

Solid State Relay G3R-I/O

Compact SSRs for I/O Interface with High Dielectric Strength Requirements

- High-speed models with optimum input ratings for a variety of sensors are available.
- Input Modules and Output Modules that have the same form-factor as the G2R.
- Using a coupler approved by VDE 0884 and assuring an I/O dielectric strength of 4 kV.
- Incorporating an easy-to-see monitoring indicator.
- Approved by UL, CSA, and TÜV. ("-UTU" models)



Ordering Information

To Order: Select the part number and add the desired coil voltage rating, (e.g., G3R-IAZR1SN-DC5)

Input Module

| Isolation | Indicator | Response speed | Logic level | | Rated input voltage | Model |
|--------------|-----------|--------------------|----------------|----------------|---------------------|---------------|
| | | | Supply voltage | Supply current | | |
| Photocoupler | Yes | — | 4 to 32 VDC | 0.1 to 100 mA | 100 to 240 VAC | G3R-IAZR1SN |
| | | High-speed (1 kHz) | | | 5 VDC | G3R-IDZR1SN |
| | | Low-speed (10 Hz) | | | 12 to 24 VDC | G3R-IDZR1SN-1 |
| | | | | | 5 VDC | |
| 12 to 24 VDC | | | | | | |

Output Module

| Isolation | Indicator | Zero cross function | Rated output load | Rated input voltage | Model |
|--------------|-----------|---------------------|------------------------|---------------------|--------------|
| Phototriac | Yes | Yes | 2 A at 100 to 240 VAC | 5 to 24 VDC | G3R-OA202SZN |
| | | No | | | G3R-OA202SLN |
| Photocoupler | — | — | 2 A at 5 to 48 VDC | | G3R-ODX02SN |
| | | | 1.5 A at 48 to 200 VDC | | G3R-OD201SN |

Note: When ordering a UL, CSA and EN (TÜV) approved model, add "-UTU" to the model number as shown below:
Example: G3R-OA202SZN-UTU DC5-24.

I/O Indication

I/O module classification and AC/DC use are indicated on the mark affixed to the top of the product.

| Mark indication | Specification |
|-----------------|--------------------------|
| AC IN | Input module, AC input |
| DC IN | Input module, DC input |
| AC OUT | Output module, AC output |
| DC OUT | Output module, DC output |



Specifications

■ Ratings (at an Ambient Temperature of 25°C)

Input Module

Input

| Model | 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. |
| | 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. |
| | 12 to 24 VDC | 6.6 to 32 VDC | | 6.6 VDC max. | 3.6 VDC min. |

Output

| Model | Logic level supply voltage | Logic level supply current |
|---------------|----------------------------|----------------------------|
| G3R-IAZR1SN | 4 to 32 VDC | 0.1 to 100 mA |
| G3R-IDZR1SN | | |
| G3R-IDZR1SN-1 | | |

Output Module

Input

| Model | 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 | | | 8 mA max. | | |
| G3R-ODX02SN | | | | | |
| G3R-OD201SN | | | | | |

Output

| Model | Rated load voltage | Load voltage range | Load current (see note) | Inrush current |
|--------------|--------------------|--------------------|-------------------------|-----------------------|
| G3R-OA202SZN | 100 to 240 VAC | 75 to 264 VAC | 0.05 to 2 A | 30 A (60 Hz, 1 cycle) |
| G3R-OA202SLN | | | | |
| G3R-ODX02SN | 5 to 48 VDC | 4 to 60 VDC | 0.01 to 2 A | 8 A (10 ms) |
| G3R-OD201SN | 48 to 200 VDC | 40 to 200 VDC | 0.01 to 1.5 A | 8 A (10 ms) |

Note: The minimum current value is measured at 10°C min.

Characteristics

■ Input Module

| Item | G3R-IAZR1SN | G3R-IDZR1SN | G3R-IDZR1SN-1 |
|------------------------|---|-------------|---------------|
| Operate time | 20 ms max. | 0.1 ms max. | 15 ms max. |
| Release time | 20 ms max. | 0.1 ms max. | 15 ms max. |
| 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 input and output | | |
| Dielectric strength | 4,000 VAC, 50/60 Hz for 1 min. between input and output | | |
| Vibration resistance | 10 to 55 Hz, 1.5-mm double amplitude | | |
| Shock resistance | 1,000 m/s ² {approx. 100G} | | |
| Ambient temperature | Operating: -30°C to 80°C (with no icing) Storage: -30°C to 100°C (with no icing) | | |
| Approved standards | UL File No. E64562 CSA File No. LR35535 TÜV File No. R9650094 (EN60950) | | |
| Ambient humidity | Operating: 45% to 85% | | |
| Weight | Approx. 18 g | | |

■ Output Module

| Item | G3R-OA202SZN | G3R-OA202SLN | G3R-ODX02SN | G3R-OA201SN |
|------------------------|---|--------------|-------------|-------------|
| Operate time | 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. | | 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 input and output | | | |
| Dielectric strength | 4,000 VAC, 50/60 Hz for 1 min. between input and output | | | |
| Vibration resistance | 10 to 55 Hz, 1.5-mm double amplitude | | | |
| Shock resistance | 1,000 m/s ² {approx. 100G} | | | |
| Ambient temperature | Operating: -30°C to 80°C (with no icing) Storage: -30°C to 100°C (with no icing) | | | |
| Approved standards | UL File No. E64562 CSA File No. LR35535 TÜV File No. R9650094 (EN60950) | | | |
| Ambient humidity | Operating: 45% to 85% | | | |
| Weight | Approx. 18 g | | | |

Engineering Data

Load Current vs. Ambient Temperature

G3R-OA202SZN(-UTU)/OA202SLN(-UTU) G3R-ODX02SN(-UTU) (4 to 60 VDC) G3R-OD201SN(-UTU) (40 to 200 VAC)



Note: 1. When G730-Z0M04-B is mounted.
 2. When G70A-Z0C16 is mounted.

Inrush Current Resistivity

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

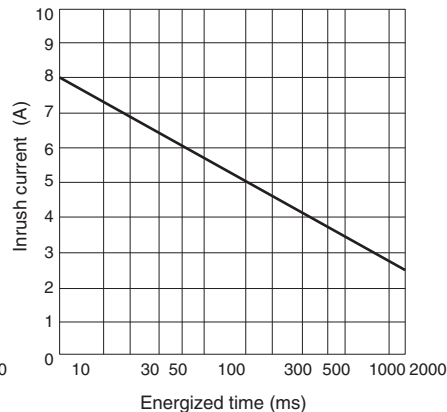
G3R-OA202SZN(-UTU)/OA202SLN(-UTU)



G3R-ODX02SN(-UTU)



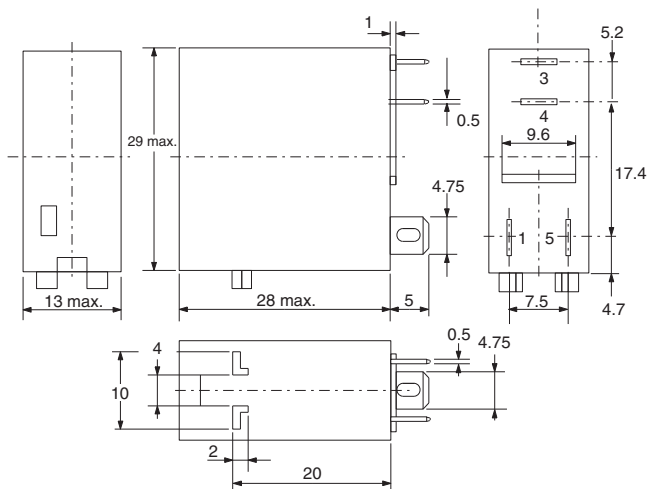
G3R-OD201SN(-UTU)



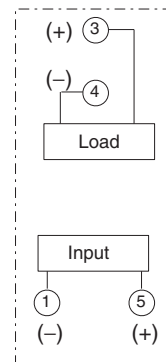
Dimensions

Unit: mm (inch)

■ G3R

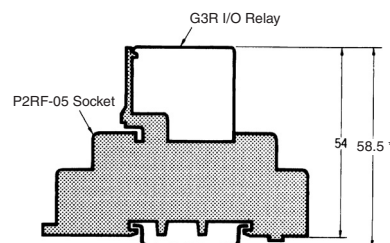


Terminal Arrangement/
Internal Connections
(Bottom View)



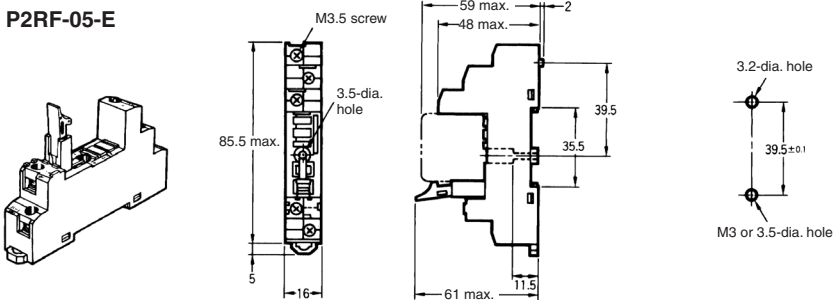
■ Connecting Sockets

P2RF-05



* Indicates a value when using the PFP-□N Supporting Rail. The value is 67.5 when using the PFP-□N2.

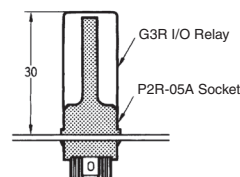
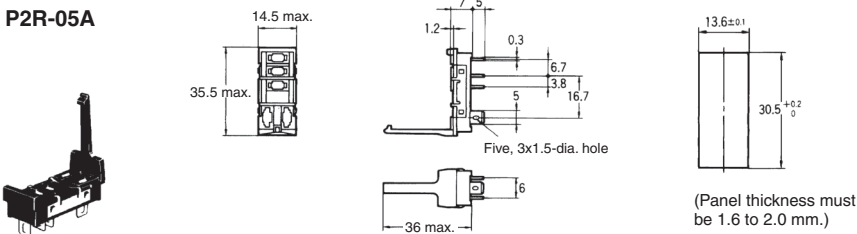
P2RF-05-E



** Indicates a value when using the PFP-□N Supporting Rail with the P2RF-05-E. The value is 71.5 when using the PFP-□N2.

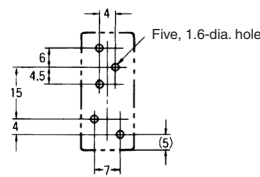
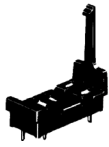
*** Indicates a value when using the PFP-□N Supporting Rail with the P2RF-08-E. The value is 75.5 when using the PFP-□N2.

P2R-05A

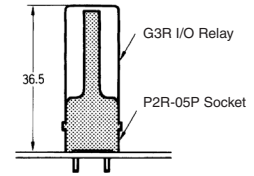


(For use when mounting in a panel or in the P2R-P mounting plate)

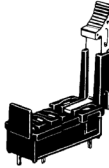
P2R-05P



Dimensional tolerance is ± 0.1 .



P2R-057P



Socket Mounting Plate

Use the P2R-P Socket Mounting Plate when arranging several P2R-05A Sockets in a row.

P2R-P



Approvals

UL Recognized (File No. E64562) / CSA Certified (File No. LR35535)

| Model G3R- | Module type | Rating |
|------------|-------------|---------------------|
| IAZR1SN | Input | 100 to 240 VAC |
| IDZR1SN | Input | 5 VDC, 12 to 24 VDC |
| IDZR1SN-1 | Input | 5 VDC, 12 to 24 VDC |
| OA202SZN | Output | 5 to 24 VDC |
| OA202SLN | Output | 5 to 24 VDC |
| ODX02SN | Output | 5 to 24 VDC |
| OD201SN | Output | 5 to 24 VDC |

| Model G3R- | Module type | Output rating |
|------------|-------------|----------------------------------|
| IAZR1SN | Input | 32 VDC, 100 mA (General Purpose) |
| IDZR1SN | Input | 32 VDC, 100 mA (General Purpose) |
| IDZR1SN-1 | Input | 32 VDC, 100 mA (General Purpose) |
| OA202SZN | Output | 264 VAC, 2 A (General Purpose) |
| | | 264 VAC, 1 A (Tungsten) |
| | | 264 VAC, 1 A FLA, 6 A LRA |
| OA202SLN | Output | 264 VAC, 2 A (General Purpose) |
| | | 264 VAC, 1 A (Tungsten) |
| | | 264 VAC, 1 A FLA, 6 A LRA |
| ODX02SN | Output | 60 VDC, 2 A (General Purpose) |
| | | 60 VDC, 1 A (Tungsten) |
| OD201SN | Output | 200 VDC, 1.5 A (General Purpose) |
| | | 200 VDC, 0.75 A (Tungsten) |

Precautions

■ Connection

With the SSR for DC switching, the load can be connected to either positive or negative output terminal of the SSR.

■ Protective element

Since the SSR does not incorporate an overvoltage absorption component, be sure to connect an overvoltage absorption component when using the SSR under an inductive load.

■ Precaution of Mounting Output Modules

With up to four G3R SSRs mounted closely and side by side, 2-A loads can be switched.



With a G3R SSRs mounted every other slot, 2-A loads can be switched.



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ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

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