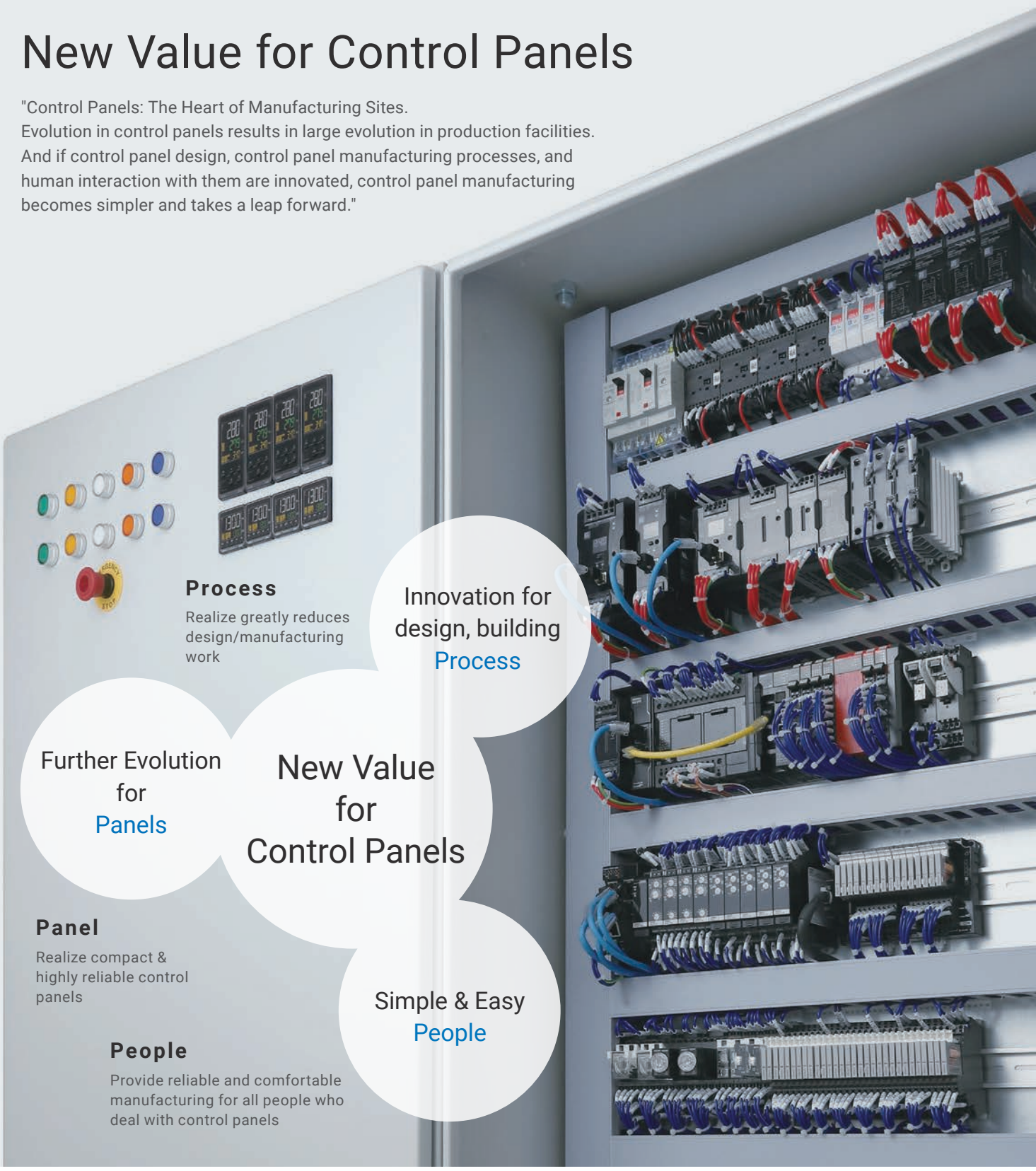
Slim I/O Relay
Slim I/O Solid State Relay
G2RV-ST/G3RV-ST

Space Saving and Easy Installation for your Control Panel

Value Design for Panel

New Value for Control Panels

"Control Panels: The Heart of Manufacturing Sites.
Evolution in control panels results in large evolution in production facilities.
And if control panel design, control panel manufacturing processes, and human interaction with them are innovated, control panel manufacturing becomes simpler and takes a leap forward."



Innovation for Control Panels Building with Value Design

Our shared concept for the specifications of products used in control panels,
" Value Design for Panel " (herein after referred toas Value Design)
will create new value to our customer's Combining multiple products that share the Value Design concept will further increase the value provided to control panels.

Overwhelming Line up That Innovates Your Control Panel Manufacturing

Save more space in your panel with our new slim I/O relay

NEW

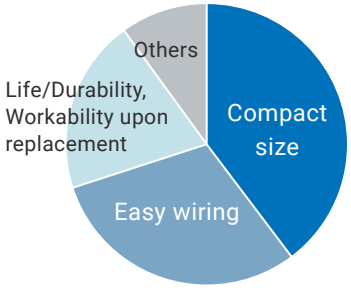
Slim I/O Relay
G2RV-ST

NEW

Slim I/O
Solid State Relay
G3RV-ST

Save more space in your panel with our new slim I/O relay

Customer requirements for Relay



Note. According to OMRON investigation in September 2022

Issues Previous Relay

- Equipment needs to be enhanced but not enough space is available for additional devices (all industries)
- Ancillary equipment that can be retrofitted to existing equipment always come with space restrictions (all industries)
- Compact equipment required to improve production efficiency per unit area (especially in semiconductor industry)

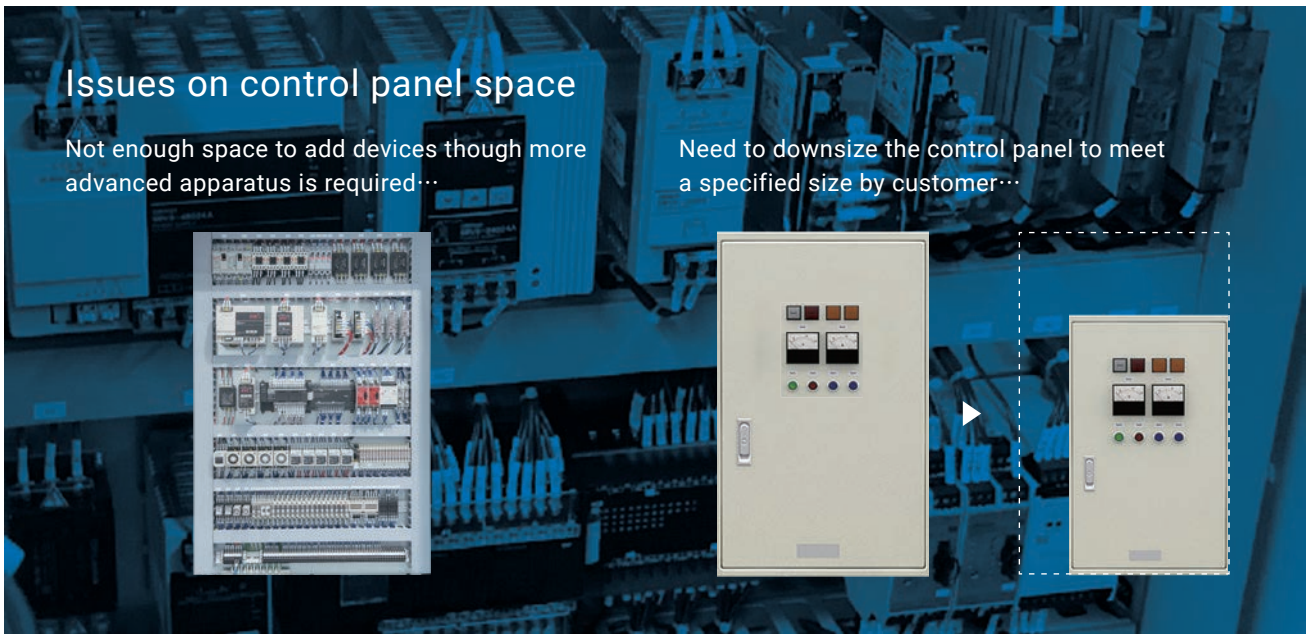
NEW G2RV-ST/G3RV-ST

- 6.2mm width saves 60%*1 of your horizontal panel space, freeing up room for products with new features and helping to downsize the control panel itself.

*1. Compared with G2RS.

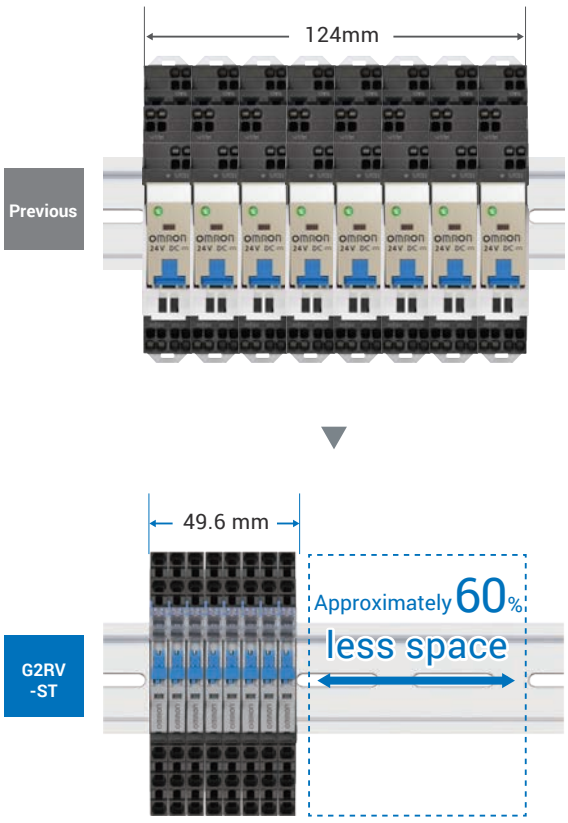
Saving Space and More-advanced Control Panels

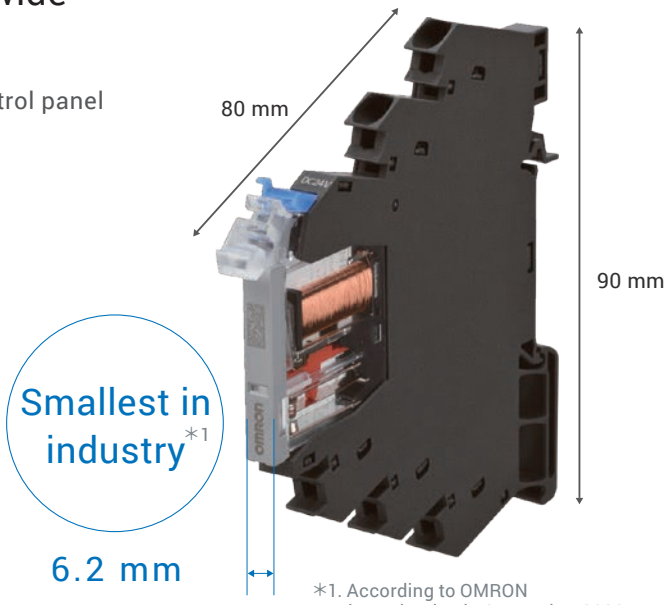
The interface wiring system of the smallest size industry*1 help delivering more compact control panels with additional functionality.



Replace existing relays with 6.2 mm-wide relays to use space effectively

By replacing existing relays, you can downsize your control panel and enhance your equipment while maintaining its size.



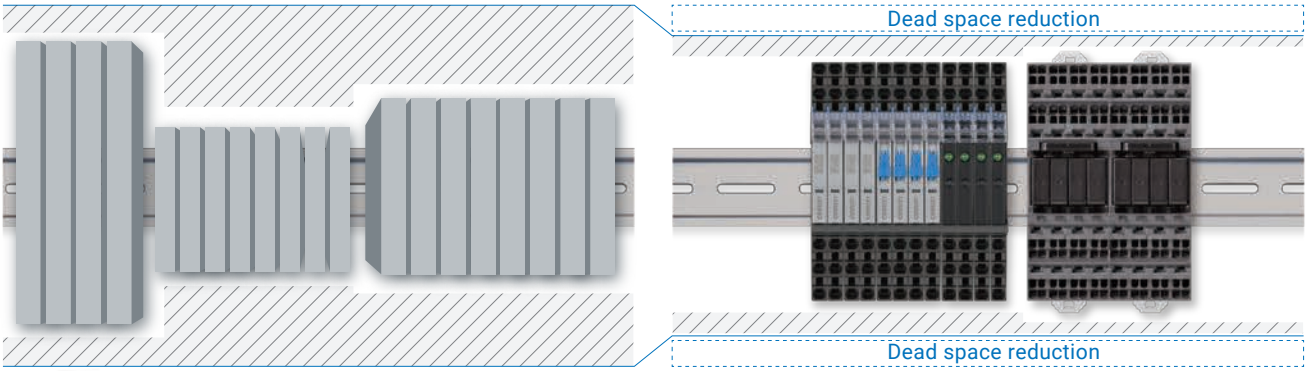


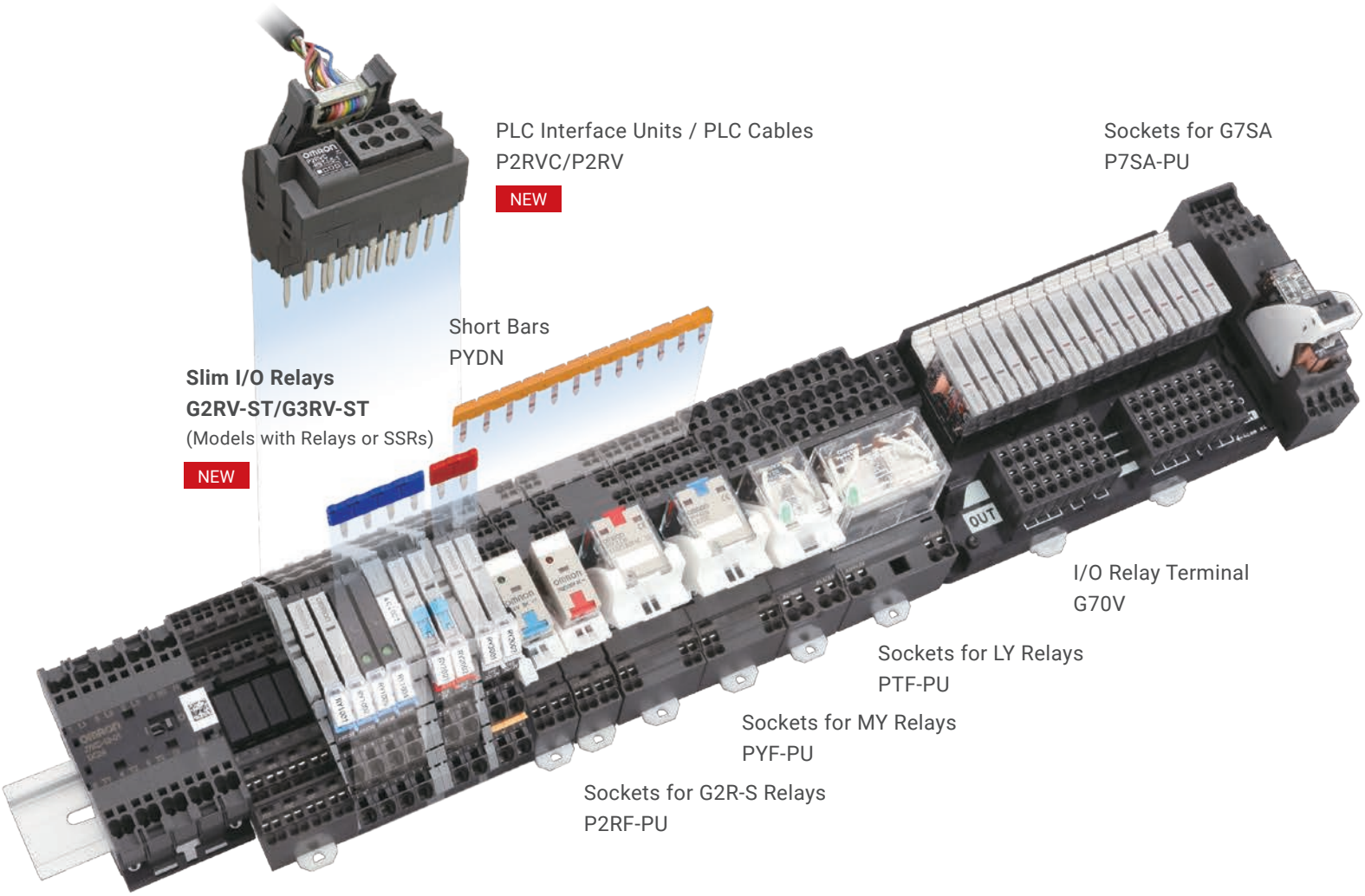
*1. According to OMRON investigation in September 2022

The saved space can be used for implementing additional functions such as safety or IoT.

Unified height reduces dead space and downsizes control panels

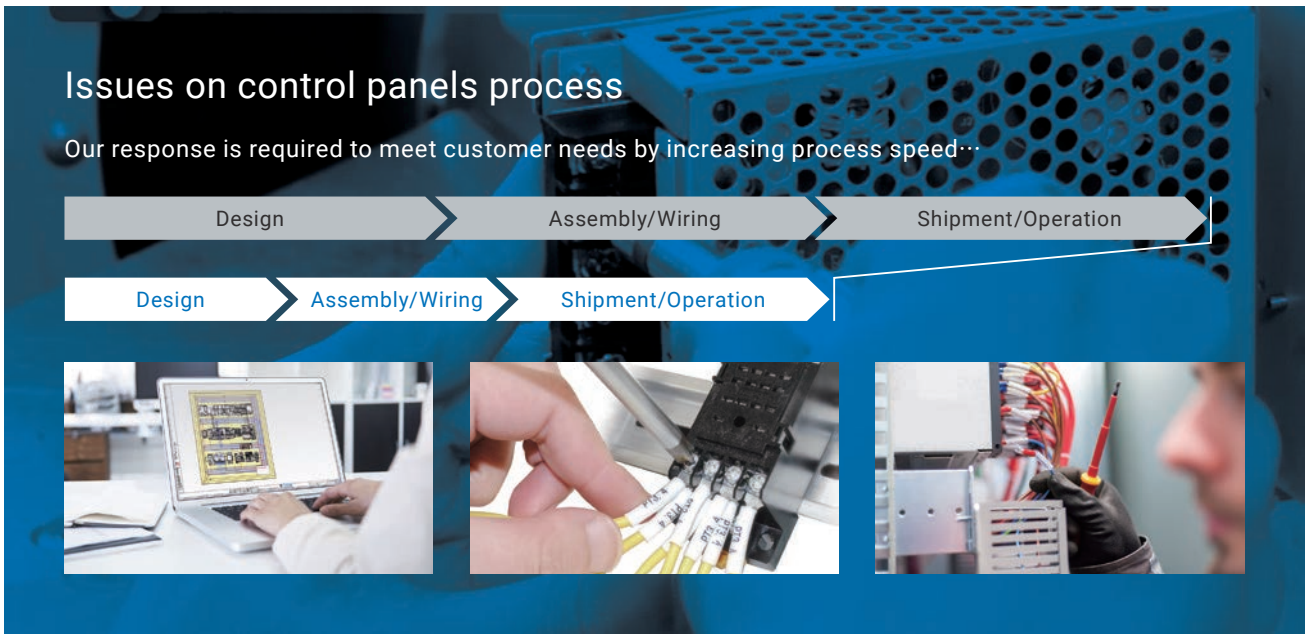
Our Value Design for Panel relays and their sockets are of the same height.





Shortening Lead Time for Control Panel Building

Unique product specifications let you shorten the entire process for building control panels.

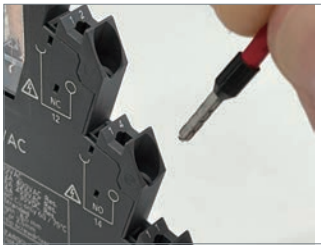


Push-In Plus technology requires only a single step, greatly reducing wiring work

Reduction of approx. 60% ∗1

1. Remove the screw
2. Connect with the terminal
3. Tighten the screw
4. Put a check mark
5. Retighten the screw

Previous A lot of steps are required to complete wiring for the screw terminal…



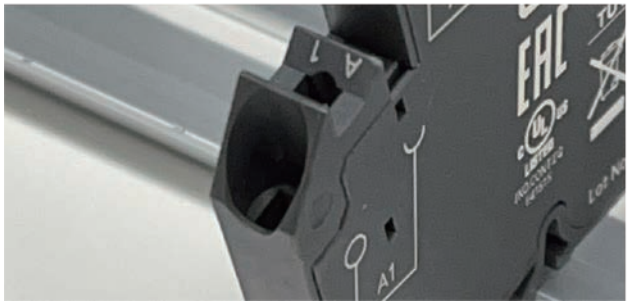
1. Insert the terminal

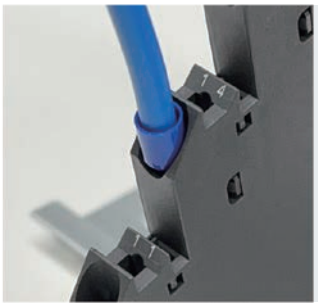
Value Design for Panel Push-In Plus technology completes by a single step

∗1. Information for Push-In Plus and Screw Terminal Blocks is based on OMRON's actual measurement data

Larger wire terminal opening contributes to efficiency of wiring and standardization of wires

Wiring holes are wide in diameter and are structured diagonally to allow for better visibility and easy insertion, and support standard 2.5 mm² ferrule terminals.



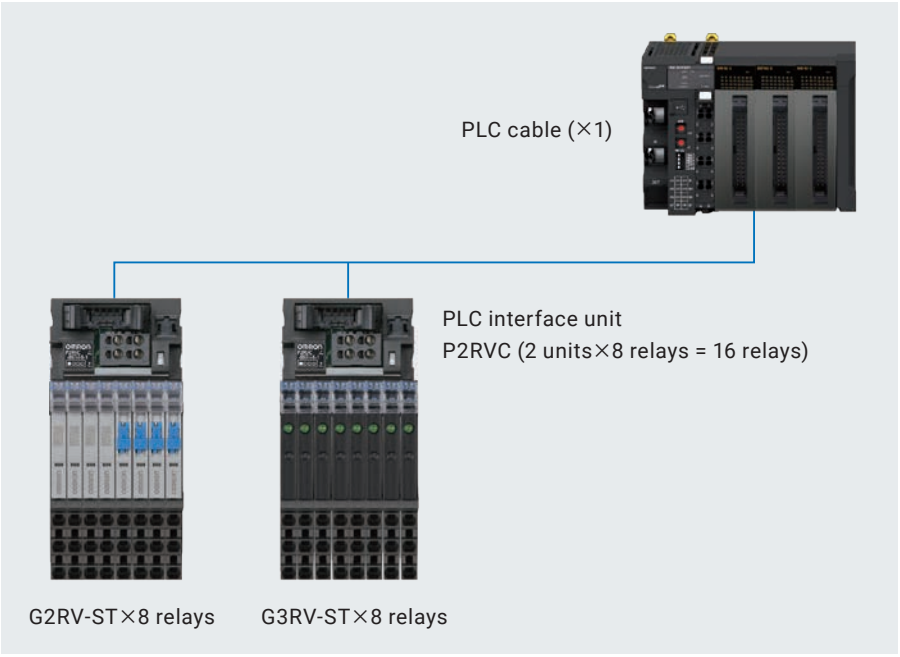


2.5 mm² ferrule available

2.0 mm² standardization on DC line on request basis

PLC interface unit and short bars further reduce wiring effort

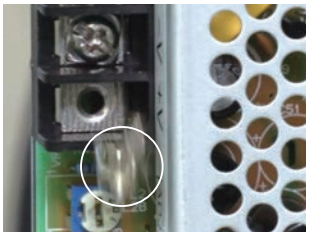
Our extensive lineup of accessories for reducing wiring allows for less wiring work and therefore less effort.



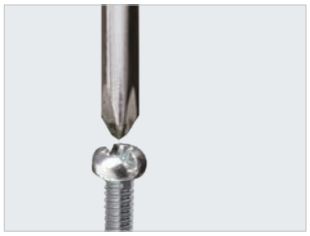
Short Bars

No need for retightening, even when vibration is applied on terminals

The pressure of the clamp spring holds the ferrule or wire securely with Push-In Plus technology, eliminating worries about screws loosening or disconnection due to vibration.



Previous The screw is loosened anddropped by vibration…



Retightening is needed before export and shipment…

Value Design for Panel No drop-off or retightening of screws

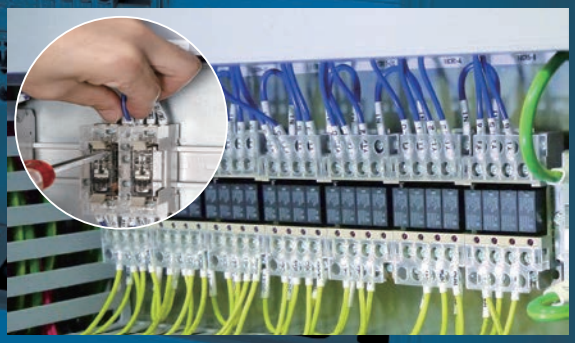
Reducing the burden of building, operating, and maintaining control panels

Made to be less taxing on the health of those who build control panels and more useful to on-site users.

Issues on control panels wiring

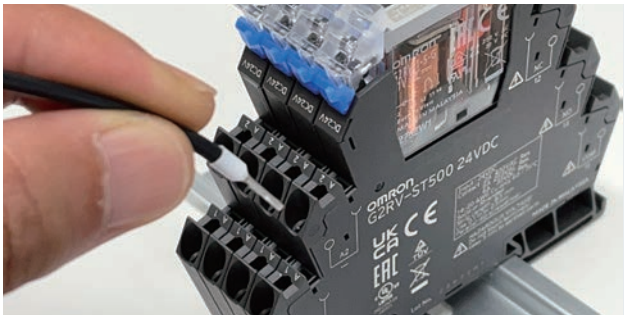
Increasing devices in accordance with moreadvanced control panels require much time for wiring with screw terminals…

Screw terminals, which require wiring in vertical direction, will impose workers additional hassle for caring wiring order…

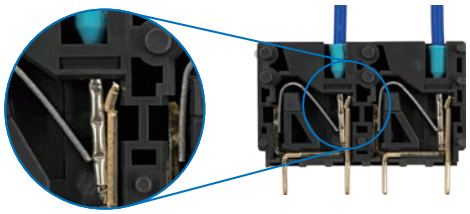


Installation friendly assembly/wiring with less burden on worker's health

Push-In Plus technology with reliability and ease of insertion



OMRON's Push-In Plus technology is as easy as inserting to an earphone jack.
This reduces the load on workers fingers.



IEC standard ∗1	Push-In Plus ∗2	Screw ∗2
20 N min.	125 N	112 N

Even though less insertion force is required, the wires are held firmly in place by a unique spring structure that ensures reliability.

∗1. In the case that a cable diameter is AWG20, 0.5 mm2 ∗2. OMRON's actual measurement value data.

Easy-to-install accessories

Short bars and insulation plates can be cut or removed with little force to deliver stress-free workability.

Short Bars

Isolation plate

Can be cut easily with average grip force.

Note. Target cutting force: 25 k

Extra support is provided through an enhanced mounting system

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

DIN rail tolerance is also supported through elasticity

Extra support is provided through an enhanced mounting system.

Short Bars

Insertion feedback to let you know when mounting is complete.

Easier Maintenance

Visibility is enhanced by the LED release lever

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.

Color coded stoppers indicate the voltage type

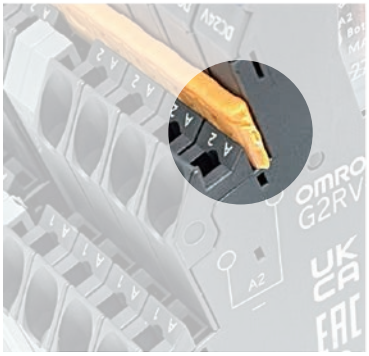
Voltage systems are color-coded for easy checking.

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

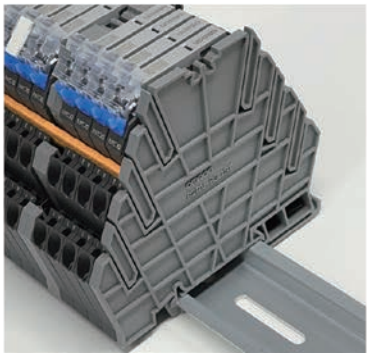
Both easy replacement and detachment prevention of relays are achieved by locking and unlocking of stopper.

Use insulation plates to prevent electrical shock and separation of groups easier

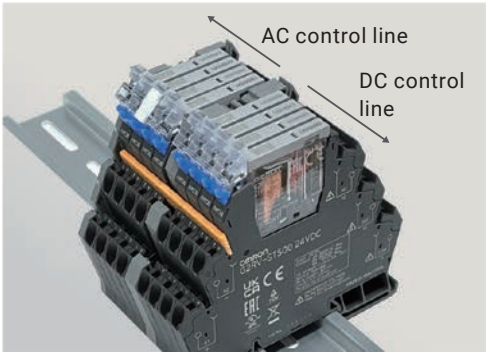
You can attach insulation plates to the ends of short bars to prevent electrical shock and separation.



Electrical shock hazard



Insulation plate prevent electrical shock



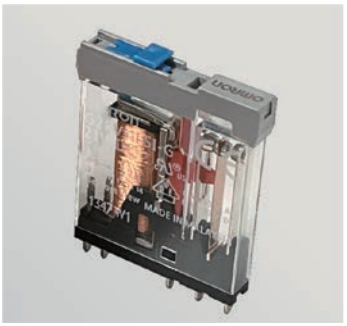
Separation groups

Relay structure allows for easy checking and replacement

The relays themselves are designed to the finest detail for ease of use, allowing for easy operation checks and replacement.

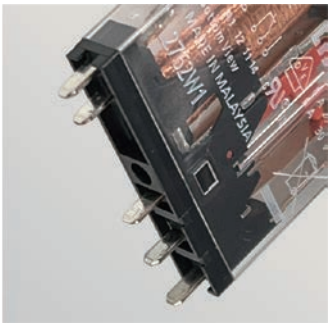
Easy operation checks

- Transparent case for checking relay state
- Test buttons for checking circuit
- Mechanical indicator for checking operation



Easy replacement

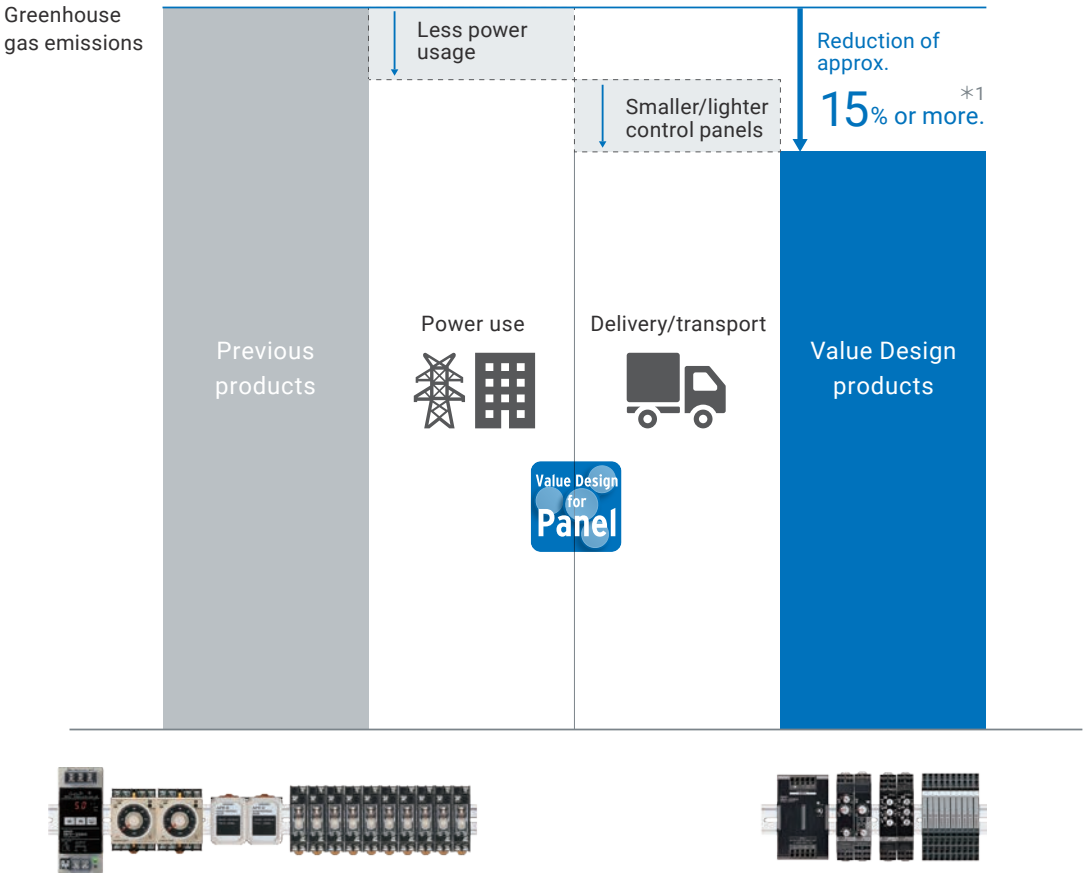
- Easy relay replacement by hard to bend terminal structure



Reducing greenhouse gas emissions

Our Value Design products reduce greenhouse gas emissions by making control panels smaller and lighter, and their devices more power efficient.

Value Design products reduce emissions by 15% or more.



*1. Estimates as of February 2022, using OMRON's model control panel

Product lineup

G2RV-ST (Slim I/O Relay)

Terminal(Wire connection)	Classification	Latching lever (Test switch)	Rated input voltage (V)	Model	Dimensions W×H×D (mm)
Push-In Plus Terminal	Standard	No	24 VDC	G2RV-ST500 24 VDC	6.2 x 90 x 88
			24 VAC/VDC	G2RV-ST500 24 VAC/VDC	
			200 VAC	G2RV-ST500 200 VAC	
		Yes	24 VDC	G2RV-ST501 24 VDC	
	Microloads	なし	24 VDC	G2RV-ST500-AP 24 VDC	
			24 VAC/VDC	G2RV-ST500-AP 24 VAC/VDC	
Screw terminal	Standard	No	24 VDC	G2RV-ST700 24 VDC	
		Yes	24 VDC	G2RV-ST701 24 VDC	
	Microloads	No	24 VDC	G2RV-ST700-AP 24 VDC	

Note. The above products are excerpts.Refer to the G2RV-ST/G3RV-ST Slim I/O Relay/Slim I/O Solid State Relay Datasheet (Cat. No. J214) for details.

G3RV-ST (Slim I/O Solid State Relay)

Terminal(Wire connection)	Applicable output load	Zero cross function	Rated input voltage (V)	Model	Dimensions
Push-In Plus Terminal	DC load	-	24 VDC	G3RV-ST500-D 24 VDC	6.2 x 90 x 88
			24 VAC/VDC	G3RV-ST500-D 24 VAC/VDC	
	DC load(high-speed opening and closing)		24 VDC	G3RV-ST500-D-H 24 VDC	
			24 VAC/VDC	G3RV-ST500-D-H 24 VAC/VDC	
	AC load	Yes	12 VDC	G3RV-ST500-A 12 VDC	
			24 VDC	G3RV-ST500-A 24 VDC	
		No	24 VDC	G3RV-ST500-AL 24 VDC	
Screw terminal	DC load	-	24 VDC	G3RV-ST700-D 24 VDC	
	DC load(high-speed opening and closing)		24 VDC	G3RV-ST700-D-H 24 VDC	
	AC load	Yes	12 VDC	G3RV-ST700-A 12 VDC	
		No	24 VDC	G3RV-ST700-AL 24 VDC	

Note. The above products are excerpts.Refer to the G2RV-ST/G3RV-ST Slim I/O Relay/Slim I/O Solid State Relay Datasheet (Cat. No. J214) for details.

For G2RV-ST/G3RV-ST Common Accessories

Short Bars

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

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

Isolation plate

Model
P2RV-P3.1ST

Isolation plate

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
	Screw	PNP	G2RV-ST700-AP	P2RVC-8ST-I-7-1
For output	Push-In	PNP	G2RV-ST500, G2RV-ST501, G3RV-ST500	P2RVC-8ST-O-5-1
		NPN		P2RVC-8ST-O-5
	Screw	PNP	G2RV-ST700, G2RV-ST701, G3RV-ST700	P2RVC-8ST-O-7-1

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

New Value for Control Panels

Cat. No. Y218-E1

Omron's control panel solutions revolutionize control panel building. This catalog provides recommendations to help you resolve issues in control panel building, customer use case examples,and other content to alleviate any concerns you may have in adopting our solutions.

OMRON's wide variety of products compliant with the "Value Design for Panel" concept

Heater Condition Monitoring Device
K7TM

Cat. No. N229-E1

Insulation resistance monitoring device
K7GE

Cat. No. N226-E1

Panel condition monitoring device
K6PM

Cat. No. H232-E1

Wireless Pushbutton Switches
A2W

Cat. No. A268-E1

Motor Condition Monitoring Devices
K6CM

Cat. No. N220-E1

Switch Mode Power Supplies
S8VK-X

Cat. No. T211-E1

Digital Temperature Controllers
E5□D/NX-TC

Cat. No. H222-E1

Machine Automation Controller
NX1P

Cat. No. P115-E1

Unique I/O increases application quality and range
NX-series I/O System

Cat. No. R183-E1

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 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 ASIA PACIFIC PTE. LTD.
438B Alexandra Road, #08-01/02 Alexandra
Technopark, Singapore 119968
Tel: (65) 6835-3011 Fax: (65) 6835-2711

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:

CSM_2_1

Cat. No. J266-E1-03 0223 (0922)