

Protection components

Thermal-magnetic motor circuit breakers types GV2-M and GV2-P

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GV2-M with screw clamp connections

Presentation

Motor circuit breakers GV2-M and GV2-P are 3-pole thermal-magnetic circuit breakers **specifically designed for the control and protection of motors**, conforming to standards IEC 947-2 and IEC 947-4-1.

Type of connection

GV2-M and GV2-P motor circuit breakers are designed for connection by screw clamp connectors. Motor circuit breaker GV2-M can be supplied with **spring terminal connections**.

This technique makes it possible to ensure secure and permanent tightness, resistant to harsh environments, vibration and impact, which is even more effective if conductors without cable ends are used. Each connector can take two independent conductors.

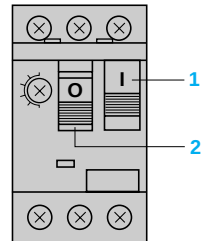
Range

GV2-M with screw clamp connections: 0.1 to 32 A i.e. up to 15 kW at 400 V, breaking capacity 10 to 100 kA.

GV2-M with spring terminal connections: 0.1 to 25 A i.e. up to 11 kW at 400 V, breaking capacity 15 to 100 kA.

GV2-P screw clamp connections: 0.1 to 25 A i.e. up to 11 kW at 400 V, breaking capacity 50 to 100 kA.

Operation

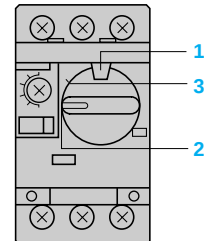


GV2-M

GV2-M: 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

GV2-P: control by rotary knob.

Energisation is controlled manually by turning the knob to position "I" **1**.

De-energisation is controlled manually by turning the knob to position "O" **2**.

De-energisation due to a fault automatically places the knob in the "Trip" position **3**. Re-energisation is possible only after having returned the knob to position "O".



GV2-P

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.

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 about 13 times the maximum setting current of the thermal trips.

The **thermal** elements (overload protection) include automatic compensation for ambient temperature variations between - 20 °C and + 60 °C for open mounting and between - 20 °C and + 40 °C for enclosed mounting.

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.

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 3 padlocks.

Because it is suitable for isolation, the GV2, in the open position, provides an adequate isolation distance and indicates the actual position of the moving contacts by the position of the operators.

Special features

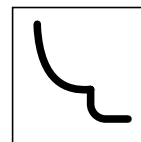
These motor circuit breakers are easily installed in any configuration thanks to their universal fixing arrangement: screw fixing or clip-on mounting on omega, asymmetrical or combination rails.

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GV2-M

Thermal-magnetic motor circuit breakers GV2-M with screw clamp connections

Pushbutton control

Standard power ratings of 3-phase motors 50/60 Hz in category AC-3					Setting range of thermal trips	Magnetic tripping current I _d ± 20 %	Thermal current I _{th} in GV2-M... enclosure	Reference	Weight
220 V	415 V	440 V	500 V	690 V					
kW	kW	kW	kW	kW	A	A	A		kg
—	—	—	—	—	0.1...0.16	1.5	0.16	GV2-M01	0.260
—	0.06	0.06	—	—	0.16...0.25	2.4	0.25	GV2-M02	0.260
0.06	0.09	0.09 0.12	—	—	0.25...0.40	5	0.40	GV2-M03	0.260
—	0.12 0.18	0.18	—	0.37	0.40...0.63	8	0.63	GV2-M04	0.260
0.09 0.12	0.25 0.37	0.25 0.37	0.37	0.55	0.63...1	13	1	GV2-M05	0.260
0.18 0.25	0.37 0.55	0.37 0.55	0.37 0.55 0.75	0.75 1.1	1...1.6	22.5	1.6	GV2-M06	0.260
0.37	0.75	0.75 1.1	1.1	1.5	1.6...2.5	33.5	2.5	GV2-M07	0.260
0.55 0.75	1.1 1.5	1.5	1.5 2.2	2.2 3	2.5...4	51	4	GV2-M08	0.260
1.1	2.2	2.2 3	3	4	4...6.3	78	6.3	GV2-M10	0.260
1.5 2.2	3 4	4	4 5.5	5.5 7.5	6...10	138	9	GV2-M14	0.260
2.2 3	5.5	5.5 7.5	7.5	9 11	9...14	170	13	GV2-M16	0.260
4	7.5	7.5 9	9	15	13...18	223	17	GV2-M20	0.260
5.5	9 11	11	11	18.5	17...23	327	21	GV2-M21	0.260
5.5	11	11	15	22	20...25	327	23	GV2-M22 (1)	0.260
7.5	15	15	18.5	22	24...32	—	24	GV2-M32	0.260

Thermal-magnetic motor circuit breakers GV2-M with built-in auxiliary contact block

With instantaneous auxiliary contact block (composition, see page 21034/7):

- GV2-AE1, add suffix **AE1TQ** to the motor circuit breaker reference selected above. Example: **GV2-M01AE1TQ**.
 - GV2-AE11, add suffix **AE11TQ** to the motor circuit breaker reference selected above. Example: **GV2-M01AE11TQ**.
 - GV2-AN11, add suffix **AN11TQ** to the motor circuit breaker reference selected above. Example: **GV2-M01AN11TQ**.
- These thermal-magnetic motor circuit breakers with built-in contact block are sold in lots of 20 parts in a single pack.

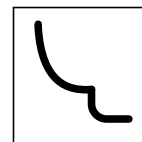
(1) Maximum rating that can be mounted in enclosures shown on page 21020/3.

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GV2-M003

Thermal-magnetic motor circuit breakers GV2-M with spring terminal connections (1)

Pushbutton control				Setting range of thermal trips	Magnetic tripping current I _d ± 20 %	Reference	Weight
Standard power ratings of 3-phase motors 50/60 Hz in category AC-3							
220 V	400 V						
230 V	415 V	440 V	500 V				
kW	kW	kW	kW	A	A		kg
–	–	–	–	0.1...0.16	1.5	GV2-M013▲	0.280
–	0.06	0.06	–	0.16...0.25	2.4	GV2-M023▲	0.280
0.06	0.09	0.09 0.12	–	0.25...0.40	5	GV2-M033▲	0.280
–	0.12 0.18	0.18	–	0.40...0.63	8	GV2-M043▲	0.280
0.09 0.12	0.25 0.37	0.25 0.37	0.37	0.63...1	13	GV2-M053▲	0.280
0.18 0.25	0.37 0.55	0.37 0.55	0.37 0.55 0.75	1...1.6	22.5	GV2-M063▲	0.280
0.37	0.75	0.75 1.1	1.1	1.6...2.5	33.5	GV2-M073▲	0.280
0.55 0.75	1.1 1.5	1.5	1.5 2.2	2.5...4	51	GV2-M083▲	0.280
1.1	2.2	2.2 3	3	4...6.3	78	GV2-M103▲	0.280
1.5 2.2	3 4	4	4 5.5	6...10	138	GV2-M143▲	0.280
2.2 3	5.5	5.5 7.5	7.5	9...14	170	GV2-M163▲	0.280
4	7.5	7.5 9	9	13...18	223	GV2-M203▲	0.280
5.5	9 11	11	11	17...23	327	GV2-M213▲	0.260
5.5	11	11	15	20...25	327	GV2-M223▲	0.260

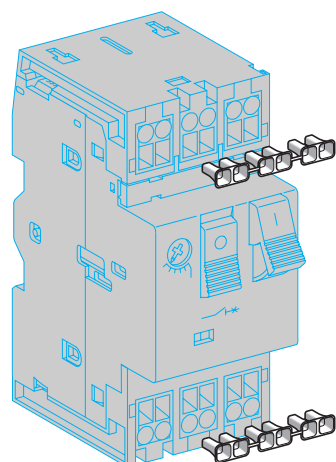
Contact blocks

Description	Mounting	Max. number	Type of contacts	Sold in lots of	Unit reference	Weight kg
Instantaneous auxiliary contacts	Front	1	N/O + N/C	10	GV2-AE113▲	0.030
			N/O + N/O	10	GV2-AE203▲	0.030
	LH side	2	N/O + N/C	1	GV2-AN113▲	0.060
			N/O + N/O	1	GV2-AN203▲	0.060

Accessory

Description	Application	Sold in lots of	Unit reference	Weight kg
Cable end adaptors	For connecting conductors from 1 to 1.5 mm ²	20	LA9-D99	–

(1) For connecting conductors with a c.s.a. of 1 to 1.5 mm², it is advisable to use a cable end adaptor LA9-D99.



LA9-D99

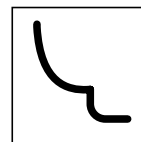
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Protection components

Thermal-magnetic motor circuit breakers type GV2-P

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References (continued)

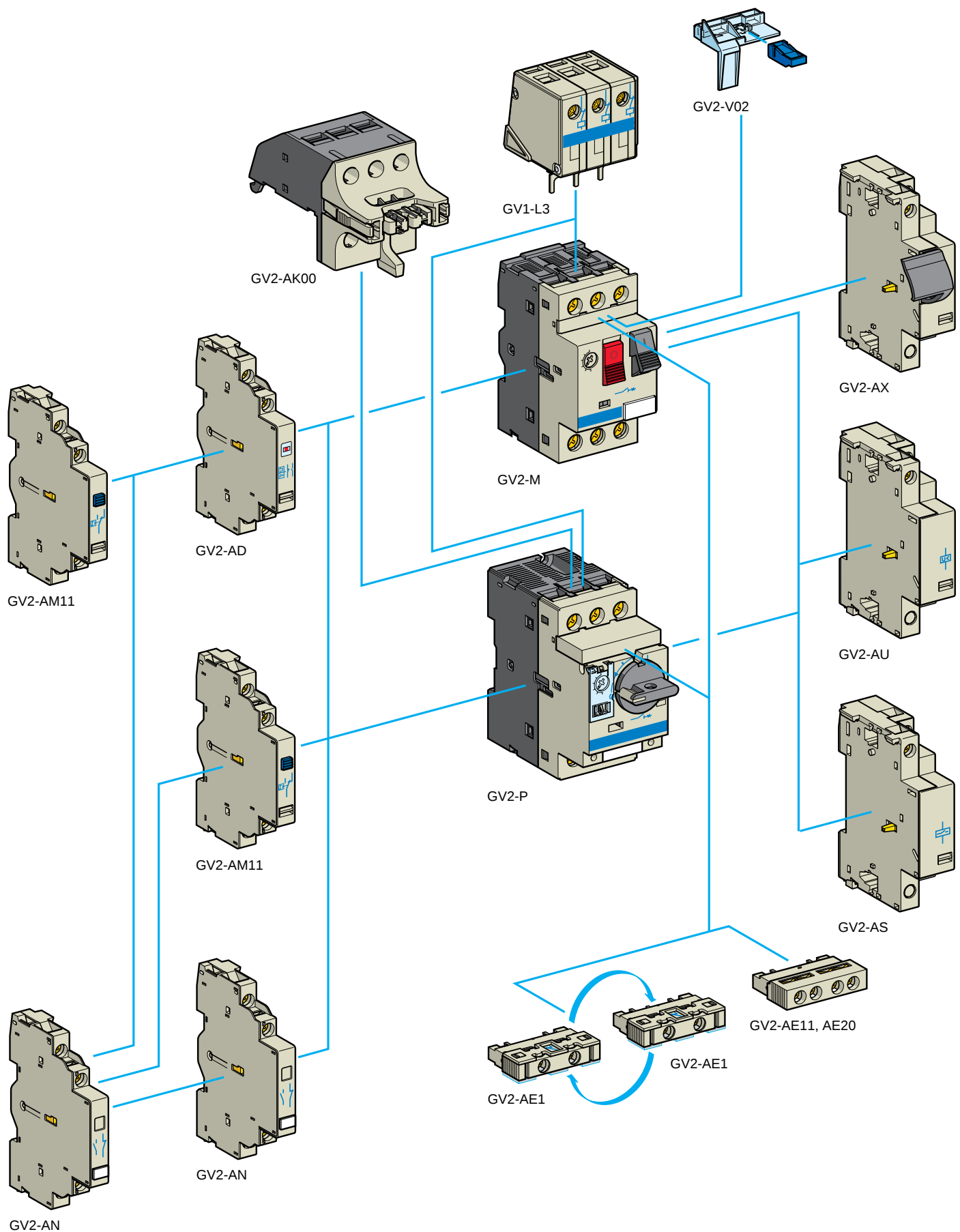


GV2-P

Thermal-magnetic motor circuit breakers GV2-P with screw clamp connections

Control by rotary knob

Standard power ratings of 3-phase motors 50/60 Hz in category AC-3					Setting range of thermal trips	Magnetic tripping current I _d ± 20 %	Reference	Weight
220 V	400 V	440 V	500 V	690 V				
kW	kW	kW	kW	kW	A	A		kg
–	–	–	–	–	0.1...0.16	1.5	GV2-P01	0.350
–	0.06	0.06	–	–	0.16...0.25	2.4	GV2-P02	0.350
0.06	0.09	0.09 0.12	–	–	0.25...0.40	5	GV2-P03	0.350
–	0.12 0.18	0.18	–	0.37	0.40...0.63	8	GV2-P04	0.350
0.09 0.12	0.25 0.37	0.25 0.37	0.37	0.55	0.63...1	13	GV2-P05	0.350
0.18 0.25	0.37 0.55	0.37 0.55	0.37 0.55 0.75	0.75 1.1	1...1.6	22.5	GV2-P06	0.350
0.37	0.75	0.75 1.1	1.1	1.5	1.6...2.5	33.5	GV2-P07	0.350
0.55 0.75	1.1 1.5	1.5	1.5 2.2	2.2 3	2.5...4	51	GV2-P08	0.350
1.1	2.2	2.2 3	3	4	4...6.3	78	GV2-P10	0.350
1.5 2.2	3 4	4	4 5.5	5.5 7.5	6...10	138	GV2-P14	0.350
2.2 3	5.5	5.5 7.5	7.5	9 11	9...14	170	GV2-P16	0.350
4	7.5	7.5 9	9	15	13...18	223	GV2-P20	0.350
5.5	9 11	11	11	18.5	17...23	327	GV2-P21	0.350
5.5	11	11	15	22	20...25	327	GV2-P22	0.350



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Contact blocks

Description	Mounting	Max. n° of blocks	Contact types	Sold in lots of	Unit reference	Weight kg
Instantaneous auxiliary contacts	Front (1)	1	N/O or N/C (2)	10	GV2-AE1	0.015
			N/O + N/C	10	GV2-AE11	0.020
			N/O + N/O	10	GV2-AE20	0.020
	LH side	2	N/O + N/C	1	GV2-AN11	0.050
			N/O + N/O	1	GV2-AN20	0.050
Fault signalling contact + instantaneous auxiliary contact	LH side (3)	1	N/O	+ N/O 1	GV2-AD1010	0.055
			(fault)	+ N/C 1	GV2-AD1001	0.055
			N/C	+ N/O 1	GV2-AD0110	0.055
			(fault)	+ N/C 1	GV2-AD0101	0.055
Short-circuit signalling contact	LH side	1	C/O common point	1	GV2-AM11	0.045

Electric trips

Mounting	Voltage	Reference	Weight kg
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Undervoltage trips and shunt trips (4)

Side (1 block on RH side of breaker)	24 V	50 Hz	GV2-A●025	0.105
		60 Hz	GV2-A●026	0.105
	48 V	50 Hz	GV2-A●055	0.105
		60 Hz	GV2-A●056	0.105
	100 V	50 Hz	GV2-A●107	0.105
	100...110 V	60 Hz	GV2-A●107	0.105
	110...115 V	50 Hz	GV2-A●115	0.105
		60 Hz	GV2-A●116	0.105
	120...127 V	50 Hz	GV2-A●125	0.105
	127 V	60 Hz	GV2-A●115	0.105
	200 V	50 Hz	GV2-A●207	0.105
	200 V...220 V	60 Hz	GV2-A●207	0.105
	220 V...240 V	50 Hz	GV2-A●225	0.105
		60 Hz	GV2-A●226	0.105
	380 V...400 V	50 Hz	GV2-A●385	0.105
		60 Hz	GV2-A●386	0.105
	415 V...440 V	50 Hz	GV2-A●415	0.105
	415 V	60 Hz	GV2-A●416	0.105
	440 V	60 Hz	GV2-A●385	0.105
	480 V	60 Hz	GV2-A●415	0.105
	500 V	50 Hz	GV2-A●505	0.105
	600 V	60 Hz	GV2-A●505	0.105

INRS undervoltage trip (only suitable for mounting on GV2-M)

Safety device for dangerous machines conforming to INRS and VDE 0113

Side (1 block on RH side of breaker)	110...115 V	50 Hz	GV2-AX115	0.110
		60 Hz	GV2-AX116	0.110
	127 V	60 Hz	GV2-AX115	0.110
		50 Hz	GV2-AX225	0.110
	220...240 V	60 Hz	GV2-AX226	0.110
		50 Hz	GV2-AX385	0.110
	380...400 V	60 Hz	GV2-AX386	0.110
		50 Hz	GV2-AX415	0.110
	415...440 V	50 Hz	GV2-AX385	0.110
	440 V	60 Hz	GV2-AX385	0.110

Add-on blocks

Description	Mounting	Max. n° of blocks	Sold in lots of	Unit reference	Weight kg
Isolation block (5)	Frontal (1)	1	1	GV2-AK00	0.150
Limiters	At top	1	1	GV1-L3	0.130
	Separate	1	1	LA9-LB920	0.320
Sealing kit for GV2-M	Front	—	10	GV2-V02	0.010

(1) Mounting of a **GV2-AE** contact block or a **GV2-AK00** visible isolation block on **GV2-P**.

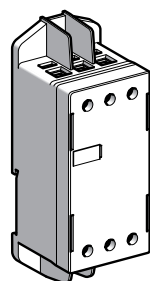
(2) Choice of N/C or N/O contact operation depending on which way round the reversible block is mounted.

(3) The **GV2-AD** is always mounted next to the circuit breaker.

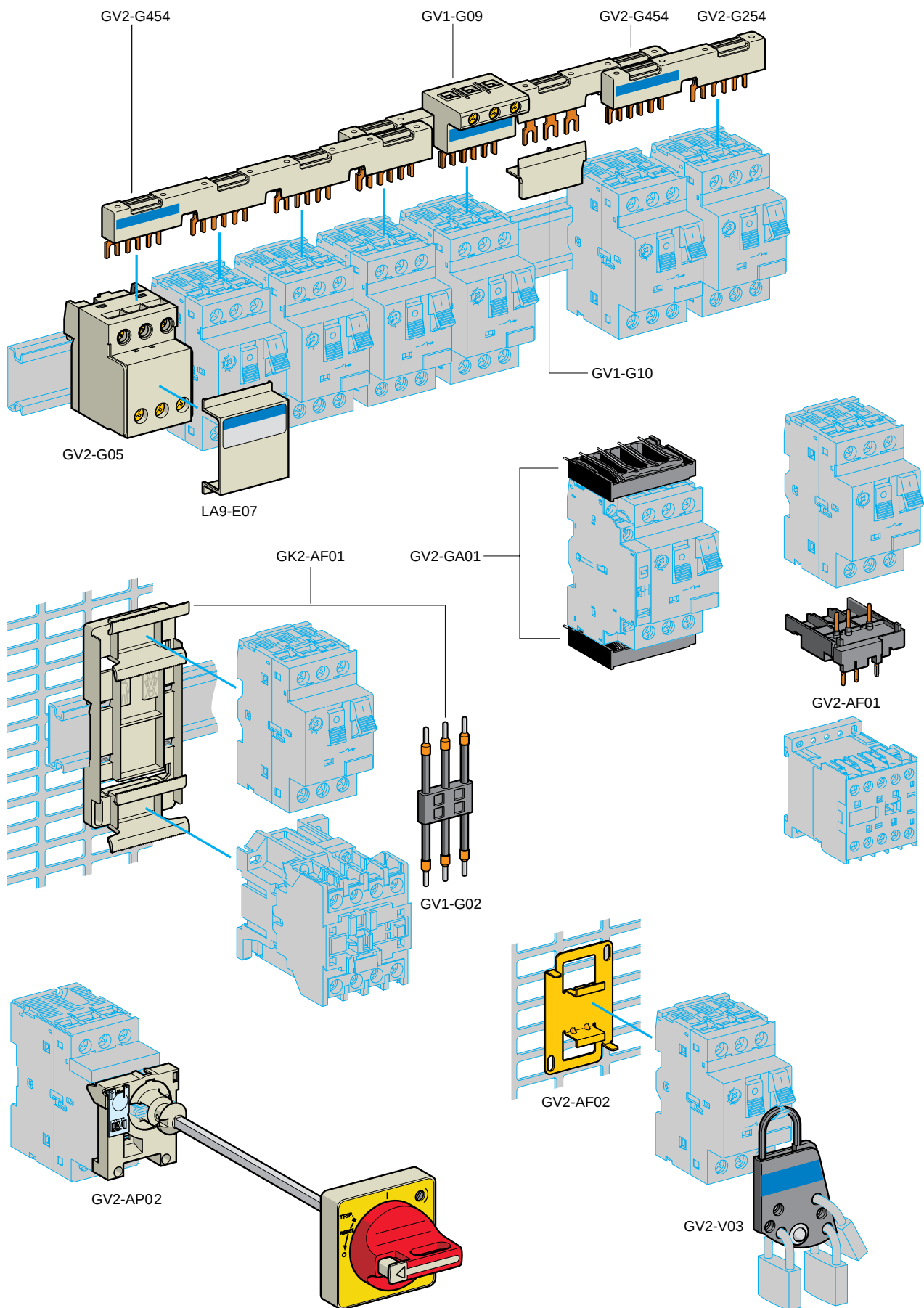
(4) To order an undervoltage trip replace the dot in the reference by the letter **U**, example: **GV2-AU025**.

To order a shunt trip replace the dot in the reference by the letter **S**, example: **GV2-AS025**.

(5) 3-pole visible isolation on incoming side of **GV2-P** motor circuit breaker.



LA9-LB920



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Mounting accessories

Description	Application	Sold in lots of	Unit reference	Weight kg
Motor starter adaptor plate	With 3-pole connection for mounting of a GV2 and an LC1-D09 to D25 contactor	1	GK2-AF01	0.120
Adaptor plate	For screw fixing of a GV2-M	10	GV2-AF02	0.021
Height compensation plate	7.5 mm	10	GV1-F03	0.003
Combination block	Between GV2-M and LC1-K or LP1-K contactor	10	GV2-AF01	0.020

Cabling accessories

Description	Application	Pitch mm	Reference	Weight kg
Sets of 3-pole busbars 63 A	2 tap-offs	45	GV2-G245	0.036
		54	GV2-G254	0.038
		72	GV2-G272	0.042
	3 tap-offs	54	GV2-G354	0.060
	4 tap-offs	45	GV2-G445	0.077
		54	GV2-G454	0.085
		72	GV2-G472	0.094
	5 tap-offs	54	GV2-G554	0.100
Description	Application	Sold in lots of	Unit reference	Weight kg
Protective end cover	For unused busbar outlets	5	GV1-G10	0.005
Terminal blocks for supply to one or more GV2-G busbar sets	Connection from the top	1	GV1-G09	0.040
	Can be fitted with a GV1-L3 current limiter	1	GV2-G05	0.115
Cover for terminal block	For mounting in modular panels	10	LA9-E07	0.005
Flexible 3-pole connection For connecting a GV2 to an LC1-D09...D25 contactor	Centre distance between mounting rails: 100...120 mm	10	GV1-G02	0.013
Set of connections upstream/downstream	For GV2-M on printed circuit	10	GV2-GA01	0.045

Marking accessories

Clip-in marker holders (supplied with each motor circuit breaker)	For GV2-M (8 x 17 mm)	100	LA9-D90	0.001
	For GV2-P (8 x 22 mm)	100	LA9-D92	0.001

Padlockable external operator

Description	Reference	Weight kg
For GV2-P (150 to 290 mm)	Padlocking in On and Off position Black handle, blue legend plate, IP 54	GV2-AP01 0.200
	Padlocking in Off position Red handle, yellow legend plate, IP 54	GV2-AP02 0.200

Padlocking device

For all GV2 breakers	6 padlocks, Ø 6 mm shank max. (padlocks not supplied)	GV2-V03 0.130
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