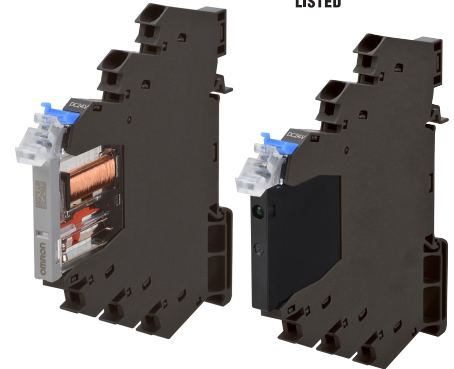


Slim I/O Relay/Slim I/O Solid State Relay G2RV-ST/G3RV-ST

Slim I/O relay realizes space saving thanks to high-density mounting and ultra-slim body

- 60% space saving from G2R series with 6.2 mm width.
- 60%* reduction in wiring time and user-friendly with a low insertion force thanks to Push-In Plus Technology.
- Larger hole and angled structure contribute to efficient wiring and standardization of wires up to AWG14, 2.5 mm².
- Easy maintenance with improved LED visibility and color stopper voltage line identification.
- Low cutting force of short bars contribute to reducing health issues such as Tenosynovitis.

* According to OMRON actual measurement data for both push-in plus terminal blocks and screw terminal blocks.



For the recent information on models that have been certified for safety standards, refer to your OMRON website.

Refer to *Safety Precautions* on page 22.

G2RV-ST

G3RV-ST

Slim I/O Relay Types

- G2RV-ST series mounted relay: electromagnetic relay..... from page 2
- G3RV-ST series mounted relay: solid state relay..... from page 12

Common matter

- Common precautions from page 22
- Common accessories (order separately)..... from page 29

Common Precautions

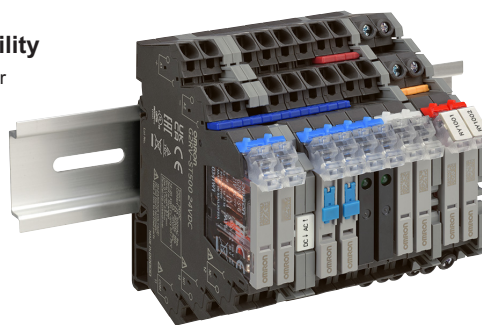
Common features of G2RV-ST/G3RV-ST

Wiring standardization is also supported by 2.5 mm² compatibility

DC common wiring also provides support for 2.5 mm² dia./AWG14 (2.0 mm²) needs

Wiring work efficiency improvement

Easy to see and easy insertion thanks to large-diameter wiring holes and tilted structure.



Maintainability is enhanced by color stoppers



Both easy replacement and detachment prevention of relays are achieved by locking and unlocking of stopper.

Designed so that wires are hard come out even if release levers are touched unintentionally.



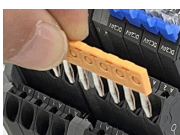
Coil voltage line identification
Red: AC
Blue: DC
White: Multi (e.g. 24 VAC/VDC)

Work judgment support is provided through mounting feeling enhancement.

Work efficiency is enhanced by DIN rail sliding performance and short bar improvements.



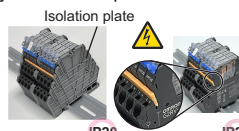
DIN rail tolerance is also supported through elasticity.



Insertion feeling to let you know when mounting is complete.

Easy and safe

Short bar cutting force has been decreased to reduce the burden during assembly. Electrification of the short bar fracture plane is prevented by an isolation plate.



Note. Cutting force of 25 kg, so easily cut by needle-nose pliers

Visibility is enhanced by release lever LED



Visibility from the front is improved by a structure where the actual release lever lights and by expanding the light emission area.

Note. The third relay from the right is equipped with a label.

Common Accessories

Slim I/O Relay G2RV-ST

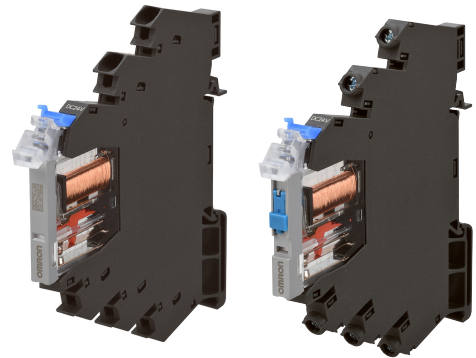
G2RV-ST

Slim I/O relay realizes space saving thanks to high-density mounting and ultra-slim body

- 60% space saving from G2R series with 6.2 mm width technology.
- 60%*1 reduction in wiring time and user-friendly with a low insertion force thanks to Push-In Plus Technology.
- Max. 6 A realized even with close-contact mounting.
- Au-plated contacts suitable for micro loads with a failure rate P value*2 of 1 mA at 100 mVDC.
- A transparent case that allows for easy on-site visual checks of contact state abnormalities.
- Easy relay replacement with a terminal structure that does not bend easily.
- Operation check using a test switch reduces inspection time.
- A coil surge absorption circuit equipped as standard.

*1. According to OMRON actual measurement data for both push-in plus terminal blocks and screw terminal blocks.

*2. Reference value



For the recent information on models that have been certified for safety standards, refer to your OMRON website.

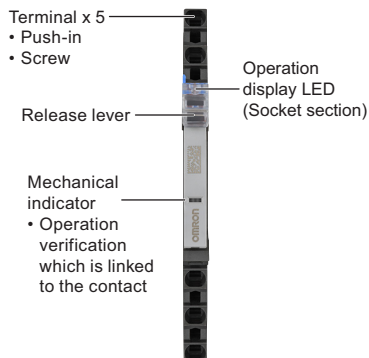
Refer to *Safety Precautions* on page 22.

G3RV-ST

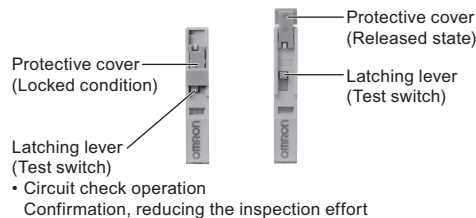
Features

Common Precautions

Standard model/Micro load

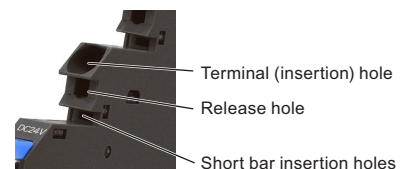


With latching lever (Test switch)

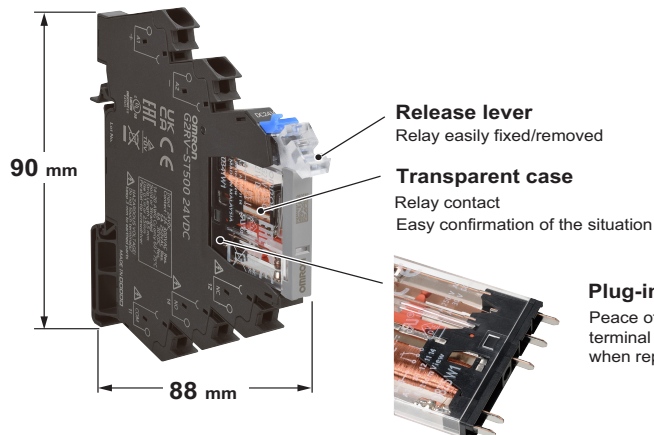


- Circuit check operation Confirmation, reducing the inspection effort

Push-In Plus technology



Common Accessories



Model Number Structure

Model Number Legend

G2RV-ST □□ □ - □ □
 (1) (2) (3) (4) (5) (6)

(1) Basic model name
 G2RV: Slim I/O Relay

(2) Sub type

ST: Slim relay + integrated low profile socket

(3) Terminal (wire connection)
 50: Push-In Plus Terminal
 70: Screw terminal

(4) Latching lever (test switch)
 0: Without latching lever
 1: With latching lever

(5) Contact structure
 Blank: Standard
 AP: Microloads

(6) Rated input voltage
 12, 24 VDC
 24, 48 VAC/VDC
 100, 110, 200, 230 VAC

Ordering Information

Terminal (Wire connection)	Classification	Latching lever (Test switch)	Rated input voltage (V)		Model	
Push-In Plus Terminal	Standard	No	DC	12	G2RV-ST500 12 VDC	
				24	G2RV-ST500 24 VDC	
			AC/DC	24	G2RV-ST500 24 VAC/VDC	
				48	G2RV-ST500 48 VAC/VDC	
				AC	100	G2RV-ST500 100 VAC
			110		G2RV-ST500 110 VAC	
			200		G2RV-ST500 200 VAC	
			230		G2RV-ST500 230 VAC	
			Microloads	No	DC	12
	24	G2RV-ST500-AP 24 VDC				
	AC/DC	24			G2RV-ST500-AP 24 VAC/VDC	
		48			G2RV-ST500-AP 48 VAC/VDC	
		AC			100	G2RV-ST500-AP 100 VAC
	110				G2RV-ST500-AP 110 VAC	
	200				G2RV-ST500-AP 200 VAC	
	230				G2RV-ST500-AP 230 VAC	
	Screw terminal	Standard			No	DC
			24	G2RV-ST700 24 VDC		
AC/DC			24	G2RV-ST700 24 VAC/VDC		
			48	G2RV-ST700 48 VAC/VDC		
			AC	100		G2RV-ST700 100 VAC
110				G2RV-ST700 110 VAC		
200				G2RV-ST700 200 VAC		
230				G2RV-ST700 230 VAC		
Microloads			No	DC		12
		24			G2RV-ST700-AP 24 VDC	
		AC/DC		24	G2RV-ST700-AP 24 VAC/VDC	
				48	G2RV-ST700-AP 48 VAC/VDC	
				AC	100	G2RV-ST700-AP 100 VAC
		110			G2RV-ST700-AP 110 VAC	
		200			G2RV-ST700-AP 200 VAC	
		230			G2RV-ST700-AP 230 VAC	

Note: Sockets are not sold individually.

G2RV-ST

G3RV-ST

Common Precautions

Common Accessories

G2RV-ST

Relay for Maintenance

Model Number Legend

G2RV-1 - S □ - □ - **G** □
 (1) (2)(3) (4) (5) (6)

(1) No. of poles

1: 1 pole

(2) Terminal

S: plug-in

(3) Latching lever (Test switch)

Blank: Without latching lever

I: With latching lever

(4) Contact material

Blank: Ag alloy

AP: Ag alloy + Au plating

(5) Types of relay for exchange

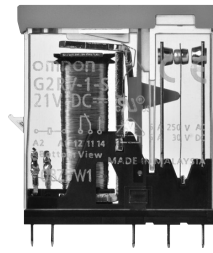
G: G2RV-ST series equipped

Relay

(6) Rated coil voltage

Number: 11, 21, 48 VDC

G2RV-1-SI-G



G2RV-1-S(-AP)-G



List of Models

Type	Latching Lever (Test switch)	Rated coil voltage (V)		Model	Applicable model
Standard	No	DC	11	G2RV-1-S-G DC11	G2RV-ST700/500 12 VDC
			21	G2RV-1-S-G DC21	G2RV-ST700/500 24 VDC
			48	G2RV-1-S-G DC48	G2RV-ST700/500 24 VAC/VDC
					G2RV-ST700/500 48 VAC/VDC
	Yes	DC	21	G2RV-1-SI-G DC21	G2RV-ST700/500 100 VAC
					G2RV-ST700/500 110 VAC
					G2RV-ST700/500 200 VAC
					G2RV-ST700/500 230 VAC
Microload	No	DC	11	G2RV-1-S-AP-G DC11	G2RV-ST701/501 24 VDC
			21	G2RV-1-S-AP-G DC21	G2RV-ST700/500-AP 12 VDC
			48	G2RV-1-S-AP-G DC48	G2RV-ST700/500-AP 24 VDC
					G2RV-ST700/500-AP 24 VAC/VDC
	Yes	DC	21	G2RV-1-SI-AP-G DC21	G2RV-ST700/500-AP 48 VAC/VDC
					G2RV-ST700/500-AP 100 VAC
					G2RV-ST700/500-AP 110 VAC
					G2RV-ST700/500-AP 200 VAC
Yes	DC	48	G2RV-1-SI-AP-G DC48	G2RV-ST700/500-AP 230 VAC	
				G2RV-ST700/500-AP 100 VAC	
				G2RV-ST700/500-AP 110 VAC	
				G2RV-ST700/500-AP 200 VAC	

Note: Voltage is reduced within the socket for the slim I/O relay, so the rated input voltage and rated coil voltage of replacement relays are different.

Accessories (order separately)

Refer to page 29 for G2RV-ST/G3RV-ST Common Accessories.

G2RV-ST

G3RV-ST

Common Precautions

Common Accessories

Specifications

Ratings

Coil ratings

Rated input voltage	Rated current			Must operate voltage	Must release voltage	Power consumption		Maximum allowable voltage
	AC		DC			Percentage of the rated voltage	AC (VA)	
	50 Hz	60 Hz		Percentage of the rated voltage	AC (VA)			DC (mW)
12 VDC	–	–	27.9 mA	80% max.*	10% min.	–	Approx. 300 mW	110%
24 VDC	–	–	13.5 mA			–	Approx. 300 mW	
24 VAC/VDC	13.7 mA	14.9 mA	12.6 mA			Approx. 0.5 VA	Approx. 300 mW	
48 VAC/VDC	5.9 mA	6.4 mA	5.2 mA			Approx. 0.4 VA	Approx. 250 mW	
100 VAC	6.8 mA	7.1 mA	–			Approx. 0.8 VA	–	
110 VAC	6.1 mA	6.4 mA	–			Approx. 0.8 VA	–	
200 VAC	6.1 mA	7.3 mA	–			Approx. 1.7 VA	–	
230 VAC	6.8 mA	8.2 mA	–			Approx. 1.7 VA	–	

Note: The operating characteristics are measured at ambient temperature of 23°C.

* Operating voltage will be, for mounting in the upside down direction, 85% max.
(Upside down: Direction in which the mechanical indicator faces down)

Contact ratings

Item	Standard (G2RV-ST700, 500, 701, 501)		For microloads (G2RV-ST700-AP, 500-AP) *2
Contact configuration	SPDT		
Load	Resistive load ($\cos\phi=1$)	Inductive load ($\cos\phi=0.4$, L/R=7ms)	Resistive load ($\cos\phi=1$)
Rated load	6 A at 250 VAC 6 A at 30 VDC	2.5 A at 250 VAC 2 A at 30 VDC	50 mA at 30 VAC 50 mA at 36 VDC
Rated carry current *3	6 A		50 mA
Maximum switching voltage	440 VAC, 125 VDC		30 VAC, 36 VDC
Maximum switching current	6 A		50 mA
Maximum switching power	1,500 VA 180 W	500 VA 60 W	–
Failure rate P value (reference value) *1	10 mA at 5 VDC		1 mA at 100 mVDC

*1. P level: $\lambda_{60}=0.1 \times 10^{-6}$ /times

This value is the value in switching frequency 120 operations/min.

*2. If the Au plating layer is destroyed, the number will be the same as the standard type.

*3. Please energize under 32A total when use short bar connection.

G2RV-ST

G2RV-ST

G3RV-ST

Common Precautions

Common Accessories

Characteristics

Item	Standard (G2RV-ST700, 500, 701, 501)	For microloads (G2RV-ST700-AP, 500-AP)
Contact resistance *	100 m Ω max.	
Operate time *	20 ms max.	
Release time *	AC, AC/DC: 40 ms max. DC: 20 ms max.	
Maximum operating frequency	Mechanical: 18,000 operations/h Electrical: 1,800 operations/h (rated load)	
Insulation resistance	1,000 MΩ min. (at 500 VDC)	
Dielectric strength	Between coil and contacts: 4,000VAC 50/60 Hz 1 min Contact between the same polarity: 1,000 VAC 50/60 Hz 1 min	
Vibration resistance	Destruction: 10 to 55 to 10 Hz, single amplitude 0.50 mm (double amplitude 1.0 mm) Malfunction: 10 to 55 to 10 Hz, single amplitude 0.50 mm (double amplitude 1.0 mm)	
Shock resistance	Destruction: 1,000 m/s ² Malfunction: Energized 200m/s ² , Non-energized 100m/s ²	
Endurance *	Mechanical	5,000,000 operations min.
	Electrical	NO contact: 70,000 operations min. NC contact: 50,000 operations min.
		5,000,000 operations min.
Ambient operating temperature	Operating: -40 to +55°C (with no icing or condensation)	
Ambient operating humidity	Operating: 5 to 85% RH	
Weight	Approx. 30 g	
Type of interruption	Micro-disconnection	
Type of insulation	Basic isolation: Coil-Contact, Live parts-Ground	
Pollution degree	2	
Impulse withstand voltage	4.0 kV	
Test procedure	A (Group mounting)	
Categories of environmental protection	RT 1	
Degree of protection by enclosure according to IEC 60529	IP20	
Contact material	Ag alloy	Ag alloy + Au plating

Note: Above values are initial values.

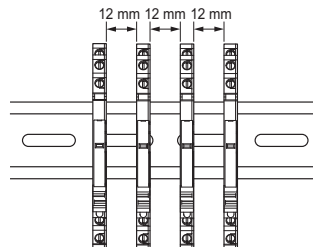
* Value is at ambient temperature of 23°C.

Approved standards

UL (File No.E41643)

Model	Contact form	Operation coil ratings	Contact ratings	Operations
G2RV-ST series	SPDT	12 to 48 VDC 24 to 230 VAC	6 A at 250 VAC (Resistive load) 6 A at 30 VDC (Resistive load) 2 A at 400 VAC (Resistive load)*	6,000

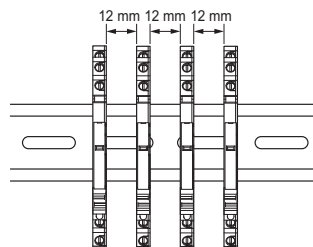
* If the load voltage exceeds 250 VAC, please attach with a spacing of 12 mm min., or use a separate plate (XW5Z-EP12) or 4psc of isolation plate (P2RV-P3.1T).



TÜV (File No.R50327609, EN 61810-1)

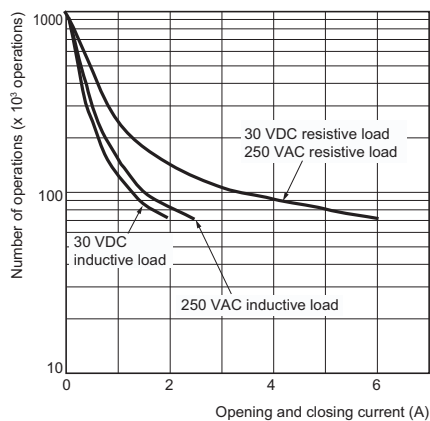
Model	Contact form	Operation coil ratings	Contact ratings	Operations
G2RV-ST series	SPDT	12, 24 VDC 24, 48 VAC/VDC 100, 110, 200, 230 VAC	6 A at 250 VAC (Resistive load) 6 A at 30 VDC (Resistive load) 2 A at 400 VAC (Resistive load)*	50,000 50,000 6,000

* If the load voltage exceeds 250 VAC, please attach with a spacing of 12 mm min., or use a separate plate (XW5Z-EP12) or 4psc of isolation plate (P2RV-P3.1T).

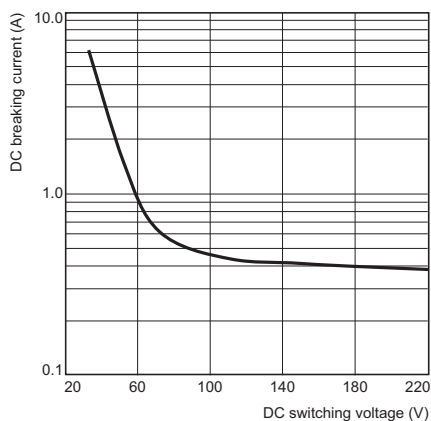


Reference Data

Endurance curve (N.O. side)



Switching capacity of DC resistive load



G2RV-ST

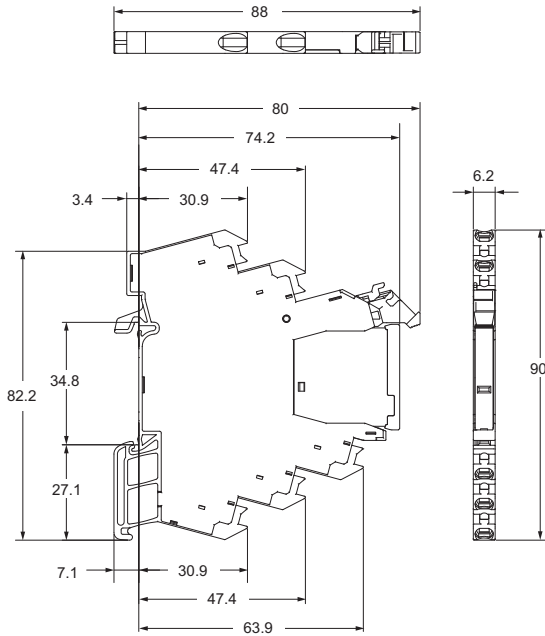
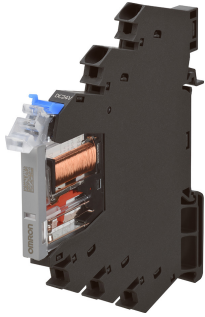
Dimensions

(unit: mm)

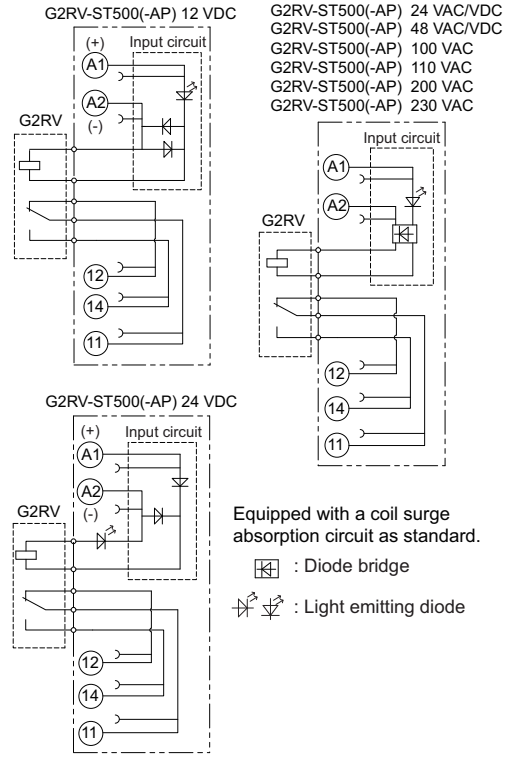
Slim I/O Relay + socket
Push-In Plus Terminal Block

Models without latching lever (without test switch)

G2RV-ST500
G2RV-ST500-AP



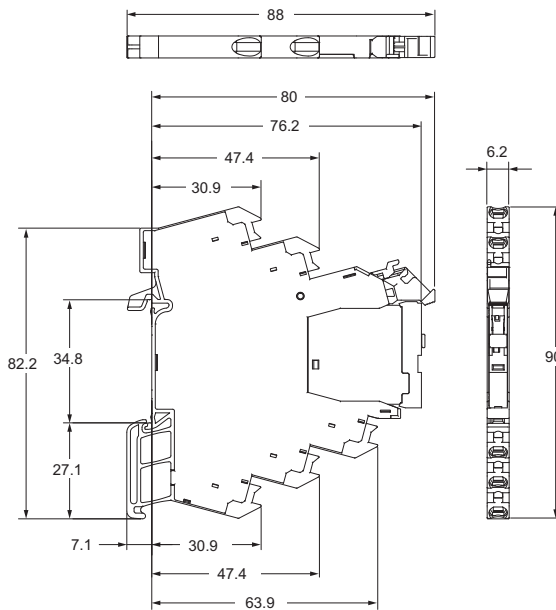
Terminal Arrangement/Internal Connection Diagram (TOP VIEW)



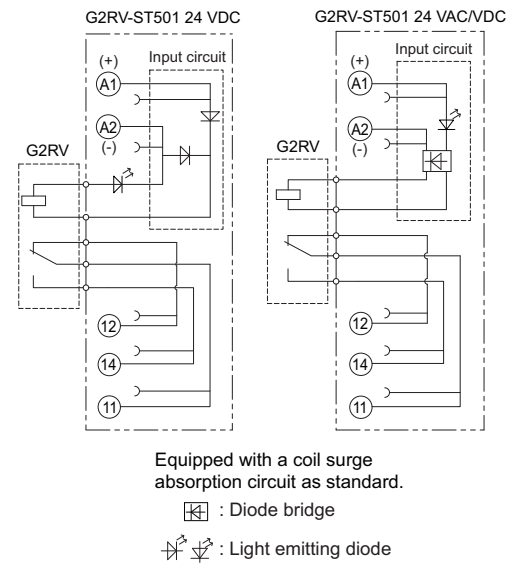
Note: For recommended ferrules, crimp tools, and types and gauges of wires, refer to 3. Recommended Ferrules and Crimp Tools on page 26.

Models with latching lever (with test switch)

G2RV-ST501



Terminal Arrangement/Internal Connection Diagram (TOP VIEW)



Note: For recommended ferrules, crimp tools, and types and gauges of wires, refer to 3. Recommended Ferrules and Crimp Tools on page 26.

G2RV-ST

G3RV-ST

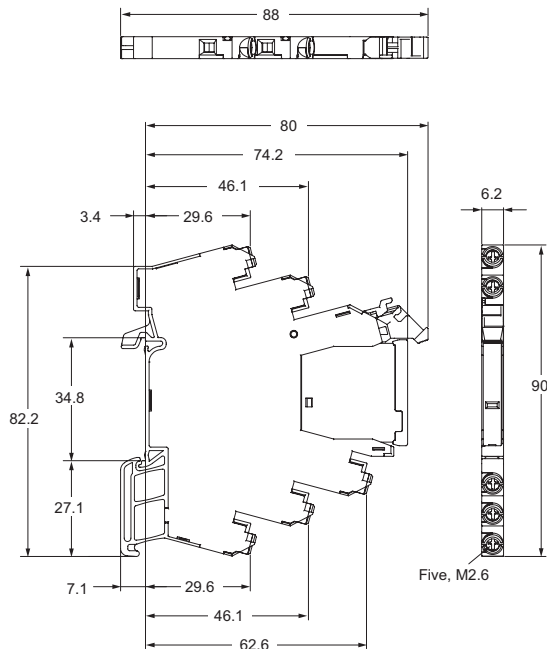
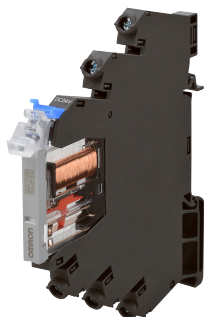
Common Precautions

Common Accessories

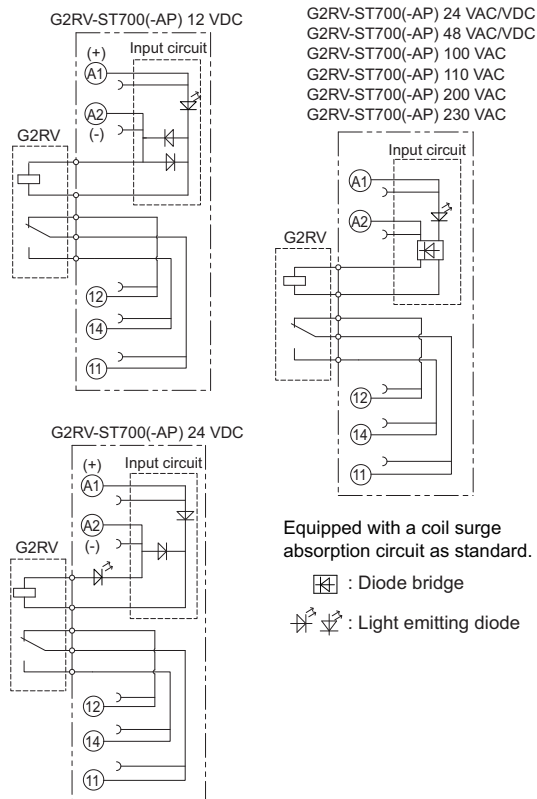
Screw terminal

Models without latching lever (without test switch)

G2RV-ST700
G2RV-ST700-AP



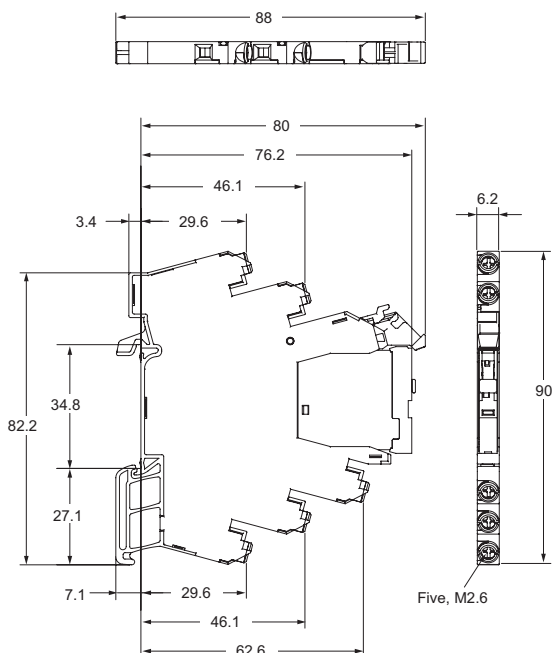
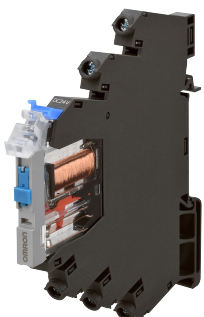
Terminal Arrangement/Internal Connection Diagram (TOP VIEW)



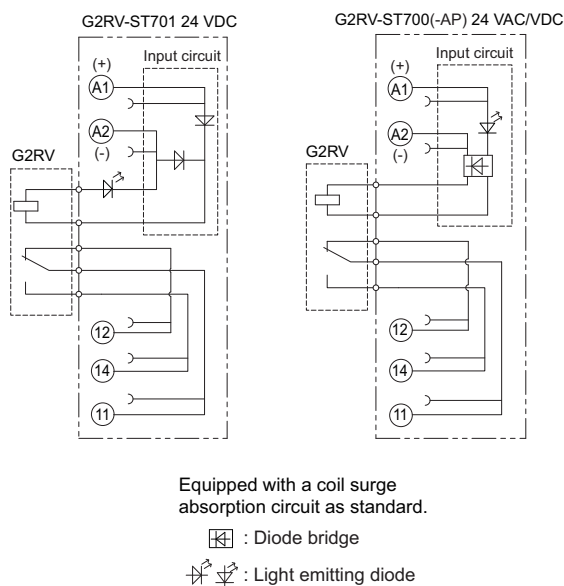
Note: For recommended ferrules, crimp tools, and types and gauges of wires, refer to 3. Recommended Ferrules and Crimp Tools on page 26.

Models with latching lever (with test switch)

G2RV-ST701



Terminal Arrangement/Internal Connection Diagram (TOP VIEW)



Note: For recommended ferrules, crimp tools, and types and gauges of wires, refer to 3. Recommended Ferrules and Crimp Tools on page 26.

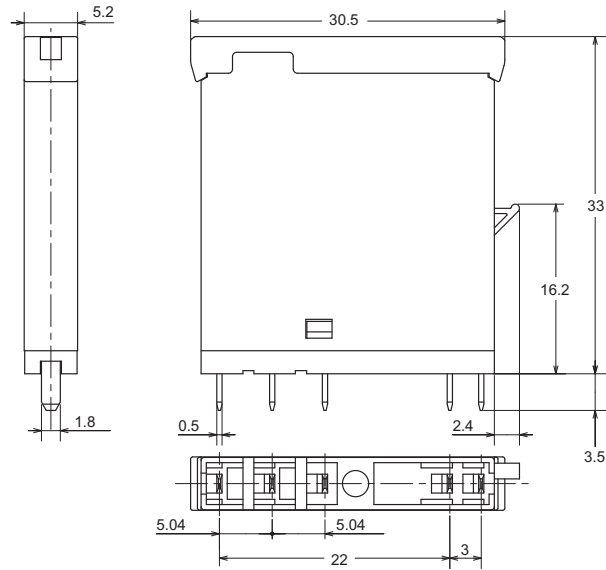
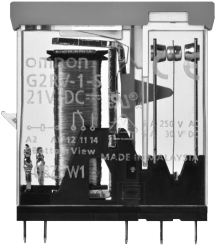
G2RV-ST

Relay for maintenance

Models without latching lever

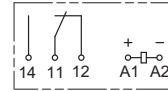
G2RV-1-S-G

G2RV-1-S-AP-G



Terminal Arrangement/
Internal Connection Diagram
(TOP VIEW)

(Input circuit)

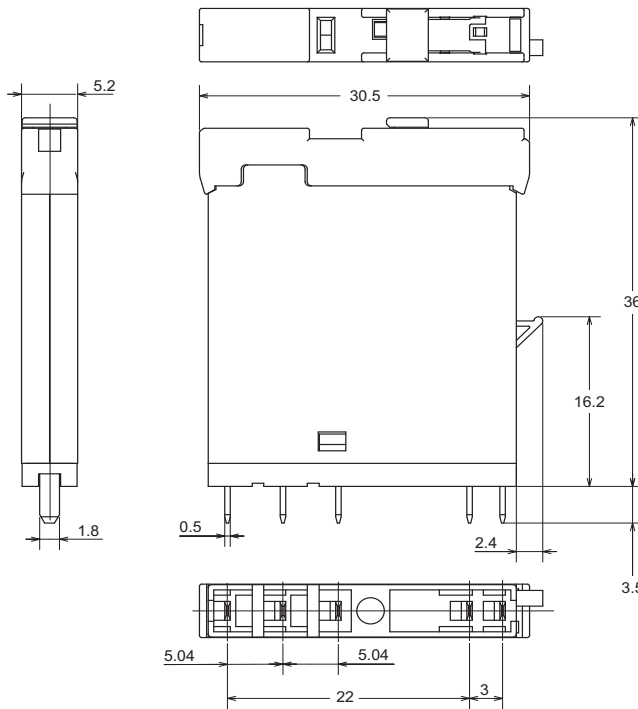


G2RV-ST

G3RV-ST

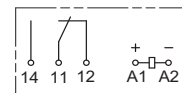
Models with latching lever (test switch)

G2RV-1-SI-G



Terminal Arrangement/
Internal Connection Diagram
(TOP VIEW)

(Input circuit)



Common Precautions

Common Accessories

Slim I/O Solid State Relay

G3RV-ST

Slim I/O SSR realizes space saving thanks to high-density mounting and ultra-slim body

- 60% space saving from G3R-I/O series with 6.2 mm width technology.
- 60%* reduction in wiring time and user-friendly with a low insertion force thanks to Push-In Plus Technology.
- Maximum applicable load of 3 A (DC) and 2 A (AC) realized thanks to slim technology.
- The output DC type has a minimum applicable load of 100 μ A and a leaked current of 10 μ A or less.
- High-speed switching type (operation time of 0.2 ms or less, release time of 0.4 ms or less) added.

* According to OMRON actual measurement data for both push-in plus terminal blocks and screw terminal blocks.



For the recent information on models that have been certified for safety standards, refer to your OMRON website.

Refer to *Safety Precautions* on page 22.

Features

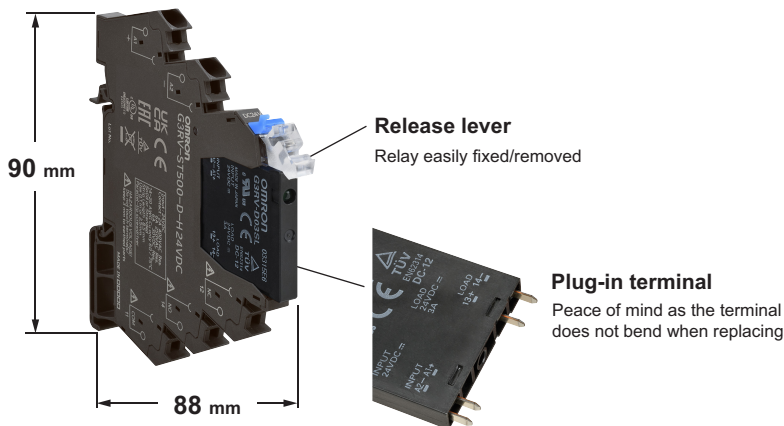
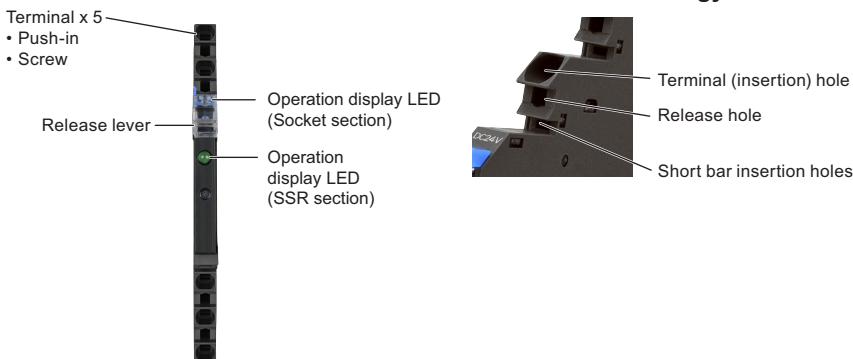
G2RV-ST

G3RV-ST

Common Precautions

Common Accessories

Push-In Plus technology



Model Number Structure

Model Number Legend

G3RV-ST □ □ □ - □ - □ □
 (1) (2) (3) (4) (5) (6)

(1) Basic model name

G3RV: Slim I/O Solid State Relay

(2) Sub type

ST: Slim solid relay + integrated low profile socket

(3) Terminal (wire connection)

500: Push-In Plus Terminal

700: Screw terminal

(4) Output voltage specification

A : AC output (triac) zero cross function available

AL : AC output (triac) zero cross function not available

D : DC output (MOS FET)

(5) Operation and release time

H : High speed type

(6) Rated voltage input

12, 24 VDC

24, 48 VAC/VDC

100, 110, 200, 230 VAC

G2RV-ST

G3RV-ST

Common Precautions

Common Accessories

G3RV-ST

Ordering Information

Terminal (wire connection)	Applicable output load	Zero cross function	Rated input voltage (V)		Model	
Push-In Plus Terminal	DC load	—	DC	12	G3RV-ST500-D 12 VDC	
				24	G3RV-ST500-D 24 VDC	
			AC/DC	24	G3RV-ST500-D 24 VAC/VDC	
				48	G3RV-ST500-D 48 VAC/VDC	
			AC	100	G3RV-ST500-D 100 VAC	
				110	G3RV-ST500-D 110 VAC	
				200	G3RV-ST500-D 200 VAC	
	230	G3RV-ST500-D 230 VAC				
	DC load (high-speed opening and closing)	—	DC	24	G3RV-ST500-D-H 24 VDC	
			AC/DC	24	G3RV-ST500-D-H 24 VAC/VDC	
	AC load	Yes	DC	12	G3RV-ST500-A 12 VDC	
				24	G3RV-ST500-A 24 VDC	
			AC/DC	24	G3RV-ST500-A 24 VAC/VDC	
				48	G3RV-ST500-A 48 VAC/VDC	
			AC	100	G3RV-ST500-A 100 VAC	
				110	G3RV-ST500-A 110 VAC	
				200	G3RV-ST500-A 200 VAC	
		230		G3RV-ST500-A 230 VAC		
		No	DC	12	G3RV-ST500-AL 12 VDC	
				24	G3RV-ST500-AL 24 VDC	
			AC/DC	24	G3RV-ST500-AL 24 VAC/VDC	
				48	G3RV-ST500-AL 48 VAC/VDC	
			AC	100	G3RV-ST500-AL 100 VAC	
110				G3RV-ST500-AL 110 VAC		
200	G3RV-ST500-AL 200 VAC					
Common Precautions	DC load	—	DC	12	G3RV-ST700-D 12 VDC	
				24	G3RV-ST700-D 24 VDC	
			AC/DC	24	G3RV-ST700-D 24 VAC/VDC	
				48	G3RV-ST700-D 48 VAC/VDC	
			AC	100	G3RV-ST700-D 100 VAC	
				110	G3RV-ST700-D 110 VAC	
				200	G3RV-ST700-D 200 VAC	
	230	G3RV-ST700-D 230 VAC				
	DC load (high-speed opening and closing)	—	DC	24	G3RV-ST700-D-H 24 VDC	
			AC/DC	24	G3RV-ST700-D-H 24 VAC/VDC	
	Common Accessories	AC load	Yes	DC	12	G3RV-ST700-A 12 VDC
					24	G3RV-ST700-A 24 VDC
				AC/DC	24	G3RV-ST700-A 24 VAC/VDC
					48	G3RV-ST700-A 48 VAC/VDC
AC				100	G3RV-ST700-A 100 VAC	
				110	G3RV-ST700-A 110 VAC	
				200	G3RV-ST700-A 200 VAC	
		230	G3RV-ST700-A 230 VAC			
No		DC	12	G3RV-ST700-AL 12 VDC		
			24	G3RV-ST700-AL 24 VDC		
		AC/DC	24	G3RV-ST700-AL 24 VAC/VDC		
			48	G3RV-ST700-AL 48 VAC/VDC		
		AC	100	G3RV-ST700-AL 100 VAC		
			110	G3RV-ST700-AL 110 VAC		
	200		G3RV-ST700-AL 200 VAC			
Screw terminal	DC load	—	DC	12	G3RV-ST700-D 12 VDC	
				24	G3RV-ST700-D 24 VDC	
			AC/DC	24	G3RV-ST700-D 24 VAC/VDC	
				48	G3RV-ST700-D 48 VAC/VDC	
			AC	100	G3RV-ST700-D 100 VAC	
				110	G3RV-ST700-D 110 VAC	
				200	G3RV-ST700-D 200 VAC	
	230	G3RV-ST700-D 230 VAC				
	DC load (high-speed opening and closing)	—	DC	24	G3RV-ST700-D-H 24 VDC	
			AC/DC	24	G3RV-ST700-D-H 24 VAC/VDC	
	AC load	Yes	DC	12	G3RV-ST700-A 12 VDC	
				24	G3RV-ST700-A 24 VDC	
			AC/DC	24	G3RV-ST700-A 24 VAC/VDC	
				48	G3RV-ST700-A 48 VAC/VDC	
AC			100	G3RV-ST700-A 100 VAC		
			110	G3RV-ST700-A 110 VAC		
			200	G3RV-ST700-A 200 VAC		
		230	G3RV-ST700-A 230 VAC			
No		DC	12	G3RV-ST700-AL 12 VDC		
			24	G3RV-ST700-AL 24 VDC		
		AC/DC	24	G3RV-ST700-AL 24 VAC/VDC		
			48	G3RV-ST700-AL 48 VAC/VDC		
		AC	100	G3RV-ST700-AL 100 VAC		
			110	G3RV-ST700-AL 110 VAC		
	200		G3RV-ST700-AL 200 VAC			
AC load	—	DC	12	G3RV-ST700-AL 12 VDC		
			24	G3RV-ST700-AL 24 VDC		
		AC/DC	24	G3RV-ST700-AL 24 VAC/VDC		
			48	G3RV-ST700-AL 48 VAC/VDC		
		AC	100	G3RV-ST700-AL 100 VAC		
			110	G3RV-ST700-AL 110 VAC		
			200	G3RV-ST700-AL 200 VAC		
AC load	—	DC	12	G3RV-ST700-AL 12 VDC		
			24	G3RV-ST700-AL 24 VDC		
		AC/DC	24	G3RV-ST700-AL 24 VAC/VDC		
			48	G3RV-ST700-AL 48 VAC/VDC		
		AC	100	G3RV-ST700-AL 100 VAC		
			110	G3RV-ST700-AL 110 VAC		
			200	G3RV-ST700-AL 200 VAC		

Note: Sockets are not sold individually.

Solid state relay for maintenance

Model Number Legend

G3RV-□□S□-□□
 (1) (2) (3) (4) (5) (6)

(1) Output voltage specification

D: DC output
 2: AC output

(2) Rated current

02: AC output 2 A
 03: DC output 3 A

(3) Terminal

S: Plug-in type

(4) Zero cross functions

Blank: Zero cross function available
 L: Zero cross function not available

(5) Operation and release time

H : High speed type

(6) Rated voltage input

Number: 12, 24, 48 VDC



List of Models

Insulation method	Operation Display	Output (SSR)	Zero cross Function	Rated output Load *	Rated input voltage (socket)	Model	Applicable model		
Photo-triac	Yes (green)	AC	Yes	2 A (at 100 to 240 VAC)	12 VDC	G3RV-202S DC12	G3RV-ST700/500-A 12 VDC		
					24 VDC	G3RV-202S DC24	G3RV-ST700/500-A 24 VDC		
					24 VAC/VDC		G3RV-ST700/500-A 24 VAC/VDC		
					48 VAC/VDC	G3RV-202S DC48	G3RV-ST700/500-A 48 VAC/VDC		
					100 VAC		G3RV-ST700/500-A 100 VAC		
					110 VAC		G3RV-ST700/500-A 110 VAC		
					200 VAC		G3RV-ST700/500-A 200 VAC		
					230 VAC		G3RV-ST700/500-A 230 VAC		
					12 VDC	G3RV-202SL DC12	G3RV-ST700/500-AL 12 VDC		
		24 VDC	G3RV-202SL DC24	G3RV-ST700/500-AL 24 VDC					
		24 VAC/VDC		G3RV-ST700/500-AL 24 VAC/VDC					
		48 VAC/VDC	G3RV-202SL DC48	G3RV-ST700/500-AL 48 VAC/VDC					
		100 VAC		G3RV-ST700/500-AL 100 VAC					
		110 VAC		G3RV-ST700/500-AL 110 VAC					
		200 VAC		G3RV-ST700/500-AL 200 VAC					
		230 VAC		G3RV-ST700/500-AL 230 VAC					
		Photo-voltage coupler		DC	-	3 A (at 5 to 24 VDC)	12 VDC	G3RV-D03SL DC12	G3RV-ST700/500-D 12 VDC
							24 VDC	G3RV-D03SL DC24	G3RV-ST700/500-D 24 VDC
24 VAC/VDC	G3RV-ST700/500-D 24 VAC/VDC								
48 VAC/VDC	G3RV-D03SL DC48						G3RV-ST700/500-D 48 VAC/VDC		
100 VAC							G3RV-ST700/500-D 100 VAC		
110 VAC							G3RV-ST700/500-D 110 VAC		
200 VAC							G3RV-ST700/500-D 200 VAC		
230 VAC							G3RV-ST700/500-D 230 VAC		
24 VDC	G3RV-D03SL-H DC24						G3RV-ST700/500-D-H 24 VDC		
							G3RV-ST700/500-D-H 24 VAC/VDC		

* Different depending on the ambient temperature.

For more details, refer to *Load current vs. ambient rated temperature* on page 18.

Accessories (order separately)

Refer to page 29 for G2RV-ST/G3RV-ST Common Accessories.

G3RV-ST

Specifications

Rating (ambient temperature 25°C)

Input

G3RV-ST700/500-A series

Rated input voltage	Rated current			Must operate voltage	Must release voltage	Input voltage
	AC		DC			
	50 Hz	60 Hz				
12 VDC	–	–	15.0 mA	10.8 V max.	1 V min.	±10%
24 VDC	–	–	12.0 mA	21.6 V max.		
24 VAC/VDC	11.3 mA	11.4 mA	11.0 mA	21.6 V max.		
48 VAC/VDC	6.8 mA	6.9 mA	6.0 mA	43.2 V max.		
100 VAC	6.2 mA	6.2 mA	–	90 V max.		
110 VAC	6.2 mA	6.2 mA	–	99 V max.		
200 VAC	6.7 mA	7.9 mA	–	180 V max.		
230 VAC	7.5 mA	8.8 mA	–	207 V max.		

G3RV-ST700/500-AL series

Rated input voltage	Rated current			Must operate voltage	Must release voltage	Input voltage
	AC		DC			
	50 Hz	60 Hz				
12 VDC	–	–	15.0 mA	10.8 V max.	1 V min.	±10%
24 VDC	–	–	12.0 mA	21.6 V max.		
24 VAC/VDC	11.4 mA	11.5 mA	11.0 mA	21.6 V max.		
48 VAC/VDC	7.7 mA	7.7 mA	6.9 mA	43.2 V max.		
100 VAC	7.3 mA	7.3 mA	–	90 V max.		
110 VAC	7.3 mA	7.3 mA	–	99 V max.		
200 VAC	7.0 mA	8.1 mA	–	180 V max.		
230 VAC	7.7 mA	8.9 mA	–	207 V max.		

G3RV-ST700/500-D series

Rated input voltage	Rated current			Must operate voltage	Must release voltage	Input voltage
	AC		DC			
	50 Hz	60 Hz				
12 VDC	–	–	8.0 mA	10.8 V max.	1 V min.	±10%
24 VDC	–	–	4.6 mA	21.6 V max.		
24 VAC/VDC	5.0 mA	5.1 mA	4.3 mA	21.6 V max.		
48 VAC/VDC	6.8 mA	6.9 mA	6.0 mA	43.2 V max.		
100 VAC	6.8 mA	6.8 mA	–	90 V max.		
110 VAC	6.7 mA	6.7 mA	–	99 V max.		
200 VAC	6.7 mA	7.9 mA	–	180 V max.		
230 VAC	7.5 mA	8.8 mA	–	207 V max.		

High-speed type G3RV-ST700/500-D-H series

Rated input voltage	Rated current			Must operate voltage	Must release voltage	Input voltage
	AC		DC			
	50 Hz	60 Hz				
24 VDC	–	–	9.0 mA	21.6 V max.	1 V min.	±10%
24 VAC/VDC	9.0 mA	9.5 mA	8.4 mA	21.6 V max.		

Output

Item	G3RV-ST700/500-A(L)	G3RV-ST700/500-D
Rated load voltage	100 to 240 VAC (50/60 Hz)	5 to 24 VDC
Load voltage range	75 to 264 VAC (50/60 Hz)	3 to 26.4 VDC
Load current	0.1 to 2 A (Ambient temperature=25°C)	100 µA to 3 A (Ambient temperature=25°C)
Inrush current resistance	30 A (10 ms)	30 A (10 ms)
Permissible I ² t; Joule integral value (reference value)	15A ² s	9 A ² s
Applied load capacity	400 W (Output voltage: 200 VAC)	72 W (Output voltage: 24 VDC)

Characteristics

Item	G3RV-ST700/500-A	G3RV-ST700/500-AL	G3RV-ST700/500-D-H 24 VDC	G3RV-ST700/500-D-H 24 VAC/VDC	G3RV-ST700/500-D
Operate time	11 ms max. *	3 ms max.	0.2 ms max.	3 ms max. *	6 ms max.
Release time	31 ms max. *	31 ms max. *	0.4 ms max.	21 ms max. *	21 ms max. *
Output ON voltage drop	1.6 V (RMS) max.		-		
Output ON resistance	-		0.3 Ω max. (at 24 VDC)		
Leaked current	5 mA max. (at 200 VAC, 50/60 Hz)		10 μA max. (at 24 VDC)		
Insulation resistance	100 MΩ min. (at 500 VDC)				
Dielectric strength	Between input and output 2,500 VAC 50/60 Hz 1 min				
Vibration resistance	Malfunction: 10 to 55 to 10 Hz double amplitude 0.70 mm				
Shock resistance	300m/s ²				
Ambient operating temperature	Storage: -30 to +100°C (with no icing or no condensation) Operating: -30 to +55°C (with no icing or no condensation)				
Ambient operating humidity	45 to 85% RH				
Weight	Approx. 30 g				
Pollution degree	2				
The degree of protection by IEC60529	IP20				
Rated impulse dielectric strength	4.0 kV/III				
Load category	LC-A		DC-12		
Overload current profile	1.5Ie 1.1Ie 5s ON, 10s OFF, 10 cycles				
Rated insulation voltage	240 V				

* Operate time is 1/2cycle of load power supply + 1ms, and release time is 1/2 cycle of load power supply + 1ms + 1cycle of input power supply frequency.

Approved standards

UL (File No.E64562)

Model	Input ratings	Contact ratings
G3RV-ST700/500-D series	12, 24 VDC 24, 48 VAC/VDC 100, 110, 200, 230 VAC	24 VDC 3 A (resistive load) at 25°C
G3RV-ST700/500-A(L) series	12, 24 VDC 24, 48 VAC/DC 100, 110, 200, 230 VAC	240 VAC 2 A (resistive load) at 25°C

TÜV (EN 62314)

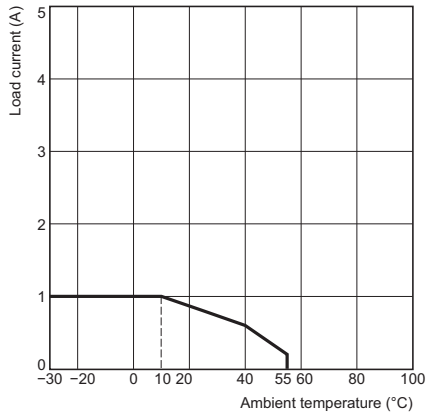
Model	Input ratings	Contact ratings
G3RV-ST700/500-D series	12, 24 VDC 24, 48 VAC/VDC 100, 110, 200, 230 VAC	24 VDC 3 A (resistive load)
G3RV-ST700/500-A(L) series	12, 24 VDC 24, 48 VAC/VDC 100, 110, 200, 230 VAC	240 VAC 2 A (resistive load)

Engineering Data

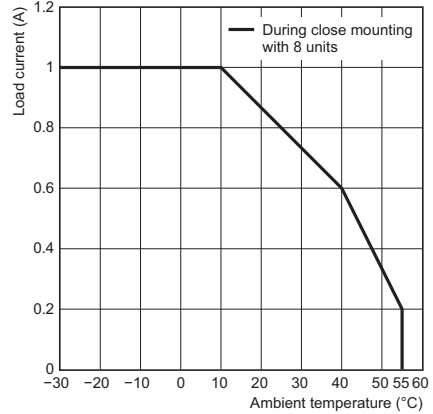
Load current vs. ambient rated temperature

G3RV-ST700/500-A(L) series

Product mounting spacing 10 mm (Separate Mounting)

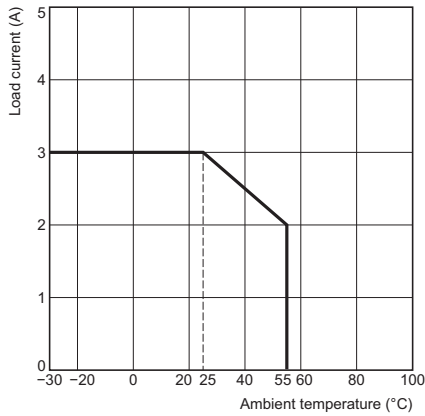


Close mounting (up to 8 units *)

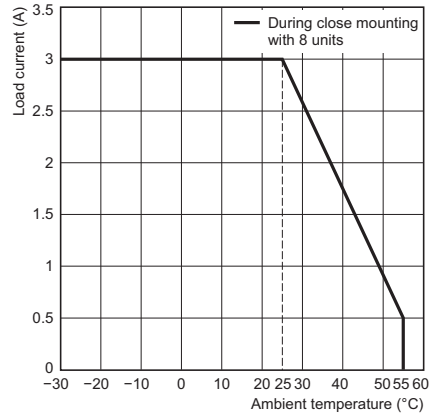


G3RV-ST700/500-D series

Product mounting spacing 10 mm (Separate Mounting)



Close mounting (up to 8 units *)

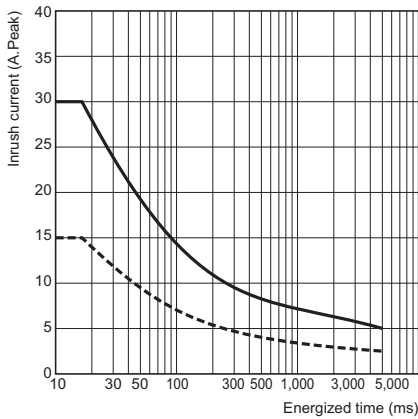


* When eight or more are installed, install with 10 mm space between each.
For details, please refer to *Mounting* on page 27.

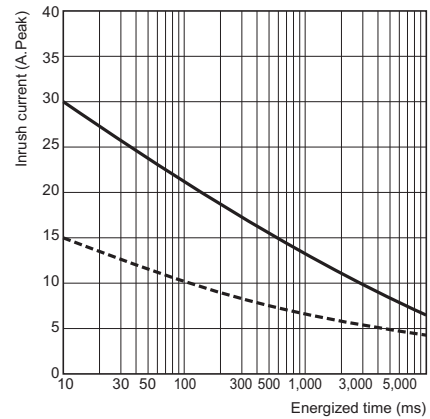
Inrush Current Resistance: Non-repetitive

Keep the inrush current to below the inrush current resistance value (i.e., below the broken line) if it occurs repetitively.

G3RV-ST700/500-A(L) series

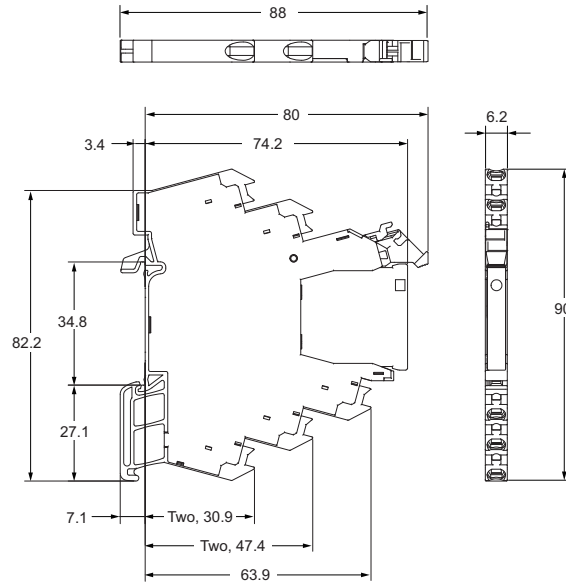


G3RV-ST700/500-D series

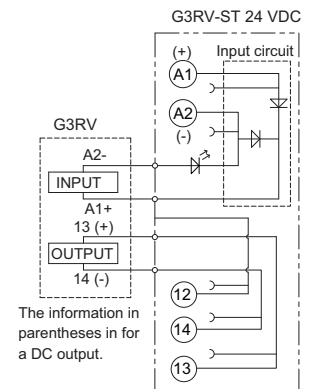
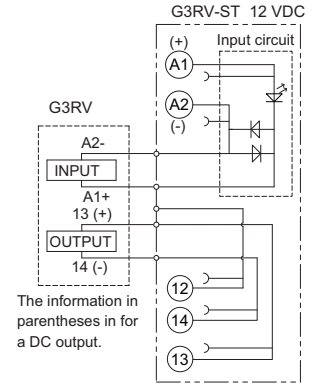


Dimensions

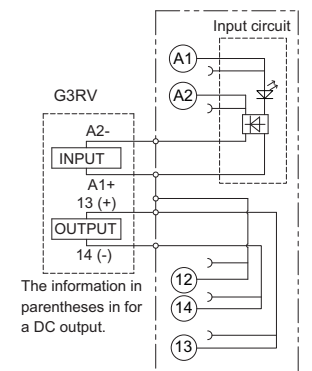
Solid state relay + socket
Push-In Plus Terminal Block
G3RV-ST500



**Terminal Arrangement/
Internal Connection Diagram
(TOP VIEW)**



- G3RV-ST 24 VAC/VDC
- G3RV-ST 48 VAC/VDC
- G3RV-ST 100 VAC
- G3RV-ST 110 VAC
- G3RV-ST 200 VAC
- G3RV-ST 230 VAC



Equipped with a coil surge absorption circuit as standard.

: Diode bridge

: Light emitting diode

Note: For recommended ferrules, crimp tools, and types and gauges of wires, refer to 3. *Recommended Ferrules and Crimp Tools* on page 26.

G3RV-ST

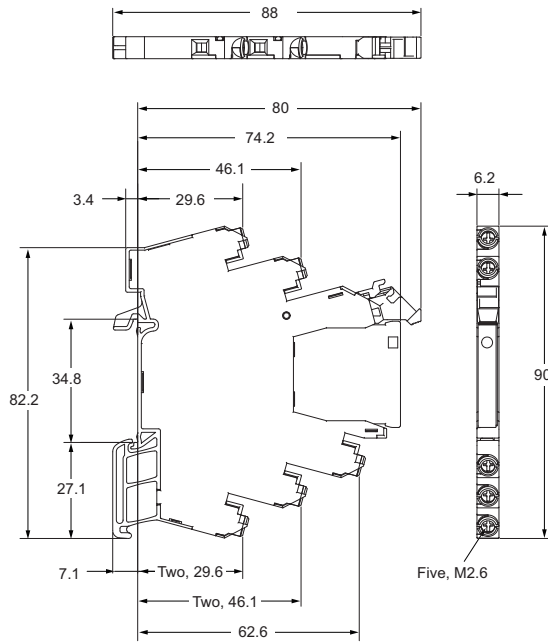
Screw terminal
G3RV-ST700

G2RV-ST

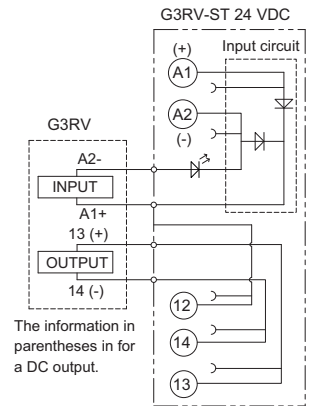
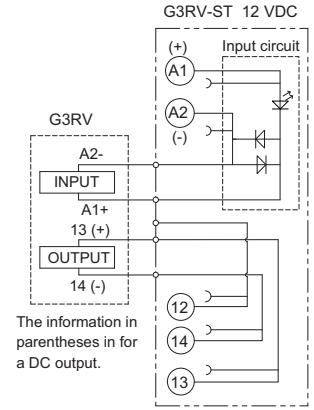
G3RV-ST

Common Precautions

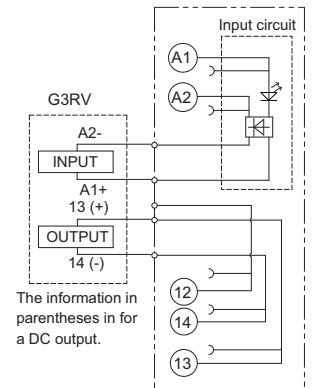
Common Accessories



Terminal Arrangement/
Internal Connection Diagram
(TOP VIEW)



- G3RV-ST 24 VAC/VDC
- G3RV-ST 48 VAC/VDC
- G3RV-ST 100 VAC
- G3RV-ST 110 VAC
- G3RV-ST 200 VAC
- G3RV-ST 230 VAC



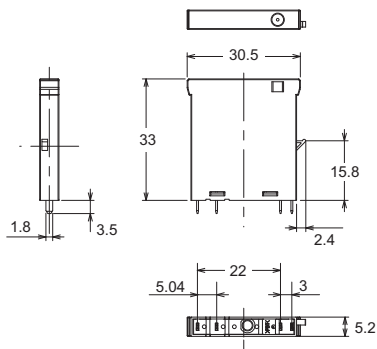
Equipped with a coil surge absorption circuit as standard.

- : Diode bridge
- : Light emitting diode

Note: For recommended ferrules, crimp tools, and types and gauges of wires, refer to 3. *Recommended Ferrules and Crimp Tools* on page 26.

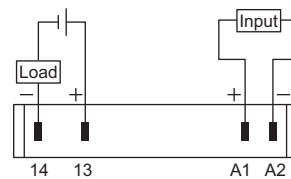
Solid state relay for maintenance

G3RV-D03SL
G3RV-202S(L)



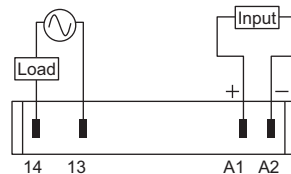
Terminal Arrangement/
Internal Connection Diagram
(TOP VIEW)

G3RV-D03SL (input circuit)



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

G3RV-202S(L) (input circuit)



G2RV-ST

G3RV-ST



Common Precautions

Common Accessories





Safety Precautions

Be sure to read the *Safety Precautions for All Relays* in the website at the following URL:
<http://www.ia.omron.com/>.

Format of Warning Indications

 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.
 CAUTION	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or in property damage.
Precautions for Safe Use	Indicates supplementary comments on what to do or avoid doing, to use the product safely.
Precautions for Correct Use	Includes operating precautions to ensure that the product will operate properly and that performance and functions will not be adversely affected.

Meaning of Graphic Symbols for Ensuring Product Safety

	Indicates the possibility of electric shock under specific conditions.
	Used for general CAUTION, WARNING, or DANGER precautions for which there is no specified symbol. (This symbol is also used as the alerting symbol, but shall not be used in this meaning on the product.)
	Indicates the possibility of explosion or rupture under specific conditions.
	Indicates the possibility of injuries by high temperature under specific conditions.

 **WARNING**

Ensure that the socket is not charged during wiring and maintenance. Not doing so may result in electric shock.



Do not touch the terminal section of the G2RV-ST or the surrounding area while the power is being supplied. Doing so may result in electric shock.



 **CAUTION**

Minor electrical shock may occasionally occur. Do not touch the G3RV terminal section (i.e., current carrying parts) while the power is being supplied.



The G3RV may rupture if short-circuit current flows. As protection against accidents due to short-circuiting, be sure to install protective devices, such as fuses and no-fuse breakers, on the power supply side.



Minor electrical shock may occasionally occur. Do not touch the main circuit terminals on the G3RV immediately after the power supply has been turned OFF.

Shock may result due to the electrical charge stored in the built-in snubber circuit.
 Note: G3RV-202S(L), G3RV-ST500/700-A(L) series models only



Minor burns may occasionally occur. Do not touch the G3RV or the heat sink while the power is being supplied or immediately after the power supply has been turned OFF. The G3RV becomes extremely hot.



Provide a space of at least 3 mm or place an insulating plate (P2RV-P3.1ST) between the G2RV-ST or G3RV-ST and ground and other adjacent components. Not doing so may result in an electric shock.



When mounting the G2RV-ST or G3RV-ST with its input and output opposite to the input and output of an adjacent product, provide a space of at least 3 mm or place an insulating plate (P2RV-P3.1ST) between them.



Precautions for Safe Use

Transport

- Do not use the product if it has been dropped on the ground. Dropping the product may adversely affect performance.
- Do not drop the product or subject it to abnormal vibration or shock during transportation or mounting. Doing so may result in deterioration of performance, malfunction, or failure.
- Do not transport the product without it being packaged. Doing so may result in damage, malfunction, or failure.
- Do not transport the G3RV under the following conditions. Doing so may result in damage, malfunction, or deterioration of performance characteristics.
 - High temperature, high humidity conditions
 - Conditions such as temperature change that causes rapid condensation
 - Condition where it is not packaged

Operating and Storage Environments

- Do not use or store the product in the following locations. Doing so may result in damage, malfunction, or deterioration of performance characteristics.
 - Storage in locations subject to ambient temperature outside the range -40 to 70°C (for G2RV) and -30 to 100°C (for G3RV), and usage in locations subject to ambient temperature outside the range -40 to 55°C (for G2RV) and -30 to 55°C (for G3RV).
 - Locations subject to relative humidity outside the range 5% to 85% (for G2RV) and outside the range 45% to 85% (for G3RV).
 - Locations subject to high temperature or high humidity.
 - Conditions such as temperature change that causes rapid condensation
 - Locations where corrosive gases or flammable gases are present
 - Location where rainwater or water droplets gets splashed
 - Location with splashes of water, oil, and chemicals, etc.
 - Locations with much dust, salt, and iron powder
 - Location with blockers
 - Where static electricity or noise occurs
 - Where strong electromagnetic field is generated
 - Where there is a risk of exposure to radioactivity
 - Storage in a state with a load applied to the product
 - Locations subject to ultraviolet rays from direct sunlight
- Do not use or store Sockets in environments that contain silicone gas, sulfidizing gas (e.g., SO₂ or H₂S), or organic gas, or near materials that contain silicone. Doing so may cause the contacts to be unstable or to fail.

Handling <G3RV>

- Keep the G3RV well ventilated. There is a risk of short-circuiting or burning due to G3RV overheating.

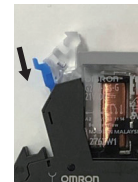
Mounting

- Before you start wiring, please make sure that the socket is securely attached to the mounting rail. If the socket is unstable, it may come loose and risk of injury towards the workers.
- Please insert the flat-blade screwdriver to the bottom of the hole. If you do not insert the flat-blade screwdriver correctly, the cable will not be connected correctly.
- When lubricant such as oil is attached to the tip of the driver, the driver will fall off, with a risk of injury towards the workers.

- When replacing a relay, set the stopper to the unlocked state and then eject the relay with the ejector lever. In addition, press the stopper after replacement to change the state from unlocked to locked.

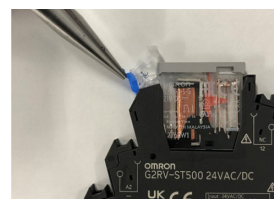


Locked state



Unlocked state

- To operate the stopper, you can change the state from locked to unlocked by gripping the stopper protruding part with the recommended needle-nose pliers. (Needle-nose pliers with a tip shape that is 4 mm wide or less and 3 mm thick or less.)
- Do not use cutting nippers to operate the stopper. Doing so may damage the stopper.



- If the stopper is operated with an exceedingly strong force, the stopper protruding part may be damaged and the stopper may drop out. Since the function of the stopper is to fix the ejector lever, use as a product is possible even in the event that the stopper is damaged or drops out because the functionality is satisfied even without a stopper in respect to vibrations and impacts.

Usage

- Please select the load within the rated range. Doing so may result in damage, malfunction, or failure.
- Please use the power of the rated frequency. It may cause malfunction, failure, or risk of burnout.

<G3RV>

- Install G3RV according to instructions *Mounting* on page 27. If you install in the wrong direction, abnormal heat is generated, and may lead to short-circuiting or burning the output element.
- G3RV is an SSR that generates heat. Please observe the ambient temperature setting range of G3RV. If installing in an enclosed space, set a fan, and ventilate.
- When mounting G3RV to DIN rail, firmly fits into the groove. If it is not properly installed, there is a risk of it falling.

Wiring

- For the current to be applied, make sure a wire size with margin is used. Otherwise, excessive heat generated by the wires may cause burning.
- Do not attempt to use the wire if the coat is torn. Not doing so may result in electric shock.
- Always turn OFF the power supply before performing wiring. Not doing so may cause electrical shock.

<G3RV>

- The wires of the socket for G3RV socket should not be passed through the same duct as that being connected to the high-voltage power supply. Otherwise, inductive noise may damage the G3RV or cause it to malfunction.

Push-In Plus Terminal Block

- Do not wire anything to the release holes.
- Do not tilt or twist a flat-blade screwdriver while it is inserted into a release hole on the terminal block. The terminal block may be damaged.
- Insert a flat-blade screwdriver into the release holes at an angle. The terminal block may be damaged if you insert the screwdriver straight in.
- Do not allow the flat-blade screwdriver to fall out while it is inserted into a release hole.
- Do not bend the wire past its natural bending radius or pull on it with excessive force. Doing so may cause the wire disconnection.
- Do not insert more than one wire into each terminal (insertion) hole.
- To prevent wiring materials from smoking or ignition, confirm wire ratings and use the wiring materials given in the following table.

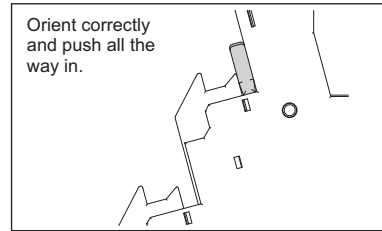
Recommended Wire	Stripping length (Ferrules not used)
0.5 to 2.5 mm ² / AWG20 to AWG14 stranded wire	8 mm

Disposal

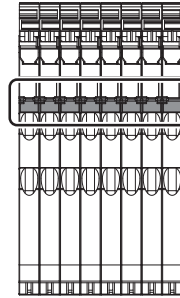
- When disposing of the product, do not put into the fire.

Precautions for Correct Use

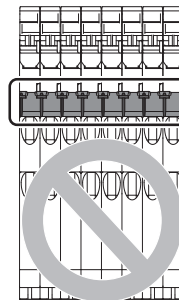
- Do not use or store the product in the following locations. Doing so may result in damage, malfunction, or deterioration of performance characteristics.
 - Where vibration or shock is directly transmitted to the body
 - Where the socket could come into contact with a solvent or alkaline agent
- When installing the short bar, insert it into the insertion hole, and insert until all terminals are all the way in.



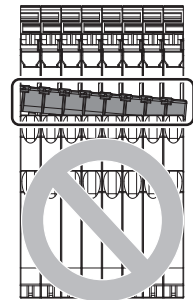
Completely inserted
All terminals are inserted all the way in.
Correct



Incomplete insertion
All terminals are not inserted all the way in.
Incorrect



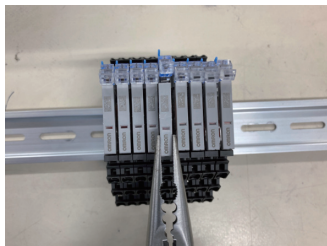
Incorrect installation
Some terminals not inserted completely.
Incorrect



- To remove the short bar, insert a screwdriver beneath the hole on top of the short bar and lift up. Start lifting up from either end, lift up all screwdriver in order, and then remove the short bar.



- If using a short bar, install the short bar before performing wiring work.
- A push-in Plus terminal block type and a screw terminal type have different insertion positions, so a mixed installation using the same short bar is not possible.
- Do not insert short bar in the hole for wire or screw driver, it may cause the result of failure of pull out.
If insert short bar in the hole for wire or screw driver and try to pull out, it may cause damage for short bar or socket and failure in electric conductivity.
- Please insert P2RVC terminal into the short bar insertion hole of G2RV-ST/G3RV-ST. If insert P2RVC into the release hole or terminal (insertion) hole wrongly, P2RVC may stuck and can not remove and it may cause result of damage on P2RVC and G2RV-ST/G3RV-ST.
Please turn off the power of input and output side and remove PLC interface unit when replacing mounting relays and SSRs for maintenance.
- When replacing relays, there is a possibility the relay will pop out and fall. Take care to prevent the relay from falling during replacement.
- When replacing a relay, remove it by tilting it to the left as shown in the figure below because the protrusion to prevent pop-out relay will get in the way.



- Dedicated accessories for G2RV-SR/G3RV-SR are not compatible and cannot be used.

Short Bars

- PYDN-6.2-020□
- PYDN-6.2-030□
- PYDN-6.2-040□
- PYDN-6.2-100□
- PYDN-6.2-200□

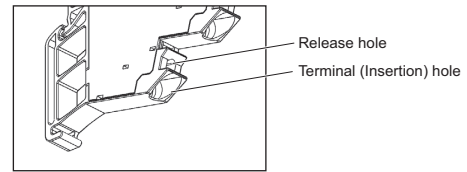
PLC interface unit

- P2RVC-8-I-5-1
- P2RVC-8-I-5
- P2RVC-8-I-7-1
- P2RVC-8-O-5-1
- P2RVC-8-O-5
- P2RVC-8-O-7-1

Push-In Plus Terminal Block

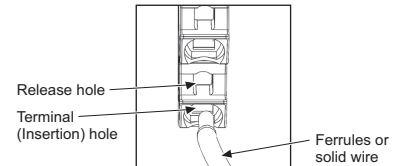
1. Connecting Wires to the Push-In Plus Terminal Block

Part Names of the Terminal Block



Connecting Wires with Ferrules and Solid Wires

Insert the solid wire or ferrule straight into the terminal block until the end strikes the terminal block.

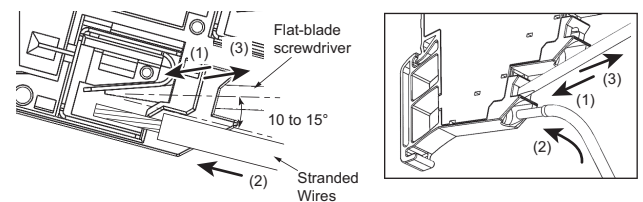


- If a wire is difficult to connect because it is too thin, use a flat-blade screwdriver in the same way as when connecting stranded wire.

Connecting Stranded Wires

Use the following procedure to connect the wires to the terminal block.

- (1) Hold a flat-blade screwdriver at an angle and insert it into the release hole.
The angle should be between 10° and 15°. If the flat-blade screwdriver is inserted correctly, you will feel the spring in the release hole.
- (2) With the flat-blade screwdriver still inserted into the release hole, insert the wire into the terminal hole until it strikes the terminal block.
- (3) Remove the flat-blade screwdriver from the release hole.



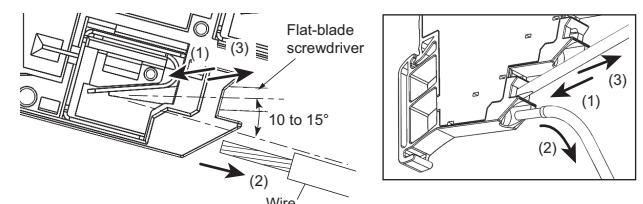
Checking Connections

- After the insertion, pull gently on the wire to make sure that it will not come off and the wire is securely fastened to the terminal block.
- If you use a ferrule with a conductor length of 10 mm, part of the conductor may be visible after the ferrule is inserted into the terminal block, but the product insulation distance will still be satisfied.

2. Removing Wires from the Push-In Plus Terminal Block

Use the following procedure to remove wires from the terminal block. The same method is used to remove stranded wires, solid wires, and ferrules.

- (1) Hold a flat-blade screwdriver at an angle and insert it into the release hole.
- (2) With the flat-blade screwdriver still inserted into the release hole, remove the wire from the terminal insertion hole.
- (3) Remove the flat-blade screwdriver from the release hole.

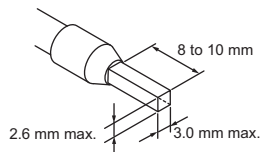


3. Recommended ferrules and Crimp Tools

Recommended ferrules

Applicable wire		Ferrules Conduct length (mm)	Stripping length (mm) (Ferrules used)	Recommended ferrules		
(mm ²)	(AWG)			Phoenix Contact product	Weidmuller product	Wago product
0.25	24	8	10	AI 0,25-8	H0.25/12	216-301
		10	12	AI 0,25-10	---	---
0.34	22	8	10	AI 0,34-8	H0.34/12	216-302
		10	12	AI 0,34-10	---	---
0.5	20	8	10	AI 0,5-8	H0.5/14	216-201
		10	12	AI 0,5-10	H0.5/16	216-241
0.75	18	8	10	AI 0,75-8	H0.75/14	216-202
		10	12	AI 0,75-10	H0.75/16	216-242
1/1.25	18/17	8	10	AI 1-8	H1.0/14	216-203
		10	12	AI 1-10	H1.0/16	216-243
1.25/1.5	17/16	8	10	AI 1,5-8	H1.5/14	216-204
		10	12	AI 1,5-10	H1.5/16	216-244
2.0/2.5	14	10	12	AI 2,5-10	H2.5/16DS	
Recommended crimp tool				CRIMPFOX6 CRIMPFOX6T-F CRIMPFOX10S	PZ6 roto	Variocrimp4

- Note:**
1. Make sure that the outer diameter of the wire is smaller than the inner diameter of the insulating sleeve of the recommended ferrule.
 2. Make sure that the ferrule processing dimensions conform to the following figure.

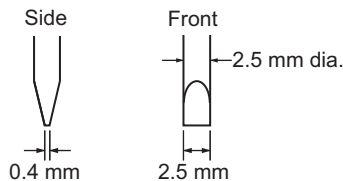


3. If you use AWG24 to AWG22 (0.25 to 0.34 mm²) wires, UL certification will not apply.

Recommended Flat-blade Screwdriver

Use a flat-blade screwdriver to connect and remove wires. Use the following flat-blade screwdriver.

The following table shows manufacturers and models as of 2015/Dec.



Model	Manufacturer
ESD 0,40×2,5	Wera
SZS 0,4×2,5 SZF 0-0,4×2,5 *	Phoenix Contact
0.4×2.5×75 302	Wiha
AEF.2,5×75	Facom
210-719	Wago
SDI 0.4×2.5×75	Weidmuller

* OMRON's exclusive purchase model XW4Z-00B is available to order as SZF 0-0,4×2,5 (manufactured by Phoenix Contact).

Screw Terminal

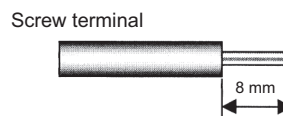
• Screw terminal

Wired type	Applicable wire size	Stripping length
Stranded wires, without ferrule	0.5 to 2.5 mm ²	8 mm
Stranded wires, with ferrule and plastic collar	0.5 to 2.5 mm ²	8 mm
Stranded wires with ferrule, without plastic collar	0.5 to 2.5 mm ²	8 mm
Single wire	0.5 to 2.5 mm ²	8 mm

• Tightening Torque 0.36 to 0.46 N · m

• Electric wiring

Use the electric wire of specified size as shown above. The length of the that is not covered is 8 mm.



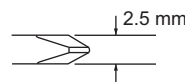
Stripping length

Recommended Flat-blade Screwdriver/ Phillips Screwdriver

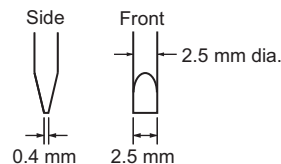
Use a Phillips screwdriver or flat-blade screwdriver to remove the product from a DIN rail and connect and remove the electric wires. Use a Phillips screwdriver with the shape specified below and a flat-blade screwdriver in the table below.

The following table shows manufacturers and models as of 2015/Dec.

Recommended Phillips Screwdriver



Recommended Flat-blade Screwdriver



Model	Manufacturer
ESD 0,40×2,5	Wera
SZS 0,4×2,5 SZF 0-0,4×2,5 *	Phoenix Contact
0.4×2.5×75 302	Wiha
AEF.2,5×75	Facom
210-719	Wago
SDI 0.4×2.5×75	Weidmuller

* OMRON's exclusive purchase model XW4Z-00B is available to order as SZF 0-0,4×2,5 (manufactured by Phoenix Contact).

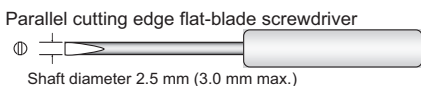
<G2RV>

Operating latching lever (test switch)

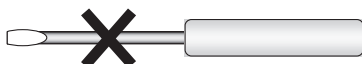
When operating the latching lever for G2RV-ST701/501 series, use a 2.5 mm width flat-blade screwdriver.

• Applicable flat-blade screwdriver

Flat-blade screwdriver with parallel cutting edge: shaft diameter 2.5 mm (3.0 mm max.)



Wide flat-blade screwdriver



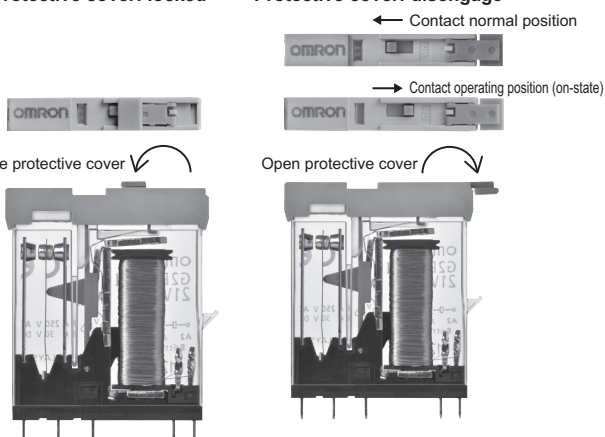
Driver with a thick shaft cannot be used.

- Always turn OFF the power supply before operating latching lever.
- Return to its original state after using the latching lever.
- Do not use the latching lever as a switch.
- Operation durability of the latching lever is 100 times or more.
- Do not keep the latching lever ON for a long period of time (24 hours or more) in order to maintain the operation check function.

Method of operation of the latching lever (test switch)

<Protective cover: locked>

<Protective cover: disengage>



Keep the protective cover open when using the latching lever. Move until the latching lever clicks to the ON position (ON state). After use latching lever, in order to prevent malfunction, return the switch to contact normal position (OFF state), and make sure the protective cover is firmly closed.

Using the latching lever

Example: check the operation of the relay and the sequence circuit

Input ratings

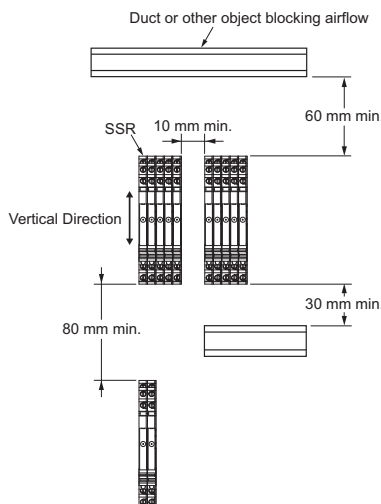
Smoothing capacitors are used in the internal circuits of AC/DC-type G2RV-ST devices. AC/DC-type G2RV-ST devices driven by the sensor may not operate normally due to the characteristics of the smoothing capacitor. When driving such devices by the sensor, use the DC specification settings.

<G3RV>

- Since the G3RV uses electronic components, do not allow it to fall, vibrate, or apply shock that exceeds the criteria. Doing so may result in failure, malfunction, or deterioration of performance.
- Tighten screw terminal for G3RV at torque 0.36 to 0.46 N · m. It may cause short-circuit failure or burning.
- Please use the voltage and current suitable for the input and output terminal portion of G3RV. It may cause short-circuit failure or burning.

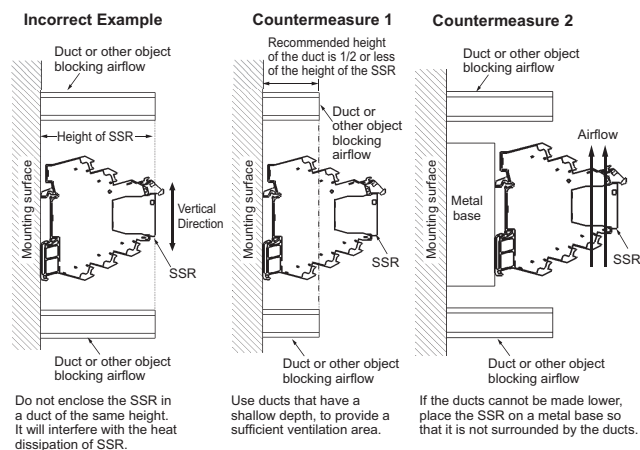
Mounting

<The SSR Mounting Pitch (Panel Mounting)>



- * When five or more are installed, install with 10 mm space between each.
- * Please ask distributor or sales when need assistance in detail of mounting pitch.

<Relationship of SSR and duct (duct depth)>

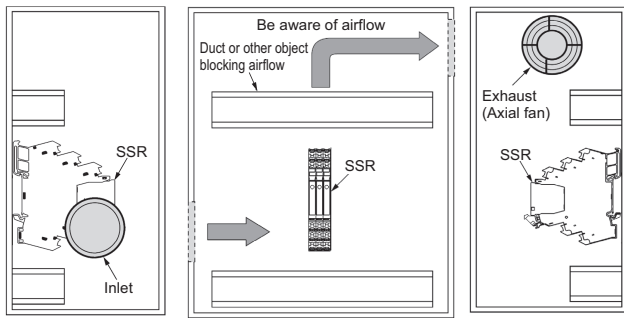


Do not enclose the SSR in a duct of the same height. It will interfere with the heat dissipation of SSR.

Use ducts that have a shallow depth, to provide a sufficient ventilation area.

If the ducts cannot be made lower, place the SSR on a metal base so that it is not surrounded by the ducts.

<Ventilation Outside the Control Panel>



- If the air inlet or air outlet has a filter, clean the filter regularly to prevent it from clogging to ensure an efficient flow of air.
- Do not place objects that may obstruct the proper ventilation for outside or inside the inlet or exhaust port, and in the outside vicinity.
- A heat exchanger, if used, should be located in front of the G3RV to ensure the efficiency of the heat exchanger.
- Please observe the ambient temperature of G3RV. The rated current of the G3RV is measured at an ambient temperature of 25°C.
- The G3RV uses a semiconductor in the output element. This causes the temperature inside the control panel to increase due to heating resulting from the flow of electrical current through the load. The G3RV reliability can be increased by adding a ventilation fan to the control panel to dispel this heat, thus lowering the ambient temperature of the G3RV.
(It suggests that life expectancy is doubled by each 10°C reduction in ambient temperature.)

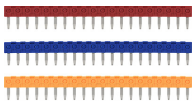
EMI

The G3RV is a Class A product (for industrial environments). When used in a residential environment, it may cause radio interference. In such case, the user may be required to take appropriate measures.

**For G2RV-ST/G3RV-ST
Common Accessories (order separately)**

Ordering Information

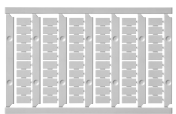
Short Bars

Appearance	Pitch	No. of poles	Colors	Model *	Minimum order (Quantity)	Maximum energizing current
	6.2 mm	20	Red (R), Blue (S), Yellow (Y)	PYDN-6.2ST-200□	10	32 A


Note: Use for wiring to the adjacent socket.

* Replace the box (□) in the model number with the code for the covering color. □ color selection: R = red, S = blue, Y = yellow

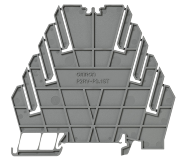
Label

Appearance	Model	Minimum order (Sheet) (Pieces per sheet)
	XW5Z-P2.5LB1	5 (1 sheet/72 pieces)

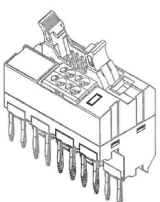
Separate Plate

Appearance	Model
	XW5Z-EP12

Isolation plate

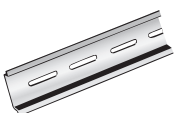


Appearance	Model
	P2RV-P3.1ST

PLC interface unit Coming Soon

Appearance	I/O classification	Connection method	Common process	Applicable Models *	Model
	For input	Push-In	PNP	G2RV-ST500-AP	P2RVC-8ST-I-5-1
			NPN		P2RVC-8ST-I-5
	For output	Screw	PNP	G2RV-ST700-AP	P2RVC-8ST-I-7-1
			NPN		P2RVC-8ST-O-5-1
For output	Push-In	PNP	G2RV-ST500 G2RV-ST501 G3RV-ST500	P2RVC-8ST-O-5	
		NPN		P2RVC-8ST-O-5	
For output	Screw	PNP	G2RV-ST700 G2RV-ST701 G3RV-ST700	P2RVC-8ST-O-7-1	
		NPN		P2RVC-8ST-O-7-1	

* Please make sure applicable models, P2RVC can not be used other combination than the above table.

Parts for DIN Track Mounting

Appearance	Type	Model	Minimum order (Quantity)
	DIN Tracks	1 m	PFP-100N
		0.5 m	PFP-50N
	End Plate *	PFP-M	10
	Spacer	PFP-S	

* When mounting DIN Track, please use End Plate (PFP-M). Refer to your OMRON website for details on PFP-□.

G2RV-ST/G3RV-ST

Applicable Cables

Name		Appearance	Cable length L (mm)	Connecting Cables	Applicable Connectors
G2RV-ST Cables with Loose Wires P2RV-A□C	8 I/O points		1,000	P2RV-A100C	Various devices
			2,000	P2RV-A200C	
			3,000	P2RV-A300C	
			5,000	P2RV-A500C	
G3RV-ST OMRON PLC Connecting Cables with Connectors (1:4) P2RV-4-□C	32 output points		1,000	P2RV-4-100C	PLC I/O Units with MIL connectors (1:4) CJ1W-OD232/OD262, etc.
			2,000	P2RV-4-200C	
			3,000	P2RV-4-300C	
			5,000	P2RV-4-500C	
G3RV-ST OMRON PLC Connecting Cables with Connectors (1:4) P2RV-4-□IMC	32 input points		1,000	P2RV-4-100IMC	PLC I/O Units with MIL connectors (1:4) CJ1W-ID232/ID262, etc. *1
			2,000	P2RV-4-200IMC	
			3,000	P2RV-4-300IMC	
			5,000	P2RV-4-500IMC	
Common Precautions OMRON PLC Connecting Cables with Connectors (1:4) P2RV-4-□IFC	32 input points		1,000	P2RV-4-100IFC	PLC I/O Units with Fujitsu connectors (1:4) CJ1W-ID231/ID261, etc. *2
			2,000	P2RV-4-200IFC	
			3,000	P2RV-4-300IFC	
			5,000	P2RV-4-500IFC	
Common Precautions OMRON PLC Connecting Cables with Connectors (1:1) P2RV-A□C-OMR GRT1	8 output points		500	P2RV-A050C-OMR GRT1	Slice I/O Units (1:1) For inputs: GRT1-ID8-1 For outputs: GRT1-OD8-1
	8 input points		1,000	P2RV-A100C-OMR GRT1	
			500	P2RV-A050IC-OMR GRT1	
Common Precautions OMRON PLC Connecting Cables with Connectors (1:1) P2RV-A□C-OMR NX	8 output points		500	P2RV-A050C-OMR NX	PLC I/O Units with screw-less clamp terminal block (1:1) For inputs: NX-ID4442 For outputs: NX-OD4256
	8 input points		1,000	P2RV-A100C-OMR NX	
			500	P2RV-A050IC-OMR NX	
			1,000	P2RV-A100IC-OMR NX	

*1. Use the P2RVC-8-I-□-1(PNP) as the PLC interface unit when connecting to the CJ1W-ID232/ID262 (or a unit with an equivalent terminal arrangement).

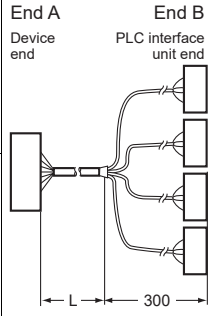
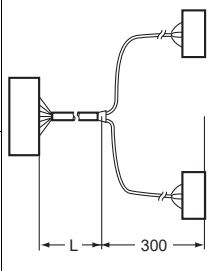
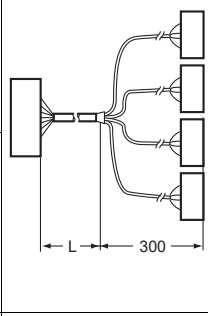
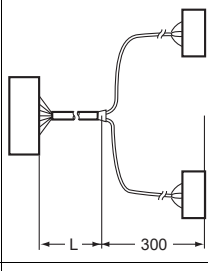
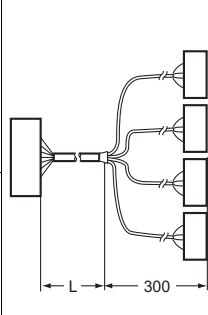
*2. Use the P2RVC-8-I-□-1(PNP) as the PLC interface unit when connecting to the CJ1W-ID231/ID261 (or a unit with an equivalent terminal arrangement).

G2RV-ST

G3RV-ST

Common Precautions

Common Accessories

Name	Appearance	Cable length L (mm)	Connecting Cables	Applicable Connectors
Schneider Electric PLC Connecting Cables P2RV-□C-SCH-□		500	P2RV-050C-SCH-A	Schneider Electric PLCs with 32-point connectors (1:4) For inputs: 140 DDI 353 00 For outputs: 140 DDO 353 00
		1,000	P2RV-100C-SCH-A	
		2,000	P2RV-200C-SCH-A	
		3,000	P2RV-300C-SCH-A	
		5,000	P2RV-500C-SCH-A	
		500	P2RV-050C-SCH-B	
		1,000	P2RV-100C-SCH-B	
		2,000	P2RV-200C-SCH-B	
		3,000	P2RV-300C-SCH-B	
		5,000	P2RV-500C-SCH-B	
		500	P2RV-050C-SCH-C	Schneider Electric PLCs with 16-point connectors (1:2) For inputs: BMX DDI 1602 For outputs: BMX DDO 1602
		1,000	P2RV-100C-SCH-C	
		2,000	P2RV-200C-SCH-C	
		3,000	P2RV-300C-SCH-C	
		5,000	P2RV-500C-SCH-C	
		500	P2RV-050C-SCH-D	
1,000		P2RV-100C-SCH-D		
2,000		P2RV-200C-SCH-D		
3,000	P2RV-300C-SCH-D			
5,000	P2RV-500C-SCH-D			
Siemens PLC Connecting Cables P2RV-□C-SIM-□		500	P2RV-050C-SIM-A	Siemens PLCs with 32-point connectors (1:4) For inputs: 6ES7 321-1BL00-0AA0 For outputs: 6ES7 322-1BL00-0AA0
		1,000	P2RV-100C-SIM-A	
		2,000	P2RV-200C-SIM-A	
		3,000	P2RV-300C-SIM-A	
		5,000	P2RV-500C-SIM-A	
		500	P2RV-050C-SIM-B	
		1,000	P2RV-100C-SIM-B	
		2,000	P2RV-200C-SIM-B	
		3,000	P2RV-300C-SIM-B	
		5,000	P2RV-500C-SIM-B	
		500	P2RV-050C-SIM-C	Siemens PLCs with 16-point connectors (1:2) For inputs: 6ES7 321-1BH02-0AA0
		1,000	P2RV-100C-SIM-C	
		2,000	P2RV-200C-SIM-C	
		3,000	P2RV-300C-SIM-C	
		5,000	P2RV-500C-SIM-C	
		500	P2RV-050C-SIM-D	Siemens PLCs with 32-point connectors (1:4) For inputs: 6ES7 421-1BL-0AA0 For outputs: 6ES7 422-1BL-0AA0
1,000		P2RV-100C-SIM-D		
2,000		P2RV-200C-SIM-D		
3,000		P2RV-300C-SIM-D		
5,000		P2RV-500C-SIM-D		
500		P2RV-050C-SIM-E		
1,000		P2RV-100C-SIM-E		
2,000		P2RV-200C-SIM-E		
3,000		P2RV-300C-SIM-E		
5,000		P2RV-500C-SIM-E		

G2RV-ST

G3RV-ST

Common Precautions

Common Accessories

G2RV-ST/G3RV-ST

PLC interface unit

Coming Soon

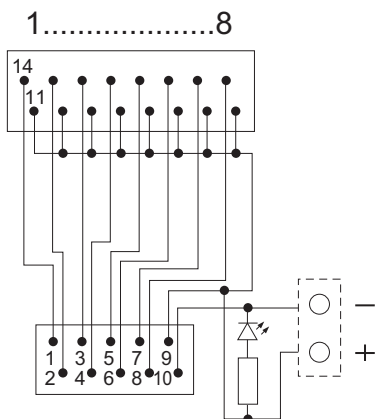
Ratings / characteristics

Rated voltage		30 VAC/DC
Rated current		0.5 A/poles, 2 A/unit
Ambient operating temperature		-40 to 55°C
Vibration resistance	Destruction	10 to 55 to 10 Hz, single amplitude 0.50 mm (double amplitude 1.0 mm)
	Malfunction	10 to 55 to 10 Hz, single amplitude 0.50 mm (double amplitude 1.0 mm)
Shock resistance	Destruction	300 m/s ²
	Malfunction	100 m/s ²

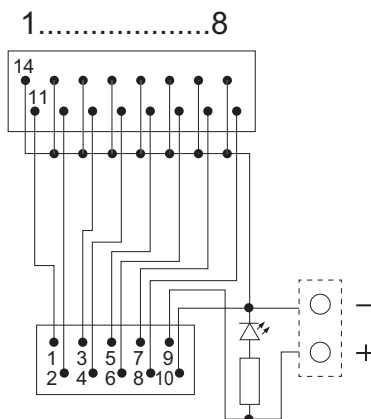
Electrical schematic

Input

P2RVC-8ST-I-□-1 (PNP)

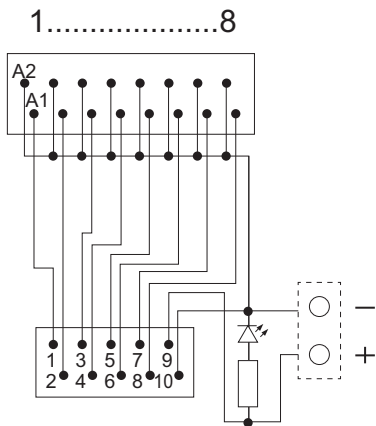


P2RVC-8ST-I-5 (NPN)

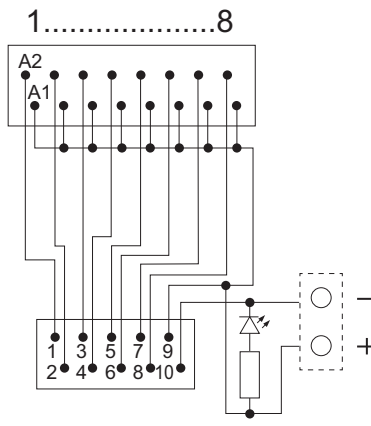


Output

P2RVC-8ST-O-□-1 (PNP)



P2RVC-8ST-O-5 (NPN)



G2RV-ST

G3RV-ST

Common Precautions

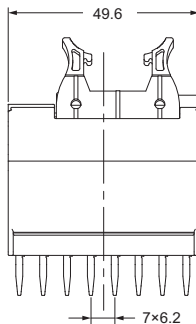
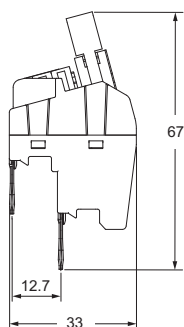
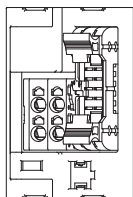
Common Accessories

Dimensions

PLC interface unit

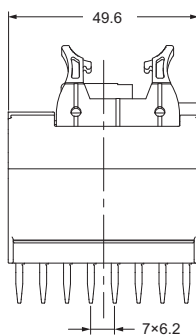
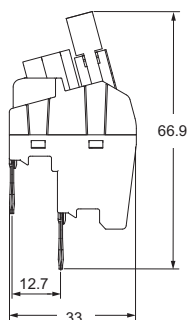
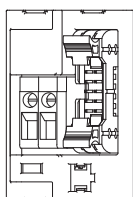
Push-IN

- P2RVC-8ST-I-5(-1)
- P2RVC-8ST-O-5(-1)



Screw

- P2RVC-8ST-I-7-1
- P2RVC-8ST-O-7-1



G2RV-ST

G3RV-ST

Common Precautions

Common Accessories

G2RV-ST/G3RV-ST

(Except for PLC interface unit)
Common Accessories (order separately)

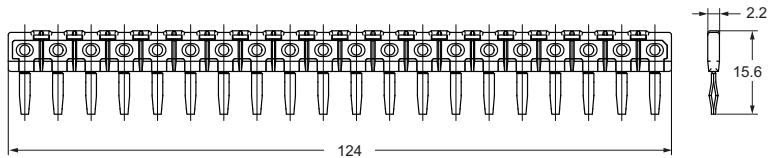
G2RV-ST

Dimensions

(unit: mm)

Short Bars

PYDN-6.2ST-200□



Pitch	No. of poles	L (Length)	Colors	Model *	Maximum carry current
6.2 mm	20	124	Red (R) Blue (S) Yellow (Y)	PYDN-6.2ST-200□	32 A

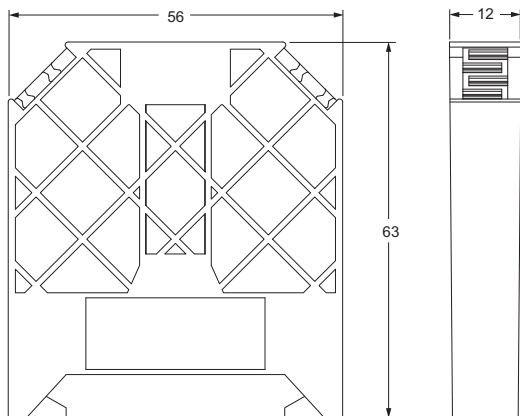
Note: Use the Short Bars for crossover wiring within one Socket or between Sockets.

* Replace the box (□) in the model number with the code for the covering color.

G3RV-ST

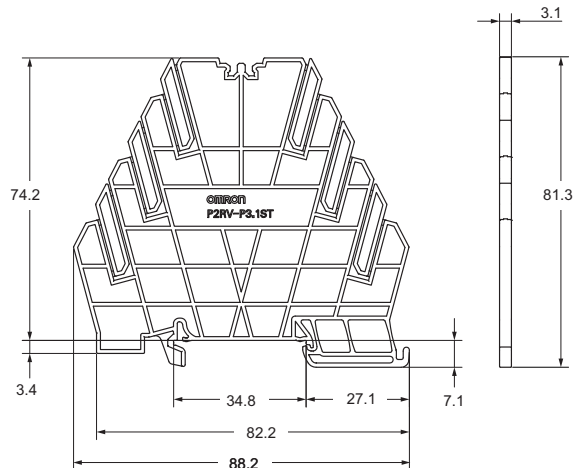
Separate Plate

XW5Z-EP12



Isolation plate

P2RV-P3.1ST



Common Precautions

Parts for DIN Track Mounting

Refer to your OMRON website for details on the PFP-□.

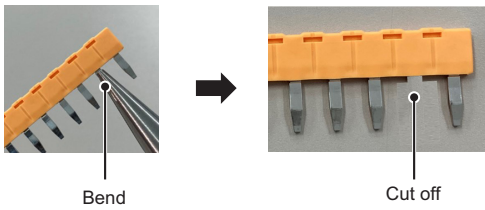
Common Accessories

Safety Precautions

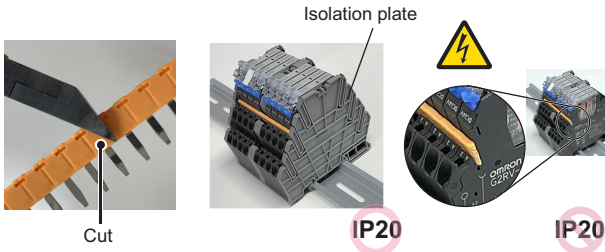
Precautions for Correct Use

When mounting a short bar

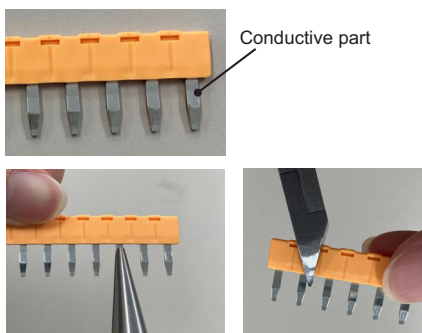
- Intermediate pins can be bent by a tool and cut off for use.



- The short bar can be cut to as many poles as needed. Insert the tool from the plastic part side, and cut along the groove in the plastic part between the terminals. When cutting, take care not to break or deform the terminals. However, since the metal on the cut surface will be exposed, human safety and insulation countermeasures between adjacent products must be ensured. Such countermeasures include using insulating plate model P2RV-P3.1-ST or taking an equivalent insulation countermeasure.

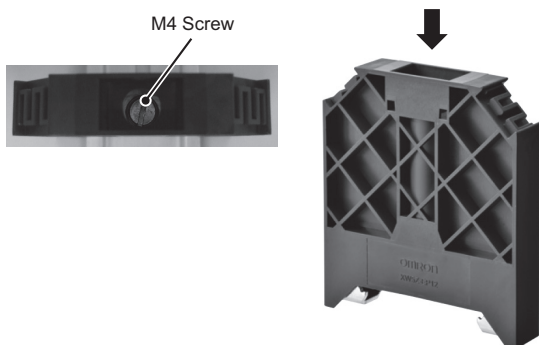


- When cutting the short bar or its pins, do not touch the conductive part. If the conductive part is deformed, contact failure may result.
- When cutting the product, check that there is no person nearby and take care that a cut off piece does not fly off.

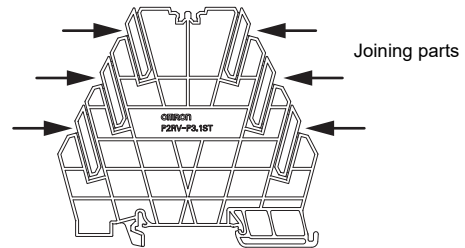


Mounting a separate plate

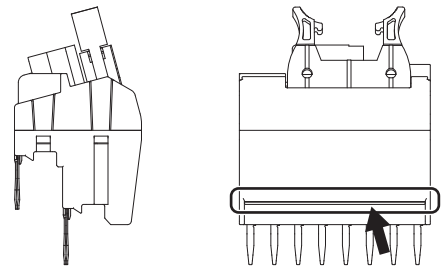
- Use a flat-blade screwdriver to tighten the center top screw and secure the plate. Loosen the screw to remove the plate from the DIN rail.



- When using both an isolation plate and short bar together, use without removing the insulating plate will be possible if you cut the joining parts. Furthermore, the joining parts can be cut easily by using needle-nose pliers to cut them.
- After mounting to a DIN rail, check that the product is correctly held in place.



- When removing the PLC interface, place a finger at the place below and pull it out.



G2RV-ST

G3RV-ST

Common Precautions

Common Accessories

Terms and Conditions Agreement

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.

Warranties.

(a) Exclusive Warranty. Omron's exclusive warranty is that the Products will be free from defects in materials and workmanship for a period of twelve months from the date of sale by Omron (or such other period expressed in writing by Omron). Omron disclaims all other warranties, express or implied.

(b) Limitations. OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCTS. BUYER ACKNOWLEDGES THAT IT ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE.

Omron further disclaims all warranties and responsibility of any type for claims or expenses based on infringement by the Products or otherwise of any intellectual property right. (c) Buyer Remedy. Omron's sole obligation hereunder shall be, at Omron's election, to (i) replace (in the form originally shipped with Buyer responsible for labor charges for removal or replacement thereof) the non-complying Product, (ii) repair the non-complying Product, or (iii) repay or credit Buyer an amount equal to the purchase price of the non-complying Product; provided that in no event shall Omron be responsible for warranty, repair, indemnity or any other claims or expenses regarding the Products unless Omron's analysis confirms that the Products were properly handled, stored, installed and maintained and not subject to contamination, abuse, misuse or inappropriate modification. Return of any Products by Buyer must be approved in writing by Omron before shipment. Omron Companies shall not be liable for the suitability or unsuitability or the results from the use of Products in combination with any electrical or electronic components, circuits, system assemblies or any other materials or substances or environments. Any advice, recommendations or information given orally or in writing, are not to be construed as an amendment or addition to the above warranty.

See <http://www.omron.com/global/> or contact your Omron representative for published information.

Limitation on Liability; Etc.

OMRON COMPANIES SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, NEGLIGENCE OR STRICT LIABILITY.

Further, in no event shall liability of Omron Companies exceed the individual price of the Product on which liability is asserted.

Suitability of Use.

Omron Companies shall not be responsible for conformity with any standards, codes or regulations which apply to the combination of the Product in the Buyer's application or use of the Product. At Buyer's request, Omron will provide applicable third party certification documents identifying ratings and limitations of use which apply to the Product. This information by itself is not sufficient for a complete determination of the suitability of the Product in combination with the end product, machine, system, or other application or use. Buyer shall be solely responsible for determining appropriateness of the particular Product with respect to Buyer's application, product or system. Buyer shall take application responsibility in all cases.

NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY OR IN LARGE QUANTITIES WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT(S) IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

Programmable Products.

Omron Companies shall not be responsible for the user's programming of a programmable Product, or any consequence thereof.

Performance Data.

Data presented in Omron Company websites, catalogs and other materials 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 user must correlate it to actual application requirements. Actual performance is subject to the Omron's Warranty and Limitations of Liability.

Change in Specifications.

Product specifications and accessories may be changed at any time based on improvements and other reasons. It is our practice to change part numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the Product may be changed without any notice. When in doubt, special part numbers may be assigned to fix or establish key specifications for your application. Please consult with your Omron's representative at any time to confirm actual specifications of purchased Product.

Errors and Omissions.

Information presented by Omron Companies has been checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical or proofreading errors or omissions.

Note: Do not use this document to operate the Unit.

OMRON Corporation Industrial Automation Company

Kyoto, JAPAN

Contact : www.ia.omron.com

Regional Headquarters

OMRON EUROPE B.V.

Wegalaan 67-69, 2132 JD Hoofddorp
The Netherlands

Tel: (31) 2356-81-300 Fax: (31) 2356-81-388

OMRON ASIA PACIFIC PTE. LTD.

438B Alexandra Road, #08-01/02 Alexandra
Technopark, Singapore 119968

Tel: (65) 6835-3011 Fax: (65) 6835-2711

OMRON ELECTRONICS LLC

2895 Greenspoint Parkway, Suite 200
Hoffman Estates, IL 60169 U.S.A.

Tel: (1) 847-843-7900 Fax: (1) 847-843-7787

OMRON (CHINA) CO., LTD.

Room 2211, Bank of China Tower,
200 Yin Cheng Zhong Road,
PuDong New Area, Shanghai, 200120, China

Tel: (86) 21-5037-2222 Fax: (86) 21-5037-2200

Authorized Distributor:

©OMRON Corporation 2022 All Rights Reserved.
In the interest of product improvement,
specifications are subject to change without notice.

Cat. No. J265-E1-01 0922 (0922)