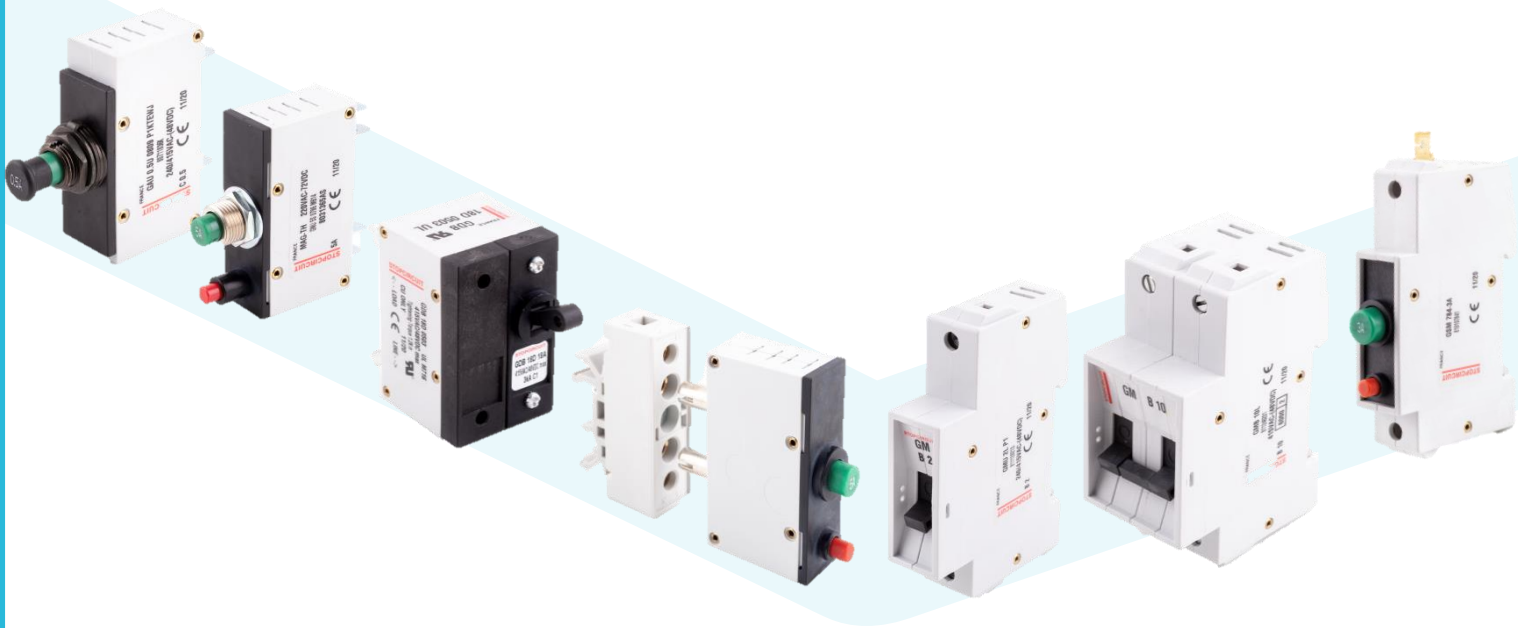




MINIATURE CIRCUIT BREAKERS

PROTECTION SOLUTIONS FOR HARSH ENVIRONMENTS



MAFELEC TEAM
CREATING SMART AND
SUSTAINABLE INTERFACES



CIRCUIT BREAKERS

Summary



Flush mounting and DIN Rail miniature circuit breakers

Technical characteristics	1
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GD – GN – GV series

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GM – GF – GC series

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CIRCUIT BREAKERS

Technical characteristics



✓ Magneto-Thermic protection ✓ Magnetic protection ✓ Thermic protection		GD-GN-GV series 		GM-GF-GC series 	
Rated current	Standard	0,1 to 32 A			
	On demand	0,04 to 50 A			
Max operating voltage DC		GD	48 VDC	GM	48 VDC
		GN	100 VDC	GF	100 VDC
		GV	150 VDC	GC	150 VDC
Max operating voltage AC		GD	240 / 415 VAC	GM	240 / 415 VAC
Breaking capacity	IEC 60947			GM	4 kA @ 220 VAC
					2 kA @ 220 VAC
	IEC 60898	GD	2 kA	GM	2 kA
	NF F 62001	GN	1 kA	GF	1 kA
		GV	1,5 kA	GC	1,5 kA
Service life (number of cycles ON/OFF)	MCB	4000 cycles			
	Auxiliary	4000 cycles			
With stand to mechanical shocks IEC 61373	Standard	30 G			
	With options	50G / 100 G (Cat 1 Class B)			
Operating temperature IEC 60068	Standard	- 5°C to + 40°C			
	With options	- 25°C to + 70°C			
		- 40°C to + 85°C			
Fire and smoke EN 45545-2		R22-R23-R24-R26 / HL1-HL2-HL3			
Certifications		  * In Progress CB  REACH COMPLIANT  RoHS COMPLIANT 			

* In Progress



CIRCUIT BREAKERS

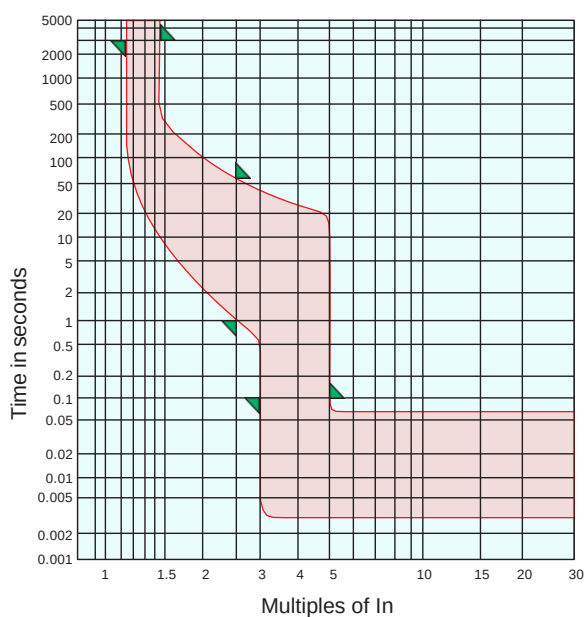
Protection Curves



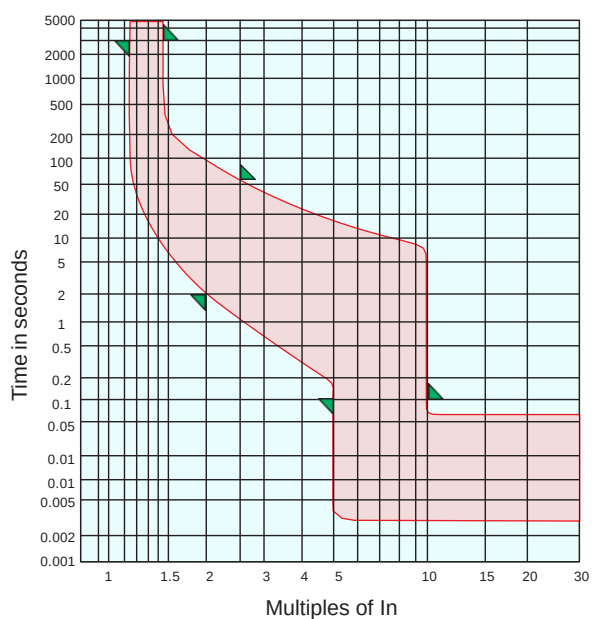
AC tripping curves*
Magneto-Thermic protection
(IEC 60898 standard)

GD – GM Series

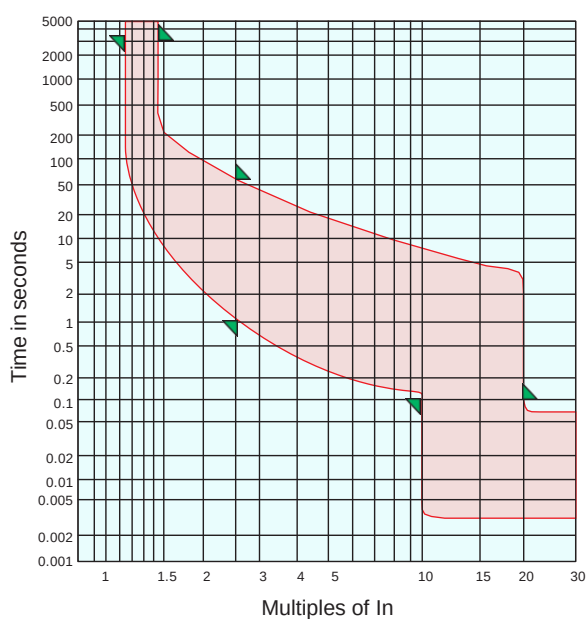
CURVE B



CURVE C



CURVE D



Legend

* Tripping at +30°C according to IEC 60898

Tests realized :

- at cold ($I=0$ before overload)
- Overload on all the poles for multipoles

Standard limits

For information

Uncertain tripping zone



CIRCUIT BREAKERS

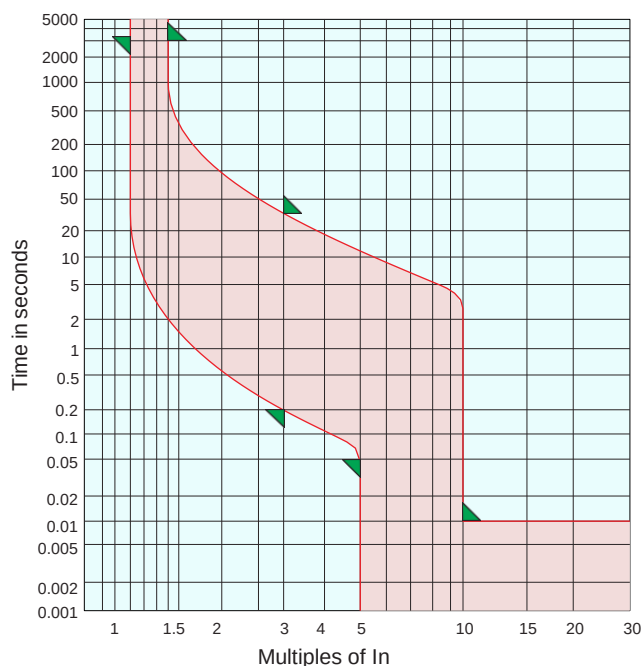
Protection Curves



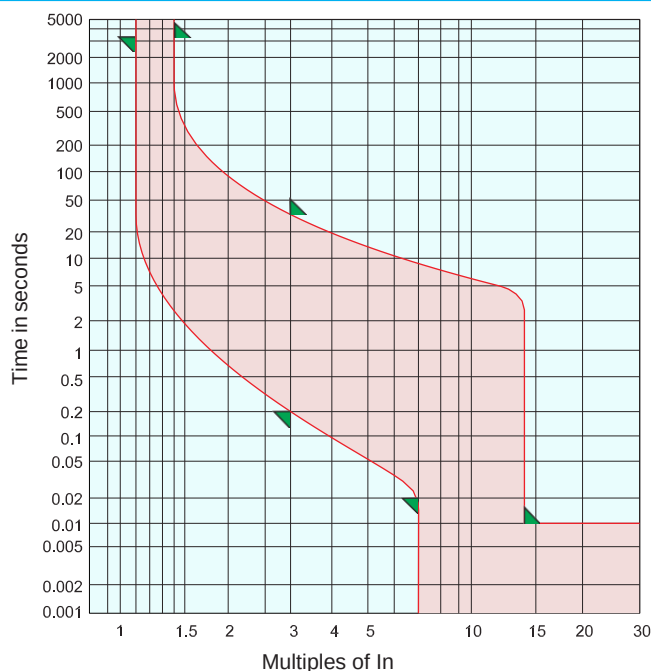
DC tripping curves*
Magneto-Thermic protection
(IEC 60898 standard)

GN – GV – GF – GC Series

CURVE S : Rating from 0,1 A to 2 A included



CURVE S : Rating from > 2 A to 32 A included



Legend

* Tripping at +20°C according to NF F 62001

Tests realized:

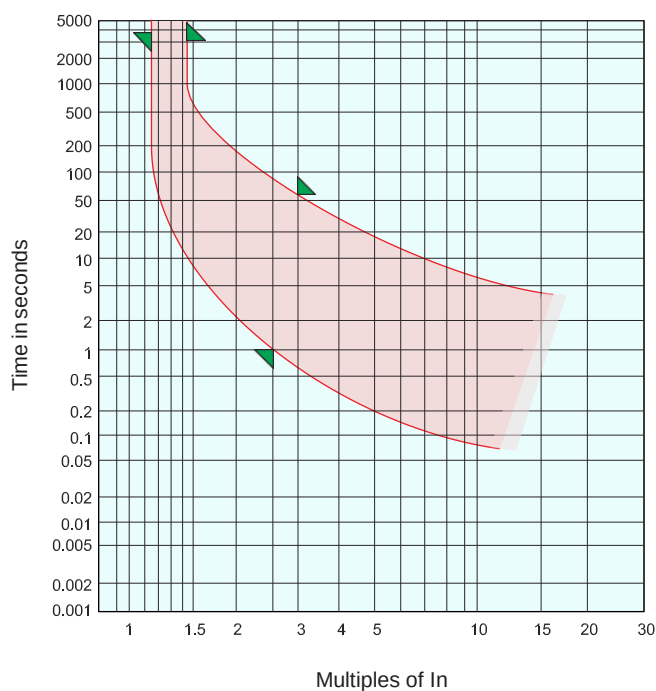
- at cold ($I=0$ before overload)
- Overload on all the poles for multiples

Standard limits

For information

Uncertain tripping zone

AC and DC tripping curve
All series
Thermic protection only (model T)





GD-GN-GV Series

Technical Information

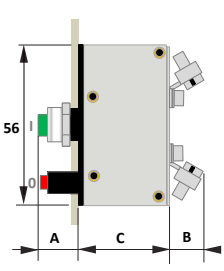
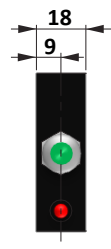
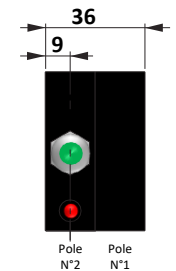
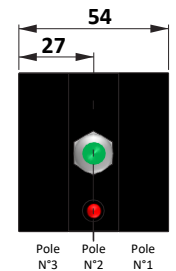


Flush mount or unpluggable versions : Dimensions drawings

Flush mount versions. Circuit breaker one pole to 3 poles.

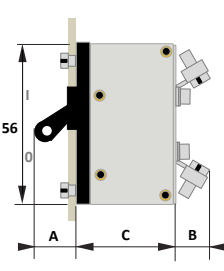
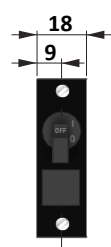
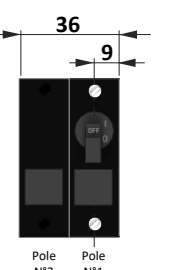
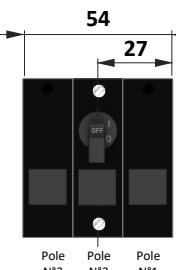
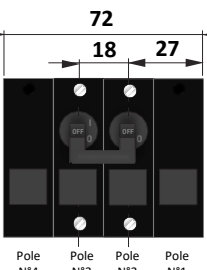
Mounting by screws or by plastic threaded bush (or metal, option W)

Fastening and operations : 03 - 04 - 06 - 07 - 08 - 09

Side view	Version U 1 pole	Version B or 1+N 2 poles	Version T 3 poles	Examples	
				Command 07 : 2 buttons	Command 08 : 1 push pull button
					

Flush mount versions. Circuit breaker one pole to 4 poles. Mounting by screws

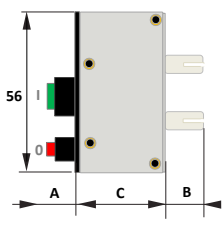
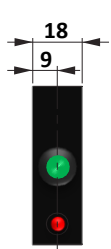
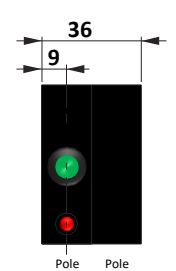
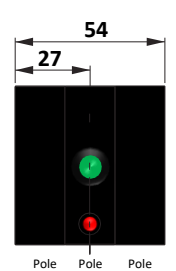
Fastening and operations : 05

Side view	Version U 1 pole	Version B or 1+N 2 poles	Version T 3 poles	Version Q or 3+N 4 poles (2 handles)	Example
					Command 05 : 1 handle
					

Unpluggable versions. Circuit breaker one pole to 3 poles. Bases on DIN Rail or plate

Fastening and operations*: 00 - 01 - 02 / Terminals compatible : 10

*Other variants available : contact us

Side view	Version U 1 pole	Version B or 1+N 2 poles	Version T 3 poles	Example
				Command 01 : 2 buttons
				 



GD-GN-GV Series

Technical Information



Flush mount or unpluggable versions : Fastenings and terminals

Fastening drawings*

Projection			Screw fastening			Fastening threaded bush			
00	01	02	03	04	05	06	07	08	09

* Other variants available : contact us

Terminals drawings*

10	01	02	03	33	43	04	05	06	07	08	09

* Other variants available : contact us

Dimensions

	Unpluggable			Screw			Threaded bush			
Fastening / Operations	00	01	02	03	04	05	06	07	08	09
Dimension A (mm)	8	8	8	8	8	17,5	15	15	21	28
Dimension C (mm)	33	33	33	37	37	37	33	33	33	33
Panel thickness max. (mm)				3	3	3	5	5	5	5

Terminals	10	01	02	03	33	43	04	05	06	07	08	09
Dimension B (mm)	15	4	4	12	12	12	4	4	7	4	4	11



GD-GN-GV Series

Technical Information



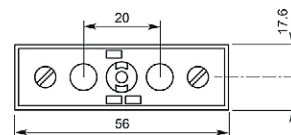
Accessories and options

Bases for unpluggable circuit breakers

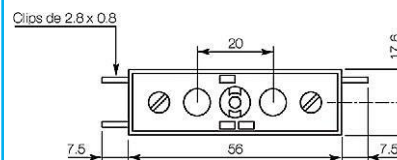
Mounting on plate

Number of auxiliary change-over contacts	1 pole	2 poles	3 poles	4 poles
0	B100	B200	B300	B400
1	B101	B201	B301	B401
2		B202	B302	B402
3			B303	B403
4				B404

Without auxiliary contact



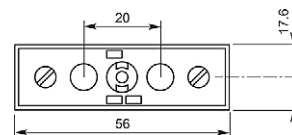
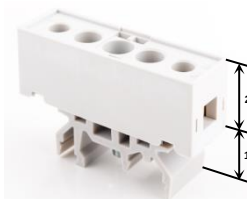
With auxiliary contact



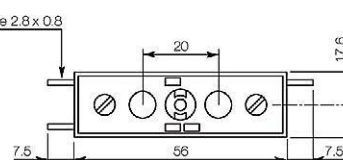
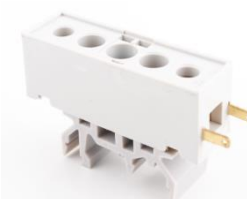
Mounting on DIN rail 1-3

Number of auxiliary change-over contacts	1 pole	2 poles	3 poles	4 poles
0	B130	B230	B330	B430
1	B131	B231	B331	B431
2		B232	B332	B432
3			B333	B433
4				B434

Without auxiliary contact

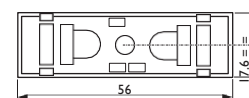
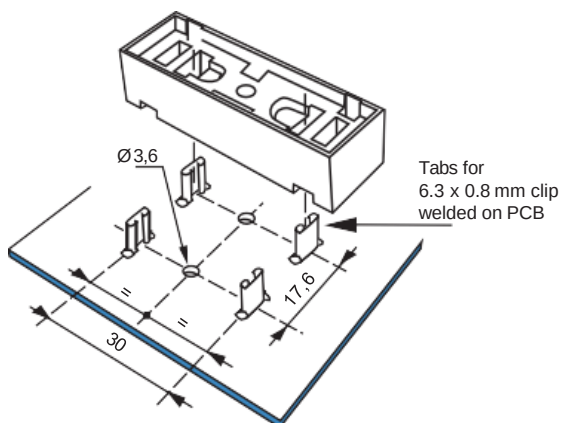


With auxiliary contact



Mounting on PCB - With terminals 09

Part number B110





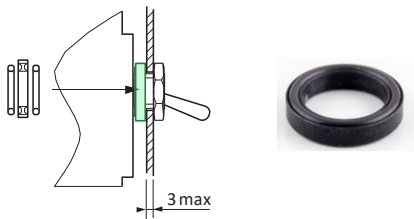
GD-GN-GV Series

Technical Information



Accessories and options

Sealing

Part number	Description	
E206	Hooded sealing for Fastening / operation N° 06	
E208	Hooded sealing for Fastening / operation N° 08	
E100	Equipment sealing for fastening / operation N° 09 . 1 ring, 2 seals (providing a seal to the artificial rain in front face) <u>Requires the T option for the circuit-breaker</u>	

Options

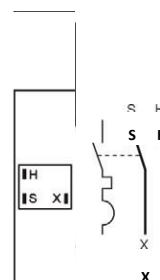
Change-over auxiliary contacts (options P1-P2-P3-P4)

Switching capacity (resistive circuit)

Maximum value :
3A under 240 VAC / 48 VDC

Minimum value :
5mA under 15 VDC

Connection with tabs 2.8 x 0.8 for clips (terminals S.H.X)



GD series Circuit-breaker, model D with thermal protection adjustable (option R)

The magnetic thresholds are defined according to the D curve and from the lowest rated current of the range

Adjusting range (A) :

| 0,1 / 0,16 | 0,16 / 0,25 | 0,25 / 0,4 | 0,4 / 0,6 | 1 / 1,6 |
| 1,6 / 2,5 | 2,5 / 4 | 4 / 6 | 6 / 10 |





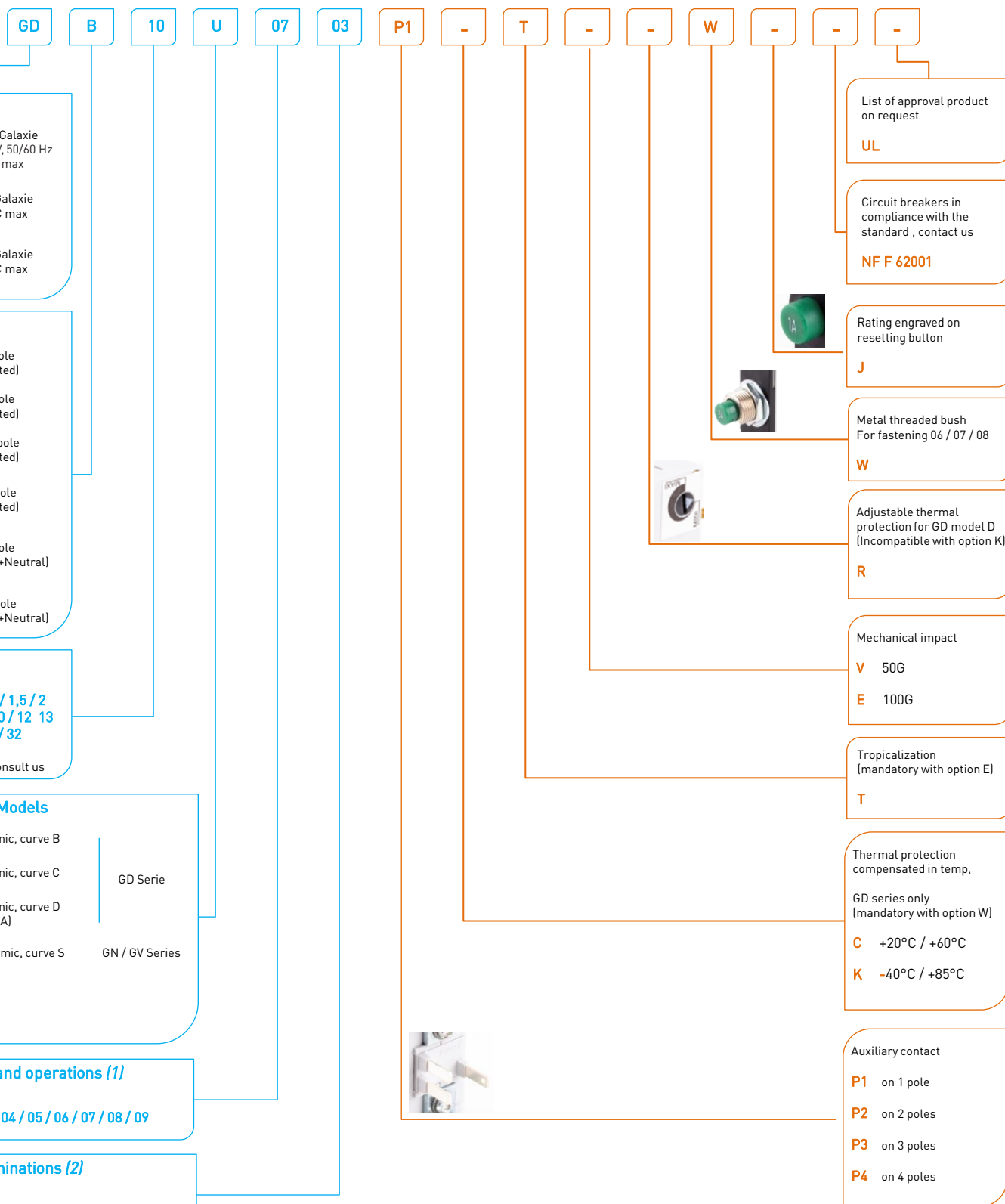
GD-GN-GV Series

How to order ?



Example:

1 Circuit-breaker - **Serie** : Galaxie standard AC - **Version** : 2 protected poles - **Rating** : 10 A - **Model** : magnetic-thermal, curve C
- **Fastenings and operations** : Threaded bush flush type 2 buttons - **Terminations** : Screws and back connectors
- **With Options** Auxiliary for position signalling O/F : on 1 pole - Tropicalization



STOPCIRCUIT also accompanies you in the definition of special products on specifications (reference GS)





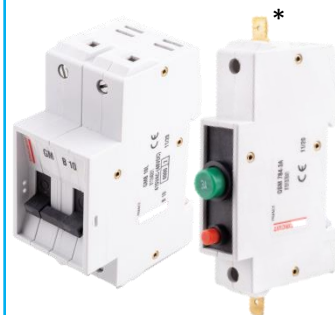
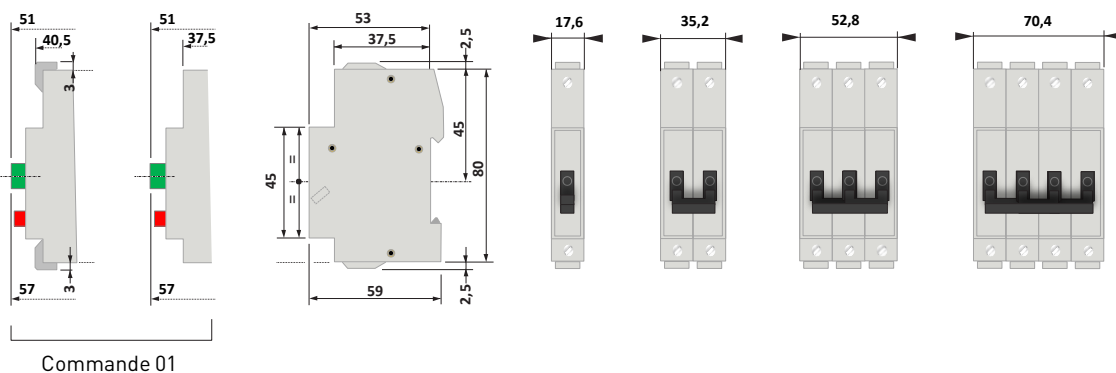
GM-GF-GC Series

Technical Information



DIN Rail mount versions

Dimensions drawings



Note : Operation N° 00 or 01 on the first pole if 2 poles, or on the second pole if 3 poles

* Possibility of specific terminals on request

Options

Change-over auxiliary contacts (options P1-P2-P3-P4)

Switching capacity (resistive circuit)

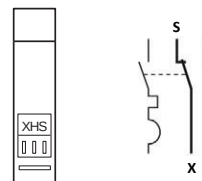
Maximum value :

3A under 240 VAC / 48 VDC

Minimum value :

5mA under 15 VDC

Connection with tabs 2.8 x 0.8 for clips (terminals S.H.X)



Mounting on DIN rail 1-3

Part number

A466





GM-GF-GC series

How to order ?



Example:

1 Circuit-breaker - **Serie** : Galaxie Modular AC - **Version** : 4 protected poles - **Rating** : 16 A - **Model** : magnetic-thermal, curve C
- **Option** : Tropicalization

GM Q 16 U - - - T - - -

Series

GM	Standard Galaxie AC 240/415 V, 50/60 Hz 48V DC max
GF	Special Galaxie 100V DC max
GC	Special Galaxie 150V DC max

Versions

U	One-pole (protected)
B	Two-pole (protected)
T	Three-pole (protected)
Q	Four-pole (protected)
1+N	Two-pole (1 protected +Neutral)
3+N	Four-pole (3 protected +Neutral)

Ratings (A)

0,1 / 0,2 / 0,3 / 0,5 / 1 / 1,5 / 2
2,5 / 3 / 4 / 5 / 6 / 8 / 10 / 12 / 13
/ 16 / 20 / 25 / 30 / 32

Others Consult us

Models

L	Magneto-Thermic, curve B	GM Serie
U	Magneto-Thermic, curve C	
D	Magneto-Thermic, curve D (Rating 6 to 32 A)	GF / GC Series
S	Magneto-Thermic, curve S	
T	Thermic only	
N	Switch (32A)	

Operations

00	1 button	3 poles max.
01	2 buttons	

List of approval product
on request

UL

Circuit breakers in
compliance with the
standard , contact us

NF F 62001

Rating engraved on
resetting button

J

Mechanical impact

V 50G

Tropicalization

T

Thermal protection
compensated in temp,

C +20°C / +60°C

Auxiliary contact

P1	on 1 pole
P2	on 2 poles
P3	on 3 poles
P4	on 4 poles

STOPCIRCUIT also accompanies you in the definition of special products on specifications (reference GS)





<http://www.stopcircuit.fr/>



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