○	○	○	○	○	○	○	○	
IEC 35mm wide rail mounting		No-mark	○	○	○	○	○	○	○	○	—	—	
Internal accessories Page 06/63													
Alarm switch		K	○	○	○	○	○	○	○	○	○	○	
Auxiliary switch		W	○	○	○	○	○	○	○	○	○	○	
Undervoltage trip		R	○	○	○	○	○	○	○	○	○	○	
Shunt trip		F	○	○	○	○	○	○	○	○	○	○	
External accessories Page 06/66													
Handle padlocking device Cap type		Q1/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	○	○	○	○	○	○	○	○	○	○	
Insulation barrier Earth		BL	○	○	○	○	○	○	○	○	—	—	
Handle locking cover		L1	○	○	○	○	○	○	○	○	○	○	
Flat terminal		SS	○	○	○	○	○	○	○	○	○	○	
Block terminal		SL	—	—	—	—	—	—	—	—	○	○	

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

Note: *¹ Specify DC only when ordering circuit breakers for DC circuit.

*² Electrical Appliance and Material Safety Law of Japan

Molded Case Circuit Breakers

G-TWIN series

Mounting modifications

■ Mounting modifications

• Standard series

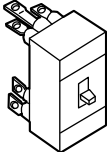
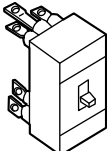
Standard type FUJI breakers are front mounting with front connections. The standard breaker can easily be modified to become front mounting rear connection type, flush mounting type and plug-in type. The additional parts such as insulation bases, barriers, covers and similar parts are added as required.

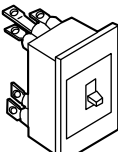
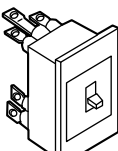
Front mounting
Front connection

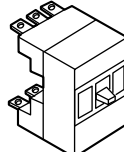
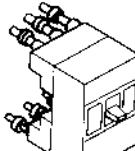
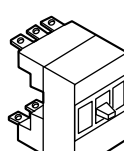


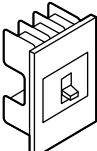
BASIC DESIGN



Additional main parts	Front mounting Rear connection (X type)
Bar stud terminal 	BW32 BW50 BW63 BW100
Bar stud terminal 	BW50HAG BW125 BW160 BW250 BW400 BW630 BW800 Each stud can be turned by 90°

Additional main parts	Flush mounting Rear connection (E type)
Bar stud terminal 	BW32 BW50 BW63 BW100
Bar stud terminal 	BW50HAG BW125 BW160 BW250 BW400 BW630 BW800 Each stud can be turned by 90°

Additional main parts	Plug-in mounting (P type)
Bar stud terminal 	BW32 BW50 BW63 BW100
Round stud terminal 	BW50HAG BW125
Bar stud terminal 	BW160 BW250 BW400 BW630 BW800 Each stud can be turned by 90°

Additional main parts	Flush mounting Top and bottom connection (Y type)
Decorative flush plate 	BW32 BW50 BW63 BW100

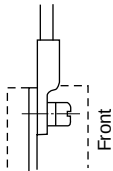
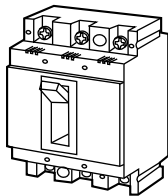
Molded Case Circuit Breakers

G-TWIN series

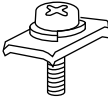
Terminal connection

■ Terminal connection/Front mounting, front connection

• 32AF to 100AF

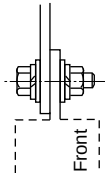
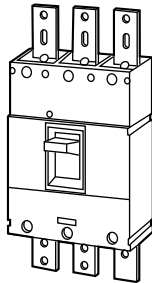


Flat terminal

Self lifting screw	Breaker type	Tightening torque (N•m)	Size
	BW32 BW50 BW100*	2.3 to 2.8	M5 × 14
Pan-head screw	Breaker type	Tightening torque (N•m)	Size
	BW63 BW100	5.5 to 7.5	M8 × 15

* Breaker of rated current : 50A

• 400AF to 800AF



Flat terminal

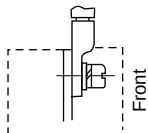
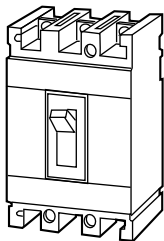
Hexagonal head bolt	Breaker type	Tightening torque (N•m)	Size (mm)
	BW400	40 to 50	M12 × 35
	BW630 BW800	40 to 50	M12 × 40

Type of connection/up to 250AF

Front mounting front connection

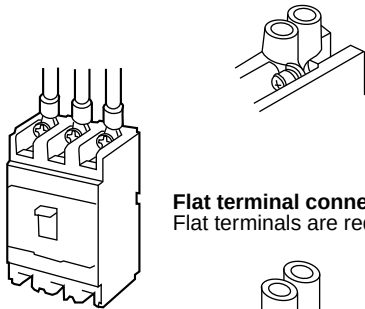
Direct connection

• 125AF to 250AF



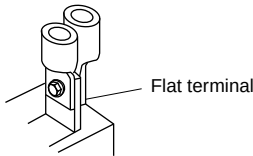
Front

Pan-head screw	Breaker type	Tightening torque (N•m)	Size (mm)
	BW50HAG BW125	5.5 to 7.5	M8 × 16
Hexagonal socket head bolt	Breaker type	Tightening torque (N•m)	Size (mm)
	BW160 BW250	8.0 to 13.0	M8 × 16



Flat terminal connection

Flat terminals are required.



Flat bar studs/1-hole type

Breaker type	Pole	Type of flat terminal
BW32 BW50	2	BZ6S10C502
	3	BZ6S10C503
BW63 BW100*	2	BZ6S10C1002
	3	BZ6S10C1003
BW50HAG BW125	2	BW9SS0CA-2
	3	BW9SS0CA-3
	4	BW9SS0CA-4
BW160 BW250	2	BZ-S50B-2252
	3	BZ-S50B-2253
	4	BW9SS0GA-4

* BW100 breaker of rated current 50A: BZ6S10C502 or 503.

Molded Case Circuit Breakers

G-TWIN series

Wire size and terminal

■ Wire size and crimp terminal

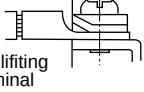
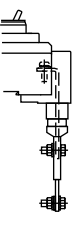
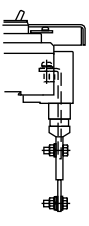
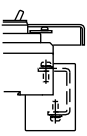
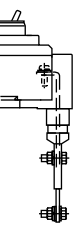
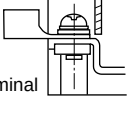
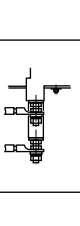
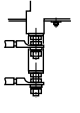
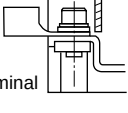
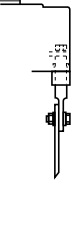
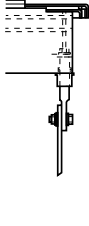
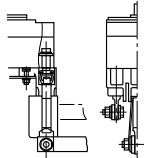
The following is the size recommendations for crimp terminals.

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	BW32	R2-5	R5.5-5	R8-5	R14-5							
50	BW50AAG,EAG,SAG	R2-5	R5.5-5	R8-5	R14-5							
	BW50HAG	R2-8	R5.5-8	R8-8	R14-8	R22-8	JST38-S8	CB60-8				
63	BW63	R2-8	R5.5-8	R8-8	R14-8	JST22-S8						
100	BW100	R2-8	R5.5-8	R8-8	R14-8	JST22-S8	JST38-S8					
125	BW125	R2-8	R5.5-8	R8-8	R14-8	R22-8	JST38-S8	CB60-8				
160 250	BW160 BW250					R22-8	R38-8	R60-8	CB100-8			
400	BW400						R38-12	R60-12	R100-12	R150-12	R200-12	JST325-12
630	BW630								R100-12	R150-12	R200-12	JST325-12
800	BW800								R100-12	R150-12	R200-12	JST325-12

■ Breaker termination

• Standard

MCCB type	Front connection	Rear connection X	Flush mounting E	Y	Plug-in mounting P
BW32 BW50	 Self-lifting terminal				
BW63 BW100	 Flat terminal				
BW50HAG BW125					
BW160 BW250	 Flat terminal				
BW400 BW630 BW800	 Flat terminal	90° rotational stud	90° rotational stud		90° rotational stud

Molded Case Circuit Breakers

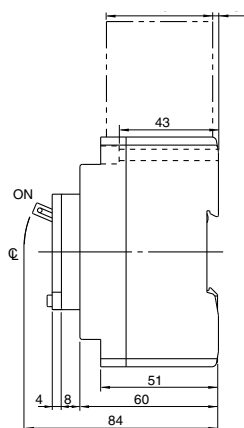
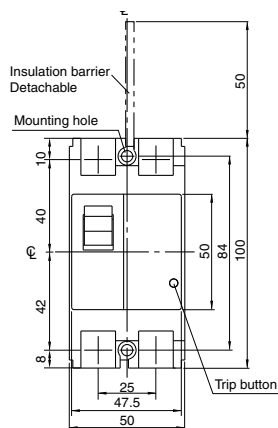
G-TWIN series

Dimensions / Standard

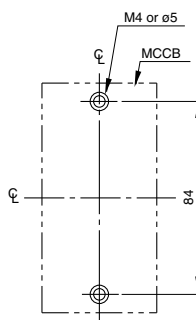
■ Dimensions, mm

● Front mounting, front connection

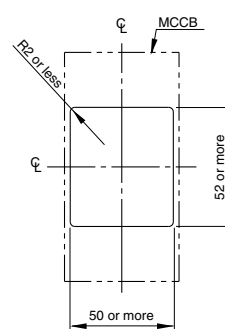
BW32-2P, BW50-2P



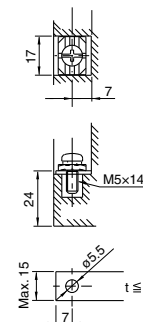
Panel drilling



Front panel cutting

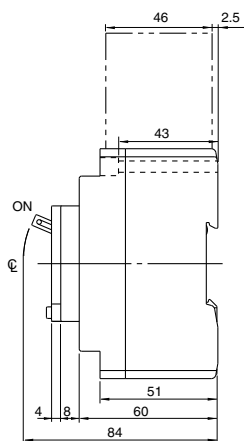
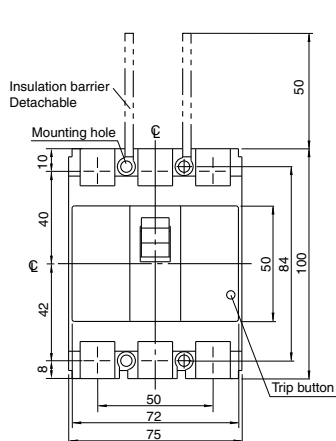


Terminal section

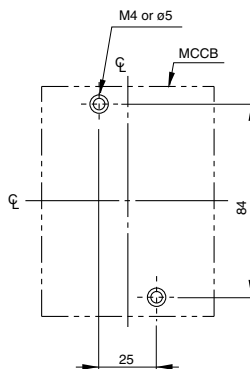


Insulation barriers
Standard provided: BW50SAG, BW50RAG
Optional: BW32AAG, BW32SAG, BW50EAG

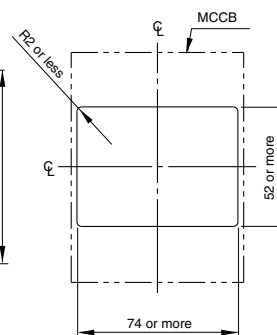
BW32-3P, BW50-3P



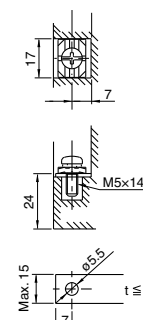
Panel drilling



Front panel cutting

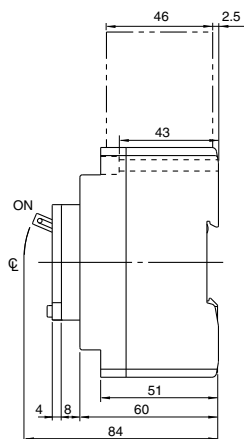
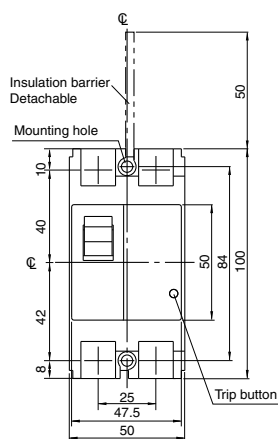


Terminal section

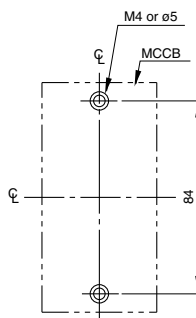


Insulation barriers
Standard provided: BW50SAG, BW50RAG
Optional: BW32AAG, BW32SAG, BW50EAG

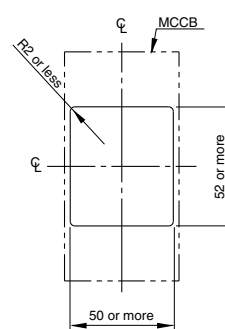
BW63-2P



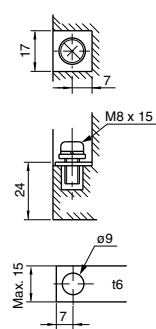
Panel drilling



Front panel cutting



Terminal section



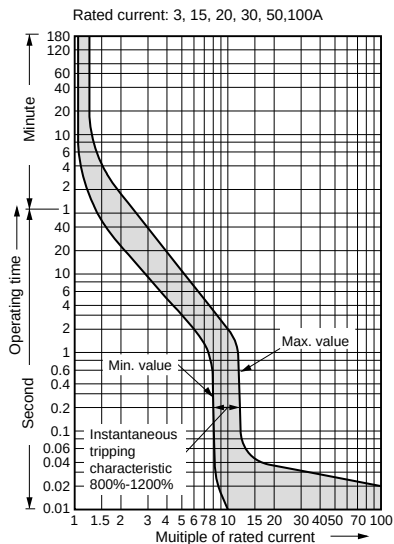
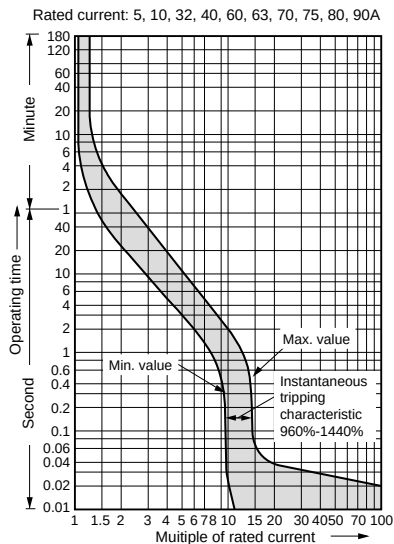
Molded Case Circuit Breakers

G-TWIN series

Characteristic curves

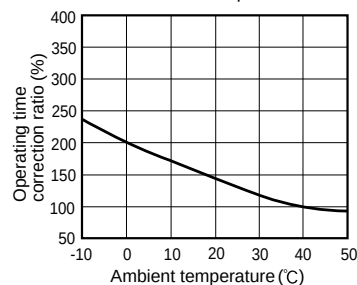
■ Characteristic curves / Line protection

BW32, 50, 63, 100



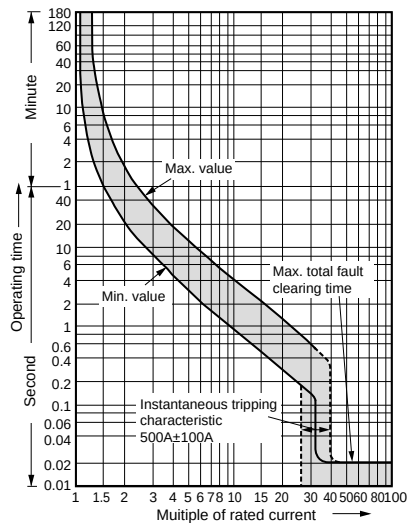
Temperature correction curve

Reference temp. 40 °C

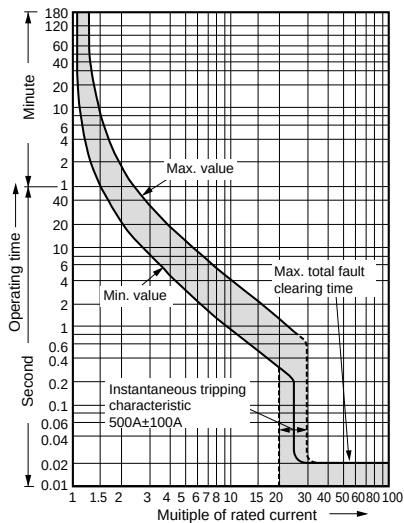


BW50HAG, BW125

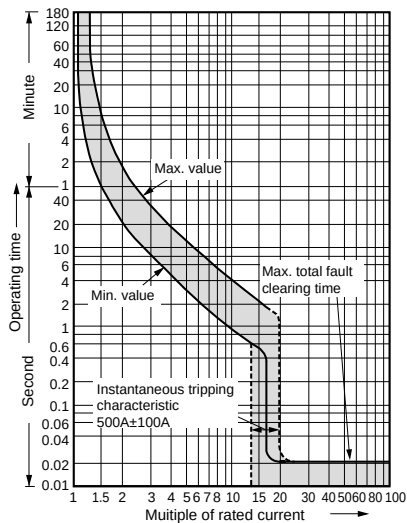
• 15A



• 20A



• 30A



Temperature correction curve

• 15-30A

Reference temp. 40 °C

