Round Water-resistant Connectors (M12 Smartclick)

**Round Water-resistant Smartclick Connectors That Reduce Installation Work**

- A newly developed lock mechanism that is compatible with round M12 connectors.
- Simply insert the Connectors, then turn them approximately 1/8 of a turn to lock.
- A positive click indicates locking.
- Features the same degree of protection (IP67) as M12 connectors.
- Connectors with Cables are UL certified.

- Four types of assembly connectors are available, including IDC, crimping, soldering and screw-on types.

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**Model Number Structure**

**Connectors with Cables Model Number Legend**

*For details, refer to the data sheet of the XS2 Round Water-resistant Connectors (M12 Threads).

**Note 1.** Only DC, straight, and 4-core types are shown in this table. Refer to the relevant pages for other products.

**2.** Other than the M12 sizes introduced in this table, M8-sized (XS3) products and M8-M12 conversion cables are also available. For details, refer to the data sheet of the XS3 Round Water-resistant Connectors (M8/S8).

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**XS5: One-touch Smartclick Connection (compatible with M12 connectors)**

**XS2: M12 Screw Connection**

---

**Table:**

<table>
<thead>
<tr>
<th>Connector on both cable ends</th>
<th>Connectors on one cable end (Socket)</th>
<th>Connectors on one cable end (Plug)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Connectors on both cable ends</strong></td>
<td><strong>Connectors on one cable end (Socket)</strong></td>
<td><strong>Connectors on one cable end (Plug)</strong></td>
</tr>
<tr>
<td>Fire-retardant, PVC robot cable</td>
<td>Fire-retardant, PVC robot cable</td>
<td>Fire-retardant, PVC robot cable</td>
</tr>
<tr>
<td>Oil-resistant polyurethane robot cable</td>
<td>Spatter-resistant Cable</td>
<td>Spatter-resistant Cable</td>
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<tr>
<td>Spatter-resistant Cable</td>
<td>Spatter-resistant Cable</td>
<td>Spatter-resistant Cable</td>
</tr>
<tr>
<td><strong>Connectors on one cable end (Socket)</strong></td>
<td><strong>Connectors on one cable end (Plug)</strong></td>
<td><strong>Spatter-resistant Cable</strong></td>
</tr>
<tr>
<td><strong>Connectors on both cable ends</strong></td>
<td><strong>Connectors on one cable end (Socket)</strong></td>
<td><strong>Connectors on one cable end (Plug)</strong></td>
</tr>
<tr>
<td>Fire-retardant, PVC robot cable</td>
<td>Fire-retardant, PVC robot cable</td>
<td>Fire-retardant, PVC robot cable</td>
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<tr>
<td>Oil-resistant polyurethane robot cable</td>
<td>Spatter-resistant Cable</td>
<td>Spatter-resistant Cable</td>
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<tr>
<td>Spatter-resistant Cable</td>
<td>Spatter-resistant Cable</td>
<td>Spatter-resistant Cable</td>
</tr>
</tbody>
</table>

---

**XS5: One-touch Smartclick Connection**

**XS2: M12 Screw Connection**

---

**Note:** Screw connections will be made if connecting with a screw type.

---

For details, refer to the data sheet of the XS2 Round Water-resistant Connectors (M12 Threads).

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For details, refer to the data sheet of the XS3 Round Water-resistant Connectors (M8/S8).

---

Smartclick is a registered trademark of the OMRON Corporation.
Features

Featuring a Lock Mechanism that Connects and Disconnects with One-touch

It can be used easily by anyone, significantly reducing man-hours spent on wiring.

Connections are complete when an audible click sound can be heard.

It does not become loose due to machine vibration, meaning periodic re-tightening is unnecessary.

Compatibility with M12 Screws

Can also be connected to M12 screw sensors and actuators

<table>
<thead>
<tr>
<th></th>
<th>XS5 Smartclick Plug Connectors</th>
<th>M12 Screw Plug Connectors</th>
</tr>
</thead>
<tbody>
<tr>
<td>XS5 Smartclick</td>
<td>One-touch connection</td>
<td>Screw connection</td>
</tr>
<tr>
<td>M12 Screw</td>
<td>Screw connection</td>
<td>Screw connection</td>
</tr>
</tbody>
</table>

All types of combinations can be connected. Screw connections will be made if connecting Smartclick with a screw type.

Ratings and Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated current</td>
<td>4 A</td>
</tr>
<tr>
<td>Rated voltage</td>
<td>250 VDC</td>
</tr>
<tr>
<td>Contact resistance (connector)</td>
<td>40 mΩ max. (20 mV max., 100 mA max.)</td>
</tr>
<tr>
<td>Insulation resistance</td>
<td>1,000 MΩ min. (at 500 VDC)</td>
</tr>
<tr>
<td>Dielectric strength (connector)</td>
<td>1,500 VAC for 1 min (leakage current: 1 mA max.)</td>
</tr>
<tr>
<td>Degree of protection</td>
<td>IP67 (IEC60529)</td>
</tr>
<tr>
<td>Insertion tolerance</td>
<td>50 times</td>
</tr>
<tr>
<td>Lock strength</td>
<td>Tensile: 100 N/15 s, Torsion: 1 N·m/15 s</td>
</tr>
<tr>
<td>Cable holding strength</td>
<td>Tensile: 100 N/15 s, Torsion: 1 N·m/15 s (for cable diameter of 6 mm) *2</td>
</tr>
<tr>
<td>Lock operating force</td>
<td>0.1 to 0.25 N·m</td>
</tr>
<tr>
<td>Ambient operating temperature range</td>
<td>−25 to 70°C *3</td>
</tr>
<tr>
<td>Ambient humidity range</td>
<td>20% to 85%</td>
</tr>
<tr>
<td>Number of pressure-weld repairs *1</td>
<td>10 times max. (Limited to the same external diameter and wire diameter.)</td>
</tr>
</tbody>
</table>

*1. Only X5SC/G (IDC models)
*2. Refer to product specifications for details.
*3. Use the PVC robot cable within a temperature range between 0°C and 70°C to prevent the wires inside the cable from being broken when bending it.
## Materials and Finish

<table>
<thead>
<tr>
<th>Item</th>
<th>Model</th>
<th>XS5F/H/W</th>
<th>XS5R</th>
<th>XS5M/P</th>
<th>XS5C/G (Crimping, Soldering)</th>
<th>XS5C/G (Screw-on)</th>
<th>XS5C/G (IDC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contacts</td>
<td></td>
<td>Phosphor bronze, gold plating</td>
<td>Phosphor bronze or Brass, gold plating</td>
<td>Phosphor bronze, gold plating</td>
<td>Brass, gold plating</td>
<td>Phosphor bronze or Brass, gold plating</td>
<td>Phosphor bronze, gold plating</td>
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<tr>
<td>Fixture</td>
<td></td>
<td>Nickel plated zinc alloy</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Fixtures (Lock) *</td>
<td></td>
<td>Stainless</td>
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</tr>
<tr>
<td>Pin block</td>
<td></td>
<td>PBT resin</td>
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<td></td>
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</tr>
<tr>
<td>O-ring</td>
<td></td>
<td>Rubber</td>
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<td></td>
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<tr>
<td>Cover</td>
<td></td>
<td>Soft PBT resin</td>
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<td></td>
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<td></td>
<td>PBT resin</td>
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<tr>
<td>Cable</td>
<td></td>
<td>Fire-retardant, PVC robot cable</td>
<td>UL AWM2464 CL3, 6 mm dia., AWG20</td>
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<tr>
<td></td>
<td></td>
<td>Oil-resistant polyurethane cable</td>
<td>6 mm dia. AWG20</td>
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<tr>
<td></td>
<td></td>
<td>Spatter-resistant Cable</td>
<td>6.6 mm dia. AWG20</td>
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<td></td>
<td></td>
<td>Oil-resistant polyurethane robot cable</td>
<td>4.7 mm dia. AWG23</td>
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</table>

*Only plug

## Pin Arrangement (Engaged Side)

<table>
<thead>
<tr>
<th>Item</th>
<th>No. of poles</th>
<th>4 poles</th>
</tr>
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<tbody>
<tr>
<td>A-coding (DC type)</td>
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<td></td>
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<tr>
<td>Male (plug) contacts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female (socket) contacts</td>
<td></td>
<td></td>
</tr>
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</table>

## Connection

<table>
<thead>
<tr>
<th>OMRON model No.</th>
<th>Smartclick Plug Connectors</th>
<th>M12 Plug Connectors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>XSSH, XSG5, XSW5 (plug side), XSR5 (plug side), XSM</td>
<td>XSH2, XSG2, XSW2 (plug side), XSR2 (plug side), XSM</td>
</tr>
</tbody>
</table>

| Smartclick Socket Connectors | XSF5, XSC5, XSW5 (socket side), XSR5 (socket side), XSP |   |   |
|                             | @ |   |   |

| M12 Socket Connectors      | XSF2, XSC2, XSW2 (socket side), XSR2 (socket side), XSP |   |   |
|                            | @ |   |   |

@: Connected by twisting.  
@: Connected by screwing.  
Note: The XS@M and XS@P cannot mate with each other.
# XS5W Connectors with Cables, Socket and Plug on Both Cable Ends

## Model Number Structure

<table>
<thead>
<tr>
<th>Model Number Structure</th>
<th>Model Number Legend</th>
</tr>
</thead>
<tbody>
<tr>
<td>XS5W-D42□□-□□-□□-□□</td>
<td>Use this model number legend to identify products from their model number. Use this model number legend to identify products from their model number. When ordering, use a model number from the table in Ordering Information.</td>
</tr>
</tbody>
</table>

### 1. Type
- W: Connectors with cables, socket and plug on both cable ends

### 2. Mating Section Form
- D: A-coding (DC type)

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

### 4. Contact Plating
- 2: Gold plating

### 5. Cable Connection Direction
- 1: Straight (Socket)/straight (Plug)
- 2: Right-angle (Socket)/right-angle (Plug)
- 3: Straight (Socket)/right-angle (Plug)
- 4: Right-angle (Socket)/straight (Plug)
- B: Straight (Socket)/straight (Plug) 4.7 dia.

### 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
- J: 10 m
- K: 15 m
- L: 20 m

### 7. Connections
- (Numbers inside circles are terminal numbers)
- 8: ① Brown, ② White, ③ Blue, ④ Black

### 8. Connectors on One Cable End/Both Ends
- 1: Connectors on both cable ends

### 9. Cable Specifications
- F: Fire-retardant, PVC robot cable
- P: Oil-resistant Polyurethane Cable
- SA: Spatter-resistant cable
- PR: Oil-resistant polyurethane robot cable

## Ordering Information

### Cable Specifications

<table>
<thead>
<tr>
<th>Cable Specifications</th>
<th>Cable Length L (m)</th>
<th>Cable Diameter (mm)</th>
<th>Straight (Socket)/Straight (Plug)</th>
<th>Right-angle (Socket)/Right-angle (Plug)</th>
<th>UL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire-retardant, PVC Robot</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>UL2238 certified (File no. E207683)</td>
</tr>
<tr>
<td></td>
<td>0.5</td>
<td>6 dia.</td>
<td>X5SW-D421-B81-F</td>
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</tr>
<tr>
<td></td>
<td>1</td>
<td></td>
<td>X5SW-D421-C81-F</td>
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<tr>
<td></td>
<td>2</td>
<td></td>
<td>X5SW-D421-D81-F</td>
<td>X5SW-D422-D81-F</td>
<td></td>
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<td>3</td>
<td></td>
<td>X5SW-D421-E81-F</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td></td>
<td>X5SW-D421-F81-F</td>
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<tr>
<td></td>
<td>5</td>
<td></td>
<td>X5SW-D421-G81-F</td>
<td>X5SW-D422-G81-F</td>
<td></td>
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<tr>
<td></td>
<td>10</td>
<td></td>
<td>X5SW-D421-J81-F</td>
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<tr>
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<td></td>
<td>20</td>
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<td>X5SW-D421-L81-F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil-resistant polyurethane</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cable</td>
<td>2</td>
<td>6.6 dia.</td>
<td>X5SW-D421-D81-SA</td>
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<td></td>
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<td></td>
<td>X5SW-D421-G81-SA</td>
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</tr>
<tr>
<td></td>
<td>10</td>
<td></td>
<td>X5SW-D421-J81-P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spatter-resistant Cable</td>
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<td></td>
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</tr>
<tr>
<td></td>
<td>2</td>
<td>6.6 dia.</td>
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<tr>
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<td>5</td>
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<td>X5SW-D42B-G81-PR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil-resistant polyurethane</td>
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<td></td>
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</tr>
<tr>
<td>robot cable</td>
<td>1</td>
<td>4.7 dia.</td>
<td>X5SW-D42B-C81-PR</td>
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<td></td>
<td>2</td>
<td></td>
<td>X5SW-D42B-D81-PR</td>
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<td>X5SW-D42B-G81-PR</td>
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</tr>
<tr>
<td></td>
<td>10</td>
<td></td>
<td>X5SW-D42B-J81-PR</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Ask your OMRON representative about other cable lengths.
Dimensions

(Unit: mm)

Note: Oil-resistant polyurethane cables (XS5W-D42\@-\@81-P) and spatter-resistant cables (XS5W-D421-\@81-SA) have black covers.

Fire-retardant, PVC robot cables (XS5W-D42\@-\@81-F), oil-resistant (polyurethane) robot cables (XS5W-D42B-\@81-PR) have warm gray covers.

Right-angle (Socket)/Right-angle (Plug)
Fire-retardant, PVC Robot Cable
XS5W-D422-\@81-F

Straight (Socket)/Right-angle (Plug)
Fire-retardant, PVC Robot Cable
XS5W-D423-\@81-F

Right-angle (Socket)/Straight (Plug)
Fire-retardant, PVC Robot Cable
XS5W-D424-\@81-F

Wiring Diagram for 4 Cores

Cable color of core sheath
Brown
White
Blue
Black

Pin No.
1
2
3
4

Note: Oil-resistant polyurethane cables (XS5W-D42\@-\@81-P) and spatter-resistant cables (XS5W-D421-\@81-SA) have black covers.

Fire-retardant, PVC robot cables (XS5W-D42\@-\@81-F), oil-resistant (polyurethane) robot cables (XS5W-D42B-\@81-PR) have warm gray covers.
### Model Number Legend

**XS5F-D42[ ]-[ ]-[ ]-[ ]-[ ]**

1. **Type**  
   F: Connectors with cables  
   Socket on one cable end

2. **Mating Section Form**  
   D: A-coding (DC type)

3. **Connector Poles**  
   4: 4 poles

4. **Contact Plating**  
   2: Gold plating

5. **Cable Connection Direction**  
   1: Straight  
   2: Right-angle  
   B: Straight (4.7 dia.)  
   C: Right-angle (4.7 dia.)

6. **Cable Length**  
   A: 0.3 m  
   B: 0.5 m  
   C: 1 m  
   D: 2 m  
   E: 3 m  
   G: 5 m  
   H: 7 m  
   J: 10 m  
   K: 15 m  
   L: 20 m

7. **Connections (Numbers inside circles are terminal numbers)**  
   8: ① Brown, ② White, ③ Blue, ④ Black  
   A: ① Brown, ② -, ③ -, ④ Blue (DC)

8. **Connectors on One Cable End/ Both Ends**  
   0: One cable end

9. **Cable Specifications**  
   F: Fire-retardant, PVC Robot Cable  
   P: Oil-resistant Polyurethane Cable  
   SA: Spatter-resistant Cable  
   PR: Oil-resistant Polyurethane Robot Cable

### Ordering Information

<table>
<thead>
<tr>
<th>Cable Specifications</th>
<th>Cable Length L (m)</th>
<th>Cable Diameter (mm)</th>
<th>Straight Connectors Model</th>
<th>Right-angle Connectors Model</th>
<th>UL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire-retardant, PVC Robot Cable</td>
<td>1</td>
<td>6 dia. 4.7 dia.</td>
<td>XS5F-D421-C80-F</td>
<td>XS5F-D421-C80-F</td>
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<tr>
<td></td>
<td>2</td>
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<td>XS5F-D421-D80-F</td>
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<tr>
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<tr>
<td>Oil-resistant Polyurethane cable</td>
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<td>6 dia. 4.7 dia.</td>
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<td>XS5F-D422-C80-P</td>
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<td>XS5F-D422-G80-P</td>
<td>XS5F-D422-G80-P</td>
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</tr>
<tr>
<td>Spatter-resistant Cable</td>
<td>2</td>
<td>6.6 dia. 4.7 dia.</td>
<td>XS5F-D421-D80-SA</td>
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<td>XS5F-D421-G80-SA</td>
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<tr>
<td>Oil-resistant Polyurethane robot cable</td>
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<td></td>
<td>XS5F-D422-J80-PR</td>
<td>XS5F-D422-J80-PR</td>
<td></td>
</tr>
</tbody>
</table>

*Note: Ask your OMRON representative about other cable lengths, and about 2-core cables.*
Dimensions
(Unit: mm)

Straight
Fire-retardant, PVC Robot Cable
XS5F-D421-80-F
Oil-resistant Polyurethane Cable
XS5F-D421-80-P
Spatter-resistant Cable
XS5F-D421-80-SA
Oil-resistant Polyurethane Robot Cable
XS5F-D42B-80-PR

Right-angle
Fire-retardant, PVC Robot Cable
XS5F-D422-80-F
Oil-resistant Polyurethane Cable
XS5F-D422-80-P
Oil-resistant Polyurethane Robot Cable
XS5F-D42C-80-PR

Note: Oil-resistant Polyurethane Cable (XS5F-D42-80-P), Spatter-resistant cables (XS5F-D421-80-SA) have black covers.
Fire-retardant, PVC robot cables (XS5F-D42-80-F), oil-resistant (polyurethane) robot cables (XS5F-D42-80-PR) have warm gray covers.
XS5H Connectors with Cables, Plug on One Cable End

Model Number Structure

Model Number Legend

XS5H-D42-80-

1. Type
H: Connectors with cables
Plug on one cable end

2. Mating Section Form
D: A-coding (DC type)

3. Connector Poles
4: 4 poles

4. Contact Plating
2: Gold plating

5. Cable Connection Direction
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

7. Connections (Numbers inside circles are terminal numbers)
8: ① Brown, ② White, ③ Blue,
④ Black

8. Connectors on One Cable End/ Both Ends
0: One cable end

9. Cable Specifications
F: Fire-retardant, PVC robot cable
P: Oil-resistant Polyurethane Cable
SA: Spatter-resistent cable

Ordering Information

<table>
<thead>
<tr>
<th>Cable specifications</th>
<th>Cable length L (m)</th>
<th>Cable diameter (mm)</th>
<th>Straight Connectors Model</th>
<th>Right-angle Connectors Model</th>
<th>UL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire-retardant, PVC Robot Cable</td>
<td>0.3</td>
<td>6 dia.</td>
<td>XS5H-D421-A80-F</td>
<td>XS5H-D422-A80-F</td>
<td>UL2238 certified</td>
</tr>
<tr>
<td></td>
<td>0.5</td>
<td></td>
<td>XS5H-D421-B80-F</td>
<td></td>
<td>(File no. E207683)</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td></td>
<td>XS5H-D421-C80-F</td>
<td>XS5H-D422-C80-F</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td></td>
<td>XS5H-D421-D80-F</td>
<td>XS5H-D422-D80-F</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td></td>
<td>XS5H-D421-E80-F</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5</td>
<td></td>
<td>XS5H-D421-G80-F</td>
<td>XS5H-D422-G80-F</td>
<td></td>
</tr>
<tr>
<td>Oil-resistant polyurethane cable</td>
<td>0.3</td>
<td>6.6 dia.</td>
<td>XS5H-D421-A80-P</td>
<td>XS5H-D422-A80-P</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td></td>
<td>XS5H-D421-B80-P</td>
<td>XS5H-D422-B80-P</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5</td>
<td></td>
<td>XS5H-D421-D80-P</td>
<td>XS5H-D422-D80-P</td>
<td></td>
</tr>
<tr>
<td>Spatter-resistant Cable</td>
<td>0.3</td>
<td>6.6 dia.</td>
<td>XS5H-D421-A80-SA</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td></td>
<td>XS5H-D421-C80-SA</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Ask your OMRON representative about other cable lengths.
Dimensions

(Unit: mm)

**Straight**
Fire-retardant, PVC Robot Cable
XS5H-D421-80-F
Oil-resistant Polyurethane Cable
XS5H-D421-80-P
Spatter-resistant Cable
XS5H-D421-80-SA

**Right-angle**
Fire-retardant, PVC Robot Cable
XS5H-D422-80-F
Oil-resistant Polyurethane Cable
XS5H-D422-80-P
Spatter-resistant Cable
XS5H-D421-80-SA

Note: Oil-resistant polyurethane cables (XS5H-D421-80-P) and spatter-resistant cables (XS5H-D421-80-SA) have black covers. Fire-retardant, PVC robot cables (XS5H-D422-80-F) have warm gray covers.
XS5 Eight-pole Connectors with Cables

Ordering Information

<table>
<thead>
<tr>
<th>Type</th>
<th>Cable specifications</th>
<th>Cable connection direction</th>
<th>Number of cores</th>
<th>Cable length L (m)</th>
<th>Applicable wire gauge</th>
<th>Model</th>
<th>UL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socket on one cable end</td>
<td>6.3 mm dia.</td>
<td>Straight</td>
<td>8</td>
<td>2</td>
<td>—</td>
<td>XS5F-D821-DH0-R</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>AWG23 (0.25 mm²)</td>
<td></td>
<td></td>
<td>5</td>
<td>—</td>
<td>XS5F-D821-GH0-R</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Structure: 0.08 mm/60 wires</td>
<td></td>
<td></td>
<td>10</td>
<td>—</td>
<td>XS5F-D821-JH0-R</td>
<td>—</td>
</tr>
<tr>
<td>Panel-mounting plug</td>
<td>—</td>
<td></td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

Ratings and Specifications

- 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 (IEC60529)
- Insertion tolerance: 50 times
- Ambient operating temperature range: −25 to 70°C
- Ambient humidity range: 20% to 85%

Materials and Finishes

- Contacts: Brass, gold plating
- Fixture: Nickel plated zinc alloy
- Body: Nickel plated zinc alloy
- Nut: Nickel plated brass
- Fixtures (lock): Stainless
- Pin block: PBT resin
- Cover: Soft PBT resin
- Seal resin: Rubber
- O-ring: Rubber

Pin Nos.

<table>
<thead>
<tr>
<th>Pin Nos.</th>
</tr>
</thead>
<tbody>
<tr>
<td>① ② ③ ④ ⑤ ⑥ ⑦ ⑧</td>
</tr>
</tbody>
</table>

Pin No. | Pin lead colors |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>①</td>
<td>White</td>
</tr>
<tr>
<td>②</td>
<td>Brown</td>
</tr>
<tr>
<td>③</td>
<td>Green</td>
</tr>
<tr>
<td>④</td>
<td>Yellow</td>
</tr>
<tr>
<td>⑤</td>
<td>Gray</td>
</tr>
<tr>
<td>⑥</td>
<td>Pink</td>
</tr>
<tr>
<td>⑦</td>
<td>Blue</td>
</tr>
<tr>
<td>⑧</td>
<td>Red</td>
</tr>
</tbody>
</table>

Dimensions (Unit: mm)

Socket on one cable end
XS5F-D821-□H0-R

Front-locking, Panel-mounting Plug
XS5M-D827-4

Panel Cutout
### Ordering Information

**XS5G Assembly Connector Plugs**

#### Accessories (Order Separately)

**Crimping Pin for XS5G**

<table>
<thead>
<tr>
<th>Suitable core size (mm²)</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.18 to 0.3</td>
<td>XS5U-3121</td>
</tr>
<tr>
<td>0.5 to 0.75</td>
<td>XS5U-3122</td>
</tr>
</tbody>
</table>

---

*1. Minimum wire diameter: 0.08 mm, External sheath diameter of wire covering: 0.7 to 2.6 mm, Material of wire covering: PVC and PE

*2. There are two types of contacts.

Note: XS5G Screw-on Plugs cannot be connected to side by side to the CN1 and CN2 connectors of XS2R or XS5R Y-Joint Sockets/Plugs.

Use a cable of mentioning. If you do not use one of these cables, there is a possibility that the performance can’t be met.

Ask your OMRON representative about selecting a cable of other than above.
Dimensions

Straight Connectors
XS5G-D418 (IDC Model)

XS5G-D4C (Crimping Model)

XS5G-D42 (Soldering Model)

Straight Connectors
XS5G-D42S (Screw-on Connectors, Suitable Cable Dia.: 7 or 8 mm)

Straight Connectors
XS5G-D4S (Screw-on Connectors, Suitable Cable Dia.: 3, 4, or 6 mm)

Right-angle Connectors
XS5G-D42S (Soldering Model)

Right-angle Connectors
XS5G-D4S (Screw-on Connectors)

Crimping Pin for XS5G
XS5U-312

* A special tool must be used for crimping. For details, refer to page 24.

Dimensions

<table>
<thead>
<tr>
<th>Model</th>
<th>Suitable core size (mm²)</th>
<th>Dimension (mm)</th>
<th>No. of slits</th>
</tr>
</thead>
<tbody>
<tr>
<td>XS5U-3121</td>
<td>0.18 to 0.3</td>
<td>22.6 6.1 0.8</td>
<td>1</td>
</tr>
<tr>
<td>XS5U-3122</td>
<td>0.3 to 0.75</td>
<td>22.7 6.2 1.3</td>
<td>0</td>
</tr>
</tbody>
</table>
# XS5C Assembly Connector Sockets

## Ordering Information

- **1.** Minimum wire diameter: 0.08 mm, External sheath diameter of wire covering: 0.7 to 2.6 mm, Material of wire covering: PVC and PE

- **2.** There are two types of contacts.

Note: Use a cable in mentioning. If you do not use one of these cables, there is a possibility that the performance can't be met. Ask your OMRON representative about selecting a cable of other than above.

### Accessories (Order Separately)

#### Crimping Pin for XS5C

<table>
<thead>
<tr>
<th>Suitable core size (mm²)</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.18 to 0.3</td>
<td>X5SU-2221</td>
</tr>
<tr>
<td>0.5 to 0.75</td>
<td>X5SU-2222</td>
</tr>
</tbody>
</table>

### No. of poles | Connection method | Suitable cable | Core conductor size (mm²) | Suitable sheath material | Straight Connectors | Right-angle Connectors | UL |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>IDC</td>
<td>3 to 8 dia.</td>
<td>0.14 to 0.75 *1</td>
<td></td>
<td>XS5C-D418</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Crimping</td>
<td>6 dia. (5 to 6 dia.)</td>
<td>0.18 to 0.3</td>
<td>PVC, PE, PUR</td>
<td>XS5C-D4C1 XS5C-D4C2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 dia. (4 to 5 dia.)</td>
<td>0.5 to 0.75 *2</td>
<td></td>
<td>XS5C-D4C3 XS5C-D4C4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 dia. (3 to 4 dia.)</td>
<td></td>
<td></td>
<td>XS5C-D4C5 XS5C-D4C6</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Soldering</td>
<td>6 dia. (5 to 6 dia.)</td>
<td>0.5 max.</td>
<td></td>
<td>XS5C-D421 XS5C-D422</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 dia. (4 to 5 dia.)</td>
<td></td>
<td></td>
<td>XS5C-D423 XS5C-D424</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 dia. (3 to 4 dia.)</td>
<td></td>
<td></td>
<td>XS5C-D425 XS5C-D426</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Screw-on</td>
<td>6 dia. (5 to 6 dia.)</td>
<td>0.18 to 0.75</td>
<td>PVC, PE, PUR</td>
<td>XS5C-D4S1 XS5C-D4S2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 dia. (4 to 5 dia.)</td>
<td></td>
<td></td>
<td>XS5C-D4S3 XS5C-D4S4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 dia. (3 to 4 dia.)</td>
<td></td>
<td></td>
<td>XS5C-D4S5 XS5C-D4S6</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>8 dia. (7 to 8 dia.)</td>
<td></td>
<td></td>
<td>XS5C-D4S7</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>7 dia. (6 to 7 dia.)</td>
<td></td>
<td></td>
<td>XS5C-D4S9</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 Screw-on</td>
<td>6 dia. (5 to 6 dia.)</td>
<td>0.18 to 0.75</td>
<td>PVC, PE, PUR</td>
<td>XS5C-D5S1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 dia. (4 to 5 dia.)</td>
<td></td>
<td></td>
<td>XS5C-D5S3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 dia. (3 to 4 dia.)</td>
<td></td>
<td></td>
<td>XS5C-D5S5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>8 dia. (7 to 8 dia.)</td>
<td></td>
<td></td>
<td>XS5C-D5S7</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>7 dia. (6 to 7 dia.)</td>
<td></td>
<td></td>
<td>XS5C-D5S9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1. Minimum wire diameter: 0.08 mm, External sheath diameter of wire covering: 0.7 to 2.6 mm, Material of wire covering: PVC and PE

*2. There are two types of contacts.

Note: Use a cable in mentioning. If you do not use one of these cables, there is a possibility that the performance can't be met. Ask your OMRON representative about selecting a cable of other than above.

UL 2238 certified (File no. E207683)
Dimensions

Straight Connectors
XS5C-D418 (IDC Model)

Straight Connectors
XS5C-D4C (Crimping Model)
XS5C-D42 (Soldering Model)

Straight Connectors
XS5C-D        (Screw-on Connectors, Suitable Cable Dia.: 7 or 8 mm)

Straight Connectors
XS5C-D        (Screw-on Connectors, Suitable Cable Dia.: 3, 4, or 6 mm)

Right-angle Connectors
XS5C-D4C      (Crimping Model)
XS5C-D42      (Soldering Model)

Right-angle Connectors
XS5C-D        (Screw-on Connectors)

Crimping Pin for XS5C
XS5U-222

* A special tool must be used for crimping. For details, refer to page 24.
## XS5C/XS5G Safety Precautions

### Assembly Procedure for XSSC/XS5G (IDC models) Connector Assemblies

1. **Preparations (Make sure they are all at hand.)**
   - Pin block
   - IDC cover
   - Cap unit

2. **Dressing the cable end**
   - Peel covering of a cable.

3. **Choose the waterproof bushing**
   - Choose the waterproof bushing type according to the cable size.
   - **External diameter of cable: In case of 3 to 5 mm**
     - Use the cap unit in the delivery state.
   - **External diameter of cable: In case of 5 to 8 mm**
     - When using, pick tab both sides of the waterproof bushing with a tab and pull it out in the direction of an arrow.
     - Note: When it isn't necessary to pull out bushing, do not pull a tab or pull out waterproof bushing carelessly. Do not insert the pulled-out bushing again.

4. **Cable insertion**
   - Insert a cable in the cap unit.

5. **Wiring**
   - Confirm the terminal number indication\(^*1\) of a IDC (Insulation Displacement Contact) cover, insert a core wire in each wire guide according to the terminal number and push in to the lowermost part of a core wire storage part.
   - **Terminal No.1:** Brown
   - **Terminal No.2:** White
   - **Terminal No.3:** Blue
   - **Terminal No.4:** Black

   - **Note:** There is a difference in a storing state depending on core wire diameter.

6. **Processing the core wire end**
   - Cut the end part of each core wire with nippers. Cutting the core wire end in the range of cut-area of figure.
   - **Cut-area**

   - **Note:** Please be careful not to cut the boss.

7. **Assembling the Pin block**
   - Insert the cap unit core wire end processing has completed in a pin block.
   - Use a △ mark of a housing and an arrow of a IDC cover, as a guideline of alignment. The location of the arrow is the side of the terminal No.1.

   - **Note:** Confirm that the color of the housing and the IDC cover is same before insertion.

---

<table>
<thead>
<tr>
<th>External diameter of applicable cable</th>
<th>Core conductor size</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 to 8 mm</td>
<td>0.14 to 0.75 mm² / AWG26 to 18</td>
</tr>
</tbody>
</table>
(8) Tightening up the cap

• After inserting the cap unit and tightening a screw up lightly by hand, screw up the cap by a tool of a spanner or wrench (size 15 mm).*2

• When a gap between a mold cover of pin block and a cap disappeared assembly and wire connection has completed.

Note 1. When the operation has completed, △ mark of cap comes into the square of the indicator formed into a mold cover ( ), so also use it as guideline to know to complete.

2. Avoid tightening a cap up beyond the completion position. It may cause damage.

(9) Final checking

• When the connector has been assembled, make sure the line insulation is as specified.

---

**Repair work procedure**

**Cap unit removal**

• When releasing wire connection, remove the cap unit in the opposite procedure of assembly work. [from (8) to (7)]

  Note 1. The core wire remain connected to the IDC connection part rarely. In that case, remove core wire end part to the vertical direction by tweezers etc.

  Do not touch the IDC contact directly at that time.

  2. When IDC cover was left on the housing side, remove it by pulling a cable. In case IDC cover has been removed by holding strongly and pulling, it may cause damage.

**Cable removal**

• When removing the cable from the cap unit, pull the cable to the opposite direction of assembly work procedure (4). When tip of the core wire end has been pushed lightly into the IDC cover by tweezers etc, cable removal becomes easy.

**Repair work**

• When connecting the wire again, do assembly (repair work) according to assembling procedure from (1) to (8).

  Note 1. In case of repair, use a cable of the same diameter and a core wire of the same diameter.

  The number of times of repair wire connection is maximum 10 times.

  2. When doing a repair, work after enough removing the foreign substance and moisture adhering to a connector.

  Be careful so that the foreign substance and moisture do not enter the wire connection part.

  It may cause short-circuit etc.
Assembly Procedure for XS5C/XS5G (Crimping/Soldering/Screw-on models) Connector Assemblies

(1) Connector and Cable Diameters
- Connectors for 8, 7, 6, 4, and 3 mm diameter Cables (i.e., Cables that are 7 to 8, 6 to 7, 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.
- A waterproof bushing for 6/7 mm diameter Cable has no stripe, that for 8/4 mm diameter Cable has a single stripe, and that for 3 mm diameter Cable has two stripes.

(2) Component Insertion

Crimping/Soldering Connectors

Straight Connectors

(Right-angle Model)

Screw-on Connectors

Confirm that you have all of the required parts.

Insulation caps and insulation tubes are included with 5-pole Connectors (XS5C-D5S and XS5G-D5S).

*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.

(3) Wiring (Dressing the Cable Ends)

Soldering Connectors

- Strip 10mm 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 temperature: 350±5°C
    - Soldering period: 3±1 s
  - 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

Crimping

- 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 XY2F-0002 Crimp Tool, both of which are sold separately, and set the selector dial of the Crimp Tool to 8.
  - 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.)

Wiring

- 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.

Insertion

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

• Use the dedicated Screwdriver (XW4Z-00B)* and tighten the screws securely so that the cores do not pull out. (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: Pins 1 to 4: 0.15 to 0.2 N·m, Pin 5: 0.03 to 0.05 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 tube on the drain line of the shield and connect it to the terminal.
  • Tighten the screw and then check visually to see if there is insulation between the cores.

*When tightening the screws, use the dedicated XW4Z-00B Screwdriver that matches with the screw-slot dimensions.
(5) Mounting Cap

- After mounting the cover to the pin block and the cover snaps into place, tighten the cap securely by hand (0.39 to 0.49 N·m)

Note: If the cap is not tightened 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. (Use these as a guide.)

<table>
<thead>
<tr>
<th>External diameter of applicable cable</th>
<th>Cable external diameter (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>For 6-mm-dia. cable</td>
<td>6 mm</td>
</tr>
<tr>
<td>For 4-mm-dia. cable</td>
<td>—</td>
</tr>
<tr>
<td>For 3-mm-dia. cable</td>
<td>—</td>
</tr>
</tbody>
</table>

(6) After Assembly

- Confirm the insulation between cores after completing assembly.

#### 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 conductor sizes of 0.18 to 0.75 mm² for crimping connectors and 0.5 mm² maximum for soldering connectors.

#### 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).
XS5R Y-Joint Plug/Socket Connectors

Ordering Information

<table>
<thead>
<tr>
<th>Cable</th>
<th>Connector</th>
<th>Cable length (m)</th>
<th>Model</th>
<th>UL</th>
</tr>
</thead>
<tbody>
<tr>
<td>With cable</td>
<td>Connectors on both cable ends</td>
<td>0.5</td>
<td>XS5R-D426-B11-F</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>XS5R-D426-C11-F</td>
<td>UL2238 certified (File no. E207683)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>XS5R-D426-D11-F</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>XS5R-D426-E11-F</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Connectors on one cable end</td>
<td>2</td>
<td>XS5R-D426-D10-F</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5</td>
<td>XS5R-D426-G10-F</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cable</th>
<th>Connector</th>
<th>Cable length (m)</th>
<th>Model</th>
<th>UL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without cable</td>
<td>Connectors on both cable ends</td>
<td>—</td>
<td>XS5R-D426-1</td>
<td>UL2238 certified (File no. E207683)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>XS5R-D426-5</td>
<td></td>
</tr>
</tbody>
</table>

Note 1. Ask your OMRON representative about other specifications.
2. XS2G/XS5G Assembled Connectors with screw-on connections cannot be connected to both CN1 and CN2 at the same time.

Dimensions (Unit: mm)

Connectors on Both Cable Ends (Y-Joint Plug/Socket)
XS5R-D426-011-F

Connectors on One Cable End (Y-Joint Socket)
XS5R-D426-010-F

Connectors on Both Cable Ends (Y-Joint Plug/Socket)
XS5R-D426-014-
**XS5P Panel-mounting Sockets**

**Ordering Information**

<table>
<thead>
<tr>
<th>Type</th>
<th>No. of poles</th>
<th>Lock</th>
<th>Wire length (m)</th>
<th>Model</th>
<th>UL</th>
</tr>
</thead>
<tbody>
<tr>
<td>With wire</td>
<td>4</td>
<td>Rear lock</td>
<td>0.5</td>
<td>XS5P-D426-5</td>
<td>UL2238 certified</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Front lock</td>
<td></td>
<td>XS5P-D427-5</td>
<td>(File no. E207683)</td>
</tr>
<tr>
<td>Solder cup pins</td>
<td>4</td>
<td>Rear lock</td>
<td></td>
<td>XS5P-D426-4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Front lock</td>
<td></td>
<td>XS5P-D427-4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>Rear lock</td>
<td></td>
<td>XS5P-D526-4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Front lock</td>
<td></td>
<td>XS5P-D527-4</td>
<td></td>
</tr>
</tbody>
</table>

*Install the rear lock type from the front of the panel and tighten the nut from the rear.
Install the front lock type from the rear of the panel and tighten the nut from the front.

**Dimensions**

(Unit: mm)

**With wire**

**Rear lock** XS5P-D426-5

**Front lock** XS5P-D427-5

**Solder cup pins**

**Rear lock** XS5P-D426-4

**Rear lock** XS5P-D526-4

**Front lock** XS5P-D427-4

**Front lock** XS5P-D527-4

**Wiring**

<table>
<thead>
<tr>
<th>Pin No.</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Brown</td>
</tr>
<tr>
<td>2</td>
<td>White</td>
</tr>
<tr>
<td>3</td>
<td>Blue</td>
</tr>
<tr>
<td>4</td>
<td>Black</td>
</tr>
</tbody>
</table>

**Wire Specifications**

<table>
<thead>
<tr>
<th>Specification</th>
<th>UL1007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal size</td>
<td>AWG20</td>
</tr>
<tr>
<td>Number of wires</td>
<td>21</td>
</tr>
<tr>
<td>Wire diameter</td>
<td>0.18</td>
</tr>
<tr>
<td>Standard outer diameter</td>
<td>1.8</td>
</tr>
</tbody>
</table>

**Panel Cutout**

Note 1. The panel cutout dimension is the same for Front Locking and Rear Locking Sockets.
2. Rotational positioning is not possible for connector rotation.
XS5M Panel-mounting Plugs

Ordering Information

<table>
<thead>
<tr>
<th>Type</th>
<th>No. of poles</th>
<th>Lock</th>
<th>Wire length (m)</th>
<th>Model</th>
<th>UL</th>
</tr>
</thead>
<tbody>
<tr>
<td>With wire</td>
<td>4</td>
<td>Rear</td>
<td>0.5</td>
<td>XS5M-D426-5</td>
<td>UL2238 certified</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Front</td>
<td></td>
<td>XS5M-D427-5</td>
<td>File no. E207683</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>No. of poles</th>
<th>Lock*</th>
<th>Applicable wires</th>
<th>Model</th>
<th>UL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solder cup pins</td>
<td>4</td>
<td>Rear</td>
<td>AWG20 to AWG28</td>
<td>XS5M-D426-4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Front</td>
<td></td>
<td>XS5M-D427-4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>Rear</td>
<td></td>
<td>XS5M-D526-4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Front</td>
<td></td>
<td>XS5M-D527-4</td>
<td></td>
</tr>
</tbody>
</table>

*Install the rear lock type from the front of the panel and tighten the nut from the rear. Install the front lock type from the rear of the panel and tighten the nut from the front.

Dimensions (Unit: mm)

With wire

Rear lock
XS5M-D426-5

Front lock
XS5M-D427-5

Solder cup pins

Rear lock
XS5M-D426-4

Rear lock
XS5M-D526-4

Front lock
XS5M-D427-4

Front lock
XS5M-D527-4

Wiring

<table>
<thead>
<tr>
<th>Pin No.</th>
<th>Color</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Brown</td>
</tr>
<tr>
<td>2</td>
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<tr>
<td>3</td>
<td>Blue</td>
</tr>
<tr>
<td>4</td>
<td>Black</td>
</tr>
</tbody>
</table>

Wire Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>UL1007</th>
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</thead>
<tbody>
<tr>
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<td>Wire diameter</td>
<td>0.18</td>
</tr>
<tr>
<td>Standard outer diameter</td>
<td>1.8</td>
</tr>
</tbody>
</table>

Panel Cutout

Panel Cutout Dimension
Panel thickness = 1 to 4 mm
Note 1. The panel cutout dimension is the same for Front Locking and Rear Locking Sockets.
2. Rotational positioning is not possible for connector rotation.
Ordering Information

Connector Covers

Waterproof Covers

**XS2Z-11**
- Material: Brass/nickel plated
- Suitable connector: XS5G/XS5H/XS5M/XS5R/XS5W/XS2G/XS2H/XS2M/XS2R/XS2W
- Mounting portion: M12 male screw

**XS5Z-11**
- Material: PBT
- Suitable connector: XS5C/XS5F/XS5P/XS5R/XS5W/XW3D
- Mounting portion: M12 female screw

Application Example: XS2Z-11

The Waterproof Cover ensures IP67. When mounting the Water-resistant Cover to a Connector, be sure to apply a torque range between 0.39 and 0.49 N·m to tighten the Water-resistant Cover. XS5Z-11 is Smartclick mechanism. There’s no need to keep track of locking torque.

Dust Covers

**XS2Z-13**
- Material: Rubber/black
- Suitable connector: XS5G/XS5H/XS5M/XS5R/XS5W/XS2G/XS2H/XS2M/XS2R
- Mounting portion: M12 male screw

**XS2Z-15/XS2Z-14**
- Material: Silicone rubber/black
- Suitable connector: XS2Z-15/XS2Z-14
- Mounting portion: M12 female screw

Application Example: 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.

Sputter Protective Cover

**XS2Z-31**
- Material: Silicone rubber/black
- Suitable connector: XS5F/XS5H/XS5W/XS2F/XS2H/XS2W
- Mounting portion: M12 female screw (thread bracket)

Application Example: XS2Z-31

The Sputter Protective Cover protects the connector from weld sputter. Make sure it covers the entire connector.
Tools

Crimp Tool
XY2F-0002

Locator
XY2F-0003

Use the Crimp Tool to crimp a cable core to the XS5U or XS2U Crimping Pin used with the XS@C or XS@G Crimping Connector. Both the Crimp Tool and the optional Locator are required for use.

- The XY2F-0002 Crimp Tool is DMC’s AFM8 (M22520/2-01).
- The XY2F-0003 Locator is a component for positioning crimp terminals. Use the screw provided to mount the Locator to the locator guide of the Crimp Tool.

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 (XS@C/ XS@G, soldering/crimping).

Safety Precautions

Extraction Procedure

(1) Disconnecting Components
- Disconnect all components on the cap side from the cover.

(2) 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.

Precautions for Correct Use

- 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.
Safety Precautions

Definitions of Precautions

<table>
<thead>
<tr>
<th>Precautions for Safe Use</th>
<th>These refer to actions that should be performed or refrained from in order to ensure safe product usage.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precautions for Correct Use</td>
<td>These refer to actions that should be performed or refrained from in order to prevent product breakage, malfunctioning, and negative effects to performance and functionality.</td>
</tr>
</tbody>
</table>

Precautions for Safe Use

Degree of Protection
Do not use these products if their protective structures have deteriorated, such as swelling or breakage of housing and sealing components. If products with deteriorated protective structures continue to be used, breakage or fire damage, etc., may occur.

Connector Connection and Disconnection
- When connecting or disconnecting Connectors, be sure to hold the Connectors by hand.
- Do not hold the cable when disconnecting Connectors. Use after confirming the direction of the polarity key groove.
- Do not touch wiring with wet hands. Doing so may result in malfunction or breakage when the device is turned on.
- When mating Connectors, be sure to insert the plug all the way to the back of the socket before attempting to lock the Connectors. After operating the lock, always confirm that the Connector is connected.
- Do not use tools of any sort to mate the Connectors. Always use your hands. Pliers or other tools may damage the Connectors.
- When replacing the Connector, confirm that no foreign substances such as liquids or cutting oils are adhered to the connection surface of the Connector before connecting.
- When mating the Connectors to XS2 or other M12 Connectors, tighten the thread bracket by hand to a torque of 0.39 to 0.49 N·m.

Precautions for Correct Use
- Do not use the Connectors in an atmosphere or environment that exceeds the specifications.
- Do not perform wiring while power is flowing. Doing so may result in electrical shock or device breakage.
- Do not use the Connectors in an environment where corrosive gases or high temperature/high humidity are present. Doing so may result in malfunctions such as connection/contact failures and corrosion.
- Do not pull excessively on the Connectors or cables.
- Do not step on or place any objects on the Connectors. Doing so may damage the Connectors.
- Install the Connectors in a location where they will not be stepped on, to prevent disconnection of the cables or damage to the Connectors. If the Connectors or cables must be installed where they might be stepped on, protect them with covers.
- If sensors or switches are not attached during installation, or if plug connectors are not connected, protect the mating surface of the Connector with a XS5Z-11 or XS2Z-11 Waterproof Cover or XS2Z-13/14/15 Dust Cover.

Wiring
- Do not perform wiring in environments where the cable ends may be exposed to liquids such as water or cutting oils.
- Follow the wiring diagrams when wiring the cables. When using Sensors or Limit Switches, confirm whether connections are possible.
- Lay the cables so that external force is not applied to the Connectors. Otherwise, the degree of protection may not be achieved.

Degree of Protection (IP67)
- The degree of protection of Connectors (IP67) is not for a fully watertight structure. Do not use the Connectors underwater.

Setup
- Do not install the Connectors or cables in any way that would place a load directly on the mating section or cable connections. Doing so can damage the Connectors or break the wires inside the cables.
- Any bends made must have a minimum radius of 40 mm.

Do not bend from the base.

Leave space for the wire to straighten from the base.

Radius of 40 mm or more
Connector Connection Procedure

1. Connecting the XS5 Plug and Socket
   • Align the projection on the plug cover with the polarity key on the socket, then insert the plug all the way in.
   • Hold the knurled socket grip, then insert the projection on the plug into the groove of the socket.
   • Turn the knurled grips of the socket clockwise approximately 45 degrees in respect to the plug. A click will indicate that the Connectors are locked. The locking condition can also be confirmed by the alignment marks on the plug and socket.

2. Connecting the XS5 and XS2
   • Align the projection on the plug cover with the polarity key on the socket, then insert the plug all the way in.
   • In the same way as when connecting two XS2 Connectors, screw the knurled grip in the clockwise direction.
   • Use your fingers to tighten the Connectors sufficiently.
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