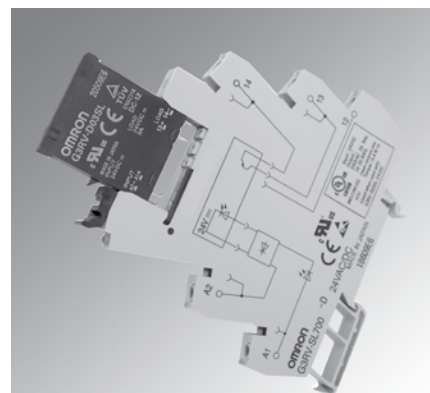


# Solid State Relays

## G3RV

### Slimmest OMRON plug-in SSR with maximum width 6.2 mm

- Long electrical life and high speed switching
- Large plug-in terminals for reliable connection
- G3RV-D (DC load) models can manage resistive loads of 100  $\mu$ A to 3.0 A
- LED indicator for visible operation checking
- Convenient quick electrical connections possible with G3RV push-in models and cross bar connectors
- Low power consumption for energy savings
- G3RV is cUL listed when correct relay is matched with the G3RV Socket



## Model Number Structure

### Model Number Legend

G3RV-SL 

|  |  |  |
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|--|--|--|

 - 

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|  |  |  |  |
|--|--|--|--|

1      2      3      4      5

#### 1. Basic Model Name

G3RV: Solid State Relay

#### 2. Auxiliary Type Designation

SL: Slim Solid State Relay and socket combination

#### 3. Wire Connection

700: Screw Terminals

500: Push-in (screwless) terminals

#### 4. Output voltage specifications

A(L): AC Output .. TRIAC

\* A: with Zero cross function AL: without Zero cross function

D: DC Output .. MOS FET

#### 5. Input Voltage

(Complete part numbers listed in the SSR and Socket Combinations Chart below)

## Ordering Information

### List of Models

| Classification    |                 | Enclosure rating | Input voltage | Type of connection | Contact form |
|-------------------|-----------------|------------------|---------------|--------------------|--------------|
|                   |                 |                  |               |                    | SPST         |
| Plug-in terminals | General-purpose | Unsealed         | AC/DC         | Screw terminals    | G3RV-SL700   |
|                   |                 |                  |               | Push-in terminals  | G3RV-SL500   |

### SSR and Socket Combinations

| Input voltage | Screw terminals         | Push-in terminals       |
|---------------|-------------------------|-------------------------|
| 12 VDC        | G3RV-SL700-D DC12       | G3RV-SL500-D DC12       |
|               | G3RV-SL700-A(L) DC12    | G3RV-SL500-A(L) DC12    |
| 24 VDC        | G3RV-SL700-D DC24       | G3RV-SL500-D DC24       |
|               | G3RV-SL700-A(L) DC24    | G3RV-SL500-A(L) DC24    |
| 24 VAC/DC     | G3RV-SL700-D AC/DC24    | G3RV-SL500-D AC/DC24    |
|               | G3RV-SL700-A(L) AC/DC24 | G3RV-SL500-A(L) AC/DC24 |
| 48 VAC/DC     | G3RV-SL700-D AC/DC48    | G3RV-SL500-D AC/DC48    |
|               | G3RV-SL700-A(L) AC/DC48 | G3RV-SL500-A(L) AC/DC48 |
| 110 VAC       | G3RV-SL700-D AC110      | G3RV-SL500-D AC110      |
|               | G3RV-SL700-A(L) AC110   | G3RV-SL500-A(L) AC110   |
| 230 VAC       | G3RV-SL700-D AC230      | G3RV-SL500-D AC230      |
|               | G3RV-SL700-A(L) AC230   | G3RV-SL500-A(L) AC230   |



Relay and Socket Combinations are cUL<sub>us</sub> listed.

## Specifications

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

Input

## G3RV-SL700/500-A Series

| Rated voltage | Rated current |        |       | Must operate voltage | Must release voltage | Input voltage      |
|---------------|---------------|--------|-------|----------------------|----------------------|--------------------|
|               | AC            |        | DC    |                      |                      | % of rated voltage |
|               | 50 Hz         | 60 Hz  |       |                      |                      |                    |
| 12 VDC        | ---           | ---    | 15 mA | 10.8V                | 1V                   | ±10%               |
| 24 VDC        | ---           | ---    | 12 mA | 21.6V                |                      |                    |
| 24 VAC/DC     | 20 mA         | 21 mA  | 11 mA | 21.6V                |                      |                    |
| 48 VAC/DC     | 10 mA         | 11 mA  | 6 mA  | 43.2V                |                      |                    |
| 110 VAC       | 7.5 mA        | 8.2 mA | ---   | 99V                  |                      |                    |
| 230 VAC       | 7.3 mA        | 8.6 mA | ---   | 207V                 |                      |                    |

## G3RV-SL700/500-AL Series

| Rated voltage | Rated current |        |       | Must operate voltage | Must release voltage | Input voltage      |
|---------------|---------------|--------|-------|----------------------|----------------------|--------------------|
|               | AC            |        | DC    |                      |                      | % of rated voltage |
|               | 50 Hz         | 60 Hz  |       |                      |                      |                    |
| 12 VDC        | ---           | ---    | 15 mA | 10.8V                | 1V                   | ±10%               |
| 24 VDC        | ---           | ---    | 12 mA | 21.6V                |                      |                    |
| 24 VAC/DC     | 20 mA         | 21 mA  | 11 mA | 21.6V                |                      |                    |
| 48 VAC/DC     | 10 mA         | 11 mA  | 6 mA  | 43.2V                |                      |                    |
| 110 VAC       | 7.5 mA        | 8.2 mA | ---   | 99V                  |                      |                    |
| 230 VAC       | 7.3 mA        | 8.6 mA | ---   | 207V                 |                      |                    |

## G3RV-SL700/500-D Series

| Rated voltage | Rated current |         |        | Must operate voltage | Must release voltage | Input voltage      |
|---------------|---------------|---------|--------|----------------------|----------------------|--------------------|
|               | AC            |         | DC     |                      |                      | % of rated voltage |
|               | 50 Hz         | 60 Hz   |        |                      |                      |                    |
| 12 VDC        | ---           | ---     | 8 mA   | 10.8V                | 1V                   | ±10%               |
| 24 VDC        | ---           | ---     | 4.5 mA | 21.6V                |                      |                    |
| 24 VAC/DC     | 10.7 mA       | 11.1 mA | 4.3 mA | 21.6V                |                      |                    |
| 48 VAC/DC     | 9.6 mA        | 10.2 mA | 6 mA   | 43.2V                |                      |                    |
| 110 VAC       | 6.8 mA        | 7.5 mA  | ---    | 99V                  |                      |                    |
| 230 VAC       | 6.8 mA        | 8.1 mA  | ---    | 207V                 |                      |                    |

Output

| Item                                                            | G3RV-SL700/500-A(L)              | G3RV-SL700/500-D               |
|-----------------------------------------------------------------|----------------------------------|--------------------------------|
| Rated load voltage                                              | AC100~240V (50/60Hz)             | DC5~24V                        |
| Load voltage range                                              | AC75~264V (50/60Hz)              | DC3~26.4V                      |
| Load current                                                    | 0.1~2A (Ta=40°C)                 | 100μA~3A (Ta=40°C)             |
| Inrush current                                                  | 30A (60Hz/1cycle)                | 30A (60Hz/1cycle)              |
| Permissible I <sup>2</sup> t ; Joule Integral (Reference value) | 15A <sup>2</sup> s               | 9A <sup>2</sup> s              |
| Application load capacity                                       | 400W<br>(Output voltage: AC200V) | 72W<br>(Output voltage: DC24V) |

## Specifications

### ■ Characteristics

| Item                                        | G3RV-SL700/500-A                                                                                            | G3RV-SL700/500-AL | G3RV-SL700/500-D      |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------|-------------------|-----------------------|
| Operate time                                | 1/2 of load power source cycle + 1 ms max.                                                                  | 1 ms max.         | 6 ms max.             |
| Release time                                | 40 ms max.                                                                                                  | 20 ms max.        | 60 ms max.            |
| Output ON voltage drop                      | 1.6 V rms max.                                                                                              |                   | 0.9 V max.            |
| Leakage current                             | 5 mA max. (at 200 VAC 50/60Hz)                                                                              |                   | 10 µA max. (at 24VDC) |
| Insulation resistance                       | 100 MΩ min. (at 500 VDC)                                                                                    |                   |                       |
| Dielectric strength                         | AC2500V 50/60 Hz for 1 min between input and output                                                         |                   |                       |
| Vibration resistance                        | Malfunction: 10 to 55 to 10 Hz, 0.7-mm single amplitude                                                     |                   |                       |
| Shock resistance                            | 300m/s <sup>2</sup>                                                                                         |                   |                       |
| Ambient temperature                         | Storage: -30~+100°C (with no icing or condensation)<br>Operating: -30~+55°C (with no icing or condensation) |                   |                       |
| Ambient humidity                            | 45~85%RH                                                                                                    |                   |                       |
| Weight                                      | Approx. 38 g                                                                                                |                   |                       |
| Pollution degree                            | 2                                                                                                           |                   |                       |
| Degree of protection according to IEC 60529 | IP20                                                                                                        |                   |                       |
| Rated Impulse Withstand Voltage             | 4.0kV / III                                                                                                 |                   |                       |
| Load category                               | LC-A                                                                                                        |                   | DC-12                 |
| Overload Current Profile                    | 1.5Ie 1.1Ie<br>5s ON, 10s OFF, 10cycles                                                                     |                   |                       |
| Rated insulation Voltage                    | 240V                                                                                                        |                   |                       |

### ■ Approved Standards

#### UL 508 (File No. E64562)

| Model                      | Input ratings                               | Contact ratings                      |
|----------------------------|---------------------------------------------|--------------------------------------|
| G3RV-SL700/500-D Series    | 12, 24 VDC<br>24, 48 VAC/DC<br>110, 230 VAC | 24 VDC 3 A (Resistive Load) at 25°C  |
| G3RV-SL700/500-A(L) Series | 12, 24 VDC<br>24, 48 VAC/DC<br>110, 230 VAC | 240 VAC 2 A (Resistive Load) at 25°C |

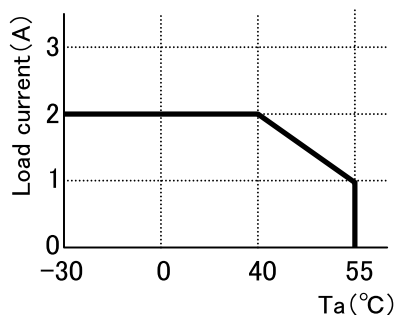
#### IEC/TUV (EN 62314)

| Input ratings                               | Contact ratings              |
|---------------------------------------------|------------------------------|
| 12, 24 VDC<br>24, 48 VAC/DC<br>110, 230 VAC | 24 VDC 3 A (Resistive Load)  |
| 12, 24 VDC<br>24, 48 VAC/DC<br>110, 230 VAC | 240 VAC 2 A (Resistive Load) |

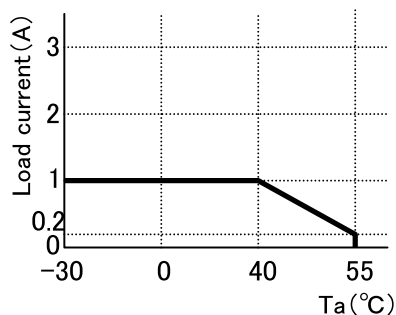
## ■ Load current derating curves

### G3RV-SL700/500-A(L) Series

Mounting Distance 10mm

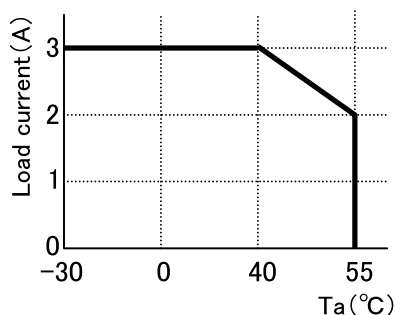


Mounting Distance 0mm

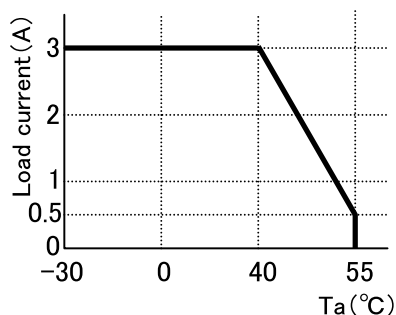


### G3RV-SL700/500-D Series

Mounting Distance 10mm



Mounting Distance 0mm

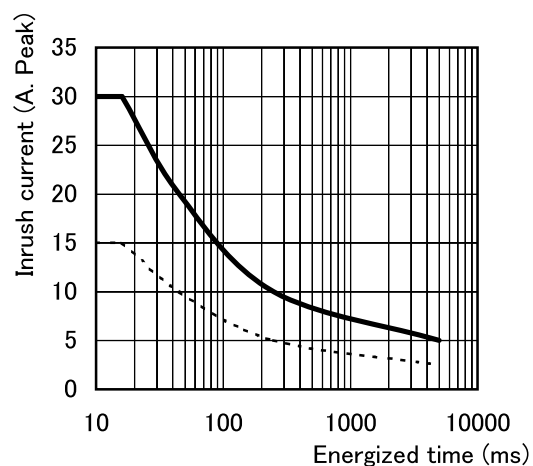


## ■ One Cycle Surge Current: Non-repetitive

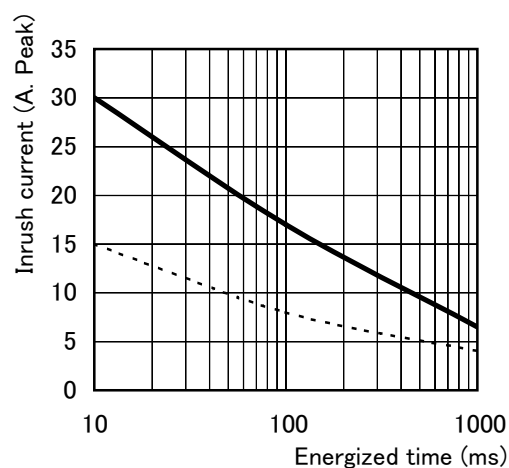
Non-repetitive (Keep the inrush current to half the rated value if it occurs repetitively.)

The values shown by the solid line are for non-repetitive inrush currents.

### G3RV-SL700/500-A(L) Series



### G3RV-SL700/500-D Series



## Accessories

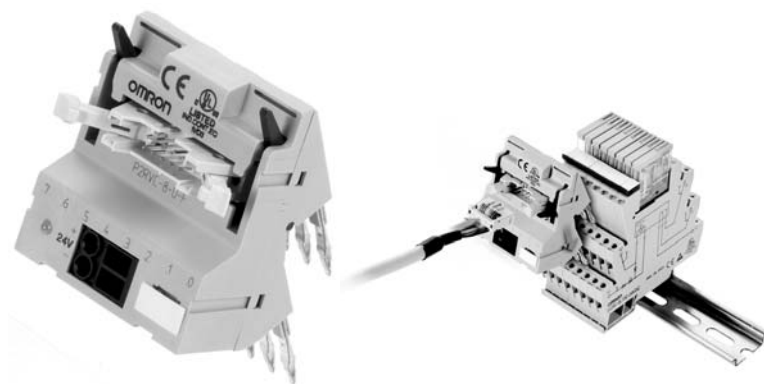
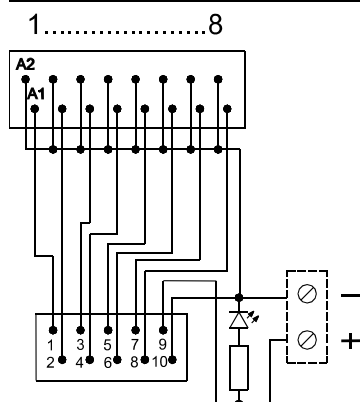
## ■ PLC Interface (for G2RV-SL700 &amp; G3RV-SL700 series only)

List of Models

| Model number | Description                                                                 | Connection                                  |
|--------------|-----------------------------------------------------------------------------|---------------------------------------------|
| P2RVC-8-O-F  | PLC Output Interface for 8x<br>G2RV-SL700 & G3RV-SL700 series<br>PNP - type | Ribbon cable connector<br>10 Pole, IEC603/1 |

Specifications

|                 |                      |                                              |
|-----------------|----------------------|----------------------------------------------|
| Input           | Rated voltage        | 30 VAC/VDC max.                              |
|                 | Current capacity     | 0.5 A per channel                            |
|                 |                      | 2.0 A total current, power supply terminal   |
| Characteristics | Ambient temperature  | Operating: 0 to 55°C<br>Storage: -20 to 85°C |
|                 | Overvoltage category | III                                          |
|                 | Pollution degree     | 2                                            |

Electrical schematic P2RVC-O-8-F

## Accessories

## ■ Cables for PLC Interface P2RVC-8-O-F

P2RV-4-C

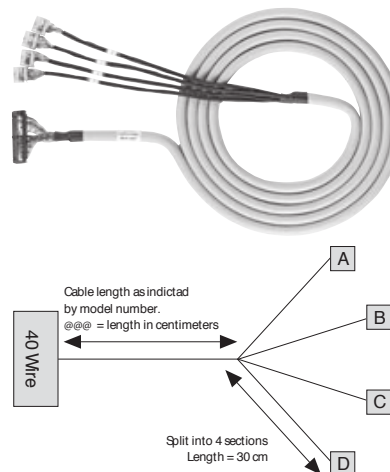
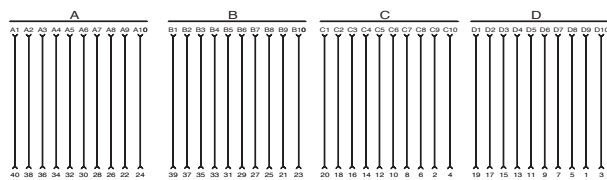
Cable to connect CJ1 to 4 x P2RVC-8-O-F

40 pole IDC mounting to Omron PLC CJ1-OD232

## List of Models

| Model number | Cable length |
|--------------|--------------|
| P2RV-4-100C  | 1.0 m        |
| P2RV-4-200C  | 2.0 m        |
| P2RV-4-300C  | 3.0 m        |
| P2RV-4-500C  | 5.0 m        |

## 4x10 pole IDC mounting to 4 x P2RVC-8-O-F



## Technical data

|                                    |                                                      |
|------------------------------------|------------------------------------------------------|
| Control line                       | AWG26/0.14 mm <sup>2</sup> , tin-plated copper       |
| Diameter cable                     | 10.6 mm (one end splits into 4 sections: A, B, C, D) |
| Operating voltage                  | 60 VDC                                               |
| Continuous current per signal wire | 0.5 A                                                |
| Max. total current, 4 bytes, each  | 1.0 A                                                |
| Test voltage                       | 0.5 KV, 50 Hz, 1 min                                 |
| Operating temperature range        | -20°C to +50°C                                       |

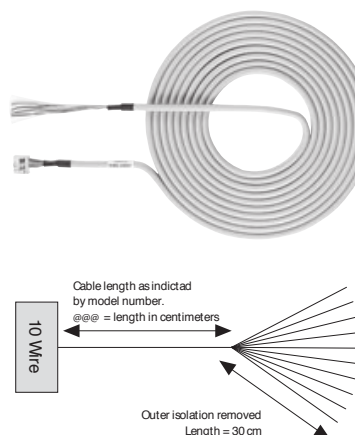
P2RV-AC

Cable, single sided 10 pole IDC connector, to connect to P2RVC-8-O-F

## List of Models

| Model number | Cable length |
|--------------|--------------|
| P2RV-A100C   | 1.0 m        |
| P2RV-A200C   | 2.0 m        |
| P2RV-A300C   | 3.0 m        |
| P2RV-A500C   | 5.0 m        |

## 10 pole IDC mounting to P2RVC-8-O-F



## Technical data

|                                    |                                                |
|------------------------------------|------------------------------------------------|
| Control line                       | AWG26/0.14 mm <sup>2</sup> , tin-plated copper |
| Diameter cable                     | 6.8 mm                                         |
| Operating voltage                  | 60 VDC                                         |
| Continuous current per signal wire | 0.5 A                                          |
| Max. total current                 | 1.0 A                                          |
| Test voltage                       | 0.5 KV, 50 Hz, 1 min                           |
| Operating temperature range        | -20°C to +50°C                                 |

## Accessories

## ■ SSR for Maintenance (Replacement SSRs)

## Model Number Legend

G3RV-□ □ □ □  
1 2 3 4

## 1. Output voltage specifications

D: DC Output

2: AC Output

## 2. Rated Current

02: AC Output 2A

03: DC Output 3A

## 3. Terminals

S: Plug-In

## 4. Zero cross function

Blank: with Zero cross function

L: without Zero cross function

## List of Models

| Isolation  | Movement indication | Rated input voltage (Socket) | Output (SSR)             | Zero cross function | Rated output load*  | Model Number    | Replacement for           |    |     |                   |                 |                       |
|------------|---------------------|------------------------------|--------------------------|---------------------|---------------------|-----------------|---------------------------|----|-----|-------------------|-----------------|-----------------------|
| Phototriac | Yes (Green)         | DC12V                        | AC                       | Yes                 | 2A at 100 to 240VAC | G3RV-202S DC12  | G3RV-SL700/500-A DC12     |    |     |                   |                 |                       |
|            |                     | DC24V                        |                          |                     |                     | G3RV-202S DC24  | G3RV-SL700/500-A DC24     |    |     |                   |                 |                       |
|            |                     | AC/DC24V                     |                          |                     |                     |                 | G3RV-SL700/500-A AC/DC24  |    |     |                   |                 |                       |
|            |                     | AC/DC48V                     |                          |                     |                     |                 | G3RV-SL700/500-A AC/DC48  |    |     |                   |                 |                       |
|            |                     | AC110V                       |                          |                     |                     | G3RV-202S DC48  | G3RV-SL700/500-A AC110    |    |     |                   |                 |                       |
|            |                     | AC230V                       |                          |                     |                     |                 | G3RV-SL700/500-A AC230    |    |     |                   |                 |                       |
|            |                     | DC12V                        |                          | No                  |                     | G3RV-202SL DC12 | G3RV-SL700/500-AL DC12    |    |     |                   |                 |                       |
|            |                     | DC24V                        |                          |                     |                     | G3RV-202SL DC24 | G3RV-SL700/500-AL DC12    |    |     |                   |                 |                       |
|            |                     | AC/DC24V                     |                          |                     |                     |                 | G3RV-SL700/500-AL AC/DC24 |    |     |                   |                 |                       |
|            |                     | AC/DC48V                     |                          |                     |                     |                 | G3RV-SL700/500-AL AC/DC48 |    |     |                   |                 |                       |
|            |                     | AC110V                       |                          |                     |                     | G3RV-202SL DC48 | G3RV-SL700/500-AL AC110   |    |     |                   |                 |                       |
|            |                     | AC230V                       |                          |                     |                     |                 | G3RV-SL700/500-AL AC230   |    |     |                   |                 |                       |
|            |                     | Photocoupler                 |                          |                     |                     |                 | DC12V                     | DC | --- | 3A at 5 to 24 VDC | G3RV-D03SL DC12 | G3RV-SL700/500-D DC12 |
|            |                     |                              |                          |                     |                     |                 | DC24V                     |    |     |                   | G3RV-D03SL DC24 | G3RV-SL700/500-D DC24 |
| AC/DC24V   |                     |                              | G3RV-SL700/500-D AC/DC24 |                     |                     |                 |                           |    |     |                   |                 |                       |
| AC/DC48V   | G3RV-D03SL DC48     |                              | G3RV-SL700/500-D AC/DC48 |                     |                     |                 |                           |    |     |                   |                 |                       |
| AC110V     |                     |                              | G3RV-SL700/500-D AC110   |                     |                     |                 |                           |    |     |                   |                 |                       |
| AC230V     |                     |                              | G3RV-SL700/500-D AC230   |                     |                     |                 |                           |    |     |                   |                 |                       |

\*different by ambient temperature.

Please refer to 4 pages of characteristic data “ ■ Load current derating curves” for the details.



## Accessories

## ■ Cross bars

Model Number LegendP2RVM - ☐ ☐  
                  1    2

## 1. Number of Poles

020: 2 poles  
 030: 3 poles  
 040: 4 poles  
 100: 10 poles  
 200: 20 poles

## 2. Color

R: Red  
 S: Blue  
 B: Black

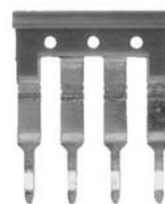
## List of Models

| Model number                       | Poles | Quantity                     | Color                            |
|------------------------------------|-------|------------------------------|----------------------------------|
| P2RVM-020 <input type="checkbox"/> | 2     | 60 pcs / box (minimum order) | Red (R)<br>Blue (S)<br>Black (B) |
| P2RVM-030 <input type="checkbox"/> | 3     | 60 pcs / box (minimum order) |                                  |
| P2RVM-040 <input type="checkbox"/> | 4     | 60 pcs / box (minimum order) |                                  |
| P2RVM-100 <input type="checkbox"/> | 10    | 20 pcs / box (minimum order) |                                  |
| P2RVM-200 <input type="checkbox"/> | 20    | 20 pcs / box (minimum order) |                                  |

☐ select color: R = Red, S = Blue, B = Black

## Specification

|                                                                                         |         |
|-----------------------------------------------------------------------------------------|---------|
| Max current<br>(EN60947-7-1 section 8.3.3 / 1991)                                       | 32A     |
| Max. Voltage                                                                            | 400 VAC |
| Max. Voltage<br>when cutting Cross-bar without using separation<br>plate or end-bracket | 250 VAC |



## ■ Plastic Labels for G2RV/G3RV Sockets

| Model number    | Box quantity                                          | Color |
|-----------------|-------------------------------------------------------|-------|
| R99-15 for G2RV | 5 sheets × 120 labels =<br>600 labels (minimum order) | White |



## ■ Labels (Stickers) for G2RV/G3RV Sockets

| Model number    | Box quantity                                             | Color |
|-----------------|----------------------------------------------------------|-------|
| R99-16 for G2RV | 10 sheets × 484 labels =<br>4,840 labels (minimum order) | White |





## Accessories

### ■ Separating Plates

| Model number | Quantity  | Description                                                            |
|--------------|-----------|------------------------------------------------------------------------|
| P2RV-S       | 50 plates | Provides isolation between adjacent relays to achieve 400 V isolation. |

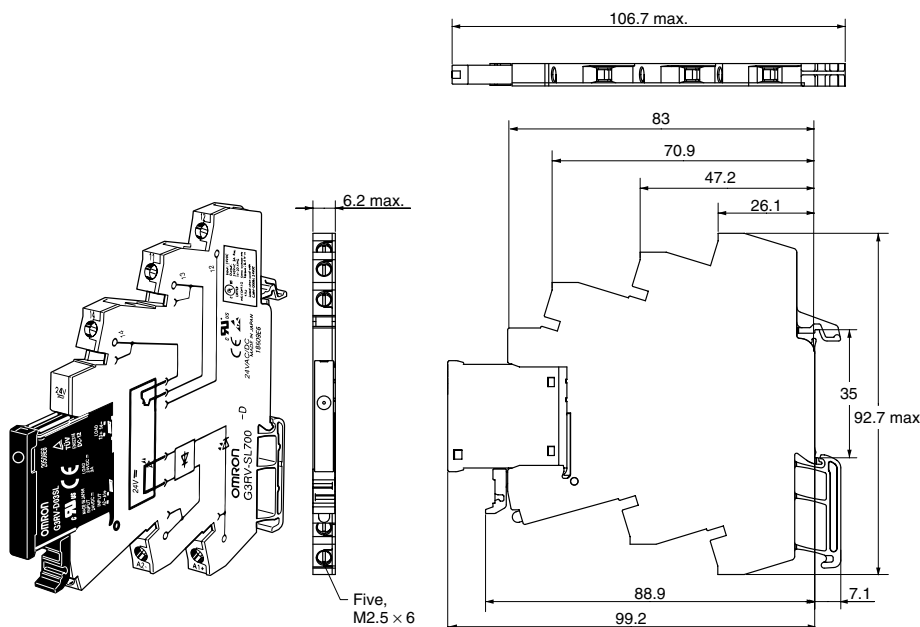


## Dimensions

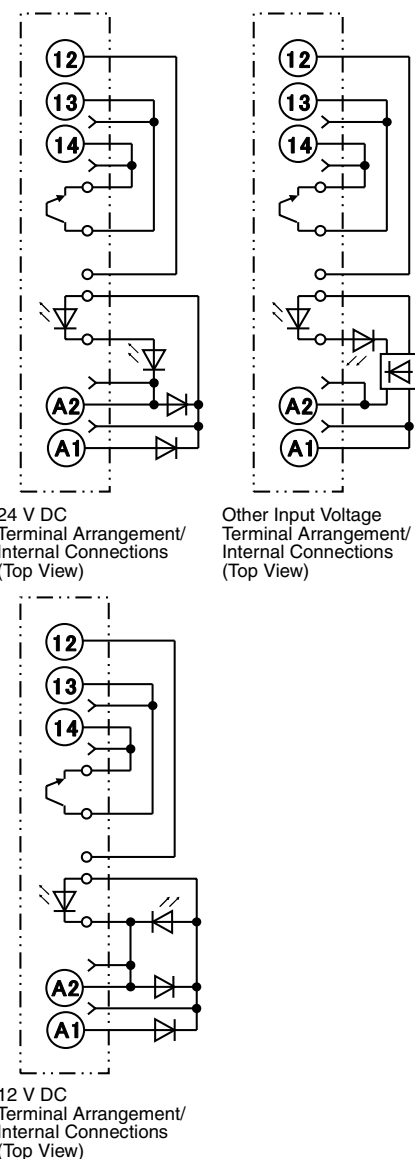
**Note:** All units are in millimeters unless otherwise indicated.

### Complete Unit

#### G3RV-SL700

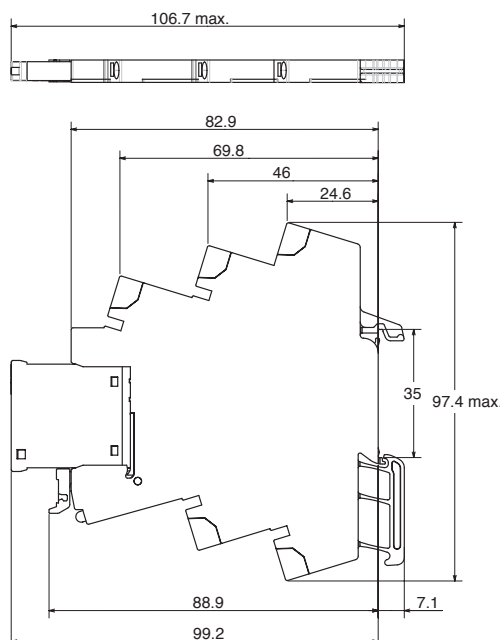
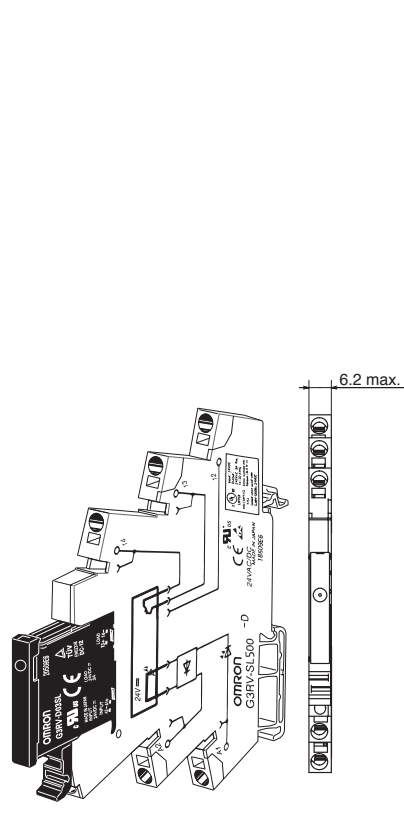


#### Input circuit

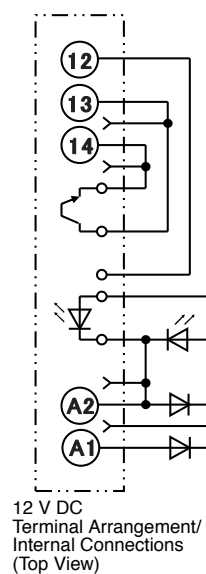
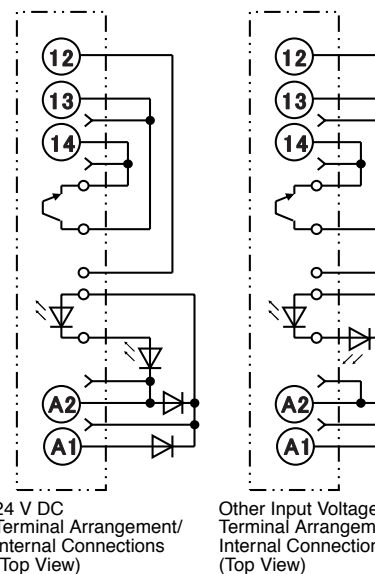


# Dimensions

## G3RV-SL500

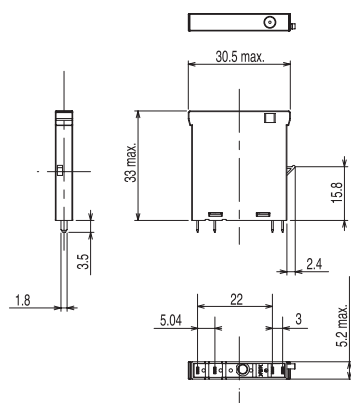


### Input circuit

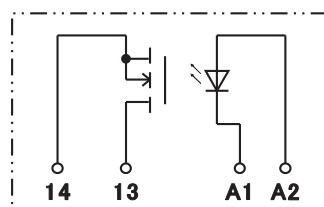


## Solid State Relay

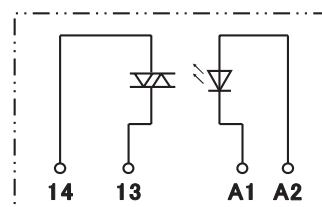
### G3RV-D03SL G3RV-202S(L)



### Input circuit G3RV-D03SL



### G3RV-202S(L)



Terminal Arrangement/  
Internal Connections  
(Bottom View)

## Installation

### Tools

G3RV-SL700 series: Flat-Blade screwdriver should be used for mounting and / or releasing cables.

G3RV-SL500 series: Flat-Blade screwdriver should be used for mounting stranded wires without ferrules and / or releasing cables.

### Applicable Screwdriver

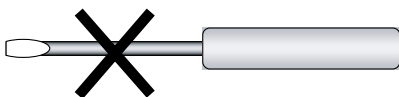
- Flat-blade, Parallel-tip, 2.5 mm diameter (3.0 mm max.)

- Flat-blade, Parallel-tip



2.5 dia. (3.0 mm max.)

- Flat-blade, Flared-tip



Cannot be used.

Examples: FACOM AEF.2.5 × 75E (AEF. 3 × 75E)  
 VESSEL No. 9900-(-)2.5 × 75 (No. 9900-(-)3 × 100)  
 WAGO 210-119  
 WIHA 260/2.5 × 40 (260/3 × 50)

\*Chamfering the tip of the driver improves insertion when used as an exclusive tool.

### Applicable Wires

### Applicable Wire Sizes

#### G3RV-SL700 Series

##### Box clamp technology

| Wire type                                     | Applicable wire size      | Stripping length |
|-----------------------------------------------|---------------------------|------------------|
| Stranded without ferrules                     | 0.5 - 1.5 mm <sup>2</sup> | 7 mm             |
| Stranded with ferrules and plastic collar     | 0.5 - 1.5 mm <sup>2</sup> | 7 mm             |
| Stranded with ferrules without plastic collar | 0.5 - 1.5 mm <sup>2</sup> | 7 mm             |
| Solid                                         | 0.5 - 1.5 mm <sup>2</sup> | 7 mm             |

#### G3RV-SL500 Series

##### Push-in technology

| Wire type                                     | Applicable wire size      | Stripping length |
|-----------------------------------------------|---------------------------|------------------|
| Stranded without ferrules                     | 0.5 - 1.5 mm <sup>2</sup> | 12 mm            |
| Stranded with ferrules and plastic collar     | 0.5 - 1.5 mm <sup>2</sup> | 12 mm            |
| Stranded with ferrules without plastic collar | 0.5 - 1.5 mm <sup>2</sup> | 12 mm            |
| Solid                                         | 0.5 - 1.5 mm <sup>2</sup> | 12 mm            |

### Tightening torque

**G3RV-SL700 Series: 0.4Nm**

# Installation

## ■ Wiring

Use wires of the applicable sizes specified above. The length of the exposed conductor should be 7 mm for a G3RV-SL700 series, 12 mm for a G3RV-SL500 series.

G3RV-SL700



G3RV-SL500

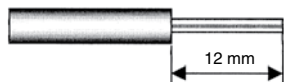
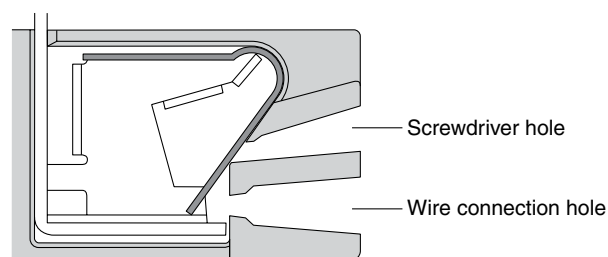
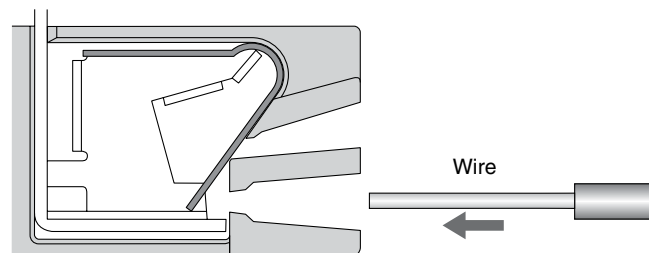


Fig. 1 Exposed Conductor Length

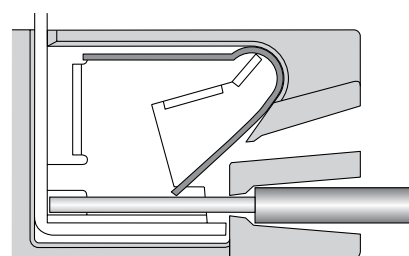
## Wiring Procedure for G3RV-SL500 series



### ● Wiring



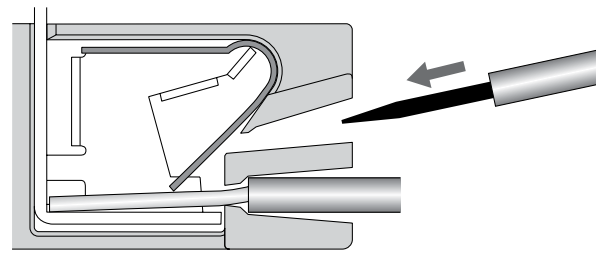
Insert the exposed conductor into the connection hole.



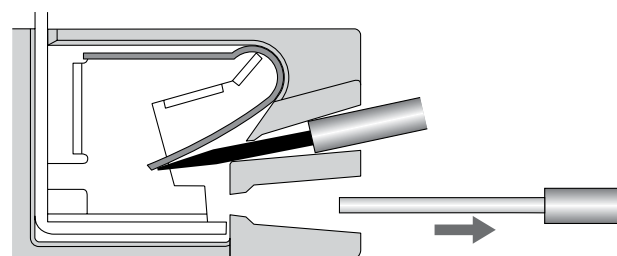
No other tools are required.

**Note:** In case of wiring stranded wires without ferrules screwdriver should be inserted before inserting the wire.  
Screwdriver should be removed after fully insertion of the wire.

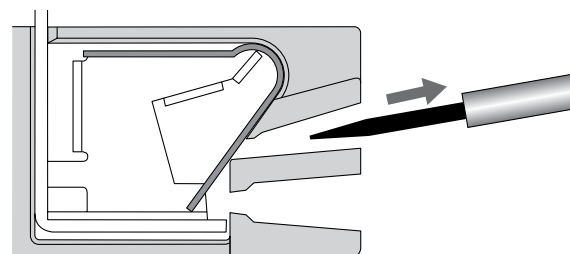
### ● Removing



Insert the specified screwdriver into the release hole.



Removing wire.

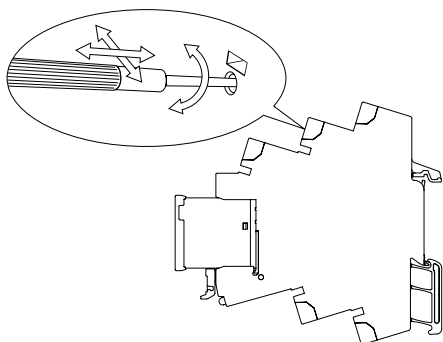


Removing screwdriver.

## Precautions

### Precautions for Connection

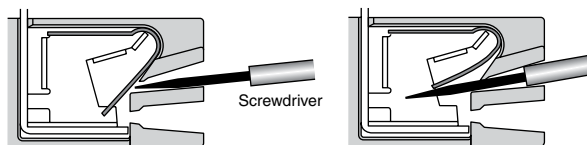
- Do not move the screwdriver up, down, or from side to side while it is inserted in the hole. Doing so may cause damage to internal components (e.g., deformation of the clamp spring or cracks in the housing) or cause deterioration of insulation.
- Do not insert the screwdriver at an angle. Doing so may break the side of socket and result in a short-circuit.



- Do not insert two or more wires in the hole. Wires may come in contact with the spring causing a temperature rise or be subject to sparks.



- Insert the screwdriver along the hole wall as shown below.



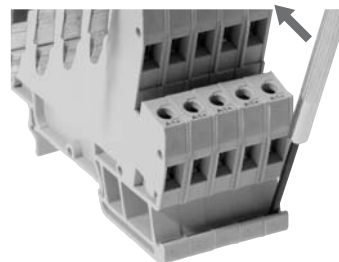
- If lubricating liquid, such as oil, is present on the tip of screwdriver, the screwdriver may fall out resulting in injury to the operator.
- Insert the screwdriver into the bottom of the hole. It may not be possible to connect cables properly if the screwdriver is inserted incorrectly.

### General Precautions

- Do not use the product if it has been dropped on the ground. Dropping the product may adversely affect performance.
- Confirm that the socket is securely attached to the mounting track before wiring. If the socket is mounted insecurely it may fall and injure the operator.
- Ensure that the socket is not charged during wiring and maintenance. Not doing so may result in electric shock.
- Do not pour water or cleansing agents on the product. Doing so may result in electric shock.
- Do not use the socket in locations subject to solvents or alkaline chemicals.
- Do not use the socket in locations subject to ultraviolet light (e.g., direct sunlight). Doing so may result in markings fading, rust, corrosion, or resin deterioration.
- Do not dispose the product in fire.

### Removing from Mounting Rail

To remove the socket from the mounting rail, insert the tip of screwdriver in the fixture rail, and move it in the direction shown below.



## Precautions

### Definition of Precautionary Information

|                                                                                                  |                                                                                                                                                                                                              |
|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>WARNING</b> | Indicates a potentially hazardous situation which, if not avoided, will result in minor or moderate injury, or may result in serious injury or death. Additionally there may be significant property damage. |
|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                  |                                                                                           |
|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
|  <b>CAUTION</b> | A potentially hazardous situation by misuse, may result in property damage only accident. |
|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|

|  <b>CAUTION</b>                                                                                                                                 |                                                                                    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Minor hazard by electric shock may occasionally occur.<br>Do not touch the G3RV's terminal (Charging part) while the power supply turned on.                                                                                     |   |
| The G3RV may occasionally rupture in case of a short circuit.<br>To protect against short-circuit accident, install a protective device, such as a quick-burning fuse or a circuit breaker or the like, on the power supply.     |   |
| Minor hazard by electric shock may occasionally occur.<br>Do not touch the G3RV's main circuit terminals immediately after the power is turned OFF.<br>The internal snubber circuit is charged.<br>* 202S,SL,G3RV-A(L) Type only |   |
| Minor hazard by burns may occasionally occur.<br>Do not touch the G3RV or the heat sink either while the power supply is ON, or immediately after the power is turned OFF.<br>The G3RV and the heat sink will be hot.            |  |

### Precautions for Safe Use

- **Shipping**  
When shipping the G3RV, be sure to avoid the following:
  - Conditions where the G3RV is exposed to water.
  - High ambient temperatures and humidity.
  - Inadequate packaging
 Failure to avoid these conditions while shipping G3RV will lead to damage, malfunction, or deterioration.
- **Operating and Storage Locations**  
Do not use or store the G3RV in the locations listed below. Failure to do so may result in damage, malfunction, or deterioration of performance characteristics.
  - Locations subject to rain or water drops.
  - Locations subject to exposure to water, or oil, or chemicals.
  - Locations subject to high temperatures or high humidity.
  - Locations subject to ambient temperatures outside the range from -30 to +100 centigrade.
  - Locations subject to relative humidity outside the range 45% to 85%.
  - Locations subject to corrosive or flammable gases.
  - Locations subject to dust (especially iron dust) or salts.
  - Locations subject to barrier.
  - Locations subject to static electricity or other forms of noise.
  - Locations subject to strong electromagnetic fields.
  - Locations subject to possible exposure to radioactivity.

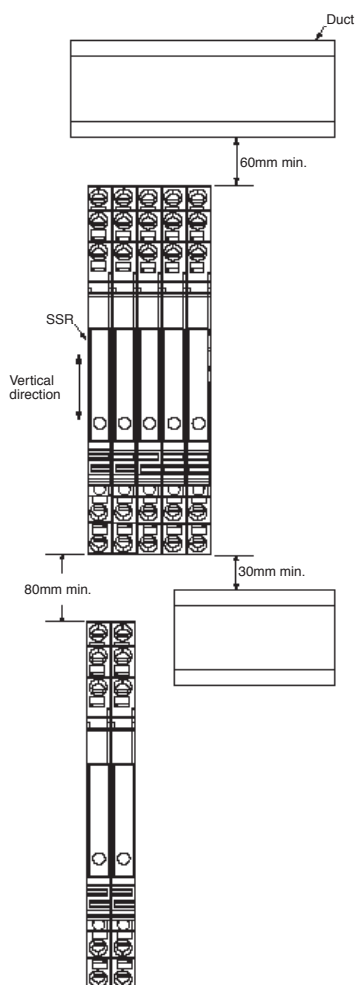
- **Handling**
  - Be sure to provide adequate air flow to G3RV. Failure to do so can cause the G3RV to overheat leading to short circuit and burning.
  - Do not install G3RV Relay with bent terminals into the socket. Doing so could lead to poor electrical connection and hazardous conditions.
  - Be sure to mount G3RV's with clean hands. Performing mounting with oil stained hands or coated with metal powder could result in hazardous outcomes.
- **Mounting**
  - Be sure to mount the G3RV in the specified orientation. Mounting the G3RV in a different orientation could lead to abnormal heat generation causing output elements to short leading to burning.
  - G3RV's are SSR's and generate heat. Be sure to control ambient temperature in setting where G3RV is used. If mounted in an enclosed space, install a fan to insure G3RV is properly ventilated.
  - Be sure that the G3RV clicks into place when mounting it to DIN Track. The G3RV may fall if it is not mounted correctly.
- **Wiring**
  - Use a wire an adequate size for current to be applied. Abnormal heating of wire may cause burning.
  - Do not use any wires with damaged sheaths. These may cause electric shock.
  - Confirm that wiring to G3RV Socket is not used in pipe or duct for high voltage power supply. Using a wire in pipe or duct connected to high voltage power supply will generate induction causing malfunction or damage.
  - Be sure to conduct wiring with the power supply turned OFF. Touching the terminals when they are charged may occasionally result in minor electric shock.
- **Using**
  - Select a load within the rated range. Inappropriate load may cause misoperation, trouble or burning.
  - Select the power supply within the rated frequency range. Inappropriate power frequency may cause misoperation, trouble or burning.

### Precautions for Correct Use

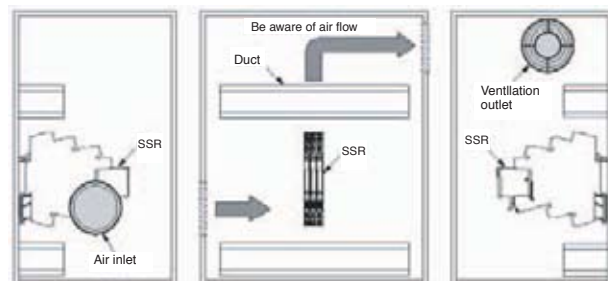
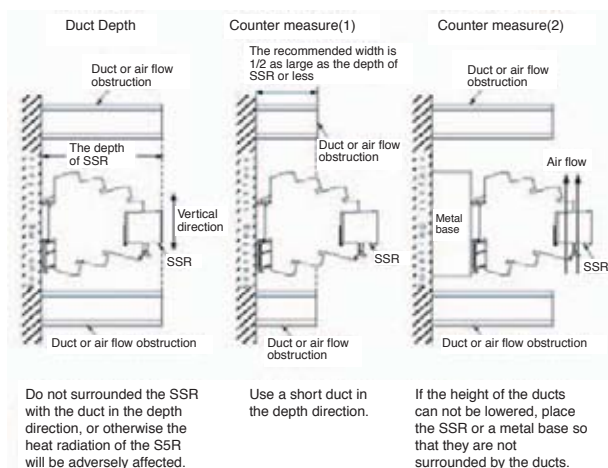
- G3RV uses electronics parts inside, so that any dropping, vibration, and physical shock beyond the standard level should be prevented. Failure to do so may result in damage, malfunction, or deterioration of performance characteristics.
- Be sure to use tightening torque of 0.4 N·m for screw terminal G3RV. Failure to do so could result in short circuit failure and burning.
- Be sure to use proper voltage/current to G3RV input and output terminals. Failure to do so could result in short circuit failure and burning.

# Safety Precautions

## <SSR Mounting Pitch (Panel Mounting)>



## <Relations between SSR and duct (Depth of duct)>



- \* If the air inlet or outlet has a filter, clean the filter regularly to prevent it from clogging and ensuring efficient flow of air.
- \* Do not locate any objects around the air inlet or air outlet, otherwise the objects may obstruct the proper ventilation of the control panel.
- \* A heat exchanger, if used, should be located in front of the G2RVs to ensure the efficiency of the heat exchanger.
- \* Please monitor the ambient temperature of the G3RV's. The rated load current is measured at 25°C ambient temperature.
- \* A G3RV uses semiconductor in the output element. This causes the temperature inside the control panel to increase due to heating resulting from the passage of electrical current through the load. To restrict heating, attach a fan to the ventilation outlet or air inlet of the control panel to ventilate the panel. This will reduce the ambient temperature of the G3RVs and thus increase reliability. (Generally, each 10°C reduction in temperature will double the expected life.)
- EMI
  - This is a class A product. In residential areas it may cause radio interference, in which case the user may be required to take adequate measures to reduce interference.

## Suitability for Use

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of the products in the customer's application or use of the product.

Take all necessary steps to determine the suitability of the product for the systems, machines, and equipment with which it will be used.

Know and observe all prohibitions of use applicable to this product.

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See also Product catalog for Warranty and Limitation of Liability.

**ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.**

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

## Read and Understand This Catalog

Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments.

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OMRON's exclusive warranty is that the products are free from defects in materials and workmanship for a period of one year (or other period if specified) from date of sale by OMRON.

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The following are some examples of applications for which particular attention must be given. This is not intended to be an exhaustive list of all possible uses of the products, nor is it intended to imply that the uses listed may be suitable for the products:

- Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this catalog.
- Nuclear energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
- Systems, machines, and equipment that could present a risk to life or property.

Please know and observe all prohibitions of use applicable to the products.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCTS ARE PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

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OMRON shall not be responsible for the user's programming of a programmable product, or any consequence thereof.

## Disclaimers

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It is our practice to change model numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the products may be changed without any notice. When in doubt, special model numbers may be assigned to fix or establish key specifications for your application on your request. Please consult with your OMRON representative at any time to confirm actual specifications of purchased products.

### DIMENSIONS AND WEIGHTS

Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

### PERFORMANCE DATA

Performance data given in this catalog is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of OMRON's test conditions, and the users must correlate it to actual application requirements. Actual performance is subject to the OMRON Warranty and Limitations of Liability.

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