

# GV4L80N

Motor circuit breaker, TeSys GV4, 3P, 80 A, Icu 50 kA, magnetic, EverLink terminals



## Main

|                                       |                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Range                                 | TeSys                                                                                                                                                                                                                                                                                                                                                                                  |
| Product name                          | TeSys GV4                                                                                                                                                                                                                                                                                                                                                                              |
| Product or component type             | Circuit breaker                                                                                                                                                                                                                                                                                                                                                                        |
| Device short name                     | GV4L                                                                                                                                                                                                                                                                                                                                                                                   |
| Device application                    | Motor protection                                                                                                                                                                                                                                                                                                                                                                       |
| Poles description                     | 3P                                                                                                                                                                                                                                                                                                                                                                                     |
| Utilisation category                  | Category A                                                                                                                                                                                                                                                                                                                                                                             |
| Trip unit technology                  | Magnetic<br>Electronic                                                                                                                                                                                                                                                                                                                                                                 |
| Protection type                       | Short-circuit                                                                                                                                                                                                                                                                                                                                                                          |
| [In] rated current                    | 80 A                                                                                                                                                                                                                                                                                                                                                                                   |
| Breaking capacity                     | Icu 100 kA at 220...240 V AC 50/60 Hz conforming to IEC 60947-2<br>Icu 50 kA at 380...415 V AC 50/60 Hz conforming to IEC 60947-2<br>Icu 50 kA at 440 V AC 50/60 Hz conforming to IEC 60947-2<br>Icu 15 kA at 525 V AC 50/60 Hz conforming to IEC 60947-2<br>Icu 8 kA at 660...690 V AC 50/60 Hz conforming to IEC 60947-2<br>Icu 25 kA at 500 V AC 50/60 Hz conforming to IEC 60947-2 |
| [Ics] rated service breaking capacity | 100 KA at 220...240 V AC 50/60 Hz conforming to IEC 60947-2<br>50 KA at 380...415 V AC 50/60 Hz conforming to IEC 60947-2<br>50 KA at 440 V AC 50/60 Hz conforming to IEC 60947-2<br>25 KA at 500 V AC 50/60 Hz conforming to IEC 60947-2<br>15 KA at 525 V AC 50/60 Hz conforming to IEC 60947-2<br>2 kA at 660...690 V AC 50/60 Hz conforming to IEC 60947-2                         |
| Magnetic setting range                | 480...1120 A                                                                                                                                                                                                                                                                                                                                                                           |
| Control type                          | Rotary handle                                                                                                                                                                                                                                                                                                                                                                          |

## Complementary

|                                        |                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| [Ue] rated operational voltage         | 690 V AC 50/60 Hz conforming to IEC 60947-2                                                                                                                                                                                                                                                                                                  |
| Motor power kW                         | 37 KW at 400...415 V AC 50/60 Hz<br>45 KW at 500 V AC 50/60 Hz<br>55 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 |
| [Uimp] rated impulse withstand voltage | IEC 60947-2 8 kV                                                                                                                                                                                                                                                                                                                             |
| [Ui] rated insulation voltage          | 800 V conforming to IEC 60947-2                                                                                                                                                                                                                                                                                                              |
| Mounting mode                          | By screws<br>By clips                                                                                                                                                                                                                                                                                                                        |

|                                      |                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mounting support                     | Plate<br>75 mm symmetrical DIN rail<br>35 mm symmetrical DIN rail                                                                                                                                                                                                                                                                                |
| Suitability for isolation            | Yes conforming to IEC 60947-1                                                                                                                                                                                                                                                                                                                    |
| 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                                                                                                                                                                                                                                                                          |
| Local signalling                     | Green indicator for presence of auxiliary contacts                                                                                                                                                                                                                                                                                               |
| 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                                                                                                                                      |
| Toggle padlocking (with accessories) | Padlock in OFF or ON position                                                                                                                                                                                                                                                                                                                    |
| Connection pitch                     | 27 mm                                                                                                                                                                                                                                                                                                                                            |
| Connections - terminals              | Top 1 EverLink BTR screw connectors wire size 1.5...70 mm <sup>2</sup> , solid<br>Top 1 EverLink BTR screw connectors wire size 1.5...50 mm <sup>2</sup> , flexible<br>Bottom 1 EverLink BTR screw connectors wire size 2.5...95 mm <sup>2</sup> , solid<br>Bottom 1 EverLink BTR screw connectors wire size 2.5...70 mm <sup>2</sup> , flexible |
| Tightening torque                    | 9 N.M for 16...95 mm <sup>2</sup><br>5 N.m for 1.5...10 mm <sup>2</sup>                                                                                                                                                                                                                                                                          |
| Wire stripping length                | 20 mm                                                                                                                                                                                                                                                                                                                                            |
| Quality labels                       | CE                                                                                                                                                                                                                                                                                                                                               |
| Standards                            | EN/IEC 60947-2<br>EN/IEC 60947-4-1                                                                                                                                                                                                                                                                                                               |
| Height                               | 155 mm                                                                                                                                                                                                                                                                                                                                           |
| Width                                | 81 mm                                                                                                                                                                                                                                                                                                                                            |
| Depth                                | 165 mm                                                                                                                                                                                                                                                                                                                                           |
| Net weight                           | 1.65 kg                                                                                                                                                                                                                                                                                                                                          |
| Colour                               | Grey (RAL 7016)                                                                                                                                                                                                                                                                                                                                  |

## Environment

|                                       |                                                                                                                                                                                  |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product certifications                | IEC<br>CCC<br>EAC<br>EU-RO MR                                                                                                                                                    |
| Tropicalisation                       | 2 conforming to IEC 68-2                                                                                                                                                         |
| 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                                                                                                                                                      |
| 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 |
| Ambient air temperature for operation | -25...70 °C                                                                                                                                                                      |
| Ambient air temperature for storage   | -50...85 °C                                                                                                                                                                      |
| Operating altitude                    | 0...2000 m without derating<br>2000...5000 m with derating                                                                                                                       |

## Packing Units

|                  |           |
|------------------|-----------|
| Package 1 Weight | 1.700 kg  |
| Package 1 Height | 21.000 cm |
| Package 1 width  | 11.000 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                                                                                              |
| <b>Contractual warranty</b> |                                                                                                                                 |
| Warranty                    | 18 months                                                                                                                       |

## Tripping Curves for GV4L and GV4LE Combined with Thermal Overload Relay LRD or LR9

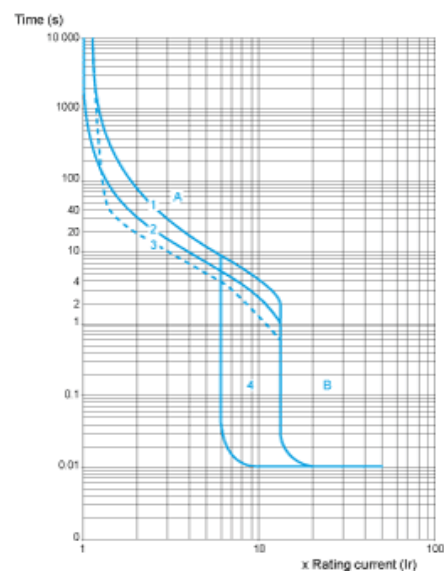
Average Operating Times at 20 °C Related to Multiples of the Setting Current

GV4L02 and GV4LE02 to 12 with LRD05 to LRD14, GV4L80 and GV4LE80 with LRD3363



- 1 3 poles from cold state
- 2 2 poles from cold state
- 3 3 poles from hot state
- 4 6...14 Ir
- A Thermal overload relay protection zone
- B GV4L protection zone

GV4L25 and GV4LE25 with LRD 318, LRD325 GV4L50 AND GV4LE50 with LRD 332, LRD 340, LRD 350



- 1 3 poles from cold state
- 2 2 poles from cold state
- 3 3 poles from hot state
- 4 6...14 Ir
- A Thermal overload relay protection zone
- B GV4L protection zone

GV4L115 and GV4LE115 with Class 10 LR9F5367, LR9D5369 and Class 20 LR9D5567, LR9F5569



- 1 Cold state curve
- 2 Hot state curve
- 3 6...14 Ir

### Current Limitation on Short-Circuit for GV4L, GV4LE (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 GV4L115
- 3 GV4L80
- 4 GV4L50
- 5 GV4L25
- 6 GV4L12
- 7 GV4L07
- 8 GV4L03
- 9 GV4L02

## Current Limitation on Short-Circuit for GV4L, GV4LE + Thermal Overload Relay LRD or LR9 (3-Phase 400/415 V)

### Dynamic Stress

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

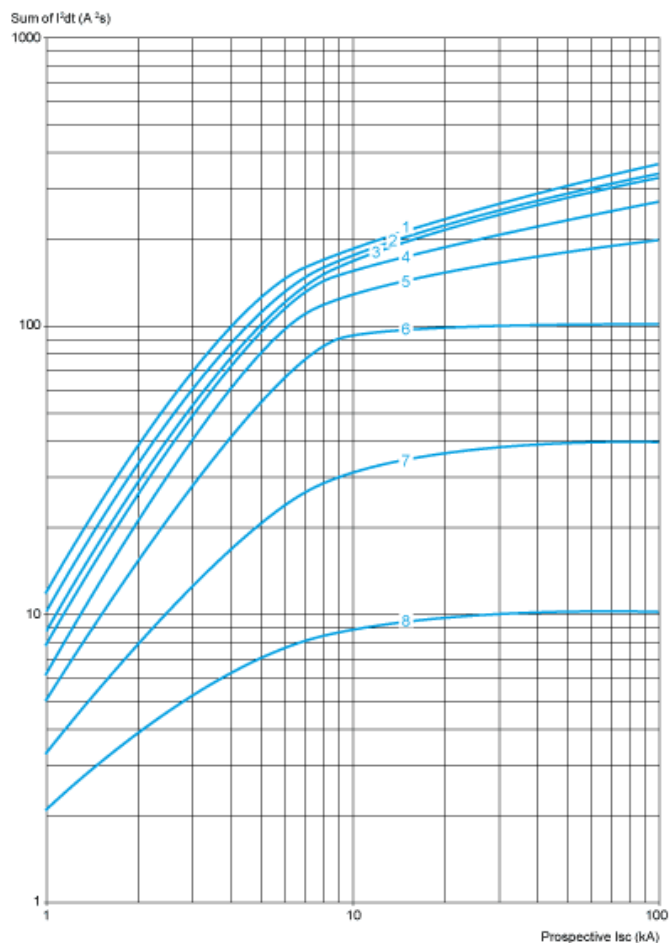


- 1 Maximum peak current
- 2 GV4L115 + LR9D5367 or LR9F5367
- 3 GV4L80 + LRD3361
- 4 GV4L50 + LRD340
- 5 GV4L25 + LRD325
- 6 GV4L12 + LRD313
- 7 GV4L07 + LRD12
- 8 GV4L03 + LRD07
- 9 GV4L02 + LRD07

## Thermal Limit on Short-Circuit for GV4L, GV4LE

Thermal Limit in  $A^2s$

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



- 1 GV4L115
- 2 GV4L80
- 3 GV4L50
- 4 GV4L25
- 5 GV4L12
- 6 GV4L07
- 7 GV4L03
- 8 GV4L02

### Current Limitation on Short-Circuit for GV4L, GV4LE + Thermal Overload Relay LRD or LR9

Thermal Limit in kA in the Magnetic Operating Zone

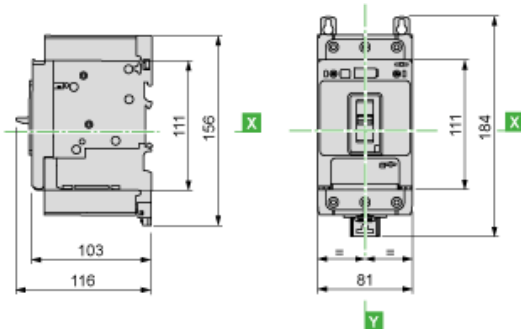
Sum of  $I^2dt = f$  (prospective Isc) at 1.05 Ue = 435 V



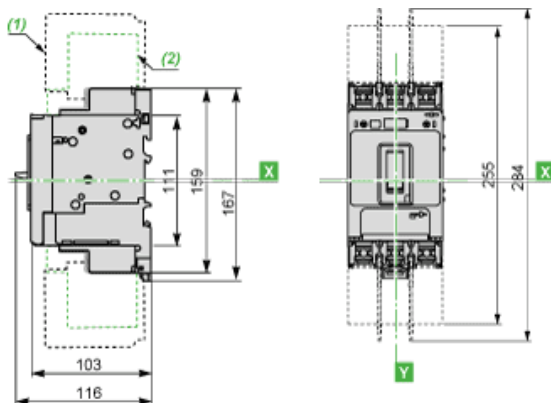
- 1 GV4L115 + LR9D5367 or LR9F5367
- 2 GV4L80 + LRD3361
- 3 GV4L50 + LRD340
- 4 GV4L25 + LRD325
- 5 GV4L12 + LRD313
- 6 GV4L07+ LRD12
- 7 GV4L03+ LRD07
- 8 GV4L02 + LRD07

GV4 with Toggle: GV4LE, GV4PE, GV4PEM

With EverLink® Connector



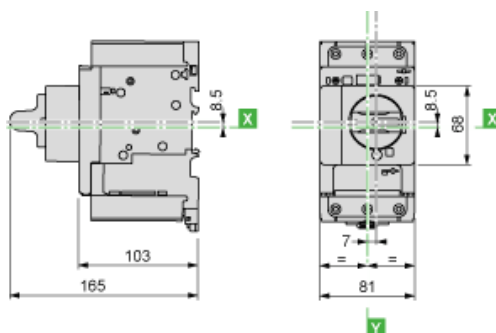
With Crimp Lug Connector



- (1) Interphases barriers
- (2) Long terminal shield

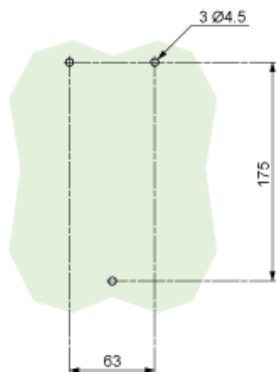
GV4 with Rotary Handle: GV4L, GV4P, or GV4LE, GV4PE, GV4PEM with GV4ADN01, GV4ADN02 Direct Mounting Rotary Handle

Dimensions



GV4L, GV4P, GV4LE, GV4PE, GV4PEM

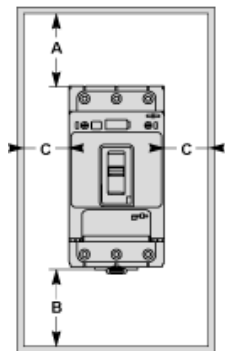
Panel Mounting with M4 Screws



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

GV4L, GV4LE

