



Automatización Eléctrica

At the end of this document you will find links to products related to this catalog. You can go directly to our shop by clicking HERE. <u>HERE</u>

Solid State Relays

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 μA 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



- 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

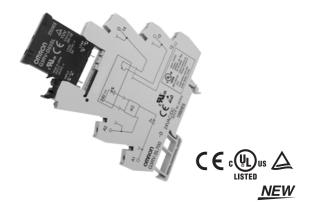
Ordering Information

■ List of Models

Classification		sification Enclosure rating		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 12VDC	G3RV-SL500-D 12VDC
	G3RV-SL700-A(L) 12VDC	G3RV-SL500-A(L) 12VDC
24 VDC	G3RV-SL700-D 24VDC	G3RV-SL500-D 24VDC
	G3RV-SL700-A(L) 24VDC	G3RV-SL500-A(L) 24VDC
24 VAC/DC	G3RV-SL700-D 24VAC/DC	G3RV-SL500-D 24VAC/DC
	G3RV-SL700-A(L) 24VAC/DC	G3RV-SL500-A(L) 24VAC/DC
48 VAC/DC	G3RV-SL700-D 48VAC/DC	G3RV-SL500-D 48VAC/DC
	G3RV-SL700-A(L) 48VAC/DC	G3RV-SL500-A(L) 48VAC/DC
110 VAC	G3RV-SL700-D 110VAC	G3RV-SL500-D 110VAC
	G3RV-SL700-A(L) 110VAC	G3RV-SL500-A(L) 110VAC
230 VAC	G3RV-SL700-D 230VAC	G3RV-SL500-D 230VAC
	G3RV-SL700-A(L) 230VAC	G3RV-SL500-A(L) 230VAC



4. Output voltage specifications

A(L): AC Output .. TRIAC *A: with Zero cross function AL: without Zero cross function D: DC Output .. MOS FET

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

<u>Input</u>

G3RV-SL700/500-A Series

Rated voltage	Rated currer		Rated current		Must release	Input voltage		
	AC		AC		DC	voltage	voltage	% 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		ent	Must operate	Must release	Input voltage		
	AC		AC		DC	voltage	voltage	% 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		ent	Must operate	Must release	Input voltage		
	AC		AC		DC	voltage	voltage	% 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				

<u>Output</u>

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 ² t ; Joule Integral (Reference value)	15A²s	9A²s
Application load capacity	400W (Output voltage: AC200V)	72W (Output voltage: DC24V)

■ 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 rn	ns max.	0.9 V max.			
Leakage current	5 mA max. (at 20	0 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 a	ind output			
Vibration resistance	Malfunctio	n: 10 to 55 to 10 Hz, 0.7-mm single	amplitude			
Shock resistance	300m/s ²					
Ambient temperature	Storage: -30~+100°C (with no icing or condensation)					
	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	DC-12				
Overload Current Profile	Profile 1.5le 1.1Ue					
	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 24, 48 VAC/DC 110, 220 VAC	24 VDC 3 A (Resistive Load) at 25°C
G3RV-SL700/500-A(L) Series	110, 230 VAC 12, 24 VDC 24, 48 VAC/DC 110, 230 VAC	240 VAC 2 A (Resistive Load) at 25°C

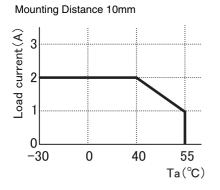
IEC/TUV (EN 62314)

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

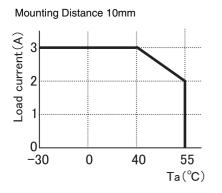
Engineering Data

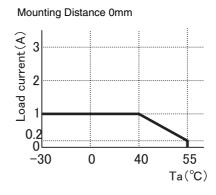
Load current derating curves

G3RV-SL700/500-A(L) Series

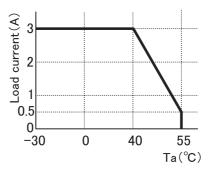


G3RV-SL700/500-D Series





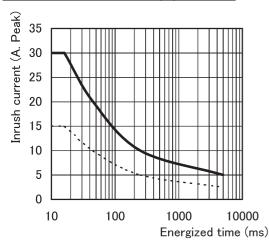
Mounting Distance 0mm



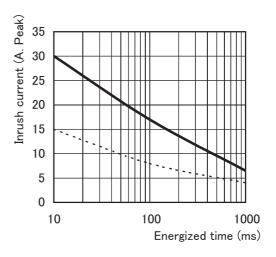
■ One Cycle Surge Current: Non-repetitive

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



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

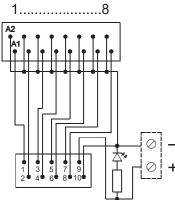
List of Models

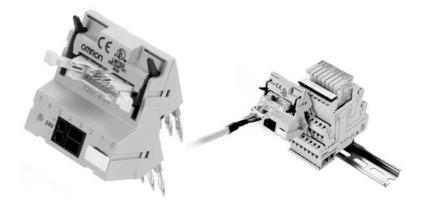
Model number	Description	Connection
P2RVC-8-O-F	PLC Output Interface for 8x G2RV-SL700 & G3RV-SL700 series PNP - type	Ribbon cable connector 10 Pole, IEC603/1

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		
		Storage: – 20 to 85°C		
	Overvoltage category	111		
	Pollution degree	2		

Electrical schematic P2RVC-O-8-F





SSR for Maintenance (Replacement SSRs)

Model Number Legend



- 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	G3RV-202S DC12	G3RV-SL700/500-A DC12
	DC24V			to 240VAC	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	G3RV-D03SL DC12	G3RV-SL700/500-D DC12
		DC24V			24 VDC	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	1				G3RV-SL700/500-D AC110
		AC230V	1				G3RV-SL700/500-D AC230

*different by ambient temperature.

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



Cross bars

Model Number Legend

P2RVM - _ _ _

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	2	60 pcs / box (minimum order)	
P2RVM-030	3	60 pcs / box (minimum order)	Red (R)
P2RVM-040	4	60 pcs / box (minimum order)	Blue (S)
P2RVM-100	10	20 pcs / box (minimum order)	Black (B)
P2RVM-200	20	20 pcs / box (minimum order)	

 \Box select color: R = Red, S = Blue, B = Black

Specification

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







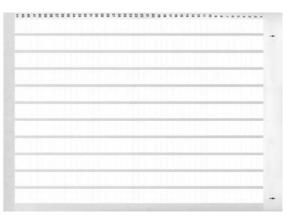
■ Plastic Labels for G2RV/G3RV Sockets

Model number	Box quantity	Color
	5 sheets × 120 labels = 600 labels (minimum order)	White

And Street Street	in the local in		11
parts from these	person (second person)	and some the	

■ Labels (Stickers) for G2RV/G3RV Sockets

Model number	Box quantity	Color
	10 sheets × 484 labels = 4,840 labels (minimum order)	White



Separating Plates

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

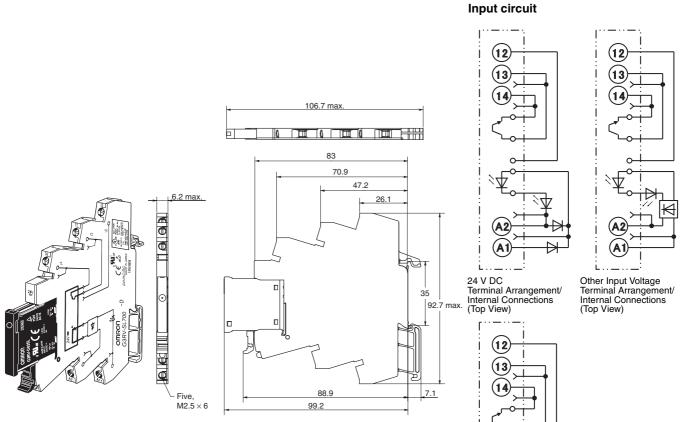


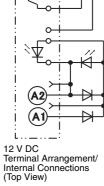
Dimensions

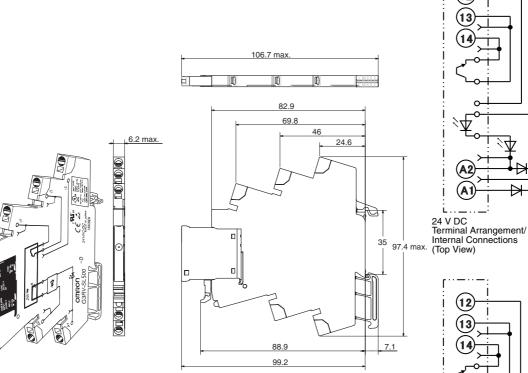
Note: All units are in millimeters unless otherwise indicated.

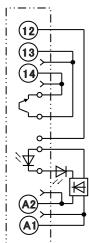
Complete Unit

G3RV-SL700

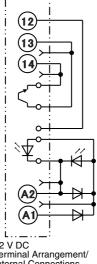








L Other Input Voltage Terminal Arrangement/ Internal Connections (Top View)

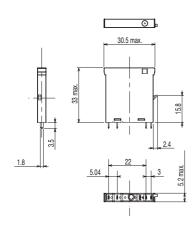


Input circuit

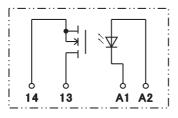
12 V DC Terminal Arrangement/ Internal Connections (Top View)

Solid State Relay

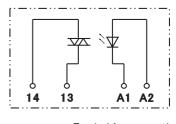
G3RV-D03SL G3RV-202S(L)



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.

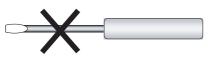
G3RV-SL500 series: Flat-Blade screwdriver should be used for mounting stranded wires without ferrules and / or releasing cables.

Applicable Screwdriver

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



• Flat-blade, Flared-tip



■ 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 mm²	7 mm
Stranded with ferrules and plastic collar	0.5 - 1.5 mm ²	7 mm
Stranded with ferrules without plastic collar	0.5 - 1.5 mm ²	7 mm
Solid	0.5 - 1.5 mm ²	7 mm

G3RV-SL500 Series

Push-in technology

Wire type	Applicable wire size	Stripping length
Stranded without ferrules	0.5 - 1.5 mm²	12 mm
Stranded with ferrules and plastic collar	0.5 - 1.5 mm ²	12 mm
Stranded with ferrules without plastic collar	0.5 - 1.5 mm ²	12 mm
Solid	0.5 - 1.5 mm ²	12 mm

Tightening torque

G3RV-SL700 Series: 0.4Nm

■ 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

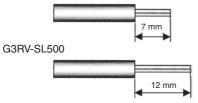
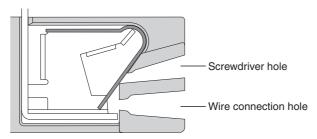
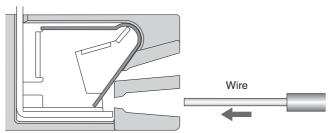


Fig. 1 Exposed Conductor Length

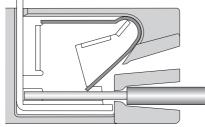
Wiring Procedure for G3RV-SL500 series



Wiring



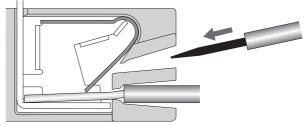
Insert the exposed conductor into the connection hole.



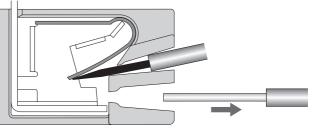
No other tools are required.

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.

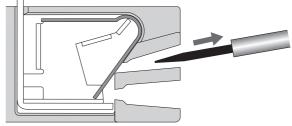
Removing



Insert the specified screwdriver into the release hole.



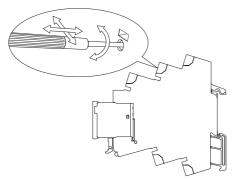
Removing wire.



Removing screwdriver.

Precautions for Connection

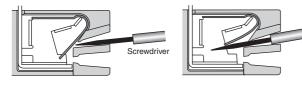
- Do not move the screwdriver up, down, or from side to side while it is inserted in the hole. Doing so may cause damage to internal components (e.g., deformation of the clamp spring or cracks in the housing) or cause deterioration of insulation.
- Do not insert the screwdriver at an angle. Doing so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



Definition of Precautionary Information

▲ WARNING	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.
	A potentially hazardous situation by misuse, may result in property damage only accident.

Minor hazard by electric shock may occasionally occur.	Δ
Do not touch the G3RV's terminal (Charging part) while the power supply turned on.	<u>/4</u> \
The G3RV may occasionally rupture in case of a short circuit.	^
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.	
Do not touch the G3RV's main circuit terminals immediately after the power is turned OFF.	
The internal snubber circuit is charged. * 202S,SL,G3RV-A(L) Type only	
Minor hazard by burns may occasionally occur.	
Do not touch the G3RV or the heat sink either while the power supply is ON, or immediately after the power is turned OFF.	

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.
- \bullet 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.

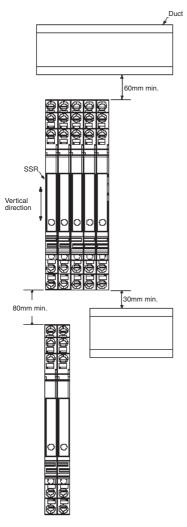
Precautions for Correct Use

- 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.

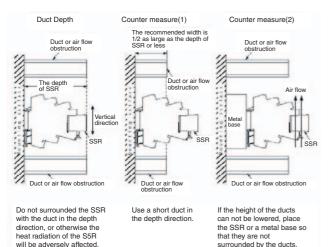
13

Mounting

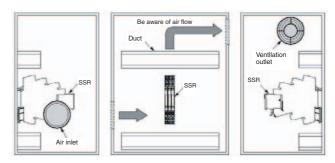
<SSR Mounting Pitch (Panel Mounting)>



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



<Ventilation Outside the Control Panel>



- * 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 no 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 the 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.

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 PRODUCT IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

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.

Cat. No. J180-E2-02 In the interest of product improvement, specifications are subject to change without notice.





Below is a list of articles with direct links to our shop Electric Automation Network where you can see:

- Quote per purchase volume in real time.
- Online documentation and datasheets of all products.
- Estimated delivery time enquiry in real time.
- Logistics systems for the shipment of materials almost anywhere in the world.
- Purchasing management, order record and tracking of shipments.

Product Code **Product link** Reference 358297 Buy on EAN 358294 Buy on EAN 358295 Buy on EAN MYA-NA2 114197 Buy on EAN 100/110DC Buy on EAN 235714 Fibre optic sensor, thru-beam, M4 head with 1.2mm Buy on EAN 131495 sleeve, high flex R1 fibre, 2m cable Timer, plug-in, 8-pin, 1/16DIN (48 x 48mm), IP66, 4 preset & 4 actual time digits, multi range 0.01s to 120006 Buy on EAN 9999h (10 ranges), economy model, NPN/PNP/No voltage input selectable, SPDT 5 A relay output, 12-24 VDC/24 VAC supply Timer, plug-in, 8-pin, DIN48x48mm, IP66, 4 preset & 4 actual time digits, multi range 0.01s to 9999h (10 120007 Buy on EAN ranges), economy model, NPN/PNP/No voltage input selectable, 100mA 30VDC NPN transistor output, 12-24VDC/24VAC supply Timer, DIN48x48mm, IP66, 4 preset & 4 actual time digits, multi range 0.01s to 9999h (10 ranges), Buy on EAN multifunction, NPN/PNP/No voltage input selectable, 120004 100mA 30VDC NPN transistor output, 12-24VDC supply, includes colour change display function PE120-i-16-345994 Buy on EAN R88MK2K030F Proximity sensor, inductive, nickel-brass, long body, Buy on EAN 172204 M30, unshielded, 30mm, DC, 3-wire, PNP-NC, 2m cable

To access the product, <u>click on the green button</u>.

120000 Buy on I