

# TeSys protection components

## Thermal-magnetic motor circuit-breakers

### GV2 ME



#### Motor circuit-breakers from 0.06 to 15 kW / 400 V, with screw clamp terminals

##### GV2 ME with pushbutton control

Standard power ratings of 3-phase motors  
50/60 Hz in category AC-3

Standard power ratings of 3-phase motors 50/60 Hz in category AC-3									Setting range of thermal trips (2)	Magnetic tripping current I <sub>d</sub> ± 20 %	Reference	Weight
400/415 V			500 V			690 V						
P	I <sub>cu</sub>	I <sub>cs</sub> (1)	P	I <sub>cu</sub>	I <sub>cs</sub> (1)	P	I <sub>cu</sub>	I <sub>cs</sub> (1)				
kW	kA	%	kW	kA	%	kW	kA	%	A	A		kg
-	-	-	-	-	-	-	-	-	0.1...0.16	1.5	GV2 ME01	0.260
0.06	*	*	-	-	-	-	-	-	0.16...0.25	2.4	GV2 ME02	0.260
0.09	*	*	-	-	-	-	-	-	0.25...0.40	5	GV2 ME03	0.260
0.12	*	*	-	-	-	0.37	*	*	0.40...0.63	8	GV2 ME04	0.260
0.18	*	*	-	-	-	-	-	-	-	-	-	-
0.25	*	*	-	-	-	0.55	*	*	0.63...1	13	GV2 ME05	0.260
0.37	*	*	0.37	*	*	-	-	-	1...16	22.5	GV2 ME06	0.260
0.55	*	*	0.55	*	*	0.75	*	*	-	-	-	-
-	-	-	0.75	*	*	1.1	*	*	-	-	-	-
0.75	*	*	1.1	*	*	1.5	3	75	1.6...2.5	33.5	GV2 ME07	0.260
1.1	*	*	1.5	*	*	2.2	3	75	2.5...4	51	GV2 ME08	0.260
1.5	*	*	2.2	*	*	3	3	75	-	-	-	-
2.2	*	*	3	50	100	4	3	75	4...6.3	78	GV2 ME10	0.260
3	*	*	4	10	100	5.5	3	75	6...10	138	GV2 ME14	0.260
4	*	*	5.5	10	100	7.5	3	75	-	-	-	-
5.5	15	50	7.5	6	75	9	3	75	9...14	170	GV2 ME16	0.260
-	-	-	-	-	-	11	3	75	-	-	-	-
7.5	15	50	9	6	75	15	3	75	13...18	223	GV2 ME20	0.260
9	15	40	11	4	75	18.5	3	75	17...23	327	GV2 ME21	0.260
11	15	40	15	4	75	-	-	-	20...25	327	GV2 ME22 (3)	0.260
15	10	50	18.5	4	75	22	3	75	24...32	416	GV2 ME32	0.260

#### Motor circuit-breakers from 0.06 to 15 kW / 400 V, with lugs

To order thermal magnetic circuit-breakers with connection by lugs, add the digit 6 to the end of reference selected above.

Example: **GV2 ME08** becomes **GV2 ME086**.

#### Thermal magnetic circuit-breakers GV2 ME with built-in auxiliary contact block

With instantaneous auxiliary contact block (composition, see page 24512/3):

- GV AE1, add suffix **AE1TQ** to the motor circuit-breaker reference selected above.  
Example: **GV2 ME01AE1TQ**.
- GV AE11, add suffix **AE11TQ** to the motor circuit-breaker reference selected above.  
Example: **GV2 ME01AE11TQ**.
- GV AN11, add suffix **AN11TQ** to the motor circuit-breaker reference selected above.  
Example: **GV2 ME01AN11TQ**.

These circuit-breakers with built-in contact block are sold in lots of 20 units in a single pack.

(1) As % of I<sub>cu</sub>.

(2) The thermal trip setting must be within the range marked on the graduated knob.

(3) Maximum rating which can be mounted in enclosures **GV2 MC** or **MP**, please consult your Regional Sales Office.

\* > 100 kA.



## Characteristics

## Installation system

TeSys Quickfit for motor starter components  
Components with spring terminals

**Table of GV2 circuit-breaker current limitation at 60°C ambient temperature with TeSys Quickfit**

Circuit-breaker reference	GV2 ratings (1)	Maximum current of GV2 with TeSys Quickfit
GV2 ME06	1 - 1.6 A	1.28 A
GV2 ME07	1.6 - 2.5 A	2 A
GV2 ME08	2.5 - 4 A	3.2 A
GV2 ME10	4 - 6.3 A	5 A
GV2 ME14	6 - 10 A	8 A
GV2 ME16	9 - 14 A	11.2 A
GV2 ME20	13 - 18 A	14.4 A
GV2 ME21	17 - 23 A	18 A

## Electromechanical relay characteristics

Type of control connection module		LAD 9AP31, LAD 9AP32	
<b>Characteristics of the electromechanical relay control circuit (PLC side)</b>			
Rated voltage at Us	V	~	24
Energisation threshold at 40 °C	V	~	19.2
Drop-out voltage at 20 °C	V	~	2.4
Maximum operational voltage	V	~	30
Maximum current at Us	mA		15
Drop-out current at 20 °C	mA		1
Maximum power dissipated at Us	W		0.36
Supply failure	ms		5
<b>Characteristics of the electromechanical relay output circuit</b>			
Type of contact			1F
Maximum switching voltage	V	~	250
	V	~	130
Frequency of the operating current	Hz		50/60
Maximum current of the contact	A		4
<b>Other characteristics of the electromechanical relay</b>			
Maximum operating time at Us (including bounce)	Between coil energisation and closing of the contact	ms	10
	Between coil de-energisation and opening of the contact	ms	5
Maximum operating rate	No load	Hz	10
	At Ie	Hz	0.5
Mechanical life	In millions of operating cycles		20
Dielectric strength	V		1000 (50/60 Hz) - 1 mn
Rated impulse withstand voltage (Uimp)	kV		2.5
Primary/secondary rated insulation voltage	V		300
Maximum current for 500 000 operations	24 V - DC13	A	0.6
	230 V - AC15	A	0.9

(1) Thermal trip setting range.

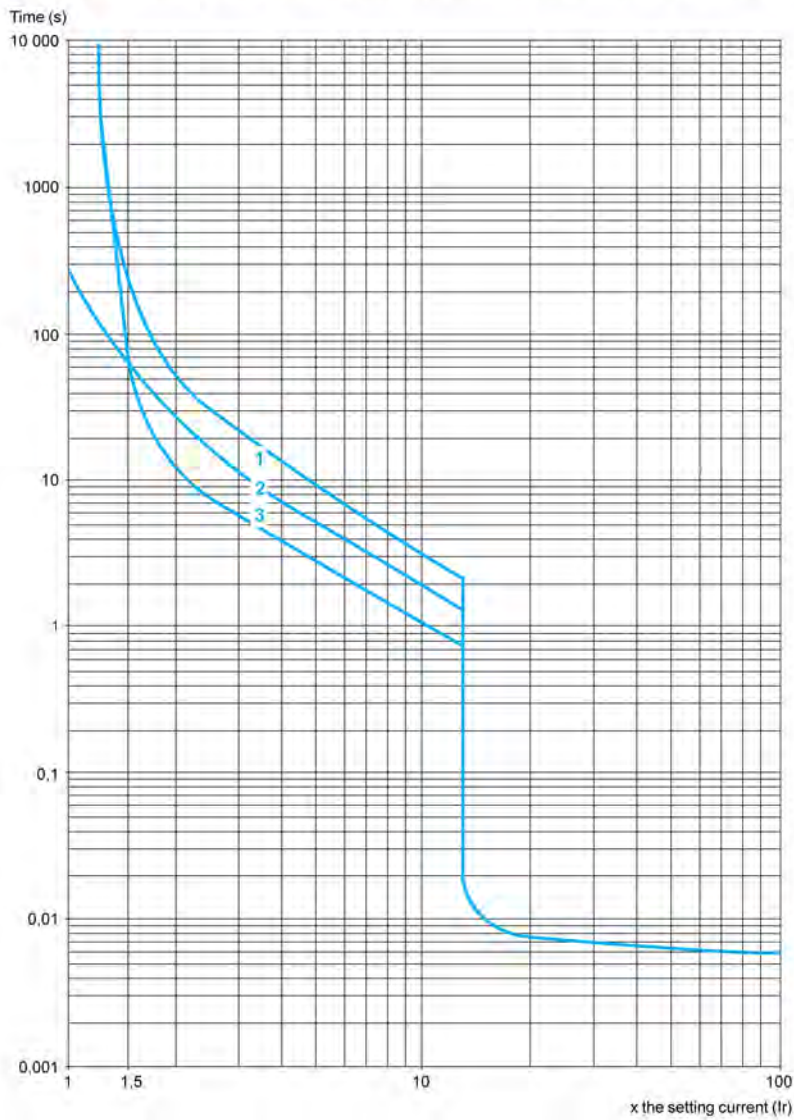
## Curves

## TeSys protection components

Thermal-magnetic motor circuit-breakers  
GV2 ME and GV2 P

### Thermal-magnetic tripping curves for GV2 ME and GV2 P

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

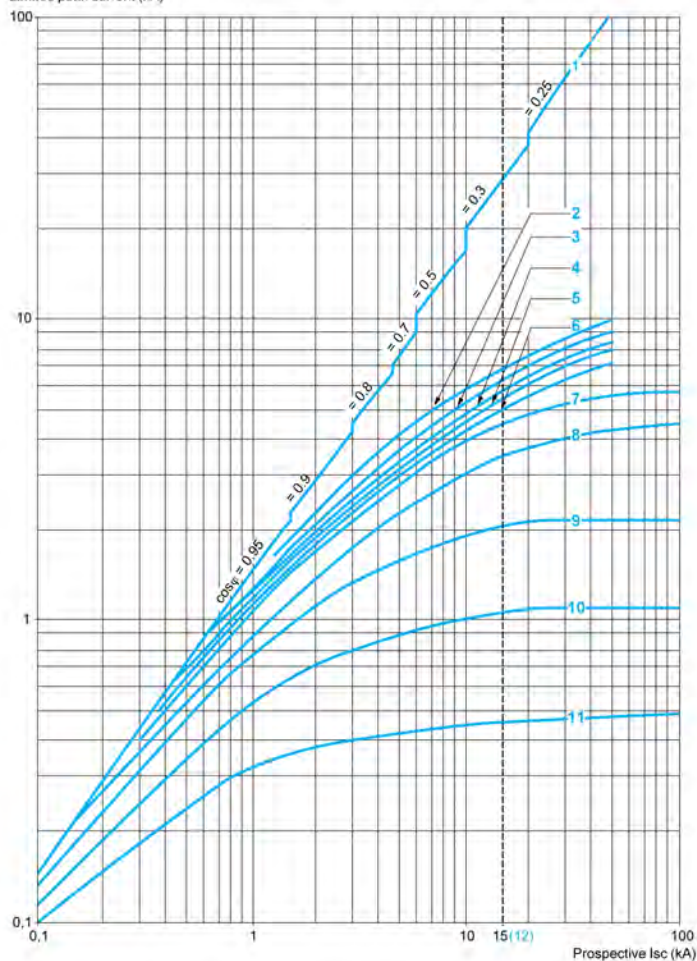


### Current limitation on short-circuit for GV2 ME and GV2 P (3-phase 400/415 V)

#### Dynamic stress

$I_{peak} = f(\text{prospective } I_{sc}) \text{ at } 1.05 U_e = 435 \text{ V}$

Limited peak current (kA)



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

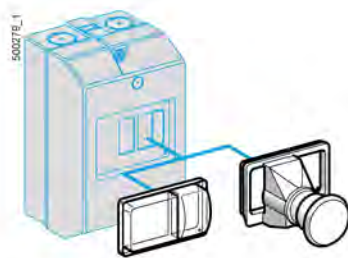
10 1.6 -2.5 A

11 1 -1.6 A

12 Limit of rated ultimate breaking capacity on short-circuit of GV2 ME (14, 18, 23 and 25 A ratings)



GV2 MC



GV2 K011

## TeSys enclosed starters

Enclosed thermal-magnetic motor circuit-breakers  
GV2 ME and accessories

Assembly of a safety enclosure

### Thermal-magnetic motor circuit-breakers GV2 ME

For motor circuit-breakers and accessories: see pages 3/46, 3/55 and 3/57. Starters consisting of a GV2 ME motor circuit-breaker in an enclosure conform to standard IEC 60947-4-1.

GV2	ME 01	ME 02	ME 03	ME 04	ME 05	ME 06	ME 07	ME 08	ME 10	ME 14	ME 16	ME 20	ME 21	ME 22
lthe in enclosure (A)	0.16	0.25	0.4	0.63	1	1.6	2.5	4	6.3	9	13	17	21	23

### Enclosures for thermal-magnetic circuit-breakers GV2 ME

Type	Degree of protection	Possible number of side-mounting auxiliary contact blocks on GV2 ME		Reference	Weight kg
		LH side	RH side		
Surface mounting, double insulated with protective conductor. Sealable cover	IP 41	1	1	GV2 MC01	0.290
	IP 55	1	1	GV2 MC02	0.300
				or GV2 MCK04 (1)	0.420
IP 55 for temperature < + 5 °C	1	1	GV2 MC03	0.300	

### Accessories common to all enclosures (to be ordered separately)

Description		Sold in lots of	Unit reference	Weight kg	
<b>Padlocking devices (2)</b> for GV2 ME operator (padlocking is only possible in the "O" position)	1 to 3 padlocks Ø 4 to 8 mm	1	GV2 V01	0.075	
<b>Mushroom head</b>	Spring return (2)	1	GV2 K011	0.052	
<b>Emergency stop pushbutton Ø 40 mm, red</b>	Latching (2)	Key release, key n° 455	1	GV2 K021	0.160
	IP 55	Turn to release	1	GV2 K031	0.115
				1	GV2 K04 (3)
<b>Sealing kit</b>	For enclosures and front plate	IP 55 for temperature between + 5 °C and + 40 °C	10	GV2 E01	0.012
		IP 55 for temperature between - 20 °C and + 40 °C	10	GV2 E02	0.012
<b>Neutral terminal</b>		100	AB1 VV635UBL	0.015	
<b>Partition</b>		50	AB1 AC6BL	0.003	

(1) Enclosure **GV2 MCK04** is fitted with a **GV2 K04** mushroom head Emergency stop pushbutton as standard.

(2) Supplied with IP 55 sealing kit. To be fitted with enclosure **GV2 M●01**.

(3) Padlockable in "Off" position using Ø 4 to 8 mm shank padlocks.



## TeSys protection components Thermal-magnetic motor circuit-breakers GV2 P, GV3 P and GV3 ME80



### Motor circuit-breakers from 0.06 to 30 kW / 400 V

Standard power ratings of 3-phase motors 50/60 Hz in category AC-3									Setting range of thermal trips (2)	Magnetic tripping current I <sub>d</sub> ± 20 %	Reference	Weight
400/415 V			500 V			690 V						
P	I <sub>cu</sub>	I <sub>cs</sub> (1)	P	I <sub>cu</sub>	I <sub>cs</sub> (1)	P	I <sub>cu</sub>	I <sub>cs</sub> (1)				
kW	kA	%	kW	kA	%	kW	kA	%	A	A		kg

#### GV2 P: control by rotary knob

##### Screw clamp terminals

-	-	-	-	-	-	-	-	-	0.1...0.16	1.5	GV2 P01	0.350
0.06	*	*	-	-	-	-	-	-	0.16...0.25	2.4	GV2 P02	0.350
0.09	*	*	-	-	-	-	-	-	0.25...0.40	5	GV2 P03	0.350
0.12	*	*	-	-	-	-	-	-	0.40...0.63	8	GV2 P04	0.350
0.18	*	*	-	-	-	-	-	-	-	-	-	-
0.25	*	*	-	-	-	-	-	-	0.63...1	13	GV2 P05	0.350
0.37	*	*	0.37	*	*	-	-	-	1...1.6	22.5	GV2 P06	0.350
0.55	*	*	0.55	*	*	0.75	*	*	-	-	-	-
0.75	*	*	1.1	*	*	1.5	8	100	1.6...2.5	33.5	GV2 P07	0.350
1.1	*	*	1.5	*	*	2.2	8	100	2.5...4	51	GV2 P08	0.350
2.2	*	*	3	*	*	4	6	100	4...6.3	78	GV2 P10	0.350
3	*	*	5	50	100	5.5	6	100	6...10	138	GV2 P14	0.350
5.5	*	*	7.5	42	75	9	6	100	9...14	170	GV2 P16	0.350
-	-	-	-	-	-	11	6	100	-	-	-	-
7.5	50	50	9	10	75	15	4	100	13...18	223	GV2 P20	0.350
9	50	50	11	10	75	18.5	4	100	17...23	327	GV2 P21	0.350
11	50	50	15	10	75	-	-	-	20...25	327	GV2 P22	0.350
15	35	50	18.5	10	75	22	4	100	24...32	416	GV2 P32	0.350

#### GV3 P: control by rotary knob

##### Connection by EverLink® BTR screw connectors (3)

5.5	100	100	7.5	12	50	11	6	50	9...13	182	GV3 P13	0.960
7.5	100	100	9	12	50	15	6	50	12...18	252	GV3 P18	0.960
11	100	100	15	12	50	18.5	6	50	17...25	350	GV3 P25	0.960
15	100	100	18.5	12	50	22	6	50	23...32	448	GV3 P32	0.960
18.5	50	100	22	12	50	37	6	50	30...40	560	GV3 P40	0.960
22	50	100	30	12	50	45	6	50	37...50	700	GV3 P50	0.960
30	50	100	45	12	50	55	6	50	48...65	910	GV3 P65	0.960

##### Connection by EverLink® BTR screw connectors, for assembly with a contactor

To assemble a GV3 P13 to P65 circuit-breaker with an LC1 D40A to D65A contactor, it is possible to use the circuit-breaker supplied without downstream EverLink® power terminal block. To order this product, add the digit 1 to the end of the references selected above. Example: GV3 P65 becomes GV3 P651.

##### Connection by lugs

To order thermal magnetic circuit-breakers with connection by lugs, add the digit 6 to the end of reference selected above. Example: GV3 P18 becomes GV3 P186.

##### GV3 ME80: pushbutton control, screw clamp terminals

37	15	50	45	4	100	55	2	100	56...80		GV3 ME80 (4)	0.700
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### Motor circuit-breakers up to 50 hp / 600 V, UL 508 type E

#### GV2 (5)

To obtain a GV2 P motor circuit-breaker, UL 508 type E, combine:

- a circuit-breaker GV2 P●●H7 (except 32 A),
- and a "Large Spacing" adapter GV2 GH7.

#### GV3 (6)

To obtain a motor-circuit-breaker GV3 P, UL 508 type E, use the following with the circuit-breaker:

- a "Large Spacing" cover GV3 G66,
- a short-circuit signalling contact GV AM11.

#### GV3 with connection by lugs (6)

To obtain a motor-circuit-breaker GV3 P, UL 508 type E, with connection by lugs, add the digit 6 to the end of reference selected above and use the following with the circuit-breaker:

- two IP 20 covers LAD 96570,
- a short-circuit signalling contact GV AM11.

(1) As % of I<sub>cu</sub>.

(2) The thermal trip setting must be within the range marked on the graduated knob.

(3) BTR screws: hexagon socket head. Require use of an insulated Allen key, in compliance with local wiring regulations.

(4) Recommended for use in association with a contactor.

(5) Accessory: see page 24512/11.

(6) Accessories: see page 24512/5.

\* > 100 kA.

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GV3 P65

526140



GV3 P651