Industrial Ethernet Cables
XS5/XS6

Cables and Connectors for EtherCAT® and Other Industrial Ethernet Networks

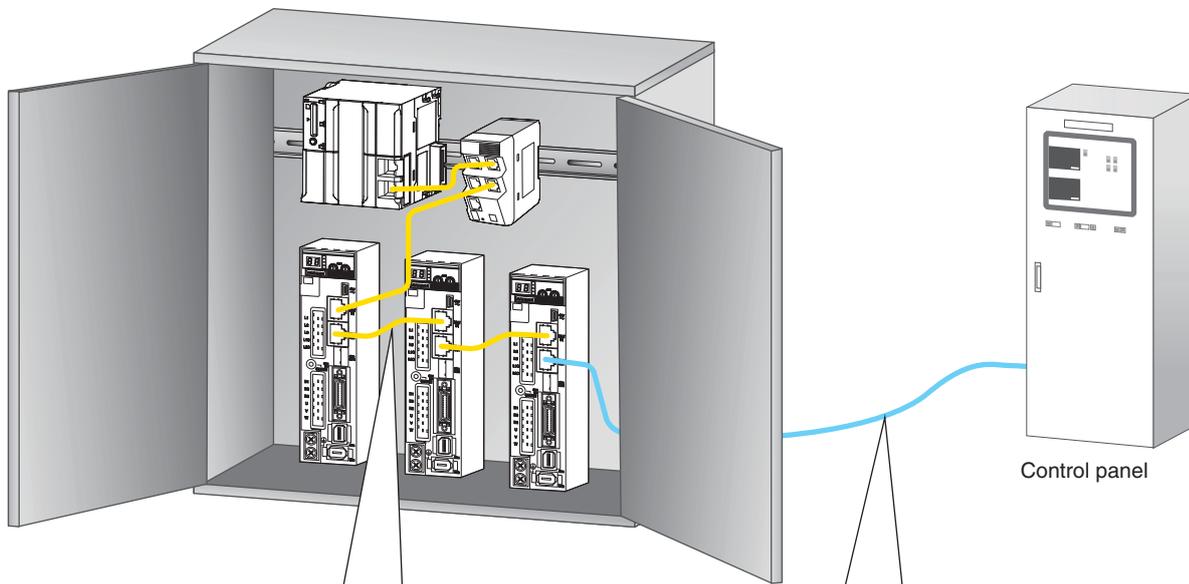| CAT6a Ethernet patch cables |
| --- |

- **For in-cabinet use**
- **LSZH with standard RJ45 plugs**

CAT5e Ethernet patch cables

- **For out-of-cabinet use**
- **PUR with standard RJ45 plugs**
- **PVC with rugged RJ45 plugs**
- **PVC with M12 SmartClick plugs**

Smartclick

■ Connection Examples

Control panel

Ideal for in-cabinet
XS6W-6LSZH

Standard Connectors

Ideal for out-of-cabinet
XS6W-5PUR   XS5   XS6

Standard Connectors | Rugged Connectors | Rugged Assembly Connectors

XS5

M12 Connectors

■ Features

| Cables with Standard RJ45 Connectors | Refer to page 4 for details. |

- The lineup features LSZH cables* for in-panel wiring and PUR cables for wiring outside of panels.
- The Standard RJ45 Connectors reduce cable routing space.
  - Outer diameter: 5.8 mm
  - 4-pair AWG27 (LSZH) or AWG26 (PUR)
- Cable colors include blue, yellow, or green.
- LSZH cables are available in 12 lengths from 0.2 to 20 m and PUR cables are available in 10 lengths from 0.5 to 20 m.
- Double-shielded cables with overall braiding and individual foil shield on each wire pair to reduce EMC interference in industrial environments.

* Low-smoke zero-halogen cables.

Shape of RJ45 Connector	LSZH Cable with Double Shield
	Overall braiding and individual foil shield on each wire pair
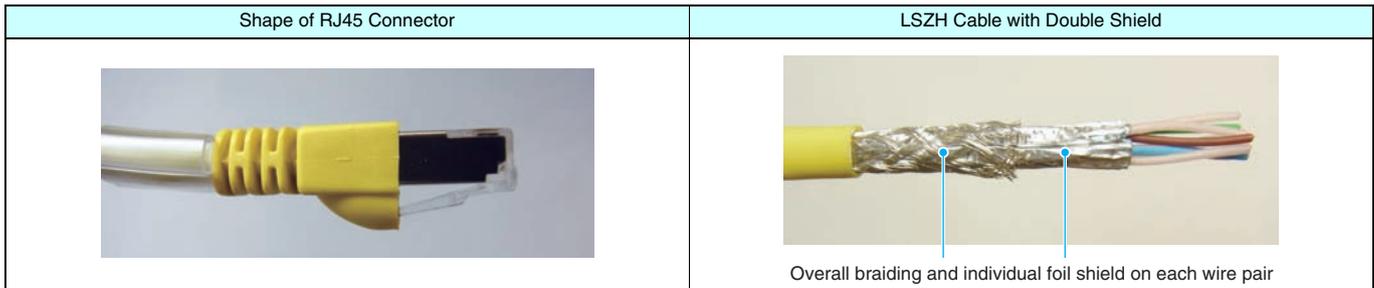
| Cables with Rugged RJ45 Connectors | Refer to page 7 for details. |

- Tough latches and RJ45 connectors with strong cable holding strength are used to enable connections outside of control panels.
- Quad AWG22 cable with PVC cover of 6.5 mm outer diameter.
- Double-shielded cables with overall braiding and individual foil shield to reduce EMC interference in industrial environments.

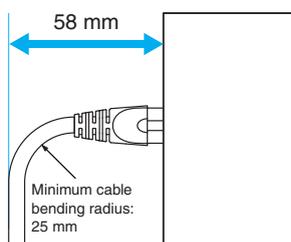| Shape of RJ45 Connector	PVC Cable with Double Shield
Tough latch	Overall braiding and individual foil shield
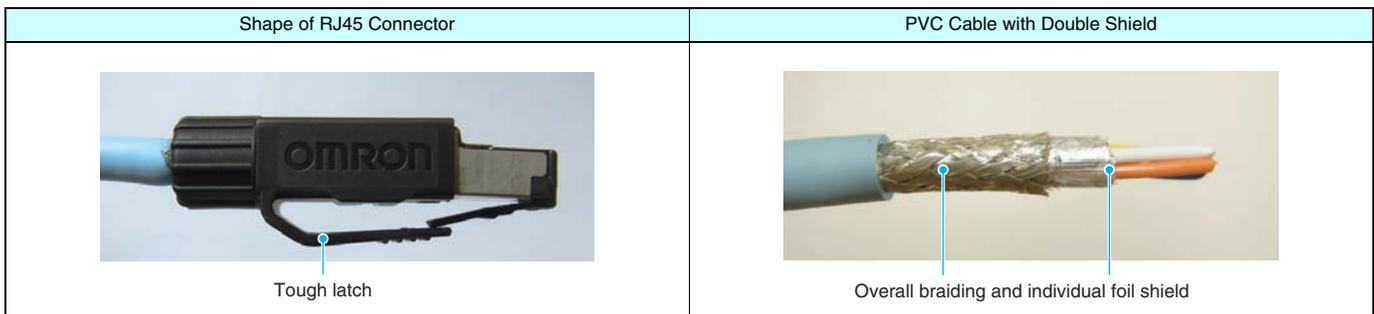
| Assembly Connectors |

You can easily assemble Ethernet cables onsite without crimping tools or other special tools.

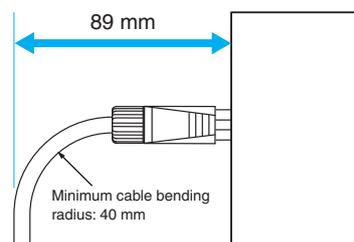Refer to page 14 for the assembly procedure.

● **Cable Extension Length**

Standard Connectors (RJ45 Connectors)

58 mm

Minimum cable bending radius: 25 mm

Rugged Connectors (RJ45 Connectors)

89 mm

Minimum cable bending radius: 40 mm

Cables with M12 Connectors   Refer to page 7 for details.

- Resistance to harsh environments with IP67 protection.
- SmartClick Connectors that provide one-step (1/8th turn) connection are used (compatible with standard M12 screw connectors).
- A wide range of variations, such as cables with right-angle connectors and PCB connectors.
- Cables with sockets and robot cables were added to the series.

Shape of M12 Connector	PVC Cable with Double Shield
Shield structure	Overall braiding and individual foil shield

Shield Effectiveness Data for Rugged RJ45 Connectors and Waterproof M12 Connectors

The following data is the results of OMRON testing. Shield effectiveness may vary for your environment and application conditions.

● Comparison of Shield Effectiveness with Product without a Double Shield

The following table shows the differences with a structure without a double shield. Higher numeric values show greater shield effectiveness.

Shield structure	Frequency (MHz)				
	0.5	1	5	10	30
Product with single shield	53 dB	49 dB	35 dB	25 dB	17 dB
Product with a double shield (XS5□-T, Category 5E)	61 dB	58 dB	43 dB	31 dB	27 dB

- SmartClick is registered trademark of OMRON Corporation.
- EtherCAT® is a registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.

Cables with Standard RJ45 Connectors

■ Model Number Legend

Use this legend when determining the product specifications from the model number. Choose from the model numbers listed in *Ordering Information* when ordering.

XS6W-□ □□□□ 8 SS □□□□CM-□
　　　　①　②　　③④　⑤　　⑥

①Transmission Characteristics
5: Category 5
6: Category 6A

②Sheath Material
LSZH: LSZH
PUR: PUR

③Number of Pins
8: 8 pins

④Cable Attachment Direction
SS: Straight/Straight

⑤Cable Length*
20: 0.2 m
30: 0.3 m
50: 0.5 m
100: 1 m
150: 1.5 m
200: 2 m
300: 3 m
500: 5 m
750: 7.5 m
1000: 10 m
1500: 15 m
2000: 20 m

⑥Sheath Color
B: Blue
Y: Yellow
G: Green

* PUR cables are not available for 0.2-m and 0.3-m cables.

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■ Ordering Information

Appearance	Type	Category	Cable sheath material	Cable color	Cable length (m)	Model
	Cable with Connectors on Both Ends (RJ45/RJ45)	Cat.6a	LSZH	Blue	0.2	**XS6W-6LSZH8SS20CM-B**
					0.3	**XS6W-6LSZH8SS30CM-B**
					0.5	**XS6W-6LSZH8SS50CM-B**
					1	**XS6W-6LSZH8SS100CM-B**
					1.5	**XS6W-6LSZH8SS150CM-B**
					2	**XS6W-6LSZH8SS200CM-B**
					3	**XS6W-6LSZH8SS300CM-B**
					5	**XS6W-6LSZH8SS500CM-B**
					7.5	**XS6W-6LSZH8SS750CM-B**
					10	**XS6W-6LSZH8SS1000CM-B**
					15	**XS6W-6LSZH8SS1500CM-B**
					20	**XS6W-6LSZH8SS2000CM-B**
				Yellow	0.2	**XS6W-6LSZH8SS20CM-Y**
					0.3	**XS6W-6LSZH8SS30CM-Y**
					0.5	**XS6W-6LSZH8SS50CM-Y**
					1	**XS6W-6LSZH8SS100CM-Y**
					1.5	**XS6W-6LSZH8SS150CM-Y**
					2	**XS6W-6LSZH8SS200CM-Y**
					3	**XS6W-6LSZH8SS300CM-Y**
					5	**XS6W-6LSZH8SS500CM-Y**
					7.5	**XS6W-6LSZH8SS750CM-Y**
					10	**XS6W-6LSZH8SS1000CM-Y**
					15	**XS6W-6LSZH8SS1500CM-Y**
					20	**XS6W-6LSZH8SS2000CM-Y**
				Green	0.2	**XS6W-6LSZH8SS20CM-G**
					0.3	**XS6W-6LSZH8SS30CM-G**
					0.5	**XS6W-6LSZH8SS50CM-G**
					1	**XS6W-6LSZH8SS100CM-G**
					1.5	**XS6W-6LSZH8SS150CM-G**
					2	**XS6W-6LSZH8SS200CM-G**
					3	**XS6W-6LSZH8SS300CM-G**
					5	**XS6W-6LSZH8SS500CM-G**
					7.5	**XS6W-6LSZH8SS750CM-G**
					10	**XS6W-6LSZH8SS1000CM-G**
					15	**XS6W-6LSZH8SS1500CM-G**
					20	**XS6W-6LSZH8SS2000CM-G**
		Cat.5	PUR	Green	0.5	**XS6W-5PUR8SS50CM-G**
					1	**XS6W-5PUR8SS100CM-G**
					1.5	**XS6W-5PUR8SS150CM-G**
					2	**XS6W-5PUR8SS200CM-G**
					3	**XS6W-5PUR8SS300CM-G**
					5	**XS6W-5PUR8SS500CM-G**
					7.5	**XS6W-5PUR8SS750CM-G**
					10	**XS6W-5PUR8SS1000CM-G**
					15	**XS6W-5PUR8SS1500CM-G**
					20	**XS6W-5PUR8SS2000CM-G**

■ Specifications

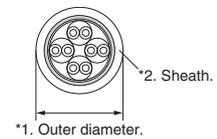|	Type	Cable with Connectors on Both Ends (RJ45/RJ45)/LSZH	Cable with Connectors on Both Ends (RJ45/RJ45)/PUR
Item	Model	XS6W-6LSZH8SS□□□□CM-□	XS6W-5PUR8SS□□□□CM-G
Rated current		1 A (at 50°C)	
Withstand voltage		1,000 VDC for 60 s (leakage current: 1 mA max.)	
Ambient operating temperature		−20 to 60°C	−40 to 85°C
Ambient storage temperature		−20 to 60°C	−40 to 85°C
Ambient installation temperature		0 to 50°C	−10 to 60°C
Protective structure		IP20	

■ Materials and Finish

● Connectors

	Type	Cable with Connectors on Both Ends (RJ45/RJ45)/LSZH	Cable with Connectors on Both Ends (RJ45/RJ45)/PUR
Item	Model	XS6W-6LSZH8SS□□□□CM-□	XS6W-5PUR8SS□□□□CM-G
Connector housing		PC resin (UL94V-0)/transparent	
Contacts		Phosphor bronze/nickel base, gold plated (0.8 μm)	
Shield		Brass/nickel plated	
Cover (structured to prevent the tab from breaking)		LSZH: Blue, yellow, or green	PUR: Green
Marking tube		PVC resin (UL94V-0)/transparent	

● Cables

	Type	Cable with Connectors on Both Ends (RJ45/RJ45)/LSZH	Cable with Connectors on Both Ends (RJ45/RJ45)/PUR
Item	Model	XS6W-6LSZH8SS□□□□CM-□	XS6W-5PUR8SS□□□□CM-G
Compliant standard		IEC 60332-1 /UL1581 FT2	IEC 60332-1 /UL1581 FT2
Number of cores/gauge		$4 \times 2 \times$ AWG27 0.1 mm²	$4 \times 2 \times$ AWG26 0.13 mm²
Outer diameter*1		5.8 mm	
Sheath color*2		Blue, yellow, or green	Green
Sheath material		LSZH	PUR
Shield structure		Double shield S/FTP	Double shield SF/UTP

*2. Sheath.

*1. Outer diameter.

■ Dimensions

(Unit: mm)

● Cable with Connectors on Both Ends (RJ45/RJ45)
XS6W-6LSZH8SS□□□□CM-□
XS6W-5PUR8SS□□□□CM-G

Wiring

RJ45		RJ45
1	———	1
2	———	2
3	———	3
4	———	4
5	———	5
6	———	6
7	———	7
8	———	8
Shield	———	Shield

L (cable length)

(14)

13.2

38.5   18   18   38.5

Marking tube
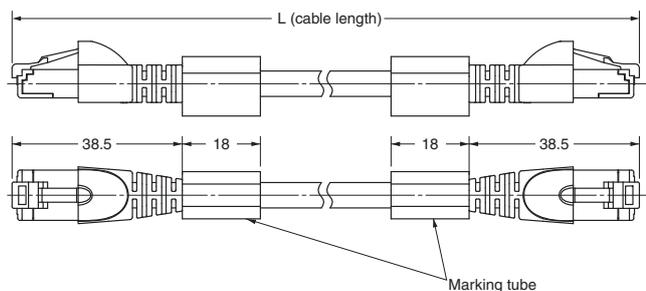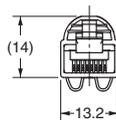
Note. External dimensions are the same for all cable materials.

Cables with Rugged RJ45 Connectors and Cables with M12 Connectors

■ Model Number Legend

Use this legend when determining the product specifications from the model number. Choose from the model numbers listed in *Ordering Information* when ordering.

● **Cable with Connectors**

XS5□-T 4 2 □-□M□-□□
① ②③④ ⑤ ⑥ ⑦ ⑧

①**Connector Shape**
H: Cable with plug on one end
W: Cable with connectors on both ends

②**Type**
T: Ethernet (mating part: M12 D coding)

③**Number of Pins**
4: 4 pins

④**Contact Plating Specification**
2: Gold plating, 0.4 μm

⑤**Cable Attachment Direction (M12 Connectors)**
1: Straight
2: Right angle

⑥**Cable Length**
A: 0.3 m
B: 0.5 m
C: 1 m
D: 2 m
E: 3 m
G: 5 m
J: 10 m
K: 15 m

⑦**Connector Shape**
0: M12 plug on one end
1: Connectors on both ends: M12 socket/M12 plug
2: Connectors on both ends: M12 plug/M12 plug
C: Connectors on both ends: M12 plug/RJ45 plug
D: Connectors on both ends: RJ45 plug/RJ45 plug
E: Connectors on both ends: M12 socket/RJ45 plug

⑧**Cable Specification**
K: Standard cable
KR: Robot cable

● **RJ45 Assembly Connectors**

XS6G-T 4 2 1-1
① ② ③ ④ ⑤

①**Type**
T: Ethernet

②**Number of Pins**
4: 4 pins

③**Contact Plating Specification**
2: Gold plating, 0.4 μm

④**Cable Attachment Direction**
1: Straight

⑤**Degree of Protection**
1: IP20

● **M12 Connectors for Panel Mounting**

XS5P-T 4 2 □-□
① ② ③ ④ ⑤

①**Type**
T: Ethernet (mating part: M12 D coding)

②**Number of Pins**
4: 4 pins

③**Plating Specification**
2: Gold plating, 0.4 μm

④**Mounting Method**
6: Rear lockingt
7: Front locking

⑤**Terminal Shape**
1: DIP terminalst
5: Cable with loose wires (0.5 m)

■ Ordering Information

Appearance	Cable type	Type	Cable length (m)	Model
		Cable with Plug on One End (M12 Straight)	0.5	**XS5H-T421-BM0-K**
			1	**XS5H-T421-CM0-K**
			2	**XS5H-T421-DM0-K**
			3	**XS5H-T421-EM0-K**
			5	**XS5H-T421-GM0-K**
			10	**XS5H-T421-JM0-K**
			15	**XS5H-T421-KM0-K**
		Cable with Plugs on Both Ends (M12 Straight/M12 Straight)	0.5	**XS5W-T421-BM2-K**
			1	**XS5W-T421-CM2-K**
			2	**XS5W-T421-DM2-K**
			3	**XS5W-T421-EM2-K**
			5	**XS5W-T421-GM2-K**
			10	**XS5W-T421-JM2-K**
			15	**XS5W-T421-KM2-K**
		Cable with Plugs on Both Ends (M12 Straight/RJ45)	0.3	**XS5W-T421-AMC-K**
			0.5	**XS5W-T421-BMC-K**
			1	**XS5W-T421-CMC-K**
			2	**XS5W-T421-DMC-K**
			3	**XS5W-T421-EMC-K**
			5	**XS5W-T421-GMC-K**
			10	**XS5W-T421-JMC-K**
			15	**XS5W-T421-KMC-K**
		Cable with Plug on One End (M12 Right-angle)	0.5	**XS5H-T422-BM0-K**
			1	**XS5H-T422-CM0-K**
			2	**XS5H-T422-DM0-K**
			3	**XS5H-T422-EM0-K**
			5	**XS5H-T422-GM0-K**
			10	**XS5H-T422-JM0-K**
			15	**XS5H-T422-KM0-K**
	Standard Cables	Cable with Plugs on Both Ends (M12 Right-angle/M12 Right-angle)	0.5	**XS5W-T422-BM2-K**
			1	**XS5W-T422-CM2-K**
			2	**XS5W-T422-DM2-K**
			3	**XS5W-T422-EM2-K**
			5	**XS5W-T422-GM2-K**
			10	**XS5W-T422-JM2-K**
			15	**XS5W-T422-KM2-K**
		Cable with Plugs on Both Ends (M12 Right-angle/RJ45)	0.3	**XS5W-T422-AMC-K**
			0.5	**XS5W-T422-BMC-K**
			1	**XS5W-T422-CMC-K**
			2	**XS5W-T422-DMC-K**
			3	**XS5W-T422-EMC-K**
			5	**XS5W-T422-GMC-K**
			10	**XS5W-T422-JMC-K**
			15	**XS5W-T422-KMC-K**
		Cable with Plugs on Both Ends (RJ45/RJ45)	0.3	**XS5W-T421-AMD-K**
			0.5	**XS5W-T421-BMD-K**
			1	**XS5W-T421-CMD-K**
			2	**XS5W-T421-DMD-K**
			3	**XS5W-T421-EMD-K**
			5	**XS5W-T421-GMD-K**
			10	**XS5W-T421-JMD-K**
			15	**XS5W-T421-KMD-K**
		Cable with Plug on One End and Socket on Other End (M12 Straight/M12 Straight)	0.5	**XS5W-T421-BM1-K**
			1	**XS5W-T421-CM1-K**
			2	**XS5W-T421-DM1-K**
			3	**XS5W-T421-EM1-K**
			5	**XS5W-T421-GM1-K**
			10	**XS5W-T421-JM1-K**
			15	**XS5W-T421-KM1-K**
		Cable with Plug on One End and Socket on Other End (M12 Straight/RJ45)	0.5	**XS5W-T421-BME-K**
			1	**XS5W-T421-CME-K**
			2	**XS5W-T421-DME-K**
			3	**XS5W-T421-EME-K**
			5	**XS5W-T421-GME-K**
			10	**XS5W-T421-JME-K**
			15	**XS5W-T421-KME-K**

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Appearance	Cable type	Type		Cable length (m)	Model
	Robot Cables	Cable with Plug on One End and Socket on Other End (M12 Straight/M12 Straight)		0.5	**XS5W-T421-BM1-KR**
				1	**XS5W-T421-CM1-KR**
				2	**XS5W-T421-DM1-KR**
				3	**XS5W-T421-EM1-KR**
				5	**XS5W-T421-GM1-KR**
				10	**XS5W-T421-JM1-KR**
				15	**XS5W-T421-KM1-KR**
		Cable with Plugs on Both Ends (M12 Straight/M12 Straight)		0.5	**XS5W-T421-BM2-KR**
				1	**XS5W-T421-CM2-KR**
				2	**XS5W-T421-DM2-KR**
				3	**XS5W-T421-EM2-KR**
				5	**XS5W-T421-GM2-KR**
				10	**XS5W-T421-JM2-KR**
				15	**XS5W-T421-KM2-KR**
		Cable with Plugs on Both Ends (M12 Straight/RJ45)		0.5	**XS5W-T421-BMC-KR**
				1	**XS5W-T421-CMC-KR**
				2	**XS5W-T421-DMC-KR**
				3	**XS5W-T421-EMC-KR**
				5	**XS5W-T421-GMC-KR**
				10	**XS5W-T421-JMC-KR**
				15	**XS5W-T421-KMC-KR**
		Cable with Plugs on Both Ends (RJ45/RJ45)		0.5	**XS5W-T421-BMD-KR**
				1	**XS5W-T421-CMD-KR**
				2	**XS5W-T421-DMD-KR**
				3	**XS5W-T421-EMD-KR**
				5	**XS5W-T421-GMD-KR**
				10	**XS5W-T421-JMD-KR**
				15	**XS5W-T421-KMD-KR**
	Standard Cables	RJ45 Assembly Connector		---	**XS6G-T421-1**
		M12 Connector for Panel Mounting	Rear locking	0.5	**XS5P-T426-5**
			Front locking	0.5	**XS5P-T427-5**
		M12 Panel-mounting PCB Straight Terminals		---	**XS5P-T426-1**

Cable Bending Data for Robot Cables (XS5W-T421-□M□-KR)

The following data is the results of OMRON testing for cable bending test conditions. The number of bends may vary for your environment and application conditions.
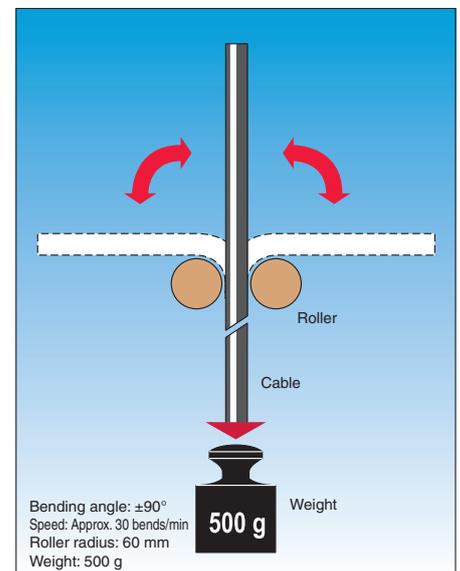
Cableveyor Test
Number of bends: 20 million min.
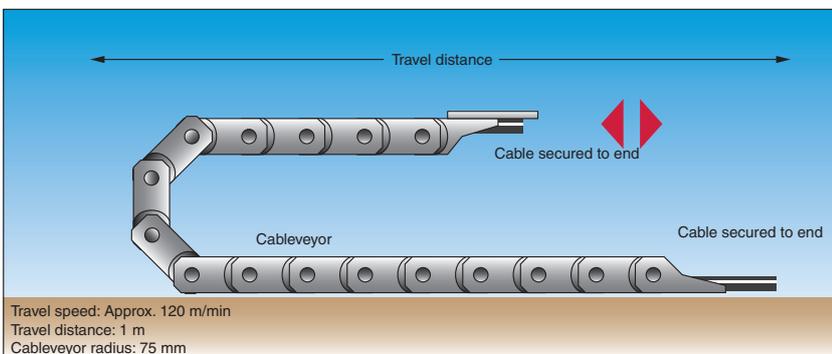
90° Bending Test
Number of bends: 6 million min.

Travel distance
Cable secured to end
Cableveyor
Cable secured to end
Travel speed: Approx. 120 m/min
Travel distance: 1 m
Cableveyor radius: 75 mm

Roller
Cable
Weight
500 g
Bending angle: ±90°
Speed: Approx. 30 bends/min
Roller radius: 60 mm
Weight: 500 g

■ Specifications

Type Item　　　Model	Cable with Plug on One End (M12) XS5H -T42□-□M0-K	Cable with Plugs on Both Ends (M12/M12) XS5W -T42□-□M2-K, -KR	Cable with Plug on One End and Socket on Other End (M12/M12) XS5W -T42□-□M1-K, -KR	Cable with Plugs on Both Ends (M12/RJ45) XS5W -T42□-□MC-K, -KR	Cable with Plug on One End and Socket on Other End (M12/RJ45) XS5W -T421-□ME-K	Cable with Plugs on Both Ends (RJ45/RJ45) XS5W -T421-□MD-K, -KR	RJ45 Assembly Connector XS6G -T421-1	M12 Connector for Panel Mounting XS5P-T42□-5	M12 Panel-mounting PCB Straight Terminals XS5P -T426-1
Rated current	3 A			2.5 A				4 A	
Rated voltage	30 V							125 VDC	
Contact resistance	40 mΩ max.								
Insulation resistance	1,000 MΩ min.			500 MΩ min.				1,000 MΩ min.	
Withstand voltage	1,000 VAC for 60 s (leakage current: 1 mA max.)							1,500 VAC for 60 s (leakage current: 1 mA max.)	
Ambient operating temperature	−25 to 70°C								
Ambient storage temperature	−25 to 70°C								
Protective structure	M12: IEC IP67, RJ45: IEC IP20								

■ Materials and Finish

● Connectors

Model Item	M12 XS5H and XS5W	M12 XS5P-T42□-5	M12 XS5P-T426-1	RJ45 XS5W and XS6G
Contact blocks	PBT resin (UL94V-0)/light gray		PA resin (UL94V-0)/black	PA resin (UL94V-0)/black
Contacts	Phosphor bronze/nickel base, gold plated (0.4 μm)		Brass/nickel base, gold plated (0.4 μm)	Phosphor bronze/nickel base, gold plated (1.4 μm)
Anchors	Zinc diecast/nickel plating			---
Anchors (tabs)	SUS	---		
Cover	Straight connector: Soft PBT resin (UL94V-0)/black Right-angle connector: TPC resin/black	---		
Sealing resin	---	Epoxy resin	---	
O-rings	Rubber			---
Grounding fixture	---		Phosphor bronze/nickel base, tin plated (2.0 μm)	---
Anchor cover	---		SUS	---
Nuts	---	Brass/nickel plated		---

● Cables

Model Item	Standard Cables	Robot Cables
Compliant standard	UL CM	
Category	Category 5e	
Number of cores/gauge	4 × AWG22 0.3 mm² (7/0.26)	4 × AWG22 0.3 mm² (7/24/0.05)
Outer diameter*1	6.5 dia.	
Sheath color*2	Light blue	
Sheath material	PVC	
Shield structure	Double shield SF/UTP	

*2. Sheath.

*1. Outer diameter.
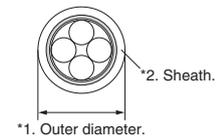
Note. For the XS5H and XS5W, cables are available only with connectors attached.

■ Dimensions

(Unit: mm)

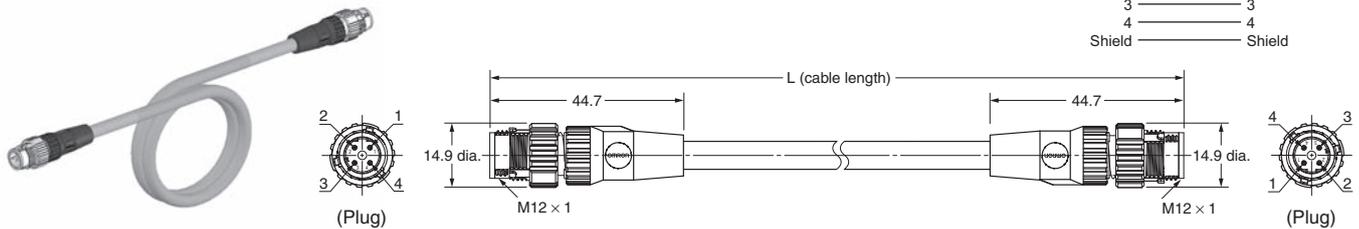### ● Cable with Plug on One End (M12 Straight)
XS5H-T421-□M0-K

Wiring

Terminal No.	Color
1	Yellow
2	White
3	Orange
4	Blue

44.7

L (cable length)

14.9 dia.

M12 × 1
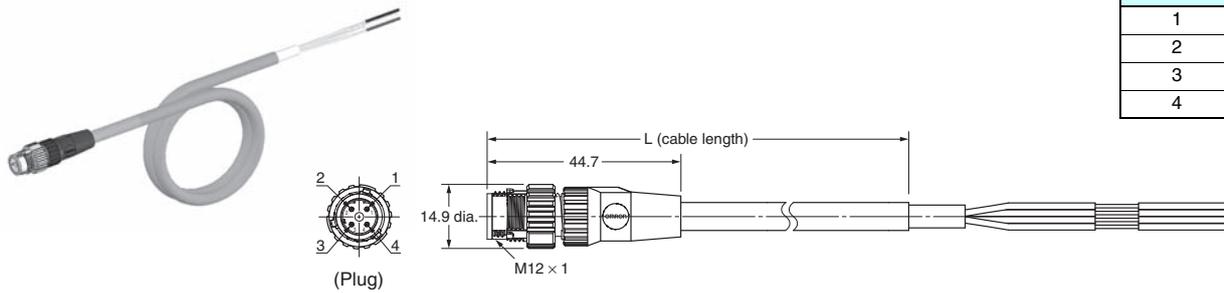
(Plug)

● Cable with Plugs on Both End (M12 Straight/M12 Straight)
XS5W-T421-□M2-K
XS5W-T421-□M2-KR

Wiring

M12 straight — M12 straight
1 —— 1
2 —— 2
3 —— 3
4 —— 4
Shield —— Shield

44.7

L (cable length)

44.7

14.9 dia.

M12 × 1

(Plug)

14.9 dia.

M12 × 1

(Plug)

● Cable with Plugs on Both Ends (M12 Straight/RJ45)
XS5W-T421-□MC-K
XS5W-T421-□MC-KR

Wiring

M12 straight — RJ45
1 —— 1
2 —— 3
3 —— 2
4 —— 6
Shield —— Shield

44.7

L (cable length)

54.7

14.9 dia.

M12 × 1
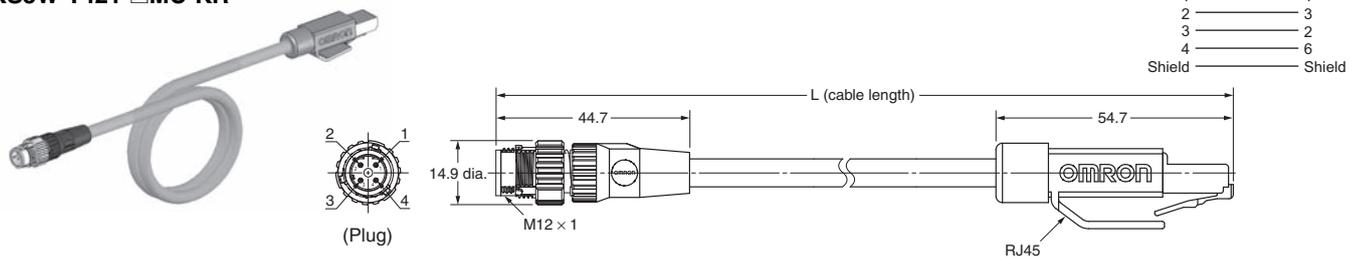
(Plug)

RJ45

● Cable with Plug on One End and Socket on Other End (M12 Straight/M12 Straight)
XS5W-T421-□M1-K
XS5W-T421-□M1-KR

Wiring

M12 straight — M12 straight
1 —— 1
2 —— 2
3 —— 3
4 —— 4
Shield —— Shield

44.7

L (cable length)

50.7

14.9 dia.

M12 × 1

(Plug)

14.9 dia.

M12×1
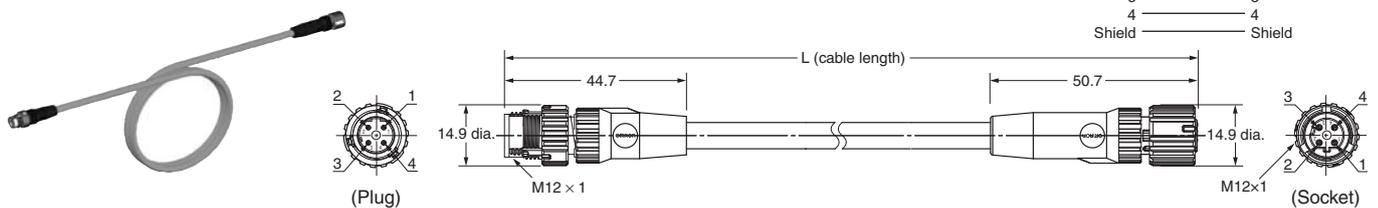
(Socket)

● Cable with Plug on One End and Socket on Other End (M12 Straight/RJ45)
XS5W-T421-□ME-K

Wiring

M12 straight — RJ45
1 —— 1
2 —— 3
3 —— 2
4 —— 6
Shield —— Shield

50.7

L (cable length)

54.7

14.9 dia.

M12 × 1

(Socket)

RJ45
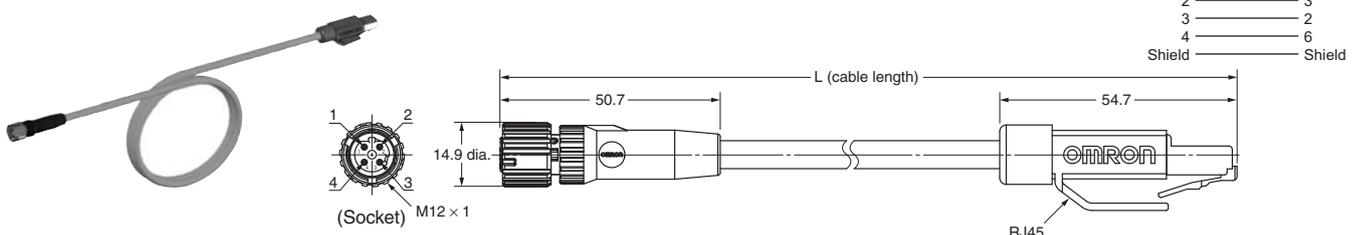
● **Cable with Plug One End (M12 Right-angle)**
XS5H-T422-□M0-K

Wiring

Terminal No.	Color
1	Yellow
2	White
3	Orange
4	Blue

L (cable length)

22.5

32.3

14.9 dia.

M12 × 1

1   4

2   3
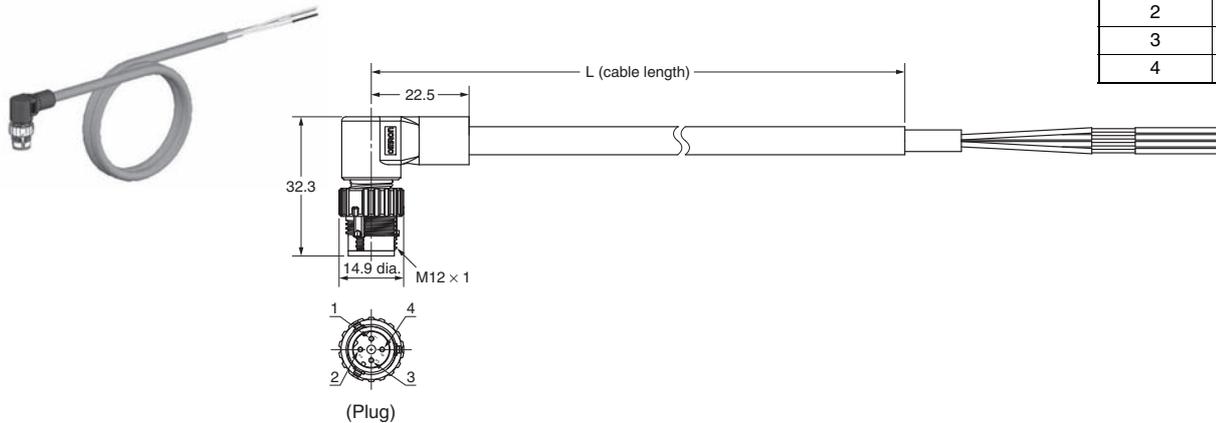
(Plug)

● **Cable with Plugs on Both Ends (M12 Right-angle/M12 Right-angle)**
XS5W-T422-□M2-K

Wiring

M12 right angle		M12 right angle
1	———	1
2	———	2
3	———	3
4	———	4
Shield	———	Shield

L (cable length)

22.5   22.5

32.3   32.3

14.9 dia.   M12 × 1   M12 × 1   14.9 dia.

1   4   3   2

2   3   4   1

(Plug)   (Plug)
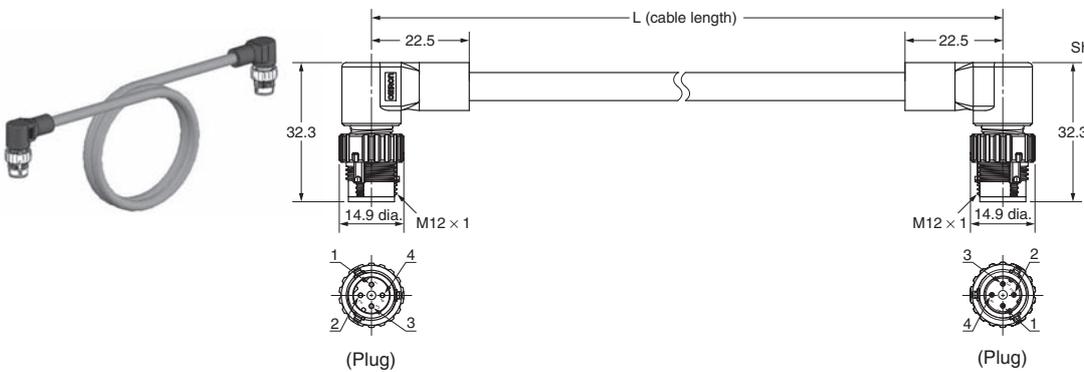
● **Cable with Plugs on Both Ends (M12 Right-angle/RJ45)**
XS5W-T422-□MC-K

L (cable length)

22.5   54.7

32.3

RJ45

14.9 dia.   M12 × 1

1   4

2   3

(Plug)

Wiring

M12 right angle		RJ45
1	———	1
2	———	3
3	———	2
4	———	6
Shield	———	Shield
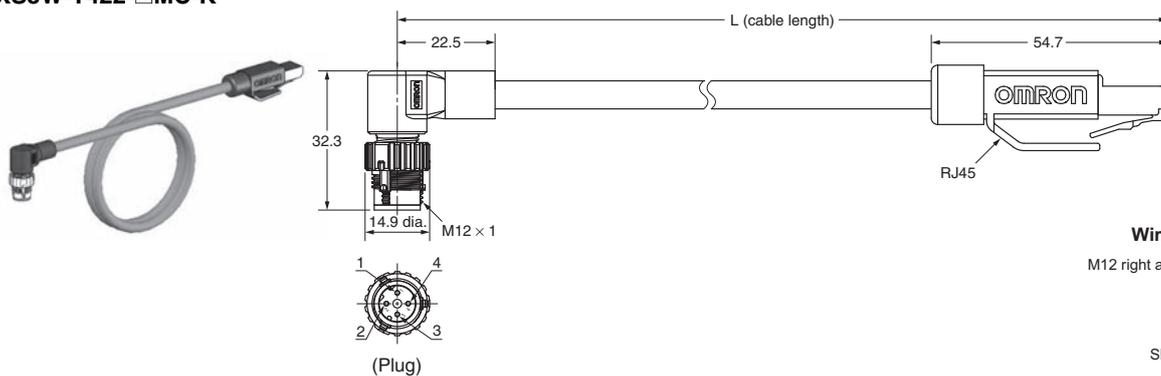
● **Cable with Plugs on Both Ends (RJ45/RJ45)**
XS5W-T421-□MD-K
XS5W-T421-□MD-KR

Wiring

RJ45		RJ45
1	———	1
2	———	2
3	———	3
6	———	6
Shield	———	Shield

L (cable length)

54.7   54.7

RJ45   RJ45

● **RJ45 Assembly Connector**
XS6G-T421-1

52.6

11.8

8.1

11.3
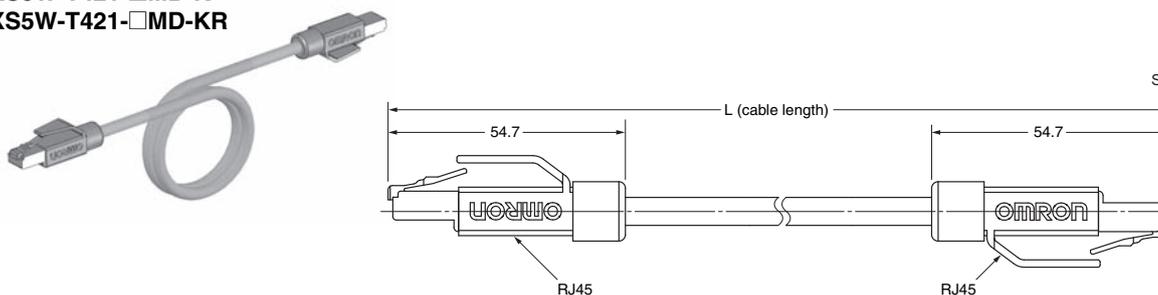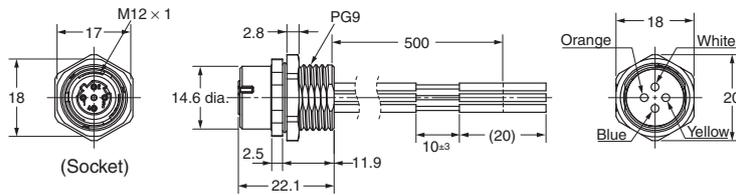
Contact 6
Contact 3
Contact 2
Contact 1
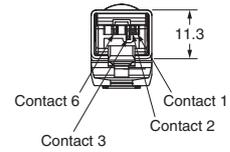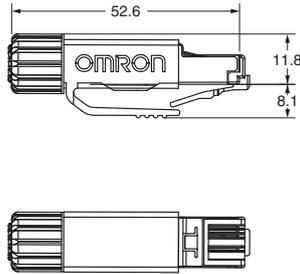
Applicable wires
Sheath outer diameter: 6.1 to 6.9 mm
Core size: AWG22 to AWG24 (stranded wires)
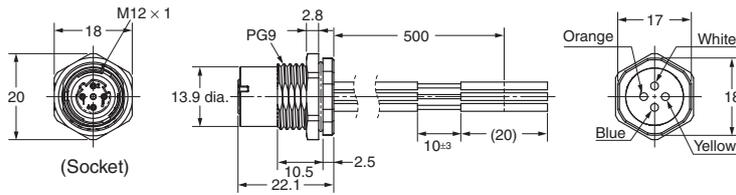AWG22 to AWG23 (solid wires)
Insulation outer diameter: 1.6 mm max.

● **M12 Connector for Panel Mounting**
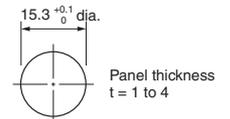**XS5P-T42□-5**

XS5P-T426-5 (Rear Locking)

M12 × 1
17
18
2.8
PG9
14.6 dia.
500
2.5
11.9
22.1
10±3
(20)

Orange
White
18
20
Blue
Yellow

(Socket)

XS5P-T427-5 (Front Locking)

M12 × 1
18
20
PG9
2.8
13.9 dia.
500
10.5
22.1
2.5
10±3
(20)

Orange
White
17
18
Blue
Yellow

(Socket)

Wiring

Terminal No.	Color
1	Yellow
2	White
3	Orange
4	Blue

Panel Cutout Dimension

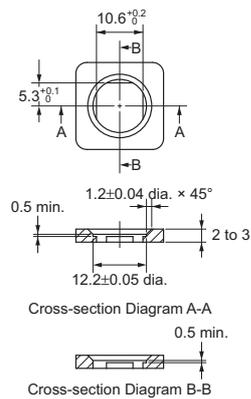$15.3^{+0.1}_{0}$ dia.

Panel thickness
t = 1 to 4

Note 1: The panel cutout dimension is the same for Front-locking and Rear-locking Connectors.
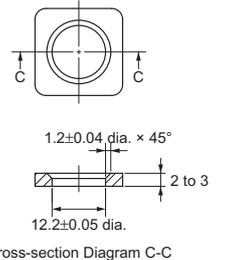Note 2: Rotational positioning is not possible for connector rotation.

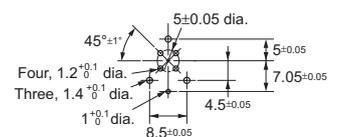● **M12 Panel-mounting PCB Straight Terminals**
XS5P-T426-1

Pin No.
M12×1
19.9
10.4
2.5
14
15
2.5

(Socket)

16.5 dia. 14.6 dia.
3
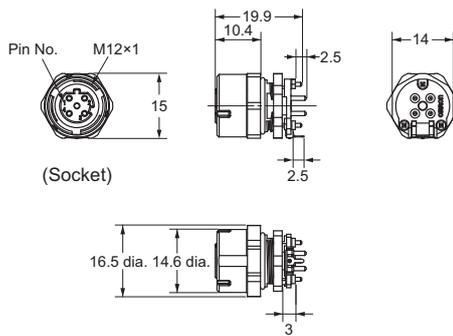
**Mounting Hole Dimensions
(D Cut Structure)**

$10.6^{+0.2}_{0}$
B
$5.3^{+0.1}_{0}$
A
A
B

1.2±0.04 dia. × 45°
0.5 min.
2 to 3
12.2±0.05 dia.

Cross-section Diagram A-A

0.5 min.

Cross-section Diagram B-B

Mounting Hole Dimensions

C
C

1.2±0.04 dia. × 45°
2 to 3
12.2±0.05 dia.

Cross-section Diagram C-C

Panel Processing Dimensions

5±0.05 dia.
45°±1°
5±0.05
7.05±0.05
Four, $1.2^{+0.1}_{0}$ dia.
Three, $1.4^{+0.1}_{0}$ dia.
$1^{+0.1}_{0}$ dia.
4.5±0.05
8.5±0.05

■ Assembly Procedure

### ● RJ45 Assembly Connectors
XS6G-T421-1

1. Pass the cable through the cable clamp and the connector housing

2. Strip the cable sheath and ground braiding to the correct lengths.

3. Follow the color codes and prepare to insert the wires into the splice piece.

4. Insert the wires into the splice piece for the length of the splice piece.

5. Place the splice piece into the RJ45 data module and engage it.

6. Place the data module and the splice piece on the IDC assembly housing.

7. Press the data module and the IDC assembly housing together and use pliers or a similar device to make the insulation displacement contact.

8. Remove the data module from the IDC assembly housing.

9. Place the upper screen plate on the data module and press it over the ground braiding of the cable.

10. Place the lower screen plate on the bottom of the data module, align it with the upper screen place, and latch it until you hear it click into place.

11. Slide the housing that you placed around the cable in step 1 up to the data module and latch it until you hear it click into place.

12. Tighten the cable clamp.

24 mm
13 mm

Pin Assignments
Pin Assignments for Fast Ethernet 10/100 Mbps

Function/Signal	Wire color			Pin No.
	Industrial Ethernet	EIA/TIA 568A	EIA/TIA 568B	
Transmission Data+/TD+	YE	WH/GN	WH/OG	1
Transmission Data-/TD−	OG	GN	OG	2
Receiver Data/RD+	WH	WH/OG	WH	3
Receiver Data/RD−	BU	OG	GN	6

Pin 2 (Orange)
Pin 6 (Blue)
Pin 1 (Yellow)
Pin 3 (White)
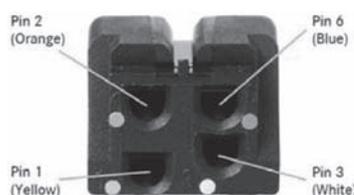
● M12 Panel-mounting PCB Straight Terminals
XS5P-T426-1
Confirming the Number of Parts
The following four parts are included in the package when it is delivered.

Panel-mounting Parts
1. Anchor   2. O-Ring   3. Nut
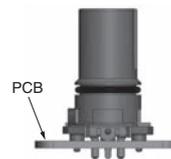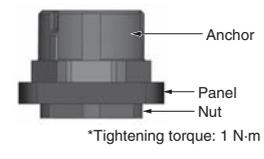
PCB-mounting Part
4. Connector

Assembly Procedure

1. Mount the connector to the PCB.
2. Attach the anchor to the panel with the nut.
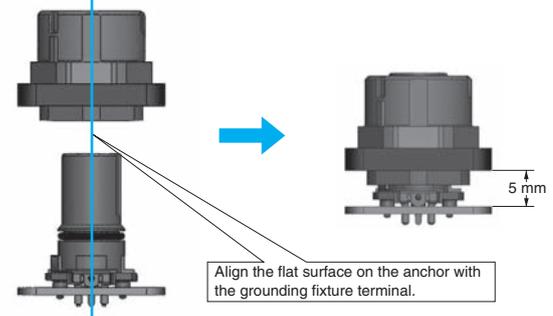
Mounting the Connector to the PCB

Mounting the Anchor to the Panel

PCB

Anchor
Panel
Nut
*Tightening torque: 1 N·m

3. Attach the connector that you mounted to the PCB to the panel.
   * Make sure that the connector and anchor are oriented correctly.

Attachment

5 mm

Align the flat surface on the anchor with the grounding fixture terminal.

4. Temporarily mount the O-ring to the top of the connector at the mating surface.

Temporary Mounting of the O-Ring

O-ring

5. Mate the Connector Waterproof Cover (XS2Z-22, sold separately) or the Partner Connector Plug (XS5H-T42□-□M0-K, sold separately) and press the O-ring to the O-ring position after mounting.

Mounting the O-Ring

O-Ring Position after Mounting

● Connector Waterproof Cover (Sold Separately)
XS2Z-22

* Tightening torque: 0.39 to 0.49 N·m

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■ Safety Precautions

Precautions for Correct Use

Do not use the Connectors in an atmosphere or environment that exceeds the specifications.

● Connector Connection and Disconnection
- When connecting or disconnecting Connectors, be sure to hold the Connectors.
- Do not hold the cable when disconnecting Connectors.
- When joining Connectors, be sure to insert the plug all the way to the back of the socket before attempting to lock the Connectors.
- Do not use tools of any sort to join the Connectors. Always use your hands. Pliers or other tools may damage the Connectors.

● Wiring
Lay the cables so that external force is not applied to the Connectors. Otherwise, the degree of protection (IP67) may not be achieved.

● Degree of Protection for M12/Smartclick Connectors
- The degree of protection of Connectors (IP67) is not for a fully watertight structure. Do not use the Connectors underwater.
- Do not step on or place any objects on the Connectors. Doing so may damage the Connectors.

● Handling Precautions
- Do not pull on the Connectors or cables with excessive force. Do not install the Connectors with a load placed directly on the joint or at the point where the wires connect to the Connector. The Connector may be damaged or the wires in the cable may be disconnected.
- Lay the cable where it will not be stepped on to prevent the wires in the cable from being disconnected and to protect the Connectors from being damaged. If the cable must be placed where it will be stepped on, install a protective cover.
- When bending cables, do not exceed the cable specifications.

OMRON Corporation   **Industrial Automation Company**

Tokyo, JAPAN

Contact: www.ia.omron.com

Regional Headquarters

OMRON EUROPE B.V.
Wegalaan 67-69-2132 JD Hoofddorp
The Netherlands
Tel: (31)2356-81-300/Fax: (31)2356-81-388

OMRON ELECTRONIC COMPONENTS LLC
55 Commerce Drive, Suite B,
Shaumburg, IL, 60173, U.S.A.
Tel: (1) 847-882-2288/Fax: (1) 847-882-2192

OMRON ASIA PACIFIC PTE. LTD.
No. 438A Alexandra Road # 05-05/08 (Lobby 2),
Alexandra Technopark,
Singapore 119967
Tel: (65) 6835-3011/Fax: (65) 6835-2711

OMRON (CHINA) CO., LTD.
Room 2211, Bank of China Tower,
200 Yin Cheng Zhong Road,
PuDong New Area, Shanghai, 200120, China
Tel: (86) 21-5037-2222/Fax: (86) 21-5037-2200

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