

## 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<br>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<br>(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 *<br>(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.<br>(at 25° C) | 4 VDC max.           | 1 VDC min.           |
| G3R-OA202SLN |      |               |                   |                          |                      |                      |
| G3R-ODX02SN  |      |               |                   | 8mA max.                 |                      |                      |
| G3R-OD201SN  |      |               |                   |                          |                      |                      |

##### Output Side

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

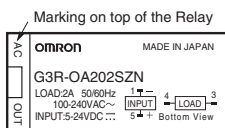
\*2. The minimum current value is for a temperature of 10°C or higher.

### 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 $\mu$ A max.  |             |               |
| Insulation resistance         |      | 100 M $\Omega$ 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 <sup>2</sup>  |             |               |
| 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 $\Omega$ 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 <sup>2</sup>  |              |             |             |
| 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)

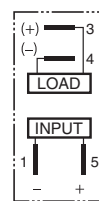


## Dimensions

### 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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