





# GV2, GV3, and GV7 Manual Motor Starters, Controllers, and Protectors

## Standard Features

Table 1: Standard Features

|   | <br><b>GV2ME</b><br>0.1 to 32 A<br>Up to 20 hp @ 460 V<br>10 kA SCCR @ 480 V<br>Push Button Operator  | <br><b>GV2P</b><br>0.1 to 30 A<br>Up to 15 hp @ 460 V<br>50 kA SCCR @ 480 V<br>Rotary Handle Operator<br>Visible Trip Indication | <br><b>GV3P</b><br>9 to 65 A<br>Up to 40 hp @ 460 V<br>GV3P13–GV3P32 rated<br>100 kA SCCR @ 480 V<br>GV3P40–GV3P65 rated<br>65 kA SCCR @ 480 V<br>Rotary Handle | <br><b>GV7RE/GV7RS</b><br>25 to 220 A<br>Up to 150 hp @ 460 V<br>25 kA SCCR @ 480 V<br>Toggle Operator |
|---|--|---|---|---|
| <b>Protection</b>   | Thermal-magnetic (overload relays are bimetallic—Class 10)   |   |   | Solid-state overload relay—magnetic short circuit (Class 10)  |
| <b>Mounting</b>   | <ul style="list-style-type: none"> <li>Clip-on mounting on 35 mm DIN rail. Unclips without the use of a tool.</li> <li>Panel mounts using a metal adapter plate.</li> </ul>  | <ul style="list-style-type: none"> <li>Clip-on mounting on 35 mm DIN rail. Unclips without the use of a tool.</li> <li>Panel mounts directly.</li> </ul>  | <ul style="list-style-type: none"> <li>Clip-on mounting on 35 mm DIN rail. Unclips without the use of a tool.</li> <li>Panel mounts directly.</li> </ul>  | Panel mounts directly   |
| <b>Connection</b>   | Screw terminals using cross-head, captive screws. Cross-head screws used for connections on GV2 starters and their add-on blocks.  |   | Uses an Allen wrench.   | Clip-on connectors (sold separately)  |
| <b>Marking</b>  | Using the marker holder supplied with each unit.   |   |   |   |
| <b>Trip test</b>  | Using a fine-blade screwdriver on the front face of the product.   |   |   | —   |
| <b>Signaling on the front face</b>  |  |   |   |   |
| <b>Manual control device</b>  | On or Off state  | <ul style="list-style-type: none"> <li>On or Off state</li> <li>Trip on overload, short circuit, undervoltage, or shunt trip.</li> </ul>  | <ul style="list-style-type: none"> <li>On or Off state</li> <li>Trip on overload, short circuit, undervoltage, or shunt trip.</li> </ul>  | On or Off state   |
| <b>Mechanical flag indicator</b>  | —  | Trips on short circuit  | Trips on short circuit  | Trip on overload or short circuit   |
| <b>Padlocking</b>   | Padlocks in the Off position using the system incorporated into the manual control device. (Padlocks are supplied by the customer.)  |   |   | Padlockable when used with a door-mounted rotary handle or with a separate locking device   |
| <b>Tamper-proof current dial</b>  | —  | The thermal-current setting dial is covered by a transparent cover, which can be sealed.  | —   | —   |
| <b>Accessories</b>  |  |   |   |   |
| <b>Front-mounting accessories</b>   | Instantaneous contact blocks—either N.C., N.O., N.O. + N.O., or N.O. + N.C.—which do not increase the width of the product.  |   |   | Front accessible, internally mounted:   |
| <b>Side-mounting accessories (snap onto the starters without the use of a tool)</b> | On the left side, contact blocks which provide the following: <ul style="list-style-type: none"> <li>N.O. + N.O. or N.O. + N.C. instantaneous contacts</li> <li>N.O. or N.C. trip signaling contact incorporating a mechanical flag indicator and an N.O. or N.C. instantaneous contact</li> <li>C/O magnetic trip signaling contact, associated with a mechanical flag indicator, used for reset.</li> </ul> On the right side: <ul style="list-style-type: none"> <li>Shunt trip or undervoltage trip</li> </ul> |   |   | <ul style="list-style-type: none"> <li>Auxiliary contacts</li> <li>Trip indication contacts</li> <li>Shunt trip</li> <li>Undervoltage trip</li> </ul> Rotary Handles                      |
| <b>Other accessories</b>  | <ul style="list-style-type: none"> <li>Combination block for use with TeSys® contactor</li> <li>Bus bars and connectors</li> </ul>   | <ul style="list-style-type: none"> <li>Visible isolation block, mounting on the incoming terminals of the device</li> <li>Door interlock mechanism</li> </ul>   | —   |   |
| <b>Selection</b>  | Page 38  | Page 38   | Page 38   | Page 39   |

# GV2, GV3, and GV7 Manual Motor Starters, Controllers, and Protectors Short-Circuit Current Ratings

## Short-Circuit Current Ratings

### UL 508 Type E

**Manual Self-Protected Combination Motor Controller, TeSys® GV**

Manual Self-Protected Combination Starter Meeting UL 508 Type E, UL File E164871

**Table 2: TeSys GV2P Horsepower and SCCR Ratings**

In combination with line spacer GV2GH7 (stand-alone starters) or GV1G09 terminal and GV2G busbars (multiple starters)

| Standard Motor Ratings @ 50/60 Hz (hp) |       |       |       |       |       | Associated Cable, AWG 75 °C, Cu | Manual Self-Protected Starter | Overload Trip Range (A) | SCCR (kA) 480Y/277V |
|--|-------|-------|-------|-------|-------|---------------------------------|-------------------------------|-------------------------|---------------------|
| 1 Ø                                    |       | 3 Ø   |       |       |       |                                 |                               |                         |                     |
| 120 V                                  | 240 V | 200 V | 240 V | 480 V | 600 V |                                 |                               |                         |                     |
|  |       |       |       |       |       | 10                              | GV2P01                        | 0.1–0.16                | 100                 |
|  |       |       |       |       |       | 10                              | GV2P02                        | 0.16–0.25               | 100                 |
|  |       |       |       |       |       | 10                              | GV2P03                        | 0.25–0.4                | 100                 |
|  |       |       |       |       |       | 10                              | GV2P04                        | 0.4–0.63                | 100                 |
|  |       |       |       | 0.5   |       | 10                              | GV2P05                        | 0.63–1                  | 100                 |
|  |       |       |       | 0.75  |       | 10                              | GV2P06                        | 1–1.6                   | 100                 |
|  |       | 0.5   | 0.5   | 1     |       | 10                              | GV2P07                        | 1.6–2.5                 | 100                 |
|  |       | 0.75  | 1     | 2     |       | 10                              | GV2P08                        | 2.5–4                   | 100                 |
|  |       | 1.5   | 1.5   | 4     |       | 10                              | GV2P10                        | 4–6.3                   | 100                 |
| 0.5                                    | 1     | 2     | 3     | 5     | 7.5   | 10                              | GV2P14                        | 6–10                    | 100                 |
| 1                                      | 2     | 3     | 3     | 10    | 10    | 8                               | GV2P16                        | 9–14                    | 10                  |
| 1                                      | 3     | 5     | 5     | 10    | 15    | 8                               | GV2P20                        | 13–18                   | 10                  |
| 2                                      | 3     | 5     | 7.5   | 15    | 20    | 6                               | GV2P21                        | 17–23                   | 10                  |
| 2                                      | 3     | 5     | 7.5   | 15    | 20    | 6                               | GV2P22                        | 20–25                   | 10                  |

**Table 3: TeSys GV3P Horsepower and SCCR Ratings**

In combination with line spacer GV3G66 and magnetic trip unit GVAM11 for stand-alone starters

| Standard Motor Ratings @ 50/60 Hz (hp) |       |       |       |       |       | Associated Cable, AWG 75 °C, Cu | Manual Self-Protected Starter | Overload Trip Range (A) | SCCR (kA)  |            |
|--|-------|-------|-------|-------|-------|---------------------------------|-------------------------------|-------------------------|------------|------------|
| 1 Ø                                    |       | 3 Ø   |       |       |       |                                 |                               |                         | 480Y/277 V | 600Y/347 V |
| 120 V                                  | 240 V | 200 V | 240 V | 480 V | 600 V |                                 |                               |                         |            |            |
| 1                                      | 2     | 3     | 3     | 7.5   | 10    | 8                               | GV3P13                        | 9–13                    | 100        | 25         |
| 1                                      | 3     | 3     | 5     | 7.5   | 10    | 8                               | GV3P18                        | 12–18                   | 100        | 25         |
| 2                                      | 3     | 5     | 7.5   | 15    | 20    | 6                               | GV3P25                        | 17–25                   | 100        | 25         |
| 2                                      | 3     | 7.5   | 7.5   | 20    | 25    | 6                               | GV3P32                        | 23–32                   | 100        | 25         |
| 3                                      | 5     | 10    | 10    | 25    | 30    | 3                               | GV3P40                        | 30–40                   | 65         | 25         |
| 3                                      | 7.5   | 10    | 10    | 30    | 40    | 3                               | GV3P50                        | 37–50                   | 65         | 25         |
| 5                                      | 10    | 15    | 15    | 40    | 50    | 3                               | GV3P65                        | 48–65                   | 65         | 25         |

# GV2, GV3, and GV7 Manual Motor Starters, Controllers, and Protectors

## Short-Circuit Current Ratings

### UL 508 Type F

Combination Motor Controller, TeSys® GV

Manual Self-Protected Combination Starter Meeting UL 508 Type F, UL File E164871

**Table 4: TeSys GV2P Horsepower and SCCR Ratings**

In combination with line spacer GV2GH7 (stand-alone starters) or GV1G09 terminal and GV2G busbars (multiple starters)

| Standard Motor Ratings @ 50/60 Hz (hp) |       |       |       |       |       | Associated Cable, AWG<br>75 °C, Cu | Manual Self-Protected Starter | Overload Trip Range (A) | Type of Contactor Required | SCCR (kA)<br>480Y/277 V |
|--|-------|-------|-------|-------|-------|------------------------------------|-------------------------------|-------------------------|----------------------------|-------------------------|
| 1 Ø                                    |       | 3 Ø   |       |       |       |                                    |                               |                         |                            |                         |
| 120 V                                  | 240 V | 200 V | 240 V | 480 V | 600 V |                                    |                               |                         |                            |                         |
|  |       |       |       |       |       | 10                                 | GV2P01                        | 0.1–0.16                | LC1D09 or D12              | 100                     |
|  |       |       |       |       |       | 10                                 | GV2P02                        | 0.16–0.25               | LC1D09 or D12              | 100                     |
|  |       |       |       |       |       | 10                                 | GV2P03                        | 0.25–0.4                | LC1D09 or D12              | 100                     |
|  |       |       |       |       |       | 10                                 | GV2P04                        | 0.4–0.63                | LC1D09 or D12              | 100                     |
|  |       |       |       | 0.5   |       | 10                                 | GV2P05                        | 0.63– 1                 | LC1D09 or D12              | 100                     |
|  |       |       |       | 0.75  |       | 10                                 | GV2P06                        | 1–1.6                   | LC1D09 or D12              | 100                     |
|  |       | 0.5   | 0.5   | 1     |       | 10                                 | GV2P07                        | 1.6–2.5                 | LC1D09 or D12              | 100                     |
|  |       | 0.75  | 1     | 2     |       | 10                                 | GV2P08                        | 2.5– 4                  | LC1D09 or D12              | 100                     |
|  |       | 1.5   | 1.5   | 4     |       | 10                                 | GV2P10                        | 4–6.3                   | LC1D09 or D12              | 100                     |
| 0.5                                    | 1     | 2     | 3     | 5     | 7.5   | 10                                 | GV2P14                        | 6–10                    | LC1D09 or D12              | 100                     |
| 1                                      | 2     | 3     | 3     | 10    | 10    | 8                                  | GV2P16                        | 9–14                    | LC1D12 or D18              | 42                      |
| 1                                      | 3     | 5     | 5     | 10    | 15    | 8                                  | GV2P20                        | 13–18                   | LC1D12 or D18              | 42                      |
| 2                                      | 3     | 5     | 7.5   | 15    | 20    | 6                                  | GV2P21                        | 17–23                   | LC1D25 or D32              | 42                      |
| 2                                      | 3     | 5     | 7.5   | 15    | 20    | 6                                  | GV2P22                        | 20–25                   | LC1D25 or D32              | 42                      |

**Table 5: TeSys GV3P Horsepower and SCCR Ratings**

In combination with line spacer GV3G66 and magnetic trip unit GVAM11 for stand-alone starters

| Standard Motor Ratings @ 50/60 Hz (hp) |       |       |       |       |       | Associated Cable, AWG<br>75 °C, Cu | Manual Self-Protected Starter | Overload Trip Range (A) | Type of Contactor Required | SCCR (kA)      |                |
|--|-------|-------|-------|-------|-------|------------------------------------|-------------------------------|-------------------------|----------------------------|----------------|----------------|
| 1 Ø                                    |       | 3 Ø   |       |       |       |                                    |                               |                         |                            | 480Y/<br>277 V | 600Y/<br>347 V |
| 120 V                                  | 240 V | 200 V | 240 V | 480 V | 600 V |                                    |                               |                         |                            |                |                |
| 1                                      | 2     | 3     | 3     | 7.5   | 10    | 8                                  | GV3P13                        | 9–13                    | LC1D18                     | 65             | 25             |
| 1                                      | 3     | 3     | 5     | 7.5   | 10    | 8                                  | GV3P18                        | 12–18                   | LC1D18                     | 65             | 25             |
| 2                                      | 3     | 5     | 7.5   | 15    | 20    | 6                                  | GV3P25                        | 17–25                   | LC1D25                     | 65             | 25             |
| 2                                      | 3     | 7.5   | 7.5   | 20    | 25    | 6                                  | GV3P32                        | 23–32                   | LC1D32                     | 65             | 25             |
| 3                                      | 5     | 10    | 10    | 25    | 30    | 3                                  | GV3P40                        | 30–40                   | LC1D40A/ 50A/65A           | 65             | 25             |
| 3                                      | 7.5   | 10    | 10    | 30    | 40    | 3                                  | GV3P50                        | 37–50                   | LC1D50A/65A                | 65             | 25             |
| 5                                      | 10    | 15    | 15    | 40    | 50    | 3                                  | GV3P65                        | 48–65                   | LC1D65A/80                 | 65             | 25             |

# GV2, GV3, and GV7 Manual Motor Starters, Controllers, and Protectors Short-Circuit Current Ratings

## UL 508 Group Motor Installations

**Manual Combination Motor Controller, TeSys® GV**  
GV2ME: UL File E164864  
(MC 164581, Report 1012350, Project 2152063)

**Table 6: TeSys GV2ME Horsepower and SCCR Ratings**  
In association with LC1D contactors, suitable for group installation when protected by fuses or an inverse-time circuit breaker (when used with GV1G09 terminal or GV2G05 blocks plus GV2G busbars)

| Standard Motor Ratings @ 50/60 Hz (hp) |       |       |       |       |       | Associated Cable, AWG 75 °C, Cu | Manual Motor Starter | Overload Trip Range (A) | Contactor     | SCCR (kA) |            |                          |               |                             |
|--|-------|-------|-------|-------|-------|---------------------------------|----------------------|-------------------------|---------------|-----------|------------|--------------------------|---------------|-----------------------------|
| 1 Ø                                    |       | 3 Ø   |       |       |       |                                 |                      |                         |               | 240/480 V | 600Y/347 V | 480 V with GV1L3 Limiter | Contactor     | 600 V with LA9LB920 Limiter |
| 120 V                                  | 240 V | 200 V | 240 V | 480 V | 600 V |                                 |                      |                         |               |           |            |                          |               |                             |
|  |       |       |       |       |       | 10                              | GV2ME01              | 0.1–0.16                | LC1D09 or D12 | 65        | 42         | 65                       | LC1D09 or D12 | 42                          |
|  |       |       |       |       |       | 10                              | GV2ME02              | 0.16–0.25               | LC1D09 or D12 | 65        | 42         | 65                       | LC1D09 or D12 | 42                          |
|  |       |       |       |       |       | 10                              | GV2ME03              | 0.25–0.4                | LC1D09 or D12 | 65        | 42         | 65                       | LC1D09 or D12 | 42                          |
|  |       |       |       |       |       | 10                              | GV2ME04              | 0.4–0.63                | LC1D09 or D12 | 65        | 42         | 65                       | LC1D09 or D12 | 42                          |
|  |       |       |       | 0.5   |       | 10                              | GV2ME05              | 0.63–1                  | LC1D09 or D12 | 65        | 42         | 65                       | LC1D09 or D12 | 42                          |
|  |       |       |       | 0.75  |       | 10                              | GV2ME06              | 1–1.6                   | LC1D09 or D12 | 65        | 42         | 65                       | LC1D09 or D12 | 42                          |
|  |       | 0.5   | 0.5   | 1     |       | 10                              | GV2ME07              | 1.6–2.5                 | LC1D09 or D12 | 65        | 42         | 65                       | LC1D09 or D12 | 42                          |
|  |       | 0.75  | 1     | 2     |       | 10                              | GV2ME08              | 2.5–4                   | LC1D09 or D12 | 65        | 42         | 65                       | LC1D09 or D12 | 42                          |
|  |       | 1.5   | 1.5   | 4     |       | 10                              | GV2ME10              | 4–6.3                   | LC1D09 or D12 | 65        | 42         | 65                       | LC1D09 or D12 | 42                          |
| 0.5                                    | 1     | 2     | 3     | 5     | 7.5   | 10                              | GV2ME14              | 6–10                    | LC1D09 or D12 | 65        | 42         | 65                       | LC1D09 or D12 | 42                          |
| 1                                      | 2     | 3     | 3     | 10    | 10    | 8                               | GV2ME16              | 9–14                    | LC1D12 or D18 | 22        | 10         | 65                       | LC1D32 or D38 | 42                          |
| 1                                      | 3     | 5     | 5     | 10    | 15    | 8                               | GV2ME20              | 13–18                   | LC1D12 or D18 | 22        | 10         | 65                       | LC1D32 or D38 | 42                          |
| 2                                      | 3     | 5     | 7.5   | 15    | 20    | 6                               | GV2ME21              | 17–23                   | LC1D25 or D32 | 10        | 10         | 65                       | LC1D32 or D38 | 42                          |
| 2                                      | 3     | 5     | 7.5   | 15    | 20    | 6                               | GV2ME22              | 20–25                   | LC1D25 or D32 | 10        | 10         | 65                       | LC1D32 or D38 | 42                          |
| 2                                      | 5     | 10    | 10    | 20    | 30    | 6                               | GV2ME32              | 24–32                   | LC1D25 or D32 | 5         | 5          | 65                       | LC1D32 or D38 | 42                          |

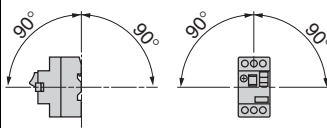
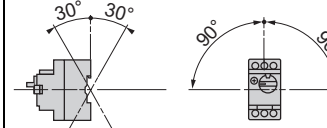
# GV2, GV3, and GV7 Manual Motor Starters, Controllers, and Protectors

## Specifications and Operating Curves

### Specifications and Operating Curves

#### GV2 Specifications

Table 7: Environment

| Type  | GV2ME  | GV2P                                   | LS1D30,<br>LS1D303   | LS1D32,<br>LS1D323                     |  |  |
|---|--|--|--|--|--|--|
| <b>Conforming to standards</b>  | IEC 60947-1, 60947-2, 60947-4-1, EN 60204, BS 4752, BS 4941, UL 508, CSA C22.2 No. 14, NF C 63-650, NFC63-120, 79-130, VDE 0113, 0660. |  |  |  |  |  |
| <b>Product approvals</b>  | DEMKO, NEMKO, SEMKO, CSA, UL, BV, GL, LROS, DNV, PTB   | CSA, UL, PTB                           | UL, CSA  | BV                                     |  |  |
| <b>UL File Number</b>   | File E164864, CCN NLRV   |  | File E197164<br>CCN IZLT   | File E197164<br>CCN IZLT2              |  |  |
| <b>CSA File Number</b>  | File LR 81630, Class 3211 05   |  | File 222370, Class 6225-01   |  |  |  |
| <b>Protective treatment</b>   | —  | —                                      | "TH"   | "TH"                                   |  |  |
| <b>Degree of protection</b><br>Conforming to IEC 60529                          | <b>GV2ME01</b> enclosure: IP41<br><b>GV2ME02</b> enclosure: IP55   | —                                      | —  | —                                      |  |  |
| <b>Shock resistance</b><br>Conforming to IEC 60068-2-27                         | 30 g   | 30 g                                   | —  | —                                      |  |  |
| <b>Vibration resistance</b><br>Conforming to IEC 60068-2-6                      | 5 to 150 Hz (5 g)  | 5 to 150 Hz (5 g)                      | —  | —                                      |  |  |
| <b>Ambient air temperature</b>  |  |  |  |  |  |  |
| <b>Storage</b>  | -40 to +176 °F (-40 to +80 °C)   | -40 to +176 °F (-40 to +80 °C)         | —  | —                                      |  |  |
| <b>Operation</b>  | <b>Open:</b> -4 to +140 °F (-20 to +60 °C)<br><b>Enclosed:</b> -4 to 104 °F (-20 to 40 °C)   | -4 to +140 °F (-20 to +60 °C)          | -58 to +158 °F<br>(-50 to +70 °C)  | -58 to +158 °F<br>(-50 to +70 °C)      |  |  |
| <b>Temperature compensation</b>   | <b>Open:</b> -4 to +140 °F (-20 to +60 °C)<br><b>Enclosed:</b> -4 to 104 °F (-20 to 40 °C)   | -4 to +140 °F (-20 to +60 °C)          | —  | —                                      |  |  |
| <b>Flame resistance</b><br>Conforming to IEC 60695-2-1                          | 1760 °F (960 °C)   |  |  |  |  |  |
| <b>Maximum operating altitude</b>   | 6562 ft (2000 m)   | 6562 ft (2000 m)                       | —  | —                                      |  |  |
| <b>Operating positions in relation to the normal vertical mounting position</b> |   |  |  |  | ± 23 °                                 |  |
| <b>Wiring</b><br>Number of conductors and wire size                             | <b>Maximum</b>   | <b>Minimum</b>                         | <b>Maximum</b>   | <b>Minimum</b>                         | <b>Maximum</b>                         | <b>Minimum</b>                         |
| <b>Solid cable</b>  | 2 x 8 AWG<br>(2 x 6 mm <sup>2</sup> )  | 2 x 16 AWG<br>(2 x 1 mm <sup>2</sup> ) | 2 x 8 AWG<br>(2 x 6 mm <sup>2</sup> )  | 2 x 16 AWG<br>(2 x 1 mm <sup>2</sup> ) | 2 x 8 AWG<br>(2 x 6 mm <sup>2</sup> )  | 2 x 16 AWG<br>(2 x 1 mm <sup>2</sup> ) |
| <b>Flexible cable without cable end</b>   | 2 x 8 AWG<br>(2 x 6 mm <sup>2</sup> )  | 2 x 14 AWG<br>(2 x 1 mm <sup>2</sup> ) | 2 x 8 AWG<br>(2 x 6 mm <sup>2</sup> )  | 2 x 14 AWG<br>(2 x 1 mm <sup>2</sup> ) | 2 x 8 AWG<br>(2 x 6 mm <sup>2</sup> )  | 2 x 14 AWG<br>(2 x 1 mm <sup>2</sup> ) |
| <b>Flexible cable with cable end</b>  | 2 x 10 AWG<br>(2 x 4 mm <sup>2</sup> )   | 2 x 16 AWG<br>(2 x 1 mm <sup>2</sup> ) | 2 x 10 AWG<br>(2 x 4 mm <sup>2</sup> )   | 2 x 16 AWG<br>(2 x 1 mm <sup>2</sup> ) | 2 x 10 AWG<br>(2 x 4 mm <sup>2</sup> ) | 2 x 16 AWG<br>(2 x 1 mm <sup>2</sup> ) |
| <b>Suitable for isolation</b><br>Conforming to IEC 60947-1 / 60947-1-6          | Yes  |  | Yes  |  | —                                      | —                                      |
| <b>Tightening torque</b>  | 15 lb-in (1.7 N•m)   |  |  |  |  |  |
| <b>Resistance to mechanical impact</b>  | 0.5 J  |  | 0.5 J  |  |  |  |
| <b>Sensitivity to phase failure</b>   | Conforming to IEC 60947-4-1, paragraph 7-2-1-5-2   |  |  | —                                      | —                                      |  |

## GV2, GV3, and GV7 Manual Motor Starters, Controllers, and Protectors Specifications and Operating Curves

**Table 8: Technical Characteristics**

| Type   |  | GV2ME    | GV2P               | LS1D30,<br>LS1D303 | LS1D32,<br>LS1D323 <sup>[1]</sup> |
|--|--|----------|--------------------|--------------------|-----------------------------------|
| <b>Utilization category</b>  | Conforming to IEC 60947-2                    | A        | A                  | —                  | AC 20B#                           |
|  | Conforming to IEC 60947-4-1                  | AC-3     | AC-3               |                    |                                   |
| <b>Rated operational voltage (Ue)</b>                                      | Conforming to IEC 60947-2                    | 690 V    | 690 V              | 690 V              | 690 V                             |
| <b>Rated insulation voltage (Ui)</b>                                       | Conforming to IEC 60947-2                    | 690 V    | 690 V              | —                  | 690 V                             |
|  | Conforming to<br>CSA C22.2 No. 14 and UL 508 | 600 V    | 600 V              |                    |                                   |
| <b>Rated operational frequency</b>   | Conforming to IEC 60947-2                    | 50/60 Hz | 50/60 Hz           | 50/60 Hz           | 50/60 Hz                          |
| <b>Rated impulse withstand voltage (U imp)</b>                             | Conforming to IEC 60947-2                    | 6 kV     | 6 kV               | —                  | —                                 |
| <b>Total power dissipated per pole (W)</b>                                 |  | 2.5 W    | 2.5 W              | 3.2 W              | 3.2 W                             |
| <b>Mechanical life (close-open operations)</b><br>(varies with conditions) |  | 100,000  | —                  | —                  | —                                 |
| <b>Electrical life (close-open operations)</b><br>(for AC-3 duty)          |  | 100,000  | 100,000            | —                  | —                                 |
| <b>Duty class (close-open operations/hr)</b><br>(maximum operating rate)   |  | 25       | 25                 | —                  | —                                 |
| <b>Rated duty</b>  | Conforming to IEC 60947-4-1                  | —        | Continuous<br>duty | —                  | —                                 |

<sup>1</sup> Conforming to IEC 60947-3

**Table 9: GV2 Trip Module Specifications**

| Type                                 |   | GV2AU   | GV2AS                                     |
|--------------------------------------|---|---|---|
| <b>Rated insulation voltage (Ui)</b> | Conforming to IEC 60947-1               | 690 V   | 690 V                                     |
| <b>Operational voltage (Ue)</b>      | Conforming to IEC 60947-1               | 0.85-1.1 V  | 0.7-1.1 V                                 |
| <b>Drop-out voltage (Ue)</b>         |   | 0.35-0.7 V  | 0.2-0.75 V                                |
| <b>Inrush consumption</b>            |   | 12 VA   | 14 VA                                     |
|                                      |   | 8 W   | 10.5 W                                    |
| <b>Sealed consumption</b>            |   | 3.5 VA  | 5 VA                                      |
|                                      |   | 1.1 W   | 1.6 W                                     |
| <b>Operating time (ms)</b>           | Conforming to IEC 60947-1               | From the moment the voltage reaches its operational value until opening of the GV2•• 10–15 ms |   |
| <b>On-load factor</b>                |   | 100%  |   |
| <b>Wiring</b>                        |   | <b>Minimum</b>  | <b>Maximum</b>                            |
| Number of conductors and wire size   | Solid cable                             | 1 x 16–12 AWG (1-2.5 mm <sup>2</sup> )  | 2 x 16–12 AWG (1–2.5 mm <sup>2</sup> )    |
|                                      | Flexible cable <i>without</i> cable end | 1 x 18–12 AWG (0.75-2.5 mm <sup>2</sup> )   | 2 x 18–12 AWG (0.75–2.5 mm <sup>2</sup> ) |
|                                      | Flexible cable <i>with</i> cable end    | 1 x 18–14 AWG (0.75-1.5 mm <sup>2</sup> )   | 2 x 18–14 AWG (0.75–1.5 mm <sup>2</sup> ) |
| <b>Tightening torque</b>             |   | 12 lb-in (1.4 N•m) maximum  |   |

# GV2, GV3, and GV7 Manual Motor Starters, Controllers, and Protectors

## Specifications and Operating Curves

**Table 10: GV Auxiliary and Fault Signaling Contact Specifications**

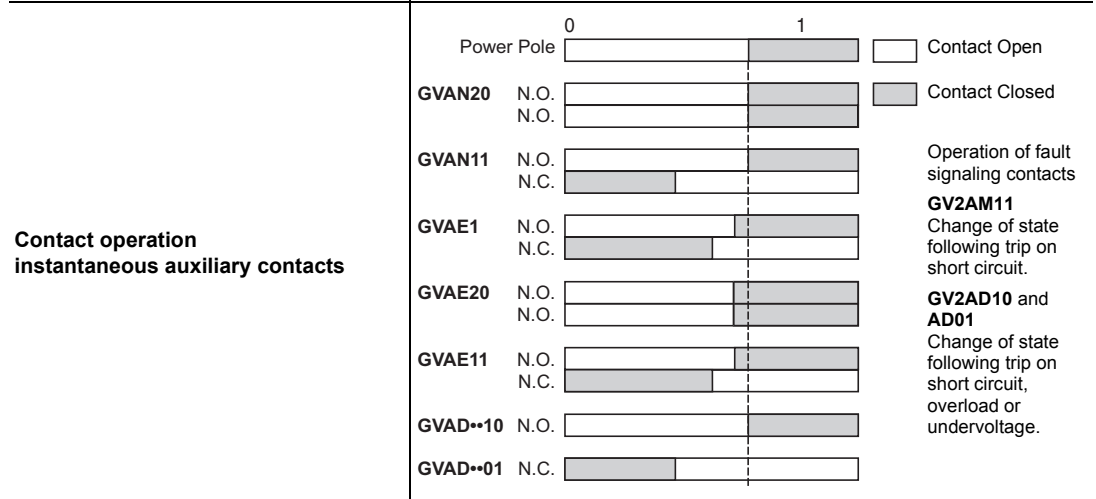
| Type  | Instantaneous Auxiliary Contacts<br>GVAN, GVAD   |                |                |                |                      |           |   | Fault Signaling Contacts<br>GV2AD, GV2AM11 |        |                |                |
|---|--|----------------|----------------|----------------|----------------------|-----------|---|--|--------|----------------|----------------|
| <b>Rated insulation voltage (Ui)</b><br>(associated insulation coordination)<br>Conforming to IEC 60947-1 | 690 V  |                |                |                |                      |           |   | 690 V                                      |        |                |                |
| Conforming to CSA C22.2 No. 14<br>and UL 508  | 600 V  |                |                |                |                      |           |   | 300 V                                      |        |                |                |
| <b>Conventional rated thermal current (Ith)</b><br>Conforming to IEC 60947-5-1                            | 6 A  |                |                |                |                      |           |   | 2.5 A                                      |        |                |                |
| Conforming to CSA C22.2 No. 14<br>and UL 508  | 5 A  |                |                |                |                      |           |   | 1 A  |        |                |                |
| <b>Operational power and current—<br/>AC operation</b><br>Conforming to IEC 60947-5-1                     | AC-15/100,000 close–open operations  |                |                |                |                      |           |   | AC-14/1000 close–open operations           |        |                |                |
| <b>Rated operational voltage (Ue)</b>   | 48 V   | 110 V<br>127 V | 230 V<br>240 V | 380 V<br>415 V | 440 V                | 500 V     | 690 V                                     | 24 V                                       | 48 V   | 110 V<br>127 V | 230 V<br>240 V |
| <b>Operational power,<br/>normal conditions</b>   | 300 VA   | 500 VA         | 720 VA         | 850 VA         | 650 VA               | 500 VA    | 400 VA                                    | 36 VA                                      | 48 VA  | 72 VA          | 72 VA          |
| <b>Occasional breaking and making<br/>capacities, abnormal conditions</b>                                 | 3000 VA  | 7000 VA        | 13,000 VA      | 15,000 VA      | 13,000 VA            | 12,000 VA | 9000 VA                                   | 220 VA                                     | 300 VA | 450 VA         | 450 VA         |
| <b>Rated operational current (Ie)</b>   | 6 A  | 4.5 A          | 3.3 A          | 2.2 A          | 1.5 A                | 1 A       | 0.6 A                                     | 1.5 A                                      | 1 A    | 0.5 A          | 0.3 A          |
| <b>Operational power and current—<br/>DC operation</b><br>Conforming to IEC 60947-5-1                     | DC-13/100,000 close–open operations  |                |                |                |                      |           |   | DC-13/1000 close–open operations           |        |                |                |
| <b>Rated operational voltage (Ue)</b>   | 24 V   | 48 V           | 60 V           | 110 V          | 240 V <sup>[1]</sup> | —         | —   | 24 V                                       | 48 V   | 60 V           | —              |
| <b>Operational power,<br/>normal conditions</b>   | 140 W  | 240 W          | 180 W          | 140 W          | 120 W                | —         | —   | 24 W                                       | 15 W   | 9 W            | —              |
| <b>Occasional breaking and making<br/>capacities, abnormal conditions</b>                                 | 240 W  | 360 W          | 240 W          | 210 W          | 180 W                | —         | —   | 100 W                                      | 50 W   | 50 W           | —              |
| <b>Rated operational current (Ie)</b>   | 6 A  | 5 A            | 3 A            | 1.3 A          | 0.5 A                | —         | —   | 1 A  | 0.3 A  | 0.15 A         | —              |
| <b>Low-level switching contact<br/>reliability</b>  | Number of faults for <i>n</i> million operating cycles (17 V, 5 mA): = 10 <sup>-6</sup>    |                |                |                |                      |           |   |  |        |                |                |
| <b>Short-circuit protection</b>   | GB2CB** control circuit protector or control circuit fuse gG 10 A maximum (or equivalent). |                |                |                |                      |           |   |  |        |                |                |
| <b>Wiring (screw clamp)</b>   | <b>Minimum</b>   |                |                |                |                      |           | <b>Maximum</b>                            |  |        |                |                |
| Number of conductors and<br>wire size   |  |                |                |                |                      |           |   |  |        |                |                |
| Solid cable   | 1 x 16–12 AWG (1–2.5 mm <sup>2</sup> )   |                |                |                |                      |           | 2 x 16–12 AWG (1–2.5 mm <sup>2</sup> )    |  |        |                |                |
| Flexible cable <i>without</i> cable end   | 1 x 18–12 AWG (0.75–2.5 mm <sup>2</sup> )  |                |                |                |                      |           | 2 x 18–12 AWG (0.75–2.5 mm <sup>2</sup> ) |  |        |                |                |
| Flexible cable <i>with</i> cable end  | 1 x 18–14 AWG (0.75–1.5 mm <sup>2</sup> )  |                |                |                |                      |           | 2 x 18–14 AWG (0.75–1.5 mm <sup>2</sup> ) |  |        |                |                |
| <b>Wiring (spring terminal)</b>   | <b>Minimum (GVAN only)</b>   |                |                |                |                      |           | <b>Maximum (GVAN only)</b>                |  |        |                |                |
| Flexible cable <i>without</i> cable end   | 1 x 18–12 AWG (0.75–2.5 mm <sup>2</sup> )  |                |                |                |                      |           | 2 x 18–12 AWG (0.75–2.5 mm <sup>2</sup> ) |  |        |                |                |
| Tightening torque   | 12 lb-in (1.4 N•m) maximum   |                |                |                |                      |           |   |  |        |                |                |

<sup>1</sup> Add an RC circuit, Type LA4D, to the load terminals. Consult the *Digest*.

# GV2, GV3, and GV7 Manual Motor Starters, Controllers, and Protectors Specifications and Operating Curves

**Table 11: GV2AE Auxiliary Contact Specifications**

| Type  | Instantaneous Auxiliary Contacts GV2AE   |        |   |                |
|---|--|--------|---|----------------|
| <b>Rated insulation voltage (Ui)</b><br>(associated insulation coordination)<br>Conforming to IEC 60947-1 | 250 V (690 V with respect to main circuit)   |        |   |                |
| Conforming to CSA C22.2 No. 14 and UL 508   | 300 V  |        |   |                |
| <b>Conventional rated thermal current (Ith)</b><br>Conforming to IEC 60947-5-1                            | 2.5 A  |        |   |                |
| Conforming to CSA C22.2 No. 14 and UL 508   | 1 A  |        |   |                |
| <b>Operational power and current AC operation</b><br>Conforming to IEC 60947-5-1                          | AC-15/100,000 close–open operations  |        |   |                |
| <b>Rated operational voltage (Ue)</b>   | 24 V   | 48 V   | 110 V<br>127 V                            | 230 V<br>240 V |
| <b>Operational power, normal conditions</b>   | 48 VA  | 60 VA  | 120 VA                                    | 120 VA         |
| <b>Occasional breaking and making capacities, abnormal conditions</b>                                     | 480 VA   | 600 VA | 1270 VA                                   | 2400 VA        |
| <b>Rated operational current (Ie)</b>   | 2 A  | 1.25 A | 1 A                                       | 0.5 A          |
| <b>Operational power and current DC operation</b><br>Conforming to IEC 60947-5-1                          | DC-13/100,000 close–open operations  |        |   |                |
| <b>Rated operational voltage (Ue)</b>   | 24 V   | 48 V   | 60 V                                      | —              |
| <b>Operational power, normal conditions</b>   | 24 W   | 15 W   | 9 W                                       | —              |
| <b>Occasional breaking and making capacities, abnormal conditions</b>                                     | 100 W  | 50 W   | 50 W                                      | —              |
| <b>Rated operational current (Ie)</b>   | 1 A  | 0.3 A  | 0.15 A                                    | —              |
| <b>Low-level switching contact reliability</b>  | Number of faults for <i>n</i> million operating cycles (17 V, 5 mA): = 10 <sup>-6</sup>            |        |   |                |
| <b>Short-circuit protection</b>   | <b>GB2CB</b> ** control circuit protector or control circuit fuse gG 10 A maximum (or equivalent). |        |   |                |
| <b>Wiring (screw clamp)</b>   | <b>Minimum</b>   |        | <b>Maximum</b>                            |                |
| Number of conductors and wire size  |  |        |   |                |
| Solid cable   | 1 x 16–12 AWG (1–2.5 mm <sup>2</sup> )   |        | 2 x 16–12 AWG (1–2.5 mm <sup>2</sup> )    |                |
| Flexible cable <i>without</i> cable end   | 1 x 18–12 AWG (0.75–2.5 mm <sup>2</sup> )  |        | 2 x 18–12 AWG (0.75–2.5 mm <sup>2</sup> ) |                |
| Flexible cable <i>with</i> cable end  | 1 x 18–14 AWG (0.75–1.5 mm <sup>2</sup> )  |        | 2 x 18–14 AWG (0.75–1.5 mm <sup>2</sup> ) |                |
| <b>Wiring (spring terminal)</b>   | <b>Minimum (GVAN only)</b>   |        | <b>Maximum</b>                            |                |
| Flexible cable <i>without</i> cable end   | 1 x 18–12 AWG (0.75–2.5 mm <sup>2</sup> )  |        | 2 x 18–12 AWG (0.75–2.5 mm <sup>2</sup> ) |                |
| Tightening torque   | 12 lb-in (1.4 N•m) maximum   |        |   |                |





# GV2, GV3, and GV7 Manual Motor Starters, Controllers, and Protectors Specifications and Operating Curves

**Table 12: GV2 Accessory Specifications**

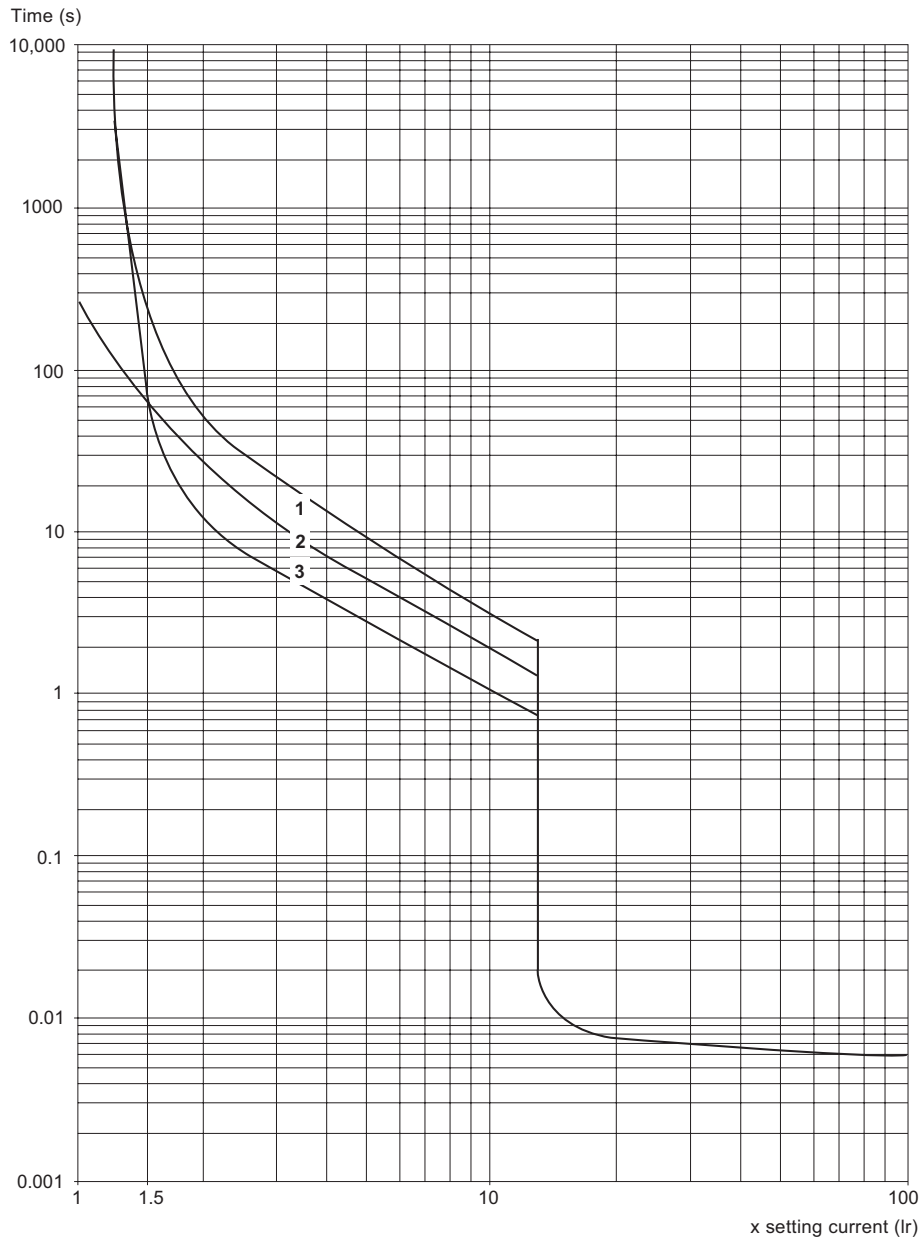
| <b>3-Pole Busbars GV2G•</b>                               |   |  |
|---|---|--|
| Rated insulation voltage (Ui)                             | Conforming to IEC 60947-1               | 690 V  |
| Conventional rated thermal current (Ith)                  | Conforming to IEC 60439-1               | 63 A   |
| Permissible peak current (I peak)                         |   | 11 kA  |
| Permissible thermal limit (I <sup>2</sup> t)              |   | 104 kA <sup>2</sup> s  |
| Degree of protection                                      | Conforming to IEC 60529                 | IP20   |
| <b>Terminal Blocks GV2G05 and GV1G09</b>                  |   |  |
| Rated insulation voltage (Ui)                             | Conforming to IEC 60947-1               | 690 V  |
| Conventional rated thermal current (Ith)                  | Conforming to IEC 60439-1               | 63 A   |
| Degree of protection                                      | Conforming to IEC 60529                 | IP20   |
| Wiring  | Solid cable                             | 1 x 14–2 AWG (1.5–25 mm <sup>2</sup> ) conductor or<br>2 x 14–6 AWG (1.5–10 mm <sup>2</sup> ) conductors |
|   | Flexible cable <i>without</i> cable end | 1 x 14–2 AWG (1.5–25 mm <sup>2</sup> ) conductor or<br>2 x 12–6 AWG (2.5–10 mm <sup>2</sup> ) conductors |
|   | Flexible cable <i>with</i> cable end    | 1 x 14–4 AWG (1.5–16 mm <sup>2</sup> ) conductor or<br>2 x 14–10 AWG (1.5–4 mm <sup>2</sup> ) conductors |
| Tightening torque   | Connector                               | 20 lb-in (2.2 N•m)   |
|   | Screw clamp                             | 15 lb-in (1.7 N•m)   |
| <b>Current Limiter GV1L3 (European applications only)</b> |   |  |
| Rated insulation voltage (Ui)                             | Conforming to IEC 60947-1               | 690 V  |
| Conventional rated thermal current (Ith)                  | Conforming to IEC 60947-1               | 63 A   |
| Operating threshold                                       | rms current                             | 1500 A (non adjustable threshold)  |
| Wiring  | Solid cable                             | 1 x 14–2 AWG (1.5–25 mm <sup>2</sup> ) conductor or<br>2 x 14–6 AWG (1.5–10 mm <sup>2</sup> ) conductors |
|   | Flexible cable <i>without</i> cable end | 1 x 14–2 AWG (1.5–25 mm <sup>2</sup> ) conductor or<br>2 x 12–6 AWG (2.5–10 mm <sup>2</sup> ) conductors |
|   | Flexible cable <i>with</i> cable end    | 1 x 14–4 AWG (1.5–16 mm <sup>2</sup> ) conductor or<br>2 x 14–10 AWG (1.5–4 mm <sup>2</sup> ) conductors |
| Tightening torque   |   | 20 lb-in (2.2 N•m)   |

# GV2, GV3, and GV7 Manual Motor Starters, Controllers, and Protectors Specifications and Operating Curves

## GV2 Operating Curves

**Table 13: Thermal-Magnetic Trip Curves for GV2ME and GV2P**

Average operating time at 68 °F (20 °C) as a function of multiples of the setting current



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

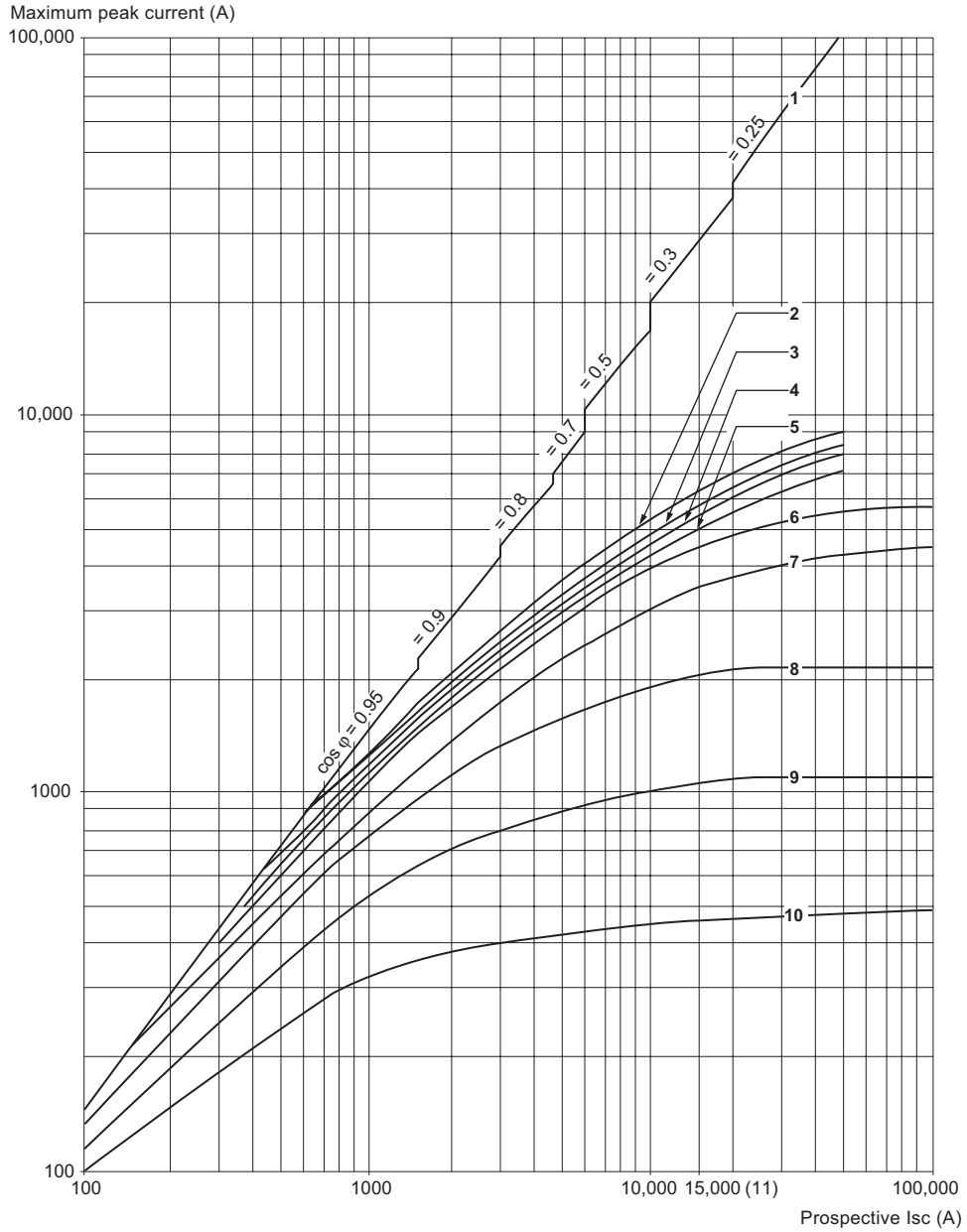
# GV2, GV3, and GV7 Manual Motor Starters, Controllers, and Protectors Specifications and Operating Curves

**Table 14: Current Limitation on Short Circuit**

**For GV2M and GV2P**  
3Ø, 400/415 V

**Dynamic stress**

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



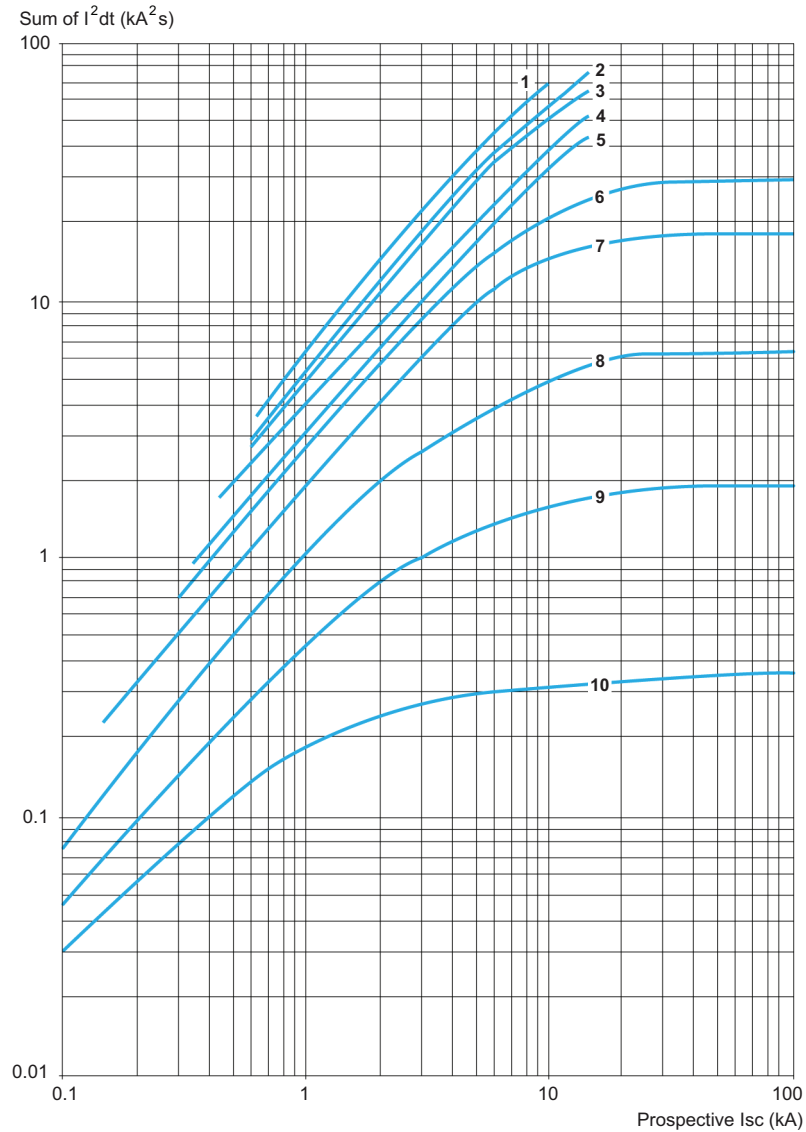
- |                   |   |
|-------------------|---|
| 1. I peak maximum | 7. 4–6.3 A  |
| 2. 20–25 A        | 8. 2.5–4 A  |
| 3. 17–23 A        | 9. 1.6–2.5 A  |
| 4. 13–18 A        | 10. 1–1.6 A   |
| 5. 9–14 A         | 11. Limit of rated ultimate breaking capacity on short circuit of GV2M (14, 18, 23, and 25 A ratings) |
| 6. 6–10 A         |   |

# GV2, GV3, and GV7 Manual Motor Starters, Controllers, and Protectors Specifications and Operating Curves

**Table 15: Thermal Limit on Short Circuit for GV2ME**

**Thermal limit in  $kA^2s$  in the magnetic operating zone**

Sum of  $I^2dt = f(\text{prospective } I_{sc})$  at  $1.05 U_e = 435 V$

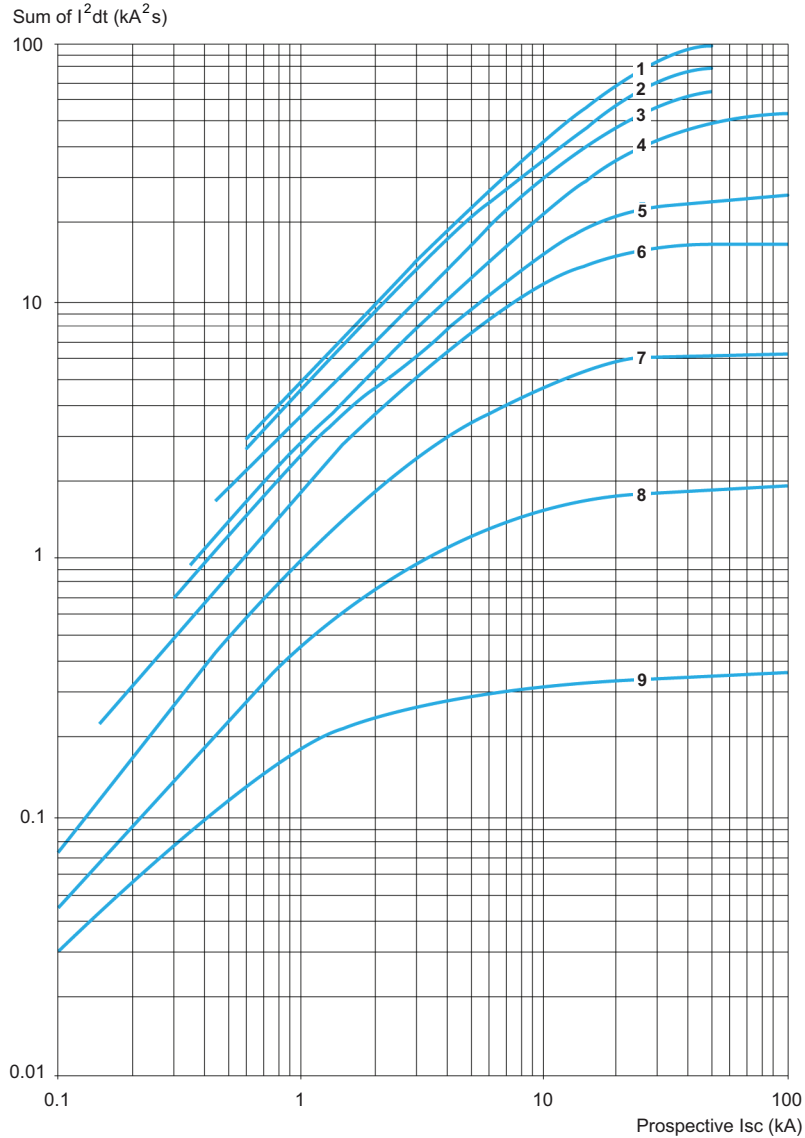


- |            |              |
|------------|--------------|
| 1. 24–32 A | 6. 6–10 A    |
| 2. 20–25 A | 7. 4–6.3 A   |
| 3. 17–23 A | 8. 2.5–4 A   |
| 4. 13–18 A | 9. 1.6–2.5 A |
| 5. 9–14 A  | 10. 1–1.6 A  |

# GV2, GV3, and GV7 Manual Motor Starters, Controllers, and Protectors Specifications and Operating Curves

**Table 16: Thermal Limit on Short Circuit for GV2P**

**Thermal limit in kA<sup>2</sup>s in the magnetic operating zone**  
 Sum of I<sup>2</sup>dt = f (prospective I<sub>sc</sub>) at 1.05 U<sub>e</sub> = 435 V



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

# GV2, GV3, and GV7 Manual Motor Starters, Controllers, and Protectors Specifications and Operating Curves

**Table 17: GV2ME Breaking Capacity for European Applications**

| Type  |  | Units     | Catalog Number Suffix (GV2ME) |         |         |     |     |     |    |    |     |     |     |
|---|--|-----------|-------------------------------|---------|---------|-----|-----|-----|----|----|-----|-----|-----|
|   |  |           | 01-06                         | 07      | 08      | 10  | 14  | 16  | 20 | 21 | 22  |     |     |
| <b>Rating</b> <sup>[1]</sup>                          |  | A         | 0.1-1.6                       | 2.5     | 4       | 6.3 | 10  | 14  | 18 | 23 | 25  |     |     |
| <b>Breaking capacity</b><br>conforming to IEC 60947-2 | 230/240 V  | Icu       | kA                            | >100 kA |         |     |     |     |    |    | 50  | 50  |     |
|   |  |           | %                             | >100 kA |         |     |     |     |    |    | 100 | 100 |     |
|   | 400/415 V  | Icu       | kA                            | >100 kA |         |     |     |     | 15 | 15 | 15  | 15  |     |
|   |  |           | %                             | >100 kA |         |     |     |     | 50 | 50 | 40  | 40  |     |
|   | 440 V  | Icu       | kA                            | >100 kA |         |     | 50  | 15  | 8  | 8  | 6   | 6   |     |
|   |  |           | %                             | >100 kA |         |     | 100 | 100 | 50 | 50 | 50  | 50  |     |
|   | 500 V  | Icu       | kA                            | >100 kA |         |     | 50  | 10  | 6  | 6  | 4   | 4   |     |
|   |  |           | %                             | >100 kA |         |     | 100 | 100 | 75 | 75 | 75  | 75  |     |
|   | 690 V  | Icu       | kA                            | >100 kA | 3       | 3   | 3   | 3   | 3  | 3  | 3   | 3   |     |
|   |  |           | %                             | >100 kA | 75      | 75  | 75  | 75  | 75 | 75 | 75  | 75  |     |
|   | <b>Associated fuses (if required)</b><br>if I <sub>sc</sub> > breaking capacity I <sub>cu</sub><br>conforming to IEC 60947-2 | 230/240 V | A                             | Ics     | >100 kA |     |     |     |    |    |     | 80  | 80  |
|   |  |           |                               |         | >100 kA |     |     |     |    |    |     | 100 | 100 |
| 400/415 V   |  | A         | Ics                           | >100 kA |         |     |     |     | 63 | 63 | 80  | 80  |     |
|   |  |           |                               | >100 kA |         |     |     |     | 80 | 80 | 100 | 100 |     |
| 440 V   |  | A         | Ics                           | >100 kA |         |     | 50  | 50  | 50 | 50 | 63  | 63  |     |
|   |  |           |                               | >100 kA |         |     | 63  | 63  | 63 | 63 | 80  | 80  |     |
| 500 V   |  | A         | Ics                           | >100 kA |         |     | 50  | 50  | 50 | 50 | 50  | 50  |     |
|   |  |           |                               | >100 kA |         |     | 63  | 63  | 63 | 63 | 63  | 63  |     |
| 690 V   |  | A         | Ics                           | >100 kA | 16      | 25  | 32  | 32  | 40 | 40 | 40  | 40  |     |
|   |  |           |                               | >100 kA | 20      | 32  | 40  | 40  | 50 | 50 | 50  | 50  |     |

<sup>1</sup> I<sub>cs</sub> = % of I<sub>cu</sub>.

**Table 18: GV2P Breaking Capacity for European Applications**

| Type  |  | Units     | Catalog Number Suffix (GV2P) |         |         |     |     |     |     |         |     |     |     |
|---|--|-----------|------------------------------|---------|---------|-----|-----|-----|-----|---------|-----|-----|-----|
|   |  |           | 01-06                        | 07      | 08      | 10  | 14  | 16  | 20  | 21 & 22 | 32  |     |     |
| <b>Rating</b> <sup>[1]</sup>                          |  | A         | 0.1-1.6                      | 2.5     | 4       | 6.3 | 10  | 14  | 18  | 23 & 25 | 32  |     |     |
| <b>Breaking capacity</b><br>conforming to IEC 60947-2 | 230/240 V  | Ics       | kA                           | >100 kA |         |     |     |     |     |         |     |     |     |
|   |  |           | %                            | >100 kA |         |     |     |     |     |         |     |     |     |
|   | 400/415 V  | Ics       | kA                           | >100 kA |         |     |     |     | 50  | 50      | 50  |     |     |
|   |  |           | %                            | >100 kA |         |     |     |     | 50  | 50      | 50  |     |     |
|   | 440 V  | Ics       | kA                           | >100 kA |         |     | 50  | 20  | 20  | 20      | 20  |     |     |
|   |  |           | %                            | >100 kA |         |     | 75  | 75  | 75  | 75      |     |     |     |
|   | 500 V  | Ics       | kA                           | >100 kA |         |     | 50  | 42  | 10  | 10      | 10  |     |     |
|   |  |           | %                            | >100 kA |         |     | 100 | 75  | 75  | 75      | 75  |     |     |
|   | 690 V  | Ics       | kA                           | >100 kA | 8       | 8   | 6   | 6   | 6   | 4       | 4   |     |     |
|   |  |           | %                            | >100 kA | 100     | 100 | 100 | 100 | 100 | 100     | 100 |     |     |
|   | <b>Associated fuses (if required)</b><br>if I <sub>sc</sub> > breaking capacity I <sub>cu</sub><br>conforming to IEC 60947-2 | 230/240 V | A                            | Ics     | >100 kA |     |     |     |     |         |     |     |     |
|   |  |           |                              |         | >100 kA |     |     |     |     |         |     | 100 | 100 |
| 400/415 V   |  | A         | Ics                          | >100 kA |         |     |     |     | 125 | 125     | 125 |     |     |
|   |  |           |                              | >100 kA |         |     |     |     | 50  | 63      | 80  | 80  |     |
| 440 V   |  | A         | Ics                          | >100 kA |         |     | 63  | 80  | 100 | 100     |     |     |     |
|   |  |           |                              | >100 kA |         |     | 50  | 50  | 50  | 50      | 50  |     |     |
| 500 V   |  | A         | Ics                          | >100 kA |         |     | 63  | 63  | 63  | 63      | 63  |     |     |
|   |  |           |                              | >100 kA |         |     | 50  | 50  | 50  | 50      | 50  |     |     |
| 690 V   |  | A         | Ics                          | >100 kA | 20      | 25  | 40  | 40  | 50  | 50      | 50  |     |     |
|   |  |           |                              | >100 kA | 25      | 32  | 50  | 50  | 63  | 63      | 63  |     |     |

<sup>1</sup> I<sub>cs</sub> = % of I<sub>cu</sub>.

# GV2, GV3, and GV7 Manual Motor Starters, Controllers, and Protectors Specifications and Operating Curves

**Table 19: GV2P\*\* Breaking Capacity for European Applications When Used with Current Limiter GV1L3**

| Type  |           | Units | Catalog Number Suffix (GV2P**) |         |    |     |    |    |     |         |    |  |
|---|-----------|-------|--------------------------------|---------|----|-----|----|----|-----|---------|----|--|
|   |           |       | 01-06                          | 07      | 08 | 10  | 14 | 16 | 20  | 21 & 25 | 32 |  |
| <b>Rating</b> <sup>[1]</sup>                          |           | A     | 0.1-1.6                        | 2.5     | 4  | 6.3 | 10 | 14 | 18  | 21 & 23 | 32 |  |
| <b>Breaking capacity</b><br>conforming to IEC 60947-2 | 230/240 V | Ics   | kA                             | >100 kA |    |     |    |    |     |         |    |  |
|   |           |       | %                              |         |    |     |    |    |     |         |    |  |
|   | 400/415 V |       | kA                             | >100 kA |    |     |    |    |     |         |    |  |
|   |           |       | %                              |         |    |     |    |    |     |         |    |  |
|   | 440 V     |       | kA                             | >100 kA |    |     |    |    |     | 100     |    |  |
|   |           |       | %                              | >100 kA |    |     |    |    |     | 50      |    |  |
|   | 500 V     |       | kA                             | >100 kA |    |     |    |    | 100 |         |    |  |
|   |           |       | %                              | >100 kA |    |     |    |    | 50  |         |    |  |

<sup>1</sup> Ics = % of Icu.

**Table 20: GV2ME\*\* Breaking Capacity for European Applications When Used with Current Limiter GV1L3**

| Type  |           | Units | Catalog Number Suffix (GV2ME**) |         |    |     |    |    |     |     |     |     |     |
|---|-----------|-------|---------------------------------|---------|----|-----|----|----|-----|-----|-----|-----|-----|
|   |           |       | 01 to 06                        | 07      | 08 | 10  | 14 | 16 | 20  | 21  | 22  |     |     |
| <b>Rating</b> <sup>[1]</sup>                          |           | A     | 0.1-1.6                         | 2.5     | 4  | 6.3 | 10 | 14 | 18  | 23  | 25  |     |     |
| <b>Breaking capacity</b><br>conforming to IEC 60947-2 | 230/240 V | Ics   | kA                              | >100 kA |    |     |    |    |     |     |     |     |     |
|   |           |       | %                               |         |    |     |    |    |     |     |     |     |     |
|   | 400/415 V |       | kA                              | >100 kA |    |     |    |    |     | 100 | 100 | 100 | 100 |
|   |           |       | %                               | >100 kA |    |     |    |    |     | 50  | 50  | 40  | 40  |
|   | 440 V     |       | kA                              | >100 kA |    |     |    |    |     | 50  | 20  | 20  | 20  |
|   |           |       | %                               | >100 kA |    |     |    |    |     | 75  | 75  | 75  | 75  |
|   | 500 V     |       | kA                              | >100 kA |    |     |    |    | 50  | 42  | 10  | 10  | 10  |
|   |           |       | %                               | >100 kA |    |     |    |    | 100 | 100 | 75  | 75  | 75  |
| <b>Rating</b>   |           | A     | 0.1-1.6                         | 2.5     | 4  | 6.3 | 10 | 14 | 18  | 23  | 25  |     |     |

<sup>1</sup> Ics = % of Icu.