

TeSys™ GV Family

The TeSys GV family of products are 3-pole, horsepower rated, UL 508 listed manual starters. They include a manual disconnect, class 10 ambient-compensated thermal overload relay, and instantaneous, magnetic trip mechanism in one compact unit.

Any GV manual starter can be used alone for local manual control of a motor with individual full-load currents up to 220 A. The GV products may also be used in group motor installations in accordance with National Electric Code article 430-53. Group motor installations give you greater panel density for smaller size and require fewer parts and less wiring for installation when compared to conventional panel designs.

The GV2P and GV3P products also have an additional UL508 Type E rating as a stand-alone, self-protected manual combination starter. The UL508 Type E rating requires the addition of line side insulating barrier GV2GH7 for the GV2P or a GV3G66 line side insulating barrier and a GVAM11 short circuit signaling contact for the GV3P. The GV2P and GV3P self-protected manual combination starters may also be combined with specific size contactors from the LC1D product family for a UL508 Type F combination starter construction. These products have a UL-listed short circuit current rating from 10–100 kA depending on application size and voltage. Refer to the Motor Control Solutions for the North American Market data bulletin (8536DB0901) for more information.



GV2ME

Table 18.123: GV2, GV3

Thermal Setting (A)	Maximum Horsepower Ratings								Group Motor Applications Max. Fuse or Circuit Breaker	GV2ME push button [32] Catalog Number	GV2/3P rotary handle Catalog Number
	Single-Phase			Three-Phase							
	115 V	200 V	230 V	115 V	200 V	230 V	460 V	575 V			
0.10–0.16	—	—	—	—	—	—	—	—	450 A	GV2ME01	GV2P01
0.16–0.25	—	—	—	—	—	—	—	—	450 A	GV2ME02	GV2P02
0.25–0.40	—	—	—	—	—	—	—	—	450 A	GV2ME03	GV2P03
0.40–0.63	—	—	—	—	—	—	—	—	450 A	GV2ME04	GV2P04
0.63–1	—	—	—	—	—	—	—	1/2	450 A	GV2ME05	GV2P05
1–1.6	—	—	1/10	—	—	—	3/4	3/4	450 A	GV2ME06	GV2P06
1.6–2.5	—	1/6	1/6	—	1/2	1/2	1	1.5	450 A	GV2ME07	GV2P07
2.5–4	1/8	1/4	1/3	—	3/4	3/4	2	3	450 A	GV2ME08	GV2P08
4–6.3	1/4	1/2	1/2	3/4	1	1.5	3	5	450 A	GV2ME10	GV2P10
6–10	1/2	1	1.5	1	2	3	5	7.5	450 A	GV2ME14	GV2P14
9–14	3/4	2	2	2	3	3	10	10	450 A	GV2ME16	GV2P16
13–18	1	2	3	2	5	5	10	15	450 A	GV2ME20	GV2P20
17–23	1.5	3	3	3	5	7.5	15	20	450 A	GV2ME21	GV2P21
20–25	2	—	—	—	7.5	7.5	15	20	450 A	GV2ME22	GV2P22
24–32	2	5	5	5	7.5	10	20	25	450 A	GV2ME32	GV2P32
9–13	1/2	—	1.5	—	3	3	7.5	10	—	—	GV3P13
12–18	3/4	—	2	—	3	5	7.5	10	—	—	GV3P18
17–25	1.5	—	3	—	5	7.5	15	20	—	—	GV3P25
23–32	2	—	3	—	7.5	7.5	20	25	—	—	GV3P32
30–40	3	—	5	—	10	10	25	30	—	—	GV3P40
37–50	3	—	7.5	—	10	10	30	40	—	—	GV3P50
48–65	3	—	10	—	15	15	40	50	—	—	GV3P65



GV2P



GV3P

Table 18.124: GV7

Thermal Setting (A)	Maximum Three-Phase Horsepower Ratings				Toggle Operator	
	200 V	230 V	460 V	575 V	Standard Interrupt Catalog No.	High Interrupt Catalog No.
12–20	—	5	10	15	GV7RE20	GV7RS20
15–25	—	7.5	15	20	GV7RE25	GV7RS25
25–40	—	10	30	30	GV7RE40	GV7RS40
30–50	—	15	30	40	GV7RE50	GV7RS50
48–80	—	30	60	75	GV7RE80	GV7RS80
60–100	—	30	75	100	GV7RE100	GV7RS100
90–150	—	50	100	150	GV7RE150	GV7RS150
132–220	—	75	150	200	GV7RE220	GV7RS220

Accessories: TeSys™ GV2, GV3, GV7 Manual Starters and Protectors, page 18-37  
Dimensions: TeSys Manual Starters and Protectors, page 18-66 and TeSys GV7 Manual Starters and Protectors, page 18-69



GV7RE20

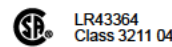
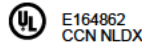
[32] For spring terminals add 3 to the catalog number (for example, GV2ME013). GV2ME32 is not available with spring terminals. For ring terminals, add 6.

### Motor Protector Circuit Breakers

Listed to UL 60947-4-1, these manual starters provide built-in thermal and magnetic protection.

**Table 18.125: PowerPact™ Electronic Motor Protector Circuit Breakers (Manual Starters)** <sup>New!</sup>

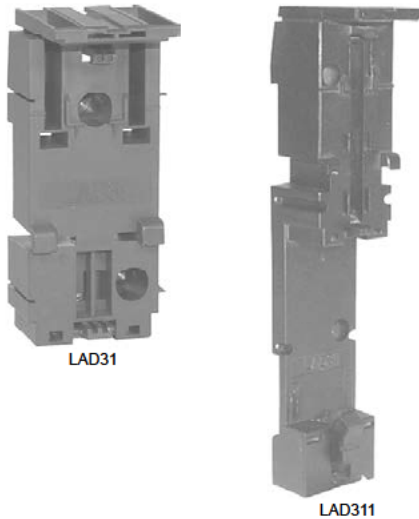
Electronic Trip Unit Type	Frame	Sensor Rating	Trip Unit	Full Load Ampere Rating (FLA)	Isd (x FLA)	G Interrupting	J Interrupting	L Interrupting	R Interrupting
						Cat. No.	Cat. No.	Cat. No.	Cat. No.
Standard [33]	H-Frame	30	2.2 M	14-25	5-13 x FLA	HGL36030M38X	HJL36030M38X	HLL36030M38X	HRL36030M38X
		50		14-42	5-13 x FLA	HGL36050M38X	HJL36050M38X	HLL36050M38X	HRL36050M38X
		100		30-80	5-13 x FLA	HGL36100M38X	HJL36100M38X	HLL36100M38X	HRL36100M38X
		150		58-130	5-13 x FLA	HGL36150M38X	HJL36150M38X	HLL36150M38X	HRL36150M38X
		250		114-217	5-13 x FLA	HGL36250M38X	HJL36250M38X	HLL36250M38X	HRL36250M38X
	L-Frame	400	2.3 M	190-348	5-13 x FLA	LGL36400M38X	LJL36400M38X	LLL36400M38X	LRL36400M38X
		600		312-520	5-13 x FLA	LGL36600M38X	LJL36600M38X	LLL36600M38X	LRL36600M38X



### TeSys™ GV2 Accessories and Enclosures

**Table 18.126: GV2 Mounting Accessories**

Description	Application	Standard Pack [34]	Catalog Number
Common mounting plate	For GV2 plus any 3-pole LC1D09 thru LC1D25 contactor (supplied with GV1G02 connector)	1	GK2AF01
Adapter plate	For screw mounting of GV2M	10	GV2AF02
Combination block	Interconnect for GV2 plus any 3-pole LC1K or LP1K contactor	10	GV2AF01
	Interconnect GV2 and LC1D09 thru D32	10	GV2AF3
	Interconnect GV2 and LC1D09 thru D32 mounted on LAD31	10	GV2AF4
7.5 mm compensation plate	To allow mounting of GV2M and GV2P on a common bus bar	10	GV1F03
Mounting plate	For mounting GV2ME or GV2P and contactor LC1D09 thru D32	10	LAD31
		10	LAD311



**Table 18.127: GV2 Cabling Accessories—Bus Bars**

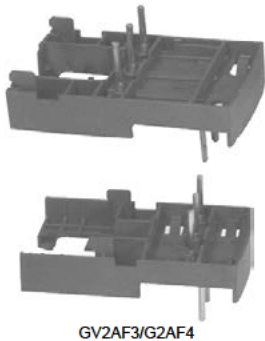
Description	Application	Pitch	Standard Pack [34]	Catalog Number
3-Pole, 63 A Bus Bar	For feeding 2 GV2 starters	45	1	GV2G245
		54	1	GV2G254
		72	1	GV2G272
	For feeding 3 GV2 starters	45	1	GV2G345
		54	1	GV2G354
	For feeding 4 GV2 starters	45	1	GV2G445
		54	1	GV2G454
	For feeding 5 GV2 starters	54	1	GV2G554

**Table 18.128: GV2 Other Cabling Accessories**

Description	Application	Standard Pack [34]	Catalog Number
Terminal blocks	Top feed for use with bus bars	1	GV1G09
	Bottom feed, to be used with bus bars; can be fitted with GV1L3 current limiter	1	GV2G05
Protective end cover	To cover unused bus bar outlets	5	GV1G10
3-pole flexible connector	For connecting a GV2 to an LC1D09 thru D25 contactor	10	GV1G02
Incoming line spacer	For GV2P when used in UL 508 Type E applications [35]	1	GV2GH7

**Table 18.129: GV2 Other Accessories**

Description	Application	Standard Pack [34]	Catalog Number
Visible isolation block—GV2P	Front mounting, 3-pole visible isolation on incoming side of GV2P	1	GV2AK00
Current limiter—GV2	Increases interrupt capacity when attached to GV2ME or GV2P	1	GV1L3
Through-the-door operating mechanism kits	NEMA 1, 12, Black with trip indication, for use with GV2P	1	GV2APN01
	NEMA 1, 12, Red/Yellow with trip indication, for use with GV2P	1	GV2APN02
	NEMA 3R, 4, 4X, Red/Yellow without trip indication, for use with GV2P	1	GV2APN04
Angle bracket	Operating mechanism support shaft for deep enclosures (≥ 250 mm), for use with GV2P	1	GVAPK11
Mounting bracket	Mounting bracket for installing GV2P operating mechanism	1	GVAPH02
Operating mechanism short shaft	One-piece short shaft for installing operating mechanisms in shallow enclosures, for use with GV2P, GV3P and TeSys U	1	GVAPA2
SoLink non-reversing communications link	Connection module for directly mounted GV2 and TeSys D contactor to PLC	5	LAD5C11
SoLink reversing communications link	Connection module for directly mounted GV2 and reversing TeSys D contactor to PLC	3	LAD5C12
Laser tool	Laser tool for installing through-the-door kits	1	GVAPL01



[33] The standard trip unit offers Class 5, 10, and 20 and phase unbalance or phase loss protection.

[34] Orders must specify multiples of quantities listed.

[35] Cannot be used with front-mounted auxiliary contact block.

**Table 18.130: GV2 Enclosures**

Description	Listing	Mounting	Enclosure Rating	Max. Side Mounting Aux. Contacts		Catalog Number
				Left Side	Right Side	
Enclosures for GV2ME with or without accessories	CSA Listed. Not UL Listed.	Surface mounting	NEMA 1, P41	1	1	GV2MC01
			NEMA 12/4, P55	1	1	GV2MC02
		Flush mounting	NEMA 1, P41	1	1	GV2MP01
			NEMA 12/4, P55	1	1	GV2MP02
		Flush mounting, front face reduced	NEMA 1, P41	0	1	GV2MP03
			NEMA 12/4, P55	0	1	GV2MP04

**Table 18.131: GV2 Enclosures Accessories**

Description	Type	Standard Pack <sup>[36]</sup>	Catalog Number	
Padlocking device for GV2M (when padlocked, starter is automatically in Off position)	—	1	GV2V01	
Mushroom head stop push button (40 mm, red) <sup>[37]</sup>	Spring return	1	GV2K011	
	Latching	Key release (Ronis key no. 455)	1	GV2K021
		Turn to Release	1	GV2K031
Latching / Padlockable Turn to Release		1	GV2K04	
Sealing kit	For enclosures GV2MC01 and GV2MP01	10	GV2E01	
Pilot Light (neon)	110 V	Green	10	GV2SN13
	110 V	Red	10	GV2SN14
	110 V	Orange	10	GV2SN15
	110 V	White	10	GV2SN17
	220/240 V	Green	10	GV2SN23
	220/240 V	Red	10	GV2SN24
	220/240 V	Orange	10	GV2SN25
	220/240 V	White	10	GV2SN27
	380/440 V	Green	10	GV2SN33
	380/440 V	Red	10	GV2SN34
	380/440 V	Orange	10	GV2SN35
	380/440 V	White	10	GV2SN37

[36] Orders must specify multiples of quantities listed.

[37] Supplied with P55 sealing kit.

### Voltage Trips

Table 18.132: Voltage Trips



GVAU116

Only one trip or fault signaling contact can be installed per GV2/GV3 device.				
Description	Characteristics	Voltage	Frequency	Cat. No. <sup>[38]</sup>
Voltage trips GV2 or GV3P	Undervoltage or Shunt trip (external mounting, 1 block right side only)	24 V	50 Hz	GVA●025
			60 Hz	GVA●026
		48 V	50 Hz	GVA●055
			60 Hz	GVA●056
		100–110 V	50/60 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
		415–440 V	60 Hz	GVA●386
			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		

Table 18.133: Voltage Trips—Technical Data (GV2AU, GV2AS)

Rated Voltage—660 Vac					
Model	Inrush	Sealed	Pick-Up Voltage	Drop-Out Voltage	Operating Time <sup>[39]</sup>
GVAU	12 VA / 8 W	3.5 VA / 1.1 W	0.8–1.1	0.35–0.7	10–15 ms
GVAS	14 VA / 10.5 W	5 VA / 1.6 W	0.7–1.1	0.2–0.75	10–15 ms

Table 18.134: Auxiliary Contact Blocks<sup>[40]</sup>



GVAE11

Description	Mounting Location	Max. No. of Blocks	Contact Type	Sold in lots of	Cat. No.
Instantaneous auxiliary contacts GV2 or GV3P	Front <sup>[41][42]</sup>	1	N.O. or N.C. <sup>[43]</sup>	1	GVAE1
			N.O. + N.C.	10	GVAE11 <sup>[44]</sup>
	N.O. + N.O.		1	GVAE20 <sup>[44]</sup>	
Fault signaling contact + instantaneous auxiliary contact GV2 or GV3P	Left Hand Side	2	N.O. + N.C.	1	GVAN11 <sup>[44]</sup>
			N.O. + N.O.	1	GVAN20 <sup>[44]</sup>
			N.O. (fault) + N.O.	1	GVAD1010
			N.O. (fault) + N.C.	1	GVAD1001
Short circuit signaling contact GV2 or GV3P	Left Hand Side	1	N.C. (fault) + N.O.	1	GVAD0110
			N.C. (fault) + N.C.	1	GVAD0101
Short circuit signaling contact GV2 or GV3P	Left Hand Side	1	SPDT	1	GVAM11

Table 18.135: GV3P Accessories



GVAD0101



GVAN11

Accessory	Application / Use With	Standard Pack	Cat. No.
Through-the-door operating mechanism kits	NEMA 1, 12, Black with trip indication, for use with GV3P	1	GV3APN01
	NEMA 1, 12, Red/Yellow, with trip indication, for use with GV3P	1	GV3APN02
	NEMA 3R, 4, 4X Red/Yellow without trip indication, for use with GV3P	1	GV3APN04
Angle bracket	Operating mechanism support shaft for deep enclosures (≥ 300 mm), for use with GV3P	1	GVAPK12
Mounting bracket	Mounting bracket for installing GV3P operating mechanism	1	GVAPH03
3-pole, 115 A busbar	For feeding 2 GV3P starters, 64 mm pitch	1	GV3G264
	For feeding 3 GV3P starters, 64 mm pitch	1	GV3G364
Incoming line spacer	Line spacer for GV3P when used in UL 508 Type E applications. One spacer required on line side.	1	GV3G66
P 20 cover	P20 protective cover for ring tongue versions of GV3P and 3-pole TeSys D Everlink contactors. Two covers required for line and load side.	1	LAD96570
Padlocking device	For use with up to 4 padlocks (not supplied). Ø 6 mm shank maximum	1	GV2V03
Operating mechanism short shaft	One-piece short shaft for installing operating mechanisms in shallow enclosures, for use with GV2P, GV3P and TeSys U	1	GVAPA2
SoLink non-reversing communications link	Connection module for directly mounted GV3 and TeSys D contactor to PLC	5	LAD5C31
SoLink reversing communications link	Connection module for directly mounted GV3 and reversing TeSys D contactor to PLC	3	LAD5C32
Laser tool	Laser tool for installing through-the-door kits	1	GVAPL01
S-shaped busbar	For connecting GV3P starters and LC1D40A-65A contactors side by side without intrawiring	1	GV3S

[38] To order an undervoltage trip: replace the bullet (●) with a U (for example, GVAU025).

To order a shunt trip: replace the bullet (●) with an S (for example, GVAS025).

[39] From the loss of voltage at the trip terminals to the opening of the starter contacts.

[40] One trip or one fault signaling can be fitted per GV3.

[41] Cannot be used with GV2GH7 insulator.

[42] Mounting of a GVAE contact block or a GV2AK00 visible isolation block on GV2P.

[43] Choice of N.C. or N.O. contact operation, depending on which way the reversible block is mounted.

[44] For spring terminals, add 3 to the catalog number (for example, GVAE113).

[45] The GVAD is always mounted next to the starter.



TeSys™ GV2, GV3, GV7 Manual Starters and Protectors

Table 18.136: GV7 Auxiliary Contact Blocks (auxiliary contact functions depends on location inside the device)



GV7AE11

Description	Mounting Location	Max. No. of Blocks	Contact Type	Catalog Number
<b>Standard</b>				
Instantaneous	Inside Device	2 per device	N.O. + N.C.	GV7AE11
Trip Indication		1 per device	N.O. + N.C.	
Fault Indication		1 per device	N.O. + N.C.	
<b>Low Level</b>				
Instantaneous	Inside Device	2 per device	N.O. + N.C.	GV7AB11
Trip Indication		1 per device	N.O. + N.C.	
Fault Indication		1 per device	N.O. + N.C.	

Table 18.137: GV7 Voltage Trips



GV7AD111



GV7AS055

Description	Mounting Location	Max. No. of Blocks	Voltage	Catalog Number	
Undervoltage Trip	Inside Device	1 per device	48 Vac	50 Hz	GV7AU055
			110–130 Vac	50/60 Hz	GV7AU107
			200–240 Vac	50/60 Hz	GV7AU207
			380–440/480 Vac	50/60 Hz	GV7AU387
			525 Vac	50 Hz	GV7AU525
Shunt Trip	Inside Device	1 per device	48 Vac	50 Hz	GV7AS055
			110–130 Vac	50/60 Hz	GV7AS107
			200–240 Vac	50/60 Hz	GV7AS207
			380–440/480 Vac	50/60 Hz	GV7AS387
			525 Vac	50 Hz	GV7AS525
Fault Indication	Inside Device	1 per device	24–130	–	GV7AD111
			110–415	–	GV7AD112

Table 18.138: GV7 Wiring Accessories



GV7AC01



GV7RE20

Description	Application	Catalog Number
Box Lugs	Sold in lots of 3 for GV7R•20–150[46]	GV7AC021
	Sold in lots of 3 for GV7R•220[46]	GV7AC022
<b>Phase Barriers, Bus Bars &amp; Shrouds</b>		
Terminal Extension Kit	Increases center distance between phases to 45 mm	GV7AC03
Terminal Shroud Kit	Covers terminal connections for touch safe protection	GV7AC01
Phase Barriers	Provides maximum phase separation at connection points	GV7AC04
Insulating Barriers	Provides insulation between connectors and backplate	GV7AC05
Busbars and Covers	Connect to LC1F115–185 contactor	GV7AC06
	Connect to LC1F225–265 contactor	GV7AC07
<b>Operating Handles and Accessories</b>		
Black rotary operating handle with black legend plate (mounts directly on device)		GV7AP03
Red rotary operating handle with yellow legend plate (mounts directly on device)		GV7AP04
Conversion accessory to mount the device directly on panel door		GV7AP05
Black rotary operating handle with black legend plate and extension kit (185–600 mm)		GV7AP01
Red rotary operating handle with yellow legend plate and extension kit (185–600 mm)		GV7AP02
Padlocking device for toggle handle (max. 38 mm padlocks)		GV7V01

Table 18.139: Operating Handles



GV7AC021



GV7V01



GV7AP03



GVAPB54



GVAPR54

Accessory	Description	Catalog Number
Operating Handle (Qty: 1)	NEMA 1/12 Black handle with trip indication	GVAPB54
	NEMA 1/12 Red/Yellow handle with trip indication	GVAPR54
	NEMA 3R/4/4X Black handle without trip indication	GVAPB65
	NEMA 3R/4/4X Red/Yellow handle without trip indication	GVAPR65

Dimensions: TeSys GV2 and GV3 Manual Starter and Protector Dimensions, page 18-66 and TeSys GV7 Manual Starter and Protector Dimensions, page 18-69

[46] Wire size: GV7AC021 = 14 to 3/0 AWG; GV7AC022 = 14 AWG to 350 kcmil.