OMRON

Introduction Guide for Control Panel Solutions



This guide will eliminate your doubt and concerns about the introduction of our control panel solutions for the first time.







Should I use special crimp terminals?

Use special crimp terminals: ferrules.

How do I process?

We provide a simple explanation.

Refer to page 8.

How should I check the continuity? You can check with a tester. Refer to page 12.

Won't wires come out easily? Wires are held firmly in place. Refer to page 13.



Do we need to prepare something extra for screwless terminal block wiring?

You need special terminals and crimp tools.

The following parts and tools are required.





Special crimp tool

Ferrules





Special flat-blade screw driver

Special label

<Recommended> Ferrules, special crimp tool, and special flat-blade screw driver Refer to page 14 and 15.



Special label is also available.

Use it on a top or side surface of components.



• Example of the label on the top surface



Example of the label on the side surface





Can we use the same nameplate for screw terminal blocks?

If it is a commercially available one, you can use it.

Commercially available nameplates for screw terminal blocks with 9.5-mm width and 0.5-mm thickness can be used.



Components supporting the special label



DIN Track Terminal Blocks XW5T



Slim I/O Relays G2RV-SR/G3RV-SR



Common Sockets (for MY/H3Y(N)-B) PYF-PU(-L)



Common Sockets (for G2R-S/H3RN-B/K7L-B) P2RF-PU



I/O Relay Terminals G70V



Mounting with maintaining gaps takes work...

Components of the same series can be mounted side by side.



Safety standard certification with side-by-side mounting by OMRON's unique thermal control technology

Thermal simulation methods with low-loss circuit and OMRON's unique thermal modeling knowhow control the heat distribution inside components.

By optimizing the design, side-by-side mounting was achieved.



Side-by-side Mounting Help Reduce Installation Area



* Comparison to previous OMRON Power Supply

Components that previously were not possible now can be mounted side by side.

Solid-state Timers H3DT Measuring and Monitoring Relays K8DT



Solid State Relays for Heaters G3PJ

Side-by-side mounting is possible even at 100% load.



Is the duct pitch same?

The duct pitch can be reduced compared to screw terminal blocks.

Front-in and front-release wiring enables same work efficiency when reducing the space between ducts and components.



Please refer to catalogs and read manuals carefully to ensure proper and safe use of the products.



Should I use special crimp terminals? How do I process?

Please use special crimp terminals:ferrules.



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Correct processing



What is a ferrule?

It is a standardized product designed to downsize the size of terminal blocks. Sector DOD1

Ferrules are smaller than standard pin crimp terminals and were designed to reduce the size of terminal blocks. Terminals are for screwless terminal blocks and are connected to terminal blocks as a bundle of multiple conductors, the same as round terminals and forked terminals.

Standardized terminals

They are certified by DIN standards (DIN46228-4) and UL standards (UL486F), and are used in the world wide.



Where should I insert wires?

Insert a wire into a round hole.

Push-In Plus Terminal Blocks let you finish the wirings just by inserting wires. Disconnecting is also easy with release holes.



Release hole (square hole) Terminal insertion hole (round hole) You can insert solid wires and stranded wires



STEP2



STEP3

Connection method

Ferrules and solid wires require only 1 step.



Just insert the wire until it strikes the back.

Connection confirmation

After the connection, pull the wire lightly and make sure it does not come off.





Stranded wires require 3 steps to complete wiring



Press the special flat-blade screwdriver diagonally into the release hole.

Disconnecting wire

Leave the special flat-blade screwdriver pressed into the release hole and insert the wire into the terminal hole.

Remove the special flat-blade screwdriver from the release hole.



Press the special flat-blade screwdriver diagonally into the release hole.







Remove the special flat-blade screwdriver from the release hole.

How do I do cross-over wiring?

Cross-over wiring is easy with short bars and double holes.

Screw terminal blocks Connect two wires to one terminal. Easier cross-over wiring than screw terminal blocks For models with possible cross-over wiring, either they are equipped with double holes or short bars are available. NEW Insert one wire into one terminal insertion hole. Short bars also reduce wiring. Short bar Double holes With using short bars, The Terminal Block has two cross-over wiring is possible terminals each with the same between adjacent Relays. function. One can be used for cross-over wiring. Cross-over wiring Cross-over wiring using wires and short bars. with wires only

Less space for earthing also reduces wiring.

Slim Push-In Plus Terminal Blocks reduce both space and wiring.



Continuity checks

How should I check the continuity?

You can check with a tester.

Easy continuity checks by a tester using release holes.



No need for terminal covers enhances safety.

Screw terminal blocks Terminal cover is required to prevent electric shock.

The exposed conductive parts require terminal covers to prevent electric shock.





Terminal covers are not required.

Hands do not touch the conductive part, therefore it is safe even without terminal cover.



Won't wires come out easily?

Once inserted, wires are held firmly in place.

The advanced mechanism design technology and manufacturing technology produced a spring that ensures better workability and reliability.





* Information for Push-In Plus Terminal Blocks is based on OMRON's actual measurement value for the XW2R.

1N indicates it can withstand 0.1 kg pulling force.

That means that Push-In Plus Terminal Blocks can withstand approx. 12 kg weight.

Less strength deterioration allows for long-term reliable use.

The tensile strength hardly changes after 30 years

worth of the testing.

* Based on OMRON accelerated test. This does not guarantee the product performance.

Push-In Plus Terminal Blocks after accelerated test

UL standard value



No need for retightening after shipping and operation



Table of applicable wires for control panel solution products and recommended products

					Product category/Model									
				Slim I/O Relays		Sockets for Relays	Sockets for Relays with Forcibly Guided Contacts	DIN Track Terminal Blocks						
					G2RV-SR500 G3RV-SR500		PYF-□-PU P2RF-□-PU	P7SA	XW5□-P1.5-□	XW5□-P2.5-□	XW5□-P4.0-□			
						Applicable terminal/applicable wire diameter								
					All terminals			All terminals	All terminals	All terminals	All terminals	All terminals		
Recommended ferrules and applicable wires					Wire	MIN	0.25	0.25	0.5	0.14	0.14	0.25		
Wire diameter Recommended ferrules			diameter mm ²	MAX	1.5	1.25	1.5	1.25	2.5	4				
		length	Phoenix	Weidmuller	Wago	Wire	MIN	24	24	20	26	26	24	
mm²	AWG	(onic min)	Contact	weidindilei	mago	AWG	MAX	16	16	16	18	14	12	
0.14	26	10	AI0,14-8	H0.14/12	-					Yes	Yes			
0.25 24		10	AI0,25-8	H0.25/12	216-301		Yes		Yes		Yes	Yes		
	24	12	AI0,25-10	-	-		Yes		Yes		Yes	Yes		
		14	AI0,25-12	-	-								Yes	
0.34	22	10	AI0,34-8	H0.34/12	216-302		Yes		Yes		Yes	Yes		
		12	AI0,34-10	-	-		Yes		Yes		Yes	Yes		
		14	AI0,34-12	-	-								Yes	
		10	AI0,5-8	H0.5/14	216-201		Yes		Yes	Yes	Yes	Yes		
0.5	20	12	AI0,5-10	H0.5/16	216-241		Yes		Yes	Yes	Yes	Yes		
		14	AI0,5-12	-	216-261								Yes	
		10	AI0,75-8	H0.75/14	216-202		Yes		Yes	Yes	Yes	Yes		
0.75	18	12	AI0,75-10	H0.75/16	216-242		Yes		Yes	Yes	Yes	Yes		
		14	AI0,75-12	H0.75/18	216-262								Yes	
		10	AI1-8	H1.0/14	216-203		Yes		Yes	Yes	Yes	Yes		
1/1.25	18/17	12	AI1-10	H1.0/16	216-243		Yes		Yes	Yes	Yes	Yes		
		14	Al1-12	H1.0/18	216-263								Yes	
		10	Al1,5-8	H1.5/14	216-204		Yes			Yes		Yes		
1.25/1.5	17/16	12	Al1,5-10	H1.5/16	216-244		Yes		Yes	Yes		Yes		
		14	AI1,5-12	H1.5/18D	216-264								Yes	
2.5	14	12	AI2,5-10	H2.5/16DS	216-246							Yes		
		14	AI2,5-12	H2.5/19D	216-266								Yes	
3.5/4	12	14	AI4-12	H4.0/20D	216-267							Yes		
6	10	15	Al6-12	H6.0/20	216-208*									

Recommended crimp tool

Phoenix Contact	Weidmuller	Wago
CRIMPFOX6 CRIMPFOX6T-F CRIMPFOX10S	PZ6 roto	Variocrimp4 * Use Variocrimp16

							Pro	duct categ	ory/Model				
Power Supplies									Timers, Digital Temperature Controllers, Publicton Switches, Solid State Relays for Heaters, Component Protective Components			rs	
Common to S8VK-S03024 S8VK-S /S06024			S8VK-S12024		S8VK-S24024		S8VK-S48024		Common to S8VK-S24024/ S48024	H3DT,E5□C-B, A22N-P□,M22N-P□, G3PJ,K8DT	KM-N2	KM-N2 KM-N3	
				eter									
PE	Input side	Output side	Input side	Output side	Input side	Output side	Input side	Output side	Undervoltage detection output	All terminals (input terminals for G3PJ)	pulse output terminals for Power Monitor / RS-485	Power supply terminals	pulse output terminals for Power Monitor / RS-485
2	0.34	0.5	0.34	0.75	0.5	2	0.75	3.5	0.25	0.25	0.25	0.5	0.25
2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	6	2.5	1.5	2.5	1.5	1.5
14	22	20	22	18	20	14	18	12	24	24	24	20	24
	14	14	14 14 14		14		14	10	14	16	14	16	16
									Yes	Yes	Yes		Yes
									Yes	Yes	Yes		Yes
	Yes		Yes						Yes	Yes	Yes		Yes
	Yes		Yes						Yes	Yes	Yes		Yes
	Yes	Yes	Yes		Yes				Yes	Yes	Yes	Yes	Yes
	Yes	Yes	Yes		Yes				Yes	Yes	Yes	Yes	Yes
	Yes	Yes	Yes	Yes	Yes		Yes		Yes	Yes	Yes	Yes	Yes
	Yes	Yes	Yes	Yes	Yes		Yes		Yes	Yes	Yes	Yes	Yes
	Yes	Yes	Yes	Yes	Yes		Yes		Yes	Yes	Yes	Yes	Yes
	Yes	Yes	Yes	Yes	Yes		Yes		Yes	Yes	Yes	Yes	Yes
	Yes	Yes	Yes	Yes	Yes		Yes		Yes	Yes	Yes	Yes	Yes
	Yes	Yes	Yes	Yes	Yes		Yes		Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes		Yes		
								Yes					
								Yes					

Recommended flat-blade screwdriver

Phoenix Contact	Weidmuller	Wago	Wera	Wiha	Facom
SZS 0,4×2,5 SZF 0-0,4×2,5 *	SDI 0.4×2.5×75	210-719	ESD0,40×2.5	0.4×2.5×75 302	AEF.2,5×75

* You can order Phenix Contact SZF 0-0.4×2.5 Screwdrivers with OMRON model number XW4Z-00B.

Product Catalogs for Control Panels

Switch Mode

Power Supplies

Sockets, Slim I/O Relays, I/O Relay Terminals Push-In Plus Terminal Block Series PYF-PU, P2RF-PU, G2RV-SR/G3RV-SR, G70V P7SA-PU







Cat. No. N210

Solid-state Timers H3DT

Solid-state Timers

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Digital Temperature Controllers E5_C series

Digital Temperature Co

OTTROP

Solid State Relays for Heaters G3PJ



Cat. No. J211



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