

## Sealed Connector Wiring Block

XW3A

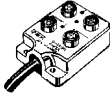
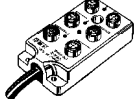
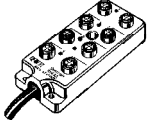
### Consolidate Sensor Inputs in a Water-resistant Terminal Block

- Sealed to meet IP67 water resistance requirements
- Available in 4-, 6- and 8-point models
- Accepts sensors terminated with M12 connectors
- Pre-wired with 5 m (16.4 feet) cable

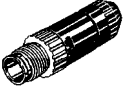

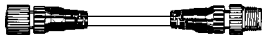


## Ordering Information





### ■ SEALED CONNECTOR WIRING BLOCKS

Input points	Appearance	Sensor input type	Part number
4 points		2-wire DC	XW3A-P442-G11
		3-wire DC (PNP)	XW3A-P443-G11
		3-wire DC (NPN)	XW3A-P445-G11
		4-wire DC (NPN) with self-diagnostic function	XW3A-P448-G11R
6 points		2-wire DC	XW3A-P642-G11
		3-wire DC (PNP)	XW3A-P643-G11
		3-wire DC (NPN)	XW3A-P645-G11
8 points		2-wire DC	XW3A-P842-G11
		3-wire DC (PNP)	XW3A-P843-G11
		3-wire DC (NPN)	XW3A-P845-G11

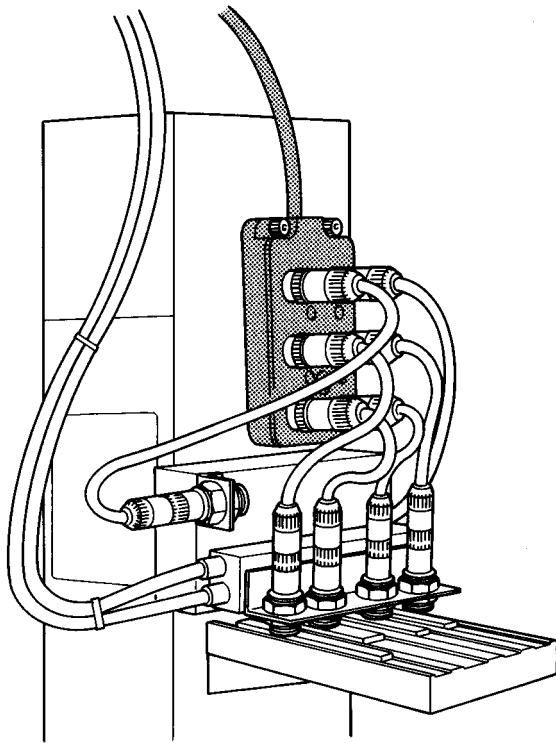
### ■ CONNECTOR CORDSETS

Description	Appearance	Specification	Cable length	Part number
Connector plug assembly, screw-on style		5 to 6 mm dia. cable strands	---	XS2G-D4S1
		4 to 5 mm dia. cable strands	---	XS2G-D4S3
		3 to 4 mm dia. cable strands	---	XS2G-D4S5
Cable with connector and plug		4 conductor cable	1 m (3.28 ft)	XS2H-D421-C80-A
Extension cable with double-ended, molded M12 connectors, socket and plug		4 conductor cable	2 m (6.56 ft)	XS2W-D421-D81-A
			5 m (16.40 ft)	XS2W-D421-G81-A

■ ACCESSORIES

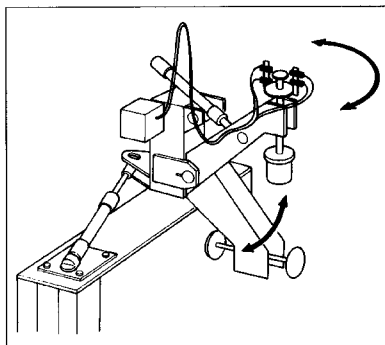
Description	Appearance	Specification	Part number
Water-resistant covers for empty connector sockets		For M12 female screw thread	<b>XS2Z-12</b>
		For M12 male screw thread	<b>XS2Z-11</b>
Dust cover for connectors		For M12 female screw thread	<b>XS2Z-13</b>
		For M12 male screw thread	<b>XS2Z-15</b>

Application Examples

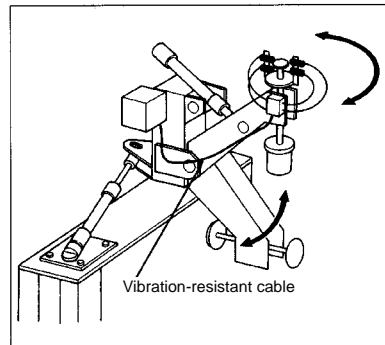


XW3A sealed wiring blocks simplify and organize the installation of connector cordsets. Just one cable carries signals for up to 8 sensor inputs back to a controller from any manufacturer. The XW3A blocks maintain the IP67 water resistance rating at all connection points.

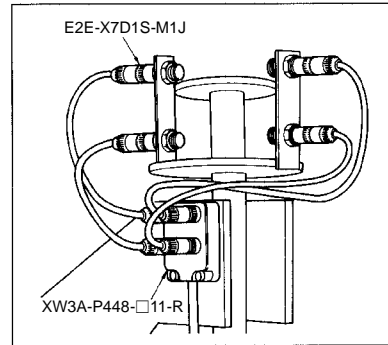
Special models are available for high vibration environments and for sensors with diagnostic outputs.



Conventional sensor installation.



The XW3A Sealed Connector Wiring Block consolidates sensor wiring.



Peripheral wiring with vibration-resistant XW3A and sensors with self-diagnostic function.

# Specifications

## ■ CHARACTERISTICS

<b>Rated current</b>	4 points: 0.6 A 6 points: 0.4 A 8 points: 0.3 A
<b>Rated voltage</b>	10 to 30 VDC
<b>Contact resistance</b>	40 mΩ max. with 100 mA max. at 20 mV max. (See Note 1)
<b>Insulation resistance</b>	100 MΩ min. at 500 VDC
<b>Dielectric strength</b>	500 VAC for 1 min with a current leakage of 1 mA max. (See Note 2)
<b>Enclosure rating</b>	IP67 (IEC529)
<b>Electrical protection</b>	Class 0
<b>Cable retention force</b>	98 N (10 kgf)/15 s
<b>Withstand insertion times</b>	200 times
<b>Ambient temperature</b>	Operating: -25°C to 70°C (-13°F to 158°F)

- Note: 1. The resistance indicated is the contact resistance of the connector.  
2. The voltage indicated is the dielectric strength of the connector.

## ■ MATERIALS/FINISH

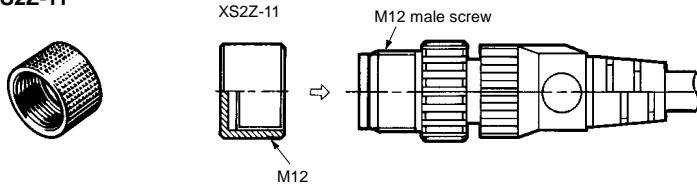
Item	Parts	Materials/Processing
Connector	Bracket	Brass plated with nickel
	Contact block	Light gray polyamide resin (UL94V-0)
	Contact	Brass and nickel plated with 0.4-μm-thick gold
Cable	Cable	Light gray sheath. Conductor size: 0.34 mm
Case	Case	2-wire model: Light gray PBT resin (UL94V-0) 3-wire model: Dark gray PBT resin (UL94V-0)
	Bushing	Rubber
	PCB	Glass-epoxy board (FCL-GE4)
	Sealing	Epoxy resin

- Note: The XW3A-P448-□11-R uses a vibration-resistant cable with a black sheath and a conductor size of 0.3 mm.

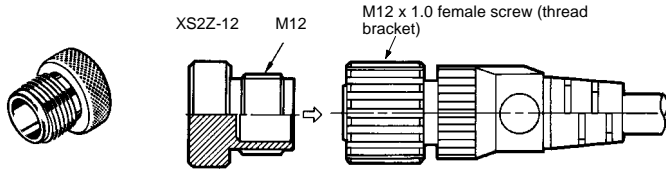
■ CONNECTOR COVERS

Water-resistant Covers

XS2Z-11



XS2Z-12

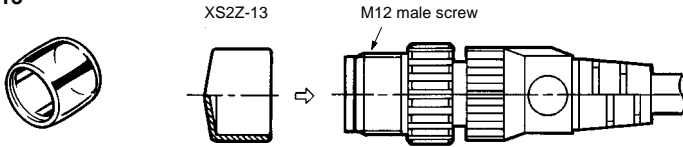


The water-resistant cover ensures IP67. When mounting the water-resistant cover to a connector, be sure to apply a torque range between 0.39 and 0.49 N • m (4 and 5 kgf • cm) to tighten the water-resistant cover.

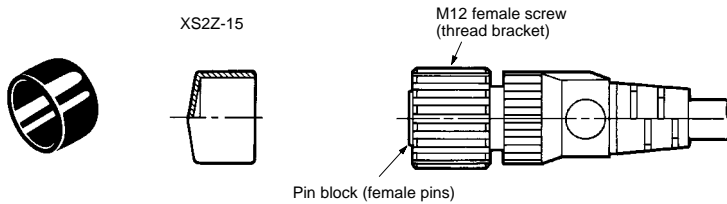
Part number	Material	Suitable connector	
		Model	Mounting portion
XS2Z-11	White aluminum	XS2G/XS2H/XS2M/XS2R	M12 male screw
XS2Z-12		XS2C/XS2R/XS2F/XS2P	M12 female screw (thread bracket)

Dust Covers

XS2Z-13



XS2Z-15



The dust cover is for dust prevention and does not ensure IP67. When mounting the dust cover to a connector, be sure to press the dust cover onto the connector until the connector is fully inserted into the dust cover.

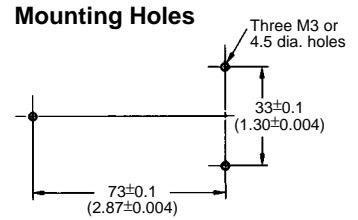
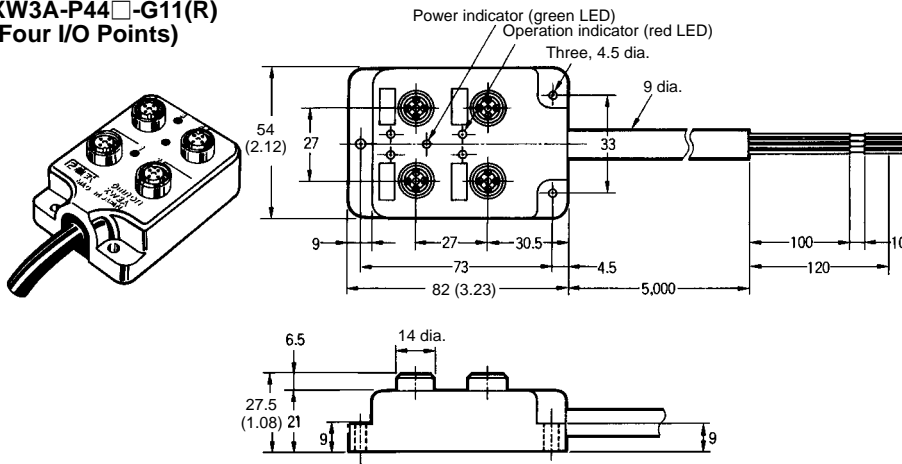
Part number	Material	Suitable connector	
		Model	Mounting portion
XS2Z-13	Transparent polyvinyl chloride	XS2G/XS2H/XS2M/XS2R	M12 male screw
XS2Z-15	Red polyvinyl chloride	XS2C/XS2R/XS2F/XS2P	M12 female screw (mounting bracket)

# Dimensions

Unit: mm (inch)

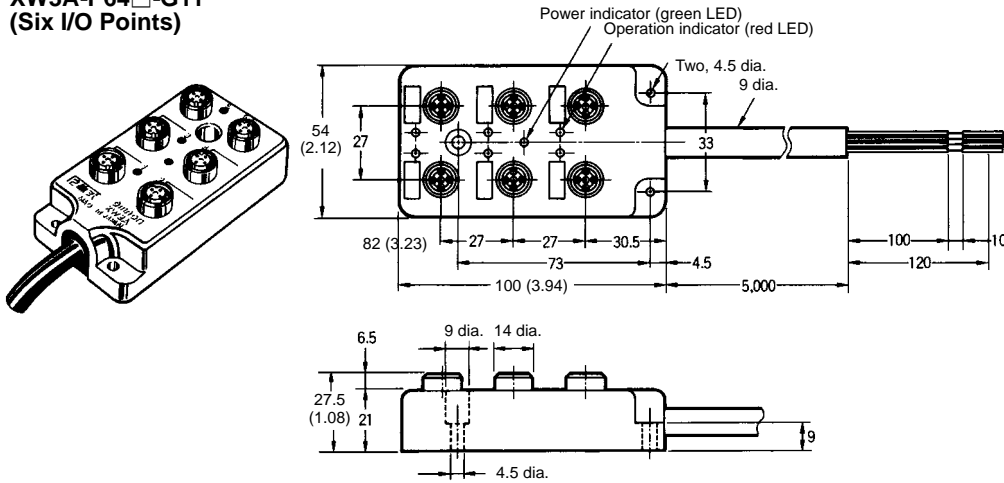
## SEALED CONNECTOR WIRING BLOCKS

**XW3A-P44□-G11(R)**  
(Four I/O Points)

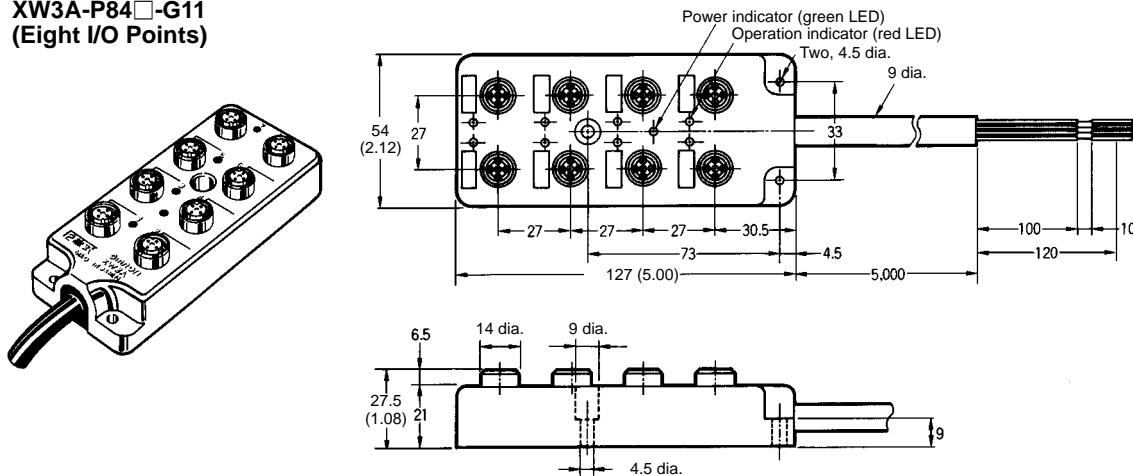


Note: Mounting dimensions do not change with the number of input points.

**XW3A-P64□-G11**  
(Six I/O Points)

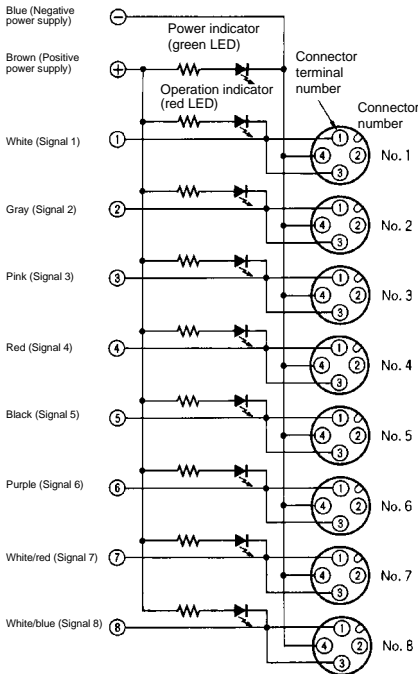


**XW3A-P84□-G11**  
(Eight I/O Points)

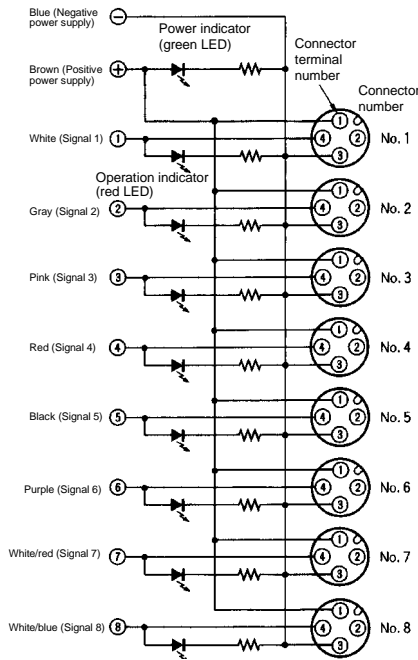


■ TERMINAL ARRANGEMENT

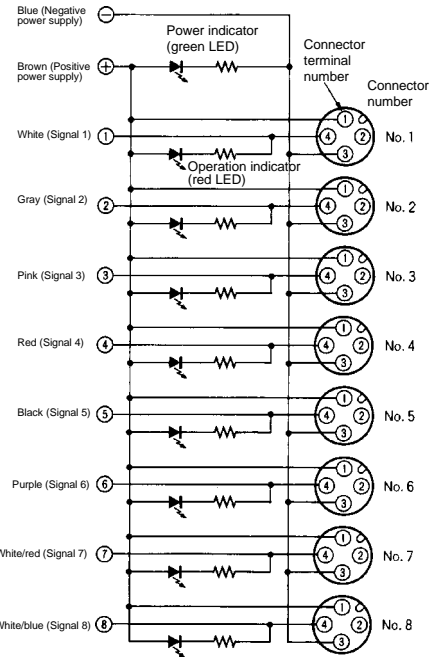
**XW3A-P□42-G11 for 2-wire DC (With or Without Polarity)**



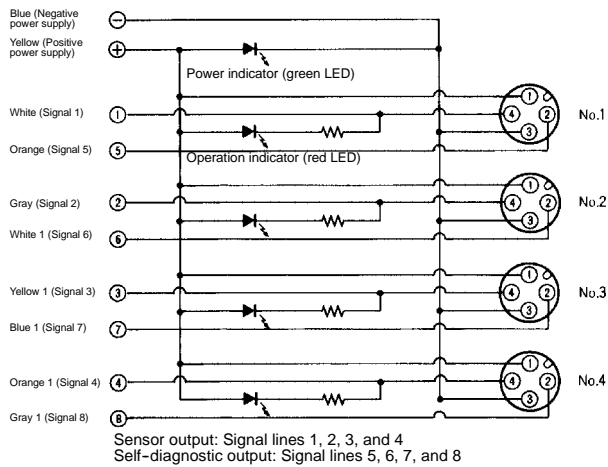
**XW3A-P□43-G11 for 3-wire DC (PNP)**



**XW3A-P□45-G11 for 3-wire DC (NPN) and 2-wire DC (Without Polarity)**



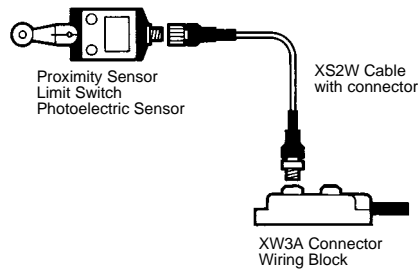
**XW3A-P448-G11R for 4-wire DC (NPN) with self-diagnostics**



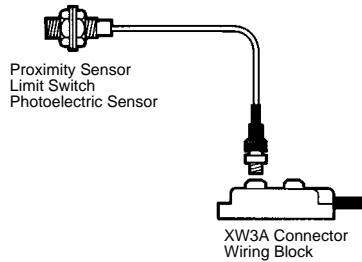
- Note: 1. The above wiring diagrams are for eight-point input use.  
 2. Figures in parentheses indicate conductor numbers.  
 3. The expression "white/red" means white and red stripes.

## INPUT DEVICE CONNECTION TYPES

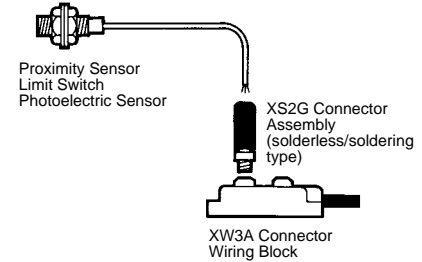
### Direct Connection Type



### Pre-wired Type Terminated in M12 Connector



### Pre-wired Type with Optional Screw-on Connector



## INPUT DEVICES USING SENSOR I/O CONNECTORS

Connector Terminal Box	Cable	Input devices using Sensor I/O Connectors		
XW3A-P□42-G11	---	2-wire DC Proximity Sensor	Pre-wired type with M12 connector	E2E-X3D1-M1GJ, E2E-X3D1-M1J-T, E2E-X7D1-M1GJ, E2E-X7D1-M1J-T E2E-X10D1-M1GJ, E2E-X10D1-M1J-T  E2E-X8MD1-M1GJ E2E-X14MD1-M1GJ E2E-X20MD1-M1GJ
			Direct connection type	E2E-X3D1-M1G, E2E-X7D1-M1G E2E-X10D1-M1G  E2E-X8MD1-M1G, E2E-X14MD1-M1G E2E-X20MD1-M1G
	XS2W-D42□-□81-A	Limit Switch	Pre-wired type with M12 connector	WL□-□DK1EJ□ (See Note 1) D4C-□0□□-DK1EJ□ (See Note 2)
			Direct connection type	WL□-□K13 (See Note 1) D4E-□□10N (See Note 2) D4CC-□□□□ (See Note 2)
XW3A-P□43-G11	XS2W-D42□-□81-A	3-wire DC Proximity Sensor (PNP)	Direct connection type	E2E-X2F1-M1, E2E-X5F1-M1 E2E-X10F1-M1  E2E-X5MF1-M1, E2E-X10MF1-M1 E2E-X18MF1-M1
	XS2W-D42□-□81-A	Photoelectric Sensor (PNP)	Direct connection type	E3S-AT36, E3S-AT86, E3S-AD36, E3S-AD37, E3S-AD38, E3S-AD86, E3S-AD87, E3S-AD88, E3S-AR36, and E3S-AR86
XW3A-P□45-G11	---	2-wire DC Proximity Sensor	Pre-wired type with M12 connector	E2E-X3D1-M1J-T E2E-X7D1-M1J-T E2E-X10D1-M1J-T
			Direct connection type	E2E-X2E1-M1, E2E-X5E1-M1 E2E-X10E1-M1  E2E-X5ME1-M1, E2E-X10ME1-M1 E2E-X18ME1-M1
	XS2W-D42□-□81-A	Photoelectric Sensor (NPN)	Direct connection type	E3S-AT16, E3S-AT66, E3S-AD16, E3S-AD17, E3S-AD18, E3S-AD66, E3S-AD67, E3S-AD68, E3S-AR16, and E3S-AR66
			Pre-wired type with M12 connector	WL□-□DK1EJ□ (See Note 1) D4C-□0□□-DK1EJ□ (See Note 2)
	XS2W-D42□-□81-A	Limit Switch	Direct connection type	WL□-□K13 (See Note 1) D4E-□□10N (See Note 2)

- Note: 1. Any of these models is available provided that only its SPST-NO contact is used.  
 2. Any of these models is available provided that it uses an NO connection.  
 3. Use the XS2G Connector assembly in combination with a pre-wired input device.

## ■ ATTACHING THE XS2G CONNECTOR TO PRE-WIRED INPUT DEVICE

Connector Wiring Block	Input devices and connector terminal number					
	3-wire DC (NPN) 1: +, 3: -, 4: output	2-wire DC (with polarity) 1: +, 4: -	2-wire DC (with polarity) 3: -, 4: +	2-wire DC (with no polarity) 3, 4	Limit switch	3-wire DC (PNP) 1: +, 3: -, 4: output
XW3A-P□42-G11	No	Yes	No	Yes	Yes	No
XW3A-P□43-G11	No	No	No	No	No	Yes
XW3A-P□45-G11	Yes	No	Yes	Yes	Yes	No

## ■ CONNECTOR WIRING BLOCKS FOR INPUT DEVICES WITH SENSOR I/O CONNECTORS

Input device			Cable	Connector Wiring Block		
Type	Connection method	Model				
Photoelectric Sensor	NPN	Direct connection type	E3S-AT16/66, E3S-AR16/66, and E3S-AD16/17/18/66/67/68	XS2W-D42□-□81-A	XW3A-P□45-G11 XW3A-P□43-G11	
	PNP					E3S-AT36/86, E3S-AR36/86, and E3S-AD36/37/38/86/87/88
Proximity Sensor	2-wire DC	Pre-wired type with M12 connector	E2E-X□D1-M1J-T	---	XW3A-P□45-G11 XW3A-P□42-G11	
			E2E-X□D1-M1GJ and E2E-X□D1-M1J-T			
			E2E-X□MD1-M1GJ			
			E2EQ-X□D1-M1GJ			
	3-wire DC	NPN	Direct connection type	E2E-X□D1-M1G	XS2W-D42□-□81-A	XW3A-P□45-G11 XW3A-P□43-G11
				E2E-X□MD1-M1G		
				E2E-X□E1-M1		
				E2E-X□ME1-M1		
				E2E-X□F1-M1		
				E2E-X□MF1-M1		
Limit Switch		Pre-wired type with M12 connector	WL□-□DK1EJ□ (See Note 1) and D4C-□0□□-DK1EJ□ (See Note 2)	---	XW3A-P□42-G11 XW3A-P□45-G11	
			Direct connection type			WL□-□K13 (See Note 1) D4E-□□10N (See Note 2) D4CC-□□□□ (See Note 2)

Note: 1. Any of these models is available provided that only its SPST-NO contact is used.

2. Any of these models is available provided that it uses an NO connection.

## Precautions

### ■ CONNECTOR CONNECTION OR DISCONNECTION

Before using a Sensor or Limit Switch, check this datasheet and be sure that the Sensor or Limit Switch can be connected.

Be sure to turn off the power supplied to the XW3A before Connector connection or disconnection.

Do not touch the engaged side of any Connector with a wet hand.

If a Connector is wet with water, wipe the Connector and be sure that the connector is completely dry.

Be sure that there is no metal plate or power on the engaged side of any Connector.

### ■ CABLE CONNECTION

Be sure to wire the cable correctly according to the wiring diagram so that the blue wire will be connected to the negative power supply terminal and the brown wire will be connected to the positive power supply terminal.

If there is any wiring mistake, the load will not operate or the operation indicator will not light.

Be sure to connect a load to the signal lines to operate the Sensor.

### ■ APPLICABLE CONNECTORS

Applicable Connectors are the XS2G (assembly type), XS2H (molded type), and XS2W (molded type).

After a Connector is engaged, tighten the Connector securely with a mounting bracket.

The XS2B (assembly type) and XS2E (molded type) cannot be used.

Be sure to put the XS2Z-12 Waterproof Cover or XS2Z-15 Dust Cover on any Connector that is not used.

### ■ POWER SUPPLY AND OPERATION INDICATORS

When power is supplied, the green power indicator will be lit. When the Sensors connected to the XW3A are in operation, the corresponding operation indicators will be lit.

Only DC Sensors can be connected to the XW3A. Do not connect AC Sensors. Such DC Sensors are two-wire (with light-gray casings) or three-wire DC (with dark-gray casings) models, both of which need negative common connection.

NOTE: DIMENSIONS SHOWN ARE IN MILLIMETERS. To convert millimeters to inches divide by 25.4.

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