

# 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<br>(Applicable output load)                   | Rated input voltage | Model         |
|-----------|--------------|---------------------|-----------|-----------------------------------------------------------------|---------------------|---------------|
| PCB       | Phototriac   | Yes                 |           | 2 A at 100 to 120 VDC<br>(2 A at 75 to 132 VDC)<br>(see note 1) |                     | G3R-102PN-US  |
|           |              | No                  |           |                                                                 |                     | G3R-102PLN-US |
|           |              | Yes                 |           | 2 A at 100 to 240 VAC<br>(2 A at 75 to 264 VAC)<br>(see note 2) |                     | G3R-202PN-US  |
|           |              | No                  |           |                                                                 |                     | G3R-202PLN-US |
|           | Photocoupler | ---                 | Yes       | 1.5 A at 5 to 110 VDC<br>(1.5 A at 3 to 125 VDC)                |                     | G3RD-101PN-US |
|           |              |                     |           | 2 A at 4 to 48 VDC<br>(2 A at 3 to 52.8 VDC)<br>(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<br>G3RD-101PN | 24 VDC        | 19.2 to 28.8 VDC  | 1.5 k $\Omega \pm 20\%$ | 16.8 VDC max.        | 1.8 VDC min.         |

### Output

| Model                   | Rated load voltage | Applicable load    |               |                       |
|-------------------------|--------------------|--------------------|---------------|-----------------------|
|                         |                    | Load voltage range | Load current  | Inrush current        |
| G3R-102PN<br>G3R-102PLN | 100 to 120 VAC     | 75 to 132 VAC      | 0.1 to 2 A    | 30 A (60 Hz, 1 cycle) |
| G3R-202PN<br>G3R-202PLN | 100 to 240 VAC     | 75 to 264 VAC      | 0.1 to 2 A    |                       |
| 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)<br>5 mA max. (at 200 VAC) |                                            | 0.1 mA max. (at 125 VDC)<br>0.1 mA max. (at 50 VDC) |
| Insulation resistance  | 100 M $\Omega$ 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 <sup>2</sup>                                                                                 |                                            |                                                  |                                            |                                                     |
| Ambient temperature    | Operating: -30°C to 80°C (with no icing or condensation)<br>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

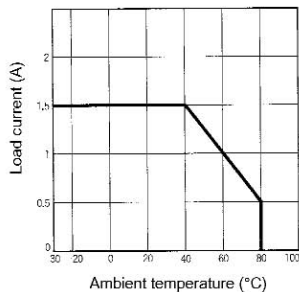
| Model             | Ratings        |
|-------------------|----------------|
| G3R-102P(L)(N)-US | 2 A at 125 VAC |
| G3R-202P(L)(N)-US | 2 A at 250 VAC |
| G3RD-X02P(N)-US   | 2 A at 50 VDC  |

## Engineering Data

## Load Current vs. Ambient Temperature Characteristics

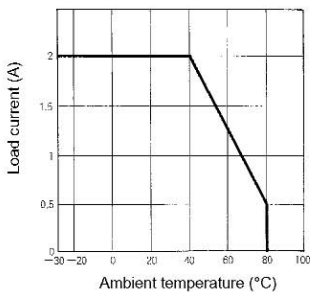
## 1-A Load Model

G3RD-101PN



## 2-A Load Model

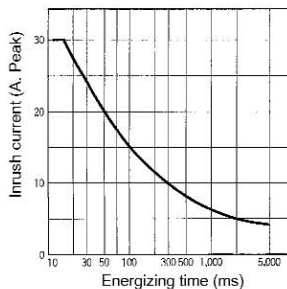
G3R-102□, G3RD-X02□, G3R-202□



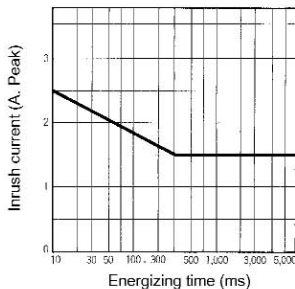
## Inrush Current Resistivity

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

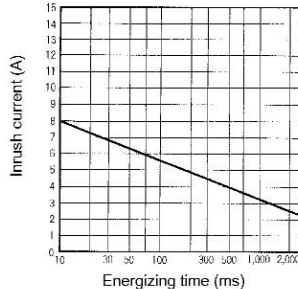
G3R-102□/-202□



G3RD-101PN



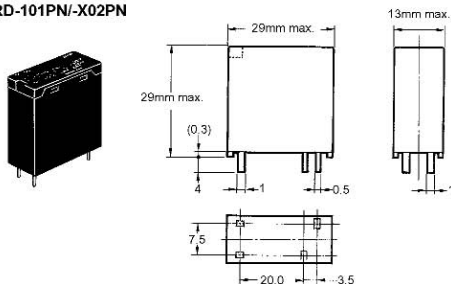
G3RD-X02□



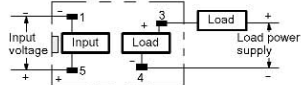
## Dimensions

**Note:** All units are in millimeters unless otherwise indicated.

G3R-102P□/V-202P□  
G3RD-101PN/-X02PN

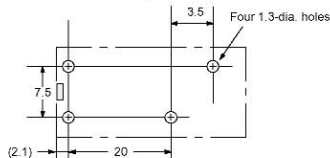


### Terminal Arrangement/ Internal Connections (Bottom View)



**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.

# Mouser Electronics

Authorized Distributor

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## Omron:

[G3R-OA202SLN-DC5-24](#) [G3RDX02PN2DC24](#) [G3RZ-201SLN DC5](#) [G3RZ-201SLN DC24](#) [G3RZ-201SLN DC12](#)  
[G3R-OD201SN DC5-24](#) [G3R-IDZR1SN-1 DC12-24](#) [G3R-IDZR1SN DC12-24](#) [G3R-202PN-US DC24](#) [G3RD-X02PN](#)  
[DC24](#) [G3R-OA202SZN-UTU DC5-24](#) [G3R-202PN-2 DC24](#) [G3R-ODX02SN-UTU DC5-24](#) [G3R-IDZR1SN-1 DC5](#)  
[G3R-OD201SN-UTU DC5-24](#) [G3RV-202S DC12](#) [G3RV-202S DC24](#) [G3RV-202S DC48](#) [G3RV-202SL DC12](#) [G3RV-](#)  
[202SL DC24](#) [G3RV-202SL DC48](#) [G3RV-D03SL DC12](#) [G3RV-D03SL DC24](#) [G3RV-D03SL DC48](#) [G3RV-SL500-A](#)  
[AC/DC48](#) [G3RV-SL500-A AC110](#) [G3RV-SL500-A AC230](#) [G3RV-SL500-A DC12](#) [G3RV-SL500-A DC24](#) [G3RV-SL500-](#)  
[AL AC230](#) [G3RV-SL500-AL DC24](#) [G3RV-SL500-D AC110](#) [G3RV-SL500-D AC230](#) [G3RV-SL500-D DC12](#) [G3RV-](#)  
[SL500-D DC24](#) [G3RV-SL700-A AC/DC48](#) [G3RV-SL700-A AC110](#) [G3RV-SL700-A AC230](#) [G3RV-SL700-A DC12](#)  
[G3RV-SL700-A DC24](#) [G3RV-SL700-AL AC110](#) [G3RV-SL700-AL AC230](#) [G3RV-SL700-AL DC24](#) [G3RV-SL700-D](#)  
[AC/DC48](#) [G3RV-SL700-D AC110](#) [G3RV-SL700-D AC230](#) [G3RV-SL700-D DC12](#) [G3RV-SL700-D DC24](#) [G3RV-](#)  
[SL500-A AC/DC24](#) [G3RV-SL500-AL AC110](#) [G3RV-SL500-AL AC/DC24](#) [G3RV-SL500-AL AC/DC48](#) [G3RV-SL500-AL](#)  
[DC12](#) [G3RV-SL500-D AC/DC24](#) [G3RV-SL500-D AC/DC48](#) [G3RV-SL700-A AC/DC24](#) [G3RV-SL700-AL AC/DC24](#)  
[G3RV-SL700-AL AC/DC48](#) [G3RV-SL700-AL DC12](#) [G3RV-SL700-D AC/DC24](#) [G3RD-X02PN-2 DC24](#)