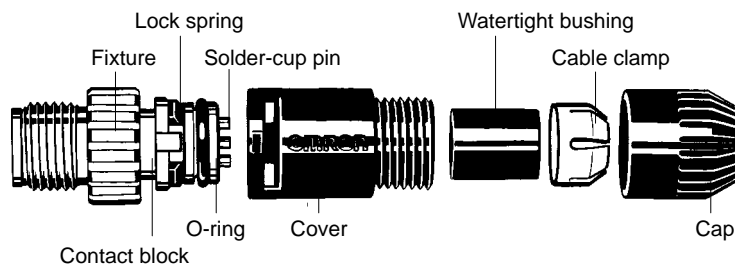


## Water- and Environment-resistant FA Connector Saves Wiring and Maintenance Effort

- Compact FA connector meets IP67 requirements and ensures a 94V-0 fire retardant rating.
- A wide array of connectors makes a wiring system more modular, simplifies maintenance, and reduces downtime.
- Cables with connectors and connector assemblies are available.
- Solderless and soldering models are available.

### ■ Construction



### ■ 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)   |
| Withstand voltage          | 1,500 VAC for 1 min (leakage current: 1 mA max.) (See note 2)  |
| Enclosure rating           | IP67 (IEC529)  |
| Electrical protection      | Class 0  |
| Insertion tolerance        | 200 times min.   |
| Vibration resistance       | At 10 to 500 Hz, 1.5 mm (0.059 in.) amplitude (or 10 G), no current shut-off for more than 1 μs.                                     |
| Assembled fixture strength | Tensile: 98 N (10 kgf)/15 sec.<br>Torsion: 0.98 N • m (10 kgf • cm)/15 sec.  |
| Cable hold strength        | Cable diameter:<br>6 mm      98 N (10 kgf) for 15 sec.<br>4 to 5 mm   49 N (5 kgf) for 15 sec.<br>3 mm      29 N (3 kgf) for 15 sec. |
| Ambient temperature        | Operating: -25°C to 70°C   |

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

### ■ Materials/Finish

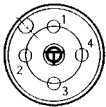
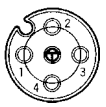
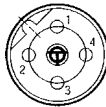
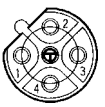
|                    |  |
|--------------------|--|
| Contact block      | PBT resin (UL94V-0); for DC: light grey; for AC: dark grey (see note 1)            |
| Contact            | Brass/nickel base, 0.4-μm gold plating (See note 2)                                |
| Fixtures           | Brass with nickel plating (See note 3)   |
| Cap                | Black PBT resin (UL94V-0)  |
| Cable clamp        | Polyamide resin (UL94-0); 6-mm: white; 4-/3-mm: black                              |
| Pin clamp          | White polyamide resin (UL94V-0)  |
| Lock spring        | LCP resin  |
| Watertight bushing | Rubber   |
| Cover              | Assembled: PBT resin (UL94V-0)/black<br>Molded: Polyvinyl chloride (UL94V-0)/black |
| Ring               | Steel  |
| O-ring             | Rubber   |

- Note:** 1. The pin blocks of the XS2R, XS2M, and XS2P are made of polyamide resin (UL94V-0).  
2. The contact of the XS2F, XS2H, and XS2W is made of phosphorus bronze.  
3. The thread bracket of the XS2R is made of white aluminum.

**■ Recommended Cables**

| Cable outer diameter |           | Conductor sizes                  |                          |
|----------------------|-----------|----------------------------------|--------------------------|
|                      |           | Solderless models                | Soldering models         |
| 6 mm                 | 5 to 6 mm | Two types of pins are available. | 0.5 mm <sup>2</sup> max. |
| 4 mm                 | 4 to 5 mm |                                  |                          |
| 3 mm                 | 3 to 4 mm |                                  |                          |

**■ Socket Appearance**

| DC type   |   | AC type  |   |
|---|---|--|---|
| Male contact  | Female contact  | Male contact   | Female contact  |
|  |  |  |  |

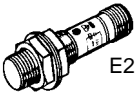
**Note:** The AC and DC connectors are different as shown here and therefore cannot be connected together.

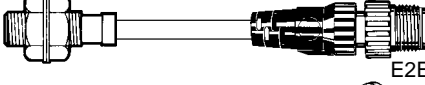
■ Configuration


↔ : connections, ← : wiring

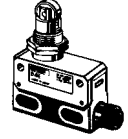
**Sensors**

Used with Sensors and Limit Switches Incorporating Connectors

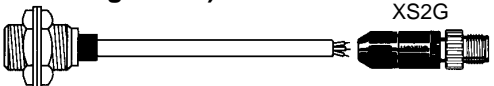
**Proximity Switch (with connector)**  
 E2E

Terminal connector  
 E2E

**Compact Limit Switch (with connector)**  
 D4CC

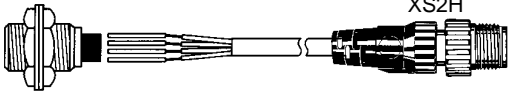
**Compact Enclosure Switch (with connector)**  
 D4E-□N

Used as Connectors for Sensors Incorporating Lead Wires

**Connector Assembly (Solderless or Soldering Model)**  
 XS2G

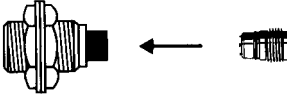
Use the XS2G as a connector for a sensor that has lead wires.

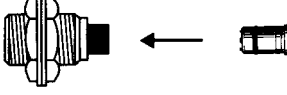
Used as Sensor Components (by Sensor Manufacturers)

**Connector with Cable**  
 XS2H

Use the XS2H as the built-in connector of a sensor.

**Built-in Sensor Connector**


 XS2M (Embedded model with screw thread)


 XS2M (Embedded model with no screw thread)

Use the XS2M as the built-in connector of a sensor.

Used as Panel-mounting Connectors

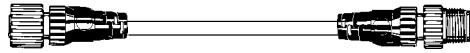
**Panel-mounting Connector**

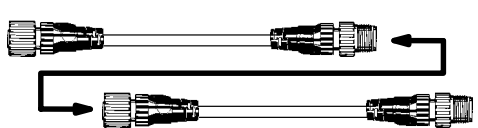
 XS2M Flange-mounting Model

 XS2M Screw-mounting Model

**Cables**

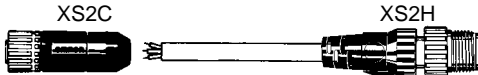
**Cable with Connector**  
 XS2W






More than one XS2W can be used for connection.

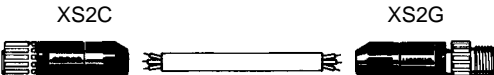
**Connector Assembly (Solderless or Soldering Model) and Cables with Connectors**

 XS2C XS2H

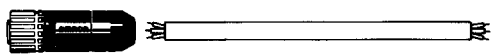
**Cable with Connector and Connector Assembly (Solderless or Soldering Model)**

 XS2F XS2G

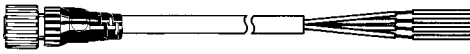
**Connector Assembly (Solderless or Soldering Model)**

 XS2C XS2G

**Connector Assembly (Solderless or Soldering Model)**

 XS2C

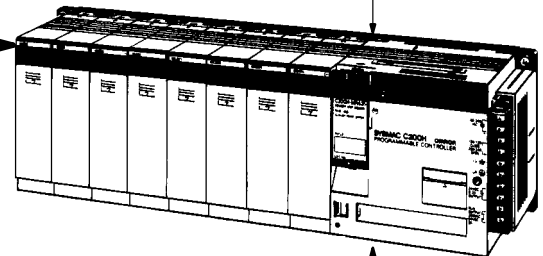
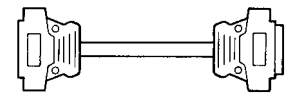
**Cable with Connector**  
 XS2F



Personal Computer  
PT (Programmable Terminal)



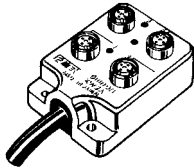
Host Link Cable  
XW2Z



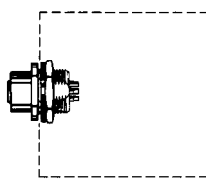
PC

Terminal Box (Panel-mounting)

Connector Terminal Box  
XW3A



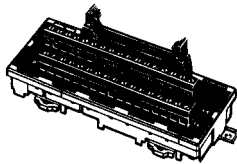
Connector for Terminal Box  
XS2P



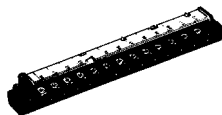
Use the XS2P for the connector of a terminal box.

Connector-Terminal  
Conversion Unit

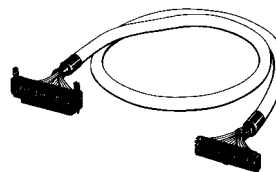
XW2C (with power-supply common terminal and operation indicator)  
XW2B (with no power supply common terminal or operation indicator)



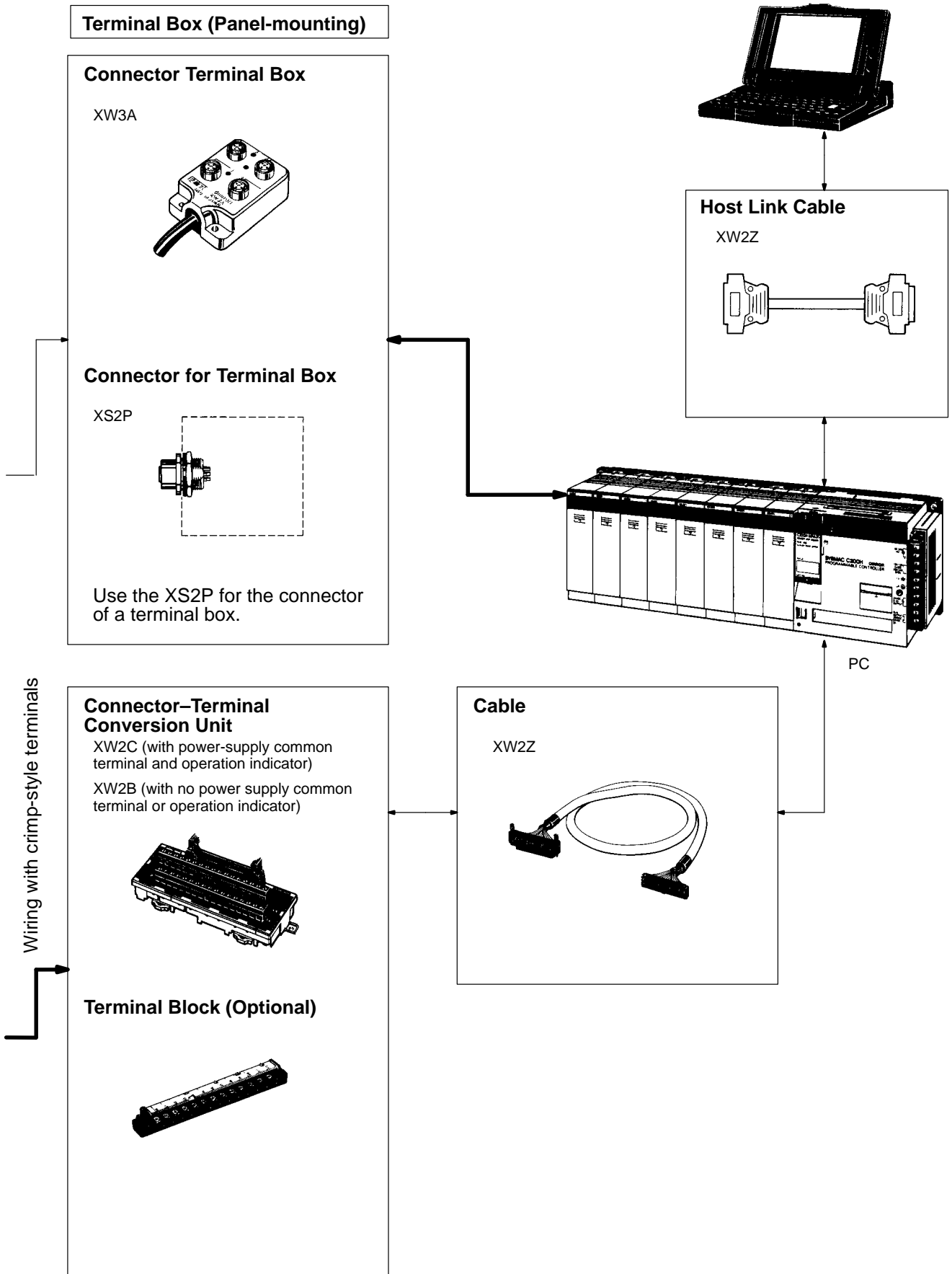
Terminal Block (Optional)



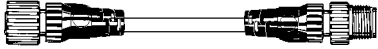




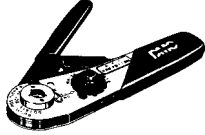

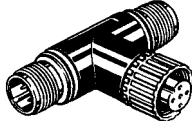


Cable  
XW2Z



Wiring with crimp-style terminals



## ■ Classification

| Item   | Model   | Appearance  |
|--|---|---|
| Cable with Connector   | XS2W with socket and plug for both cable ends |    |
|  | XS2F with socket for single cable end         |    |
|  | XS2H with plug for single cable end           |    |
| Connector Assembly:<br>(Solderless or soldering model)<br>Used as sensor cable or connection cable connectors. | XS2G Plug                                     |    |
|  | XS2C Socket                                   |    |
|  | XY2F Crimp Tool                               |    |
| Terminal Box Connector:<br>Used as the connectors of terminal boxes.   | XS2P Socket                                   |    |
| T Joint:<br>Used for bifurcated wiring or daisy-chain connection.  | XS2R Plug/Socket                              |    |
| Built-in Sensor Connector:<br>Used as built-in sensor connectors.  | XS2M Plug                                     |  |
| Panel-mounting Connector:<br>Used as the panel-mounting connectors of I/O boxes.                               | XS2M Plug                                     |  |

# XS2W Sensor I/O Connector with Socket and Plug Used for Both Cable Ends

## ■ Ordering Information

Orders are accepted in multiples of the minimum order.

| Item           | Cable pulling direction     | No. of cable conductors | Cable length (m)  | DC              |                 |    |
|----------------|-----------------------------|-------------------------|-------------------|-----------------|-----------------|----|
|                |                             |                         |                   | Model           | Minimum order   |    |
| Standard cable | Straight/Straight           | 4                       | 1                 | XS2W-D421-C81-A | 10              |    |
|                |                             |                         | 2                 | XS2W-D421-D81-A |                 |    |
|                |                             |                         | 5                 | XS2W-D421-G81-A | 5               |    |
|                |                             |                         | 10                | XS2W-D421-J81-A |                 |    |
|                | L-shaped/L-shaped           |                         | 2                 | XS2W-D422-D81-A | 10              |    |
|                |                             |                         | 5                 | XS2W-D422-G81-A | 5               |    |
|                | Straight/L-shaped           |                         | 2                 | XS2W-D423-D81-A | 10              |    |
|                |                             |                         | 5                 | XS2W-D423-G81-A | 5               |    |
|                | L-shaped/Straight           |                         | 2                 | XS2W-D424-D81-A | 10              |    |
|                |                             |                         | 5                 | XS2W-D424-G81-A | 5               |    |
|                | 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         |                   |                 |                 |    |

## ■ Model Number Legend

XS2W-D42□-□81-□  
1 2 3 4 5 6 7 8 9

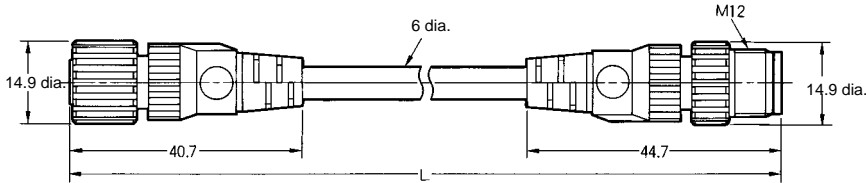
1. **Type**  
 W: Connector with socket and plug for both cable ends
2. **AC/DC (Shape of Engaged Portion)**  
 D: DC
3. **No. of Connector Poles**  
 4: 4 poles
4. **Pin plating**  
 2: 0.4-μm gold plating
5. **Cable Pulling Direction**
  - 1: Straight/Straight
  - 2: L-shaped/L-shaped
  - 3: Straight (XS2F)/L-shaped (XS2H)
  - 4: L-shaped (XS2F)/Straight (XS2H)
6. **Cable Length**
  - C: 1 m (for only cables pulled straight)
  - D: 2 m
  - G: 5 m
  - J: 10 m (for only cables pulled straight)
7. **Wiring**  
 For pins 1, 2, 3, and 4  
 8: Brown, white, blue, and black (for DC)
8. **Connector for Single Cable End/Both Cable Ends**  
 1: Connector for both cable ends
9. **Cable Specification**
  - A: Standard
  - R: Vibration-proof cable (for only cables pulled straight)

# XS2W Sensor I/O Connector with Sockets and Plugs Used for Both Cable Ends

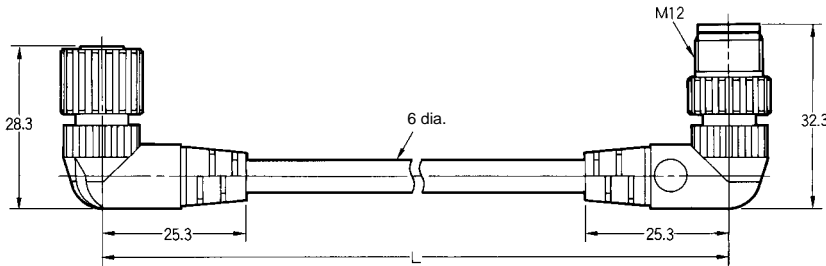
- XS2W-D42□-□81-A Standard Cable
- XS2W-D421-□81-R Vibration-proof Robot Cable (Only for Cables Pulled Straight)

## ■ Dimensions

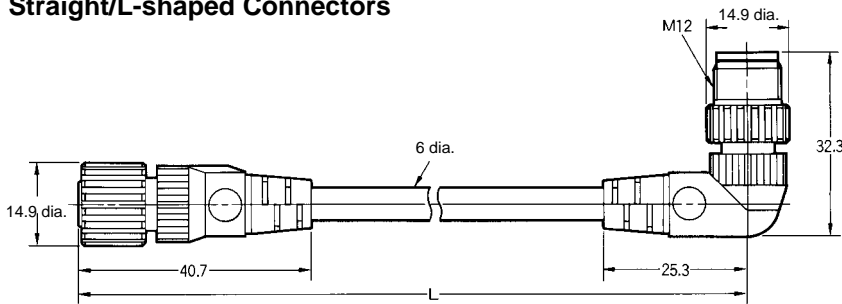
### Straight/Straight Connectors



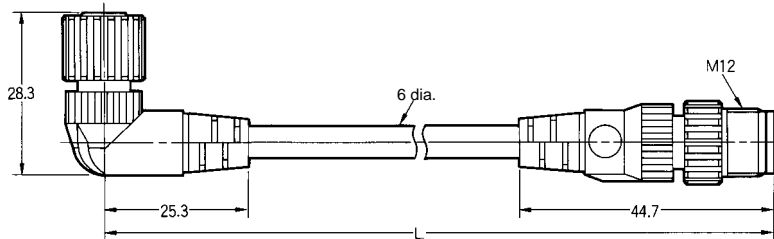
### L-shaped/L-shaped Connectors



### Straight/L-shaped Connectors

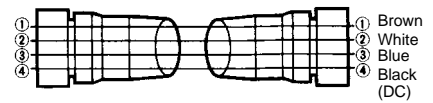


### L-shaped/Straight Connectors



### Wiring Diagram (4-conductor Model)

Contact No.



Cable conductor color

# XS2F Sensor I/O Connector with Socket Used for Single Cable End

## ■ Model Number Legend

XS2F-□□2□-□□0-□  
1 2 3 4 5 6 7 8 9

### 1. Type

F: Sensor I/O Connector (with Socket Used for Single Cable End)

### 2. AC/DC (Shape of Engaged Portion)

A: AC

D: DC

### 3. No. of Connector Poles

4: 4 poles

5: 5 poles

### 4. Pin plating

2: 0.4-μm gold plating

### 5. Cable Pulling Direction

1: Straight

2: L-shaped

### 6. Cable Length

C: 1 m

D: 2 m

G: 5 m

J: 10 m (2- and 5-m-long cables are available for models with five connector poles.)

### 7. Wiring

For pins 1, 2, 3, and 4

For pins 1, 2, 3, 4, and 5

A: Brown, ---, ---, and blue (for DC)

G: Brown, white, blue, black, and gray

B: ---, ---, brown, and blue (for AC)

C: Brown, ---, blue, and black

8: Brown, white, blue, and black (for DC)

9: Brown, white, blue, and black (for AC)

### 8. Connector for Single Cable End/Both Cable Ends

0: Connector for single cable end

### 9. Cable Specification/E2E Connection Only

A: Standard

R: Vibration-proof cable (for only cables pulled straight)

TR: E2E connection only (See note)

**Note:** Refer to page 17 for wiring, which is different from the wiring specifications shown as suffix item 7 on this page.



**Non-polar DC (for Sensors and Limit Switches)****6. Cable Length**

3: 2 m

4: 5 m

**7. Wiring**

For pins 1, 2, 3, and 4

1: ---, ---, black, and white

**8. Connector for Single Cable End/Both Cable Ends**

0: Connector for single cable end

**9. Cable Specification**

---

**Note:** Items 6, 7, and 9 apply only to models for non-polar DC.

---

## **XS2F Sensor I/O Connector with Socket Used for Single Cable End**

- **XS2F-□42□-□□0-A Standard Cable**
- **XS2F-□42□-□□0-R Vibration-proof Robot Cable  
(Only for Cables Pulled Straight)**
- **XS2F-□42□-□□0 Standard Cable  
(Only for Non-polar DC)**

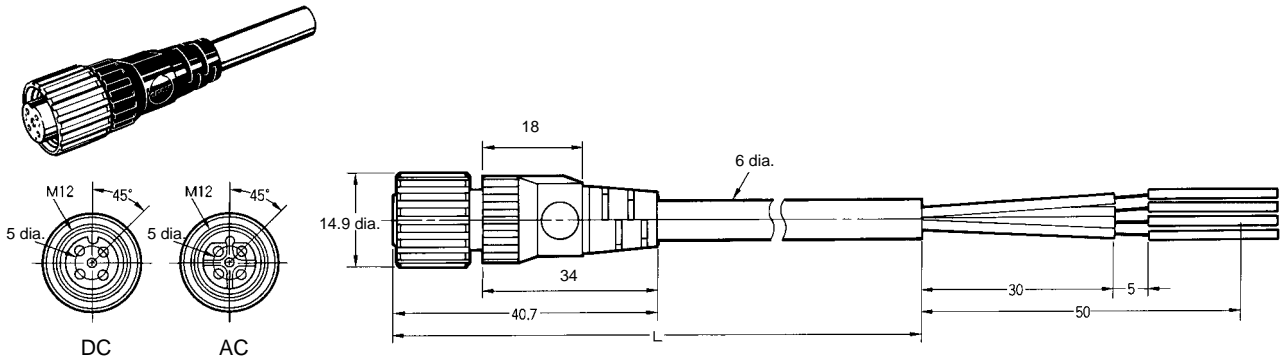
## ■ Ordering Information

Orders are accepted in multiples of the minimum order.

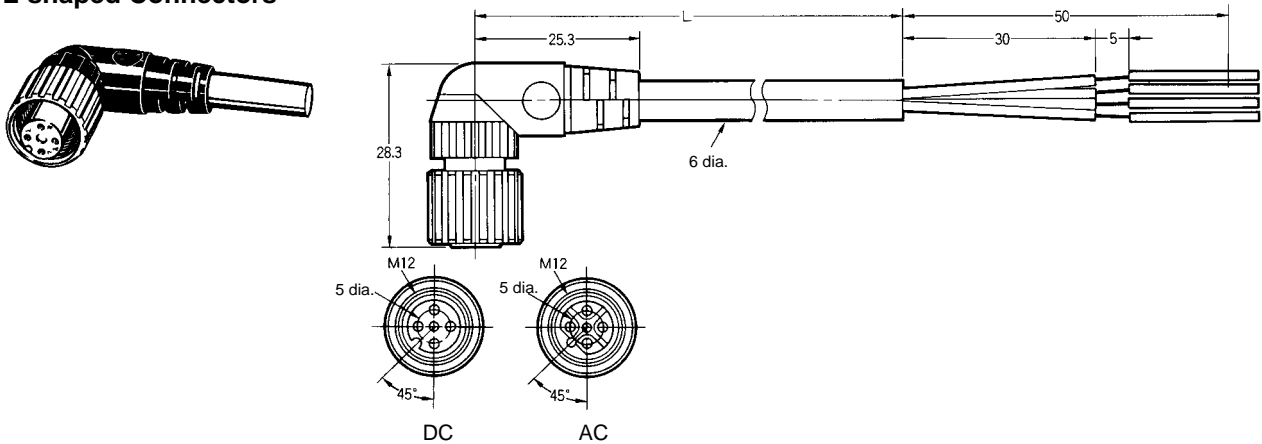
| Item                        | Cable pulling direction    | No. of cable conductors | Cable length (m) | Model             |                 | Minimum order   |               |    |
|-----------------------------|----------------------------|-------------------------|------------------|-------------------|-----------------|-----------------|---------------|----|
|                             |                            |                         |                  | DC                | AC              |                 |               |    |
| Standard cable              | Straight                   | 2                       | 1                | XS2F-D421-CA0-A   | XS2F-A421-CB0-A | 10              |               |    |
|                             |                            | 3                       |                  | XS2F-D421-CC0-A   | ---             |                 |               |    |
|                             |                            | 4                       |                  | XS2F-D421-C80-A   | XS2F-A421-C90-A |                 |               |    |
|                             |                            | 2                       | 2                | XS2F-D421-DA0-A   | XS2F-A421-DB0-A | 10              |               |    |
|                             |                            | 3                       |                  | XS2F-D421-DC0-AZ  | ---             |                 |               |    |
|                             |                            | 4                       |                  | XS2F-D421-D80-AZZ | XS2F-A421-D90-A |                 |               |    |
|                             |                            | 2                       | 5                | XS2F-D421-GA0-A   | XS2F-A421-GB0-A | 5               |               |    |
|                             |                            | 3                       |                  | XS2F-D421-GC0-AZ  | ---             |                 |               |    |
|                             |                            | 4                       |                  | XS2F-D421-G80-AZZ | XS2F-A421-G90-A |                 |               |    |
|                             |                            | 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 |                 |               |    |
|                             | L-shaped                   | 2                       | 1                | XS2F-D422-CA0-A   | XS2F-A422-CB0-A | 10              |               |    |
|                             |                            |                         |                  | 3                 | XS2F-D422-CC0-A |                 | ---           |    |
|                             |                            |                         |                  | 4                 | XS2F-D422-C80-A |                 | ---           |    |
|                             |                            | 2                       | 2                | XS2F-D422-DA0-A   | XS2F-A422-DB0-A | 10              |               |    |
|                             |                            | 3                       |                  | XS2F-D422-DC0-AZ  | ---             |                 |               |    |
|                             |                            | 4                       |                  | XS2F-D422-D80-AZ  | ---             |                 |               |    |
|                             |                            | 2                       | 5                | XS2F-D422-GA0-A   | XS2F-A422-GB0-A | 5               |               |    |
|                             |                            | 3                       |                  | XS2F-D422-GC0-AZ  | ---             |                 |               |    |
|                             |                            | 4                       |                  | XS2F-D422-G80-AZ  | ---             |                 |               |    |
|                             |                            | 2                       | 10               | XS2F-D422-JA0-A   | XS2F-A422-JB0-A | 5               |               |    |
|                             |                            | 3                       |                  | XS2F-D422-JC0-A   | ---             |                 |               |    |
|                             |                            | 4                       |                  | XS2F-D422-J80-A   | ---             |                 |               |    |
| 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  |

■ Dimensions

Straight Connectors



L-shaped Connectors



■ Wiring Diagram

| Item                  | Standard cable<br>Vibration-proof robot cable   | Standard cable (non-polar DC)   |
|-----------------------|---|---|
|                       | XS2F-□42□-□□0-A<br>XS2F-□42□-□□0-R  | XS2F-□42□-□□0   |
| Two-conductor model   | <p>Contact No. ① Brown<br/>② Blue (DC)<br/>③<br/>④</p> <p>Cable conductor color</p> <p>Contact No. ① Brown<br/>② Blue (AC)<br/>③<br/>④</p> <p>Cable conductor color</p> | <p>Contact No. ① Black<br/>② White<br/>③<br/>④</p> <p>Cable conductor color</p> |
| Three-conductor model | <p>Contact No. ① Brown<br/>② Blue<br/>③ Black (DC)<br/>④</p> <p>Cable conductor color</p>   | ---   |
| Four-conductor model  | <p>Contact No. ① Brown<br/>② White<br/>③ Blue<br/>④ Black (DC/AC)<br/>⑤</p> <p>Cable conductor color</p>  | ---   |

● XS2F-□42□-□□0-TR E2E Connection Cable

The XS2F-□42□-□□0-TR is a dedicated connection cable for the E2E. The Cable has pin numbers and color lead wires that are the same as the corresponding terminal numbers and the colors of the E2E lead wires. The Cable is dark gray and marked with a lot number □□□□-TR to discriminate the Cable from the standard XS2F.

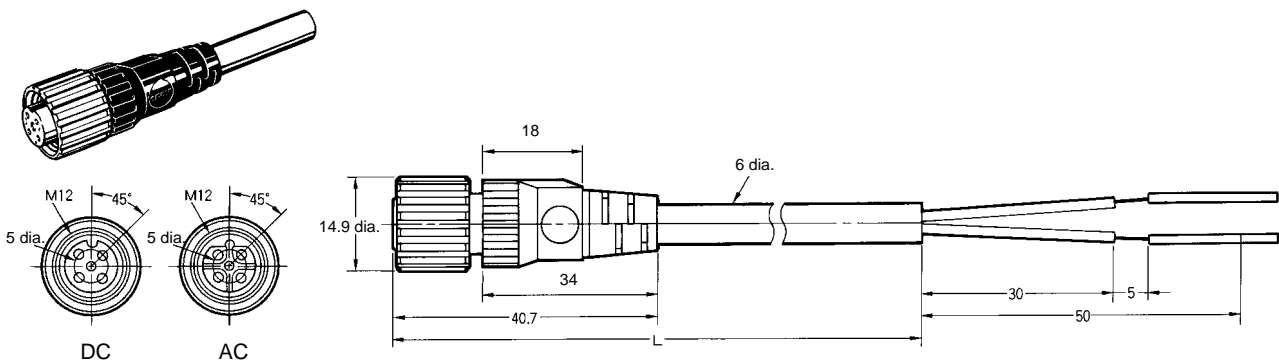
■ Ordering Information

Orders are accepted in multiples of the minimum order.

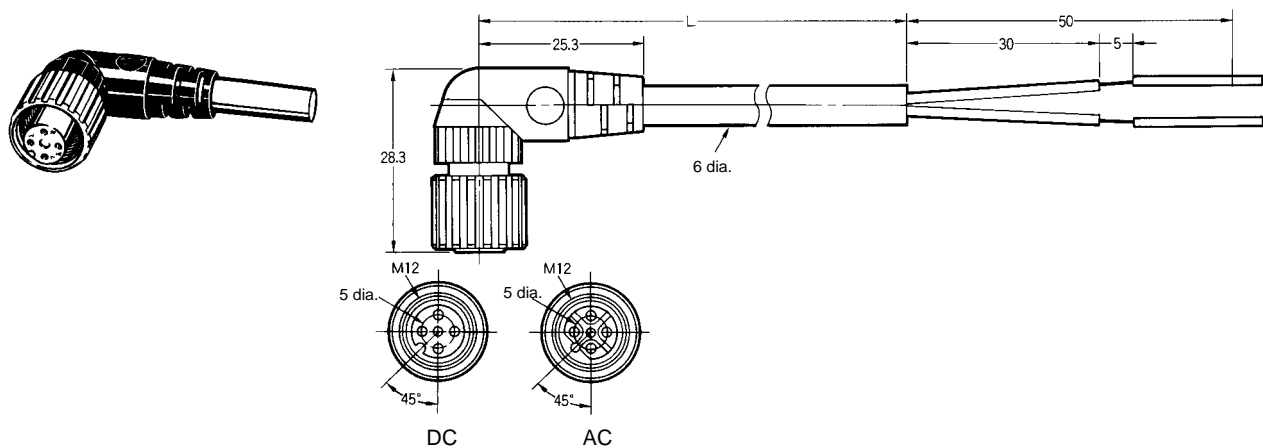
| Cable pulling direction | No. of cable conductors | Cable length (m) | Model            |                  | Minimum order |
|-------------------------|-------------------------|------------------|------------------|------------------|---------------|
|                         |                         |                  | DC               | AC               |               |
| Straight/Straight       | 2                       | 2                | XS2F-D421-DD0-TR | XS2F-A421-DB0-TR | 10            |
|                         |                         | 5                | XS2F-D421-GD0-TR | XS2F-A421-GB0-TR | 5             |
| L-shaped/L-shaped       |                         | 2                | XS2F-D422-DD0-TR | XS2F-A422-DB0-TR | 10            |
|                         |                         | 5                | XS2F-D422-GD0-TR | XS2F-A422-DB0-TR | 5             |
| Straight/Straight       | 3                       | 2                | XS2F-D421-DC0-TR | ---              | 10            |
|                         |                         | 5                | XS2F-D421-GC0-TR | ---              | 5             |
| L-shaped/L-shaped       |                         | 2                | XS2F-D422-DC0-TR | ---              | 10            |
|                         |                         | 5                | XS2F-D422-GC0-TR | ---              | 5             |

■ Dimensions

Straight Connectors



L-shaped Connectors



● XS2F-□42□-□□0-TR E2E Connection Cable

■ Wiring Diagram

| Model            | Wiring diagram   | No. of cable conductors |
|------------------|--|-------------------------|
| XS2F-D42□-□D0-TR | <p>Blue<br/>Brown<br/>(DC)<br/>Cable conductor color</p>           | 2                       |
| XS2F-A42□-□B0-TR | <p>Brown<br/>Blue<br/>(AC)<br/>Cable conductor color</p>           |                         |
| XS2F-D42□-□C0-TR | <p>Brown<br/>Blue<br/>Black<br/>(DC)<br/>Cable conductor color</p> | 3                       |

■ Applicable Proximity Sensors

| XS2F model       | Proximity Sensor                             | Old connector model |
|------------------|--|---------------------|
| XS2F-D42□-□D0-TR | E2E-X□D1-P1<br>E2E-X□D1-M1J-T<br>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□          |
| XS2F-A42□-□B0-TR | E2E-X□Y1-P1<br>E2E-X□Y2-P1                   | Y92E-P1A2□          |

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

● XS2F-D521-□G0-A Sensor I/O Connector (with Five Poles for DC)

■ Ordering Information

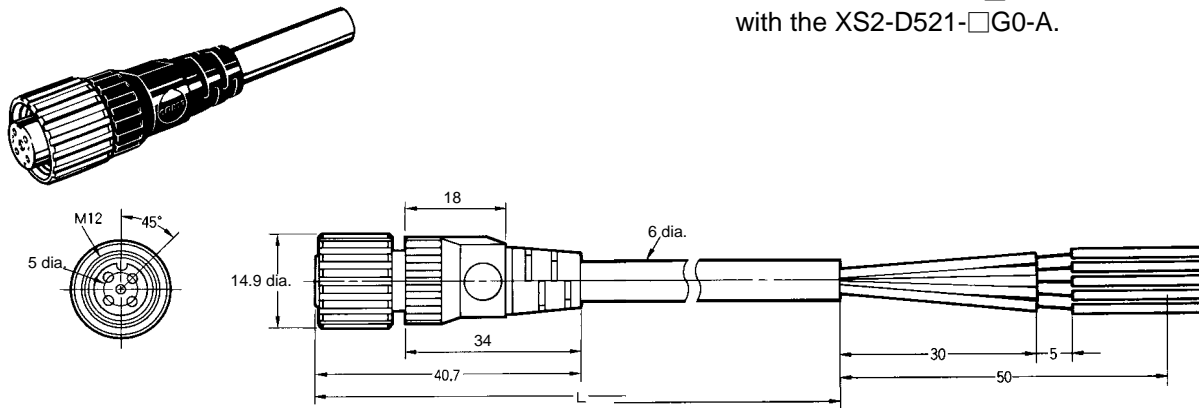
Orders are accepted in multiples of the minimum order.

| No. of cable conductors | Cable length (m) | DC              |               |
|-------------------------|------------------|-----------------|---------------|
|                         |                  | Model           | Minimum order |
| 5                       | 2                | XS2F-D521-DG0-A | 10            |
|                         | 5                | XS2F-D521-GG0-A | 5             |

■ Dimensions

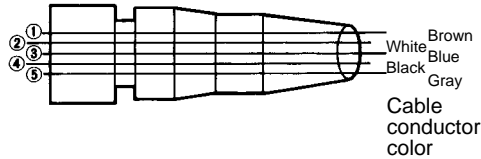
Straight Connectors

**Note:** Use the XS2F-D521-□G0-A in combination with the XS2-D521-□G0-A.

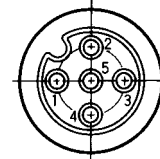


Wiring Diagram

Contact No.



Pin Arrangements (Engagement Side)



# XS2H Sensor I/O Connector with Plug for Single Cable End

## ■ Model Number Legend

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

### 1. Type

H: Connector with plug for single cable end

### 2. AC/DC

A: AC

D: DC

### 3. No. of Connector Poles

4: 4 poles

5: 5 poles

### 4. Pin plating

2: 0.4- $\mu$ m gold plating

### 5. Cable Pulling Direction

1: Straight

### 6. Cable Length

A: 0.3 m

C: 1 m

### 7. Wiring

For pins 1, 2, 3, and 4

For pins 1, 2, 3, and 4

For pins 1, 2, 3, 4, and 5

8: Brown, white, blue, and black (for DC)

A: Brown, ---, ---, and blue (for DC)

G: Brown, white, blue black, and gray

9: Brown, white, blue, and black (for AC)

B: ---, ---, brown, and blue (for AC)

C: Brown, ---, blue, and black (for DC)

### 8. Connector for Single Cable End/Both Cable Ends

0: Connector for single cable end

### 9. Cable Specification

A: Standard

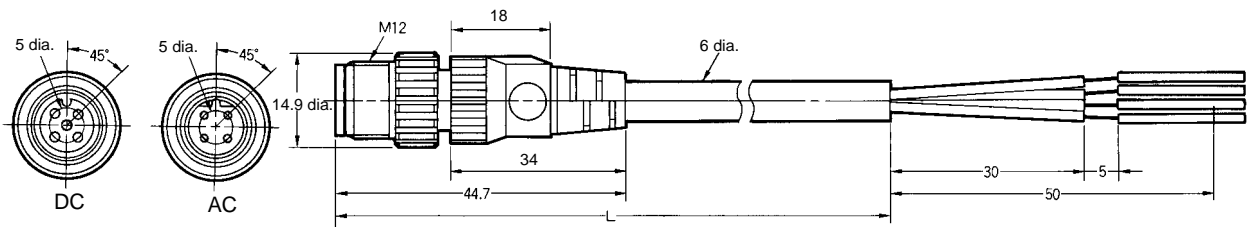
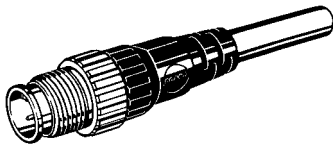


# XS2H Sensor I/O Connector with Plug for Single Cable End

- XS2H-□421-□□0-A Standard Cable

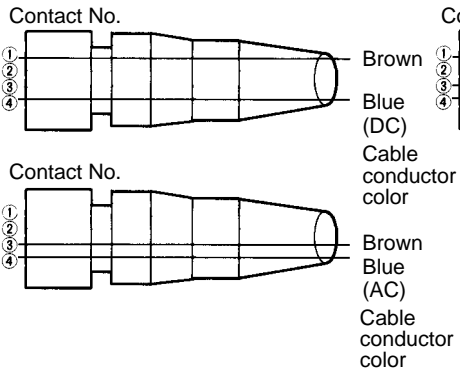
## ■ Dimensions

### Straight Connectors

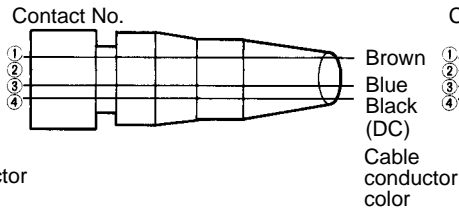


### Wiring Diagram

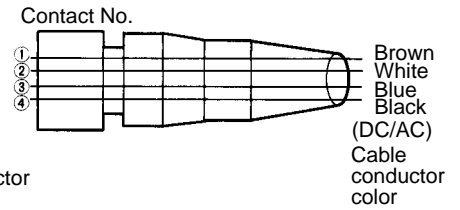
#### Two-conductor Model



#### Three-conductor Model



#### Four-conductor Model



● XS2H-D521-□G0-A Sensor I/O Connector with Five Poles for DC

■ Ordering Information

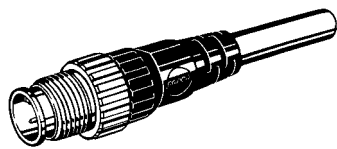
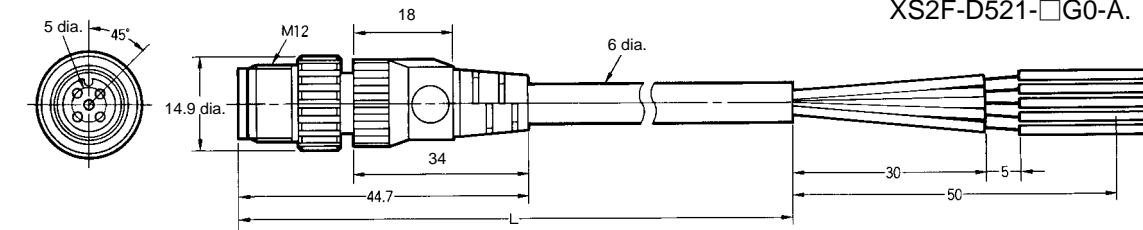
Orders are accepted in multiples of the minimum order.

| No. of connector poles | Cable pulling direction | No. of cable conductors | Size                | Cable length (m) | Model           |                 | Minimum order |
|------------------------|-------------------------|-------------------------|---------------------|------------------|-----------------|-----------------|---------------|
|                        |                         |                         |                     |                  | DC              | AC              |               |
| 4                      | Straight/<br>Straight   | 2                       | 0.5 mm <sup>2</sup> | 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 |               |
|                        |                         | 2                       |                     | 1                | XS2H-D421-CA0-A | XS2H-A421-CB0-A |               |
|                        |                         | 3                       |                     |                  | XS2H-D421-CC0-A | ---             |               |
|                        |                         | 4                       |                     |                  | XS2H-D421-C80-A | XS2H-A421-C90-A |               |
|                        |                         | 5                       |                     |                  | ---             | ---             |               |
| 5                      |                         | 5                       | 0.3 mm <sup>2</sup> | 0.3              | XS2H-D521-AG0-A | ---             |               |
|                        |                         |                         |                     | 1                | XS2H-D521-CG0-A | ---             |               |

■ Dimensions

Straight Connectors

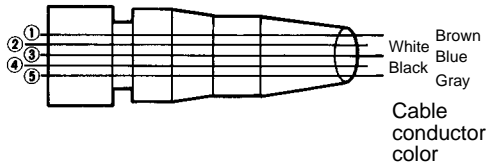
**Note:** Use the XS2H-D521-□G0-A in combination with the XS2F-D521-□G0-A.



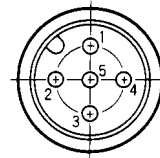
Wiring Diagram

Five-conductor Model

Contact No.



Pin Arrangements (Engagement Side)



# XS2G Sensor I/O Connector with Solderless/Soldering Plug Assembly

## ■ Ordering Information

Orders are accepted in multiples of the minimum order.

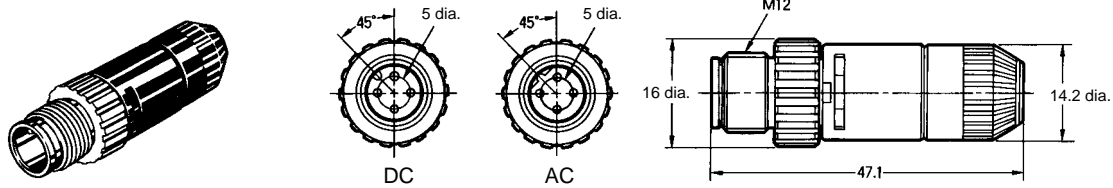
| Suitable cable dia. (mm)         | Cable pulling direction | Connection method | Model     |           | Minimum order |
|----------------------------------|-------------------------|-------------------|-----------|-----------|---------------|
|                                  |                         |                   | 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 | ---       |               |

## ■ Dimensions

XS2G-□4C□ (Solderless Model)

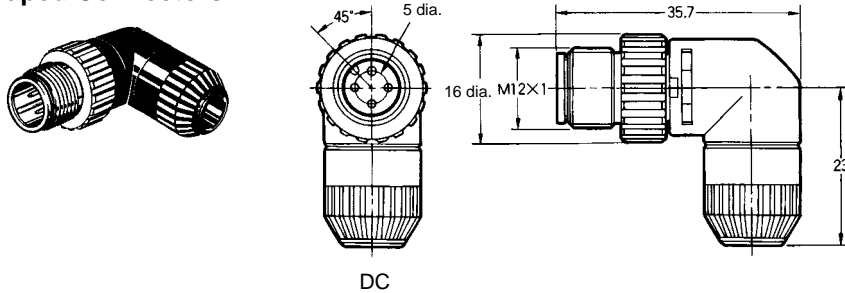
XS2G-□42□ (Soldering Model)

Straight Connectors



XS2G-D42□ (Soldering Model)

L-shaped Connectors



**Note:** Plug pins for solderless models are sold separately.

# XS2C Sensor I/O Connector with Solderless/Soldering Plug Assembly

## ■ Ordering Information

Orders are accepted in multiples of the minimum order.

| Suitable cable dia. (mm)         | Cable pulling 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 |               |

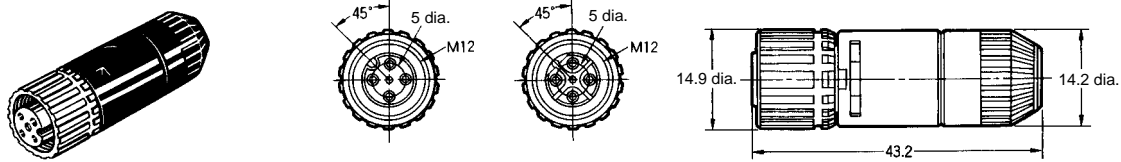
**Note:** Plug pins for solderless models are sold separately.

## ■ Dimensions

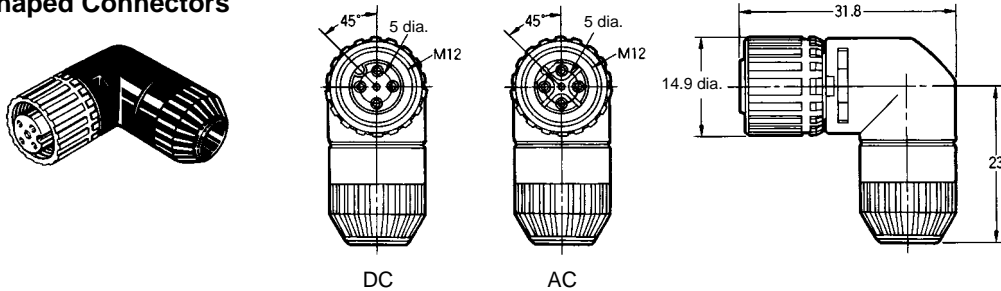
XS2C-□4C□ (Solderless Model)

XS2C-□42□ (Soldering Model)

Straight Connectors



L-shaped Connectors



## XS2U Solderless Pin for XS2G

### Ordering Information

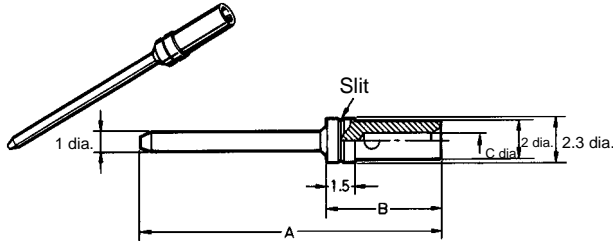
| Suitable conductor size (mm <sup>2</sup> ) | Model     | Minimum order |
|--|-----------|---------------|
| 0.18 to 0.3                                | XS2U-3121 | 100           |
| 0.5 to 0.75                                | XS2U-3122 |               |

**Note:** Orders are accepted in multiples of a minimum order of 100 Units.

### Dimensions

A dedicated tool is required to press-fit wires to the XS2U. Refer to page 32.

#### XS2U-312□ Plug Pin



## XS2U Socket Pin for XS2C

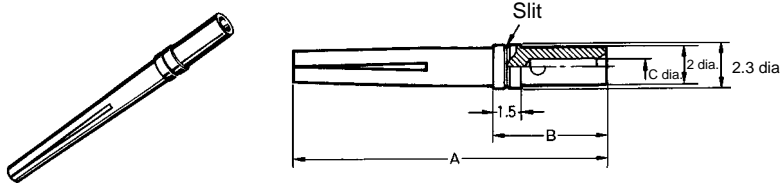
### Ordering Information

| Suitable conductor size (mm <sup>2</sup> ) | 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 a minimum order of 100 Units.

### Dimensions

#### XS2U-222□ Socket Pin



#### Dimensions

| Model     | Suitable conductor size (mm <sup>2</sup> ) | 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            |

#### Dimensions

| Model     | Suitable conductor size (mm <sup>2</sup> ) | 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            |

# XS2P Sensor I/O Connector with Panel-mounting Socket for Terminal Boxes

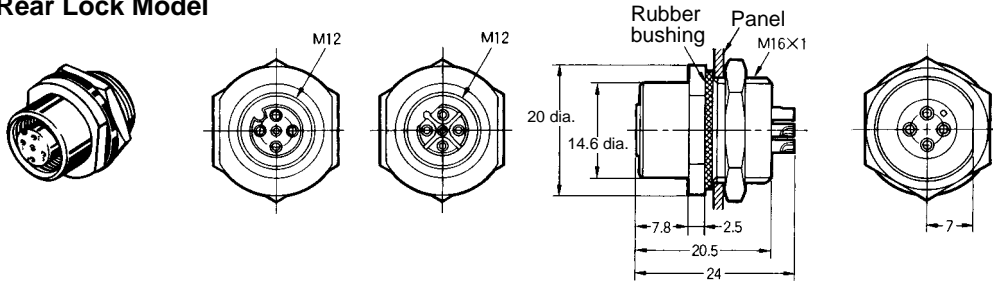
## ■ Ordering Information

Orders are accepted in multiples of the minimum order.

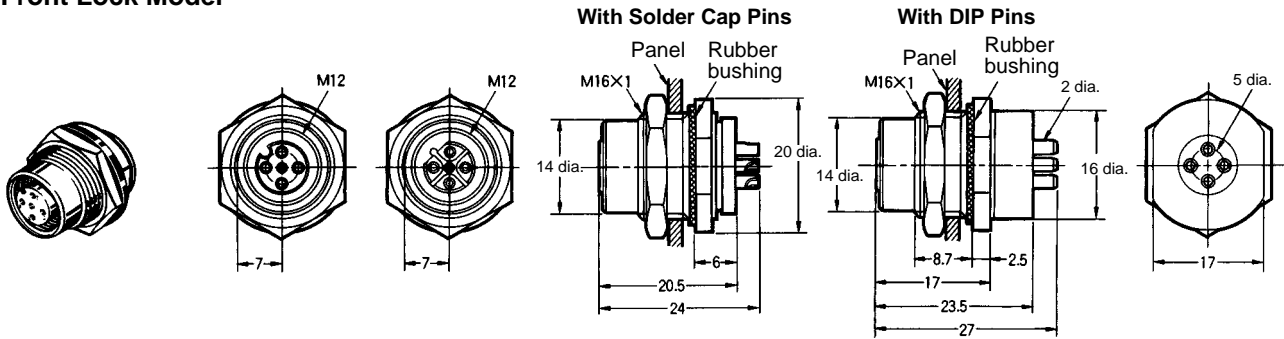
| Lock method | Pin shape      | Model       |             | Minimum order |
|-------------|----------------|-------------|-------------|---------------|
|             |                | DC          | AC          |               |
| Rear lock   | Solder cap pin | XS2P-D421-2 | XS2P-A421-2 | 50      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

## ■ Dimensions

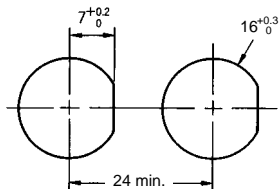
### XS2P-□421-2 (with Solder Cap Pins) Rear Lock Model



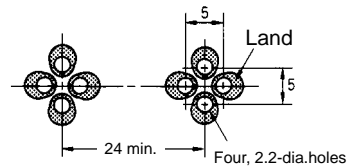
### XS2P-□422-1 (with DIP Pins) XS2P-□422-2 (with Solder Cap Pins) Front Lock Model



#### Panel Cutout



#### PCB-mounting Dimensions



**Note:** The panel thickness is 1 to 4 mm.

# XS2R Sensor I/O Connector with Y-joint Plug/Socket

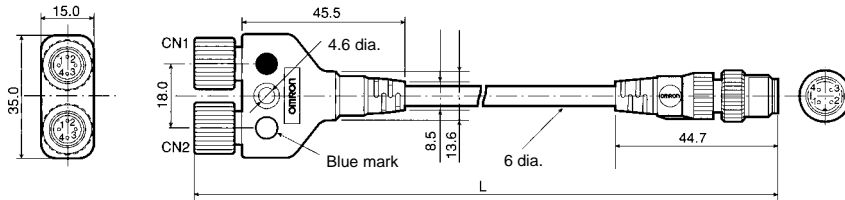
## ■ Ordering Information

Orders are accepted in multiples of the minimum order.

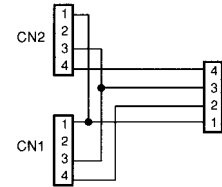
| Cable         | Connector                      | DC                 |                 | Minimum order |
|---------------|--------------------------------|--------------------|-----------------|---------------|
|               |                                | Cable length L (m) | Model           |               |
| With cable    | Connector for both 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 for single cable end | 2                  | XS2R-D426-D10-F |               |
|               |                                | 5                  | XS2R-D426-G10-F |               |
| Without cable | Connector for both cable ends  | ---                | XS2R-D426-1     | 10            |

## ■ Dimensions

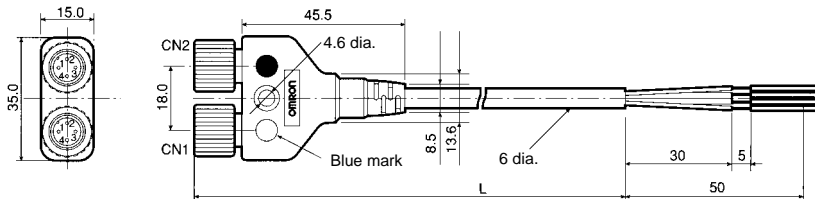
**XS2R-D426-□11-F**  
Connector for Both Cable Ends with Y-joint Plug/Socket



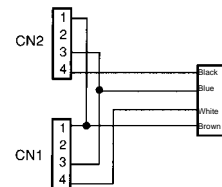
Wiring Diagram



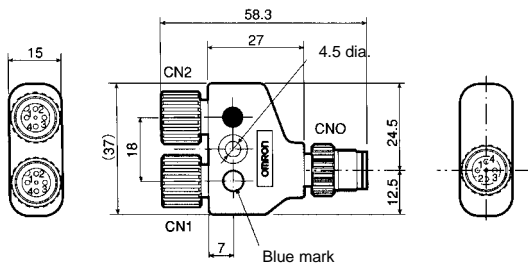
**XS2R-D426-□10-F**  
Connector for Single Cable End with Y-joint Plug/Socket



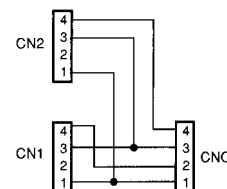
Wiring Diagram



**XS2R-D426-□-1**  
Connector for Both Cable Ends with Y-joint Plug/Socket without Cable



Wiring Diagram



# XS2R Sensor I/O Connector with T-joint Plug/Socket

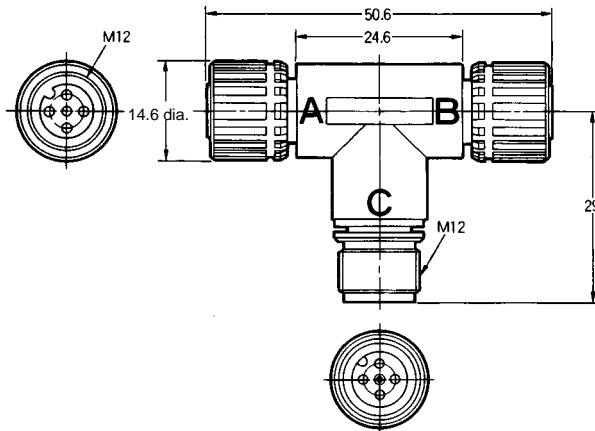
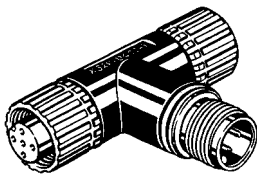
## ■ Ordering Information

Orders are accepted in multiples of the minimum order.

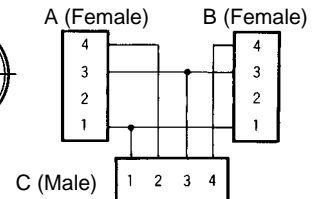
| Type              | DC          |               |
|-------------------|-------------|---------------|
|                   | Model       | Minimum order |
| Aggregate model   | XS2R-D422-1 | 20            |
|                   | XS2R-D422-5 |               |
| Bifurcated model  | XS2R-D423-1 |     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

## ■ Dimensions

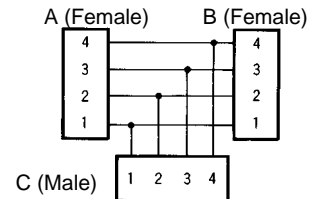
**XS2R-D422-1**  
**XS2R-D422-5**  
**Aggregate Models**



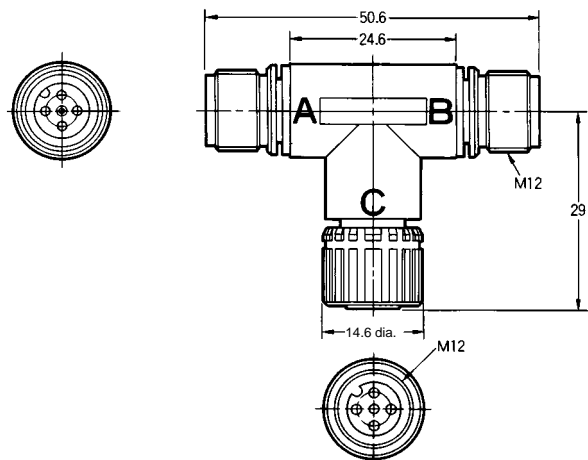
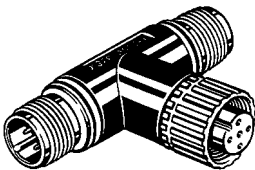
**Internal Connections**  
**XS2R-D422-1**



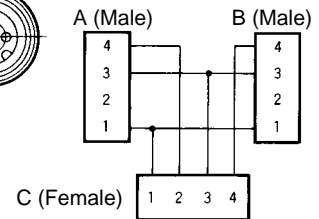
**XS2R-D422-5**



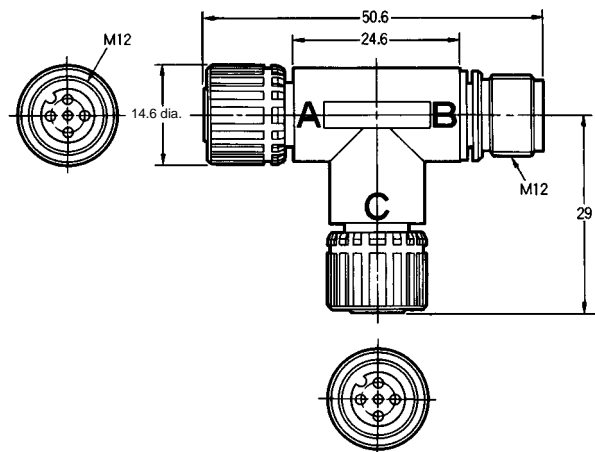
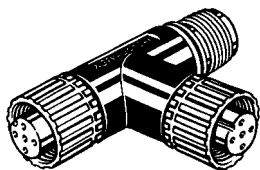
**XS2R-D423-1**  
**Bifurcated Model**



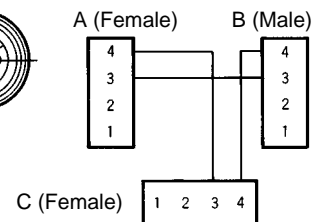
**Internal Connections**



**XS2R-D424-1**  
**Daisy-chain Model**



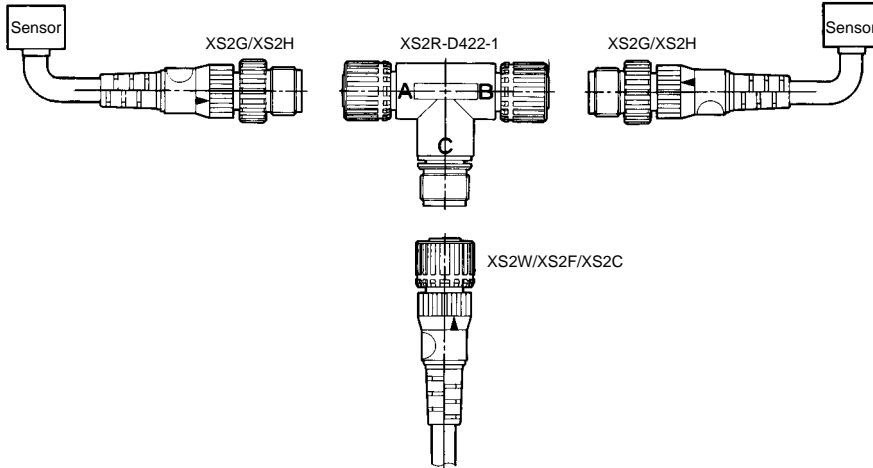
**Internal Connections**





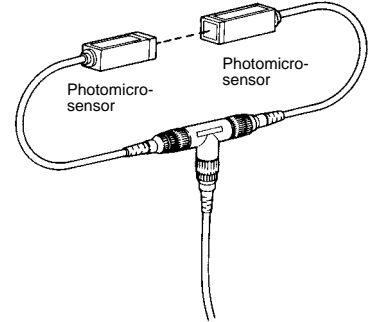
■ XS2R Application Examples

XS2R-D422-1 (Aggregate Model)

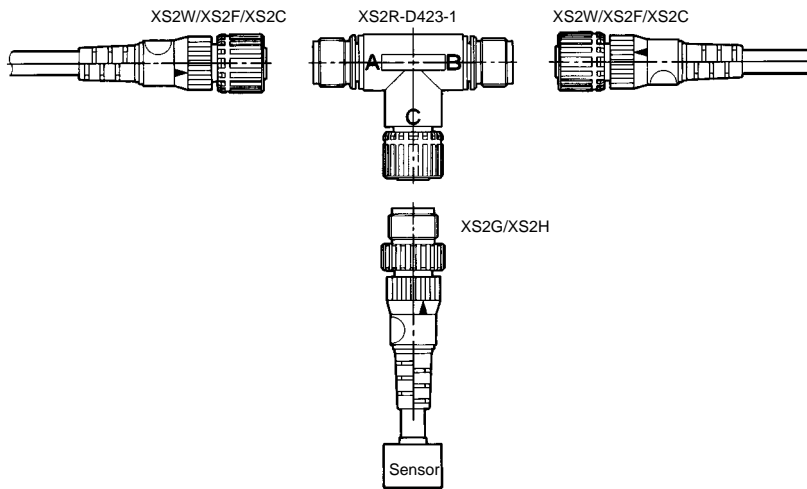


A pair of Two-wire Sensors or Three-wire Sensors can be connected as shown in the illustration.

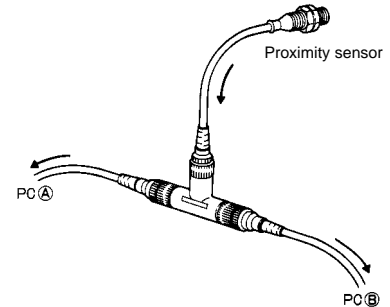
The XS2R-D422-5 has feed-through connections, thus working as a connector for the extension cable.



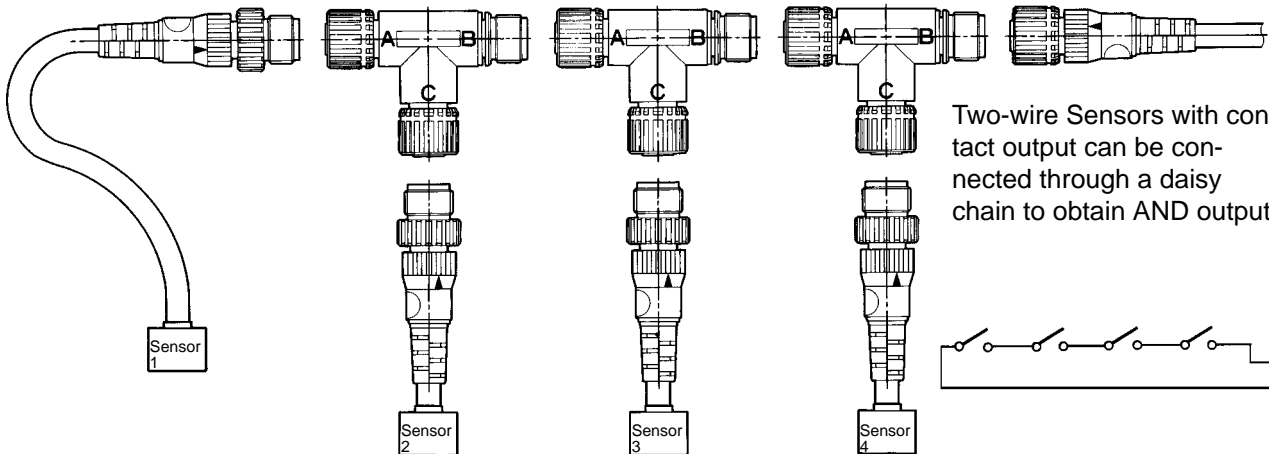
XS2R-D423-1 (Bifurcated Model)



Two or Three-wire Sensor signals can be bifurcated.



XS2R-D424-1 (Daisy-chain Model)



Two-wire Sensors with contact output can be connected through a daisy chain to obtain AND output.

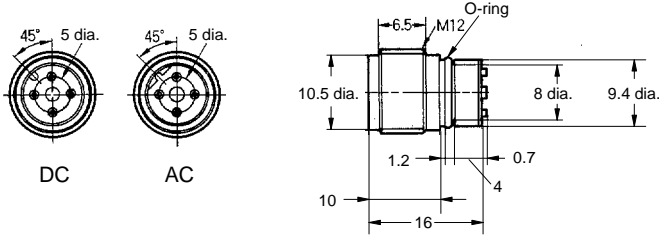
■ Precautions

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

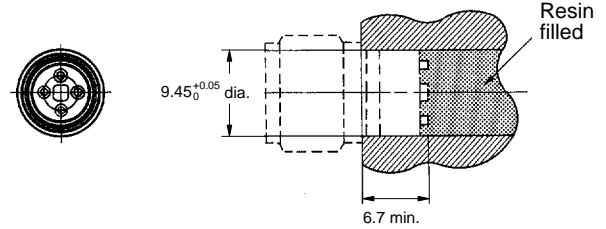
# XS2M Sensor Connector with Male Contact

## ■ Dimensions

XS2M-D421 (DC)  
 XS2M-A421 (AC)  
 (Screw-embedding Type)

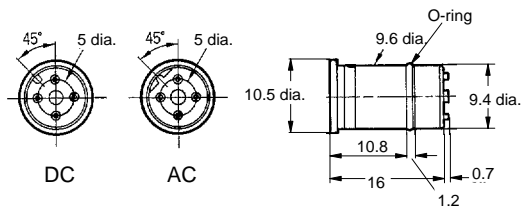
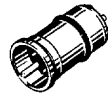


### Mounted Dimensions

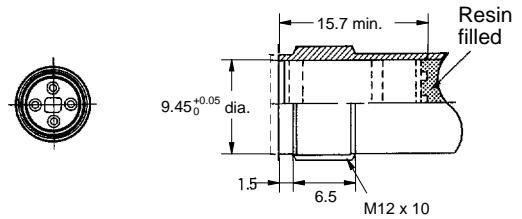


**Note:** After mounting, anchor the solder-cups by injecting resin.

XS2M-D422 (DC)  
 XS2M-A422 (AC)  
 (Non-screw Embedding Type)



### Mounted Dimensions

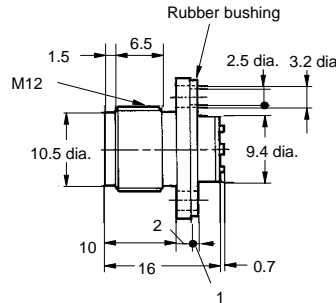
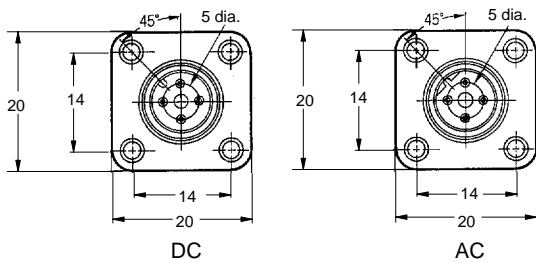
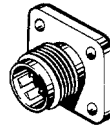


**Note:** After mounting, anchor the solder-cups by injecting resin.

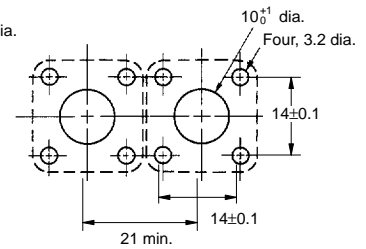
# XS2M Panel-mounting Connector Plug

## ■ Dimensions

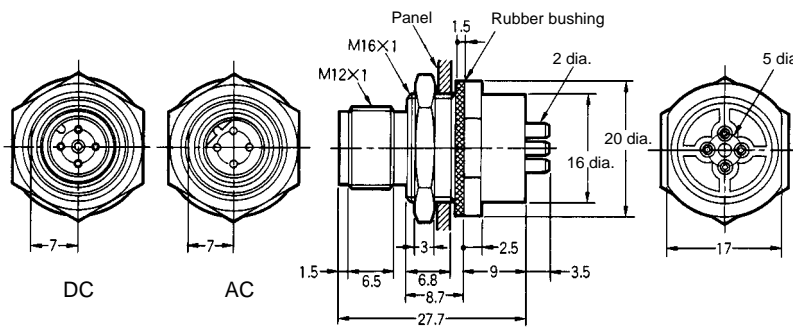
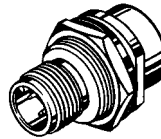
XS2M-D423 (For DC)  
 XS2M-A423 (For AC)  
 (Flange-mounting Type)



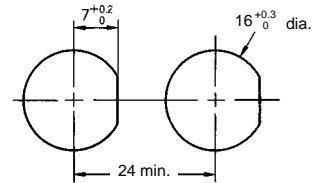
Panel Dimensions



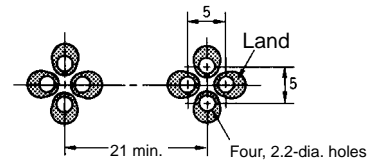
XS2M-□424-1 (With DIP Pins)  
 XS2M-□424-2 (With Solder Cap Pins)  
 (Screw-mounting Model)



Panel Cutout



**Note:** The panel thickness is 1 to 4 mm.  
**PCB-mounting Dimensions**



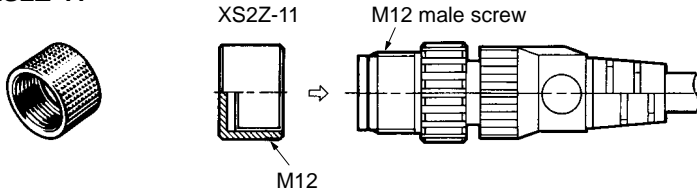
## ■ Ordering Information

Orders are accepted in multiples of the minimum order.

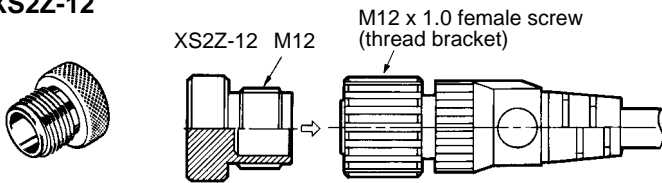
| Mounting method                     | Pin shape      | Model       |             | Minimum order |
|-------------------------------------|----------------|-------------|-------------|---------------|
|                                     |                | DC          | AC          |              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

■ Connector Covers

**Water-resistant Covers**  
XS2Z-11



**XS2Z-12**

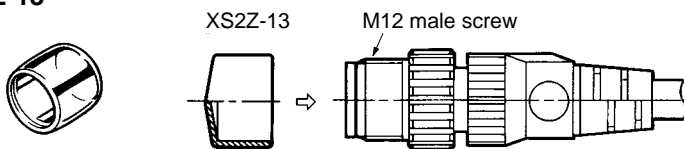


The Water-resistant Cover ensures IP67. When mounting the Water-resistant Cover to a Connector, be sure to apply a torque range between 0.39 and 0.49 N • m (4 and 5 kgf • cm) to tighten the Water-resistant Cover.

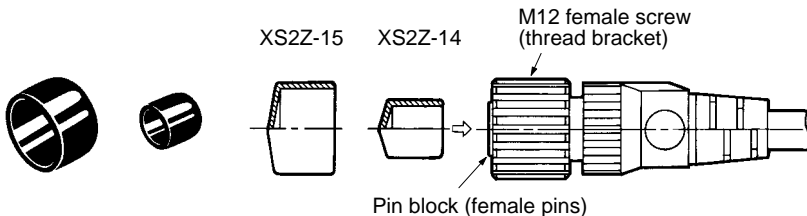
Orders are accepted in multiples of the minimum order.

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

**Dust Covers**  
XS2Z-13



**XS2Z-15/XS2Z-14**



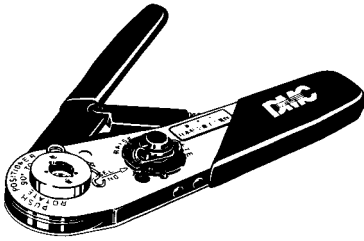
The Dust Cover is for dust prevention and does not ensure IP67. When mounting the Dust Cover to a connector, be sure to press the Dust Cover onto the Connector until the Connector is fully inserted into the Dust Cover.

Orders are accepted in multiples of the minimum order.

| 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 | Pin block (female pins) |
| XS2Z-15 |               |                                |                     |                         |

■ Tools

**Crimp Tool  
XY2F-0002**

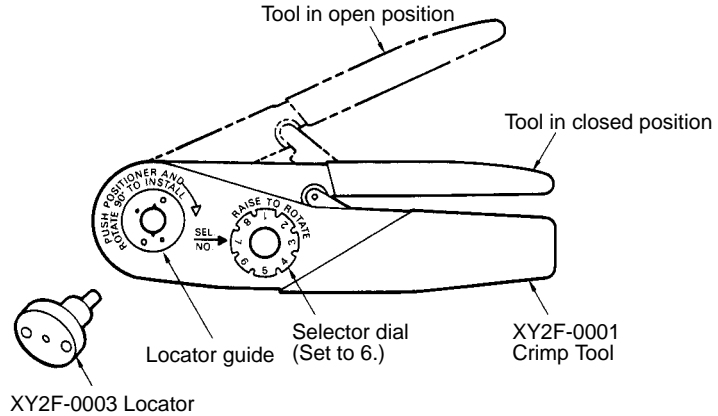


**Locator  
XY2F-0003**



The XY2F-0002 Crimp Tool is DMC's AFM8 (M22520/2-01).

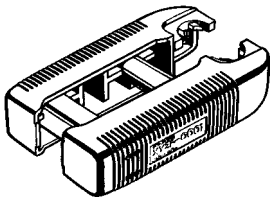
Mount the XY2F-0003 Locator (sold separately) to the locator guide of the Crimp Tool with a screw provided with the XY2F-0003 Locator.



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

**XY2F-0001 Pin-block Extraction Tool**

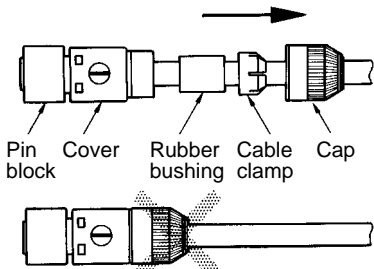
Use this tool to extract pin blocks from covers mounted to the pin blocks in order to make wiring changes of pin blocks.



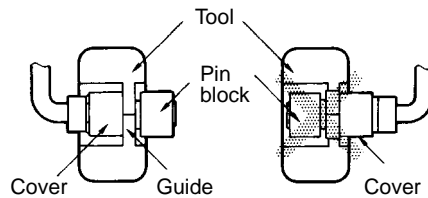
■ Extraction Procedure

**1. Disconnecting Components**

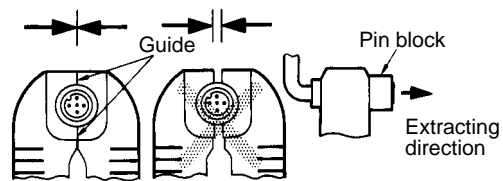
Disconnect all components on the cap side from the cover.



Make sure that the pin block is outside the Tool.

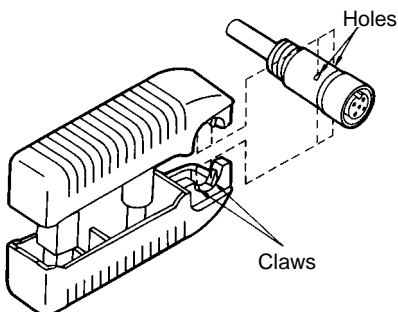


Press the Tool so that the guides of the Tool are in close contact. Then pull the pin block straight.



**2. Extracting Pin Block**

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



■ Precautions

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

**■ Assembly Procedure for XS2C/XS2G Connector Assemblies**

**1. Connector and Cable External Diameters**

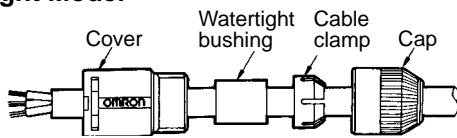
Connectors for 6-, 4-, and 3-mm-diameter Cables (i.e., Cables that are 5 to 6, 4 to 5, and 3 to 4 mm in diameter respectively) are available. When assembling a Connector used with a cable, make sure that the external diameter of the Connector is suited to that of the cable.

Connectors for 6-mm-diameter Cables use white cable clamps. Connectors for 4 and 3-mm-diameter Cables use black cable clamps.

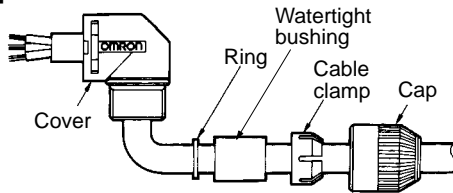
A watertight bushing for 6-mm-diameter Cable has no stripe, that for 4-mm-diameter Cable has a single stripe, and that for 3-mm-diameter Cable has two stripes.

**2. Component Insertion**

**Straight Model**



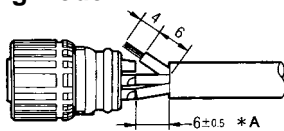
**L-shaped model**



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

**3. Wiring (Processing Cable End)**

**Soldering Model**



Strip 10 mm of the Cable sheath and 4 mm of each conductor.

Before soldering conductors and solder cap pins together, solder-coat each of them.

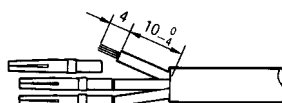
The following conditions are recommended for soldering each solder cap pin.

- 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 enclosure rating of the connector will not be maintained.

**Solderless Model**

**• Crimping**



Strip 14 mm of the Cable sheath and 4 mm of each conductor.

Make sure that each conductor is not damaged and its end strands are not spread out.

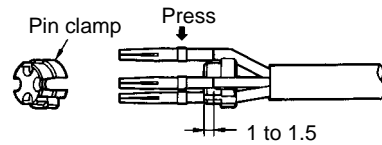
Mount the XY2F-0003 Locator to DMC's AFM8 (M25520/2-01) Press-fit Tool, both of which are sold separately, and set the selector dial of the Crimp Tool to 6.

After mounting the solderless pins to the Locator, fully insert the conductors to the solderless pins.

Squeeze the handle of the Crimp Tool to press-fit the conductors to the solderless pins.

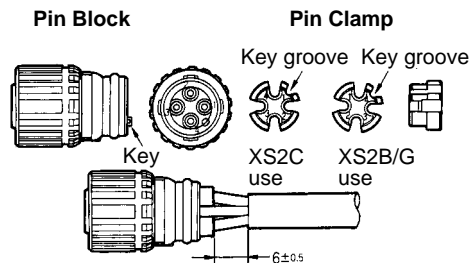
(Squeeze the handle firmly until the handle automatically returns to the release position.)

**• Crimping Cable Conductors to Pin Clamp**



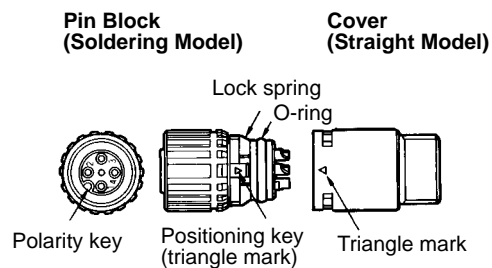
After press-fitting the conductors to the pins, insert the pins into the pin clamp as shown in the illustration. Then make sure that the conductor colors correspond to the pin clamp numbers that are identical to the connector pin numbers.

**• Mounting Pin Clamp to Pin Block**

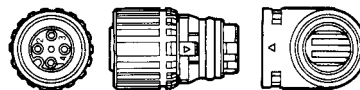


Tentatively insert the pins to the pin block holes so that the key on the pin block will coincide with the key groove on the pin clamp. Then insert the cable along with the pin clamp.

**4. Inserting Pin Block**



**Solderless Model      L-shaped Model**



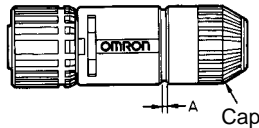
Mount the cover to the pin block so that the triangle mark on the pin block will coincide with the triangle mark on the cover.

If the L-shaped cover is used, the relationship between the position of the polarity key on the engaged side and cable pulling 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.

**5. 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 (4 and 5 kgf • cm).



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

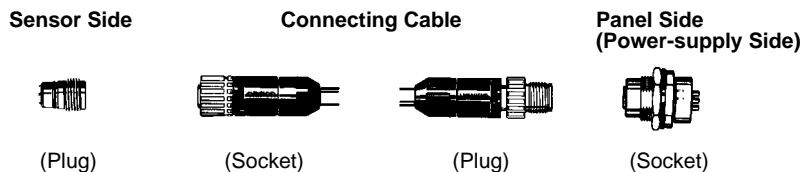
| Connector           | Cable external diameter (mm) |      |      |      |
|---------------------|------------------------------|------|------|------|
|                     | 6 mm                         | 5 mm | 4 mm | 3 mm |
| For 6-mm-dia. cable | 1                            | 0    | ---  | ---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

**■ Recommended Cable**

When using a standard cable for connection to a Connector Assembly, the cable should be 3 to 6 mm in external diameter and each conductor size should be 0.18 to 0.75 mm<sup>2</sup> if the Connector Assembly is a solderless model and 0.5 mm<sup>2</sup> maximum if the Connector Assembly is a soldering model.

**■ Connector Arrangement**

For the purposes of 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).



**■ Precautions**

**Tightening Cap (Connector Assembly)**

1. 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 (4 and 5 kgf • cm).
2. If caps are not tightened securely, the Connectors may not maintain their proper enclosure rating (i.e., IP67) or the caps may drop off due to vibration.

**Connector Connection and Disconnection**

When connecting or disconnecting Connectors, be sure to hold the Connectors by hand.

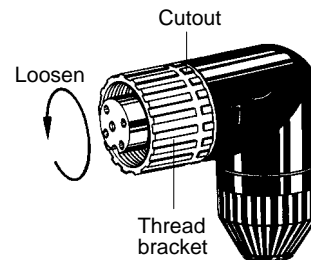
Do not hold the cable part when disconnecting Connectors.

Connectors engaged with sockets must be fully inserted into the sockets. Then 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 (4 and 5 kgf • cm) and be sure that the threads of the opposite parts are hidden by the thread brackets.

When disconnecting Connectors, be sure so loosen the thread brackets. Do not loosen the caps.

Thread brackets must be loosened in the cutout direction.



**Enclosure Rating**

Do not impose external force continuously on the joints of pin blocks and covers, otherwise the Connectors may not keep its proper enclosure rating (i.e., IP67).

Connectors are not fully watertight. Do not use them underwater.

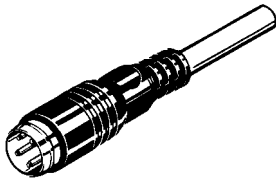
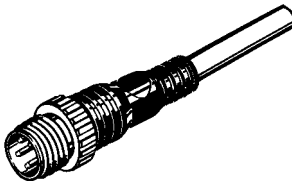
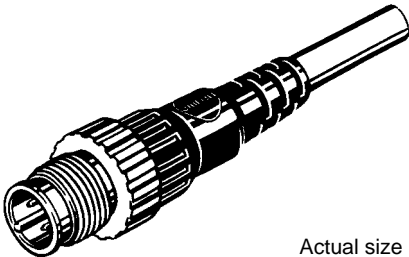
Connectors are of resin mold construction. Do not impose excessive force on them.

## 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.
- M8 screw and S8 snap-in models are available for connection.
- Greatly saves installation space, such as terminal box or conduit space.
- Ideal for a wide variety of FA and OA applications.
- Ensures ease of equipment maintenance and reduces downtime required for equipment maintenance.
- Cables with connectors require no harness work.
- Standard models with robot cables are available.

### ■ Comparison between XS3 and XS2

| Item                | XS3 (S8 model)   | XS3 (M8 model)   | XS2 (M12 model)  |
|---------------------|--|--|--|
| Appearance          | <br>Actual size | <br>Actual size | <br>Actual size |
| Securing method     | S8 (snap-in)   | M8 (screw)   | M12 (screw)  |
| Cable external dia. | 4 mm dia.  |  | 6 mm dia.  |
| Cable specification | Robot cable  |  | Standard and robot cables  |

### ■ Specifications

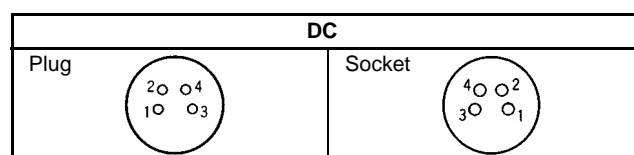
|                       |   |
|-----------------------|---|
| Rated current         | 1 A   |
| Rated voltage         | 125 VDC   |
| Contact resistance    | 40 mΩ max. (20 mV max., 100 mA max.) (See note 1)               |
| Insulation resistance | 1,000 MΩ min. (at 500 VDC)                                      |
| Withstand voltage     | 1,000 VAC for 1 minute (leakage current 1 mA max.) (See note 2) |
| Enclosure rating      | IP67 (IEC529)   |
| Electrical protection | Class 0   |
| Insertion tolerance   | 200 times min.  |
| Tensile strength      | 50 N (5.1 kgf/15 sec)   |
| Ambient temperature   | Operating: -25°C to 70°C  |

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

### ■ Materials/Finish

|                                |  |
|--------------------------------|--|
| Contact block                  | PBT resin: light grey or black         |
| Contact                        | Brass/nickel base, 0.4-μm gold plating |
| Thread bracket (M8) Shell (S8) | Nickel-plated brass                    |
| Cover                          | Black thermoplastic elastomer          |
| O-ring                         | Rubber                                 |

### ■ Pin Arrangement (Engaged Side)





■ Configuration

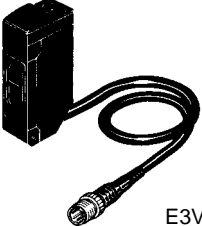
↔ : connections,    ⇄ : wiring

**Sensor**

**M8 Models:** OMRON is planning to release Sensors and Limit Switches that incorporate XS3 Sensor I/O Connectors.

Used with Sensors and Limit Switches Incorporating Connectors

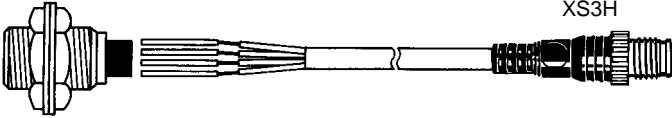
**Sensor**



E3V3

Used as Sensor Components (by Sensor Manufacturers)

**Connector with Cable**

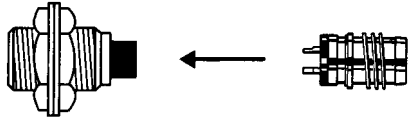


XS3H

Use the XS3H as the built-in connector of a sensor.

**M8/S8 Common Model**

Used as Sensor Components (by Sensor Manufacturers)



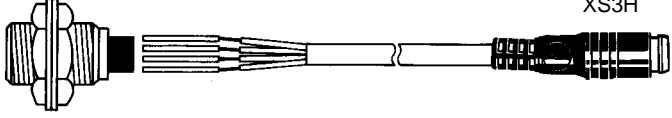
XS3M (Embedded model)

Use the XS3M as the built-in connector of a sensor.

**S8 Model**

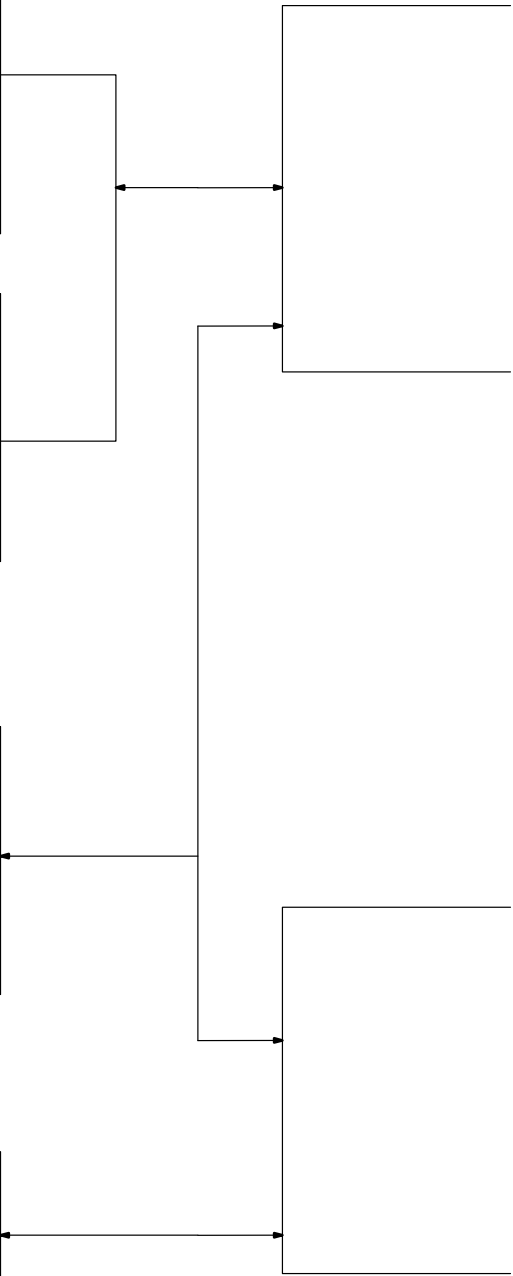
Used as Sensor Components (by Sensor Manufacturers)

**Connector with Cable**



XS3H

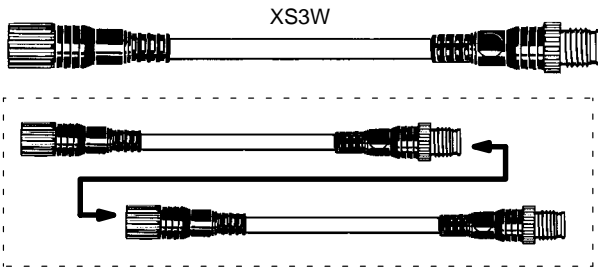
Use the XS3H as the built-in connector of a sensor.



**Cables**

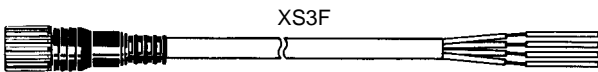
**M8 Model**

**Connector with Cable**



More than one XS3W Cable can be used for connection.

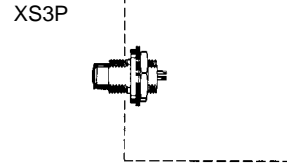
**Connector with Cable**



**Terminal Box (Panel-mounting)**

**M8 Model**

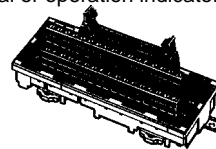
**Connector for Terminal Box**



Use the XS3P as the connector of a terminal box.

**Connector-Terminal Conversion Unit**

XW2C (with power-supply common terminal and operation indicator)  
 XW2B (with no power supply common terminal or operation indicator)

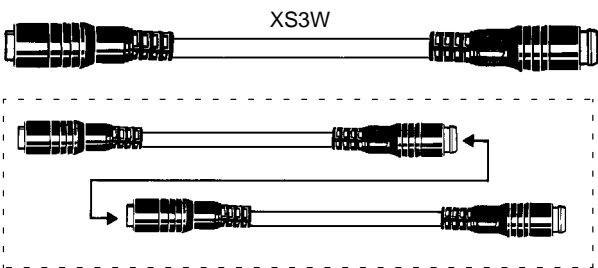


**Terminal Block (Optional)**



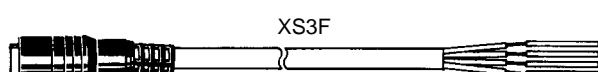
**S8 Model**

**Connector with Cable**



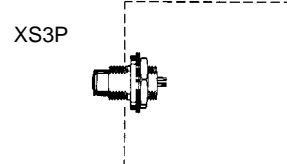
More than one XS3W Cable can be used for connection.

**Connector with Cable**



**S8 Model**

**Connector for Terminal Box**



Use the XS3P as the connector of a terminal box.

**Connector-Terminal Conversion Unit**

XW2C (with power-supply common terminal and operation indicator)  
 XW2B (with no power supply common terminal or operation indicator)



**Terminal Block (Optional)**



## XS3W Sensor I/O Connector with Socket and Plug Used for Both Cable Ends

### ■ Ordering Information

#### M8 Model

| Item                        | Cable pulling direction | No. of cable conductors | Cable length (m)  | Model           |
|-----------------------------|-------------------------|-------------------------|-------------------|-----------------|
| 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/Straight | 2               |
|                             | 5                       |                         |                   | XS3W-M423-405-R |
|                             | L-shaped/L-shaped       |                         |                   | 2               |
|                             |                         |                         | 5                 | XS3W-M424-405-R |

#### S8 Model

| Item                        | Cable pulling direction | No. of cable conductors | Cable length (m)  | Model           |
|-----------------------------|-------------------------|-------------------------|-------------------|-----------------|
| 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/Straight | 2               |
|                             | 5                       |                         |                   | XS3W-S423-405-R |
|                             | L-shaped/L-shaped       |                         |                   | 2               |
|                             |                         |                         | 5                 | XS3W-S424-405-R |

### ■ Model Number Legend

Use the information on this page as well as *Ordering Information* above to determine the specifications of the models when ordering.

**XS3W-□42□-4□□-R**

1 2 3 4 5 6

#### 1. Securing Method

M: M8 screw model

S: S8 screw model

#### 2. No. of Connector Poles

4: 4 poles

#### 3. Cable Pulling Direction

1: Straight/Straight

2: L-shaped/L-shaped

3: Straight (XS3F)/L-shaped (XS3H)

4: L-shaped (XS3F)/Straight (XS3H)

#### 4. Wiring

For pins 1, 2, 3, and 4

8: Brown, white, blue, and black

#### 5. Cable Length

01: 1 m

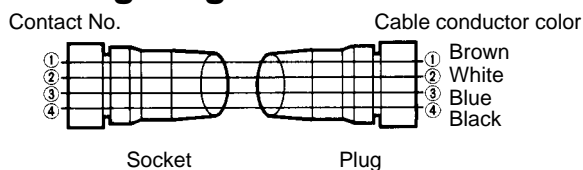
02: 2 m

05: 5 m

#### 6. Cable Specification

R: Vibration-proof cable

### ■ Wiring Diagram



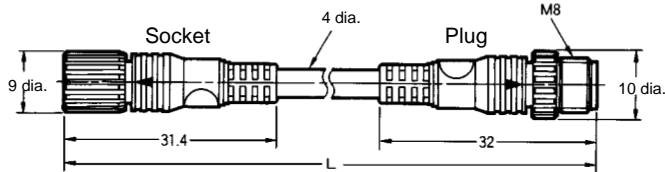
### ■ Connection Counterparts

| Item      | Socket side                | Plug side                          |
|-----------|----------------------------|------------------------------------|
| XS3W (M8) | XS3M (common)<br>XS3H (M8) | XS3F (M8), XS3W (M8),<br>XS3P (M8) |
| XS3W (S8) | XS3M (common)<br>XS3H (S8) | MS3F (S8), XS3W (S8),<br>XS3P (S8) |

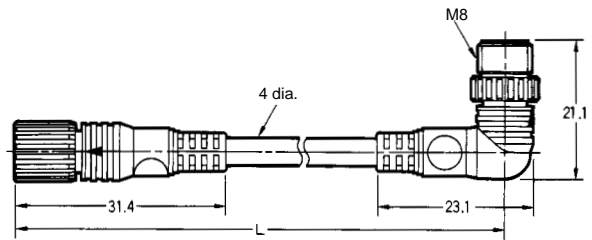
- Note:**
- Cables can be extended with more than one XS3W.
  - M8 screw models and S8 snap-in models cannot be connected to each other.

● XS3W-M42□-4□□-R M8 Screw Model with Vibration-proof Robot Cable  
 ■ Dimensions

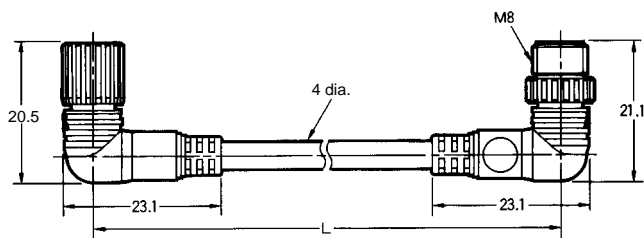
**Straight/Straight Connectors**



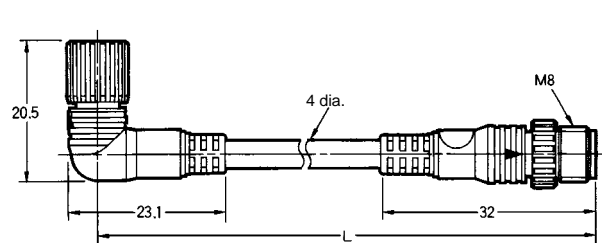
**L-shaped/L-shaped Connectors**



**Straight/L-shaped Connectors**

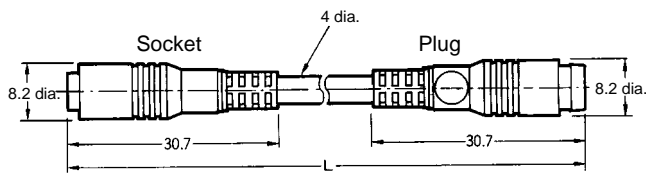


**L-shaped/Straight Connectors**

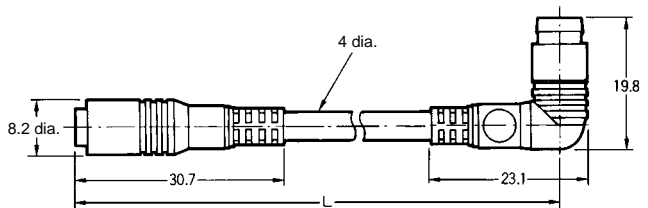


● XS3W-S42□-4□□-R S8 Snap-in Model with Vibration-proof Robot Cable  
 ■ Dimensions

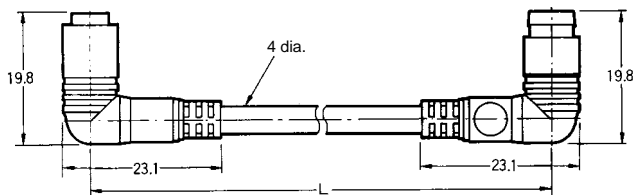
**Straight/Straight Connectors**



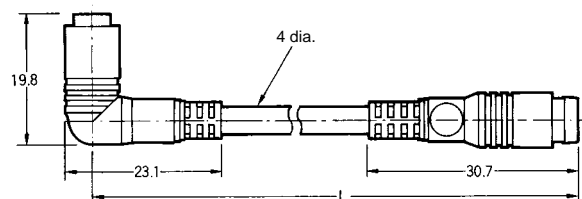
**L-shaped/L-shaped Connectors**



**Straight/L-shaped Connectors**



**L-shaped/Straight Connectors**



# XS3F Sensor I/O Connector with Socket for Single Cable End

## ■ Ordering Information

### M8 Model

| Item                        | Cable pulling direction | No. of cable conductors | Cable length (m) | Model           |
|-----------------------------|-------------------------|-------------------------|------------------|-----------------|
| Vibration-proof robot cable | Straight                | 4                       | 1                | XS3F-M421-401-R |
|                             |                         |                         | 2                | XS3F-M421-402-R |
|                             |                         |                         | 5                | XS3F-M421-405-R |
|                             | L-shaped                | 4                       | 1                | XS3F-M422-401-R |
|                             |                         |                         | 2                | XS3F-M422-402-R |
|                             |                         |                         | 5                | XS3F-M422-405-R |

### S8 Model

| Item                        | Cable pulling direction | No. of cable conductors | Cable length (m) | Model           |
|-----------------------------|-------------------------|-------------------------|------------------|-----------------|
| Vibration-proof robot cable | Straight                | 4                       | 1                | XS3F-S421-401-R |
|                             |                         |                         | 2                | XS3F-S421-402-R |
|                             |                         |                         | 5                | XS3F-S421-405-R |
|                             | L-shaped                | 4                       | 1                | XS3F-S422-401-R |
|                             |                         |                         | 2                | XS3F-S422-402-R |
|                             |                         |                         | 5                | XS3F-S422-405-R |

## ■ Model Number Legend

Use the information on this page as well as *Ordering Information* above to determine the specifications of the models when ordering.

XS3F-    4  2  -4      -R  
           1  2    3  4    5    6

### 1. Securing Method

M: M8 screw model

S: S8 screw model

### 2. No. of Connector Poles

4: 4 poles

### 3. Cable Pulling Direction

1: Straight

2: L-shaped

### 4. Wiring

For pins 1, 2, 3, and 4

4: Brown, white, blue, and black

### 5. Cable Length

01: 1 m

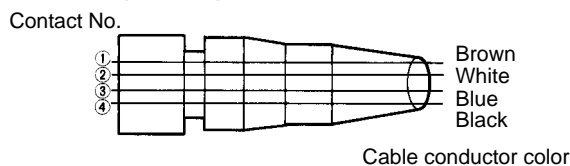
02: 2 m

05: 5 m

### 6. Cable Specification

R: Vibration-proof cable

## ■ Wiring Diagram



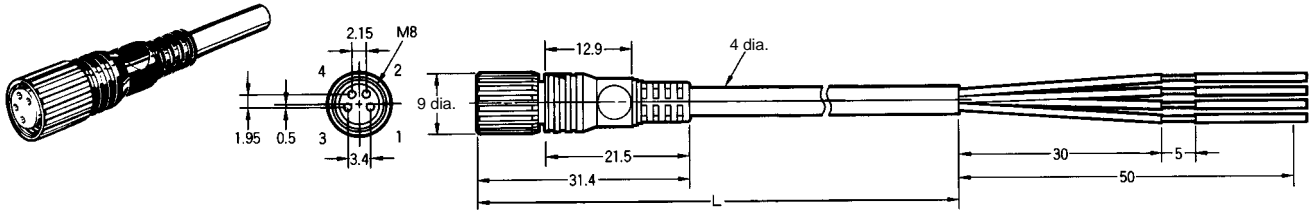
## ■ Connection Counterparts

| Item      | Model                               |
|-----------|-------------------------------------|
| XS3W (M8) | XS3M (common), XS3H (M8), XS3W (M8) |
| XS3W (S8) | XS3M (common), XS3H (S8), XS3W (S8) |

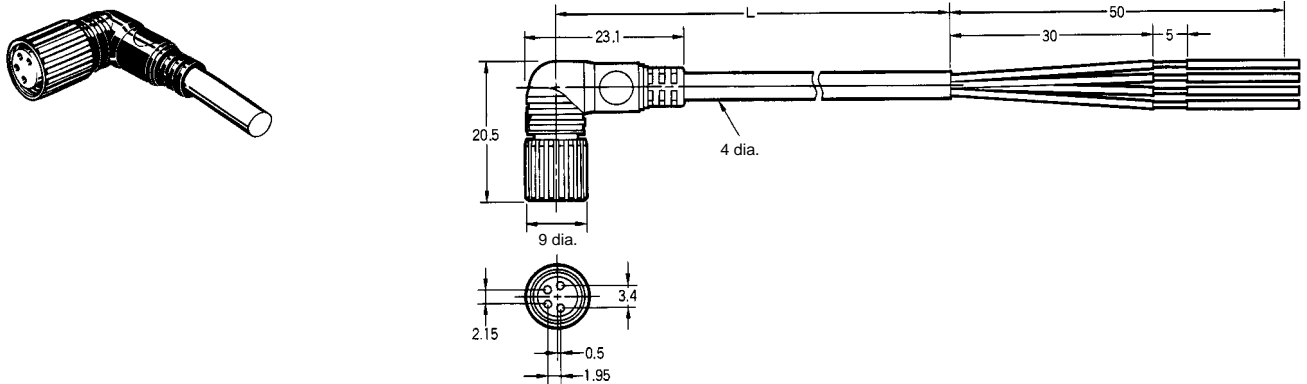
**Note:** M8 screw models and S8 snap-in models cannot be connected to each other.

● XS3F-M42□-4□□-R M8 Screw Model with Vibration-proof Robot Cable  
 ■ Dimensions

Straight Connectors

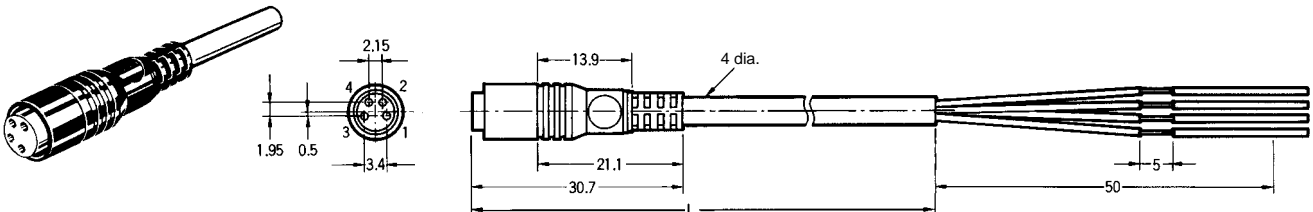


L-shaped Connectors

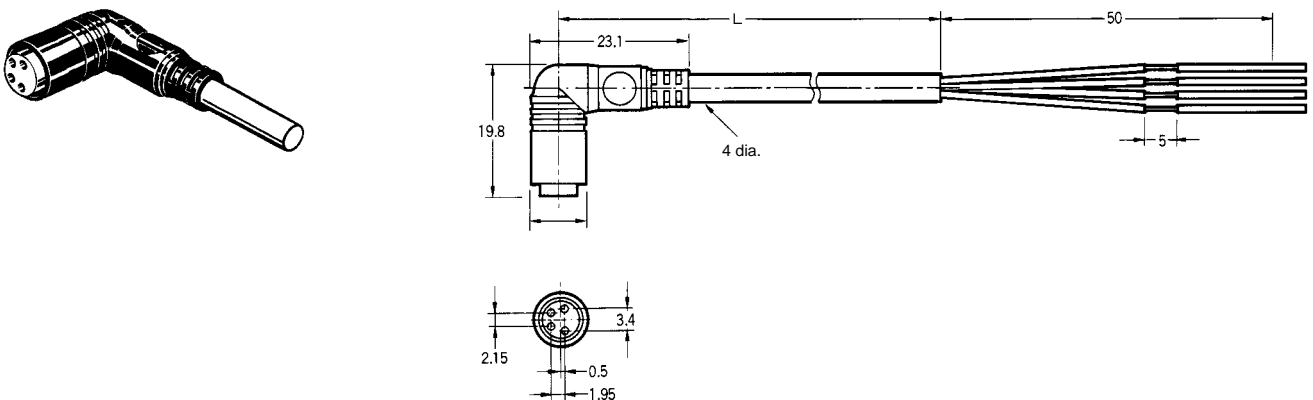


● XS3F-S42□-4□□-R S8 Snap-in Model with Vibration-proof Robot Cable  
 ■ Dimensions

Straight Connectors



L-shaped Connectors



# XS3H Sensor I/O Connector with Plug for Single Cable End

## ■ Ordering Information

### M8 Model

| Item                        | Cable pulling direction | No. of cable conductors | Cable length (m) | Model           |
|-----------------------------|-------------------------|-------------------------|------------------|-----------------|
| Vibration-proof robot cable | Straight                | 4                       | 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

| Item                        | Cable pulling direction | No. of cable conductors | Cable length (m) | 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 |

## ■ Model Number Legend

Use the information on this page as well as *Ordering Information* above to determine the specifications of the models when ordering.

XS3H-  42  -4    -R  
           1  2  3  4  5  6

### 1. Securing Method

M: M8 screw model

S: S8 screw model

### 2. No. of Connector Poles

4: 4 poles

### 3. Cable Pulling Direction

1: Straight

2: L-shaped

### 4. Wiring

For pins 1, 2, 3, and 4

4: Brown, white, blue, and black

### 5. Cable Length

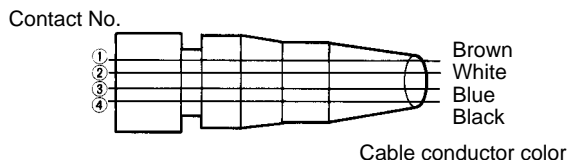
C3: 0.3 m

01: 1 m

### 6. Cable Specification

R: Vibration-proof cable

## ■ Wiring Diagram



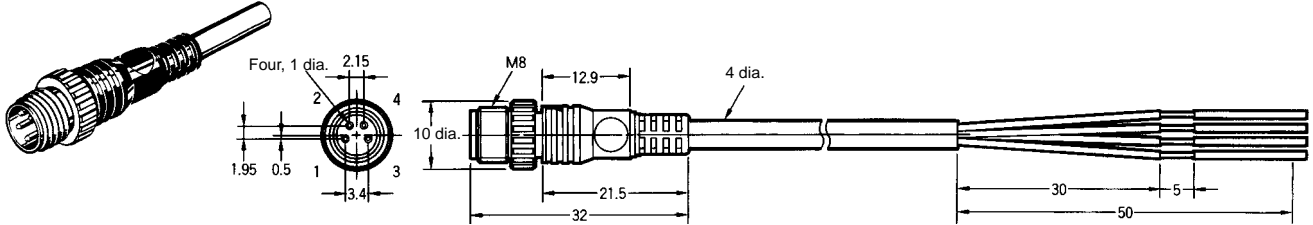
## ■ Connection Counterparts

| Item      | Model                           |
|-----------|---------------------------------|
| XS3H (M8) | XS3F (M8), XS3W (M8), XS3P (M8) |
| XS3H (S8) | XS3F (S8), XS3W (S8), XS3P (S8) |

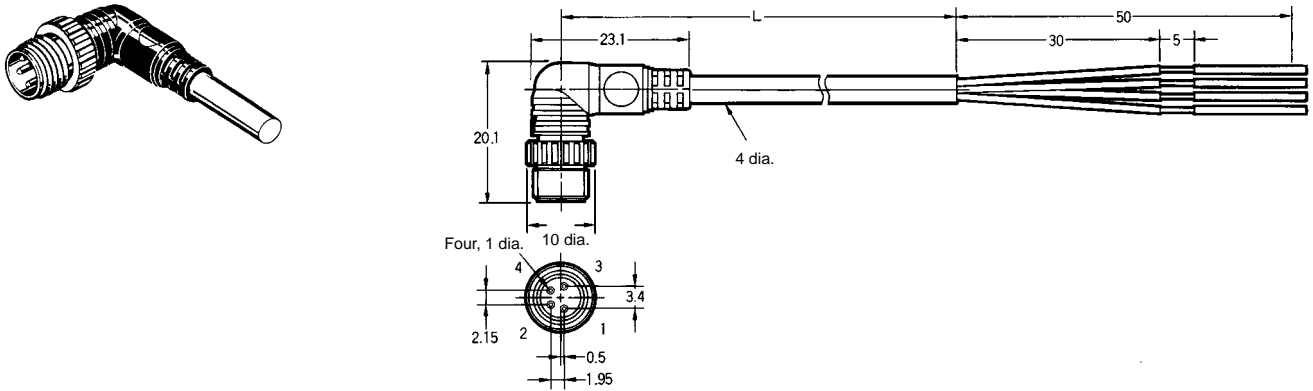
**Note:** M8 screw models and S8 snap-in models cannot be connected to each other.

● XS3H-M42□-4□□-R M8 Screw Model with Vibration-proof Robot Cable  
 ■ Dimensions

Straight Connectors

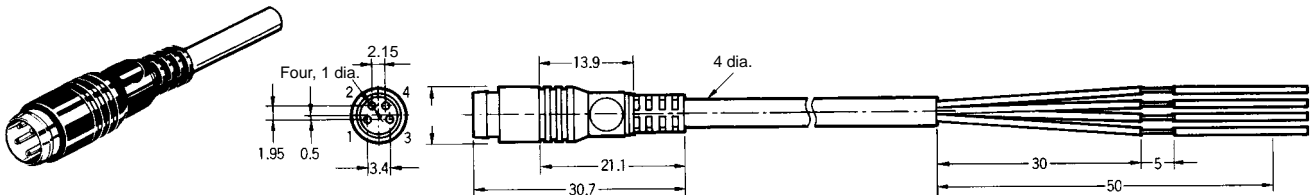


L-shaped Connectors

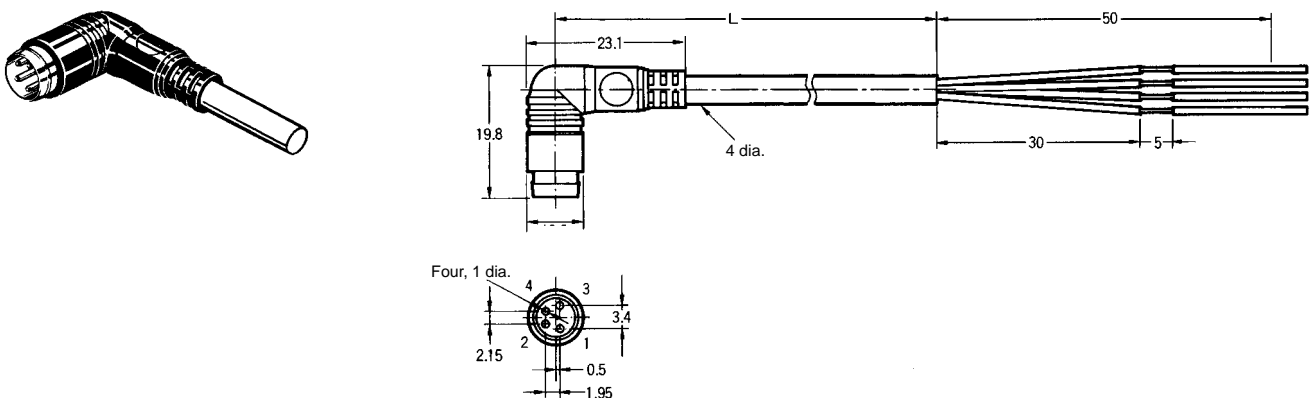


● XS3H-S42□-4□□-R S8 Snap-in Model with Vibration-proof Robot Cable  
 ■ Dimensions

Straight Connectors



L-shaped Connectors





# XS3P Sensor I/O Connector with Panel-mounting Socket for Terminal Boxes

- XS3P-M421-1 M8 Screw Model DIP Pins
- XS3P-M421-2 M8 Screw Model Solder Cap Pins

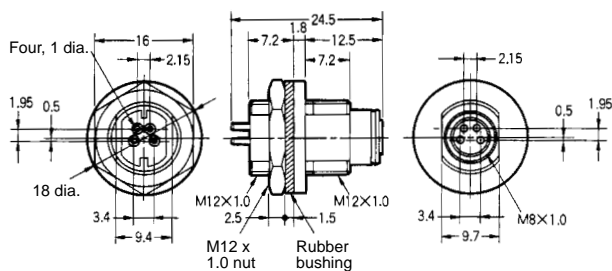
## ■ Ordering Information

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

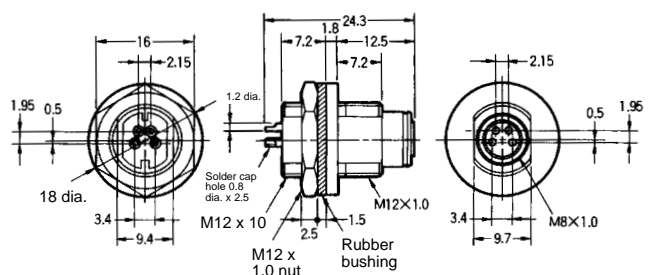
**Note:** Orders are accepted in multiples of the minimum order.

## ■ Dimensions

### XS3P-M421-1 (DIP Pins)



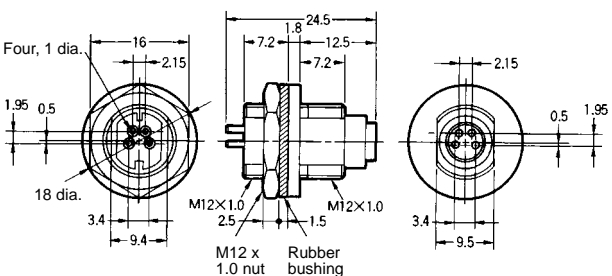
### XS3P-M421-2 (Solder Cap Pins)



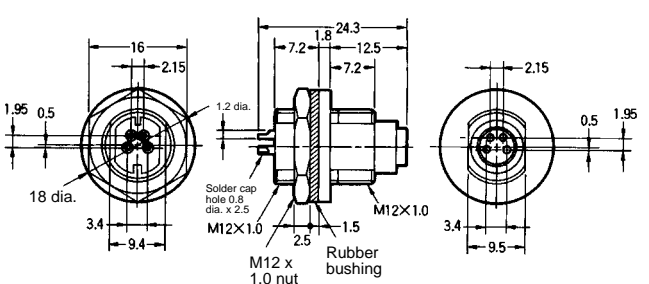
- XS3P-S421-1 S8 Snap-in Model DIP Pins
- XS3P-S421-2 S8 Snap-in Model Solder Cap Pins

## ■ Dimensions

### XS3P-S421-1 (DIP Pins)

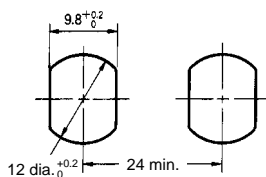


### XS3P-S421-2 (Solder Cap Pins)

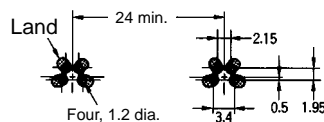


## ■ Mounting Dimensions for XS3P Screw or Snap-in Models

### Panel Cutout



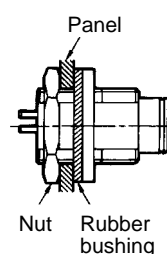
### PCB-mounting Dimensions



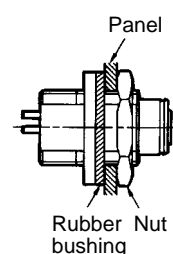
**Note:** The panel thickness is 1 to 3 mm.

### Panel-mounting Dimensions

#### Rear Lock



#### Front Lock



## ■ Connection Counterparts

| Item      | Model                |
|-----------|----------------------|
| XS3P (M8) | XS3H (M8), XS3W (M8) |
| XS3P (S8) | XS3H (S8), XS3W (S8) |

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

# XS3M Embedded Sensor I/O Connector with Screw Thread

- XS3M-K421-1 Embedded Model with DIP Pins
- XS3M-K421-2 Embedded Model with Solder Cap Pins

## ■ Ordering Information

| Connection method | Pin shape       | Model       |
|-------------------|-----------------|-------------|
| Embedded model    | DIP pins        | XS3M-K421-1 |
|                   | Solder cap pins | XS3M-K421-2 |

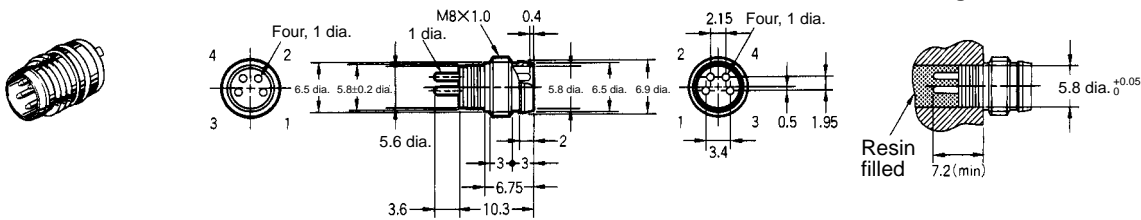
## ■ Connection Counterparts

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

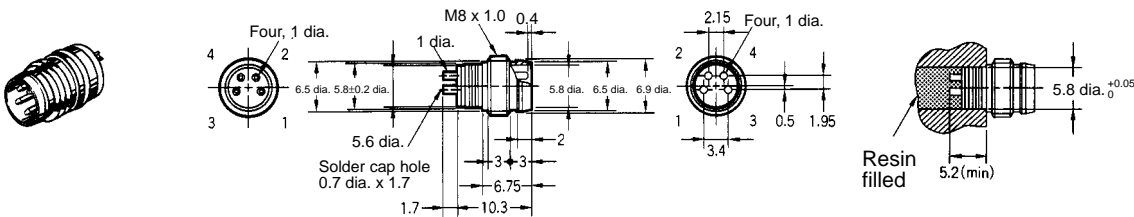
**Note:** The plug can be connected to both M8 screw and S8 snap-in models.

## ■ Dimensions

### XS3M-K421-1 Embedded Model with DIP Pins

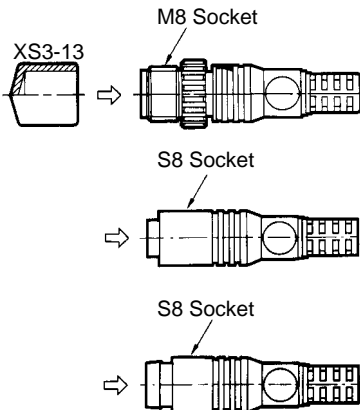


### XS3M-K421-2 Embedded Model with Solder Cap Pins

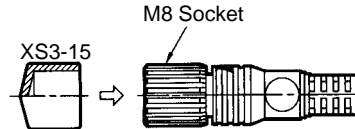


## ■ XS3 Common Connector Cover

### XS3Z-13 Dust Cover



### XS3Z-15 Dust Cover



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.

| Model   | Material               | Suitable connector |                  |
|---------|------------------------|--------------------|------------------|
|         |                        | Model              | Mounting portion |
| XS3Z-13 | Red polyvinyl chloride | XS3H/XS3M          | M8 plug          |
|         |                        | XS3F               | S8 socket        |
|         |                        | XS3H               | S8 plug          |
| XS3Z-15 | Red polyvinyl chloride | XS3F               | M8 socket        |

## ■ Precautions

### Connections

The XS3 and XS2 Sensor I/O Connectors cannot be connected to each other.

Before connecting the XS3 Sensor I/O Connector to a sensor or limit switch incorporating a connector, check this catalog and make sure that the XS3 Sensor I/O Connector is an applicable type.

Do not connect M8 screw models and S8 snap-in models together, otherwise the proper enclosure rating 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.

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 (3.1 and 4.1 kgf • cm). If the thread bracket is not tightened securely, the Connector may not maintain its proper enclosure rating 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 enclosure rating or the thread brackets may drop off due to vibration.

Make sure that engagement side of any Connector is free of metal dust or power.

### Enclosure Rating

Do not impose external force continuously on the joints of pin blocks and covers, otherwise the Connectors may not keep its proper enclosure rating (i.e., IP67).

Connectors are not fully watertight. Do not use them underwater.

Connectors do not resist water. Do not use Connectors in places where oil may be sprayed onto the Connectors.

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 enclosure rating.

Connectors are of resin mold construction. Do not impose excessive force on them.

### Panel Mounting

When mounting Connectors to panels, refer to page 46 and provide rubber bushings and nuts to the Connectors. Then apply a torque between 0.4 and 0.6 N • m (4.1 and 6.1 kgf • cm) to mount the Connectors.

Do not store Connectors in the following places for an extended time.

- Places with dust and high humidity.
- Places with ammonia gas or sulfide gas.

### Cable Wire Color

The XS3 Sensor I/O Connector uses the following lead wire colors.

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



# Connector–Terminal Conversion Unit

# XW2C

**Incorporates Power Supply Common Terminals and Operation Indicators, and Saves Wiring Effort in Control Panels for Input Devices**

- Power supply common terminals for input devices.
- Compact 50-mm width.
- Operation indicators make it possible to monitor the ON and OFF conditions of input signals with ease.
- DIN track mounting and screw mounting are available.
- Dedicated cables are available (sold separately).

## ■ Ordering Information

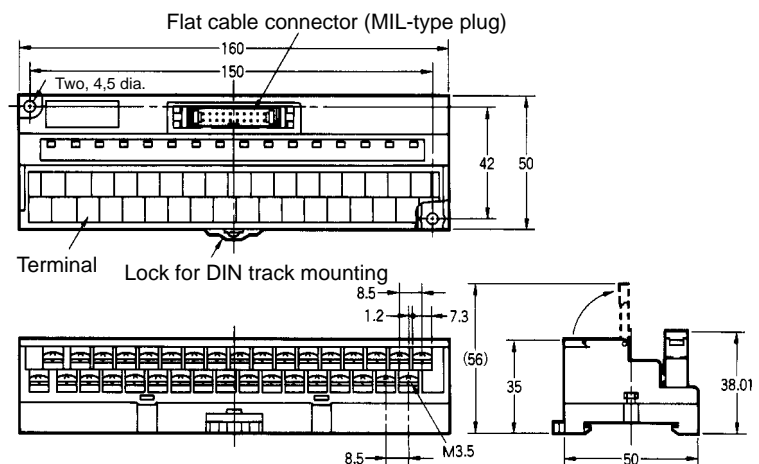
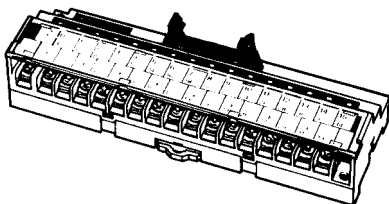
| Number of input points | Input mode                  | Model          |
|------------------------|-----------------------------|----------------|
| 16                     | NPN input (negative common) | XW2C-20G5-IN16 |

## ■ Specifications

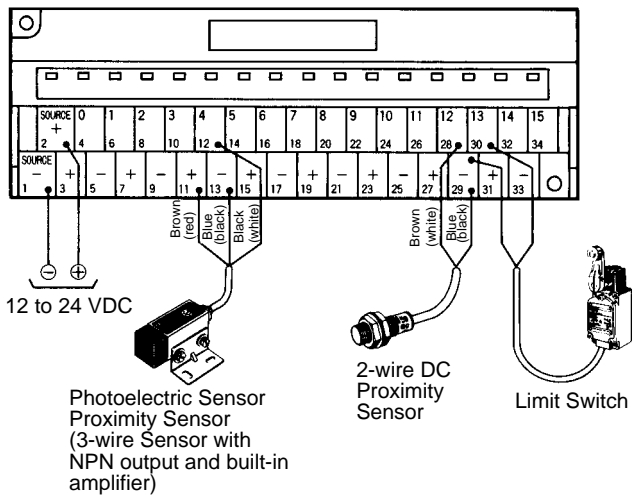
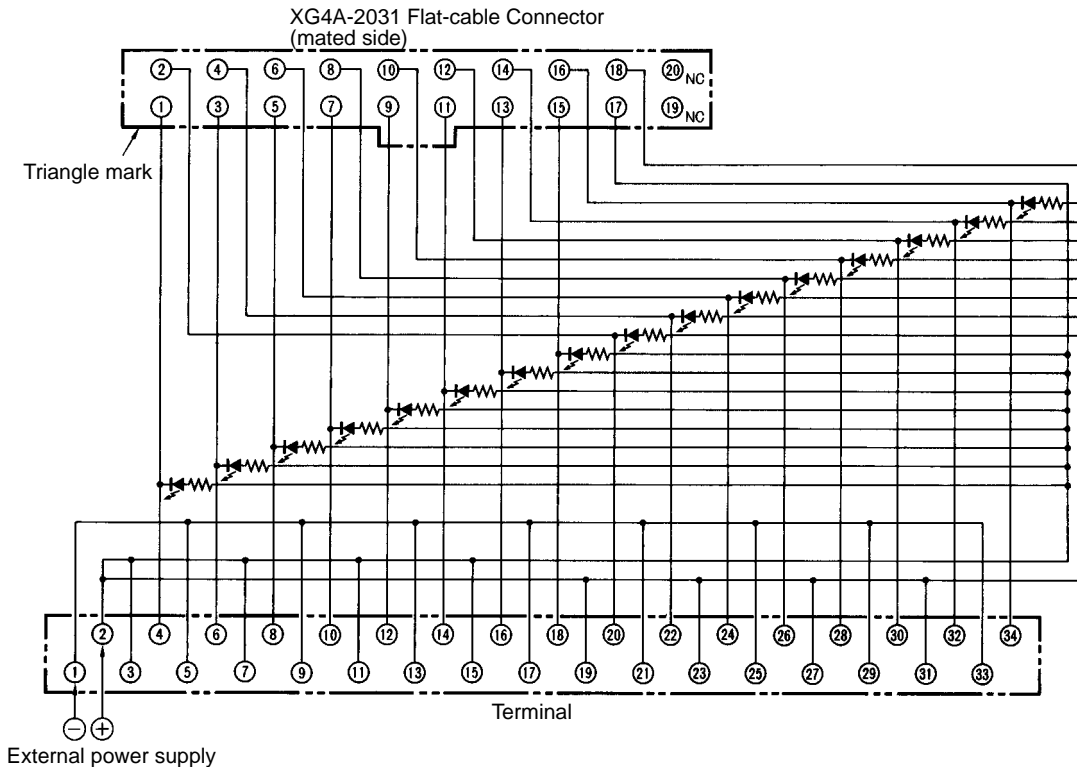
|                            |                                 |
|----------------------------|---------------------------------|
| Rated current              | 1 A/common                      |
| Rated voltage              | 12 to 24 VDC                    |
| Number of inputs           | 16                              |
| Input indicator            | Orange LED                      |
| Power supply voltage range | 12 to 24 VDC $\pm$ 5%           |
| LED current                | 10 mA/point at 24 VDC           |
| Insulation resistance      | 50 M $\Omega$ min. (at 500 VDC) |
| Dielectric strength        | 500 VAC for 1 min               |
| Enclosure rating           | IP10 (IEC529)                   |
| Electrical protection      | Class 0                         |
| Ambient temperature        | Operating: 0°C to 55°C          |

## ■ Dimensions

XW2C-20G5-IN16



■ Terminal Arrangement



**Note:** The lead wire colors of Photoelectric Sensors and Proximity Sensors have been changed in compliance with the latest applicable JIS standards. Colors in parentheses are previous ones.

■ Dedicated Cable

Refer to pages 68 to 71.

**Note:** The G79-□C Cable with a connector for the G7TC cannot be used due to a difference in wiring.

**■ Precautions****Wiring**

Do not wire the Unit while power is supplied to the Unit, otherwise the terminals may be short-circuited with the cable and the Unit may malfunction.

Do not connect or disconnect the connector while power is supplied to the Unit, otherwise the Unit may malfunction.

**Terminal Wire Connections**

Follow the instructions below to connect the wires directly to the M3.5 screw terminals:

The wires can be connected to the M3.5 screw terminal via the following crimp terminals:

2-3.5 type (round type)

2Y-3.5 type (fork type)

**DIN Track Mounting**

Secure both ends of the XW2C with end plates.

**Terminal Screw Tightening Torque**

When connecting crimp terminals to the terminal block, be sure to tighten each crimp terminal to 0.59 N • m (6 kgf • cm).






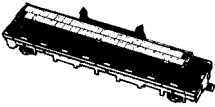
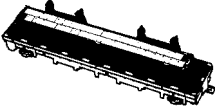



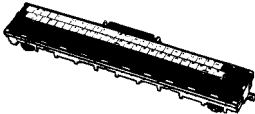
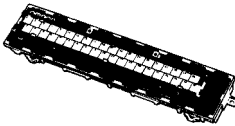
# Connector–Terminal Conversion Unit

# XW2B

## Enables Easy Conversion between Connector and Terminal Block, and Reduces Wiring

- Easily mounts to DIN track or via screws.
- Compact 45-mm width.
- MIL-approved flat-cable connectors built-in.
- Terminal blocks available with either M2.4 or M3.5 terminal screws.
- Dedicated cables are available for the PC (sold separately).

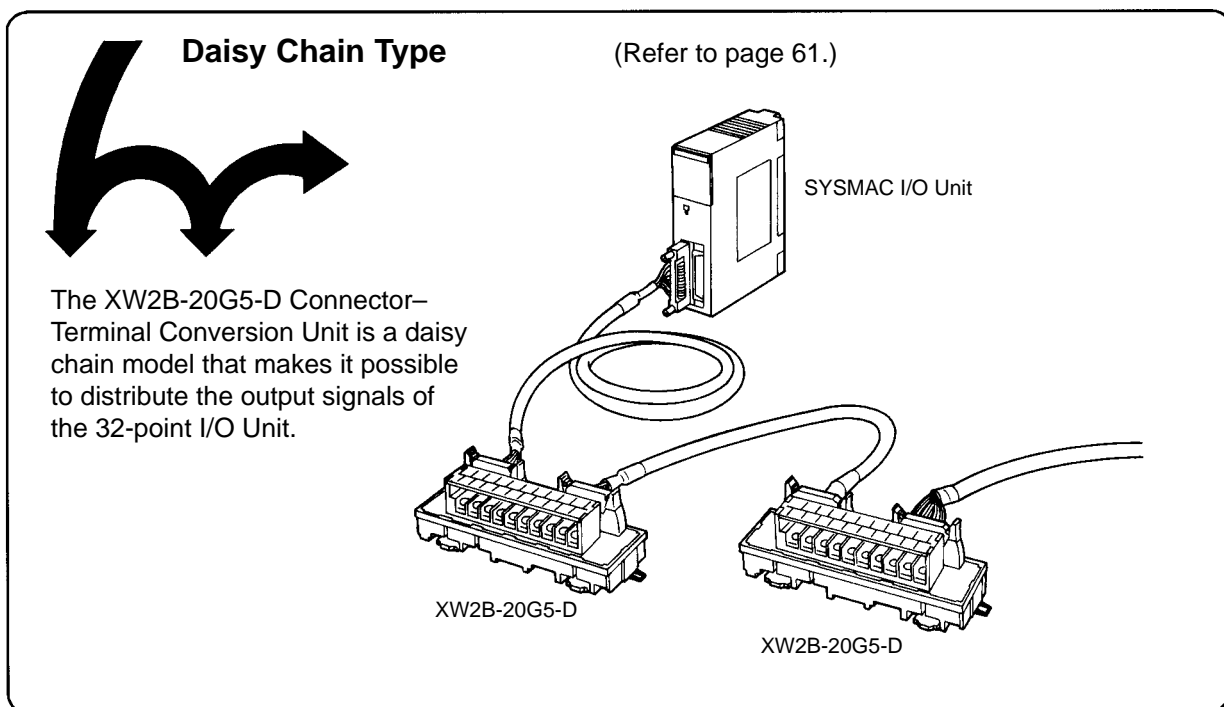
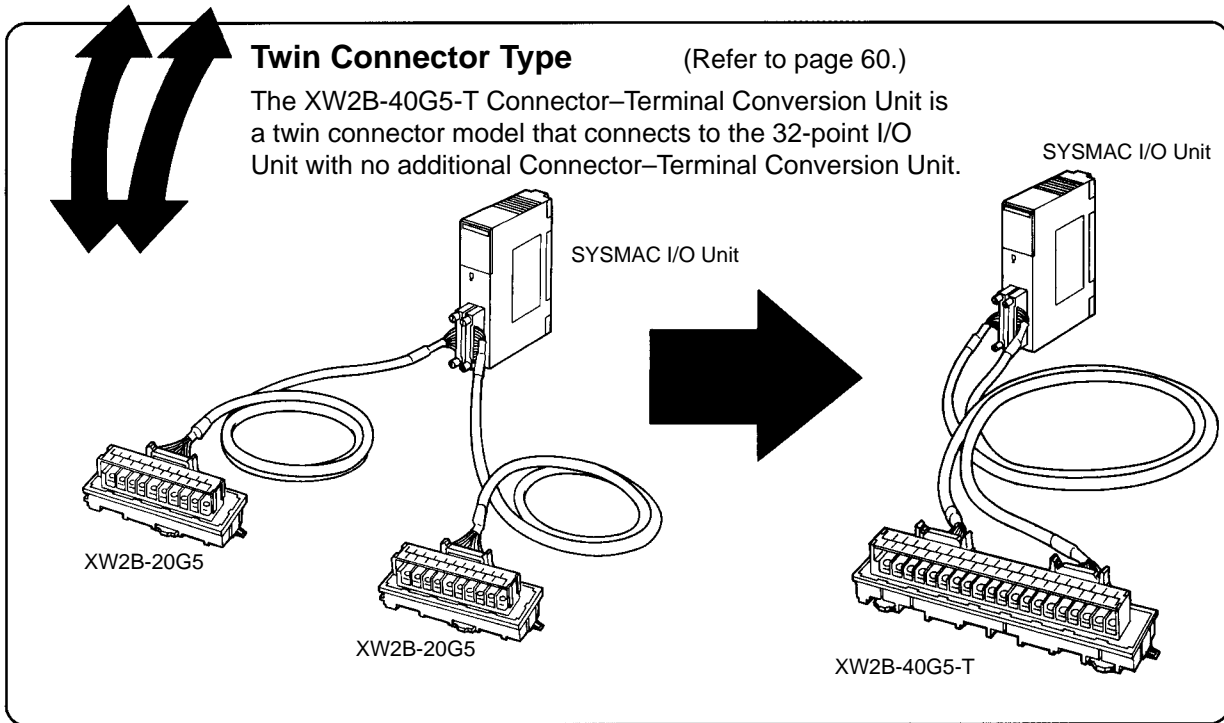
## ■ Ordering Information

| Connector type              | Model       | Connector  | Terminals  | Appearance  | Reference page   |
|-----------------------------|-------------|--|--|---|--|
| Flat-cable connector        | XW2B-□□G4   | Flat-cable connector   | M3 screw terminals   |    | 58   |
|                             | XW2B-□□G5   |  | M3.5 screw terminals   |     | 59   |
| Twin connector              | XW2B-40G5-T | Flat-cable connector   | M3.5 screw terminals   |   | 60   |
| Daisy chain                 | XW2B-20G5-D |  |  |  | 61   |
| Multi-pole square connector | XW2B-□□Y4   | Multi-pole square connector plug (made by Honda Tsushin Kogyo) | M3 screw terminals   |  | 62   |
|                             | XW2B-□□Y5   |  | M3.5 screw terminals   |  | 63   |
|                             |             | XW2B-□□X5  | Multi-pole square connector socket (made by Honda Tsushin Kogyo) |   |  |
| PCB I/O connector           | XW2B-40F5-P | PCB I/O connector plug (made by Fujitsu)                       | M3.5 screw terminals   |   | 65   |

## ■ Specifications

| Item                  | Flat-cable connector                                    | Multi-pole square connector | PCB I/O connector |
|-----------------------|---|-----------------------------|-------------------|
|                       | XW2B-□□G□   | XW2B-□□Y□                   | XW2B-40F5-P       |
| Rated current         | 1 A   |                             |                   |
| Rated voltage         | 125 VAC   |                             |                   |
| Insulation resistance | 100 MΩ min. (at 500 VDC)                                |                             |                   |
| Dielectric strength   | 500 VAC for 1 min (with a current leakage of 1 mA max.) |                             |                   |
| Enclosure rating      | IP00  |                             |                   |
| Electrical protection | Class 0   |                             |                   |
| Ambient temperature   | Operating: –25°C to 80°C                                |                             |                   |

**Among the XW2B Series, the use of two Connector–Terminal Conversion Unit models for the 32-point I/O Unit saves the most wiring effort and space.**



# XW2B Flat-cable Connector Type with M3 Screw Terminals

## Ordering Information

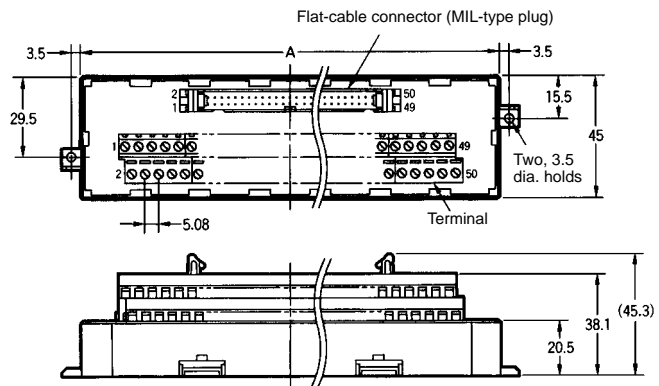
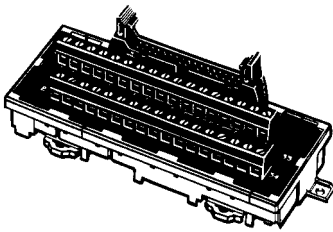
| No. of contacts | Model     |
|-----------------|-----------|
| 20              | XW2B-20G4 |
| 34              | XW2B-34G4 |
| 40              | XW2B-40G4 |
| 50              | XW2B-50G4 |

| Model     | Connector                            |               |  |                         |
|-----------|--------------------------------------|---------------|--|-------------------------|
|           | Flat-cable connector MIL-type socket |               | Discrete-wire IDC connector 2-row socket |                         |
|           | Connector                            | Strain relief | Connector (See note 1)                   | Semi-cover (See note 2) |
| XW2B-20G4 | XG4M-2030                            | XG4T-2004     | XG5M-2032-N<br>XG5M-2035-N               | XG5S-1001               |
| XW2B-34G4 | XG4M-3430                            | XG4T-3404     | XG5M-3432-N<br>XG5M-3435-N               | XG5S-1701               |
| XW2B-40G4 | XG4M-4030                            | XG4T-4004     | XG5M-4032-N<br>XG5M-4035-N               | XG5S-2001               |
| XW2B-50G4 | XG4M-5030                            | XG4T-5004     | XG5M-5032-N<br>XG5M-5035-N               | XG5S-2501               |

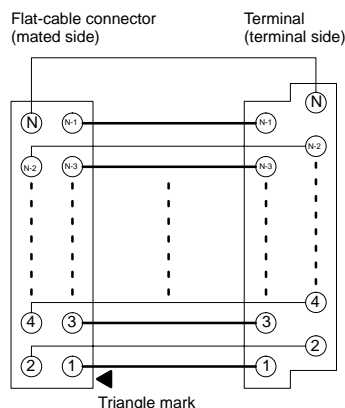
**Note:** 1. The XG5M-□□32-N or the XG5M-□□35-N may be used.  
2. Each connector requires two semi-covers.

## Dimensions

### XW2B-□□G4



### Connection Diagram



| Model     | No. of contacts | Length of A | Connector (See note 1) |
|-----------|-----------------|-------------|------------------------|
| XW2B-20G4 | 20              | 67.5        | XG4A-2031              |
| XW2B-34G4 | 34              | 112.5       | XG4A-3431              |
| XW2B-40G4 | 40              | 135.0       | XG4A-4031              |
| XW2B-50G4 | 50              | 157.5       | XG4A-5031              |

**Note:** 1. The flat-cable connector has one polarity slot.  
2. The contact pitch of the terminals is 5.08 mm.  
Use AWG22 to AWG16 wire, which is 0.3 to 1.25 mm<sup>2</sup> thick.  
The size of the wire inlet is 2.5 x 1.8 (W x H) mm.

Refer to the connection diagrams on pages 72 to 76 when connecting the PC through a dedicated cable.

## Dedicated Cables

Refer to pages 68 to 71.

# XW2B Flat-cable Connector Type with M3.5 Screw Terminals

## Ordering Information

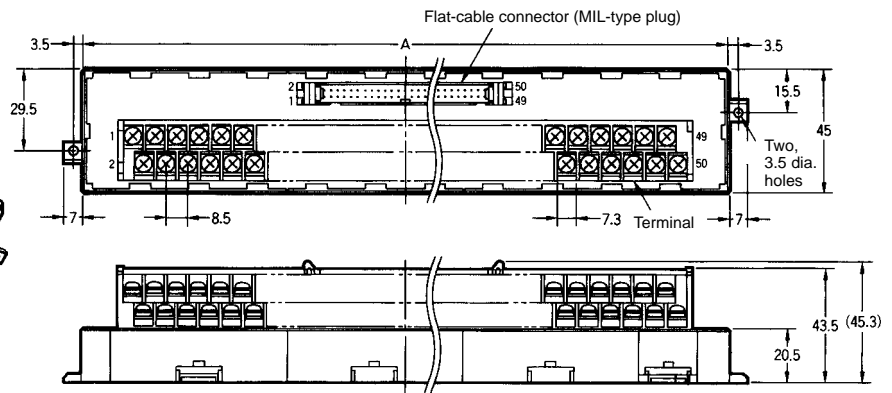
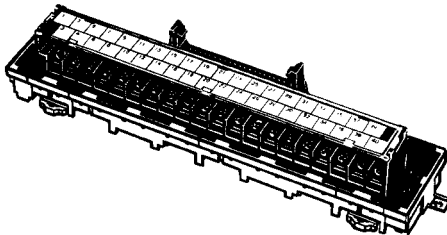
| No. of contacts | Model     |
|-----------------|-----------|
| 20              | XW2B-20G5 |
| 34              | XW2B-34G5 |
| 40              | XW2B-40G5 |
| 50              | XW2B-50G5 |

| Model     | Connector                            |               |  |                         |
|-----------|--------------------------------------|---------------|--|-------------------------|
|           | Flat-cable connector MIL-type socket |               | Discrete-wire IDC connector 2-row socket |                         |
|           | Connector                            | Strain relief | Connector (See note 1)                   | Semi-cover (See note 2) |
| XW2B-20G5 | XG4M-2030                            | XG4T-2004     | XG5M-2032-N<br>XG5M-2035-N               | XG5S-1001               |
| XW2B-34G5 | XG4M-3430                            | XG4T-3404     | XG5M-3432-N<br>XG5M-3435-N               | XG5S-1701               |
| XW2B-40G5 | XG4M-4030                            | XG4T-4004     | XG5M-4032-N<br>XG5M-4035-N               | XG5S-2001               |
| XW2B-50G5 | XG4M-5030                            | XG4T-5004     | XG5M-5032-N<br>XG5M-5035-N               | XG5S-2501               |

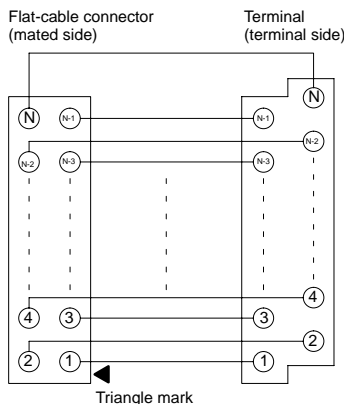
- Note:** 1. Either the XG5M-□□32-N or the XG5M-□□35-N may be used.  
 2. Each connector requires two semi-covers.

## Dimensions

### XW2B-□□G5



### Connection Diagram



| Model     | No. of contacts | Length of A | Connector (See note) |
|-----------|-----------------|-------------|----------------------|
| XW2B-20G5 | 20              | 112.5       | XG4A-2031            |
| XW2B-34G5 | 34              | 180.0       | XG4A-3431            |
| XW2B-40G5 | 40              | 202.5       | XG4A-4031            |
| XW2B-50G5 | 50              | 247.5       | XG4A-5031            |

- Note:** 1. The flat-cable connector has one polarity slot.  
 2. The contact pitch of the terminals is 8.5 mm.

Refer to the connection diagrams on pages 72 to 76 when connecting the PC through a dedicated cable.

## Dedicated Cables

Refer to pages 68 to 71.

# XW2B Twin Connector Type with M3.5 Screw Terminals

## Ordering Information

| Model       | No. of contacts (See note 1) | Connector (See note 2) |
|-------------|------------------------------|------------------------|
| XW2B-40G5-T | 40                           | XG4A-2031              |

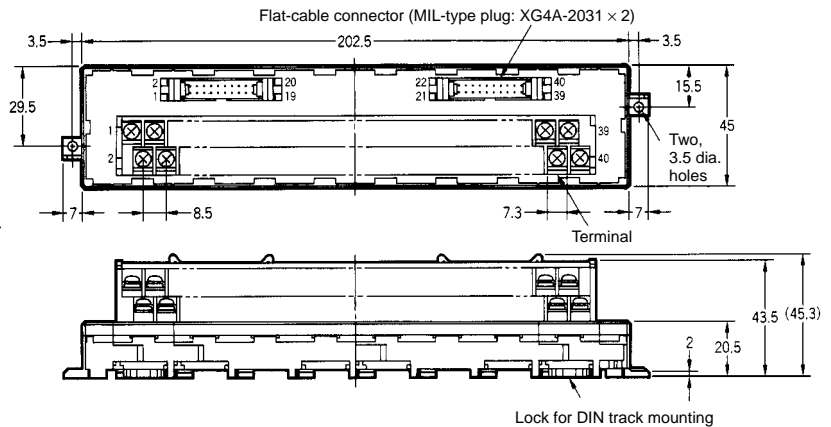
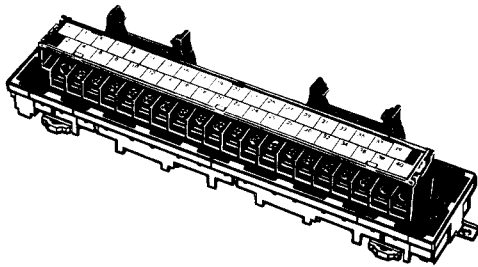
- Note:**
- The number of contacts indicates the number of poles of the terminal block.
  - The flat-cable connector has one polarity slot.
  - The contact pitch of the terminals is 8.5 mm.

| Model       | Connector                               |  |                         |
|-------------|---|--|-------------------------|
|             | Flat-cable connector<br>MIL-type socket | Discrete-wire IDC connector 2-row socket |                         |
|             | Strain relief                           | Connector (See note 1)                   | Semi-cover (See note 2) |
| XW2B-40G5-T | XG4M-2030-T                             | XG5M-2032-N<br>XG5M-2035-N               | XG5S-1001               |

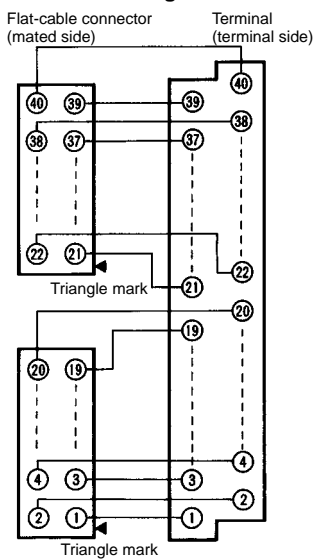
- Note:**
- Either the XG5M-□□32-N or the XG5M-□□35-N may be used.
  - Each connector requires two semi-covers.

## Dimensions

### XW2B-40G5-T



### Connection Diagram



## Dedicated Cables

Refer to pages 68 to 71.

# XW2B Daisy Chain Type with M3.5 Screw Terminals

## Ordering Information

| Model       | No. of contacts (See note 1) | Connector (See note 2) |
|-------------|------------------------------|------------------------|
| XW2B-20G5-D | 20                           | XG4A-2031              |

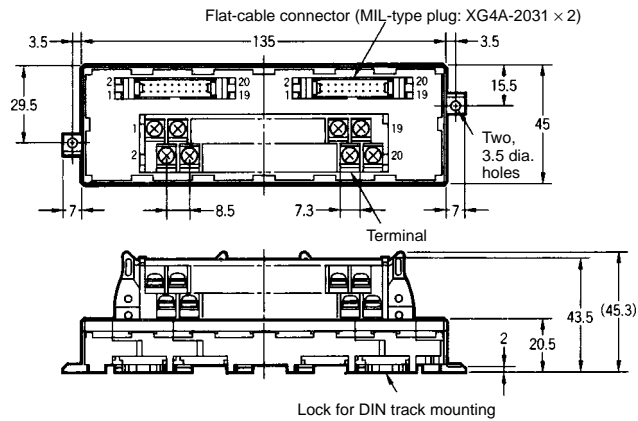
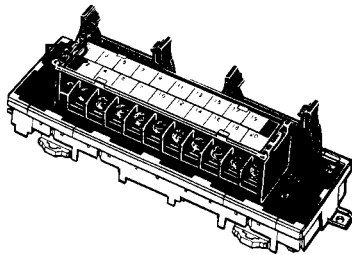
- Note:**
- The number of contacts indicates the number of poles of the terminal block.
  - The flat-cable connector has one polarity slot.
  - The contact pitch of the terminals is 8.5 mm.

| Model       | Connector                               |  |                         |
|-------------|---|--|-------------------------|
|             | Flat-cable connector<br>MIL-type socket | Discrete-wire IDC connector 2-row socket |                         |
|             | Strain relief                           | Connector (See note 1)                   | Semi-cover (See note 2) |
| XW2B-20G5-D | XG4M-2030-T                             | XG5M-2032-N<br>XG5M-2035-N               | XG5S-1001               |

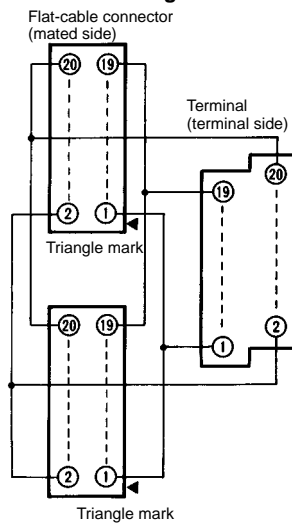
- Note:**
- Either the XG5M-□□32-N or the XG5M-□□35-N may be used.
  - Each connector requires two semi-covers.

## Dimensions

### XW2B-20G5-D



### Connection Diagram



## Dedicated Cables

Refer to pages 68 to 71.

**Note:** Contact your OMRON representatives for cables used with the XW2B.

# XW2B Multi-pole Square Connector Plug Type with M3 Screw Terminals

## Ordering Information

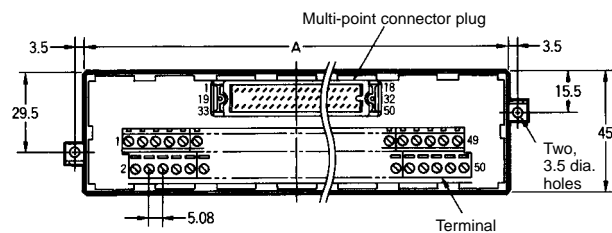
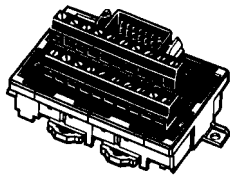
| No. of contacts | Model     |
|-----------------|-----------|
| 20              | XW2B-20Y4 |
| 34              | XW2B-34Y4 |
| 50              | XW2B-50Y4 |

| Model     | Connector (See note 1)   | Hood (See note 1) |
|-----------|--|-------------------|
| XW2B-20Y4 | MR-20F (soldering)<br>MRP-20F01 (crimp terminals) (see note 2)<br>MR-20FW (wrapping) | MR-20L            |
| XW2B-34Y4 | MR-34F (soldering)<br>MRP-34F01 (crimp terminals) (see note 2)<br>MR-34FW (wrapping) | MR-34L            |
| XW2B-50Y4 | MR-50F (soldering)<br>MRP-50F01 (crimp terminals) (see note 2)<br>MR-50FW (wrapping) | MR-50L            |

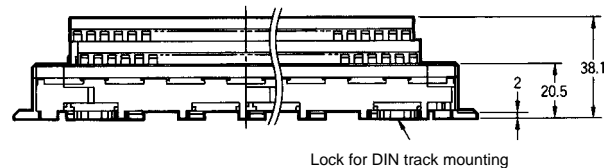
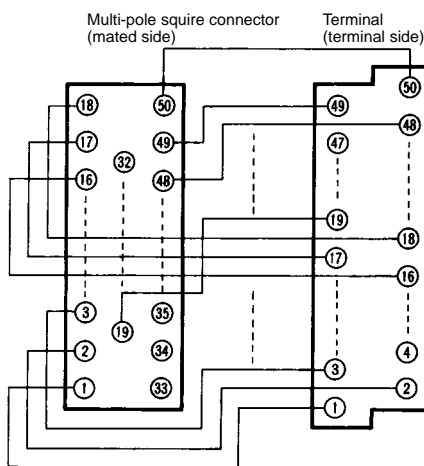
- Note:** 1. All the connectors and hoods are made by Honda Tsushin Kogyo.  
2. Use Honda Tsushin Kogyo's MRP-F113 or MRP-F103 crimp terminals.

## Dimensions

XW2B-□□Y4



### Connection Diagram (with 50 Poles)



- Note:** As shown in the above connection diagram, each terminal of the multi-pole square connector is wired to the corresponding terminal of the terminal block.

| Model     | No. of contacts | Length of A | Connector (See note 1) |
|-----------|-----------------|-------------|------------------------|
| XW2B-20Y4 | 20              | 67.5        | MR-20RMD2              |
| XW2B-34Y4 | 34              | 112.5       | MR-34RMD2              |
| XW2B-50Y4 | 50              | 157.5       | MR-50RMD2              |

- Note:** 1. The connectors are made by Honda Tsushin Kogyo.  
2. The contact pitch of the terminals is 5.08 mm.  
Use AWG22 to AWG16 wire, which is 0.3 to 1.25 mm thick.  
The size of the wire inlet is 2.5 x 1.8 (W x H) mm.

# XW2B Multi-pole Square Connector Plug Type with M3.5 Screw Terminals

## Ordering Information

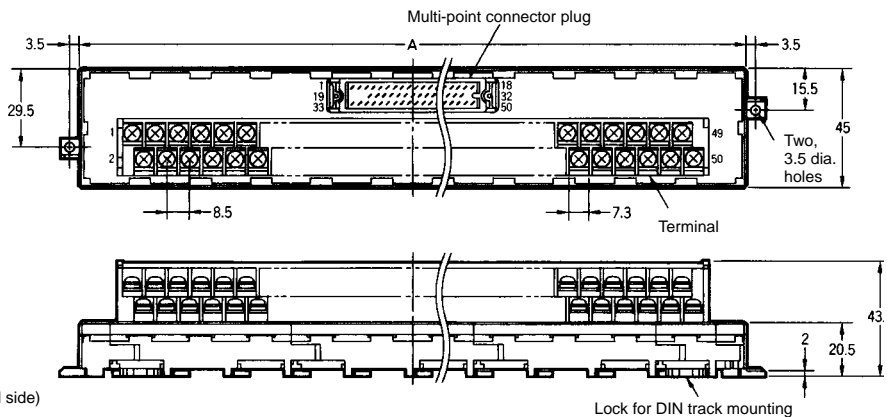
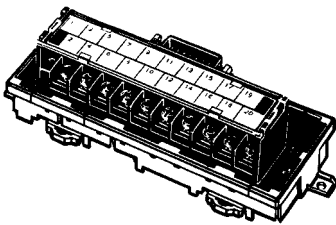
| No. of contacts | Model     |
|-----------------|-----------|
| 20              | XW2B-20Y5 |
| 34              | XW2B-34Y5 |
| 50              | XW2B-50Y5 |

| Model     | Connector (See note 1)   | Hood (See note 1) |
|-----------|--|-------------------|
| XW2B-20Y5 | MR-20F (soldering)<br>MRP-20F01 (crimp terminals) (see note 2)<br>MR-20FW (wrapping) | MR-20L            |
| XW2B-34Y5 | MR-34F (soldering)<br>MRP-34F01 (crimp terminals) (see note 2)<br>MR-34FW (wrapping) | MR-34L            |
| XW2B-50Y5 | MR-50F (soldering)<br>MRP-50F01 (crimp terminals) (see note 2)<br>MR-50FW (wrapping) | MR-50L            |

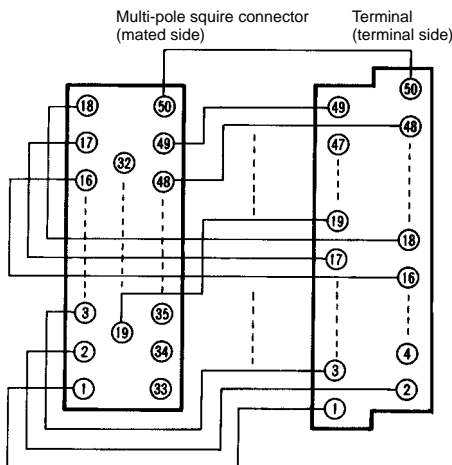
- Note:** 1. All the connectors and hoods are made by Honda Tsushin Kogyo.  
 2. Use Honda Tsushin Kogyo's MRP-F113 or MRP-F103 crimp terminals.

## Dimensions

XW2B-□□Y5



Connection Diagram (with 50 Poles)



- Note:** As shown in the above connection diagram, each terminal of the multi-pole square connector is wired to the corresponding terminal of the terminal block.

| Model     | No. of contacts | Length of A | Connector (See note 1) |
|-----------|-----------------|-------------|------------------------|
| XW2B-20Y5 | 20              | 112.5       | MR-20RMD2              |
| XW2B-34Y5 | 34              | 180.0       | MR-34RMD2              |
| XW2B-50Y5 | 50              | 247.5       | MR-50RMD2              |

- Note:** 1. The connectors are made by Honda Tsushin Kogyo.  
 2. The contact pitch of the terminals is 8.5 mm.



# XW2B Multi-pole Square Connector Socket Type with M3.5 Screw Terminals

## Ordering Information

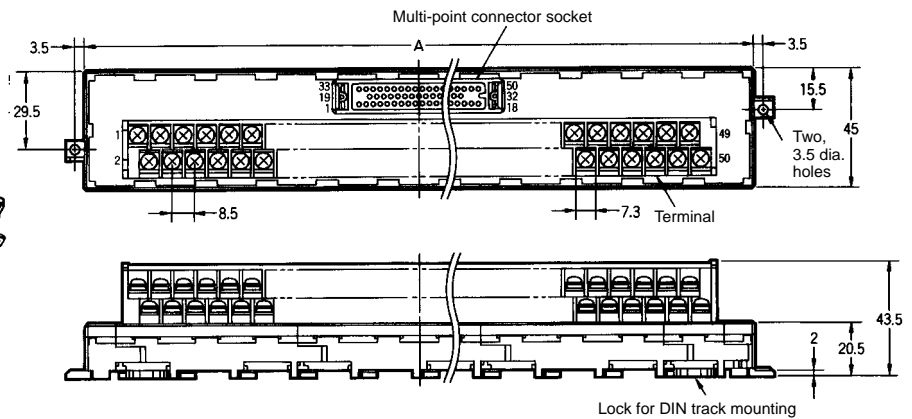
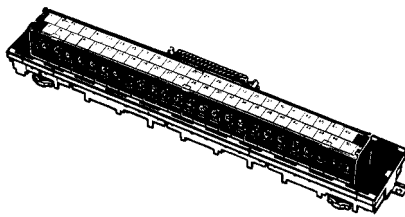
| No. of contacts | Model     |
|-----------------|-----------|
| 20              | XW2B-20X5 |
| 34              | XW2B-34X5 |
| 50              | XW2B-50X5 |

| Model     | Connector (See note 1)   | Hood (See note 1) |
|-----------|--|-------------------|
| XW2B-20X5 | MR-20M (soldering)<br>MRP-20M01 (crimp terminals) (see note 2)<br>MR-20MW (wrapping) | MR-20L            |
| XW2B-34X5 | MR-34M (soldering)<br>MRP-34M01 (crimp terminals) (see note 2)<br>MR-34MW (wrapping) | MR-34L            |
| XW2B-50X5 | MR-50M (soldering)<br>MRP-50M01 (crimp terminals) (see note 2)<br>MR-50MW (wrapping) | MR-50L            |

- Note:** 1. All the connectors and hoods are made by Honda Tsushin Kogyo.  
 2. Use Honda Tsushin Kogyo's MRP-F113 or MRP-F103 crimp terminals.

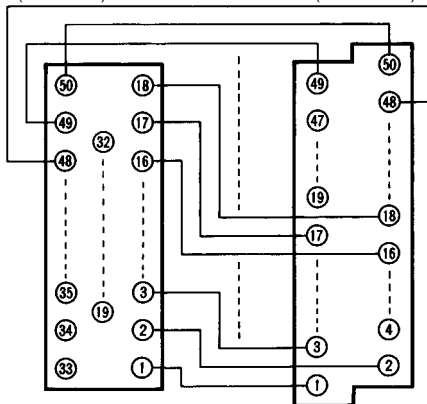
## Dimensions

XW2B-□□X5



Connection Diagram (with 50 Poles)

Multi-pole square connector (mated side)      Terminal (terminal side)



- Note:** As shown in the above connection diagram, each terminal of the multi-pole square connector is wired to the corresponding terminal of the terminal block.

| Model     | No. of contacts | Length of A | Connector (See note) |
|-----------|-----------------|-------------|----------------------|
| XW2B-20X5 | 20              | 112.5       | MR-20RFD2            |
| XW2B-34X5 | 34              | 180.0       | MR-34RFD2            |
| XW2B-50X5 | 50              | 247.5       | MR-50RFD2            |

- Note:** 1. The connectors are made by Honda Tsushin Kogyo.  
 2. The contact pitch of the terminals is 8.5 mm.

# XW2B PCB I/O Connector Type with M3.5 Screw Terminals

## ■ Ordering Information

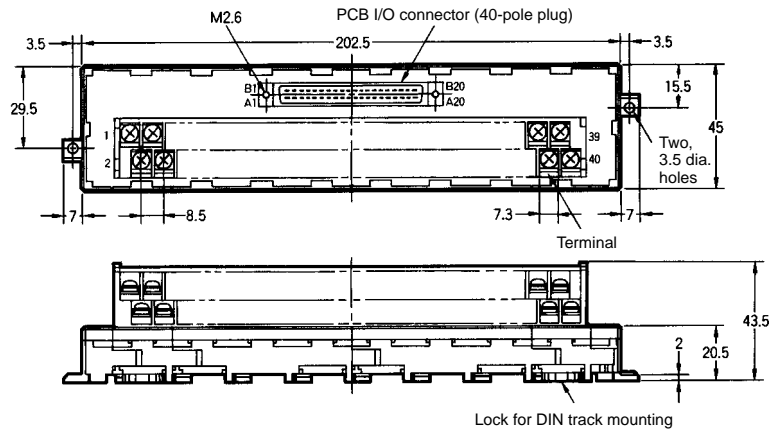
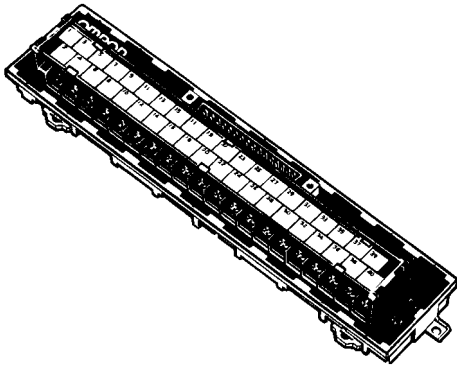
| No. of contacts | Model       |
|-----------------|-------------|
| 40              | XW2B-40F5-P |

| Model       | Connector (40-pole socket) (See note 1)                        | Cover (See note 1) |
|-------------|--|--------------------|
| XW2B-40F5-P | FCN-361J040-AU (soldering)<br>FCN-363J040-AU (crimp terminals) | FCN-360C040-B      |

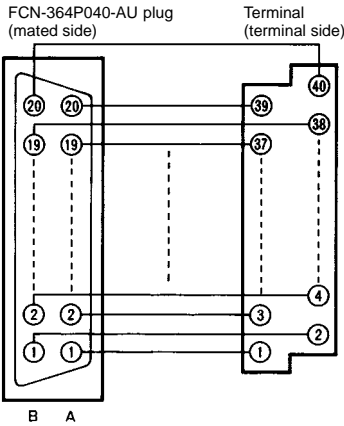
- Note:** 1. All the connectors and hoods are made by Fujitsu.  
 2. For the special connecting cable between the XW2B-40F5-P and the AC Servo Driver (U Series), refer to the OMNUC U-series User's Manuals.

## ■ Dimensions

### XW2B-40F5-P



### Connection Diagram



| Model     | No. of contacts | Connector and circuits (See note)                       |
|-----------|-----------------|---|
| XW2B-40F5 | 40              | FCN-364P40-AU (connector)<br>FCN-360A1 (fixing bracket) |

**Note:** The connectors are made by Fujitsu. The contact pitch of the terminals is 5.08 mm.

## ■ Precautions

### Wiring

Do not wire the Unit while power is supplied to the Unit, otherwise the terminals may be short-circuited with the cable and the Unit may malfunction.

Do not connect or disconnect the connector while power is supplied to the Unit, otherwise the Unit may malfunction.

### Terminal Wire Connections

Follow the instructions below to connect the wires directly to the M3 screw terminals:

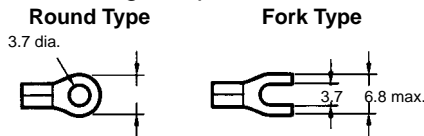
The diameter of each wire must be 0.3 to 1.25 mm<sup>2</sup> (AWG22 to AWG16).

The tip of each wire must be prepared as follows:



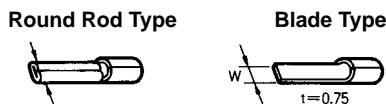
The wire insertion mouth of the M3 screw terminals is 1.8 x 2.5 (H x W) mm.

The wires can be connected to the M3.5 screw terminal via the following crimp terminals:



| Applicable crimp terminal | Applicable wire |  |
|---------------------------|-----------------|--|
| Round type                | 1.25-3.5        | AWG22-16 (0.30 to 1.25 mm <sup>2</sup> ) |
|                           | 2-3.5           | AWG16-14 (1.25 to 2.0 mm <sup>2</sup> )  |
| Fork type                 | 1.25Y-3.5       | AWG22-16 (0.30 to 1.25 mm <sup>2</sup> ) |
|                           | 2Y-3.5          | AWG16-14 (1.25 to 2.0 mm <sup>2</sup> )  |

The wires can be connected to the M3 screw terminal via the following crimp terminals:



| Applicable crimp terminal | Applicable wire                      |  |
|---------------------------|--------------------------------------|--|
| Round rod type            | TC-05<br>φ = 1                       | AWG22-18 (0.30 to 0.75 mm <sup>2</sup> ) |
|                           | TC-1.25S<br>φ = 1.5                  | AWG22-16 (0.30 to 1.25 mm <sup>2</sup> ) |
| Blade type                | BT1.25-9-1<br>BT1.25-10-1<br>W = 2.2 | AWG22-16 (0.30 to 1.25 mm <sup>2</sup> ) |

**Note:** The crimp terminals of round and blade types are made by Nichifu.

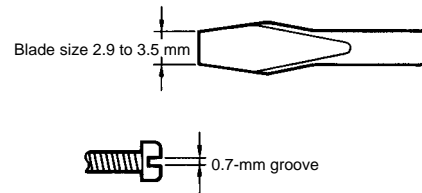
### Terminal Screw Tightening Torque

When the wires with or without crimp terminals are connected to the terminal, apply the following tightening torque to screw in the wires or the crimp terminals.

| Terminal   | Tightening torque kgf • cm (N • m) |
|------------|------------------------------------|
| M3 screw   | 4 (0.40)                           |
| M3.5 screw | 6 (0.59)                           |

Apply the following flat-blade screwdriver to the M3 terminal blocks.

### Mounting

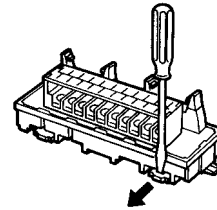


### Dismounting

More than one XW2B Connector–Terminal Connection Unit can be densely mounted to a DIN track. The mounting stays on both sides of the XW2B can be moved to the bottom side of the XW2B.

Secure both ends of the XW2B with end plates.

When dismantling the XW2B from the DIN track, apply a flat-blade screwdriver to the sliding part, unlock the XW2B, and pull the XW2B as shown in the following.





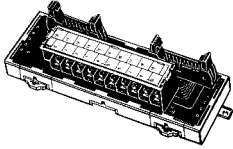
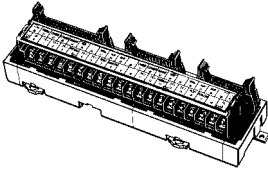
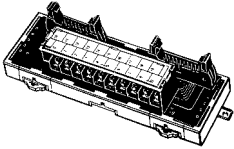
# Servo Terminal Unit

# XW2B

## Terminal Unit with Connector and Terminal Block Connects the Servo Driver to the Position Control Unit with Minimal Wiring Effort

- Relays control signals between the Servo Driver and the Position Control Unit or CQM1 PC (with a built-in pulse I/O function) with minimal wiring effort.
- Connectors are wired with a single screwdriver and no soldering is required.
- Dedicated Cable connects Units.
- Only 24 VDC is required for control signal use.
- Terminal block saves space and uses M3.0 screws.
- Easily mounts to DIN track or via screws.

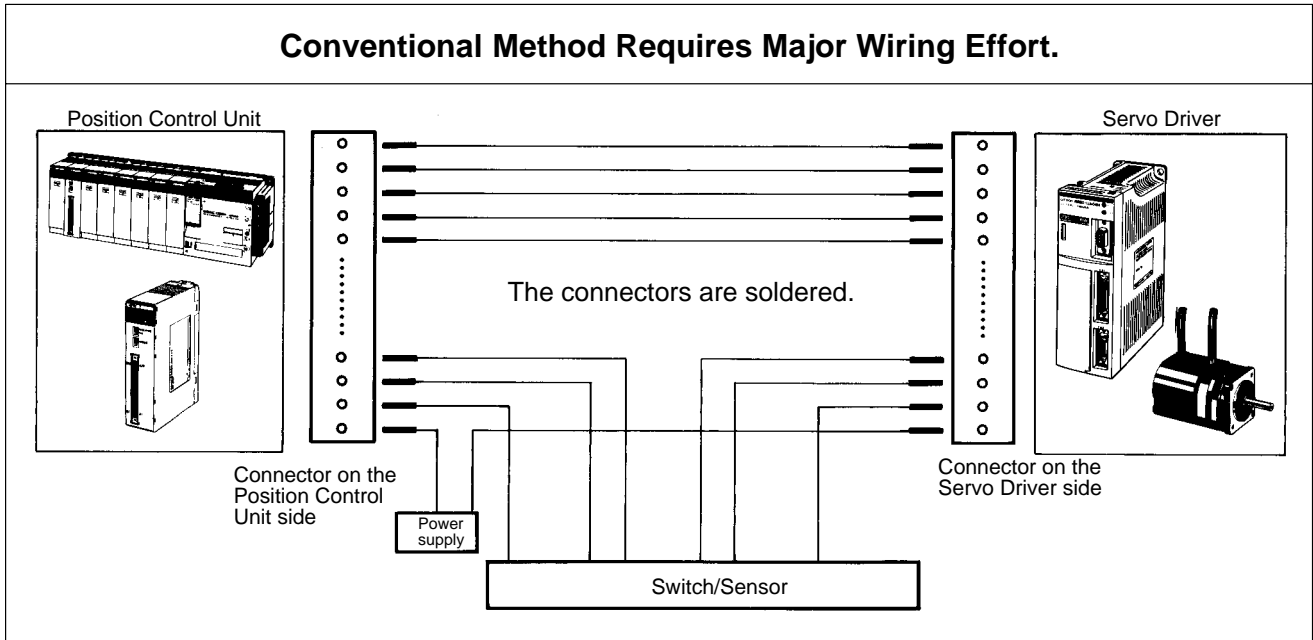
### ■ Ordering Information

| Applicable Servo Driver  | Applicable Position Control Unit/CQM1       | Servo Terminal Unit | Appearance   | Reference page |
|--|---|---------------------|--|----------------|
| U-series R88D-UP□□□<br>R88D-UT□□□□<br>R88D-UJP□□□□<br>M-series R88D-MT□□<br>H-series R88D-H□□□ | C200H-NC112<br>C200HW-NC113                 | XW2B-20J6-1B        |    | 81             |
|  | C200H-NC211<br>C200HW-NC213<br>C200HW-NC413 | XW2B-40J6-2B        |   | 83             |
|  | CQM1-CPU43                                  | XW2B-20J6-3B        |  | 85             |

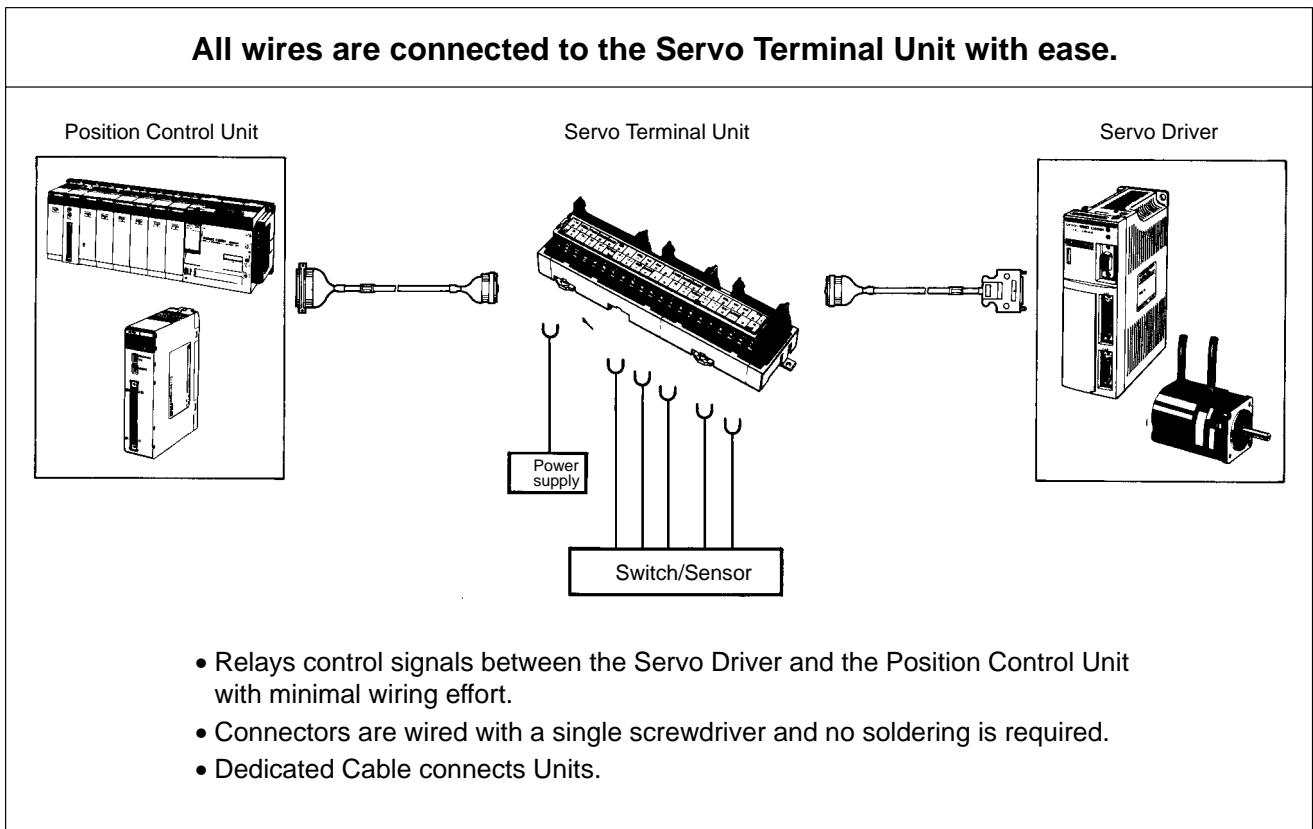
### ■ Specifications

| Item                  | XW2B-□□J6-□   |
|-----------------------|---|
| Rated current         | 1 A (at a temperature of 30°C max.)                     |
| Rated voltage         | 24 VDC  |
| Insulation resistance | 5 MΩ min. (at 500 VDC)                                  |
| Dielectric strength   | 500 VAC for 1 min (with a current leakage of 1 mA max.) |
| Enclosure rating      | IP00  |
| Electrical protection | Class 0   |
| Ambient temperature   | Operating: 0°C to 55°C                                  |

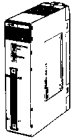


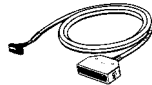

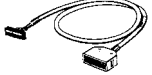
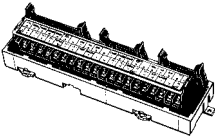
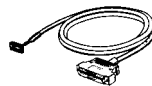

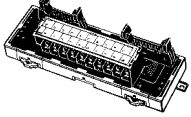
# Ideal for Wiring the Servo Driver and Position Control Unit



## Servo Terminal Unit



### ■Combinations of the Servo Terminal Unit, Servo Driver, Position Control Unit, and CQM1 PC

| Position Control Unit, and CQM1   | Cable on the Position Control Unit side   | Servo Terminal Unit   | Cable on the Servo Driver side   | Servo Driver  |
|---|---|---|--|---|
|    |                    |                    | (see note 2, 3 and 5)<br>   |    |
| Position Control Unit (for one axis) for C200H                                      | Cable for C200H-NC112   | Servo Terminal Unit for C200H-NC112   | U-series Cable   | U-series Servo Driver   |
| C200H-NC112   | XW2Z-□□□J-A1<br>XW2Z-□□□J-A4 (For R88D-U□□□)  | XW2B-20J6-1B (see note 1)   | XW2Z-□□□J-B1<br>XW2Z-□□□J-B4<br>XW2Z-□□□J-B5   | R88D-UP□□□<br>R88D-UT□□□<br>R88D-U□□□ (see note 4)                                    |
|    |                    |                    | (see note 2, 3 and 5)<br> |  |
| Position Control Unit (for one axis) for C200H                                      | Cable for C200HW-NC113  | Servo Terminal Unit for C200HW-NC113  | M-series Cable   | M-series Servo Driver   |
| C200HW-NC113  | XW2Z-□□□J-A6<br>XW2Z-□□□J-A8 (For R88D-U□□□)  | XW2B-20J6-1B (see note 1)   | XW2Z-□□□J-B2   | R88D-MT□□□  |
|  |                  |                  | (see note 2, 3 and 5)<br> |  |
| Position Control Unit (for two axes) for C200H                                      | Cable for C200H-NC211   | Servo Terminal Unit for C200H-NC211   | H-series Cable   | H-series Servo Driver   |
| C200H-NC211   | XW2Z-□□□J-A2<br>XW2Z-□□□J-A5 (For R88D-U□□□)  | XW2B-40J6-2B (see note 1)   | XW2Z-□□□J-B3   | R88D-H□□□   |
|  | (see note 5)<br> | (see note 5)<br> | (see note 2, 3 and 5)<br> |  |
| Position Control Unit (for two axes/four axes) for C200HW                           | Cable for C200HW-NC213 (two axes) and C200HW-NC413 (four axes)                                      | Servo Terminal Unit for C200HW-NC213 (two axes) and C200HW-NC413 (four axes)                        | U-series Cable   | U-series Servo Driver   |
| C200HW-NC213<br>C200HW-NC413  | XW2Z-□□□J-A7<br>XW2Z-□□□J-A9 (For R88D-U□□□)  | XW2B-40J6-2B (see note 5)   |  |   |
|  | (see note 3)<br> | (see note 3)<br> | (see note 2, 3 and 5)<br> |  |
| CQM1 (for one/two axes)   | Cable for CQM1-CPU43-EV1  | Servo Terminal Unit for CQM1-CPU43-EV1  | H-series Cable   | H-series Servo Driver   |
| CQM1-CPU43  | XW2Z-□□□J-A3  | XW2B-20J6-3 (see note 1)  |  |   |

- Note:**
- Has the functions of the conventional XW2B-20J6-1, XW2B-40J6-2, and XW2B-20J6-3 and can be connected to the R88D-U□□□.
  - Two cables will be required on the Servo Driver side if the C200H-NC211 (for two axes) is used.
  - Two cables each will be required on the Servo Terminal Unit and Position Control Unit side and on the Servo Driver side if the CQM1-CPU43-EV1 is used for two axes.
  - Use the XW2Z-□□□J-A4 Cable when connecting to the C200H-NC112 and use the XW2Z-□□□J-A5 Cable when connecting to the C200H-NC211.
  - Two cables each will be required on the Servo Terminal Unit and Position Control Unit side and on the Servo Driver side if the C200HW-NC413 (four axes) is used.

■ Applicable Cables

| Position Control Units       | Connecting Cables | Servo Terminal Units | Connecting Cables | Servo Drivers |
|------------------------------|-------------------|----------------------|-------------------|---------------|
| C200H-NC112                  | XW2Z-□□□J-A1      | XW2B-20J6-1B         | XW2Z-□□□J-B1      | R88D-UP□□□    |
|                              |                   |                      | XW2Z-□□□J-B2      | R88D-MT□□     |
|                              |                   |                      | XW2Z-□□□J-B3      | R88D-H□□□     |
|                              |                   |                      | XW2Z-□□□J-B4      | R88D-UT□□□    |
|                              | XW2Z-□□□J-A4      | XW2B-20J6-1B         | XW2Z-□□□J-B5      | R88D-UEP□□□   |
| C200H-NC211                  | XW2Z-□□□J-A2      | XW2B-40J6-2B         | XW2Z-□□□J-B1      | R88D-UP□□□    |
|                              |                   |                      | XW2Z-□□□J-B2      | R88D-MT□□     |
|                              |                   |                      | XW2Z-□□□J-B3      | R88D-H□□□     |
|                              |                   |                      | XW2Z-□□□J-B4      | R88D-UT□□□    |
|                              | XW2Z-□□□J-A5      | XW2B-40J6-2B         | XW2Z-□□□J-B5      | R88D-UEP□□□   |
| CQM1-CPU43                   | XW2Z-□□□J-A3      | XW2B-20J6-3B         | XW2Z-□□□J-B1      | R88D-UP□□□    |
|                              |                   |                      | XW2Z-□□□J-B2      | R88D-MT□□     |
|                              |                   |                      | XW2Z-□□□J-B3      | R88D-H□□□     |
|                              |                   |                      | XW2Z-□□□J-B4      | R88D-UT□□□    |
|                              |                   |                      | XW2Z-□□□J-B5      | R88D-UEP□□□   |
| C200HW-NC113                 | XW2Z-□□□J-A6      | XW2B-20J6-1B         | XW2Z-□□□J-B1      | R88D-UP□□□    |
|                              |                   |                      | XW2Z-□□□J-B2      | R88D-MT□□     |
|                              |                   |                      | XW2Z-□□□J-B3      | R88D-H□□□     |
|                              |                   |                      | XW2Z-□□□J-B4      | R88D-UT□□□    |
|                              | XW2Z-□□□J-A8      | XW2B-20J6-1B         | XW2Z-□□□J-B5      | R88D-UEP□□□   |
| C200HW-NC213<br>C200HW-NC413 | XW2Z-□□□J-A7      | XW2B-40J6-2B         | XW2Z-□□□J-B1      | R88D-UP□□□    |
|                              |                   |                      | XW2Z-□□□J-B2      | R88D-MT□□     |
|                              |                   |                      | XW2Z-□□□J-B3      | R88D-H□□□     |
|                              |                   |                      | XW2Z-□□□J-B4      | R88D-UT□□□    |
|                              | XW2Z-□□□J-A9      | XW2B-40J6-2B         | XW2Z-□□□J-B5      | R88D-UEP□□□   |

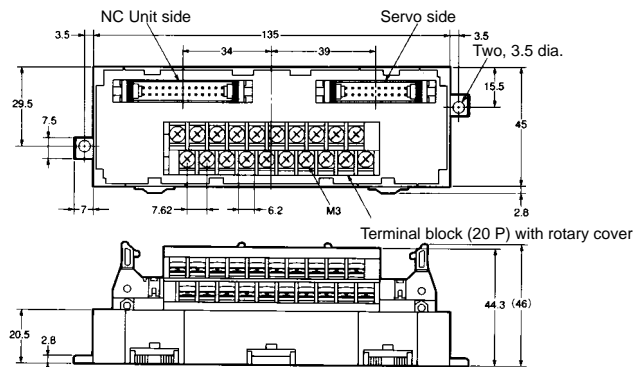
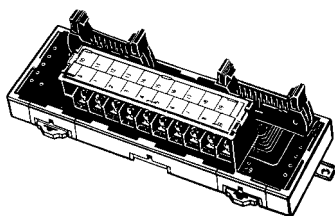
**XW2B Servo Terminal Unit with M3.0 Terminals for the C200H-NC112/C200HW-NC113**

■ Ordering Information

| Model        | Applicable Position Control Unit                          |
|--------------|---|
| XW2B-20J6-1B | C200H-NC112 (for one axis)<br>C200HW-NC113 (for one axis) |

■ Dimensions

XW2B-20J6-1B



**Note:** The terminal block has a terminal pitch of 7.62 mm.

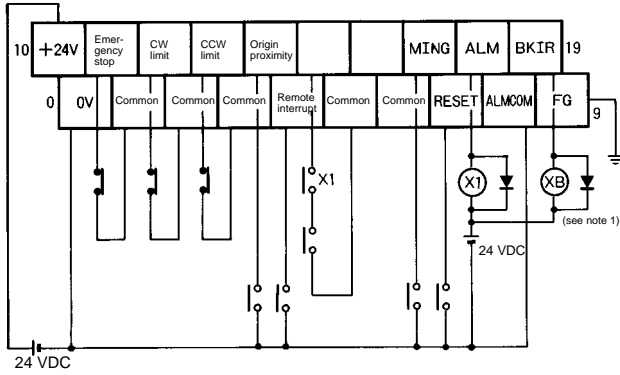
**Connecting to Terminal Block**

The terminal signal name varies with the Servo Driver. For details refer to the Operation Manual of the Servo Driver in use.

The Servo Terminal Unit is provided with terminal nameplates. Affix a nameplate corresponding to the Servo Driver onto the terminal cover.

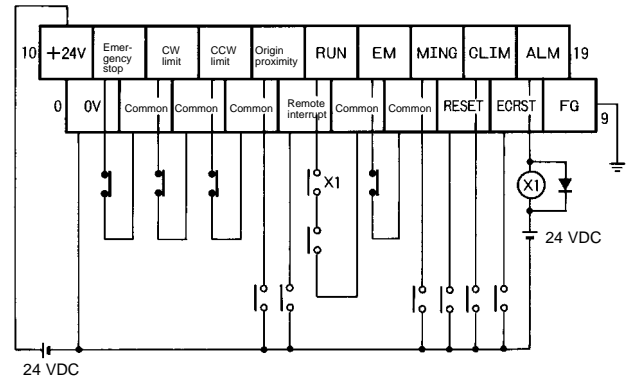


**NC112/NC113-U/UE Models**



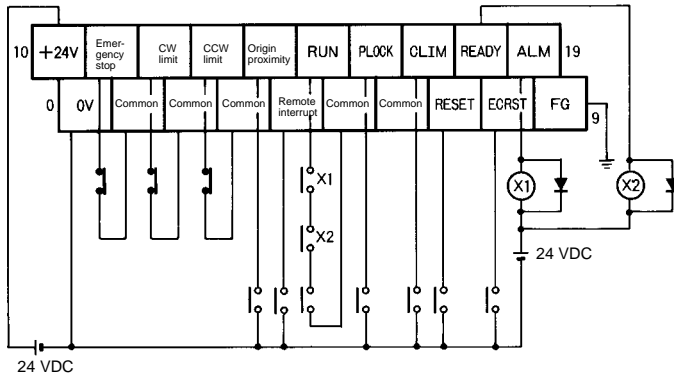
**Note:** Use mode 2 for origin search.

**NC112/NC113-M Models**



**Note:** Use mode 3 for origin search.

**NC112/NC113-H Models**



**Note:** Use mode 3 for origin search.

- Note:**
1. The XB contact is used to turn the electromagnetic brake on and off.
  2. The open terminal must be left unconnected.
  3. 0-V and common terminals are connected internally.
  4. The suitable crimp terminal is R1.25-3 (round or fork type).

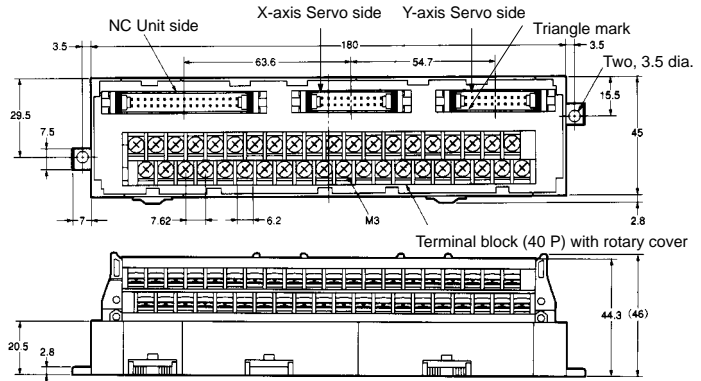
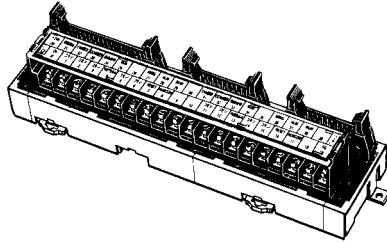
# XW2B Servo Terminal Unit with M3.0 Terminals for the C200H-NC211, C200HW-NC213, and C200HW-NC413

## ■ Ordering Information

| Model        | Applicable Position Control Unit  |
|--------------|---|
| XW2B-40J6-2B | C200H-NC211 (for two axes)<br>C200HW-NC213 (for two axes)<br>C200HW-NC413 (for four axes) |

## ■ Dimensions

XW2B-40J6-2B



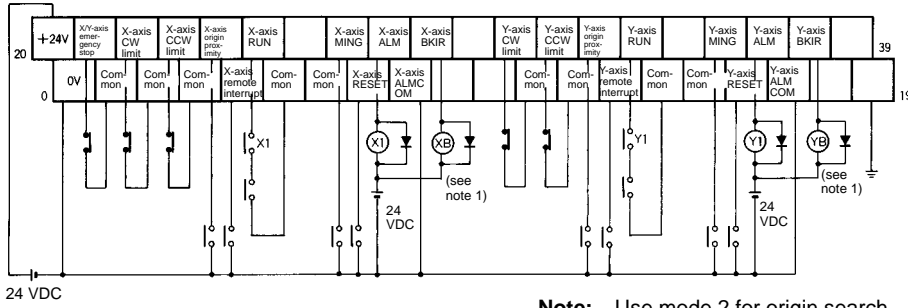
**Note:** The terminal block has a terminal pitch of 7.62 mm.

## Connecting to Terminal Block

The terminal signal name varies with the Servo Driver. For details refer to the Operation Manual of the Servo Driver in use

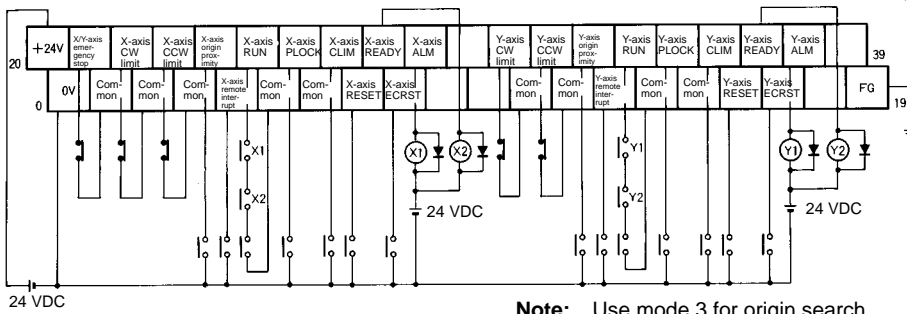
The Servo Terminal Unit is provided with terminal nameplates. Affix a nameplate corresponding to the Servo Driver onto the terminal cover.

NC211/213/413-U/UE Models



Note: Use mode 2 for origin search.

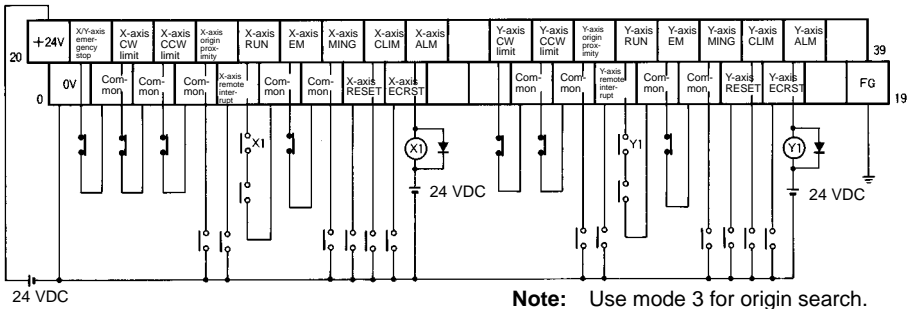
NC211/213/413-M Models



Note: Use mode 3 for origin search.

- Note:
1. The XB contact is used to turn the electromagnetic brake on and off.
  2. When only a single axis is used, short-circuit the unused axis' CW limit and CCW limit to the common terminal.
  3. The open terminal must be left unconnected.
  4. 0-V and common terminals are connected internally.
  5. The suitable crimp terminal is R1.25-3 (round or fork type).

NC211/213/413-H Models



Note: Use mode 3 for origin search.

# XW2B Servo Terminal Unit with M3.0 Terminals for the CQM1-CPU43-EV1

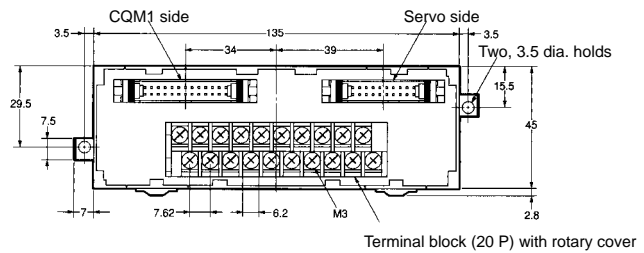
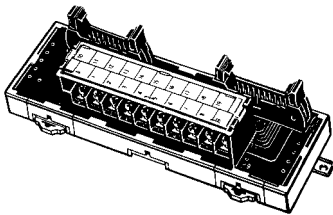
## Ordering Information

| Model        | Applicable CQM1                      |
|--------------|--------------------------------------|
| XW2B-20J6-3B | CQM1-CPU43-EV1 (for one or two axes) |

**Note:** Two Servo Terminal Units will be required if the CQM1-CPU43-EV1 is used for two axes.

## Dimensions

### XW2B-20J6-3B



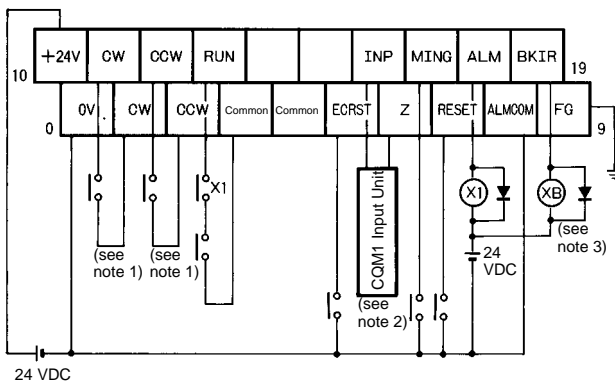
**Note:** The terminal block has a terminal pitch of 7.62 mm.

## Connecting to Terminal Block

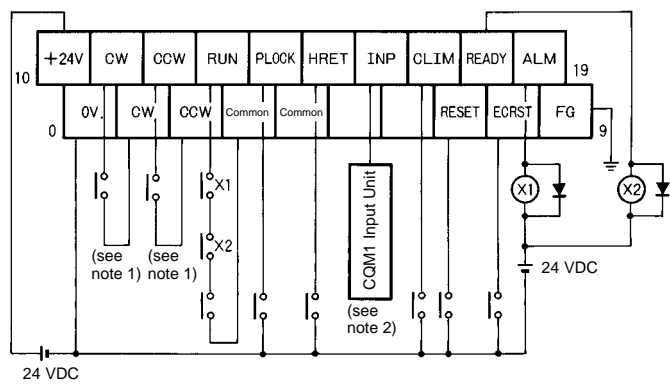
The terminal signal name varies with the Servo Driver. For details refer to the Operation Manual of the Servo Driver in use.

The Servo Terminal Unit is provided with terminal nameplates. Affix a nameplate corresponding to the Servo Driver onto the terminal cover.

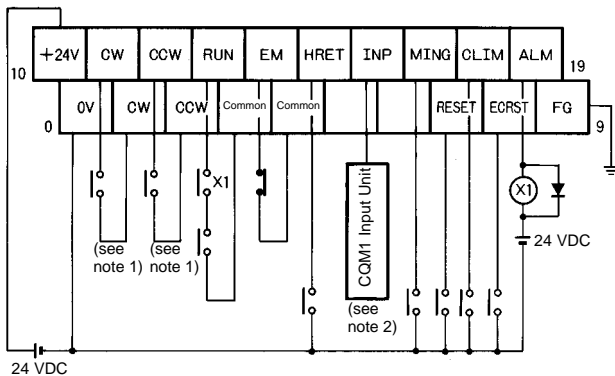
### CQM1-U Models



### CQM1-M Models



### CQM1-H Models



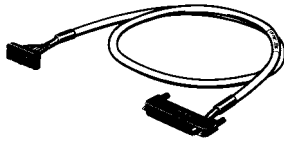
- Note:**
1. When this signal is input, the output pulses of the CQM1 can be input to the high-speed counters directly.
  2. Input this signal output to the CQM1 Input Unit.
  3. The XB contact is used to turn the electromagnetic brake on and off.
  4. Phase Z is an open collector output.
  5. The open terminal must be left unconnected.
  6. 0-V and common terminals are connected internally.
  7. The suitable crimp terminal is R1.25-3 (round or fork type).

# XW2Z Cable for Servo Terminal Unit

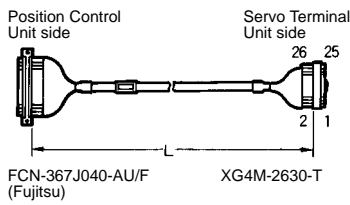
## Connecting the Position Control Unit/CQM1 and Servo Terminal Unit

### For C200H-NC112 Use

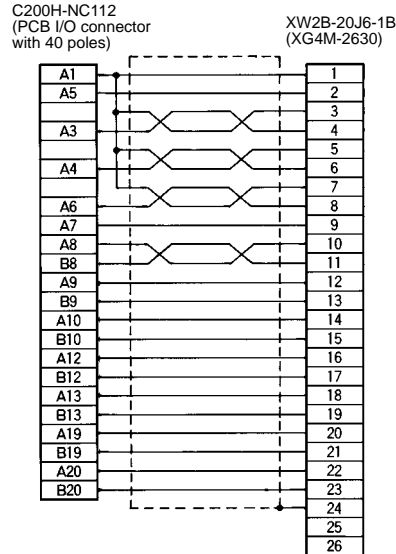
XW2Z-□□□J-A1  
 XW2Z-□□□J-A4  
 (R88D-UEP□□□)



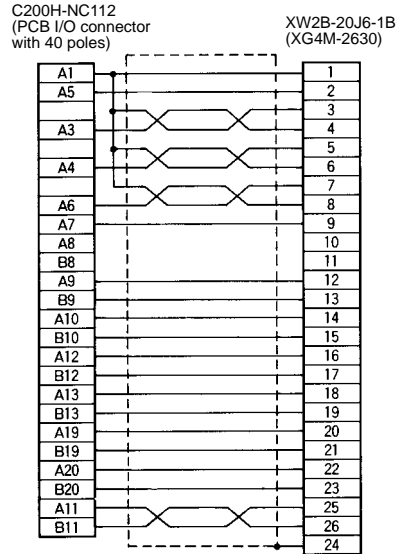
#### Connector



#### Wiring Diagram XW2Z-□□□J-A1



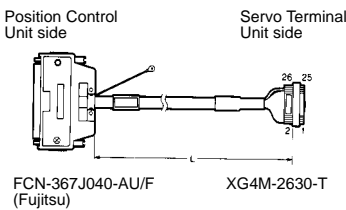
#### XW2Z-□□□J-A4



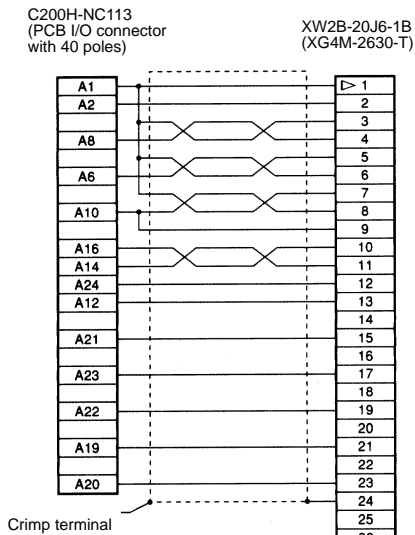
### For C200HW-NC113 Use

XW2Z-□□□J-A6  
 XW2Z-□□□J-A8  
 (R88D-UEP□□□)

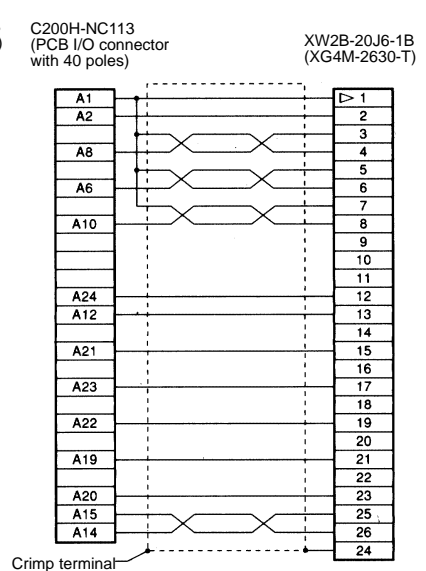
#### Connector



#### Wiring Diagram XW2Z-□□□J-A6

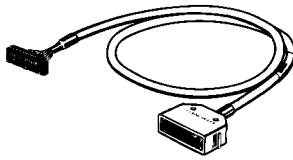


#### XW2Z-□□□J-A8

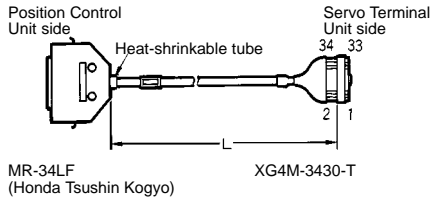


## For C200H-NC211 Use

XW2Z-□□□J-A2  
XW2Z-□□□J-A5  
(R88D-UEP□□□)



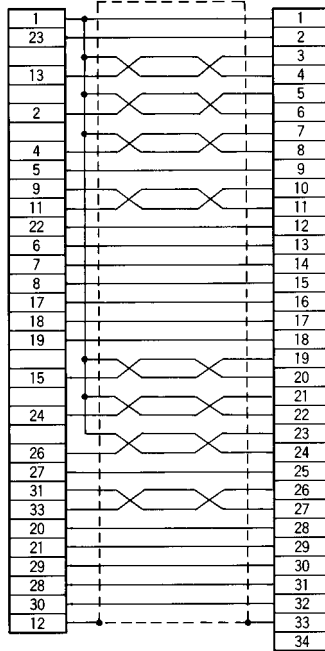
### Connector



### Wiring Diagram XW2Z-□□□J-A2

C200H-NC211 (Multi-pole square connector with 34 poles)

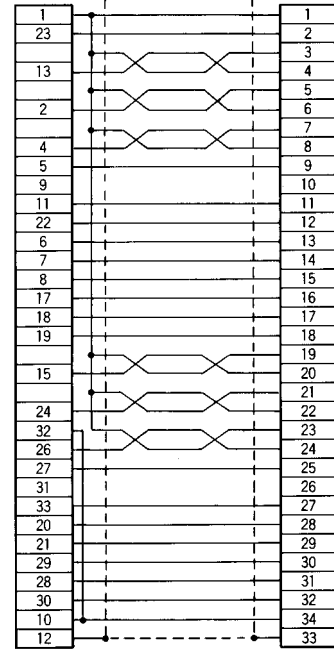
XW2B-40J6-2B (XG4M-3430)



### Wiring Diagram XW2Z-□□□J-A5

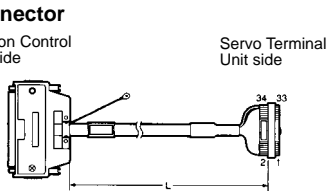
C200H-NC211 (Multi-pole square connector with 34 poles)

XW2B-40J6-2B (XG4M-3430)



## For C200HW-NC213/NC413 Use

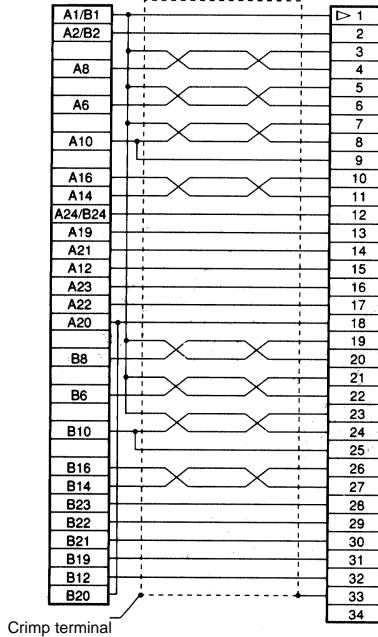
XW2Z-□□□J-A7  
XW2Z-□□□J-A9  
(R88D-UEP□□□)



### Wiring Diagram XW2Z-□□□J-A7

C200H-NC213/NC413 (Multi-pole square connector with 34 poles)

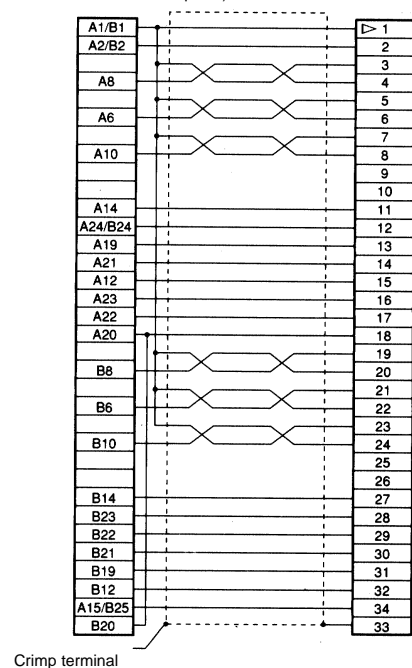
XW2B-40J6-2B (XG4M-3430-T)



### Wiring Diagram XW2Z-□□□J-A9

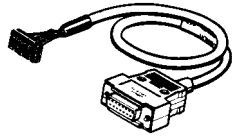
C200H-NC213/NC413 (Multi-pole square connector with 34 poles)

XW2B-40J6-2B (XG4M-3430-T)

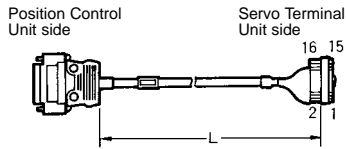


For CQM1 Use

XW2Z-□□□J-A3



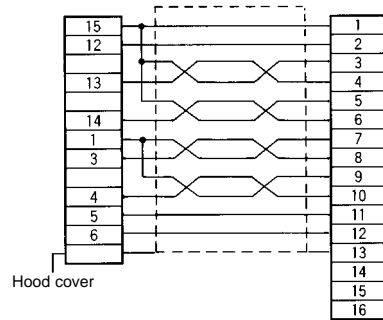
Connector



XM2D-1501 Socket  
XM2S-1511 Hood  
XG4M-1630-T

Wiring Diagram  
XW2Z-□□□J-A3

CQM1-CPU43-EV1 (XM2D-1501)      XW2B-20J6-3B (XG4M-1630)



■ Ordering Information

Cable on the Position Control Unit Side

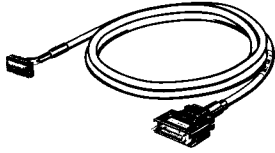
| Cable length L (mm) | Model                     | Applicable Position Control Unit                            | Applicable Servo Terminal Unit |
|---------------------|---------------------------|---|--------------------------------|
| 500                 | XW2-050J-A1               | C200H-NC112 (for one axis)                                  | XW2B-20J6-1                    |
| 1,000               | XW2-100J-A1               |   |                                |
| 500                 | XW2-050J-A2               | C200H-NC211 (for two axes)                                  | XW2B-40J6-2                    |
| 1,000               | XW2-100J-A2               |   |                                |
| 500                 | XW2-050J-A3 (See note 1)  | CQM1-CPU43-EV1 (for one or two axes)                        | XW2B-20J6-3 (See note 1)       |
| 1,000               | XW2-100J-A3 (See note 1)  |   |                                |
| 500                 | XW2Z-050J-A4              | C200H-NC112 (for one axis)                                  | XW2B-20J6-1B                   |
| 1,000               | XW2Z-100J-A4              |   |                                |
| 500                 | XW2Z-050J-A5              | C200H-NC211 (for two axes)                                  | XW2B-40J6-2B                   |
| 1,000               | XW2Z-100J-A5              |   |                                |
| 500                 | XW2-050J-A6               | C200H-NC113 (for one axis)                                  | XW2B-20J6-1B                   |
| 1,000               | XW2-100J-A6               |   |                                |
| 500                 | XW2-050J-A8               |   |                                |
| 1,000               | XW2-100J-A8               |   |                                |
| 500                 | XW2-050J-A7               | C200HW-NC213 (for two axes)<br>C200HW-NC413 (for four axes) | XW2B-40J6-2B (See note 2)      |
| 1,000               | XW2-100J-A7               |   |                                |
| 500                 | XW2Z-050J-A9 (See note 2) |   |                                |
| 1,000               | XW2Z-100J-A9 (See note 2) |   |                                |

- Note:**
- Two cables each will be required on the Servo Terminal Unit and Position Control Unit side and on the Servo Driver side if the CQM1-CPU43 is used for two axes.
  - Two cables each will be required on the Servo Terminal Unit and Position Control Unit side and on the Servo Driver side if the C200HW-NC413 (four axes) is used for two axes.

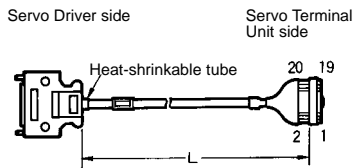
## Connecting Servo Driver and Servo Terminal Unit

### For U Series Use

XW2Z-□□□J-B1  
 XW2Z-□□□J-B4  
 XW2Z-□□□J-B5



#### Connector

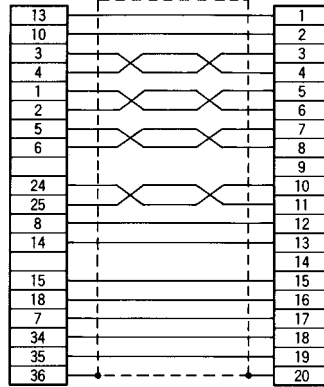


10136-3000VE Plug  
 10336-52A0-008 Hood  
 (both Sumitomo 3M) XG4M-2030-T

#### Wiring Diagram XW2Z-□□□J-B1

R88D-UP□□□□  
 (Half-pitch connector  
 with 36 poles)

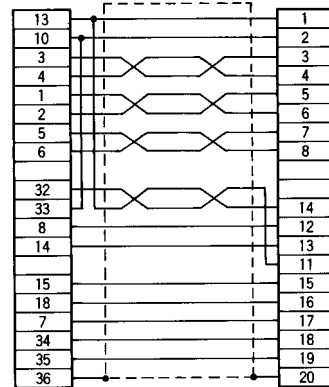
XW2B-□□J6-□B  
 (XG4M-2030)



#### XW2Z-□□□J-B4

R88D-UP□□□□  
 (Half-pitch connector  
 with 36 poles)

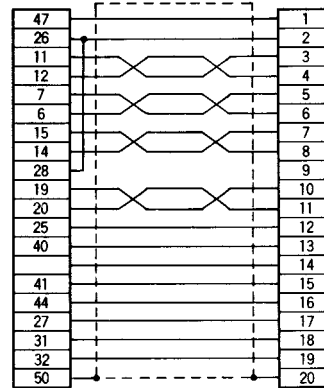
XW2B-□□J6-□B  
 (XG4M-2030)



#### XW2Z-□□□J-B5

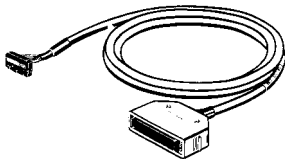
R88D-UP□□□□  
 (Half-pitch connector  
 with 36 poles)

XW2B-□□J6-□B  
 (XG4M-2030)

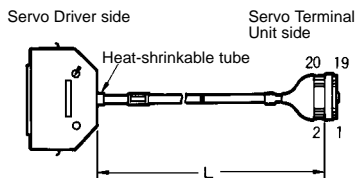


### For M Series Use

XW2Z-□□□J-B2



#### Connector

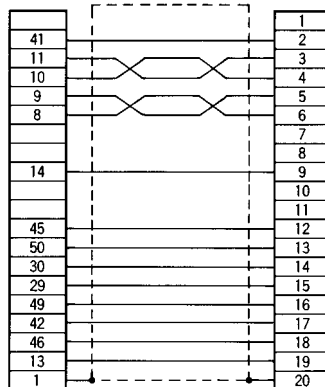


MR-50LF  
 (Honda Tsushin Kogyo) XG4M-2030-T

#### Wiring Diagram

R88D-MT□□  
 (Multi-pole square  
 connector with 50 poles)

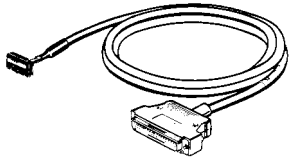
XW2B-□□J6-□B  
 (XG4M-2030)



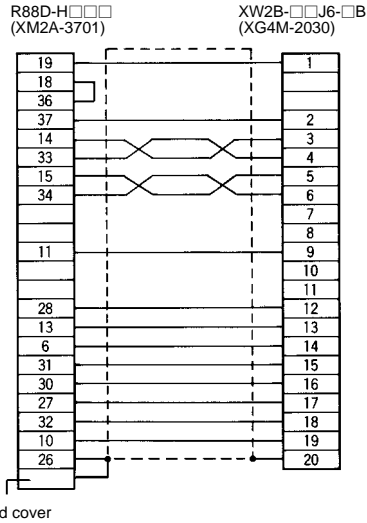


For H Series Use

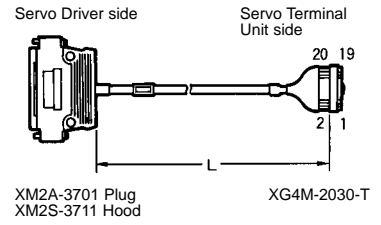
XW2Z-□□□J-B3



Wiring Diagram



Connector



■ Ordering Information

Cable on the Servo Driver Side

| Cable length L (mm) | Model        | Applicable Servo Driver | Applicable Servo Terminal Unit                          |
|---------------------|--------------|-------------------------|---|
| 1,000               | XW2-100J-B1  | R88D-UP□□□              | XW2B-20J6-1B<br>XW2B-40J6-2B (See note)<br>XW2B-20J6-3B |
| 2,000               | XW2-200J-B1  |                         |   |
| 1,000               | XW2-100J-B2  | R88D-MT□□               |   |
| 2,000               | XW2-200J-B2  |                         |   |
| 1,000               | XW2-100J-B3  | R88D-H□□□               |   |
| 2,000               | XW2-200J-B3  |                         |   |
| 1,000               | XW2Z-100J-B4 | R88D-UT□□□              |   |
| 2,000               | XW2Z-200J-B4 |                         |   |
| 1,000               | XW2Z-100J-B5 | R88D-UEP□□□             |   |
| 2,000               | XW2Z-200J-B5 |                         |   |

**Note:** Two cables will be required on the Servo Driver side if the XW2B-40J6-2B is used for two axes.

## ■ Specifications

| Item                  | XW2Z-□J-A□/B□  |
|-----------------------|--|
| Rated current         | 1 A  |
| Rated voltage         | 24 VDC   |
| Contact resistance    | 20 mΩ max. (with 100 mA max. at 20 mV max.) (See note 1)             |
| Insulation resistance | 5 MΩ min. (at 500 VDC)   |
| Dielectric strength   | 500 VAC for 1 min (with a current leakage of 1 mA max.) (See note 2) |
| Enclosure rating      | IP00   |
| Electrical protection | Class 0  |
| Ambient temperature   | Operating: 0°C to 55°C   |

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

## ■ Precautions

### Wiring

The open terminal must be left unconnected.

0-V and common terminals are connected internally.

Do not wire the Unit while power is supplied to the Unit, otherwise the terminals may be short-circuited with the cable and the Unit may malfunction.

Do not connect or disconnect the connector while power is supplied to the Unit, otherwise the Unit may malfunction.

### Terminal Wire Connections

The suitable crimp terminal is R1.25-3 (round or fork type).

### Mounting

More than one XW2B Servo Terminal Unit can be densely mounted to a DIN track, in which case, move the mounting stays from both sides of the XW2B to the bottom of the XW2B.

Secure both ends of the XW2B with end plates.

### Terminal Screw Tightening Torque

When connecting crimp terminals or wires to the terminal block, be sure to tighten each crimp terminal or wire to 0.5 to 0.8 N • m (4.9 to 7.8 kgf • cm).

# Host Link Cable (RS-232C Cable for PC)

# XW2Z

**Ideal Cable and Connector for Host Link Communications between the PC and Personal Computer**

## ■ Ordering Information

| SYSMAC side  | Host Link Cable (RS-232C cable for PC) |                |           | Host link side   |
|--|--|----------------|-----------|--|
|  | Wiring pattern                         | Cable length L | Model     |  |
| C20-LK201-V1<br>C500-LK203<br>C500-LK201-V1<br>C120-LK201-V1<br>C200H-LK201<br>CV500-LK201<br>(Port 1 in all duplex mode)  | <b>D-sub 25-pin plug</b><br>           | 2 m            | XW2Z-200P | Personal computer (IBM PC/AT or compatible)<br>PT (NT20M, NT600M, NT610C, or NT610G) |
|  |  | 5 m            | XW2Z-500P |  |
| C200HS-CPU31/33/21/23<br>CQM1-CPU21<br>CQM1-CPU41<br>CQM1-CPU42<br>CQM1-CPU43<br>CQM1-CPU44<br>(with RS-232C)<br>C20H, C28H, C40H,<br>C60H<br>(Built-in host link)   | <b>D-sub 9-pin plug</b><br>            | 2 m            | XW2Z-200R |  |
|  |  | 5 m            | XW2Z-500R |  |
| C200HS-CPU31/33/21/23<br>CQM1-CPU21<br>CQM1-CPU42<br>CQM1-CPU43<br>CQM1-CPU44<br>(with RS-232C)<br>CV500/1000/2000<br>CVM1<br>(Built-in host link)<br>CV500-LK201<br>(Port 2 in all duplex mode)<br>C200HE-CPU42<br>C200HG-CPU43/63<br>C200HX-CPU44/64<br>C200HW-COM02<br>C200HW-COM04<br>C200HW-COM05<br>C200HW-COM06<br>CPM1-CIF01 | <b>D-sub 9-pin plug</b><br>            | 2 m            | XW2Z-200S |  |
|  |  | 5 m            | XW2Z-500S |  |

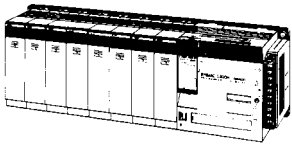
| SYSMAC side  | Host Link Cable (RS-232C cable for PC)  |                |       | Host link side |  |                   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |   |     |             |   |
|--|---|----------------|-------|----------------|--|-------------------|---|---|----|----|---|---|----|----|---|---|----|----|---|---|----|----|---|---|----|----|---|---|----|----|---|---|----|----|---|---|---|----|---|---|---|-----|-------------|---|
|  | Wiring pattern  | Cable length L | Model |                |  |                   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |   |     |             |   |
| C20-LK201-V1<br>C500-LK203<br>C120-LK201-V1<br>C200H-LK201<br>CV500-LK201<br>(Port 1 in all duplex mode)   | <b>D-sub 25-pin plug</b><br><table border="1"> <tr><th colspan="2">PC side</th><th colspan="2">Host link side</th></tr> <tr><td>Connector hood FG</td><td>1</td><td>1</td><td>RD</td></tr> <tr><td>FG</td><td>2</td><td>2</td><td>SD</td></tr> <tr><td>SD</td><td>3</td><td>3</td><td>ER</td></tr> <tr><td>RD</td><td>4</td><td>4</td><td>SG</td></tr> <tr><td>RS</td><td>5</td><td>5</td><td>DR</td></tr> <tr><td>CS</td><td>6</td><td>6</td><td>RS</td></tr> <tr><td>DR</td><td>7</td><td>7</td><td>CS</td></tr> <tr><td>SG</td><td>8</td><td>8</td><td>—</td></tr> <tr><td>ER</td><td>9</td><td>9</td><td>—</td></tr> </table> | PC side        |       | Host link side |  | Connector hood FG | 1 | 1 | RD | FG | 2 | 2 | SD | SD | 3 | 3 | ER | RD | 4 | 4 | SG | RS | 5 | 5 | DR | CS | 6 | 6 | RS | DR | 7 | 7 | CS | SG | 8 | 8 | — | ER | 9 | 9 | — | 2 m | XW2Z-200P-V | Personal computer (IBM PC/AT or compatible) |
|  |   | PC side        |       | Host link side |  |                   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |   |     |             |   |
| Connector hood FG  | 1   | 1              | RD    |                |  |                   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |   |     |             |   |
| FG   | 2   | 2              | SD    |                |  |                   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |   |     |             |   |
| SD   | 3   | 3              | ER    |                |  |                   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |   |     |             |   |
| RD   | 4   | 4              | SG    |                |  |                   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |   |     |             |   |
| RS   | 5   | 5              | DR    |                |  |                   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |   |     |             |   |
| CS   | 6   | 6              | RS    |                |  |                   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |   |     |             |   |
| DR   | 7   | 7              | CS    |                |  |                   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |   |     |             |   |
| SG   | 8   | 8              | —     |                |  |                   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |   |     |             |   |
| ER   | 9   | 9              | —     |                |  |                   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |   |     |             |   |
| 5 m  | XW2Z-500P-V   |                |       |                |  |                   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |   |     |             |   |
| C200HS-CPU31/33/21/23<br>CQM1-CPU21<br>CQM1-CPU42<br>CQM1-CPU43<br>CQM1-CPU44<br>CV500/1000/2000<br>CVM1<br>(Communication port 2)<br>C200HE-CPU42<br>C200HG-CPU43/63<br>C200HX-CPU44/64<br>C200HW-COM02<br>C200HW-COM04<br>C200HW-COM05<br>C200HW-COM06<br>CPM1-CIF01 | <b>D-sub 9-pin plug</b><br><table border="1"> <tr><th colspan="2">PC side</th><th colspan="2">Host link side</th></tr> <tr><td>Connector hood FG</td><td>1</td><td>1</td><td>RD</td></tr> <tr><td>—</td><td>2</td><td>2</td><td>SD</td></tr> <tr><td>SD</td><td>3</td><td>3</td><td>ER</td></tr> <tr><td>RD</td><td>4</td><td>4</td><td>SG</td></tr> <tr><td>RS</td><td>5</td><td>5</td><td>DR</td></tr> <tr><td>CS</td><td>6</td><td>6</td><td>RS</td></tr> <tr><td>—</td><td>7</td><td>7</td><td>CS</td></tr> <tr><td>—</td><td>8</td><td>8</td><td>—</td></tr> <tr><td>SG</td><td>9</td><td>9</td><td>—</td></tr> </table>     | PC side        |       | Host link side |  | Connector hood FG | 1 | 1 | RD | —  | 2 | 2 | SD | SD | 3 | 3 | ER | RD | 4 | 4 | SG | RS | 5 | 5 | DR | CS | 6 | 6 | RS | —  | 7 | 7 | CS | —  | 8 | 8 | — | SG | 9 | 9 | — | 2 m | XW2Z-200S-V |   |
|  |   | PC side        |       | Host link side |  |                   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |   |     |             |   |
| Connector hood FG  | 1   | 1              | RD    |                |  |                   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |   |     |             |   |
| —  | 2   | 2              | SD    |                |  |                   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |   |     |             |   |
| SD   | 3   | 3              | ER    |                |  |                   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |   |     |             |   |
| RD   | 4   | 4              | SG    |                |  |                   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |   |     |             |   |
| RS   | 5   | 5              | DR    |                |  |                   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |   |     |             |   |
| CS   | 6   | 6              | RS    |                |  |                   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |   |     |             |   |
| —  | 7   | 7              | CS    |                |  |                   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |   |     |             |   |
| —  | 8   | 8              | —     |                |  |                   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |   |     |             |   |
| SG   | 9   | 9              | —     |                |  |                   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |   |     |             |   |
| 5 m  | XW2Z-500S-V   |                |       |                |  |                   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |   |     |             |   |

| SYSMAC side   | PT: Dedicated NT20S Cable   |                |       | Host link side |  |                   |   |   |   |   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |    |     |           |   |
|---|---|----------------|-------|----------------|--|-------------------|---|---|---|---|---|---|----|----|---|---|----|----|---|---|----|----|---|---|----|----|---|---|---|----|---|---|----|-----|-----------|---|
|   | Wiring pattern  | Cable length L | Model |                |  |                   |   |   |   |   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |    |     |           |   |
| CQM1-CPU21<br>CQM1-CPU41<br>CQM1-CPU42<br>CQM1-CPU43<br>CQM1-CPU44<br>(with RS-232C)<br>C200HS-CPU31/32/21/23<br>CV500/1000/2000-CPU01<br>CVM1-CPU01/11<br>CV500-LK201<br>(Communications port 2)<br>C200HE-CPU42<br>C200HG-CPU43/63<br>C200HX-CPU44/64<br>C200HW-COM02<br>C200HW-COM04<br>C200HW-COM05<br>C200HW-COM06<br>CPM1-CIF01 | <b>D-sub 9-pin plug</b><br><table border="1"> <tr><th colspan="2">PC side</th><th colspan="2">Host link side</th></tr> <tr><td>Connector hood FG</td><td>1</td><td>1</td><td>—</td></tr> <tr><td>—</td><td>2</td><td>2</td><td>SD</td></tr> <tr><td>SD</td><td>3</td><td>3</td><td>RD</td></tr> <tr><td>RD</td><td>4</td><td>4</td><td>RS</td></tr> <tr><td>RS</td><td>5</td><td>5</td><td>CS</td></tr> <tr><td>CS</td><td>6</td><td>6</td><td>—</td></tr> <tr><td>SG</td><td>9</td><td>9</td><td>SG</td></tr> </table> | PC side        |       | Host link side |  | Connector hood FG | 1 | 1 | — | — | 2 | 2 | SD | SD | 3 | 3 | RD | RD | 4 | 4 | RS | RS | 5 | 5 | CS | CS | 6 | 6 | — | SG | 9 | 9 | SG | 2 m | XW2Z-200T | PT (NT20M, NT20S, NT600S, NT620S, NT620C, NT30, or NT30C) |
|   |   | PC side        |       | Host link side |  |                   |   |   |   |   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |    |     |           |   |
| Connector hood FG   | 1   | 1              | —     |                |  |                   |   |   |   |   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |    |     |           |   |
| —   | 2   | 2              | SD    |                |  |                   |   |   |   |   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |    |     |           |   |
| SD  | 3   | 3              | RD    |                |  |                   |   |   |   |   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |    |     |           |   |
| RD  | 4   | 4              | RS    |                |  |                   |   |   |   |   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |    |     |           |   |
| RS  | 5   | 5              | CS    |                |  |                   |   |   |   |   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |    |     |           |   |
| CS  | 6   | 6              | —     |                |  |                   |   |   |   |   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |    |     |           |   |
| SG  | 9   | 9              | SG    |                |  |                   |   |   |   |   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |    |     |           |   |
| 5 m   | XW2Z-500T   |                |       |                |  |                   |   |   |   |   |   |   |    |    |   |   |    |    |   |   |    |    |   |   |    |    |   |   |   |    |   |   |    |     |           |   |

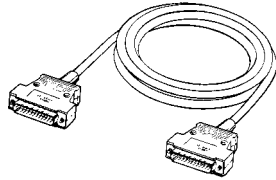
Cable length L (mm)



## ■ Connection Example



**SYSMAC Side**  
 CQM1  
 C Series  
 CV Series



**XW2Z Host Link Cable**



**Host Link Side**  
 Personal computer  
 PT

## ■ Specifications

| Item                  | XW2Z-□P/R/S/T  |
|-----------------------|--|
| Rated current         | 1 A  |
| Rated voltage         | 125 VAC  |
| Contact resistance    | 15 mΩ max. (with 100 mA max. at 20 mV max.) (See note 1)             |
| Insulation resistance | 100 MΩ min. (at 500 VDC)   |
| Dielectric strength   | 500 VAC for 1 min (with a current leakage of 1 mA max.) (See note 2) |
| Enclosure rating      | IP00   |
| Electrical protection | Class 0  |
| Ambient temperature   | Operating: -25°C to 80°C   |

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

## ■ Materials/Finish

| Item      | Parts                  | Materials/Processing |   |
|-----------|------------------------|----------------------|---|
| Connector | XM2A-0901<br>XM2A-2501 | Housing              | Milky polyamide resin (UL94V-0)   |
|           |                        | Contact              | Contact-carrying part/press-fit part:<br>Brass and nickel plated with 0.2-μm-thick gold |
|           |                        | Shell                | Nickel-plated steel   |
|           | XM2S-0911/2511         | Housing              | Nickel-plated ABS resin   |
| Cable     | UL2464 interface cable | Equivalent to AWG28  |   |

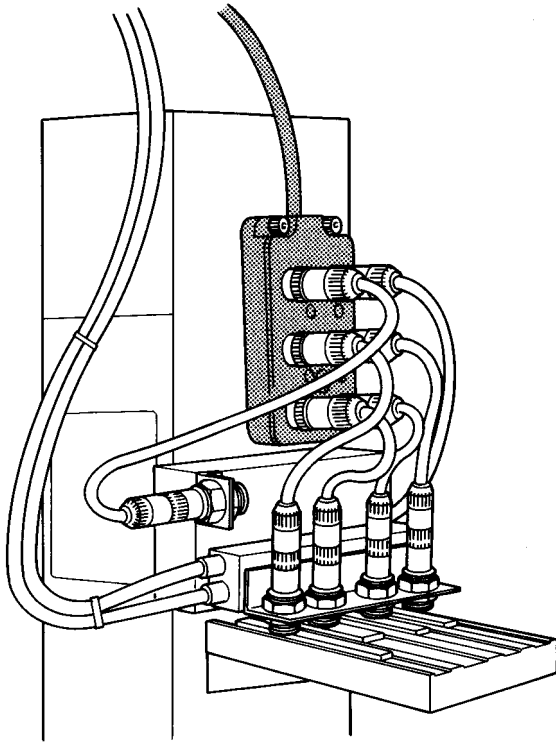


# Connector Terminal Box

# XW3A

## Tough Terminal Box for Wiring Sensor I/O Connectors Greatly Saves Outer-panel Wiring Effort

- Compact, tough model satisfies IP67 requirements.
- Available for proximity sensors, limit switches, and photoelectric sensors with sensor I/O connectors.
- Incorporates power and operation indicators.
- Uses a single mounting method regardless of the number of I/O points, which ensures easy system expansion.
- Models with a built-in self-diagnostic function are available.



## ■ Specifications

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

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

## ■ Materials/Finish

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

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

## ■ Applicable Connectors

|             |   |
|-------------|---|
| <b>XS2G</b> | Connector assembly plug (solderless/soldering type) |
| <b>XS2W</b> | Cable with a socket/plug and both-end connectors    |
| <b>XS2H</b> | Cable with a plug and connector                     |



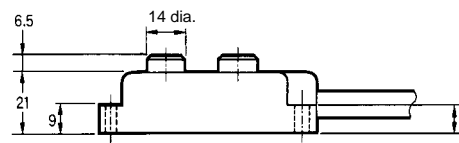
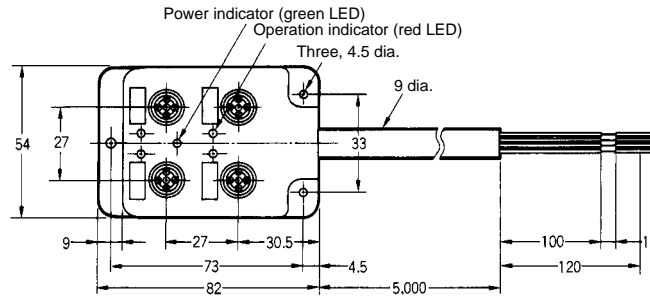
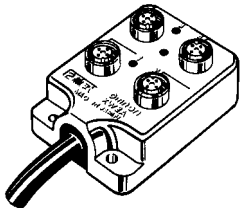
# XW3A Connector Terminal Box

## Ordering Information

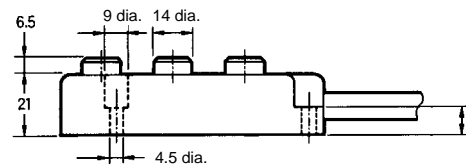
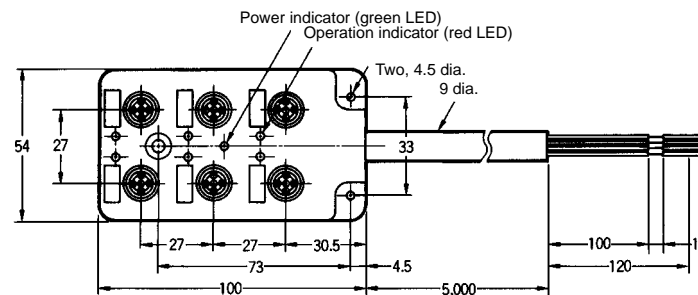
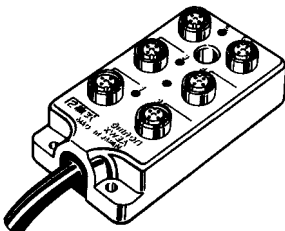
| I/O points | 2-wire DC     | 3-wire DC (PNP) | 3-wire DC (NPN) |
|------------|---------------|-----------------|-----------------|
| 4          | XW3A-P442-G11 | XW3A-P443-G11   | XW3A-P445-G11   |
| 6          | XW3A-P642-G11 | XW3A-P643-G11   | XW3A-P645-G11   |
| 8          | XW3A-P842-G11 | XW3A-P843-G11   | XW3A-P845-G11   |

## Dimensions

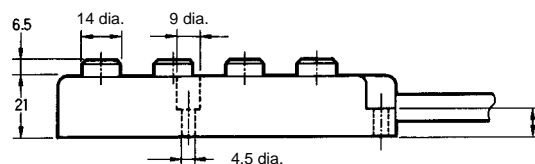
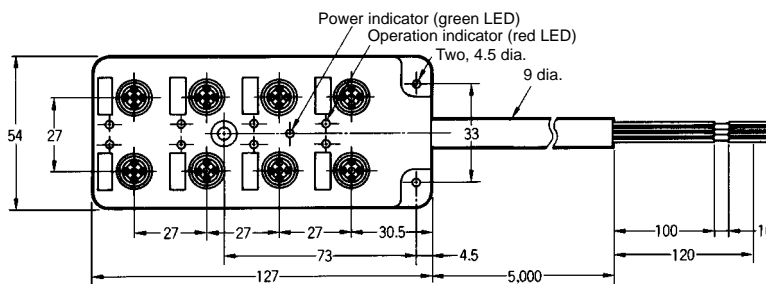
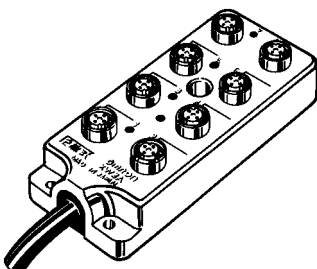
**XW3A-P44□-G11**  
(Four I/O Points)



**XW3A-P64□-G11**  
(Six I/O Points)



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



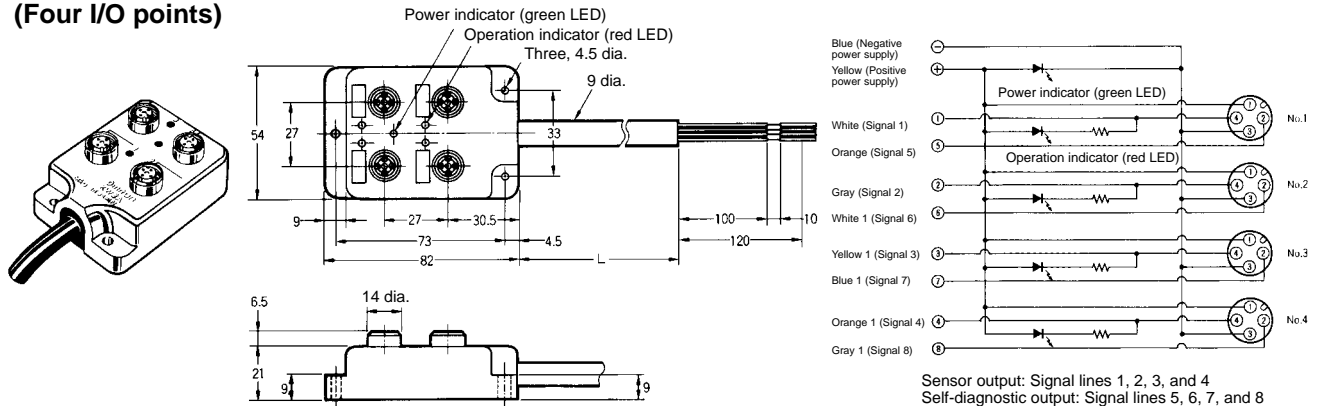
# XW3A Connector Terminal Box with Vibration-resistant Cable for Sensors with Self-diagnostic Function

## ■ Ordering Information

| I/O points | Cable length L (mm) | 4-wire DC (self-diagnostic model) |
|------------|---------------------|-----------------------------------|
| 4          | 2,000               | XW3A-P448-D11-R                   |
|            | 5,000               | XW3A-P448-G11-R                   |

## ■ Dimensions/Connection Diagram

XW3A-P448-□11-R  
(Four I/O points)



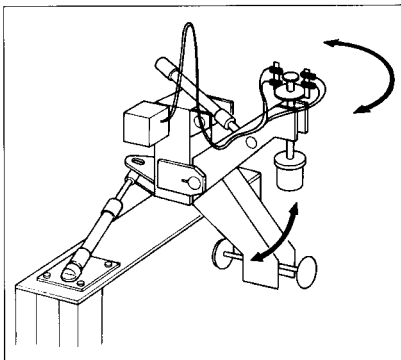
## ■ Applications Examples

### Reduces Malfunctions and Downtime

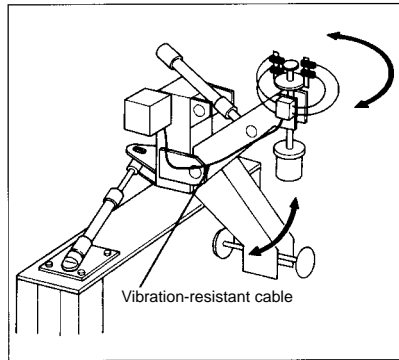
Connects to Sensors with self-diagnostic function → Prevents line interruption due to Sensor malfunctioning.

Vibration-resistant cable → Reduces wire disconnection at movable components.

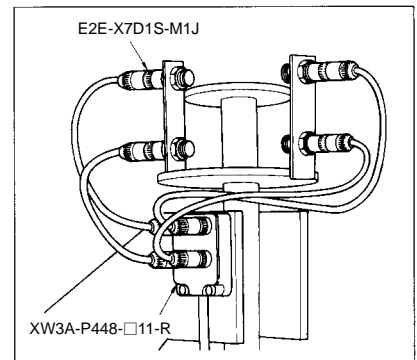
Easy Sensor replacement or installation → Reduces Sensor wiring effort.



Conventional operation.



The Connector Terminal Box is used.



Peripheral wiring with XW3A.

## ■ Applicable Sensors with Self-diagnostic Function

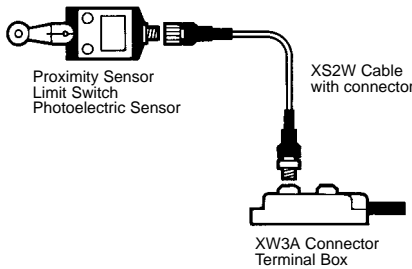
E3E-X7D1S-MJ Proximity Sensor

E3S-5E4S1-M1J Photoelectric Sensor

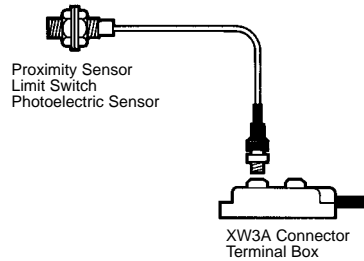
**Note:** The above Sensors are special models. Contact your OMRON representative for details.

Connections of Input Devices with Sensor I/O Connectors

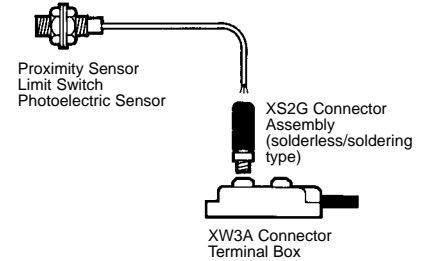
Direct Connection Type



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 |                                    |  |
|------------------------|------------------------|---|------------------------------------|--|
| XW3A-P□42-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      |
|                        | XS2W-D42□-□81-A        |   |                                    | E2E-X8MD1-M1GJ, E2E-X14MD1-M1GJ, and E2E-X20MD1-M1GJ   |
|                        |                        |   |                                    | E2EQ-X3D1-M1GJ, E2EQ-X7D1-M1GJ, and E2EQ-X10D1-M1GJ  |
|                        | ---                    | Limit Switch                              | Connector-Terminal connection type | E2E-X3D1-M1G, E2E-X7D1-M1G, and E2E-X10D1-M1G  |
| XS2W-D42□-□81-A        | Direct connection type |   |                                    | E2E-X8MD1-M1G, E2E-X14MD1-M1G, and E2E-X20MD1-M1G  |
| XW3A-P□43-G11          | XS2W-D42□-□81-A        | 3-wire DC Proximity Sensor (PNP)          | Direct connection type             | E2E-X2F1-M1, E2E-X5F1-M1, and E2E-X10F1-M1<br>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 |
| XW3A-P□45-G11          | ---                    | 2-wire DC Proximity Sensor                | Connector-Terminal connection type | E2E-X3D1-M1J-T, E2E-X7D1-M1J-T, and E2E-X10D1-M1J-T  |
|                        | XS2W-D42□-□81-A        | 3-wire DC Proximity Sensor (NPN)          | Direct connection type             | E2E-X2E1-M1, E2E-X5E1-M1, and E2E-X10E1-M1<br>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) 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:**
- Any of these models is available provided that only its SPST-NO contact is used.
  - Any of these models is available provided that it uses an NO connection.
  - 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 terminal number |   |   |                                      |              |   |
|------------------------|---|---|---|--------------------------------------|--------------|---|
|                        | 3-wire DC (NPN)<br>1: +, 3: -,<br>4: output | 2-wire DC (with polarity)<br>1: +, 4: - | 2-wire DC (with polarity)<br>3: -, 4: + | 2-wire DC (with no polarity)<br>3, 4 | Limit Switch | 3-wire DC (PNP)<br>1: +, 3: -,<br>4: output |
| XW3A-P□42-G11          | No  | Yes                                     | No                                      | Yes                                  | Yes          | No  |
| XW3A-P□43-G11          | No  | No                                      | No                                      | No                                   | No           | Yes   |
| XW3A-P□45-G11          | Yes   | No                                      | Yes                                     | Yes                                  | Yes          | No  |

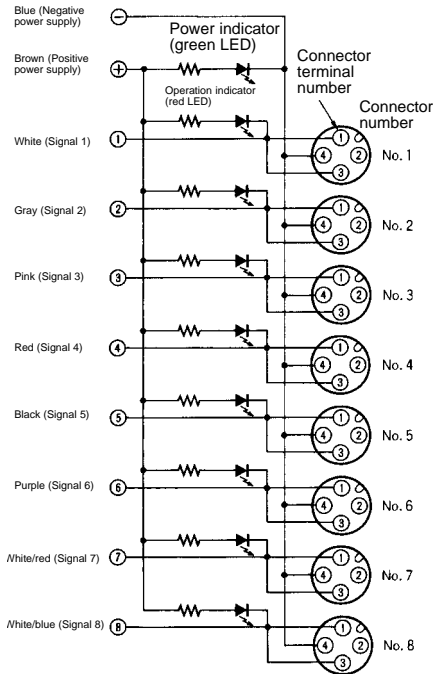
■ Connector Terminal Boxes for Input Devices with Sensor I/O Connectors

| Input device         |                   |                                    | Cable   | Connector Terminal Box |  |                                  |                 |               |
|----------------------|-------------------|------------------------------------|---|------------------------|--|----------------------------------|-----------------|---------------|
| Type                 | Connection method | Model                              |   |                        |  |                                  |                 |               |
| Photoelectric Sensor | NPN               | Direct connection type             | XS2W-D42□-□81-A   | XW3A-P□45-G11          |  |                                  |                 |               |
|                      | PNP               |                                    |   |                        | E3S-AT36/86, E3S-AR36/86, and E3S-AD36/37/38/86/87/88                      |                                  |                 |               |
| Proximity Sensor     | 2-wire DC         | Connector-Terminal connection type | ---   | XW3A-P□45-G11          |  |                                  |                 |               |
|                      |                   |                                    |   | XW3A-P□42-G11          |  |                                  |                 |               |
|                      |                   |                                    |   | 3-wire DC              | NPN  | Direct connection type           | XS2W-D42□-□81-A | XW3A-P□45-G11 |
|                      |                   |                                    |   |                        |  |                                  |                 | XW3A-P□43-G11 |
|                      | PNP               | Direct connection type             | XS2W-D42□-□81-A   | XW3A-P□45-G11          |  |                                  |                 |               |
|                      |                   |                                    |   | XW3A-P□43-G11          |  |                                  |                 |               |
|                      | Limit Switch      | Connector-Terminal connection type | WL□-□DK1EJ□ (See note 1) and D4C-□0□□-DK1EJ□ (See note 2) | ---                    | XW3A-P□42-G11<br>XW3A-P□45-G11   |                                  |                 |               |
|                      |                   |                                    | Direct connection type                                    |                        | WL□-□K13 (See note 1) and D4E-□□10N (See note 2)<br>D4CC-□□□□ (See note 2) | XS2W-D42□-□81-A<br>XW3A-P□42-G11 |                 |               |

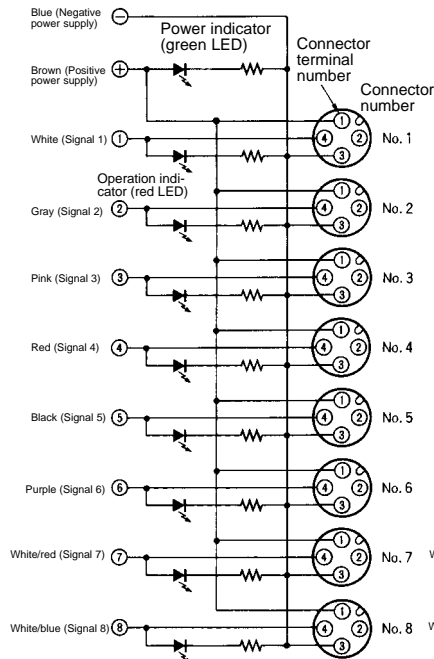
- Note:** 1. Any of these models is available provided that only its SPST-NO contact is used.  
 2. Any of these models is available provided that it uses an NO connection.

■ Connection Diagram

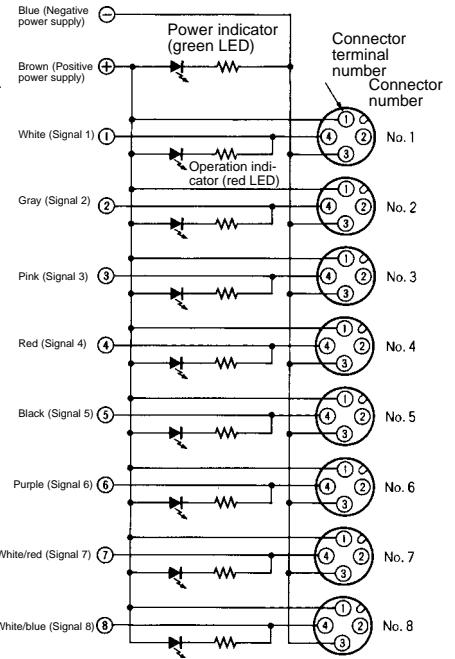
XW3A-P□42-G11 for 2-wire DC (With or Without Polarity)



XW3A-P□43-G11 for 3-wire DC (PNP)



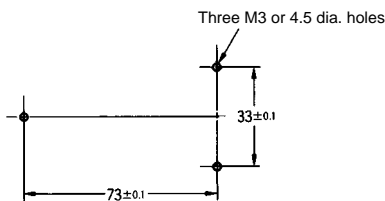
XW3A-P□45-G11 for 3-wire DC (NPN) and 2-wire DC (Without Polarity)



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

Refer to pages 108 to 109 for input devices that can be connected through the above connectors.

■ Mounting Dimensions



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

## ■ Precautions

### Connector Connection or Disconnection

Before using a Sensor or Limit Switch, check this data-sheet 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.

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

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

### Power Supply and Operation Indicators

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

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