TeSys GV5/GV6

55 to 250 kW

Product references

PB120638.eps

GV5P220F

Thermal-magnetic circuit breakers GV5P with screw clamp terminals up to 110 kW (1)

Control by direct rotary handle

Standard power ratings of 3-phase motors 50/60 Hz in category AC-3									Thermal setting range (Ir)	Reference	Weight
400/415 V			500 V			660/690 V					
P	Icu	Ics (2)	P	Icu	Ics (2)	P	Icu	Ics (2)			
kW	kA	%	kW	kA	%	kW	kA	%	A		kg
55...75	36	100	**75...90**	30	100	**90... 110**	8	100	70…150	**GV5P150F**	2.4
	70	100		50	100		10	100		**GV5P150H**	
90...110	36	100	**110**	30	100	**110...132**	8	100	100…220	**GV5P220F**	2.6
	70	100		50	100		10	100		**GV5P220H**	

(1) Breakers have to be used with suitable rating of contactors, as defined in section A6.
(2) As % of Icu.

PB120633.eps

GV6P320F

Thermal-magnetic circuit breakers GV6P with screw clamp terminals up to 250 kW (1)

Control by direct rotary handle

Standard power ratings of 3-phase motors 50/60 Hz in category AC-3									Thermal setting range (Ir)	Reference	Weight
400/415 V			500 V			660/690 V					
P	Icu	Ics (2)	P	Icu	Ics (2)	P	Icu	Ics (2)			
kW	kA	%	kW	kA	%	kW	kA	%	A		kg
132...160	36	100	**160...200**	25	100	**200...250**	10	100	160…320	**GV6P320F**	6.5
	70	100		50	100		10	100		**GV6P320H**	
200...250	36	100	**250...315**	25	100	**315...400**	10	100	250…500	**GV6P500F**	6.7
	70	100		50	100		10	100		**GV6P500H**	

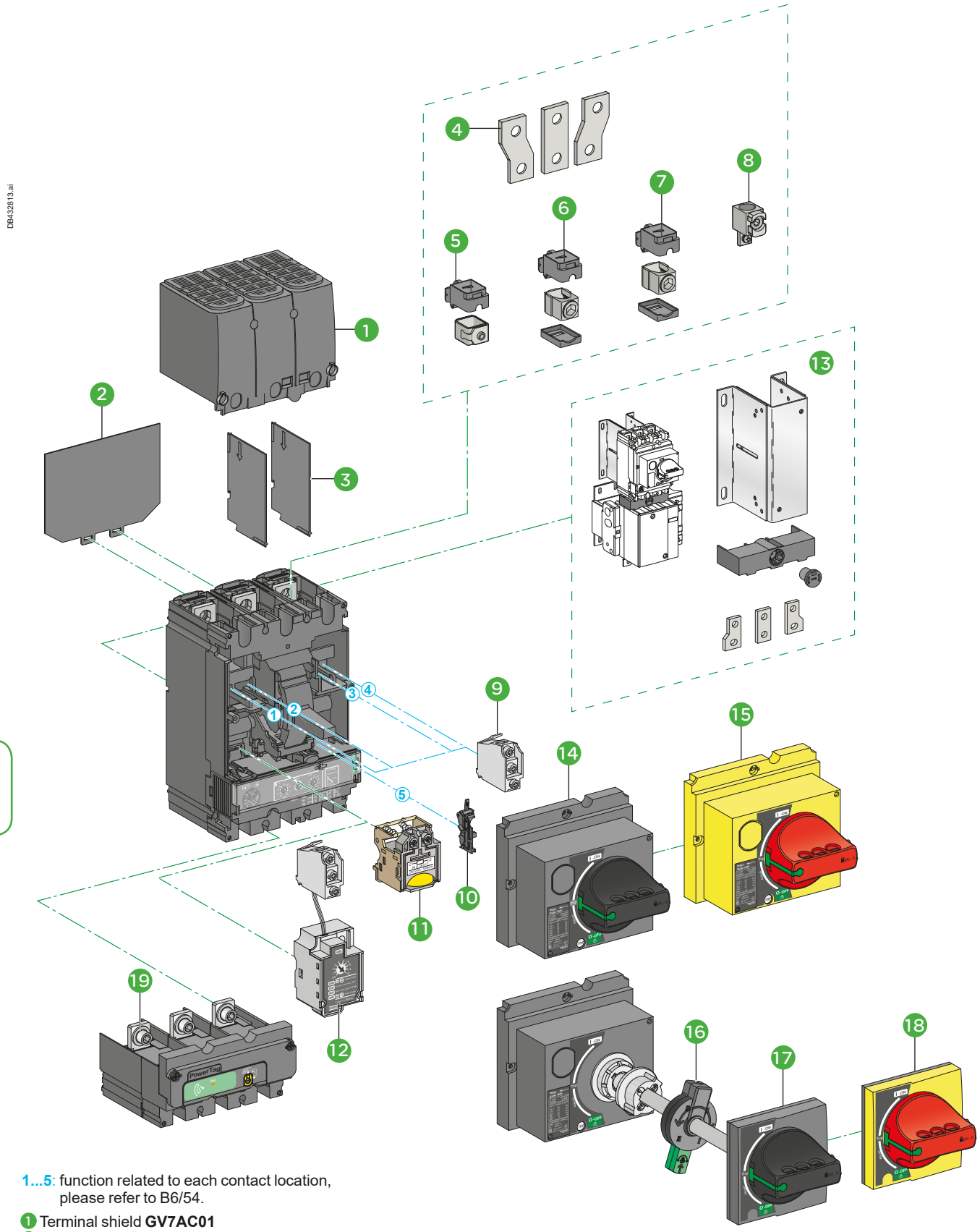
(1) Breakers have to be used with suitable rating of contactors, as defined in section A6.
(2) As % of Icu.

Thermal-magnetic circuit breakers GV5P/GV6P with screw clamp terminals (1)

Control by direct rotary handle

Thermal setting	3-Phase			Standard breaking capacity	High breaking capacity
	230 V	460 V	575 V		
A	HP	HP	HP	Reference	Reference
90…150	50	100	150	**GV5P150F**	**GV5P150H**
133…220	75	150	200	**GV5P220F**	**GV5P220H**
160…320	125	250	300	**GV6P320F**	**GV6P320H**
250…500	150	350	500	**GV6P500F**	**GV6P500H**

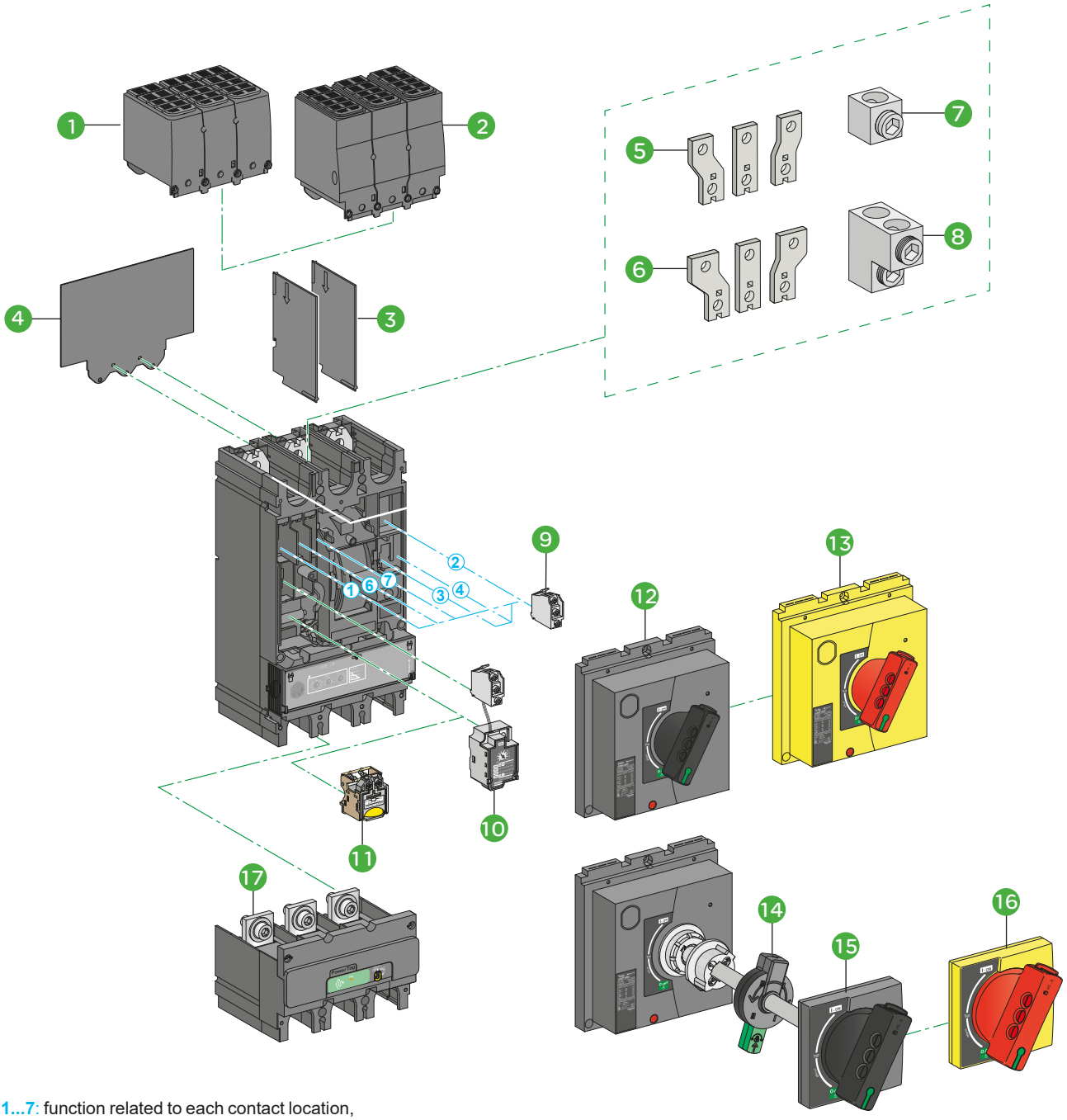
(1) Breakers have to be used with suitable rating of contactors, as defined in section A6.



1...5: function related to each contact location, please refer to B6/54.

1. Terminal shield **GV7AC01**
2. Insulating screen **GV7AC05**
3. Interphase barriers **GV7AC04**
4. Spreaders 45 mm **GV7AC03**
5. Steel connector **GV7AC021** (1.5-95 mm²)
6. Aluminum connector **LV429227** (25-95 mm²)
7. Aluminum connector **GV7AC022** (120-185 mm²)
8. Aluminum connector **LV429244** (120-240 mm²)
9. OF, SD, or SDE indication contacts **GV7AE11** (standard) / **GV7AB11** (for low level)
10. SDE adapter **LV429451**
11. AU (UVR) or AS (SHT) voltage release **GV7AU●●●/ GV7AS●●●**
12. SDTAM thermal fault module **LV429424**
13. Combination kit for contactor **GV7AC06/GV7AC07/GV7AC08**
14. Direct rotary handle black **GV5AP03** (shipped with the device)
15. Direct rotary handle red on yellow bezel **GV7AP04**
16. Open door shaft operator **LV426937**
17. Extended rotary handle black **GV7AP01**
18. Extended rotary handle red on yellow bezel **GV7AP02**
19. PowerTag M250 wireless energy sensor **LV434020**

DB432814.ai



1...7: function related to each contact location, please refer to B6/54.

1. Terminal shield 45 mm **LV432593**
2. Terminal shield 52.5 mm **LV432595**
3. Interphase barriers **LV432570**
4. Insulating screen **LV432578**
5. Spreader 52.5 mm **LV432490**
6. Spreader 70 mm **LV432492**
7. Aluminum connector **LV432479** (1 x 35-300 mm^2)
8. Aluminum connector **LV432481** (2 x 35-300 mm^2)
9. OF, SD, or SDE indication contacts **GV7AE11** (standard) / **GV7AB11** (for low level)
10. SDTAM thermal fault module **LV429424**
11. AU (UVR) or AS (SHT) voltage releases **GV7AU●●●/ GV7AUS●●●**
12. Direct rotary handle black **GV6AP03** (shipped with the device)
13. Direct rotary handle red on yellow bezel **LV432599**
14. Open door shaft operator **LV426937**
15. Extended rotary handle black **LV432598**
16. Extended rotary handle red on yellow bezel **LV432600**
17. PowerTag M630 wireless energy sensor **LV434022**

Add-on auxiliary contacts - OF contacts

These allow remote indication of the circuit breaker contact states. They can be used for signalling, electrical locking, relaying, etc. They are available in two versions: standard and low level. They include a terminal block and the auxiliary circuits leave the circuit breaker through a hole provided for this purpose.
They perform the following functions, depending on where they are located in the circuit breaker:

Location	Function	Application
1 and/or 4 (GV5) 1 and/or 4, 6, 7 (GV6)	C/O contact	Indicates the position of the circuit breaker poles.
2	Trip indication	Indicates that the circuit breaker has tripped due to an overload, a short-circuit, a differential fault or the operation of a voltage trip (undervoltage or shunt trip), or of the "push to trip" test button. It resets when the circuit breaker is reset.
3	Electrical fault indication	Indicates that the circuit breaker has tripped due to an overload, a short-circuit or a differential fault. It resets when the circuit breaker is reset.
5	Adapter for electrical fault indication	This accessory is mandatory for GV5 to provide electrical fault indication.

Type	Reference
Standard	**GV7AE11**
Low level	**GV7AB11**
Adapter for electrical fault indication	**LV429451**

Thermal fault module - SDTAM

GV5/ GV6 can be equipped with thermal fault module. This module have:
■ a contact to indicate overload fault in the circuit-breaker
■ a contact to open the contactor. In the event of overload or phase unbalance, this output is activated 400 ms before circuit-breaker tripping to open the contactor and avoid circuit breaker tripping.

Voltage	Reference
24...415 V AC/DC	**LV429424** (1)

Electric trips

These allow the circuit breaker to be tripped via an electrical control signal.
■ Undervoltage release (UVR) - GV7AU
■ Trips the circuit breaker when the control voltage drops below 35 % of its rated voltage.
■ Between 35 % and 70 % of the rated voltage opening is possible but not guaranteed.
■ Above 70 % of the rated voltage, opening does not take place.
■ Continuous duty rated coil.
■ Circuit breaker closing is possible only if the voltage exceeds 85 % of the rated voltage.
■ Shunt trip (SHT) - GV7AS
Trips the circuit breaker when the control voltage rises above 0.7 times the rated voltage.
■ Impulse type ⩾ 20 ms or maintained control signals.
■ Operation (GV7AU or GV7AS)
□ When the circuit breaker has been tripped by a GV7 AU or AS, it must be reset either locally.
□ Tripping has priority over manual closing: if a tripping order is present, manual action does not result in closing, even temporarily, of the contacts.
□ Durability: 50 % of the mechanical durability of the circuit breaker.

Type	Voltage	Reference
Undervoltage trip	48 V, 50/60 Hz	**GV7AU055**
	110…130 V, 50/60 Hz	**GV7AU107**
	200…240 V, 50/60 Hz	**GV7AU207**
	380…440 V, 50/60 Hz	**GV7AU387**
Shunt trip	48 V, 50/60 Hz	**GV7AS055**
	110…130 V, 50/60 Hz	**GV7AS107**
	200…240 V, 50/60 Hz	**GV7AS207**
	380…440 V, 50/60 Hz	**GV7AS387**

*(1) **LV429429** takes the place of the AU/AS electric trip coil and an auxiliary contact (C/O contact 1).*

Characteristics:
pages B6/136 and B6/137
Schemes:
page B6/144

LV432479

LV432490

LV432593

GV7AC04

GV6AP03

LV432599

GV7AP02

Cabling accessories

Cable connectors: The connectors for GV5 snap directly on to the device terminals or are secured by clips to right-angle and straight terminal extensions as well as spreaders. GV6 connectors are screwed directly to the device terminals.

Spreaders: Spreaders may be used to increase the pitch from 35 mm to 45 mm for GV5. The 45 mm pitch can be increased to 52.5 or 70 mm for GV6.

Long terminal shields: They are used for front connection with cables or insulated bars. They comprise two parts assembled with captive screws, forming an IP40 cover. The top part is equipped with sliding grids with break marks for precise adaptation to cables or insulated bars. The rear part completely blocks off the connection zone. Partially cut squares can be removed to adapt to all types of connection for cables with lugs or copper bars. Long terminal shields may be mounted upstream and downstream of the breaker.

Phase barriers: These interphase barriers are used for maximum insulation at the power-connection points.

Insulating screens: These are fited at the rear of the device which provides insuation. Their use is mandatory for devices with spreaders, installed on backplates, when terminal shields are not used.

GV5 Combination kits: These kits allow link between the circuit breaker and the contactor. The cover provides protection against direct finger contact. The kit comprises links, a protective shield and a depth adjustable metal bracket for the breaker.

Description	Application	Sold in lots of	Unit reference GV5	Unit reference GV6
Steel connectors (set of 3)	1.5…95 mm² ≤ 150 A	1	**GV7AC021**	**–**
Aluminium connectors (set of 3)	25…95 mm² ≤ 220 A	1	**LV429227**	
	120…185 mm² ≤ 220 A	1	**GV7AC022**	
	120…240 mm² ≤ 220 A	1	**LV429244**	
	35...300 mm²	1		**LV432479**
	2 x 35...300 mm²	1		**LV432481**
Spreader 3-pole (1)	35…45 mm pole pitch	1	**GV7AC03**	
	52.5 mm pole pitch	1		**LV432490**
	70 mm pole pitch	1		**LV432492**
Long terminal shield (IP40) (1)	35 mm pole pitch	1	**GV7AC01**	
	45 mm pole pitch	1		**LV432593**
	52.5 mm pole pitch	1		**LV432595**
Phase barriers (set of 6)		1	**GV7AC04**	**LV432570**
Insulating screens (set of 2)	45 mm	1	**GV7AC05**	
	70 mm			**LV432578**
Combination Kits (2)				
For contactor LC1 F115…F185	Connection kits between breaker and contactor	1	**GV7AC06**	
For contactor LC1 F225 and F265		1	**GV7AC07**	
For contactor LC1 D115 and D150		1	**GV7AC08**	

Direct rotary handle

The circuit breaker is always supplied direct rotary handle (black handle, black plate) as standard and it provides IP40 protection. The other type handles can be used by replacing this direct rotary handle. It includes a device for locking the circuit breaker in the O (Off) position by means of up to 3 padlocks with a shackle diameter of 5 to 8 mm (padlocks not included). A MCC conversion accessory allows the direct rotary handle to be mounted on the enclosure door. In this case, the door cannot be opened if the circuit breaker is in the “ON” position. Circuit breaker closing is inhibited if the enclosure door is open and prevents the device from being closed if the door is open.

Description	Type	Sold in lots of	Unit reference GV5	Unit reference GV6
Direct rotary handle	Black handle, black legend plate	1	**GV5AP03**	**GV6AP03**
	Red handle, yellow legend plate	1	**GV7AP04**	**LV432599**
MCC conversion accessory	Four mounting direct rotary handle on enclosure door	1	**GV7AP05**	**LV432606**

Extended rotary handle

Allows to operate a circuit breaker from the front of the switch board, which's installed in the back of an enclosure, which provides IP55 protection. It comprises:

- a unit which is screwed onto the front accessory cover of the circuit breaker,
- an assembly (handle mechanism and front plate) to be fitted on the enclosure door,
- an extension shaft which must be adjusted.
- The distance minimum and maximum distances between the mounting surface and the door are
  - 185...600 mm for GV5
  - 209...600 mm for GV6

It includes a device for locking the circuit breaker in the O (Off) position by means of up to 3 padlocks with a shackle diameter of 5 to 8 mm (padlocks not included) and disables opening enclosure door.

Description	Type	Sold in lots of	Unit reference GV5	Unit reference GV6
Extended rotary handle	Black handle, black legend plate	1	**GV7AP01**	**LV432598**
	Red handle, yellow legend plate	1	**GV7AP02**	**LV432600**

(1) Terminal shields cannot be used together with spreaders.
(2) The kit comprises links, a protective shield and a depth adjustable metal bracket for the breaker.

Dimensions:
page B6/141

Front extended rotary handles (cont.)

Operation when door is opened
An open door shaft operator can be used to operate the circuit breaker when door is opened. This accessory complies with UL508 A.
The indication of the three positions OFF (**O**), ON (**I**) and tripped (**Trip**) is visible on the circuit breaker.
The circuit breaker itself may be locked in OFF position when the door is opened by 1 padlock / lockout hasp, shackle Ø4-8 mm.


PB121328.eps

LV426937
Open door shaft operator

Description	Reference
Open door shaft operator	**LV426937**
Laser tool	**GVAPL01**


PB106297.eps

GVAPL01 Laser tool

Other accessories

Bag of 6 tamper seals + 6 cover caps (1 large, 5 small) for screw heads	**LV429375**


PB120637.eps

LVA429375
Sealing accessories

PowerTag Measurement module

Wireless-communication module
PowerTag is directly mounted on the bottom side of the circuit breaker.
It provides capability to measure energy, monitor voltage loss, and trigger alarms.
It then delivers useful data to a concentrator for monitoring and diagnosis of the associated circuit breaker.
In addition to monitoring and alarming, PowerTag solution provides a complete knowledge of real time electrical values with a rich and accurate data transfer every 5 seconds.
PowerTag energy sensors can be quickly and easily installed in new or existing panels at any time. Compared to traditional metering solutions, installation time and commissioning are much shorter with no wiring, hence an error proof high density solution and a built-in class 1 accuracy.


PB121345.eps

LV434020, LV434022

Functions
PowerTag energy sensor measures the following values in accordance with the IEC 61557-12 standard:
- ■ Energy (4 quadrants):
  - □ Active energy (Wh): total and partial, delivered and received
  - □ Active energy per phase (Wh): total
  - □ Reactive energy (VARh): partial, delivered and received
- ■ Power:
  - □ Active power (W): total and per phase
  - □ Reactive power (VAR): total
  - □ Apparent power (VA): total
- ■ Voltages (V): phase-to-phase (U12, U23, U31) and phase-to-neutral (V1N, V2N, V3N)
- ■ Currents (A): per phase (I1, I2, I3)
- ■ Frequency
- ■ Power factor
- ■ Voltage loss alarm:
  - □ PowerTag energy sensor sends a "voltage loss" alarm and the current-per-phase value before being de-energized
  - □ At "voltage loss", PowerTag adds an overload alarm if the current is higher than the rated current of the associated protective device.

Note: *functions listed above depend on concentrators/gateways.*

Description	Reference
PowerTag M250 3P: suitable for GV5 up to 220 A	**LV434020**
PowerTag M630 3P: suitable for GV6 up to 500 A	**LV434022**

Circuit breakers

Dimensions:
page B6/142

TeSys GB2

0.5 to 20 A

(for equipment and control circuits)

PB110899_20.eps

GB2CB

PB110901_20.eps

GB2CD

PB110902_20.eps

GB2DB

PB110900_20.eps

GB2CS

Introduction

GB2 thermal-magnetic circuit breakers protect and isolate the control circuits of industrial equipment with contactor coils, transformers….
They protect and isolate single-phase auxiliary circuits such as solenoid valves, electro-brakes, battery chargers, supplied from the control circuit voltage.

GB2CB, GB2CD, GB2DB

12 ratings are available, from 0.5 to 20 A, in single-pole (GB2CB), single-pole + neutral (GB2CD) and 2-pole (GB2DB) versions.
They have a magnetic tripping threshold set at between 12 and 16 In to withstand the current peaks generated by many industrial components.

GB2CS

2 ratings are available, 0.5 and 1 A, in single-pole version.
The magnetic tripping threshold is set between 5 and 7 In.

Functions, installation

Clip-on fixing onto all types of 35 mm ⊥ rails, on ⊔ rails and on Telequick mounting plates.
Upstream and downstream marking by means of AB1 clip-in markers.
Clear indication of “I” and “O” positions on the operator.
Tamper-proof device which requires no special maintenance (fixed magnetic and thermal tripping thresholds).

Selection for the protection of circuits supplied by transformers

Single-phase transformers.
Magnetising peak: 20 In.
Operation of magnetic trips: 13 In.

Power	Primary (1)		Secondary			
VA	220/240 V	380/415 V	24 V	48 V	110 V	220 V
40	GB2DB05	GB2DB05	GB2CD07	GB2CD06	GB2CD05	GB2CD05
63	GB2DB05	GB2DB05	GB2CD08	GB2CD07	GB2CD06	GB2CD05
100	GB2DB06	GB2DB05	GB2CD10	GB2CD07	GB2CD06	GB2CD05
160	GB2DB07	GB2DB06	GB2CD14	GB2CD09	GB2CD07	GB2CD06
250	GB2DB07	GB2DB06	GB2CD16	GB2CD12	GB2CD08	GB2CD07
400	GB2DB08	GB2DB07	GB2CD22	GB2CD14	GB2CD09	GB2CD07
630	GB2DB10	GB2DB08	–	GB2CD21	GB2CD12	GB2CD08
1000	GB2DB14	GB2DB09	–	–	GB2CD16	GB2CD10
1600	GB2DB20	GB2DB14	–	–	–	GB2CD14
2000	GB2DB21	GB2DB14	–	–	GB2CD22	GB2CD16
2500	GB2DB22	GB2DB20	–	–	–	GB2CD20
3000	GB2DB22	GB2DB20	–	–	–	GB2CD21
4000	–	GB2DB21	–	–	–	GB2CD22
5000	–	GB2DB22	–	–	–	–

*(1) If the breaking capacity of the **GB2** is insufficient, use a **GV2RT** with 2 poles connected in series.*

Product references

PB110899_20.eps

GB2CB●●

Circuit breakers with magnetic tripping threshold: 12 to 16 In

Single-pole

Conventional rated thermal current Ith (1)	Magnetic tripping current Id ± 20 %	Sold in lots of	Unit reference
A	A		
0.5	6.6	6	**GB2CB05**
1	14	6	**GB2CB06**
2	26	6	**GB2CB07**
3	40	6	**GB2CB08**
4	52	6	**GB2CB09**
5	66	6	**GB2CB10**
6	83	6	**GB2CB12**
8	108	6	**GB2CB14**
10	138	6	**GB2CB16**
12	165	6	**GB2CB20**
16	220	6	**GB2CB21**
20	270	6	**GB2CB22**

PB110901_20.eps

GB2CD●●

Single-pole + neutral

Conventional rated thermal current Ith (1)	Magnetic tripping current Id ± 20 %	Sold in lots of	Unit reference
A	A		
0.5	6.6	6	**GB2CD05**
1	14	6	**GB2CD06**
2	26	6	**GB2CD07**
3	40	6	**GB2CD08**
4	52	6	**GB2CD09**
5	66	6	**GB2CD10**
6	83	6	**GB2CD12**
8	108	6	**GB2CD14**
10	138	6	**GB2CD16**
12	165	6	**GB2CD20**
16	220	6	**GB2CD21**
20	270	6	**GB2CD22**

PB110902_20.eps

GB2DB●●

2-pole

Conventional rated thermal current Ith (1)	Magnetic tripping current Id ± 20 %	Sold in lots of	Unit reference
A	A		
0.5	6.6	3	**GB2DB05**
1	14	3	**GB2DB06**
2	26	3	**GB2DB07**
3	40	3	**GB2DB08**
4	50	3	**GB2DB09**
5	66	3	**GB2DB10**
6	83	3	**GB2DB12**
8	108	3	**GB2DB14**
10	138	3	**GB2DB16**
12	165	3	**GB2DB20**
16	220	3	**GB2DB21**
20	270	3	**GB2DB22**

(1) Conforming to IEC 60947-1.

Characteristics:
pages B6/146 to B6/148

Dimensions, schemes:
page B6/149

Product references

Circuit breakers with magnetic tripping threshold: 5 to 7 In

PB110900_20.eps

GB2CS●●

Single-pole

Conventional rated thermal current Ith (1)	Magnetic tripping current Id ± 20 %	Sold in lots of	Unit reference
A	A		
0.5	3.3	6	**GB2CS05**
1	6	6	**GB2CS06**

(1) Conforming to IEC 60947-1.

Accessories for circuit breakers GB2-CB, DB and CS

PB121347.eps

GB2G210

Description	Sold in lots of	Unit reference
Busbar set for supply to 10 GB2 DB or 20 GB2CB or GB2CS with 2 connectors	1	**GB2G210**
Supply connector	10	**GB2G01**

PB121348.eps

GB2G01

Characteristics:
pages B6/146 to B6/148

Dimensions, schemes:
page B6/149

TeSys GV, GB

Technical Data for Designers

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TeSys GV2

0.06 to 15 kW

Characteristics

Environment

Circuit breaker type				GV2L	GV2LE	GV2ME	GV2P	GV2RT
Conforming to standards				IEC/EN 60947-4-1, IEC/EN 60947-2				
				CSA C22.2 n°60947-4-1 (1)				
Product certifications				CCC, EAC, BV, LROS, DNV-GL, RINA, UL (1)	CCC, EAC, BV, RINA, UL (1)	CCC, UL, CSA, EAC, ATEX, BV, LROS, DNV-GL, RINA	CCC, UL, CSA, EAC, ATEX, BV, LROS, DNV-GL, RINA	CCC, UL, CSA, EAC, BV, LROS
Climatic withstand				According to IACS E10				
Degree of protection (front face)	Conforming to IEC 60529	Open mounted		Against direct finger contact: IP20				
		In enclosure		IP65 with GV2PC01 GV2PC02 enclosure	-	IP41 with GV2M●01 IP55 with GV2M●02 enclosure	IP 65 with GV2PC01 GV2PC02 enclosure	-
Shock resistance	Conforming to IEC 60068-2-27			30 gn - 11 ms				
Vibration resistance	Conforming to IEC 60068-2-6			5 gn (5 to 150 Hz)				
Ambient air temperature	Storage		°C	-40…+80				
	Operation	Open mounted	°C	-20…+60				
		In enclosure	°C	-20…+40				
Temperature compensation		Open mounted	°C	-20…+60				
		In enclosure	°C	-20…+40				
Flame resistance	Conforming to IEC 60695-2-11		°C	960				
Maximum operating altitude			m	2000				
Suitable for isolation	Conforming to IEC 60947-1 § 7-1-6			Yes				
Resistance to mechanical impact			J	0.5				
				IK04				
Sensitivy to phase failure				Yes, conforming to IEC 60947-4-1 § 8-2-1-5-2 for GV2ME & GV2P				

Technical characteristics

Circuit breaker type			GV2L	GV2LE	GV2ME	GV2P	GV2RT
Utilisation category	Conforming to IEC 60947-2		A				
	Conforming to IEC 60947-4-1		AC-3				
Rated operational voltage (Ue)	Conforming to IEC 60947-2	V	690				
Rated insulation voltage (Ui)	Conforming to IEC 60947-2	V	690				
Rated voltage	Conforming to UL 60947-4-1	V	-	-	600	600	600
	CSA C 22.2 n° 60947-4-1		480	480	600	600	600
Rated operational frequency	Conforming to IEC 60947-4-1 UL, CSA	Hz	50/60				
Rated impulse withstand voltage (U imp)	Conforming to IEC 60947-2	kV	6				
Total power dissipated per pole		W	1.8		2.5		
Mechanical durability (C.O.: Closing, Opening)		C.O.	100 000				
Electrical durability for AC-3/415V duty (C.O.: Closing, Opening)	415 V In	C.O.	100 000				
Duty class (maximum operating rate)		C.O./h	40		25		
Maximum conventional rated thermal current (Ith)	Conforming to IEC 60947-4-1	A	0.4...32	0.4...32	0.16...32	0.16...32	0.40...23
Rated duty	Conforming to IEC 60947-4-1		Continuous duty				

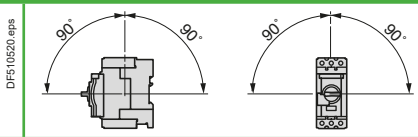
*(1) **GV2L03** to **GV2L22**, **GV2LE03** to **GV2LE22**.*
*(2) UL 60947-4-1 type E for **GV2P●●** (except 32 A).*

Ref.
Circuit breakers

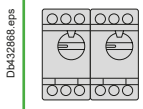
References:
pages B6/11 to B6/18
Curves:
pages B6/69 to B6/78
Dimensions:
pages B6/82 to B6/91

Mounting characteristics

Operating position
Without derating, in relation to normal vertical mounting plane (1)



Products side by side



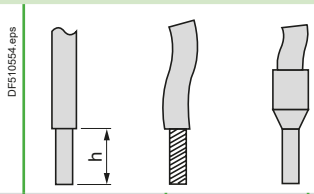
When several products **GV2ME●●**, **GV2P●●**, **GV2RT●●** are mounted side by side, the thermal trip setting Ir maybe need to be adjusted up to 1.1xIn.

Do not exceed the maximum thermal setting Ir.
E.g: **GV2ME14**, thermal setting range: 6...10, do not adjust Ir above 10 A.

Connection characteristics

Connection to screw clamp terminals or spring terminals

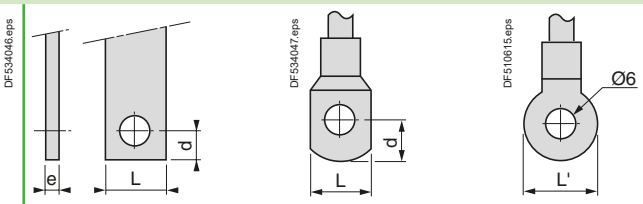
Bare cables



Circuit breaker type			GV2L		GV2LE		GV2ME		GV2P		GV2RT	
			Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Connection to screw clamp terminals (Max. number of conductors x c.s.a.)	Solid cable	mm²	2 x 1	2 x 6	2 x 1	2 x 6	2 x 1	2 x 6	2 x 1	2 x 6	2 x 1	2 x 6
	Flexible cable without cable end	mm²	2 x 1.5	2 x 6	2 x 1.5	2 x 6	2 x 1.5	2 x 6	2 x 1.5	2 x 6	2 x 1.5	2 x 6
	Flexible cable with cable end	mm²	2 x 1	2 x 4	2 x 1	2 x 4	2 x 1	2 x 4	2 x 1	2 x 4	2 x 1	2 x 4
Tightening torque		N.m	1.7									
Connection to spring terminals Number of conductors x c.s.a.	Solid cable	mm²	–	–	–	–	2 x 1 (2)	2 x 6	–	–	–	–
	Flexible cable without cable end	mm²	–	–	–	–	2 x 1.5 (2)	2 x 4	–	–	–	–

Connection by bars or lugs

Bars or lugs



Circuit breaker type			GV2ME●●6
Pitch	Without spreaders	mm	13.5
	With spreaders	mm	–
Bars or cables with lugs	e	mm	≤ 6
	L	mm	≤ 9.5
	L'	mm	≤ 9.5
	d	mm	≤ 10
Screws			M4
	Tightening torque	N.m	1.7
Bare cables (copper or aluminium) with connectors	Height (h)	mm	–
	C.s.a.	mm²	–
	Tightening torque	N.m	–

(1) When mounting on a vertical rail, fit a stop to prevent any slippage.
*(2) For cross-sections 1 to 1.5 mm², the use of an **LA9D99** cable end reducer is recommended.*

References:
pages B6/11 to B6/18
Curves:
pages B6/69 to B6/78
Dimensions:
pages B6/82 to B6/91

Characteristics

Breaking capacity of GV2L and GV2LE

Circuit breaker type				GV2LE									GV2L								
				03 to 06	07	08	10	14	16	20	22	32	03 to 05	06 & 07	08	10	14	16	20	22	32
Rating			A	0.4 to 1.6	2.5	4	6.3	10	14	18	25	32	0.4 to 1	1.6 to 2.5	4	6.3	10	14	18	25	32
Breaking capacity conforming to IEC 60947-2	230/240 V	Icu	kA	★	★	★	★	★	★	★	50	50	★	★	★	★	★	★	★	50	50
		Ics % (1)		★	★	★	★	★	★	★	100	100	★	★	★	★	★	★	★	100	100
	400/415 V	Icu	kA	★	★	★	★	★	15	15	15	10	★	★	★	★	★	50	50	50	50
		Ics % (1)		★	★	★	★	★	50	50	40	50	★	★	★	★	★	50	50	50	50
	440 V	Icu	kA	★	★	★	50	15	8	8	6	6	★	★	★	★	20	20	20	20	20
		Ics % (1)		★	★	★	100	100	50	50	50	50	★	★	★	★	75	75	75	75	75
	500 V	Icu	kA	★	★	★	50	10	6	6	4	4	★	★	★	★	10	10	10	10	10
		Ics % (1)		★	★	★	100	100	75	75	75	75	★	★	★	★	100	75	75	75	75
	690 V	Icu	kA	★	3	3	3	3	3	3	3	3	★	4	4	4	4	4	4	4	4
		Ics % (1)		★	75	75	75	75	75	75	75	75	★	100	100	100	100	100	100	100	100
Associated fuses (if required) if Isc > breaking capacity Icu conforming to IEC 60947-2 amendment 1	230/240 V	aM	A	★	★	★	★	★	★	★	80	80	★	★	★	★	★	★	★	100	100
		gG	A	★	★	★	★	★	★	★	100	100	★	★	★	★	★	★	★	125	125
	400/415 V	aM	A	★	★	★	★	★	63	63	80	80	★	★	★	★	★	80	100	100	100
		gG	A	★	★	★	★	★	80	80	100	100	★	★	★	★	★	100	125	125	125
	440 V	aM	A	★	★	★	50	50	50	50	63	63	★	★	★	★	50	63	80	80	80
		gG	A	★	★	★	63	63	63	63	80	80	★	★	★	★	63	80	100	100	100
	500 V	aM	A	★	★	★	50	50	50	50	50	50	★	★	★	★	50	50	50	50	50
		gG	A	★	★	★	63	63	63	63	63	63	★	★	★	★	63	63	63	63	63
	690 V	aM	A	★	16	25	32	32	40	40	40	40	★	20	25	40	40	50	50	50	50
		gG	A	★	20	32	40	40	50	50	50	50	★	25	32	50	50	63	63	63	63
Cable protection against thermal stress in the event of short-circuit (PVC insulated copper cables) Minimum c.s.a. protected at 40 °C and at Isc max.	1 mm²		kA	●	●	●	≤10	≤ 6	(2)	(2)	(2)	(2)	●	●	●	≤10	≤ 6	(2)	(2)	(2)	(2)
	1.5 mm²		kA	●	●	●	≤20	≤10	(2)	(2)	(2)	(2)	●	●	●	≤20	≤10	(2)	(2)	(2)	(2)
	2.5 mm²			●	●	●	●	●	●	●	●	(2)	●	●	●	●	●	●	●	●	(2)
	4…6 mm²			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

★ *> 100 kA.*
● *Cable c.s.a. protected.*
(1) As % of Icu.
(2) Cable c.s.a. not protected.

References:
pages B6/12 and B6/13
Curves:
pages B6/69 to B6/78
Dimensions:
pages B6/82 to B6/91

Characteristics

Breaking capacity of GV2ME, GV2RT and GV2P

Circuit breaker type				GV2ME and GV2RT										GV2P								
				01 to 06	07	08	10	14	16	20	21 & 22	32		01 to 06	07	08	10	14	16	20	21 & 22	32
Rating			A	0.1 to 1.6	2.5	4	6.3	10	14	18	23 & 25	32		0.1 to 1.6	2.5	4	6.3	10	14	18	23 & 25	32
Breaking capacity conforming to IEC 60947-2	230/240 V	Icu	kA	★	★	★	★	★	★	★	50	50		★	★	★	★	★	★	★	★	★
		Ics % (1)		★	★	★	★	★	★	★	100	100		★	★	★	★	★	★	★	★	★
	400/415 V	Icu	kA	★	★	★	★	★	15	15	15	10		★	★	★	★	★	★	50	50	50
		Ics % (1)		★	★	★	★	★	50	50	40	50		★	★	★	★	★	★	50	50	50
	440 V	Icu	kA	★	★	★	50	15	8	8	6	6		★	★	★	★	★	50	20	20	20
		Ics % (1)		★	★	★	100	100	50	50	50	50		★	★	★	★	★	75	75	75	75
	500 V	Icu	kA	★	★	★	50	10	6	6	4	4		★	★	★	★	50	42	10	10	10
		Ics % (1)		★	★	★	100	100	75	75	75	75		★	★	★	★	100	75	75	75	75
	690 V	Icu	kA	★	3	3	3	3	3	3	3	3		★	8	8	6	6	6	4	4	4
		Ics % (1)		★	75	75	75	75	75	75	75	75		★	100	100	100	100	100	100	100	100
Associated fuses (if required) if Isc > breaking capacity Icu conforming to IEC 60947-2	230/240 V	aM	A	★	★	★	★	★	★	★	80	80		★	★	★	★	★	★	★	★	★
		gG	A	★	★	★	★	★	★	★	100	100		★	★	★	★	★	★	★	★	★
	400/415 V	aM	A	★	★	★	★	★	63	63	80	80		★	★	★	★	★	★	100	100	100
		gG	A	★	★	★	★	★	80	80	100	100		★	★	★	★	★	★	125	125	125
	440 V	aM	A	★	★	★	50	50	50	50	63	63		★	★	★	★	★	50	63	80	80
		gG	A	★	★	★	63	63	63	63	80	80		★	★	★	★	★	63	80	100	100
	500 V	aM	A	★	★	★	50	50	50	50	50	50		★	★	★	★	50	50	50	50	50
		gG	A	★	★	★	63	63	63	63	63	63		★	★	★	★	63	63	63	63	63
	690 V	aM	A	★	16	25	32	32	40	40	40	40		★	20	25	40	40	50	50	50	50
		gG	A	★	20	32	40	40	50	50	50	50		★	25	32	50	50	63	63	63	63

★ > 100 kA.
(1) As % of Icu.

References:
pages B6/14 to B6/18

Curves:
pages B6/75 to B6/78

Dimensions:
pages B6/85 to B6/90

Breaking capacity of GV2ME, GV2RT and GV2P (used in association with current limiter GV1L3)

Circuit breaker type				GV2ME and GV2RT									
				01 to 06	07	08	10	14	16	20	21	22	32
Rating			A	0.1 to 1.6	2.5	4	6.3	10	14	18	23	25	32
Breaking capacity conforming to IEC 60947-2	230/240 V	Icu	kA	★	★	★	★	★	★	★	★	★	★
		Ics % (1)		★	★	★	★	★	★	★	★	★	★
	400/415 V	Icu	kA	★	★	★	★	★	100	100	100	100	100
		Ics % (1)		★	★	★	★	★	50	50	40	40	40
	440 V	Icu	kA	★	★	★	★	★	50	20	20	20	20
		Ics % (1)		★	★	★	★	★	75	75	75	75	75
	500 V	Icu	kA	★	★	★	★	50	42	10	10	10	10
		Ics % (1)		★	★	★	★	100	100	75	75	75	75

Circuit breaker type				GV2P									
				01 to 06	07	08	10	14	16	20	21	22	32
Rating			A	0.1 to 1.6	2.5	4	6.3	10	14	18	23	25	32
Breaking capacity conforming to IEC 60947-2	230/240 V	Icu	kA	★	★	★	★	★	★	★	★	★	★
		Ics % (1)		★	★	★	★	★	★	★	★	★	★
	400/415 V	Icu	kA	★	★	★	★	★	★	★	★	★	★
		Ics % (1)		★	★	★	★	★	★	★	★	★	★
	440 V	Icu	kA	★	★	★	★	★	100	100	100	100	100
		Ics % (1)		★	★	★	★	★	50	50	50	50	50
	500 V	Icu	kA	★	★	★	★	100	100	100	100	100	100
		Ics % (1)		★	★	★	★	50	50	50	50	50	50
	690 V (3)	Icu = Ics	kA	★	50	50	50	50	50	50	50	50	50

Circuit breaker type				GV2ME									
				01 to 06	07	08	10	14	16	20	21	22	32
Rating			A	0.1 to 1.6	2.5	4	6.3	10	14	18	23	25	32
Cable protection against thermal stress in the event of short-circuit (PVC insulated copper cables)	Minimum c.s.a. protected at 40 °C at Isc max.	1 mm²		●	●	●	⩽ 10 kA	⩽ 6 kA	(2)	(2)	(2)	(2)	(2)
		1.5 mm²		●	●	●	⩽ 20 kA	⩽ 10 kA	(2)	(2)	(2)	(2)	(2)
		2.5 mm²		●	●	●	●	●	●	●	●	●	(2)
		4…6 mm²		●	●	●	●	●	●	●	●	●	●

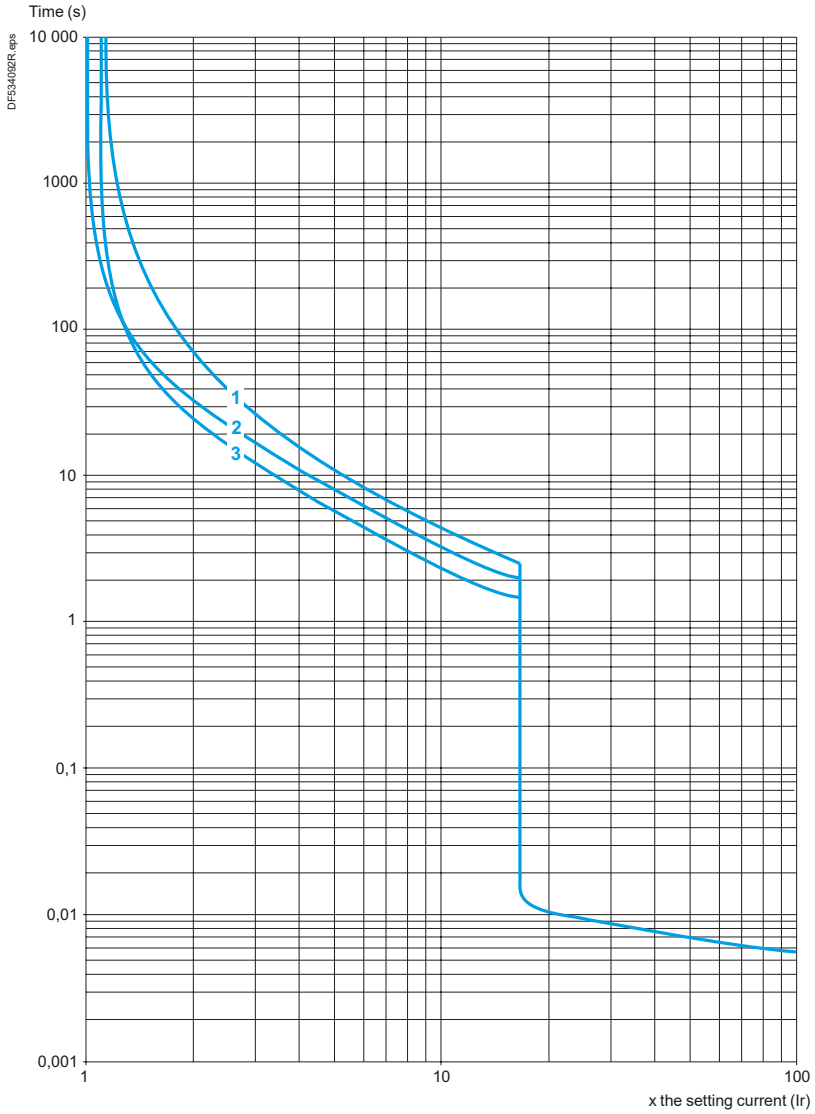
★ *> 100 kA.*
● *Cable c.s.a. protected.*
(1) As % of Icu.
(2) Cable c.s.a. not protected.
(3) With limiter ***LA9LB920****.*

References:
pages B6/14 to B6/18
Curves:
pages B6/75 to B6/78
Dimensions:
pages B6/85 to B6/90

Curves

Tripping curves for GV2L or LE combined with thermal overload relay LRD or LR2K

Average operating times at 20 °C related to multiples of the setting current



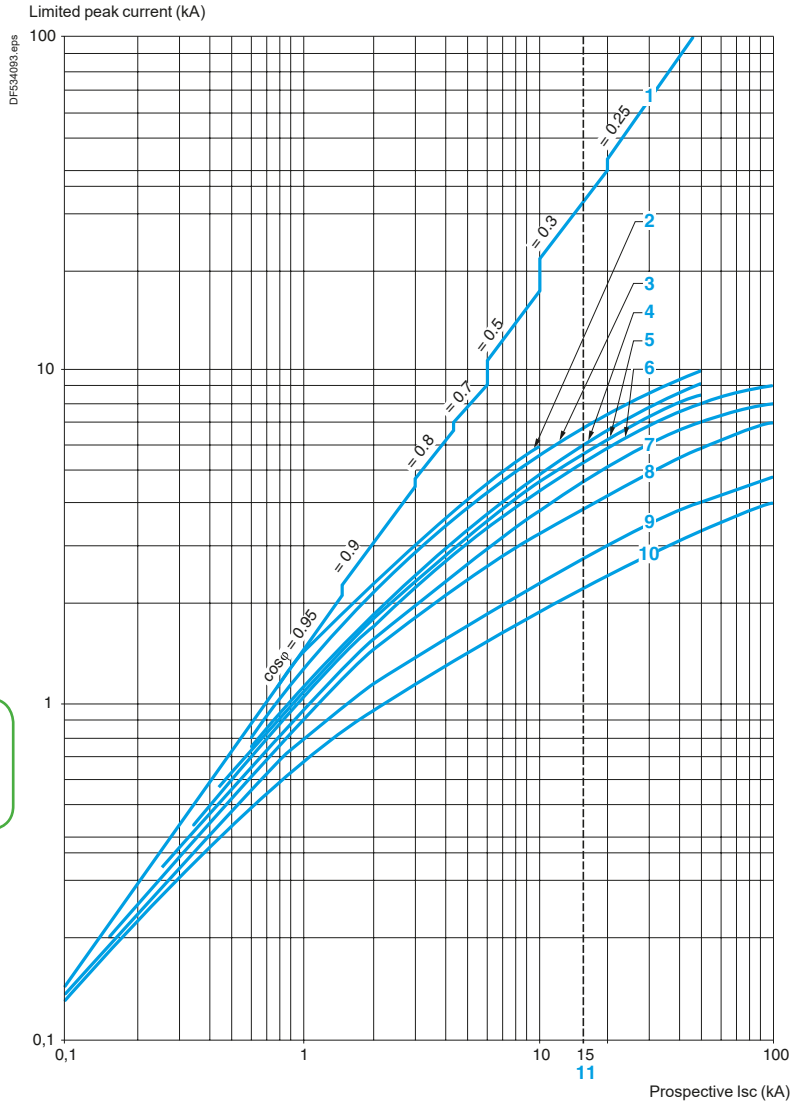
1 3 poles from cold state
2 2 poles from cold state
3 3 poles from hot state

References:
pages B6/12 and B6/13
Characteristics:
pages B6/64 to B6/68
Dimensions:
pages B6/82 to B6/84, B6/91

Current limitation on short-circuit for GV2L and GV2LE only (3-phase 400/415 V)

Dynamic stress

I peak = f (prospective Isc) at 1.05 Ue = 435 V



1 Maximum peak current
2 32 A
3 25 A
4 18 A
5 14 A
6 10 A
7 6.3 A
8 4 A
9 2.5 A
10 1.6 A
11 Limit of rated ultimate breaking capacity on short-circuit of GV2LE (14, 18, 23 and 25 A ratings).

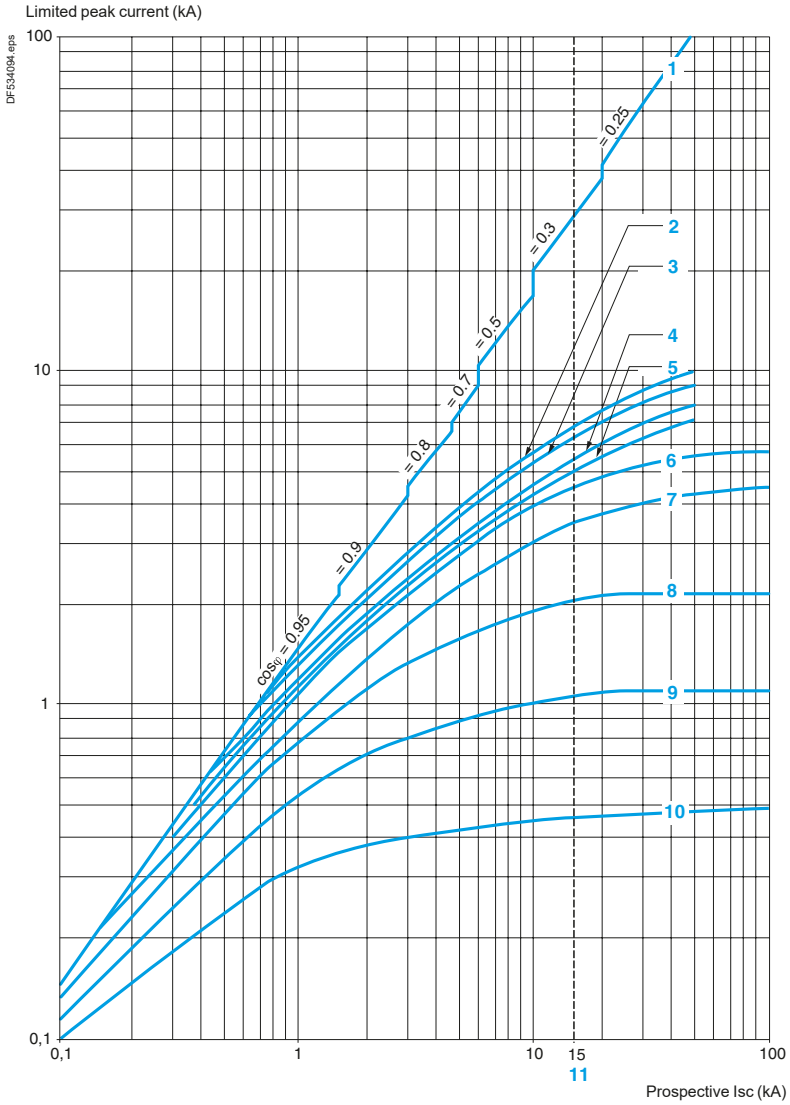
References:
pages B6/12 and B6/13
Characteristics:
pages B6/64 to B6/68
Dimensions:
pages B6/82 to B6/84, B6/91

Curves

Current limitation on short-circuit for GV2L and GV2LE + thermal overload relay LRD or LR2K (3-phase 400/415 V)

Dynamic stress

I peak = f (prospective Isc) at 1.05 Ue = 435 V



1 Maximum peak current
2 32 A
3 25 A
4 18 A
5 14 A
6 10 A
7 6.3 A
8 4 A
9 2.5 A
10 1.6 A
11 Limit of rated ultimate breaking capacity on short-circuit of GV2LE (14, 18, 23 and 25 A ratings).

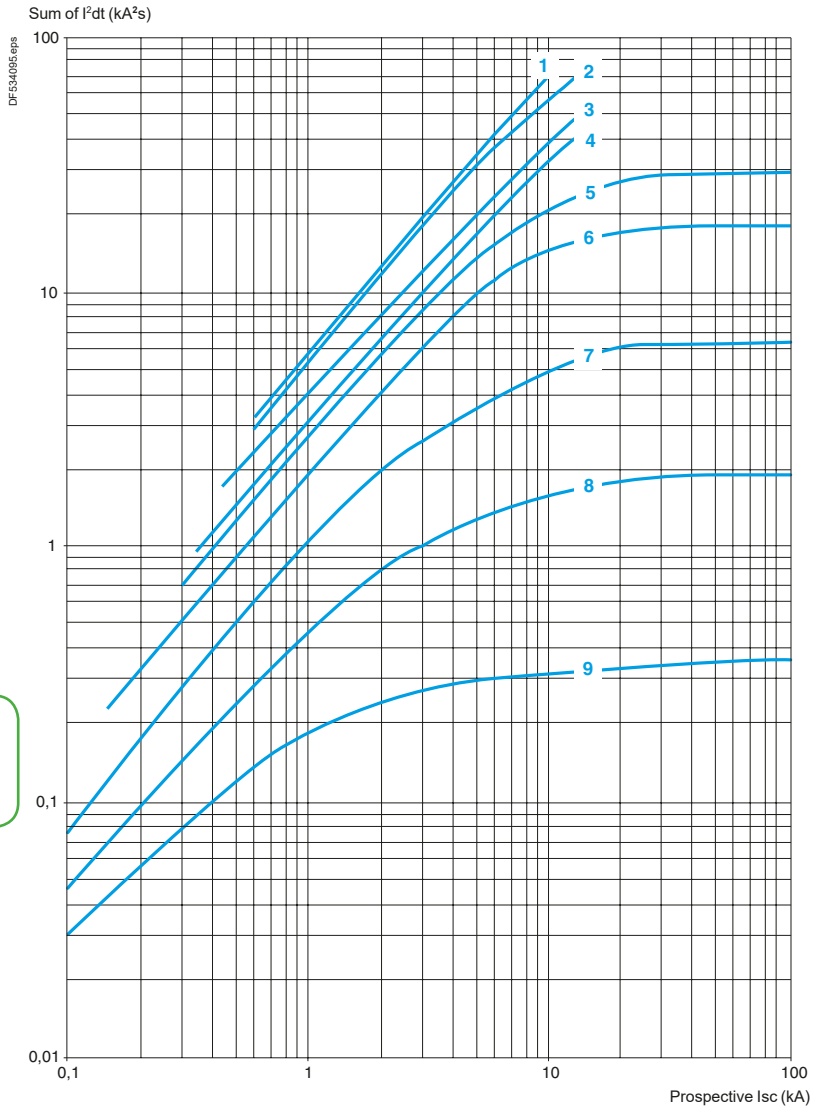
References:
pages B6/12 and B6/13
Characteristics:
pages B6/64 to B6/68
Dimensions:
pages B6/82 to B6/84, B6/91

Curves

Thermal limit on short-circuit for GV2LE only

Thermal limit in kA²s in the magnetic operating zone

Sum of I²dt = f (prospective Isc) at 1.05 Ue = 435 V



1 32 A
2 25 A
3 18 A
4 14 A
5 10 A
6 6.3 A
7 4 A
8 2.5 A
9 1.6 A

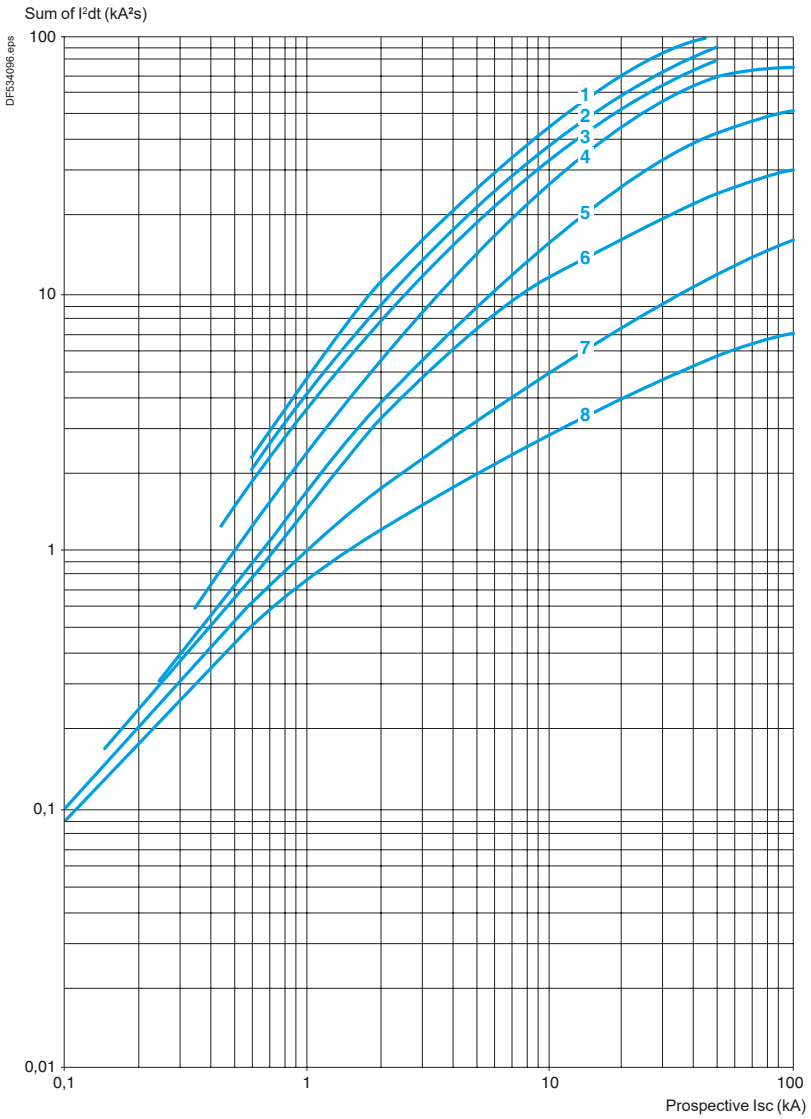
Ref.
Circuit breakers

Curves

Thermal limit on short-circuit for GV2L only

Thermal limit in kA²s in the magnetic operating zone

Sum of I²dt = f (prospective Isc) at 1.05 Ue = 435 V



1 25 A and 32 A
2 18 A
3 14 A
4 10 A
5 6.3 A
6 4 A
7 2.5 A
8 1.6 A

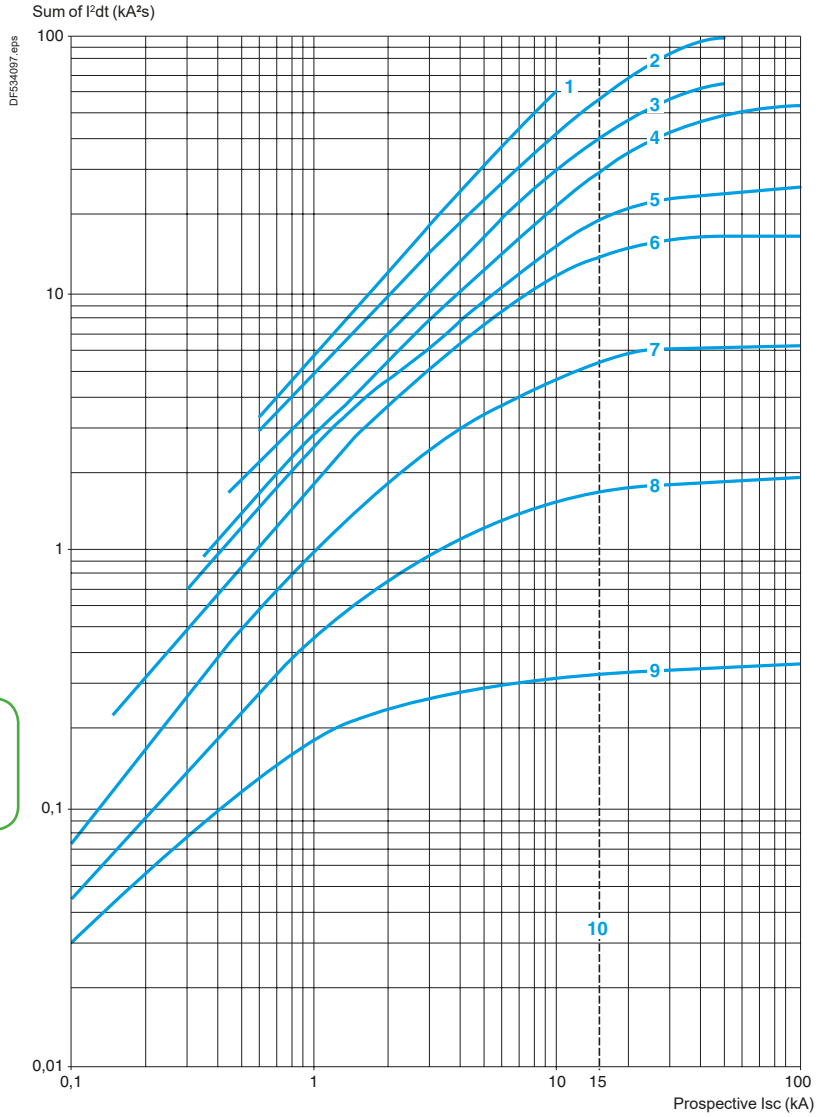
Ref.
Circuit breakers

Curves

Thermal limit on short-circuit for GV2L and GV2LE + thermal overload relay LRD or LR2K

Thermal limit in kA²s in the magnetic operating zone

Sum of I²dt = f (prospective Isc) at 1.05 Ue = 435 V



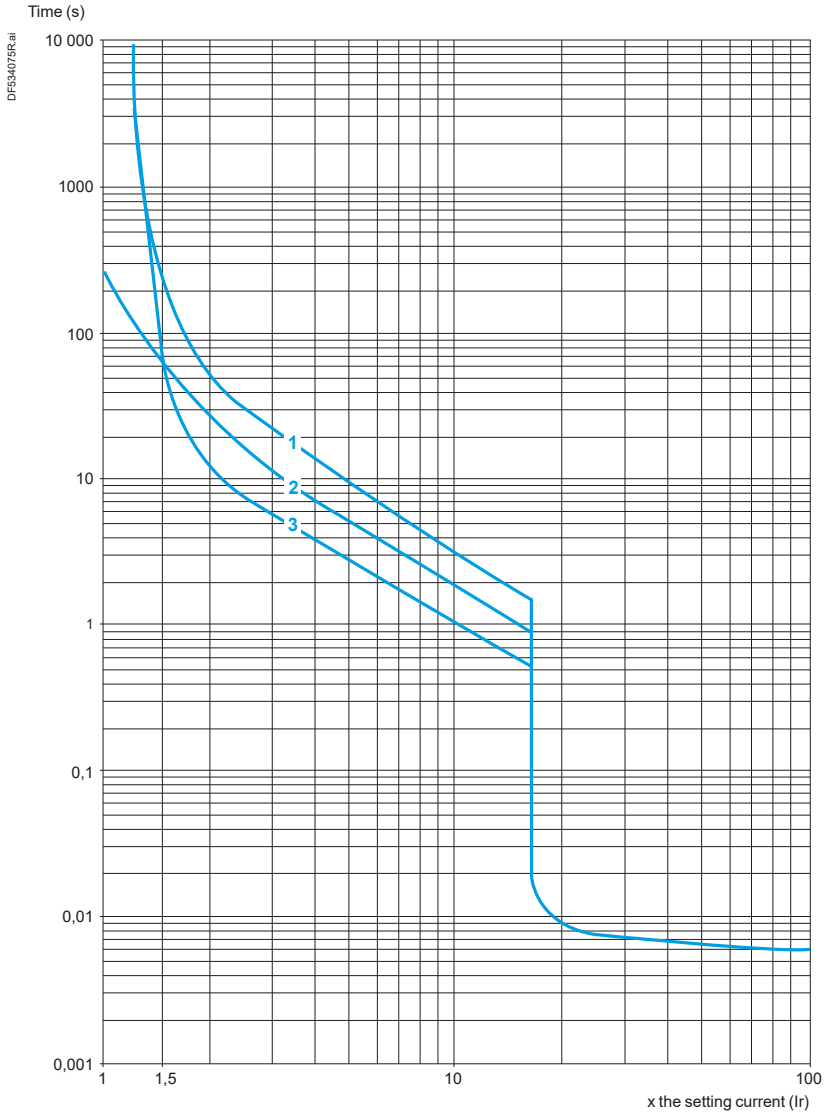
1 32 A (GV2LE32)
2 25 A and 32 A (GV2L32)
3 18 A
4 14 A
5 10 A
6 6.3 A
7 4 A
8 2.5 A
9 1.6 A
10 Limit of rated ultimate breaking capacity on short-circuit of GV2LE (14, 18, 23 and 25 A ratings).

References:
pages B6/12 to B6/13
Characteristics:
pages B6/64 to B6/68
Dimensions:
pages B6/82 to B6/84, B6/91

Curves

Thermal-magnetic tripping curves for GV2ME, GV2RT and GV2P

Average operating times at 20 °C related to multiples of the setting current



1 3 poles from cold state
2 2 poles from cold state
3 3 poles from hot state

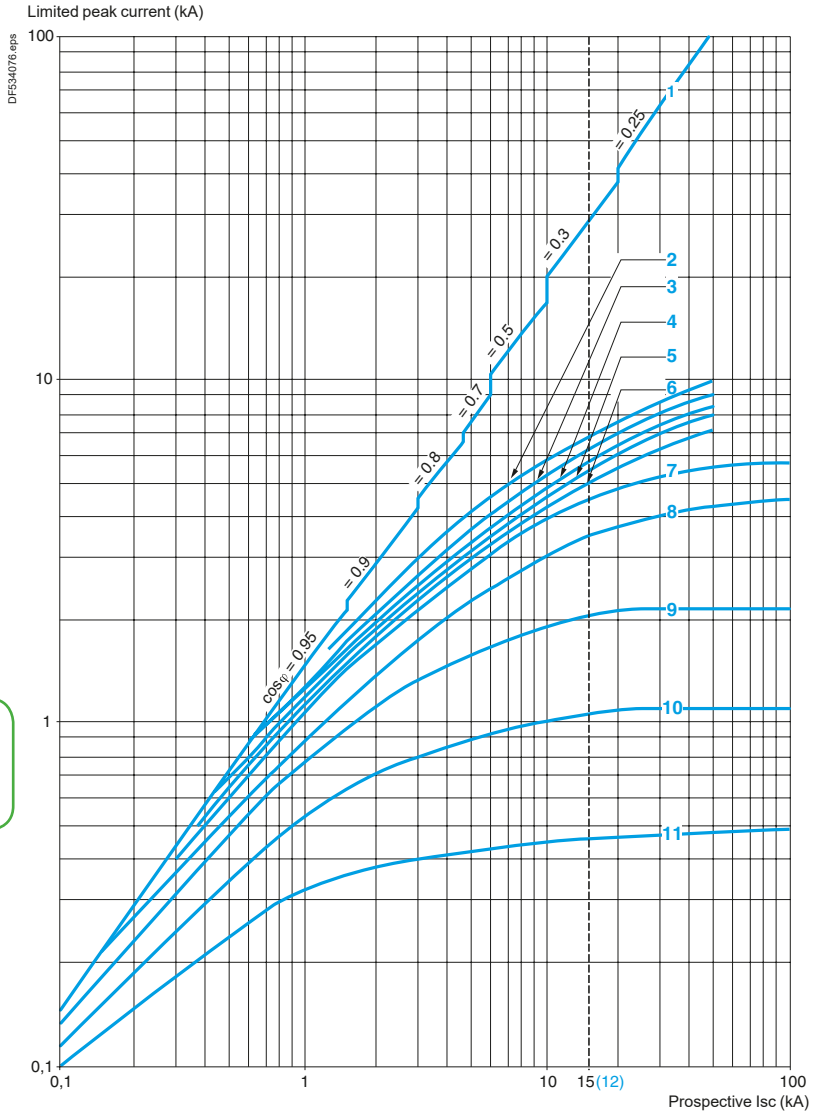
Ref.
Circuit breakers

Curves

Current limitation on short-circuit for GV2ME, GV2RT and GV2P (3-phase 400/415 V)

Dynamic stress

I peak = f (prospective Isc) at 1.05 Ue = 435 V



1 Maximum peak current
2 24 - 32 A
3 20 - 25 A
4 17 - 23 A
5 13 - 18 A
6 9 - 14 A
7 6 - 10 A
8 4 - 6.3 A
9 2.5 - 4 A
10 1.6 - 2.5 A
11 1 - 1.6 A
12 Limit of rated ultimate breaking capacity on short-circuit of GV2ME (14, 18, 23 and 25 A ratings)

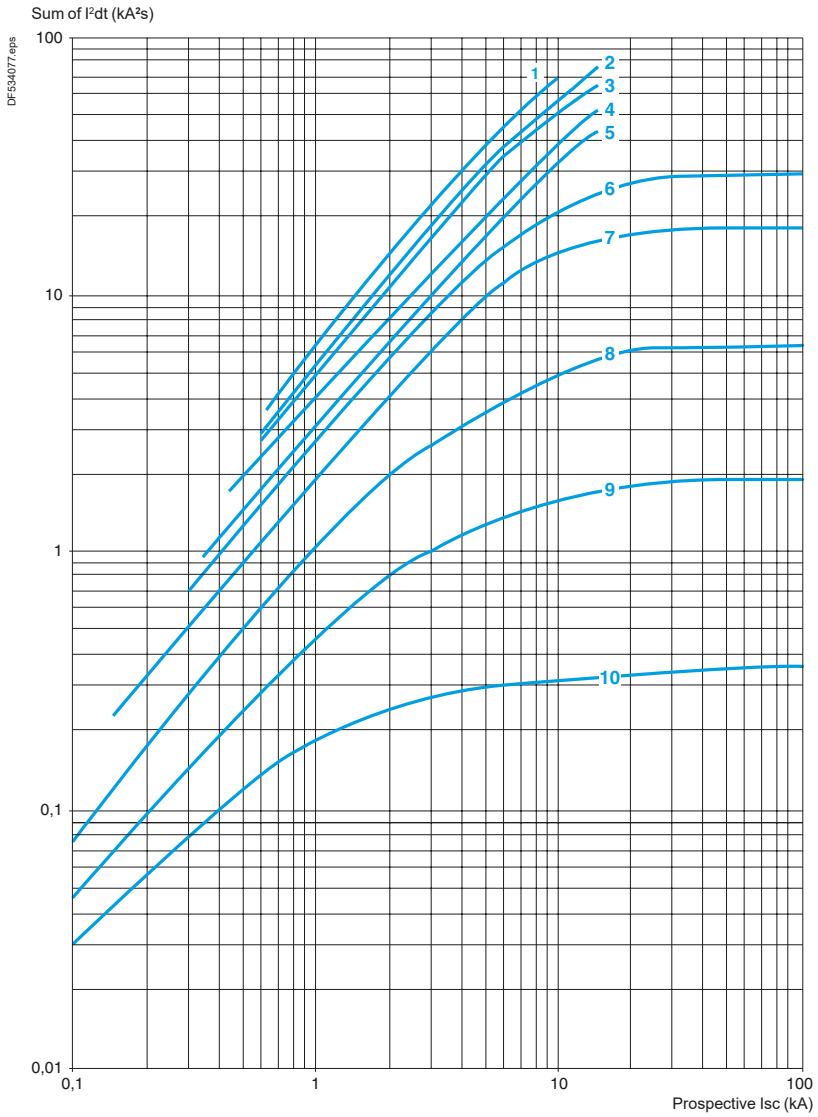
Ref.
Circuit breakers

Curves

Thermal limit on short-circuit for GV2ME and GV2RT

Thermal limit in kA²s in the magnetic operating zone

Sum of I²dt = f (prospective Isc) at 1.05 Ue = 435 V



1 24 - 32 A
2 20 - 25 A
3 17 - 23 A
4 13 - 18 A
5 9 - 14 A
6 6 - 10 A
7 4 - 6.3 A
8 2.5 - 4 A
9 1.6 - 2.5 A
10 1 - 1.6 A

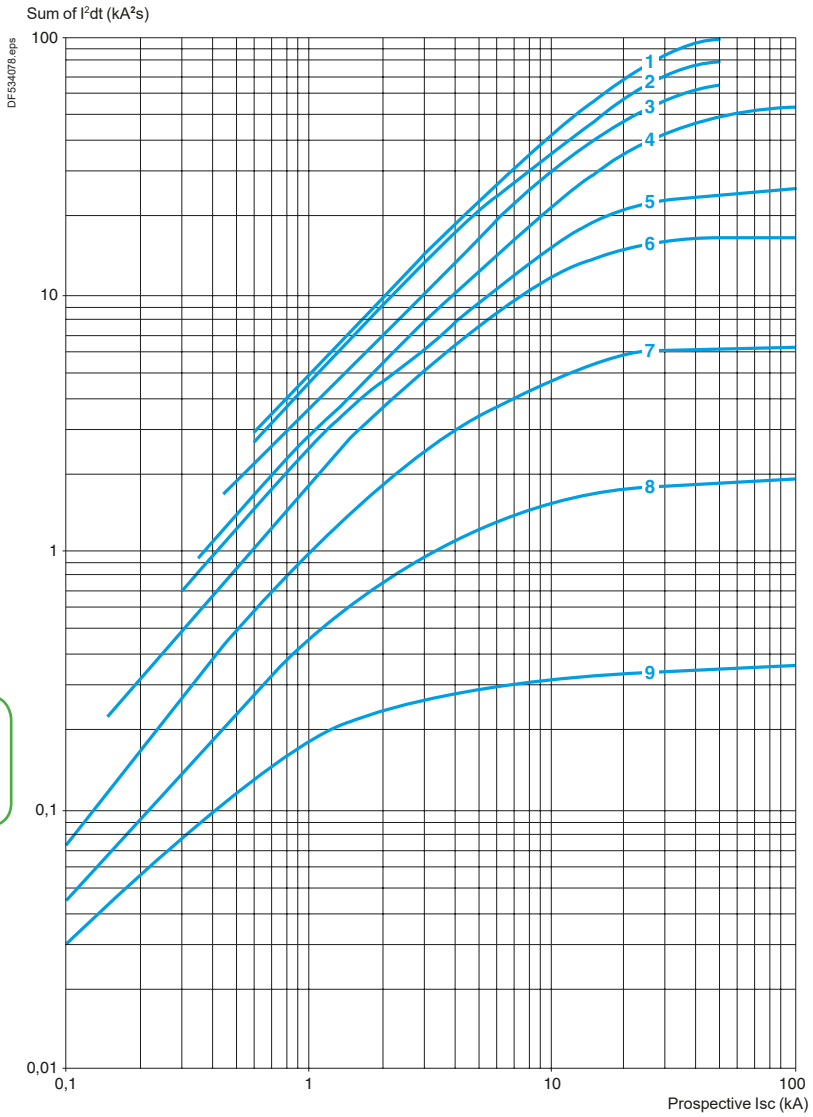
Ref.
Circuit breakers

Curves

Thermal limit on short-circuit for GV2P

Thermal limit in kA²s in the magnetic operating zone

Sum of I²dt = f (prospective Isc) at 1.05 Ue = 435 V



1 20 - 25 A, 24 - 32 A
2 17 - 23 A
3 13 - 18 A
4 9 - 14 A
5 6 - 10 A
6 4 - 6.3 A
7 2.5 - 4 A
8 1.6 - 2.5 A
9 1 - 1.6 A

Ref.
Circuit breakers

Characteristics

Characteristics of GV2 electric trips

Type of trip			GVAU●●● MN undervoltage trip	GVAX●●● MN undervoltage trip for GV2ME - safety device for dangerous machines	GVAS●●● MX shunt trip
Rated insulation voltage (Ui)	Conforming to IEC 60947-1	**V**	690	500	690
	Conforming to UL 60947-4-1, CSA C22.2 n° 60947-4-1	**V**	600	-	600
Operational voltage (Ue)	Conforming to IEC 60947-1	**V**	0.85...1.1 Uc	0.85...1.1 Uc	0.7...1.1 Uc
Drop-out voltage		**V**	0.7...0.35 Uc	0.7...0.35 Uc	0.75...0.2 Uc
Inrush consumption	~ ⎓	**VA**	12	12	14
Sealed consumption	~ ⎓	**VA**	3.5	3.5	5
Operating time	Conforming to IEC 60947-1	**ms**	From the moment the voltage reaches its operational value until opening of the circuit breaker. 10...15		
On-load factor			100 %		
Cabling (screw clamp connection)	Number of conductors		2 or 4		
	Solid cable	**mm²**	1...2.5		
	Flexible cable without cable end	**mm² AWG**	0.75...2.5		
	Flexible cable with cable end	**mm²**	0.75...2.5		
Tightening torque		**N.m**	1.4 max		
Mechanical durability (C.O.: Close - Open)		**C.O.**	30000 (GV2ME and GV2P)		

Ref.
Circuit breakers

References:
page B6/21

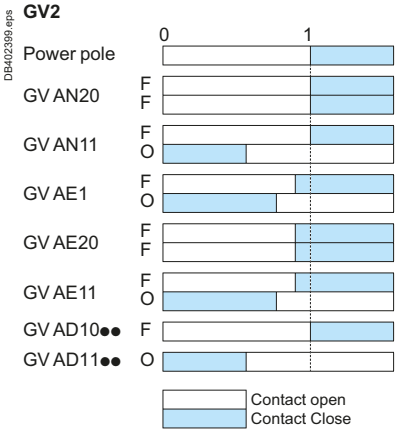
Dimensions:
pages B6/82 and B6/85

Characteristics

Type of contacts			Instantaneous auxiliary GVAN, GVAD							Fault signalling GVAD, GVAM11 (1)				Instantaneous auxiliary GVAE			
Rated insulation voltage (Ui) (associated insulation coordination)	Conforming to IEC 60947-1	V	690							690				250 (690 in relation to main circuit)			
	Conforming to UL 60947-4-1, CSA C22.2 n° 60947-4-1	V	600							300				300			
Conventional thermal current (Ith)	Conforming to IEC 60947-5-1	A	6							2.5				2.5			
	Conforming to UL 60947-5-1, CSA C22.2 n° 60947-5-1	A	5							1				1			
Mechanical durability (C.O.: Close - Open)		C.O.	100 000							1000				100 000			
Operational power and current conforming to IEC 60947-5-1. a.c. operation			AC-15/100 000 C.O.							AC-14/1000 C.O.				AC-15/100 000 C.O.			
	Rated operational voltage (Ue)	V	**48**	**110 127**	**230 240**	**380 415**	**440**	**500**	**690**	**24**	**48**	**110 127**	**230 240**	**24**	**48**	**110 127**	**230 240**
Operation	Operational power, normal conditions	VA	300	500	720	850	650	500	414	36	48	72	72	48	60	120	120
	Occasional breaking and making capacities, abnormal conditions	kVA	3	7	13	15	13	12	9	0.22	0.3	0.45	0.45	0.48	0.6	1.27	2.4
	Rated operational current (Ie)	A	6	4.5	3.3	2.2	1.5	1	0.6	1.5	1	0.5	0.3	2	1.25	1	0.5
Operational power and current conforming to IEC 60947-5-1. d.c.			DC-13/100 000 C.O.							DC-13/1000 C.O.				DC-13/100 000 C.O.			
	Rated operational voltage (Ue)	V	**24**	**48**	**60**	**110**	**240** (2)	**–**	**–**	**24**	**48**	**60**	**–**	**24**	**48**	**60**	**–**
Operation	Operational power, normal conditions	W	140	240	180	140	120	–	–	24	15	9	–	24	15	9	–
	Occasional breaking and making capacities, abnormal conditions	W	240	360	240	210	180	–	–	100	50	50	–	100	50	50	–
	Rated operational current (Ie)	A	6	5	3	1.3	0.5	–	–	1	0.3	0.15	–	1	0.3	0.15	–
Low power switching reliability of contact			**GVAE**: Number of failures for “n” million operating cycles (17 V-5 mA): = 10^{-6}														
Minimum operational conditions d.c. operation		V	17														
		mA	5														
Short-circuit protection			By **GB2CB●●** circuit breaker (rating according to operational current for Ue ⩽ 415 V) or by gG fuse 10 A max											**GB2CB06** or gG fuse 10 A max			
Cabling, screw clamp terminals	Number of conductors		**1**			**2**											
	Solid cable	mm²	1…2.5			1…2.5											
	Flexible cable without cable end	mm²	0.75…2.5			0.75…2.5											
	Flexible cable with cable end	mm²	0.75…1.5			0.75…1.5											
	Tightening torque	N.m	1.4 max			1.4 max											
Cabling, spring terminal connections			**GVAN** only														
	Flexible cable without cable end	mm²	0.75…2.5			0.75…2.5				–				0.75…1.5			

Operation of instantaneous auxiliary contacts

GV2



Operation of fault signalling contacts

GVAM11
Change of state following tripping on short-circuit.

GVAD10●● and **GVAD01●●**
Change of state following tripping on short-circuit, overload or undervoltage.

(1) For application example of fault signalling contact and short-circuit signalling contact.
*(2) Add an RC circuit type **LA4D** to the load terminals.*

References: page B6/21
Dimensions: pages B6/82 and B6/85

Characteristics

Characteristics of 3-pole busbars GV2G●●●

			GV2G●●●
Rated insulation voltage (Ui)	Conforming to IEC 60947-1	V	690
Conventional thermal current (Ith)	Conforming to IEC 60439-1	A	63
Rated operational current (Ie)		A	63
Permissible peak current (I peak)		kA	11
Permissible thermal limit (I^2t)		kA^2s	104
Degree of protection	Conforming to IEC 60529		IP 20
Terminal block			Yes

Characteristics of terminal blocks GV2G05 and GV1G09 (for GV2ME and GV2P)

Rated insulation voltage (Ui)	Conforming to IEC 60947-1	V	690	
Conventional thermal current (Ith)	Conforming to IEC 60439-1	A	63	
Rated operational current (Ie)		A	63	115
Degree of protection	Conforming to IEC 60529		IP 20	
Connection	Solid cable	mm^2	1 x 1.5 to 25 or 2 x 1.5 to 6	
	Flexible cable without cable end	mm^2	1 x 1.5 to 16 or 2 x 1.5 to 4	
	Flexible cable with cable end	mm^2	1 x 1.5 to 16 or 2 x 1.5 to 4	
	Flexible or solid cable AWG		1 AWG 4	
Tightening torque	Connector	N.m	2.2	
	Screw clamp terminals	N.m	1.7	

Characteristics of current limiters (GV2ME and GV2P)

Type			GV1L3		LA9LB920	
Rated insulation voltage (Ui)	Conforming to IEC 60947-1	V	690		690	
Conventional thermal current (Ith)	Conforming to IEC 60947-1	A	63		63	
Rated operational current (Ie)		A	32		32	
Operating threshold	rms current	A	1500 (non adjustable threshold)		1000 (non adjustable threshold)	
Connection			1 conductor	2 conductors	1 conductor	2 conductors
	Solid cable	mm^2	1.5…25	1.5…10	1.5…25	1.5…10
	Flexible cable without cable end	mm^2	1.5…25	2.5…10	1.5…25	1.5…10
	Flexible cable with cable end	mm^2	1.5…16	1.5… 4	1.5…16	1.5… 4
Tightening torque		N.m	2.2			

Ref.
Circuit breakers

References:
page B6/21

Dimensions:
page B6/89

Dimensions and mounting

GV2L

Dimensions

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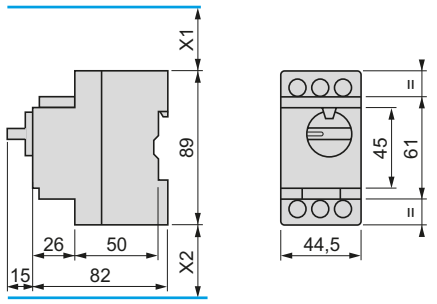
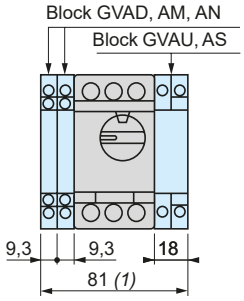


X1 Electrical clearance = 40 mm for Ue ≤ 415 V, or 80 mm for Ue = 440 V, or 120 mm for Ue = 500 and 690 V.
X2 = 40 mm.

GVAD, AM, AN, AU, AS



(1) Maximum.

GV2AK00

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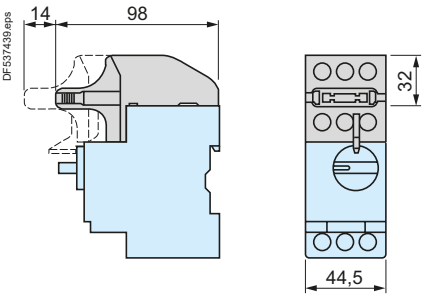
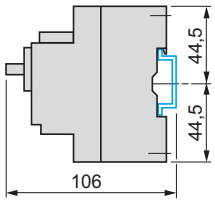


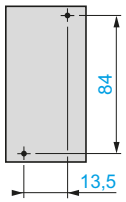
Mounting

On rail AM1DE200, AM1ED200 (35 x 15)

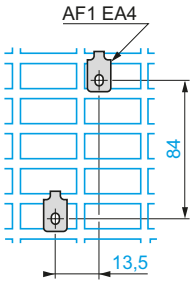
DF537440.eps



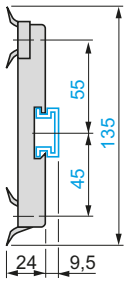
Panel mounted

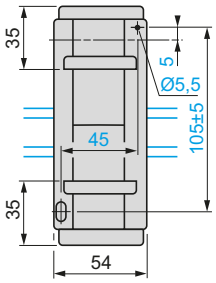


On pre-slotted mounting plate AM1PA



Adapter plate GK2AF01





7.5 mm height compensation plate GV1F03

DF537441.eps

GV2LE

Dimensions

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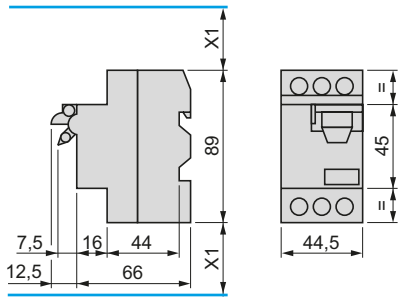

X1 Electrical clearance = 40 mm for Ue ≤ 690 V.

GVAD, AM, AN, AU, AS

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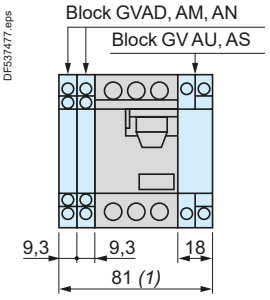
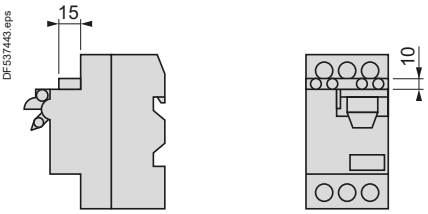


(1) Maximum.

GVAE

DF537443.eps



Mounting

On 35 mm ⎓ rail

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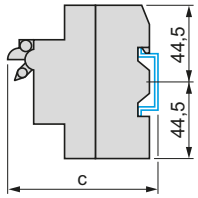
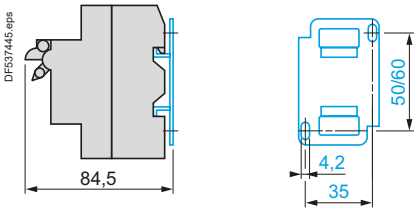


c = 80 on AM1DP200 (35 x 7.5) and 88 on AM1DE200, ED200 (35 x15)

On panel with adapter plate GV2AF02

DF537445.eps



On pre-slotted plate AM1PA

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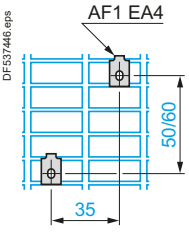

On rails DZ5MB201

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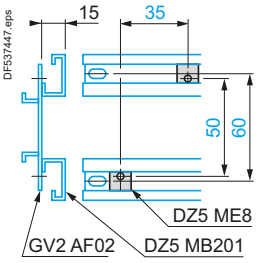
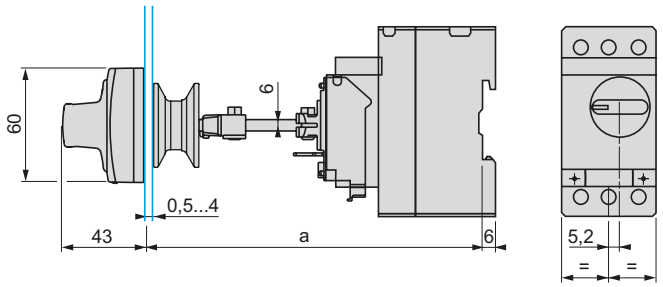


References: pages B6/12 to B6/13
Characteristics: pages B6/64 to B6/68
Curves: pages B6/69 to B6/78

Mounting

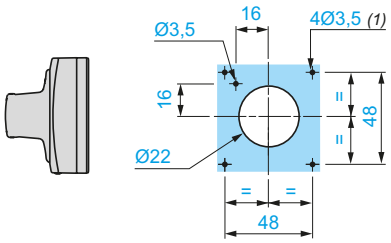
Mounting of external operator GV2APN01, GV2APN02 or GV2APN04 for motor circuit breakers GV2L

DB127415.eps



Door cut-out

DB126634.eps



(1) For IP65 only.

Mounting of external operator GVAPH02 for motor circuit breakers GV2L

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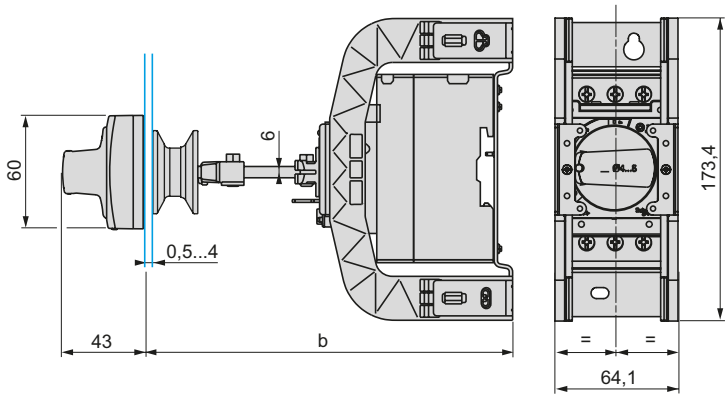

Door cut-out

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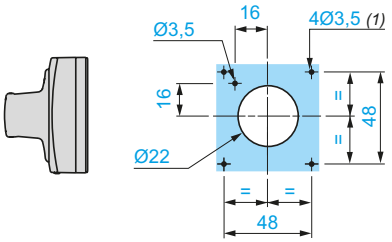
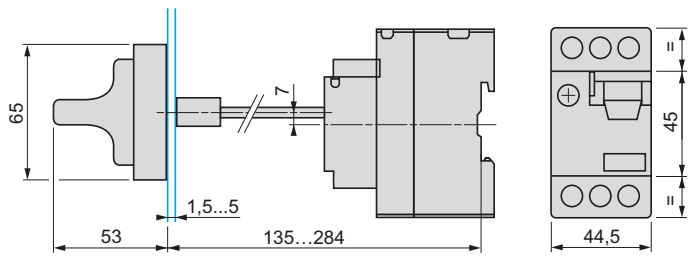


(1) For IP65 only.

	a		b	
	Mini	Maxi	Mini	Maxi
GV2APN●●	140	250		
GV2APN●● + GVAPH02			151	250
GV2APN●● + GVAPK11	250	434	-	-
GV2APN●● + GVAPH02 + GVAPK11	-	-	250	445

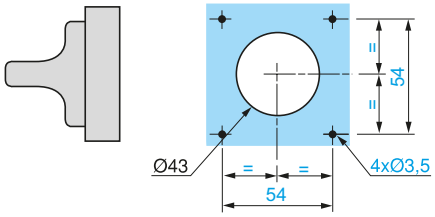
Mounting of external operator GV2AP03 for GV2LE

DB126649.eps



Door cut-out

DF569008.eps



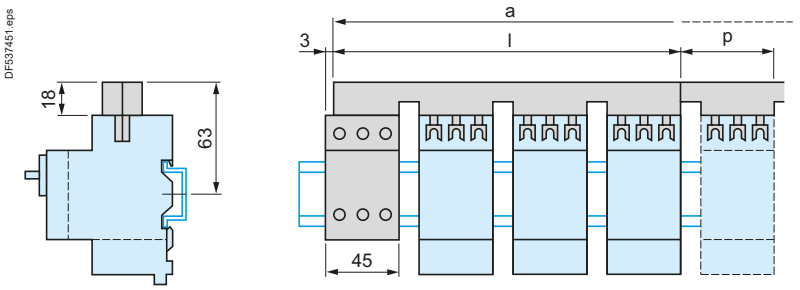
Ref.
Circuit breakers

References:
page B6/24

Dimensions and mounting

GV2LE

Sets of busbars GV2G445, GV2G454, GV2G472, with terminal block GV2G05

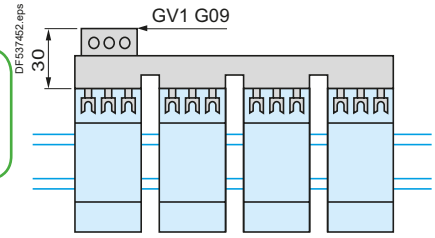


	l	p
GV2G445 (4 x 45 mm)	179	45
GV2G454 (4 x 54 mm)	206	54
GV2G472 (4 x 72 mm)	260	72

	a			
Number of tap-offs	**5**	**6**	**7**	**8**
GV2G445	224	269	314	359
GV2G454	260	314	368	422
GV2G472	332	404	476	548

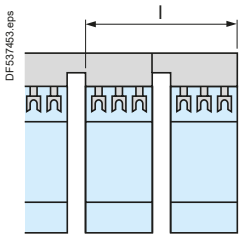
Sets of busbars GV2LE

Sets of busbars GV2G●●● with term. block GV1G09

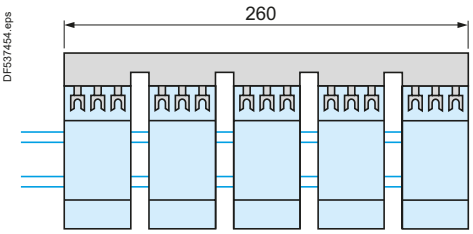


	l
GV2G245 (2 x 45 mm)	89
GV2G254 (2 x 54 mm)	98
GV2G272 (2 x 72 mm)	116

Sets of busbars GV2G245, GV2G254, GV2GR272

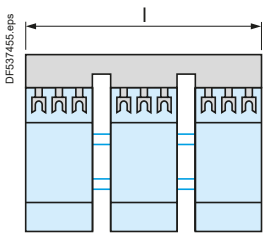


Set of busbars GV2G554



	l
GV2G345 (3 x 45 mm)	134
GV2G354 (3 x 54 mm)	152

Sets of busbars GV2G345 and GV2G354

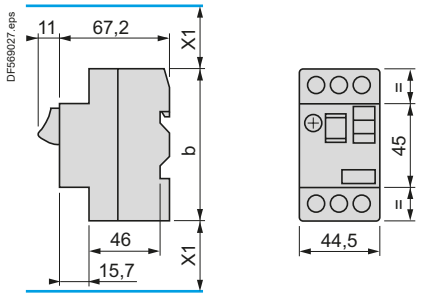


Ref.
Circuit breakers
References: page B6/23
Characteristics: page B6/81

Dimensions and mounting

Dimensions

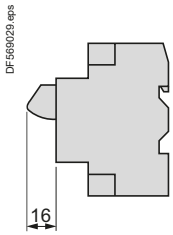
GV2ME



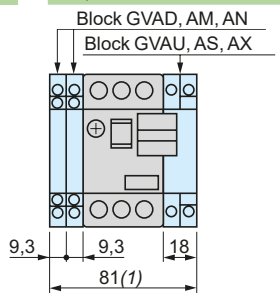
	b
GV2ME●●	89
GV2ME●●3	101

(1) Maximum.
X1 Electrical clearance = 40 mm for Ue ≤ 690 V

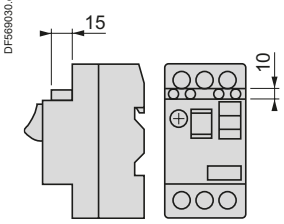
GVAX



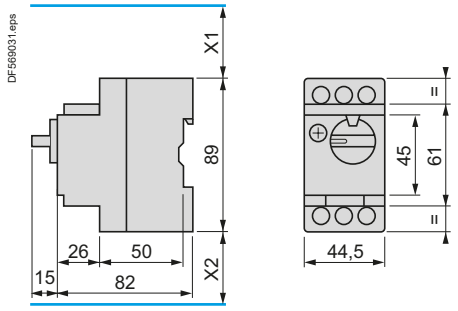
GVAD, AM, AN, AU, AS, AX



GVAE

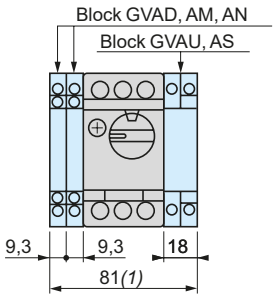


GV2P

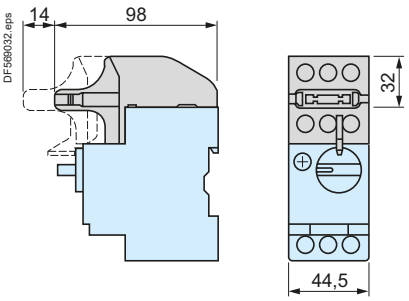


(1) Maximum.
X1 Electrical clearance = 40 mm for Ue ≤ 415 V, or 80 mm for Ue = 440 V, or 120 mm for Ue = 500 and 690 V
X2 = 40 mm

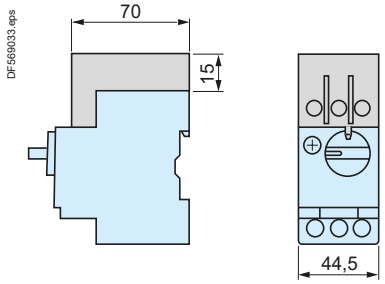
GVAD, AM, AN, AU, AS



GV2AK00



GV2GH7



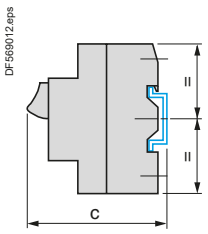
Ref.
Circuit breakers

Dimensions and mounting

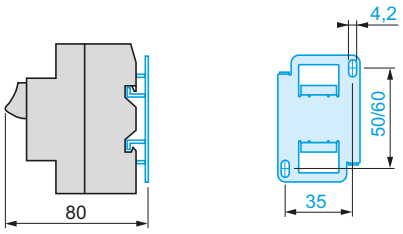
Mounting

GV2ME

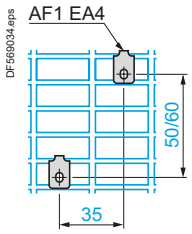
On 35 mm ⊔ rail



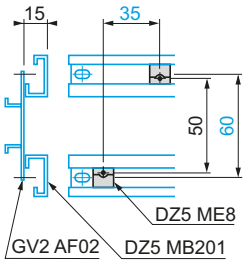
On panel with adapter plate GV2AF02



On pre-slotted plate AM1PA



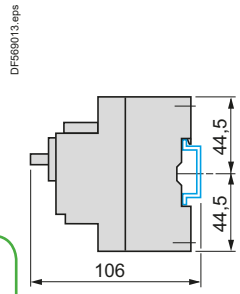
On rails DZ5MB201



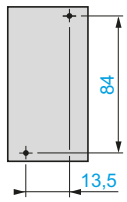
c = 78.5 on AM1 DP200 (35 x 7.5)
c = 86 on AM1 DE200, ED200 (35 x 15)

GV2P

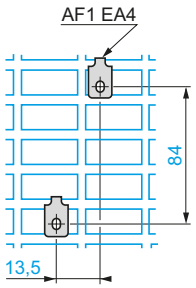
On rail AM1DE200, ED200 (35 x 15)



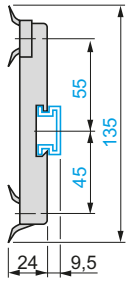
Panel mounted

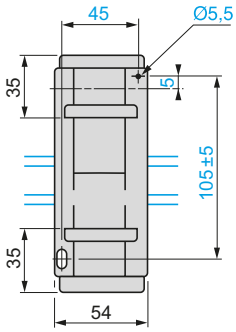


On pre-slotted plate AM1PA



Adapter plate GK2AF01

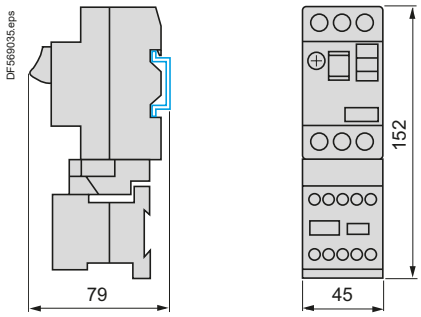




Dimensions

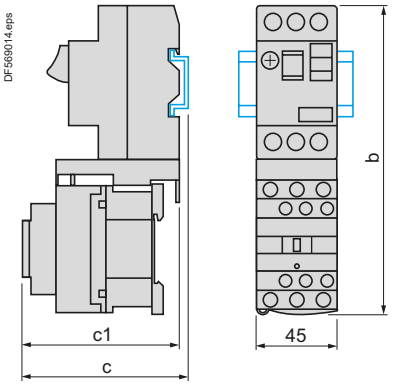
GV2AF01

Combination GV2ME + TeSys k contactor

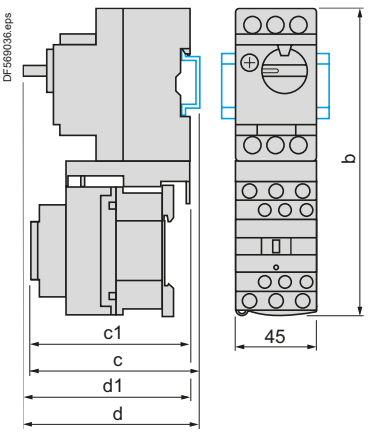


GV2AF3

Combination GV2ME + TeSys d contactor



Combination GV2P + TeSys d contactor



GV2ME +	LC1D09 …D18	LC1D25 and D32
b	176.4	186.8
c1	94.1	100.4
c	99.6	105.9

GV2P +	LC1D09 …D18	LC1D25 and D32
b	176.4	186.8
c1	100.1	106.4
c	105.6	111.9
d1	95	95
d	100.5	100.5

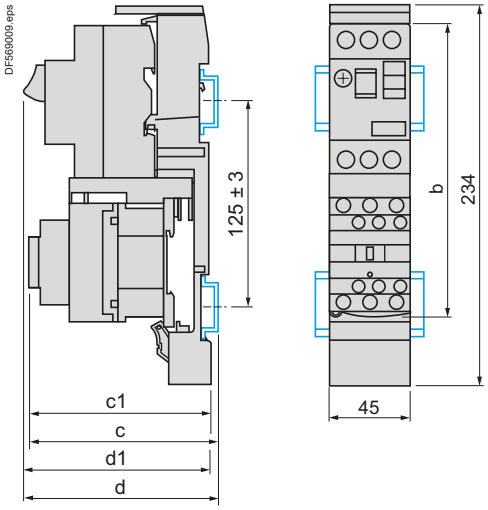
References: pages B6/14 to B6/17
Characteristics: pages B6/64 to B6/68
Curves: pages B6/75 to B6/78

Dimensions and mounting

Dimensions

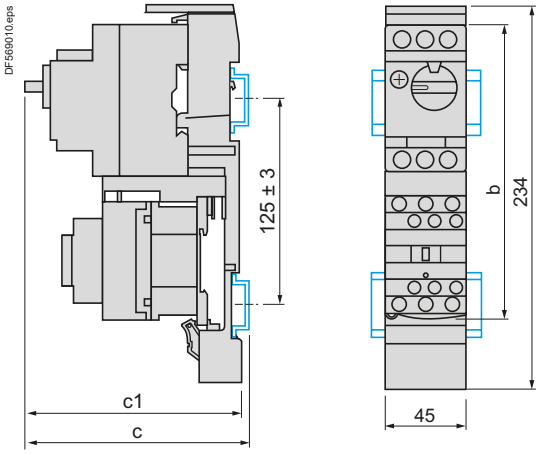
GV2AF4 + LAD311

Combination GV2ME + TeSys d contactor



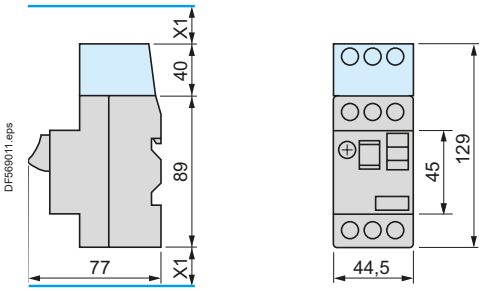
GV2ME +	LC1D09…D18	LC1D25 and D32
b	176.4	186.8
c1	130.1	136.4
c	135.6	141.9
d1	107	107
d	112.5	112.5

Combination GV2P + TeSys d contactor



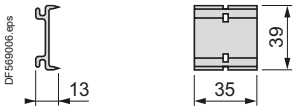
GV2P +	LC1D09…D18	LC1D25 and D32
b	176.4	186.8
c1	136.5	142.4
c	141.6	147.9

GV2ME + GV1L3 (current limiter)



X1 = 10 mm for Ue = 230 V
or 30 mm for 230 V < Ue ≤ 690 V

7.5 mm height compensation plate GV1F03



Ref.
Circuit breakers

References:
pages B6/14 to B6/17

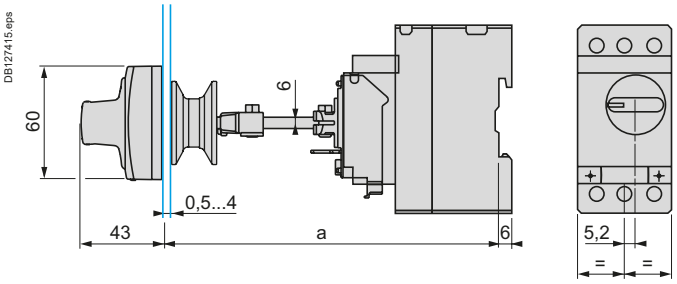
Characteristics:
pages B6/64 to B6/68

Curves:
pages B6/75 to B6/78

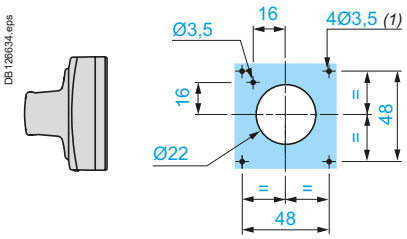
Dimensions and mounting

Mounting

Mounting of external operator GV2APN01, GV2APN02 or GV2APN04 for motor circuit breakers GV2P

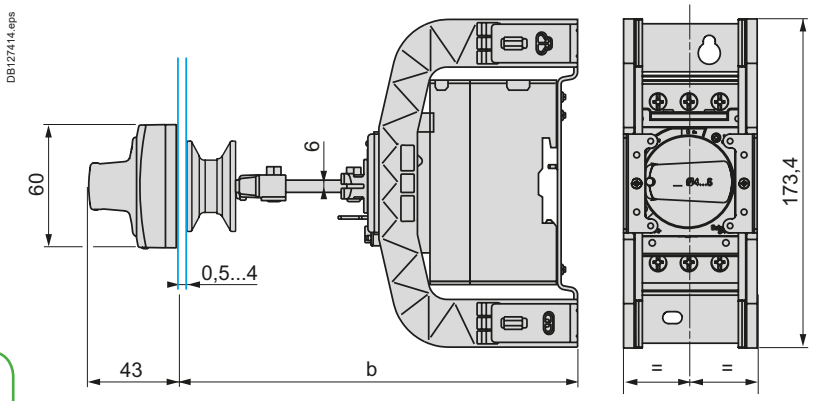


Door cut-out

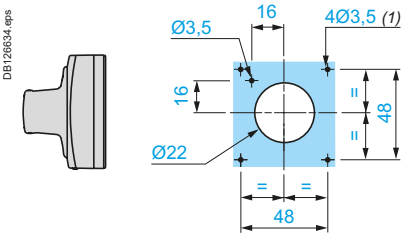


(1) For IP65 only.

Mounting of external operator GVAPH02 for motor circuit breakers GV2P



Door cut-out



(1) For IP65 only.

	a		b	
	Mini	Maxi	Mini	Maxi
GV2APN●●	140	250		
GV2APN●● + GVAPH02			151	250
GV2APN●● + GVAPK11	250	434	-	-
GV2APN●● + GVAPH02 + GVAPK11	-	-	250	445

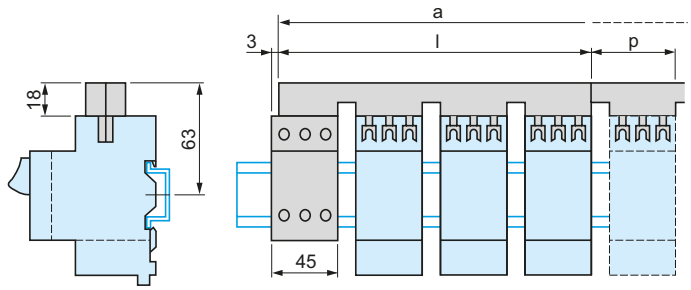
Ref.
Circuit breakers

References:
page B6/24

GV2ME, GV2P

Sets of busbars GV2G445, GV2G454, GV2G472, with terminal block GV2G05

DF569037.eps

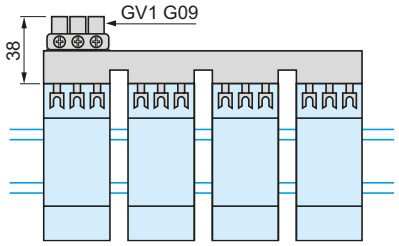


	l	p
GV2G445 (4 x 45 mm)	179	45
GV2G454 (4 x 54 mm)	206	54
GV2G472 (4 x 72 mm)	260	72

	a			
Number of tap-offs	**5**	**6**	**7**	**8**
GV2G445	224	269	314	359
GV2G454	260	314	368	422
GV2G472	332	404	476	548

Sets of busbars GV2G●●● with terminal block GV1G09

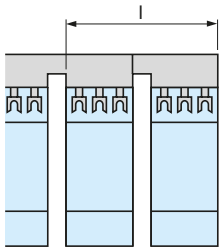
DF569028.eps



	l
GV2G245 (2 x 45 mm)	89
GV2G254 (2 x 54 mm)	98
GV2G272 (2 x 72 mm)	116

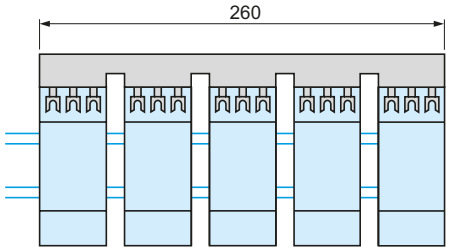
Sets of busbars GV2G245, GV2G254, GV2G272

DF569038.eps



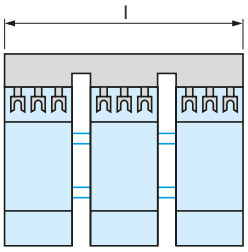
Sets of busbars GV2G554

DF569039.eps



Sets of busbars GV2G345 and GV2G354

DF569040.eps



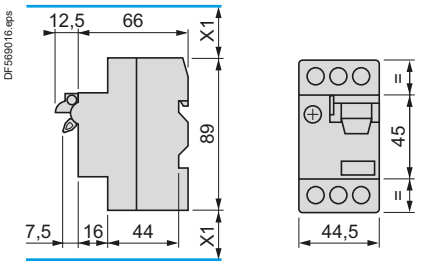
	l
GV2G345 (3 x 45 mm)	134
GV2G354 (3 x 54 mm)	152

References:
page B6/23

Dimensions and mounting

GV2RT

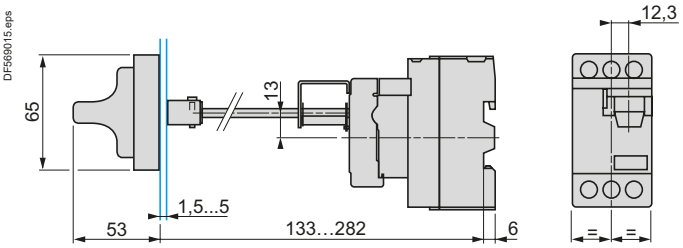
Dimensions



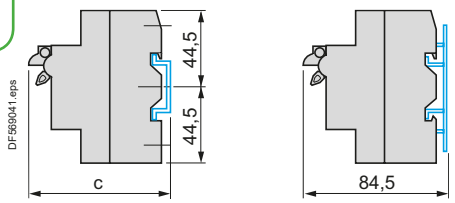
X1: Electrical clearance = 40 mm for Ue < 690 V

Mounting

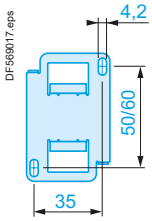
Mounting of external operator GV2AP03



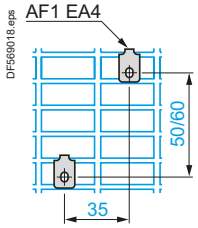
On 35 mm ⎓ rail



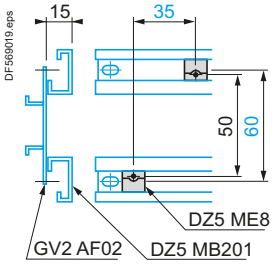
On panel with adapter plate GV2AF02



On pre-slotted plate AM1PA



On rails DZ5MB



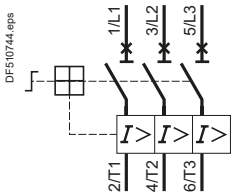
c = 80 on AM1DP200 (35 x 7.5)
c = 88 on AM1DE200, ED200 (35 x 15)

Ref.
Circuit breakers

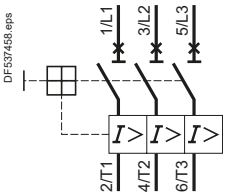
Schemes

Schemes

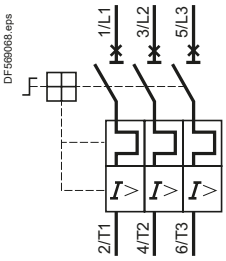
GV2L●●



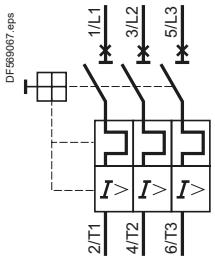
GV2LE●●



GV2P●●

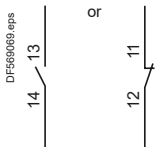


GV2ME●● and GV2RT

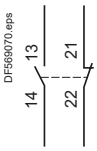


Front mounting add-on contact blocks
Instantaneous auxiliary contacts

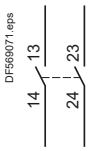
GVAE1



GVAE11

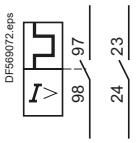


GVAE20

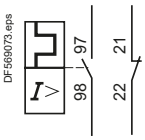


Front mounting add-on contact blocks
Instantaneous auxiliary contacts and fault signalling contacts

GVAED101

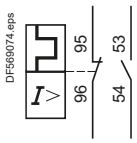


GVAED011

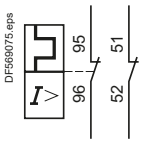


Side mounting add-on contact blocks
Instantaneous auxiliary contacts and fault signalling contacts

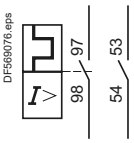
GVAD0110



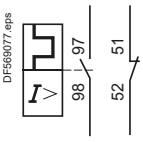
GVAD0101



GVAD1010

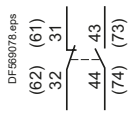


GVAD1001

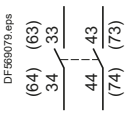


Instantaneous auxiliary contacts

GVAN11

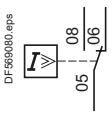


GVAN20



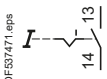
Short-circuit signalling contacts

GVAM11

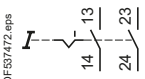


Start-Stop signalling contact blocks

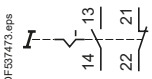
GK2AX10



GK2AX20

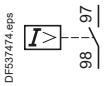


GK2AX50

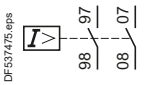


Fault signaling contact blocks

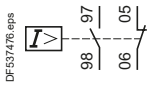
GK2AX12



GK2AX22

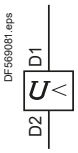


GK2AX52

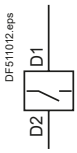


Voltage trips

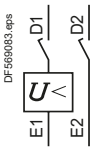
GVAU●●●



GVAS●●●

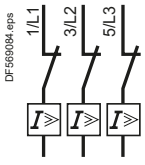


GVAX●●●

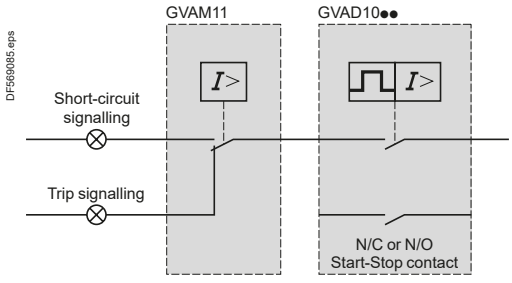


Current limiter

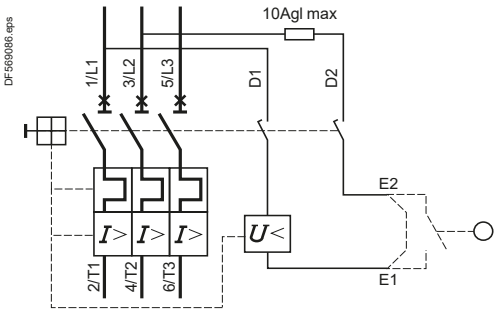
GV1L3



Use of fault signalling contact and short-circuit signalling contact



Connection of undervoltage trip for dangerous machines (conforming to INRS) on GV2ME only



References:
pages B6/11 to B6/24

TeSys GV3

5 to 45 kW

Characteristics

Environment

Circuit breaker type				GV3L	GV3P
Conforming to standards				IEC/EN 60947-4-1 IEC/EN 60947-2	IEC/EN 60947-4-1 IEC/EN 60947-2 UL 60947-4-1 CSA C22.2 n° 60947-4-1
Product certifications				CCC, EAC, BV, LROS, DNV-GL, ABS, UL (1), CSA (2)	CCC, UL, CSA, EAC, ATEX, BV, LROS, DNV-GL, ABS
Climatic withstand				According to IACS E10	
Degree of protection (front face)	Conforming to IEC 60529	Open mounted		Against direct finger contact: IP20	
		In enclosure		-	**GV3PC01** and **GV3PC02**: IP55
Shock resistance	Conforming to IEC 60068-2-27			On: 15 gn -11 ms (On: 5 gn -11 ms for GV3L73, GV3L80, GV3P73, GV3P80) Off: 30 gn -11 ms	
Vibration resistance (3)	Conforming to IEC 60068-2-6			4 gn (5…300 Hz)	
Ambient air temperature	Storage		**°C**	-40…+80	
	Operation	Open mounted	**°C**	-20…+60 (3)	
		In enclosure	**°C**	–	-20…+40
Temperature compensation		Open mounted	**°C**	–	-20…+60
		In enclosure	**°C**	–	-20…+40
Flame resistance	Conforming to IEC 60695-2-11		**°C**	960	
Maximum operating altitude			**m**	3000	
Suitable for isolation	Conforming to IEC 60947-1 § 7-1-6			Yes	–
Resistance to mechanical impact			**J**	–	10
					IK09 (in enclosure)
Sensitivity to phase failure				Yes, conforming to IEC 60947-4-1 § 8-2-1-5-2 for GV3P	

Technical characteristics

Circuit breaker type			GV3L	GV3P
Utilisation category	Conforming to IEC 60947-2		A	–
	Conforming to IEC 60947-4-1		–	AC-3
Rated operational voltage (Ue)	Conforming to IEC 60947-2	**V**	690	
Rated insulation voltage (Ui)	Conforming to IEC 60947-2	**V**	690	
Rated voltage	Conforming to UL 60947-4-1, CSA C 22.2 n° 60947-4-1	**V**		600
Rated operational frequency	Conforming to IEC 60947-4-1 UL, CSA	**Hz**	50/60	
Rated impulse withstand voltage (U imp)	Conforming to IEC 60947-2	**kV**	6	
Total power dissipated per pole		**W**	8	
Mechanical durability (C.O.: Close, Open)		**C.O.**	50 000	
Electrical durability for AC-3 duty	415 V In	**C.O.**	50 000 (20 000 for GV3L73, GV3P73, GV3L80, GV3P80)	
Duty class (maximum operating rate)		**C.O./h**	25	
Maximum conventional rated thermal current (Ith)	Conforming to IEC 60947-4-1	**A**	–	13 to 80
Rated duty	Conforming to IEC 60947-4-1			Continuous duty
Operating threshold of magnetic trips			14 I max	

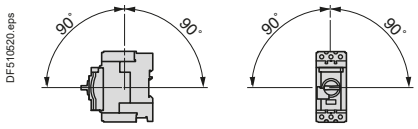
*(1) For **GV3L25** to **73**, may be followed by 6 or 1.*
*(2) For **GV3L**, **GV3L25** to **GV3L73** may be followed by 6 or 1 for use in conjunction with certified overload relay.*
(3) Leave a space of 9 mm between 2 circuit breakers: either an empty space, or side mounting add-on contact blocks. Side by side mounting is possible up to 40 °C.

Ref.
Circuit breakers

References: pages B6/26 and B6/27
Curves: pages B6/98 to B6/103
Dimensions: pages B6/107 and B6/108
Schemes: page B6/109

Mounting characteristics

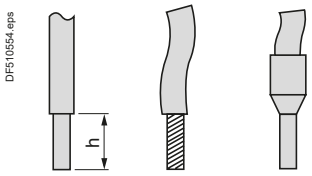
Operating position
Without derating, in relation to normal vertical mounting plane (1)



Connection characteristics

Connection to screw clamp terminals or spring terminals

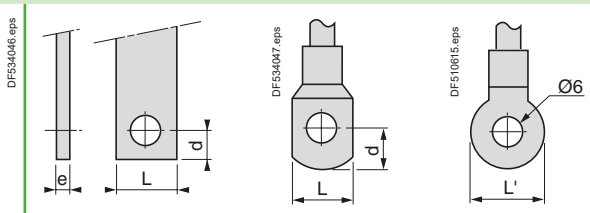
Bare cables



Circuit breaker type			GV3L		GV3P	
			Min.	Max.	Min.	Max.
Connection to screw clamp terminals (2) (Max. number of conductors x c.s.a.)	Solid cable	mm²	2 x 1	1 x 25 and 1 x 35	2 x 1	1 x 25 and 1 x 35
	Flexible cable without cable end	mm²	2 x 1	1 x 25 and 1 x 35	2 x 1	1 x 25 and 1 x 35
	Flexible cable with cable end	mm²	2 x 1	1 x 25 and 1 x 35	2 x 1	1 x 25 and 1 x 35
Tightening torque		N.m	5	5: 25 mm² 8: 35 mm²	5	5: 25 mm² 8: 35 mm²

Connection by bars or lugs

Bars or lugs



Circuit breaker type			GV3L●●6	GV3P●●6
Pitch	Without spreaders	mm	17.5	
	With spreaders	mm	–	
Bars or cables with lugs	e	mm	≤ 6	
	L	mm	≤ 13.5	
	L'	mm	≤ 16.5	
	d	mm	≤ 10	
Screws			M6	
	Tightening torque	N.m	6	
Bare cables (copper or aluminium) with connectors	Height (h)	mm	–	
	C.s.a.	mm²	–	
	Tightening torque	N.m	–	

(1) When mounting on a vertical rail, fit a stop to prevent any slippage.
*(2) For motor circuit breakers **GV3P**: BTR hexagon socket head screws, **Ever**Link® system. Require use of an insulated Allen key, in compliance with local electrical wiring regulations.*
*(3) For cross-sections 1 to 1.5 mm², the use of an **LA9D99** cable end reducer is recommended.*

Ref.
Circuit breakers

Characteristics

Breaking capacity of GV3L

Type				GV3L25	GV3L32	GV3L40	GV3L50	GV3L65	GV3L73	GV3L80
Breaking capacity of the circuit-breaker only or of the circuit-breaker combined with a thermal overload relay	230/240 V	Icu	**kA**	100	100	100	100	100	65	65
		Ics % (1)		100	100	100	100	100	100	100
	400/415 V	Icu	**kA**	100	100	50	50	50	50	50
		Ics % (1)		100	100	100	100	100	60	60
	440 V	Icu	**kA**	50	50	50	50	50	50	50
		Ics % (1)		100	100	100	100	100	60	60
	500 V	Icu	**kA**	12	12	12	12	12	12	12
		Ics % (1)		50	50	50	50	50	50	50
	690 V	Icu	**kA**	6	6	6	6	6	6	6
		Ics % (1)		50	50	50	50	50	50	50
Associated fuses (if required) for use with circuit breaker only or circuit breaker combined with a thermal overload relay if Isc > breaking capacity	230/240 V	aM	**A**	★	★	★	★	★	★	★
		gG	**A**	★	★	★	★	★	★	★
	415 V	aM	**A**	★	★	★	★	125	125	125
		gG	**A**	★	★	★	★	160	160	160
	440 V	aM	**A**	63	80	125	125	125	125	125
		gG	**A**	80	100	160	160	160	160	160
	500 V	aM	**A**	63	63	63	63	80	80	80
		gG	**A**	80	80	80	80	100	100	100
	690 V	aM	**A**	50	50	50	50	63	63	63
		gG	**A**	63	63	63	63	80	80	80
Use of circuit breakers without fuses				Minimum cable length (in metres) limiting the maximum short-circuit current to 35 kA maximum.						
	Cable c.s.a.		**mm²**	**≤ 25**	**35**	**50**	**70**	**95**	- (2)	- (2)
	Isc (rms) 3-phase, incoming (Ue = 415 V)	50 kA	**m**	5	6	8	10	13	- (2)	- (2)
		45 kA	**m**	5	5	7	8	10	- (2)	- (2)
		40 kA	**m**	5	5	5	5	8	- (2)	- (2)
		37 kA	**m**	5	5	5	5	5	- (2)	- (2)

★ *Fuse not required: breaking capacity Icn > Isc.*
(1) As % of Icu.
(2) Please consult your Regional Sales Office.

Ref.
Circuit breakers

Characteristics

Breaking capacity of GV3P

Motor circuit breaker type				GV3P								
				13	18	25	32	40	50	65	73	80
Rating			A	13	18	25	32	40	50	65	73	80
Breaking capacity conforming to IEC 60947-2	230/240 V	Icu	kA	100	100	100	100	100	100	100	100	100
		Ics % (1)		100	100	100	100	100	100	100	100	100
	400/415 V	Icu	kA	100	100	100	100	50	50	50	50	50
		Ics % (1)		100	100	100	100	100	100	100	60	60
	440 V	Icu	kA	50	50	50	50	50	50	50	50	50
		Ics % (1)		100	100	100	100	100	100	100	60	60
	500 V	Icu	kA	12	12	12	12	12	12	12	12	12
		Ics % (1)		50	50	50	50	50	50	50	50	50
	690 V	Icu	kA	6	6	6	6	6	6	6	6	6
		Ics % (1)		50	50	50	50	50	50	50	50	50
Associated fuses, if required if Isc > breaking capacity Icu	230/240 V	aM	A	★	★	★	★	★	★	★	★	★
		gG	A	★	★	★	★	★	★	★	★	★
	415 V	aM	A	★	★	★	★	125	125	125	125	125
		gG	A	★	★	★	★	160	160	160	160	160
	440 V	aM	A	63	80	125	125	125	125	125	125	125
		gG	A	80	100	160	160	160	160	160	160	160
	500 V	aM	A	63	63	63	63	80	80	80	80	80
		gG	A	80	80	80	80	100	100	100	100	100
	690 V	aM	A	50	50	50	50	63	63	63	63	63
		gG	A	63	63	63	63	80	80	80	80	80

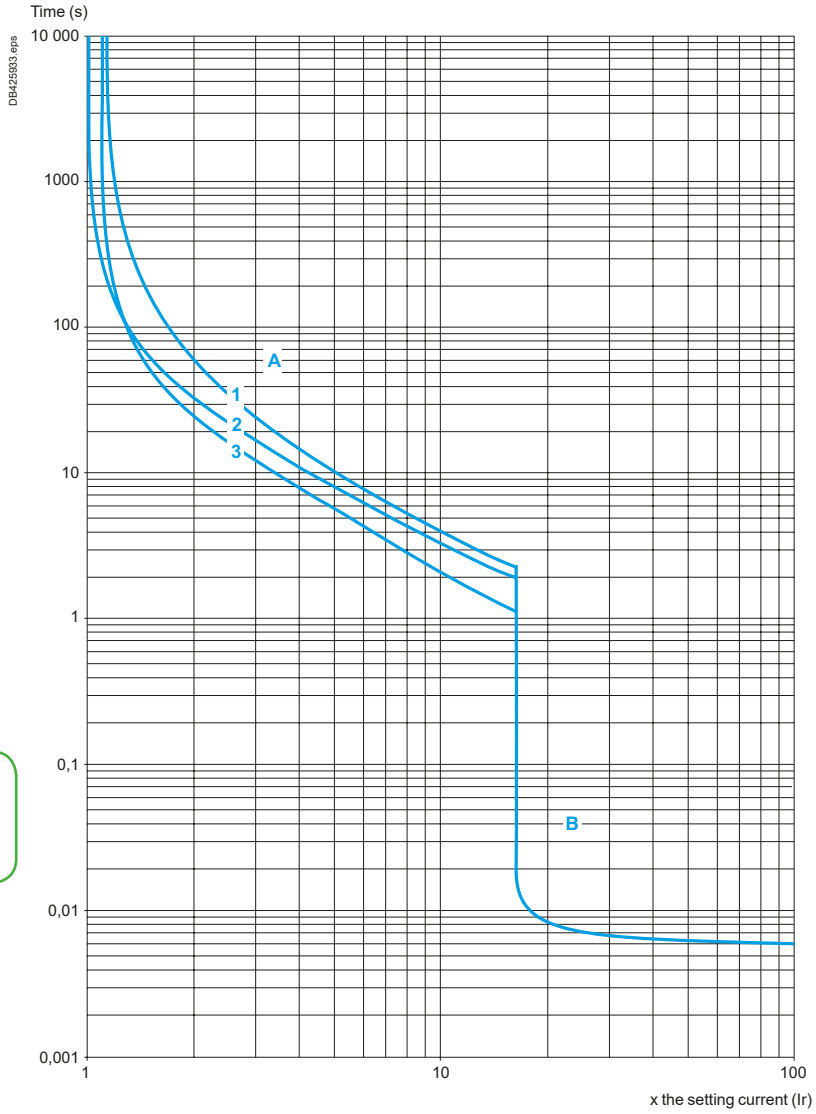
★ *Fuse not required: breaking capacity Icn > Isc.*
(1) As % of Icu.

Ref.
Circuit breakers

Curves

Tripping curves for GV3L combined with thermal overload relay LRD33

Average operating time at 20 °C without prior current flow



1 3 poles from cold state
2 2 poles from cold state
3 3 poles from hot state

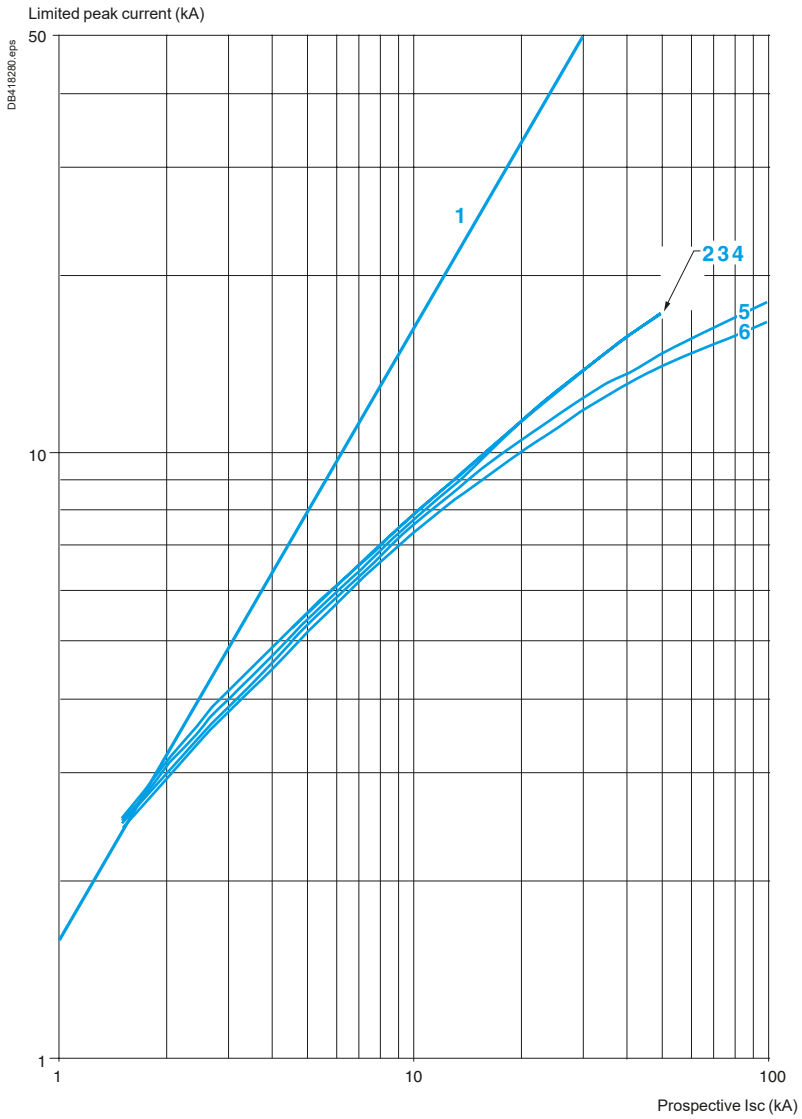
A Thermal overload relay protection zone
B GV3L protection zone

Ref.
Circuit breakers

Current limitation on short-circuit for GV3L (3-phase 400/415 V)

Dynamic stress

I peak = f (prospective Isc) at 1.05 Ue = 435 V



1 Maximum peak current
2 GV3L80 - GV3L73 - GV3L65
3 GV3L50
4 GV3L40
5 GV3L32
6 GV3L25

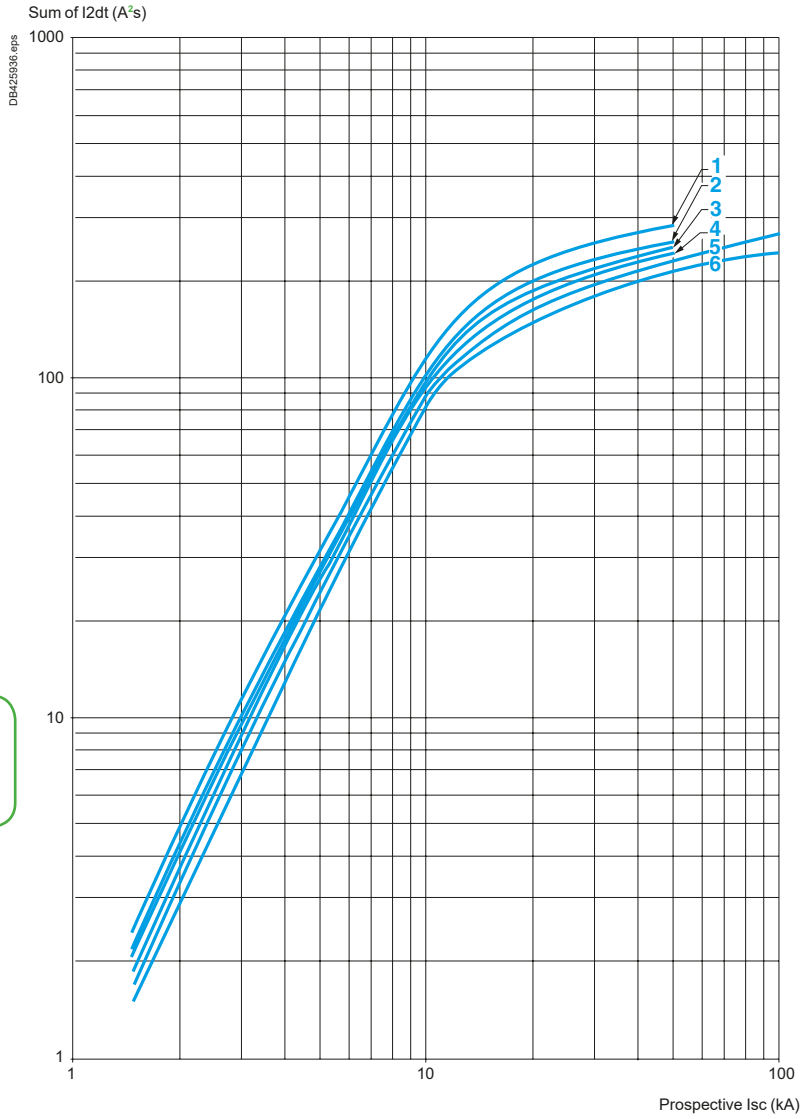
Ref.
Circuit breakers

Curves

Thermal limit on short-circuit for GV3L

Thermal limit in A^2s

Sum of I^2dt = f (prospective Isc) at 1.05 Ue = 435 V



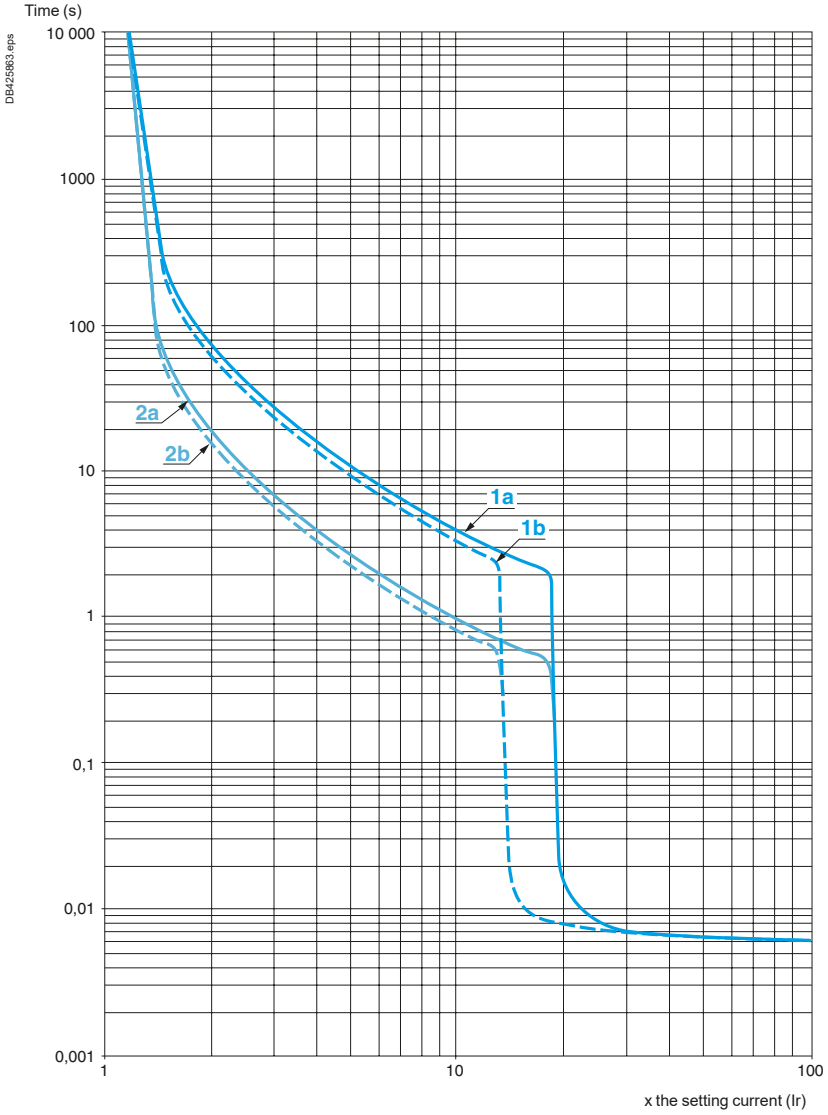
1 GV3L73 - GV3L80
2 GV3L65
3 GV3L50
4 GV3L40
5 GV3L32
6 GV3L25

Ref.
Circuit breakers

Curves

Thermal-magnetic tripping curves for GV3P

Average operating times at 20 °C related to multiples of the setting current



1a 3 poles from cold state (Ir mini.): GV3P
1b 3 poles from cold state (Ir maxi.): GV3P
2a 3 poles from hot state (Ir mini.): GV3P
2b 3 poles from hot state (Ir maxi.): GV3P

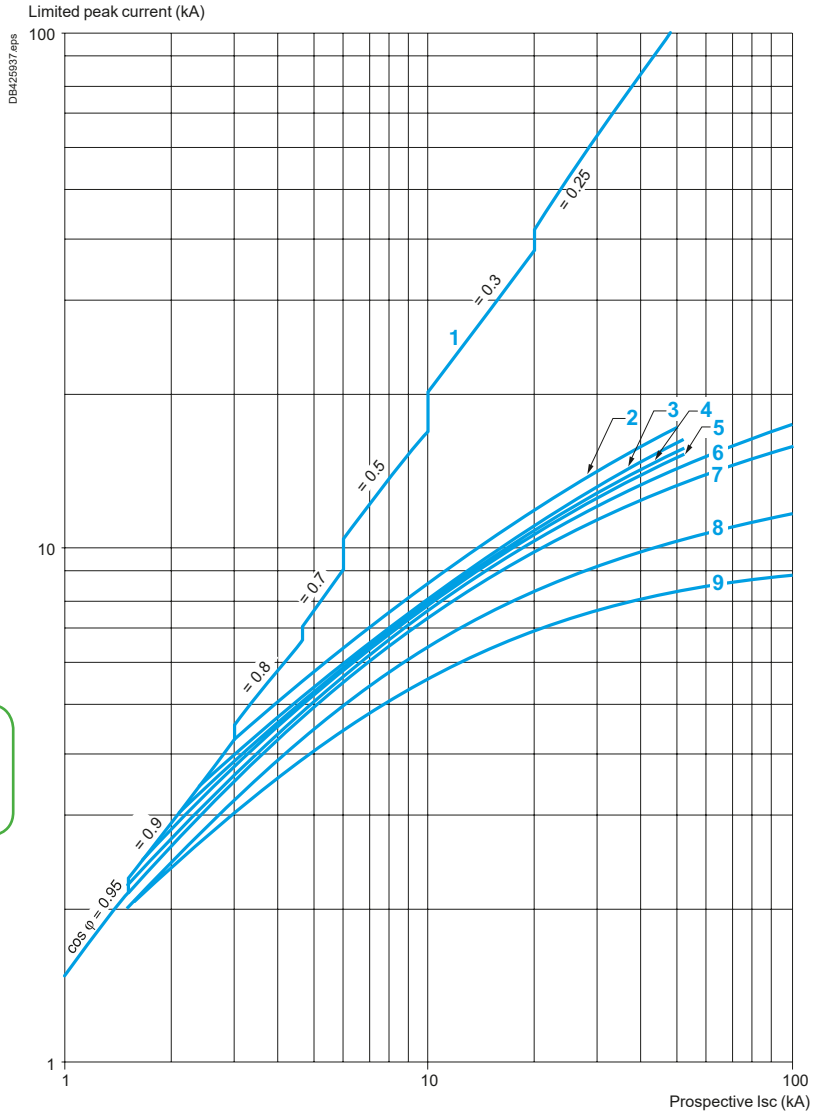
Ref.
Circuit breakers

Curves

Current limitation on short-circuit for GV3P (3-phase 400/415 V)

Dynamic stress

I peak = f (prospective Isc) at 1.05 Ue = 435 V



1 Maximum peak current
2 70-80 A (GV3P80); 62-73 A (GV3P73)
3 48-65 A (GV3P65)
4 37-50 A (GV3P50)
5 30-40 A (GV3P40)
6 23-32 A (GV3P32)
7 17-25 A (GV3P25)
8 12-18 A (GV3P18)
9 9-13 A (GV3P13)

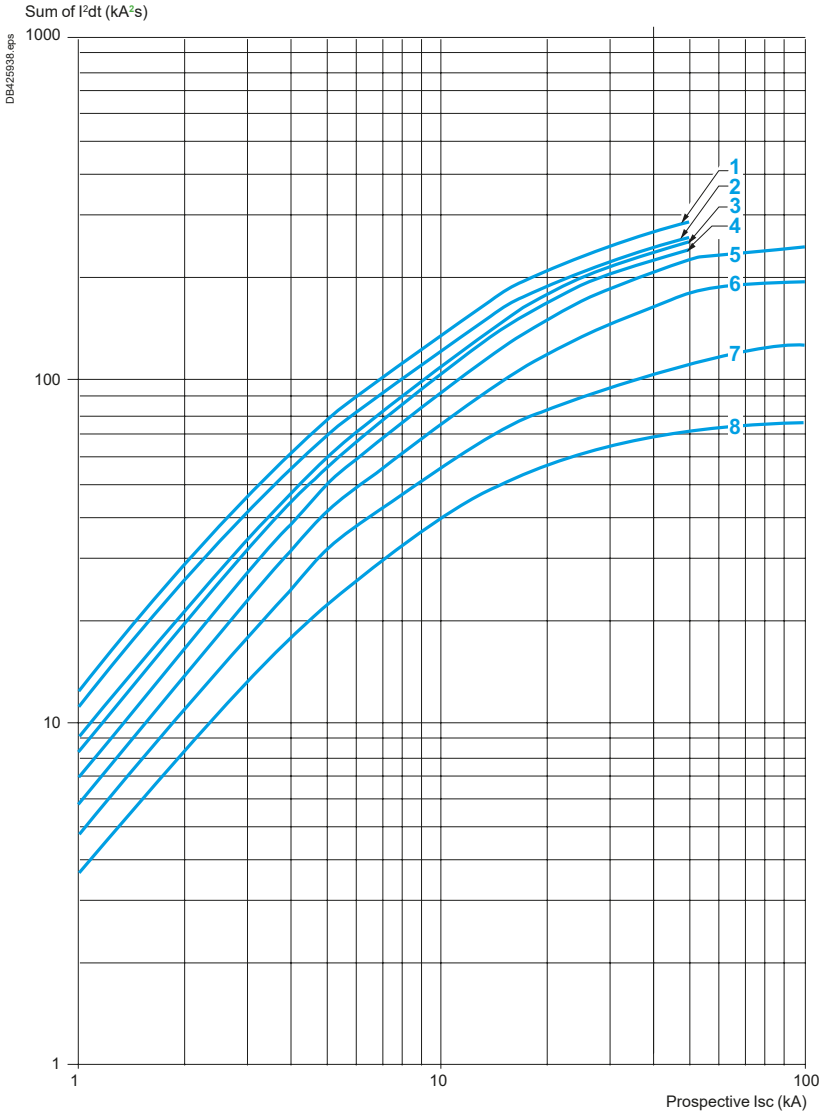
Ref.
Circuit breakers

Curves

Maximum thermal limit on short-circuit for GV3P

Thermal limit in kA²s in the magnetic operating zone

Sum of I²dt = f (prospective Isc) at 1.05 Ue = 435 V



1 70-80 (GV3P80) - 62-73 (GV3P73)
2 48-65 A (GV3P65)
3 37-50 A (GV3P50)
4 30-40 A (GV3P40)
5 23-32 A (GV3P32)
6 17-25 A (GV3P25)
7 12-18 A (GV3P18)
8 9-13 A (GV3P13)

Ref.
Circuit breakers

Characteristics

Characteristics of GV3 electric trips

Type of trip			GVAU●●● MN undervoltage trip	GVAS●●● MX shunt trip
Rated insulation voltage (Ui)	Conforming to IEC 60947-1	**V**	690	690
	Conforming to CSA C22-2 n°14, UL 508	**V**	600	600
Operational voltage (Ue)	Conforming to IEC 60947-1	**V**	0.85...1.1 Uc	0.7...1.1 Uc
Drop-out voltage		**V**	0.7...0.35 Uc	0.75...0.2 Uc
Inrush consumption	~ ⎓	**VA**	12	14
Sealed consumption	~ ⎓	**VA**	3.5	5
Operating time	Conforming to IEC 60947-1	**ms**	From the moment the voltage reaches its operational value until opening of the circuit breaker. 10...15	
On-load factor			100 %	
Cabling (spring connection)	Number of conductors		2 or 4	
	Solid cable	**mm²**	1...2.5	
	Flexible cable without cable end	**mm² AWG**	0.75...2.5	
	Flexible cable with cable end	**mm²**	0.75...2.5	
Tightening torque		**N.m**	1.4 max	
Mechanical durability (C.O.: Close - Open)		**C.O.**	10000 (GV3P and GV3L)	

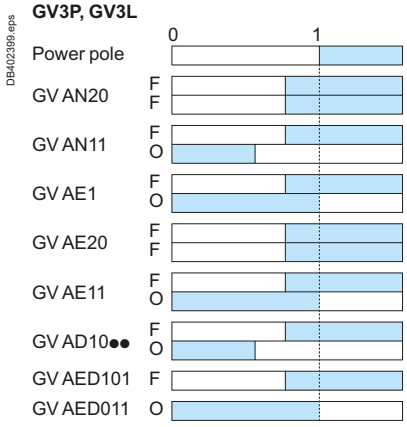
References: page B6/29
Dimensions: page B6/107
Schemes: page B6/109

Characteristics

Type of contacts			Instantaneous auxiliary GVAN, GVAD							Fault signalling GVAD, GVAM11 (1)				Instantaneous auxiliary GVAE			
Rated insulation voltage (Ui) (associated insulation coordination)	Conforming to IEC 60947-1	**V**	690							690				250 (690 in relation to main circuit)			
	Conforming to UL 60947-4-1, CSA C22.2 n° 60947-4-1	**V**	600							300				300			
Conventional thermal current (Ith)	Conforming to IEC 60947-5-1	**A**	6							2.5				2.5			
	Conforming to UL 60947-5-1, CSA C22.2 n° 60947-5-1	**A**	5							1				1			
Mechanical durability (C.O.: Close - Open)		**C.O.**	100 000							1000				100 000			
Operational power and current conforming to IEC 60947-5-1. a.c. operation			AC-15/100 000 C.O.							AC-14/1000 C.O.				AC-15/100 000 C.O.			
	Rated operational voltage (Ue)	**V**	**48**	**110 127**	**230 240**	**380 415**	**440**	**500**	**690**	**24**	**48**	**110 127**	**230 240**	**24**	**48**	**110 127**	**230 240**
Operation	Operational power, normal conditions	**VA**	300	500	720	850	650	500	400	36	48	72	72	48	60	120	120
	Occasional breaking and making capacities, abnormal conditions	**kVA**	3	7	13	15	13	12	9	0.22	0.3	0.45	0.45	0.48	0.6	1.27	2.4
	Rated operational current (Ie)	**A**	6	4.5	3.3	2.2	1.5	1	0.6	1.5	1	0.5	0.3	2	1.25	1	0.5
Operational power and current conforming to IEC 60947-5-1. d.c.			DC-13/100 000 C.O.							DC-13/1000 C.O.				DC-13/100 000 C.O.			
	Rated operational voltage (Ue)	**V**	**24**	**48**	**60**	**110**	**240** (2)	**–**	**–**	**24**	**48**	**60**	**–**	**24**	**48**	**60**	**–**
Operation	Operational power, normal conditions	**W**	140	240	180	140	120	–	–	24	15	9	–	24	15	9	–
	Occasional breaking and making capacities, abnormal conditions	**W**	240	360	240	210	180	–	–	100	50	50	–	100	50	50	–
	Rated operational current (Ie)	**A**	6	5	3	1.3	0.5	–	–	1	0.3	0.15	–	1	0.3	0.15	–
Low power switching reliability of contact			**GVAE**: Number of failures for “n” million operating cycles (17 V-5 mA): = 10^{-6}														
Minimum operational conditions d.c. operation		**V**	17														
		mA	5														
Short-circuit protection			By **GB2CB●●** circuit breaker (rating according to operational current for Ue ⩽ 415 V) or by gG fuse 10 A max											**GB2CB06** or gG fuse 10 A max			
Cabling, screw clamp terminals	Number of conductors		**1**			**2**											
	Solid cable	**mm²**	1…2.5			1…2.5											
	Flexible cable without cable end	**mm²**	0.75…2.5			0.75…2.5											
	Flexible cable with cable end	**mm²**	0.75…1.5			0.75…1.5											
	Tightening torque	**N.m**	1.4 max			1.4 max											
Cabling, spring terminal connections			**GVAN** only														
	Flexible cable without cable end	**mm²**	0.75…2.5			0.75…2.5				–				0.75…1.5			

Operation of instantaneous auxiliary contacts

GV3P, GV3L



Operation of fault signalling contacts

GVAM11
Change of state following tripping on short-circuit.

GVAD10●● and **GVAD01●●**
Change of state following tripping on short-circuit, overload or undervoltage.

(1) For application example of fault signalling contact and short-circuit signalling contact.
*(2) Add an RC circuit type **LA4D** to the load terminals.*

References: page B6/29
Dimensions: page B6/107
Schemes: page B6/109

Characteristics

Characteristics of 3-pole busbars GV3G●●●

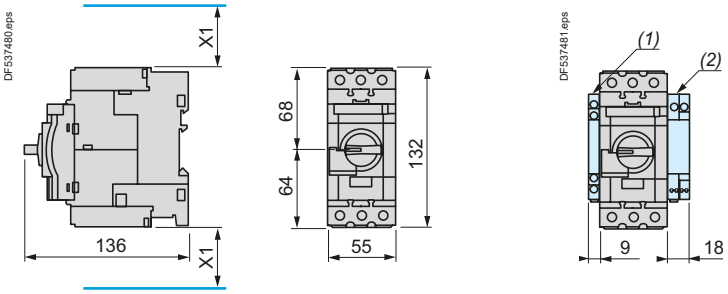
			GV3G●64
Rated insulation voltage (Ui)	Conforming to IEC 60947-1	**V**	690
Conventional thermal current (Ith)	Conforming to IEC 60439-1	**A**	115
Rated operational current (Ie)		**A**	115
Permissible peak current (I peak)		**kA**	20
Permissible thermal limit (I^2t)		**kA^2s**	300
Degree of protection	Conforming to IEC 60529		IP 20
Terminal block			–

References:
page B6/29

Dimensions:
page B6/107

GV3L, GV3P

Dimensions



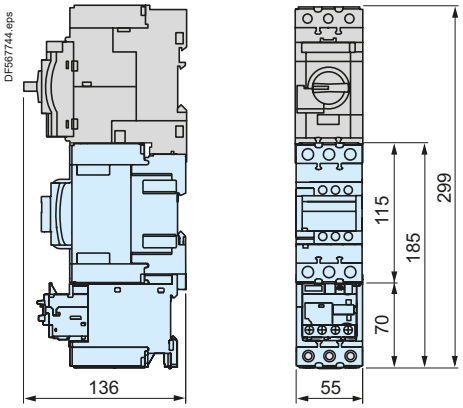
X1 = Electrical clearance (ISC max)
40 mm for Ue ⩽ 500 V, 50 mm for Ue ⩽ 690 V

*(1) Blocks **GVAN●●**, **GVAD●●** and **GVAM11**.*
*(2) Blocks **GV3AU●●** and **GV3AS●●**.*

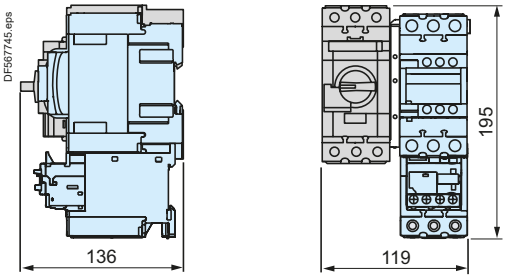
***Note:** Leave a space of 9 mm between 2 circuit breakers: either an empty space or side-mounting add-on contact blocks.*
Side by side mounting is possible up to 40 °C.

Mounting

Mounting with Tesys contactor LC1D40A…D80A and relay LR3D313…380 (1) (2) (3)

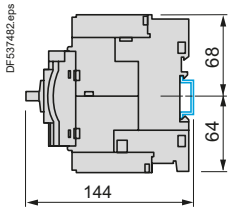


Side by side mounting with Tesys contactor LC1D40A…D73A (S-shape busbar system GV3S (1)**)**

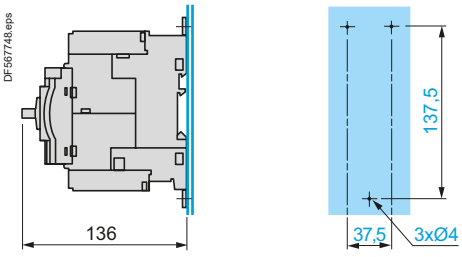


*(1) Mountings with c.b. up to **GV3L73**, **GV3P73**.*
*(2) For **GV3L80**, **GV3P80** use cable between components for dissipating heat. Consult online datasheets for values*
(3) S-shape busbar system suitable up to 73 A.

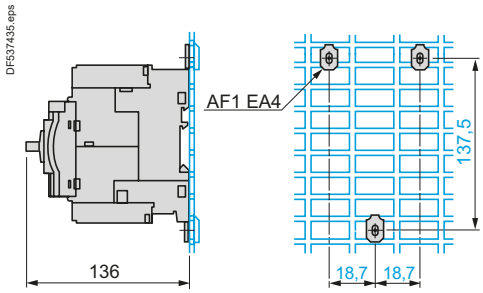
Mounting on rail AM1DE200 or AM1ED201



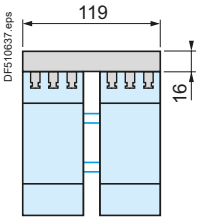
Panel mounting, using M4 screws



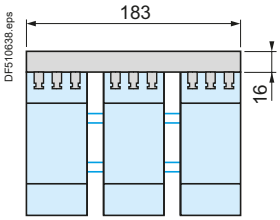
Mounting on pre-slotted plate AM1PA



Set of busbars GV3G264



Set of busbars GV3G364

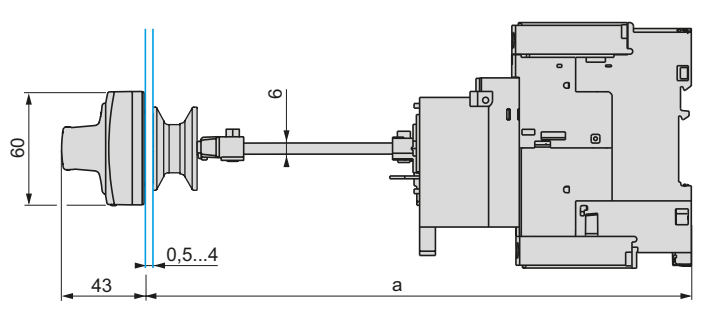


References: pages B6/26 and B6/27
Characteristics: pages B6/94 to B6/97
Curves: pages B6/98 to B6/103
Schemes: page B6/109

Mounting

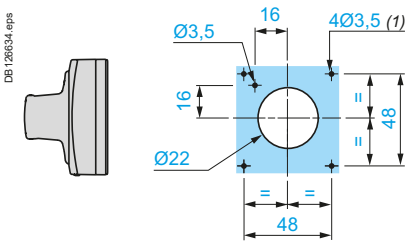
Mounting of external operator GV3APN01, GV3APN02 or GV3APN04 for motor circuit breakers GV3L

DB127416.eps



Door cut-out

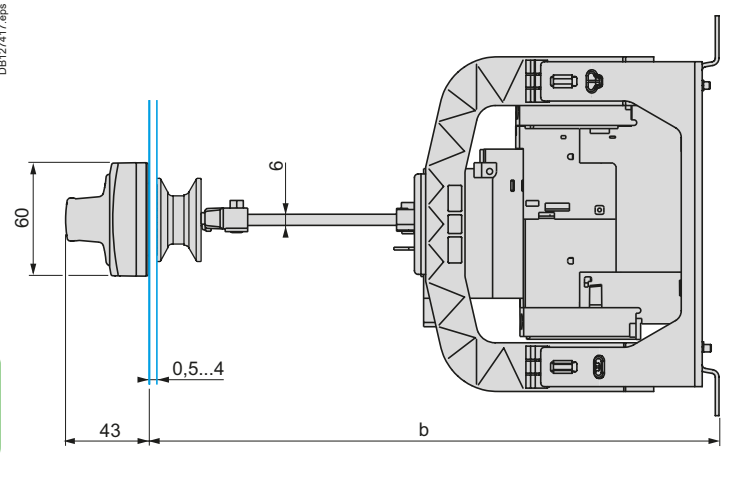
DB126634.eps



(1) For IP65 only.

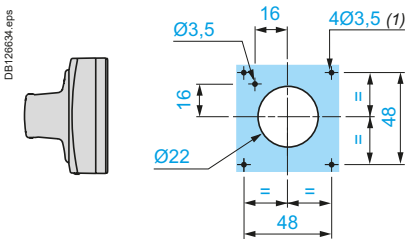
Mounting of external operator GVAPH03 for motor circuit breakers GV3L

DB127417.eps



Door cut-out

DB126634.eps



(1) For IP65 only.

	a		b	
	Mini	Maxi	Mini	Maxi
GV3APN●●	189	300	-	-
GV3APN●● + GVAPK12	300	481		
GV3APN●● + GVAPH03	-	-	200	300
GV3APN●● + GVAPH03 + GVAPK12	-	-	300	492

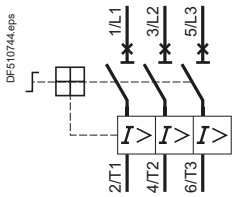
Ref.
Circuit breakers

References:
page B6/30

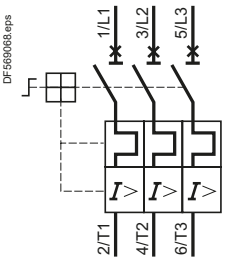
Schemes

Schemes

GV3L●●

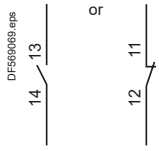


GV3P●●

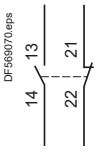


Front mounting add-on contact blocks
Instantaneous auxiliary contacts

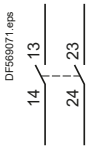
GVAE1



GVAE11

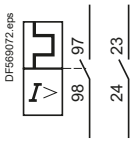


GVAE20

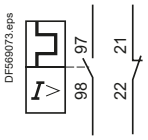


Front mounting add-on contact blocks
Instantaneous auxiliary contacts and fault signalling contacts

GVAED101

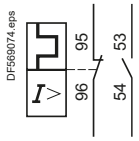


GVAED011

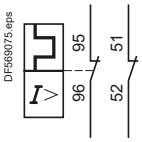


Side mounting add-on contact blocks
Instantaneous auxiliary contacts and fault signalling contacts

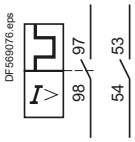
GVAD0110



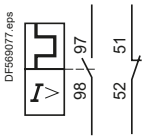
GVAD0101



GVAD1010

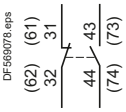


GVAD1001

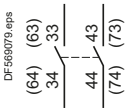


Instantaneous auxiliary contacts

GVAN11

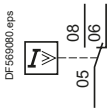


GVAN20



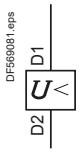
Short-circuit signalling contacts

GVAM11

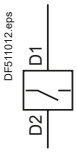


Voltage trips

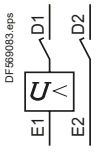
GVAU●●●



GVAS●●●

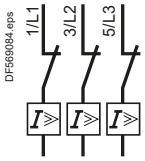


GVAX●●●

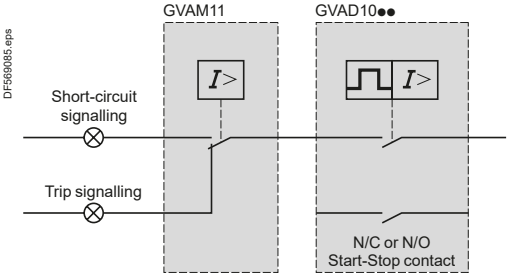


Current limiter

GV1L3

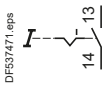


Use of fault signalling contact and short-circuit signalling contact

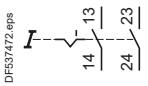


Start-Stop signalling contact blocks

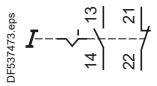
GK2AX10



GK2AX20

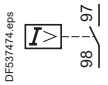


GK2AX50

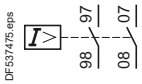


Fault signalling contact blocks

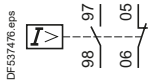
GK2AX12



GK2AX22



GK2AX52



References:
pages B6/26 to B6/29

Characteristics:
pages B6/94 to B6/97

Curves:
pages B6/98 to B6/103

Dimensions:
page B6/107

TeSys GV4

0.25 to 55 kW - 1/2 to 60 HP

Characteristics

Environment

Circuit breaker type				GV4L	GV4LE	GV4P	GV4PE	GV4PEM	GV4PB
Conforming to standards				IEC/EN 60947-1, IEC/EN 60947-2, IEC/EN 60947-4-1		IEC/EN 60947-1, IEC/EN 60947-2, IEC/EN 60947-4-1, UL 60497-4-1, CSA 22.2 n° 60497-4-1			IEC/EN 60947-2, IEC/ EN 60947-4-1
Product certifications				CCC, EAC, BV, EU-RO MR (1)		CCC, EAC, CSA (cCSAus), ATEX, BV, EU-RO MR (1)			UL 489, CSA C22.2 n°5
Climatic withstand				According to IACS E10					
Degree of protection (front face)	Conforming to IEC 60529	Open mounted		IP 40 front face except on connection area. Connection area: - IP20 with EverLink connector - IP40 with crimp lug connector and terminal shield.					
		In enclosure (2)		DRH = IP40 ERH = IP54 or IP65					
Shock resistance	Conforming to IEC 60068-2-27			15g - 11 ms		15g - 11 ms			
Vibration resistance	Conforming to IEC 60068-2-6			2.0 to 13.2 Hz and amplitude ±1 mm 13.2 to 100 Hz acceleration 0.7 g					
Ambient air temperature	Storage		°C	-50…+85					
	Operation		°C	-25…+70					
Temperature compensation			°C	Non applicable		-25…+60 (3)			
Flame resistance	Conforming to IEC 60695-2-11		°C	960					
Maximum operating altitude			m	2000 without derating. Up to 5000 with derating					
Suitable for isolation	Conforming to IEC 60947-1 § 7-1-6			Yes					
Resistance to mechanical impact			J	IK07 (2J)					
Sensitivity to phase failure				No		Yes			

Technical characteristics

Utilisation category	Conforming to IEC 60947-2		A	A	
	Conforming to IEC 60947-4-1		AC-3 (4)		
Rated operational voltage (Ue)	Conforming to IEC 60947-2	V	690		
Rated insulation voltage (Ui)	Conforming to IEC 60947-2	V	800		
Rated voltage	Conforming to CSA C22-2 n°1, UL 60947-4-1	V	Non applicable	600	
Rated operational frequency	Conforming to IEC 60947-4-1, UL, CSA	Hz	50/60		
Rated impulse withstand voltage (U imp)	Conforming to IEC 60947-2	kV	8		
Total power dissipated per pole		W	6.1	4.6	
Mechanical durability (C.O.: Closing, Opening)		C.O.	40000		
Electrical durability for AC-3/415V duty (C.O.: Closing, Opening)	415 V In	C.O.	5 000		
Duty class (maximum operating rate)		C.O./h	25		
Maximum conventional rated thermal current (Ith)	Conforming to IEC 60947-4-1	A	115		
Rated duty	Conforming to IEC 60947-4-1		Continuous duty		

(1) Refer to chapter on page A6/39 for details on Marine Classification Societies.

(2) DRH = with Direct Rotary Handle
ERH = with Extended Rotary Handle.

(3) For operation up to 70 °C, please consult your regional sales office.

(4) Up to 100 A.

Ref.
Circuit breakers

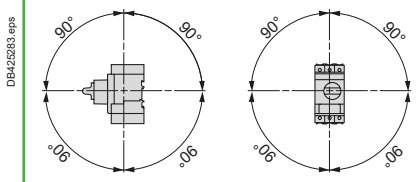
References:
pages B6/35 to B6/41

Curves:
pages B6/116 to B6/123

Dimensions, schemes:
pages B6/126 to B6/129

Mounting characteristics

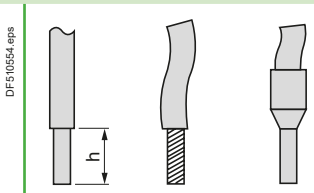
Operating position
Without derating, in relation to normal vertical mounting plane (1)



Power connection characteristics

Power connection by bare cables (EverLink connector)

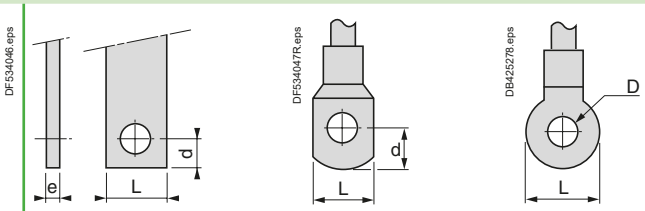
Bare cables



			Min.	Max.
Connection to screw clamp terminals (Max. number of conductors x c.s.a.)	Solid cable	**mm²** **AWG**	Cu 1 x 1.5 + 1 x 2.5 Cu 2 x 14	Cu 1 x 70 + 1 x 95 Cu 1 x 2/0 + 1 x 3/0
	Flexible cable without cable end	**mm²** **AWG**	Cu 1 x 1.5 + 1 x 2.5 Cu 2 x 6	Cu 1 x 50 + 1 x 70 Cu 1 x 1/0 + 1 x 2/0
	Flexible cable with cable end	**mm²** **AWG**	Cu 1 x 1.5 + 1 x 2.5 Cu 2 x 6	Cu 1 x 50 + 1 x 70 Cu 1 x 1/0 + 1 x 2/0
Tightening torque		**N.m**	5 ≤ 10 mm² / 8 AWG 9 ≥ 16 mm² / 6 AWG	
Stripping length (h)	Solid cable	**mm**	20	

Power connection by bars or lugs

Bars or lugs



Pitch	Without spreaders	**mm**	27
	With spreaders	**mm**	35
Bars or cables with lugs	e	**mm**	≤ 8
	L	**mm**	≤ 20
	d	**mm**	≤ 7
	D	**mm**	6.4
M6 Screws	Tightening torque	**N.m**	5 ≤ 10 mm² / 8 AWG 9 ≥ 16 mm² / 6 AWG

(1) When mounting on a vertical rail, fit a stop to prevent any slippage.

References:
pages B6/35 to B6/41
Curves:
pages B6/116 to B6/123
Dimensions, schemes:
pages B6/126 to B6/129

Characteristics

Breaking capacity of GV4L and GV4LE

Circuit breaker type				GV4L●●●B GV4LE●●●B				GV4L●●●N GV4LE●●●N								GV4LE●●●S							
Rating			A	25	50	80	115	2	3.5	7	12.5	25	50	80	115	2	3.5	7	12.5	25	50	80	115
Breaking capacity conforming to IEC 60947-2	230/240 V	Icu	kA	50				100								120							
		Ics % (1)		100				100								100							
	400/415 V	Icu	kA	25				50								100							
		Ics % (1)		100				100								100							
	440 V	Icu	kA	20				50								70							
		Ics % (1)		100				100								100							
	500 V	Icu	kA	10				25								30							
		Ics % (1)		100				100								100							
	525 V	Icu	kA	-				15								18							
		Ics % (1)		-				100								100							
	690 V	Icu	kA	-				8								10							
		Ics % (1)		-				25								25							

(1) As % of Icu.

Ref.
Circuit breakers

Characteristics

Breaking capacity of GV4P, GV4PE, GV4PB●●●B

Circuit breaker type				GV4P●●●B GV4PE●●●B GV4PEM●●●B GV4PB●●●B					GV4P●●●N GV4PE●●●N GV4PEM●●●N GV4PB●●●N								GV4P●●●S GV4PE●●●S GV4PEM●●●S GV4PB●●●S							
Rating			A	25	50	80	115		2	3.5	7	12.5	25	50	80	115	2	3.5	7	12.5	25	50	80	115
Breaking capacity conforming to IEC 60947-2	230/240 V	Icu	kA	50					100								120							
		Ics % (1)		100					100								100							
	400/415 V	Icu	kA	25					50								100							
		Ics % (1)		100					100								100							
	440 V	Icu	kA	20					50								70							
		Ics % (1)		100					100								100							
	500 V	Icu	kA	10					25								30							
		Ics % (1)		100					100								100							
	525 V	Icu	kA	-					15								18							
		Ics % (1)		-					100								100							
	690 V	Icu	kA	-					8								10							
		Ics % (1)		-					25								25							
Breaking capacity conforming to UL 60947-4-1 and CSA 22.2 n° 60947-4-1	120 V		kA	35					65								100							
	208 V		kA	35					65								100							
	240 V		kA	35					65								100							
	480Y / 277 V		kA	18					35								65							
	480 V (2)		kA	18					35								65							
	600Y / 347 V		kA	14					18								25							
	600 V (2)		kA	14					18								25							

(1) As % of Icu.
(2) Except for MCC suitable for TAP conductor protection, in motor group installation and GV4PB.

Ref.
Circuit breakers

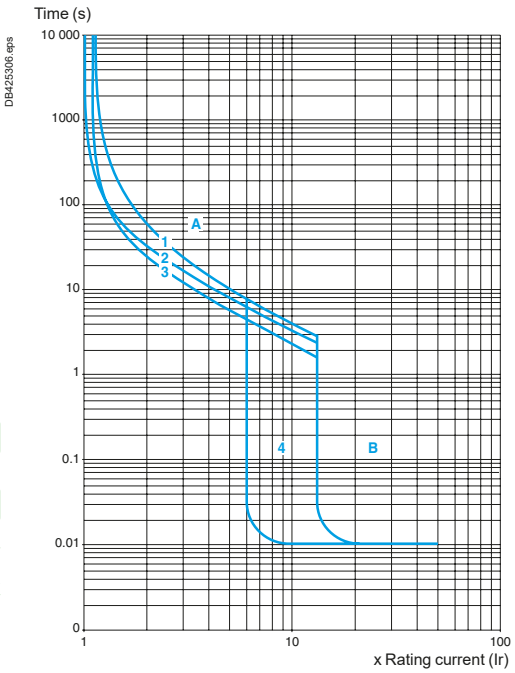
References: pages B6/37 to B6/41
Curves: pages B6/121 to B6/123
Dimensions, schemes: pages B6/126 to B6/129

Curves

Tripping curves for GV4L and GV4LE combined with thermal overload relay LRD or LR9

Average operating times at 20 ° C related to multiples of the setting current

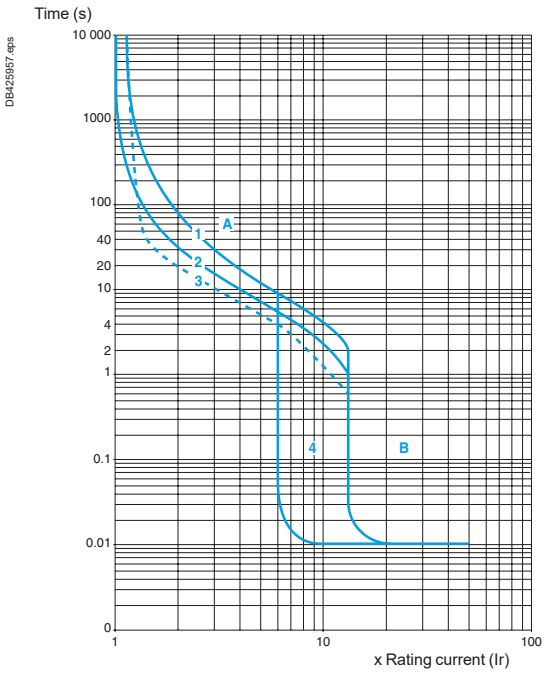
GV4L02 and GV4LE02 to 12 with LRD05 to LRD14, GV4L80 and GV4LE80 with LRD3363



1 3 poles from cold state
2 2 poles from cold state
3 3 poles from hot state
4 6 ...14 Ir

A Thermal overload relay protection zone
B GV4L protection zone

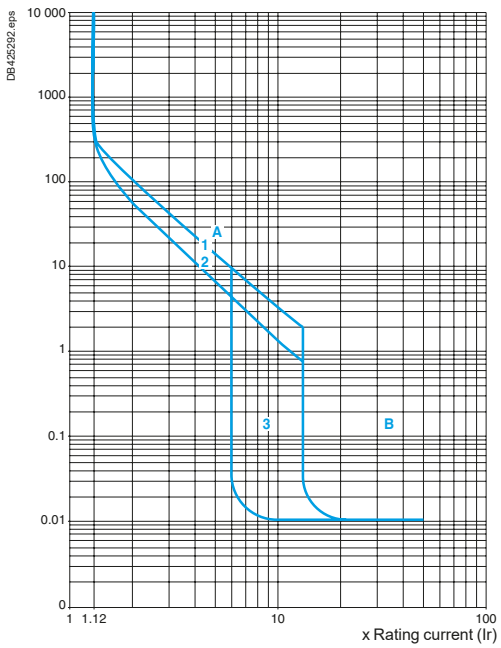
GV4L25 AND GV4LE25 with LRD318, LRD325
GV4L50 AND GV4LE50 with LRD332, LRD340, LRD350



1 3 poles from cold state
2 2 poles from cold state
3 3 poles from hot state
4 6 ...14 Ir

A Thermal overload relay protection zone
B GV4L protection zone

GV4L115 and GV4LE115 with class 10 LR9F5367, LR9D5369 and class 20 LR9D5567, LR9F5569



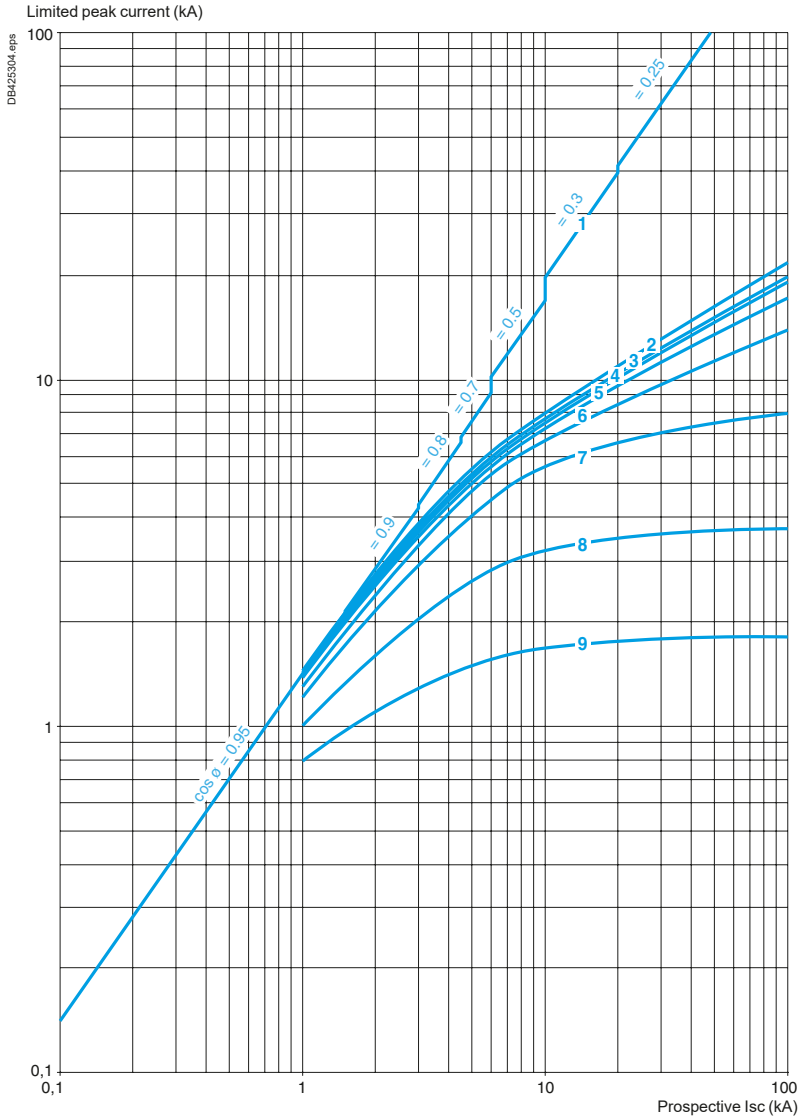
1 Cold state curve
2 Hot state curve
3 6 ...14 Ir

Ref.
Circuit breakers

Current limitation on short-circuit for GV4L, GV4LE (3-phase 400/415 V)

Dynamic stress

I peak = f (prospective Isc) at 1.05 Ue = 435 V



1 Maximum peak current
2 GV4L115
3 GV4L80
4 GV4L50
5 GV4L25
6 GV4L12
7 GV4L07
8 GV4L03
9 GV4L02

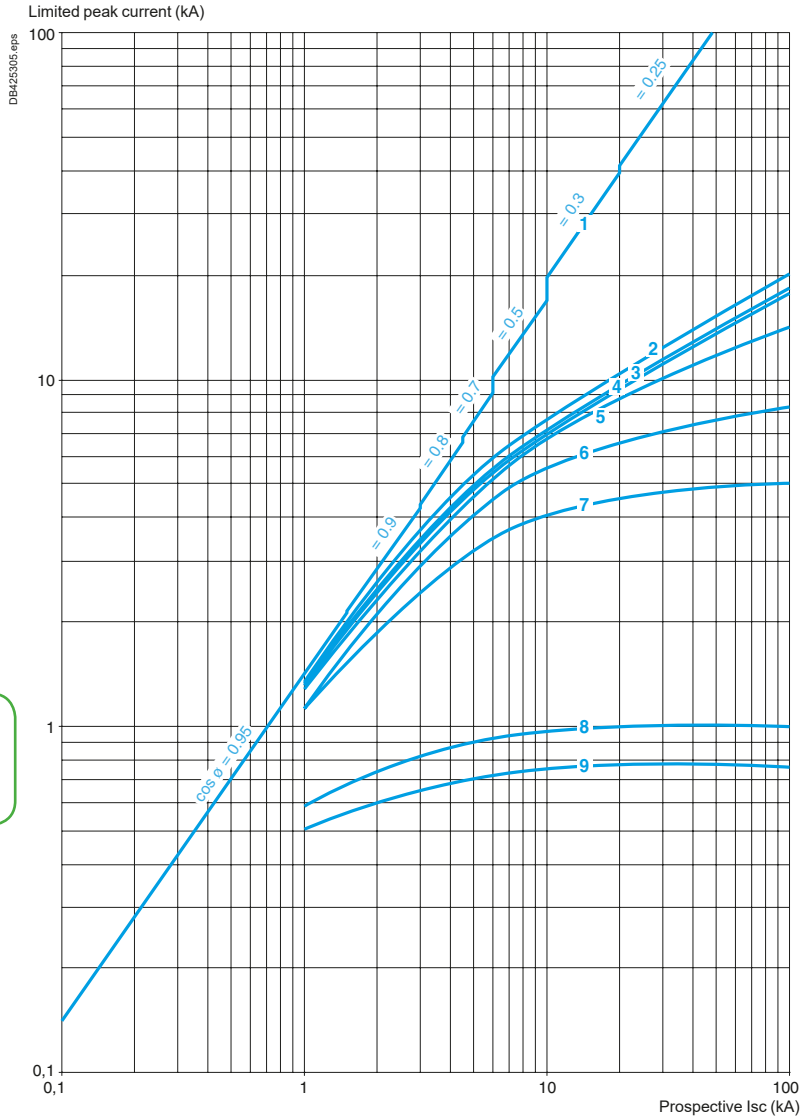
References: page B6/35
Characteristics: pages B6/112 to B6/114
Dimensions, schemes: pages B6/126 to B6/129

Curves

Current limitation on short-circuit for GV4L, GV4LE + thermal overlaoad relay LRD or LR9 (3-phase 400/415 V)

Dynamic stress

I peak = f (prospective Isc) at 1.05 Ue = 435 V



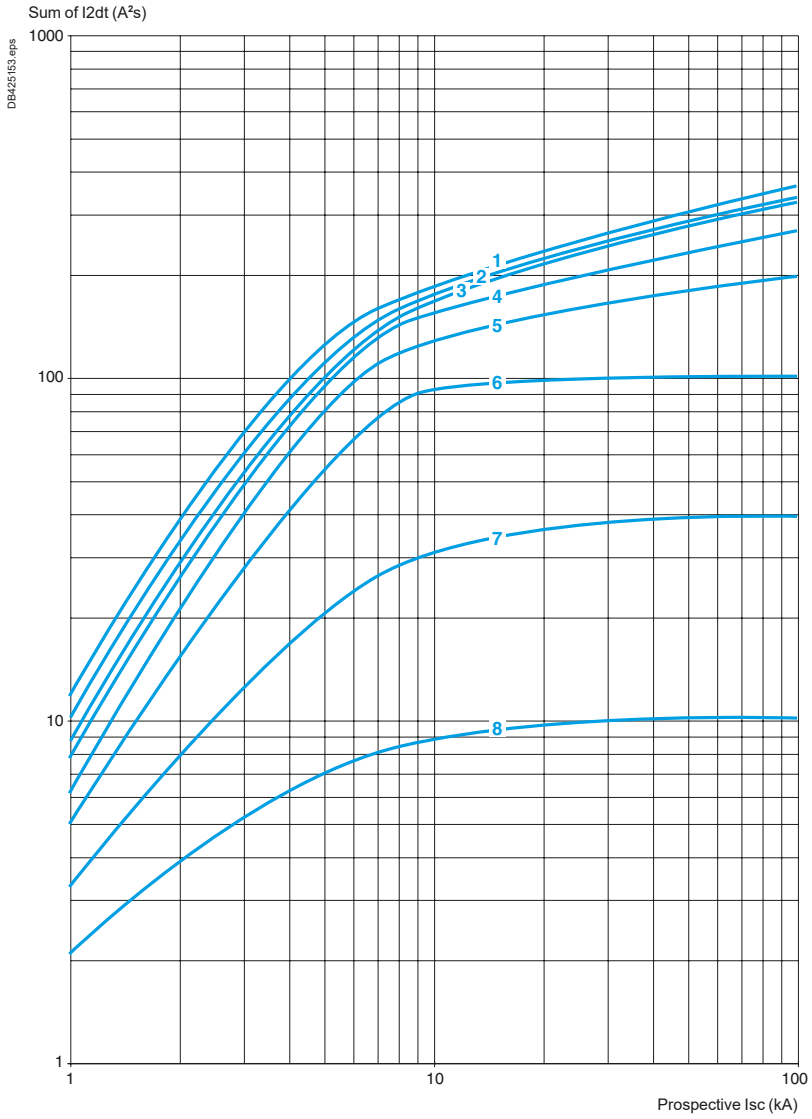
1 Maximum peak current
2 GV4L115 + LR9D5367 or LR9F5367
3 GV4L80 + LRD3361
4 GV4L50 + LRD340
5 GV4L25 + LRD325
6 GV4L12 + LRD313
7 GV4L07 + LRD12
8 GV4L03 + LRD07
9 GV4L02 + LRD07

Ref.
Circuit breakers

Thermal limit on short-circuit for GV4L, GV4LE

Thermal limit in A^2s

Sum of I^2dt = f (prospective Isc) at 1.05 Ue = 435 V



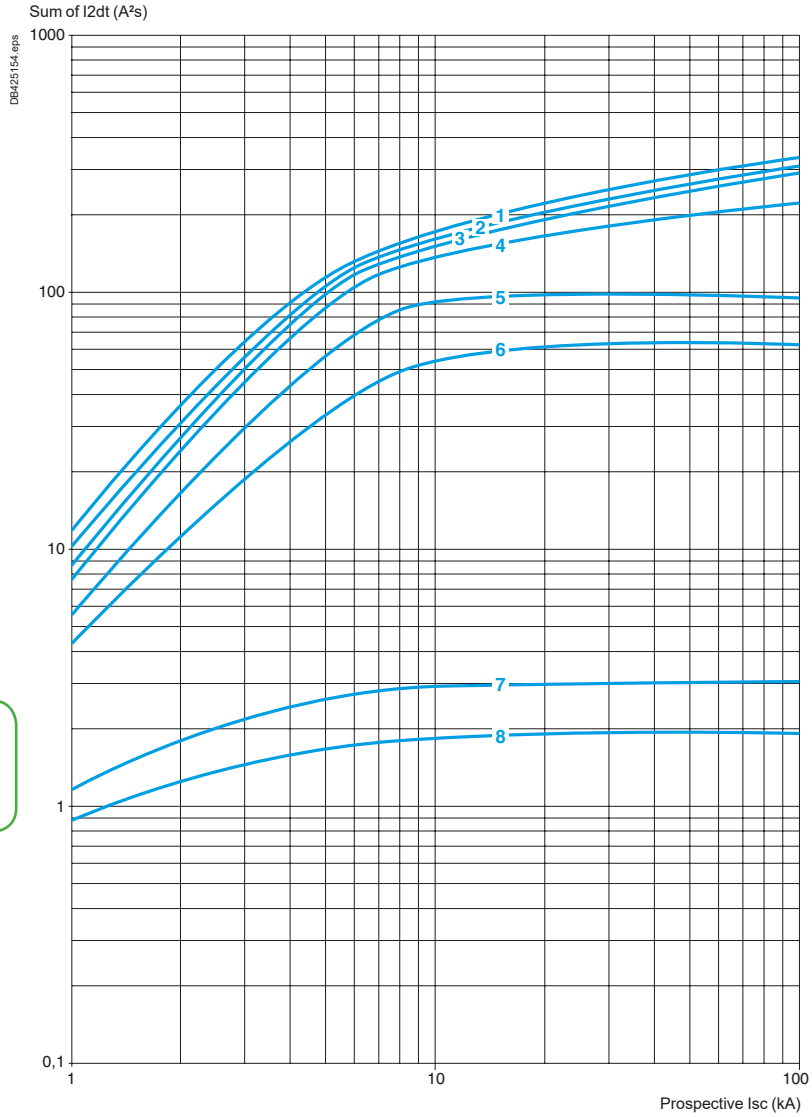
1 GV4L115
2 GV4L80
3 GV4L50
4 GV4L25
5 GV4L12
6 GV4L07
7 GV4L03
8 GV4L02

Ref.
Circuit breakers

Thermal limit on short-circuit for GV4L, GV4LE + thermal overlaoad relay LRD or LR9

Thermal limit in kA in the magnetic operating zone

Sum of I²dt = f (prospective Isc) at 1.05 Ue = 435 V



1 GV4L115 + LR9D5367 or LR9F5367
2 GV4L80 + LRD3361
3 GV4L50 + LRD340
4 GV4L25 + LRD325
5 GV4L12 + LRD313
6 GV4L07+ LRD12
7 GV4L03+ LRD07
8 GV4L02 + LRD07

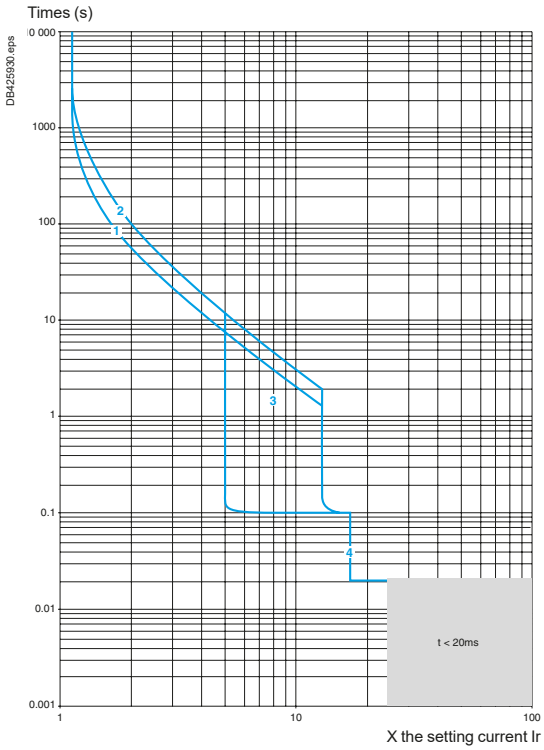
Ref.
Circuit breakers

Curves

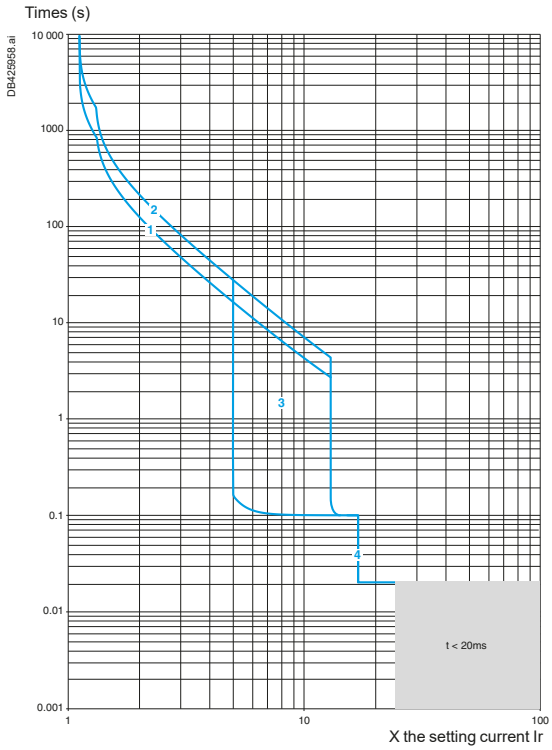
Thermal-magnetic tripping curves for GV4P, GV4PE, GV4PEM, GV4PB

Average operating times at 20 °C related to multiples of the setting current

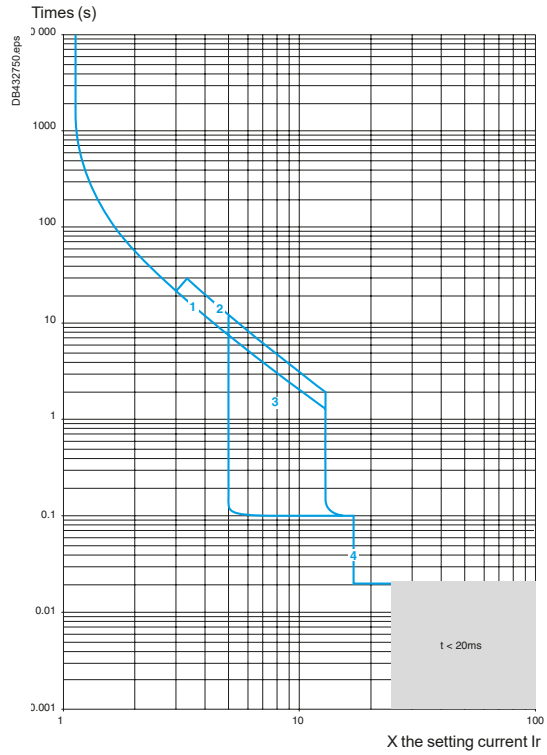
GV4P, GV4PE, GV4PEM



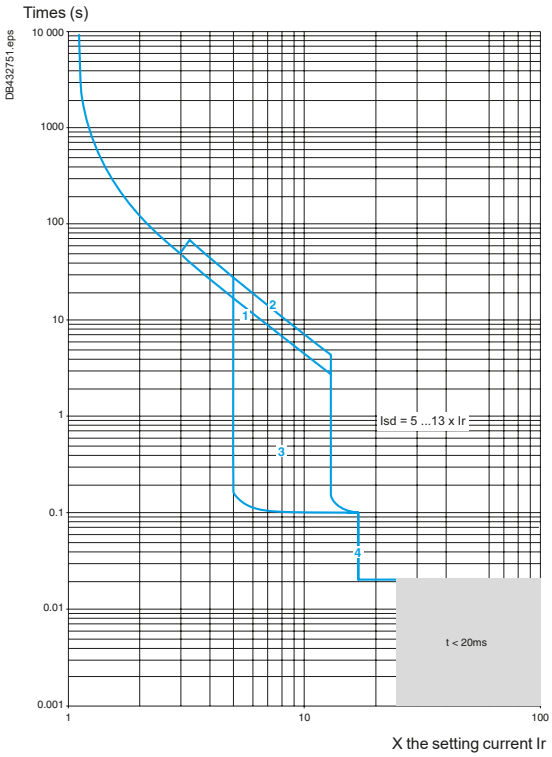
GV4P, GV4PE, GV4PEM



GV4PB



GV4PB



Hot state

1 Class 10
2 Class 20
3 Isd = 13 x Ir (GV4P - GV4PE); Isd = 5….13 x Ir (GV4PEM - GV4PB)
4 Ii = 17 In

Cold state

1 Class 10
2 Class 20
3 Isd = 13 x Ir (GV4P - GV4PE); Isd = 5…. 13 x Ir (GV4PEM - GV4PB)
4 Ii = 17 In

References:
pages B6/37 to B6/41

Characteristics:
pages B6/112 to B6/115

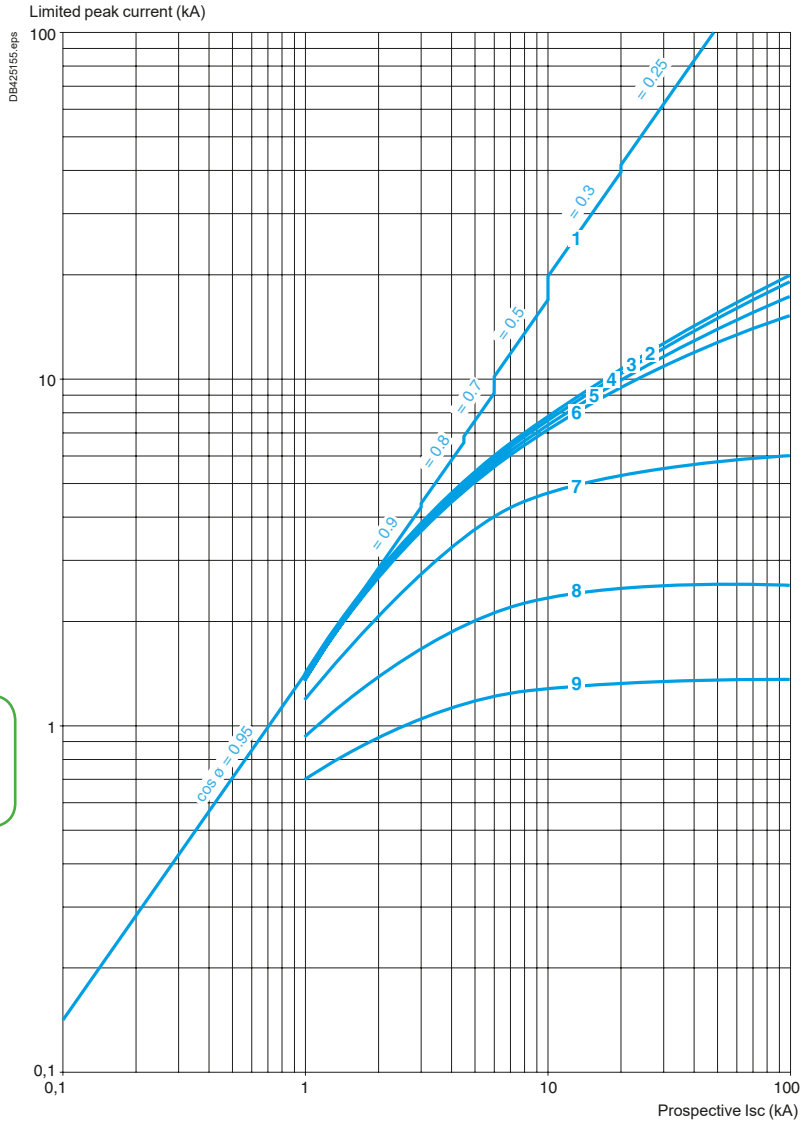
Dimensions, schemes:
pages B6/126 to B6/129

Curves

Current limitation on short-circuit for GV4P, GV4PE, GV4PEM, GV4PB (3-phase 400/415 V)

Dynamic stress

I peak = f (prospective Isc) at 1.05 Ue = 435 V



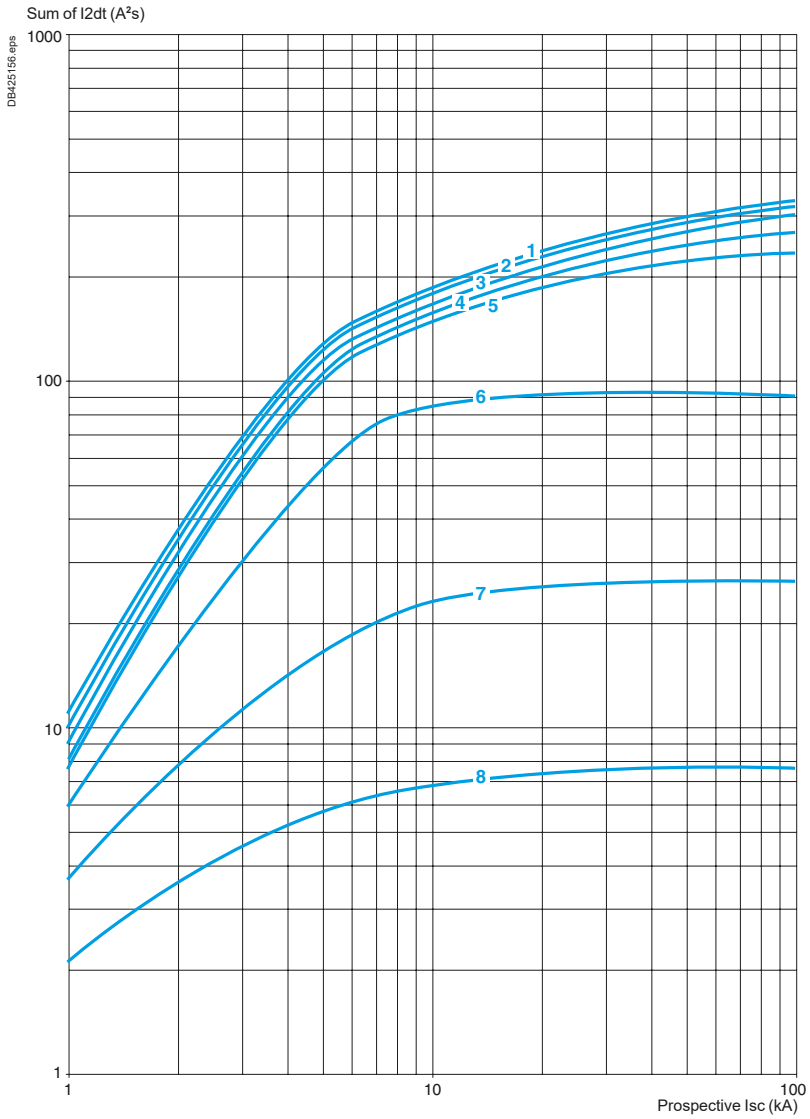
1 Maximum peak current
2 GV4P115
3 GV4P80
4 GV4P50
5 GV4P25
6 GV4P12
7 GV4P07
8 GV4P03
9 GV4P02

Ref.
Circuit breakers

Thermal limit on short-circuit for GV4P, GV4PE, GV4PEM, GV4PB

Thermal limit in kA²s in the magnetic operating zone

Sum of I²dt = f (prospective Isc) at 1.05 Ue = 435 V



1 GV4P115
2 GV4P80
3 GV4P50
4 GV4P25
5 GV4P12
6 GV4P07
7 GV4P03
8 GV4P02

References:
pages B6/37 to B6/41
Characteristics:
pages B6/112 to B6/115
Dimensions, schemes:
pages B6/126 to B6/129

Characteristics

Characteristics of electric trips

Type of trip			GV4AU●●● MN (undervoltage release)						
Rated insulation voltage (Ui)	Conforming to IEC 60947-1	V	= Ue						
Operational voltage (Ue)	Conforming to IEC 60947-1	V	24 V AC/DC	48 V AC/DC	110-130 V AC 125 V DC	208-240 V 60 Hz 220-240 V 50 Hz	277 V 60 Hz	380-415 V 60 Hz	440-480 V 60 Hz
Inrush consumption	~	VA	< 7 VA	< 7 VA	< 7 VA	< 7 VA	< 7 VA	< 7 VA	< 7 VA
	⎓		< 2 W	< 2 W	< 2 W				
Sealed consumption	~	VA	< 7 VA	< 7 VA	< 7 VA	< 7 VA	< 7 VA	< 7 VA	< 7 VA
	⎓		< 2 W	< 2 W	< 2 W				
Operating time	Conforming to IEC 60947-1	ms	< 50						
On-load factor			100 %						
Cabling (spring connection)	Number of conductors		1 per terminal						
	Solid cable	mm²	No solid cable allowed						
	Flexible cable without cable end	mm² AWG	Cu 0.5 mm² to 1.5 mm² Cu 20AWG to 16AWG						
	Flexible cable with cable end	mm²	No cable with cable end allowed						
Tightening torque		N.m	NA						
Mechanical durability (C.O.: Close - Open)		C.O.	20000						

Characteristics of electric trips

Type of trip			GV4AS●●● MX (Shunt trip)				
Rated insulation voltage (Ui)	Conforming to IEC 60947-1	V	= Ue				
Operational voltage (Ue)	Conforming to IEC 60947-1	V	24 V AC/DC	48 V AC/DC	110-130 V AC 125 V DC	208-240 V 60 Hz 220-240 V 50 Hz	380-415 V 50 Hz 440-480 V 60 Hz
Inrush consumption	~	VA	< 6 VA	< 6 VA	< 6 VA	< 6 VA	< 6 VA
	⎓		< 10 W	< 10 W	< 10 W		
Sealed consumption	~	VA	< 4 VA	< 4 VA	< 4 VA	< 4 VA	< 4 VA
	⎓		< 1 W	< 1 W	< 1 W		
Operating time	Conforming to IEC 60947-1	ms	< 50				
On-load factor			100 %				
Cabling (spring connection)	Number of conductors		1 per terminal				
	Solid cable	mm²	No solid cable allowed				
	Flexible cable without cable end	mm² AWG	Cu 0.5 mm² to 1.5 mm² Cu 20AWG to 16AWG				
	Flexible cable with cable end	mm²	No cable with cable end allowed				
Tightening torque		N.m	NA				
Mechanical durability (C.O.: Close - Open)		C.O.	20000				

References:
page B6/43

Characteristics

Auxiliary contact characteristics

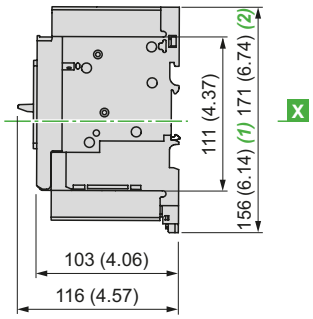
Type of contacts				Auxiliary contact block GV4AE11						SDx contact module for GV4PEM , GV4PB, GV4ADM1111					
Rated insulation voltage(Ui)	Conforming to IEC 60947-1		V	690						250					
	Conforming to CSA C22-2 n°14 UL 508		V	-						-					
Conventional thermal current (Ith)	Conforming to IEC 60947-5-1		A	5						5					
	Conforming to CSA C22-2 n°14 UL 508		A	5						5					
Mechanical durability (C.O.: Close - Open)			C.O.	40 000						100 000					
Operational power and current conforming to IEC 60947-5-1 a.c. operation	**Rated operational voltage (Ue)**		V	**24**	**48**	**110/ 127**	**230/ 240**	**380/ 440**	**660/ 690**	**48**	**110**	**230/ 240**	**380/ 415**	**440**	**690**
	Operational power (AC12)		VA	120	240	635	1200	2200	3450			400			
	Occasional breaking and making capacities		kVA	1.2	2.4	6.35	12	22	34.5						
	Operational current (Ie)	AC-12	A	5	5	5	5	5	5						
		AC-15	A	5	5	4	3	2.5	0.1		3	1.5			
Operational power and current conforming to IEC 60947-5-1 d.c. operation	**Rated operational voltage (Ue)**		V	**24**	**48**	**110**	**250**			**24**	**48**	**60**	**110**	**250**	
	Operational power (DC12)		W	120	120	66	75			50					
	Occasional breaking and making capacities		W	1200	1200	660	750								
	Rated operational current (Ie)	DC-12	A	5	2.5	0.6	0.3								
		DC-13	A	2.5	1.2	0.35	0.05			2			0.22	0.11	
		DC-14	A	1	0.2	0.05	0.03								
Low power switching reliability of contact				10^{-6} at 17 V / 2 mA											
Minimum operational conditions d.c. operation			V	17											
			mA	2											
Short-circuit protection				5 A fuse gG conforming to IEC 60947-5-1											
Spring terminals cabling	Number of conductors			1 per hole											
	Solid cable		mm^2	-						0.2 to 1.5					
	Flexible cable without cable end		mm^2	0.5 to 1.5						0.2 to 2.5					
	Flexible cable with cable end		mm^2	-						0.25 to 1.5					

References:
page B6/42

GV4 with toggle: GV4LE, GV4PE, GV4PEM, GV4PB

With EverLink® connector

DB432740.eps



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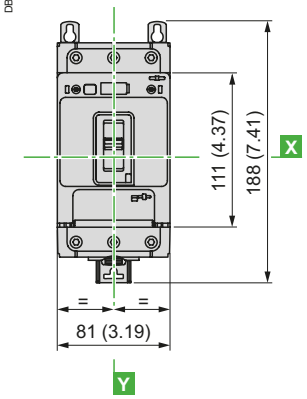
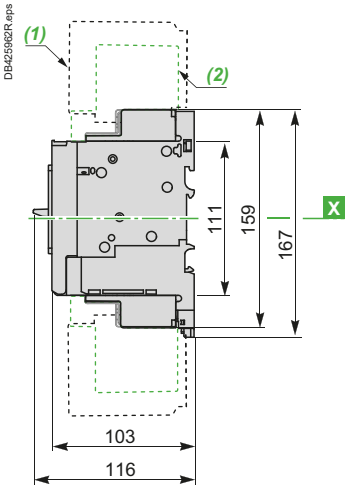


(1) ***GV4LE***, ***GV4PE***, ***GV4PEM***.
(2) ***GV4PB***.

With crimp lug connector

DB425982R.eps



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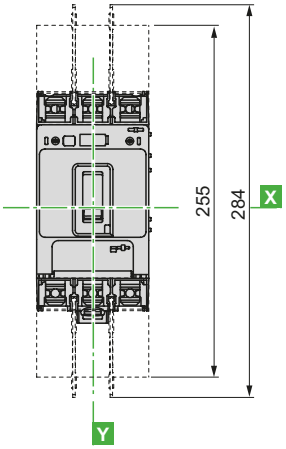
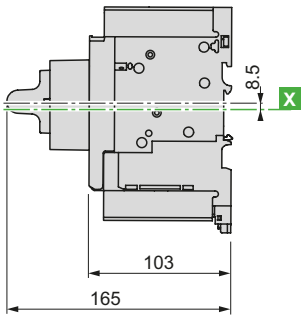


(1) *Interphases barriers.*
(2) *Long terminal shield.*

GV4 with rotary handle: GV4L, GV4P, or GV4LE, GV4PE, GV4PEM, GV4PB with GV4ADN01, GV4ADN02 direct mounting rotary handle

Dimensions

DB425964.eps



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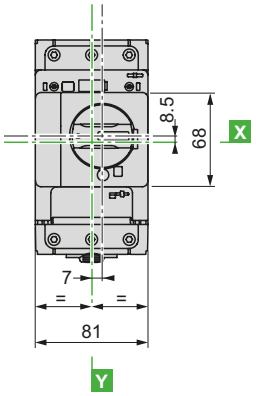
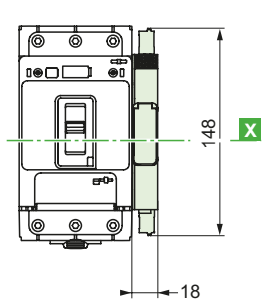


SDx module

DB425966.eps

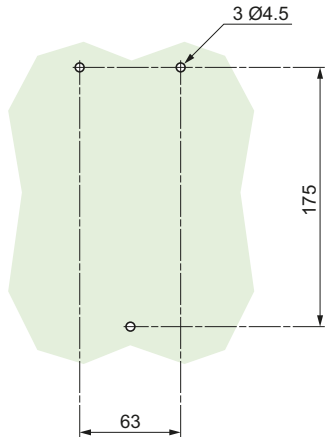


Ref.
Circuit breakers

GV4L, GV4P, GV4LE, GV4PE, GV4PEM, GV4PB

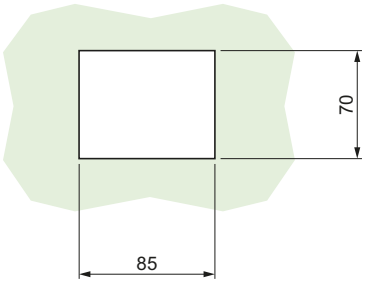
Panel mounting with M4 screws

DB425163.eps



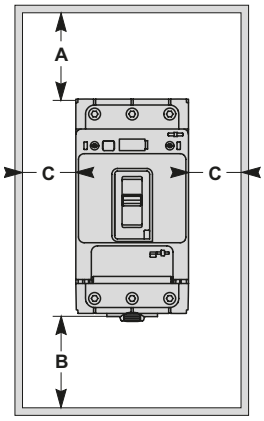
Door cut-out for rotary handle

DB425164.eps



Minimum safety clearance

DB425971.eps



Toggle-type, rotary handle-type: identical clearance values.

Safety clearance (mm)

	Painted sheet metal			Bare sheet metal		
	A	B	C	A	B	C
No accessory	30	0	0	40	0	5
Interphase barriers	0	0	0	0	0	5
Long terminal shield	0	0	0	0	0	5

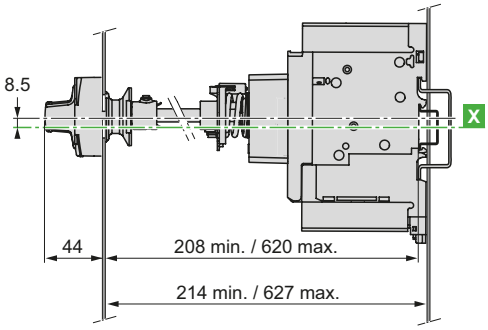
Ref.
Circuit breakers

Dimensions and mounting

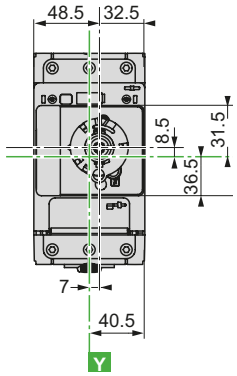
GV4 with extended rotary handle

Front extended rotary handle GV4APN01, GV4APN02, GV4APN04

DB436340.eps



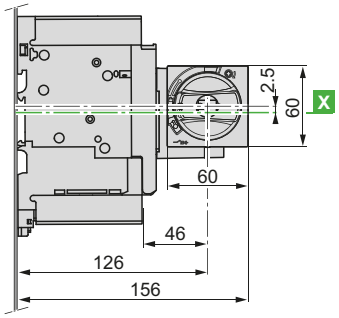
DB436341.eps



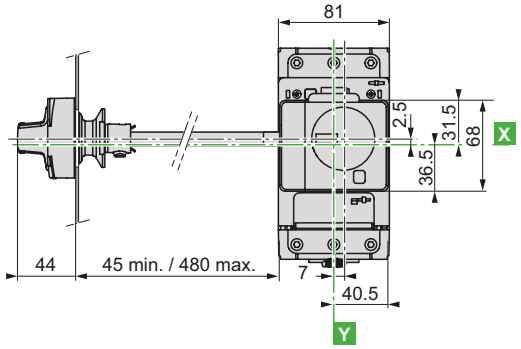
Ref.

Side (left or right) extended rotary handle LV426935, LV426936

DB425970.eps



DB425969.eps

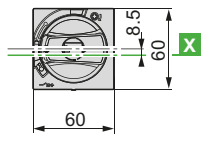


Circuit breakers

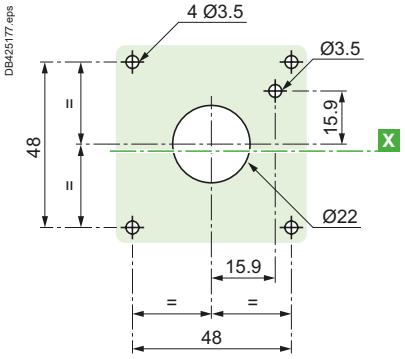
Front and side extended rotary handle, door/side panel cut-out

Front and side extended rotary handle	IP65, door panel cut-out	IP54, door/side panel cut-out

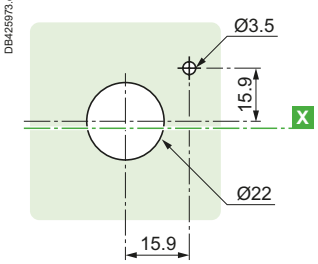
DB436342.eps



DB425177.eps



DB425973.eps

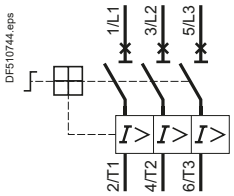


References:
pages B6/45 to B6/47

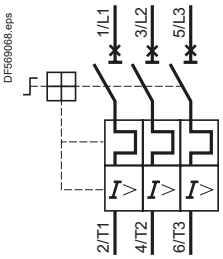
Schemes

Magnetic motor circuit breakers

GV4L, GV4LE



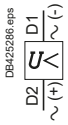
GV4P, GV4PE, GV4PEM, GV4PB



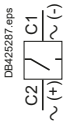
Accessories

Electrical trips

MN GV4AU●●●



MX GV4AS●●●

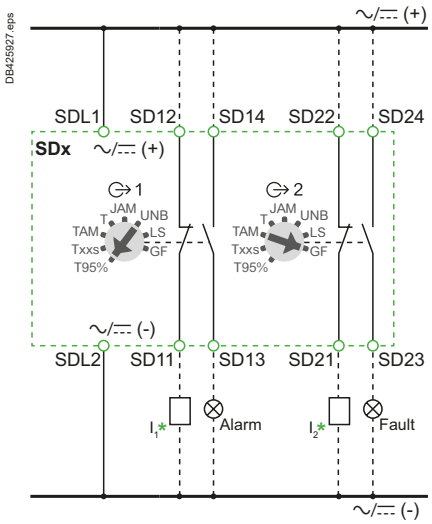


GV4AE11 auxiliary contacts

Used as OF contact

Used as SD contact

Side mounting add-on contact blocks
Instantaneous auxiliary contacts and fault signalling contacts



* I1, I2: PLC digital inputs - used as alarm inputs, as an example.

Ref.
Circuit breakers

TeSys GV5/GV6

55 to 250 kW

Characteristics

Environment

Circuit breaker type				GV5P/ GV6P
Conforming to standards				IEC/EN 60947-4-1 IEC/EN 60947-2 UL 60947-4-1 CSA C22.2 n° 60947-4-1
Product certifications				CB, UL, CSA, EAC, DNV-GL (1)
Climatic withstand				According to IACS E10
Degree of protection (front face)	Conforming to IEC 60529	Bare circuit breaker with terminal shields		IP40 with direct rotary handle
		Installed in switchboard		IP40 with direct rotary handle / IP43 with MCC conversion accessory/ IP55 with extended rotary handle
Shock resistance	Conforming to IEC 60068-2-27			15 gn -11 ms
Vibration resistance	Conforming to IEC 60068-2-6			2.5 gn (25 Hz)
Ambient air temperature	Storage in packing		°C	-50…+85
	Operation	Open mounted	°C	-25… +70
		In enclosure	°C	-25...+70
Flame resistance	Conforming to IEC 60695-2-11		°C	960
Maximum operating altitude			m	2000
Suitable for isolation	Conforming to IEC 60947-1 § 7-1-6			Yes
Resistance to mechanical impact			J	0.5
Sensitivity to phase failure				Yes

Technical characteristics

Circuit breaker type			GV5P150	GV5P220	GV6P320	GV6P500
Utilisation category	Conforming to IEC 60947-2		A			
	Conforming to IEC 60947-4-1		AC-3			
Rated operational voltage (Ue)	Conforming to IEC 60947-2	V	690			
Rated insulation voltage (Ui)	Conforming to IEC 60947-2	V	800			
Rated voltage	Conforming to UL 60947-4-1, CSA C22.2 n° 60947-4-1	V	600			
Rated operational frequency	Conforming to IEC 60947-4-1 UL, CSA	Hz	50/60			
Rated impulse withstand voltage (U imp)	Conforming to IEC 60947-2	kV	8			
Total power dissipated per pole		W	9.2	17.6	19.2	39.7
Mechanical durability (C.O.: Close, Open)		C.O.	40 000	20 000	15 000	15 000
Electrical durability for AC-3 duty	400/415 V (In)	C.O.	20 000	10 000	6 000	4 000
Duty class (maximum operating rate)		C.O./h	25			
Maximum conventional rated thermal current (Ith)	Conforming to IEC 60947-4-1	A	70…150	100...220	160...320	250...500
Rated duty	Conforming to IEC 60947-4-1		Continuous duty			

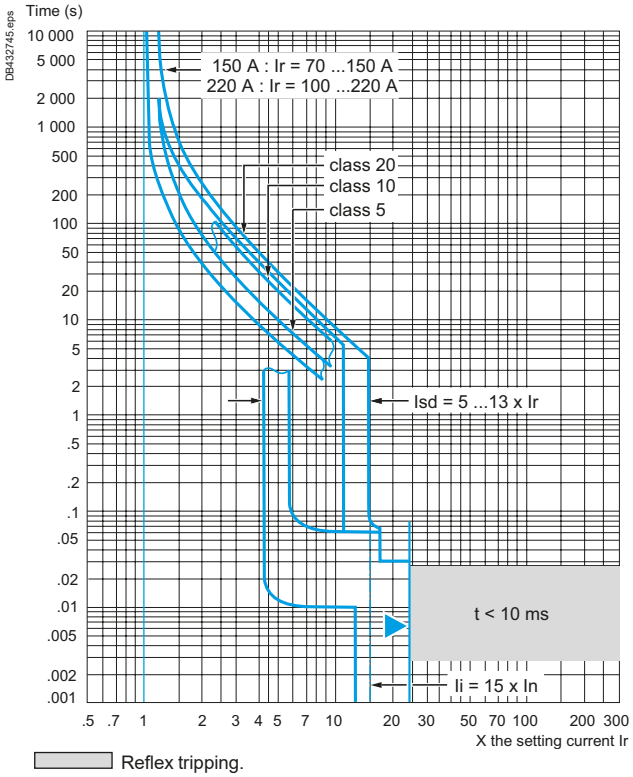
*(1) **EAC & DNV-GL** certifications are in progress. Please check with your nearest sales office for more details.*

Ref.
Circuit breakers

Curves

Thermal-magnetic tripping curves for GV5P

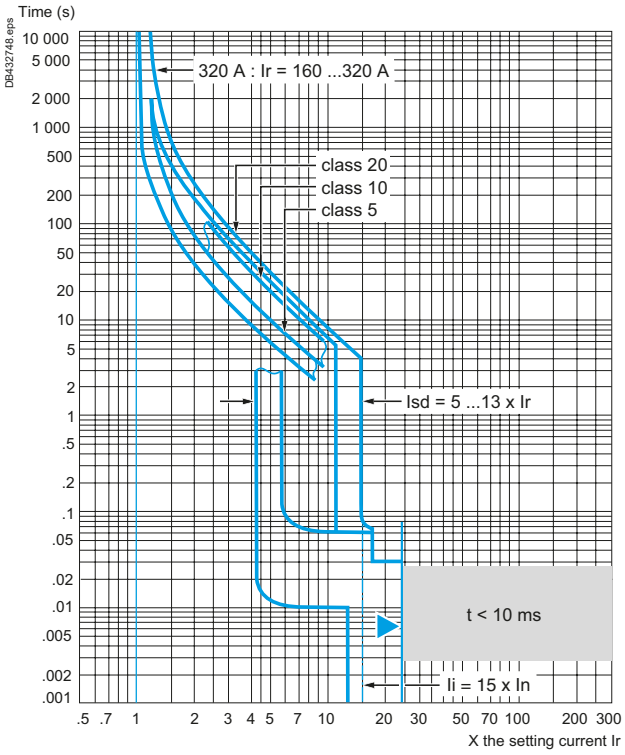
MicroLogic 2.2 M - 150/220 A



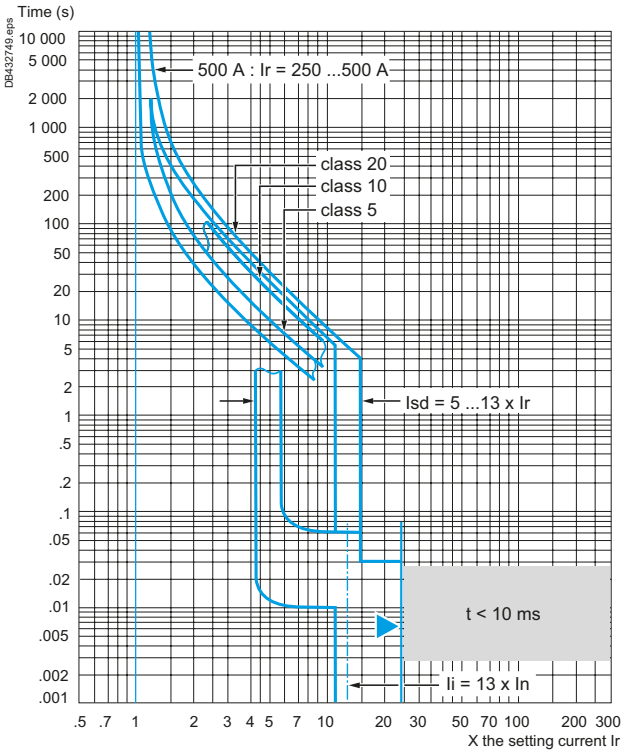
Reflex tripping.

Thermal-magnetic tripping curves for GV6P

MicroLogic 2.3 M - 320 A



MicroLogic 2.3 M - 500 A



Reflex tripping.

References:
pages B6/51 to B6/55

Characteristics:
page B6/132

Dimensions:
pages B6/138 to B6/143

Schemes:
page B6/144

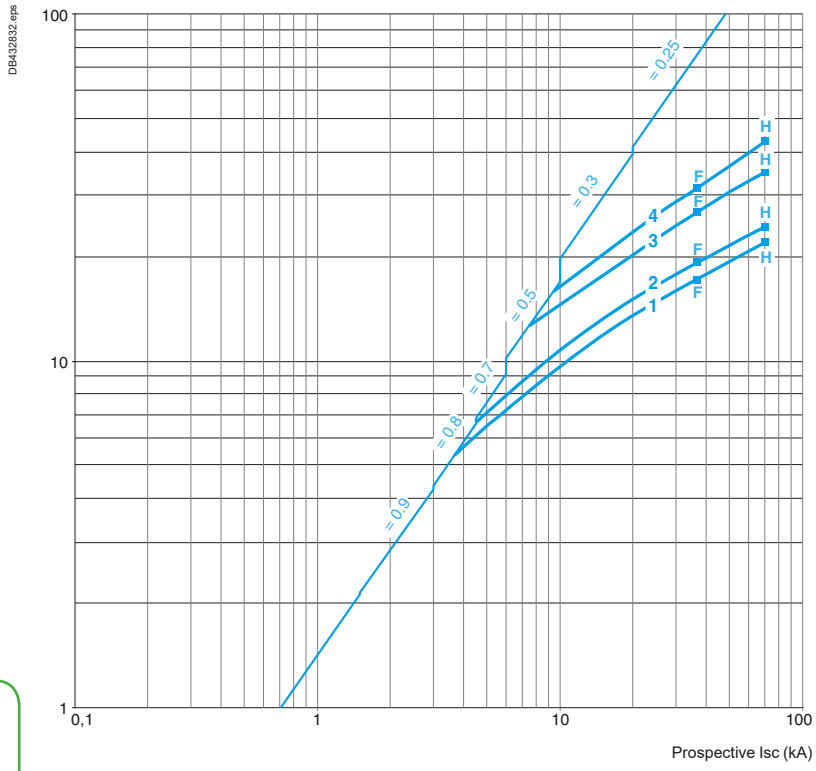
Curves

Current limitation on short-circuit (3-phase 400 - 415 V)

Dynamic stress

For GV5P/6P●●●F/H type

Limited peak current (kA)



1 GV5P150F/H
2 GV5P220F/H
3 GV6P320F/H
4 GV6P500F/H

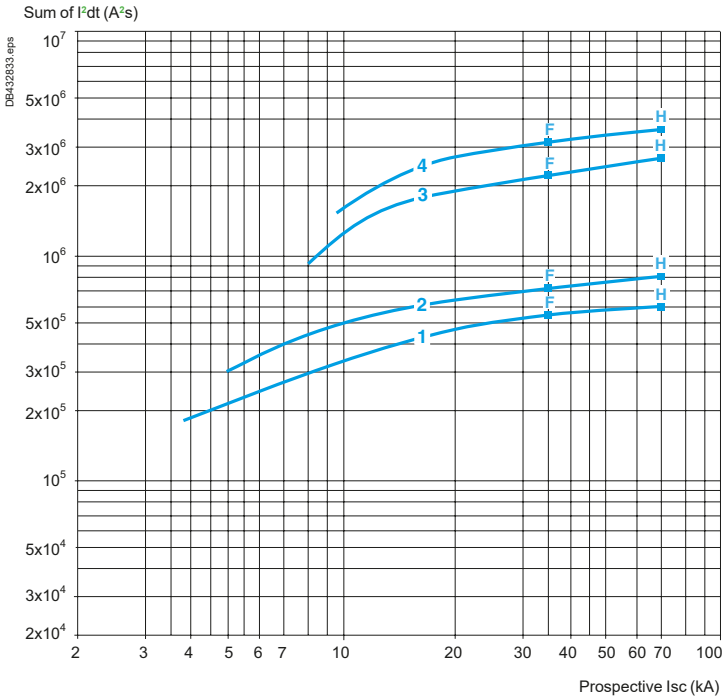
Ref.
Circuit breakers

Curves

Maximum thermal limit on short-circuit

Thermal limit in kA²s in the magnetic operating zone

Sum of I²dt = f (prospective Isc) at 1.05 Ue = 435 V



1 GV5P150F/H
2 GV5P220F/H
3 GV6P320F/H
4 GV6P500F/H

Ref.
Circuit breakers

Characteristics

Characteristics of GV5P/GV6P electric trips

Type of trip			GV7AU●●● undervoltage trip	GV7AS●●● shunt trip
Rated insulation voltage (Ui)	Conforming to IEC 60947-1	V	690	690
	Conforming to CSA C22-2 n°14, UL 508	V	600	600
Operational voltage (Ue)	Conforming to IEC 60947-1	V	0.85...1.1 Uc	0.7...1.1 Uc
Drop-out voltage		V	0.7...0.35 Uc	0.7...0.35 Uc
Inrush consumption	~	VA	< 10	
Sealed consumption	~	VA	< 5	
Operating time	Conforming to IEC 60947-1	ms	From the moment the voltage reaches its operational value until opening of the circuit breaker. < 50	
On-load factor			100 %	
Cabling	Number of conductors		1	
	Solid cable	mm^2	1.5	
	Flexible cable without cable end	mm^2	1.5	
	Flexible cable with cable end	mm^2	1	
Tightening torque		N.m	1.2	
Mechanical durability (C.O.: Close - Open)		C.O.	50 % of the mechanical durability of the circuit breaker.	

Characteristics of GV5P/GV6P thermal fault module

Type of trip			LV429424 (1)
Operational voltage (Ue)	Conforming to IEC 60947-1	V	24 to 415 V AC/ DC
Conventional thermal current (Ith)	Conforming to IEC 60947-5-1	A	80 mA max.

*(1) **LV429424** takes the place of the AU/AS electric trip coil and an auxiliary contact.*

Ref.
Circuit breakers

Characteristics

Auxiliary contact characteristics

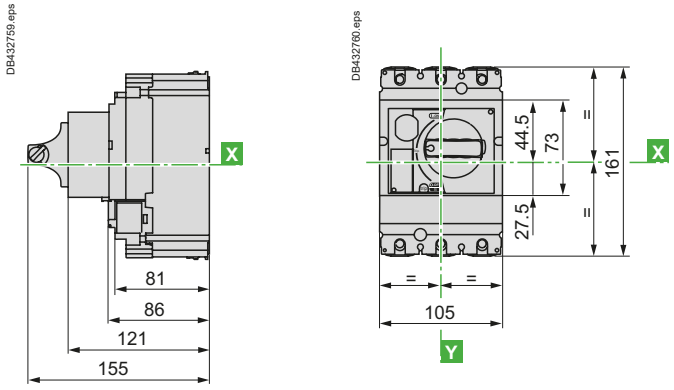
Type of contacts				GV7AE11						GV7AB11				
Rated insulation voltage(Ui) (associated insulation coordination)	Conforming to IEC 60947-1		V	690						690				
Conventional thermal current (Ith)	Conforming to IEC 60947-5-1		A	6						5				
Mechanical durability (C.O.: Close - Open)			C.O.	50 000						50 000				
Operational current conforming to IEC 60947-5-1 a.c. operation				AC-12 or AC-15. 50 000 C.O.						AC-12 or AC-15. 50 000 C.O.				
	Rated operational voltage (Ue)		V	**24**	**48**	**110**	**220/ 240**	**380/ 440**	**690**	**24**	**48**	**110**	**230/ 240**	**380/ 415**
	Rated operational current (Ie)	AC-12	A	6	6	6	6	6	6	5	5	5	5	5
		AC-15	A	6	6	5	4	2	0.1	3	3	2.5	2	1.5
Operational current conforming to IEC 60947-5-1 d.c. operation				DC-12 or DC-14. 50 000 C.O.						DC-12 or DC-14. 50 000 C.O.				
	Rated operational voltage (Ue)		V	**24**		**48**		**110**	**250**	**24**		**48**	**110**	**250**
	Rated operational current (Ie)	DC-12	A	6		2.5		0.6	0.3	5		2.5	0.6	0.3
		DC-14	A	1		0.2		0.05	0.03	1		0.2	0.05	0.03
Minimum operational conditions d.c. operation			V	24						4				
			mA	100						1				
Short-circuit protection				By **GB2CB●●** circuit breaker (rating according to operational current for Ue ≤ 415 V) or gG fuse, 10 A max.										
Cabling	Solid cable		mm^2	1 x 1.5 conductor						1 x 1.5 conductor				
	Flexible cable without cable end		mm^2	1 x 1.5 conductor						1 x 1.5 conductor				
	Flexible cable with cable end		mm^2	1 x 1.5 conductor						1 x 1.5 conductor				

Ref.
Circuit breakers

Dimensions and mounting

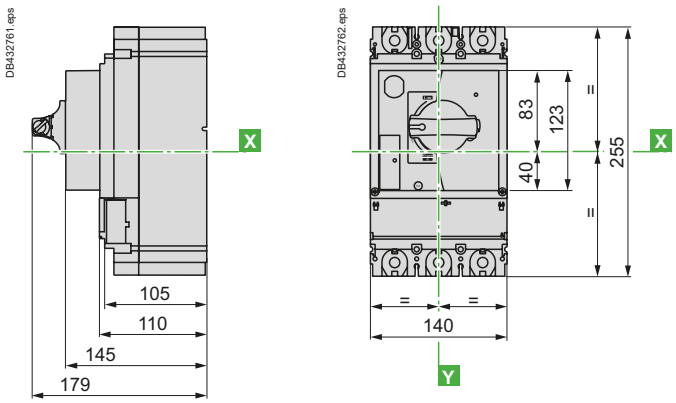
GV5P

Dimensions

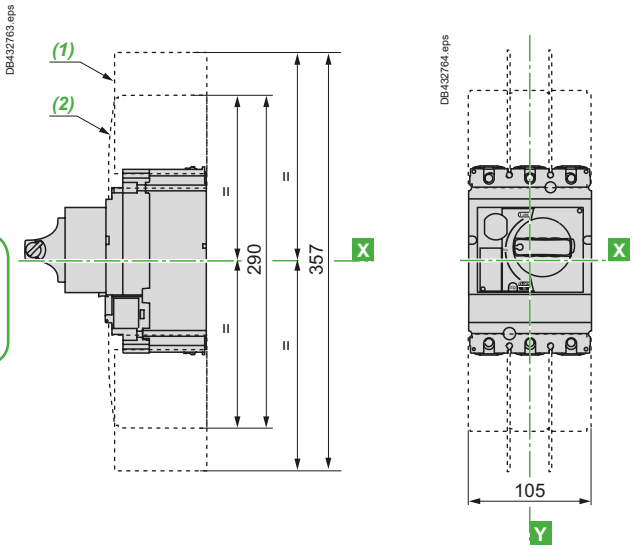


GV6P

Dimensions

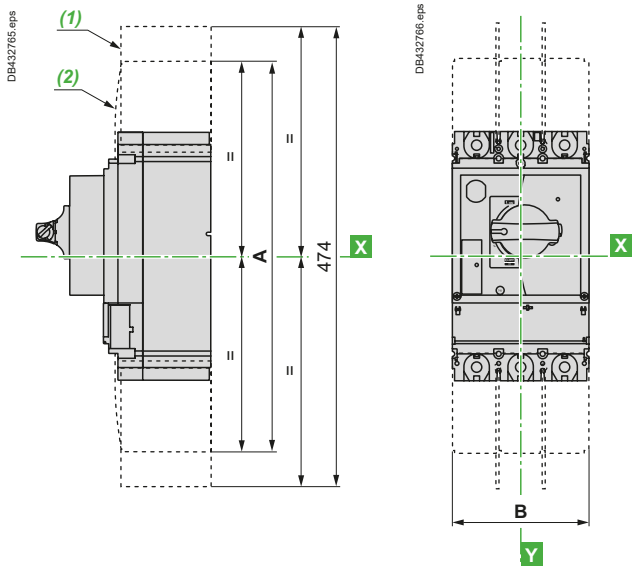


With long terminal shields or interphases barriers GV5P + GV7AC04/GV7AC01



(1) Interphases barriers: **GV7AC04**.
(2) Terminal shield: **GV7AC01**.

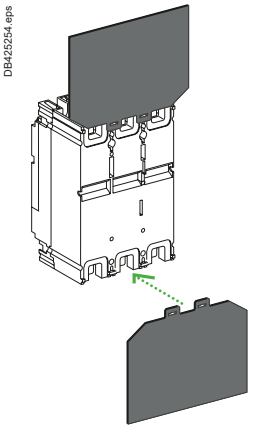
GV6P + LV432593 / LV432595 / LV432570



(1) Interphases barriers: **LV432570**.
(2) Terminal shield: **LV432593** *(45mm)* / **LV432595** *(52.5mm)* .

	A	B
LV432593	400	140
LV432595	480	157.5

Insulating screen



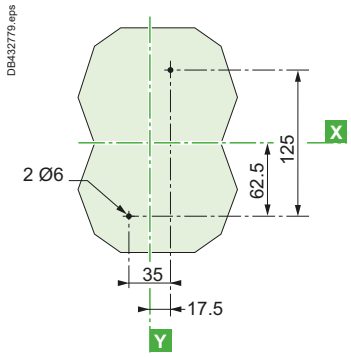
Motor circuit breaker		GV5P + GV7AC05	GV6P + LV432578
3P	W x H x thickness (mm)	140 x 105 x 1	203 x 175 x 1.5

References: pages B6/51 to B6/56
Characteristics: page B6/132
Curves: pages B6/133 to B6/135
Schemes: page B6/144

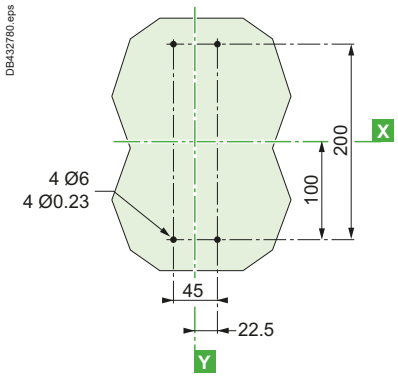
Dimensions and mounting

GV5P/GV6P

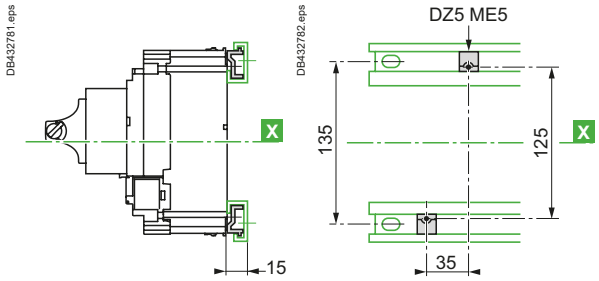
Panel mounting - GV5P



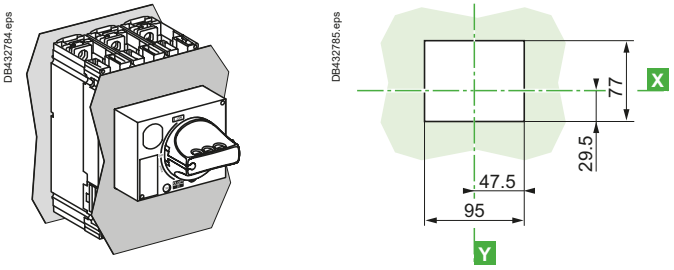
Panel mounting - GV6P



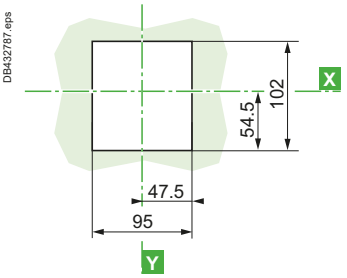
Mounting on 2 mounting rails for GV5P only



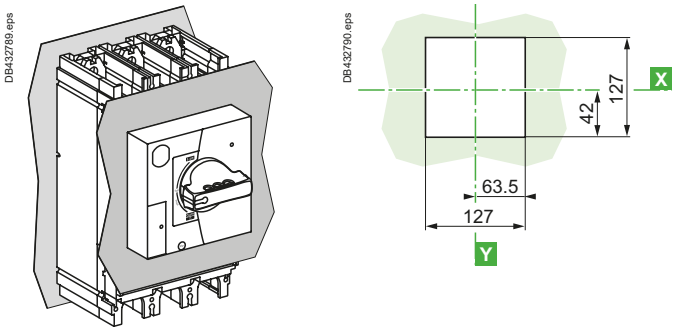
Door cut-out mounting GV5P



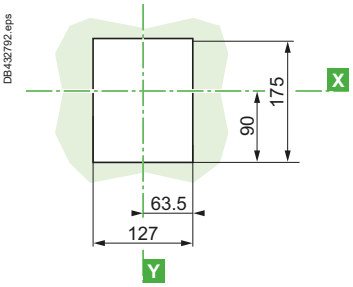
With access to trip unit



Door cut-out mounting GV6P



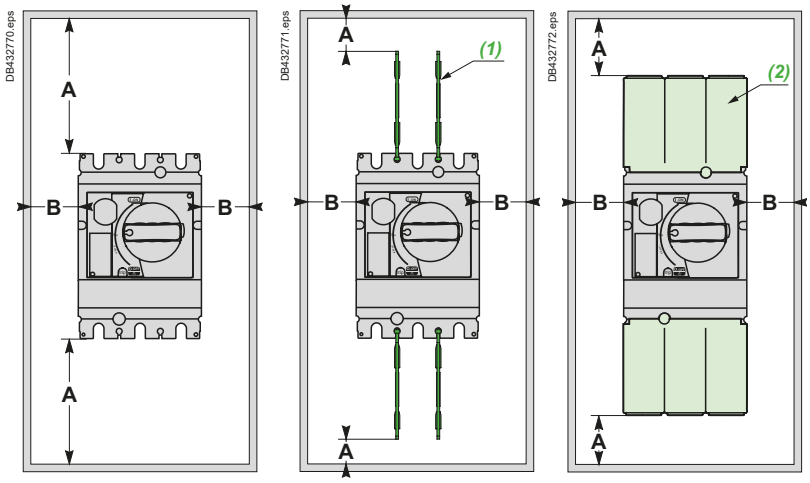
With access to trip unit



Ref.
Circuit breakers

GV5P

Minimum electrical clearance

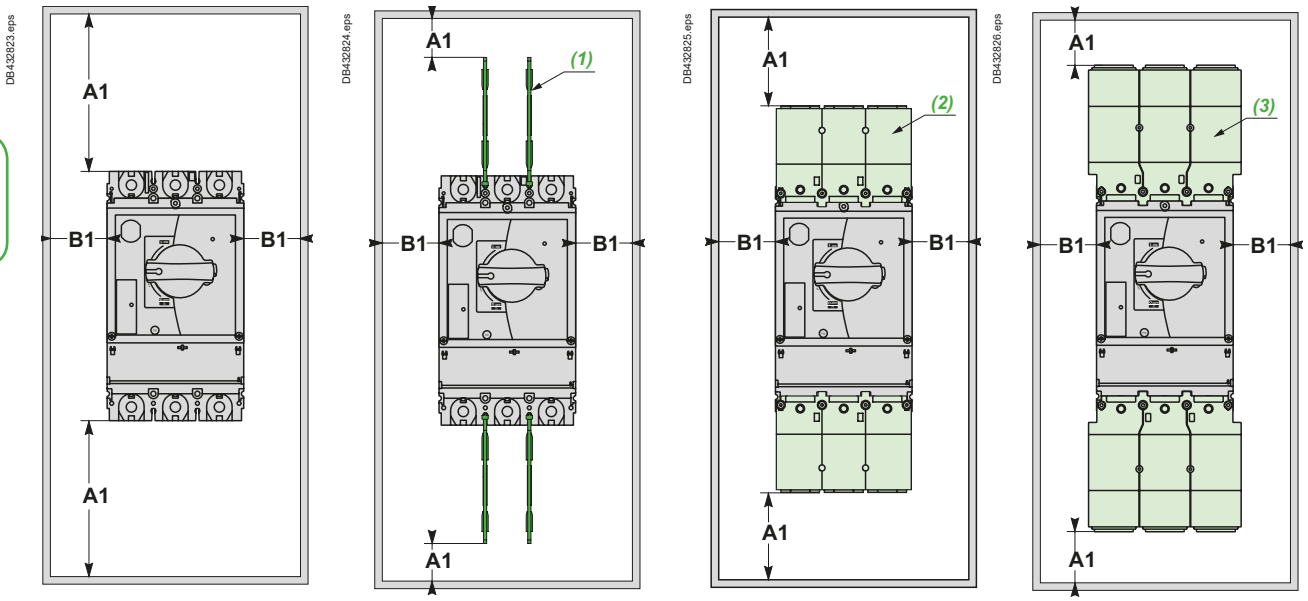


Clearance in mm

		Painted sheet metal		Bare metal plate	
		A	B	A	B
No accessories	V ≤ 500 V~	30	0	40	20
	V > 500 V~	-	-	-	-
Interphases barriers (1)	V ≤ 500 V~	0	0	10	20
	V > 500 V~	-	-	-	-
Terminal shield (2)	V ≤ 500 V~	0	0	10	10
	V > 500 V~	30	10	40	20

GV6P

Minimum electrical clearance



Clearance in mm

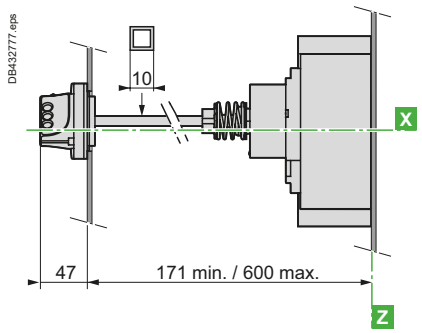
		Painted sheet metal		Bare sheet metal	
		A1	B1	A1	B1
No accessories	V ≤ 500 V~	30	0	40	20
	V > 500 V~	-	-	-	-
Interphase barriers (1)	V ≤ 500 V~	0	0	10	20
	V > 500 V~	-	-	-	-
Long terminal shield (LV432593) (2)	V ≤ 500 V~	30	0	40	10
	V > 500 V~	50	0	50	20
Long terminal shield (LV432595) (3)	V ≤ 500 V~	0	0	10	10
	V > 500 V~	30	0	30	20

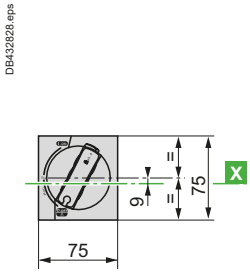
References: pages B6/51 to B6/56
Characteristics: page B6/132
Curves: pages B6/133 to B6/135
Schemes: page B6/144

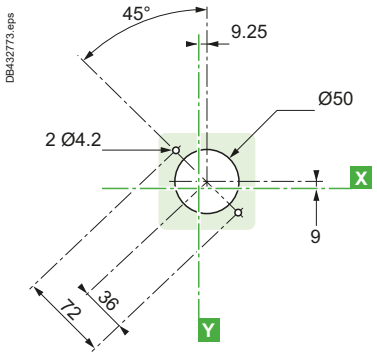
Dimensions and mounting

GV5P/GV6P

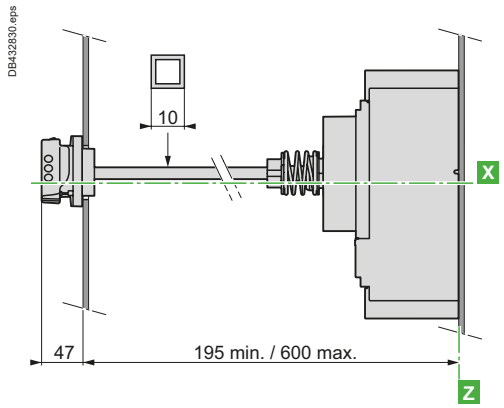
GV5 with extended rotary handle GV7AP01/ GV7AP02

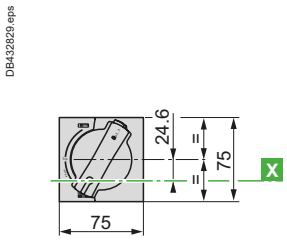


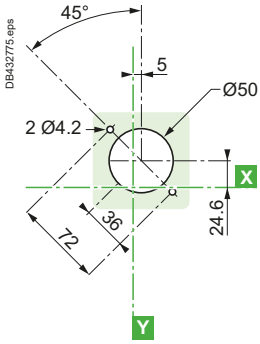




GV6 with extended rotary handle LV432598/ LV432600

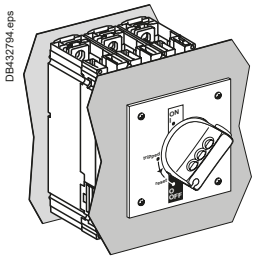


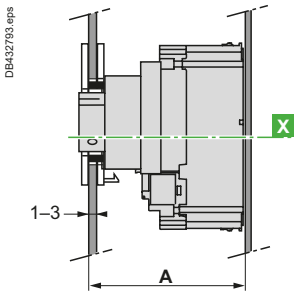


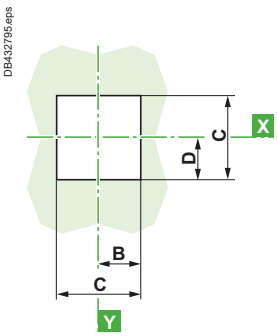


GV5P/GV6P

MCC type direct rotary handle





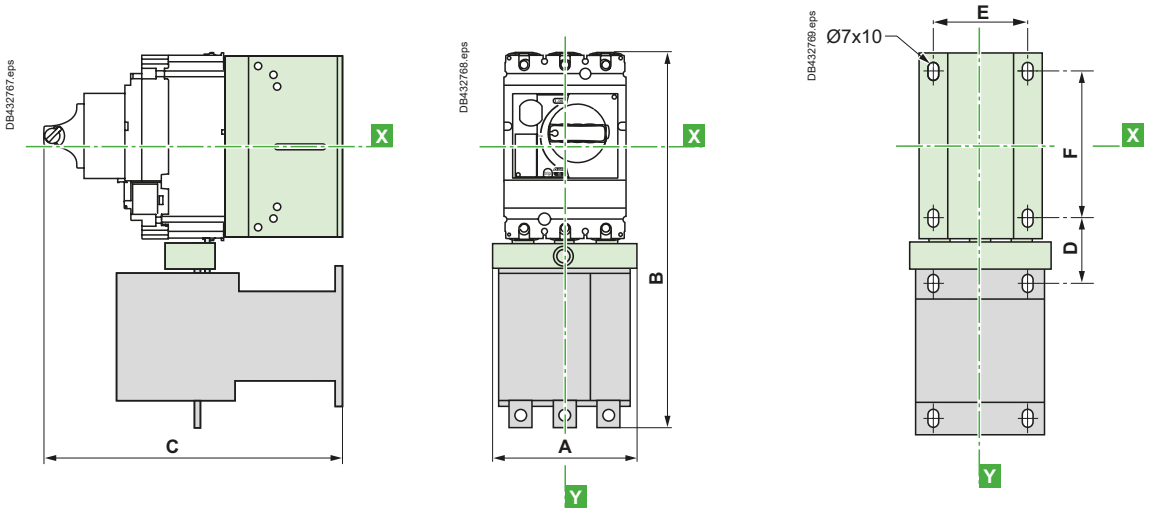


	A	B	C	D
150/220 A	125 ±2	50	100	41
320/500 A	149 ±2	72.5	145	51

Ref.
Circuit breakers

GV5P

Combination of GV5P and TeSys contactor LC1F●●●/LC1D●●● with kit GV7AC0●

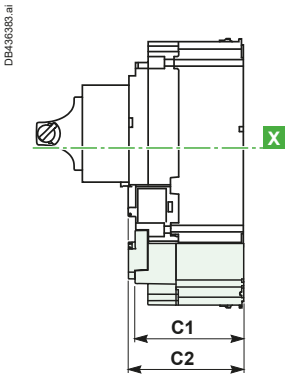


	A	B	C	D	E	F
GV5P + LC1F115 + GV7AC06	119	334	243	44	85	120
GV5P + LC1F150 + GV7AC06	119	334	243	46	85	120
GV5P + LC1F185 + GV7AC06	119	338	249	48	85	120
GV5P + LC1F225 + GV7AC07	131	358	249	57	85	120
GV5P + LC1F265 + GV7AC07	131	364	277	60	85	120
GV5P + LC1D115 + GV7AC08	120	332	205	48	85	120
GV5P + LC1D150 + GV7AC08	120	332	205	48	85	120

Minimum distance between 2 circuit breakers mounted side by side = 0

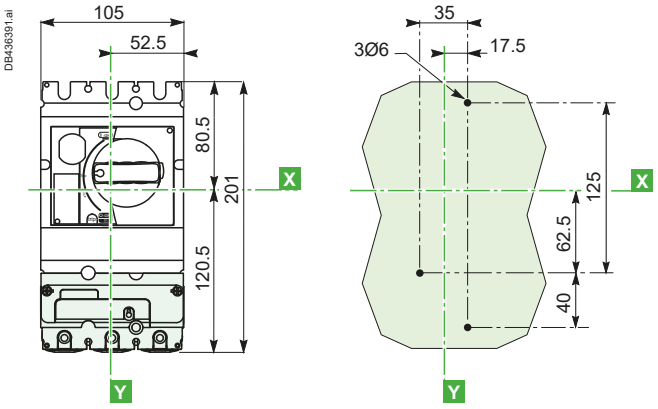
GV5P/GV6P

With additional PowerTag

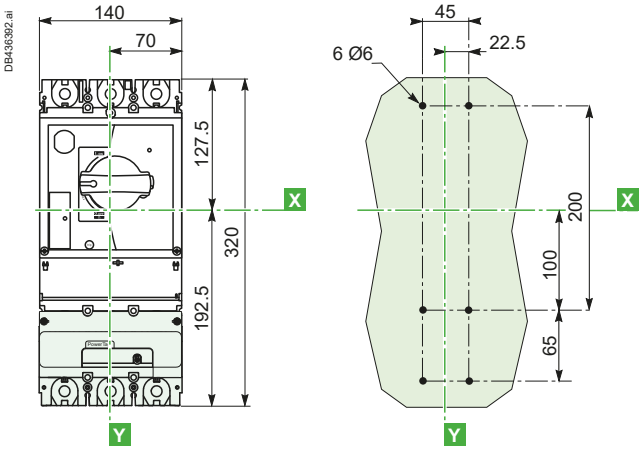


Type	C1	C2
GV5P	81	86
GV6P	95.5	110

GV5P with LV434020 / Panel mounting



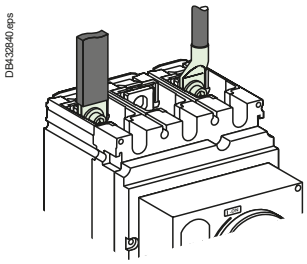
GV6P with LV434022 / Panel mounting



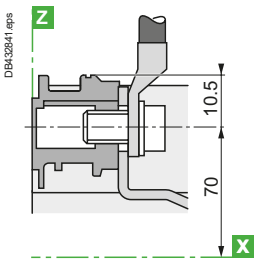
Dimensions and mounting

GV5P/GV6P

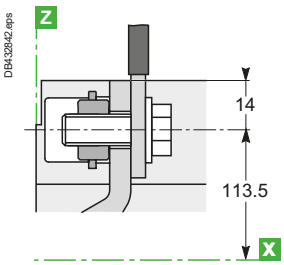
Front connection without accessories



GV5P
Cables with lugs bars

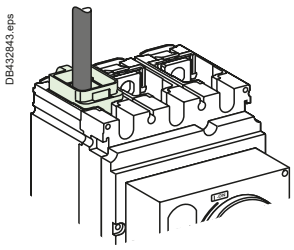


GV6P
Bars/cables with lugs

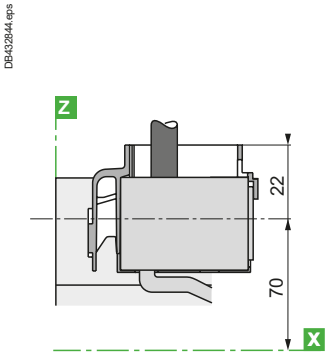


GV5P

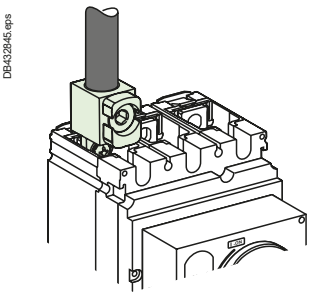
Bare-cables connectors

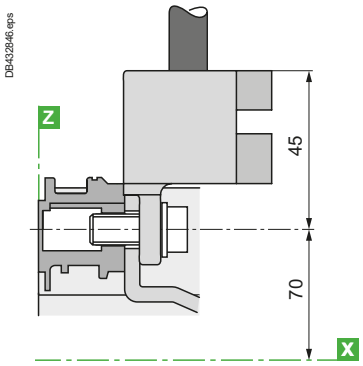


GV7AC021/LV429227/GV7AC022



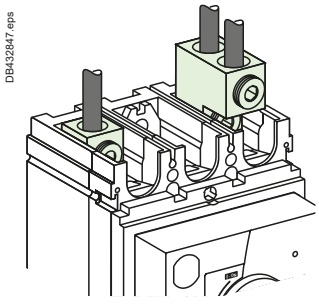
LV429244



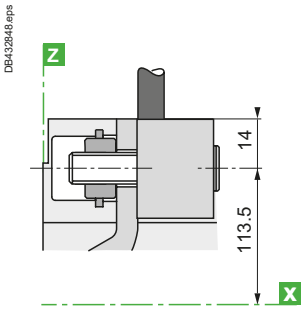


GV6P

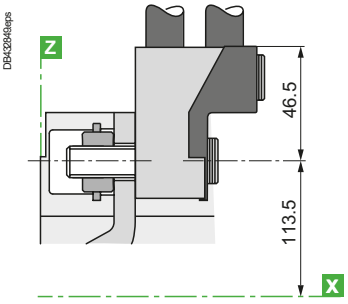
Bare-cables connectors



LV432479

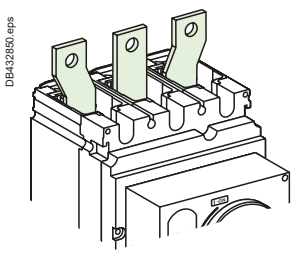


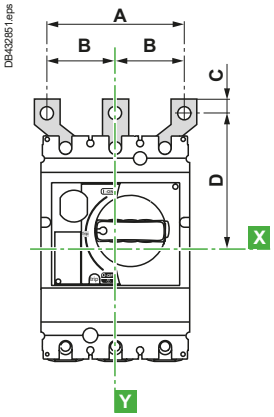
LV432481



GV5P/GV6P

Spreaders



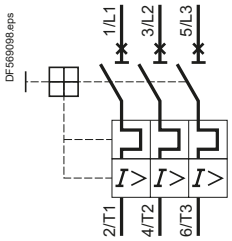


Type	A	B	C	D
GV5P/ Spreaders GV7AC03	114	45	11	100
GV6P/ Spreaders LV432490	135	52.5	15	152.5
GV6P/ Spreaders LV432492	170	70	15	166

Schemes

Motor circuit breakers

GV5P/ 6P



Add-on auxiliary contacts according to their location (1)

GV7AE11, GV7AB11

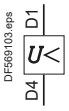
Location 1 C/O contact	Location 2 Trip indication	Location 3 Electrical fault indication (2)	Location 4 C/O contact
			

A self-adhesive label, supplied with the contact, can be affixed to the front face of the circuit-breaker to allow personalised marking according to the function of the contact or contacts.

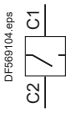
(1) See page B6/52 to B6/54.
*(2) Adapter **LV429451** is mandatory for electrical trip indication in GV5.*

Electric trips

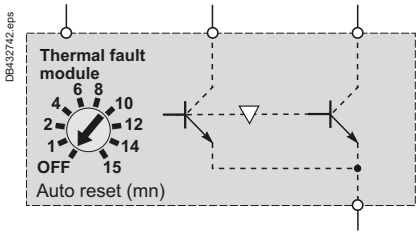
GV7AU●●●



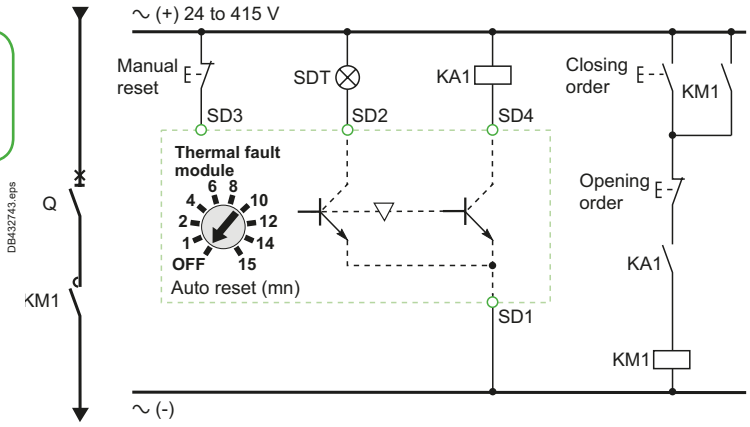
GV7AS●●●



Thermal fault module LV429424



Recommended application schemes for LV429424



SD1, **SD3:** thermal fault module input power supply
SD2: over-load fault signal output. This output will stay-put until reset
SD4: contactor control output
SD2 and SD4: Static outputs: 24 to 415 V AC / V DC; 80 mA max
KM1: LC1D or LC1F contactor
KA1: CA2 or CAD type control relays

Terminals shown in green **O** must be connected by customer.

References: pages B6/51 to B6/56
Characteristics: pages B6/132
Curves: pages B6/133 to B6/135
Dimensions: pages B6/138 to B6/143