

Compact SSRs Ideal for Built-in Applications

- Vertical, compact SSRs with an operation indicator offered in versatile variations.
- High dielectric strength of 2,500 VAC for 2-A models.
- High-voltage DC version also available.
- Approved by UL and CSA.



Ordering Information

| Terminals | Isolation | Zero cross function | Indicator | Rated output load (Applicable output load) | Rated input voltage | Model | |
|-----------|--------------|---------------------|-----------|---|---------------------|---|--------------|
| PCB | Phototriac | Yes | | 2 A at 100 to 120 VDC (2 A at 75 to 132 VDC) (see note 1) | | G3R-102PN-US | |
| | | No | | | | G3R-102PLN-US | |
| | | Yes | | | | 2 A at 100 to 240 VAC (2 A at 75 to 264 VAC) (see note 2) | G3R-202PN-US |
| | | No | | | | G3R-202PLN-US | |
| | Photocoupler | --- | Yes | 1.5 A at 5 to 110 VDC (1.5 A at 3 to 125 VDC) | | G3RD-101PN-US | |
| | | --- | --- | 2 A at 4 to 48 VDC (2 A at 3 to 52.8 VDC) (see note 3) | | G3RD-X02PN-US | |

- Note:**
1. Product is labelled "125 VAC".
 2. Product is labelled "250 VAC".
 3. Product is labelled "50 VDC".

Specifications

■ Ratings

Input (AC Output With Zero Cross Function)

| Model | Rated voltage | Operating voltage | Impedance | Voltage level | |
|-----------|---------------|-------------------|-------------------------|----------------------|----------------------|
| | | | | Must operate voltage | Must release voltage |
| G3R-102PN | 5 VDC | 4 to 6 VDC | 250 $\Omega \pm 20\%$ | 3.5 VDC max. | 0.375 VDC min. |
| G3R-202PN | 12 VDC | 9.6 to 14.4 VDC | 600 $\Omega \pm 20\%$ | 8.4 VDC max. | 0.9 VDC min. |
| | 24 VDC | 19.2 to 28.8 VDC | 1.5 k $\Omega \pm 20\%$ | 16.8 VDC max. | 1.8 VDC min. |

Input (AC Output Without Zero Cross Function, DC Output)

| Model | Rated voltage | Operating voltage | Impedance | Voltage level | |
|------------|---------------|-------------------|-------------------------|----------------------|----------------------|
| | | | | Must operate voltage | Must release voltage |
| G3R-102PLN | 5 VDC | 4 to 6 VDC | 300 $\Omega \pm 20\%$ | 3.5 VDC max. | 0.375 VDC min. |
| G3R-202PLN | 12 VDC | 9.6 to 14.4 VDC | 750 $\Omega \pm 20\%$ | 8.4 VDC max. | 0.9 VDC min. |
| G3RD-X02PN | 24 VDC | 19.2 to 28.8 VDC | 1.5 k $\Omega \pm 20\%$ | 16.8 VDC max. | 1.8 VDC min. |
| G3RD-101PN | | | | | |

Output

| Model | Rated load voltage | Applicable load | | |
|------------|--------------------|--------------------|---------------|-----------------------|
| | | Load voltage range | Load current | Inrush current |
| G3R-102PN | 100 to 120 VAC | 75 to 132 VAC | 0.1 to 2 A | 30 A (60 Hz, 1 cycle) |
| G3R-102PLN | | | | |
| G3R-202PN | 100 to 240 VAC | 75 to 264 VAC | 0.1 to 2 A | |
| G3R-202PLN | | | | |
| G3RD-X02PN | 4 to 48 VDC | 3 to 52.8 VDC | 0.01 to 2 A | 8 A (10 ms) |
| G3RD-101PN | 5 to 110 VDC | 3 to 125 VDC | 0.01 to 1.5 A | 2.5 A (10 ms) |

■ Characteristics

| Item | G3R-102PLN | G3R-102PN | G3R-202PLN | G3R-202PN | G3RD-X02PN/-101PN |
|------------------------|---|--|--|--|---|
| Operate time | 1 ms max. | 1/2 of load power source cycle + 1 ms max. | 1 ms max. | 1/2 of load power source cycle + 1 ms max. | 1 ms max. |
| Release time | 1/2 of load power source cycle + 1 ms max. | | | | 1 ms max. |
| Output ON voltage drop | 1.6 V (RMS) max. | | | | 1.5 V max. |
| Leakage current | 2 mA max. (at 100 VAC) | | 2 mA max. (at 100 VAC) 5 mA max. (at 200 VAC) | | 0.1 mA max. (at 125 VDC) 0.1 mA max. (at 50 VDC) |
| Insulation resistance | 100 M Ω min. (at 500 VDC) | | | | |
| Dielectric strength | 2,500 VAC, 50/60 Hz for 1 min | | | | 2,500 VAC, 50/60 Hz for 1 min |
| Vibration resistance | Malfunction: 10 to 55 Hz, 1.5-mm double amplitude | | | | |
| Shock resistance | Malfunction: 1,000 m/s ² | | | | |
| Ambient temperature | Operating: -30°C to 80°C (with no icing or condensation) Storage: -30°C to 100°C (with no icing or condensation) | | | | |
| Approved standards | UL508 File No. E64562, CSA C22.2 (No. 14) File No. 35535 | | | | |
| Ambient humidity | Operating: 45% to 85% | | | | |
| Weight | Approx. 18 g | | | | |

■ Approved Standards

UL508 File No. E64562/CSA C22.2 (No.0, No.14) File No. LR35535

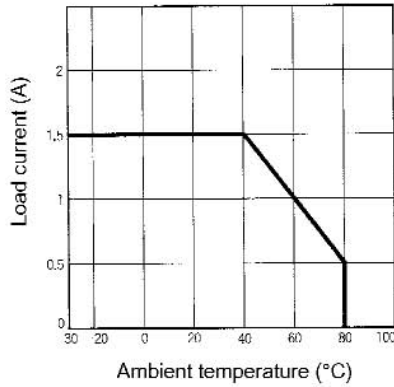
| Model | Ratings |
|-------------------|----------------|
| G3R-102P(L)(N)-US | 2 A at 125 VAC |
| G3R-202P(L)(N)-US | 2 A at 250 VAC |
| G3RD-X02P(N)-US | 2 A at 50 VDC |

Engineering Data

Load Current vs. Ambient Temperature Characteristics

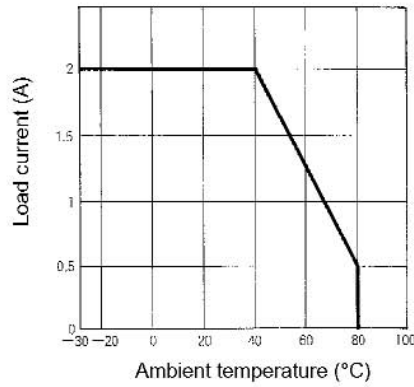
1-A Load Model

G3RD-101PN



2-A Load Model

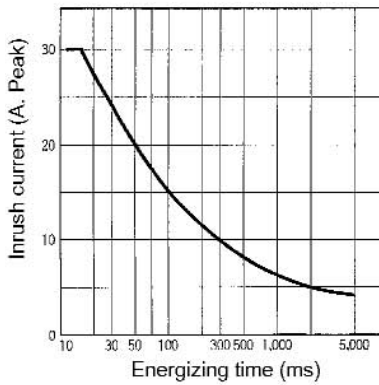
G3R-102□, G3RD-X02□, G3R-202□



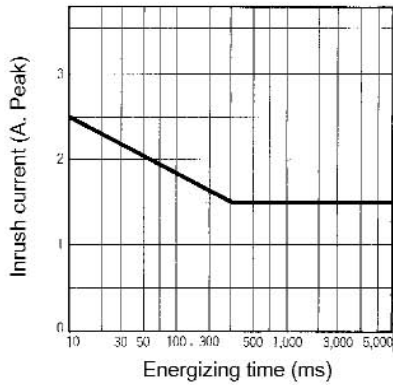
Inrush Current Resistivity

Non-repetitive (Keep the inrush current to half the rated value if it occurs repetitively.)

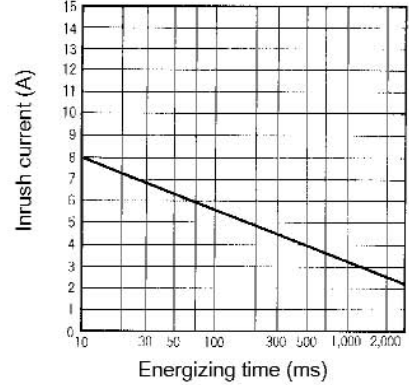
G3R-102□/-202□



G3RD-101PN



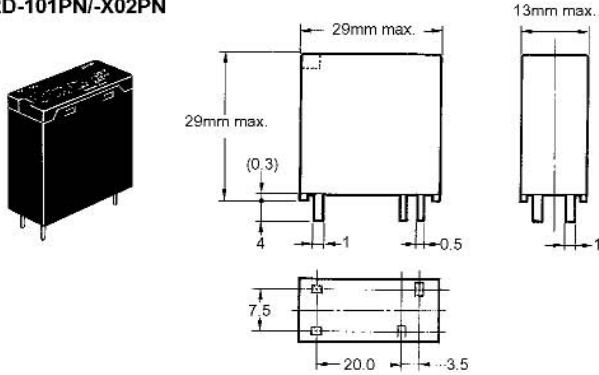
G3RD-X02□



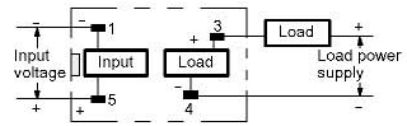
Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3R-102P□/-202P□
G3RD-101PN/-X02PN

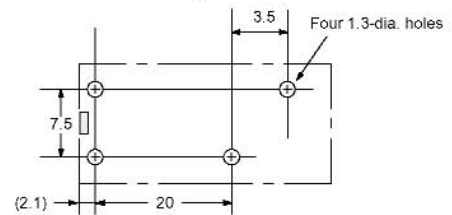


Terminal Arrangement/ Internal Connections (Bottom View)



Note: The plus and minus symbols shown in the parentheses are for DC loads.

Mounting Holes



Precautions

Connection

The SSR for DC switching a surge can connect to a load regardless of the polarity of the positive and negative output terminals.

Protective Terminal

For AC inductive loads, connect the load terminals of the SSR to a surge absorber (varistor).

ALL DIMENSIONS SHOWN ARE IN MILLIMETRES.

To convert millimetres into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.