XW3B

Series Includes New Lightweight, Low-profile Connector Terminal Boxes for Use Outside of Control Boxes to Centralize Sensor I/O Connectors with Reduced Labor and Greater Environmental Resistance

■ Tough model with a significantly lower profile satisfies IP67.

■ Available for Photoelectric Sensors, Proximity Sensors, and Limit Switches with Sensor I/O Connectors (M12). Increased rated current, with added ground terminal, and compatible with valves and solenoids.

■ Incorporates power and operation indicators.

■ Uses a single mounting method regardless of the number of ports, which ensures easy system expansion.
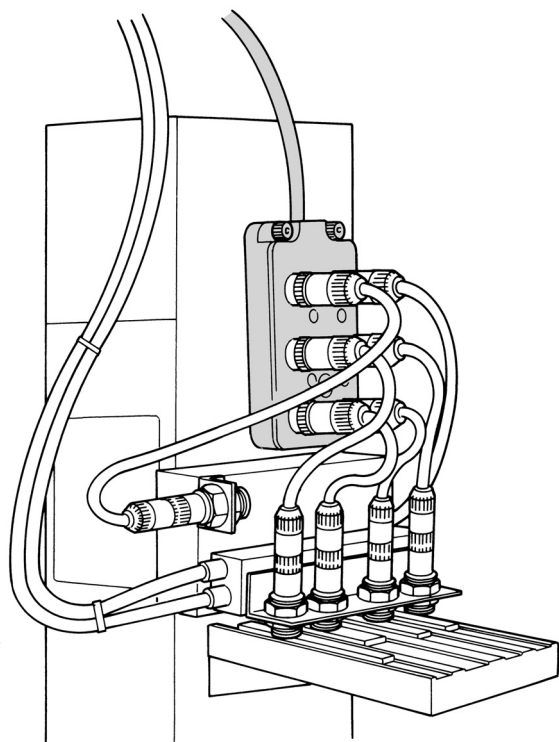
Ratings and Specifications

Rated current	4 A/port (signal lines) 12 A/box (power lines)
Rated voltage	10 to 30 VDC
Contact resistance	40 MΩ max. (with 100 mA max., 20 mV max.)*1
Insulation resistance	100 MΩ min. (at 500 VDC)
Dielectric strength	500 VAC for 1 min (leakage current: 1 mA max.)*2
Degree of protection	IP67 (IEC529)
Cable retention force	98 N/15 s
Insertion tolerance	200 times
Operating temperature	−25 to 70°C

*1. The contact resistance of the Connector.
*2. The dielectric strength of the Connector.

Compatible Connectors

XS2G	Connector Plug Assemblies (crimping, soldering, or screw-on)
XS2W	Connectors on cable ends (Sockets or Plugs)
XS2H	Connectors on one cable end (Plugs)

Materials and Finish

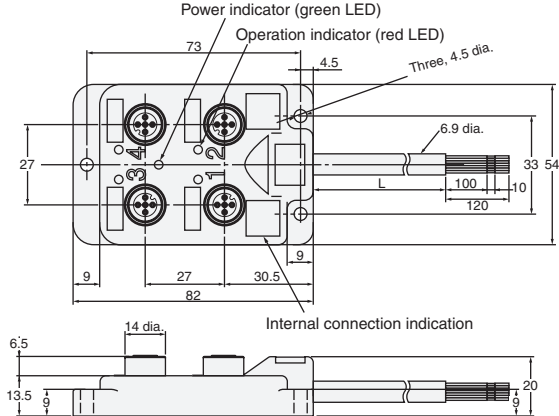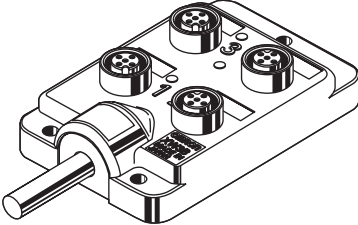| Item	Part name	Materials and finish
Connectors	Anchor	Brass/nickel plated
	Contacts	Brass/nickel base, 0.4-μm gold plating
Cable	Cable	Sheath color: gray Core size: AWG18/AWG22 *
Case	Case	PBT resin (UL94V-0)/light gray
	Bushing	Rubber
	PCB	Glass-epoxy board
	Seal resin	Urethane resin

* The positive power supply, negative power supply, and ground lines are AWG18. Signal lines are AWG22.
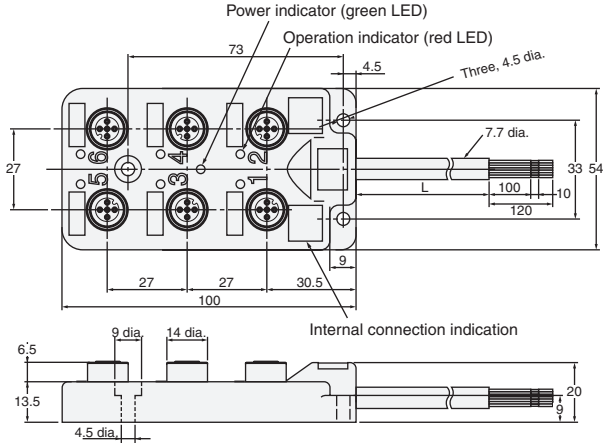
XW3B Connector Terminal Box

Dimensions
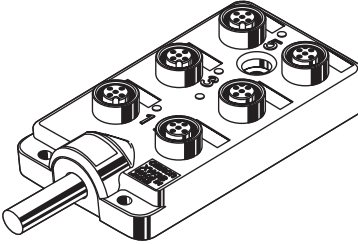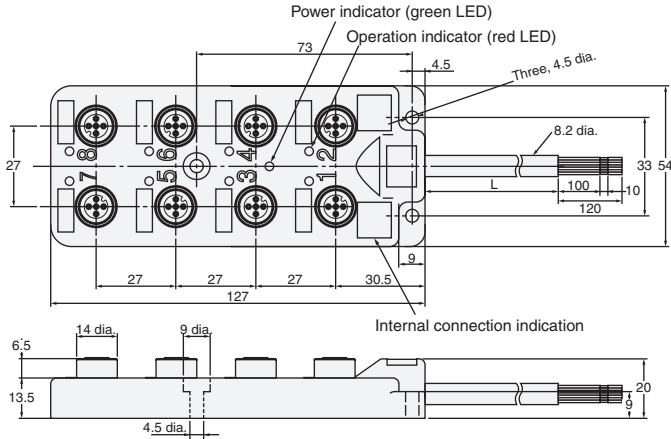
(Unit: mm)

XW3B-P45□-□11 (Four Input Ports)

Power indicator (green LED)
Operation indicator (red LED)
Three, 4.5 dia.

73
4.5
27
6.9 dia.
33 54
L
100
10
120
9
27
30.5
9
82

Internal connection indication

14 dia.
6.5
13.5
9
20
9

XW3B-P65□-□11 (Six Input Ports)

Power indicator (green LED)
Operation indicator (red LED)
Three, 4.5 dia.

73
4.5
27
7.7 dia.
33 54
L
100
10
120
9
27
27
30.5
100

Internal connection indication

9 dia.
14 dia.
6.5
13.5
20
9
4.5 dia.

XW3B-P85□-□11 (Eight Input Ports)
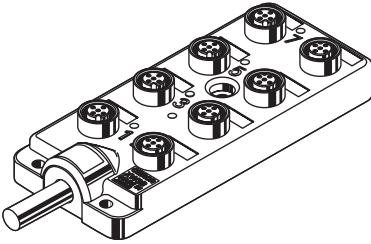
Power indicator (green LED)
Operation indicator (red LED)
Three, 4.5 dia.

73
4.5
27
8.2 dia.
33 54
L
100
10
120
9
27
27
27
30.5
127

Internal connection indication

14 dia.
9 dia.
6.5
13.5
20
9
4.5 dia.

XW3B

Ordering Information

Sensor type and connections		3-wire DC NPN/2-wire DC 3-4	2-wire DC1-4/ without polarity 3-4	3-wire DC PNP/2-wire DC 1-4
Actuator connections		Actuator connections 1-4	---	Actuator connections 3-4
No. of ports	Cable length (m)	Model	Model	Model
4	5	XW3B-P445-G11	XW3B-P452-G11	XW3B-P453-G11
6	5	XW3B-P655-G11	XW3B-P652-G11	XW3B-P653-G11
8	5	XW3B-P855-G11	XW3B-P852-G11	XW3B-P853-G11

Note: Here 1-4 and 3-4 are connector pin numbers.

Connection Diagrams

Standard Japanese Specification
XW3B-P□55-□11 for 3-wire DC NPN, 2-wire DC (without polarity 3-4), and Actuator (1-4)
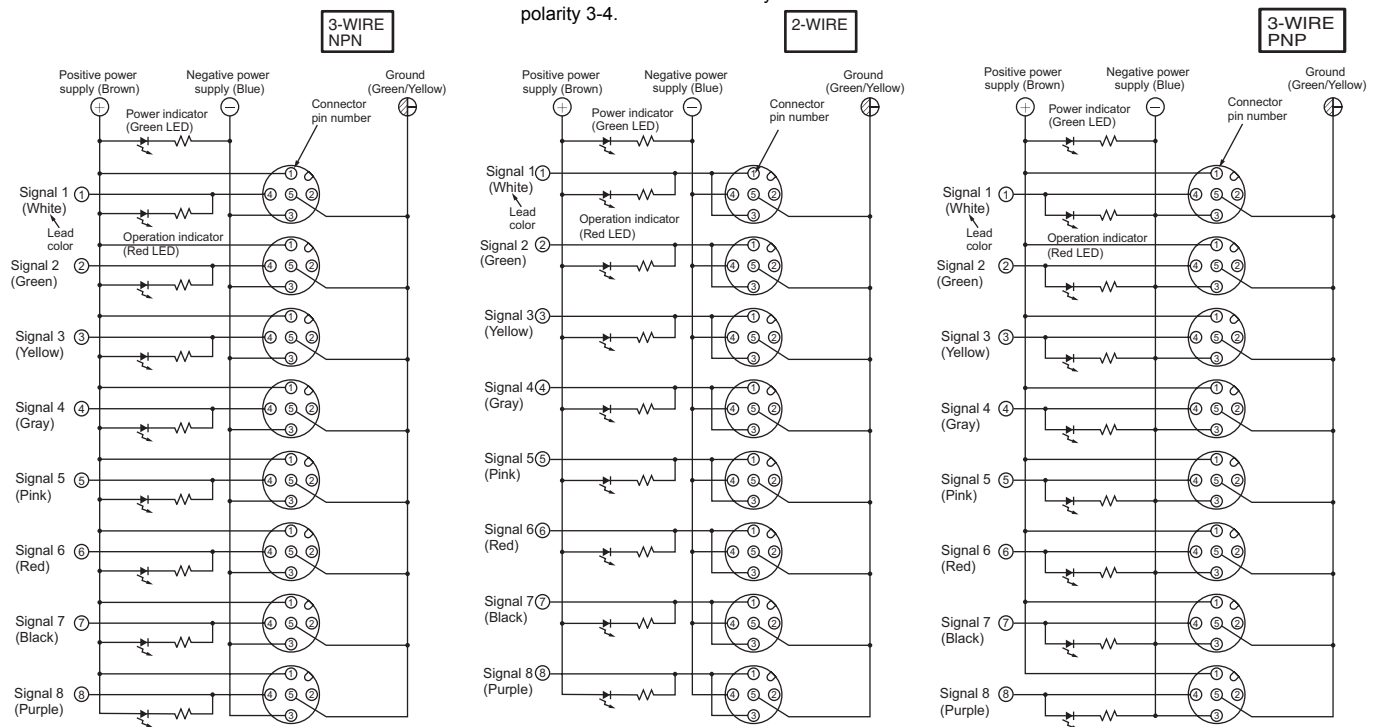
Japanese Specification
XW3B-P□52-□11 for 2-wire DC (with polarity 1-4, without polarity 3-4)
Note: Cannot be used with NPN-type Photoelectric and Proximity Sensors.
Cannot be used with Proximity Sensors with polarity 3-4.

European Specification
XW3B-P□53-□11 for 3-wire DC PNP, 2-wire DC (with polarity 1-4), and Actuator (3-4)

Note: 1. The above wiring diagrams are for eight-port use.
2. Figures in parentheses indicate lead colors.
3. The expression "white/red" means white and red stripes.
4. Here 1-4 and 3-4 are pin numbers.

Mounting Holes

Three, M4 or 4.5 dia.

33±0.1

73±0.1
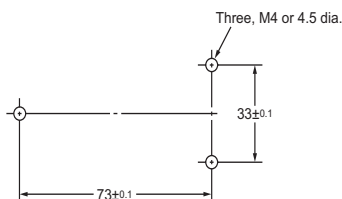
Note: Mounting hole dimensions are always the same regardless of the number of ports.

Safety Precautions

Refer to *Warranty and Limitations of Liability* on page F-2.

Precautions for Correct Use

Do not use the product in atmospheres or environments that exceed product ratings.

Connector Connection or Disconnection

- Before using a Sensor or Limit Switch, check this catalog and be sure that the Sensor or Limit Switch can be connected.
- Be sure to turn OFF the power supplied to the XW3B 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 powder 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 and Actuator.

Applicable Connectors

- Applicable Connectors are the XS2G (assembly type), XS2H (monoblock type), and XS2W (monoblock type).
- After a Connector is engaged, tighten the Connector securely with a mounting bracket.
- 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 and Actuators are operating, the corresponding red operation indicators will be lit.
- Only DC Sensors and Actuators can be connected to the XW3B. Do not connect AC Sensors or Actuators.
- Connector Terminal Boxes are internally wired with 2 or 3 wires. The type is marked on the case.

3-WIRE NPN	3-WIRE PNP	2-WIRE

XW3B

Input Device Connections Using Sensor I/O Connectors

Direct Connection Type

Proximity Sensor
Limit Switch
Photoelectric Sensor

XS2W Cable with connector

XW3B Connector Terminal Box

Connector-Terminal Connection Type

Proximity Sensor
Limit Switch
Photoelectric Sensor

XW3B Connector Terminal Box

Pre-wired Type

Proximity Sensor
Limit Switch
Photoelectric Sensor

XS2G Connector Assembly (solderless/soldering type)

XW3B Connector Terminal Box
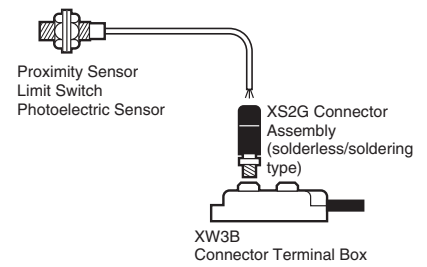
Input Devices Using Sensor I/O Connectors

Connector Terminal Box	Cable	Input devices using Sensor I/O Connectors		
XW3B-P□55-G11	---	2-wire DC Proximity Sensor	Connector-Terminal connection type	E2E-X3D1-M1J-T, E2E-X7D1-M1J-T, E2E-X10D1-M1J-T
			Direct connection type	E2E-X□D1-M1
	XS2W-D42□-□81-A	3-wire DC Proximity Sensor (NPN)	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, E3S-AR66
	---	Limit Switch	Connector-Terminal connection type	WL□-□DK1EJ□ *1, WL□-□-M1GJ *1, D4C-□0□□-DK1EJ□ *2
	XS2W-D42□-□81-A		Direct connection type	WL□-□K13 *1, D4E-□□10N *2
XW3B-P□53-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, E3S-AR86
XW3B-P□52-G11	---	2-wire DC Proximity Sensor	Connector-Terminal connection type	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
				E2EQ-X3D1-M1GJ, E2EQ-X7D1-M1GJ, E2EQ-X10D1-M1GJ
	XS2W-D42□-□81-A		Direct connection type	E2E-X3D1-M1G, E2E-X7D1-M1G, E2E-X10D1-M1G
				E2E-X8MD1-M1G, E2E-X14MD1-M1G, E2E-X20MD1-M1G
	---	Limit Switch	Connector-Terminal connection type	WL□-□DK1EJ□ *1, WL□-□-M1GJ *1, D4C-□0□□-DK1EJ□ *2
	XS2W-D42□-□81-A		Direct connection type	WL□-□K13 *1, D4E-□□10N *2, D4CC-□□□□ *2

Note: Use the XS2G Connector assembly in combination with a pre-wired input device.
*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.

Sensor Controllers/ Related Products

Digital Panel Meters

Power Supplies

Sensor Controllers
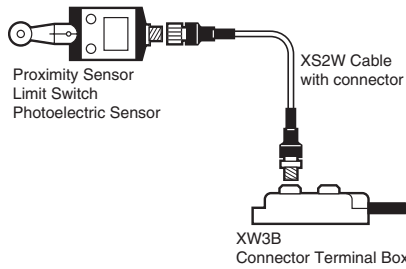
Connectors
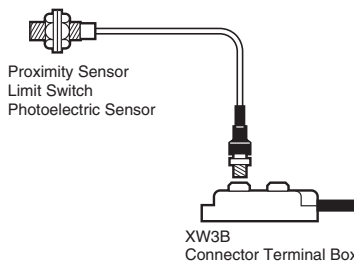
Peripheral Devices

XS5/XS2 /XW3

XS2

XN2

XW3B

XS3

XS5

XW3B

Attaching the XS2G Connector to Pre-wired Input Device

Connector Terminal Box	Input devices and connector pin 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
XW3B-P☐55-G11	Yes	No	Yes	Yes	Yes	No
XW3B-P☐53-G11	No	Yes	No	No	No	Yes
XW3B-P☐52-G11	No	Yes	No	Yes	Yes	No

Connector Terminal Boxes for Input Devices with Sensor I/O Connectors

Input device				Cable	Connector Terminal Box
Type		Connection method	Model		
Photoelectric Sensors	NPN	Direct connection type	E3S-AT16/66, E3S-AR16/66, and E3S-AD16/17/18/66/67/68	XS2W-D42☐-☐81-A	XW3B-P☐55-G11
	PNP		E3S-AT36/86, E3S-AR36/86, and E3S-AD36/37/38/86/87/88		XW3B-P☐53-G11
Proximity Sensors	2-wire DC	Connector-Terminal connection type	E2E-X☐D1-M1J-T		XW3B-P☐55-G11
			E2E-X☐D1-M1GJ and E2E-X☐D1-M1J-T		XW3B-P☐52-G11
			E2E-X☐MD1-M1GJ		
			E2EQ-X☐D1-M1GJ		
		Direct connection type	E2E-X☐D1-M1G		
			E2E-X☐MD1-M1G		
			E2E-X☐D1-M1		
	3-wire DC	NPN	E2E-X☐E1-M1		XW3B-P☐55-G11
			E2E-X☐ME1-M1		
		PNP	E2E-X☐F1-M1		XW3B-P☐53-G11
			E2E-X☐MF1-M1		
Limit Switches		Connector-Terminal connection type	WL☐-☐DK1EJ☐ *1, WL☐-☐-M1J *1, and D4C-☐0☐☐-DK1EJ☐ *2		XW3B-P☐52-G11, XW3B-P☐55-G11
		Direct connection type	WL☐-☐K13 *1 and D4E-☐☐10N *2		
			D4CC-☐☐☐☐ *2		XW3B-P☐52-G11

*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.

See the models above for components that are compatible with Sensor I/O Connectors.

Cat. No. G802-E1-01   **In the interest of product improvement, specifications are subject to change without notice.**

OMRON   1349

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