

Circuit breakers for motor protection and control

Deca, Giga motor circuit breakers provide compact, reliable and efficient solutions for:

- isolation,
- protection against short circuits and overloads,
- On-Off manual control of motors from 0.06 to 250 kW.

They are conforming to, depending of the versions, IEC/EN 60947-1, IEC/EN 60947-2, IEC/EN 60947-4-1 and UL 60947-4-1, CSA 22.2 n° 60947-4-1.

Deca, Giga protection technologies

Deca, Giga circuit breakers are carried with 3 variants:

- Magnetic detection: product references GV2LE, GV2L, GV3L, GV4L, GV4LE for protection against short-circuit.
 - Thermal-magnetic: product references GV2ME ⁽¹⁾, GV2P, GV3P, GV4P, GV4PE, GV5, GV6 for protection against short-circuits, overload, phase loss and phase unbalance.
 - Advanced: product references GV4PEM combines GV4P protections and motor jam, long start, ground-fault protections.
- With a magnetic circuit breaker, a thermal relay is frequently associated in order to have a short circuit protection and an overload protection.

TeSys Deca - Frame 2 circuit breakers: 45 mm width, for motors up to 15 kW

The most commonly used circuit breaker. with a choice of about 100 auxiliaries and accessories. TeSys Deca Frame 2 circuit breakers and TeSys K, Deca contactors can be easily assembled as a single block with one accessory.

The high Frame 2 electrical endurance (up to 100 000 operating cycles) makes it very suitable for direct manual motor control, especially ref. GV2ME ⁽¹⁾ (thermal-magnetic c.b., lth up to 32 A).

Enclosure mounting is well adapted to ref. GV2L and GV2P, with their possible extended rotary handle and visible trip indication.

TeSys Deca - Frame 3 circuit breakers: 55 mm width, for motors up to 45 kW

High performance breakers, high breaking capacity (Ics 100 kA/400 V for ratings up to 32 A, 50 kA up to 80 A).

Wide choice of auxiliaries / accessories, possible extended rotary handle. Visible tri indication.

Patented Everlink connectors provide everlasting connection (no re-tightening required).

Direct monoblock starter assembly with TeSys Deca contactors. No accessory required.

TeSys Deca - Frame 4 circuit breakers: 81 mm width, for motors up to 55 kW

State-of-the-art technology, TeSys Deca Frame 4 is compact and robust. Electronic core of ref. GV4P gives a great detection accuracy, with alarming and advanced protections for ref. GV4PEM, GV4PB.

Magnetic, electronic thermal-magnetic, or electronic thermal-magnetic with advanced protections versions.

Ratings up to 115 A with breaking capacity Ics of 25 kA/400 V (B series), 50 kA/400 V (N series) or 100 kA/400 V (S series).

TeSys Giga - Frame 5: 105 mm width, for motors up to 110 kW / Frame 6: 140 mm width, for motors up to 250 kW

TeSys Giga - Frame 5 and 6 with advanced thermal-magnetic trip unit provide more effective protection to high power motors in the most demanding appliances.

They provide protection to motors against overloads with selection of a trip class (5, 10 or 20), short-circuits, phase unbalance or phase loss.

Adjustable over-load and short circuit current settings provide flexibility.

Wide choice of auxiliaries/accessories are available for indication, control and operation.



⁽¹⁾ Ref. GV2ME●●AP are specific GV2ME references for CEE zone.



Characteristics:
p. B6/102 to B6/105

Curves:
p. B6/109 to B6/111

Dimensions:
p. B6/115 to B6/116

Schemes:
p. B6/117



GV3P80



GV3P651



GV3P736

Motor circuit breakers up to 45 kW / 400 V

Deca - Frame 3 (ref. GV3P): control by rotary handle, connection by EverLink® BTR screw connectors ⁽⁵⁾

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

400/415 V			500 V			690 V			Setting range of thermal trips ⁽²⁾	Magnetic tripping current I _n ± 20 %	Reference
P	I _{cu}	I _{cs} ⁽¹⁾	P	I _{cu}	I _{cs} ⁽¹⁾	P	I _{cu}	I _{cs} ⁽¹⁾			
kW	kA	%	kW	kA	%	kW	kA	%	A	A	
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
37	50	60	45	12	50	55	6	50	62...73	1120	GV3P73
45	50	60	45	12	50	55	6	50	70...80	1120	GV3P80 ⁽³⁾

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

To assemble a GV3P32 to P73 circuit breaker with an LC1D40A to D73A 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: ref. GV3P73 becomes GV3P731. Do not use direct mounting between GV3P80 and LC1D80A because of potential overheating, use cable link.

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: GV3P25 becomes GV3P256.

Motor circuit breakers up to 40 HP / 460 V, UL 60947-4-1 type E

Deca - Frame 3 - ref. GV3P13 to GV3P65

To obtain a motor-circuit breaker GV3P, UL 60947-4-1 type E, use the following with the circuit breaker:

- a "Large Spacing" cover GV3G66,
- a short-circuit signalling contact GVAM11.

Motor circuit breakers from 7.5 to 50 HP / 460 V

Deca - Frame 3 (ref. GV3P): control by rotary handle, connection by screw clamp terminals

Maximum Horsepower ratings ⁽⁴⁾

Single-Phase		Three-Phase				Setting range of thermal trips (A)	Reference
115 V	230 V	200 V	230 V	460 V	575 V		
1/2	1.5	3	3	7.5	10	9...13	GV3P13
3/4	2	3	5	7.5	10	12...18	GV3P18
1.5	3	5	7.5	15	20	17...25	GV3P25
2	3	7.5	7.5	20	25	23...32	GV3P32
3	5	10	10	25	30	30...40	GV3P40
3	7.5	10	10	30	40	37...50	GV3P50
3	10	15	15	40	50	48...65	GV3P65
5	15	20	25	50	60	62...73	GV3P73

Deca - Frame 3 - ref. GV3P13 to GV3P65 - with connection by lugs

To obtain a motor-circuit breaker ref. GV3P, UL 60947-4-1 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 LAD96570,
- a short-circuit signalling contact GVAM11.

⁽¹⁾ As % of I_{cu}.

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

⁽³⁾ For applications with stable full load current with maximum 80 A and Lock Rotor Current maximum 750 A.

⁽⁴⁾ 3P FLA corresponding values: see page A5/142.

⁽⁵⁾ BTR screws: hexagon socket head. Requires the use of an insulated Allen key, in compliance with local wiring regulations.

TeSys Power

Deca, Giga and Modular Motor circuit breakers

Product references

29450	GV2LE06	GV2P05	GV4AE11
29452	GV2LE07	GV2P06	GV4APN01
GB2CB05	GV2LE08	GV2P07	GV4APN02
GB2CB06	GV2LE10	GV2P08	GV4APN04
GB2CB07	GV2LE14	GV2P10	GV4AS027
GB2CB08	GV2LE16	GV2P14	GV4AS057
GB2CB09	GV2LE20	GV2P16	GV4AS137
GB2CB10	GV2LE22	GV2P20	GV4AS287
GB2CB12	GV2LE32	GV2P21	GV4AS487
GB2CB14	GV2ME01	GV2P22	GV4AU027
GB2CB16	GV2ME013	GV2P32	GV4AU057
GB2CB20	GV2ME016	GV2PC01	GV4AU137
GB2CB21	GV2ME01AP	GV2PC02	GV4AU247
GB2CD05	GV2ME02	GV2RT03	GV4AU286
GB2CD06	GV2ME023	GV2RT04	GV4AU415
GB2CD07	GV2ME02AP	GV2RT05	GV4AU486
GB2CD08	GV2ME03	GV2RT053	GV4G66
GB2CD09	GV2ME033	GV2RT06	GV4L02N
GB2CD10	GV2ME036	GV2RT07	GV4L02N6
GB2CD12	GV2ME03AP	GV2RT073	GV4L03N
GB2CD14	GV2ME04	GV2RT08	GV4L03N6
GB2CD16	GV2ME043	GV2RT10	GV4L07N
GB2CD20	GV2ME046	GV2RT14	GV4L07N6
GB2CD21	GV2ME04AP	GV2RT16	GV4L115B
GB2CS05	GV2ME05	GV2RT20	GV4L115B6
GB2CS06	GV2ME053	GV2RT21	GV4L115N
GB2DB05	GV2ME056	GV2SN14	GV4L115N6
GB2DB06	GV2ME05AP	GV2SN15	GV4L115S
GB2DB07	GV2ME06	GV2SN17	GV4L12N
GB2DB08	GV2ME063	GV2SN35	GV4L12N6
GB2DB09	GV2ME066	GV2SN37	GV4L25B
GB2DB10	GV2ME06AP	GV2V03	GV4L25B6
GB2DB12	GV2ME07	GV3A02	GV4L25N
GB2DB14	GV2ME073	GV3A03	GV4L25N6
GB2DB16	GV2ME076	GV3A08	GV4L50B
GB2DB20	GV2ME07AP	GV3A09	GV4L50B6
GB2DB21	GV2ME08	GV3APK01	GV4L50N
GK2AF01	GV2ME083	GV3APN01	GV4L50N6
GK2AX50	GV2ME086	GV3D22	GV4L80B
GV1F03	GV2ME08AP	GV3G66	GV4L80B6
GV1G02	GV2ME10	GV3L25	GV4L80N
GV1L3	GV2ME103	GV3L32	GV4L80N6
GV1V02	GV2ME106	GV3L326	GV4L80S
GV2AF01	GV2ME10AP	GV3L40	GV4LE02N
GV2AF02	GV2ME14	GV3L50	GV4LE02N6
GV2AF3	GV2ME143	GV3L65	GV4LE02S
GV2AF4	GV2ME146	GV3L73	GV4LE02S6
GV2AF5	GV2ME14AP	GV3L80	GV4LE03N
GV2AP04	GV2ME16	GV3P13	GV4LE03N6
GV2APK01	GV2ME163	GV3P18	GV4LE03S
GV2APN01	GV2ME166	GV3P25	GV4LE03S6
GV2APN02	GV2ME16AP	GV3P256	GV4LE07N
GV2APN03	GV2ME20	GV3P32	GV4LE07N6
GV2APN04	GV2ME203	GV3P321	GV4LE07S
GV2APN10	GV2ME206	GV3P40	GV4LE07S6
GV2CP21	GV2ME20AP	GV3P401	GV4LE115B
GV2GH7	GV2ME21	GV3P406	GV4LE115B6
GV2L03	GV2ME213	GV3P50	GV4LE115N
GV2L04	GV2ME216	GV3P501	GV4LE115N6
GV2L05	GV2ME21AP	GV3P506	GV4LE115S
GV2L06	GV2ME22	GV3P65	GV4LE115S6
GV2L07	GV2ME223	GV3P651	GV4LE12N
GV2L08	GV2ME226	GV3P656	GV4LE12N6
GV2L10	GV2ME22AP	GV3P73	GV4LE12S
GV2L14	GV2ME32	GV3P731	GV4LE12S6
GV2L16	GV2ME323S	GV3P736	GV4LE25B
GV2L20	GV2ME326	GV3P80	GV4LE25B6
GV2L22	GV2ME32AP	GV3PC01	GV4LE25N
GV2L32	GV2P01	GV3PC02	GV4LE25N6
GV2LE03	GV2P02	GV4ADM1111	GV4LE25S
GV2LE04	GV2P03	GV4ADN01	GV4LE25S6
GV2LE05	GV2P04	GV4ADN02	GV4LE50B

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