Switch Mode Power Supplies
S8VK-S / S8VK-W / S8VK-X

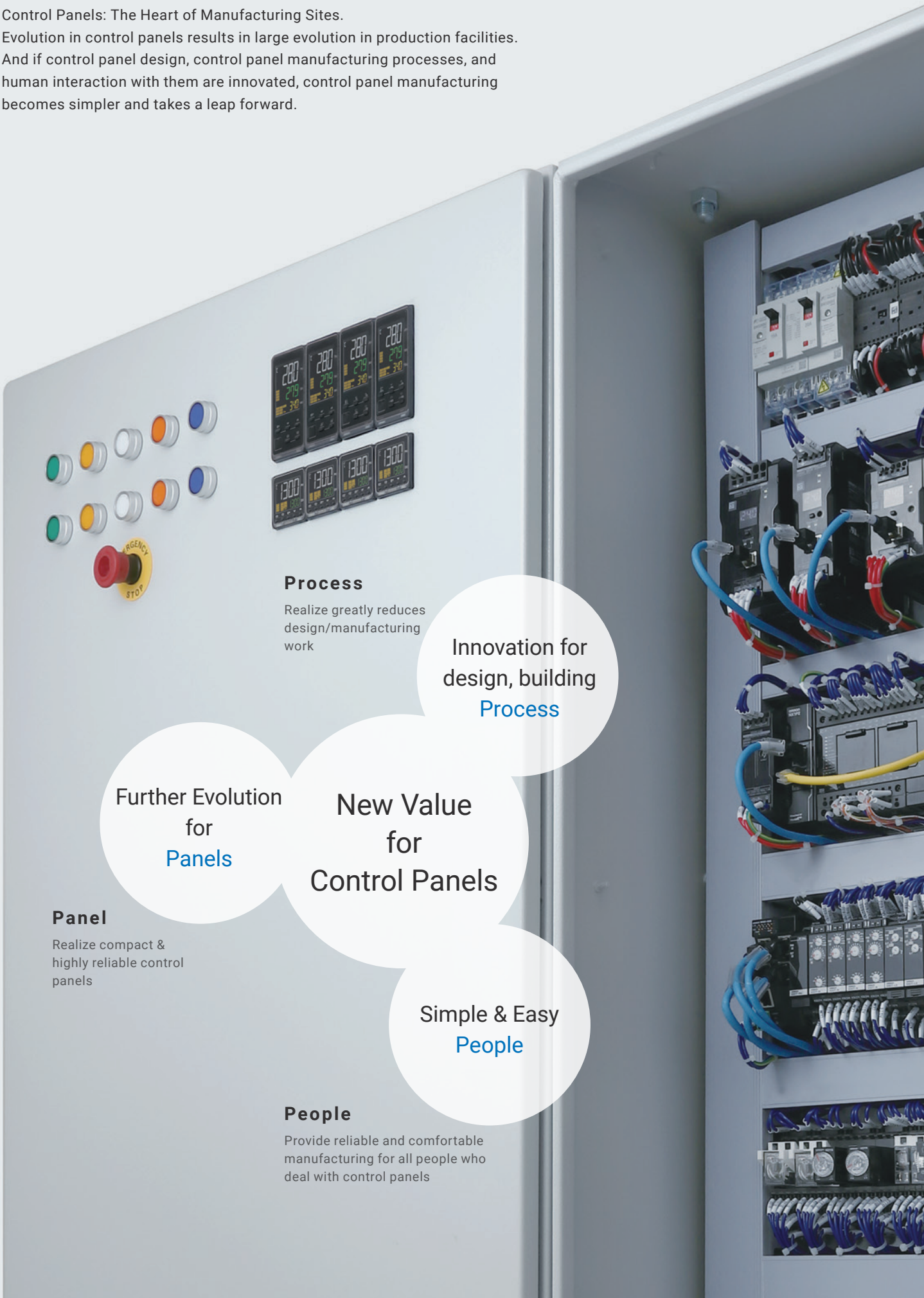
OMRON

New Value for Control Panels

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.



Process

Realize greatly reduces design/manufacturing work

Innovation for design, building Process

Further Evolution for Panels

New Value for Control Panels

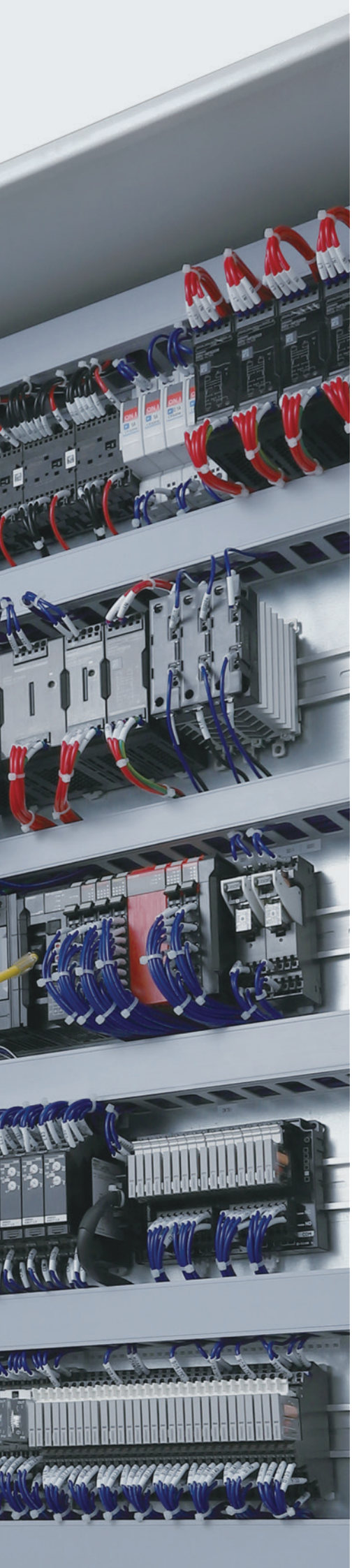
Panel

Realize compact & highly reliable control panels

Simple & Easy People

People

Provide reliable and comfortable manufacturing for all people who deal with control panels



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 to as Value Design) will create new value to our customer's control panels. Combining multiple products that share the Value Design concept will further increase the value provided to control panels.

Value Design for Panel

1 ..... Unified height & slim size[*1]

2 ..... Side-by-side mounting at (55°C) ambient temperature[*2]

3 ..... Unique Push-In Plus technology[*1]

4 ..... Front-in and front-release wiring

5 ..... eCAD library

6 ..... Certification for CE, UL, and CSA

*1. Expect for some products
*2. Side-by-side mounting is possible in the same model

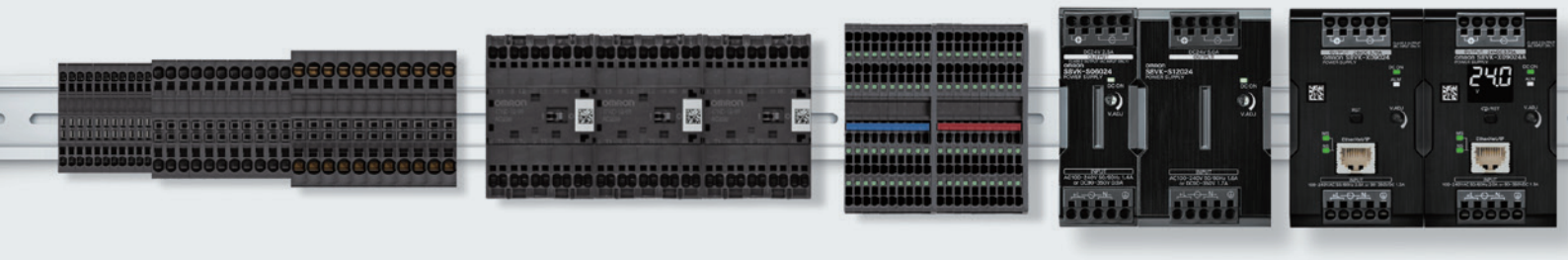
Overwhelming Line up That Innovates Your Control Panel Manufacturing

DIN Track Terminal Blocks

Magnetic Contactors

Common Terminal Blocks

Switch mode power supplies / Related equipment



I/O Relay Terminals

Timers

Motor Protective Relays

Power Monitors

Wireless Push button Switches

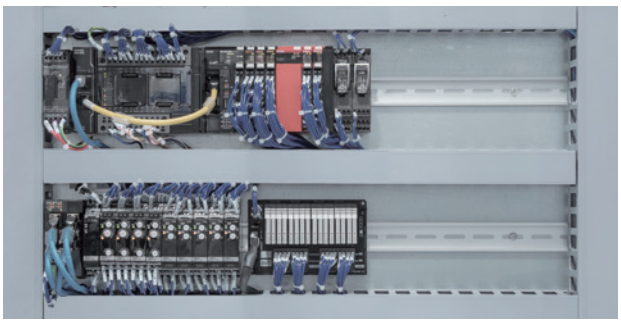
Condition Monitoring Devices

Temperature Controllers

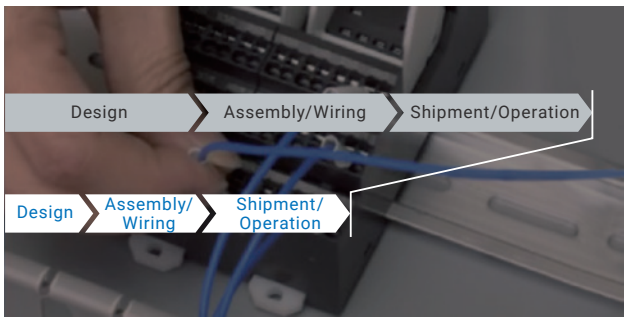
Switch mode power supplies / Related equipment

Manual Motor Starters

Our Value Design Products Deliver Innovation to Your Manufacturing Site



Saving Space and More-advanced Control Panels P6



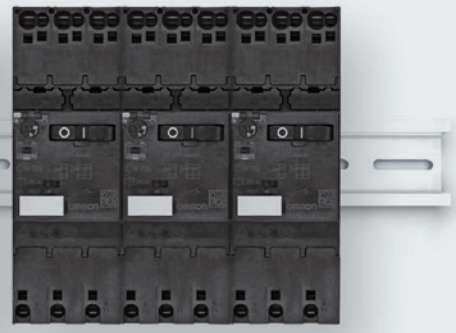
Shortening Lead Time for Control Panel Building P8

Relays, Solid-state Relays

Uninterruptible Power Supplys

Machine Automation Controllers

Safety Relays



Push Button Switches

Power Monitors

Temperature Controllers

Stable operation in a wide range of environments P10

Saving Space and More-advanced Control Panels

Harmonized design and side-by-side mounting help delivering more compact control panels with additional functionality.

Uniform height reduces dead space and enables control panel downsizing

The switch mode power supply, noise filter, and DC electronic circuit protector, all compliant with the “Value Design for Panel” concept, are made to be uniform in height to reduce dead space and enable control panel downsizing.

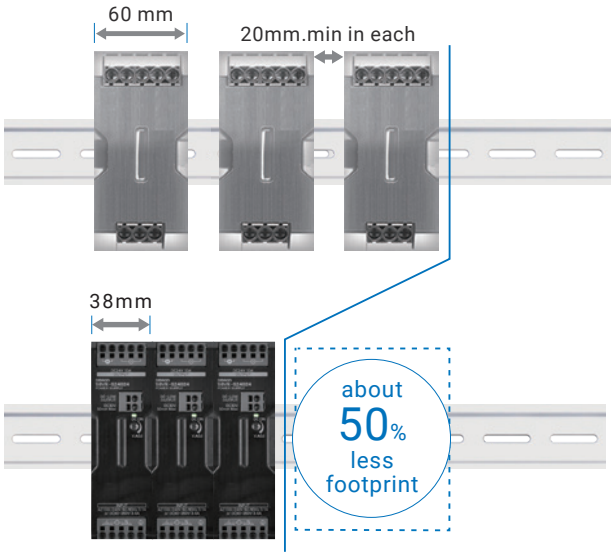
Switch mode power supplies and related equipment

Switch mode power supplies and related equipment

Side by side mounting at (55°C) ambient temperature [*1]

The S8VK Series can be mounted side by side for significant footprint reduction.

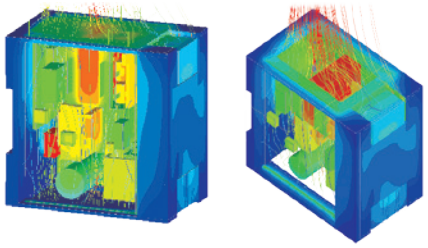
Previous OMRON's previous model 240W



Value Design for Panel S8VK-S 240W

Heat Control Technology that allows side-by-side mounting

The S8VK Series is designed with low loss circuit technology and was developed through extensive thermal simulations powered by Omron's unique modeling technology to control thermal distribution inside the product. Its design has also been optimized to enable side-by-side mounting.

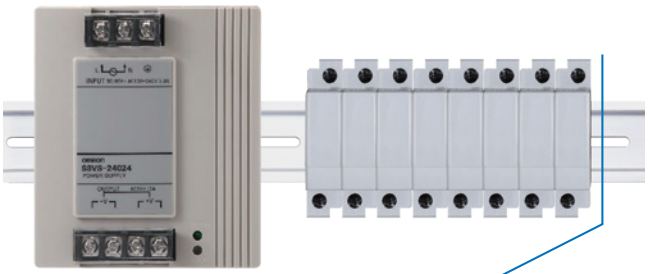


*1. Refer to the datasheet of each product for more information on use conditions.

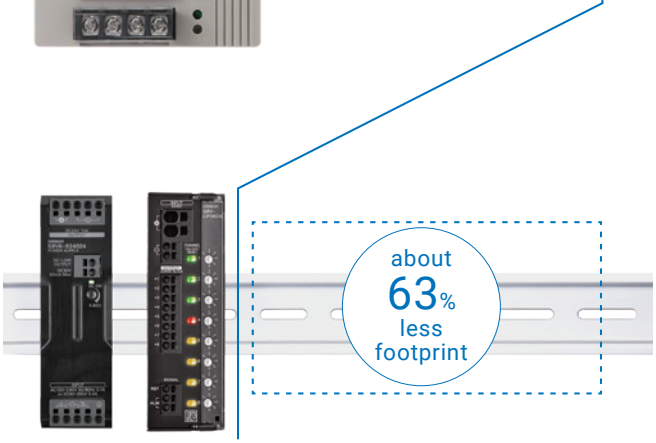
Downsizing technology makes room for control panel enhancements

You can save significant space by adopting not only power supplies but also peripheral devices that comply with the "Value Design for Panel" concept, leaving room for new functions to be added upon modification/renewal to improve product quality and production line safety.

Previous



Value Design for Panel



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

Safety Controllers

Condition Monitoring Devices

Networks

Shortening Lead Time for Control Panel Building

With its extensive product lineup and features such as electrical control CAD support and status visualization, the S8VK Series helps streamline processes in building equipment and control panels.

Design

Extensive array of products with different input specifications and capacities significantly reduces selection effort

The S8VK Series offers both models with single phase (200-240 V) input and those with the more popular high-capacity three-phase input, allowing you to significantly reduce selection effort: just select a product with the input voltage and capacity best suited for your purpose.

		60 W *2	120 W *3	240 W	480 W	960 W
S8VK-S Single-phase 100-240 V input, most popular for industrial use	Single-phase 100 V to 240 V					
S8VK-X Operation status display *1 Ethernet communication for IoT support	Single-phase 100 V to 240 V					
S8VK-WA Three-phase input popular in high-capacity (≥240 W) systems with voltage range (200-240 V) common in main power supplies in Japan. Can also be used as high-capacity power supply with single-phase input	Single-phase/ Three-phase 200 V to 240 V					
S8VK-WB Three-phase input with voltage range (380-480 V) popular in Europe	Three-phase 380 V to 480 V					

*1. ≥90 W models only *2. 30 W model also available for S8VK-S *3. 90 W model also available for S8VK-X

eCAD library provided for all models greatly reduces design work

OMRON provides the libraries for over 48,000 models*4, highest in the industry, to achieve the great reduction of works for electrical design drawing and data creation.

Up to 50%*5

Value Design for Panel

*4. In the case of EPLAN, based on OMRON's investigation as of 2020 December
*5. In the case of ZUKEN E3 series

eCAD Partners

By cooperating with various partners, we offer you more choices for your eCAD solutions.

E3.series is a product name of Zuken Inc. for their Electrical and Control Cable Design Solution.
EPLAN is a registered trademark of EPLAN Software & Service GmbH & Co. KG.

E3 series Zuken Inc.

EPLAN EPLAN

Assembly/Wiring

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

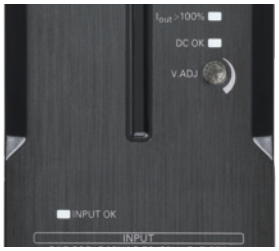
Push-In Plus technology completes by a single step

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

Shipment/Operation

LED indicators visualize input power supply / output current status, allowing for faster check-ups upon startup or during operation S8VK-WA/WB

S8VK-W power supplies notify users of their input voltage / load status via LED indicators and signal output. This clarifies failure status and required actions, allowing users to troubleshoot more quickly upon startup or during operation.

Status	Output current exceeds rated current	Output short-circuit	No input, or input voltage is lower than required minimum
LED Display			

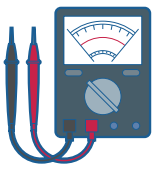
Operators can view output voltage / current values without measuring instruments, allowing for faster check-ups upon startup or during operation S8VK-X

S8VK-X power supplies display output voltage / current / maximum current values. This allows users to view their load status without testers or other measuring instruments, allowing them to troubleshoot more quickly upon startup or during operation.

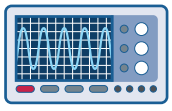
Previous

Each power supply must be checked individually for voltage and current with testers and other measuring instruments

Tester



Oscilloscope



Current Sensor

S8VK-X

Output voltage/current and maximum current values can be checked on-site without testers

Voltage

Current

Maximum current (Peak hold current)

Stable operation in a wide range of environments

With excellent vibration and environmental resistance, S8VK power supplies can be used in a wide range of environments.

Issues in stable control panel operation

With the global expansion of production sites, control panels are expected to operate stably in vastly different environments

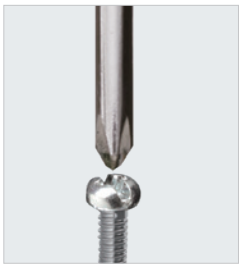
Control panels must comply with standards mandatory in their respective destinations

Excellent vibration resistance enables stable operation

The S8VK Series enables stable facility operation even in environments with significant vibration.

Previous

The screw is loosened and dropped by vibration...



Retightening is needed before export and shipment...

Value Design for Panel

No drop-off or retightening of screws

Vibration resistance enables safe transport as well as reliable operation

Robustly designed for 5G vibration resistance twice the resistance of conventional industrial power supplies. S8VK power supplies can be safely transported by ship or over rugged terrain.

Can operate in a wide range of temperatures, from areas of extreme cold to the hot location

Ambient operating temperature of -40°C to 70°C

Can operate in highly humid / dusty environments

Operating humidity of up to 95%; PCBs coated for higher protection from dust

Can operate in high altitude environments with low atmospheric pressure

Complies with safety standards even at 3,000 m altitude *1

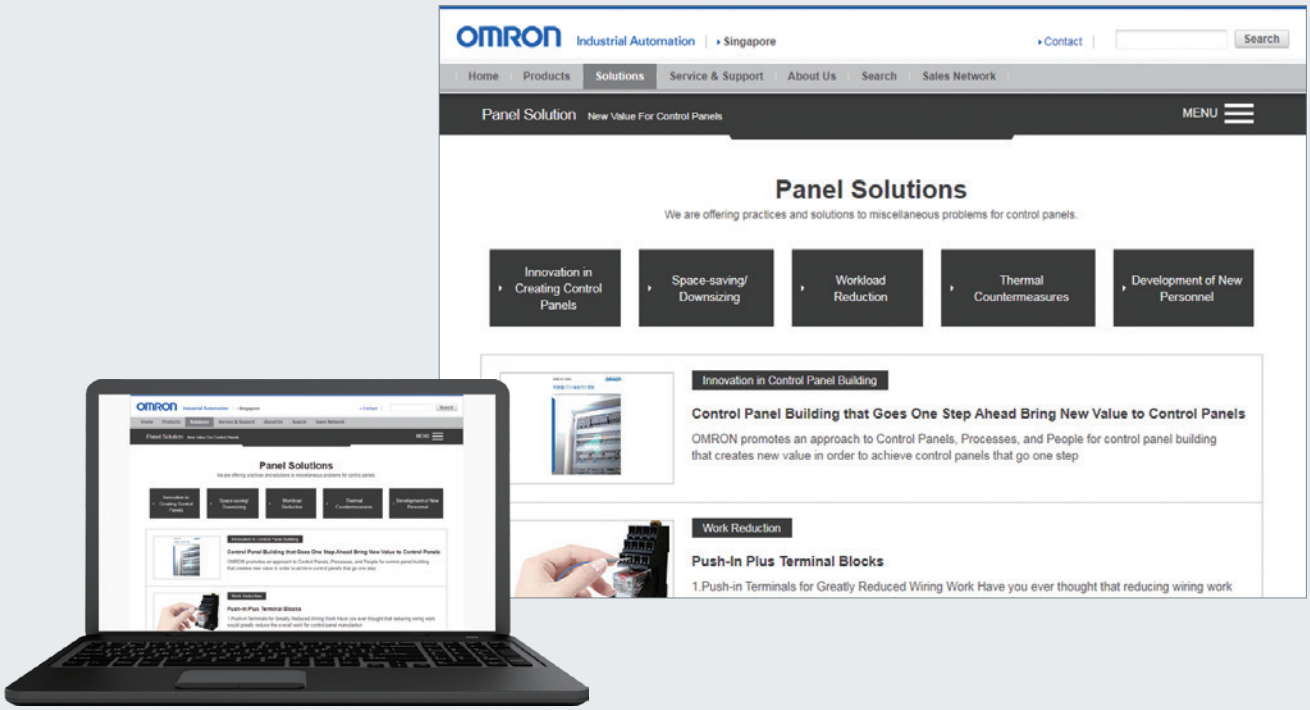
Supports global expansion of production sites through standard compliance and regulations

Complies with major standards such as UL and CSA as well as CE mark and other standards mandatory in specific regions for reliable use almost anywhere in the world. *1

*1. Refer to the datasheet of each product for information on supported standards.

Simplify and Accelerate Panel Designing with Panel Solution Site

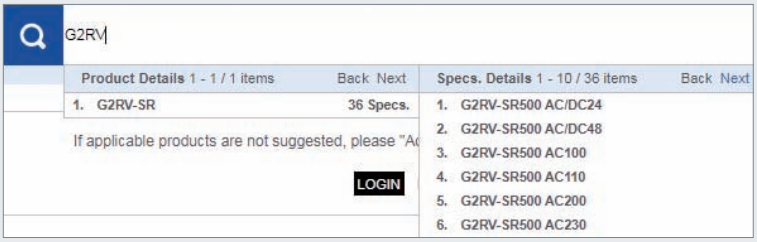
Panel Solution Site supports your control panel manufacturing through from selection to design.



You can select your best product by searching with models, categories and solutions

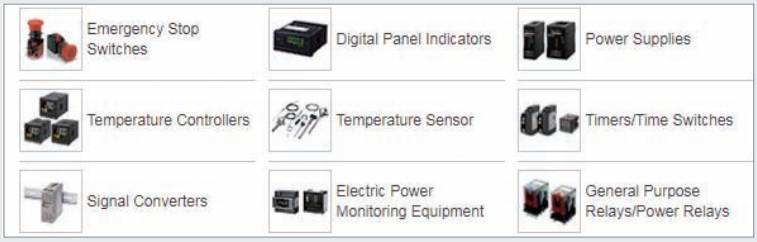
Select based on model

Entering a model name with a first few letters will show you a list of model candidates, where you can review those product specifications.



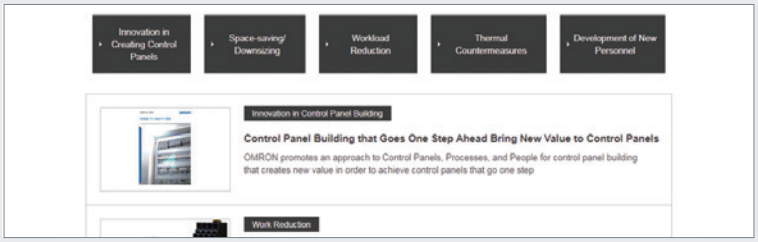
Select based on categories

Select a category, and you can narrow model selection by the specifications.



Select based on solutions

Various contents introduce you the solutions for your control panel manufacturing issues.



Customer's voice

Our Value Design products help solve issues with many customers.

Improved maintainability for equipment by saving space

Confectionery equipment manufacturer

[Issues] The control panel for existing oven line is engineered with a basic design of 20 years ago. The electrical control devices for the panel are large and so the control panel itself should be, as those devices also need much space for mounting with screws.
It was in a situation that many devices are mounted on the door of the control panel due to no space inside.

[Effect] I am fully convinced that a wide variety of OMRON lineups help downsize our control panels.
Replacing the existing devices mounted in the control panel with OMRON panel solution devices will save space by approx. 40%. We achieved zero-cabinet by utilizing those devices, and now the control panels are not conspicuous. Further, we have changed the connection method for input cables coming from the machine body to the Push-In Plus technology. This allows us to complete the wiring work in about one and a half hours, which used to take a half day before.

Needless of retightening allows wiring time reduction to one-fourth

Packaging machine manufacturer

[Issues] To achieve space-saving on machines, the needs for downsizing control panels has increased year by year.
The devices can be forcibly mounted in the machine when considering only design aspect. However, workability at the manufacturing process and maintainability at the after-sales service will need a hassle. We were thinking if the devices in the control panels would become more compact.

[Effect] For the conventional screw terminal, we provided the works relating to screws such as check and retightening to have three times, though, for the Push-In Plus technology, retightening is needless, resulting in the work reduction.
Considering it as a work time, it is reduced to about a quarter.

All the information is as of the time of interview, and those articles are quoted from the interview articles created by ITmedia Inc.

Selections

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

Single-phase 100 to 240 VAC Input S8VK-S

Power rating	Rated input voltage	Rated output voltage (DC)	Rated output current	Maximum boost current	Model number	Dimensions W x H x D (UNIT: mm)
30 W	100 to 240 VAC allowable range: 85 to 264 VAC or 90 to 350 VDC)	24 V	1.3 A	1.56 A	S8VK-S03024	32 x 90 x 86
60 W		24 V	2.5 A	3A	S8VK-S06024	32 x 90 x 86
120 W		24 V	5A	6A	S8VK-S12024	55 x 90 x 86
240 W		24 V	10A	15 A	S8VK-S24024	38 x 124 x 117.8
480 W		24 V	20 A	30 A	S8VK-S48024	60 x 124 x 117.8

Single-phase 100 to 240 VAC Input S8VK-X (With displays and communications)

Cat. No. T211-E1

With Indication Monitor

Power rating	Rated input voltage	Rated output voltage (DC)	Rated output current	Maximum boost current	Model number	Dimensions W x H x D (UNIT: mm)
90 W	100 to 240 VAC allowable range: 85 to 264 VAC or 90 to 350 VDC)	24 V	3.75 A	---	S8VK-X09024A-EIP	55 x 90 x 86
120 W		24 V	5A	6A	S8VK-X12024A-EIP	55 x 90 x 86
240 W		24 V	10A	15 A	S8VK-X24024A-EIP	38 x 124 x 117
480 W		24 V	20 A	30 A	S8VK-X48024A-EIP	60 x 124 x 117

Without Indication Monitor

Power rating	Rated input voltage	Rated output voltage (DC)	Rated output current	Maximum boost current	Model number	Dimensions W x H x D (UNIT: mm)
30 W	100 to 240 VAC (allowable range: 85 to 264 VAC, 90 to 350 VDC)	5 V	5 A *1	6A	S8VK-X03005-EIP	40 x 90 x 86
60 W		12 V	4.5 A *2	5.4 A	S8VK-X06012-EIP	40 x 90 x 86
		24 V	2.5 A	3A	S8VK-X06024-EIP	40 x 90 x 86
90 W		24 V	3.75 A	---	S8VK-X09024-EIP	55 x 90 x 86
120 W		24 V	5A	6A	S8VK-X12024-EIP	55 x 90 x 86
240 W		24 V	10A	15 A	S8VK-X24024-EIP	38 x 124 x 117
480 W		24 V	20 A	30 A	S8VK-X48024-EIP	60 x 124 x 117

*1. Output power is 25 W at rated output current.
*2. Output power is 54 W at rated output current.

Three-phase 200 to 240 VAC Input S8VK-WA

Power rating	Rated input voltage	Rated output voltage (VDC)	Rated output current	Maximum boost current	Model	Dimensions W x H x D (UNIT: mm)
240 W	Three-phase/single-phase 200 to 240 VAC (Allowable range: Three-phase/single-phase 170 to 264 VAC, 240 to 350 VDC)	24 V	10A	15 A	S8VK-WA24024	55 x 124 x 117
480 W		24 V	20 A	30 A	S8VK-WA48024	65 x 124 x 117
960 W		24 V	40 A	60 A	S8VK-WA96024	118 x 124 x 117

Three-phase 380 to 480 VAC Input S8VK-WB

Power rating	Rated input voltage	Rated output voltage (VDC)	Rated output current	Maximum boost current	Model	Dimensions W x H x D (UNIT: mm)
240 W	Three-phase 380 to 480 VAC (Allowable range: Three-phase 320 to 576 VAC, 450 to 810 VDC)	24 V	10A	15 A	S8VK-WB24024	55 x 124 x 117
480 W		24 V	20 A	30 A	S8VK-WB48024	65 x 124 x 117
960 W		24 V	40 A	60 A	S8VK-WB96024	118 x 124 x 117
240 W		48V	5A	7.5A	S8VK-WB24048	55 x 124 x 117
480 W		48V	10A	15A	S8VK-WB48048	65 x 124 x 117
960 W		48V	20A	30A	S8VK-WB96048	118 x 124 x 117

Noise Filter S8V-NF

Cat. No. T214-E1

Rated voltage	Rated current	Model number	Dimensions W x H x D (UNIT: mm)
250 VAC 250 VDC	3A	S8V-NFS203	32x90x86
	6A	S8V-NFS206	

DC Electronic Circuit Protector S8V-CP

Cat. No. T227-E1

Number of Outputs	UL Class 2 output	Model	Dimensions W x H x D (UNIT: mm)
4 outputs	No	S8V-CP0424	44.8 x 90 x 90.8
	Yes	S8V-CP0424S	
8 outputs	No	S8V-CP0824	42 x 127 x 118.1

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

Insulation resistance monitoring device
K7GE

Cat. No. N226-E1

Panel condition monitoring device
K6PM

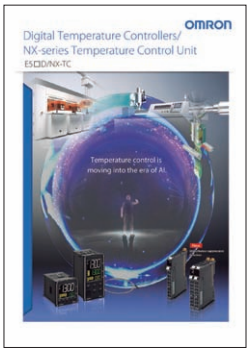
Cat. No. H232-E1

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

NX series I/O system

Cat. No. R183-E1

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

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