

I/O Solid State Relays

G3R-I/O

CSM_G3R-I/O_DS_E_4_2

SSR with Plug-in Terminals



The Same Shape as the G2R-1-S Power Relays

- Reduces wiring work by 60% when combined with the P2RF-05-PU Push-In Plus Socket (according to actual OMRON measurements).
- These I/O solid state relays can be mounted in OMRON G70A I/O Terminals.
- Lineup includes Input Modules for microloads and Output Modules for standard loads.
- Lineup also includes UL, CSA, and TÜV-certified models (-UTU models).



Note: The socket is optional.

Refer to the standards certifications and compliance section of your OMRON website for the latest information on certified models.

RoHS Compliant



Refer to *Safety Precautions for All Solid State Relays*.

Ordering Information

List of Models

Input Modules for Microloads

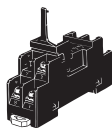
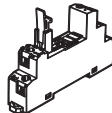
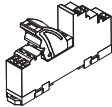

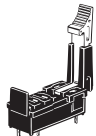
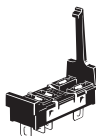
| Insulation method | Operation indicator | Response speed | Applicable load | Input rated voltage | Model |
|-------------------|---------------------|----------------|------------------------------|---------------------|-----------------------|
| Photocoupler | Yes | --- | 4 to 32 VDC 0.1 to 100 mA | 100 to 240 VAC | G3R-IAZR1SN AC100-240 |
| | | High-speed | | 5 VDC | G3R-IDZR1SN DC5 |
| | | Low-speed | | 12 to 24 VDC | G3R-IDZR1SN DC12-24 |
| | | | | 5 VDC | G3R-IDZR1SN-1 DC5 |
| | | | | 12 to 24 VDC | G3R-IDZR1SN-1 DC12-24 |

Output Modules for Standard Loads

| Insulation method | Operation indicator | Zero cross function | Applicable load | Input rated voltage | Model |
|-------------------|---------------------|---------------------|------------------------|---------------------|---------------------|
| Phototriac | Yes | Yes | 2 A at 100 to 240 VAC | 5 to 24 VDC | G3R-OA202SZN DC5-24 |
| | | No | | | G3R-OA202SLN DC5-24 |
| Photocoupler | | --- | 2 A at 5 to 48 VDC | | G3R-ODX02SN DC5-24 |
| | | | 1.5 A at 48 to 200 VDC | | G3R-OD201SN DC5-24 |

Accessories (Order Separately)

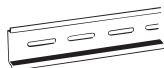
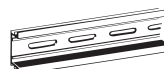


Connection Sockets

| Classification | Terminal type | Appearance | Model |
|----------------|--|---|------------|
| Front-mounting | Screw terminals |  | P2RF-05 |
| | Screw terminals (finger protection structure) |  | P2RF-05-E |
| | Push-In Plus terminal blocks |  | P2RF-05-PU |
| Back-mounting | Relays with PCB Terminals |  | P2R-05P |
| | |  | P2R-057P |
| | Solder terminals |  | P2R-05A |

Refer to *Common Socket and DIN Track Products* for details on Connection Sockets and DIN Track products (sold separately) of your OMRON website.

Refer to *PYF-□□-PU/P2RF-□□-PU* for details on A Push-In Plus Terminal Block Socket of your OMRON website.

DIN Track Mounting Parts

| Classification | Type | | Appearance | Model |
|--------------------|--|-----------------------------------|---|-----------|
| For front-mounting | DIN Tracks | Shallow type, total length: 1 m |  | PFP-100N |
| | | Shallow type, total length: 0.5 m | | PFP-50N |
| | | Deep type, total length: 1 m |  | PFP-100N2 |
| | End Plate | |  | PFP-M |
| | Spacer | |  | PFP-S |
| For back-mounting | Mounting Plates for Sockets * (For 5 Sockets) | | --- | P2R-P |

* Used to mount several P2R-05A Connecting Sockets side by side.

Ratings and Specifications

Ratings

Input Modules for Microloads

Input Side

| Model | Item | Rated voltage | Operating voltage | Input current | Must-operate voltage | Must-release voltage |
|---------------|------|----------------|-------------------|---------------|----------------------|----------------------|
| G3R-IAZR1SN | | 100 to 240 VAC | 60 to 264 VAC | 15 mA max. | 60 VAC max. | 20 VAC min. |
| G3R-IDZR1SN | | 5 VDC | 4 to 6 VDC | 8 mA max. | 4 VDC max. | 1 VDC min. |
| G3R-IDZR1SN | | 12 to 24 VDC | 6.6 to 32 VDC | | 6.6 VDC max. | 3.6 VDC min. |
| G3R-IDZR1SN-1 | | 5 VDC | 4 to 6 VDC | | 4 VDC max. | 1 VDC min. |
| G3R-IDZR1SN-1 | | 12 to 24 VDC | 6.6 to 32 VDC | | 6.6 VDC max. | 3.6 VDC min. |

Output Side

| Model | Item | Load voltage | Load current |
|---------------|------|--------------|---------------|
| G3R-IAZR1SN | | 4 to 32 VDC | 0.1 to 100 mA |
| G3R-IDZR1SN | | | |
| G3R-IDZR1SN | | | |
| G3R-IDZR1SN-1 | | | |
| G3R-IDZR1SN-1 | | | |

Output Modules for Standard Loads

Input Side

| Model | Item | Rated voltage | Operating voltage | Input current | Must-operate voltage | Must-release voltage | | |
|--------------|------|---------------|-------------------|--------------------------|----------------------|----------------------|--|--|
| G3R-OA202SZN | | 5 to 24 VDC | 4 to 32 VDC | 15 mA max. (at 25° C) | 4 VDC max. | 1 VDC min. | | |
| G3R-OA202SLN | | | | 8mA max. | | | | |
| G3R-ODX02SN | | | | | | | | |
| G3R-OD201SN | | | | | | | | |

Output Side

| Model | Item | Load voltage | Load current ^{*1} | Surge withstand current |
|--------------|------|---------------|-----------------------------|-------------------------|
| G3R-OA202SZN | | 75 to 264 VAC | 0.05 to 2 A ^{*2} | 30 A (60 Hz, 1 cycle) |
| G3R-OA202SLN | | | | |
| G3R-ODX02SN | | 4 to 60 VDC | 0.01 to 2 A ^{*2} | 8 A (10 ms) |
| G3R-OD201SN | | 40 to 200 VDC | 0.01 to 1.5 A ^{*2} | 8 A (10 ms) |

*1. Depends on the ambient temperature. Refer to the reference data *Load Current vs. Ambient Temperature Rating* on page 4 for details.

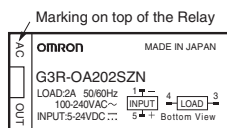
*2. The minimum current value is for a temperature of 10°C or higher.

I/O External Display

Lineup includes Input Modules and Output Modules.

The I/O Module classification and AC/DC classification are also indicated in the markings on top of the Relay.

| Marking | Specifications |
|---------|--|
| AC IN | Input Modules for Microloads, AC input |
| DC IN | Input Modules for Microloads, DC input |
| AC OUT | Output Modules for Standard Loads, AC output |
| DC OUT | Output Modules for Standard Loads, DC output |



Characteristics

Input Modules for Microloads

| Model | Item | G3R-IAZR1SN | G3R-IDZR1SN | G3R-IDZR1SN-1 |
|-------------------------------|------|---|-------------|---------------|
| Operation time | | 20 ms max. | 0.1 ms max. | 15 ms max. |
| Release time | | | | |
| Response frequency | | 10 Hz | 1 kHz | 10 Hz |
| Output ON voltage drop | | 1.6 V max. | | |
| Leakage current | | 5 μ A max. | | |
| Insulation resistance | | 100 M Ω min. between I/O | | |
| Dielectric strength | | 4,000 VAC for 1 min. between I/O | | |
| Vibration resistance | | 10 to 55 to 10 Hz, 0.75-mm single amplitude (1.5-mm double amplitude) | | |
| Shock resistance | | 1,000 m/s ² | | |
| Storage temperature | | -30 to 100°C (with no icing) | | |
| Ambient operating temperature | | -30 to 80°C (with no icing) | | |
| Ambient operating humidity | | 45% to 85% RH | | |
| Weight | | Approx. 18 g | | |

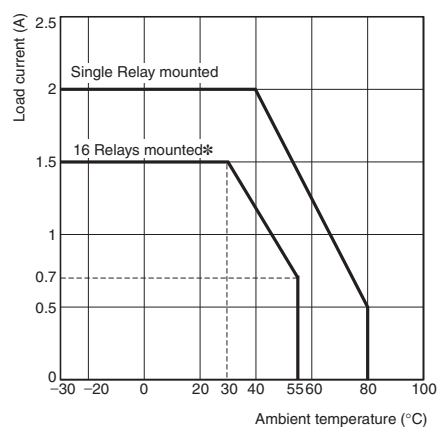
Output Modules for Standard Loads

| Model | Item | G3R-OA202SZN | G3R-OA202SLN | G3R-ODX02SN | G3R-OD201SN |
|-------------------------------|------|---|--------------|-------------|-------------|
| Operation time | | 1/2 load power supply cycle + 1 ms max. | 1 ms max. | | |
| Release time | | 1/2 load power supply cycle + 1 ms max. | | 2 ms max. | |
| Response frequency | | 20 Hz | | 100 Hz | |
| Output ON voltage drop | | 1.6 V max. | | | 2.5 V max. |
| Leakage current | | 1.5 mA max. | | 1 mA max. | |
| Insulation resistance | | 100 M Ω min. between I/O | | | |
| Dielectric strength | | 4,000 VAC for 1 min. between I/O | | | |
| Vibration resistance | | 10 to 55 to 10 Hz, 0.75-mm single amplitude (1.5-mm double amplitude) | | | |
| Shock resistance | | 1,000 m/s ² | | | |
| Storage temperature | | -30 to 100°C (with no icing) | | | |
| Ambient operating temperature | | -30 to 80°C (with no icing) | | | |
| Ambient operating humidity | | 45% to 85% RH | | | |
| Weight | | Approx. 18 g | | | |

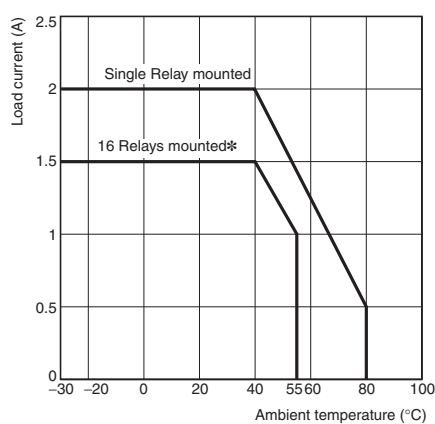
Engineering Data

Load Current vs. Ambient Temperature Rating

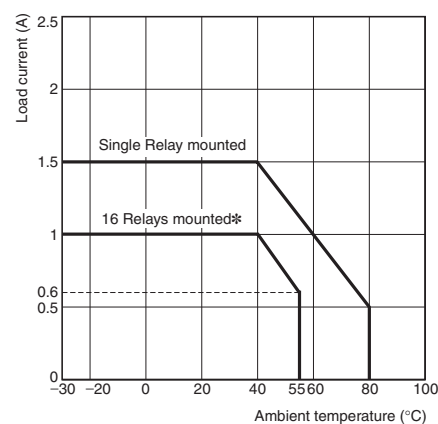
G3R-OA202S□N



G3R-ODX02SN (4 to 60 VDC)



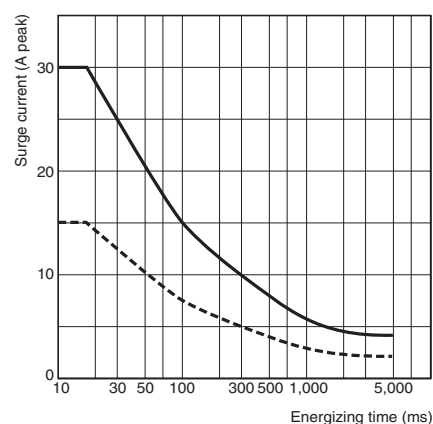
G3R-OD201SN (40 to 200 VDC)



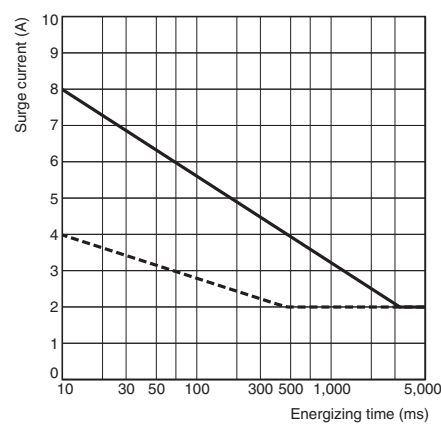
* On G70A-ZOC16, fully mounted.

Non-repetitive Surge Withstand Current (If repetitive, keep the inrush current below the dotted line.)

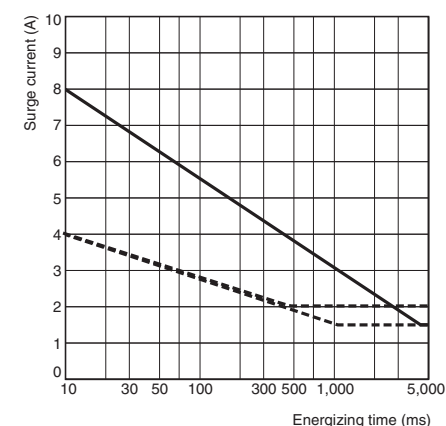
G3R-OA202S□N



G3R-ODX02SN (4 to 60 VDC)



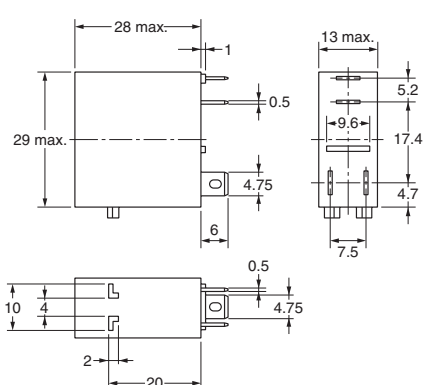
G3R-OD201SN (40 to 200 VDC)



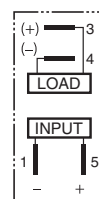
Dimensions

(Unit: mm)

Relay



Terminal Arrangement/
Internal Connections
(Bottom View)



The information in parentheses
in for a DC output.

Note: The load can be connected to either the positive or negative terminals.

Accessories (Order Separately)

Connection Socket

DIN Track Mounting Parts

Refer to *Products Related to Common Sockets and DIN Tracks* for precautions on the applicable Sockets of your OMRON website.

Refer to PYF-□□-PU/P2RF-□□-PU for precautions on Push-In Plus Terminal Block Sockets of your OMRON website.

Safety Precautions

Be sure to read 'the Common Precautions' in the website at the following URL:

<http://www.ia.omron.com/>.

Refer to *Safety Precautions for All Solid State Relays* of your OMRON website.

Refer to *Products Related to Common Sockets and DIN Tracks* for precautions on the applicable Sockets of your OMRON website.

Refer to PYF-□□-PU/P2RF-□□-PU for precautions on Push-In Plus Terminal Block Sockets of your OMRON website.

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