

SELCO G-Line

Generator Protection Relays



- 3 Phase overcurrent
- Over- and/or undervoltage
- Over- and underfrequency
- Reverse or forward power
- For line-line or line-neutral
- Adjustable trip level, time delay and hysteresis
- Phase monitor (G3300)
- Preset push button defines reference
- Instant pick-up and delayed trip
- Two separate contacts for pick-up and trip
- LED based indication of relay status
- Optional external reset with latch function
- A single variant covers all voltages
- Optional PC based configuration (RS232)
- Flame retardant DIN rail enclosure

SELCO G-Line for Land-based Applications

SELCO's new G-Line Generator Protection Relays are mainly intended for use in land-based applications. The G-Line range of relays provides an efficient solution in applications where cost of materials is the main issue. Despite a low cost, the G-Line relays still provide a number of ground-breaking features not presently offered by the competing relays.

Installation

The SELCO G-Line Generator Protection Relays are easy to install. The relays are housed in a compact enclosure for DIN rail mounting or fixation by two ordinary screws. The design matches that of the well proven SELCO T-Line product range.

Configuration

Configuration and setup is easier than ever. Despite the use of modern micro-processor technology, adjustment dials are maintained in order to make configuration and test as easy as possible. The reference current, voltage or frequency is easily set by briefly activating a small push button (PRESET).

Indications and Relays

The state of the contact sets inside the relay is clearly indicated by LEDs located on the front plate. There is one LED for power, one LED for pick-up (activates when the set-point is exceeded) and one LED to indicate the state of the trip relay. The pick-up relay has one contact set and the trip relay has two contact sets.

One relay covers all voltages

One variant covers all voltages (nominal 63 to 690V AC). An external supply of +24V DC is required.

Advanced Configuration

The SELCO G-Line Generator Protection Relays provide the optional feature of advanced PC based configuration (using a standard ANSI terminal). An optional programming kit (G0100) will allow the user to reconfigure the function of the relay, as well as the minimum/maximum scales of the dials.

This makes the G-Line relays even more flexible and versatile to customers requiring adapted functionality. The front plate of the relay can be customized as well.

Design

G-Line relays are single function units. The single variant principle is an advantage, as one version covers all voltages.

However, it is possible to choose (using the optional programming kit G0100) whether the relay is for e.g. under-current or overcurrent.

Features include a level preset function (for reference definition), all optional functions onboard (e.g. latching), PC based configuration of scales, set points etc.

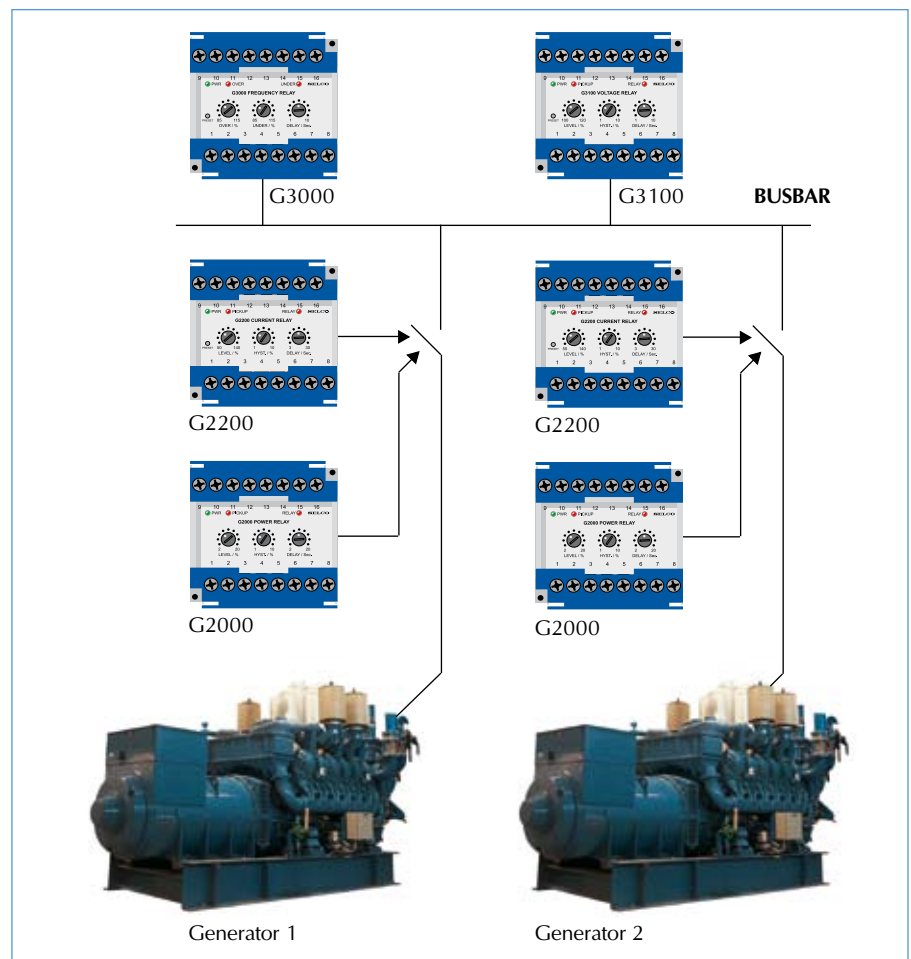
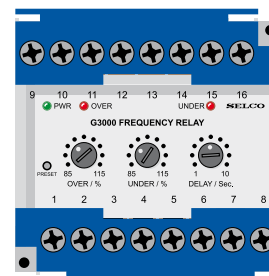
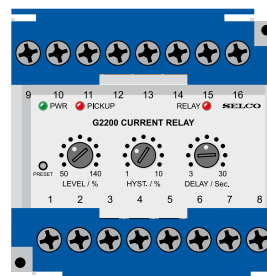
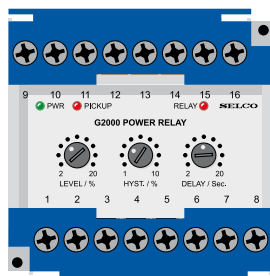


Figure 1: The connection of the G-Line Relays.

Specifications

(Specifications in parentheses require setup by serial link)



G2000 Power Relay

G2200 Current Relay

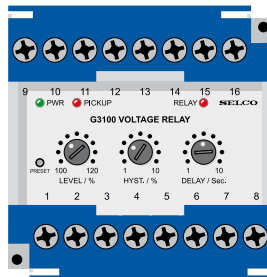
G3000 Frequency Relay

| | | | |
|---|--|--|--|
| Function | Reverse Power (Forward Power) | Overcurrent (Undercurrent) | Over- and Underfrequency |
| Supply | 8-36V DC/0.75W at 24V DC | 8-36V DC/0.75W at 24V DC | 8-36V DC/0.75W at 24V DC |
| Input voltage | 63 to 690V AC \pm 30% | | 63 to 690V AC \pm 30% |
| Input current | 5A CT, max. 10A | 5A CT, max. 10A | |
| Frequency | 35 to 75Hz | 35 to 75Hz | 35 to 75Hz |
| Trip level | RP: 2 to 20% (max. 2 to 50%) FP: 50 to 140% (max. 50 to 150%) | 50 to 140% (max. 10 to 150%) | OF: 85 to 115% (max. 75 to 125%) UF: 85 to 115% (max. 75 to 125%) |
| Hysteresis | 1 to 10% (max. 1 to 50%) | 1 to 10% (max. 1 to 50%) | |
| Delay | 2 to 20sec. (max. 1 to 360sec.) | 3 to 30sec. (max. 1 to 360sec.) | 1 to 10sec. (max. 1 to 360sec.) |
| Relay rating | 380V AC, 5A, 1250VA 150V DC, 5A, 120W | 380V AC, 5A, 1250VA 150V DC, 5A, 120W | 380V AC, 5A, 1250VA 150V DC, 5A, 120W |
| Pick-up relay - Normal state - Latching | ND (NE) Non-latching | ND (NE) Non-latching | |
| Trip relay - Normal state - Latching | ND (NE). Non-latching (latching) | ND (NE) Non-latching (latching) | |
| Overfrequency relay - Normal state - Latching | | | NE (ND) Non-latching (latching) |
| Underfrequency relay - Normal state - Latching | | | NE (ND) Non-latching (latching) |
| Reset | Automatic (manually by terminal 11) | Automatic (manually by terminal 11) | Automatic (manually by terminal 11) |
| Accuracy | \pm 5% | \pm 5% | \pm 5% |
| Repeatability | \pm 1% | \pm 1% | \pm 1% |
| Serial link | RJ11-modular | RJ11-modular | RJ11-modular |
| Operating temperature | -20° to 70° C | -20° to 70° C | -20° to 70° C |
| EMC | EN50263 | EN50263 | EN50263 |
| Burn-in | 50 hours before final test | 50 hours before final test | 50 hours before final test |
| Enclosure material | Polycarbonate. Flame retardant | Polycarbonate. Flame retardant | Polycarbonate. Flame retardant |
| Weight | 0.3kg | 0.3kg | 0.3kg |
| Dimensions | 73 x 75 x 114mm (HxWxD) | 73 x 75 x 114mm (HxWxD) | 73 x 75 x 114mm (HxWxD) |
| Installation | 35 DIN rail or two 4mm (3/16") screws | 35 DIN rail or two 4mm (3/16") screws | 35 DIN rail or two 4mm (3/16") screws |

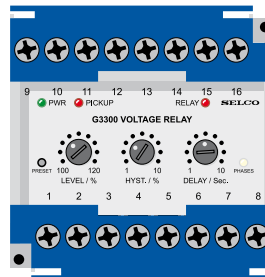
The specifications are subject to change without notice.

Specifications

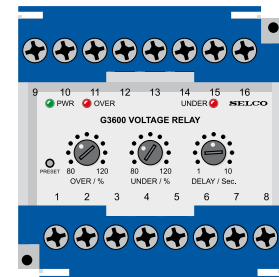
(Specifications in parentheses require setup by serial link)



G3100 Voltage Relay



G3300 Voltage Relay

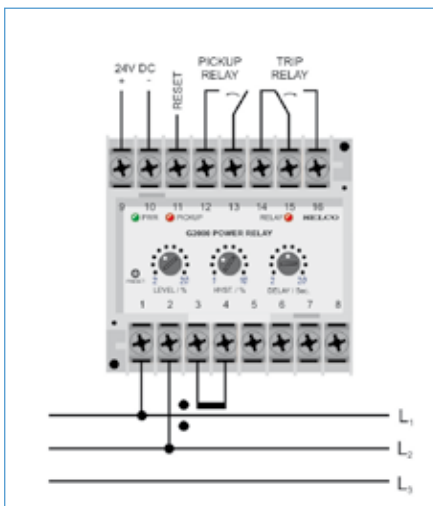


G3600 Voltage Relay

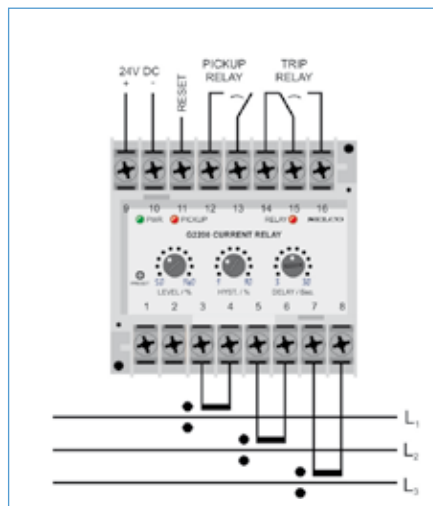
| | | | |
|--|--|--|--|
| Function | Overvoltage (Undervoltage) | 3 Phase Overvoltage (Undervoltage) | Over- and Undervoltage |
| Supply | 8-36V DC/0.75W at 24V DC | 8-36V DC/0.75W at 24V DC | 8-36V DC/0.75W at 24V DC |
| Input voltage | 63 to 690V AC \pm 30% | 63 to 690V AC \pm 30% | 63 to 690V AC \pm 30% |
| Frequency | 35 to 75Hz | 35 to 75Hz | 35 to 75Hz |
| Trip level - 1st trip level - 2nd trip level | 100 to 120% (max. 70 to 130%) | 100 to 120% (max. 1 to 130%) | 80 to 120% (max. 70 to 130%) 80 to 120% (max. 70 to 130%) |
| Hysteresis | 1 to 10% (max. 1 to 50%) | 1 to 10% (max. 1 to 50%) | |
| Delay | 1 to 10sec. (max. 1 to 360sec.) | 1 to 10sec. (max. 1 to 360sec.) | 1 to 10sec. (max. 1 to 360sec.) |
| Relay rating | 380V AC, 5A, 1250VA 150V DC, 5A, 120W | 380V AC, 5A, 1250VA 150V DC, 5A, 120W | 380V AC, 5A, 1250VA 150V DC, 5A, 120W |
| Phase monitor | | Phase failure, phase order & symmetry | |
| Pick-up (phase) relay - Normal state - Latching | ND (NE). Non-latching | ND (NE) Non-latching | |
| Trip relay - Normal state - Latching | ND (NE) Non-latching (latching) | ND (NE) Non-latching | |
| Overvoltage relay - Normal state - Latching | | | ND (NE) Non-latching |
| Undervoltage relay - Normal state - Latching | | Automatic | NE (ND) Non-latching (latching) |
| Reset | Automatic (manually by term. 11) | (manually by term. 11) \pm 5% | Automatic (manually by term. 11) |
| Accuracy | \pm 5% | \pm 1% | \pm 5% |
| Repeatability | \pm 1% | | \pm 1% |
| Serial link | RJ11-modular | RJ11-modular -20° to 70° C | RJ11-modular |
| Operating temperature | -20° to 70° C | EN50263 | -20° to 70° C |
| EMC | EN50263 | 50 hours before final test | EN50263 |
| Burn-in | 50 hours before final test | Polycarbonate. Flame retardant | 50 hours before final test |
| Enclosure material | Polycarbonate. Flame retardant | 0.5kg | Polycarbonate. Flame retardant |
| Weight | 0.3kg | 73 x 75 x 114mm (HxWxD) | 0.3kg |
| Dimensions | 73 x 75 x 114mm (HxWxD) | 35 DIN rail or two 4mm (3/16") screws | 73 x 75 x 114mm (HxWxD) |
| Installation | 35 DIN rail or two 4mm (3/16") screws | | 35 DIN rail or two 4mm (3/16") screws |

The specifications are subject to change without notice.

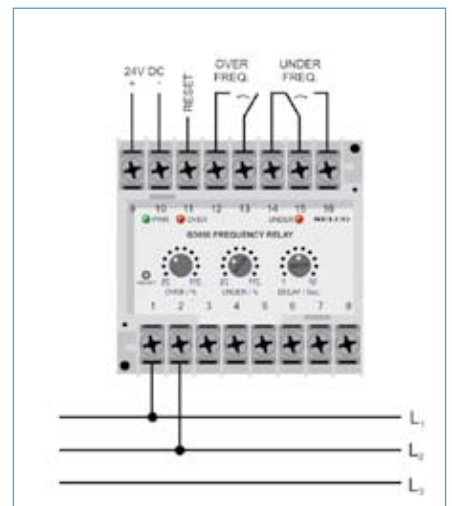
Selco G-Line Connections



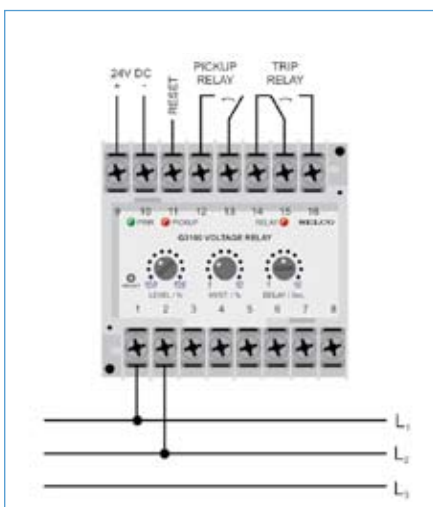
G2000 Power Relay



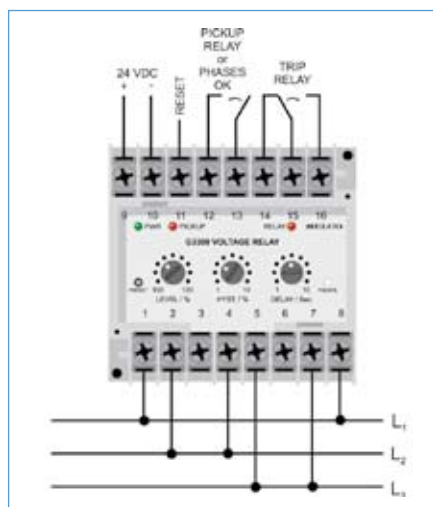
G2200 Current Relay



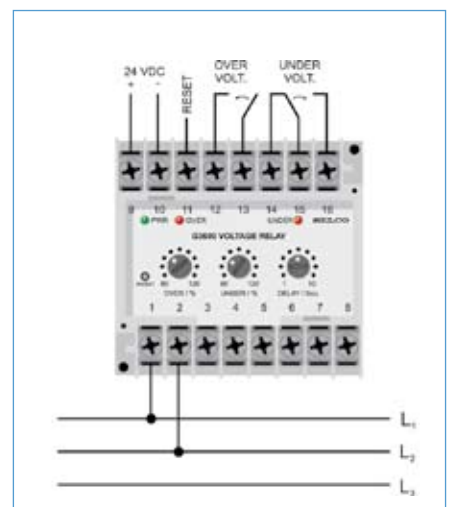
G3000 Frequency Relay



G3100 Voltage Relay



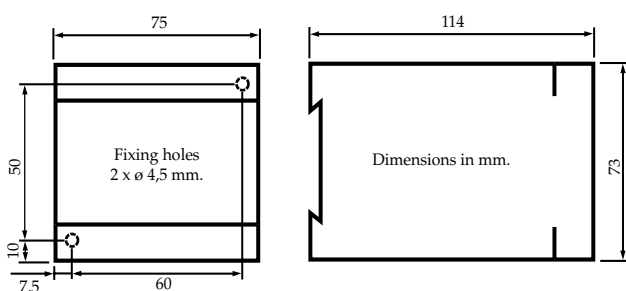
G3300 Voltage Relay



G3600 Voltage Relay

SELCO's product philosophy is to offer easy-to-install, serviceable and reliable modular system components for mounting on switchboards and control consoles. Systems based on such components provide high flexibility, easy troubleshooting and require very little maintenance and service, which give our customers a low Total Cost of Ownership (TCO).

Dimensions.





SELCO Worldwide

- SELCO Denmark
- SELCO subsidiary
- SELCO representation
- Area of supply

| | | | |
|----------------|-----------|--------------|----------------|
| Argentina | France | Malaysia | Spain |
| Australia | Germany | Morocco | Sweden |
| Austria | Greece | Netherlands | Taiwan |
| Belgium | Hong Kong | Norway | Thailand |
| Brazil | Hungary | Pakistan | Turkey |
| Bulgaria | Iceland | Philippines | Ukraine |
| China | India | Poland | United Kingdom |
| Croatia | Indonesia | Portugal | U.S.A. |
| Czech Republic | Iran | Romania | |
| Egypt | Italy | Russia | |
| Finland | Japan | Singapore | |
| | Korea | South Africa | |

Main Office:
 SELCO A/S
 Betonvej 10
 DK- 4000 Roskilde
 Denmark
 Phone: + 45 - 70 26 11 22
 Fax: + 45 - 70 26 25 22
 e-mail: selco.dk@selco.com
 www.selco.com