

## GV4PEM80S

Motor circuit breaker, TeSys GV4, 3P, 80A, Icu  
100kA, thermal magnetic multifunction, Everlink  
terminals





## Main

|                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Range                                     | TeSys                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Product name                              | TeSys GV4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Product or component type                 | Multifunction circuit breaker                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Device short name                         | GV4PEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Device application                        | Motor protection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Protection type                           | Long start<br>Ground fault protection<br>Short time short-circuit protection<br>Jam<br>Phase loss<br>Locked rotor<br>Phase unbalance<br>Overload<br>Short-circuit                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Utilisation category                      | Category A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Suitability for isolation                 | Yes conforming to IEC 60947-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Poles description                         | 3P                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| [Ue] rated operational voltage            | 690 V AC 50/60 Hz conforming to IEC 60947-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| [In] rated current                        | 80 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Trip unit technology                      | Thermal-magnetic<br>Electronic                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Magnetic tripping current                 | 1360 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| [Isd] short-time pick-up adjustment range | 5...13 x Ir                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Thermal protection adjustment range       | 40...80 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Motor tripping class                      | 10<br>20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Phase failure sensitivity                 | Yes conforming to IEC 60947-4-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Breaking capacity                         | Icu 120 kA at 220...240 V AC 50/60 Hz conforming to IEC 60947-2<br>Icu 100 kA at 380...415 V AC 50/60 Hz conforming to IEC 60947-2<br>Icu 70 kA at 440 V AC 50/60 Hz conforming to IEC 60947-2<br>Icu 30 kA at 500 V AC 50/60 Hz conforming to IEC 60947-2<br>Icu 18 kA at 525 V AC 50/60 Hz conforming to IEC 60947-2<br>100 KA at 208Y/120 V AC 50/60 Hz conforming to UL 60947<br>100 KA at 240 V AC 50/60 Hz conforming to UL 60947<br>65 KA at 480Y/277 V AC 50/60 Hz conforming to UL 60947<br>Icu 10 kA at 660...690 V AC 50/60 Hz conforming to IEC 60947-2<br>25 kA at 600Y/347 V AC 50/60 Hz conforming to UL 60947 |
| [Ics] rated service breaking capacity     | 120 KA at 220...240 V AC 50/60 Hz conforming to IEC 60947-2<br>100 KA at 380...415 V AC 50/60 Hz conforming to IEC 60947-2<br>70 KA at 440 V AC 50/60 Hz conforming to IEC 60947-2<br>30 KA at 500 V AC 50/60 Hz conforming to IEC 60947-2<br>18 KA at 525 V AC 50/60 Hz conforming to IEC 60947-2<br>2.5 kA at 660...690 V AC 50/60 Hz conforming to IEC 60947-2                                                                                                                                                                                                                                                             |
| [Uimp] rated impulse withstand voltage    | IEC 60947-2 8 kV                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

|                               |                                                                         |
|-------------------------------|-------------------------------------------------------------------------|
| [Ui] rated insulation voltage | 800 V conforming to IEC 60947-2                                         |
| Mechanical durability         | 40000 cycles                                                            |
| Electrical durability         | 14000 Cycles for AC-3 at 440 V In/2<br>7000 cycles for AC-3 at 440 V In |

## Complementary

|                             |                                                                                                                                                                                                                                                                                                                |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Motor power kW              | 37 KW at 400...415 V AC 50/60 Hz<br>45 KW at 500 V AC 50/60 Hz<br>22 KW at 400...415 V AC 50/60 Hz<br>30 KW at 500 V AC 50/60 Hz<br>37 KW at 660...690 V AC 50/60 Hz<br>45 KW at 660...690 V AC 50/60 Hz<br>55 KW at 660...690 V AC 50/60 Hz<br>30 KW at 400...415 V AC 50/60 Hz<br>37 kW at 500 V AC 50/60 Hz |
| Control type                | Toggle                                                                                                                                                                                                                                                                                                         |
| Handle padlocking           | With a lock accessory                                                                                                                                                                                                                                                                                          |
| Number of slots             | 1 slot(s) for alarm switch for fault signalling contact, plug-in<br>1 slot(s) for voltage release for electrical remote tripping, plug-in<br>1 slot(s) for auxiliary switch for open/close contact, plug-in                                                                                                    |
| Local signalling            | Flashing LED (green) for ready<br>LED (red) for alarm (T° >95%)<br>Green indicator for presence of auxiliary contacts                                                                                                                                                                                          |
| Communication port protocol | NFC                                                                                                                                                                                                                                                                                                            |
| Standards                   | UL 60947-4-1<br>EN/IEC 60947-4-1<br>CSA C22.2 No 60947-4-1<br>EN/IEC 60947-2                                                                                                                                                                                                                                   |
| Product certifications      | IEC<br>UL<br>CSA<br>CCC<br>EAC<br>ATEX<br>EU-RO MR                                                                                                                                                                                                                                                             |
| Quality labels              | CE                                                                                                                                                                                                                                                                                                             |
| Mounting mode               | By screws<br>By clips                                                                                                                                                                                                                                                                                          |
| Mounting support            | Plate<br>35 mm symmetrical DIN rail<br>75 mm symmetrical DIN rail                                                                                                                                                                                                                                              |
| Connections - terminals     | Top 1 EverLink BTR screw connectors wire size 1.5...70 mm², solid<br>Top 1 EverLink BTR screw connectors wire size 1.5...50 mm², flexible<br>Bottom 1 EverLink BTR screw connectors wire size 2.5...95 mm², solid<br>Bottom 1 EverLink BTR screw connectors wire size 2.5...70 mm², flexible                   |
| Connection pitch            | 27 mm                                                                                                                                                                                                                                                                                                          |
| Wire stripping length       | 20 mm                                                                                                                                                                                                                                                                                                          |
| Tightening torque           | 9 N.M for 16...95 mm²<br>5 N.m for 1.5...10 mm²                                                                                                                                                                                                                                                                |
| Width                       | 81 mm                                                                                                                                                                                                                                                                                                          |
| Height                      | 155 mm                                                                                                                                                                                                                                                                                                         |
| Depth                       | 116 mm                                                                                                                                                                                                                                                                                                         |
| Net weight                  | 1.45 kg                                                                                                                                                                                                                                                                                                        |
| Colour                      | Grey (RAL 7016)                                                                                                                                                                                                                                                                                                |

## Environment

|                                       |                                                            |
|---------------------------------------|------------------------------------------------------------|
| Ambient air temperature for storage   | -50...85 °C                                                |
| Ambient air temperature for operation | -25...70 °C                                                |
| Operating altitude                    | 0...2000 m without derating<br>2000...5000 m with derating |
| IP degree of protection               | IP40 front face conforming to IEC 60529                    |
| IK degree of protection               | IK07 conforming to IEC 62262                               |
| Pollution degree                      | 3 conforming to IEC 60947-1                                |

|                       |                                                                                                                                                                                  |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tropicalisation       | 2 conforming to IEC 68-2                                                                                                                                                         |
| Mechanical robustness | Vibrations: +/- 1 mm 2...13.2 Hz conforming to IEC 60068-2-6<br>Vibrations: 0.7 gn 13.2...100 Hz conforming to IEC 60068-2-6<br>Shocks: 15 gn 11 ms conforming to IEC 60068-2-27 |

### Packing Units

|                  |           |
|------------------|-----------|
| Package 1 Weight | 1.689 kg  |
| Package 1 Height | 12.500 cm |
| Package 1 width  | 9.000 cm  |
| Package 1 Length | 22.000 cm |

### Offer Sustainability

|                             |                                                                                                                                 |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Sustainable offer status    | Green Premium product                                                                                                           |
| REACH Regulation            |  <a href="#">REACH Declaration</a>             |
| EU RoHS Directive           | Compliant  <a href="#">EU RoHS Declaration</a> |
| Mercury free                | Yes                                                                                                                             |
| RoHS exemption information  |  <a href="#">Yes</a>                           |
| China RoHS Regulation       |  <a href="#">China RoHS Declaration</a>        |
| Environmental Disclosure    |  <a href="#">Product Environmental Profile</a> |
| Circularity Profile         |  <a href="#">End Of Life Information</a>       |
| WEEE                        | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins     |
| PVC free                    | Yes                                                                                                                             |
| Halogen content performance | Halogen free plastic parts product                                                                                              |

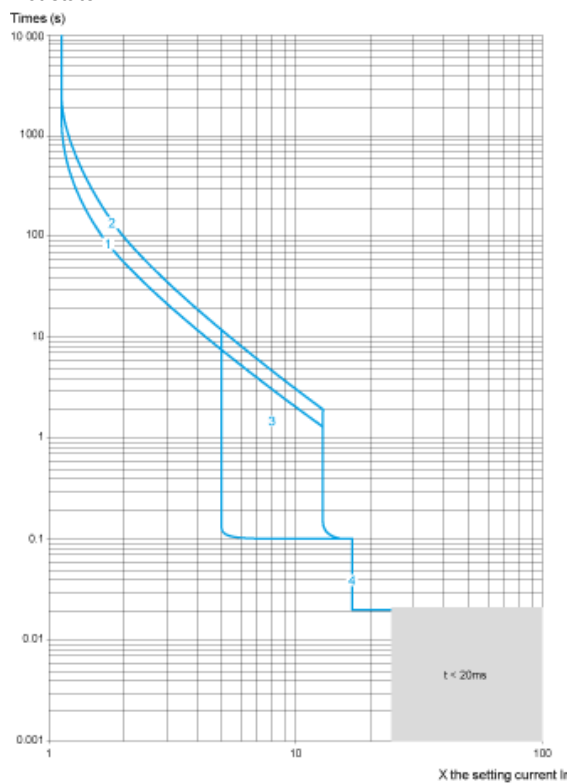
### Contractual warranty

|          |           |
|----------|-----------|
| Warranty | 18 months |
|----------|-----------|

### Thermal-Magnetic Tripping Curves for GV4P, GV4PE, GV4PEM

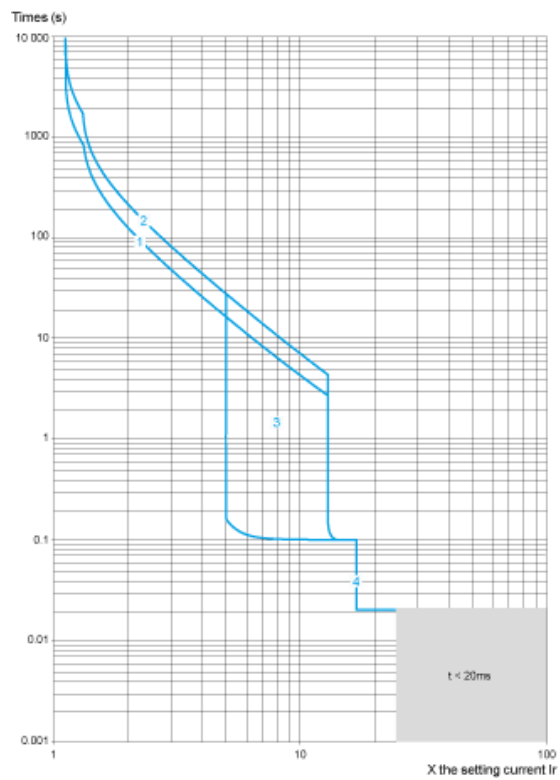
Average Operating Times at 20 °C Related to Multiples of the Setting Current

Hot state



- 1 Class 10
- 2 Class 20
- 3  $I_{sd} = 5 \dots 13 \times I_r$
- 4  $I_i = 17 I_r$

## Cold state

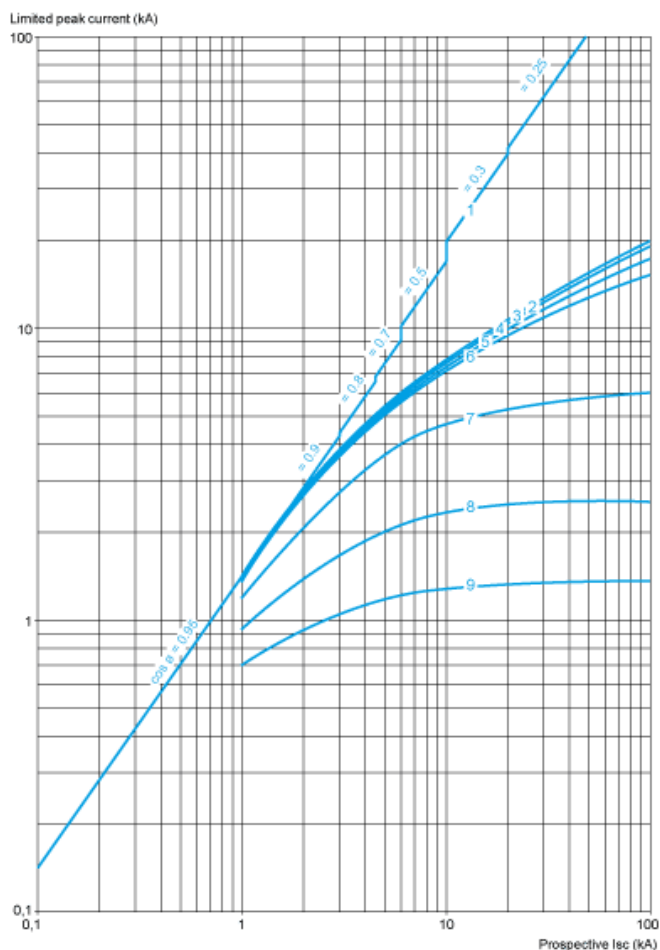


- 1 Class 10
- 2 Class 20
- 3  $I_{sd} = 5 \dots 13 \times I_r$
- 4  $I_i = 17 I_n$

## Current Limitation on Short-Circuit for GV4P, GV4PE, GV4PEM (3-Phase 400/415 V)

Dynamic Stress

$I_{peak} = f(\text{prospective } I_{sc}) \text{ at } 1.05 U_e = 435 \text{ V}$

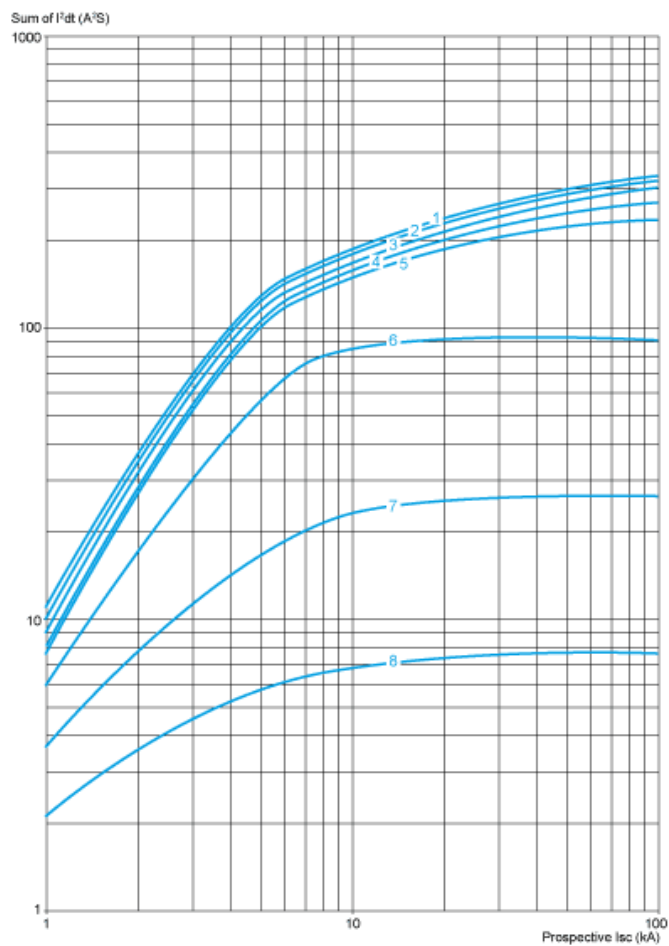


- 1 Maximum peak current
- 2 GV4P115
- 3 GV4P80
- 4 GV4P50
- 5 GV4P25
- 6 GV4P12
- 7 GV4P07
- 8 GV4P03
- 9 GV4P02

### Thermal Limit on Short-Circuit for GV4P, GV4PE, GV4PEM

Thermal Limit in  $kA^2s$  in the Magnetic Operating Zone

Sum of  $I^2 dt = f$  (prospective Isc) at  $1.05 U_e = 435 V$

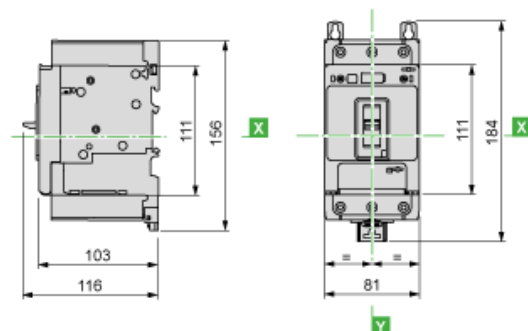


- 1 GV4P115
- 2 GV4P80
- 3 GV4P50
- 4 GV4P25
- 5 GV4P12
- 6 GV4P07
- 7 GV4P03
- 8 GV4P02

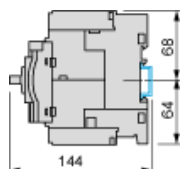


## GV4 with Toggle: GV4LE, GV4PE, GV4PEM

With EverLink® Connector

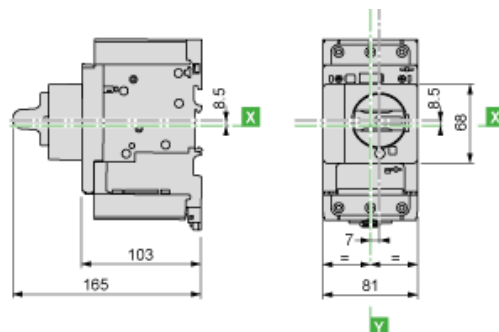


With Crimp Lug Connector



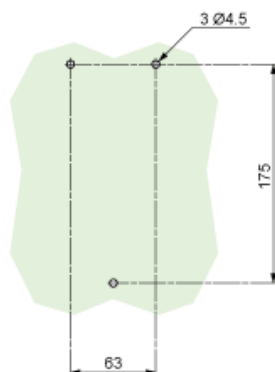
## GV4 with Rotary Handle: GV4L, GV4P, or GV4LE, GV4PE, GV4PEM with GV4ADN01, GV4ADN02 Direct Mounting Rotary Handle

Dimensions

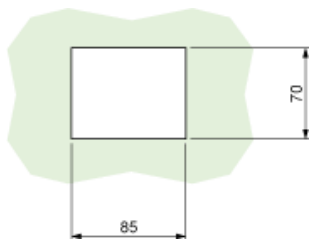


## GV4L, GV4P, GV4LE, GV4PE, GV4PEM

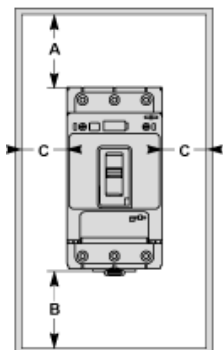
Panel Mounting with M4 Screws



Door Cut-Out for Rotary Handle



Minimum Safety Clearance



Toggle-type, rotary handle-type: identical clearance values.

| Safety Clearance (mm) |                     |   |   |                  |   |   |
|-----------------------|---------------------|---|---|------------------|---|---|
|                       | Painted Sheet Metal |   |   | Bare Sheet Metal |   |   |
|                       | A                   | B | C | A                | B | C |
| No accessory          | 30                  | 0 | 0 | 40               | 0 | 5 |
| Interphase barriers   | 0                   | 0 | 0 | 0                | 0 | 5 |
| Long terminal shield  | 0                   | 0 | 0 | 0                | 0 | 5 |

## Magnetic Motor Circuit Breakers

GV4P, GV4PE, GV4PEM

