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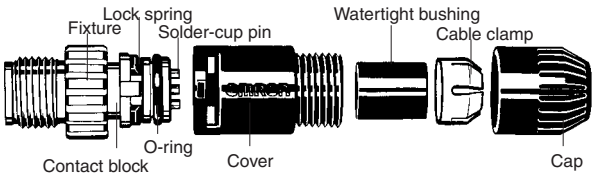
OMRON

Sensor I/O Connectors (M12) | XS2

Water- and Environment-resistive FA Connectors Save Wiring and Maintenance Effort

- Compact FA connectors meet IP67 requirements and ensure a 94V-0 fire retardant rating.
- A wide array of connectors makes a wiring system more modular, simplifies maintenance, and reduces downtime.
- Connectors with Cables and Connector Assemblies are available.
- Three types of Connector Assembly: Crimping, soldering, and screw-on.
- Conforms to IEC 60947-5-2 and NECA 4202.
- UL-listed 4-core cables.

■ Construction (Connector Assembly)



■ Specifications

Rated current	3 A
Rated voltage	125 VDC, 250 VAC
Contact resistance	40 mΩ max. (20 mV max., 100 mA max.) (See note 1.)
Insulation resistance	1,000 MΩ min. (at 500 VDC)
Dielectric strength	1,500 VAC for 1 min (leakage current: 1 mA max.) (See note 2).
Degree of protection	IP67 (IEC529)
Insertion tolerance	200 times min.
Assembled fixture strength	Tensile: 98 N/15 s Torsion: 0.98 N·m/15 s
Cable holding strength	Cable diameter: 6 mm 98 N for 15 s 4 to 5 mm 49 N for 15 s 3 mm 29 N for 15 s
Ambient temperature	Operating: – 25°C to 70°C

Note: **1.** The contact resistance of the connector.
2. The dielectric strength of the connector.

■ Recommended Cables

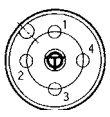
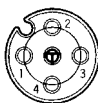
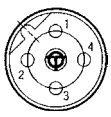
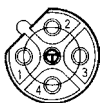
Cable outer diameter		Core sizes		
		Crimping models	**Soldering models**	**Screw-on models**
6 mm	5 to 6 mm	Two types of contacts are available. • 0.18 to 0.3 mm^2 • 0.5 to 0.75 mm^2	0.5 mm^2 max.	0.18 to 0.75 mm^2
4 mm	4 to 5 mm			
3 mm	3 to 4 mm			

■ Materials and Finish

Item		XS2F/H/W	XS2M/R/P	XS2C/G
Contacts	Materials	Phosphor bronze	Brass	
	Finish	Nickel base, 0.4-μm gold plating		
Fixtures	Materials	Brass (See note 2.)		
	Finish	Nickel plated (See note 2.)		
Pin Block	Materials	PBT resin (UL94V-0)	PA resin (UL94V-0)	PBT resin (UL94V-0)
	Finish	For DC: light gray; for AC: dark gray		
O-ring/rubber bushing		Rubber		
Cover		Polyester elastomer	---	PBT resin (UL94V-0)
Cap		---	---	PBT resin (UL94V-0)
Cable clamp		---	---	PA resin (UL94V-0)
Pin clamp		---	---	PBT resin (UL94V-0)
Lock spring		---	---	LCP resin (UL94V-0)
Watertight bushing		---	---	Rubber
Ring		---	---	Steel

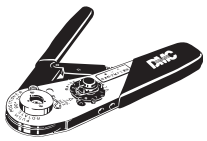
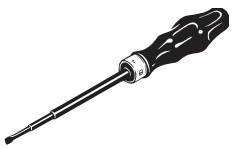
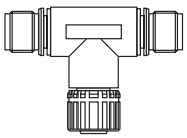
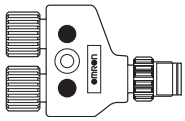
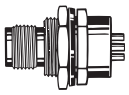
Note: **1.** The XS2H does not have an O-ring.
2. The T-joint of the XS2R is aluminum/white.

■ Socket Appearance

DC type		AC type	
Male contacts	**Female contacts**	**Male contacts**	**Female contacts**
			

Note: The AC and DC connectors are different as shown here and therefore cannot be connected together.

■ List of Products

Name	Model		Appearance	Page
Connectors attached to Cable	XS2W Sockets and Plugs on Cable Ends			3 to 4
	XS2F Sockets on One Cable End			6 to 10
	XS2H Plugs on One Cable End			11 to 12
Connector Assemblies (Crimping, Soldering, or Screw-on) Used to enable using connectors for sensor cables and relay cables.	XS2G Plug Assemblies			16, 18
	XS2C Socket Assemblies			17, 19
	XS2F Crimp Tool (for Crimping Connectors)			27
	XW4Z Screwdriver (for Screw-on Connectors)			29
Terminal Box Connectors Used to enable using connectors for terminal boxes.	XS2P Panel-mounting Sockets			20
T-Joints and Y-Joints Used for branching and for daisy-chain connections.	XS2R T-Joint/Y-Joint Plug/Socket Connectors	T-Joints		22 to 23
		Y-Joints		21
Sensor Connector Assemblies Used to enable using connectors in sensors.	XS2M Plugs	Embedded Plugs with Screw Threads		24 to 25
		Embedded Plugs with No Screw Threads		
Panel-mounting Connectors Used to enable using I/O box connectors mounted to panels.	XS2M Plugs	Flange-mounting Plugs		
		Screw-mounting Plugs		

■ Model Number Legend

Use this model number legend to identify products from their model number. When ordering, use a model number from the table in *Ordering Information.*

XS2W - D42□ - □□1 - □
1 2 3 4 5 6 7 8 9

1. Type
- W: Connectors connected to cable, socket and plug on cable ends

2. AC/DC (Mating Section Form)
- D: For DC

3. Connector Poles
- 4: 4 poles
- 5: 5 poles

4. Contact Plating
- 2: 0.4-μm gold plating

5. Cable Connection Direction
- 1: Straight/straight
- 2: L-shaped/L-shaped
- 3: Straight (XS2F)/L-shaped (XS2H)
- 4: L-shaped (XS2F)/straight (XS2H)

6. Cable Length
- A: 0.3 m (straight/straight only)
- B: 0.5 m (straight/straight only)
- C: 1 m (straight/straight only)
- D: 2 m
- E: 3 m (straight/straight only)
- F: 4 m (straight/straight only)
- G: 5 m
- H: 7 m (straight/straight only)
- J: 10 m (straight/straight only)
- K: 15 m (straight/straight only)
- L: 20 m (straight/straight only)

7. Connections

Pin No.
1 2 3 4
- 8: Brown White Blue Black (for DC)

Pin No.
1 2 3 4 5
- G: Brown White Blue Black Gray

8. Connectors on One End/Both Ends
- 1: Both ends

9. Cable Specifications
- A: Standard cable
- R: Vibration-proof robot cable (straight/straight only)
- F: Fire-retardant, vibration-proof cable

XS2W-D42□-□81-A Connectors with Standard Cable

XS2W-D421-□81-R Connectors with Vibration-proof Robot Cable (Straight/Straight)

■ Ordering Information

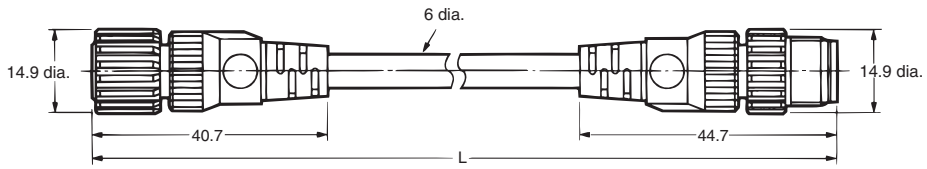
Cable type	Cable connection direction	No. of cable cores	Cable core cross-sectional area	Cable length (m)	DC		UL-listed
					Model	Minimum order	
Standard cable	Straight/Straight	4	0.5 mm^2	1	XS2W-D421-C81-A	10	Yes
				2	XS2W-D421-D81-A		Yes
				5	XS2W-D421-G81-A	5	Yes
				10	XS2W-D421-J81-A		Yes
	L-shaped/L-shaped			2	XS2W-D422-D81-A	10	Yes
				5	XS2W-D422-G81-A	5	Yes
	Straight/L-shaped			2	XS2W-D423-D81-A	10	Yes
				5	XS2W-D423-G81-A	5	Yes
	L-shaped/Straight			2	XS2W-D424-D81-A	10	Yes
				5	XS2W-D424-G81-A	5	Yes
Vibration-proof robot cable	Straight/Straight			1	XS2W-D421-C81-R	10	---
				2	XS2W-D421-D81-R		
				5	XS2W-D421-G81-R	5	
				10	XS2W-D421-J81-R		

Note: **1.** Orders are accepted in multiples of the minimum order.

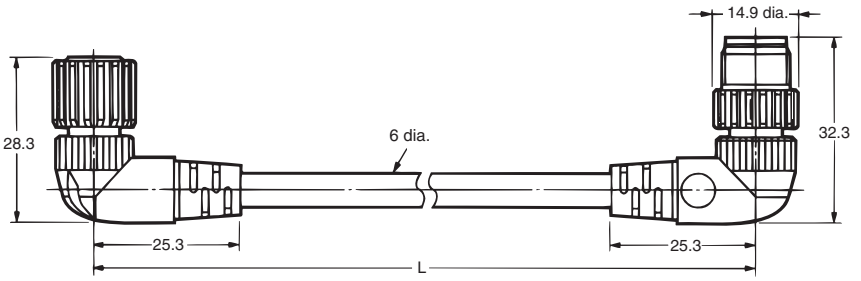
2. Ask your OMRON representative about other cable lengths, and about 5-core cables.

■ Dimensions

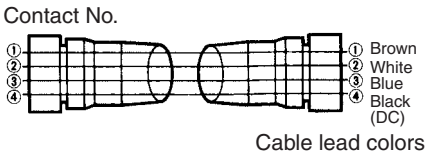
Straight/Straight Connectors



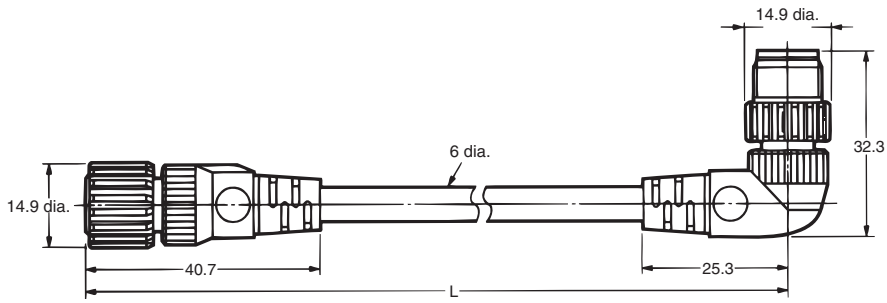
L-shaped/L-shaped Connectors



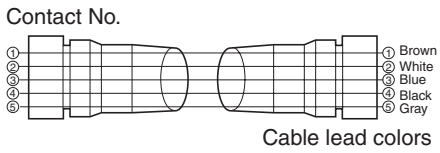
Wiring Diagram for 4 Cores



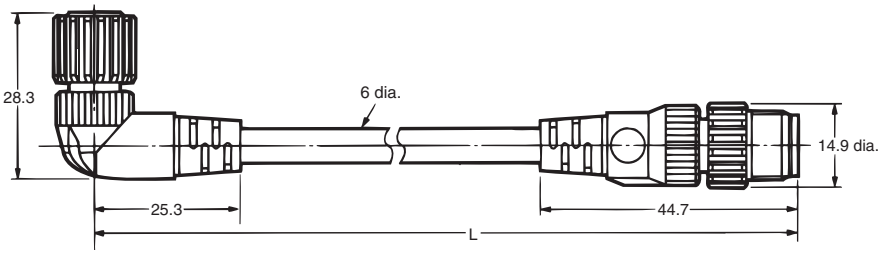
Straight/L-shaped Connectors



Wiring Diagram for 5 Cores



L-shaped/Straight Connectors



■ Model Number Legend

Use this model number legend to identify products from their model number. When ordering, use a model number from the table in *Ordering Information.*

XS2F - □□2□ - □□0 - □
1 2 3 4 5 6 7 8 9

1. Type

F: Connector connected to cable, socket on one cable end

2. AC/DC (Mating Section Form)

A: For AC

D: For DC

3. Connector Poles

4: 4 poles

5: 5 poles

4. Contact Plating

2: 0.4-μm gold plating

5. Cable Connection Direction

1: Straight

2: L-shaped

6. Cable Length

A: 0.3 m

B: 0.5 m

C: 1 m

D: 2 m

E: 3 m

F: 4 m

G: 5 m

H: 7 m

J: 10 m

K: 15 m

L: 20 m

Only the 2 m (D) and 5 m (G) cables are available for cables with 5 poles.

7. Connections

Pin No.
1 2 3 4

A: Brown --- --- Blue (for DC)

B: --- --- Brown Blue (for DC)

C: Brown --- Blue Black

8: Brown White Blue Black (for DC)

9: Brown White Blue Black (for AC)

Pin No.
1 2 3 4 5

G: Brown White Blue Black Gray

8. Connectors on One End/Both Ends

0: One end

9. Cable Specifications

A: Standard cable

R: Vibration-proof robot cable (straight/straight only)

F: Fire-retardant, vibration-proof cable

TR: For E2E Proximity Sensor (See note.)

Note: Refer to page 9 for connections. Connections for this item are different to those specified at item 7. A standard cable is used.

Designations for DC Polarity (For Limit Switches and Sensors)

6: Cable Length

3: 2 m

4: 5 m

7: Connections

Pin No.
1 2 3 4

1: --- --- Black White

8: Connectors on One End/Both Ends

0: One end

9: Cable Specifications

Not designated.

Note: Model number standards are different for items 6, 7, and 9 for connectors with DC polarity.

XS2F-□42□-□□0-A **Connectors with Standard Cable**
XS2F-□42□-□□0-R **Connectors with Vibration-proof Robot Cable**
XS2F-□42□-□□0 **DC-pole Connectors with Standard Cable**

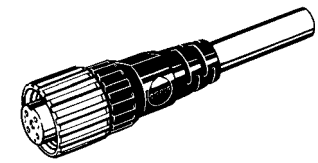
■ Ordering Information

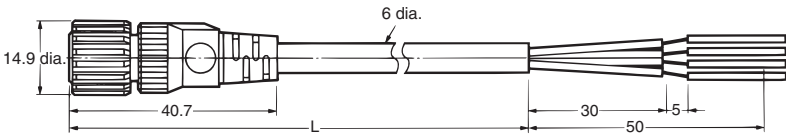
Cable type	Cable connection direction	No. of cable cores	No. of cable cores	Cable length (m)	Model		Minimum order	UL-listed
					DC	AC		
Standard cable	Straight	2	0.5 mm²	1	XS2F-D421-CA0-A	XS2F-A421-CB0-A	10	---
		3			XS2F-D421-CC0-A	---		---
		4			XS2F-D421-C80-A	XS2F-A421-C90-A		Yes
		2		2	XS2F-D421-DA0-A	XS2F-A421-DB0-A	10	---
		3			XS2F-D421-DC0-A	---		---
		4			XS2F-D421-D80-A	XS2F-A421-D90-A		Yes
		2		5	XS2F-D421-GA0-A	XS2F-A421-GB0-A	5	---
		3			XS2F-D421-GC0-A	---		---
		4			XS2F-D421-G80-A	XS2F-A421-G90-A		Yes
		2		10	XS2F-D421-JA0-A	XS2F-A421-JB0-A	5	---
		3			XS2F-D421-JC0-A	---		---
		4			XS2F-D421-J80-A	XS2F-A421-J90-A		Yes
	L-shaped	2		1	XS2F-D422-CA0-A	XS2F-A422-CB0-A	10	---
		3			XS2F-D422-CC0-A	---		---
		4			XS2F-D422-C80-A	---		Yes
		2		2	XS2F-D422-DA0-A	XS2F-A422-DB0-A	10	---
		3			XS2F-D422-DC0-A	---		---
		4			XS2F-D422-D80-A	---		Yes
		2		5	XS2F-D422-GA0-A	XS2F-A422-GB0-A	5	---
		3			XS2F-D422-GC0-A	---		---
		4			XS2F-D422-G80-A	---		Yes
		2		10	XS2F-D422-JA0-A	XS2F-A422-JB0-A	5	---
		3			XS2F-D422-JC0-A	---		---
		4			XS2F-D422-J80-A	---		Yes
Vibration-proof robot cable	Straight	2		1	XS2F-D421-CA0-R	XS2F-A421-CB0-R	10	---
		4			XS2F-D421-C80-R	XS2F-A421-C90-R		---
		2		2	XS2F-D421-DA0-R	XS2F-A421-DB0-R	10	---
		4			XS2F-D421-D80-R	XS2F-A421-D90-R		---
		2		5	XS2F-D421-GA0-R	XS2F-A421-GB0-R	5	---
		4			XS2F-D421-G80-R	XS2F-A421-G90-R		---
		2		10	XS2F-D421-JA0-R	XS2F-A421-JB0-R	5	---
		4			XS2F-D421-J80-R	XS2F-A421-J90-R		---
	L-shaped	2		1	XS2F-D422-CA0-R	XS2F-A422-CB0-R	10	---
		4			XS2F-D422-C80-R	---		---
		2		2	XS2F-D422-DA0-R	XS2F-A422-DB0-R	10	---
		4			XS2F-D422-D80-R	---		---
		2		5	XS2F-D422-GA0-R	XS2F-A422-GB0-R	5	---
		4			XS2F-D422-G80-R	---		---
		2		10	XS2F-D422-JA0-R	XS2F-A422-JB0-R	5	---
		4			XS2F-D422-J80-R	---		---
Standard cable (non-polar)	Straight	2		2	XS2F-D421-310	XS2F-A421-310	10	---
		2		5	XS2F-D421-410	XS2F-A421-410	5	---
	L-shaped	2		2	XS2F-D422-310	XS2F-A422-310	10	---
		2		5	XS2F-D422-410	XS2F-A422-410	5	---

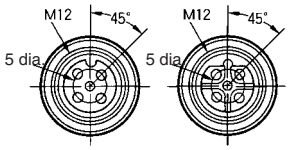
Note: 1. Orders are accepted in multiples of the minimum order.
2. Ask your OMRON representative about other cable lengths.

■ Dimensions

Straight Connectors

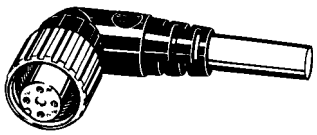


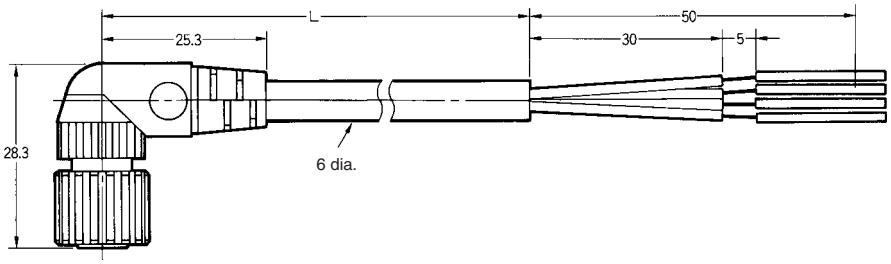


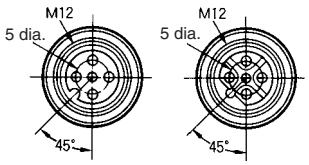


DC AC

L-shaped Connectors







DC AC

Wiring Diagram

Item	Standard cable Vibration-proof robot cable	Standard cable (non-polar DC)
	XS2F-□42□-□□0-A **XS2F-□42□-□□0-R**	**XS2F-□42□-□□0**
Two-core model	Contact No. ①②③④ Brown / Blue (DC) Cable lead colors Contact No. ①②③④ Brown / Blue (AC) Cable lead colors	Contact No. ①②③④ Black / White Cable lead colors
Three-core model	Contact No. ①②③④ Brown / Blue / Black (DC) Cable lead colors	---
Four-core model	Contact No. ①②③④ Brown / White / Blue / Black (DC/AC) Cable lead colors	---

XS2F-□42□-□□0-TR Connecting Cables for E2E Proximity Sensors

The pin numbers and lead colors of the E2E Proximity Sensors are used for the XW2E Connecting Cable. This cable is designed specifically for the E2E. It is distinguished from normal XS2F models by the dark gray cable and the -TR suffix added to the 4-digit lot number.

■ Ordering Information

Cable connection direction	No. of cable cores	Cable core cross-sectional area	Cable length (m)	Model		Minimum order
				DC	AC	
Straight	2	0.5 mm^2	2	XS2F-D421-DD0-TR	XS2F-A421-DB0-TR	10
			5	XS2F-D421-GD0-TR	XS2F-A421-GB0-TR	5
L-shaped			2	XS2F-D422-DD0-TR	XS2F-A422-DB0-TR	10
			5	XS2F-D422-GD0-TR	XS2F-A422-DB0-TR	5
Straight	3		2	XS2F-D421-DC0-TR	---	10
			5	XS2F-D421-GC0-TR	---	5
L-shaped			2	XS2F-D422-DC0-TR	---	10
			5	XS2F-D422-GC0-TR	---	5

Note: 1. Orders are accepted in multiples of the minimum order.

2. The XS2F Cables for E2E Proximity Sensors have different model number standards from those for standard XS2F models.

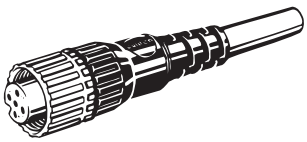
■ Applicable Proximity Sensors

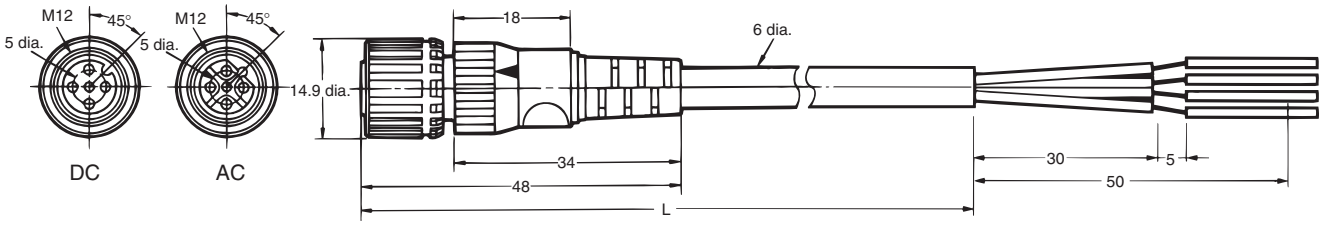
XS2F model	Proximity Sensor	Old connector model
XS2F-D42□-□D0-TR	E2E-X□D1-P1 E2E-X□D1-M1J-T E2E-X□D2-P1	Y92E-P1D2□
XS2F-D42□-□C0-TR	E2E-X□E1-P1	Y92E-P1D3□
XS2F-D42□-□80-□	E2E-X□D1S-P1	Y92E-P1D4□

Note: There is no difference in wiring method and cable wire color between the XS2F and Y92E.

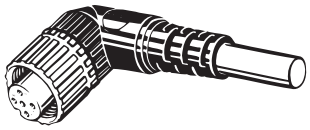
■ Dimensions

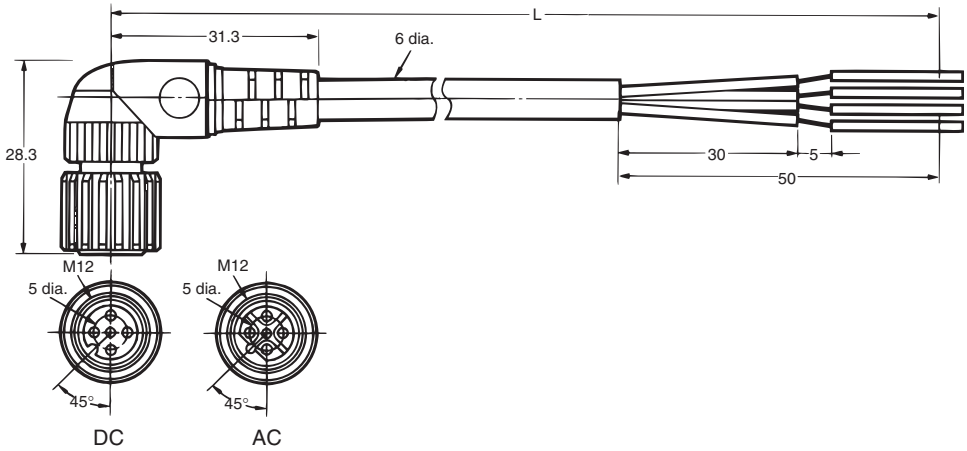
Straight Connectors



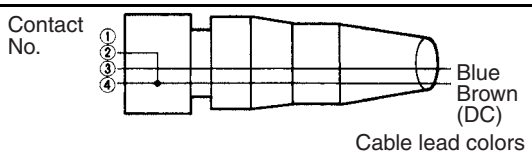
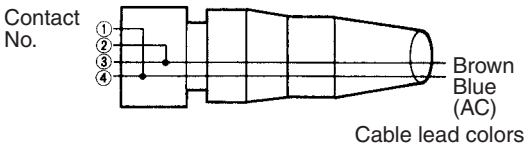
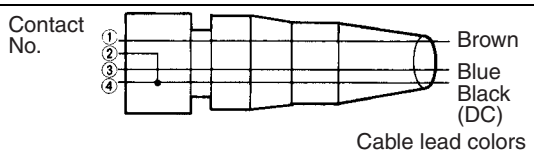


L-shaped Connectors





Wiring Diagram

Model	Wiring diagram	No. of cable cores
XS2F-D42□-□D0-TR		2
XS2F-A42□-□B0-TR		
XS2F-D42□-□C0-TR		3

XS2F-D521-□G0-A 5-pole Connectors for DC

■ Ordering Information

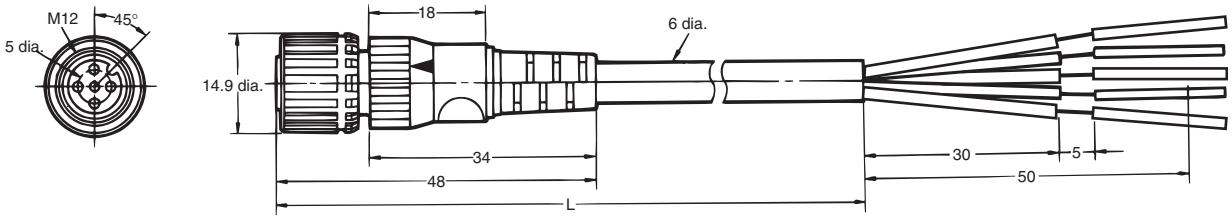
Cable connection direction	No. of cable cores	Cable core cross-sectional area	Cable length (m)	DC	
				Model	Minimum order
Straight	5	0.3 mm²	2	XS2F-D521-DG0-A	10
			5	XS2F-D521-GG0-A	5

Note: 1. Orders are accepted in multiples of the minimum order.
2. Ask your OMRON representative about other cable lengths.

■ Dimensions

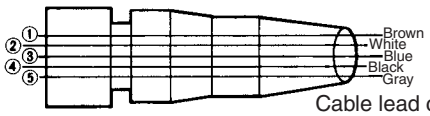
Straight Connectors

Note: Use the XS2F-D521-□G0-A in combination with the XS2H-D521-□G0-A.



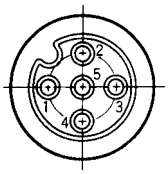
Wiring Diagram

Contact No.



Cable lead colors

Pin Arrangements (Engagement Side)



■ Model Number Legend

Use this model number legend to identify products from their model number. When ordering, use a model number from the table in *Ordering Information.*

XS2H - □□21 - □□0 - □
1 2 3 4 5 6 7 8 9

1. Type
H: Connector connected to cable, plug on one cable end

2. AC/DC (Mating Section Form)
A: For AC
D: For DC

3. Connector Poles
4: 4 poles
5: 5 poles

4. Contact Plating
2: 0.4-μm gold plating

5. Cable Connection Direction
1: Straight

6. Cable Length
A: 0.3 m
B: 0.5 m
C: 1 m
D: 2 m
G: 5 m

7. Connections

Pin No.
1 2 3 4
A: Brown --- --- Blue (for DC)
B: --- --- Brown Blue (for AC)
C: Brown --- Blue Black (for DC)
8: Brown White Blue Black (for DC)
9: Brown White Blue Black (for AC)

Pin No.
1 2 3 4 5
G: Brown White Blue Black Gray

8. Connectors on One End/Both Ends
1: One end

9. Cable Specifications
A: Standard cable
R: Vibration-proof robot cable (straight/straight only)
F: Fire-retardant, vibration-proof cable

■ Ordering Information

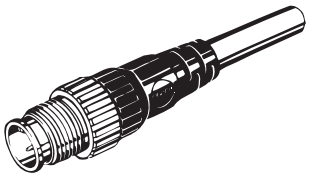
No. of connector poles	Cable connection direction	No. of cable cores	Size	Cable length (m)	Model		Minimum order	UL-listed
					DC	AC		
4	Straight	2	0.5 mm^2	0.3	XS2H-D421-AA0-A	XS2H-A421-AB0-A	10	---
		3			XS2H-D421-AC0-A	---		---
		4			XS2H-D421-A80-A	XS2H-A421-A90-A		Yes
		2		1	XS2H-D421-CA0-A	XS2H-A421-CB0-A		---
		3			XS2H-D421-CC0-A	---		---
		4			XS2H-D421-C80-A	XS2H-A421-C90-A		Yes
5		5	0.3 mm^2	0.3	XS2H-D521-AG0-A	---		---
				1	XS2H-D521-CG0-A	---		---

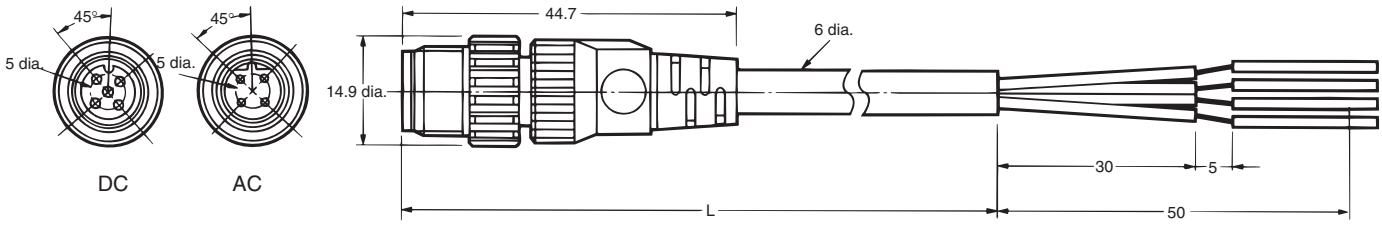
Note: Orders are accepted in multiples of the minimum order.

XS2H-□421-□□0-A Connectors on Standard Cable

■ Dimensions

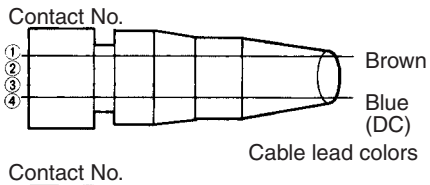
Straight Connectors

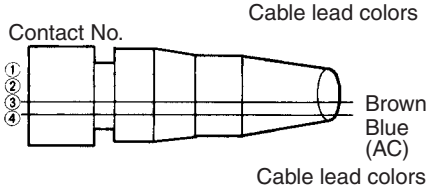




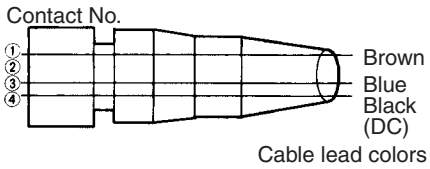
Wiring Diagram

Two-core Model

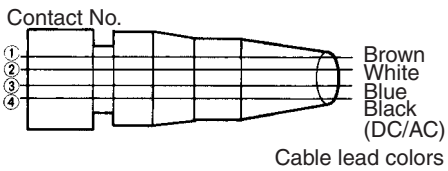




Three-core Model



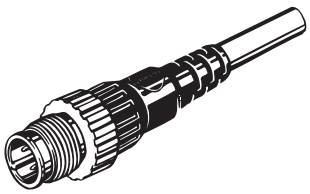
Four-conductor Model



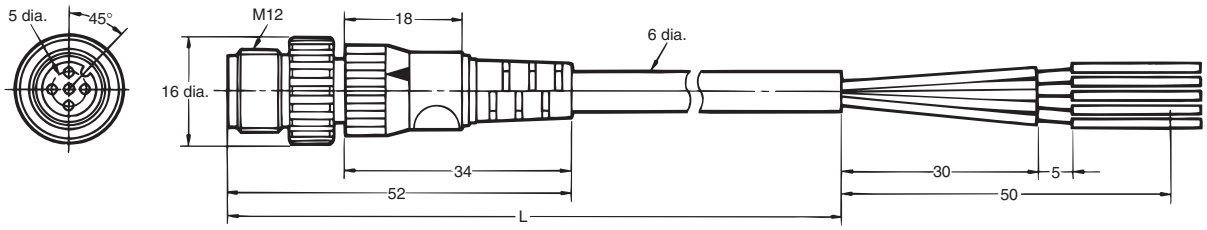
XS2H-D521-□G0-A Connectors on DC Cable (Five Poles)

■ Dimensions

Straight Connectors



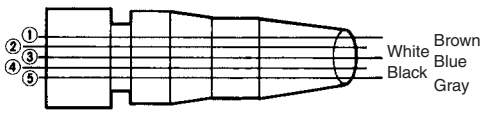
Note: Use the XS2H-D521-□G0-A in combination with the XS2F-D521-□G0-A.



Wiring diagram

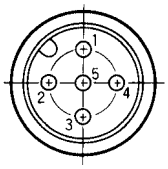
Five-conductor Model

Contact No.



Cable lead colors

Pin Arrangements (Engagement Side)



■ Ordering Information

Connector type	Cable connection direction	Number of cores	Cable length (m)	Model
Panel-mounting socket	---	---	---	XS2P-D821-2
				XS2P-D822-2
Panel-mounting plug				XS2M-D824-4
Plug on one cable end	Straight	8	0.3	XS2H-D821-AH0-C
			1	XS2H-D821-CH0-C
Socket on one cable end			2	XS2F-D821-DH0-C
			5	XS2F-D821-GH0-C
Plug and socket on cable ends			2	XS2W-D821-DH1-C
			5	XS2W-D821-GH1-C

■ Pin Numbers and Cable Lead Colors

---	Pin number							
XS2F/XS2H/XS2W cable lead colors	1	2	3	4	5	6	7	8
	White	Brown	Green	Yellow	Gray	Pink	Blue	Shield

■ Ratings and Characteristics

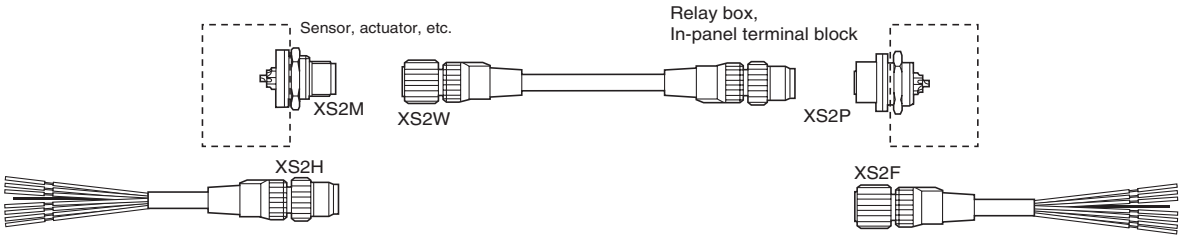
Rated current	1.5 A
Rated voltage	36 VDC
Contact resistance	40 MΩ max. (at 20 mVDC max. and 100 mA max.)
Insulation resistance	1,000 MΩ min. (at 500 VDC)
Dielectric strength	1,000 VAC for 1 min (leakage current: 1 mA max.)
Degree of protection	IP67
Insertion durability	200 times min.
Operating temperature	– 25 to 70°C

■ Materials and Finish

Contacts	Brass/nickel base, 0.4-μm gold-plating
Bracket, body, M16 nuts	Brass/nickel plated
Pin Block	PBT resin (UL94V-0)/light gray
Cover (See note 1.)	Polyester elastomer (UL94V-0)/black
Seal rubber and O-ring (See note 2.)	Rubber

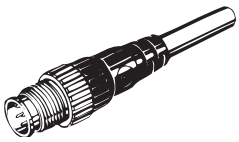
Note: **1.** XS2F/XS2H/XS2W only.
2. O-rings are on sockets only.

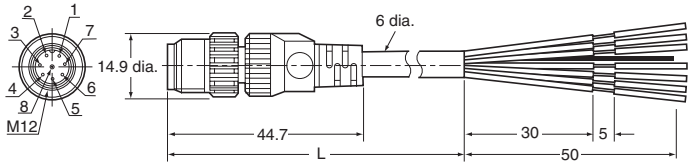
■ Wiring Example



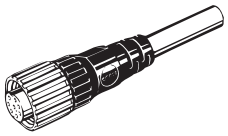
■ Dimensions

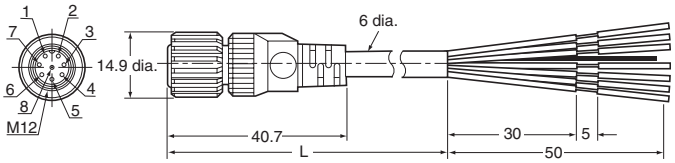
XS2H Plug on One Cable End (M12)



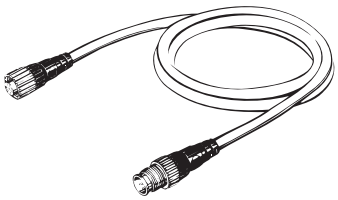


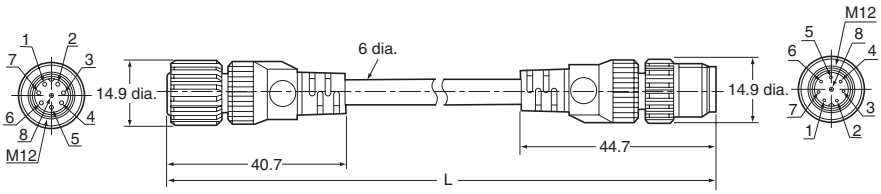
XS2F Socket on One Cable End (M12)



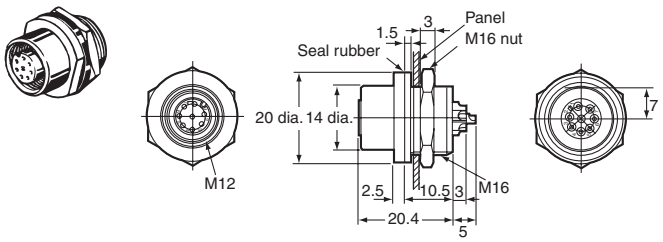


XS2W Plug and Socket on Cable Ends (M12)

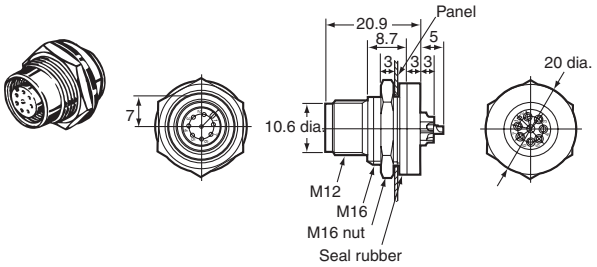




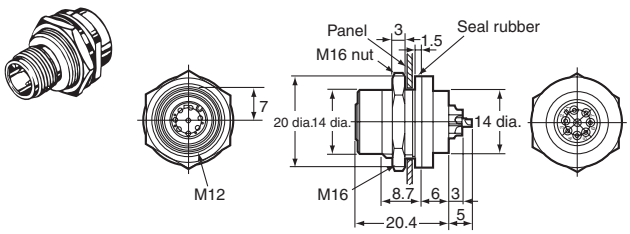
XS2P-D821-2 Panel-mounting Socket (M12) with Solder Cup Pins and Rear Lock



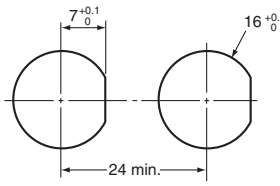
XS2M-D824-4 Panel-mounting Plug (M12) with Solder Cup Pins and Front Lock



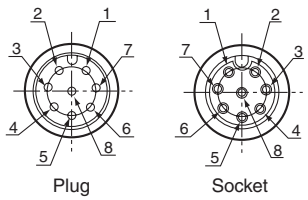
XS2P-D822-2 Panel-mounting Socket (M12) with Solder Cup Pins and Front Lock



Panel Cutouts



Connector Pin Numbers (from Mating Side)



Note: 1. Mounting panel thickness: 1 to 4 mm

2. Applicable core wire size for solder cup pins: 0.5 mm^2 max.

3. The M16 nut and seal rubber are included.

Crimping/Soldering Plug Assemblies

XS2G

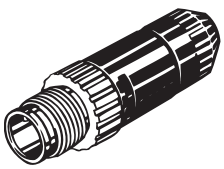
■ Ordering Information

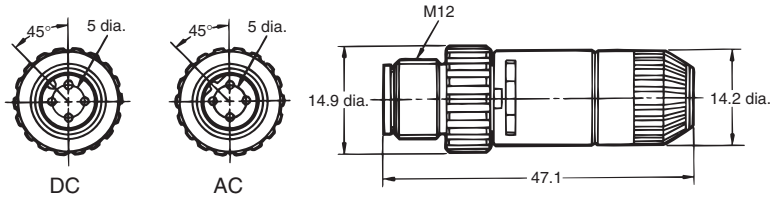
Suitable cable dia. (mm)	Cable connection direction	Connection method	Model		Minimum order
			DC	AC	
6-mm-dia. model (5 to 6 mm dia.)	Straight	Crimping	XS2G-D4C1	XS2G-A4C1	50
		Soldering	XS2G-D421	XS2G-A421	
	L-shaped	Soldering	XS2G-D422	---	
4-mm-dia. model (4 to 5 mm dia.)	Straight	Crimping	XS2G-D4C3	XS2G-A4C3	
		Soldering	XS2G-D423	XS2G-A423	
	L-shaped	Soldering	XS2G-D424	---	
3-mm-dia. model (3 to 4 mm dia.)	Straight	Crimping	XS2G-D4C5	XS2G-A4C5	
		Soldering	XS2G-D425	XS2G-A425	
	L-shaped	Soldering	XS2G-D426	---	

Note: **1.** Orders are accepted in multiples of the minimum order.
2. Crimping plug contacts are sold separately.

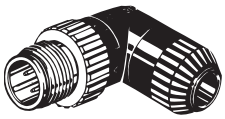
■ Dimensions

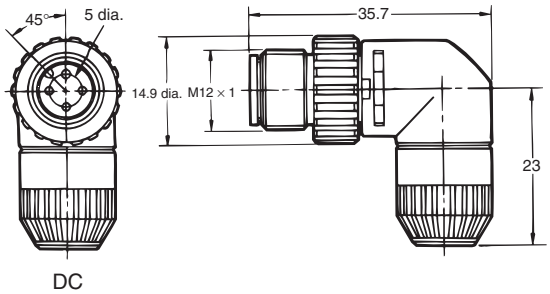
XS2G-□4C□ (Crimping Model)
XS2G-□42□ (Soldering Model)
Straight Connectors





XS2G-D42□ (Soldering Model)
L-shaped Connectors

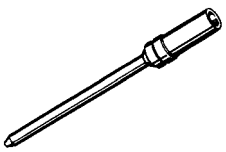


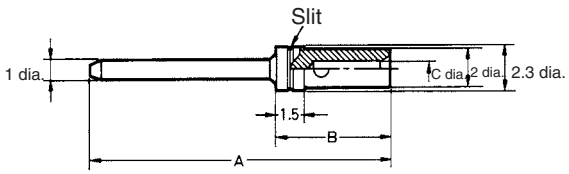


XS2U Crimping Pin for XS2G

■ Dimensions

XS2U-312□ (Plug Pin)





Dimensions

Model	Suitable core size (mm^2)	Dimension (mm)			No. of slits
		A	B	C	
XS2U-3121	0.18 to 0.3	20.0	6.1	0.8	1
XS2U-3122	0.5 to 0.75	20.1	6.2	1.3	0

■ Ordering Information

Suitable core size (mm^2)	Model	Minimum order
0.18 to 0.3	XS2U-3121	100
0.5 to 0.75	XS2U-3122	

Note: Orders are accepted in multiples of the minimum order.

Crimping/Soldering Socket Assemblies

XS2C

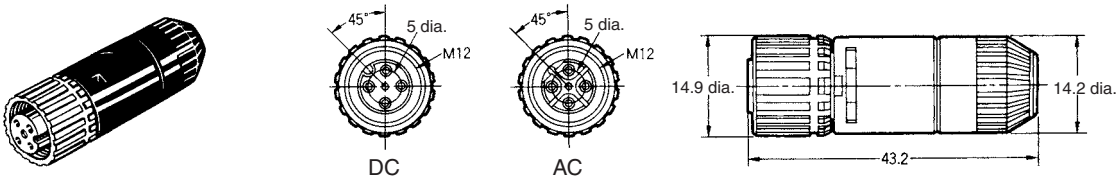
■ Ordering Information

Suitable cable dia. (mm)	Cable connection direction	Connection method	Model		Minimum order
			DC	AC	
6-mm-dia. model (5 to 6 mm dia.)	Straight	Crimping	XS2C-D4C1	XS2C-A4C1	50
		Soldering	XS2C-D421	XS2C-A421	
	L-shaped	Crimping	XS2C-D4C2	XS2C-A4C2	
		Soldering	XS2C-D422	XS2C-A422	
4-mm-dia. model (4 to 5 mm dia.)	Straight	Crimping	XS2C-D4C3	XS2C-A4C3	
		Soldering	XS2C-D423	XS2C-A423	
	L-shaped	Crimping	XS2C-D4C4	XS2C-A4C4	
		Soldering	XS2C-D424	XS2C-A424	
3-mm-dia. model (3 to 4 mm dia.)	Straight	Crimping	XS2C-D4C5	XS2C-A4C5	
		Soldering	XS2C-D425	XS2C-A425	
	L-shaped	Crimping	XS2C-D4C6	XS2C-A4C6	
		Soldering	XS2C-D426	XS2C-A426	

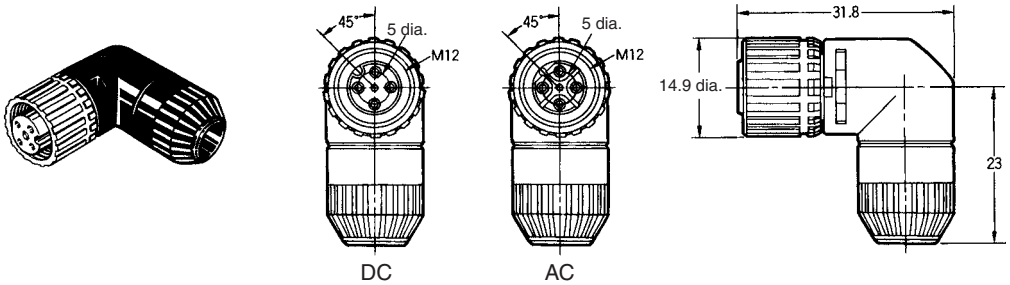
Note: **1.** Orders are accepted in multiples of the minimum order.
2. Crimping plug contacts are sold separately.

■ Dimensions

XS2C-□4C□ (Crimping Model)
XS2C-□42□ (Soldering Model)
Straight Connectors



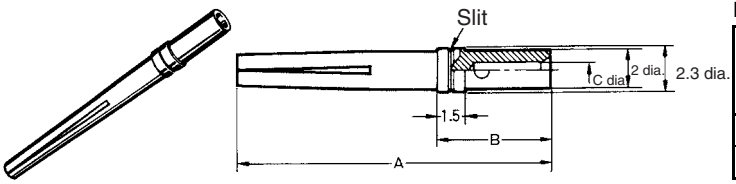
L-shaped Connectors



XS2U Crimping Pin for XS2C

■ Dimensions

XS2U-222□ (Socket Pin)



Dimensions

Model	Suitable core size (mm^2)	Dimension (mm)			No. of slits
		A	B	C	
XS2U-2221	0.18 to 0.3	16.7	6.1	0.8	1
XS2U-2222	0.5 to 0.75	16.8	6.2	1.3	0

■ Ordering Information

Suitable core size (mm^2)	Model	Minimum order
0.18 to 0.3	XS2U-2221	100
0.5 to 0.75	XS2U-2222	

Note: Orders are accepted in multiples of the minimum order.

■ Ordering Information

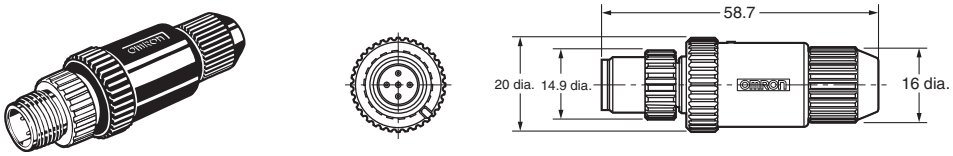
No. of poles	Suitable cable dia. (mm)	Model		Minimum order
		Straight connectors (for DC)	L-shaped connectors (for DC)	
5	8-mm-dia. model (7 to 8 mm dia.)	XS2G-D5S7 *NEW*	---	50
	7-mm-dia. model (6 to 7 mm dia.)	XS2G-D5S9 *NEW*	---	
	6-mm-dia. model (5 to 6 mm dia.)	XS2G-D5S1 *NEW*	XS2G-D5S2 *NEW*	
4	8-mm-dia. model (7 to 8 mm dia.)	XS2G-D4S7 *NEW*	---	
	7-mm-dia. model (6 to 7 mm dia.)	XS2G-D4S9 *NEW*	---	
	6-mm-dia. model (5 to 6 mm dia.)	XS2G-D4S1	XS2G-D4S2	
	4-mm-dia. model (4 to 5 mm dia.)	XS2G-D4S3	XS2G-D4S4	
	3-mm-dia. model (3 to 4 mm dia.)	XS2G-D4S5	XS2G-D4S6	

Note: **1.** Orders are accepted in multiples of the minimum order.

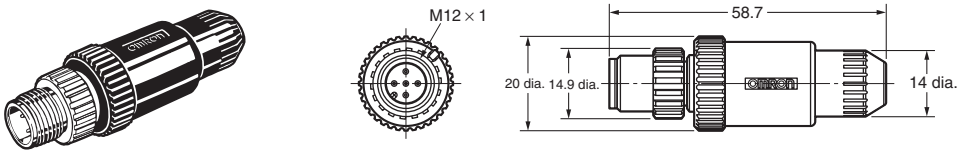
2. XS2G Screw-on Plugs cannot be connected side-by-side to the CN1 and CN2 connectors of XS2R Y-Joint Sockets/Plugs.

■ Dimensions

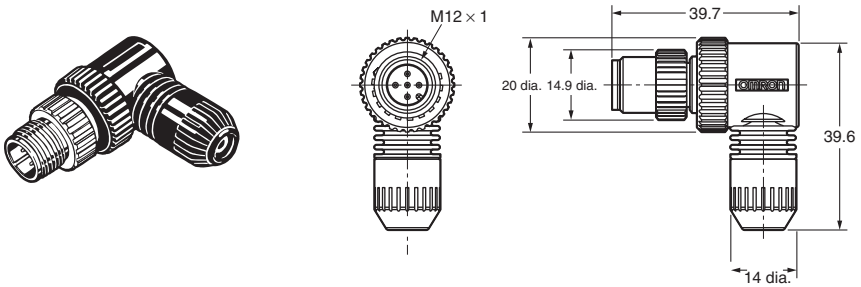
XS2G-D5S7 (5-pole, Straight, Applicable Cable Outer Diameter: 8 mm)
XS2G-D5S9 (5-pole, Straight, Applicable Cable Outer Diameter: 7 mm)
XS2G-D4S7 (4-pole, Straight, Applicable Cable Outer Diameter: 8 mm)
XS2G-D4S9 (4-pole, Straight, Applicable Cable Outer Diameter: 7 mm)



XS2G-D5S1 (5-pole, Straight, Applicable Cable Outer Diameter: 6 mm)
XS2G-D4S□ (4-pole, Straight, Applicable Cable Outer Diameter: 3, 4, or 6 mm)



XS2G-D5S2 (5-pole, L-shaped, Applicable Cable Outer Diameter: 6 mm)
XS2G-D4S□ (4-pole, L-shaped, Applicable Cable Outer Diameter: 3, 4, or 6 mm)



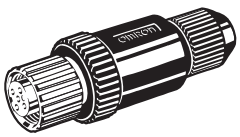
■ Ordering Information

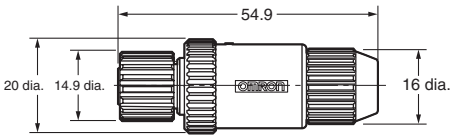
No. of poles	Suitable cable dia. (mm)	Model		Minimum order
		Straight connectors (for DC)	L-shaped connectors (for DC)	
5	8-mm-dia. model (7 to 8 mm dia.)	XS2C-D5S7 *NEW*	---	50
	7-mm-dia. model (6 to 7 mm dia.)	XS2C-D5S9 *NEW*	---	
	6-mm-dia. model (5 to 6 mm dia.)	XS2C-D5S1 *NEW*	XS2C-D5S2 *NEW*	
4	8-mm-dia. model (7 to 8 mm dia.)	XS2C-D4S7 *NEW*	---	
	7-mm-dia. model (6 to 7 mm dia.)	XS2C-D4S9 *NEW*	---	
	6-mm-dia. model (5 to 6 mm dia.)	XS2C-D4S1	XS2C-D4S2	
	4-mm-dia. model (4 to 5 mm dia.)	XS2C-D4S3	XS2C-D4S4	
	3-mm-dia. model (3 to 4 mm dia.)	XS2C-D4S5	XS2C-D4S6	

Note: Orders are accepted in multiples of the minimum order.

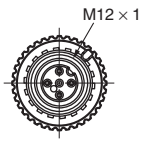
■ Dimensions

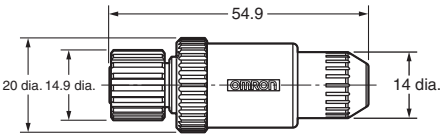
XS2C-D5S7 (5-pole, Straight, Applicable Cable Outer Diameter: 8 mm)
XS2C-D5S9 (5-pole, Straight, Applicable Cable Outer Diameter: 7 mm)
XS2C-D4S7 (4-pole, Straight, Applicable Cable Outer Diameter: 8 mm)
XS2C-D4S9 (4-pole, Straight, Applicable Cable Outer Diameter: 7 mm)



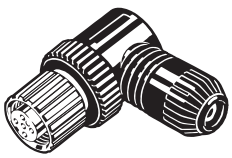


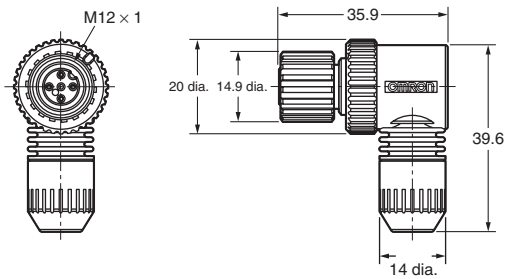
XS2C-D5S1 (5-pole, Straight, Applicable Cable Outer Diameter: 6 mm)
XS2C-D4S□ (4-pole, Straight, Applicable Cable Outer Diameter: 3, 4, or 6 mm)





XS2C-D5S2 (5-pole, L-shaped, Applicable Cable Outer Diameter: 6 mm)
XS2C-D4S□ (4-pole, L-shaped, Applicable Cable Outer Diameter: 3, 4, or 6 mm)





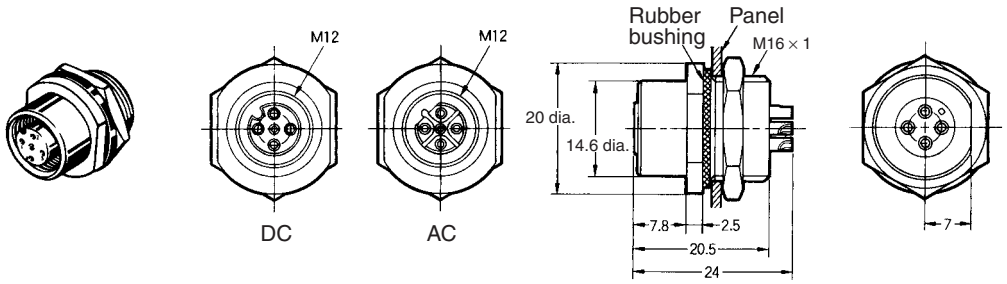
■ Ordering Information

Lock method	Pin shape	Model		Minimum order
		DC	AC	
Rear lock	Solder cup pin	XS2P-D421-2	XS2P-A421-2	50
Front lock	Solder cup pin	XS2P-D422-2	XS2P-A422-2	
	DIP pin	XS2P-D422-1	XS2P-A422-1	

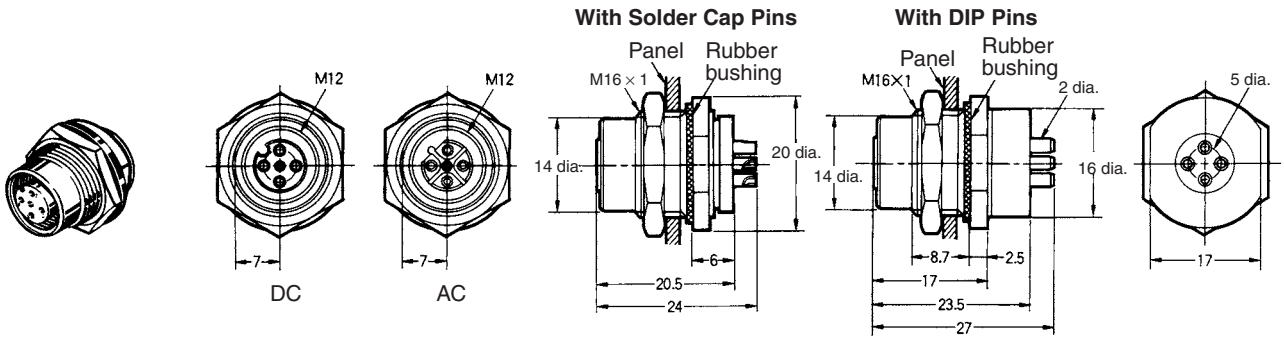
Note: Orders are accepted in multiples of the minimum order.

■ Dimensions

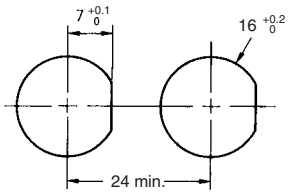
XS2P-□421-2 (with Solder Cup Pins)
Rear Lock Model



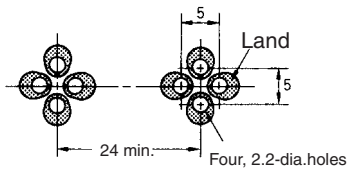
XS2P-□422-1 (with DIP Pins)
XS2P-□422-2 (with Solder Cup Pins)
Front Lock Model



Panel Cutout



PCB-mounting Dimensions



Note: The panel thickness is 1 to 4 mm.

■ Ordering Information

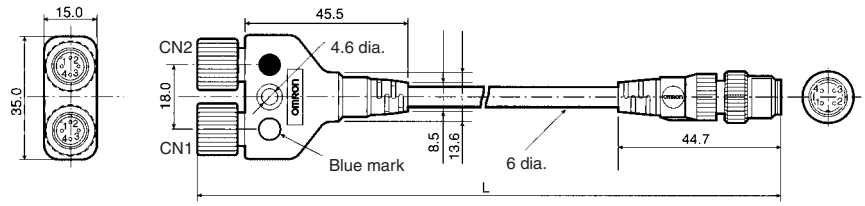
Type	Connector	DC		Minimum order
		Cable length L (m)	Model	
With cable	Connectors on cable ends	0.5	XS2R-D426-B11-F	5
		1	XS2R-D426-C11-F	
		2	XS2R-D426-D11-F	
		3	XS2R-D426-E11-F	
	Connector on one cable end	2	XS2R-D426-D10-F	
		5	XS2R-D426-G10-F	
Without cable	Y-Joint plug/socket	---	XS2R-D426-1	10
			XS2R-D426-5	
			XS2R-D426-81	
			XS2R-D426-82	

Note: **1.** Orders are accepted in multiples of the minimum order.

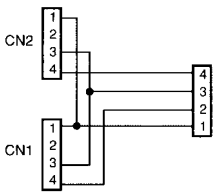
2. XS2G Screw-on Plugs cannot be connected side-by-side to the CN1 and CN2 connectors.

■ Dimensions

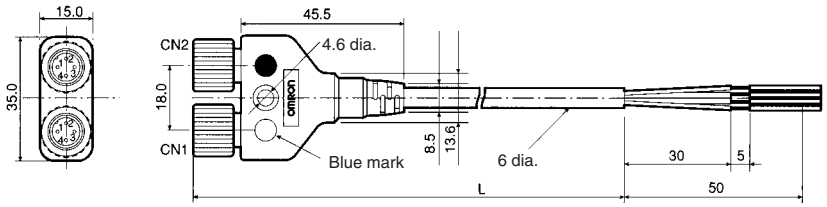
XS2R-D426-□11-F
Connectors on Cable Ends
(Y-Joint Plug/Socket)



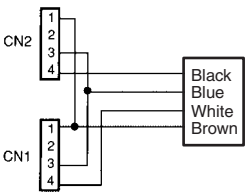
Internal Connections



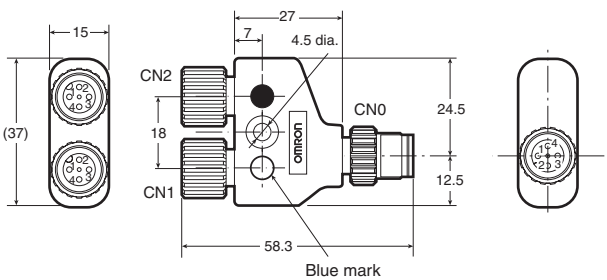
XS2R-D426-□10-F
Connectors on One Cable End
(Y-Joint Plug/Socket)



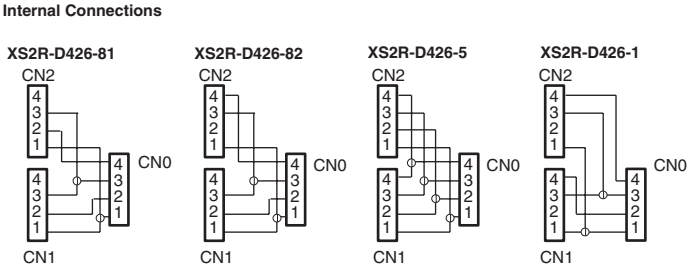
Internal Connections



XS2R-D426-1
Y-Joint Plug/Socket without Cable



Internal Connections



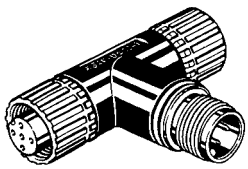
■ Ordering Information

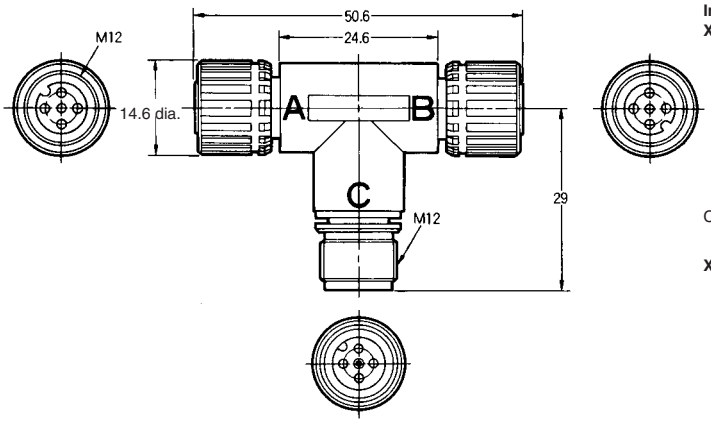
Type	DC	
	Model	Minimum order
Aggregate model	XS2R-D422-1	20
	XS2R-D422-5	
Bifurcated model	XS2R-D423-1	
Daisy-chain model	XS2R-D424-1	

Note: Orders are accepted in multiples of the minimum order.

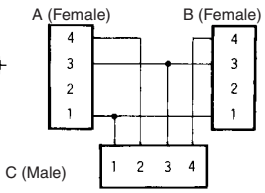
■ Dimensions

XS2R-D422-1
XS2R-D422-5
Aggregate Models

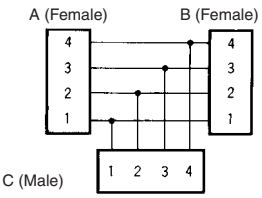




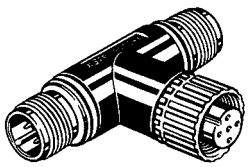
Internal Connections
XS2R-D422-1

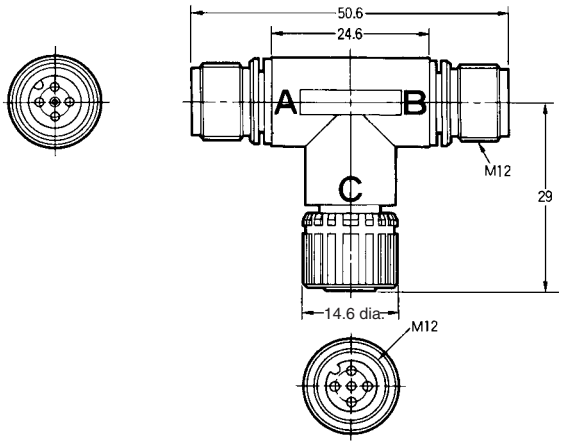


XS2R-D422-5

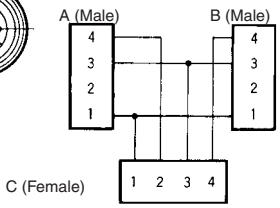


XS2R-D423-1
Bifurcated Model

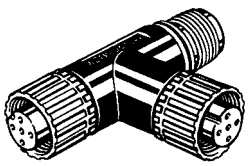


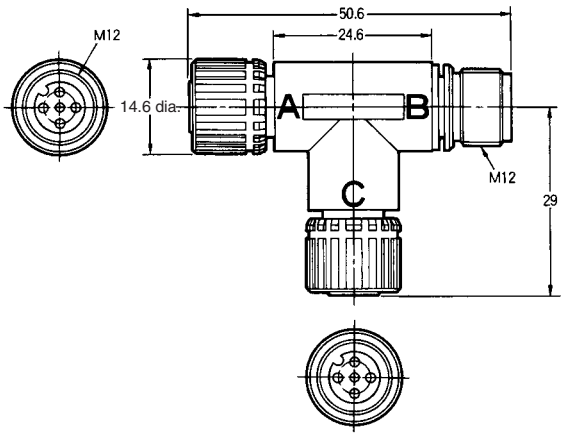


Internal Connections

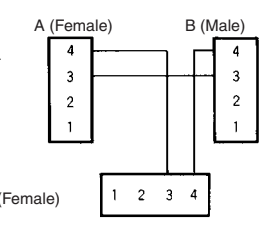


XS2R-D424-1
Daisy-chain Model





Internal Connections

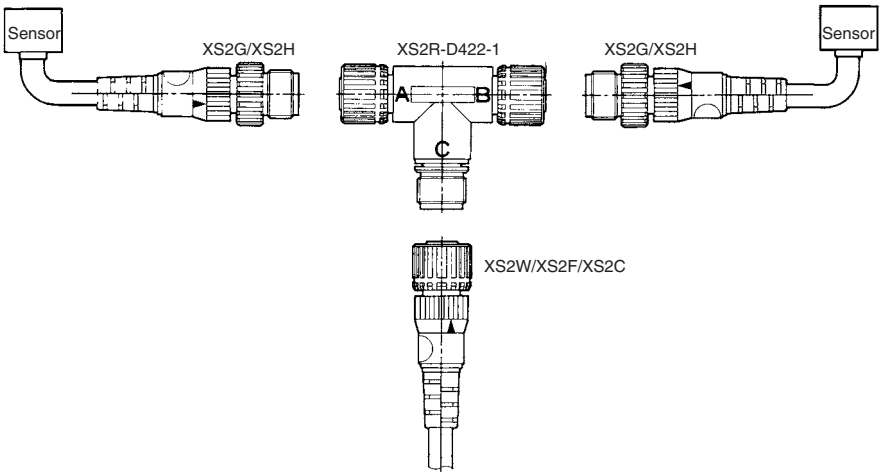


■ Precautions

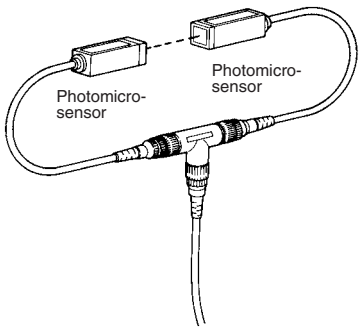
Before using the XS2R for Sensors, make sure that the wiring of the Sensors and the internal connections of the XS2R are correct.

XS2R Application Examples

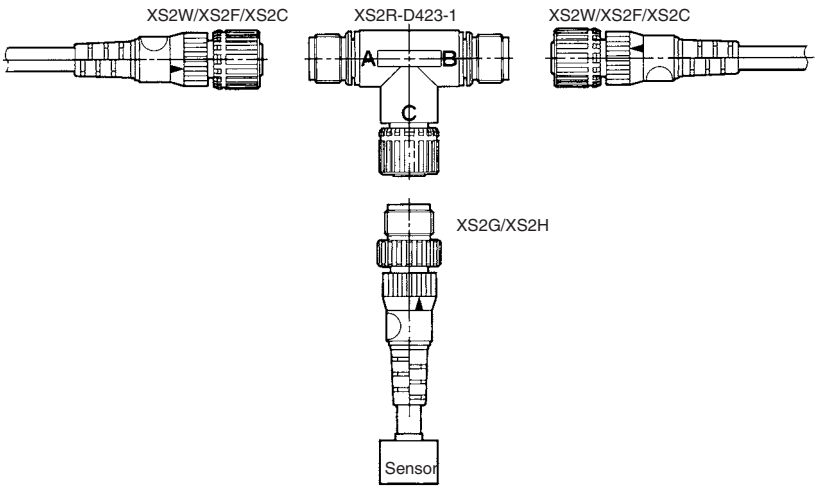
XS2R-D422-1 (Aggregate Model)



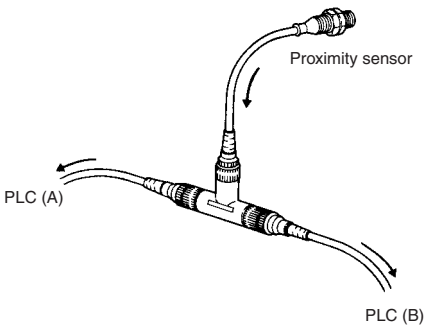
A pair of Two-wire Sensors or Three-wire Sensors can be connected as shown in the illustration.
The XS2R-D422-5 has feed-through connections, thus working as a connector for the extension cable.



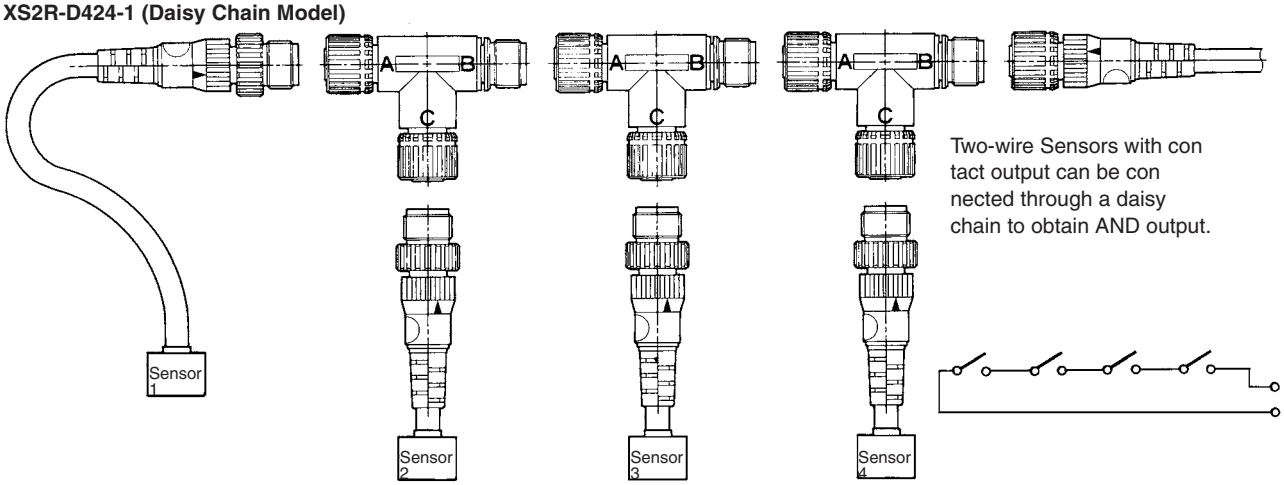
XS2R-D423-1 (Bifurcated Model)



Two or Three-wire Sensor signals can be bifurcated.



XS2R-D424-1 (Daisy Chain Model)



Two-wire Sensors with con tact output can be con nected through a daisy chain to obtain AND output.

■ Ordering Information

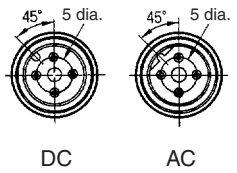
Mounting method	Pin shape	Model		Minimum order
		DC	AC	
Embedded with screw threads	Solder cup pin	XS2M-D421	XS2M-A421	50
Embedded with no screw threads		XS2M-D422	XS2M-A422	
Flange-mounting		XS2M-D423	XS2M-A423	
Screw-mounting	DIP pin	XS2M-D424-1	XS2M-A424-1	
	Solder cup pin	XS2M-D424-2	XS2M-A424-2	

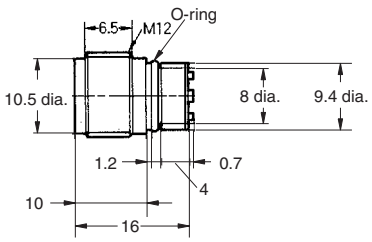
Note: Orders are accepted in multiples of the minimum order.

XS2M-□42□ Sensor-embedded Plugs

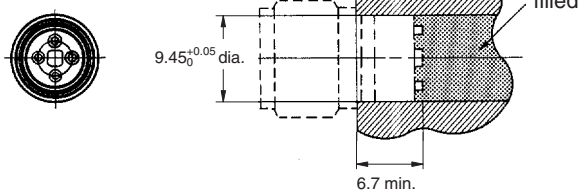
■ Dimensions

XS2M-D421 (DC)
XS2M-A421 (AC)
(Embedded Plug with Screw Threads)



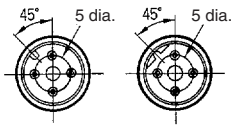


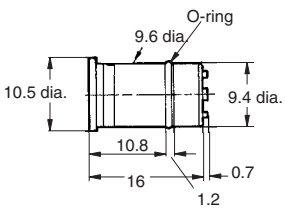
Mounted Dimensions



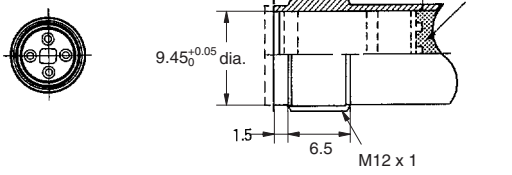
Note: After mounting, anchor the solder cups by injecting resin.

XS2M-D422 (DC)
XS2M-A422 (AC)
(Embedded Plug without Screw Threads)





Mounted Dimensions

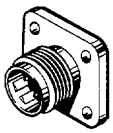


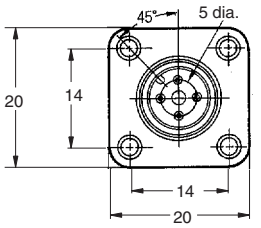
Note: After mounting, anchor the solder cups by injecting resin.

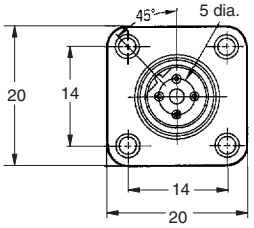
XS2M-□423 **Flange-mounting Panel-mounting Plugs**
XS2M-□424-□ **Screw-mounting Panel-mounting Plugs**

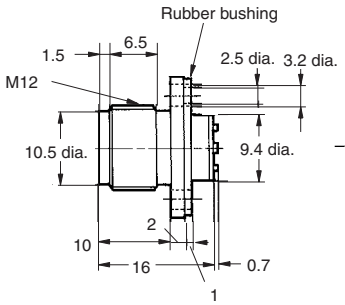
■ Dimensions

XS2M-D423 (For DC)
XS2M-A423 (For AC)
(Flange-mounting Model)

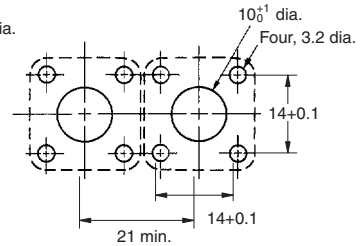




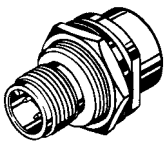


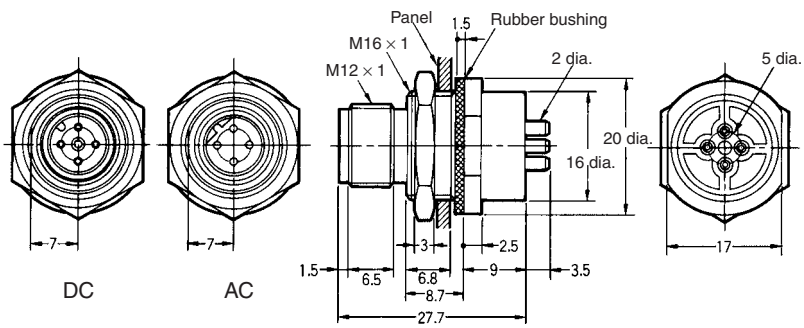


Panel Dimensions

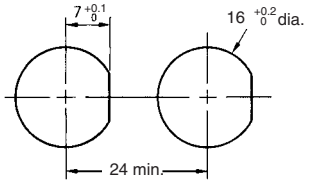


XS2M-□424-1 (With DIP Pins)
XS2M-□424-2 (With Solder Cup Pins)
(Screw-mounting Model)



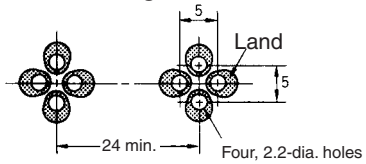


Panel Cutout



Note: The panel thickness is 1 to 4 mm.

PCB-mounting Dimensions



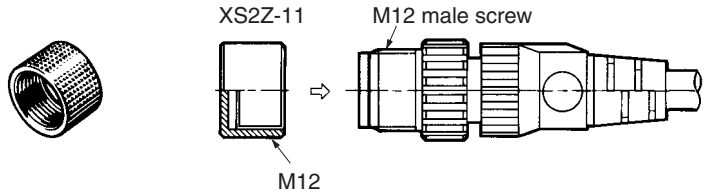
XS2 Accessories

■ XS2 Connector Covers

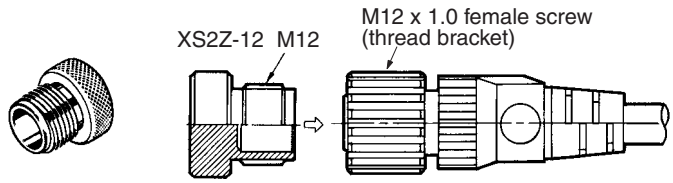
Water-resistive Covers

XS2Z-11

The Water-resistive Cover ensures IP67. When mounting the Water-resistive Cover to a Connector, be sure to apply a torque range between 0.39 and 0.49 N·m to tighten the Water-resistive Cover.



XS2Z-12



■ Ordering Information

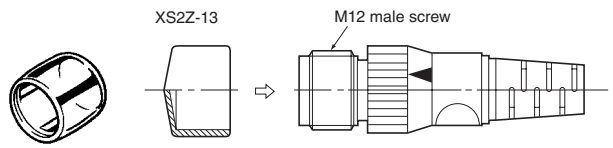
Model	Minimum order	Material	Suitable connector	
			Model	Mounting portion
XS2Z-11	50	Brass/nickel plated	XS2G/XS2H/XS2M/XS2R	M12 male screw
XS2Z-12			XS2C/XS2R/XS2F/XS2P/XW3B	M12 female screw (thread bracket)

Note: Orders are accepted in multiples of the minimum order.

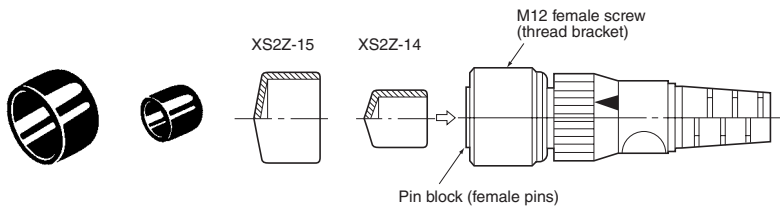
Dust Covers

XS2Z-13

The Dust Cover is for dust prevention and does not ensure IP67 degree of protection. 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.



XS2Z-15/XS1Z-14



■ Ordering Information

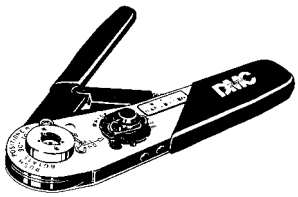
Model	Minimum order	Material	Suitable connector	
			Model	Mounting portion
XS2Z-13	50	Transparent polyvinyl chloride	XS2G/XS2H/XS2M/XS2R	M12 male screw
XS2Z-14		Red polyvinyl chloride	XS2C/XS2R/XS2F/XS2P/ XW3B	Pin block (female pins)
XS2Z-15				M12 female screw (thread bracket)

Note: Orders are accepted in multiples of the minimum order.

■ Tools

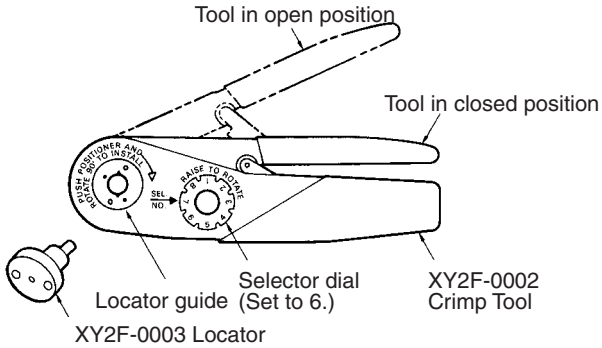
Crimp Tool

XY2F-0002



Use the Crimp Tool to crimp a cable core to the XS2U Crimping Pin used with the XS2C or XS2G Crimping Connector.

Note: The XY2F-0002 Crimp Tool is DMC's AFM8 (M22520/2-01). Mount the XY2F-0003 Locator (sold separately) to the locator guide of the Crimp Tool with a screw provided with the XY2F-0003 Locator.

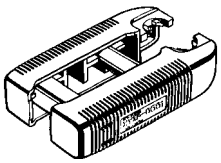


Locator

XY2F-0003

Pin-block Extraction Tool

XY2F-0001



Use this tool to extract a Pin Block from the covers in order to make wiring changes or corrections after the cover has been mounted to the pin block for Connector Assemblies (XS2C/XS2G, soldering/crimping).

■ Assembly Procedure for XS2C/XS2G Connector Assemblies

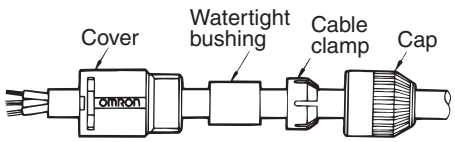
Connector and Cable External Diameters

- Connectors for 6-, 4-, and 3-mm-diameter Cables (i.e., Cables that are 5 to 6, 4 to 5, and 3 to 4 mm in diameter respectively) are available. When assembling a Connector used with a cable, make sure that the external diameter of the Connector is suited to that of the cable.
- Connectors for 6-mm-diameter Cables use white cable clamps. Connectors for 4 and 3-mm-diameter Cables use black cable clamps.
  A watertight bushing for 6-mm-diameter Cable has no stripe, that for 4-mm-diameter Cable has a single stripe, and that for 3-mm-diameter Cable has two stripes.

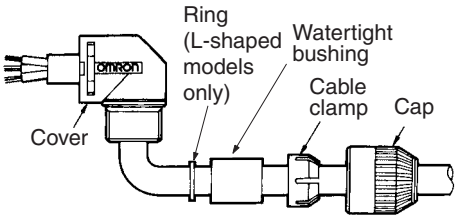
Note: When connecting a commercially available cable to a connector assembly, use a cable with an outside diameter of 3 to 6 mm and core sizes of 0.18 to 0.75 mm^2 for crimping connectors and 0.5 mm^2 maximum for soldering connectors.

Component Insertion

Straight Connectors



L-shaped Connectors



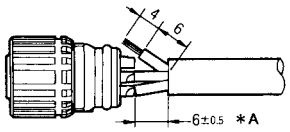
Note: A ring is not required for Screw-on Connectors.

- As shown in the above illustration, connect the above components to the Cable with its end processed.

Note: The diagram shows the cover for Soldering or Crimping Connectors. The shape of the cover is different for Screw-on Connectors.

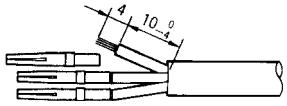
Wiring (Processing Cable Ends)

Soldering Connectors



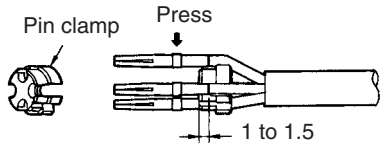
- Strip 10 mm of the Cable sheath and 4 mm of each core.
- Before soldering cores and solder cup pins together, solder-coat each of them.
- The following conditions are recommended for soldering each solder cup pin.
  Soldering iron: 30 to 60 W
  Soldering temperature: 280°C to 340°C
  Soldering period: 3 s max.
- The length marked *A should be 6.5 mm max., otherwise the proper degree of protection of the connector will not be maintained.

Crimping Connectors



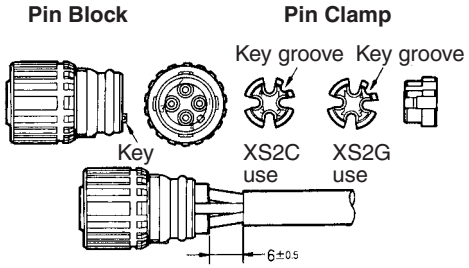
- Strip 14 mm of the Cable sheath and 4 mm of each core.
- Make sure that each core is not damaged and its end strands are not spread out.
- Mount the XY2F-0003 Locator to DMC's AFM8 (M25520/2-01) Crimping Tool, both of which are sold separately, and set the selector dial of the Crimping Tool to 6 for the XS2U-□□21 and to 7 for the XS2U-□□22.
- After mounting the crimping pins to the Locator, fully insert the cores to the crimping pins.
- Squeeze the handle of the Crimp Tool to press-fit the cores to the crimping pins.
  (Squeeze the handle firmly until the handle automatically returns to the release position.)

Crimping Cable Cores to Pin Clamp



- After press-fitting the cores to the pins, insert the pins into the pin clamp as shown in the illustration. Then make sure that the lead colors correspond to the pin clamp numbers that are identical to the connector pin numbers.

Mounting Pin Clamp to Pin Block

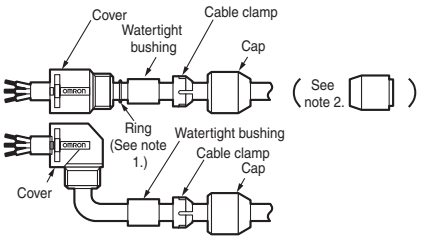


- Tentatively insert the pins to the pin block holes so that the key on the pin block will coincide with the key groove on the pin clamp. Then insert the cable along with the pin clamp.

Screw-on Connectors

Inserting Parts

Confirm that you have all of the required parts.



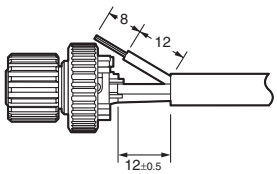
Insulation caps and insulation tubes are included with 5-pole Connectors (XS2C-D5S□ and XS2G-D5S□).

Note: 1. Rings are not required with 7-mm and 8-mm cables.

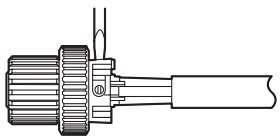
2. Insert the waterproof bushing for 7-mm and 8-mm cables in the direction shown in the diagram.

Cable End Processing

Four-pole Connectors



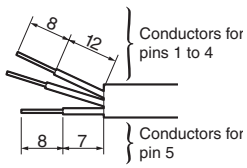
- Loosen the screws on pins 1 to 4 and insert the cores according to the pin numbers.



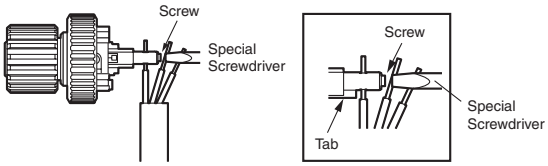
- Use the special Screwdriver (XW4Z-00B) and tighten the screws securely so that the cores do not pull out (tightening torque: 0.15 to 0.2 N·m).

Five-pole Connectors

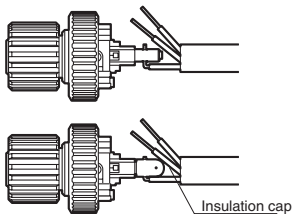
- Strip the cable sheath for a total of 15 mm and strip the core covering for 8 mm for the core to connect to pin 5.



- Connect the core to pin 5 (in the center) first.
- Insert the core from the side of the hold with the tab and tighten the screw securely (tightening torque: 0.15 to 0.2 N·m), and then cut off the excess wire with wire cutters.



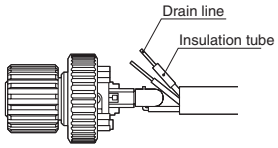
- Bend the cable as shown below, attached the enclosed insulation cap, and then strip the other cores.



- Connect the cores to pins 1 to 4.

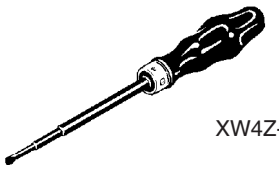
Connecting Shielded Cables to Five-pole Connectors

- Place the insulation tub on the drain line of the shield and connect ti to the terminal.
- Tighten the screw and then check visually to see if there is insulation between the cores.



- Connect the cores to pins 1 to 4.

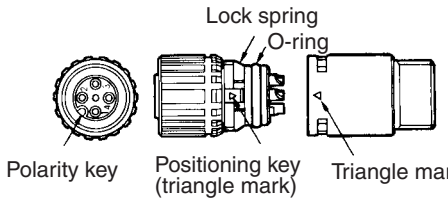
Note: When tightening the screws, use the dedicated XW4Z-00B Screwdriver that matches with the screw-slot dimensions.



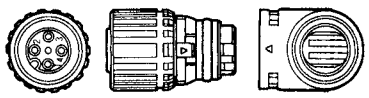
XW4Z-00B Screwdriver

Inserting Pin Block

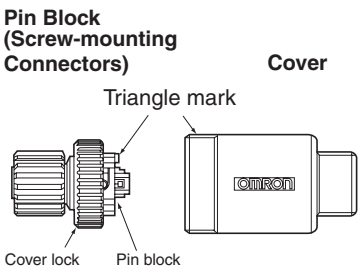
Pin Block (Soldering Model) **Cover (Straight Model)**



(Crimping Model) **(L-shaped Model)**



- Mount the cover to the pin block so that the triangle mark on the pin block will coincide with the triangle mark on the cover.
- If the cover is used for an L-shaped model, the relationship between the position of the polarity key on the engaged side and cable connection direction will be determined by the direction in which the positioning key is inserted into the cover, which can be rotated by 90°.
- Fully insert the positioning key until the positioning key is hidden by the casing.

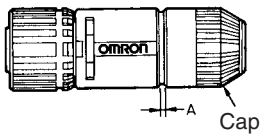


- Align the triangular marks on the pin block and cover and insert the pin block into the cover.
- Press them together firmly (0.39 to 0.49 N·m) until the pin block does not come out of the cover.

Mounting Cap

- After mounting the cover to the pin block and the cover snaps into place, tighten the cap securely by hand within a torque of 0.39 and 0.49 N·m.

Note: If the cap is not tighten securely enough, the degree of protection (IP67) may not be maintained or vibration may cause the cap to become loose. Do not tighten the cap with pliers or similar tools; they may damage the cap.



- After fully tightening the cap, length A should be approximately one of the following according to the cable external diameter and the Connector model.

Connector	Cable external diameter (mm)			
	6 mm	5 mm	4 mm	3 mm
For 6-mm-dia. cable	1	0	---	---
For 4-mm-dia. cable	---	2	1	---
For 3-mm-dia. cable	---	---	2	1

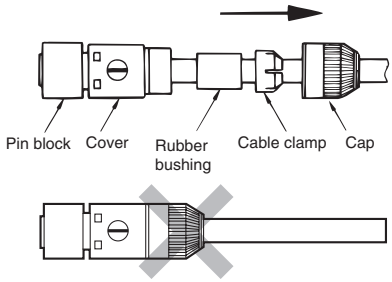
After Assembly

- Confirm the insulation between cores after completing assembly.

■ Extraction Procedure

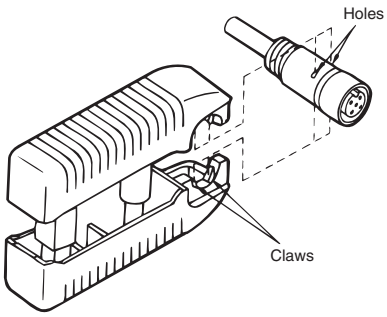
Disconnecting Components

- Disconnect all components on the cap side from the cover.

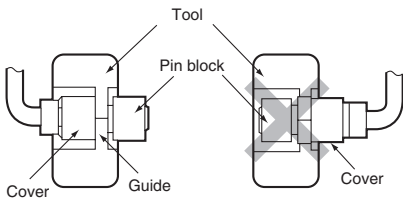


Extracting Pin Block

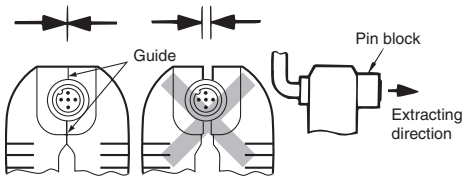
- Insert the claws of the Tool into the four holes of the cover.



- Make sure that the pin block is outside the Tool.



- Press the Tool so that the guides of the Tool are in close contact. Then pull the pin block straight.



⚠ Caution

The pin block must not be extracted from the same Connector more than 3 times, otherwise the proper degree of protection of the pin block or Connector will not be maintained.

■ Precautions

Refer to *Correct Use* for precautions for individual products.

Correct Use

Mating

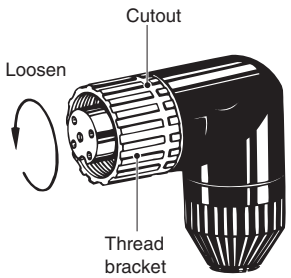
- XS2 and XS3 Connectors will not mate with each other.
- When using Sensors with Connectors or Limit Switches, use the Sensor I/O Connectors specified in the catalog.

Tightening Cap (Connector Assemblies)

- Do not use pliers to tighten caps, otherwise the caps may be damaged. Be sure to tighten each cap by hand within a torque range between 0.39 and 0.49 N·m.
- If caps are not tightened securely, the Connectors may not maintain their proper degree of protection (i.e., IP67) or the caps may become loose due to vibration.

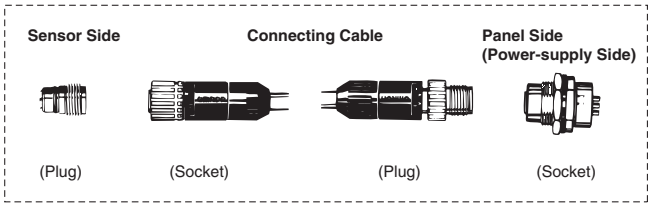
Connector Connection and Disconnection

- Always turn OFF the power supply before connecting or disconnecting connectors.
- When connecting or disconnecting Connectors, be sure to hold the Connectors by hand. Do not hold the cable part when disconnecting Connectors.
- Do not touch the mating surfaces with wet hands. Remove an water on the Connectors or surrounding area before connecting or disconnecting Connectors. Water can cause internal shorts or insulation faults.
- Do not allow pieces of metal or powder to enter the mating sections.
- Connectors mating with sockets must be fully inserted into the sockets. Tighten the thread brackets carefully so that the threads will not be damaged.
- Fully tighten thread brackets within a torque range between 0.39 and 0.49 N·m and be sure that the threads of the opposite parts are hidden by the thread brackets.
- When disconnecting Connectors, be sure to loosen the thread brackets first. Do not loosen the caps.
- Thread brackets must be loosened in the cutout direction.



Connector Arrangement

- For safety, when constructing a connection system between a Sensor and panel with a connector, make sure that the connector plug is on the Sensor side and the connector socket is on the panel side (i.e., the female pins are located on the power-supply side).



Recommended Cables

- When connecting a commercially available cable to a connector assembly, use a cable with an outside diameter of 3 to 6 mm and core sizes of 0.18 to 0.75 mm^2 for crimping connectors and 0.5 mm^2 maximum for soldering connectors.

Degree of Protection

- Do not impose external force continuously on the joints of pin blocks and covers, otherwise the Connectors may not keep its proper degree of protection (i.e., IP67).
- The degree of protection of connectors (IP67) is not for a fully watertight structure. Do not use them underwater.
- The Connectors are not oil-resistant. Do not use them where they would be subject to oil.
- When using a Connector in a location subject to constant vibration or shock, secure them near the mating sections. The Connectors may become loose or fall off, and the degree of protection (IP67) may be lost.
- Connectors are of resin mold construction. Do not impose excessive force on them.

Storage

Do not store Connectors for long periods of time in the following locations.

- Locations subject to dust or high humidity
- Locations subject to ammonia gas or sulfide gas

Changes in Standards Accompanying International Standardization

■ Changes in Standards for Sensor I/O Connectors Accompanying International Standardization

Changes in standards are progressing to enable international standardization of control components in line with movements in trade friction and EC unification. In Japan as well, domestic standards and regulations are being revised in the face of international standardization. OMRON is working positively to achieve internationalization of standards, and the pin number and lead wire colors of one-piece Sensor I/O Connectors have been changed as described below. We know that this will create extra work for our customers, but we ask for your understanding and cooperation in making the required changes.

Changes in Pin Numbers and Lead Colors for XS2 Sensor I/O Connectors

- Accompany the establishment of IEC standards, JIS standards for proximity and photoelectric sensors (JIS C4524 (High-frequency Proximity Switches) and JIS C4525 (Photoelectric Switches) were revised in 1992, resulting in changes to the lead wire color standards. Also, the standards of the Nippon Electric Control Equipment Industries Association (NECA) were also revised in line with JIS standards. Following these changes, OMRON has changed the cable pin numbers and lead wire colors for XS2 Sensor I/O Connectors.

Excerpt from General Rules on External Lead Colors for Control Devices (NECA 0402)

3.5 As a rule, the contact numbers and lead wire colors of connectors for FA sensors shall combine the lead wire colors given in *Table 6* and the contact number meanings given in *Table 7* for non-contact detection switches and limit switches with connectors.

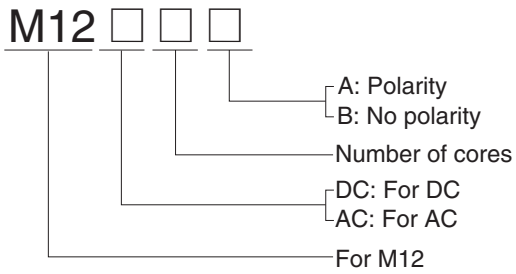
Table 6 Lead Wire Colors, M12

Applicable cable outer diameter		Contact number			
		1	2	3	4
AC	**M12AC2**	---	---	Brown	Blue
	M12AC4	Brown	White	Blue	Black
DC	**M12DC2A**	Brown	---	---	Blue
	M12DC2B	---	---	Black	White
	M12DC3	Brown	---	Blue	Black
	M12DC4	Brown	White	Blue	Black

Note: 1. The above is only an except from *Table 6*.

2. Production of products using the previous colors was terminated in September 1994.

Lead Wire Color Model Number Standards

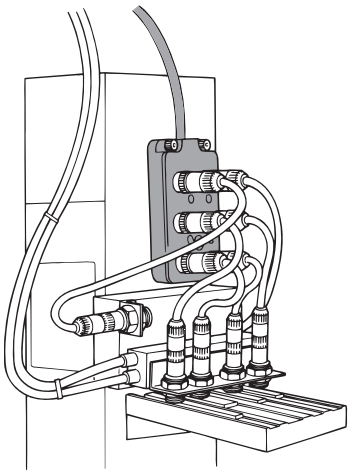


OMRON

Connector Terminal Boxes | 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).
- Incorporates power and operation indicators.
- Uses a single mounting method regardless of the number of ports, which ensures easy system expansion.



■ 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 (See note.)
Case	Case	PBT resin (UL94V-0)/light gray
	Bushing	Rubber
	PCB	Glass-epoxy board
	Seal resin	Urethane resin

Note: The positive power supply, negative power supply, and ground lines are AWG18. Signal lines are AWG22.

■ Ratings and Characteristics

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.) (See note 1.)
Insulation resistance	100 MΩ min. (at 500 VDC)
Dielectric strength	500 VAC for 1 min (leakage current: 1 mA max.) (See note 2.)
Degree of protection	IP67 (IEC529)
Cable retention force	98 N/15 s
Insertion tolerance	200 times
Operating temperature	−25 to 70°C

Note: **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)

XW3B-P□5□-G11 Connector Terminal Box

■ Ordering Information

Sensor type and connections		3-wire DC NPN/2-wire 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-P455-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.

Waterproof Cover (Sold Separately)

XW2Z-12

Model	Minimum order	Materials
XW2Z-12	50	Brass/nickel plated

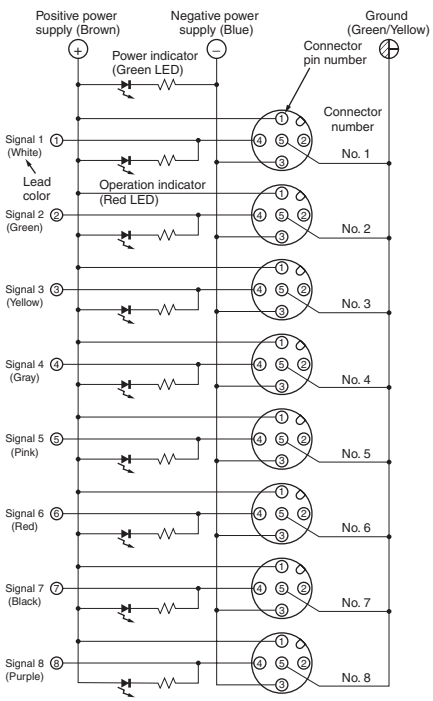
Note: The XW3B/XW3A comes with a dust cover. Use the optional XW2Z-12 Waterproof Cover when an IP67 degree of protection is required.

■ Connection Diagram

Standard Japanese Specification

XW3B-P□55-G11 for 3-wire DC NPN, 2-wire DC (without polarity 3-4), and Actuator (1-4)

3-Wire NPN

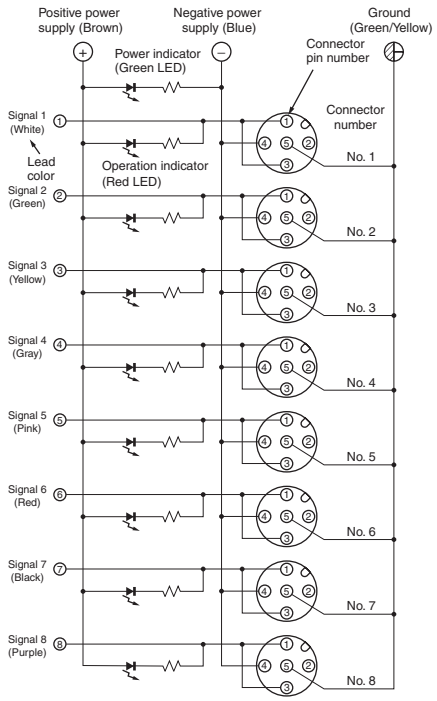


Japanese Specification

XW3B-P□52-G11 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.

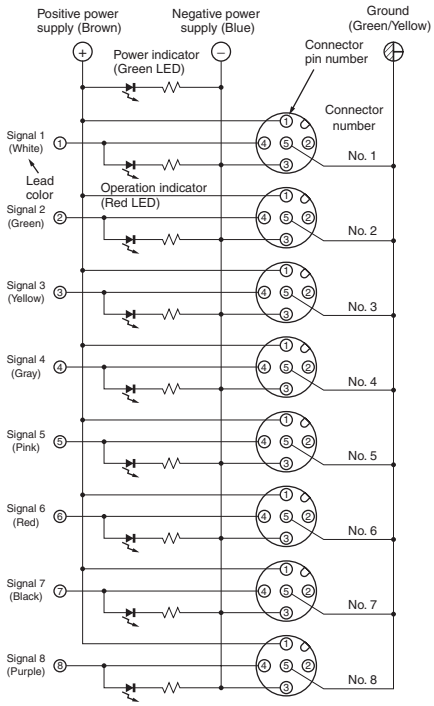
2-Wire



European Specification

XW3B-P□53-G11 for 3-wire DC PNP, 2-wire DC (with polarity 1-4), and Actuator (3-4)

3-Wire PNP



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.

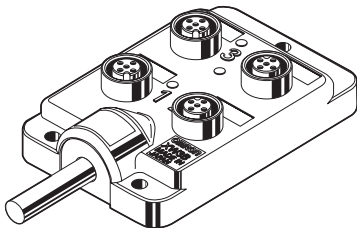
5. Contact numbers 5 through 8 in the above diagrams do not exist on Terminal Boxes with four inputs. The lead colors for signals 1 through 4, power supply, and ground are the same.

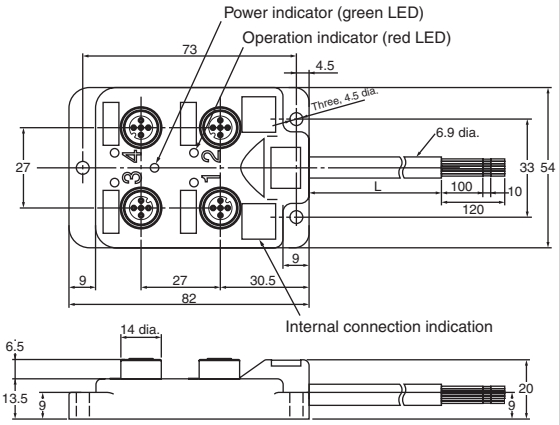
6. Contact numbers 7 and 8 in the above diagrams do not exist on Terminal Boxes with six inputs. The lead colors for signals 1 through 6, power supply, and ground are the same.

Note: Refer to pages 36 to 37 for input devices that can be connected through the above connectors.

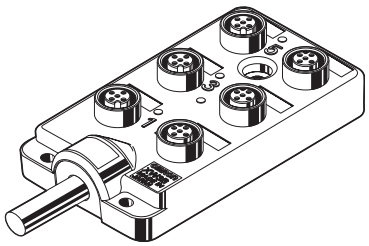
■ Dimensions

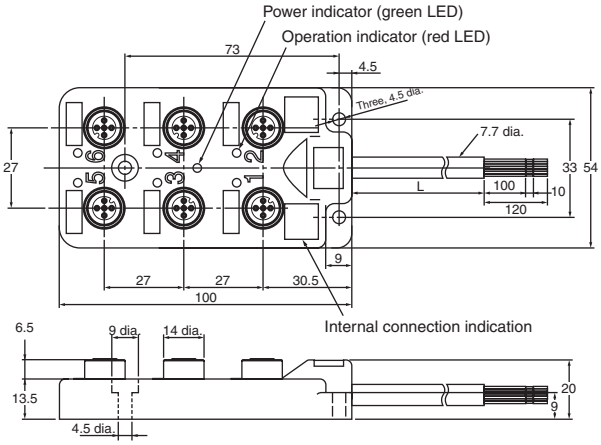
XW3B-P45□-G11 (Four Input Ports)



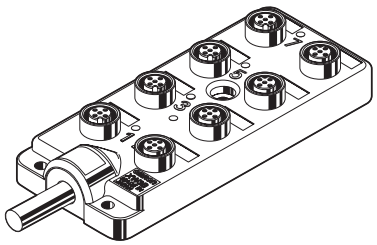


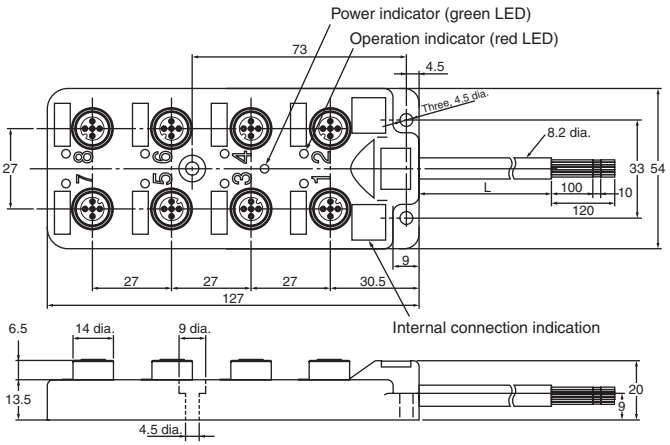
XW3B-P65□-G11 (Six Input Ports)



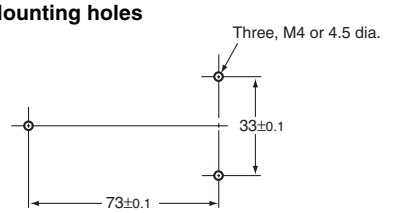


XW3B-P85□-G11 (Eight Input Ports)





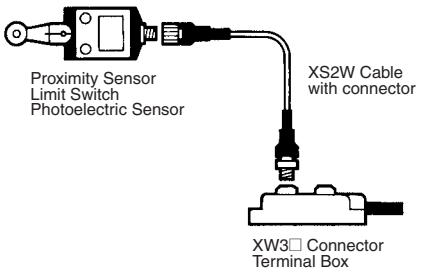
Mounting holes



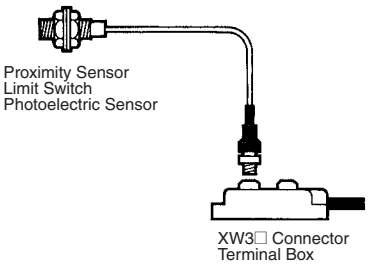
Note: Mounting hole dimensions are always the same regardless of the number of ports.

Input Device Connections Using Sensor I/O Connectors

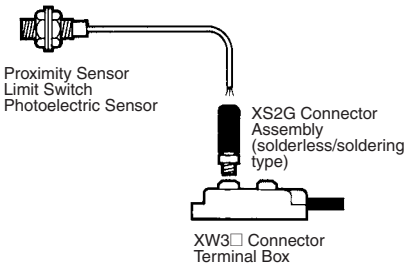
Direct Connection Type



Connector-Terminal Connection Type



Pre-wired Type



■ Input Devices Using Sensor I/O Connectors

Connector Terminal Box	Cable	Input devices using Sensor I/O Connectors		
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, and E2E-X10D1-M1J-T
				E2E-X8MD1-M1GJ, E2E-X14MD1-M1GJ, and E2E-X20MD1-M1GJ
				E2EQ-X3D1-M1GJ, E2EQ-X7D1-M1GJ, and E2EQ-X10D1-M1GJ
	XS2W-D42□-□81-A		Direct connection type	E2E-X3D1-M1G, E2E-X7D1-M1G, and E2E-X10D1-M1G
				E2E-X8MD1-M1G, E2E-X14MD1-M1G, and E2E-X20MD1-M1G
	---	Limit Switch	Connector–Terminal connection type	WL□-□DK1EJ□ (See note 1.), WL□-□-M1GJ (See note 1.), and D4C-□0□□-DK1EJ□ (See note 2.)
	XS2W-D42□-□81-A		Direct connection type	WL□-□K13 (See note 1.), D4E-□□10N (See note 2.), and D4CC-□□□□ (See note 2.)
XW3B-P□53-G11	XS2W-D42□-□81-A	3-wire DC Proximity Sensor (PNP)	Direct connection type	E2E-X2F1-M1, E2E-X5F1-M1, and E2E-X10F1-M1
				E2E-X5MF1-M1, E2E-X10MF1-M1, and 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
XW3B-P□55-G11	---	2-wire DC Proximity Sensor	Connector–Terminal connection type	E2E-X3D1-M1J-T, E2E-X7D1-M1J-T, and 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, and E2E-X10E1-M1
				E2E-X5ME1-M1, E2E-X10ME1-M1, and 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
	---	Limit Switch	Connector–Terminal connection type	WL□-□DK1EJ□ (See note 1.), WL□-□-M1J (See note 1.), and D4C-□0□□-DK1EJ□ (See note 2.)
	XS2W-D42□-□81-A		Direct connection type	WL□-□K13 (See note 1.), and 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 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□52-G11	No	Yes	No	Yes	Yes	No
XW3B-P□53-G11	No	No	No	No	No	Yes
XW3B-P□55-G11	Yes	No	Yes	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□ (See note 1.), WL□-□-M1J (See note 1), and D4C-□0□□-DK1EJ□ (See note 2.)		XW3B-P□52-G11 XW3B-P□55-G11
			Direct connection type	WL□-□K13 (See note 1.) and D4E-□□10N (See note 2.)		
				D4CC-□□□□ (See note 2.)		XW3B-P□52-G11

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

■ Precautions

Correct Use

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 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 (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

OMRON

Sensor I/O Connectors (M8/S8) | XS3

More Compact than the Popular XS2 Sensor I/O Connectors. Saves Wiring Effort and Ideal for Compact Machines and Installations

- Water-resistive, compact connector meets IP67 requirements.
- Conventional M8 screw-mounting models are available along with S8 snap-in models that connect and disconnect with one touch.
- Greatly saves installation space, such as terminal box or conduit space.
- Ideal for a wide variety of FA and OA applications.
- Using connectors for wiring ensures ease of equipment maintenance and reduces downtime required for equipment maintenance.
- Connectors on cable ends require no harness work.

■ Specifications

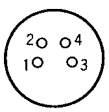
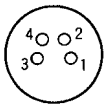
Rated current	1 A
Rated voltage	125 VDC
Contact resistance	40 MΩ max. (20 mV max., 10 mA max.) (See note 1.)
Insulation resistance	1,000 MΩ min. (at 500 VDC)
Dielectric strength	1,000 VAC for 1 min (leakage current: 1 mA max.) (See note 2.)
Degree of protection	IP67 (IEC529)
Insertion tolerance	200 times
Cable tensile strength	50 N/15 s)
Ambient temperature	Operating: – 25°C to 70°C

Note: **1.** The contact resistance of the connector.
2. The dielectric strength of the connector.

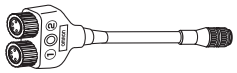
■ Materials and Finish

Pin Block	PBT resin/light gray or black
Contacts	Brass/nickel base, 0.4-μm gold plating
Thread bracket (M8) Shell (S8)	Brass/nickel plated
Cover	Thermoplastic elastomer/black
O-ring	Rubber

■ Pin Arrangement (Engaged Side)

DC	
Plug 	Socket 

List of Products

Name	Model	Appearance	Page
Connectors attached to Cable	XS3W Sockets and Plugs on Cable Ends		41 to 42
	XS3F Sockets on One Cable End		43 to 45
	XS3H Plugs on One Cable End		46 to 48
Terminal Box Connectors Used to enable using connectors for terminal boxes.	XS3P Sockets		49 to 50
Sensor Connector Assemblies Used to enable using connectors in sensors.	XS3M Plugs		51
Y-Joints Used for branching and for daisy-chain connections.	XS3R Plugs/Sockets		52

■ Model Number Legend

Use this model number legend to identify products from their model number. When ordering, use a model number from the table in *Ordering Information*.

XS3W - □42□ - 4□□ - R
1 2 3 4 5 6 7 8 9

1. **Fastening Method**
   M: M8
   S: S8
2. **Connector Poles**
   4: 4 poles
3. **Cable Connection Direction**
   1: Straight/straight
   2: L-shaped/L-shaped
   3: Straight (XS3F)/L-shaped (XS3H)
   4: L-shaped (XS3F)/straight (XS3H)
4. **Connections**
   Pin No.
   1 2 3 4
   4: Brown White Blue Black
5. **Cable Length**
   01: 1 m
   02: 2 m
   05: 5 m
6. **Cable Specifications**
   R: Vibration-proof robot cable

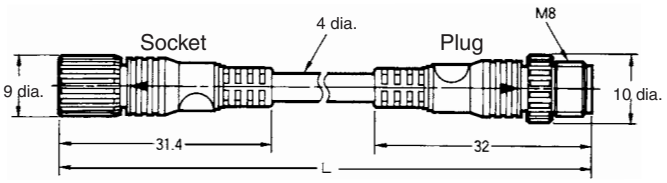
■ Ordering Information

Item	Cable connection direction	No. of cable cores	Cable length (m)	Model
M8 Connectors Vibration-proof robot cable	Straight/Straight	4	1	XS3W-M421-401-R
			2	XS3W-M421-402-R
			5	XS3W-M421-405-R
	L-shaped/L-shaped		2	XS3W-M422-402-R
			5	XS3W-M422-405-R
	Straight/L-shaped		2	XS3W-M423-402-R
			5	XS3W-M423-405-R
	L-shaped/Straight		2	XS3W-M424-402-R
			5	XS3W-M424-405-R
S8 Connectors Vibration-proof robot cable	Straight/Straight	4	1	XS3W-S421-401-R
			2	XS3W-S421-402-R
			5	XS3W-S421-405-R
	L-shaped/L-shaped		2	XS3W-S422-402-R
			5	XS3W-S422-405-R
	Straight/L-shaped		2	XS3W-S423-402-R
			5	XS3W-S423-405-R
	L-shaped/Straight		2	XS3W-S424-402-R
			5	XS3W-S424-405-R

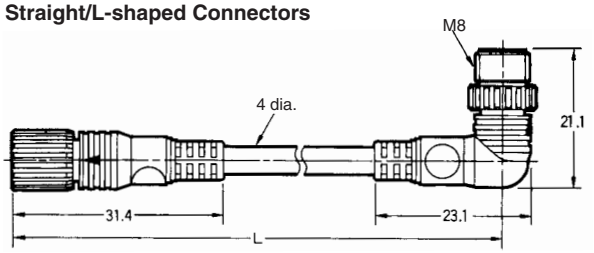
XS3W-M42□-4□□-R M8 Screw-mounting Connectors with Vibration-proof Robot Cable

■ Dimensions

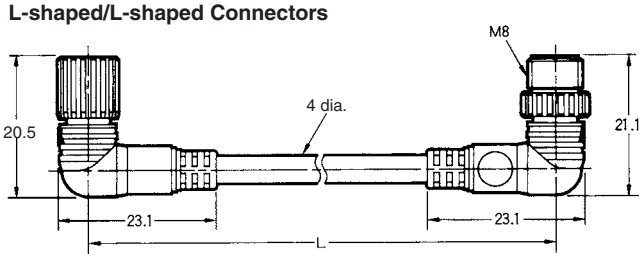
Straight/Straight Connectors



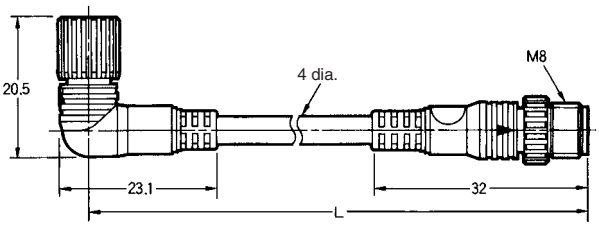
Straight/L-shaped Connectors



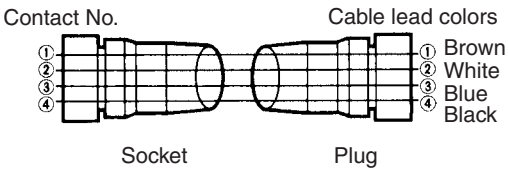
L-shaped/L-shaped Connectors



L-shaped/Straight Connectors



Wiring Diagram



Mating Connectors

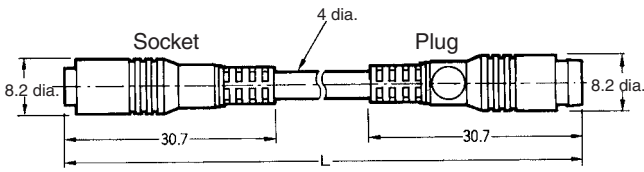
Item	Socket side	Plug side
XS3W (M8)	XS3M (M8/S8) XS3H (M8)	XS3F (M8), XS3W (M8), XS3P (M8)

Note: 1. Cables can be extended with more than one XS3W.
2. M8 screw models and S8 snap-in models cannot be connected to each other.

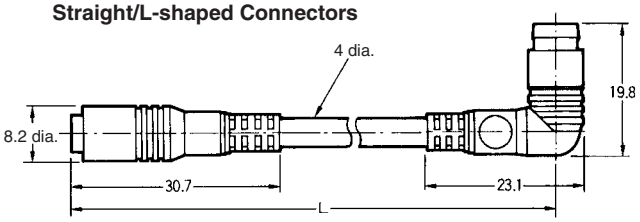
XS3W-S42□-4□□-R S8 Snap-in Connectors with Vibration-proof Robot Cable

■ Dimensions

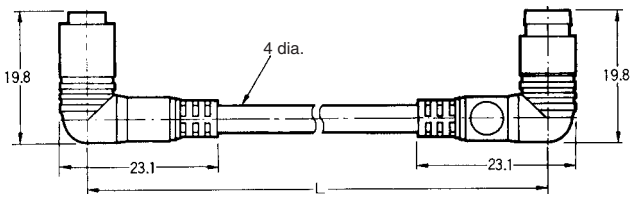
Straight/Straight Connectors



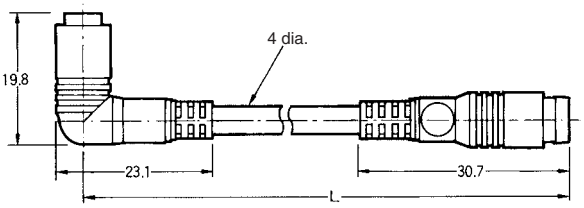
Straight/L-shaped Connectors



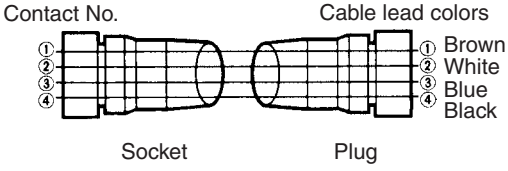
L-shaped/L-shaped Connectors



L-shaped/Straight Connectors



Wiring Diagram



Mating Connectors

Item	Socket side	Plug side
XS3W (S8)	XS3M (M8/S8), XS3H (S8)	MS3F (S8), XS3W (S8), XS3P (S8)

Note: 1. Cables can be extended with more than one XS3W.
2. M8 screw-mounting models and S8 snap-in models cannot be connected to each other.

■ Model Number Legend

Use this model number legend to identify products from their model number. When ordering, use a model number from the table in *Ordering Information.*

XS3F - □42□ - 4□□ - □
1 2 3 4 5 6 7 8 9

1. **Fastening Method**
   M: M8
   S: S8
2. **Connector Poles**
   4: 4 poles
3. **Cable Connection Direction**
   1: Straight
   2: L-shaped
4. **Connections**
   Pin No.
   1 2 3 4
   4: Brown White Blue Black
5. **Cable Length**
   01: 1 m
   02: 2 m
   05: 5 m
6. **Cable Specifications**
   A: Standard cable
   R: Vibration-proof robot cable

■ Ordering Information

M8 Model

Item	Cable connection direction	No. of cable cores	Cable core cross-sectional area	Cable length (m)	Model
Standard cable	Straight	4	0.2 mm^2	2	XS3F-M421-402-A
				5	XS3F-M421-405-A
	L-shaped			2	XS3F-M422-402-A
				5	XS3F-M422-405-A
Vibration-proof robot cable	Straight	4		1	XS3F-M421-401-R
				2	XS3F-M421-402-R
				5	XS3F-M421-405-R
	L-shaped			1	XS3F-M422-401-R
				2	XS3F-M422-402-R
				5	XS3F-M422-405-R

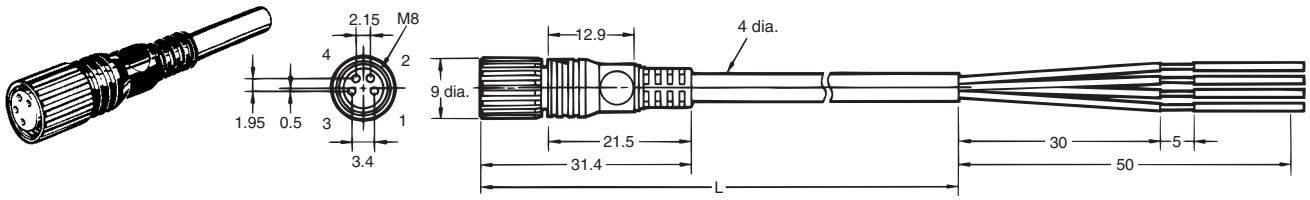
S8 Model

Cable connection direction	No. of cable cores	Cable core cross-sectional area	Cable length (m)	Model
Straight	4	0.2 mm^2	1	XS3F-S421-401-R
			2	XS3F-S421-402-R
			5	XS3F-S421-405-R
L-shaped			1	XS3F-S422-401-R
			2	XS3F-S422-402-R
			5	XS3F-S422-405-R

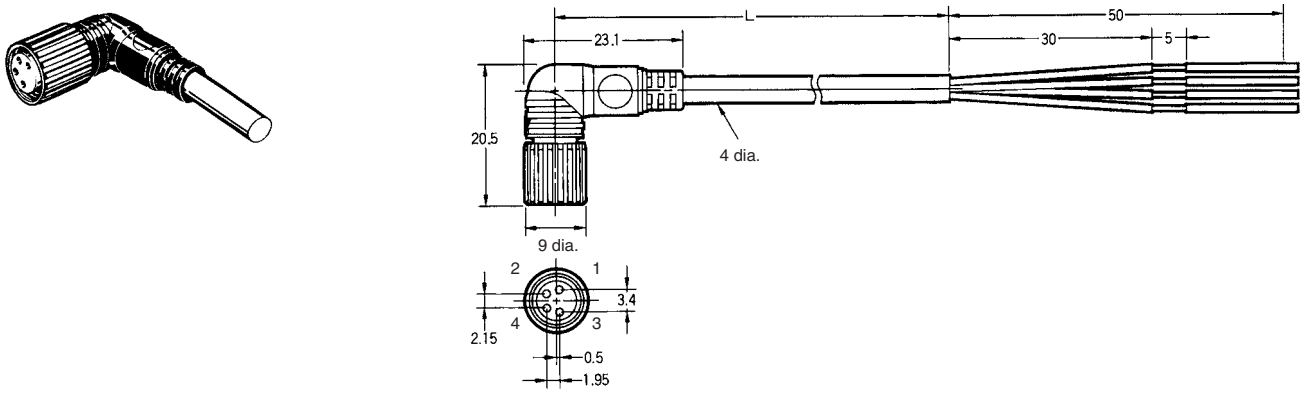
XS3F-M42□-4□□-□ M8 Screw-on Cables with Vibration-proof Robot Cable/Standard Cable

■ Dimensions

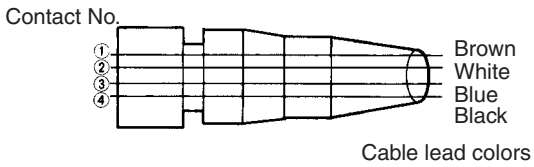
Straight Connectors



L-shaped Connectors



Wiring Diagram



Mating Connectors

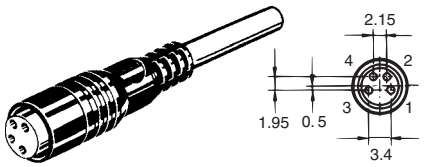
Item	Model
XS3F (M8)	XS3M (M8/S8), XS3H (M8), XS3W (M8)

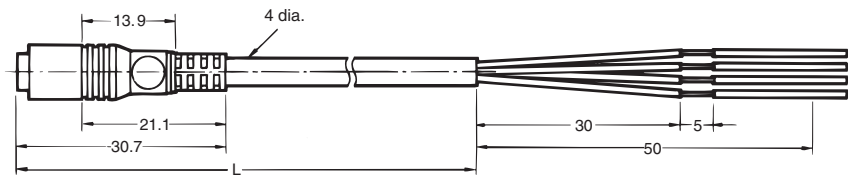
Note: M8 screw models and S8 snap-in models cannot be connected to each other.

XS3F-S42□-4□□-R S8 Snap-in Connectors with Vibration-proof Robot Cable

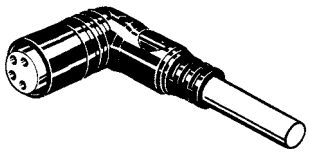
■ Dimensions

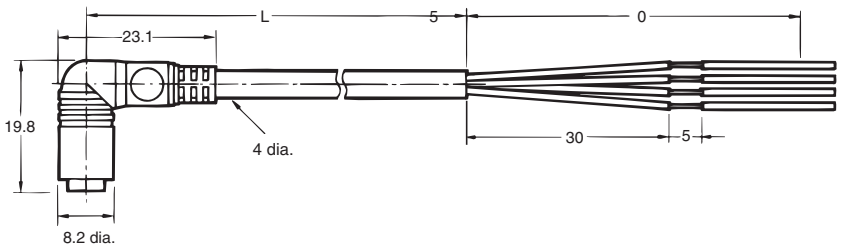
Straight Connectors

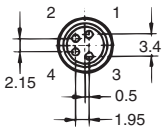




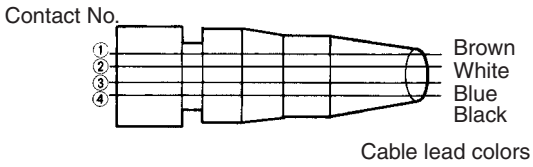
L-shaped Connectors







Wiring Diagram



Mating Connectors

Item	Model
XS3F (S8)	XS3M (M8/S8), XS3H (S8), XS3W (S8)

Note: M8 screw models and S8 snap-in models cannot be connected to each other.

■ Model Number Legend

Use this model number legend to identify products from their model number. When ordering, use a model number from the table in *Ordering Information.*

XS3H - □42□ - 4□□ - R
1 2 3 4 5 6 7 8 9

1. **Fastening Method**
   M: M8
   S: S8
2. **Connector Poles**
   4: 4 poles
3. **Cable Connection Direction**
   1: Straight
   2: L-shaped
4. **Connections**
   Pin No.
   1 2 3 4
   4: Brown White Blue Black
5. **Cable Length**
   C3: 0.3 m
   01: 1 m
6. **Cable Specifications**
   R: Vibration-proof robot cable

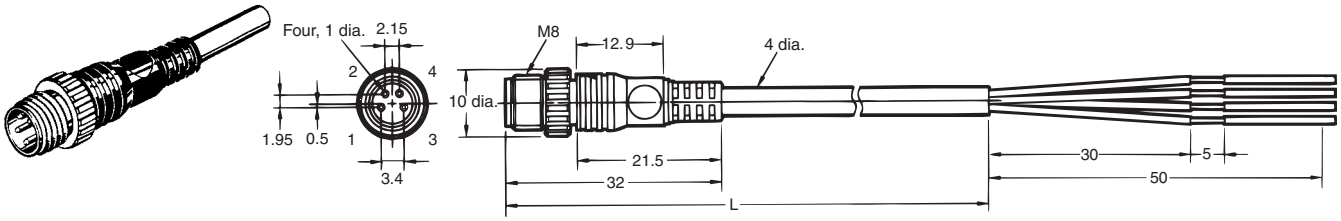
■ Ordering Information

Item	Cable connection direction	No. of cable cores	Cable core cross-sectional area	Cable length (m)	Model
M8 Model Vibration-proof robot cable	Straight	4	0.2 mm^2	0.3	XS3H-M421-4C3-R
				1	XS3H-M421-401-R
	L-shaped			0.3	XS3H-M422-4C3-R
				1	XS3H-M422-401-R
S8 Model Vibration-proof robot cable	Straight	4		0.3	XS3H-S421-4C3-R
				1	XS3H-S421-401-R
	L-shaped			0.3	XS3H-S422-4C3-R
				1	XS3H-S422-401-R

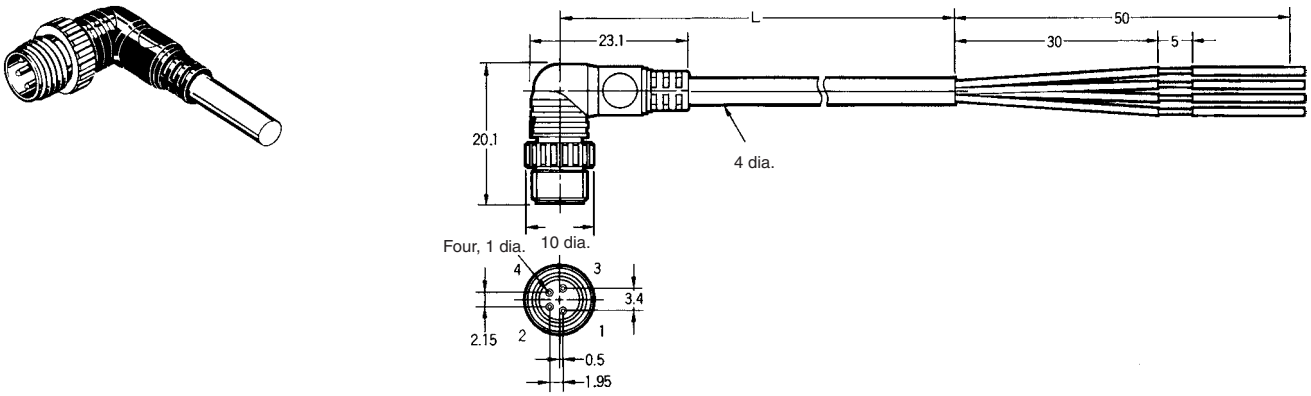
XS3H-M42□-4□□-R M8 Screw-on Connectors with Vibration-proof Robot Cable

■ Dimensions

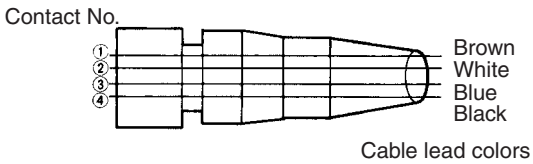
Straight Connectors



L-shaped Connectors



Wiring Diagram



Mating Connectors

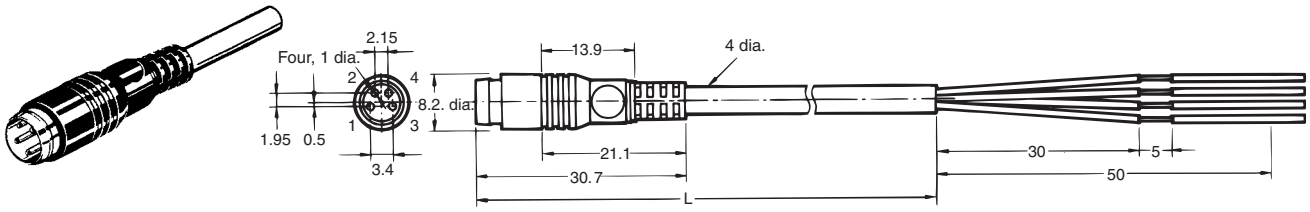
Item	Model
XS3H (M8)	XS3F (M8), XS3W (M8), XS3P (M8)

Note: M8 screw models and S8 snap-in models cannot be connected to each other.

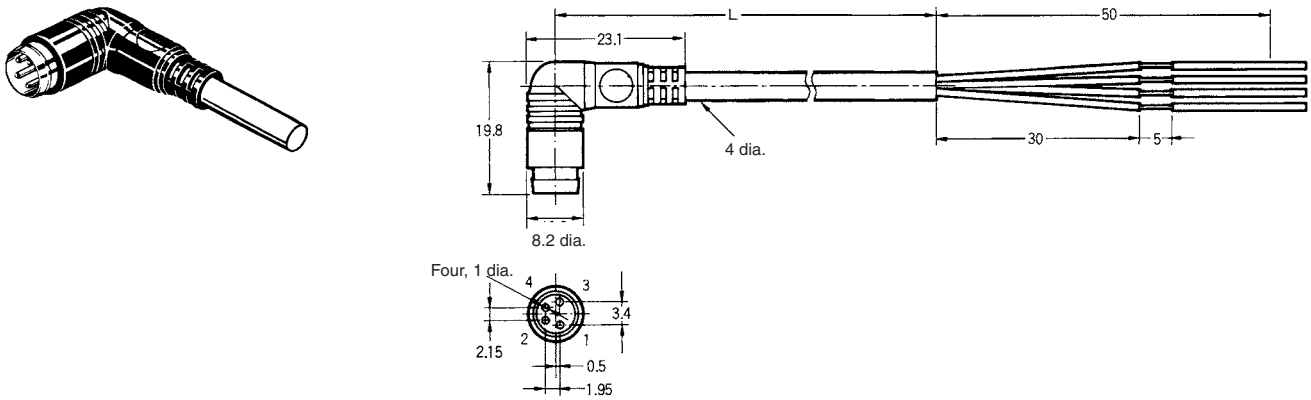
XS3H-S42□-4□□-R S8 Snap-in Connectors with Vibration-proof Robot Cable

■ Dimensions

Straight Connectors

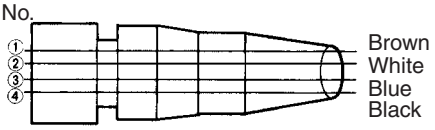


L-shaped Connectors



Wiring Diagram

Contact No.



Cable lead colors

Mating Connectors

Item	Model
XS3H (S8)	XS3F (S8), XS3W (S8), XS3P (S8)

Note: M8 screw models and S8 snap-in models cannot be connected to each other.

■ Ordering Information

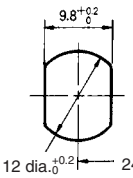
Connection method	Panel mounting	Pin shape	Model	Minimum order
M8 screw-mounting	Front lock or rear lock	DIP pins	XS3P-M421-1	50
		Solder cup pins	XS3P-M421-2	
	Rear lock	Solder cup pins	XS3P-M422-2	
S8 snap-in	Front lock or rear lock	DIP pins	XS3P-S421-1	
		Solder cup pins	XS3P-S421-2	

Note: Orders are accepted in multiples of the minimum order.

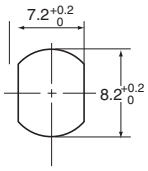
■ Dimensions

Panel Cutout

XS3P-□421

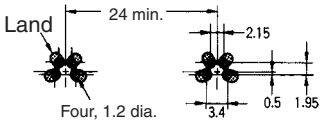


XS3P-M422-2



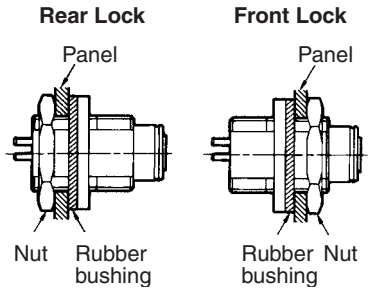
Note: The panel thickness is 1 to 3 mm.

PCB-mounting Dimensions



Note: The panel thickness is 2.4 mm minimum.

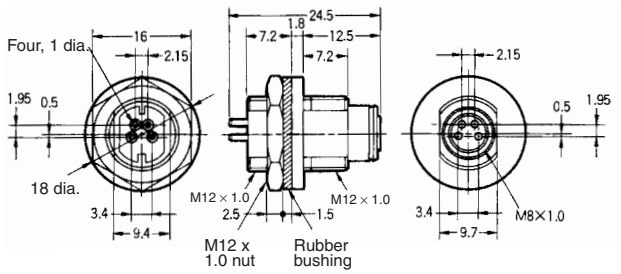
Panel-mounting Dimensions



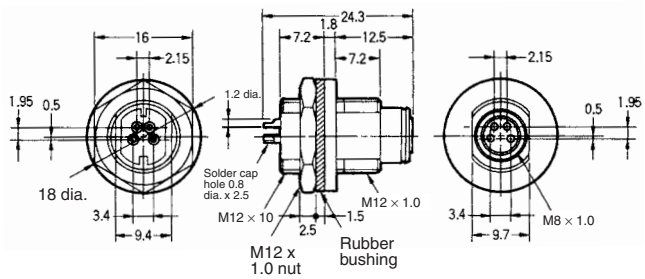
XS3P-M421-1 M8 Screw-mounting Sockets with DIP Pins
XS3P-M421-2 M8 Screw-mounting Sockets with Solder Cup Pins
XS3P-M422-2 M8 Screw-mounting Sockets with Solder Cup Pins

■ Dimensions

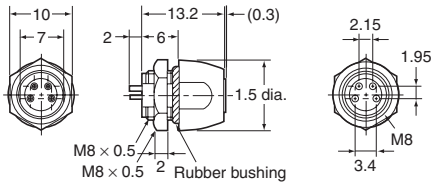
XS3P-M421-1 (DIP Pins)



XS3P-M421-2 (Solder Cup Pins)



XS3P-M422-2 (Solder Cup Pins), Rear Lock Slim Models



Mating Connectors

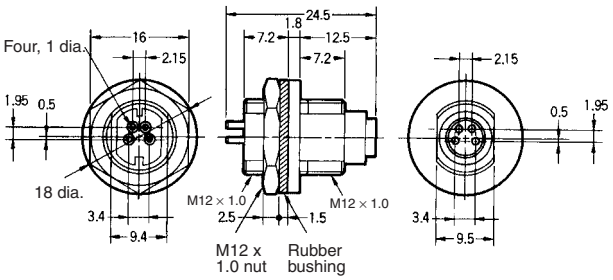
Item	Model
XS3P (M8)	XS3H (M8), XS3W (M8)

Note: M8 screw models and S8 snap-in models cannot be connected to each other.

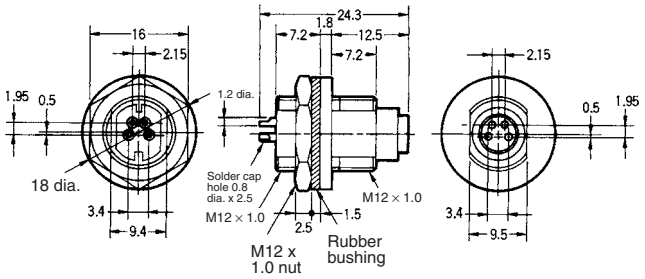
XS3P-S421-1 S8 Snap-in Sockets with DIP Pins
XS3P-S421-2 S8 Snap-in Sockets with Solder Cup Pins

■ Dimensions

XS3P-S421-1 (DIP Pins)



XS3P-S421-2 (Solder Cup Pins)



Mating Connectors

Item	Model
XS3P (S8)	XS3H (S8), XS3W (S8)

Note: M8 screw models and S8 snap-in models cannot be connected to each other.

■ Precautions

Correct Use

Panel Mounting

When mounting XS3P Panel-mounting Connectors to panels, refer to page 49 and provide rubber bushings and nuts for the Connectors. Apply a tightening torque of between 0.4 and 0.6 N·m to mount the Connectors.

XS3M-K421-1 Embedded Plugs with Screw Threads and DIP Pins
XS3M-K421-2 Embedded Plugs with Screw Threads and Solder Cup Pins

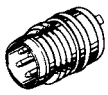
■ Ordering Information

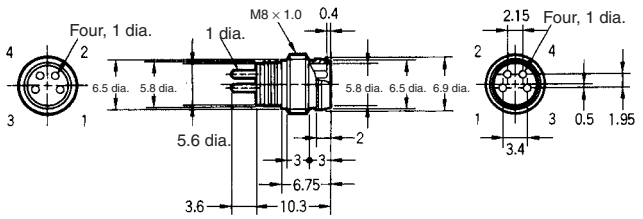
Connection method	Pin shape	Model	Minimum order
Embedded model	DIP pins	XS3M-K421-1	200
	Solder cup pins	XS3M-K421-2	

Note: Orders are accepted in multiples of the minimum order.

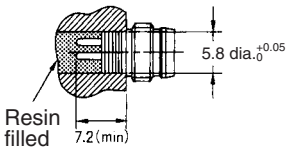
■ Dimensions

XS3M-K421-1
Embedded Model with DIP Pins

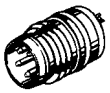


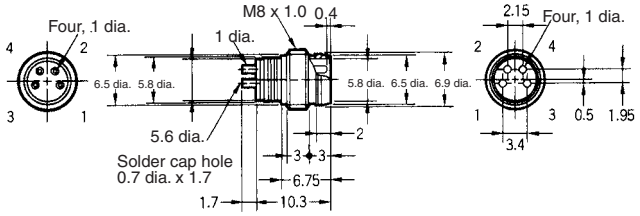


Mounting Dimensions

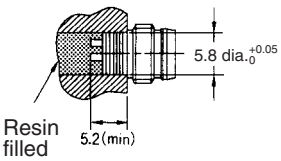


XS3M-K421-2
Embedded Model with Solder Cup Pins





Mounting Dimensions



Mating Connectors

Item	Model
XS3M	XS3F (M8/S8), XS3W (M8/S8)

Note: The plug can be connected to both M8 screw and S8 snap-in models.

OMRON

Y-Joint Plug/Socket Connectors | XS3R

■ Ratings and Characteristics

Rated current	1 A
Rated voltage	125 VDC
Contact resistance	60 MΩ max. (20 mV max., 100 mA max.) (See note 1.)
Insulation resistance	1,000 MΩ min. (at 500 VDC)
Dielectric strength	1,000 VAC for 1 min (leakage current: 1 mA max.) (See note 2.)
Degree of protection	IEC IP67
Insertion tolerance	200 times min.
Ambient temperature	Operating: −25°C to 70°C

Note: **1.** The contact resistance of the connector.
2. The dielectric strength of the connector.

■ Materials and Finish

Pin Block	PBT resin (UL94V-0)/light gray
Contacts	Phosphor bronze/nickel base, 0.4-μm gold plating
Thread bracket (M8) Shell (S8)	Brass/nickel plated
Cover	Polyester elastomer (UL94-0)/black
O-ring	Rubber

■ Applicable Connectors

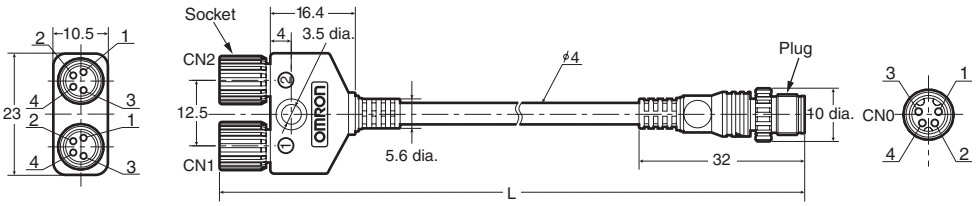
XS3H	Plug on one cable end
XS3F	Socket on one cable end
XS3W	Socket/plug on cable ends
XS3P	Panel-mounting socket

■ Ordering Information

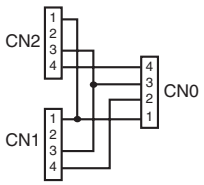
Cable	Connector	For M8 Connectors		
		Cable length L (m)	Model	Minimum order
With cable	Connectors on cable ends	0.5	XS3R-M426-1C51-A	5
		1	XS3R-M426-1011-A	5
		2	XS3R-M426-1021-A	5
		3	XS3R-M426-1031-A	5
	Connector on one cable end	2	XS3R-M426-1020-A	5
		5	XS3R-M426-1050-A	5
Without cable	Connectors on both ends	---	XS3R-M426-1	10
			XS3R-M426-5	10

■ Dimensions

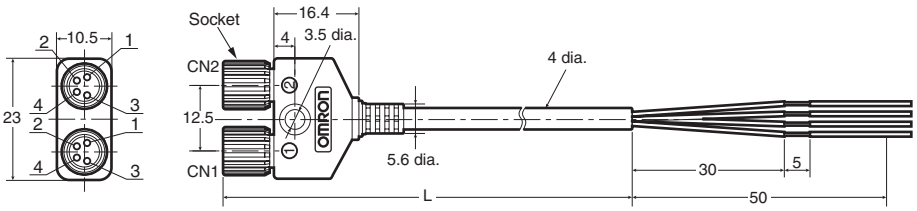
XS3R-M426-1□□1-A
Connectors on Cable Ends (Y-Joint Plug/Socket)



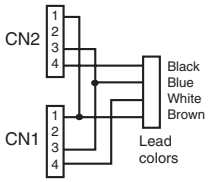
Wiring Diagram



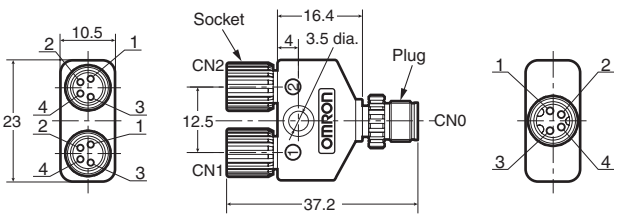
XS3R-M426-1□□0-A
Connector on One Cable End (Y-Joint Plug/Socket)



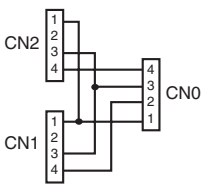
Wiring Diagram



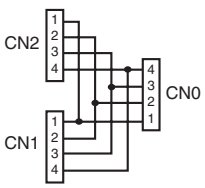
XS3R-M426-□
Connector on Both Ends (Y-joint Plug/Socket) without Cable



Wiring Diagram
XS3R-M426-1



XS3R-M426-5

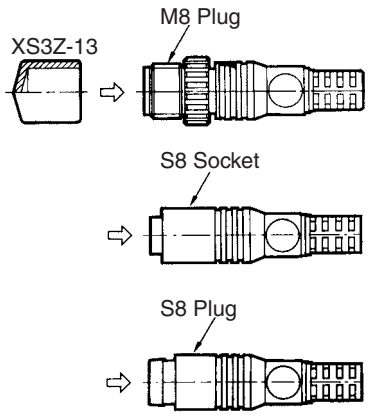


Accessories

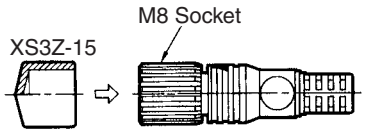
■ XS3 M8/S8 Connector Cover (Order Separately)

Dust Cover

XS3Z-13



XS3Z-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.

■ Ordering Information

Model	Material	Suitable connector	
		Model	Mounting portion
XS3Z-13	Polyvinyl chloride/red	XS3H/XS3M	M8 plug
		XS3F	S8 socket
		XS3H	S8 plug
XS3Z-15	Polyvinyl chloride/red	XS3F	M8 socket

■ Precautions

Refer to *Correct Use* for precautions for individual products.

Correct Use

Connections

- The XS3 and XS2 Sensor I/O Connectors cannot be connected to each other.
- When using Sensors with Connectors or Limit Switches, use the Sensor I/O Connectors specified in the catalog.
- Do not connect M8 screw models and S8 snap-in models together, otherwise the proper degree of protection of the Connectors will not be maintained.

Connector Connection and Disconnection

- Before connecting or disconnecting Connectors, make sure that no power is being supplied to the Connectors.
- When connecting or disconnecting Connectors, be sure to hold the Connectors by hand.
- Do not touch the engagement side of any Connector with wet hands. If there is any water on the Connector or near the Connector, be sure to wipe off the water before connecting or disconnecting the Connector, otherwise the Connector may short-circuit internally or not ensure good insulation.
- Make sure that engagement side of any Connector is free of metal dust or power.
- Do not use pliers to tighten mounting the thread bracket, otherwise the thread bracket may be damaged. Be sure to tighten each thread bracket by hand within a torque of 0.3 and 0.4 N·m. If the thread bracket is not tightened securely, the Connector may not maintain its proper degree of protection or the thread bracket may fall off due to vibration.
- Fully insert S8 snap-in models until the Connectors are hidden by the metal casing of the opposite parts, otherwise the Connectors will not maintain their proper degree of protection or the thread brackets may drop off due to vibration.

Cable Wire Color

- The M8/S8 Sensor I/O Connectors use the following lead wire colors.

Model		Pin No.			
		1	2	3	4
DC	8-mm-dia. DC4	Brown	White	Blue	Black

Degree of Protection

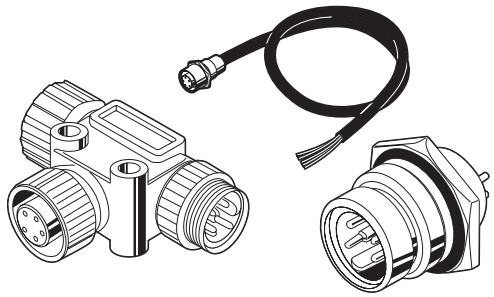
- Do not impose external force continuously on the joints of pin blocks and covers, otherwise the Connectors may not keep its proper degree of protection (i.e., IP67).
- Connectors are not fully watertight. Do not use them underwater.
- The Connectors are not oil-resistant. Do not use them where they would be subject to oil.
- If Connectors are used in places with vibration or shock, secure the engaged side of each Connector, otherwise the Connectors may be disconnected or fail to maintain their proper degree of protection.
- Connectors are of resin mold construction. Do not impose excessive force on them.

Storage

Do not store Connectors for long periods of time in the following locations

- Locations subject to dust or high humidity
- Locations subject to ammonia gas or sulfide gas

- Four-pin Connectors ideal for power supply lines.
- Complies with IP67.
- Product line includes T-branch Connectors and cables with Connectors.



■ Ratings and Characteristics

Item	XS4□-D421-1□□-A Cables with Connector	XS4R-D424-5 T-branch Connectors	XS4P-D421-1C5-A Panel Mounting Cables	XS4M-D421-1 Panel Mounting Cables
Rated current	10 A			
Rated voltage	125 VDC			
Contact resistance (See note 1.)	30 mΩ max. (at 20 mVDC, 100 mA max.)			
Insulation resistance	1,000 MΩ min. (at 500 VDC)			
Dielectric strength (See note 2.)	1,500 VAC for 1 min (leakage current: 1 mA max.)			
Operating temperature	−20 to 65°C			
Storage temperature	−25 to 70°C			
Enclosure rating	IEC IP67			
Insertion durability	200 times			
Cable holding strength	98 N/15 s	---	98 N/15 s	---
Vibration	No break in current for simple harmonic motion (10 to 500 Hz, 1.52-mm amplitude or 100 m/s^2 whichever has the smallest amplitude) for more than 1 μs min.			

Note: **1.** The contact resistance of the Connector.

2. The dielectric strength of the Connector.

3. The rated current between heavy gauge wires is 8 A.

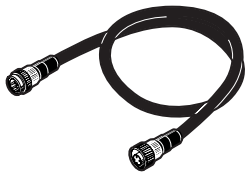
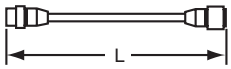
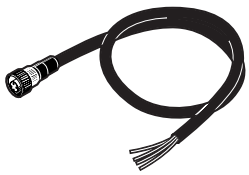
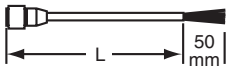
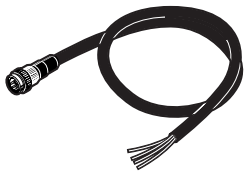
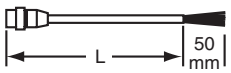
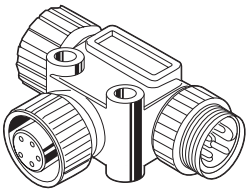
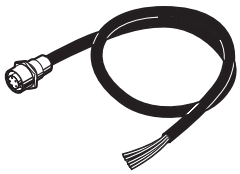
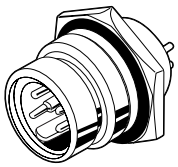
■ Materials and Finish

		XS4□ (4-pin Type for Power Supplies)
Connector	Contact block	Polyester elastomer (UL94V-0)/light gray
	Contact	Brass/1.5-μm nickel base, 0.4-μm gold plating
	Anchor	Copper/nickel plated
	Body (See note.)	Brass/nickel plated
	Cover	Polyester elastomer (UL94V-0)/black
	O ring	Rubber
Cable	Model (manufacturer)	UL STO cable (Shinagawa Densen) or the equivalent
	Cores	AWG16 × 4 cores (black, white, red, and green)
	Diameter	Approximately 11 dia.
	Sheath color	Black

Note: Only panel-mounted bodies are used.

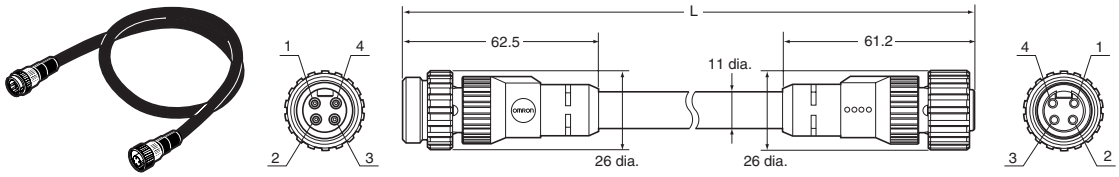
■ Ordering Information

For Power Supplies (4-pin Type)

Appearance	Type	Cable length (m)	Model
		1	XS4W-D421-101-A
		2	XS4W-D421-102-A
		5	XS4W-D421-105-A
		10	XS4W-D421-110-A
		1	XS4F-D421-101-A
		2	XS4F-D421-102-A
		5	XS4F-D421-105-A
		10	XS4F-D421-110-A
		1	XS4H-D421-101-A
		2	XS4H-D421-102-A
		5	XS4H-D421-105-A
		10	XS4H-D421-110-A
	T-branch Connectors	---	XS4R-D424-5
	Panel-mounted Connectors (Sockets) with 50-cm cable	---	XS4P-D421-1C5-A
	Panel-mounted Connectors (Plugs) with DIP terminals	---	XS4M-D421-1

■ Dimensions

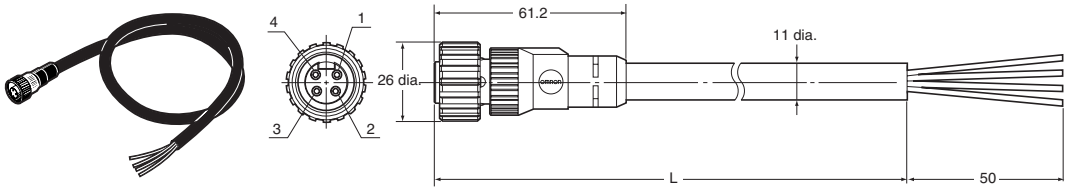
XS4W-D421-1□□-A Cables with Connectors at Both Ends (4-pin Type for Power Supplies)



Wiring

Terminal No.	Color
1	Black
2	White
3	Red
4	Green

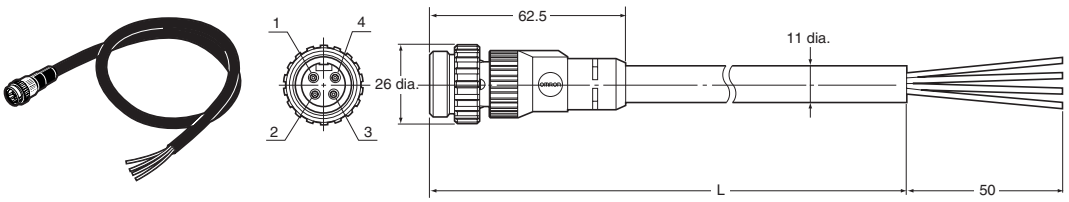
XS4F-D421-1□□-A Cables with a Connector on One End (4-pin Sockets for Power Supplies)



Wiring

Terminal No.	Color
1	Black
2	White
3	Red
4	Green

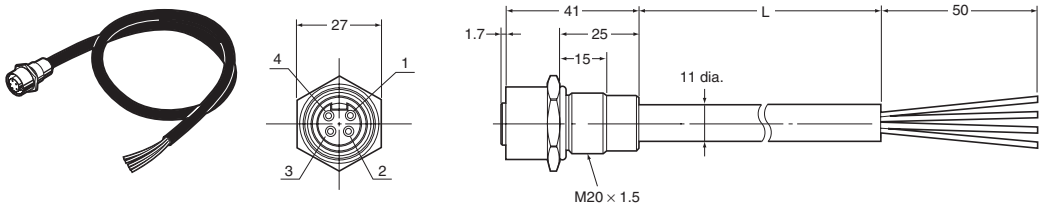
XS4H-D421-1□□-A Cables with a Connector on One End (4-pin Plugs for Power Supplies)



Wiring

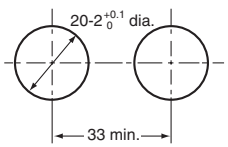
Terminal No.	Color
1	Black
2	White
3	Red
4	Green

XS4P-D421-1C5-A Panel Mounting Connectors (4-pin Sockets for Power Supplies)



Note: The rubber bushing and nut used for in-panel mounting are supplied.

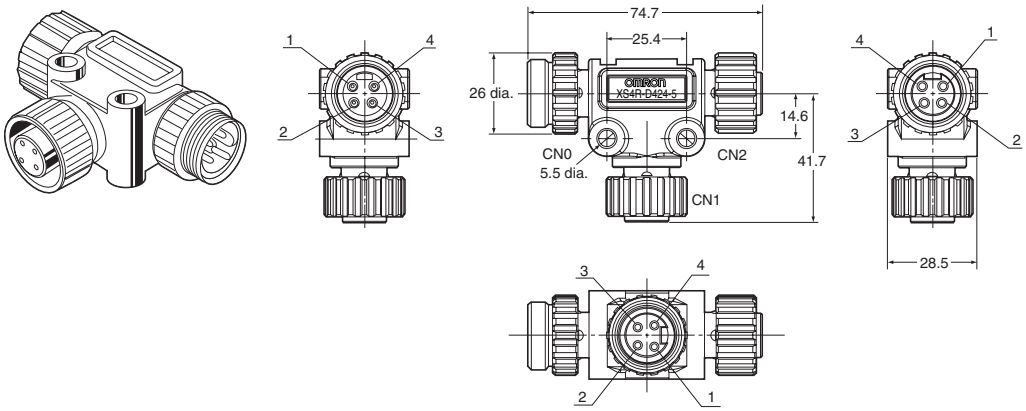
Panel dimensions



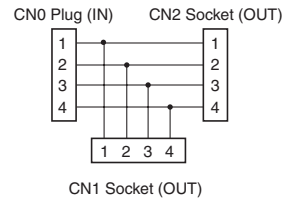
Wiring

Terminal No.	Color
1	Black
2	White
3	Red
4	Green

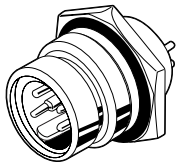
XS4R-D424-5 T-branch Connectors (4-pin Type for Power Supplies)

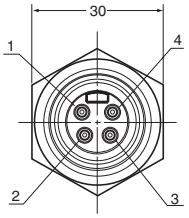


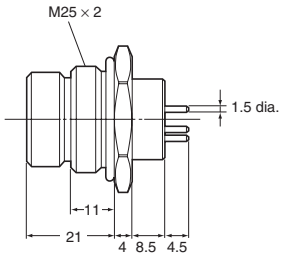
Wiring Diagram



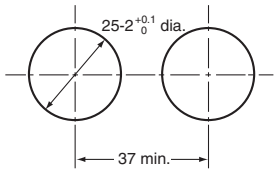
XS4M-D421-1 Panel Mounting Connectors (4-pin Plugs for Power Supplies)



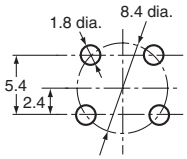




Panel dimensions

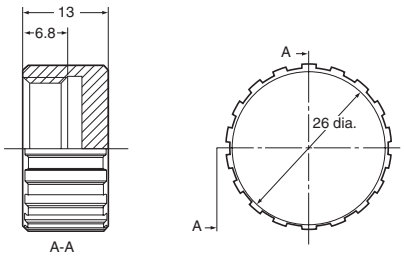


Mounting holes

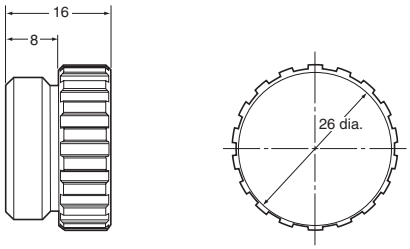


Note: The rubber bushing and nut used for in-panel mounting are supplied.

XS4Z-11 Waterproof Caps (for Plugs)



XS4Z-12 Waterproof Caps (for Sockets)



■ Precautions

Correct Use

Handling

- Do not connect or disconnect Connectors with the power turned ON.
- Hold the Connector when connecting or disconnecting Connectors.
- Never pull on the cable to disconnect a Connector.
- Before mating Connectors, insert the matable parts fully. Use a torque of 0.7 to 0.8 N·m to tighten the Anchor, and do so carefully to prevent damage to the threads.
  Do not use pliers or other tools because they may damage the Anchor. Anchors that are not properly tightened cannot maintain the enclosure rating and may become loose with vibration.
- The body is made of molded resin. Do not step on it or place heavy objects on top of it.

Enclosure Rating

- The IP67 enclosure rating is not completely waterproof. Do not use the product in locations where it will be continually under water.

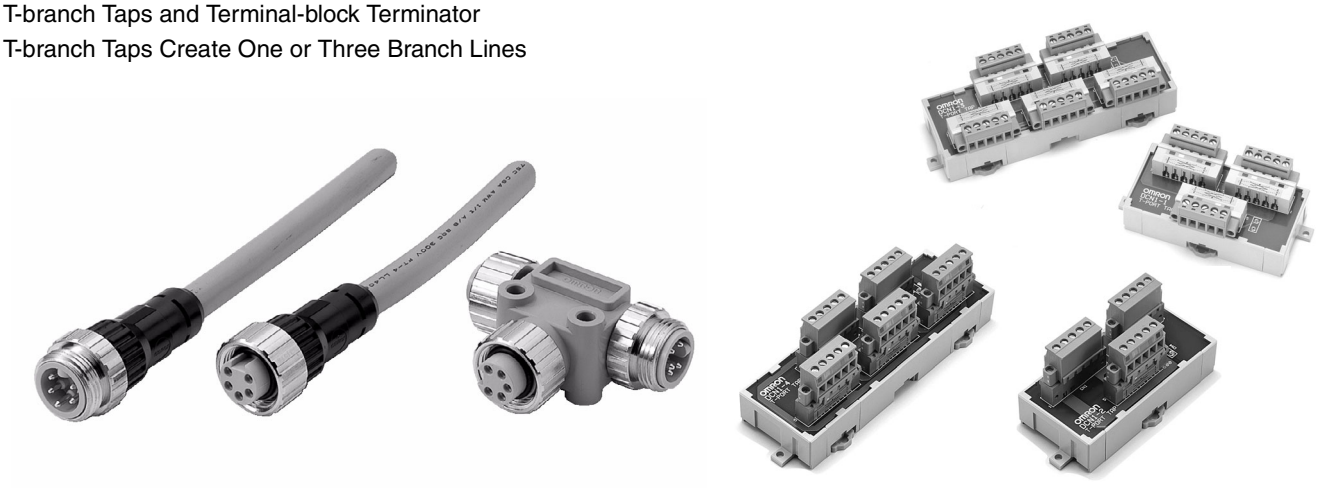
Storage

Observe the following long-term storage precautions.

1. Make sure the storage location is dust- and moisture-proof.
2. Do not store near locations generating ammonia gas, sulfurized gas, or other harmful gases.

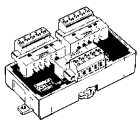
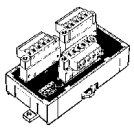
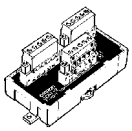
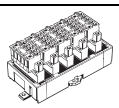
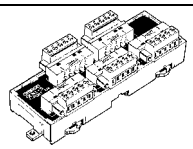
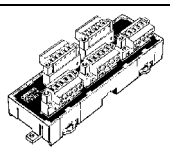
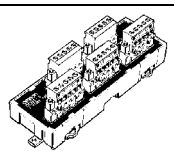
Peripheral Devices for DeviceNet Communications

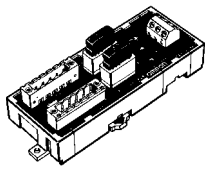
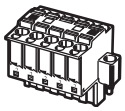
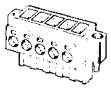
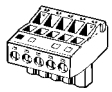
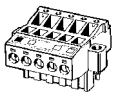
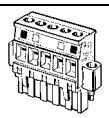
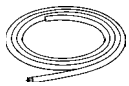
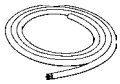
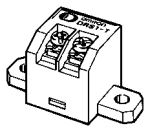
- T-branch Taps and Terminal-block Terminator
- T-branch Taps Create One or Three Branch Lines



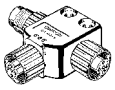
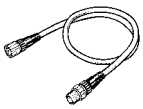
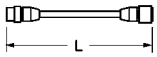
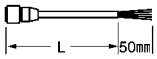
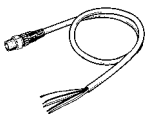
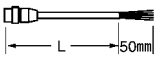
■ Ordering Information

General-purpose Models

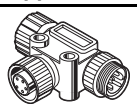
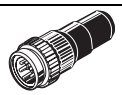
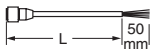
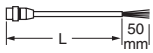
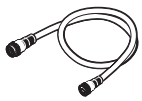
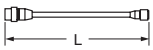
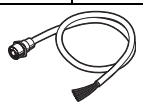
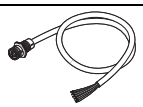
Product	Appearance	Model	Specification	
T-branch Tap for 1 branch line		DCN1-1NC	Cable wiring direction: Toward top Cable lock direction: From top Connector screw direction: From top	Provided with 3 parallel connectors with clamps (XW4G-05C1-H1-D), standard terminating resistor
		DCN1-1C	Cable wiring direction: Toward side Cable screw direction: From top Connector screw direction: From side	Provided with 3 parallel connectors with screws (XW4B-05C1-H1-D), standard terminating resistor
		DCN1-2C	Cable wiring direction: Toward top Cable screw direction: From side Connector screw direction: From top	
		DCN1-2R	Cable wiring direction: From side Cable screw direction: From top Connector screw direction: From top	Provided with 3 orthogonal connectors with screws (XW4B-05C1-VIR-D), standard terminating resistor
T-branch Tap for 3 branch lines		DCN1-3NC	Cable wiring direction: Toward top Cable lock direction: From top Connector screw direction: From top	Provided with 5 parallel clamp connectors with screws (XW4G-05C1-H1-D), standard terminating resistor
		DCN1-3C	Cable wiring direction: Toward side Cable screw direction: From top Connector screw direction: From side	Provided with 5 parallel connectors with screws (XW4B-05C1-H1-D), standard terminating resistor
		DCN1-4C	Cable wiring direction: Toward top Cable screw direction: From side Connector screw direction: From top	
		DCN1-4R	Cable wiring direction: Toward side Cable screw direction: From top Connector screw direction: From top	Provided with 5 orthogonal clamp connectors with screws (XW4B-05C1-VIR-D), standard terminating resistor

Product		Appearance	Model	Specification
Power Supply Tap			DCN1-1P	One-branch tap provided with 2 connectors, standard terminating resistor, and fuse
Connectors			XW4G-05C1-H1-D	Parallel clamp connector with screws Connector insertion and wiring both performed horizontally.
			XW4G-05C4-TF-D	Parallel multi-branching clamp connector with screws Connector insertion and wiring performed in same direction.
			XW4B-05C1-H1-D	Parallel connector with screws Connector insertion and wiring performed in same direction.
			XW4B-05C4-TD	Parallel, screwless, multi-branching connector Connector insertion and wiring performed in same direction.
			XW4B-05C4-TF-D	Parallel, multi-branching connector with screws Connector insertion and wiring performed in same direction.
			XW4B-05C1-VIR-D	Orthogonal connector with screws Connector insertion and wiring performed at a right angle.
DeviceNet Cables	Thin Cables		DCA1-5C10	Outer diameter: 7.00 mm Length: 100 m
	Thick Cables		DCA2-5C10	Outer diameter: 11.6 mm Length: 100 m
Terminal-block Terminator			DRS1-T	Resistance of 121 Ω

Environment-resistive Models for Thin Wires and M12 Micro Connectors

Product	Appearance		Model	Specifications	
Sealed Assembling-type Connector (male)			XS2G-D5S7	For communications (plug)	
Sealed Assembling-type Connector (female)			XS2C-D5S7	For communications (socket)	
Sealed T-branch Connector			DCN2-1	For 1 branch line	
Sealed Connector with Terminating Resistor			DRS2-1	Plug	
			DRS2-2	Socket	
Cables with Sealed Connectors			DCA1-5CNC5W1	Length (L): 0.5 m	Cable with connectors on both ends
			DCA1-5CN01W1	Length (L): 1 m	
			DCA1-5CN02W1	Length (L): 2 m	
			DCA1-5CN03W1	Length (L): 3 m	
			DCA1-5CN05W1	Length (L): 5 m	
			DCA1-5CN10W1	Length (L): 10 m	
			DCA1-5CNC5F1	Length (L): 0.5 m	Cable with connector socket on one end
			DCA1-5CN01F1	Length (L): 1 m	
			DCA1-5CN02F1	Length (L): 2 m	
			DCA1-5CN03F1	Length (L): 3 m	
			DCA1-5CN05F1	Length (L): 5 m	
			DCA1-5CN10F1	Length (L): 10 m	
			DCA1-5CNC5H1	Length (L): 0.5 m	Cable with connector plug on one end
			DCA1-5CN01H1	Length (L): 1 m	
			DCA1-5CN02H1	Length (L): 2 m	
			DCA1-5CN03H1	Length (L): 3 m	
			DCA1-5CN05H1	Length (L): 5 m	
			DCA1-5CN10H1	Length (L): 10 m	
Shielded Panel-mounting Connector, female			DCA1-5CNC5P1	Connector socket for Panel-mounting Cable: 0.5 m	
			XS2P-D522-2	Connector socket for Panel-mounting Cable: 0.5 m Solder-cup terminals	
Shielded Panel-mounting Connector, male			DCA1-5CNC5M1	Connector plug for Panel-mounting Cable: 0.5 m	
			XS2M-D524-4	Connector plug for Panel-mounting Solder-cup terminals	

Environment-resistive Models for Thick Wires with 7/8-16UN Mini Connectors

Product	Appearance	Model	Specifications	
Sealed T-branch Connector		DCN3-11	T-branch Connector	
		DCN3-12	T-branch Connector (Branch connector is M12.)	
Sealed Connector with Terminating Resistor		DRS3-1	Plug	
Cables with Sealed Connectors	 	DCA2-5CN01W1	Length (L): 1 m	Cable with connectors on both ends
		DCA2-5CN02W1	Length (L): 2 m	
		DCA2-5CN05W1	Length (L): 5 m	
		DCA2-5CN10W1	Length (L): 10 m	
	 	DCA2-5CN01F1	Length (L): 1 m	Cable with connector socket on one end
		DCA2-5CN02F1	Length (L): 2 m	
		DCA2-5CN05F1	Length (L): 5 m	
		DCA2-5CN10F1	Length (L): 10 m	
	 	DCA2-5CN01H1	Length (L): 1 m	Cable with connector plug on one end
		DCA2-5CN02H1	Length (L): 2 m	
		DCA2-5CN05H1	Length (L): 5 m	
		DCA2-5CN10H1	Length (L): 10 m	
	 	DCA1-5CN01W5	Length (L): 1 m	Cable with connectors on both ends Thin cable M12 socket
		DCA1-5CN02W5	Length (L): 2 m	
		DCA1-5CN05W5	Length (L): 5 m	
		DCA1-5CN10W5	Length (L): 10 m	
Panel-mounting Connector (female)		DCA2-5CNC5P1	Connector socket for panel mounting Cable: 0.5 m	
Panel-mounting Connector (male)		DCA2-5CNC5M1	Connector plug for panel mounting Cable: 0.5 m	
Panel-mounting Connector (male)		XS4M-D521-1	Connector plug for panel mounting DIP terminals	

■ Specifications

General-purpose Models (T-branch Taps)

Ratings/Characteristics

Rated current	Between main lines: 8 A (power supply line) and 2 A (signal line) Between main and branch lines: 3 A (power supply line) and 1 A (signal line)
Insulation resistance	100 MΩ min. (at 500 VDC)
Dielectric strength	500 VAC for 1 min, leakage current: 1 mA max.
Ambient temperature	Operating: 0°C to 55°C

Materials

Item	Component	Materials
Unit	Main and Expansion Units	PBT resin with glass (UL14V-0)/gray
	DIN track lock	POM resin/yellow
Terminal block connector (See note.)	Housing	PA66 resin (UL94V-0)
	Contact	Phosphor bronze/gold plated
PCB		Glass epoxy resin

Note: The terminal block connector is a product of Phoenix Contact.

Environment-resistive Models (Thin Wire Communications Connectors)

Ratings/Characteristics

Item	DCA1-5CN□□□1 Connectors with Cables	DCN2-1 T-branch Connector	XS2□-D5S7 Assembling-type Connector	DRS2-□ Connectors with Terminating Resistor
Rated current	3 A			
Rated voltage	125 VDC			
Contact resistance (connector)	40 mΩ max. (at 20 mVDC max. and 100 mA max.)			
Insulation resistance	1,000 MΩ min. (at 500 VDC)			
Dielectric strength (connector)	1,500 VAC for 60 seconds (leakage current: 1 mA max.)			
Ambient temperature range	–20 to 65°C			
Storage temperature range	–25 to 70°C			
Enclosure rating	IEC IP67			
Insertion durability	200 times			
Cable strength	98 N for 15 s	---		
Vibration resistance	No current interruptions of more than 1 μm while performing simple vibrations at either 10 to 500 Hz with 1.52-mm full amplitude or at acceleration 100 m/s^2, whichever is smaller			

Environment-resistive Models (Thick Wire Communications Connectors)

Ratings/Characteristics

Item	DCA2-5CN□□□1 Connectors with Thick Wires	DCA1-5CN□□W5 Connectors with Thick Wires	DCN3-11 T-branch Connector	DCN3-12 T-branch Connector	DRS3-1 Connectors with Terminating Resistor	DCA2-5CNC5P1 Panel Mounting Connector	XS4M-D521-1 Panel Mounting Connector
Rated current	8 A	3 A	8 A	3 A (See note.)	8 A		
Rated voltage	125 VDC						
Contact resistance (connector)	30 mΩ max. (at 20 mVDC max. and 100 mA max.)						
Insulation resistance	1,000 MΩ min. (at 500 VDC)						
Dielectric strength (connector)	1,500 VAC for 60 seconds (leakage current: 1 mA max.)						
Ambient temperature range	–20 to 65°C						
Storage temperature range	–25 to 70°C						
Enclosure rating	IEC IP67						
Insertion durability	200 times						
Cable strength	98 N for 15 s		---			98 N for 15 s	---
Vibration resistance	No current interruptions of more than 1 μm while performing simple vibrations at either 10 to 500 Hz with 1.52-mm full amplitude or at acceleration 100 m/s^2, whichever is smaller						

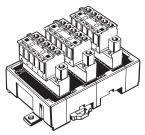
Note: The rated current between thick wires is 8 A.

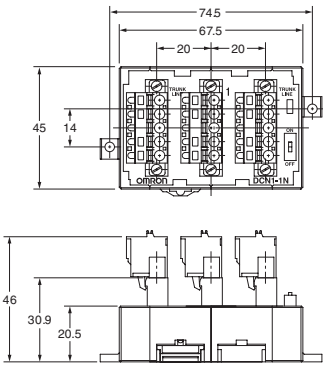
■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

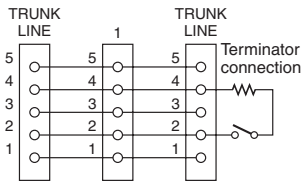
General-purpose Models

DCN1-1NC
T-branch Tap for 1 Branch Line
(With Three Branching Connectors)



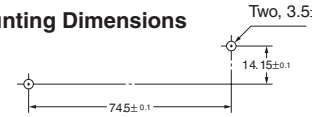


Internal Circuit

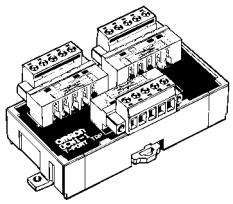


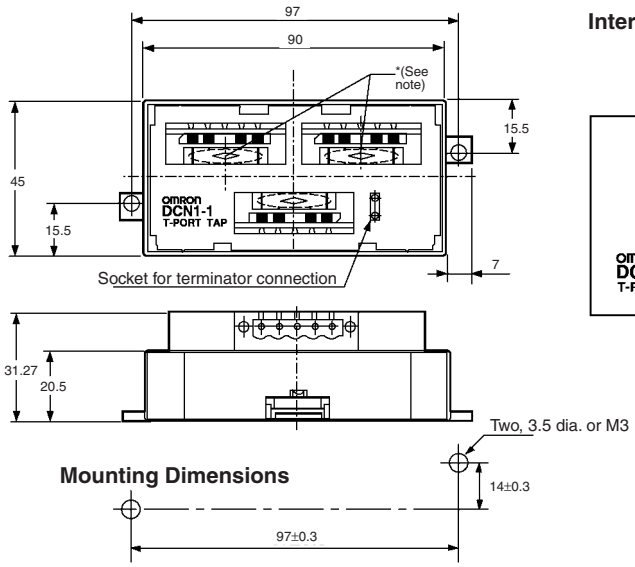
Terminal No.	Name
1	V–
2	CAN-L
3	DRAIN
4	CAN-H
5	V+

Mounting Dimensions

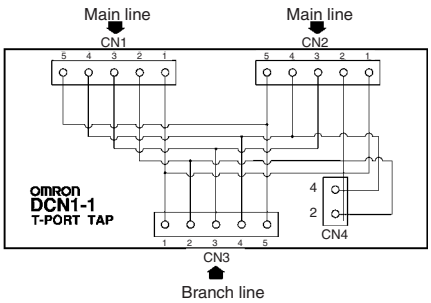


DCN1-1C
T-branch Tap for 1 Branch Line
(With Three Branching Connectors)





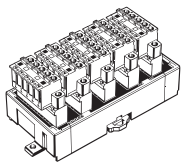
Internal Circuit

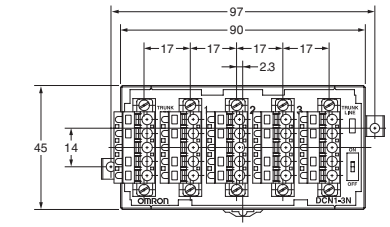


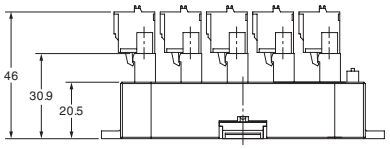
Terminal No.	Name
1	V–
2	CAN-L
3	DRAIN
4	CAN-H
5	V+

Note: When connecting a branch line to the main line, connect the main line to the connector marked with an asterisk because the resistance between the asterisks is minimal.

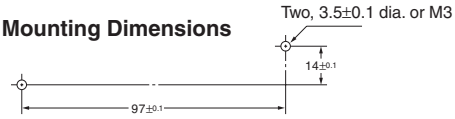
DCN1-3NC
T-branch Tap for 3 Branch Lines
(With Five Branching Connectors)



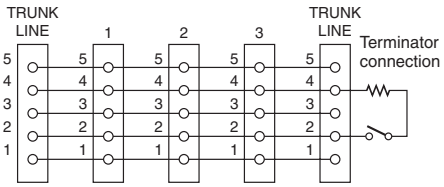




Mounting Dimensions

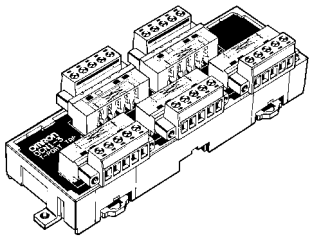


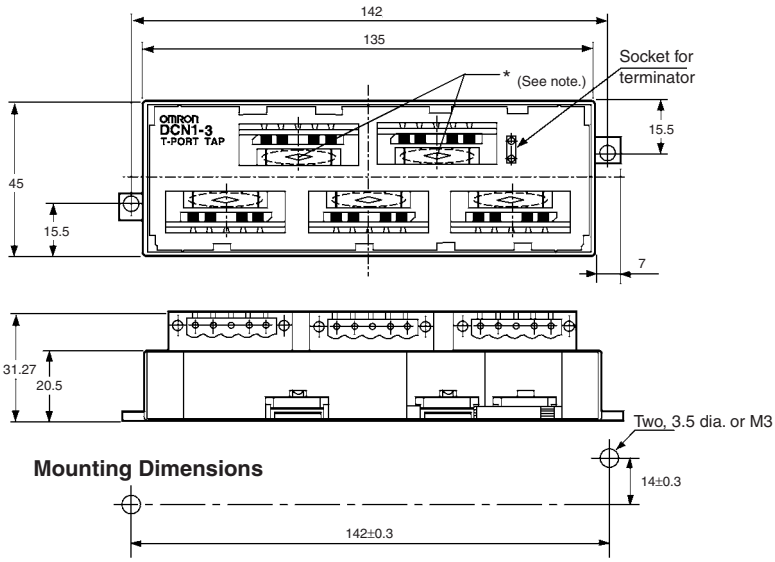
Internal Circuit



Terminal No.	Name
1	V–
2	CAN-L
3	DRAIN
4	CAN-H
5	V+

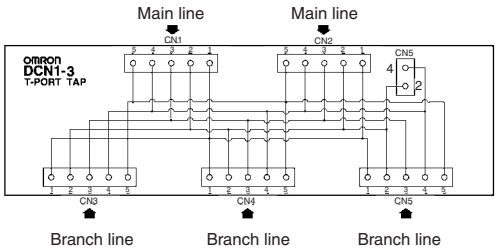
DCN1-3C
T-branch Tap for 3 Branch Lines (With Five Branching Connectors)





Mounting Dimensions

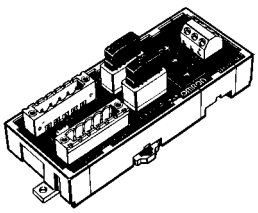
Internal Circuit

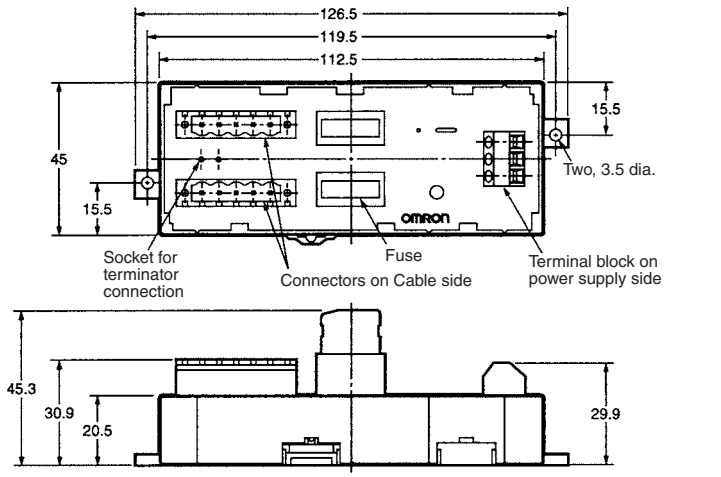


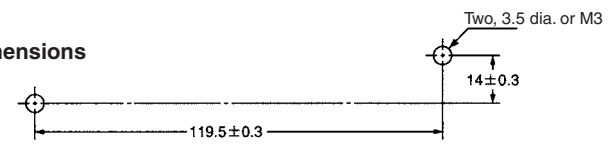
Terminal No.	Name
1	V–
2	CAN-L
3	DRAIN
4	CAN-H
5	V+

Note: When connecting a branch line to the main line, connect the main line to the connector marked with an asterisk because the resist ance between the asterisked portion is minimal.

DCN1-1P
Power Supply Tap (With Two Branching Connectors)

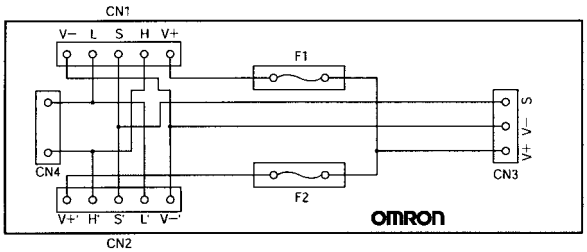






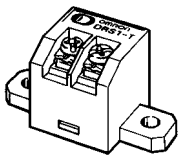
Mounting Dimensions

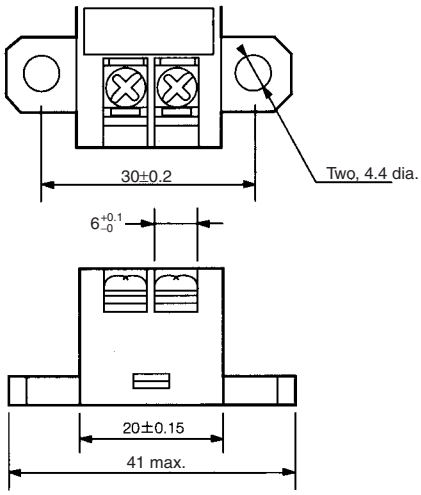
Internal Circuit



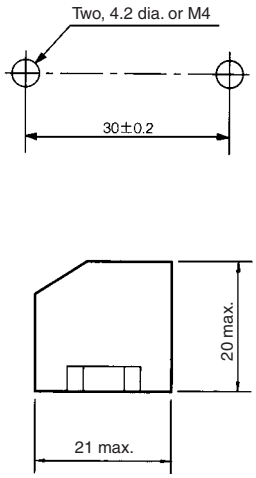
Terminal No.	Name
V–	V–
L	CAN-L
S	DRAIN
H	CAN-H
V+	V+

DRS1-T Terminal-block Terminator



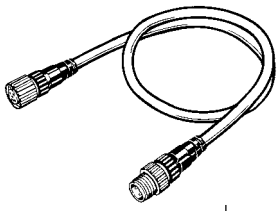


Mounting Holes

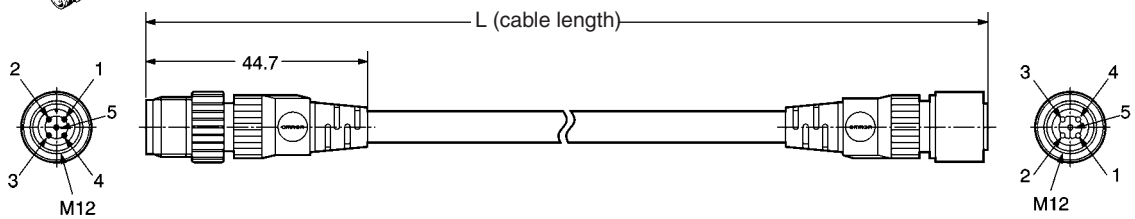


Environment-resistive Models for Thin Wires

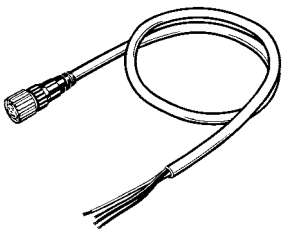
DCA1-5CN□□W1
Cables with Connectors on Both Ends



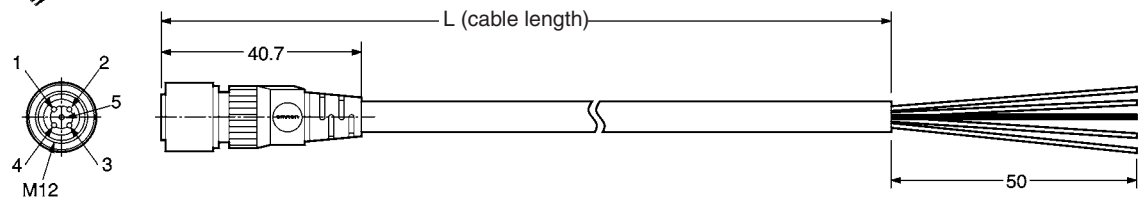
Terminal No.	Color	Name
1	---	DRAIN
2	Red	V+
3	Black	V–
4	White	CAN-H
5	Blue	CAN L



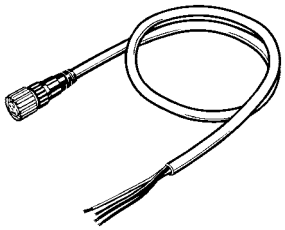
DCA1-5CN□□F1
Cables with Connector (Socket) on Single End



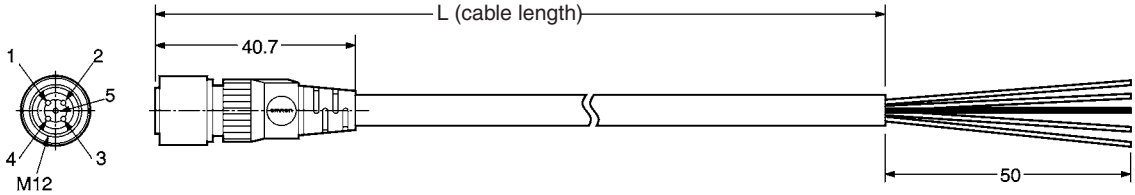
Terminal No.	Color	Name
1	---	DRAIN
2	Red	V+
3	Black	V–
4	White	CAN-H
5	Blue	CAN L



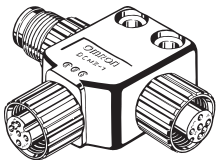
DCA1-5CN□□F1
Cables with Connector (Socket) on Single End



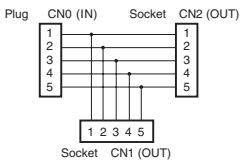
Terminal No.	Color	Name
1	---	DRAIN
2	Red	V+
3	Black	V–
4	White	CAN-H
5	Blue	CAN L



DCN2-1
T-branch Connector

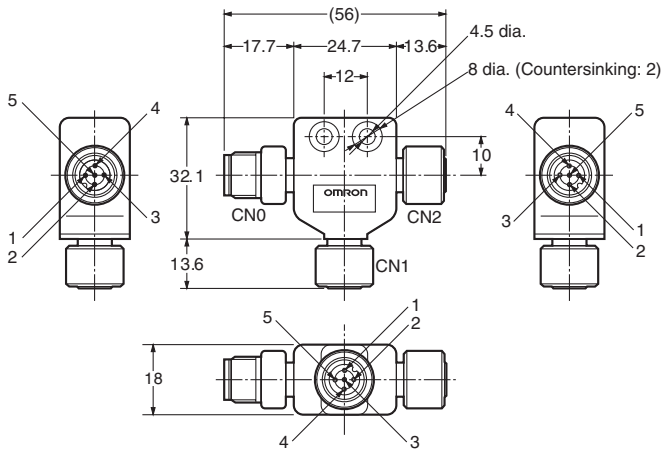


Connections Diagram



Wiring

Terminal No.	Name
1	SHIELD
2	V+
3	V–
4	CAN-H
5	CAN-L

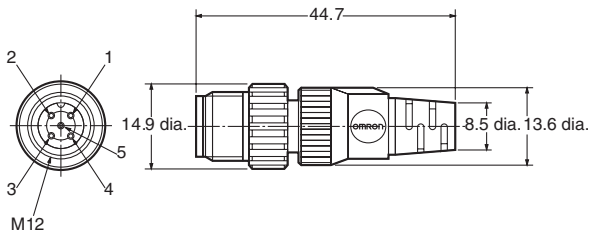


DRS2-1 (Plug)
DRS2-2 (Socket)
Connectors with Terminating Resistance

Wiring

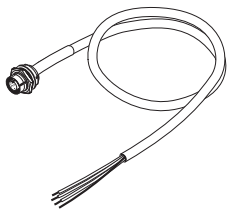
Terminal No.	Name
1	DRAIN: NC
2	V+: NC
3	V–: NC
4	CAN-H: 121 Ω
5	CAN-L:

Note: Terminating resistance (121 Ω) is connected between terminals 4 and 5.

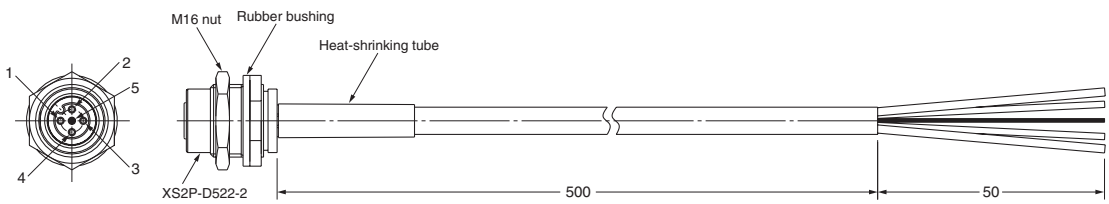


Note: The diagram shows the DRS2-1 (plug).

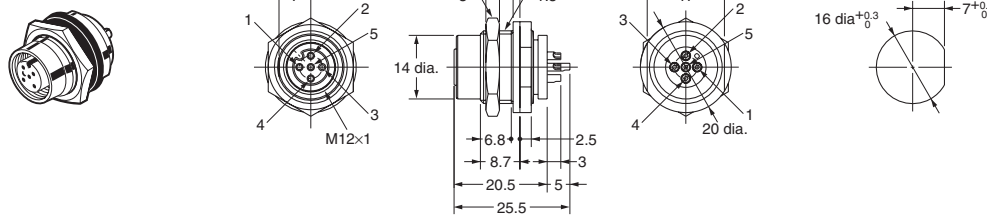
DCA1-5CNC5P1
Panel-mounting Connector Socket with 0.5 m Cable



Terminal No.	Color	Name
1	---	DRAIN
2	Red	V+
3	Black	V–
4	White	CAN-H
5	Blue	CAN L

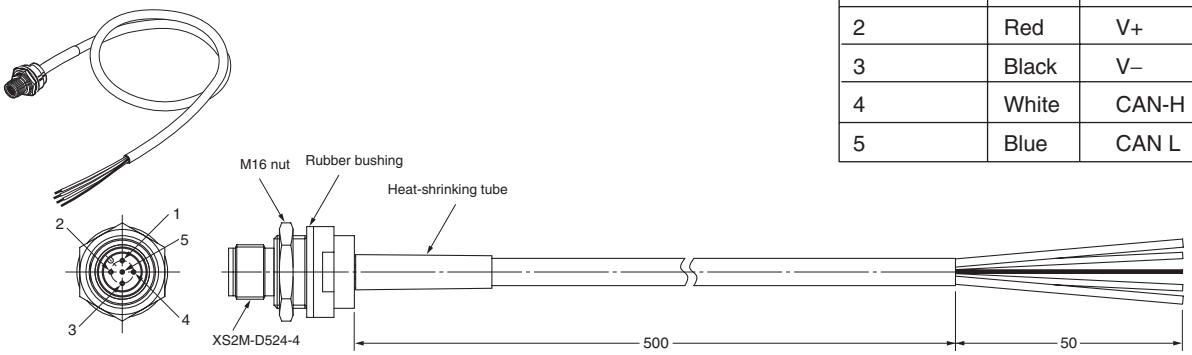


XS2P-D522-2
Panel-mounting Connector Socket, Solder-cup Terminals

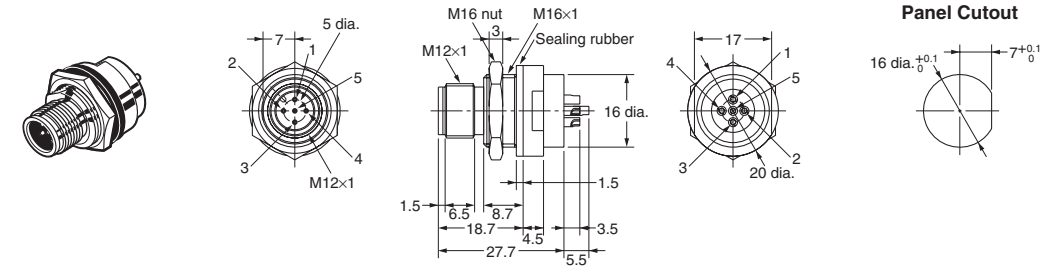


DCA1-5CNC5M1
Panel-mounting Connector Plug with 0.5 m Cable

Terminal No.	Color	Name
1	---	DRAIN
2	Red	V+
3	Black	V–
4	White	CAN-H
5	Blue	CAN L

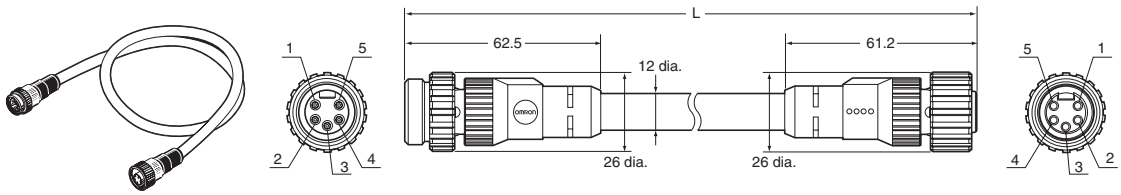


XS2P-D524-4
Panel-mounting Connector Plug, Solder-cup Terminals



Environment-resistive Models for Thick Wires

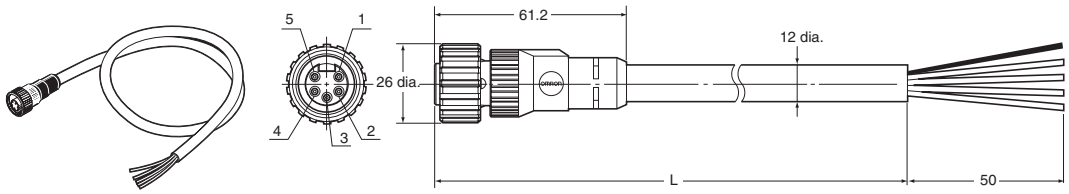
DCA2-5CN□□W1
Thick Cable with Connectors on Both Ends
(5 Conductors for Communications)



Wiring

Terminal No.	Color	Name
1	---	DRAIN
2	Red	V+
3	Black	V–
4	White	CAN-H
5	Blue	CAN-L

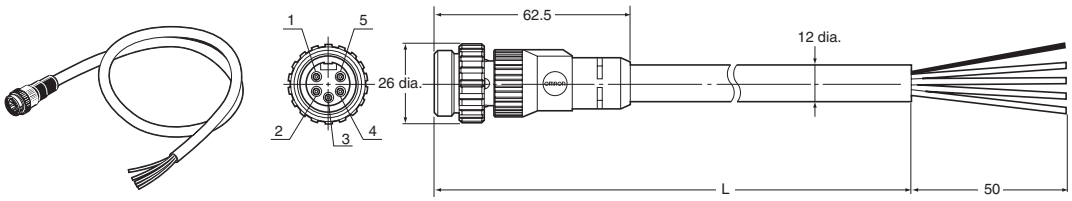
DCA2-5CN□□F1
Thick Cable with Connector Socket on One End
(5 Conductors for Communications)



Wiring

Terminal No.	Color	Name
1	---	DRAIN
2	Red	V+
3	Black	V–
4	White	CAN-H
5	Blue	CAN-L

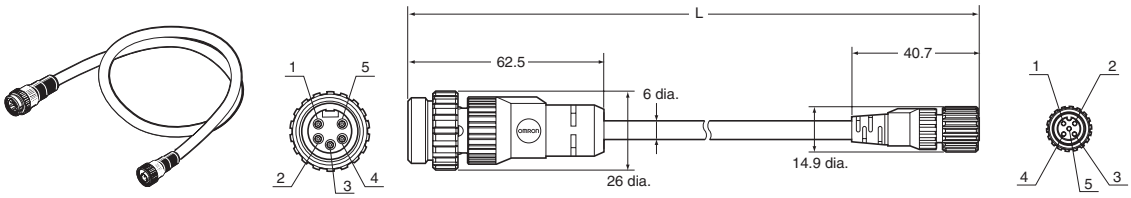
DCA2-5CN□□H1
Thick Cable with Connector Plug on One End
(5 Conductors for Communications)



Wiring

Terminal No.	Color	Name
1	---	DRAIN
2	Red	V+
3	Black	V–
4	White	CAN-H
5	Blue	CAN-L

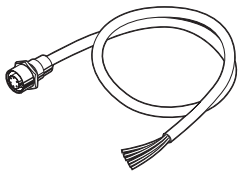
DCA1-5CN□□W5
Thin Cable with Connectors on Both Ends
(5 Conductors for Communications)

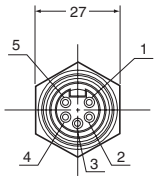


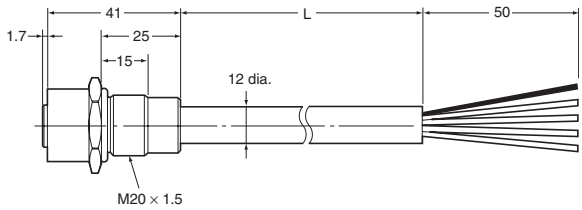
Wiring

Terminal No.	Color	Name
1	---	DRAIN
2	Red	V+
3	Black	V–
4	White	CAN-H
5	Blue	CAN-L

DCA2-5CNC5P1
Thin Cable with Panel-mounting Connector Socket on One End
(5 Conductors for Communications)





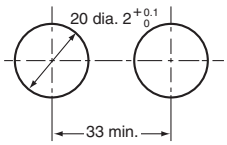


Wiring

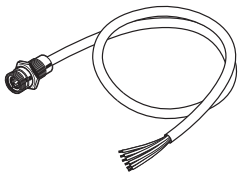
Terminal No.	Color	Name
1	---	DRAIN
2	Red	V+
3	Black	V–
4	White	CAN-H
5	Blue	CAN-L

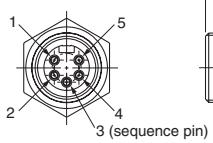
Note: A rubber seal and nut for panel mounting are included.

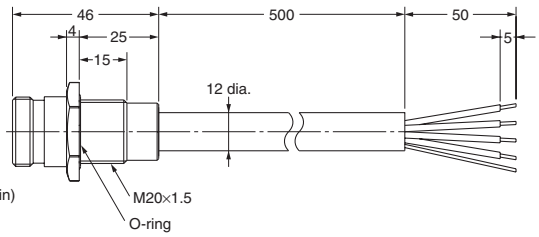
Panel Cutout Dimensions



DCA2-5CNC5M1
Panel-mounting Connector Plug with 0.5 m Cable





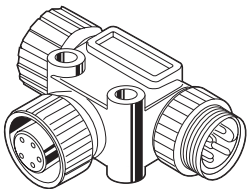


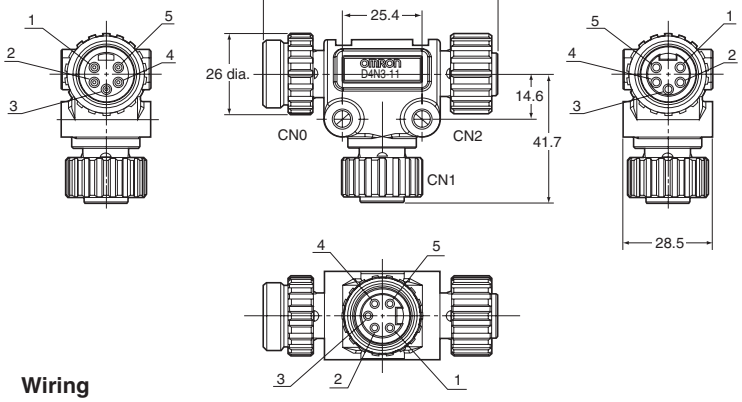
Wiring

Terminal No.	Color	Name
1	---	DRAIN
2	Red	V+
3	Black	V–
4	White	CAN-H
5	Blue	CAN-L

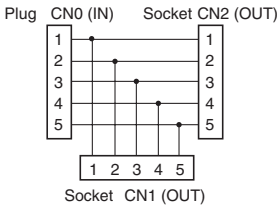
Note: A nut is included.

DCN3-11
T-branch Connector (5 Conductors for Communications, Thick Wire Branch Line)





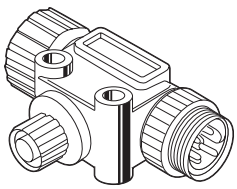
Connections Diagram

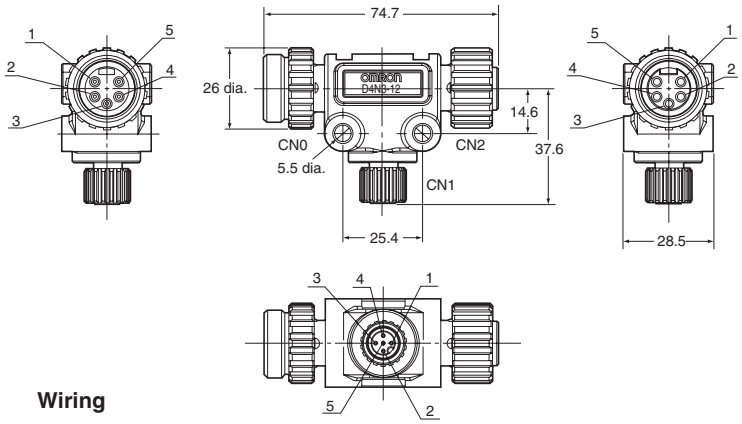


Wiring

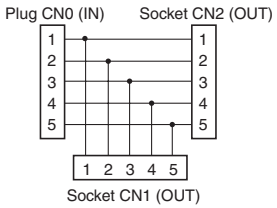
Terminal No.	Name
1	DRAIN
2	V+
3	V–
4	CAN-H
5	CAN-L

DCN3-12
T-branch Connector (5 Conductors for Communications)





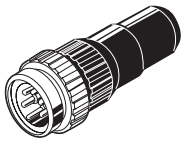
Connections Diagram



Wiring

Terminal No.	Name
1	DRAIN
2	V+
3	V–
4	CAN-H
5	CAN-L

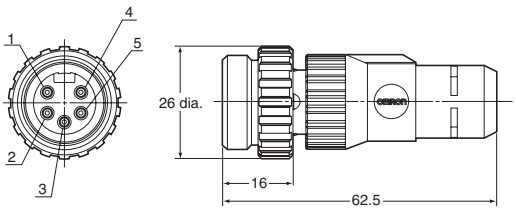
DRS3-1
Connector Plug with Terminating Resistance



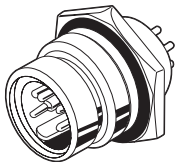
Wiring

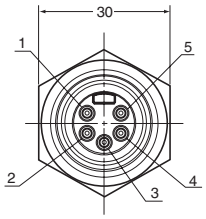
Terminal No.	Name
1	DRAIN: NC
2	V+: NC
3	V–: NC
4	CAN-H: 121 Ω
5	CAN-L:

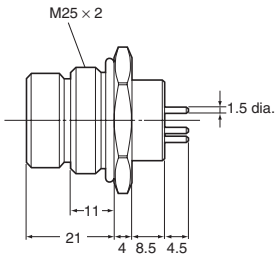
Note: Terminating resistance (121 Ω) is connected between terminals 4 and 5.



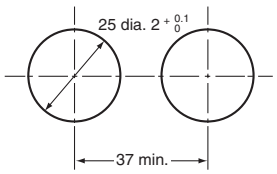
XS4M-D521-1
Panel-mounting Connector Plug (5 Pins for Communications)



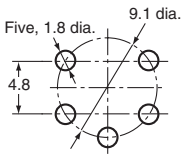




Panel Cutout Dimensions



PCB Processing Dimensions



Note: A rubber seal and nut for panel mounting are included.

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NOTE:

1. *Each of OMRON Sales offices has its branch offices.*
2. *Some of abovementioned offices do not deal all of OMRON products.*
3. *Information subject to change without notice.*