

GHG 612 miniature circuit breaker (MCB)



Size 1 MCB-1-pole



Size 2 MCB-2-pole



Size 3 MCB-3-pole



Size 4 MCB-4-pole

Technical data

MCB 0.5 A up to 40 A

Marking accd. to 2014/34/EU	⊕ II 2 G Ex de IIC/IIB Gb / ⊕ I M2 Ex de I Mb	
EC-Type Examination Certificate	PTB 98 ATEX 1087 U	
IECEX Certificate of Conformity	IECEX BKI 07.0038 U	
Marking accd. to IECEX	Ex de IIC	
Operating temperature range	-55 °C up to +110 °C (size 0, 1, 2 - IIC) -20 °C up to +110 °C (size 3, 4 - IIC) -55 °C up to +110 °C (size 3, 4 - IIB)	
Application temperature ¹⁾	-20 °C up to +55 °C (size 3, 4 - IIC) -55 °C up to +55 °C (size 0, 1, 2 - IIC; size 3, 4 - IIB)	
Rated voltage	main contact aux. contact	max. 400 V AC (+ 10 %) max. 250 V AC
Rated current	main contact aux. contact	0.5 A up to 40 A max. 5 A
Rated switching capacity 2/3 phase	10 kA	
	230 V AC (133/230 V AC) kA/cos φ	10/0.5
	400 V AC (230/400 V AC) kA/cos φ	10/0.5
Back-up fuse	depend on rated current up to 100 A	
Connecting terminals	main contact aux. contact	2 x 10 mm ² fine wire with wire end sleeve/single wire 2 x 2.5 mm ² fine wire with wire end sleeve/single wire
Weight	1-pole 2-pole 3-pole 4-pole	0.55 kg size 1 0.95 kg size 2 1.25 kg size 3 1.57 kg size 4
Enclosure material	glass-fibre reinforced polyester	
Enclosure colour	black	
Options	Auxiliary-signal contact	
Padlocking facility	in OFF position with a commercially available padlock	

¹⁾ The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account. See also pages 2.6.37.



Size 4 MCB-4-pole



Size 3 MCB-3-pole



Size 2 MCB-2-pole



Size 1 MCB-1-pole

Order code MCB 0.5 A up to 40 A

GHG 612 XXXX R0YYY

1. Contacts

1. Ordering Code for Contacts

Contacts	Termination diagram ¹⁾	1-pole (xxxx)	Module size ²⁾	2-pole (xxxx)	Module size ²⁾	3-pole (xxxx)	Module size ²⁾	4-pole (xxxx)	Module size ²⁾
only main contact	A1 up to A5	1141	1	2141	2	3141	3	4141	4
+ aux. contact (1 C/O)	B3	1142	1	2142	2	3142	3	4142	4
+ aux. contact (1NO+1NC)	B1, B2			3150	3				
+ aux. contact (2NO)	B4					4168	4		
+ N + aux. contact (1NO+1NC)	A4, B1, B2					4166	4		
+1 C/O	C3	2148	2	3157	3	4147	4	4143	4
+ signal contact (1NC) + aux. contact (1NO)	C2 + B1					4148	4		
+ signal contact (1NO) + aux. contact (1NO)	C1 + B1					4161	4	4160	4
+ signal contact (1NC) + aux. contact (1NC)	C2 + B2					4163	4		
+ Overload release (12 - 60 V)	D	2150	2	3147	3				
+ Overload release (110 - 415 V)	D	2151	2	3146	3	4146	4		
+ undervoltage trip ³⁾	E			3148	3	4144	4		
+ signal contact (1 C/O)	C3								
+ aux. contact (1 C/O)	B3			3143	3	4164	4		
+ Overload release (110 - 415 V)	D								
+ signal contact (1 C/O)	C3			4159	4				
+ Overload release (12 - 60 V)	D								
+ aux. contact (1 C/O)	B3			3149	3				
+ Overload release (110 - 415 V)	D								
+ signal contact (1 C/O)	C3								
+ auxiliary contact (1 C/O)	B3			4165	4				
+ Overload release (12 - 60 V)	D								
+ signal contact (1 C/O)	C3								
+ aux. contact (1 C/O)	B3			4169	4				
+ undervoltage trip ³⁾	E								
+ signal contact (1 C/O)	C3					4167	4		
+ undervoltage trip ³⁾	E								
+ signal contact (1 C/O)	C3								
+ aux. contact (1 C/O)	B3					4174	4		

¹⁾ Termination diagram see page 11.21

²⁾ Module size see dimension drawing page 11.22

³⁾ undervoltage trip 12 V DC, 24 V AC/DC, 48 V AC/DC, 110 V AC/DC, 230 V AC/DC, 400 V AC on request

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Order code MCB 0.5 A up to 40 A

6

GHG 612 XXXX R0YYY

2. Tripping current

2. Order code for tripping current, characteristic, max. back-up fuse, power dissipation per pole

Tripping current	Characteristic K Max. Back-up fuse gG	YYY	Characteristic Z Max. Back-up fuse gG	YYY	Characteristic B Max. Back-up fuse gG	YYY	Characteristic C Max. Back-up fuse gG	YYY
0.5 A		013		081				121
0.75 A		014						
1.0 A	not necessary	015	not necessary	082			not necessary	122
1.6 A		016		083	123			
2 A		017		084	124			
3 A		20 A		018	20 A	085		
4 A	25 A	019	20 A	086		20 A	126	
6 A	63 A	020	35 A	087	63 A	101	40 A	127
8 A	63 A	021	40 A	088			63 A	128
10 A	63 A	022	63 A	089	100 A	102	100 A	129
13 A					100 A	103	100 A	130
16 A	80 A	023	63 A	090	100 A	104	100 A	131
20 A	81 A	024	80 A	091	100 A	105	100 A	132
25 A	100 A	025	80 A	092	100 A	106	100 A	133
32 A	100 A	026	100 A	093	100 A	107	100 A	134
40 A	125 A	027	100 A	094	125 A	108	125 A	135

Back-up fuse is only required if at the installation point the max. prospective, unaffected short-circuit current will exceed the rated switching capacity.

Example

GHG 612 XXXX R 0YYY

GHG 612 **3143** R **0023**

3-pole

+ signal contact (1 C/O)

+ aux. contact (1 C/O)

16 A

K-Characteristic



Size 4 MCB-4-pole



Size 3 MCB-3-pole



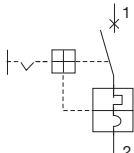
Size 2 MCB-2-pole



Size 1 MCB-1-pole

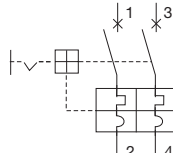
Termination diagram

①



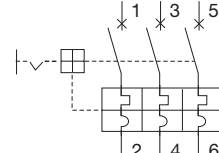
1. 1-pole MCB

②



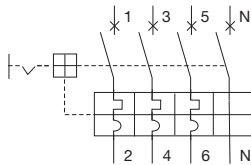
2. 2-pole MCB

③



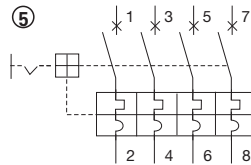
3. 3-pole MCB

④



3. 3-pole + N MCB

⑤

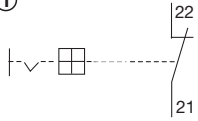


4. 4-pole MCB

6

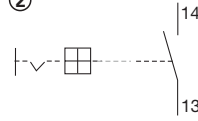
A. main contact

①



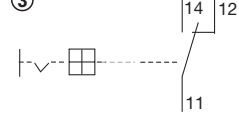
HK 1 NC

②



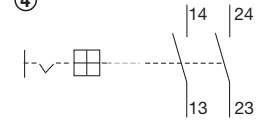
HK 1 NO

③



HK 1 C/O

④

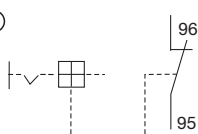


HK 2 NO

HK: aux. contact, NC: normally closed, NO: normally open, C/O: Changeover

B. Auxiliary contacts

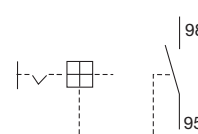
①



SK 1

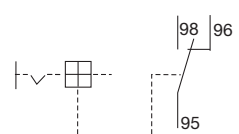
SK: Signal contact

②



SK 1 NO

③

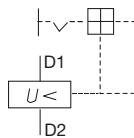
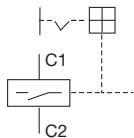


1SK 1 C/O

13. AA

14. UA

C. Signal contacts



D. AA: shunt opening release

E. undervoltage trip

- HK = main contact
- ac = aux. contact
- SK = signal contact
- AA = shunt opening release
- UA = undervoltage trip

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Size 2 MCB-2-pole



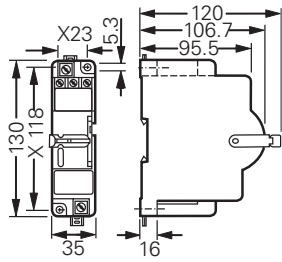
Size 3 MCB-3-pole



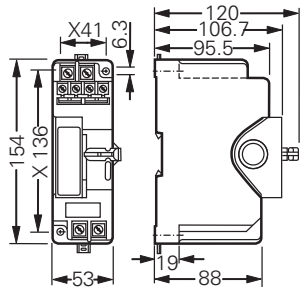
Size 4 MCB-4-pole

Dimension drawing | Termination diagram

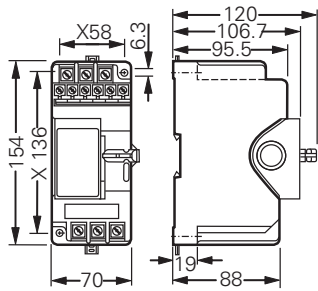
6



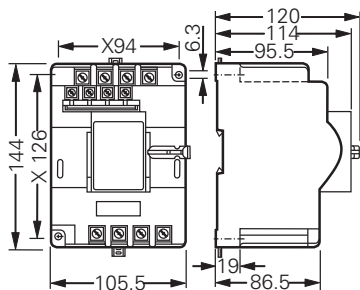
Module size 1



Module size 2



Module size 3



Module size 4

X = fixing dimension

Dimensions in mm



Size 4 MCB-4-pole



Size 3 MCB-3-pole

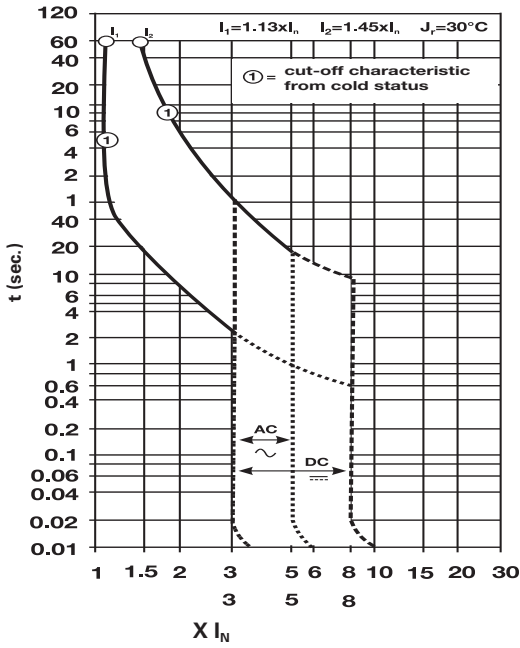


Size 2 MCB-2-pole

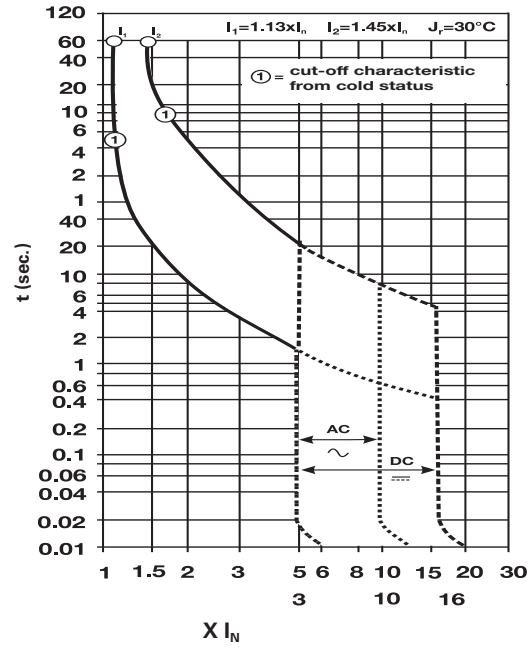


Size 1 MCB-1-pole

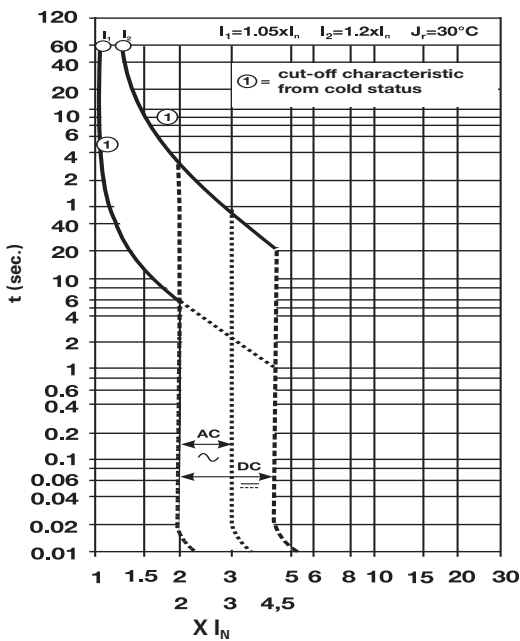
Tripping characteristic



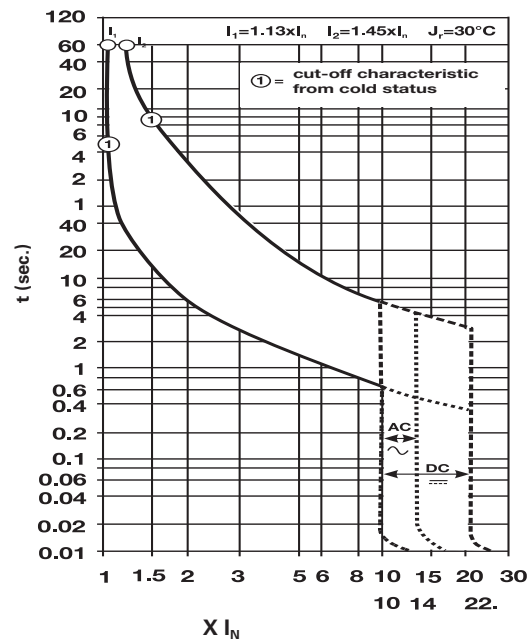
B-Characteristic



C-Characteristic



Z-Characteristic



K-Characteristic