Ultra-Compact Interface Wiring System
XW2K series

Downsize your control panels

For building green control panels

Natural disasters caused by global warming and climate change are became global social issue, that drives over 150 countries and regions worldwide to take action toward decarbonization.Our goal is to reduce greenhouse gas (GHG) emissions toward half by through new ways of building control panels, that key figure of the manufacturing site.

Process

Realize greatly reduces design/ manufacturing work

Innovation for design, building Process

Further Evolution for Panels

Building sustainable control panels

Panel

Realize compact & highly reliable control panels

Creating green control panels

Simple & Easy People

Green

Reducing GHG emission of control panels to achieve carbon neutrality

People

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

Integrating green perspectives into Value Design

Value Design for Panel (Value Design) is the common concept shared across OMRON's in-panel product specifications to deliver new value to your control panels.
This Value Design also integrate environment consideration concept that enable earth and user-friendly control panel building.

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

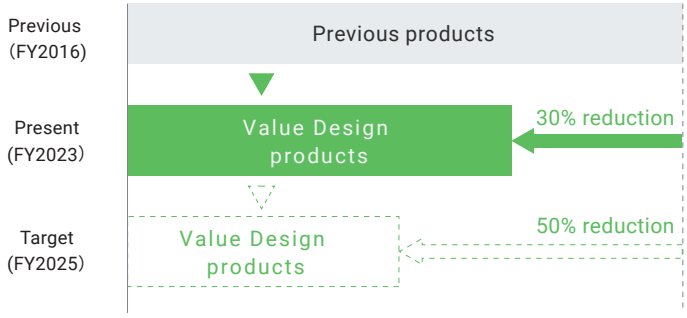
4 ..... Front-in and front-release wiring

5 ..... eCAD library

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

7 ..... Green features that save energy and resources*3

CFP of control panel (total GHG emissions)*4



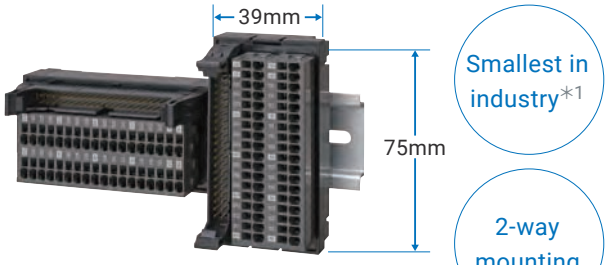
*1. Expect for some products
*2. Side-by-side mounting is possible in the same series
*3. Greener design compared to previous (2016) products
*4. CFP (carbon footprint) of control panel is a calculation result of refering the life cycle assessment method that based on international standards ISO14067 which define CO_2 quantitative conversion of the environmental burden at every stage, from manufacturing, transportation, use, and disposal of the control panel (product). According to OMRON investigation in May 2023.

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.

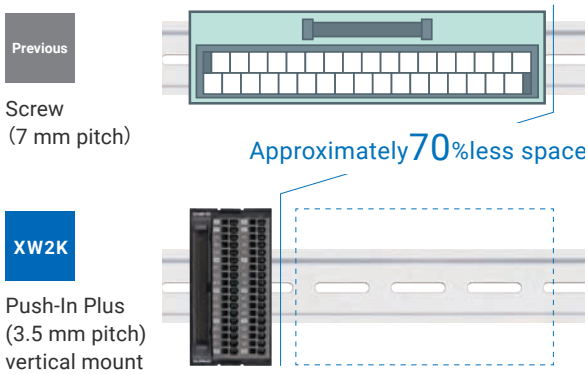
Smallest size in industry*1 and 2-way vertical/horizontal mounting feature allow for effective use of space

XW2K Value Design for Panel interface wiring system are the smallest in the industry and can be mounted both vertically and horizontally (2-way mounting feature). This reduces dead space, allowing you to downsize your control panel and enhance your equipment while maintaining its size.



Can be mounted vertically or horizontally, according to location

*1. According to OMRON investigation in March 2022



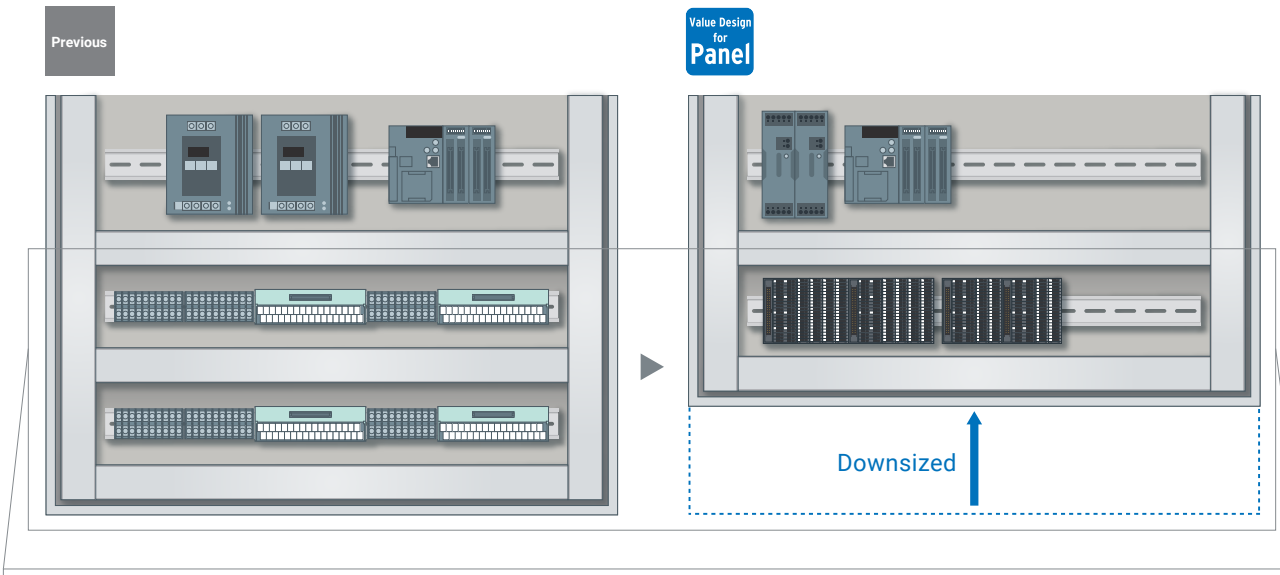
Not enough space in height direction

Horizontal mount: Save vertical space by installing the wiring system only

Not enough space in width direction

Vertical mount: Save horizontal space by installing in same row as other devices

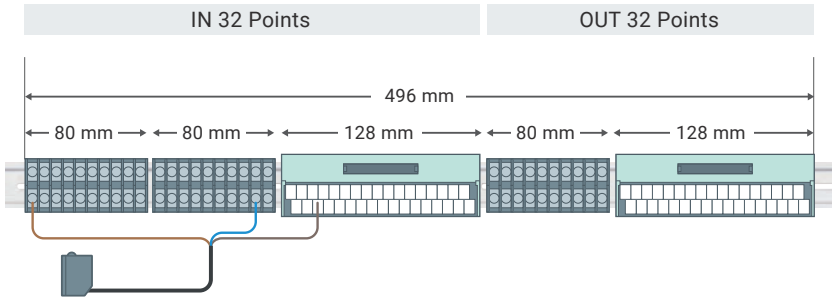
Space-saving example (switching from screw wiring system)



Previous

Screw-type wiring system
Requires significant horizontal space

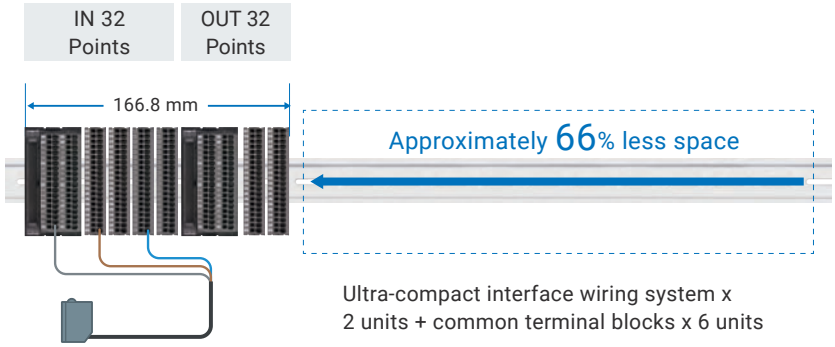
Note: 32 input points and 32 output points



XW2K

Ultra-compact interface wiring system

Flexibly minimize space consumption by combining with common terminal blocks

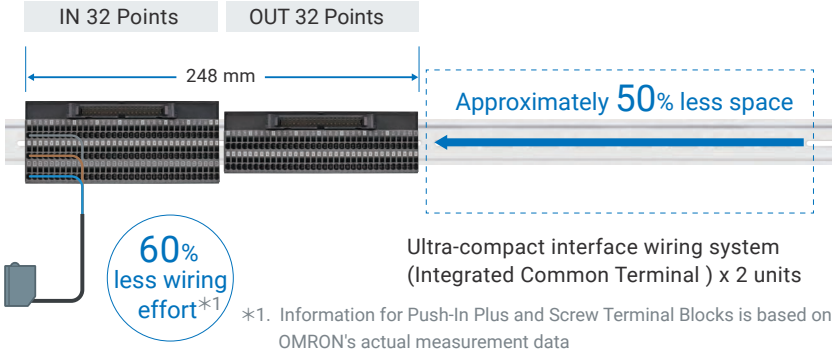


Ultra-compact interface wiring system x
2 units + common terminal blocks x 6 units

XW2K

Ultra-compact interface wiring system (Integrated common terminal type)

Save both space and wiring effort (Sensor wire does not need to be stripped long)

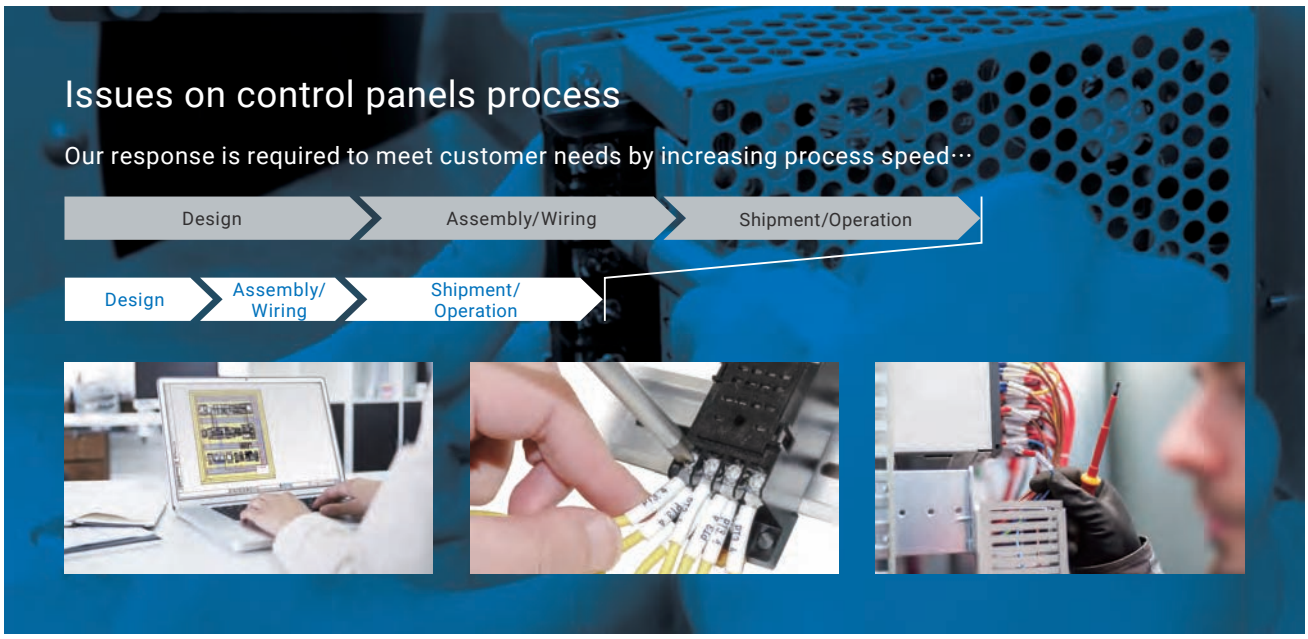


Ultra-compact interface wiring system
(Integrated Common Terminal) x 2 units

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

Shortening Lead Time for Control Panel Building

Web selection tool and unique product specifications, accelerating an entire process of control panel manufacturing.



Design

eCAD library provided for all models greatly reduces design work

OMRON provides the libraries for over 48,000 models*1, highest in the industry, to achieve the great reduction of works for electrical design drawing and data creation.

Up to 50%*2

Value Design for Panel

*1. In the case of EPLAN, based on OMRON's investigation as of 2020 December
*2. 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.

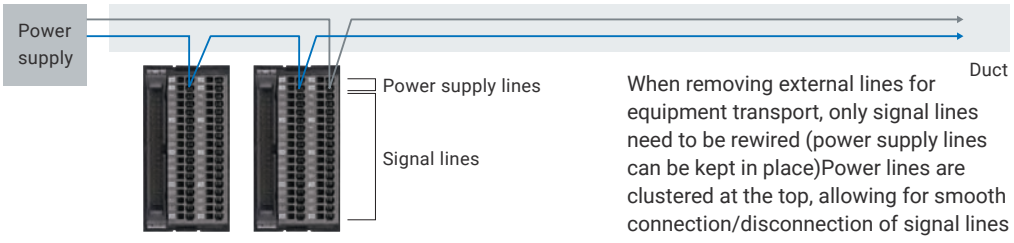
E3.series Zuken Inc.

EPLAN EPLAN

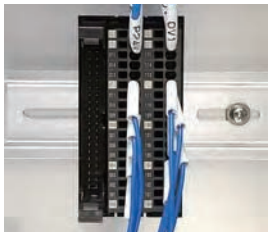
Assembly/Wiring

Reduce wiring by passing over power supply using common terminal provided for device power supply

Specialized board separates signal / power supply lines for easier wiring.

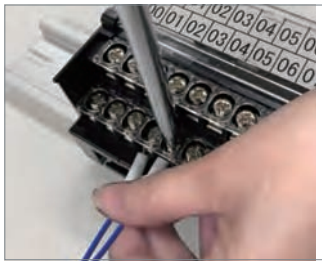


When removing external lines for equipment transport, only signal lines need to be rewired (power supply lines can be kept in place)Power lines are clustered at the top, allowing for smooth connection/disconnection of signal lines



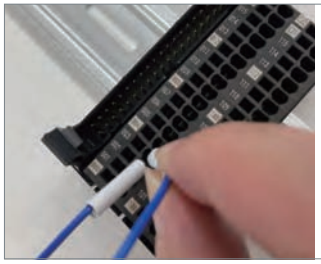
Reduction of approx. 60%*1

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



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

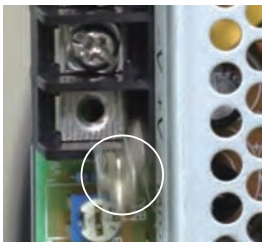
Value Design for Panel Push-In Plus technology completes by a single step

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

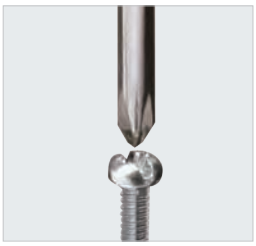
Shipment/Operation

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 and dropped by vibration…

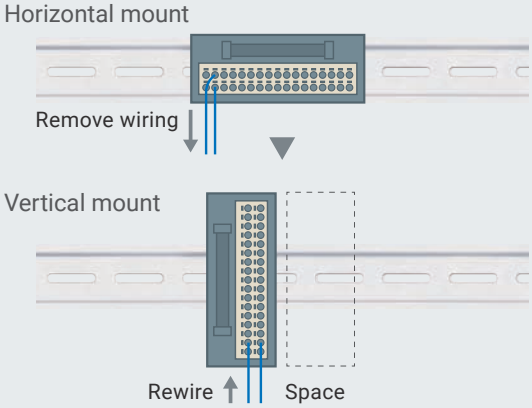


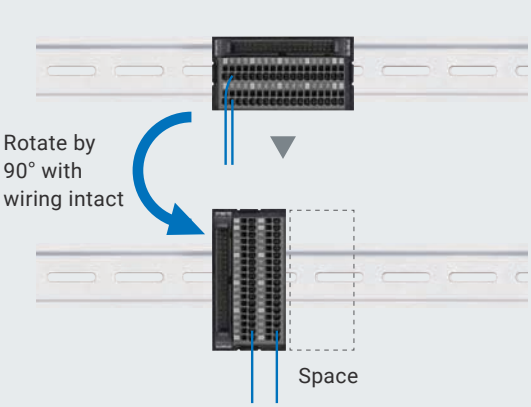
Retightening is needed before export and shipment…

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

Make space for additional I/O just by rotating XW2K

Space can be made for additional terminal blocks without rewiring a vertical mount terminal block.



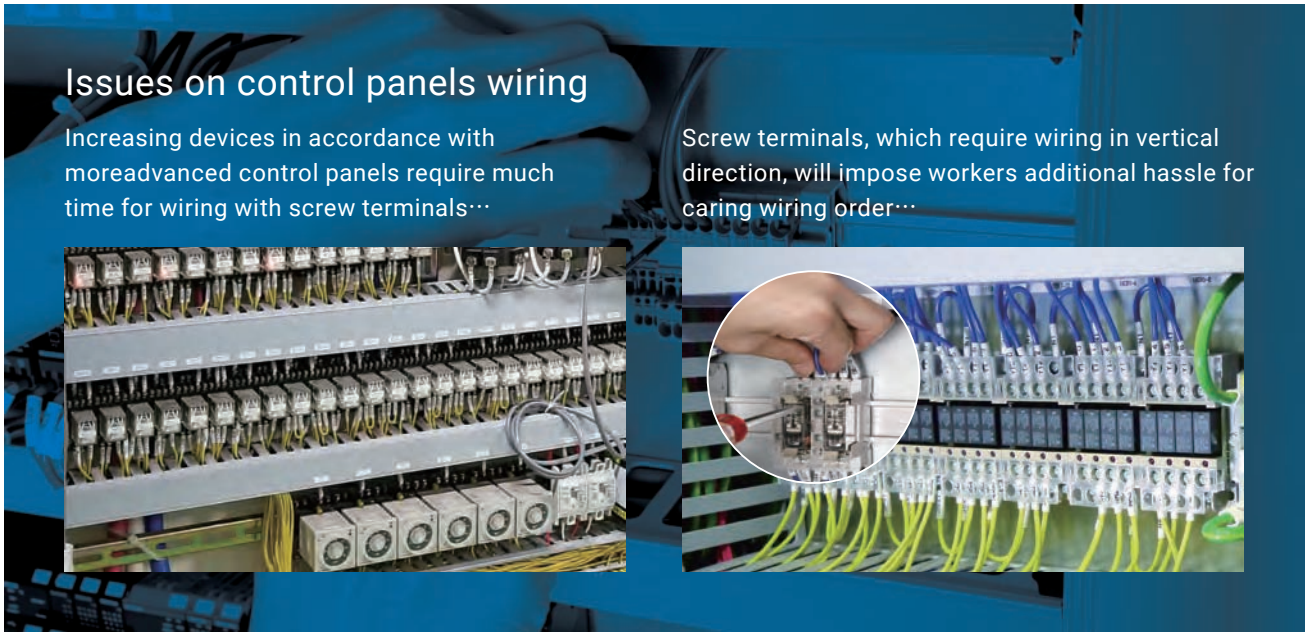


Previous Requires wiring removal and rewiring of vertical mount terminal block

XW2K A single model allows for 2-way mounting, eliminating need for rewiring

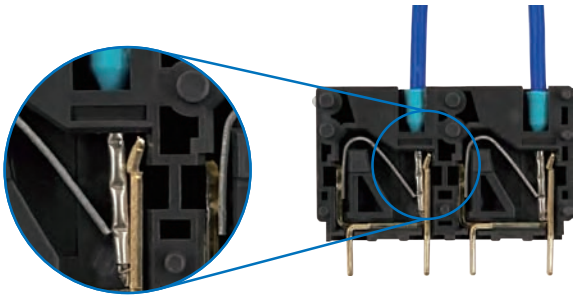
Reducing Wiring Work

Push-In Plus technology and Front-in / Front-release Wiring allow wiring work easier and speedier.



Push-In Plus technology with both 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 worker ngers.

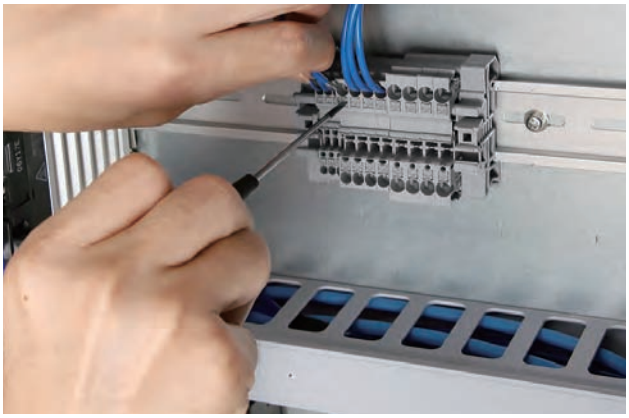


IEC standard ∗1	Push-In Plus ∗2	Screw ∗2
20 N min.	125 N	112 N

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 wiring with both hands for stranded wires with holding screwdriver



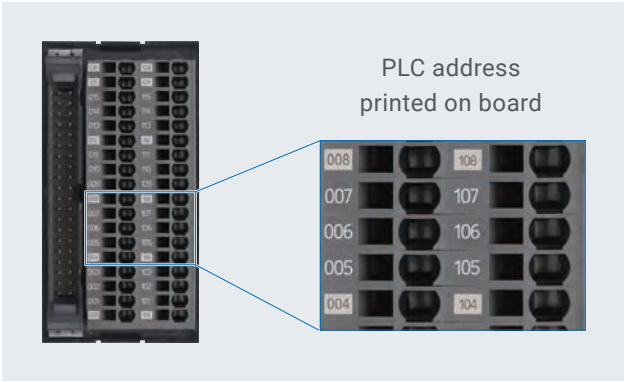
Previous One hand wiring with the other hand holding the screwdriver…

Value Design for Panel Wiring with both hands, because the screwdriver is held in the release hole

Terminals lined up in a way that is easy to understand, making wiring easier

Terminals, each labeled with its PLC address, are organized from left to right on a specialized board, enabling the same work efficiency for different PLCs (supports PLCs manufactured by OMRON, Mitsubishi Electric, Keyence, Yokogawa Electric, Hitachi Industrial Equipment Systems, and Fuji Electric).

Note. Caution must be exercised when connecting to Yokogawa Electric, Hitachi Industrial Equipment Systems, and Fuji Electric PLCs.
The PLC addresses are aligned from the left. However, the PLC addresses printed on the top surface of the terminal block are shown by the representative manufacturer.
・For Yokogawa Electric and Hitachi Industrial Equipment System PLCs ⇒ Address notation for Omron PLCs
・For Fuji Electric PLC ⇒ Address notation for Mitsubishi Electric PLC



Address numbers printed in white outline to enable easy wiring and counting

Wiring system can be mounted/removed without tools, making wiring easier even when installed in places that are difficult to access

Terminal blocks mounted on the side of the panel were often difficult to wire. XW2K can be removed, without tools, and easily wired while held in your hand.

Selections

Ultra-Compact Interface Wiring System (For PLC Connection)

Applicable PLCs	Circuit	I/O Points	Model	Dimension W×H×D (mm)	
				Vertical mount	Horizontal mount
OMRON, Yokogawa Electric, Hitachi Industrial Equipment Systems	Circuit pattern A	32 Points	XW2K-40G-O32A	39×75×40.8	75×39×40.8
	Circuit pattern B		XW2K-40G-O32B		
	Circuit pattern C		XW2K-40G-O32C		
Mitsubishi Electric, Fuji Electric	Mixed I/O		XW2K-40G-M32		
KEYENCE	Mixed I/O		XW2K-34G-K32		

Ultra-Compact Interface Wiring System (For PLC Connection・Integrated Common Terminal Type)

Applicable PLCs	Circuit	I/O Points	Model	Dimension W×H×D (mm)	
				Vertical mount	Horizontal mount
OMRON	Input	16 Points	XW2K-20G-O16A-IN	52.7×75×40.8	75×52.7×40.8
	Output		XW2K-20G-O16B-OUT	39×75×40.8	75×39×40.8
OMRON, Yokogawa Electric, Hitachi Industrial Equipment Systems	Input(Circuit pattern A)	32 Points	XW2K-40G-O32A-IN	52.7×124×40.8	124×52.7×40.8
	Input(Circuit pattern C)		XW2K-40G-O32C-IN		
	Output(Circuit pattern B)		XW2K-40G-O32B-OUT	39×124×40.8	124×39×40.8
	Output(Circuit pattern C)		XW2K-40G-O32C-OUT		
Mitsubishi Electric, Fuji Electric	Input		XW2K-40G-M32-IN	52.7×124×40.8	124×52.7×40.8
	Output		XW2K-40G-M32-OUT	39×124×40.8	124×39×40.8
KEYENCE	Input		XW2K-34G-K32-IN	52.7×124×40.8	124×52.7×40.8
	Output		XW2K-34G-K32-OUT	39×124×40.8	124×39×40.8

Ultra-Compact Interface Wiring System (General-Purpose)

Circuit	Connector poles	Model	Dimension W×H×D (mm)	
			Vertical mount	Horizontal mount
Straight wiring(1:1 Circuit)	20 poles	XW2K-20G-T	39×56×40.8	56×39×40.8
	34 poles	XW2K-34G-T	39×75×40.8	75×39×40.8
	40 poles	XW2K-40G-T	39×75×40.8	75×39×40.8
	50 poles	XW2K-50G-T	39×92.5×40.8	92.5×39×40.8

Ultra-Compact Common Terminal Blocks (For Sensor Power Supply)

Connector poles	Application	Model	Dimension W×H×D (mm)
20 poles	For + common	XW2K-COM20P	14.8×75×29.4
	For - common	XW2K-COM20N	
	+/- mix	XW2K-COM20	

Note. It is a small model that is ideal for sensor power supply, but it can also be used for uses other than sensor power supply (e.g. AC circuit).

■Applicable PLCs
・OMRON：CS, CJ and NX series　・Mitsubishi Electric：MELSEC L, Q and iQ-R series
・KEYENCE：KV-1000, 3000, 5000, 5500, 7000, 8000 and Nano series　・Yokogawa Electric：FA-M3 series
・Hitachi Industrial Equipment Systems：EH-150/EHV series　・Fuji Electric：MICREX-SX series
Note: For compliant PLC unit models and other information, refer to the XW2K Ultra-Compact Interface wiring system Datasheet (catalog no. G152-E1).

Wiring models other than Push-In Plus models also available

Circuit / Wiring method	For PLC Connection	For PLC Connection Integrated Common Terminal Type	Units for General-purpose
Push-In Plus	XW2K 	XW2K 	XW2K 
Phillips screws (with M3 Screws)	XW2R-J 	—	XW2D 
Slotted screws (rise up)	XW2R-E 	—	XW2R-E 
e-CON	—	XW2R-N 	—

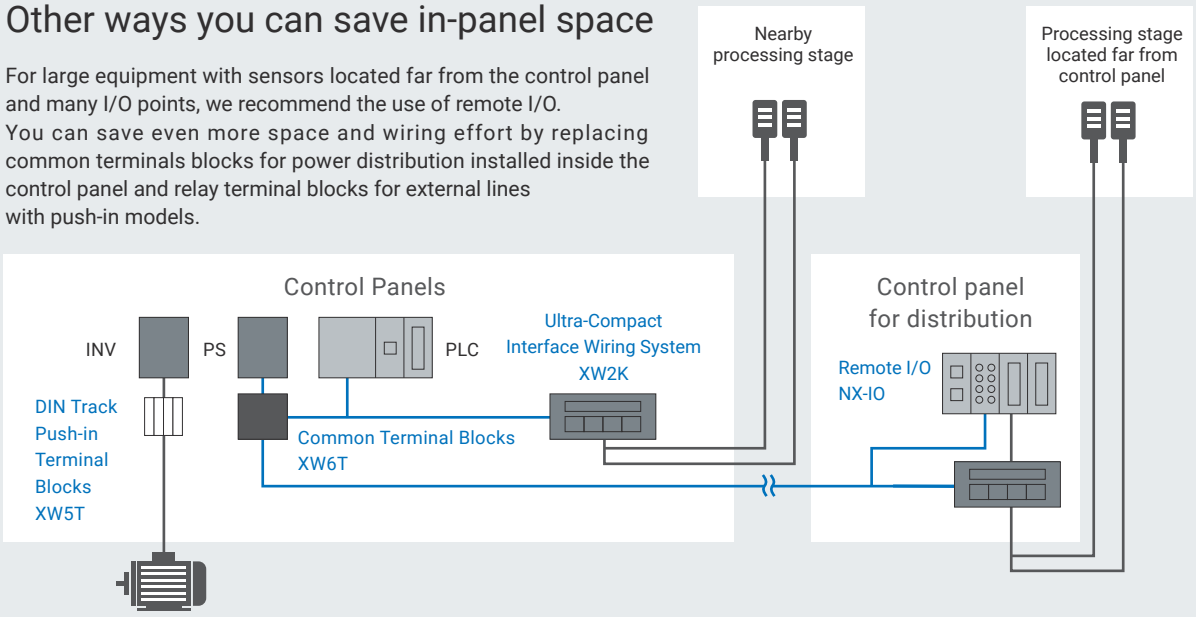
+

Connecting Cables for wiring system Conversion Units (Shielded)
XW2Z


Connecting Cables for wiring system Conversion Units (Unshielded)
XW2Z-L


Other ways you can save in-panel space

For large equipment with sensors located far from the control panel and many I/O points, we recommend the use of remote I/O.
You can save even more space and wiring effort by replacing common terminals blocks for power distribution installed inside the control panel and relay terminal blocks for external lines with push-in models.



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

Common Terminal Blocks
XW6T

Cat. No.G139-E1

DIN Track Push-in Terminal Blocks
XW5T

Cat. No.G123-E1

NXseries I/O system

Cat. No.R183-E1

Creating green control panels

Cat. No. Y235-E1

Natural disasters caused by global warming and climate change are a global social issue, driving over 150 countries and regions worldwide to take action toward decarbonization.Our goal is to cut greenhouse gas (GHG) emissions by half through new ways of building control panels, which constitute the core of the manufacturing site.

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

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