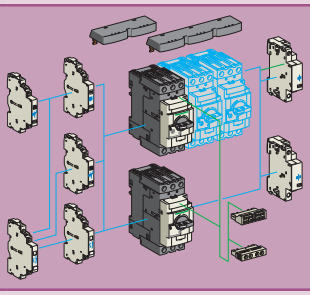
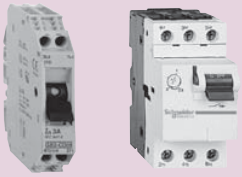
Circuit breakers
TeSys GV, GB

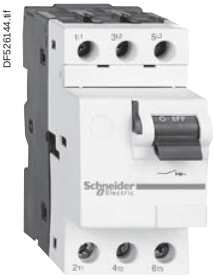
Circuit breakers - TeSys GV, GB

Type of product	Range		Pages
Magnetic circuit breakers for motors TeSys GV	Up to **15**, **30**, **37** or **110** kW		B6/2
Thermal magnetic circuit breakers for motors TeSys GV	Up to **15**, **30**, **37** or **110** kW		B6/4
Add-on blocks, accessories, for motor circuit breakers			B6/10
Thermal magnetic circuit breakers for control circuits, Solenoid valves or transformers TeSys GB, GV	From **0.5** to **23** A		B6/26

Technical Data for Designers B6/29

TeSys protection components
Magnetic motor circuit breakers
GV2 LE

TeSys GV



GV2 LE10

Magnetic motor circuit breakers from 0.06 to 15 kW

GV2 LE: control by rocker lever, connection by screw clamp terminals

Standard power ratings of 3-phase motors 50/60 Hz in category AC-3									Magnetic protection rating	Tripping current Id ± 20 %	Use in association with thermal overload relay	Reference
400/415 V			500 V			690 V						
P	Icu	Ics (1)	P	Icu	Ics (1)	P	Icu	Ics (1)				
kW	kA		kW	kA		kW	kA		A	A		
0.06	★	★	**–**	–	–	**–**	–	–	0.4	5	LR2 K0302	**GV2LE03**
0.09	★	★	**–**	–	–	**–**	–	–	0.4	5	LR2 K0304	**GV2LE03**
0.12	★	★	**–**	–	–	**0.37**	★	★	0.63	8	LR2 K0304	**GV2LE04**
0.18	★	★	**–**	–	–	**–**	–	–	0.63	8	LR2 K0305	**GV2LE04**
–	–	–	**–**	–	–	**0.55**	★	★	1	13	LR2 K0305	**GV2LE05**
0.25	★	★	**–**	–	–	**–**	–	–	1	13	LR2 K0306	**GV2LE05**
–	–	–	**–**	–	–	**0.75**	★	★	1	13	LR2 K0306	**GV2LE05**
0.37	★	★	**0.37**	★	★	**–**	–	–	1	13	LR2 K0306	**GV2LE05**
0.55	★	★	**0.55**	★	★	**1.1**	★	★	1.6	22.5	LR2 K0307	**GV2LE06**
–	–	–	**0.75**	★	★	**–**	–	–	1.6	22.5	LR2 K0307	**GV2LE06**
0.75	★	★	**1.1**	★	★	**1.5**	3	75	2.5	33.5	LR2 K0308	**GV2LE07**
1.1	★	★	**–**	–	–	**–**	–	–	2.5	33.5	LR2 K0308	**GV2LE07**
1.5	★	★	**1.5**	★	★	**3**	3	75	4	51	LR2 K0310	**GV2LE08**
–	–	–	**2.2**	★	★	**–**	–	–	4	51	LR2 K0312	**GV2LE08**
2.2	★	★	**3**	50	100	**4**	3	75	6.3	78	LR2 K0312	**GV2LE10**
3	★	★	**4**	10	100	**5.5**	3	75	10	138	LR2 K0314	**GV2LE14**
4	★	★	**5.5**	10	100	**–**	–	–	10	138	LR2 K0316	**GV2LE14**
–	–	–	**–**	–	–	**7.5**	3	75	10	138	LRD 14	**GV2LE14**
–	–	–	**–**	–	–	**9**	3	75	14	170	LRD 16	**GV2LE16**
5.5	15	50	**7.5**	6	75	**11**	3	75	14	170	LR2 K0321	**GV2LE16**
7.5	15	50	**9**	6	75	**15**	3	75	18	223	LRD 21	**GV2LE20**
9	15	40	**11**	4	75	**18.5**	3	75	25	327	LRD 22	**GV2LE22**
11	15	40	**15**	4	75	**–**	–	–	25	327	LRD 22	**GV2LE22**
15	10	50	**18.5**	4	75	**22**	3	75	32	416	LRD 32	**GV2LE32**

(1) As % of Icu.
★) > 100 kA.

Characteristics: pages B6/30 and B6/31
Dimensions: pages B6/43 to B6/45
Schemes: page B6/48

TeSys protection components
Magnetic motor circuit breakers
GV2 L, GV3 L and GK3 EF80

TeSys GV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GV2 L10


DF526146.tif

GV3 L65


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GK3 EF80

Motor circuit breakers from 0.09 to 30 kW

GV2 L: Control by rotary knob, connection by screw clamp terminals

Standard power ratings of 3-phase motors 50/60 Hz in category AC-3									Magnetic protection rating	Tripping current Id ± 20 %	Use in association with thermal overload relay (class 10 A)	Reference
400/415 V			500 V			690 V						
P	Icu	Ics (1)	P	Icu	Ics (1)	P	Icu	Ics (1)				
kW	kA		kW	kA		kW	kA		A	A		
0.09	★	★	–	–	–	–	–	–	0.4	5	LRD 03	**GV2L03**
0.12	★	★	–	–	–	0.37	★	★	0.63	8	LRD 04	**GV2L04**
0.18	★	★	–	–	–	–	–	–	0.63	8	LRD 04	**GV2L04**
–	–	–	–	–	–	0.55	★	★	1	13	LRD 05	**GV2L05**
0.25	★	★	–	–	–	–	–	–	1	13	LRD 05	**GV2L05**
–	–	–	–	–	–	0.75	★	★	1	13	LRD 06	**GV2L05**
0.37	★	★	0.37	★	★	–	–	–	1	13	LRD 05	**GV2L05**
0.55	★	★	0.55	★	★	1.1	★	★	1.6	22.5	LRD 06	**GV2L06**
–	–	–	0.75	★	★	–	–	–	1.6	22.5	LRD 06	**GV2L06**
0.75	★	★	1.1	★	★	1.5	4	100	2.5	33.5	LRD 07	**GV2L07**
1.1	–	–	–	–	–	–	–	–			LRD 08	**GV2L08**
1.5	★	★	1.5	★	★	3	4	100	4	51	LRD 08	**GV2L08**
–	–	–	–	–	–	–	–	–			LRD 08	**GV2L08**
2.2	★	★	3	★	★	4	4	100	6.3	78	LRD 10	**GV2L10**
3	★	★	4	10	100	5.5	4	100	10	138	LRD 12	**GV2L14**
4	–	–	–	–	–	–	–	–			LRD 14	**GV2L14**
–	–	–	–	–	–	7.5	4	100	10	138	LRD 14	**GV2L14**
–	–	–	–	–	–	9	4	100	14	170	LRD 16	**GV2L16**
5.5	50	50	7.5	10	75	11	4	100	14	170	LRD 16	**GV2L16**
7.5	50	50	9	10	75	15	4	100	18	223	LRD 21	**GV2L20**
9	50	50	11	10	75	18.5	4	100	25	327	LRD 22	**GV2L22**
11	50	50	15	10	75	–	–	–	25	327	LRD 22	**GV2L22**
15	35	50	18.5	10	75	22	4	100	32	416	LRD 32	**GV2L32**

GV3 L: control by rotary knob, connection by EverLink® BTR screw connectors

Standard power ratings of 3-phase motors 50/60 Hz in category AC-3									Magnetic protection rating	Tripping current Id ± 20 %	Use in association with thermal overload relay (class 10 A)	Reference
400/415 V			500 V			690 V						
P	Icu	Ics (1)	P	Icu	Ics (1)	P	Icu	Ics (1)				
kW	kA		kW	kA		kW	kA		A	A		
11	100	100	15	12	50	18.5	6	50	25	350	LRD 325	**GV3L25**
15	100	100	18.5	12	50	22	6	50	32	448	LRD 332	**GV3L32**
18.5	50	100	22	12	50	37	6	50	40	560	LRD 340	**GV3L40**
22	50	100	30	12	50	45	6	50	50	700	LRD 350	**GV3L50**
30	50	100	37	12	50	55	6	50	65	910	LRD 365	**GV3L65**

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

To assemble a **GV3 L25** to **L65** 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 L65** becomes **GV3 L651**.

Connection by lugs

To order these circuit breakers with connection by lugs, add the digit **6** to the end of reference selected above. Example: **GV3 L32** becomes **GV3 L326**.

GK3: control by rotary knob, connection by screw clamp terminals

Standard power ratings of 3-phase motors 50/60 Hz in category AC-3									Magnetic protection rating	Tripping current Id ± 20 %	Use in association with thermal overload relay (class 10 A)	Reference
400/415 V			500 V			690 V						
P	Icu	Ics (1)	P	Icu	Ics (1)	P	Icu	Ics (1)				
kW	kA		kW	kA		kW	kA		A	A		
37	35	25	55	15	30	–	–	–	80	1040	LRD 3363	**GK3EF80**

(1) As % of Icu. Associated current limiter or fuses, where required. See characteristics page B6/33.
★ > 100 kA.

Characteristics: pages B6/30 to B6/33
Dimensions: pages B6/43 to B6/47
Schemes: page B6/48

TeSys protection components
Thermal-magnetic motor circuit breakers
GV2 ME

TeSys GV


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GV2 ME10

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									Setting range of thermal trips (2)	Magnetic tripping current Id ± 20 %	Reference
400/415 V			500 V			690 V					
P	Icu	Ics (1)	P	Icu	Ics (1)	P	Icu	Ics (1)			
kW	kA	%	kW	kA	%	kW	kA	%	A	A	
–	–	–	–	–	–	–	–	–	0.1…0.16	1.5	**GV2ME01**
0.06	★	★	–	–	–	–	–	–	0.16…0.25	2.4	**GV2ME02**
0.09	★	★	–	–	–	–	–	–	0.25…0.40	5	**GV2ME03**
0.12	★	★	–	–	–	**0.37**	★	★	0.40…0.63	8	**GV2ME04**
0.18	★	★	–	–	–	–	–	–			
0.25	★	★	–	–	–	**0.55**	★	★	0.63…1	13	**GV2ME05**
0.37	★	★	**0.37**	★	★	–	–	–	1…16	22.5	**GV2ME06**
0.55	★	★	**0.55**	★	★	**0.75**	★	★			
–	–	–	**0.75**	★	★	**1.1**	★	★			
0.75	★	★	**1.1**	★	★	**1.5**	3	75	1.6…2.5	33.5	**GV2ME07**
1.1	★	★	**1.5**	★	★	**2.2**	3	75	2.5…4	51	**GV2ME08**
1.5	★	★	**2.2**	★	★	**3**	3	75			
2.2	★	★	**3**	50	100	**4**	3	75	4…6.3	78	**GV2ME10**
3	★	★	**4**	10	100	**5.5**	3	75	6…10	138	**GV2ME14**
4	★	★	**5.5**	10	100	**7.5**	3	75			
5.5	15	50	**7.5**	6	75	**9**	3	75	9…14	170	**GV2ME16**
–	–	–	–	–	–	**11**	3	75			
7.5	15	50	**9**	6	75	**15**	3	75	13…18	223	**GV2ME20**
9	15	40	**11**	4	75	**18.5**	3	75	17…23	327	**GV2ME21**
11	15	40	**15**	4	75	–	–	–	20…25	327	**GV2ME22** (3)
15	10	50	**18.5**	4	75	**22**	3	75	24…32	416	**GV2ME32**

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 B6/11):

■ 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 Icu.
(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: pages B6/51 to B6/54
Dimensions: pages B6/70 to B6/72
Schemes: page B6/82

TeSys protection components
Thermal-magnetic motor circuit breakers
GV2 ME

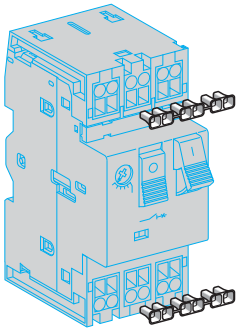
TeSys GV

GV2 ME●●3

Motor circuit breakers from 0.06 to 11 kW, with spring terminal connections

GV2 ME [1] with pushbutton control

Standard power ratings of 3-phase motors 50/60 Hz in category AC-3						Setting range of thermal trips [3]	Magnetic tripping current Id ± 20 %	Reference
400/415 V			500 V					
P	Icu	Ics [2]	P	Icu	Ics [2]			
kW	kA	%	kW	kA	%	A	A	
–	–	–	–	–	–	0.1…0.16	1.5	**GV2ME013**
0.06	★	★	–	–	–	0.16…0.25	2.4	**GV2ME023**
0.09	★	★	–	–	–	0.25…0.40	5	**GV2ME033**
0.12 **0.18**	★ ★	★ ★	–	–	–	0.40…0.63	8	**GV2ME043**
0.25 **0.37**	★ ★	★ ★	**0.37**	★	★	0.63…1	13	**GV2ME053**
0.37 **0.55**	★ ★	★ ★	**0.37** **0.55** **0.75**	★ ★ ★	★ ★ ★	1…1.6	22.5	**GV2ME063**
0.75	★	★	**1.1**	★	★	1.6…2.5	33.5	**GV2ME073**
1.1 **1.5**	★ ★	★ ★	**1.5** **2.2**	★ ★	★ ★	2.5…4	51	**GV2ME083**
2.2	★	★	**3**	50	100	4…6.3	78	**GV2ME103**
3 **4**	★ ★	★ ★	**4** **5.5**	10 10	100 100	6…10	138	**GV2ME143**
5.5	15	50	**7.5**	6	75	9…14	170	**GV2ME163**
7.5	15	50	**9**	6	75	13…18	223	**GV2ME203**
9 **11**	15 15	40 40	**11**	4	75	17…23	327	**GV2ME213**
11	15	40	**15**	4	75	20…25	327	**GV2ME223**



LA9 D99

Contact blocks

Description	Mounting	Maximum number	Type of contacts	Sold in lots of	Unit reference
Instantaneous auxiliary contacts	Front	1	N/O + N/C	10	**GVAE113**
			N/O + N/O	10	**GVAE203**
	LH side	2	N/O + N/C	1	**GVAN113**
			N/O + N/O	1	**GVAN203**

Accessory

Description	Application	Sold in lots of	Unit reference
Cable end reducer	For connection of conductors from 1 to 1.5 mm²	20	**LA9D99**

*(1) For connection of conductors from 1 to 1.5 mm², the use of an **LA9 D99** cable end reducer is recommended.*
*(2) Maximum rating which can be mounted in enclosures **GV2 MC** or **MP**, please consult your Regional Sales Office*
(3) The thermal trip setting must be within the range marked on the graduated knob.
★ > 100 kA.

Characteristics: pages B6/51 to B6/54
Dimensions: pages B6/70 to B6/72
Schemes: page B6/82

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

TeSys GV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GV2 P10


DF526139.tif

GV3 P65


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GV3 P651

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 Id ± 20 %	Reference
400/415 V			500 V			690 V					
P	Icu	Ics (1)	P	Icu	Ics (1)	P	Icu	Ics (1)			
kW	kA	%	kW	kA	%	kW	kA	%	A	A	
GV2 P: control by rotary knob											
Screw clamp terminals											
–	–	–	–	–	–	–	–	–	0.1…0.16	1.5	**GV2P01**
0.06	★	★	–	–	–	–	–	–	0.16…0.25	2.4	**GV2P02**
0.09	★	★	–	–	–	–	–	–	0.25…0.40	5	**GV2P03**
0.12	★	★	–	–	–	**0.37**	★	★	0.40…0.63	8	**GV2P04**
0.18	★	★	–	–	–	**–**	–	–			
0.25	★	★	–	–	–	**0.55**	★	★	0.63…1	13	**GV2P05**
0.37	★	★	**0.37**	★	★	**–**	–	–	1…1.6	22.5	**GV2P06**
0.55	★	★	**0.55**	★	★	**0.75**	★	★			
0.75	★	★	**1.1**	★	★	**1.5**	8	100	1.6…2.5	33.5	**GV2P07**
1.1	★	★	**1.5**	★	★	**2.2**	8	100	2.5…4	51	**GV2P08**
2.2	★	★	**3**	★	★	**4**	6	100	4…6.3	78	**GV2P10**
3	★	★	**5**	50	100	**5.5**	6	100	6…10	138	**GV2P14**
5.5	★	★	**7.5**	42	75	**9**	6	100	9…14	170	**GV2P16**
–	–	–	**–**	–	–	**11**	6	100			
7.5	50	50	**9**	10	75	**15**	4	100	13…18	223	**GV2P20**
9	50	50	**11**	10	75	**18.5**	4	100	17…23	327	**GV2P21**
11	50	50	**15**	10	75	**–**	–	–	20…25	327	**GV2P22**
15	35	50	**18.5**	10	75	**22**	4	100	24…32	416	**GV2P32**
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	**GV3P13**
7.5	100	100	**9**	12	50	**15**	6	50	12…18	252	**GV3P18**
11	100	100	**15**	12	50	**18.5**	6	50	17…25	350	**GV3P25**
15	100	100	**18.5**	12	50	**22**	6	50	23…32	448	**GV3P32**
18.5	50	100	**22**	12	50	**37**	6	50	30…40	560	**GV3P40**
22	50	100	**30**	12	50	**45**	6	50	37…50	700	**GV3P50**
30	50	100	**45**	12	50	**55**	6	50	48…65	910	**GV3P65**
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		**GV3ME80** (4)

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, use the following with the circuit breaker:
- 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 Icu.
(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 B6/13.
(6) Accessories: see page B6/17.
★ > 100 kA.

Characteristics: pages B6/51, B6/52 and B6/55
Dimensions: pages B6/70 to B6/78
Schemes: pages B6/82 and B6/83

TeSys protection components
Thermal-magnetic motor circuit breakers
GV7 R

TeSys GV


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GV7 RE40


DF526141.tif

GV7 RS220

Thermal-magnetic circuit breakers GV7 R with screw clamp terminals up to 110 kW

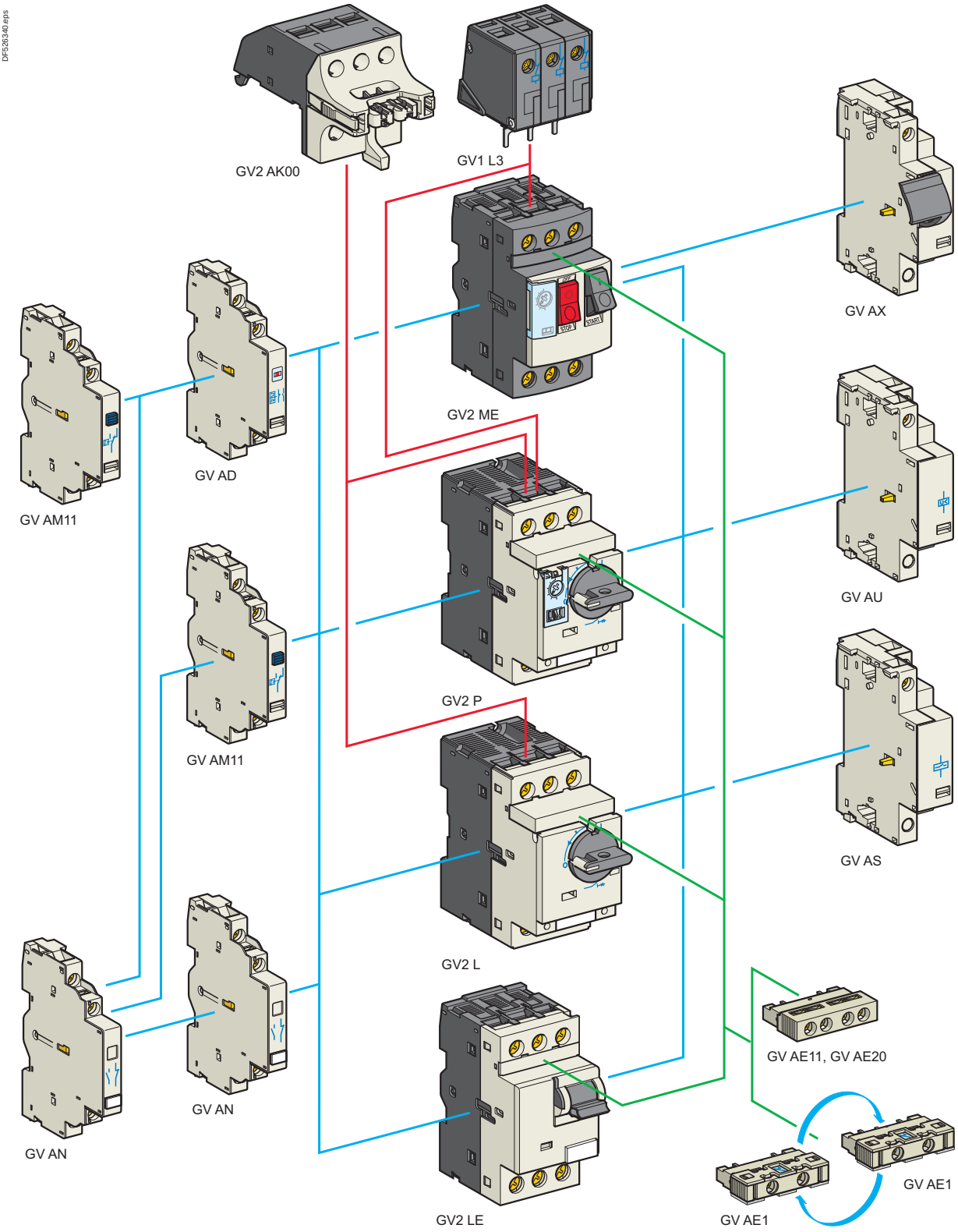
Control by rocker lever

Standard power ratings of 3-phase motors 50/60 Hz in category AC-3									Setting range of thermal trips	Reference	Weight
400/415 V			500 V			660/690 V					
P	Icu	Ics (1)	P	Icu	Ics (1)	P	Icu	Ics (1)			
kW	kA	%	kW	kA	%	kW	kA	%	A		kg
7.5 **9**	36 36	100 100	**9** **11**	18 18	100 100	**11** **15**	8 8	100 100	12…20	**GV7RE20**	2.010
7.5 **9**	70 70	100 100	**9** **11**	50 50	100 100	**11** **15**	10 10	100 100	12…20	**GV7RS20**	2.010
9 **11**	36 36	100 100	**11** **15**	18 18	100 100	**15** **18.5**	8 8	100 100	15…25	**GV7RE25**	2.010
9 **11**	70 70	100 100	**11** **15**	50 50	100 100	**15** **18.5**	10 10	100 100	15…25	**GV7RS25**	2.010
18.5	36	100	**18.5** **22**	18 18	100 100	**22**	8	100	25…40	**GV7RE40**	2.010
18.5	70	100	**18.5**	50	100	**22**	10	100	25…40	**GV7RS40**	2.010
22	36	100	**30**	18	100	**30**	8	100	30…50	**GV7RE50**	2.015
22	70	100	**30**	50	100	**30**	10	100	30…50	**GV7RS50**	2.015
37	36	100	**45** **55**	18 18	100 100	**55**	8	100	48…80	**GV7RE80**	2.040
37	70	100	**45** **55**	50 50	100 100	**55**	10	100	48…80	**GV7RS80**	2.040
45	36	100	**–**	18	100	**75**	8	100	60…100	**GV7RE100**	2.040
45	70	100	**–**	50	100	**75**	10	100	60…100	**GV7RS100**	2.040
55 **75**	35 35	100 100	**75** **90**	30 30	100 100	**90** **110**	8 8	100 100	90…150	**GV7RE150**	2.020
55 **75**	70 70	100 100	**75** **90**	50 50	100 100	**90** **110**	10 10	100 100	90…150	**GV7RS150**	2.020
90 **110**	35 35	100 100	**110** **132** **160**	30 30 30	100 100 100	**160** **200**	8 8	100 100	132…220	**GV7RE220**	2.350
90 **110**	70 70	100 100	**110** **132** **160**	50 50 50	100 100 100	**160** **200**	10 10	100 100	132…220	**GV7RS220**	2.350

(1) As % of Icu.

Circuit breakers

Characteristics: pages B6/51, B6/52 and B6/56
Dimensions: pages B6/79 to B6/81
Schemes: page B6/83


DF526340.eps
GV2 AK00
GV1 L3
GV AX
GV2 ME
GV AD
GV AM11
GV AU
GV2 P
GV AM11
GV AS
GV2 L
GV AE11, GV AE20
GV AN
GV AN
GV AE1
GV AE1
GV2 LE

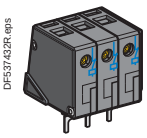
TeSys protection components
Thermal-magnetic and magnetic motor circuit breakers GV2 with screw clamp connections
Add-on blocks and accessories

Contact blocks

Description	Mounting	Maximum number	Type of contacts		Sold in lots of	Unit reference
Instantaneous auxiliary contacts	Front (1)	1	N/O or N/C (2)		10	**GVAE1**
			N/O + N/C		10	**GVAE11**
			N/O + N/O		10	**GVAE20**
	Side (LH)	2	N/O + N/C		1	**GVAN11**
			N/O + N/O		1	**GVAN20**
Fault signalling contact + instantaneous auxiliary contact	Side (3) (LH)	1	N/O (fault)	+ N/O	1	**GVAD1010**
				+ N/C	1	**GVAD1001**
			N/C (fault)	+ N/O	1	**GVAD0110**
				+ N/C	1	**GVAD0101**
Short-circuit signalling contact	Side (LH)	1	C/O common point		1	**GVAM11**

Electric trips

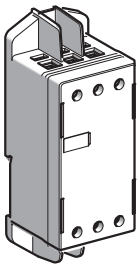
Mounting	Voltage		Reference
Undervoltage or shunt trips (4)			
Side (1 block on RH side of circuit breaker)	24 V	50 Hz	**GVA●025**
		60 Hz	**GVA●026**
	48 V	50 Hz	**GVA●055**
		60 Hz	**GVA●056**
	100 V	50 Hz	**GVA●107**
	100…110 V	60 Hz	**GVA●107**
	110…115 V	50 Hz	**GVA●115**
		60 Hz	**GVA●116**
	120…127 V	50 Hz	**GVA●125**
	127 V	60 Hz	**GVA●115**
	200 V	50 Hz	**GVA●207**
	200…220 V	60 Hz	**GVA●207**
	220…240 V	50 Hz	**GVA●225**
		60 Hz	**GVA●226**
	380…400 V	50 Hz	**GVA●385**
		60 Hz	**GVA●386**
	415…440 V	50 Hz	**GVA●415**
	415 V	60 Hz	**GVA●416**
	440 V	60 Hz	**GVA●385**
	480 V	60 Hz	**GVA●415**
	500 V	50 Hz	**GVA●505**
	600 V	60 Hz	**GVA●505**
Undervoltage trip, INRS (can only be mounted on GV2 ME) Safety device for dangerous machines conforming to INRS and VDE 0113			
Side (1 block on RH side of circuit breaker GV2 ME)	110…115 V	50 Hz	**GVAX115**
		60 Hz	**GVAX116**
	127 V	60 Hz	**GVAX115**
	220…240 V	50 Hz	**GVAX225**
		60 Hz	**GVAX226**
	380…400 V	50 Hz	**GVAX385**
		60 Hz	**GVAX386**
	415…440 V	50 Hz	**GVAX415**
	440 V	60 Hz	**GVAX385**



GV1L3

Add-on contact blocks

Description	Mounting	Maximum number	Reference
Visible isolation block (5)	Front (1)	1	**GV2AK00 (6)**
Limiters	At top (GV2 ME and GV2 P)	1	**GV1L3**
	Independent	1	**LA9LB920**



LA9LB920

*(1) Mounting of a **GV AE** contact block or a **GV2 AK00** visible isolation block on **GV2 P** and **GV2 L**.*
(2) Choice of N/C or N/O contact operation, depending on which way round the reversible block is mounted.
*(3) The **GV AD** is always mounted next to the circuit breaker.*
*(4) To order an undervoltage trip: replace the dot (●) in the reference with a **U**, example: **GV AU025**.*
*To order a shunt trip: replace the dot (●) in the reference with an **S**, example: **GV AS025**.*
*(5) Visible isolation of the 3 poles upstream of circuit breaker **GV2 P** and **GV2 L**.*
*Visible isolation block **GV2 AK00** cannot be used with motor circuit breakers GV2 P32 and GV2 L32 (Ith max = 25 A).*
(6) Ie Max = 32 A.

Characteristics: pages B6/89 and B6/94

Dimensions, schemes: pages B6/70 to B6/82

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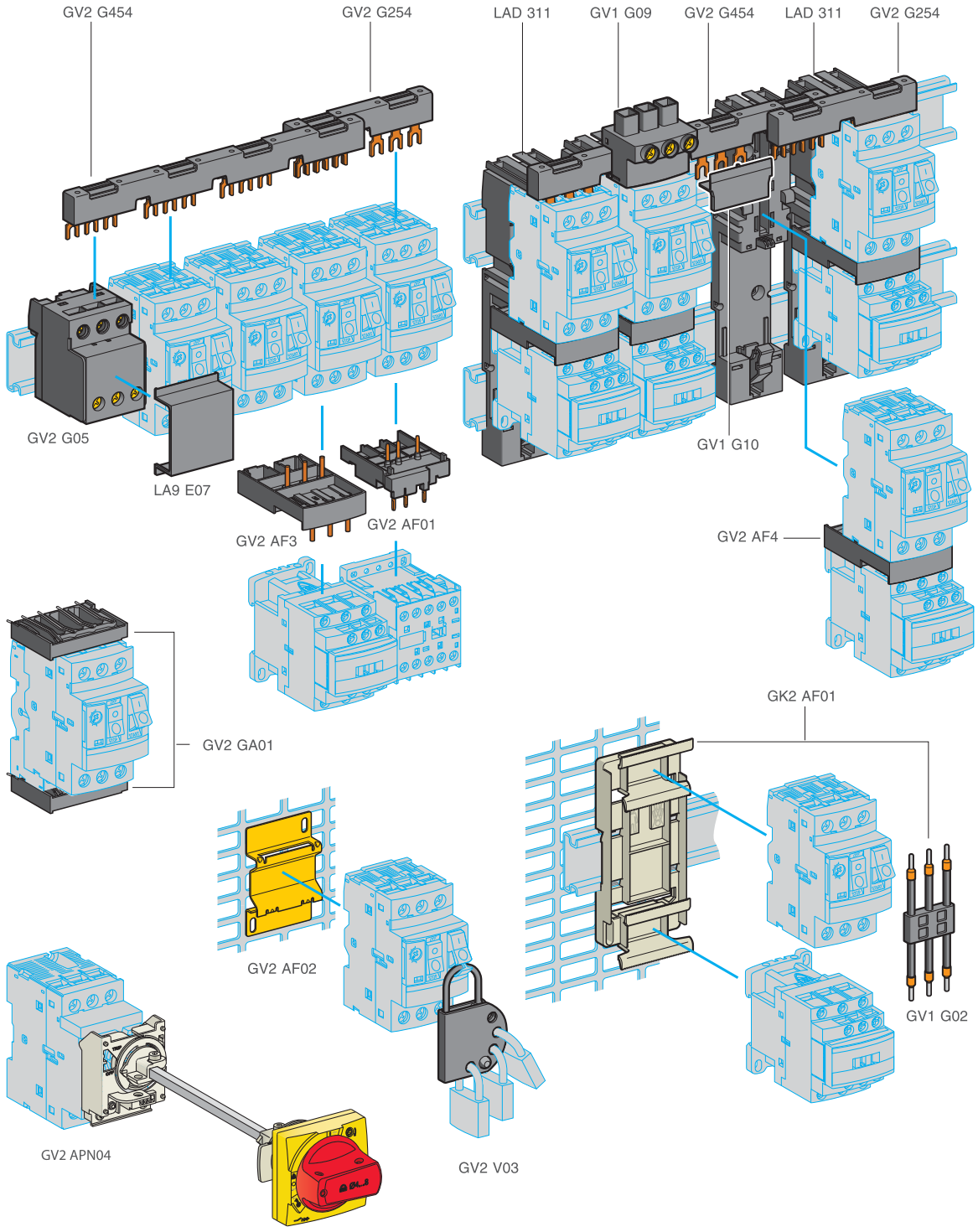


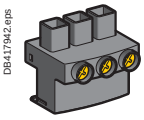
TeSys protection components
Thermal-magnetic and magnetic motor circuit breakers GV2 with screw clamp connections
Accessories

Accessories

Description	Application	Sold in lots of	Unit reference
Adapter plates	For mounting a GV2 ME or GV2 LE by screw fixing	10	**GV2AF02**
	For mounting a GV2 ME or GV2 P and contactor LC1 D09…D38 with front faces aligned	1	**LAD311**
Height compensation plate	7.5 mm	10	**GV1F03**
Combination blocks	Between GV2 and contactor LC1 K or LP1 K	10	**GV2AF01**
	Between GV2 and contactor LC1 D09…D38	10	**GV2AF3**
	Between GV2 mounted on LAD 311 and contactor LC1 D09…D38	10	**GV2AF4**
Motor starter adapter plate	With 3-pole connection for mounting a GV2 and a contactor LC1 D09…D25	1	**GK2AF01**

Description	Application	Pitch	Reference
		mm	
Sets of 3-pole 63 A busbars	2 tap-offs	45	**GV2G245**
		54	**GV2G254**
		72	**GV2G272**
	3 tap-offs	45	**GV2G345**
		54	**GV2G354**
	4 tap-offs	45	**GV2G445**
		54	**GV2G454**
		72	**GV2G472**
	5 tap-offs	54	**GV2G554**

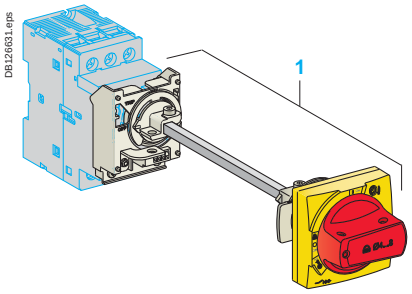
Description	Application	Sold in lots of	Unit reference
Protective end cover	For unused busbar outlets	5	**GV1G10**
Terminal block for supply to one or more GV2 G busbar sets	Connection from the top	1	**GV1G09**
	Can be fitted with current limiter GV1 L3 (GV2 ME and GV2 P)	1	**GV2G05**
Cover for terminal block	For mounting in modular panels	10	**LA9E07**
Flexible 3-pole connection for connecting a GV2 to a contactor LC1-D09…D25	Centre distance between mounting rails: 100…120 mm	10	**GV1G02**
Set of connections upstream/downstream	For connecting GV2 ME to a printed circuit board	10	**GV2GA01**
"Large Spacing" adapter UL 508 type E	For GV2 P●●H7 (except 32 A)	1	**GV2GH7**
Clip-in marker holders (supplied with each circuit breaker)	For GV2 P, GV2 L, GV2 LE and GV2 RT (8 x 22 mm)	100	**LA9D92**



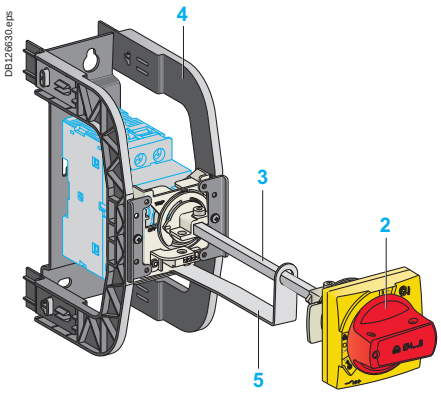
GV1 G09

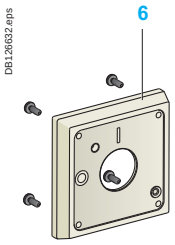
Dimensions, schemes:
pages B6/70 to B6/82

TeSys protection components
Thermal-magnetic and magnetic motor circuit breakers GV2 with screw clamp connections



Extended Rotary Handle
Allows a circuit breaker or a starter-controller installed in back of an enclosure to be operated from the front of the enclosure.
A rotary handle can be black or red/yellow, IP54 or IP65. It includes a function for locking the circuit breaker or the starter in the O (Off) or I (On) position (depending of the type of rotary handle) by means of up to 3 padlocks with a shank diameter of 4 to 8 mm. The extended shaft must be adjusted to use in different size enclosures. The IP54 rotary handle is fixed with a nut (Ø22) to make easier the assembling. The new Laser Square tool brings the accuracy to align the circuit breaker and the rotary handle.





Padlockable external operators for GV2P and GV2L

Description

1 Kit handle + mounting system
2 Universal handle
3 Shaft
4 Bracket
5 Shaft support plate for deep enclosure
6 Retrofit accessory
7 Laser Square accessory

Kit handle + mounting system

Description		Item	Reference
For GV2 P/L	Black handle, front plate, with trip status, IP 54	1	**GV2APN01**
	Red handle, front plate, with trip status, IP 54	1	**GV2APN02**
	Red handle, front plate, without trip status, IP 65	1	**GV2APN04**
For GV2 LE	Padlocking in “On” and “Off” position Black handle, blue front plate, IP 54	-	**GV2AP03**

Universal handle

For GV2 P/L	Black handle, IP 54	2	**GVAPB54**
	Red handle, IP 54	2	**GVAPR54**
	Red handle, IP 65	2	**GVAPR65**

Shaft

For GV2 P/L	L = 315 mm	3	**GVAPA1**

Bracket

For GV2 P/L		4	**GVAPH02**

Shaft support plate for deep enclosure

For GV2 P/L	Depth ≥ 250 mm	5	**GVAPK11**

Retrofit accessory

For GV2 P/L		6	**GVAPP1**

Laser Square accessory

For GV2 P/L		7	**GVAPL01**

Sticker		Sold in lots of		
Warning label	For French	10	-	**GVAPSFR**
	For English	10	-	**GVAPSEN**
	For German	10	-	**GVAPSDE**
	For Spanish	10	-	**GVAPSES**
	For Chinese	10	-	**GVAPSCN**
	For Portuguese	10	-	**GVAPSPT**
	For Russian	10	-	**GVAPSRU**
	For Italian	10	-	**GVAPSIT**

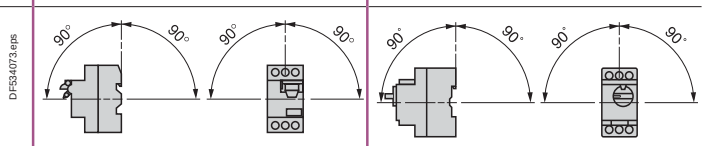
Padlocking device

Description		Reference
For all GV2 device	For use with up to 4 padlocks, Ø6 mm shank max. (padlocks not included)	**GV2V03**

TeSys protection components
Magnetic motor circuit breakers
GV2 LE and GV2 L

TeSys GV

Environment

Circuit breaker type			GV2 LE		GV2 L	
Conforming to standards			IEC 60947-1, 60947-2, EN 60204, NF C 63-650, NF C63-120, 79-130, VDE 0113, 0660.			
Product certifications			CSA, CCC		CSA, CCC, BV, DNV, GL, LROS, RINA	
Protective treatment			"TH"		"TH"	
Shock resistance	Conforming to IEC 60068-2-27		30 gn		30 gn	
Vibration resistance	Conforming to IEC 60068-2-6		5 gn (5 to 150 Hz)		5 gn (5 to 150 Hz)	
Ambient air temperature	Storage	°C	-40…+80		-40…+80	
	Operation	°C	-20…+60		-20…+60	
Flame resistance	Conforming to IEC 60695-2-1	°C	960		960	
Maximum operating altitude		m	2000		2000	
Operating position						
Connection (Max. number of conductors x c.s.a)			Min.	Max.	Min.	Max.
	Solid cable	mm²	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
	Flexible cable with cable end	mm²	2 x 1	2 x 4	2 x 1	2 x 4
Tightening torque		N.m	1.7		1.7	
Suitable for isolation	Conforming to IEC 60947-1 § 7-1-6		Yes		Yes	
Resistance to mechanical impact		J	0.5		0.5	

Technical characteristics

Utilisation category	Conforming to IEC 60947-2		A	A
	Conforming to IEC 60947-4-1		AC-3	AC-3
Rated operational voltage (Ue)	Conforming to IEC 60947-2	V	690	690
Rated insulation voltage (Ui)	Conforming to IEC 60947-2	V	690	690
Rated operational frequency	Conforming to IEC 60947-2	Hz	50/60	50/60
Rated impulse withstand voltage (U imp)	Conforming to IEC 60947-2	kV	6	6
Total power dissipated per pole		W	1.8	1.8
Mechanical durability (C.O.: Closing, Opening)	For AC-3 duty	C.O.	100 000	100 000
Electrical durability for AC-3/415V duty (C.O.: Closing, Opening)		C.O.	100 000	100 000
Duty class (maximum operating rate)		C.O./h	40	40
Rated duty	Conforming to IEC 60947-4-1		Continuous duty	Continuous duty

References: pages B6/2 and B6/3
Dimensions: pages B6/43 to B6/47
Schemes: page B6/48

TeSys protection components
Magnetic motor circuit breakers
GV2 LE and GV2 L

TeSys GV

Circuit breaker type				GV2 LE										GV2 L								
				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			●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●

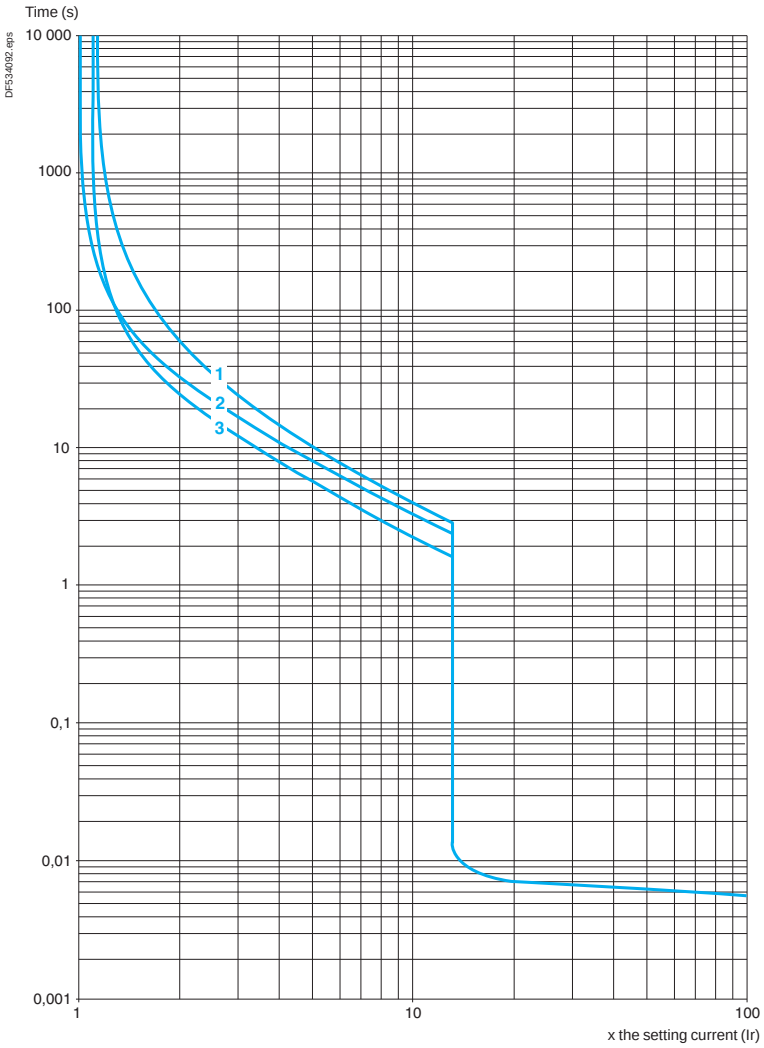
★ *> 100 kA.*
● *Cable c.s.a. protected.*
(1) As % of Icu.
(2) Cable c.s.a. not protected.

Circuit breakers

References: pages B6/2 and B6/3
Dimensions: pages B6/43 to B6/47
Schemes: page B6/48

Tripping curves for GV2 L or LE combined with thermal overload relay LRD or LR2 K

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

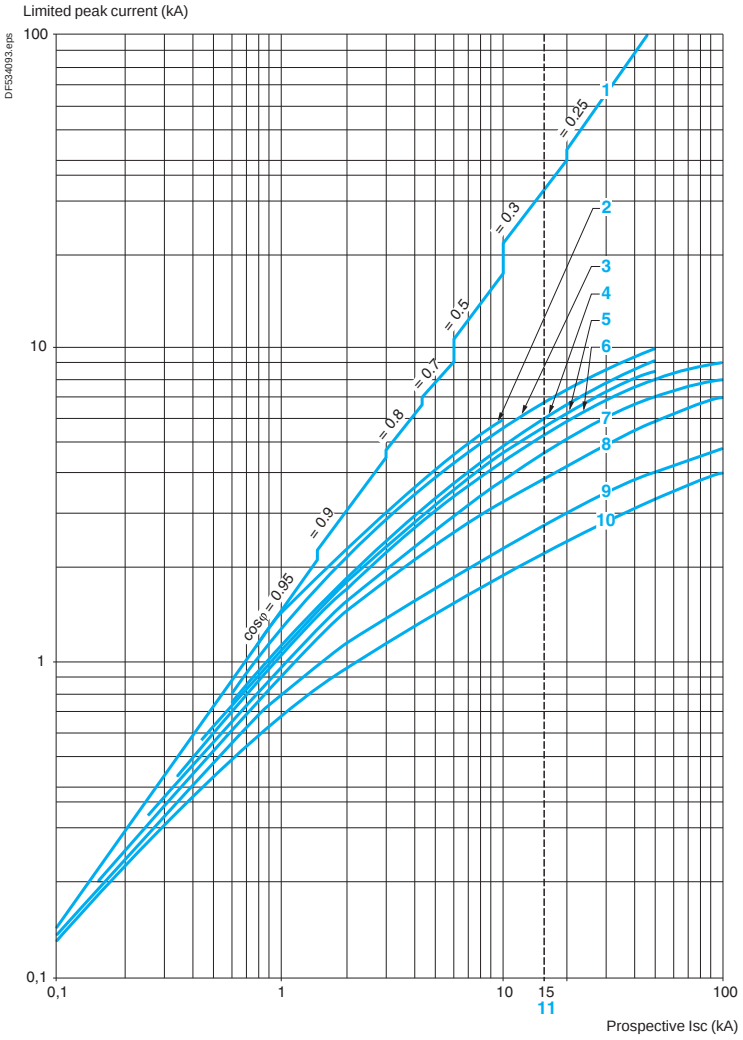


1 3 poles from cold state
2 2 poles from cold state
3 3 poles from hot state

Current limitation on short-circuit for GV2 L and GV2 LE only (3-phase 400/415 V)

Dynamic stress

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



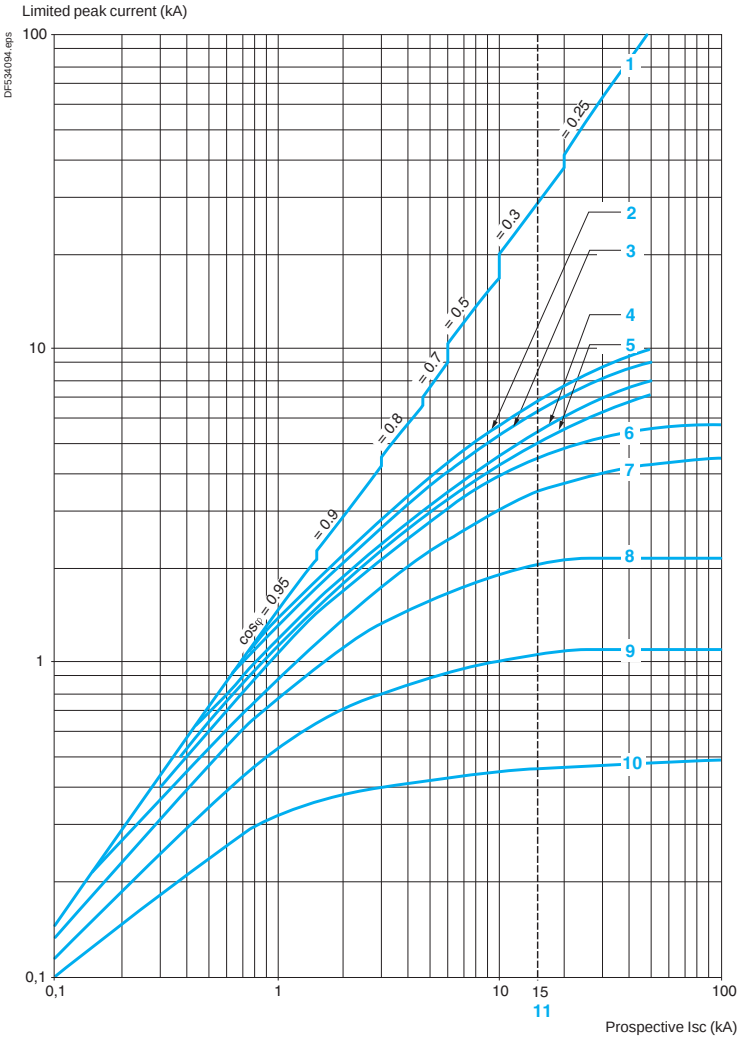
1 Maximum peak current
2 32 A
3 25 A
4 18 A
5 14 A
6 10 A
7 6.3 A
8 4 A
9 2.5 A
10 1.6 A
11 Limit of rated ultimate breaking capacity on short-circuit of GV2 LE (14, 18, 23 and 25 A ratings).

Circuit breakers

Current limitation on short-circuit for GV2 L and GV2 LE + thermal overload relay LRD or LR2 K (3-phase 400/415 V)

Dynamic stress

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

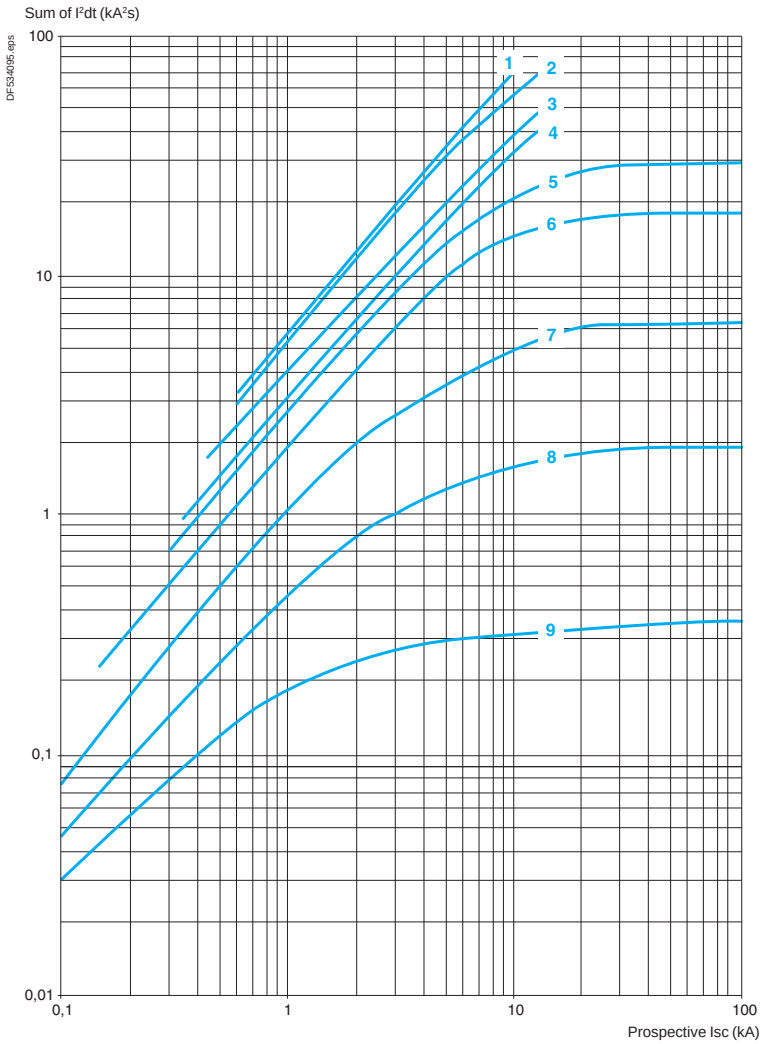


1 Maximum peak current
2 32 A
3 25 A
4 18 A
5 14 A
6 10 A
7 6.3 A
8 4 A
9 2.5 A
10 1.6 A
11 Limit of rated ultimate breaking capacity on short-circuit of GV2 LE (14, 18, 23 and 25 A ratings).

Thermal limit on short-circuit for GV2 LE only

Thermal limit in kA²s in the magnetic operating zone

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



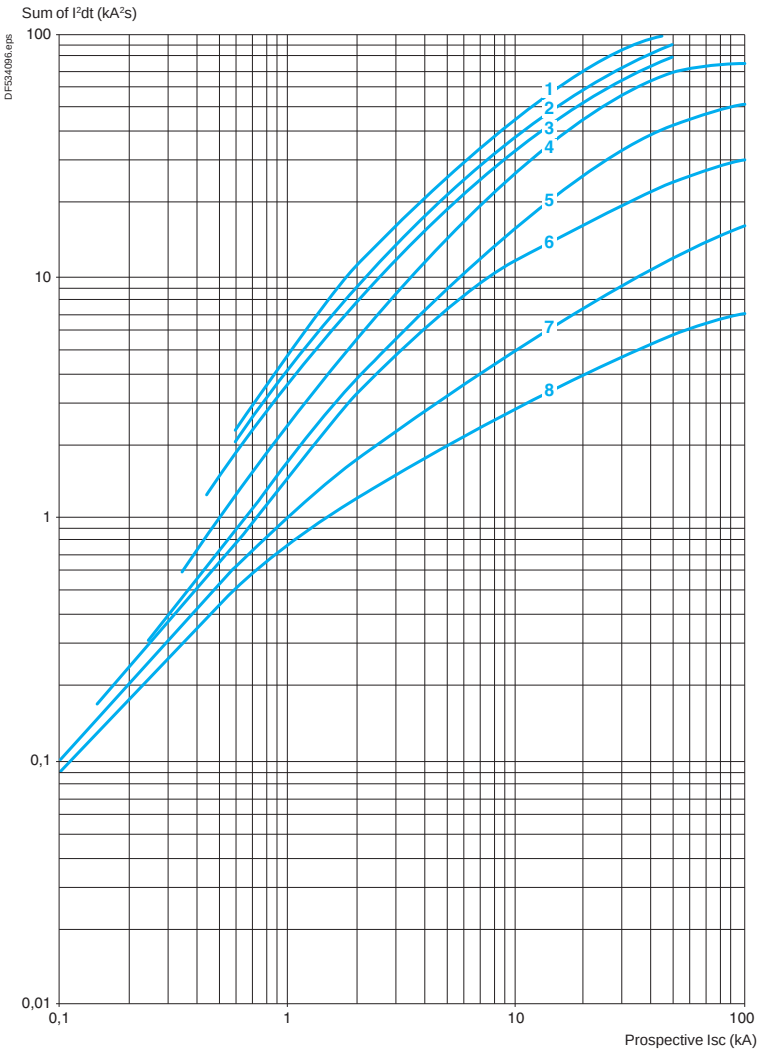
1 32 A
2 25 A
3 18 A
4 14 A
5 10 A
6 6.3 A
7 4 A
8 2.5 A
9 1.6 A

Circuit breakers

Thermal limit on short-circuit for GV2 L only

Thermal limit in kA²s in the magnetic operating zone

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

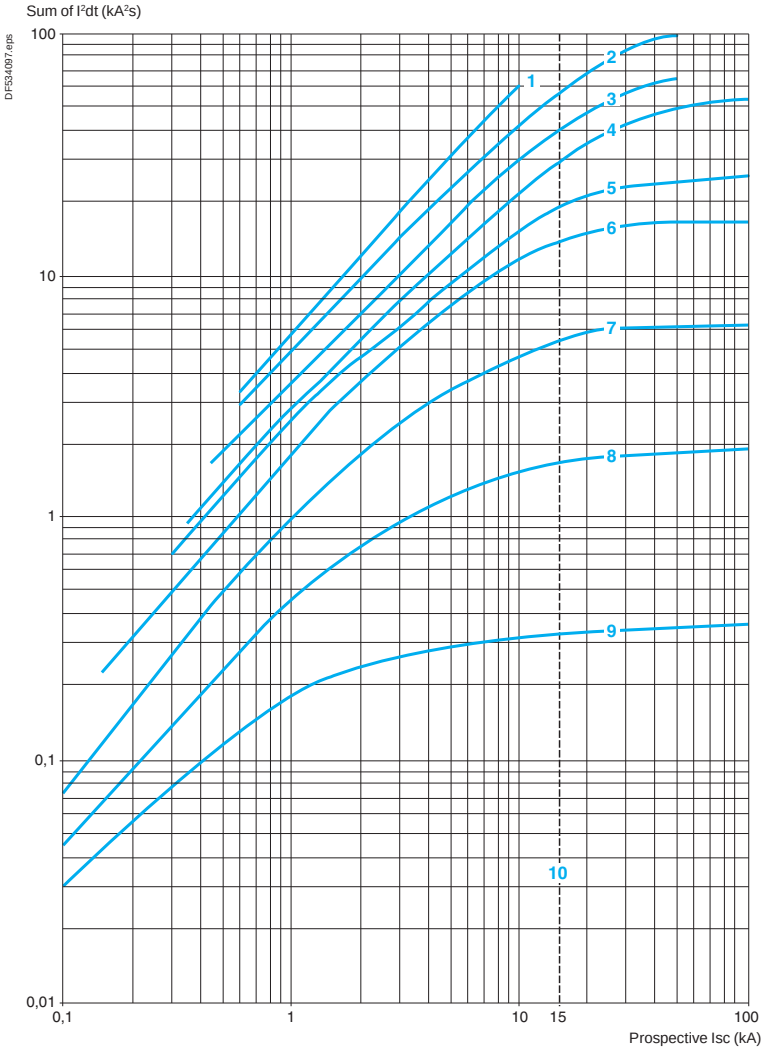


1 25 A and 32 A
2 18 A
3 14 A
4 10 A
5 6.3 A
6 4 A
7 2.5 A
8 1.6 A

Thermal limit on short-circuit for GV2 L and GV2 LE + thermal overload relay LRD or LR2 K

Thermal limit in kA²s in the magnetic operating zone

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



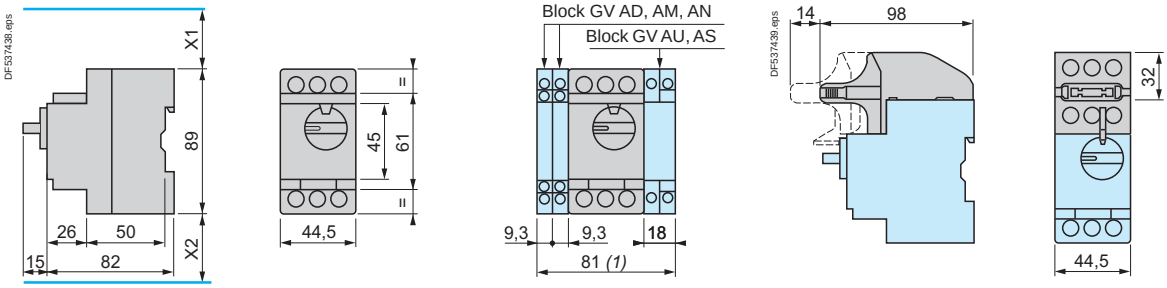
1 32 A (GV2 LE32)
2 25 A and 32 A (GV2 L32)
3 18 A
4 14 A
5 10 A
6 6.3 A
7 4 A
8 2.5 A
9 1.6 A
10 Limit of rated ultimate breaking capacity on short-circuit of GV2 LE (14, 18, 23 and 25 A ratings).

Circuit breakers

TeSys protection components
Magnetic motor circuit breakers
GV2 L and GV2 LE

GV2 L

Dimensions

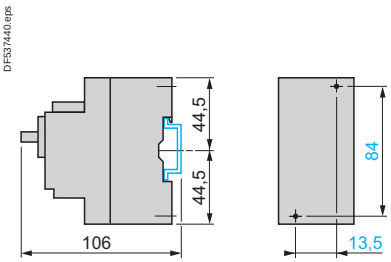


X1 Electrical clearance = 40 mm for Ue ≤ 415 V, or 80 mm for Ue = 440 V, or 120 mm for Ue = 500 and 690 V.
X2 = 40 mm.

***(1)** Maximum.*

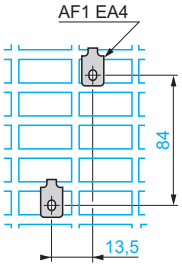
Mounting

On rail AM1 DE200, AM1 ED200 (35 x 15)

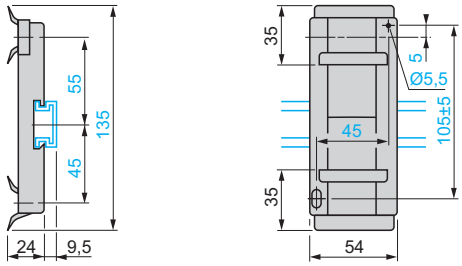


Panel mounted

On pre-slotted mounting plate AM1 PA



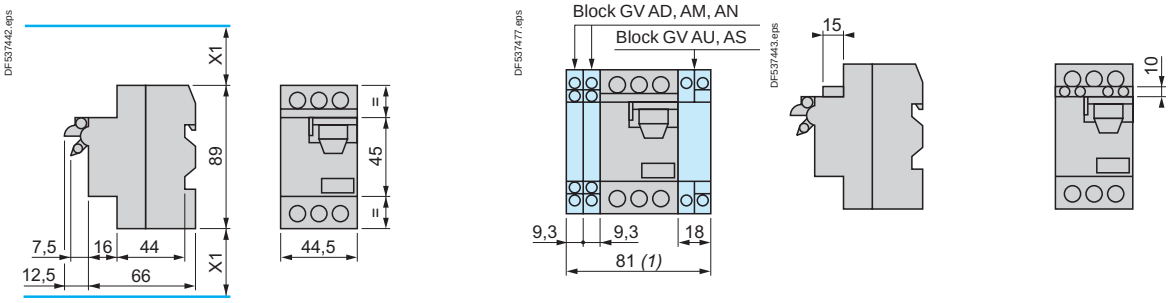
Adapter plate GK2 AF01



7.5 mm height compensation plate GV1 F03

GV2 LE

Dimensions

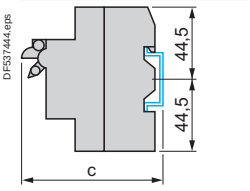


X1 Electrical clearance = 40 mm for Ue ≤ 690 V.

***(1)** Maximum.*

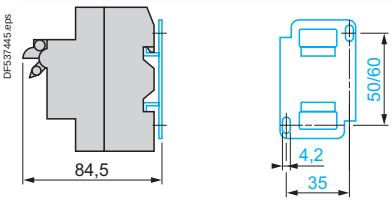
Mounting

On 35 mm ⎓ rail

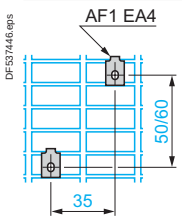


c = 80 on AM1 DP200 (35 x 7.5) and 88 on AM1 DE200, ED200 (35 x15)

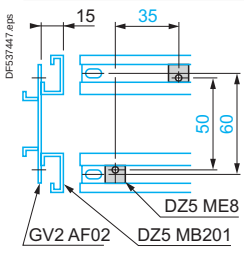
On panel with adapter plate GV2 AF02



On pre-slotted plate AM1 PA

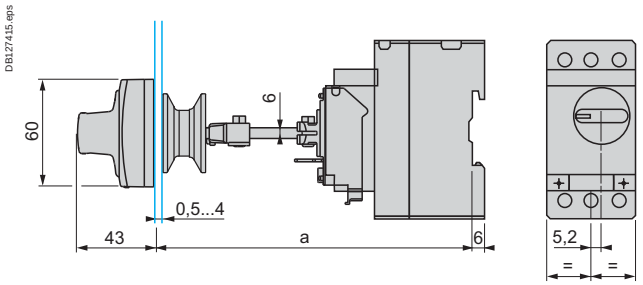


On rails DZ5 MB201

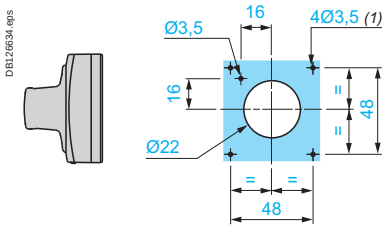


Mounting

Mounting of external operator GV2 APN01, GV2 APN02 or GV2 APN04 for motor circuit breakers GV2 L

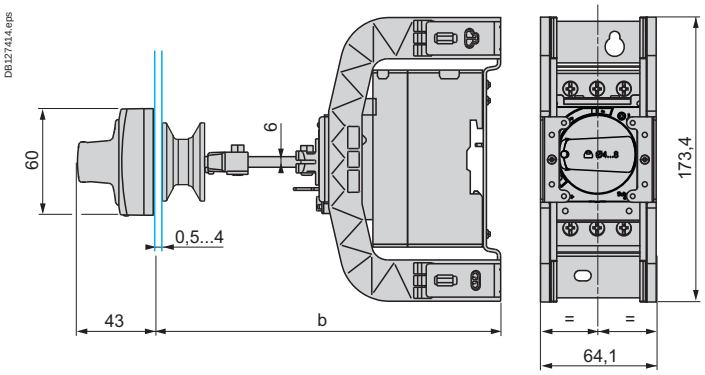


Door cut-out

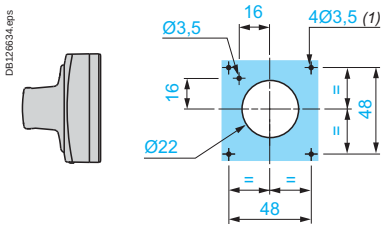


(1) For IP65 only.

Mounting of external operator GV APH02 for motor circuit breakers GV2 L



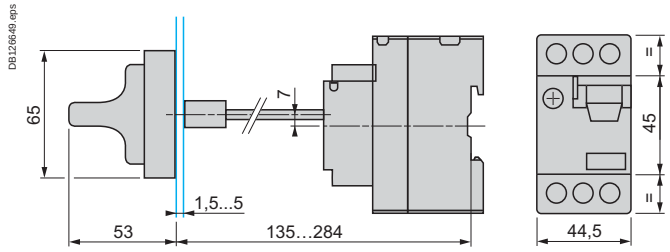
Door cut-out



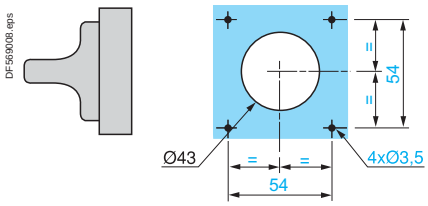
(1) For IP65 only.

	a		b	
	Mini	Maxi	Mini	Maxi
GV2 APN●●	140	250		
GV2 APN●● + GV APH02			151	250
GV2 APN●● + GV APK11	250	434	-	-
GV2 APN●● + GV APH02 + GV APK11	-	-	250	445

Mounting of external operator GV2 AP03 for GV2 LE

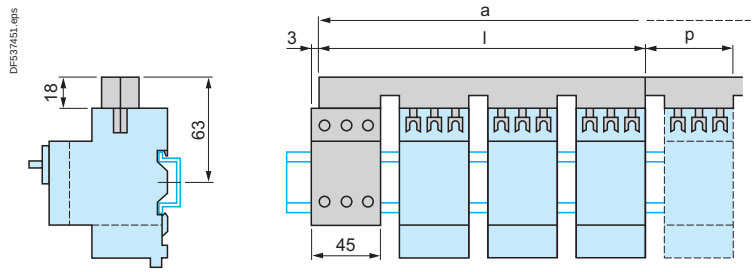


Door cut-out



GV2 L and GV2 LE

Sets of busbars GV2 G445, GV2 G454, GV2 G472, with terminal block GV2 G05

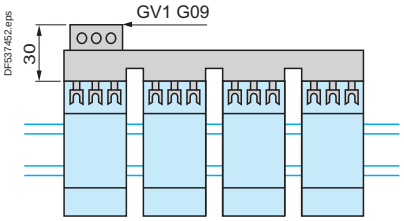


	l	p
GV2 G445 (4 x 45 mm)	179	45
GV2 G454 (4 x 54 mm)	206	54
GV2 G472 (4 x 72 mm)	260	72

	a			
Number of tap-offs	**5**	**6**	**7**	**8**
GV2 G445	224	269	314	359
GV2 G454	260	314	368	422
GV2 G472	332	404	476	548

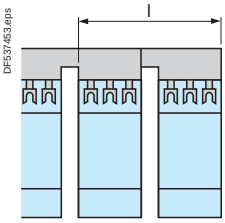
Sets of busbars for GV2 L and GV2 LE

Sets of busbars GV2 G●●● with term. block GV1 G09

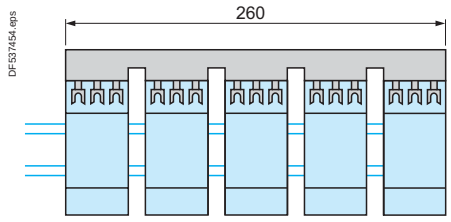


	l
GV2 G245 (2 x 45 mm)	89
GV2 G254 (2 x 54 mm)	98
GV2 G272 (2 x 72 mm)	116

Sets of busbars GV2 G245, GV2 G254, GV2 GR272

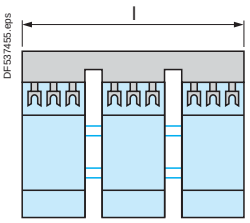


Set of busbars GV2 G554



	l
GV2 G345 (3 x 45 mm)	134
GV2 G354 (3 x 54 mm)	152

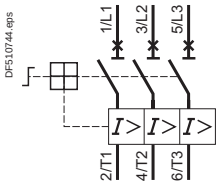
Sets of busbars GV2 G345 and GV2 G354



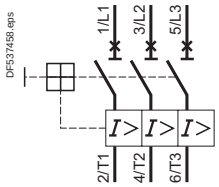
TeSys protection components
Magnetic motor circuit breakers
GV2 L, GV2 LE, GV3 L and GK3 EF80

Magnetic motor circuit breakers

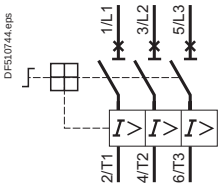
GV2 L●●



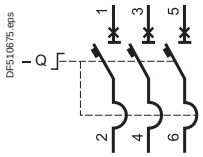
GV2 LE●●



GV3 L●●



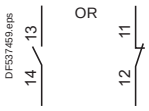
GK3 EF80



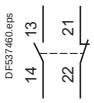
Accessories

Front mounting add-on contact blocks
Instantaneous auxiliary contacts

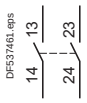
GV AE1



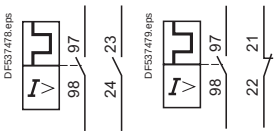
GV AE11



GV AE20

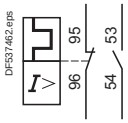


GV AED101 and GV AED011

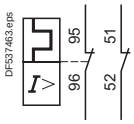


Side mounting add-on contact blocks
Instantaneous auxiliary contacts and fault signalling contacts

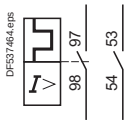
GV AD0110



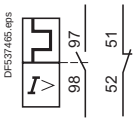
GV AD0101



GV AD1010

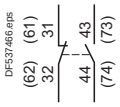


GV AD1001

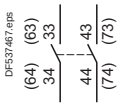


Instantaneous auxiliary contacts

GV AN11

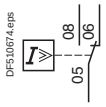


GV AN20



Short-circuit signalling contacts

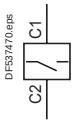
GV AM11



Voltage trips

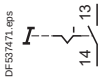
GV AU●●●

GV AS●●●

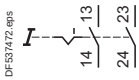


Start-Stop signalling contact blocks

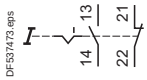
GK2 AX10



GK2 AX20

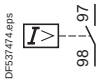


GK2 AX50

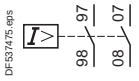


Fault signalling contact blocks

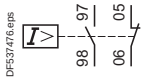
GK2 AX12



GK2 AX22

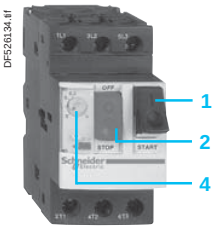


GK2 AX52

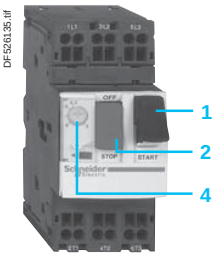


TeSys protection components
Thermal-magnetic motor circuit breakers GV2, GV3 and GV7

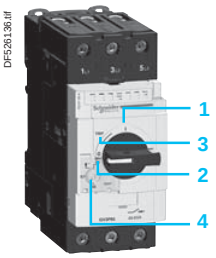
TeSys GV



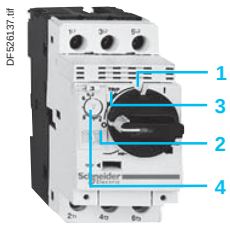
GV2 ME with screw clamp terminals



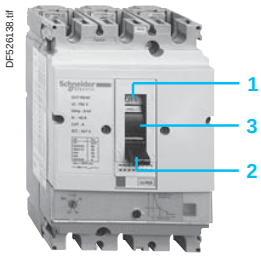
GV2 ME with spring terminals connections



GV3 P



GV2 P



GV7 R

Presentation

GV2 ME, GV2 P, GV3 ME, GV3 P and GV7 R motor circuit breakers are 3-pole thermal-magnetic circuit breakers **specifically designed for the control and protection of motors**, conforming to standards IEC 60947-2 and IEC 60947-4-1.

Connection

GV2

GV2 ME and GV2 P circuit breakers are designed for connection by screw clamp terminals.
Circuit breaker GV2 ME can be supplied with lugs or spring terminal connections.
Spring terminal connections ensure secure, permanent and durable clamping that is resistant to harsh environments, vibration and impact and are even more effective when conductors without cable ends are used. Each connection can take two independent conductors.

GV3

GV3 circuit breakers feature connection by BTR screws (hexagon socket head), tightened using a n° 4 Allen key.
This type of connection uses the **Ever**Link® system with creep compensation (1) (Schneider Electric patent).
This technique makes it possible to achieve accurate and durable tightening torque, in order to avoid cable creep.

GV3 circuit breakers are also available with connection by lugs. This type of connection meets the requirements of certain Asian markets and is suitable for applications subject to strong vibration, such as railway transport.

GV7

GV7 circuit breakers: with connection by screw clamp terminals (for bars and lugs) and by clip-on connectors.

Operation

Control is manual and local when the motor circuit breaker is used on its own.
Control is automatic and remote when it is associated with a contactor.

GV2 ME and GV3 ME80

Pushbutton control.
Energisation is controlled manually by operating the Start button “I” **1**.
De-energisation is controlled manually by operating the Stop button “O” **2**, or automatically by the thermal-magnetic protection elements or by a voltage trip attachment.

GV2 P, GV3 P and GV7 R

- Control by rotary knob: for GV2 P and GV3 P
- Control by rocker lever: for GV7 R.

Energisation is controlled manually by moving the knob or rocker lever to position “I” **1**.
De-energisation is controlled manually by moving the knob or rocker lever to position “O” **2**.
De-energisation due to a fault automatically places the knob or rocker lever in the “Trip” position **3**.
Re-energisation is possible only after having returned the knob or rocker lever to position “O”.

(1) Creep: normal crushing phenomenon of copper conductors, that is accentuated over time.

Characteristics: pages B6/51 to B6/56
References: pages B6/4 to B6/9
Dimensions and schemes: pages B6/70 to B6/83

TeSys protection components
Thermal-magnetic motor circuit breakers GV2, GV3 and GV7

Presentation

Protection of motors and personnel

Motor protection is provided by the thermal-magnetic protection elements incorporated in the motor circuit breaker.

The **magnetic** elements (short-circuit protection) have a non-adjustable tripping threshold, which is equal to 13 times the maximum setting current of the thermal trips.

The **thermal** elements (overload protection) include automatic compensation for ambient temperature variations.
The rated operational current of the motor is displayed by means of a graduated knob **4**.
Personnel protection is also provided. All live parts are protected against direct finger contact from the front panel.

The addition of an undervoltage trip allows the circuit breaker to be de-energised in the event of an undervoltage condition. The user is therefore protected against sudden starting of the machine when normal voltage is restored, since the Start button “I” has to be pressed to restart the motor.

With the addition of a shunt trip, de-energisation of the unit can be remotely controlled.
The operators on both open-mounted and enclosed motor circuit breakers can be locked in the Stop position “O” by up to 4 padlocks.

Because they are suitable for isolation, these circuit breakers, in the open position, provide an adequate isolation distance and indicate the actual position of the moving contacts by the position of the operators.

Special features

These motor circuit breakers are easily installed in any configuration thanks to their universal fixing arrangement: screw fixing or clip-on mounting on symmetrical, asymmetrical or combination rails.

TeSys protection components
Thermal-magnetic motor circuit breakers

TeSys GV

Environment

Circuit breaker type				GV2 ME	GV2 P	GV3 P	GV3 ME80	GV7 R
Conforming to standards				IEC 60947-1, 60947-2, 60947-4-1, EN 60204, UL 508, CSA C 22.2 n° 14-05, NF C 63-650, 63-120, 79-130, VDE 0113, 0660		IEC/EN 60947-1, 60947-2, 60947-4-1, UL 508 type E, CSA C 22.2 n° 14-05 type E	IEC/EN, NF EN, BS EN, DIN EN 60947-2, 60947-4-1	IEC 60947-1, 60947-2, 60947-4-1, EN 60947-1, 60947-2, EN 60947-4-1, NF C 63-650, NF C 63-120, 79-130, VDE 0113, 0660
Product certifications				UL, CSA, CCC, CEBEC, GOST, TSE, BV, GL, LROS , DNV, PTB, EZU, SETI, RINA, ATEX	UL [1], CSA, PTB, EZU, GOST, TSE, DNV, LROS, GL, BV, RINA, CCC, ATEX	UL, CSA, CCC (pending), GOST, ATEX, GL, BV, LROS (DNV, RINA pending)	UL, CSA, LROS	UL, DNV, CCC
Protective treatment				"TH"		"TH"	"TC"	"TC"
Degree of protection (front face)	Conforming to IEC 60529	Open mounted		Against direct finger contact: IP20		Against direct finger contact: IP20	Against direct finger contact: IP20	IP405 with terminal shrouds
		In enclosure		**GV2 M●01**: IP41 **GV2 M●02**: IP55	–	**GV3 PC01** and **GV3 PC02**: IP55	**GV3 CE01**: IP55	–
Shock resistance	Conforming to IEC 60068-2-27			30 gn -11 ms		On: 15 gn -11 ms Off: 30 gn -11 ms	22 gn - 20 ms	15 gn -11 ms
Vibration resistance	Conforming to IEC 60068-2-6			5 gn (5…150 Hz)		4 gn (5…300 Hz)	2.5 gn (0…25 Hz)	2.5 gn (25 Hz)
Ambient air temperature	Storage		**°C**	-40…+80	-40…+80	-40…+80	-40…+80	-55…+95
	Operation	Open mounted	**°C**	-20…+60	-20…+60	-20…+60 [2]	-20…+60	-25… +70
		In enclosure	**°C**	-20…+40	-20…+40	-20…+40	-20…+40	–
Temperature compensation		Open mounted	**°C**	-20…+60	-20…+60	-20…+60	-20…+60	-25… +55 [3]
		In enclosure	**°C**	-20…+40	-20…+40	-20…+40	-20…+40	–
Flame resistance	Conforming to IEC 60695-2-1		**°C**	960		960	960	960
Maximum operating altitude			**m**	2000		3000	3000	2000
Suitable for isolation	Conforming to IEC 60947-1 § 7-1-6			Yes		Yes	–	Yes
Resistance to mechanical impact			**J**	0.5	0.5	10	0.5	0.5
				IK04		IK09 (in enclosure)	–	–
Sensitivity to phase failure				Yes, conforming to IEC 60947-4-1 § 7-2-1-5-2				

Technical characteristics

Circuit breaker type			GV2 ME	GV2 P	GV2 RT	GV3 P	GV3 ME80	GV7 R●20... R●100	GV7 R●150	GV7 R●220
Utilisation category	Conforming to IEC 60947-2		A			A	A	A		
	Conforming to IEC 60947-4-1		AC-3			AC-3	AC-3	AC-3		
Rated operational voltage (Ue)	Conforming to IEC 60947-2	**V**	690			690	690	690		
Rated insulation voltage (Ui)	Conforming to IEC 60947-2	**V**	690			690	690	750		
Rated voltage	Conforming to CSA C22-2 n° 14, UL 508	**V**	600			600	600 (B600)	600		
Rated operational frequency	Conforming to IEC 60947-4-1 UL, CSA	**Hz**	50/60			50/60	50/60	50/60		
Rated impulse withstand voltage (U imp)	Conforming to IEC 60947-2	**kV**	6			6	6	8		
Total power dissipated per pole		**W**	2.5			8	8	5	8.7	14.5
Mechanical durability (C.O.: Close, Open)		**C.O.**	100 000			50 000	30 000	50 000	40 000	20 000
Electrical durability for AC-3 duty	440 V In/2	**C.O.**	100 000			–	30 000	50 000	40 000	20 000
	440 V In	**C.O.**	–			50 000	–	30 000	20 000	10 000
Duty class (maximum operating rate)		**C.O./h**	25			25	25	25		
Maximum conventional rated thermal current (Ith)	Conforming to IEC 60947-4-1	**A**	0.16… 32	0.16… 32	0.40… 23	13… 65	80	12… 100	150	220
Rated duty	Conforming to IEC 60947-4-1		Continuous duty							

*(1) UL 508 type E for **GV2 P●●H7**.*
(2) 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.
(3) For operation up to 70 °C, please consult your Regional Sales Office.

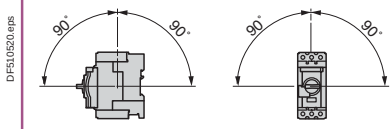
References: pages B6/4 to B6/9
Dimensions: pages B6/70 to B6/81
Schemes: pages B6/82 and B6/83

TeSys protection components
Thermal-magnetic motor circuit breakers

TeSys GV

Mounting characteristics

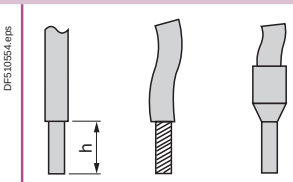
Operating position
Without derating, in relation to normal vertical mounting plane (1)



Connection characteristics

Connection to screw clamp terminals or spring terminals

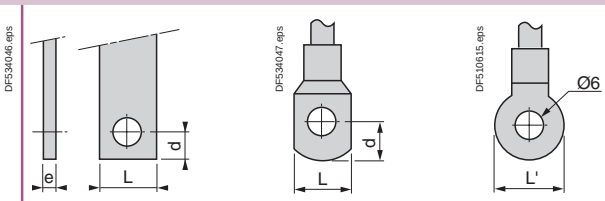
Bare cables



Circuit breaker type			GV2 ME		GV2 P		GV3 P		GV3 ME80	
			Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Connection to screw clamp terminals (2) (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	1 x 25 and 1 x 35	1 x 2.5	1 x 35
	Flexible cable without cable end	mm²	2 x 1.5	2 x 6	2 x 1.5	2 x 6	2 x 1	1 x 25 and 1 x 35	1 x 2.5	2 x 16
	Flexible cable with cable end	mm²	2 x 1	2 x 4	2 x 1	2 x 4	2 x 1	1 x 25 and 1 x 35	1 x 2.5	2 x 16
Tightening torque		N.m	1.7	1.7	1.7	1.7	5	5: 25 mm² 8: 35 mm²	5	5
Connection to spring terminals Number of conductors x c.s.a.	Solid cable	mm²	2 x 1 (3)	2 x 6	–	–	–	–	–	–
	Flexible cable without cable end	mm²	2 x 1.5 (3)	2 x 4	–	–	–	–	–	–

Connection by bars or lugs

Bars or lugs



Circuit breaker type			GV2 ME●●6	GV3 P●●6	GV7 R●20...R●100	GV7 R●150	GV7 R●220
Pitch	Without spreaders	mm	13.5	17.5	35	35	35
	With spreaders	mm	–	–	45	45	45
Bars or cables with lugs	e	mm	≤ 6	≤ 6	≤ 6	≤ 6	≤ 6
	L	mm	≤ 9.5	≤ 13.5	≤ 25	≤ 25	≤ 25
	L'	mm	≤ 9.5	≤ 16.5	–	–	–
	d	mm	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10
Screws			M4	M6	M6	M8	M8
	Tightening torque	N.m	1.7	6	10	15	15
Bare cables (copper or aluminium) with connectors	Height (h)	mm	–	–	20	20	20
	C.s.a.	mm²	–	–	1.5...95	1.5...95	1.5...185
	Tightening torque	N.m	–	–	15	15	15

(1) When mounting on a vertical rail, fit a stop to prevent any slippage.
*(2) For motor circuit breakers **GV3 P**: 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 **LA9 D99** cable end reducer is recommended.*

References: pages B6/4 to B6/9
Dimensions: pages B6/70 to B6/81
Schemes: pages B6/82 and B6/83

Breaking capacity of GV2 ME and GV2 P

Circuit breaker type				GV2 ME									GV2 P							
				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.

TeSys protection components
Thermal-magnetic motor circuit breakers GV2 ME and GV2 P

Breaking capacity of GV2 ME and GV2 P (used in association with current limiter GV1 L3)

Circuit breaker type				GV2 ME									
				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				GV2 P									
				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

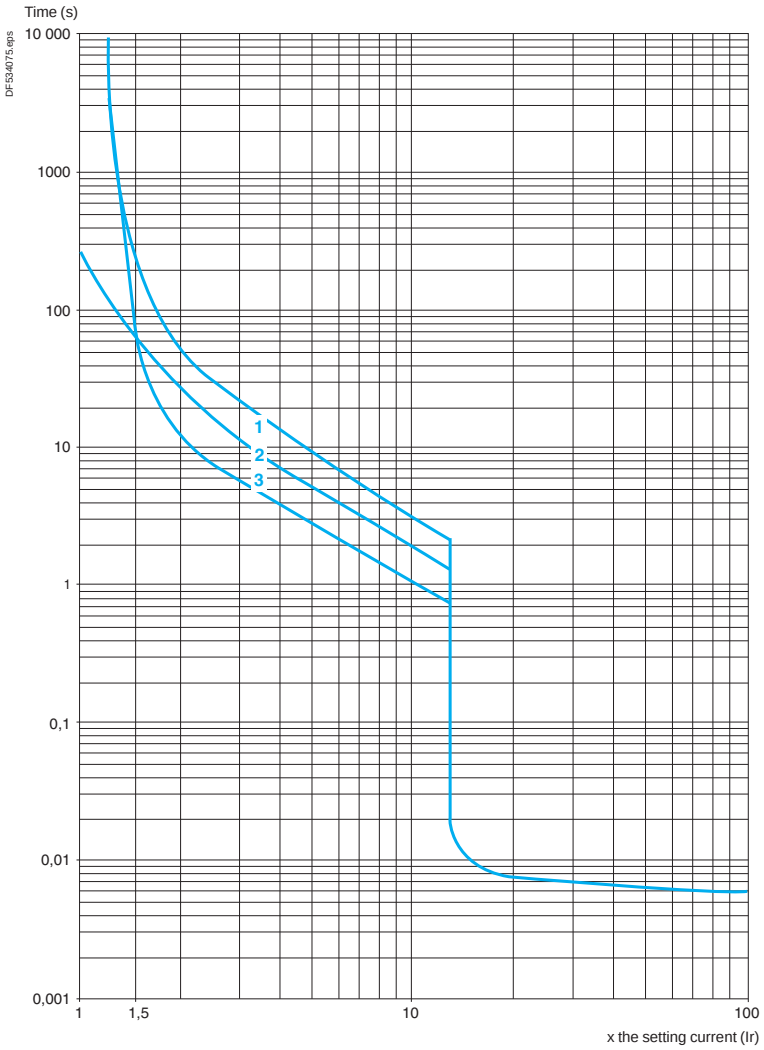
Circuit breaker type				GV2 ME									
				01 to 06	07	08	10	14	16	20	21	22	32
Rating			A	0.1 to 1.6	2.5	4	6.3	10	14	18	23	25	32
Cable protection against thermal stress in the event of short-circuit (PVC insulated copper cables)	Minimum c.s.a. protected at 40 °C at Isc max.	1 mm²		●	●	●	⩽ 10 kA	⩽ 6 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 LA9 LB920.

References: pages B6/4 to B6/6
Dimensions: pages B6/70 to B6/75
Schemes: page B6/82

Thermal-magnetic tripping curves for GV2 ME and GV2 P

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

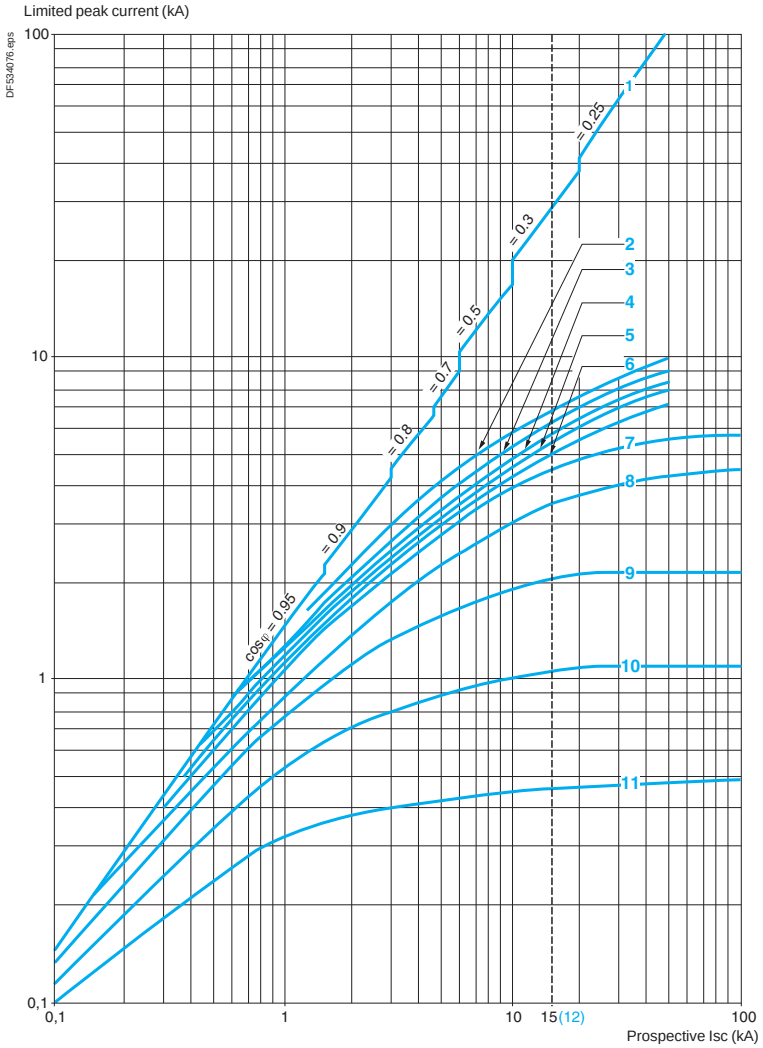


1 3 poles from cold state
2 2 poles from cold state
3 3 poles from hot state

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

Dynamic stress

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

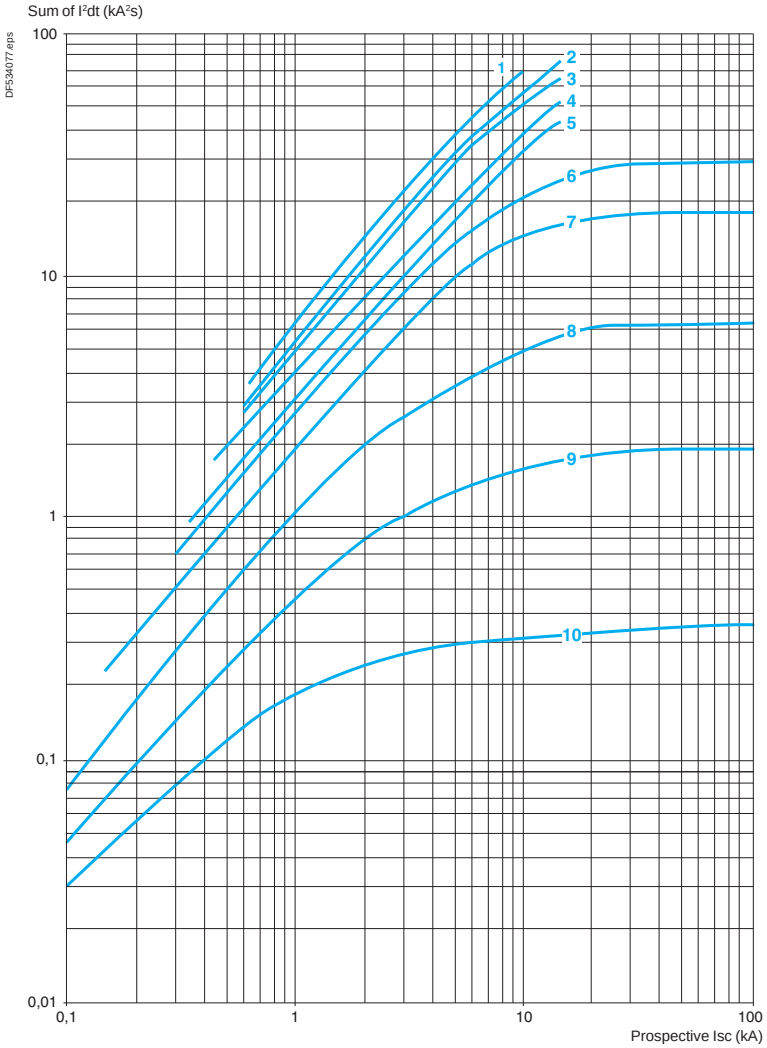


1 Maximum peak current
2 24 -32 A
3 20 -25 A
4 17 -23 A
5 13 -18 A
6 9 -14 A
7 6 -10 A
8 4 -6.3 A
9 2.5 -4 A
10 1.6 -2.5 A
11 1 -1.6 A
12 Limit of rated ultimate breaking capacity on short-circuit of GV2 ME (14, 18, 23 and 25 A ratings)

Thermal limit on short-circuit for GV2 ME

Thermal limit in kA²s in the magnetic operating zone

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

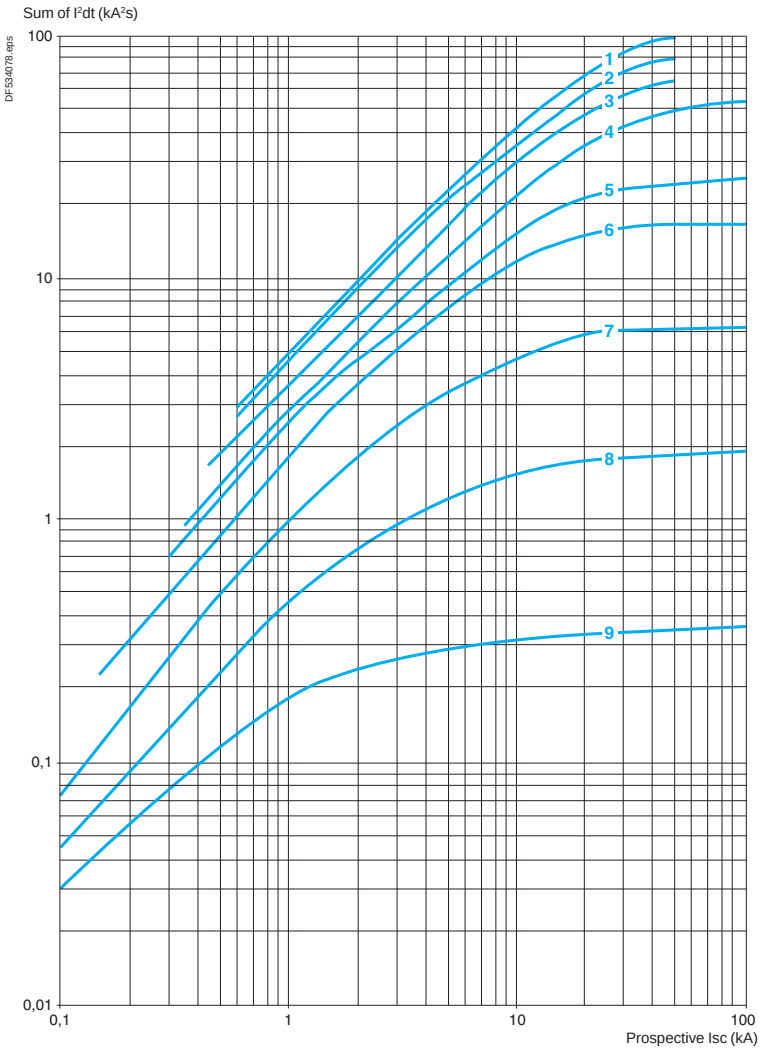


1 24 -32 A
2 20 -25 A
3 17 -23 A
4 13 -18 A
5 9 -14 A
6 6 -10 A
7 4 -6.3 A
8 2.5 -4 A
9 1.6 -2.5 A
10 1 -1.6 A

Thermal limit on short-circuit for GV2 P

Thermal limit in kA²s in the magnetic operating zone

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



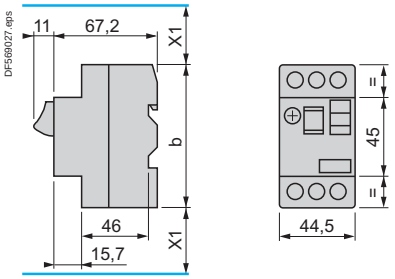
1 24 -32 A
1 20 -25 A
2 17 -23 A
3 13 -18 A
4 9 -14 A
5 6 -10 A
6 4 -6.3 A
7 2.5 -4 A
8 1.6 -2.5 A
9 1 -1.6 A

TeSys protection components
Thermal-magnetic motor circuit breakers GV2 ME and GV2 P

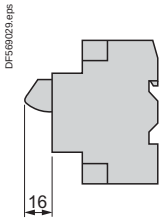
TeSys GV

Dimensions

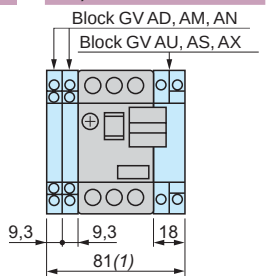
GV2 ME



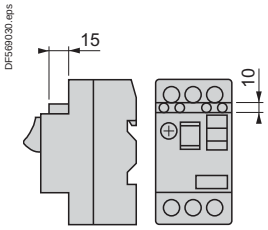
GV AX



GV AD, AM, AN, AU, AS, AX



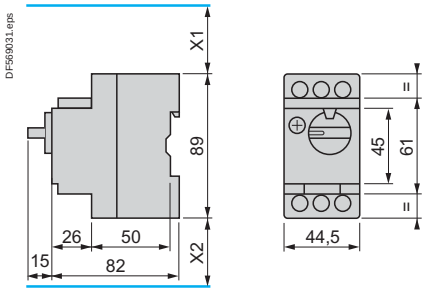
GV AE



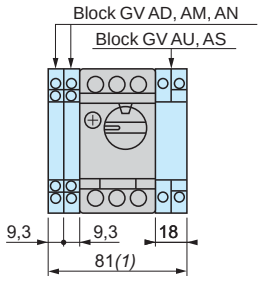
	b
GV2 ME●●	89
GV2 ME●●3	101

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

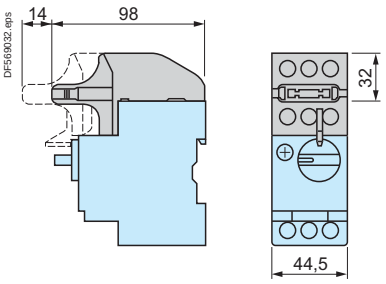
GV2 P



GV AD, AM, AN, AU, AS

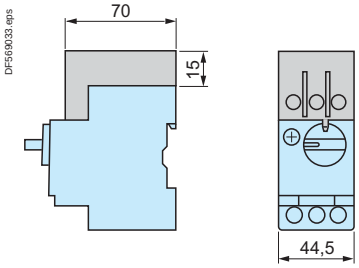


GV2 AK00



(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

GV2 GH7

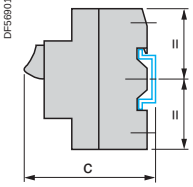


TeSys protection components
Thermal-magnetic motor circuit breakers GV2 ME and GV2 P

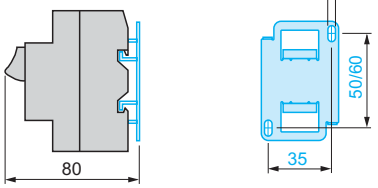
Mounting

GV2 ME

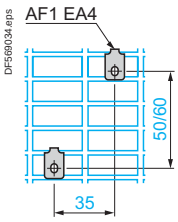
On 35 mm ⊥ rail



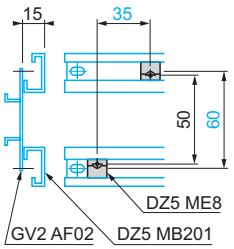
On panel with adapter plate GV2 AF02



On pre-slotted plate AM1 PA



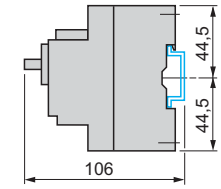
On rails DZ5 MB201



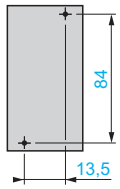
c = 78.5 on AM1 DP200 (35 x 7.5)
c = 86 on AM1 DE200, ED200 (35 x 15)

GV2 P

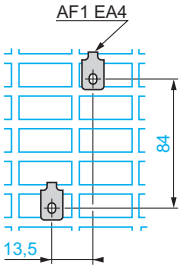
On rail AM1 DE200, ED200 (35 x 15)



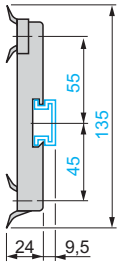
Panel mounted

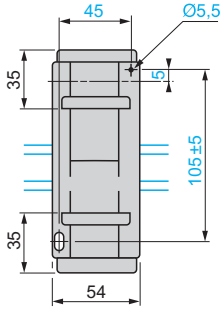


On pre-slotted plate AM1 PA



Adapter plate GK2 AF01

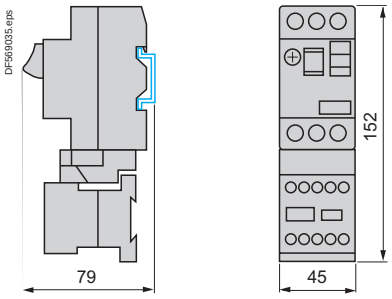




Dimensions

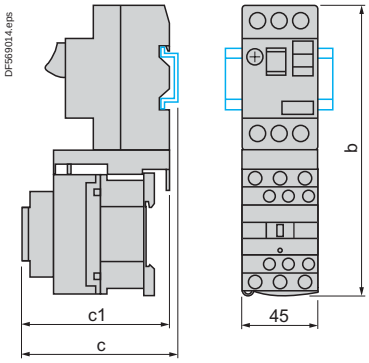
GV2 AF01

Combination GV2 ME + TeSys k contactor

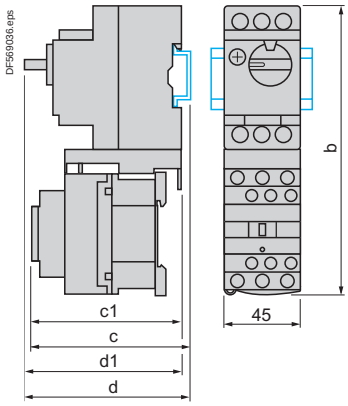


GV2 AF3

Combination GV2 ME + TeSys d contactor



Combination GV2 P + TeSys d contactor



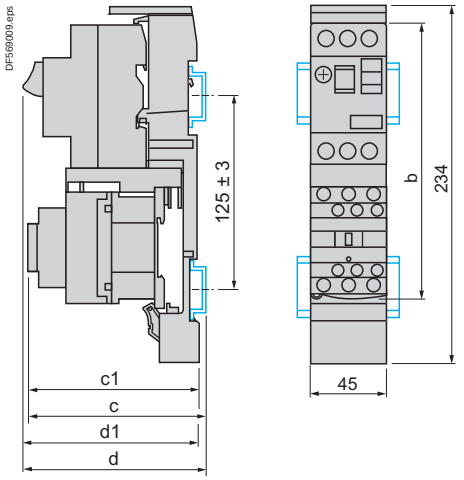
GV2 ME +	LC1 D09 ...D18	LC1 D25 and D32
b	176.4	186.8
c1	94.1	100.4
c	99.6	105.9

GV2 P +	LC1 D09 ...D18	LC1 D25 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

Dimensions

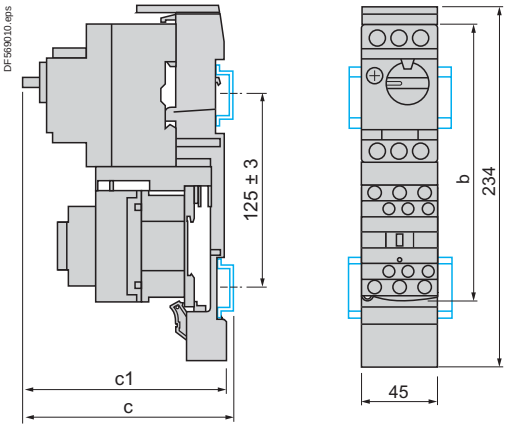
GV2 AF4 + LAD 311

Combination GV2 ME + TeSys d contactor



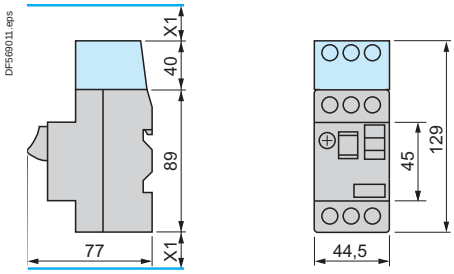
GV2 ME +	LC1 D09…D18	LC1 D25 and D32
b	176.4	186.8
c1	103.1	136.4
c	135.6	141.9
d1	107	107
d	112.5	112.5

Combination GV2 P + TeSys d contactor



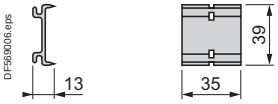
GV2 P +	LC1 D09…D18	LC1 D25 and D32
b	176.4	186.8
c1	136.5	142.4
c	141.6	147.9

GV2 ME + GV1 L3 (current limiter)



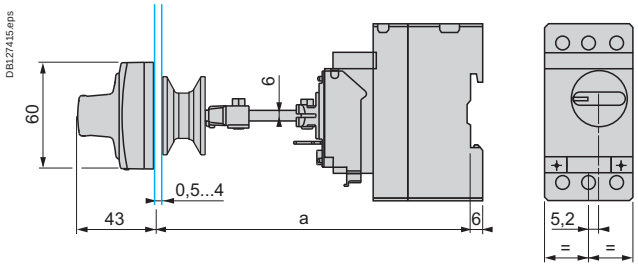
X1 = 10 mm for Ue = 230 V
or 30 mm for 230 V < Ue ≤ 690 V

7.5 mm height compensation plate GV1 F03

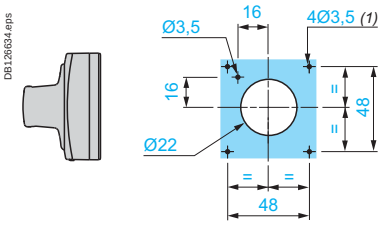


Mounting

Mounting of external operator GV2 APN01, GV2 APN02 or GV2 APN04 for motor circuit breakers GV2 P

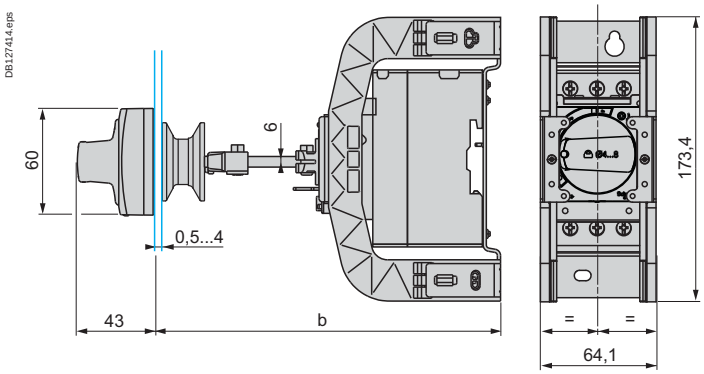


Door cut-out

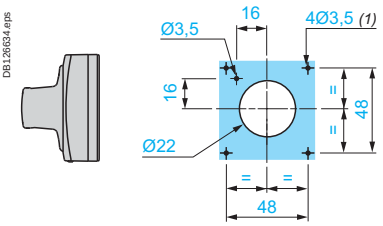


(1) For IP65 only.

Mounting of external operator GV APH02 for motor circuit breakers GV2 P



Door cut-out



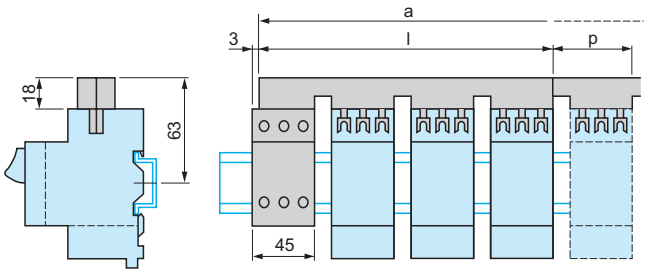
(1) For IP65 only.

	a		b	
	Mini	Maxi	Mini	Maxi
GV2 APN●●	140	250		
GV2 APN●● + GV APH02			151	250
GV2 APN●● + GV APK11	250	434	-	-
GV2 APN●● + GV APH02 + GV APK11	-	-	250	445

GV2 ME, GV2 P

Sets of busbars GV2 G445, GV2 G454, GV2 G472, with terminal block GV2 G05

DF569037.eps

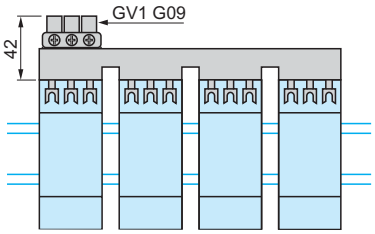


	l	p
GV2 G445 (4 x 45 mm)	179	45
GV2 G454 (4 x 54 mm)	206	54
GV2 G472 (4 x 72 mm)	260	72

	a			
Number of tap-offs	5	6	7	8
GV2 G445	224	269	314	359
GV2 G454	260	314	368	422
GV2 G472	332	404	476	548

Sets of busbars GV2 G●●● with terminal block GV1 G09

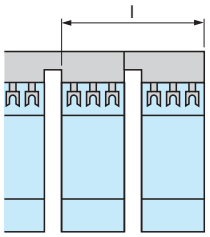
DF569028.eps



	l
GV2 G245 (2 x 45 mm)	89
GV2 G254 (2 x 54 mm)	98
GV2 G272 (2 x 72 mm)	116

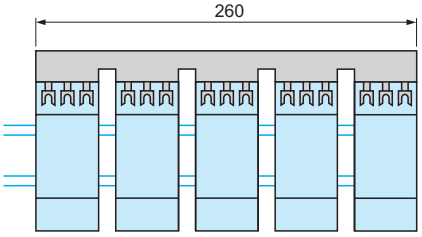
Sets of busbars GV2 G245, GV2 G254, GV2 G272

DF569038.eps



Sets of busbars GV2 G554

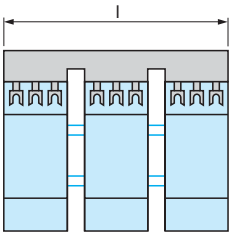
DF569039.eps



	l
GV2 G345 (3 x 45 mm)	134
GV2 G354 (3 x 54 mm)	152

Sets of busbars GV2 G345 and GV2 G354

DF569040.eps

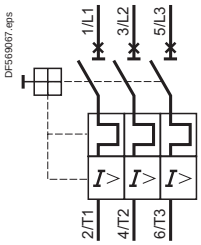


TeSys protection components
Thermal-magnetic motor circuit breakers GV2 ME, GV2 P, GV3 P and GV2 RT

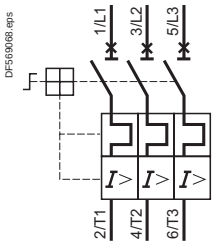
TeSys GV

Schemes

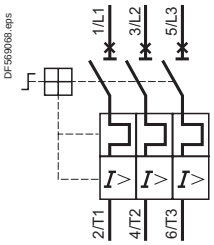
GV2 ME●● and GV2 RT



GV2 P●●

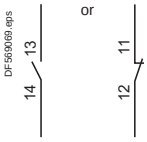


GV3 P●●

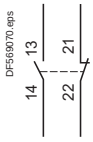


Front mounting add-on contact blocks Instantaneous auxiliary contacts

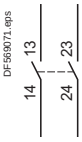
GV AE1



GV AE11

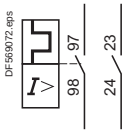


GV AE20

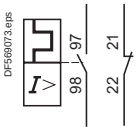


Front mounting add-on contact blocks Instantaneous auxiliary contacts and fault signalling contacts

GV AED101

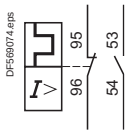


GV AED011

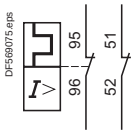


Side mounting add-on contact blocks Instantaneous auxiliary contacts and fault signalling contacts

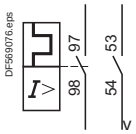
GV AD0110



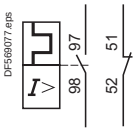
GV AD0101



GV AD1010

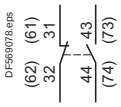


GV AD1001

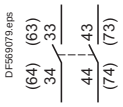


Instantaneous auxiliary contacts

GV AN11

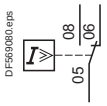


GV AN20



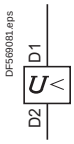
Short-circuit signalling contacts

GV AM11

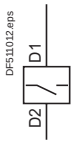


Voltage trips

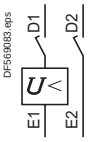
GV AU●●●



GV AS●●●

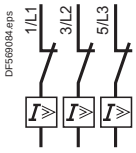


GV AX●●●

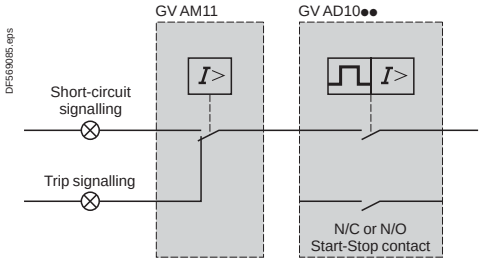


Current limiter

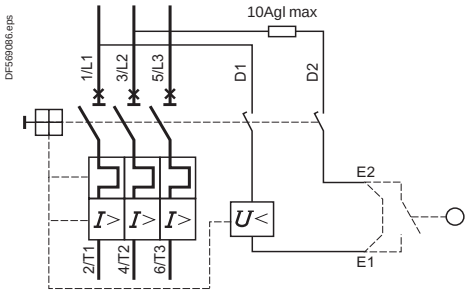
GV1 L3



Use of fault signalling contact and short-circuit signalling contact



Connection of undervoltage trip for dangerous machines (conforming to INRS) on GV2 ME only



TeSys protection components

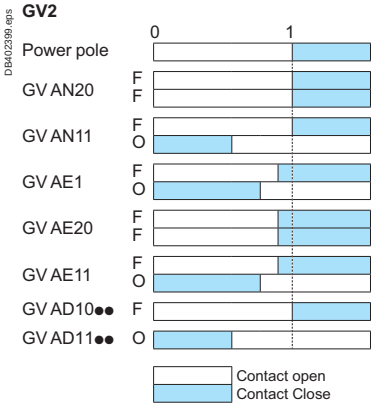
Thermal-magnetic motor circuit breakers GV2, GV3 P and GV3 L

Auxiliary contacts

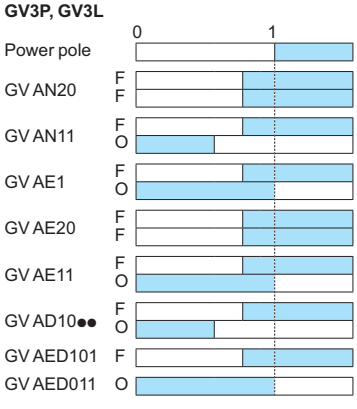
Type of contacts			Instantaneous auxiliary GV AN, GV AD							Fault signalling GV AD, GV AM11 (1)				Instantaneous auxiliary GV AE			
Rated insulation voltage (Ui) (associated insulation coordination)	Conforming to IEC 60947-1	V	690							690				250 (690 in relation to main circuit)			
	Conforming to CSA C22-2 n° 14 and UL 508	V	600							300				300			
Conventional thermal current (Ith)	Conforming to IEC 60947-5-1	A	6							2.5				2.5			
	Conforming to CSA C22-2 n° 14 and UL 508	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**
	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. operation			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**	**–**
	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			**GV AE**: 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 **GB2 CB●●** circuit breaker (rating according to operational current for Ue ≤ 415 V) or by gG fuse 10 A max											**GB2 CB06** or gG fuse 10 A max			
Cabling, screw clamp terminals	Number of conductors		**1**			**2**											
	Solid cable	mm^2	1…2.5			1…2.5											
	Flexible cable without cable end	mm^2	0.75…2.5			0.75…2.5											
	Flexible cable with cable end	mm^2	0.75…1.5			0.75…1.5											
	Tightening torque	N.m	1.4 max			1.4 max											
Cabling, spring terminal connections			**GV AN** only														
	Flexible cable without cable end	mm^2	0.75…2.5			0.75…2.5				–				0.75…1.5			

Operation of instantaneous auxiliary contacts

GV2



GV3P, GV3L



Operation of fault signalling contacts

GV AM11
Change of state following tripping on short-circuit.

GV AD10●● and **GV AD01●●**
Change of state following tripping on short-circuit, overload or undervoltage.

(1) For application example of fault signalling contact and short-circuit signalling contact, see page B6/82.
(2) Add an RC circuit type LA4 D to the load terminals, see page B8/17.

References: page B6/11

Dimensions, schemes: pages B6/38 to B6/48 and B6/70 to B6/83

TeSys protection components

Thermal-magnetic and magnetic motor circuit breakers GV2 and GV3

Accessories

Characteristics of 3-pole busbars GV2 G●●● and GV3 G●64

			GV2 G●●●	GV3 G●64
Rated insulation voltage (Ui)	Conforming to IEC 60947-1	**V**	690	690
Conventional thermal current (Ith)	Conforming to IEC 60439-1	**A**	63	115
Permissible peak current (I peak)		**kA**	11	20
Permissible thermal limit (I^2t)		**kA²s**	104	300
Degree of protection	Conforming to IEC 60529		IP 20	IP 20
Terminal block			Yes	–

Characteristics of terminal blocks GV2 G05 and GV1 G09 (for GV2 ME and GV2 P)

Rated insulation voltage (Ui)	Conforming to IEC 60947-1	**V**	690
Conventional thermal current (Ith)	Conforming to IEC 60439-1	**A**	63
Degree of protection	Conforming to IEC 60529		IP 20
Connection	Solid cable	**mm²**	1 x 1.5 to 25 conductor or 2 x 1.5 to 6 conductors
	Flexible cable without cable end	**mm²**	1 x 1.5 to 16 conductor or 2 x 2.5 to 4 conductors
	Flexible cable with cable end	**mm²**	1 x 1.5 to 10 conductor or 2 x 1.5 to 2 conductors
	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 (GV2 ME and GV2 P)

Type			**GV1 L3**		**LA9 LB920**	
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	**mm²**	1.5…25	1.5…10	1.5…25	1.5…10
	Flexible cable without cable end	**mm²**	1.5…25	2.5…10	1.5…25	1.5…10
	Flexible cable with cable end	**mm²**	1.5…16	1.5… 4	1.5…16	1.5… 4
Tightening torque		**N.m**	2.2			

References:
page B6/13