Electronic Components

Connectors

Relays Electromechanical | Relays Microelectronic | Switches | **Connectors** | Sensors | Fiber Optic

OMRON®
ELECTRONIC COMPONENTS

Omron Electronic Components LLC

Stability and Experience

With over 75 years experience, Omron continues to apply the latest technologies providing you with innovative efficient control component solutions. Our wide range of relays, switches, sensors, and connectors allows our customers to streamline vendor lists and reduce the cost of procurement.

Quality First

Our commitment, your benefit

Omron makes a conscious choice to relentlessly pursue quality. Our quality engineers are part of the design and manufacturing process from the start. We design and evaluate at the component level, test and adjust during manufacturing, and examine every physical, mechanical, and electrical aspect of each final product before it leaves the factory.

Customer Support

Omron's sales engineers, inside sales representatives, and customer service staff have experience with all types of electronic applications. No matter what the application or volume, we will find just the right component for your project.

Broad Product Offering

Relays:
- MOS FET
- Low Signal
- RF/HF
- RF MEMS
- Power PCB
- Automotive
- General-Purpose
- Solid State

Switches:
- Snap Action
- Tactile
- DIP
- Dome Array
- Thumbwheel
- Rocker

Sensors:
- Flow
- Pressure
- Tilt
- Vibration
- NIBP Module

Connectors:
- FPC
- Industrial
- PCB

Fiber Optic:
- Tosa/Rosa
- Tx/Rx Module
- Splitters
- MLA

Additional information can be found at www.components.omrom.com, or by calling us at: 847.882.2288 Monday through Friday 8:30 AM until 5:00 PM CST. Our inside sales staff will be ready to provide you with detailed product information, technical design support, or the location of your local Omron sales office or authorized distributor.

RoHS COMPLIANT

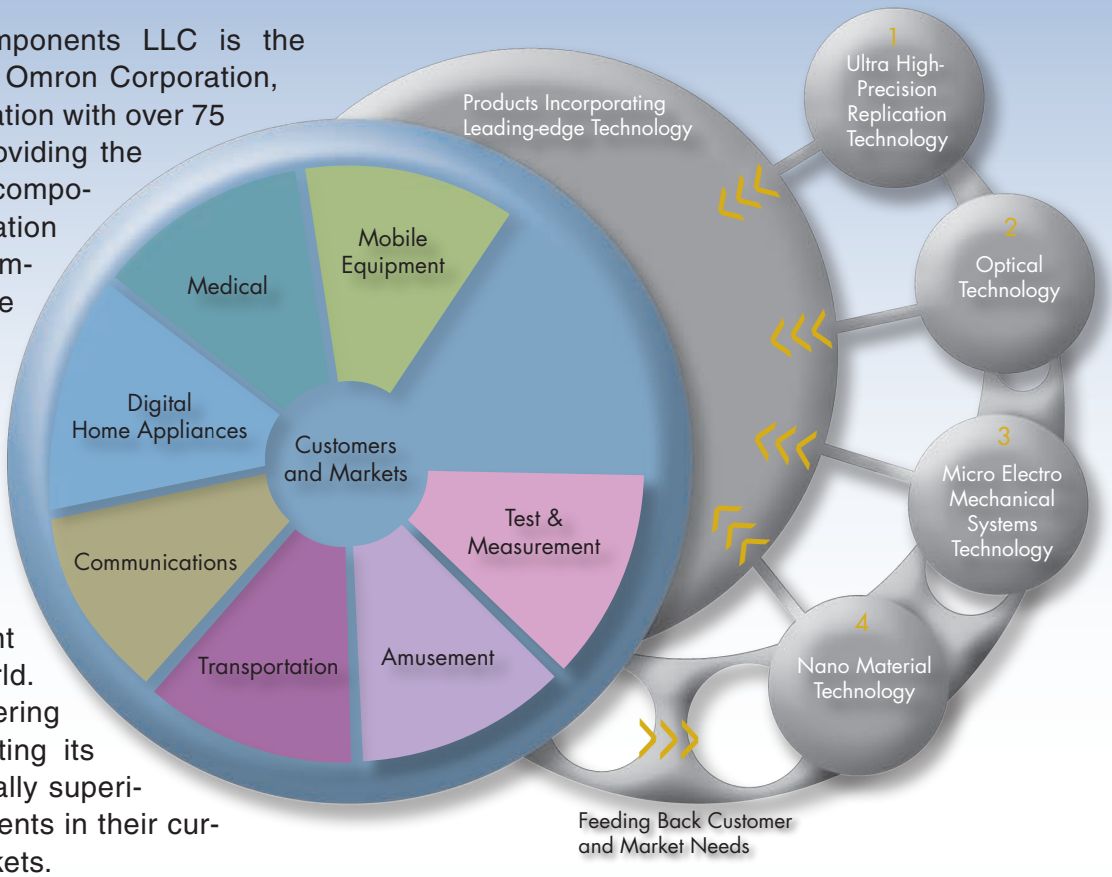
OMRON ELECTRONIC COMPONENTS

At work for a better life... a better world for all!

Focus Markets

Omron Electronic Components LLC is the Americas subsidiary of Omron Corporation, a leading global corporation with over 75 years experience of providing the market with electronic components, industrial automation controls, automotive components, and healthcare products. Our broad product offering can be found in applications for the communications, transportation, medical, HVAC, appliance, industrial automation, consumer electronics, and test & measurement markets around the world. Omron has an unfaltering commitment to supporting its customers with technically superior, high quality components in their current and emerging markets.

OMRON Responds to IT Evolution with Four Advanced Technologies.



Core Technologies

In order to provide more value to customers, OMRON has worked to further strengthen our four leading-edge technologies in the electronic components business.

Ultra High-Precision Replication

The first is an ultra-precise replication technology that is accurate down to a single micrometer. This technology is indispensable to optical communications, optical displays, illumination, high-frequency devices and subminiature mechanical devices.

Optical / Fiber

The second is optical control technology, which uses the wave nature of light to efficiently control the direction of light movement. Omron's technology supports the continuing evolution of Passive Optical Networks (PON), Video Over Fiber devices and IT devices used for data communication.

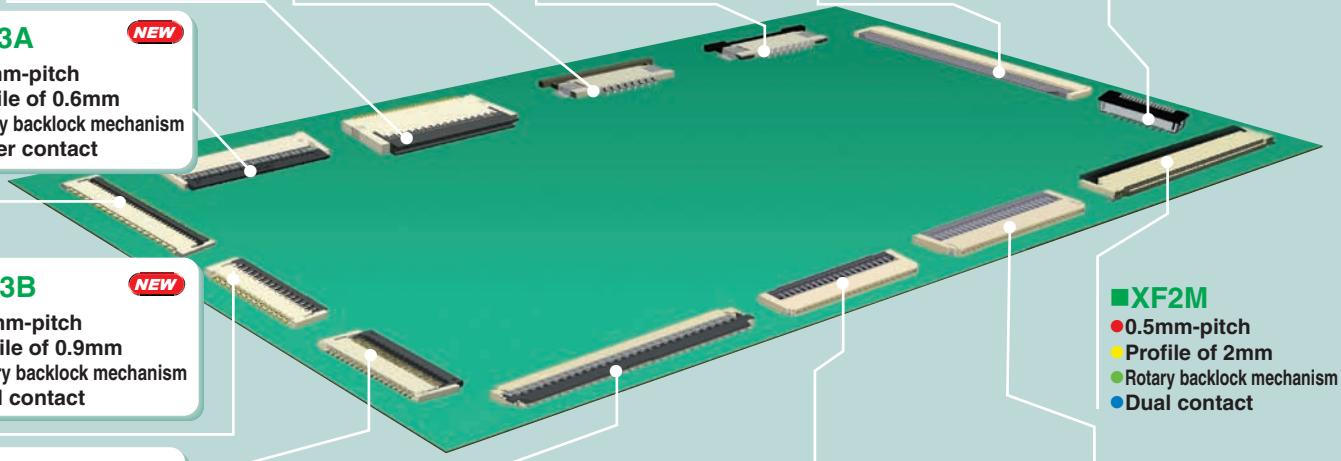
Micro Electro Mechanical Systems

The third is micro-electro-mechanical systems (MEMS) technology, which helps support the Digital Age by allowing materials to be processed with micrometer- to nanometer-level precision. This contributes to the micro-miniaturization of mobile devices, biotechnology products, consumer, industrial, and automobile applications.

Nano Materials

The fourth is nano-material technology, which is used to develop materials at the molecular level. Omron continues to incorporate nano-materials in to its new, state-of-the-art components.

FPC CONNECTORS XF SERIES



■XF2B
- 0.3mm-pitch
- Profile of 1.2mm
- Rotary backlock mechanism
- Dual contact

■XF2L
- 0.5mm-pitch
- Profile of 1.2mm
- Slide-locking mechanism
- Lower contact

■XF2L
- 0.5mm-pitch
- Profile of 1.2mm
- Slide-locking mechanism
- Upper contact

■XF2K
- 0.4mm-pitch
- Profile of 0.9mm
- Rotary backlock mechanism
- Dual contact

■XF2J
- 0.5mm-pitch
- Profile of 4.15mm
- Slide-locking mechanism
- Single-sided contact

■XF3A NEW
- 0.3mm-pitch
- Profile of 0.6mm
- Rotary backlock mechanism
- Upper contact

■XF3B NEW
- 0.3mm-pitch
- Profile of 0.9mm
- Rotary backlock mechanism
- Dual contact

■XF2M
- 0.5mm-pitch
- Profile of 2mm
- Rotary backlock mechanism
- Dual contact

■XF3C NEW
- 0.25mm-pitch
- Profile of 0.85mm
- Rotary backlock mechanism
- Dual contact

■XF2C
- 0.3mm-pitch
- Profile of 0.9mm
- Rotary backlock mechanism
- Upper contact

■XF3H
- 0.3mm-pitch
- Profile of 0.9mm
- Rotary frontlock mechanism
- Lower contact

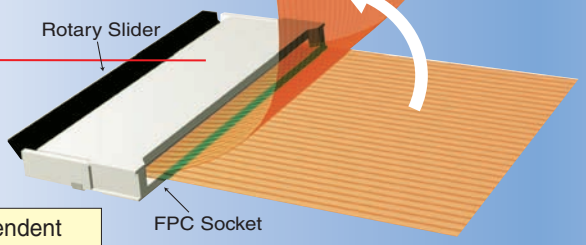
■XF2U
- 0.5mm-pitch
- Profile of 0.9mm
- Rotary backlock mechanism
- Dual contact

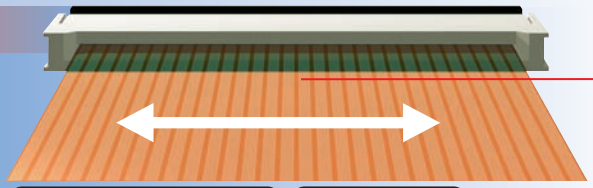
■XF2W
- 0.5mm-pitch
- Profile of 1.1mm
- Rotary backlock mechanism
- Dual contact

Applications

- Hand held medical devices
- Thermostats
- Fish finders
- Gaming machines
- Digital audio and video players
- Digital video cameras
- Digital Cameras
- Cell phones

Omron's Rotary Backlock Mechanism





Rotary slider independent of the FPC socket

➡ Slider does not disconnect if the FPC is lifted.
High reliability-A mounted FPC will not come off if excess force is applied to it.

Benefits / Features

Conventional Rotary Connector

1. Mount the connector.
2. Release the rotary slider.
3. Insert the FPC.
4. Lock the rotary slider.

XF2 Series

1. Mount the connector.
2. Insert the FPC.
3. Lock the rotary slider.

Four-sided FPC housing

➡ Construction prevents FPC displacement.

Mounting reliability is enhanced because the FPC is held in a four-sided housing and is unaffected by the slider operation.

Double-sided contact
Note: Except the XF2C and 61-pin XF2B-61.

➡ No need to discriminate between the upper and lower FPC contacts.

Connectors are the same, so it's not necessary to distinguish between the upper and lower contacts when connecting upper and lower PCBs.

Delivered with the rotary slider open.

➡ Reduces the labor required to mount FPCs.

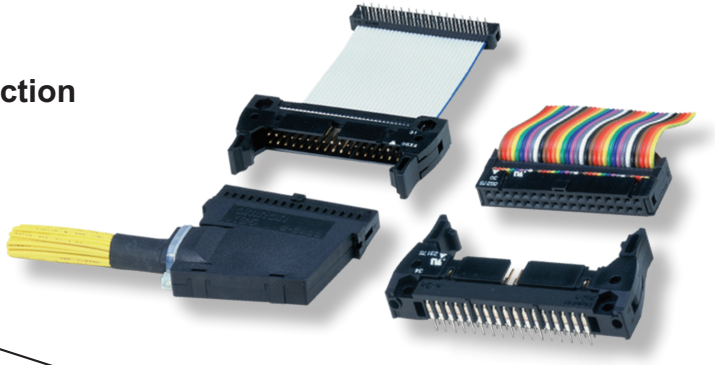
Assembly speed is improved over the conventional rotary locking type because the rotary slider does not need to be released.

PCB CONNECTORS

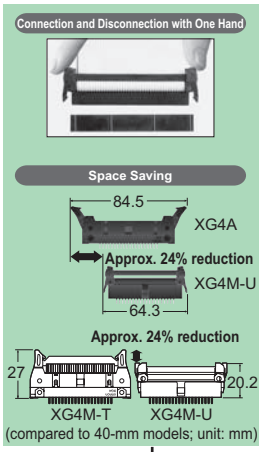
Flat Cable / IDC Connectors XG SERIES

Connection Examples

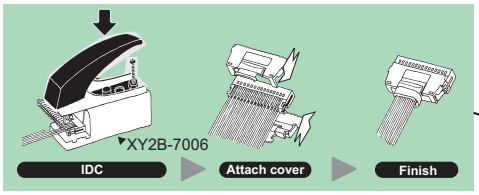
IDC: Insulation Displacement Connection



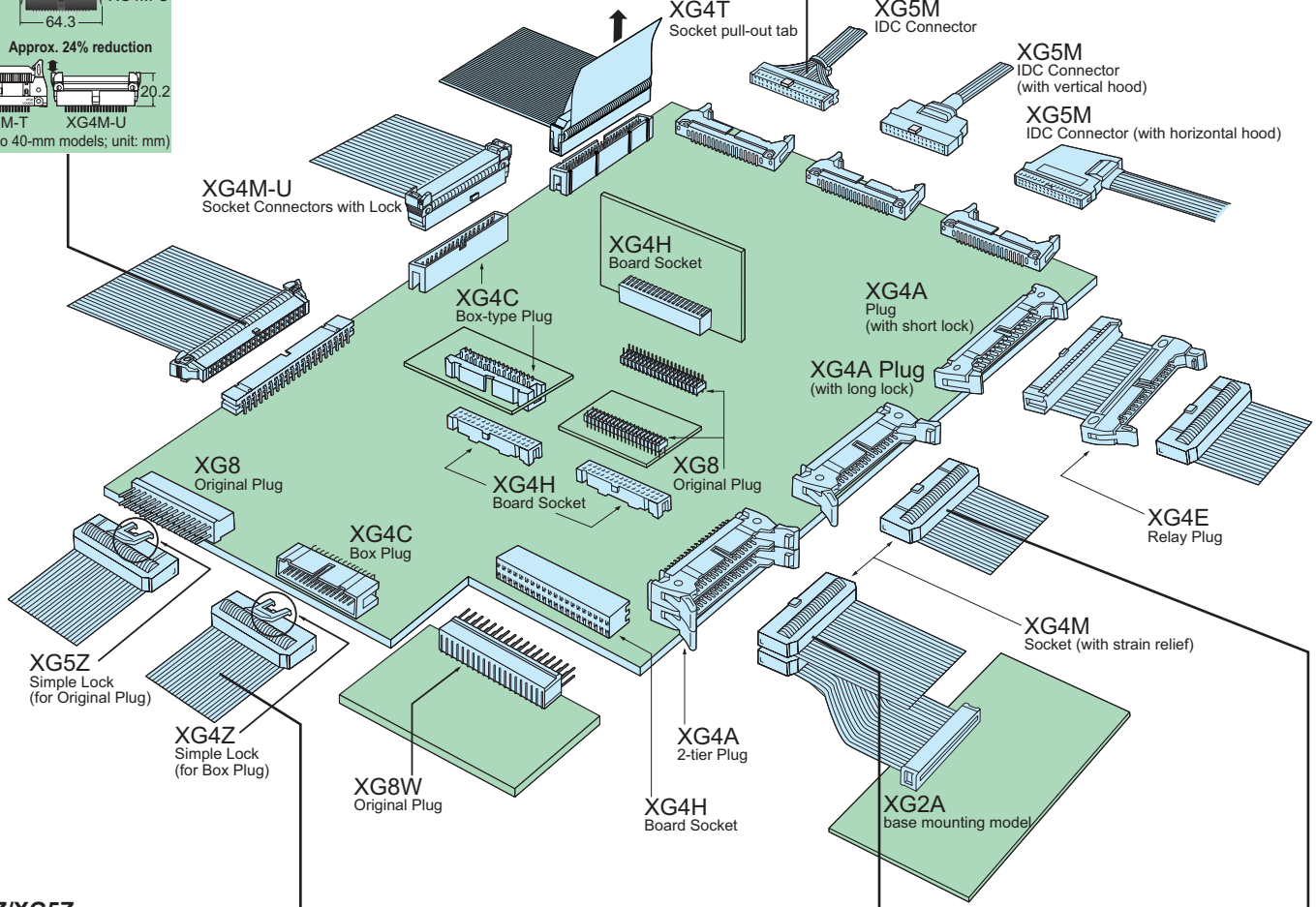
●XG4M-U
Socket Connectors with lock



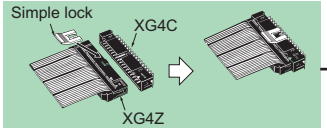
●XG5M IDC Connectors
Wiring performed with special tool, eliminating the need for wire-end stripping or crimping.



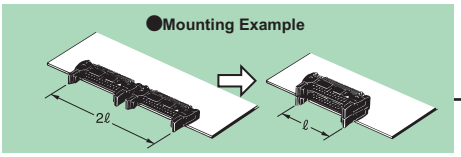
● "Easy-to-use" OMRON connectors ●



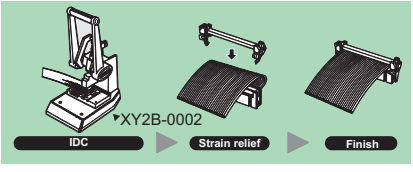
●XG4Z/XG5Z
Simple Lock (for Box Plug)
The Simple Lock for the Box Plug makes it possible to lock the Connector securely.



●XG4A·A 2-tier Plugs
2-tier plugs occupying half the space required of any conventional model.



●XG4M IDC Connectors



INDUSTRIAL CONNECTORS

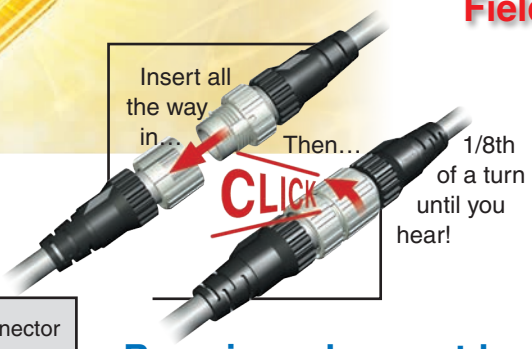
Waterproof Sensor I/O Connectors XS5 Series

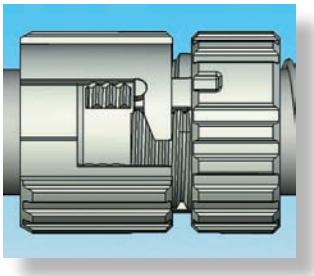
*per IP-67 Standard

The M12 twist-and-click connector solves the problems of previous screw-type connectors.

Smartclick™

Field Assembly type





All combinations are connectable.

	XS5 Twist-and-Click Plug Connector	M12 plug connector
XS5 Twist-and-Click Socket Connector	Twist-and-click connection	Screw connection
M12 socket connector	Screw connection	Screw connection

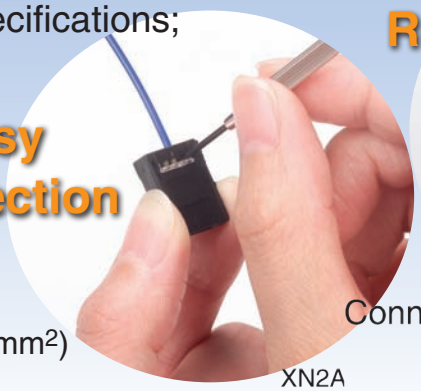
By using a bayonet locking mechanism, the XS5 creates a secure and reliable connection.

Industrial PCB Connectors XN2 Series

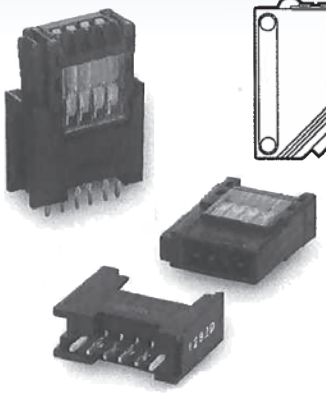
Easy-wire Connectors with *e*-*CON* Specifications; Ideal for Connecting Sensors.

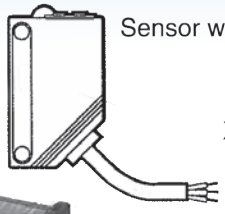
- Uses industry-proven spring clamps for wiring.
- No special tools required.
- Easy to rewire and repair.
- Each Connector accepts any size wire from AWG28 (0.08mm^2) to AWG20 (0.05mm^2) (External sheath diameter: 1.5mm max.)

Easy Connection



Easy Repair



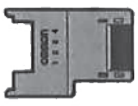


Sensor with prewired cable

Linking cables

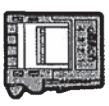
XN2A

XN2B



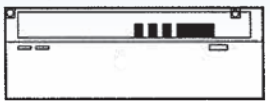
XN2A

XN2A

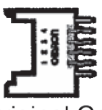


Connecting to FA Components

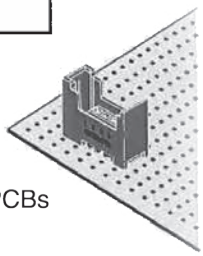
- FA components with *e*-CON connectors

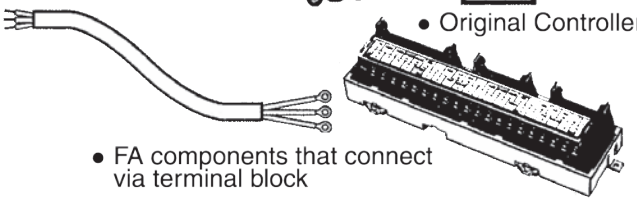


XN2D



- Original Controller PCBs





- FA components that connect via terminal block

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Omron Electronic Components, LLC

Terms and Conditions of Sales

I. GENERAL

1. Definitions: The words used herein are defined as follows.
   (a) Terms: These terms and conditions
   (b) Seller: Omron Electronic Components LLC and its subsidiaries
   (c) Buyer: The buyer of Products, including any end user in section III through VI
   (d) Products: Products and/or services of Seller
   (e) Including: Including without limitation
2. Offer; Acceptance: These Terms are deemed part of all quotations, acknowledgments, invoices, purchase orders and other documents, whether electronic or in writing, relating to the sale of Products by Seller. Seller hereby objects to any Terms proposed in Buyer's purchase order or other documents which are inconsistent with, or in addition to, these Terms.
3. Distributor: Any distributor shall inform its customer of the contents after and including section III of these Terms.

II. SALES

1. Prices; Payment: All prices stated are current, subject to change without notice by Seller. Buyer agrees to pay the price in effect at the time the purchase order is accepted by Seller. Payments for Products received are due net 30 days unless otherwise stated in the invoice. Buyer shall have no right to set off any amounts against the amount owing in respect of this invoice.
2. Discounts: Cash discounts, if any, will apply only on the net amount of invoices sent to Buyer after deducting transportation charges, taxes and duties, and will be allowed only if (a) the invoice is paid according to Seller's payment terms and (b) Buyer has no past due amounts owing to Seller.
3. Interest: Seller, at its option, may charge Buyer 1.5% interest per month or the maximum legal rate, whichever is less, on any balance not paid within the stated terms.
4. Orders: Seller will accept no order less than 200 U.S. dollars net billing.
5. Currencies: If the prices quoted herein are in a currency other than U.S. dollars, Buyer shall make remittance to Seller at the then current exchange rate most favorable to Seller; provided that if remittance is not made when due, Buyer will convert the amount to U.S. dollars at the then current exchange rate most favorable to Seller available during the period between the due date and the date remittance is actually made.
6. Governmental Approvals: Buyer shall be responsible for all costs involved in obtaining any government approvals regarding the importation or sale of the Products.
7. Taxes: All taxes, duties and other governmental charges (other than general real property and income taxes), including any interest or penalties thereon, imposed directly or indirectly on Seller or required to be collected directly or indirectly by Seller for the manufacture, production, sale, delivery, importation, consumption or use of the Products sold hereunder (including customs duties and sales, excise, use, turnover and license taxes) shall be charged to and remitted by Buyer to Seller.
8. Financial: If the financial position of Buyer at any time becomes unsatisfactory to Seller, Seller reserves the right to stop shipments or require satisfactory security or payment in advance. If Buyer fails to make payment or otherwise comply with these Terms or any related agreement, Seller may (without liability and in addition to other remedies) cancel any unshipped portion of Products sold hereunder and stop any Products in transit until Buyer pays all amounts, including amounts payable hereunder, whether or not then due, which are owing to it by Buyer. Buyer shall in any event remain liable for all unpaid accounts.
9. Cancellation; Etc: Orders are not subject to rescheduling or cancellation unless Buyer indemnifies Seller fully against all costs or expenses arising in connection therewith.
10. Force Majeure: Seller shall not be liable for any delay or failure in delivery resulting from causes beyond its control, including earthquakes, fires, floods, strikes or other labor disputes, shortage of labor or materials, accidents to machinery, acts of sabotage, riots, delay in or lack of transportation or the requirements of any government authority.
11. Shipping; Delivery: Unless otherwise expressly agreed in writing by Seller:
    (a) All sales and shipments of Products shall be FOB shipping point (unless otherwise stated in writing by Seller), at which point title to and all risk of loss of the Products shall pass from Seller to Buyer, provided that Seller shall retain a security interest in the Products until the full purchase price is paid by Buyer;
    (b) Delivery and shipping dates are estimates only; and
    (c) Seller will package Products as it deems proper for protection against normal handling and extra charges apply to special conditions.
12. Claims: Any claim by Buyer against Seller for shortage or damage to the Products occurring before delivery to the carrier or any claim related to pricing or other charges must be presented in detail in writing to Seller within 30 days of receipt of shipment.

III. PRECAUTIONS

1. Suitability: IT IS THE BUYER'S SOLE RESPOINSIBILITY TO ENSURE THAT ANY OMRON PRODUCT IS FIT AND SUFFICIENT FOR USE IN A MOTORIZED VEHICLE APPLICATION. BUYER SHALL BE SOLELY RESPONSIBLE FOR DETERMINING APPROPRIATENESS OF THE PARTICULAR PRODUCT WITH RESPECT TO THE BUYER'S APPLICATION INCLUDING (A) ELECTRICAL OR ELECTRONIC COMPONENTS, (B) CIRCUITS, (C) SYSTEM ASSEMBLIES, (D) END PRODUCT, (E) SYSTEM, (F) MATERIALS OR SUBSTANCES OR (G) OPERATING ENVIRONMENT. Buyer acknowledges that it alone has determined that the Products will meet their requirements of the intended use in all cases. Buyer must know and observe all prohibitions of use applicable to the Product/s.
2. Use with Attention: The followings are some examples of applications for which particular attention must be given. This is not intended to be an exhaustive list of all possible use of any Product, nor to imply that any use listed may be suitable for any Product:
   (a) Outdoor use, use involving potential chemical contamination or electrical interference.
   (b) Use in consumer Products or any use in significant quantities.
   (c) Energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
   (d) Systems, machines, and equipment that could present a risk to life or property.
3. Prohibited Use: NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE PRODUCT IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.
4. Motorized Vehicle Application: USE OF ANY PRODUCT/S FOR A MOTORIZED VEHICLE APPLICATION MUST BE EXPRESSLY STATED IN THE SPECIFICATION BY SELLER.
5. Programmable Products: Seller shall not be responsible for the Buyer's programming of a programmable Product.

IV. WARRANTY AND LIMITATION

1. Warranty: Seller's exclusive warranty is that the Products will be free from defects in materials and workmanship for a period of twelve months from the date of sale by Seller (or such other period expressed in writing by Seller). SELLER MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT ALL OTHER WARRANTIES, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCTS.
2. Buyer Remedy: Seller's sole obligation hereunder shall be to replace (in the form originally shipped with Buyer responsible for labor charges for removal or replacement thereof) the non-complying Product or, at Seller's election, to repay or credit Buyer an amount equal to the purchase price of the Product; provided that there shall be no liability for Seller or its affiliates unless Seller's analysis confirms that the Products were correctly handled, stored, installed and maintained and not subject to contamination, abuse, misuse or inappropriate modification. Return of any Products by Buyer must be approved in writing by Seller before shipment.
3. Limitation on Liability: SELLER AND ITS AFFILIATES SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, NEGLIGENCE OR STRICT LIABILITY. FURTHER, IN NO EVENT SHALL LIABILITY OF SELLER OR ITS AFFILITATES EXCEED THE INDIVIDUAL PRICE OF THE PRODUCT ON WHICH LIABILITY IS ASSERTED.
4. Indemnities: Buyer shall indemnify and hold harmless Seller, its affiliates and its employees from and against all liabilities, losses, claims, costs and expenses (including attorney's fees and expenses) related to any claim, investigation, litigation or proceeding (whether or not Seller is a party) which arises or is alleged to arise from Buyer's acts or omissions under these Terms or in any way with respect to the Products.

V. INFORMATION; ETC.

1. Intellectual Property: The intellectual property embodied in the Products is the exclusive property of Seller and its affiliates and Buyer shall not attempt to duplicate it in any way without the written permission of Seller. Buyer (at its own expense) shall indemnify and hold harmless Seller and defend or settle any action brought against Seller to the extent that it is based on a claim that any Product made to Buyer specifications infringed intellectual property rights of another party.
2. Property; Confidentiality: Notwithstanding any charges to Buyer for engineering or tooling, all engineering and tooling shall remain the exclusive property of Seller. All information and materials supplied by Seller to Buyer relating to the Products are confidential and proprietary, and Buyer shall limit distribution thereof to its trusted employees and strictly prevent disclosure to any third party.
3. Performance Data: Performance data is provided as a guide in determining suitability and does not constitute a warranty. It may represent the result of Seller's test conditions, and the users must correlate it to actual application requirements.
4. Change In Specifications: Product specifications and descriptions may be changed at any time based on improvements or other reasons. It is Seller's practice to change part numbers when published ratings or features are changed, or when significant engineering changes are made. However, some specifications of the Product may be changed without any notice.
5. Errors And Omissions: The information on Seller's website or in other documentation has been carefully checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical or proofreading errors or omissions.
6. Export Controls: Buyer shall comply with all applicable laws, regulations and licenses regarding (a) export of the Products or information provided by Seller; (b) sale of Products to forbidden or other proscribed persons or organizations; (c) disclosure to non-citizens of regulated technology or information.

VI. MISCELLANEOUS

1. Waiver: No failure or delay by Seller in exercising any right and no course of dealing between Buyer and Seller shall operate as a waiver of rights by Seller.
2. Assignment: Buyer may not assign its rights hereunder without Seller's written consent.
3. Law: These Terms are governed by Illinois law (without regard to conflict of laws). Federal and state courts in Cook County, Illinois have exclusive jurisdiction for any dispute hereunder.
4. Amendment: These Terms constitute the entire agreement between Buyer and Seller relating to the Products, and no provision may be changed or waived unless in writing signed by the parties.
5. Severability: If any provision hereof is rendered ineffective or invalid, such provision shall not invalidate any other provision.

Certain Precautions on Specifications and Use

1. Suitability for Use. Seller shall not be responsible for conformity with any standards, codes or regulations which apply to the combination of the Product in Buyer's application or use of the Product. At Buyer's request, Seller will provide applicable third party certification documents identifying ratings and limitations of use which apply to the Product. This information by itself is not sufficient for a complete determination of the suitability of the Product in combination with the end product, machine, system, or other application or use. Buyer shall be solely responsible for determining appropriateness of the particular Product with respect to Buyer's application, product or system. Buyer shall take application responsibility in all cases but the following is a non-exhaustive list of applications for which particular attention must be given:
   (i) Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this document.
   (ii) Energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
   (iii) Use in consumer products or any use in significant quantities.
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   NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.
2. Programmable Products. Seller shall not be responsible for the user's programming of a programmable product, or any consequence thereof.
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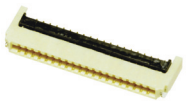
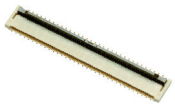
6. RoHS Compliance. Where indicated, our products currently comply, to the best of our knowledge as of the date of this publication, with the requirements of the European Union's Directive on the Restriction of certain Hazardous Substances ("RoHS"), although the requirements of RoHS do not take effect until July 2006. These requirements may be subject to change. Please consult our website for current information.

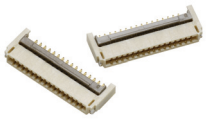
MEMO

Connectors Selection Guide

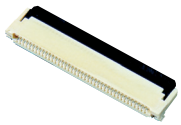
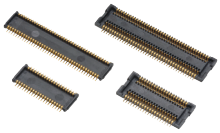
	FPC Connectors				
	 Page 13	 Page 15	 Page 17	 Page 19	 Page 21
General Attributes	**XF3C**	**XF3A**	**XF3B**	**XF2C**	**XF2B**
Pitch mm	0.25 mm	0.3 mm	0.3 mm	0.3mm	0.3mm
Insertion Type	ZIF	ZIF	ZIF	ZIF	ZIF
Cable lock type	Rotary Backlock	Rotary Backlock	Rotary Backlock	Rotary Backlock	Rotary Backlock
Plating on contacts	Gold Plating	Gold Plating	Gold Plating	Gold Plating	Gold Plating
PCB mounting	SMT	SMT	SMT	SMT	SMT
Cable insertion	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Contact type(s)	Dual Contact	Upper Contact	Dual Contact	Upper Contact	Dual Contact (Upper Contact: 61 circuits)
Dimensions mm (in)	10.5W x 3.8D x 0.85H (0.41 x 0.15 x 0.033) for 35 circuits	5.0W x 3.8D x 0.60H (0.20 x 0.15 x 0.024) for 12 circuits	12W x 4.0D x 0.9H (0.49 x 0.16 x 0.035) for 35 circuits	12.4W x 4.0D x 0.9H (0.49 x 0.16 x 0.035) for 35 circuits	12.4W x 5.5D x 1.2H (0.49 x 0.22 x 0.047) for 35 circuits
Available circuits	17, 35, 51	8, 12, 51	8, 19, 25, 35, 51, 67	17, 21, 25, 29, 35, 39, 45, 51	17, 21, 23, 25, 27, 31, 33, 35, 39, 41, 45, 51, 61 (Upper contact)
Packaging	Tape & reel	Tape & reel	Tape & reel	Tape & reel	Tape & reel
Applicable FPC Thickness	0.12 mm	0.12 mm	0.2 mm	0.12 mm	0.2 mm
Features	• Ultra Fine Pitch 0.25 mm • Realized Dual contact with 0.85mm height	• Fine pitch: 0.3mm • Upper contact with low profile of 0.60mm	• Fine pitch: 0.3mm • Realized Dual contact with 0.9mm height	• Fine pitch: 0.3mm • Realized Dual contact with 0.9mm height	• Fine pitch: 0.3mm • Realized Dual contact with 1.2mm height
Specifications					
Rated current	0.2A	0.2A	0.2A	0.2A	0.2A
Rated voltage	50V (AC/DC)	50V (AC/DC)	50V (AC/DC)	50V (AC/DC)	50V (AC/DC)
Contact resistance (@ 20 mV, 100 mA)	80mΩ max.	80mΩ max.	80mΩ max.	80mΩ max.	50mΩ max.
Insulation resistance (min.)	100MΩ @ 250VDC	100MΩ @ 250VDC	100MΩ @ 250VDC	100MΩ @ 250VDC	100MΩ @ 250VDC
Withstand voltage (leakage current: 1mA max.)	250VAC, 1 min.	250VAC, 1 min.	250VAC, 1 min.	250VAC, 1 min.	250VAC, 1 min.
Insertion tolerance	20 times	10 times	20 times	10 times	20 times
Ambient Operating Temp.	-30°C to 85°C	-30°C to 85°C	-30°C to 85°C	-30°C to 85°C	-30°C to 85°C

Note: *Be sure to read the precautions and information common to all FPC Connectors, contained in the Technical User's Guide, "FPC Connectors - Technical Information", for correct use.

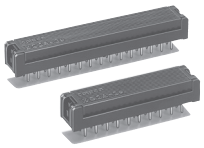
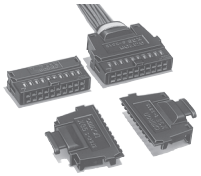
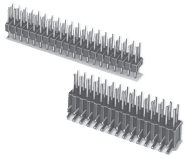
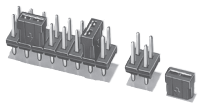
FPC Connectors

	 Page 23	 Page 25	 Page 27	 Page 29
General Attributes	**XF3H**	**XF2K**	**XF2U**	**XF2W**
Pitch mm	0.3 mm	0.4 mm	0.5 mm	0.5mm
Insertion Type	ZIF	ZIF	ZIF	ZIF
Cable lock type	Rotary Frontlock	Rotary Backlock	Rotary Backlock	Rotary Backlock
Plating on contacts	Gold Plating	Gold Plating	Gold Plating	Gold Plating
PCB mounting	SMT	SMT	SMT	SMT
Cable insertion	Horizontal	Horizontal	Horizontal	Horizontal
Contact type(s)	Lower Contact	Dual Contact	Dual Contact	Dual Contact
Dimensions mm (in)	12W x 3.5D x 0.9H (0.47 x 0.14 x 0.035) for 35 circuits	24.9W x 4.0D x 0.9H (0.98 x 0.16 x 0.035) for 57 circuits	14.0W x 3.5D x 0.9H (0.55 x 0.14 x 0.035) for 24 circuits	14.0W x 3.5D x 1.1H (0.55 x 0.14 x 0.043) for 24 circuits
Available circuits	13, 25, 31, 35, 39, 45, 51, 57, 61	57	4, 8, 11, 14, 18, 20, 24, 27, 30, 32, 40	5, 7, 8, 9, 16, 20, 24, 45, 50, 55, 64
Packaging	Tape & reel	Tape & reel	Tape & reel	Tape & reel
Applicable FPC Thickness	0.2 mm	0.2 mm	0.2 mm	0.3 mm
Features	• Fine Pitch: 0.3 mm • Ultra slim body: 3.5mm depth	• Fine pitch: 0.4mm • Realized Dual contact with 0.9mm height	• Ultra slim body: 3.5mm depth • Realized Dual contact with 0.9mm height	• Long slider type also available for easy operation • Ultra slim body: 3.5mm depth
Specifications				
Rated current	0.2A	0.4A	0.5A	0.5A
Rated voltage	50V (AC/DC)	40V (AC/DC)	50V (AC/DC)	50V (AC/DC)
Contact resistance (@ 20 mV, 100 mA)	80mΩ max.	60mΩ max.	60mΩ max.	60mΩ max.
Insulation resistance (min.)	100MΩ @ 250VDC	100MΩ @ 250VDC	100MΩ @ 250VDC	100MΩ @ 250VDC
Withstand voltage (leakage current: 1mA max.)	250VAC, 1 min.	250VAC, 1 min.	250VAC, 1 min.	250VAC, 1 min.
Insertion tolerance	20 times	20 times	20 times	20 times
Ambient Operating Temp.	-30°C to 85°C	-30°C to 85°C	-30°C to 85°C	-30°C to 85°C

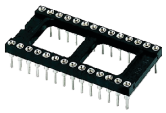
Note: *Be sure to read the precautions and information common to all FPC Connectors, contained in the Technical User's Guide, "FPC Connectors - Technical Information", for correct use.

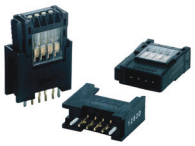
	FPC Connectors			FPC Connectors Board to Board
	 Page 31	 Page 33	 Page 35	 Page 37
General Attributes	**XF2M**	**XF2L**	**XF2J**	**XB4A/XB4B**
Pitch mm	0.5 mm	0.5 mm	0.5 mm	0.4mm
Insertion Type	ZIF	ZIF	ZIF	- - -
Cable lock type	Rotary Backlock	Slide Lock	Slide Lock	- - -
Plating on contacts	Gold Plating	Gold Plating	Gold Plating	Gold Plating
PCB mounting	SMT	SMT	SMT	SMT
Cable insertion	Horizontal	Horizontal	Vertical	- - -
Contact type(s)	Dual Contact	Upper / Lower Contact	Single-sided contact	- - -
Dimensions mm (in)	16.1W x 5.9D x 2.0H (0.63 x 0.23 x 0.079) for 24 circuits	19.9W x 3.45D x 1.2H (0.78 x 0.14 x 0.047) for 30 circuits	19.5W x 3.4D x 4.15H (0.77 x 0.13 x 0.16) for 30 circuits	7.2W x 5.0D x 0.9H (0.28 x 0.20 x 0.035) for 24 circuits
Available circuits	10, 12, 14, 18, 20, 22, 24, 26, 30, 32, 33, 34, 35, 36, 38, 40, 42, 45, 50, 55, 60	Upper Contact: 4, 6, 7, 8, 9, 10, 12, 13, 18, 21, 26, 30 Lower Contact: 5, 6, 7, 8, 10, 12, 13, 15, 18, 19, 20, 22, 24, 30	Standard Terminal Arrangement 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30 Reverse Terminal Arrangement 6, 8, 10, 12, 16, 18, 20, 22, 24, 40	Plug or Socket: 24, 40, 80
Packaging	Tape & reel	Tape & reel	Tape & reel	Tape & reel
Applicable FPC Thickness	0.3 mm	0.3 mm	0.3 mm	- - -
Features	• High-reliability Rotary Backlock • Wide range of circuits available	• Ultra slim body: 3.45mm depth	• Low profile, Top-entry • Available in Standard or Reverse Terminal Arrangement	• UltraLow Profile (Stacking Height: 0.9 mm) • Provides positive click sound
Specifications				
Rated current	0.5A	0.5A	0.5A	0.3A
Rated voltage	50V (AC/DC)	50V (AC/DC)	50V (AC/DC)	50V (AC/DC)
Contact resistance (@ 20 mV, 100 mA)	50mΩ max.	30mΩ max.	30mΩ max.	60mΩ max.
Insulation resistance (min.)	100MΩ @ 250VDC	100MΩ @ 250VDC	100MΩ @ 250VDC	100MΩ @ 250VDC
Withstand voltage (leakage current: 1mA max.)	250VAC, 1 min.	250VAC, 1 min.	250VAC, 1 min.	250VAC, 1 min.
Insertion tolerance	20 times	20 times	30 times	50 times
Ambient Operating Temp.	-30°C to 85°C	-30°C to 85°C	-30°C to 85°C	-30°C to 85°C

Note: *Be sure to read the precautions and information common to all FPC Connectors, contained in the Technical User's Guide, "FPC Connectors - Technical Information", for correct use.

	Cable / PCB Connectors				PCB Headers
	Flat Ribbon Cable	Bus Bar	Discrete Wire	Unshrouded PCB Plug	Jumper style
	 Page 41	 Page 61	 Page 63	 Page 71	 Page 81
General Attributes	**XG4**	**XG2**	**XG5**	**XG8**	**XJ8 XG8S/XG8T**
Pitch mm	2.54	2.54	2.54	2.54	2.54
Socket / Plug	Both available	Cable pass-through bus bar or Cable to PCB end termination	Socket	Plug Single or double row	Header / Jumper
Plating on contacts	Gold Plating	Tin Plating	Gold Plating	Gold or Tin Plating	Gold or Tin Plating
PCB mounting	Plugs: Through-hole (XG4A, XG4C, XG4W)	Through-hole	- - -	Through-hole	Through-hole
Termination type	**Socket:** Insulation Displacement (XG4M) **Plug:** PCB Through-hole (XG4A, XG4C, XG4W IDC (XG4M)	Insulation Displacement	Insulation Displacement	PCB	PCB
Cable type	Flat Ribbon Cable (Socket: XG4M, Plug: XG4E)	Flat Ribbon Cable	Discrete wire	- - -	- - -
Dimensions mm (in)	Varies by type	Varies by no. of circuits	Varies by type	Varies by no. of circuits	Varies by no. of circuits
Available circuits	10, 14, 16, 20, 26, 30, 34, 40, 50, 60, 64	10, 14, 16, 20, 26, 30. 34, 40, 50, 60, 64	10, 14, 16, 20, 26, 30, 34, 40, 50, 60, 54	Varies by number of rows	Varies by number of rows and circuits
Packaging	Tray	Tray	Tray	Tray	Tray
Features	**XG4M Cable Socket:** • Unique locking mechanism on socket with XG4U Strain Relief **XG4A PCB Plug:** • Long and short lock levers • 2-tier model is available • Straight or right angle **XG4E Cable Plug:** • Long and short lock levers • Straight or right angle	• End terminates cable to a pcb or acts as a pass through for connection to other cables or PCB's • Standard or reverse terminal arrangement • Part of a total flat cable wiring solution, when used in conjunction with XG4, XG5 and XG8 sockets and plugs	• Mates with XG4 and XG8 Plugs • Wiring performed with simple IDC tool • Semi-cover / Hood Cover is available	• XG8W and XG8B two row plugs mate with XG4M and XG4H sockets • XG8A / XG8B are sold in strips of 50 (single row) or 100 (double row) terminals. • XG8A / XG8B can be divided (cut) to achieve the desired number of terminations.	• Available in single, double or triple-row configurations • XJ8A Jumper provides continuity between header pins • Low profile of 5.8mm (XJ8) and 6.8mm (XG8S/XG8T) • Can be divided (cut) to achieve the desired number of terminations.
Specifications **Rated current**	1A (XG4M, XG4E) 3A (XG4A, XG4C/H)	1A	3A	3A	2A
Rated voltage	250VAC (XG4M, XG4E) 300VAC (XG4A, XG4C/H)	250VAC	300VAC	300VAC	300VAC
Contact resistance (@ 20 mV, 100 mA)	20mΩ max.	15mΩ max.	20mΩ max.	20mΩ max.	20mΩ max.
Insulation resistance (min.)	1,000MΩ @ 500VDC	1,000MΩ @ 500VDC	1,000MΩ @ 500VDC	1,000MΩ @ 500VDC	1,000MΩ @ 500VDC
Withstand voltage (leakage current: 1mA max.)	500VAC, 1 min.	500VAC, 1 min.	650VAC, 1 min.	650VAC, 1 min.	750VAC, 1 min.
Insertion tolerance	50 times	- - -	50 times	50 times for Gold 20 times for Tin	50 times for Gold 20 times for Tin
Ambient Operating Temp.	-55°C to 105°C	-55°C to 85°C	-55°C to 85°C	-55°C to 105°C	-55°C to 105°C

Note: Termination tooling and accessories for the XG4, XG2, XG5 and XG8 can be found in the "XG□ - Assembly Tooling and Accessories" datasheet

	Board to Board PCB Connectors			IC Socket
	 Page 85	 Page 97	 Page 105	 Page 111
General Attributes	**XC5**	**XH3**	**XH4A**	**XR2**
Pitch mm	2.54	1.27	1.27	2.54
Socket / Plug	Both available	Both available	- - -	IC Socket
Plating on contacts	Gold Plating	Gold/Palladium plating	Gold Plating	Gold Plating/Gold-flash plating
PCB mounting	Though-hole	Through-hole	Through-hole / SMT	Through-hole
Termination type	- - -	- - -	- - -	- - -
Cable type	- - -	- - -	- - -	- - -
Dimensions mm (in)	Varies by no. of circuits and style	Varies by no. of circuits and style	Varies by no. of circuits and style	Varies by no. of circuits and style
Available circuits	20, 32, 44, 50, 64, 100	20, 30, 40, 50, 60, 68, 80, 100, 120	40, 50, 60, 80, 100	8, 14, 16, 18, 20, 22, 24, 28, 32, 40, 42, 48, 50, 64
Packaging	Tray	Tray	Tray	Tray/Tube
Features	• DIN Twin Contact Connectors • Wide product range: Double-row; B-Type and Q-Type Triple-row; C-Type and R-Type	• Adjustable stacking height of 12 mm to 20 mm • Screw mount eliminated to save space	• Adjustable stacking height of 5mm to 11mm (for Low Profile) • Integrated male (plug) and female (socket) connector	• Ideal for high-speed data processing • A wide product selection
Specifications				
Rated current	2A	0.5A	0.5A	1A
Rated voltage	300VAC	125VAC	125VAC	300VAC
Contact resistance (@ 20 mV, 100 mA)	20mΩ max.	30mΩ max.	30mΩ max.	20mΩ max.
Insulation resistance (min.)	10^6 MΩ @ 100VDC	1,000MΩ @ 500VDC	1,000MΩ @ 500VDC	1,000MΩ @ 500VDC
Withstand voltage (leakage current: 1mA max.)	1,000VAC, 1 min.	650VAC, 1 min.	650VAC, 1 min.	1,000VAC, 1 min.
Insertion tolerance	200 times	400 times	50 times	100 times (0.75μm-gold plating) 50 times (0.25μm gold plating) 20 times (gold-flash plating)
Ambient Operating Temp.	-55°C to 125°C	-55°C to 105°C	-55°C to 105°C	-55°C to 125°C

	Sensor I/O Connectors			I/O Terminal Box	Industrial PCB
	 Page 123	 Page 139	 Page 165	 Page 177	 Page 181
General Attributes	**XS5**	**XS2**	**XS3**	**XW3D**	**XN2**
Connector type	M12 Connector (Bayonet Locking Mechanism)	M12 Connector	M8 Connector	M12 Terminal Box	Easy-wire connector
Available Models	• Standard Cables • Vibration-proof Robot Cables (CL3) • Oil-Resistant Polyurethane Cables	• PVC Cables • PUR Cables	• PVC Cables • PUR Cables	• 4 and 8 port models • IP67 when used with XS2Z-22 cover • SmartClick™ compatible	• Cable Plug, Cable Socket • Single-Socket, Four Socket
Cable Length	0.3 to 20m (depending upon specific part number)	0.3 to 20m (depending upon specific part number)	0.3 to 10m (depending upon specific part number)	5m	N/A
Rated current	4.0 A	4.0 A for 4 and 5 pole 1.5 A for 8 pole	3.0 A	4.0 A/port, 12 A/Box (power line)	3 A per pole ($0.5mm^2$ wire) 2 A per pole ($0.3mm^2$ wire) 1 A per pole ($0.2mm^2$ wire) 0.5 A per pole (0.15 or $0.08mm^2$ wire)
Rated voltage	250 VDC	125 VDC, 250 VAC	125 VDC	10 to 30 VDC	32 VDC
Contact resistance	40 mΩ max.	40 mΩ max.	60 mΩ max.	40 mΩ max.	30 mΩ max.
Dielectric Strength	1,500 VAC, 1 min.	1,500 VAC, 1 min.	1,000 VAC, 1 min.	500 VAC, 1 min.	1,000 VAC, 1 min.
Insertion tolerance	50 times	200 times	200 times	50 times	50 times
Ambient Temp. Range	-25°C to 70°C	Varies by type	Varies by type	-25°C to 70°C	-30°C to 75°C
Degree of Protection	IP67 (IEC60529)	IP67 (IEC60529)	IP67 (IEC60529)	IP67 (IEC60529)	N/A
Features	• Water-resistant • SmartClick™: Twist-Click connection with approximately 1/8th of a turn • Audible “Click” and tactile response • Interchangeable with standard screw type M12 connector.	• Water-resistant • Screw type • Wide range of product variation	• Water-resistant • Screw type	• Water-resistant (IP67) when used with XS2Z-22 cover • Suitable for connecting Sensors to PLC using XS5 or XS2 connectors • SmartClick™ connection when mating with the XS5 series	• Easy connection • Easy repair • Accepts any size wire from AWG28 to AWG22

Note: See “XS5/XS2 - Assembly Tooling and Accessories” datasheet for information regarding assembly, tooling and accessories that are common to the XS5 and XS2 connectors

FPC Connectors
Technical Information

Precautions

■ Correct Use

All Models

Operation

- Make sure that the FPC has been inserted correctly.
  If the FPC is inserted incorrectly from the customer's design specification, the pin number will not match and it may damage the contacts or cause malfunction of the equipment.
- Insert the FPC fully to the back of the connector.
  Not doing so may cause a loss of contact reliability.
- When inserting or drawing out the FPC, applying pressure from up and down, left and right, or at an angle may cause the FPC contacts to be damaged or detached, which may result in contact failure.
- Do not lock or unlock the slider with excessive force.
  The connector may be damaged, and cause contact failure.
- Do not use the connector of which the slider has once come off.
- When inserting and drawing out the FPC, make sure that the slider has been unlocked first.
- Using the FPC in the following ways may damage the FPC, change the shape of the contacts, or result in contact failure.
  1. Drawing out the FPC when the slider is still locked.
  2. Drawing out the FPC by pulling it up and down or from left to right or twisting it sideways.

Designing

- When mounting the connector to the FPC, design the FPC so that extreme peel force should not be applied directly on to the connector.
  If the FPC bends near the connector, or if the FPC is used with extreme peel force directly on to the connector, it may cause a contact loss.
- If the connector-mounted FPC is installed at a location or in any equipment that will subject the FPC to continuous shake or movement, secure the FPC or take any countermeasure against FPC disconnection from the connector.
- Use FPCs that conform to the appropriate specifications and size as stated by OMRON. When using a different FPC, or an FFC, contact OMRON.
- Use the same metal for the FPC plating and the connector plating.
- “Whiskers” may protrude from the FPC film of some lead-free FPCs. Be careful when using these units.
- Ensure a metal mask thickness of t = 0.12 to 0.15 mm.
  The recommended metal mask open area is 90% of the printed circuit board mating dimensions given in the dimensions diagrams.

Mounting

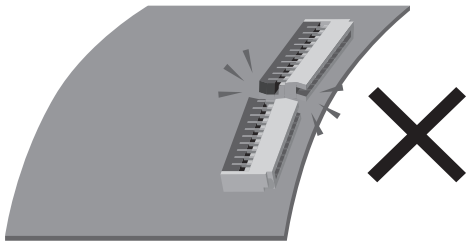
- Do not mount (reflow or manual soldering) the connector to PCB with FPC inserted in the connector. Doing so may result in contact failure.
- The reflow conditions are as stated in OMRON’s specifications and guidelines. These conditions, however, depend on the type of solder, the manufacturer, the amount of solder, the size of the circuit board, and the other mounting materials.
- When mounting the connector by manual soldering, observe the following precautions to ensure contact reliability.
  1. Conditions for manual soldering: 350±10°C 3±1 sec
  2. Do not apply an excessive amount of solder. Excessive solder will cause the flux to rise.
  3. Do not apply the soldering iron to the mount attachments using force. Doing so may cause the connectors to change shape.
  4. Do not apply the soldering iron to any parts of the connector other than the mount attachments. Doing so may cause the connector to change shape.

Board Mounting

- Be careful of board warping. The connector flatness is 0.1 mm max. A large amount of warping, however, may result in soldering faults.
- Do not apply excessive force on the connector before mounting it.
  The connector may be damaged, resulting in faulty contacts. Do not insert the FPC and lock the slider before mounting the connector.
- Be careful not to apply an excessive load on the board when performing the following actions. The connector may be damaged, resulting in faulty contacts.
  1. Dividing multi-cavity boards.
  2. Securing a board with screws.

Storage

1. Do not store the connectors in locations subject to dust or high humidity.
2. Do not store the connectors in locations close to sources of gasses such ammonia gas or sulfide gas.



Backlock Models

Operation

- Do not lock the slider without an FPC inserted.
  Locking the slider without an FPC inserted will decrease the space between upper and lower contacts and cause high insertion force.
- When locking the slider, apply pressure with your fingertips to both sides of the slider, then depress the slider until it becomes parallel with the PCB. Failing to lock the slider properly may result in contact failure.
- Do not apply force horizontally to the PCB when locking the slider. The connector may be damaged, resulting in faulty contacts.
- When unlocking the slider, place your fingers on either side or on the entire slider and slowly lift the slider up and away.
  Do not engage the slider past its initial location during the unlocking process. The connector may be damaged, resulting in faulty contacts.

Designing

- When designing the board, be sure to allow locking and operating space for the slider.

Mounting

- Do not perform reflow or manual soldering with the FPC inserted in the connector and the slider in the locked position. Doing so may result in contact failure.

Front locking Models

Operation

- When unlocking the slider, use your fingernail to rotate and lift the slider. The slider cannot be opened to an angle of more than 125 degrees. Do not apply force on the slider beyond that point. The connector may be damaged, resulting in faulty contacts.

  When locking the slider, apply pressure with your fingertips to the center of the slider, then twist the slider until it comes away from the unit. Failing to lock the slider properly may result in contact failure.

Slide locking Models

Operation

- When locking the slider, apply pressure to both sides or the entire slider, then push the slider all the way in.

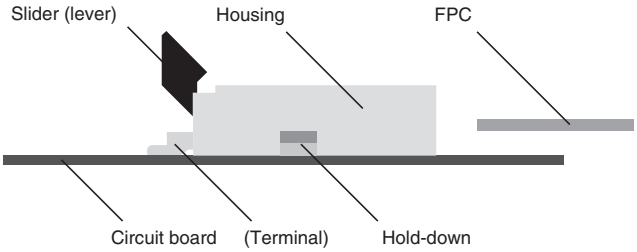
  Not doing so may result in contact failure.

Designing

- When designing the board, be sure to allow unlocking and operating space for the slider.

Operating the XF Rotary Backlock

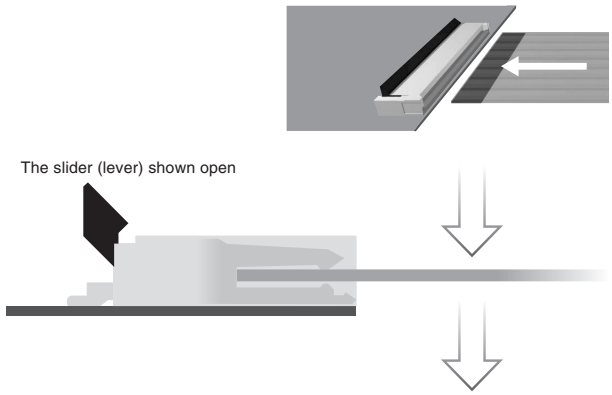
■ FPC Connector Parts



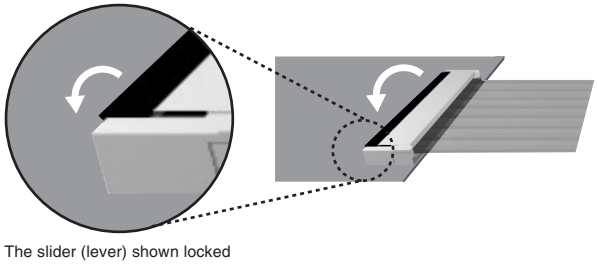
■ Handling Methods

For Inserting the FPC

1. Insert the FPC fully to the back of the connector.

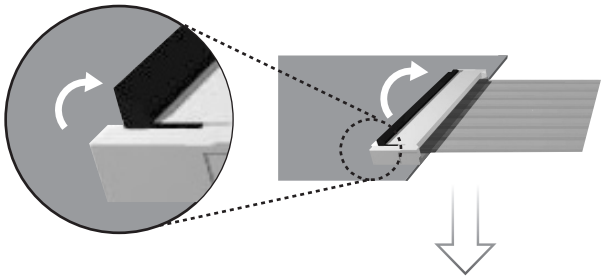


2. Activate the slider (lever) and lock the FPC in place.

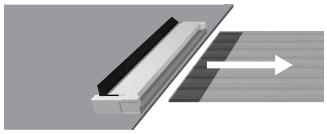


For Removing the FPC

1. Move the slider (lever) upwards to disengage the locking mechanism.



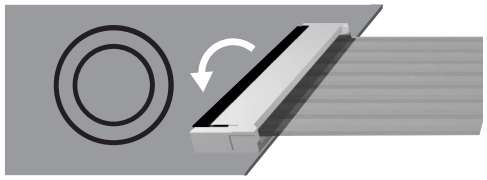
2. Once the lock has been disengaged, pull the FPC out.

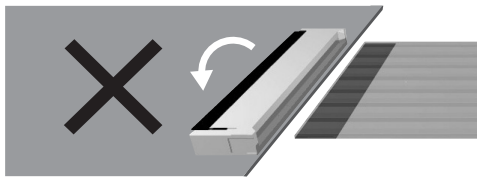


■ Precautions during Use

Operation

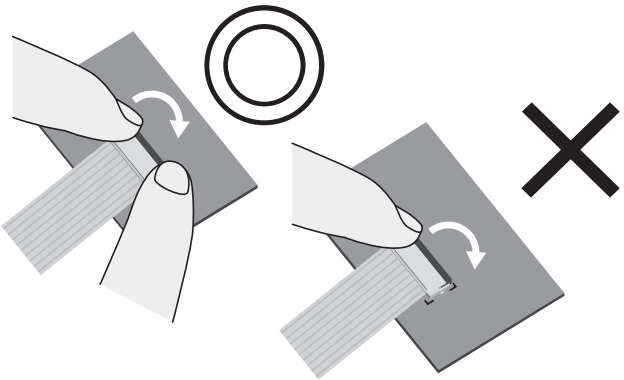
1. Do not lock the slider (lever) without an FPC inserted. Locking the slider (lever) without an FPC inserted will increase the force required to insert an FPC.





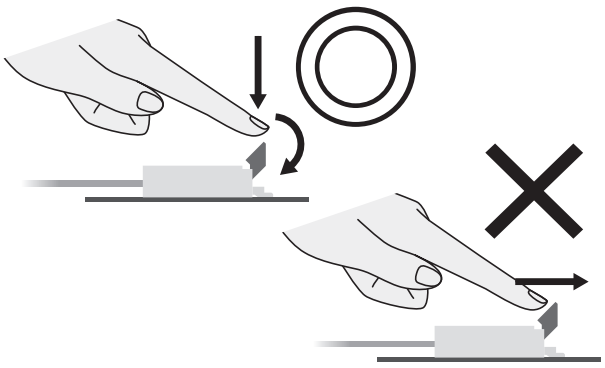
2. Do not lock or unlock the slider (lever) with excessive force. The connector may be damaged, resulting in faulty contacts. Do not use the slider (lever) again if it becomes detached.

3. When locking the slider (lever), apply pressure with your fingertips to both sides of the slider (lever) and then depress the slider (lever) until it becomes parallel with the PCB. Failing to lock the slider (lever) properly may result in contact failure.

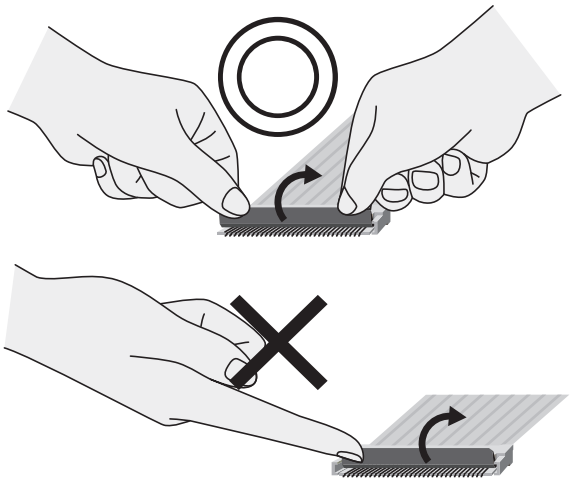


Do not apply force horizontally to the PCB when locking the slider (lever).

The connector may be damaged, resulting in faulty contacts.

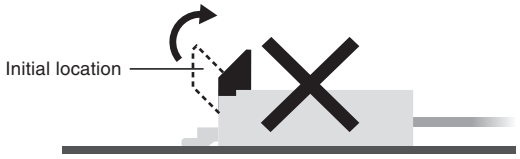


4. When unlocking the slider (lever), place your fingers on either side or the entire slider (lever) and slowly lift the slider (lever) up and away.



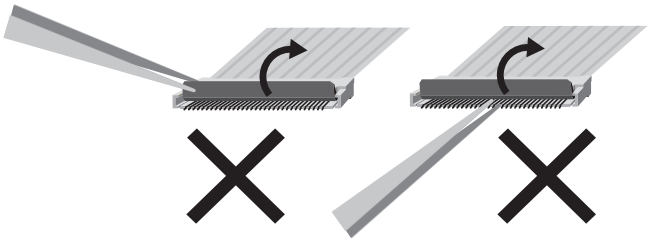
Do not engage the slider past its initial location during the unlocking process.

The connector may be damaged, resulting in faulty contacts.

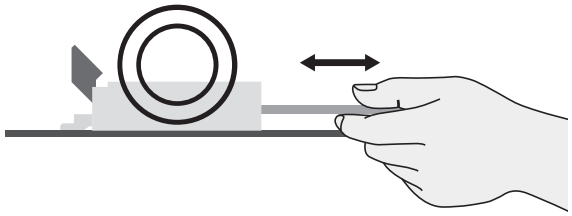


Performing the following action may cause the terminals to change shape or otherwise cause contact failures.

- Using tweezers to unlock the slider (lever).

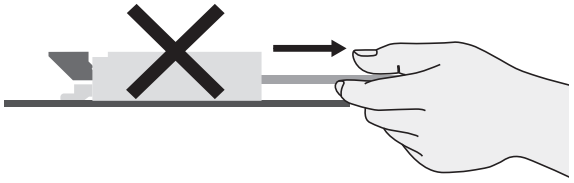


5. When inserting and drawing out the FPC, be sure to check that the slider (lever) has been unlocked first.

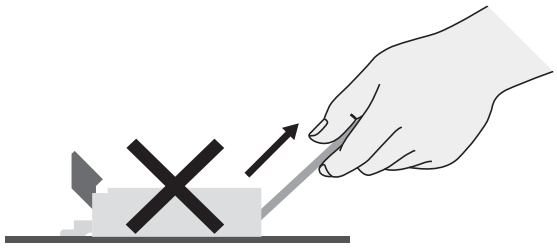


Using the FPC in the following ways may damage the FPC, change the shape of the contacts, or result in contact failure.

- Drawing out the FPC when the slider (lever) is still locked.



- Drawing out the FPC by pulling it up and down or from left to right or twisting it sideways.



6. Make sure that the FPC has been inserted correctly.

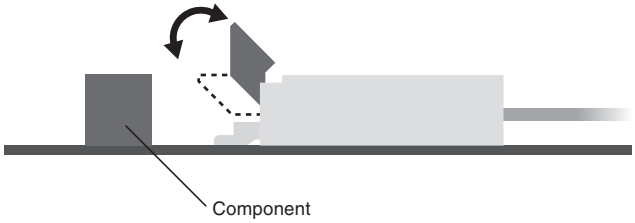
   If the FPC is inserted incorrectly from the customer's design specification, the pin number will not match and it may damage the contacts or cause malfunction of the equipment.

Mounting

1. Do not perform reflow or manual soldering with the FPC inserted in the connector and the slider (lever) in the locked position. Doing so may result in contact failure.
2. The reflow conditions are as stated in OMRON's specifications and guidelines. These conditions, however, depend on the type of solder, the manufacturer, the amount of solder, the size of the circuit board, and the other mounting materials.

Designing

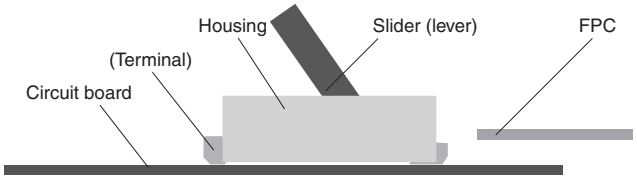
1. Design the FPC so that extreme peel force should not be applied directly on to the connector. If the FPC bends near the connector, or if the FPC is used with extreme peel force directly on to the connector, it may cause a contact loss.
2. If the FPC is installed at a location or in any equipment that will subject the FPC to continuous shake or movement, secure the FPC.
3. Use FPCs that conform to the appropriate specifications and size as stated by OMRON. When using a different FPC, or an FFC, contact OMRON.
4. Use the same metal for the FPC plating and the connector plating.
5. "Whiskers" may protrude from the FPC film of some lead-free FPCs. Be careful when using these units.
6. When designing the board, be sure to allow locking and operating space for the slider (lever).



7. Make sure that the metal mask thickness is within the appropriate specifications and size as stated by OMRON. The recommended metal mask open area is 90% of the printed circuit board mating dimensions given in the dimensions diagrams.

Operating the XF Rotary Frontlock

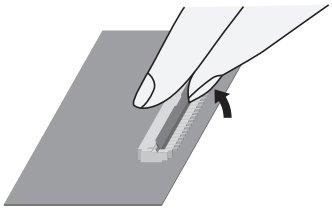
■ FPC Connector Parts



■ Handling Methods

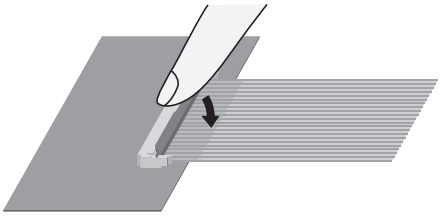
For Inserting the FPC

1. When unlocking the slider, use your fingernail to rotate and lift the slider.



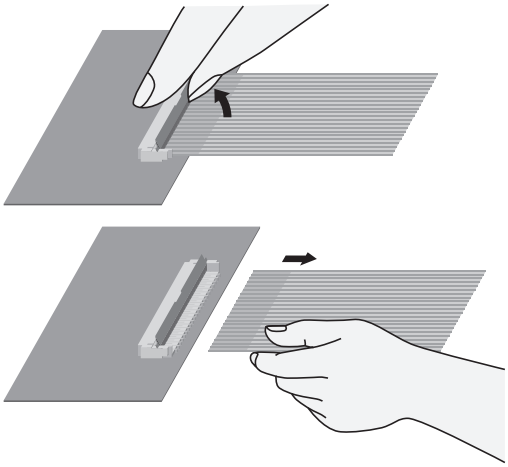
2. Securely insert the FPC so that it is perpendicular to the connector and horizontal to the connector.

3. When locking the slider, apply pressure with your fingertips to the center of the slider, then twist the slider until it comes away from the unit.



For Removing the FPC

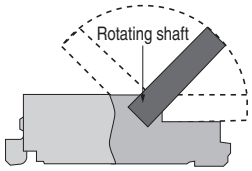
1. Unlock the slider by pushing it up, then remove the FPC.



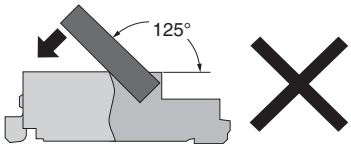
■ Precautions during Use

Operation

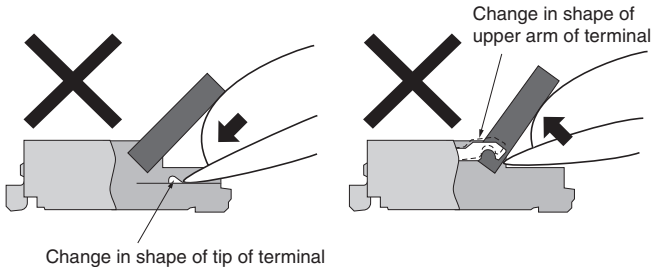
1. The slider mechanism rotates around a rotary shaft. Operate the slider in a rotating movement.



2. The slider cannot be opened to an angle of more than 125 degrees. Do not apply force on the slider beyond that point. The connector may be damaged, resulting in faulty contacts. Do not use the connector of which the slider has once come off.

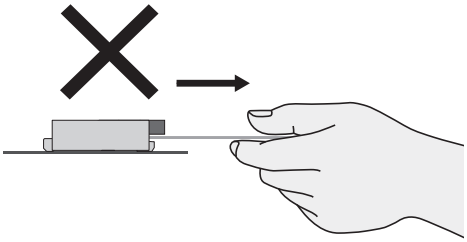


3. Lock and unlock the slider using the center of the slider. Using the end of the slider may result in incomplete locking, damage, or contact failure.
4. As shown in the following figure, do not touch the terminals with your fingernail or fingers if using the slider without the FPC inserted. Doing so may cause the terminals to change shape and result in contact failure.

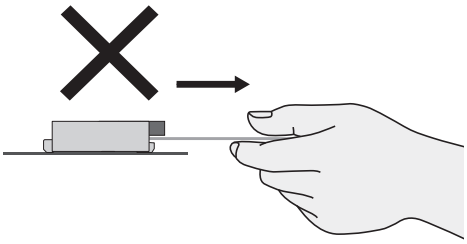


5. Using the FPC in the follow ways may damage the FPC, change the shape of the contacts, or result in contact failure.

- Drawing out the FPC when the slider (lever) is still locked.



- Drawing out the FPC by pulling it up and down or from left to right or twisting it sideways.



6. Make sure that the FPC has been inserted correctly. If the FPC is inserted incorrectly from the customer's design specification, the pin number will not match and it may damage the contacts or cause malfunction of the equipment.

Mounting

1. Do not perform reflow or manual soldering with the FPC inserted in the connector. Doing so may result in contact failure.
2. The reflow conditions are as stated in OMRON's specifications and guidelines. These conditions, however, depend on the type of solder, the manufacturer, the amount of solder, the size of the circuit board, and the other mounting materials.

Designing

1. Design the FPC so that extreme peel force should not be applied directly on to the connector. If the FPC bends near the connector, or if the FPC is used with extreme peel force directly on to the connector, it may cause a contact loss.
2. If the FPC is installed at a location or in any equipment that will subject the FPC to continuous shake or movement, secure the FPC.
3. Use FPCs that conform to the appropriate specifications and size as stated by OMRON. When using a different FPC, or an FFC, contact OMRON.
4. Use the same metal for the FPC plating and the connector plating.
5. "Whiskers" may protrude from the FPC film of some lead-free FPCs. Be careful when using these units.
6. Make sure that the metal mask thickness is within the appropriate specifications and size as stated by OMRON. The recommended metal mask open area is 90% of the printed circuit board mating dimensions given in the dimensions diagrams.

Rotary Backlock Connector (0.25-mm Pitch, Dual Contact)
XF3C

0.25 mm Pitch with Dual contact and Rotary Backlock Mechanism

- Wide molding wall on the rear bottom of the connector allows greater freedom in board design
- Dual contact
- Single sided FPC with an applicable thickness of 0.12 mm
- Halogen Free (See note)

Note: OMRON uses the following standard to determine halogen-free construction: 900 ppm max. for Br, 900 ppm max. for Cl, and 1,500 ppm max. for Br+Cl.

- RoHS Compliant

NEW

Ordering Information

Pins	Model	Quantity per reel (unit) (See Note)
17	**XF3C-1745-41A**	2,000
35	**XF3C-3545-41A**	
51	**XF3C-5145-41A**	

Note: Please order by integer multiple of the quantity per reel.

Ratings and Specifications

■ Characteristics

Rated current	0.2 A AC/DC
Rated voltage	50 V AC/DC
Contact resistance	80 mΩ max. (at 20 mV DC max., 100 mA max.)
Insulation resistance	100 MΩ min. (at 250 VDC)
Withstand voltage	250 VAC for 1 min. (leakage current: 1 mA max.)
Insertion tolerance	20 times
Ambient operating temperature	-30 to 85°C (with no icing or condensation)

■ Materials and Finish

Housing	LCP resin (UL94V-0)/natural
Slider	LCP resin (UL94V-0)/black
Contacts	Spring copper alloy/nickel substrate (2 μm) Gold-plated contacts (0.15 μm)

Dimensions

Unit: mm

XF3C-□□45-41A

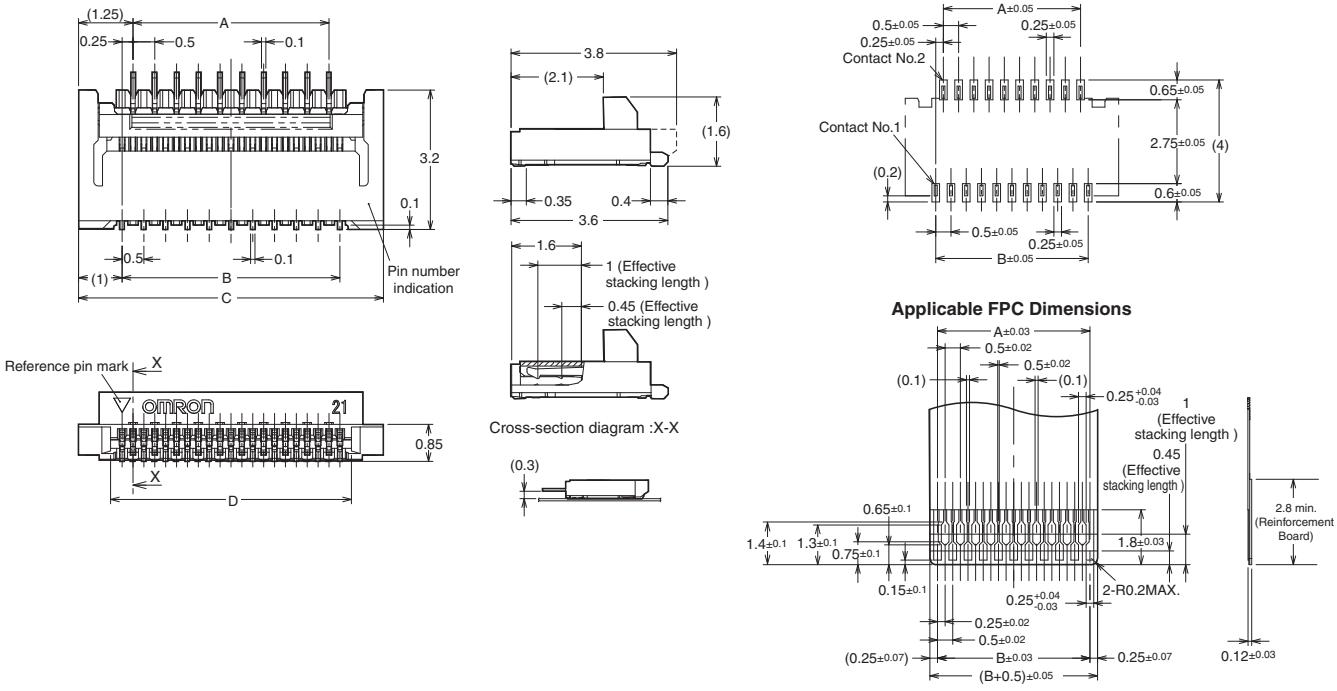


Table of Dimensions

Pins	Model	A	B	C	D
17	**XF3C-1745-41A**	3.5	4.0	6.0	4.55
35	**XF3C-3545-41A**	8.0	8.5	10.5	9.05
51	**XF3C-5145-41A**	12.0	12.5	14.5	13.05

Rotary Backlock Connector (0.3-mm Pitch, Upper Contact)
XF3A

On-board height 0.6 mm, the lowest class profile in the industry. Rotary Backlock Connectors with a 0.3-mm pitch.

- Wide molding wall on the rear bottom of the connector allows greater freedom in board design
- Upper contact
- Halogen Free (See note)

Note: OMRON uses the following standard to determine halogen-free construction: 900 ppm max. for Br, 900 ppm max. for Cl, and 1,500 ppm max. for Br+Cl.

- RoHS Compliant

NEW

Ordering Information

Pins	Model	Quantity per reel (unit) (See Note)
8	**XF3A-0855-41A**	4,000
12	**XF3A-1255-41A**	
51	**XF3A-5155-41A**	

Note: Please order by integer multiple of the quantity per reel.

Ratings and Specifications

■ Characteristics

Rated current	0.2 A AC/DC
Rated voltage	50 V AC/DC
Contact resistance	80 mΩ max. (at 20 mV DC max., 100 mA max.)
Insulation resistance	100 MΩ min. (at 250 VDC)
Withstand voltage	250 VAC for 1 min. (leakage current: 1 mA max.)
Insertion tolerance	10 times
Ambient operating temperature	-30 to 85°C (with no icing or condensation)

■ Materials and Finish

Housing	LCP resin (UL94V-0)/natural
Slider	LCP resin (UL94V-0)/black
Contacts	Spring copper alloy/nickel substrate (2 μm) Gold-plated contacts (0.15 μm)

Dimensions

Unit: mm

XF3A-□□55-41A

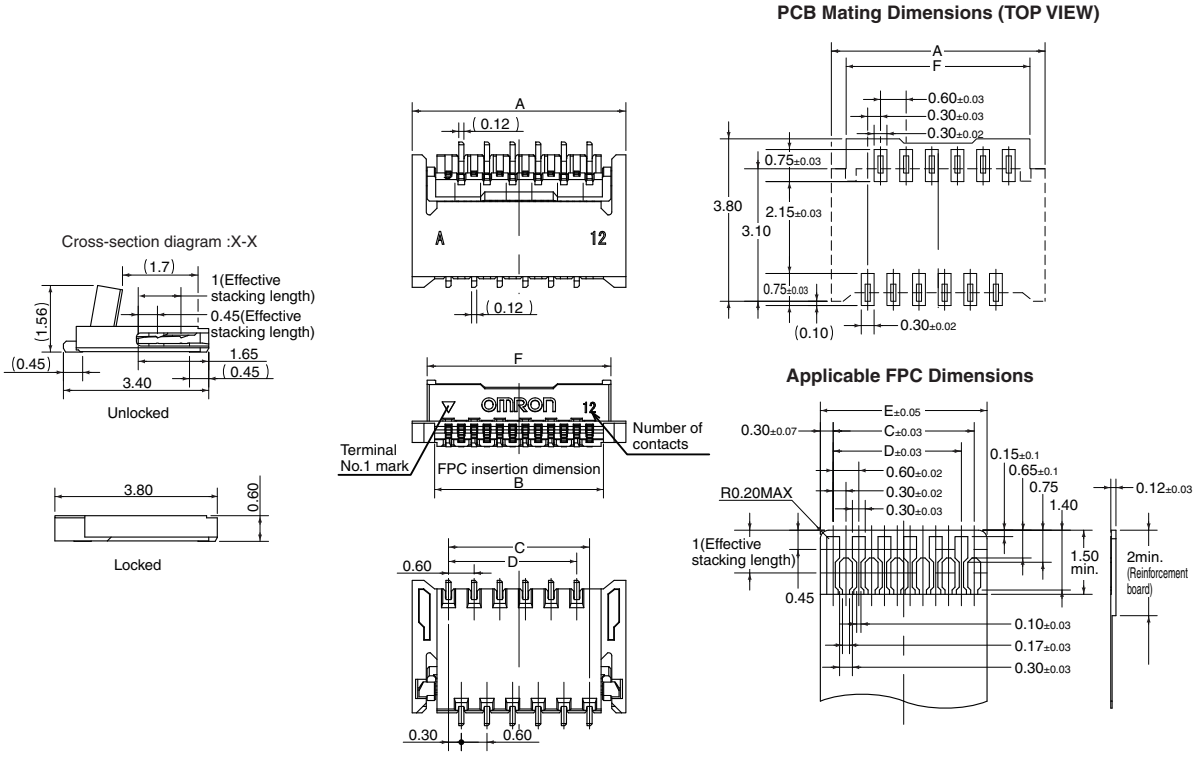


Table of Dimensions

Pins	Model	A	B	C (See note)	D	E	F
8	**XF3A-0855-41A**	3.8	2.75	2.1	1.8	2.7	3.1
12	**XF3A-1255-41A**	5.0	3.95	3.3	3.0	3.9	4.3
51	**XF3A-5155-41A**	16.7	15.65	15.0	14.4	15.6	16.0

Note: Dimension C indicates total pitch.

Rotary Backlock Connector (0.3-mm Pitch, Dual Contact)
XF3B

Compact body (with a low profile of just 0.9 mm) supports the applicable FPC thickness of 0.2 mm

- Wide molding wall on the rear bottom of the connector allows greater freedom in board design
- Dual contact model to enhance the contact structure of lower contact
- Gold plated with an applicable FPC thickness of 0.2 mm
- Halogen Free (See note)

Note: OMRON uses the following standard to determine halogen-free construction: 900 ppm max. for Br, 900 ppm max. for Cl, and 1,500 ppm max. for Br+Cl.

- RoHS Compliant

Ordering Information

Pins	Model (See Note 1.)	Quantity per reel (unit) (See Note 2.)
8	**XF3B-0845-31A**	2,000
19	**XF3B-1945-31A**	
25	**XF3B-2545-31A**	
35	**XF3B-3545-31A**	
51	**XF3B-5145-31AE**	1,500
67	**XF3B-6745-31AE**	

Note: 1. The end of the model number indicates the slider specification. None: Standard type E: Easy lock type

2. Please order by integer multiple of the quantity per reel.

Ratings and Specifications

■ Characteristics

Rated current	0.2 A AC/DC
Rated voltage	50 V AC/DC
Contact resistance	80 mΩ max. (at 20 mV DC max., 100 mA max.)
Insulation resistance	100 MΩ min. (at 250 VDC)
Withstand voltage	250 VAC for 1 min. (leakage current: 1 mA max.)
Insertion tolerance	20 times
Ambient operating temperature	-30 to 85°C (with no icing or condensation)

■ Materials and Finish

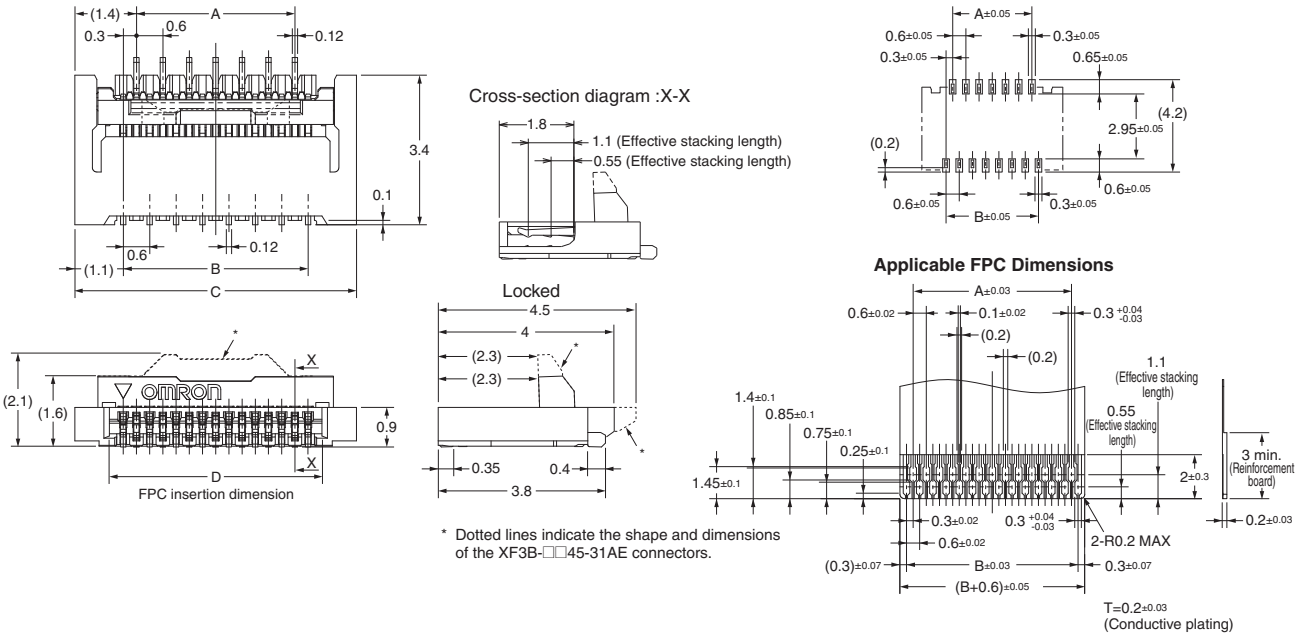
Housing	LCP resin (UL94V-0)/natural
Slider	LCP resin (UL94V-0)/brown
Contacts	Spring copper alloy/nickel substrate (2 μm) Gold-plated contacts (0.15 μm)

Dimensions

Unit: mm

XF3B-□□45-31A

XF3B-□□45-31AE



* Dotted lines indicate the shape and dimensions of the XF3B-□□45-31AE connectors.

Table of Dimensions

Pins	Model	A	B (See note)	C	D
8	**XF3B-0845-31A**	1.8	2.1	4.3	2.75
19	**XF3B-1945-31A**	4.8	5.4	7.6	6.05
25	**XF3B-2545-31A**	6.6	7.2	9.4	7.85
35	**XF3B-3545-31A**	9.6	10.2	12.4	10.85
51	**XF3B-5145-31AE**	14.4	15.0	17.2	15.65
67	**XF3B-6745-31AE**	19.2	19.8	22.0	20.45

Note: Dimension B indicates total pitch.

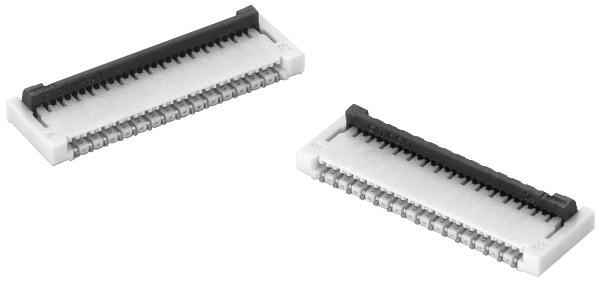
Rotary Backlock Connector (0.3-mm Pitch, Upper Contact)
XF2C

Rotary Backlock Mechanism with 0.3 mm Pitch and Low Profile of 0.9 mm

- Wide molding wall on the rear bottom of the connector allows greater freedom in board design
- Upper Contact
- Gold plated with an applicable FPC thickness of 0.12 mm
- Halogen Free (See note)

Note: OMRON uses the following standard to determine halogen-free construction: 900 ppm max. for Br, 900 ppm max. for Cl, and 1,500 ppm max. for Br+Cl.

- RoHS Compliant



Ordering Information

Pins	Model	Quantity per reel (unit) (See Note)
17	**XF2C-1755-41A**	2,000
21	**XF2C-2155-41A**	
25	**XF2C-2555-41A**	
29	**XF2C-2955-41A**	
35	**XF2C-3555-41A**	
39	**XF2C-3955-41A**	
45	**XF2C-4555-41A**	
51	**XF2C-5155-41A**	

Note: Please order by integer multiple of the quantity per reel.

Ratings and Specifications

■ Characteristics

Rated current	0.2 A AC/DC
Rated voltage	50 V AC/DC
Contact resistance	80 mΩ max. (at 20 mV DC max., 100 mA max.)
Insulation resistance	100 MΩ min. (at 250 VDC)
Withstand voltage	250 VAC for 1 min. (leakage current: 1 mA max.)
Insertion tolerance	10 times
Ambient operating temperature	-30 to 85°C (with no icing or condensation)

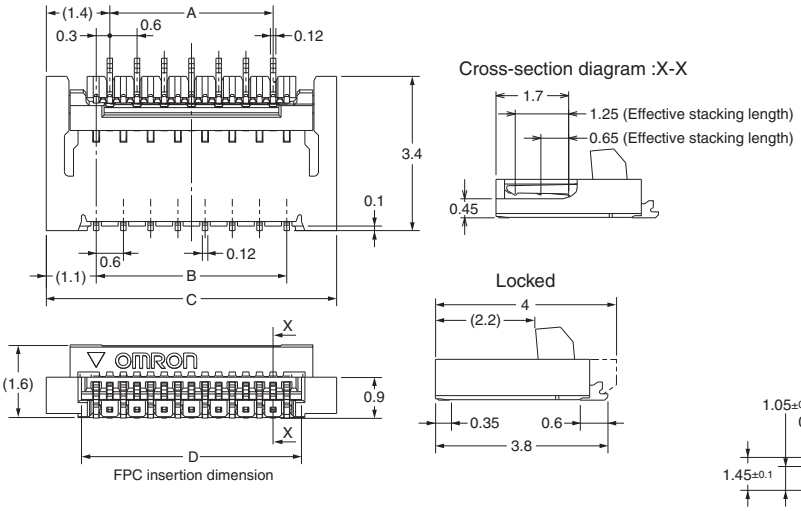
■ Materials and Finish

Housing	LCP resin (UL94V-0)/natural
Slider	LCP resin (UL94V-0)/black
Contacts	Spring copper alloy/nickel substrate (2 μm) Gold-plated contacts (0.15 μm)

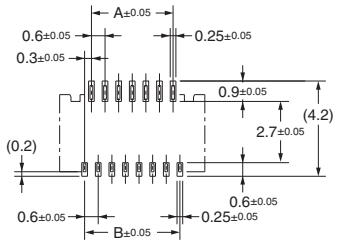
Dimensions

Unit: mm

XF2C-□□55-41A



PCB Mating Dimensions (TOP VIEW)



Applicable FPC Dimensions

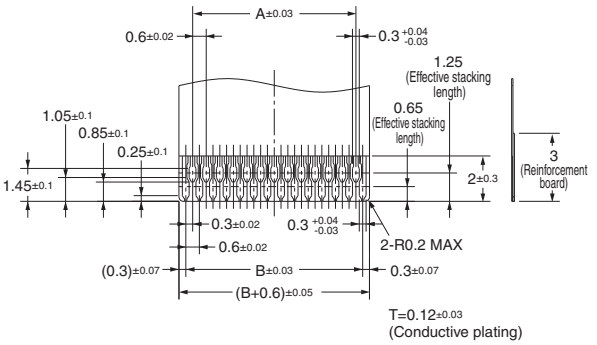


Table of Dimensions

Pins	Model	A	B	C	D
17	**XF2C-1755-41A**	4.2	4.8	7.0	5.5
21	**XF2C-2155-41A**	5.4	6.0	8.2	6.7
25	**XF2C-2555-41A**	6.6	7.2	9.4	7.9
29	**XF2C-2955-41A**	7.8	8.4	10.6	9.1
35	**XF2C-3555-41A**	9.6	10.2	12.4	10.9
39	**XF2C-3955-41A**	10.8	11.4	13.6	12.1
45	**XF2C-4555-41A**	12.6	13.2	15.4	13.9
51	**XF2C-5155-41A**	14.4	15.0	17.2	15.7

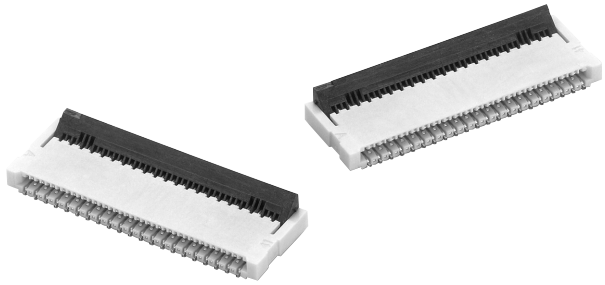
Rotary Backlock Connector (0.3 mm-pitch, Dual Contact)
XF2B

Rotary Backlock Mechanism with 0.3 mm-pitch Design

- Wide molding wall on the rear bottom of the connector allows greater freedom in board design
- Dual contact reduces the number of parts
- Gold plated with an applicable FPC thickness of 0.2 mm
- Halogen Free (See note)

Note: OMRON uses the following standard to determine halogen-free construction: 900 ppm max. for Br, 900 ppm max. for Cl, and 1,500 ppm max. for Br+Cl.

- RoHS Compliant



Ordering Information

Pins (Note 1)	Model	Quantity per reel (Note 2)
17	**XF2B-1745-31A**	1,500
21	**XF2B-2145-31A**	
23	**XF2B-2345-31A**	
25	**XF2B-2545-31A**	
27	**XF2B-2745-31A**	
31	**XF2B-3145-31A**	
33	**XF2B-3345-31A**	
35	**XF2B-3545-31A**	
39	**XF2B-3945-31A**	
41	**XF2B-4145-31A**	
45	**XF2B-4545-31A**	
51	**XF2B-5145-31A**	
61 (See note2)	**XF2B-6155-31A**	

Note: 1. Please order by integer multiple of the quantity per reel.
2. Upper contact

Ratings and Specifications

■ Characteristics

Rated current	0.2 A AC/DC
Rated voltage	50 V AC/DC
Contact resistance	50 mΩ max. (at 20 mV max., 100 mA max.)
Insulation resistance	100 MΩ min. (at 250 VDC)
Withstand voltage	250 VAC for 1 min. (leakage current: 1 mA max.)
Insertion tolerance	20 times
Ambient operating temperature	-30 to 85°C (with no icing or condensation)

■ Materials and Finish

Housing	LCP resin (UL94V-0)/natural
Slider	LCP resin (UL94V-0)/black
Contacts	Spring copper alloy/nickel substrate (2 μm), Gold-plated contacts (0.15 μm)

Dimensions

Unit: mm

XF2B-□□□5-31A

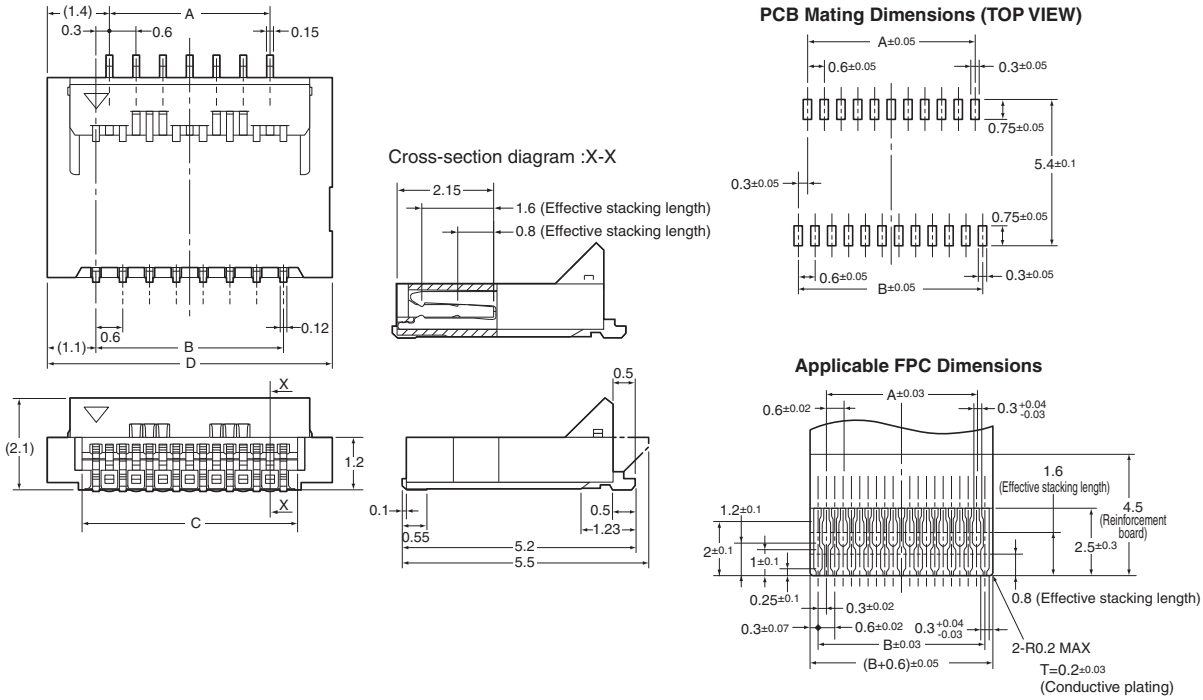


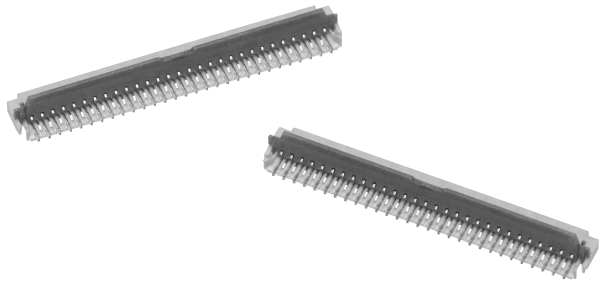
Table of Dimensions

Pins	Model	A	B	C	D
17	**XF2B-1745-31A**	4.2	4.8	5.5	7.0
21	**XF2B-2145-31A**	5.4	6.0	6.7	8.2
23	**XF2B-2345-31A**	6.0	6.6	7.3	8.8
25	**XF2B-2545-31A**	6.6	7.2	7.9	9.4
27	**XF2B-2745-31A**	7.2	7.8	8.5	10.0
31	**XF2B-3145-31A**	8.4	9.0	9.7	11.2
33	**XF2B-3345-31A**	9.0	9.6	10.3	11.8
35	**XF2B-3545-31A**	9.6	10.2	10.9	12.4
39	**XF2B-3945-31A**	10.8	11.4	12.1	13.6
41	**XF2B-4145-31A**	11.4	12.0	12.7	14.2
45	**XF2B-4545-31A**	12.6	13.2	13.9	15.4
51	**XF2B-5145-31A**	14.4	15.0	15.7	17.2
61 (See note)	**XF2B-6155-31A**	17.4	18.0	18.7	20.2

Note: Upper contact

Rotary Frontlock Connector (0.3-mm Pitch, Lower Contact)
XF3H

Rotary Front-lock Mechanism with a Depth of 3.5 mm and Low Profile of 0.9 mm



- Wide molding wall on the rear bottom of the connector allows greater freedom in board design.
- Slider open locking mechanism makes work efficient.
- Gold plated with an applicable FPC thickness of 0.2 mm.
- Halogen Free (See note)

Note: OMRON uses the following standard to determine halogen-free construction: 900 ppm max. for Br, 900 ppm max. for Cl, and 1,500 ppm max. for Br+Cl.

- RoHS Compliant

Ordering Information

Pins	Model	Quantity per reel (unit) (See Note)
13	**XF3H-1355-31A**	3,000
25	**XF3H-2555-31A**	
31	**XF3H-3155-31A**	
35	**XF3H-3555-31A**	
39	**XF3H-3955-31A**	
45	**XF3H-4555-31A**	
51	**XF3H-5155-31A**	
57	**XF3H-5755-31A**	
61	**XF3H-6155-31A**	

Note: Please order by integer multiple of the quantity per reel.

Ratings and Specifications

■ Characteristics

Rated current	0.2 A AC/DC
Rated voltage	50 V AC/DC
Contact resistance	80 mΩ max. (at 20 mV max., 100 mA max.)
Insulation resistance	100 MΩ min. (at 250 VDC)
Withstand voltage	250 VAC for 1 min. (leakage current: 1 mA max.)
Insertion tolerance	20 times
Ambient operating temperature	−30 to 85°C (with no icing or condensation)

■ Materials and Finish

Housing	LCP resin (UL94V-0)/natural
Slider	LCP resin (UL94V-0)/brown
Contacts	Spring copper alloy/nickel substrate (2 μm), Gold-plated contacts (0.15 μm)

Dimensions

Unit: mm

XF3H-□□55-31A

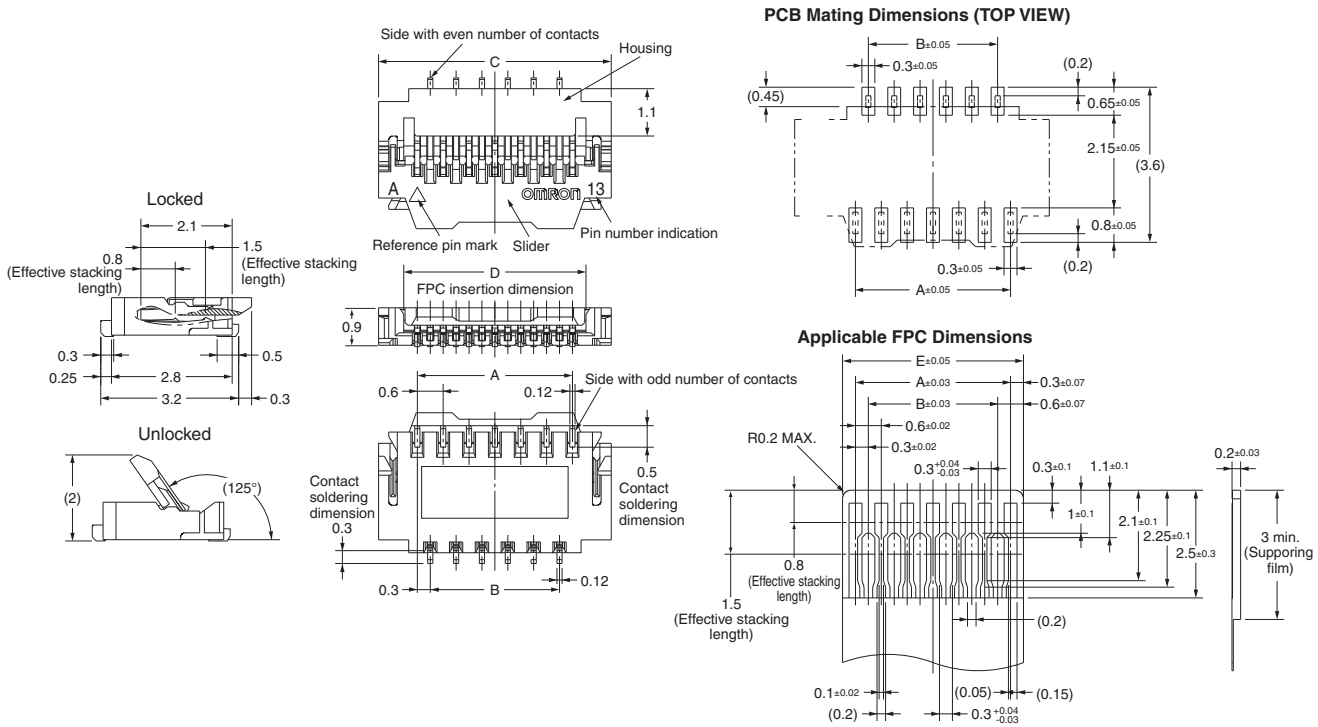


Table of Dimensions

Pins	Model	A	B	C	D	E
13	**XF3H-1355-31A**	3.6	3.0	5.4	4.23	4.2
25	**XF3H-2555-31A**	7.2	6.6	9.0	7.83	7.8
31	**XF3H-3155-31A**	9.0	8.4	10.8	9.63	9.6
35	**XF3H-3555-31A**	10.2	9.6	12.0	10.83	10.8
39	**XF3H-3955-31A**	11.4	10.8	13.2	12.03	12.0
45	**XF3H-4555-31A**	13.2	12.6	15.0	13.83	13.8
51	**XF3H-5155-31A**	15.0	14.4	16.8	15.63	15.6
57	**XF3H-5755-31A**	16.8	16.2	18.6	17.43	17.4
61	**XF3H-6155-31A**	18.0	17.4	19.8	18.63	18.6

Rotary Backlock Connector (0.4-mm Pitch, Dual Contact)
XF2K

Rotary Backlock Mechanism with a Depth of 0.4 mm and Low Profile of 0.9 mm

- Long slider makes it easier to lock and unlock the connector.
- Dual contacts reduce the number of parts.
- Gold plated with an applicable FPC thickness of 0.2 mm.
- Halogen Free (See note)

Note: OMRON uses the following standard to determine halogen-free construction: 900 ppm max. for Br, 900 ppm max. for Cl, and 1,500 ppm max. for Br+Cl.

- RoHS Compliant

Ordering Information

Pins	Model	Quantity per reel (unit) (See Note)
57	**XF2K-5715-3AE**	2,000

Note: Please order by integer multiple of the quantity per reel.

Ratings and Specifications

■ Characteristics

Rated current	0.4 A AC/DC
Rated voltage	40 V AC/DC
Contact resistance	60 mΩ max. (at 20 mV max., 100 mA max.)
Insulation resistance	100 MΩ min. (at 250 VDC)
Withstand voltage	250 VAC for 1 min (leakage current: 1 mA max.)
Insertion tolerance	20 times
Ambient operating temperature	–30 to 85°C (with no icing or condensation)

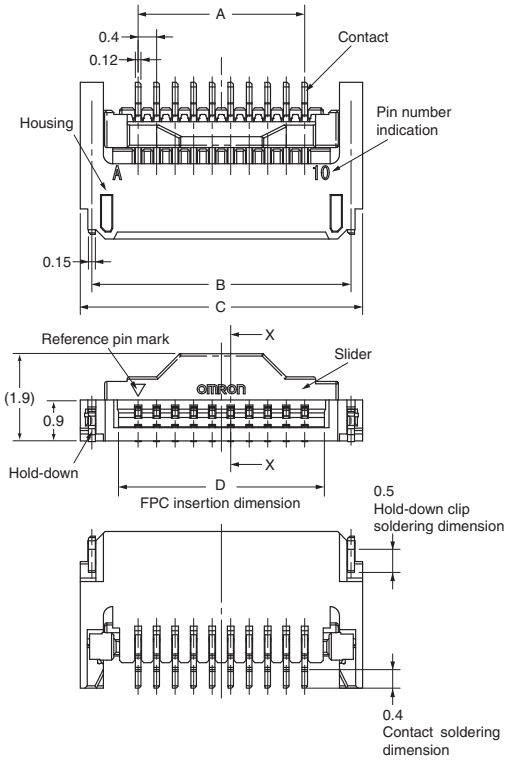
■ Materials and Finish

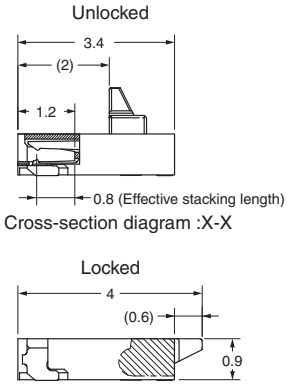
Housing	LCP resin (UL94V-0)/natural
Slider	LCP resin (UL94V-0)/brown
Contacts	Spring copper alloy/nickel substrate (2 μm), Gold-plated contacts (0.15 μm)
Hold-down	Spring copper alloy/fused-tin plating (2 μm)

Dimensions

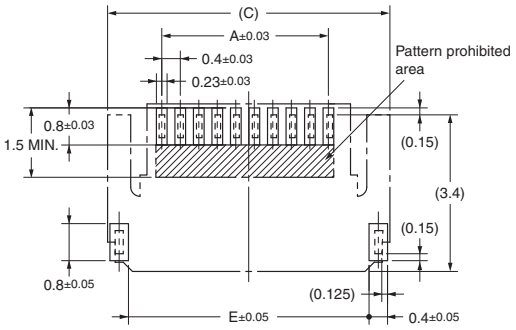
Unit: mm

XF2K-□□15-3AE





PCB Mating Dimensions (TOP VIEW)



Applicable FPC Dimensions

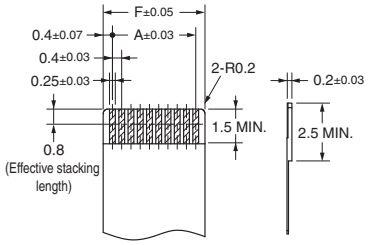


Table of Dimensions

Pins	Model	A	B	C	D	E	F
57	**XF2K-5715-3AE**	22.4	24.4	24.9	23.3	24.0	23.2

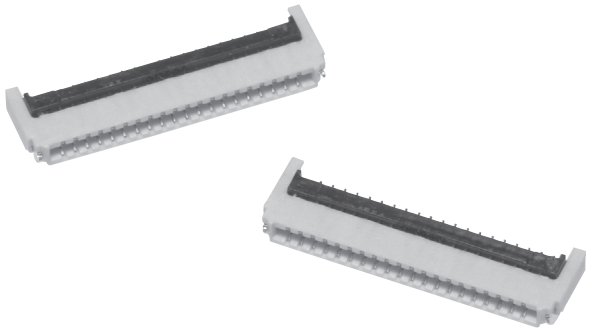
Rotary Backlock Connector (0.5-mm Pitch, Dual Contact)
XF2U

Rotary Backlock Mechanism with a Depth of 3.5 mm and Low Profile of 0.9 mm

- Dual contact reduces the number of parts.
- Wide molding wall on the rear bottom of the connector allows greater freedom in board design.
- Gold plated with an applicable FPC thickness of 0.2 mm.
- Halogen Free (See note)

Note: OMRON uses the following standard to determine halogen-free construction: 900 ppm max. for Br, 900 ppm max. for Cl, and 1,500 ppm max. for Br+Cl.

- RoHS Compliant



Ordering Information

Pins	Model	Quantity per reel (unit) (See Note)
4	**XF2U-0415-3A**	3,000
8	**XF2U-0815-3A**	
11	**XF2U-1115-3A**	
14	**XF2U-1415-3A**	
18	**XF2U-1815-3A**	
20	**XF2U-2015-3A**	
24	**XF2U-2415-3A**	
27	**XF2U-2715-3A**	
30	**XF2U-3015-3A**	
32	**XF2U-3215-3A**	
40	**XF2U-4015-3A**	

Note: Please order by integer multiple of the quantity per reel.

Ratings and Specifications

■ Characteristics

Rated current	0.5 A AC/DC
Rated voltage	50 V AC/DC
Contact resistance	60 mΩ max. (at 20 mV max., 100 mA max.)
Insulation resistance	100 MΩ min. (at 250 VDC)
Withstand voltage	250 VAC for 1 min. (leakage current: 1 mA max.)
Insertion tolerance	20 times
Ambient operating temperature	–30 to 85°C (with no icing or condensation)

■ Materials and Finish

Housing	LCP resin (UL94V-0)/natural
Slider	LCP resin (UL94V-0)/black
Contacts	Spring copper alloy/nickel substrate (2 μm), Gold-plated contacts (0.15 μm)
Hold-down	Spring copper alloy/fused-tin plating (2 μm)

Dimensions

Unit: mm

XF2U-□□15-3A

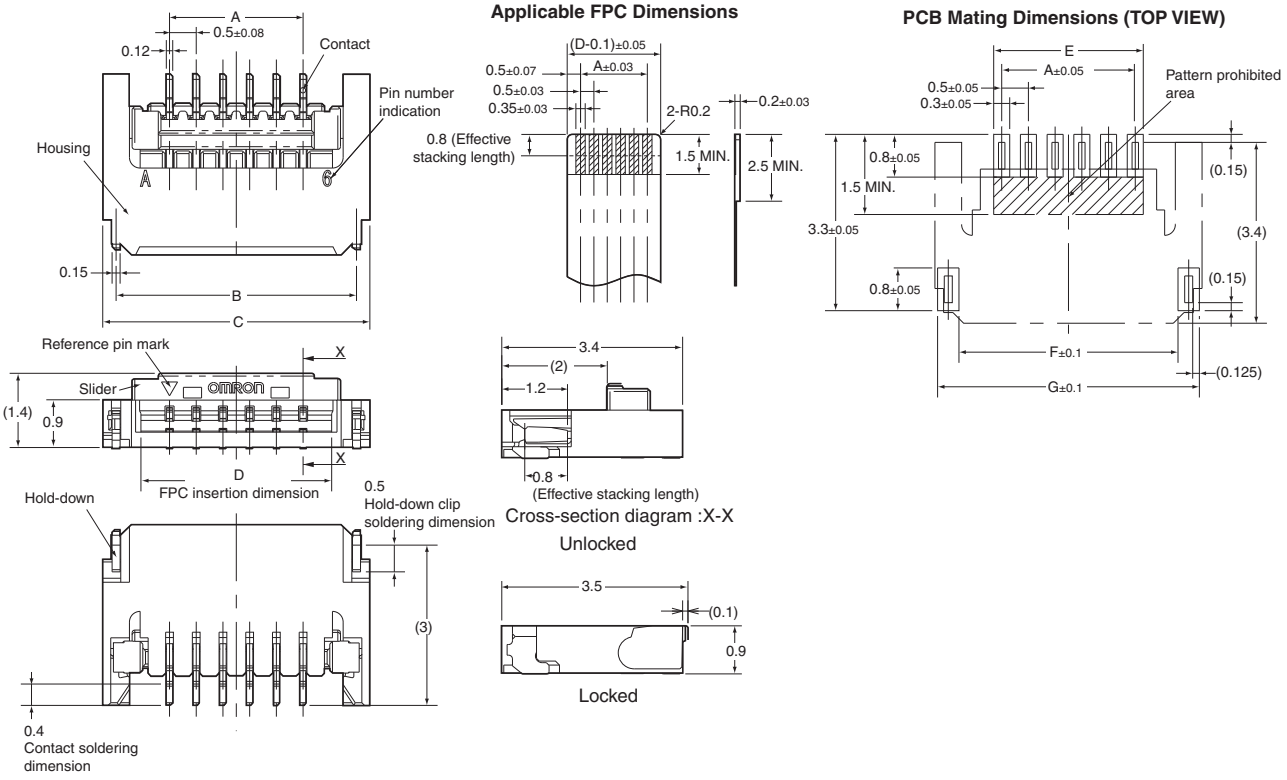


Table of Dimensions

Pins	Model	A	B	C	D	E	F	G
4	**XF2U-0415-3A**	1.5	3.5	4.0	2.6	1.8	3.1	3.9
8	**XF2U-0815-3A**	3.5	5.5	6.0	4.6	3.8	5.1	5.9
11	**XF2U-1115-3A**	5.0	7.0	7.5	6.1	5.3	6.6	7.4
14	**XF2U-1415-3A**	6.5	8.5	9.0	7.6	6.8	8.1	8.9
18	**XF2U-1815-3A**	8.5	10.5	11.0	9.6	8.8	10.1	10.9
20	**XF2U-2015-3A**	9.5	11.5	12.0	10.6	9.8	11.1	11.9
24	**XF2U-2415-3A**	11.5	13.5	14.0	12.6	11.8	13.1	13.9
27	**XF2U-2715-3A**	13.0	15.0	15.5	14.1	13.3	14.6	15.4
30	**XF2U-3015-3A**	14.5	16.5	17.0	15.6	14.8	16.1	16.9
32	**XF2U-3215-3A**	15.5	17.5	18.0	16.6	15.8	17.1	17.9
40	**XF2U-4015-3A**	19.5	21.5	22.0	20.6	19.8	21.1	21.9

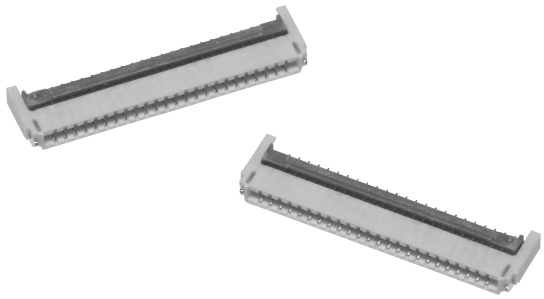
Rotary Backlock Connector (0.5-mm Pitch, Dual Contact)
XF2W

Rotary Backlock Mechanism with 0.5 mm Pitch and Low Profile of 1.1 mm

- Two models: Low profile with depth of 3.5 mm and easy-operation connector with long slider.
- Wide molding wall on the rear bottom of the connector.
- Gold plated with an applicable FPC thickness of 0.3 mm.
- Halogen Free (See note)

Note: OMRON uses the following standard to determine halogen-free construction: 900 ppm max. for Br, 900 ppm max. for Cl, and 1,500 ppm max. for Br+Cl.

- RoHS Compliant



Ordering Information

Pins	Model	Quantity per reel (unit) (See Note 2)
5	**XF2W-0515-1A**	2,000
7	**XF2W-0715-1A**	
8	**XF2W-0815-1A**	
9	**XF2W-0915-1A**	
16	**XF2W-1615-1A**	
20	**XF2W-2015-1A**	
24	**XF2W-2415-1A**	
45	**XF2W-4515-1AE**	
50	**XF2W-5015-1AE**	
55	**XF2W-5515-1AE**	
64	**XF2W-6415-1AE**	

Note: 1. The end of the model number indicates the slider specification. None: Standard type E: Easy lock type

2. Please order by integer multiple of the quantity per reel.

Ratings and Specifications

■ Characteristics

Rated current	0.5 A AC/DC
Rated voltage	50 V AC/DC
Contact resistance	60 mΩ max. (at 20 mV max., 100 mA max.)
Insulation resistance	100 MΩ min. (at 250 VDC)
Withstand voltage	250 VAC for 1 min. (leakage current: 1 mA max.)
Insertion tolerance	20 times
Ambient operating temperature	–30 to 85°C (with no icing or condensation)

■ Materials and Finish

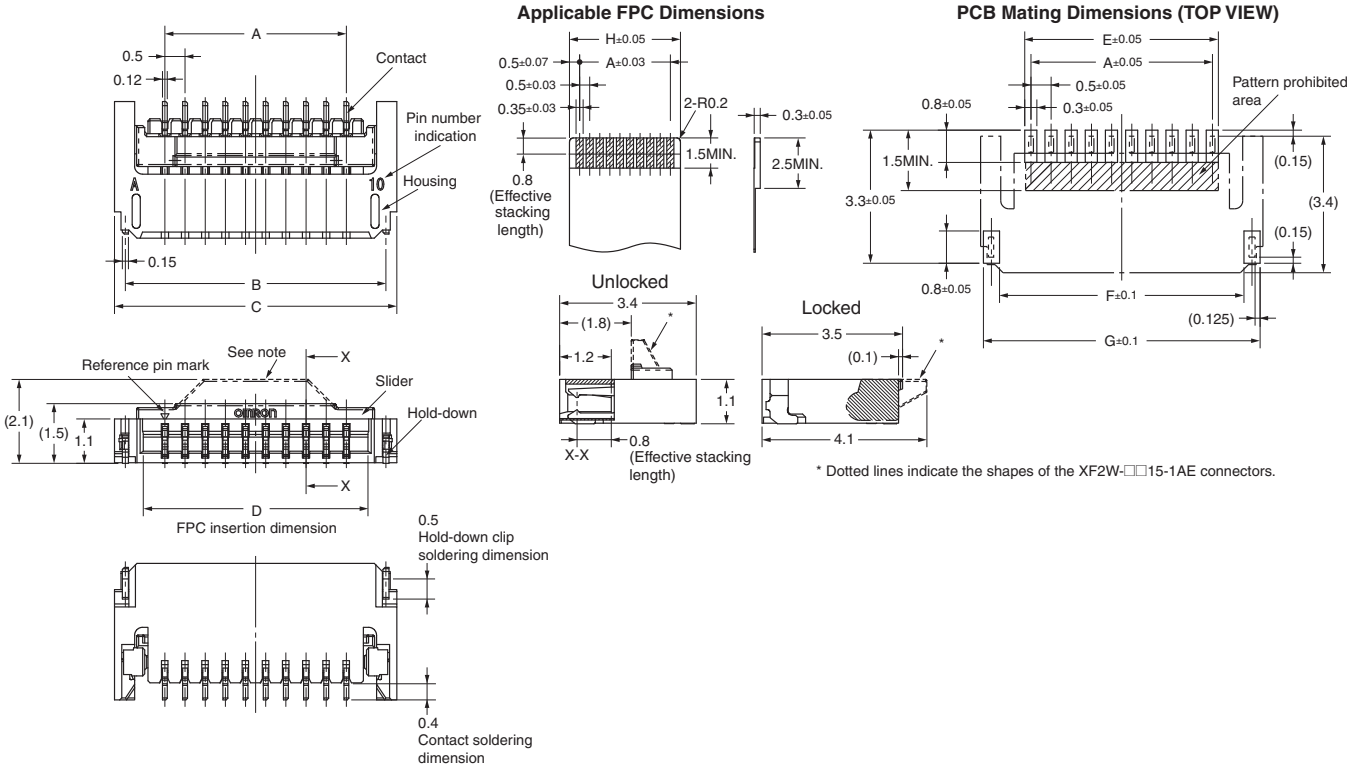
Housing	LCP resin (UL94V-0)/natural
Slider	LCP resin (UL94V-0)/brown
Contacts	Spring copper alloy/nickel substrate (2 μm), Gold-plated contacts (0.15 μm)
Hold-down	Spring copper alloy/fused-tin plating (2 μm)

Dimensions

Unit: mm

XF2W-□□15-1A

XF2W-□□15-1AE



* Dotted lines indicate the shapes of the XF2W-□□15-1AE connectors.

Table of Dimensions

Pins	Model	A	B	C	D	E	F	G	H
5	**XF2W-0515-1A**	2.0	4.0	4.5	3.1	2.3	3.6	4.4	3.0
7	**XF2W-0715-1A**	3.0	5.0	5.5	4.1	3.3	4.6	5.4	4.0
8	**XF2W-0815-1A**	3.5	5.5	6.0	4.6	3.8	5.1	5.9	4.5
9	**XF2W-0915-1A**	4.0	6.0	6.5	5.1	4.3	5.6	6.4	5.0
16	**XF2W-1615-1A**	7.5	9.5	10.0	8.6	7.8	9.1	9.9	8.5
20	**XF2W-2015-1A**	9.5	11.5	12.0	10.6	9.8	11.1	11.9	10.5
24	**XF2W-2415-1A**	11.5	13.5	14.0	12.6	11.8	13.1	13.9	12.5
45	**XF2W-4515-1AE**	22.0	24.0	24.5	23.1	22.3	23.6	24.4	23.0
50	**XF2W-5015-1AE**	24.5	26.5	27.0	25.6	24.8	26.1	26.9	25.5
55	**XF2W-5515-1AE**	27.0	29.0	29.5	28.1	27.3	28.6	29.4	28.0
64	**XF2W-6415-1AE**	31.5	33.5	34.0	32.6	31.8	33.1	33.9	32.5

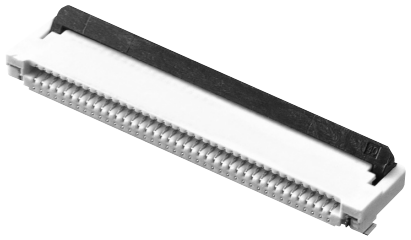
Rotary Backlock Connector (0.5-mm pitch, Dual Contact)
XF2M

High-reliability rotary-lock and Superior Work Efficiency.

- Dual contact reduces the number of parts.
- Applicable FPC thickness of 0.3 mm.
- Halogen Free (See note)

Note: OMRON uses the following standard to determine halogen-free construction: 900 ppm max. for Br, 900 ppm max. for Cl, and 1,500 ppm max. for Br+Cl.

- RoHS Compliant.



Ordering Information

Pins	Model	Quantity per reel (See Note 2)
10	**XF2M-1015-1A**	1,500
12	**XF2M-1215-1A**	
14	**XF2M-1415-1A**	
18	**XF2M-1815-1A**	
20	**XF2M-2015-1A**	
22	**XF2M-2215-1A**	
24	**XF2M-2415-1A**	
26	**XF2M-2615-1A**	
30	**XF2M-3015-1A**	
32	**XF2M-3215-1A**	
33	**XF2M-3315-1A**	

Pins	Model	Quantity per reel (See Note 2)
34	**XF2M-3415-1A**	1,500
35	**XF2M-3515-1A**	
36	**XF2M-3615-1A**	
38	**XF2M-3815-1A**	
40	**XF2M-4015-1A**	
42	**XF2M-4215-1A**	
45	**XF2M-4515-1A**	
50	**XF2M-5015-1A**	
55	**XF2M-5515-1AH**	
60	**XF2M-6015-1AH**	

Note: 1. The end of the model number indicates the slider specification. None: Standard type H: For pin count ≥ 55

2. Please order by integer multiple of the quantity per reel.

Ratings and Specifications

■ Characteristics

Rated current	0.5A AC/DC
Rated voltage	50V AC/DC
Contact resistance	50 mΩ max. (at 20 mV max., 100 mA max.)
Insulation resistance	100 MΩ min. (at 250 VDC)
Withstand voltage	250 VAC for 1 min. (leakage current: 1 mA max.)
Insertion tolerance	20 times
Ambient operating temperature	-30 to +85°C (with no icing or condensation)

■ Materials and Finish

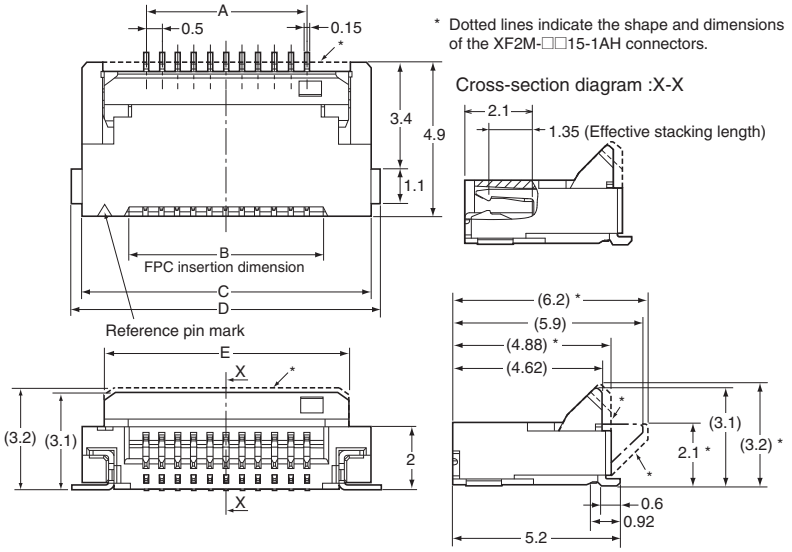
Housing	LCP resin (UL94V-0)/natural
Slider	LCP resin (UL94V-0)/black
Contacts	Spring copper alloy/nickel substrate (2 μm), Gold-plated contacts (0.15 μm)
Hold-down	Spring copper alloy/fused-tin plating (1.5μm)

Dimensions

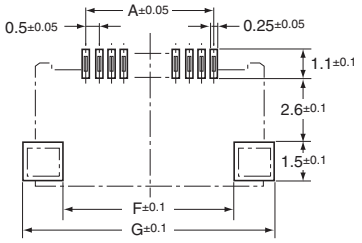
Unit: mm

XF2M-□□15-1A

XF2M-□□15-1AH



PCB Mating Dimensions (TOP VIEW)



Applicable FPC Dimensions

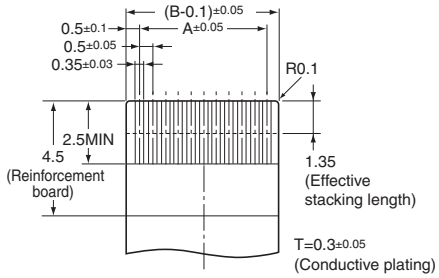


Table of Dimensions

Pins	Model	A	B	C	D	E	F	G
10	**XF2M-1015-1A**	4.5	5.6	8.5	9.1	7.1	6.1	9.5
12	**XF2M-1215-1A**	5.5	6.6	9.5	10.1	8.1	7.1	10.5
14	**XF2M-1415-1A**	6.5	7.6	10.5	11.1	9.1	8.1	11.5
18	**XF2M-1815-1A**	8.5	9.6	12.5	13.1	11.1	10.1	13.5
20	**XF2M-2015-1A**	9.5	10.6	13.5	14.1	12.1	11.1	14.5
22	**XF2M-2215-1A**	10.5	11.6	14.5	15.1	13.1	12.1	15.5
24	**XF2M-2415-1A**	11.5	12.6	15.5	16.1	14.1	13.1	16.5
26	**XF2M-2615-1A**	12.5	13.6	16.5	17.1	15.1	14.1	17.5
30	**XF2M-3015-1A**	14.5	15.6	18.5	19.1	17.1	16.1	19.5
32	**XF2M-3215-1A**	15.5	16.6	19.5	20.1	18.1	17.1	20.5
33	**XF2M-3315-1A**	16.0	17.1	20.0	20.6	18.6	17.6	21.0
34	**XF2M-3415-1A**	16.5	17.6	20.5	21.1	19.1	18.1	21.5
35	**XF2M-3515-1A**	17.0	18.1	21.0	21.6	19.6	18.6	22.0
36	**XF2M-3615-1A**	17.5	18.6	21.5	22.1	20.1	19.1	22.5
38	**XF2M-3815-1A**	18.5	19.6	22.5	23.1	21.1	20.1	23.5
40	**XF2M-4015-1A**	19.5	20.6	23.5	24.1	22.1	21.1	24.5
42	**XF2M-4215-1A**	20.5	21.6	24.5	25.1	23.1	22.1	25.5
45	**XF2M-4515-1A**	22.0	23.1	26.0	26.6	24.6	23.6	27.0
50	**XF2M-5015-1A**	24.5	25.6	28.5	29.1	27.1	26.1	29.5
55	**XF2M-5515-1AH**	27.0	28.1	31.0	31.6	29.6	28.6	32.0
60	**XF2M-6015-1AH**	29.5	30.6	33.5	34.1	32.1	31.1	34.5

ZIF Slide-locking Connector (0.5-mm pitch)
XF2L

Greater Freedom of Board Design with Smallest On-board Area in Industry

- Smallest on-board area and volume in the industry.
- Low on-board profile of only 1.2 mm max.
- Bottom wall prevents terminal exposure.
- Applicable FPC thickness of 0.3 mm.
- Halogen Free (See note)

Note: OMRON uses the following standard to determine halogen-free construction: 900 ppm max. for Br, 900 ppm max. for Cl, and 1,500 ppm max. for Br+Cl.

- RoHS Compliant.

Ordering Information

Upper Contact

Pins	Model	Qty per reel (See Note)
4	**XF2L-0425-1A**	3,000
6	**XF2L-0625-1A**	
7	**XF2L-0725-1A**	
8	**XF2L-0825-1A**	
9	**XF2L-0925-1A**	
10	**XF2L-1025-1A**	
12	**XF2L-1225-1A**	
13	**XF2L-1325-1A**	
18	**XF2L-1825-1A**	
21	**XF2L-2125-1A**	
26	**XF2L-2625-1A**	
30	**XF2L-3025-1A**	

Lower Contact

Pins	Model	Qty per reel (See Note)
5	**XF2L-0535-1A**	3,000
6	**XF2L-0635-1A**	
7	**XF2L-0735-1A**	
8	**XF2L-0835-1A**	
10	**XF2L-1035-1A**	
12	**XF2L-1235-1A**	
13	**XF2L-1335-1A**	
15	**XF2L-1535-1A**	
18	**XF2L-1835-1A**	
19	**XF2L-1935-1A**	
20	**XF2L-2035-1A**	
22	**XF2L-2235-1A**	
24	**XF2L-2435-1A**	
30	**XF2L-3035-1A**	

Note: Please order by integer multiple of the quantity per reel.

Ratings and Specifications

■ Characteristics

Rated current	0.5A AC/DC
Rated voltage	50V AC/DC
Contact resistance	30 mΩ max. (at 20 mV DC max., 100 mA max.)
Insulation resistance	100 MΩ min. (at 250 VDC)
Withstand voltage	250 VAC for 1 min. (leakage current: 1 mA max.)
Insertion tolerance	20 times
Ambient operating temperature	-30 to 85°C (with no icing or condensation)

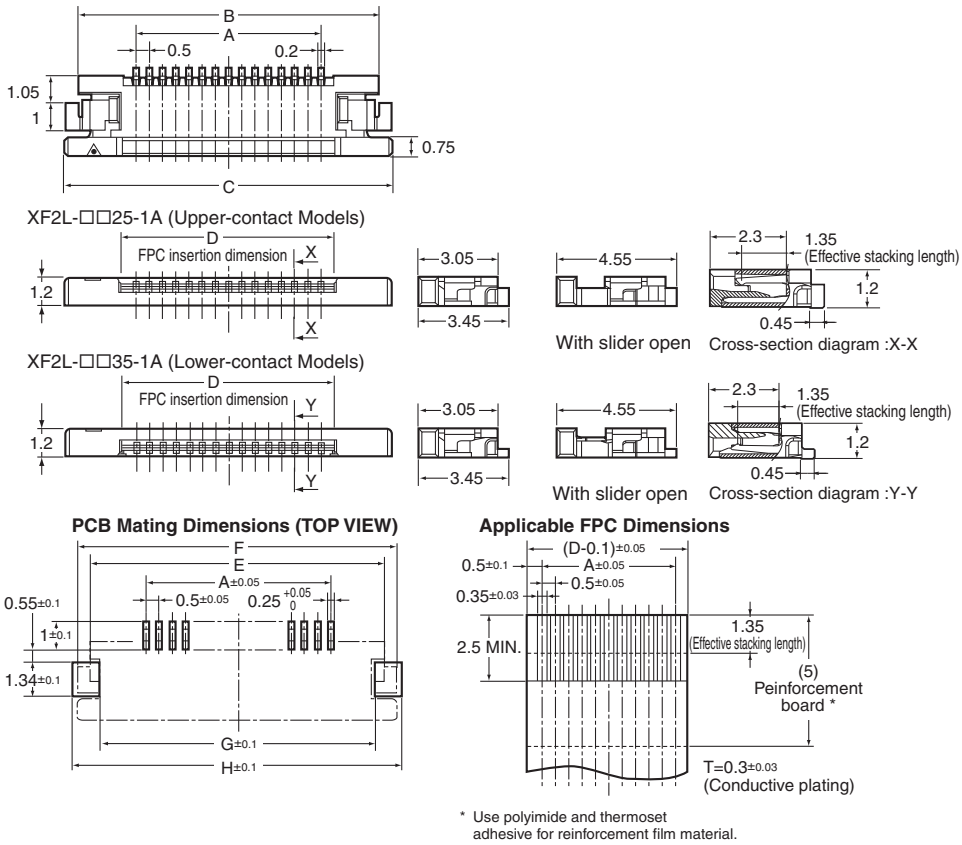
■ Materials and Finish

Model	XF2L - Upper contact type	XF2L - Lower contact type
Housing	LCP resin (UL94V-0)/natural	
Slider	LCP resin (UL94V-0)/black	LCP resin (UL94V-0)/brown
Contacts	Spring copper alloy/nickel substrate (2 μm), Gold-plated contacts (0.15 μm)	
Hold-down	Spring copper alloy/fused-tin plating (1.5 μm)	

Dimensions

Unit: mm

XF2L-□□□5-1A



* Use polyimide and thermoset adhesive for reinforcement film material.

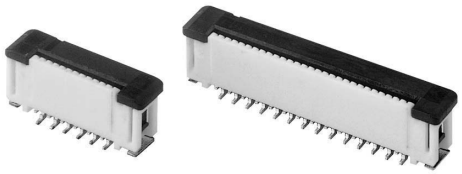
Table of Dimensions

Pins	Upper Contact	Lower Contact	A	B	C	D	E	F	G	H
4	**XF2L-0425-1A**	**- - -**	1.5	5.9	6.9	2.6	5.88	6.88	5.28	7.28
5	**- - -**	**XF2L-0535-1A**	2.0	6.4	7.4	3.1	6.38	7.38	5.78	7.78
6	**XF2L-0625-1A**	**XF2L-0635-1A**	2.5	6.9	7.9	3.6	6.88	7.88	6.28	8.28
7	**XF2L-0725-1A**	**XF2L-0735-1A**	3.0	7.4	8.4	4.1	7.38	8.38	6.78	8.78
8	**XF2L-0825-1A**	**XF2L-0835-1A**	3.5	7.9	8.9	4.6	7.88	8.88	7.28	9.28
9	**XF2L-0925-1A**	**- - -**	4.0	8.4	9.4	5.1	8.38	9.38	7.78	9.78
10	**XF2L-1025-1A**	**XF2L-1035-1A**	4.5	8.9	9.9	5.6	8.88	9.88	8.28	10.28
12	**XF2L-1225-1A**	**XF2L-1235-1A**	5.5	9.9	10.9	6.6	9.88	10.88	9.28	11.28
13	**XF2L-1325-1A**	**XF2L-1335-1A**	6.0	10.4	11.4	7.1	10.38	11.38	9.78	11.78
15	**- - -**	**XF2L-1535-1A**	7.0	11.4	12.4	8.1	11.38	12.38	10.78	12.78
18	**XF2L-1825-1A**	**XF2L-1835-1A**	8.5	12.9	13.9	9.6	12.88	13.88	12.28	14.28
19	**- - -**	**XF2L-1935-1A**	9.0	13.4	14.4	10.1	13.38	14.38	12.78	14.78
20	**- - -**	**XF2L-2035-1A**	9.5	13.9	14.9	10.6	13.88	14.88	13.28	15.28
21	**XF2L-2125-1A**	**- - -**	10.0	14.4	15.4	11.1	14.38	15.38	13.78	15.78
22	**- - -**	**XF2L-2235-1A**	10.5	14.9	15.9	11.6	14.88	15.88	14.28	16.28
24	**- - -**	**XF2L-2435-1A**	11.5	15.9	16.9	12.6	15.88	16.88	15.28	17.28
26	**XF2L-2625-1A**	**- - -**	12.5	16.9	17.9	13.6	16.88	17.88	16.28	18.28
30	**XF2L-3025-1A**	**XF2L-3035-1A**	14.5	18.9	19.9	15.6	18.88	19.88	18.28	20.28

ZIF Slide-locking Connector (0.5 mm-pitch)
XF2J

Top-entry ZIF Connector

- Low on-board profile of only 4.15 mm.
- Adhesion face on top of the connector suits automatic mounting.
- Models with reverse terminal arrangement also available.
- Applicable FPC thickness of 0.3 mm.
- RoHS Compliant.



Ordering Information

Pins	Model		Quantity per reel (See Note)
	Standard terminal arrangement	Reverse terminal arrangement	
6	**XF2J-0624-11A**	**XF2J-0624-12A**	1,000
8	**XF2J-0824-11A**	**XF2J-0824-12A**	
10	**XF2J-1024-11A**	**XF2J-1024-12A**	
12	**XF2J-1224-11A**	**XF2J-1224-12A**	
14	**XF2J-1424-11A**	**- - -**	
16	**XF2J-1624-11A**	**XF2J-1624-12A**	
18	**XF2J-1824-11A**	**XF2J-1824-12A**	
20	**XF2J-2024-11A**	**XF2J-2024-12A**	
22	**XF2J-2224-11A**	**XF2J-2224-12A**	
24	**XF2J-2424-11A**	**XF2J-2424-12A**	
26	**XF2J-2624-11A**	**- - -**	
28	**XF2J-2824-11A**	**- - -**	
30	**XF2J-3024-11A**	**- - -**	
40	**- - -**	**XF2J-4024-12A**	

Note: Order an integer multiple of the quantity per reel.

Ratings and Specifications

■ Characteristics

Rated current	0.5A AC/DC
Rated voltage	50V AC/DC
Contact resistance	30 mΩ max. (at 20 mV max., 100 mA max.)
Insulation resistance	100 MΩ min. (at 250 VDC)
Withstand voltage	250 VAC for 1 min. (leakage current: 1 mA max.)
Insertion tolerance	30 times
Ambient operating temperature	-30 to 85°C (with no icing or condensation)

■ Materials and Finish

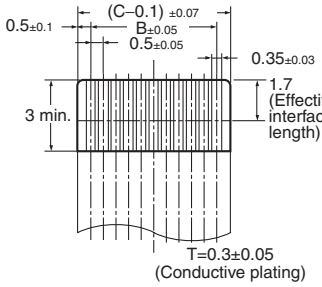
Housing	PA46 resin (UL94V-0)/natural
Slider	PPS resin (UL94V-0)/black LCP resin (UL94V-0)/black
Contacts	Spring copper alloy/nickel substrate (2 μm), Gold-plated contacts (0.15 μm)
Hold-down	Spring copper alloy/fused-tin plating (2 μm)

Dimensions

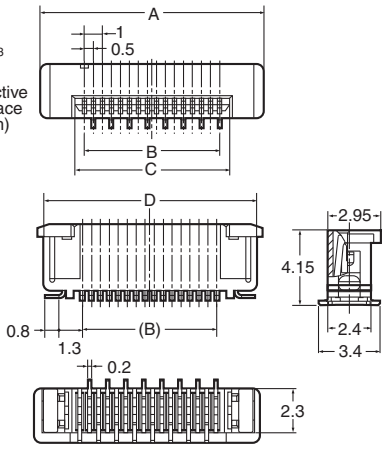
Unit: mm

XF2J-□□24-1□A

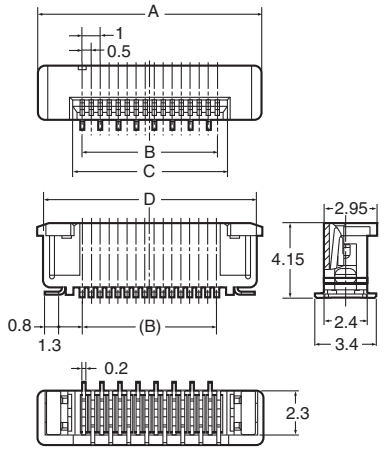
Applicable FPC Dimensions



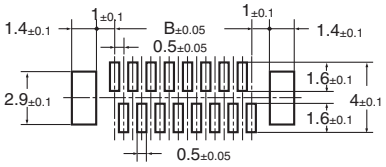
Standard Terminal Arrangement



Reverse Terminal Arrangement



PCB Mating Dimensions (Top View)



PCB Mating Dimensions (Top View)

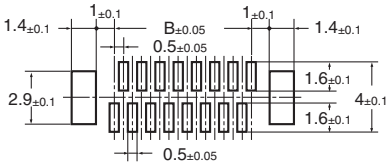


Table of Dimensions

Pins	Model		A	B	C	D
	Standard terminal arrangement	Reverse terminal arrangement				
6	**XF2J-0624-11A**	**XF2J-0624-12A**	7.5	2.5	3.6	6.9
8	**XF2J-0824-11A**	**XF2J-0824-12A**	8.5	3.5	4.6	7.9
10	**XF2J-1024-11A**	**XF2J-1024-12A**	9.5	4.5	5.6	8.9
12	**XF2J-1224-11A**	**XF2J-1224-12A**	10.5	5.5	6.6	9.9
14	**XF2J-1424-11A**	**- - -**	11.5	6.5	7.6	10.9
16	**XF2J-1624-11A**	**XF2J-1624-12A**	12.5	7.5	8.6	11.9
18	**XF2J-1824-11A**	**XF2J-1824-12A**	13.5	8.5	9.6	12.9
20	**XF2J-2024-11A**	**XF2J-2024-12A**	14.5	9.5	10.6	13.9
22	**XF2J-2224-11A**	**XF2J-2224-12A**	15.5	10.5	11.6	14.9
24	**XF2J-2424-11A**	**XF2J-2424-12A**	16.5	11.5	12.6	15.9
26	**XF2J-2624-11A**	**- - -**	17.5	12.5	13.6	16.9
28	**XF2J-2824-11A**	**- - -**	18.5	13.5	14.6	17.9
30	**XF2J-3024-11A**	**- - -**	19.5	14.5	15.6	18.9
40	**- - -**	**XF2J-4024-12A**	25.1	19.5	20.6	24.3

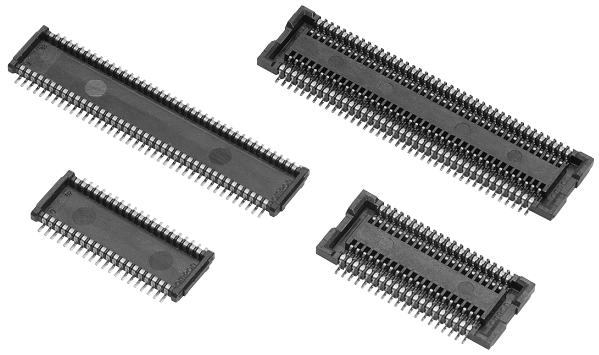
0.4-mm Pitch Board to FPC Connector
XB4A/XB4B

Ultra-low profile connector with a stacking height of 0.9 mm and high contact reliability.

- Provides a firm tactile “click” and a high removal force.
- Twist-resistant design allows removal in all directions.
- Easy insertion through self-alignment.
- Double contacts ensure highly reliable contact.
- Halogen Free (See note)

Note: OMRON uses the following standard to determine halogen-free construction: 900 ppm max. for Br, 900 ppm max. for Cl, and 1,500 ppm max. for Br+Cl.

- RoHS Compliant



Ordering Information

Type	Pin No.	Model	Quantity per reel (See Note)
Plug	24	**XB4A-2435-D**	3,000
	40	**XB4A-4035-D**	
	80	**XB4A-8035-D**	
Socket	24	**XB4B-2435-D**	3,000
	40	**XB4B-4035-D**	
	80	**XB4B-8035-D**	

Note: Please order a multiple of the quantity per reel.

Ratings and Specifications

■ Characteristics

Rated Current	0.3 A AC/DC
Rated Voltage	50 V AC/DC
Contact resistance	60 mΩ max. (at 20 mV DC max., 100 mA max.)
Insulation resisitance	100 MΩ min. (at 250 VDC)
Withstand voltage	250 VAC for 1 min. (leakage current: 1 mA max.)
Total insertion force	Pin number x 1.7N max.
Total removal force	Pin number x 0.1N min.
Insertion tolerance	50 times
Ambient operating temperature	-30 to 85°C (with no icing at low temperatures.)

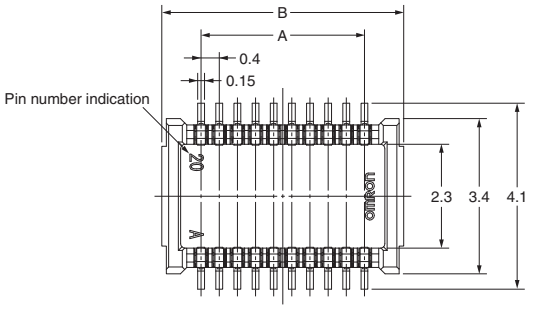
■ Material and Finish

Housing	LCP resin (UL94-0)/black
Contacts	Spring copper alloy/nickel substrate (2 μm) Gold-plated contacts (0.15 μm)

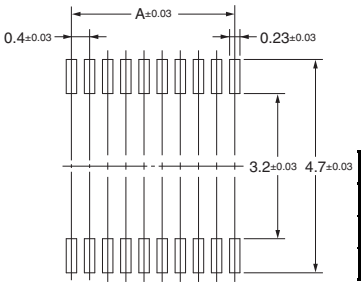
Dimensions

■ XB4A Plug, SMT terminal

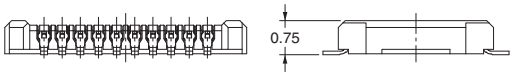
XB4A-□□35-D

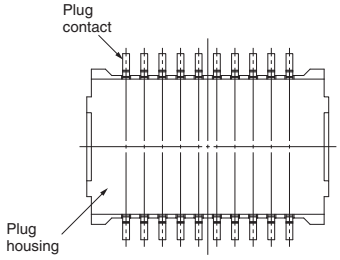


PCB Mating Dimensions (TOP VIEW)

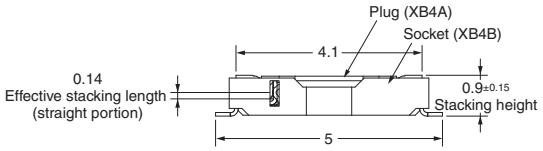


Pin No.	Model	A	B
24	**XB4A-2435-D**	4.4	6.1
40	**XB4A-4035-D**	7.6	9.3
80	**XB4A-8035-D**	15.6	17.3



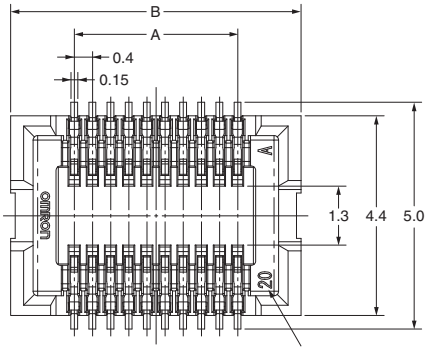


Stacking state
(Stacking connector is XB4B.)

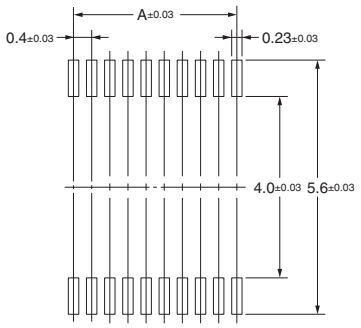


■ XB4B Socket, SMT terminal

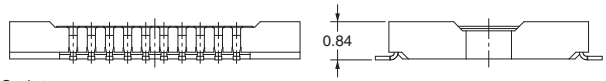
XB4B-□□35-D

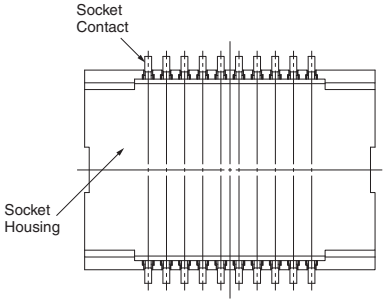


PCB Mating Dimensions (TOP VIEW)

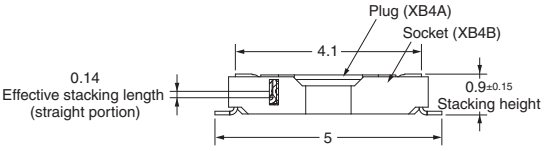


Pin No.	Model	A	B
24	**XB4B-2435-D**	4.4	7.2
40	**XB4B-4035-D**	7.6	10.4
80	**XB4B-8035-D**	15.6	18.4





Stacking state
(Stacking connector is XB4A.)

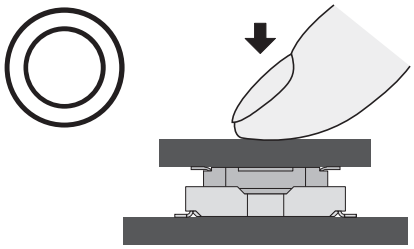


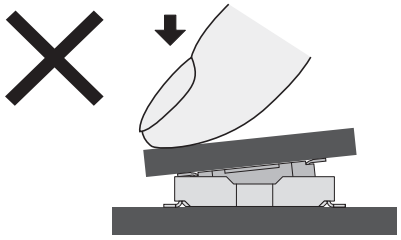
Safety Precautions

Precautions for Correct Use

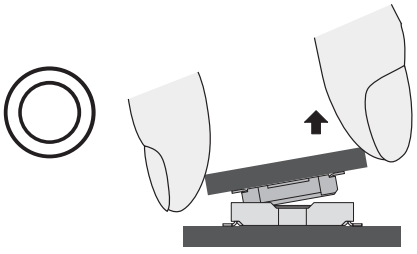
For Operating

1. Regarding the connector stacking operation, it should be confirmed there is no extreme displacement and tilt in the stacking contact areas between a plug and a socket before the stacking operation of the connectors.
2. Ensure that the connector stackings are fully seated.
   - An incomplete stacking state may cause the failure of contact reliability.
3. Do not apply an extreme load when inserting or drawing out the connector.
   - The connector may be damaged, resulting in faulty contacts.
4. When stacking the plug and socket, press the back side of printed circuit board mounted with them and then couple with as little twisting force as possible.
   - Doing so may cause the terminal and housing to change shape or the housing to crack.

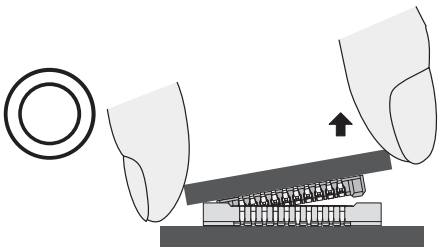




5. When drawing out, hold the edge of the printed circuit board near the connector and remove as vertically as possible, as described in the figure below.
   - Drawing out the plug with too much force may have possibility to change shape of terminal solder/housing crack.

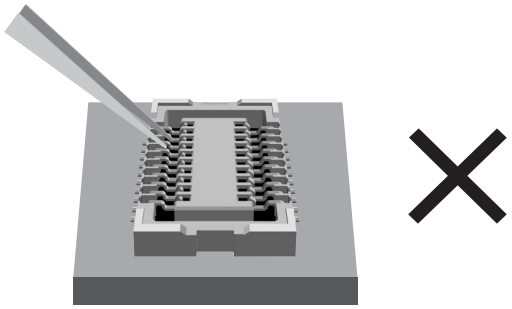


Row direction



Pitch direction

6. Do not insert a foreign object such as a tweezers into the connector stacking contact area.
   - Doing so may cause the plating peel off and deform the shape of the terminal.



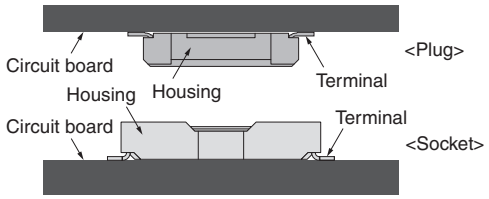
For Mounting

1. The reflow conditions are as stated in OMRON's specifications and guidelines.
   These conditions, however, depend on the type of solder, the manufacturer, the amount of solder, the size of the circuit board, and the other mounting materials.
2. When mounting the connector by manual soldering, observe the following precautions to ensure contact reliability.
   - Conditions for manual soldering: 350±10°C 3±1 sec
   - Do not apply an excessive amount of solder. Excessive solder will cause the flux creap.
   - Do not apply the soldering iron to the mounting terminal. Doing so may cause the connectors to change shape.
   - Do not apply the soldering iron to any parts of the connector other than the mount attachments. Doing so may cause the connector to change shape.

For Designing

1. When mounting the connector to the FPC, design the FPC so that extreme peel force should not be applied directly on to the connector.
   If the FPC bends near the connector, or if the FPC is used with extreme peel force directly on to the connector, it may cause a contact loss.
2. If the connector-mounted FPC is installed at a location or in any equipment that will subject the FPC to continuous shake or movement, secure the FPC or take any countermeasure against FPC disconnection from the connector.
3. Do not use plural connectors on same PCB.
   - Doing so may cause solder and housing crack.
4. When locating the connector on the printed circuit board, be sure to allow space for the stacking operation.
5. Ensure a metal mask thickness of t = 0.10 to 0.15 mm.
   The recommended open area of the metal mask is 90% of the printed circuit board's mating dimensions as shown in the dimensional diagrams.

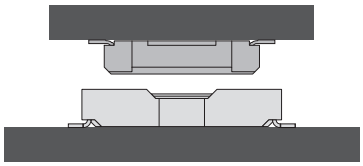
Name of the Parts for Board to Board Connectors



Handling Methods

How to couple a connector

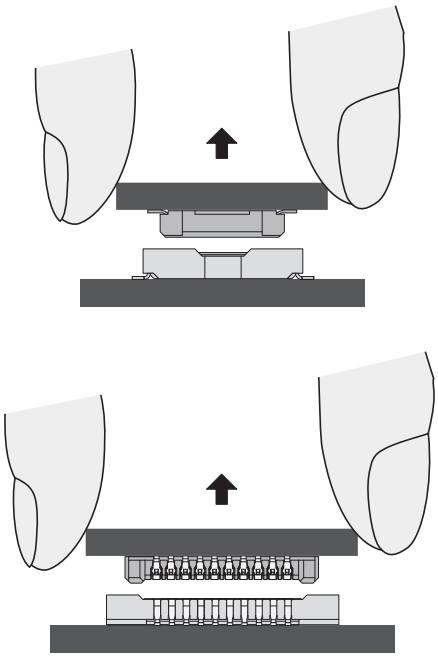
1. Position a plug with a socket.



2. Insert the connector until it becomes horizontal.

How to draw out the connector

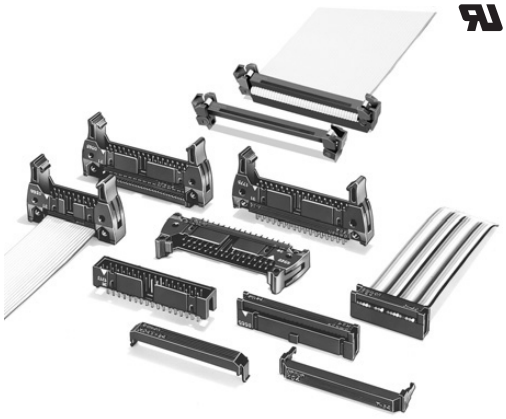
1. Hold the edge of the printed circuit board near the connector and draw out as verifcally as possible.



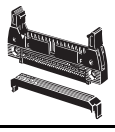
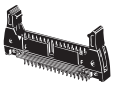
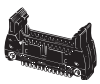
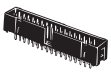
Flat Cable Connectors
XG4

Industry Standard Circuit Board Connectors Conform to MIL Standards

- XG4M-U: Unique locking system, with lock levers on strain relief / socket instead of on plug, saves 24% of space
- Space-saving Box-type Plugs (XG4C) available.
- Can be used with XG5 IDC Connectors for discrete wires, XG8 Original PCB Plugs, and the XG2 IDC Bus Connectors for PCBs.
- The Original Plugs (XG8) and the Box-type Plugs (XG4C) can be locked using External XG5Z and XG4Z Lock Levers.
- Conforms to MIL standards (MIL-C-83503).
- UL recognition (file No. E103202)



Ordering Information

	Cable			PCB			
	Socket		Plug	Plug			Socket
Connector	**XG4M**		**XG4E**	**XG4A**	**XG4A**	**XG4C**	**XG4H**
Strain relief	**XG4U**	**XG4T**	**XG4S**	**- - -**	**- - -**	**- - -**	**- - -**
Feature	Strain relief with lock levers	Strain relief without lock levers	Lock levers on connector	Integral lock levers	2-tier with lock levers	Box type plug	Board to Board Socket
Appearance							

Note: 1. XG4M can be provided with or without the strain reliefs;
⇒ XG4M-U consists of XG4M-□□3□ socket +XG4U-□□04 strain relief
⇒ XG4M-T consists of XG4M-□□3□ socket + XG4T-□□04 strain relief

2. XG4H PCB mount socket mates with XG4C and XG8W (see XG8 Datasheet) for board to board connectivity without cables.

3. XG5 connectors (see XG5 Datasheet) use discrete wire instead of flat ribbon cable.

4. XG4A PCB mount sockets are available with Long, Short or no Lock Levers.

5. Optional XG4Z-001□ side-lock levers, purchased separately, are available for use with right-angle XG4A versions that don't include them.

6. Optional XG4Z-0002 and XG5Z-0002 top-lock levers are available for mating XG4M(-T) sockets to XG4C and XG8 plugs.

■ Ratings and Characteristics

Item	MIL Sockets: XG4M Cable Plug: XG4E	MIL Plugs: XG4A Box-type PCB Plugs: XG4C Board to Board Sockets: XG4H
Rated current	1 A	3 A (See note 1.)
Rated voltage	250 VAC	300 VAC
Contact resistance	20 mΩ max. (at 20 mV, 100 mA max.)	
Insulation resistance	1,000 MΩ min. (at 500 VDC)	
Dielectric strength	500 VAC for 1 min (leakage current: 1 mA max.)	
Connector insertion	1.96 N max. per contact	
Contact removal	0.39 N min. (with test gauge, t= 0.64 mm)	
Insertion durability	50 times (See note 2.)	
Ambient temperature	Operating: –55 to 105°C (with no icing)	

Note: 1. The rated current will depend on the Socket you are using. It is 1 A using the XG4M for example.

2. For standard 0.15-μm gold plating.

■ Materials and Finish

Item		MIL Plugs: XG4A Box-type Plugs: XG4C	Cable Plugs: XG4E (Strain Relief: XG4S)	MIL Sockets: XG4M (Strain Relief: XG4T)	Board-to-board Connector: XG4H
Housings		Fiber-glass reinforced PBT resin (UL94V-0)/black			
Covers		—	Polyamide resin (UL94V-0)/ black	Fiber-glass reinforced PBT resin (UL94V-0)/black	—
Contacts	Mating end	Brass/nickel base, 0.15-μm gold plating (See note.)	Phosphor bronze/nickel base, 0.15-μm gold plating (See note.)		
	Terminal Press fit	Brass/nickel base, tin plating	Phosphor bronze/nickel base, tin plating		
Strain Reliefs		—	Polyamide resin (UL94V-0)/ black	Fiber-glass reinforced PBT resin (UL94V-0)/black	—

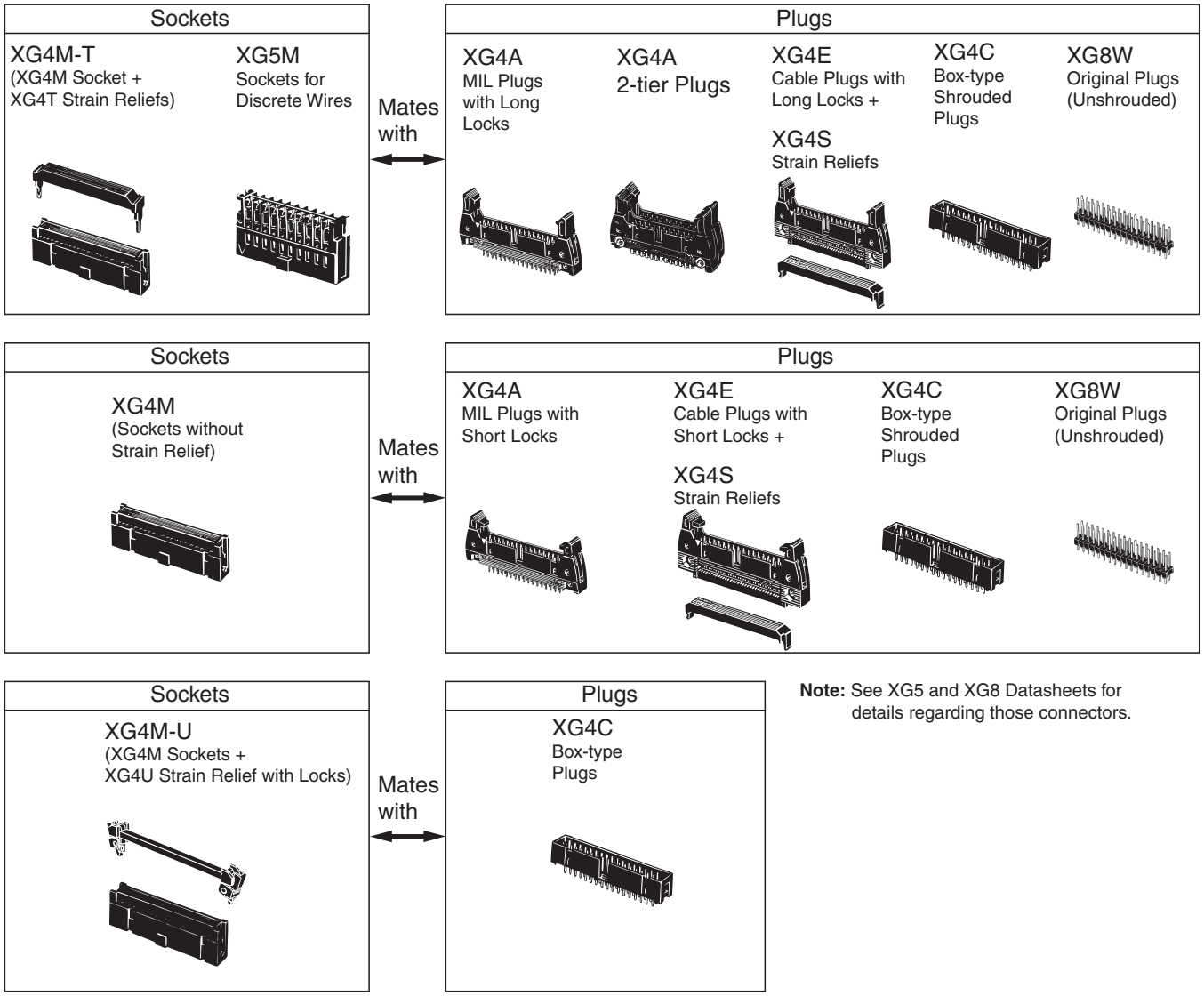
Note: For non-standard plating, contact your OMRON representative.

■ Applicable Wires

1.27-mm pitch, 7-strand flat cable

- UL2651(standard cable)
- UL20012 (folding cable)
- UL20028 (color-coded cable)

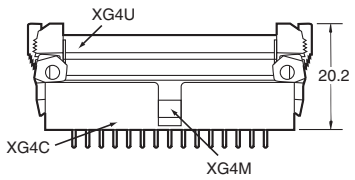
Mating Combinations for XG4, XG5 and XG8



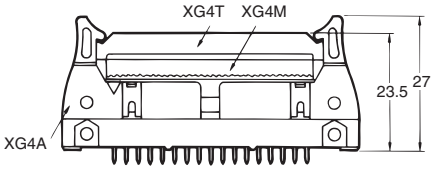
Note: See XG5 and XG8 Datasheets for details regarding those connectors.

Mating Diagrams for XG4M

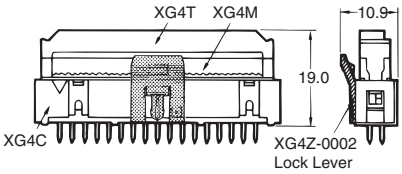
XG4U + XG4M + XG4C
(With straight terminals)



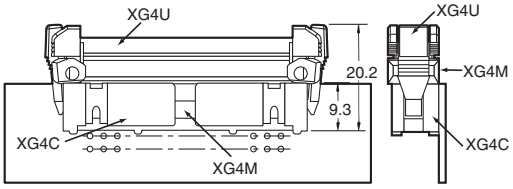
XG4T + XG4M + XG4A



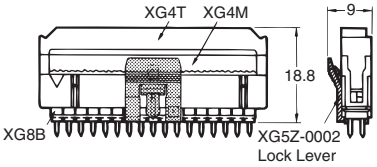
XG4T + XG4M, + XG4C + XG4Z Lock Lever



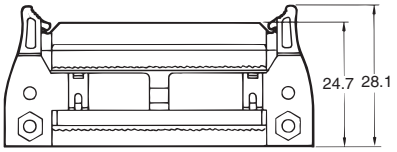
XG4U + XG4M + XG4C
(With right-angle terminals)



XG4T + XG4M + XG8 (Unshrouded Plug) + XG5Z Lock Lever



XG4T + XG4M + XG4E

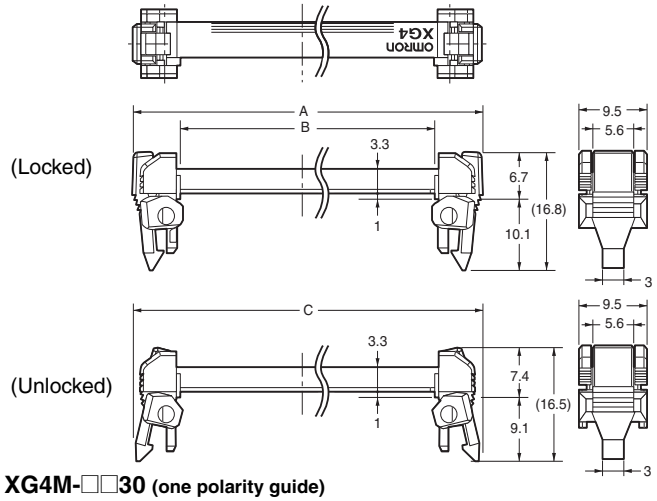


Cable Mount Connectors

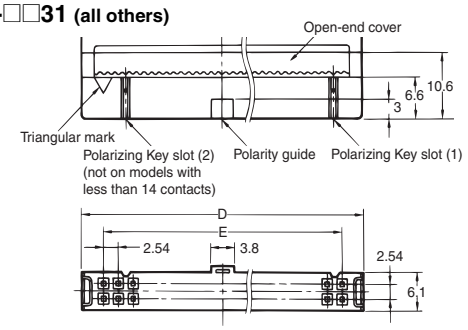
■ XG4M-U Sockets (Uses XG4U Strain Relief with Lock Levers)

Dimensions

XG4U-□□04
Strain Reliefs with Locks

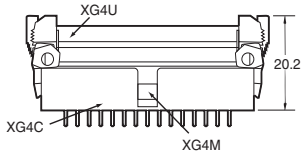


XG4M-□□30 (one polarity guide)
XG4M-□□31 (all others)

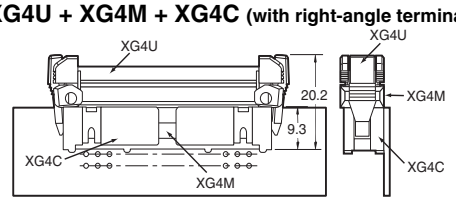


Mating Diagrams for XG4M-U

XG4U + XG4M + XG4C (with straight terminals)

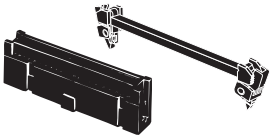
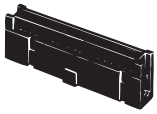


XG4U + XG4M + XG4C (with right-angle terminals)



No. of contacts	Dimensions (mm)				
	A	B	C	D	E
10	26.8	13.2	26.2	17.3	10.16
14	31.8	18.2	31.2	22.3	15.24
16	34.4	20.8	33.8	24.9	17.78
20	39.5	25.9	38.9	30.0	22.86
26	47.1	33.5	46.5	37.6	30.48
30	52.2	38.6	51.6	42.7	35.56
34	57.2	43.6	56.6	47.7	40.64
40	64.9	51.3	64.3	55.4	48.26
50	77.6	64.0	77.0	68.1	60.96
60	90.3	76.7	89.7	80.8	73.66
64	95.3	81.7	94.7	85.8	78.74

Ordering Information

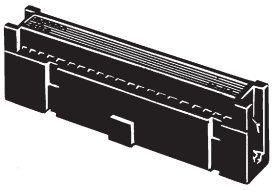
No. of contacts	No. of polarity guides	Socket+Strain Relief Sets (See notes 1 and 2.) 	Socket with Open-end Cover (See note 3.) 	Strain Relief with Locks 
10	0	**XG4M-1031-U**	**XG4M-1031**	**XG4U-1004**
	1	**XG4M-1030-U**	**XG4M-1030**	
14	1	**XG4M-1430-U**	**XG4M-1430**	**XG4U-1404**
16	1	**XG4M-1630-U**	**XG4M-1630**	**XG4U-1604**
20	1	**XG4M-2030-U**	**XG4M-2030**	**XG4U-2004**
26	1	**XG4M-2630-U**	**XG4M-2630**	**XG4U-2604**
30	1	**XG4M-3030-U**	**XG4M-3030**	**XG4U-3004**
34	1	**XG4M-3430-U**	**XG4M-3430**	**XG4U-3404**
40	1	**XG4M-4030-U**	**XG4M-4030**	**XG4U-4004**
50	1	**XG4M-5030-U**	**XG4M-5030**	**XG4U-5004**
	2 (See note 4.)	**XG4M-5031-U**	**XG4M-5031**	
60	1	**XG4M-6030-U**	**XG4M-6030**	**XG4U-6004**
	2 (See note 4.)	**XG4M-6031-U**	**XG4M-6031**	
64	1	**XG4M-6430-U**	**XG4M-6430**	**XG4U-6404**
	2 (See note 4.)	**XG4M-6431-U**	**XG4M-6431**	

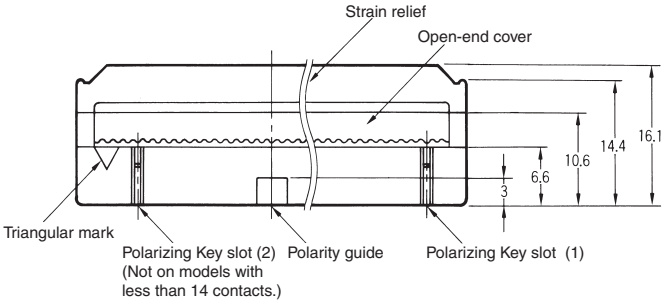
Note: 1. Sets include the connector and strain relief.
2. With open-end cover.
3. Strain Relief sold separately.
4. Polarity guide pitch is 22.86 mm.

■ XG4M-T Sockets (Uses XG4T Strain Relief without Lock Levers)

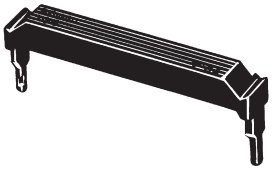
Dimensions

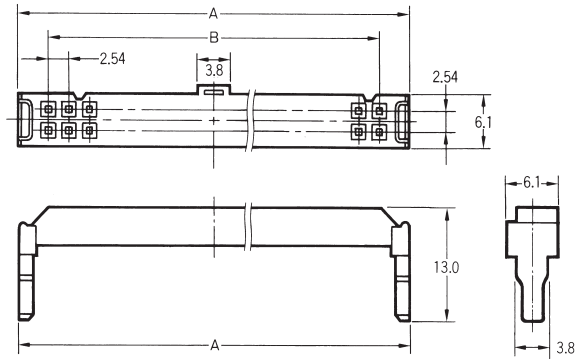
XG4M-□□30 (one polarizing guide)
XG4M-□□31 (all others)





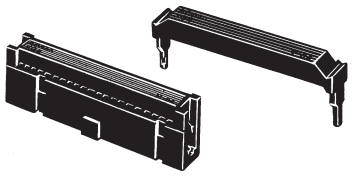
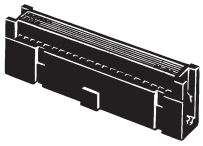
XG4T-□□04
Strain Relief





No of contacts	Dimensions (mm)	
	A	B
10	17.3	10.16
14	22.3	15.24
16	24.9	17.78
20	30.0	22.86
26	37.6	30.48
30	42.7	35.56
34	47.7	40.64
40	55.4	48.26
50	68.1	60.96
60	80.8	73.66
64	85.8	78.74

Ordering Information

No. of contacts	No. of polarity guides	Socket+Strain Relief Set (See notes 1 and 2.) 	Socket with Open-end Cover (See note 3.) 	Strain Relief for the XG4M 
10	0	**XG4M-1031-T**	**XG4M-1031**	**XG4T-1004**
	1	**XG4M-1030-T**	**XG4M-1030**	
14	1	**XG4M-1430-T**	**XG4M-1430**	**XG4T-1404**
16	1	**XG4M-1630-T**	**XG4M-1630**	**XG4T-1604**
20	1	**XG4M-2030-T**	**XG4M-2030**	**XG4T-2004**
26	1	**XG4M-2630-T**	**XG4M-2630**	**XG4T-2604**
30	1	**XG4M-3030-T**	**XG4M-3030**	**XG4T-3004**
34	1	**XG4M-3430-T**	**XG4M-3430**	**XG4T-3404**
40	1	**XG4M-4030-T**	**XG4M-4030**	**XG4T-4004**
50	1	**XG4M-5030-T**	**XG4M-5030**	**XG4T-5004**
	2 (See note 4.)	**XG4M-5031-T**	**XG4M-5031**	
60	1	**XG4M-6030-T**	**XG4M-6030**	**XG4T-6004**
	2 (See note 4.)	**XG4M-6031-T**	**XG4M-6031**	
64	1	**XG4M-6430-T**	**XG4M-6430**	**XG4T-6404**
	2 (See note 4.)	**XG4M-6431-T**	**XG4M-6431**	

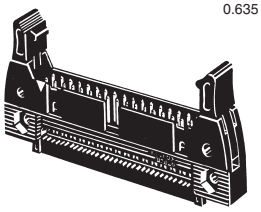
Note: 1. Sets include the connector and strain relief.
2. With open-end cover.
3. Strain Relief sold separately.
4. Polarity guide pitch is 22.86 mm

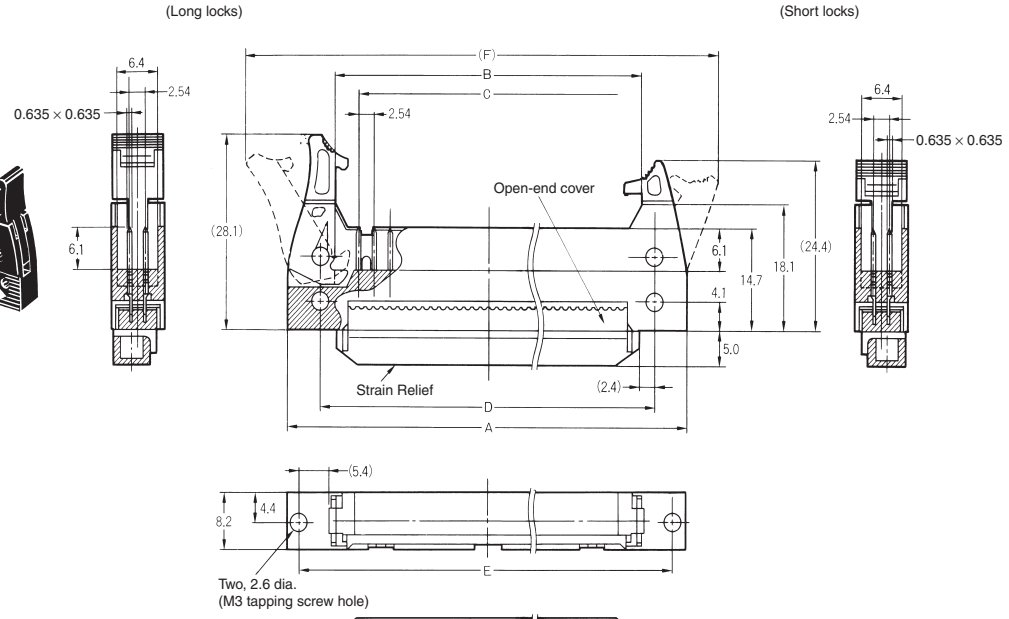
■ XG4E Plugs and XG4S Strain Relief (Locking Levers on Connector)

Dimensions

XG4E-□□31/-□□71
(With long locks)

XG4E-□□32/-□□72
(With short locks)





XG4S-□□04
Strain Relief

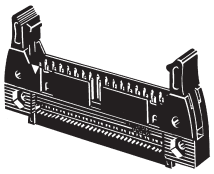
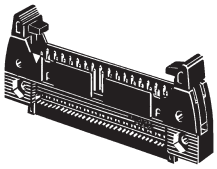
Dimensions

No. of contacts	Dimensions (mm)							
	A	B	C	D	E	F		G
						Long Lock	Short Lock	
10	32.0	17.5	10.16	21.8	27.9	46.4	40.4	16.9
14	37.1	22.6	15.24	26.9	33.0	51.5	45.5	22.0
16	39.6	25.2	17.78	29.5	35.6	54.1	46.0	24.6
20	44.7	30.2	22.86	34.5	40.6	59.1	53.1	29.6
26	52.3	37.9	30.48	42.2	48.3	66.8	60.7	38.0
30	57.4	42.9	35.56	47.2	53.3	71.8	65.8	42.3
34	62.5	48.0	40.64	52.3	58.4	76.9	70.9	47.4
40	70.1	55.6	48.26	59.9	66.0	84.5	78.5	55.0
50	82.8	68.3	60.96	72.6	78.7	97.2	91.2	67.7
60	95.5	81.0	73.66	85.3	91.4	109.9	103.9	80.4
64	100.6	86.1	78.74	90.4	96.5	115.0	109.0	85.5

Note: See the “Polarity Slot and Polarizing Key Slot Number and Position” section for details on the availability (10-contact Connectors) and pitch (with 50, 60, or 64-contact Connectors) of polarity slots.

Ordering Information

Use Long-lock Plugs to mate with XG4M-T Strain-relief Sockets, and use Short-lock Plugs to mate with XG4M that does not have a strain relief installed.

No. of contacts	No. of polarizing slots	Long-lock Plugs with Open-end Covers (See note 1.) 	Short-lock Plugs with Open-end Covers (See note 1.) 	Strain Reliefs for XG4E 
10	0	**XG4E-1071**	**XG4E-1072**	**XG4S-1004**
	1	**XG4E-1031**	**XG4E-1032**	
14	1	**XG4E-1431**	**XG4E-1432**	**XG4S-1404**
16	1	**XG4E-1631**	**XG4E-1632**	**XG4S-1604**
20	1	**XG4E-2031**	**XG4E-2032**	**XG4S-2004**
26	1	**XG4E-2631**	**XG4E-2632**	**XG4S-2604**
30	1	**XG4E-3031**	**XG4E-3032**	**XG4S-3004**
34	1	**XG4E-3431**	**XG4E-3432**	**XG4S-3404**
40	1	**XG4E-4031**	**XG4E-4032**	**XG4S-4004**
50	1	**XG4E-5031**	**XG4E-5032**	**XG4S-5004**
	2 (See note 2.)	**XG4E-5071**	**XG4E-5072**	
60	1	**XG4E-6031**	**XG4E-6032**	**XG4S-6004**
	2 (See note 2.)	**XG4E-6071**	**XG4E-6072**	
64	1	**XG4E-6431**	**XG4E-6432**	**XG4S-6404**
	2 (See note 2.)	**XG4E-6471**	**XG4E-6472**	

Note: 1. Strain Relief sold separately.
2. Polarity slot pitch is 22.86 mm.

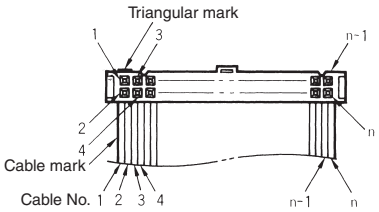
Cable Numbers and Contact Position

Cable and Corresponding Contact Number

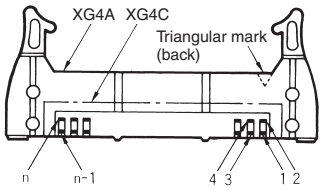
The contact numbers are not marked on the Connector. Use the triangular mark as a guide when wiring and designing circuit boards.

For the cable number, count starting from the cable mark side as shown on the right.

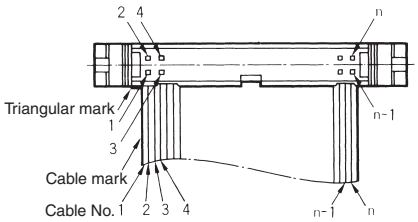
Socket (mated side)



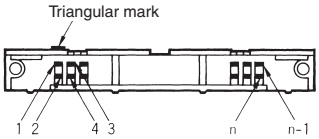
Right-angle Terminal Plug (terminal side)



Plug (XG4E)



Straight Terminal Plug (terminal side)

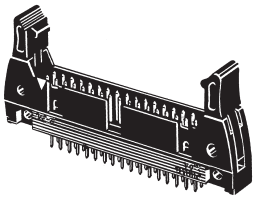


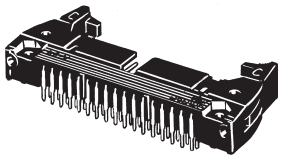
PCB Mount Connectors

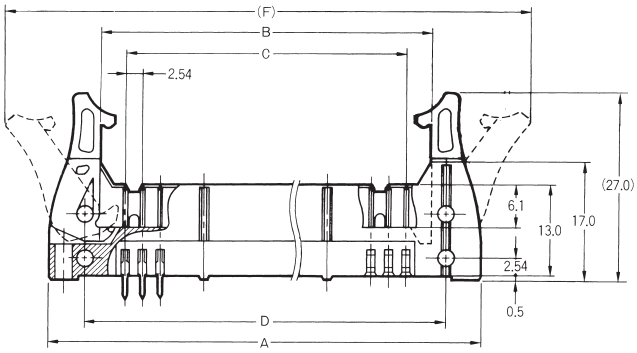
■ XG4A Plugs with Long Lock levers

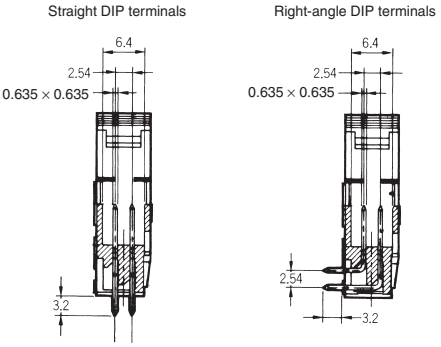
Dimensions

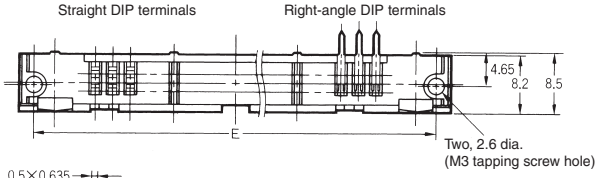
XG4A-□□31/-□□71 (With straight DIP terminals)
XG4A-□□34/-□□74 (With right-angle DIP terminals)

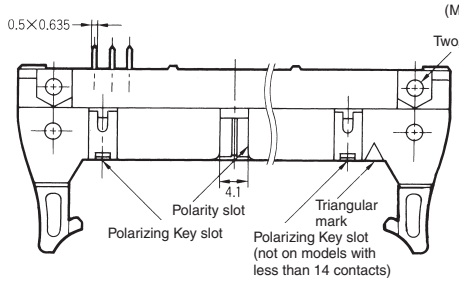


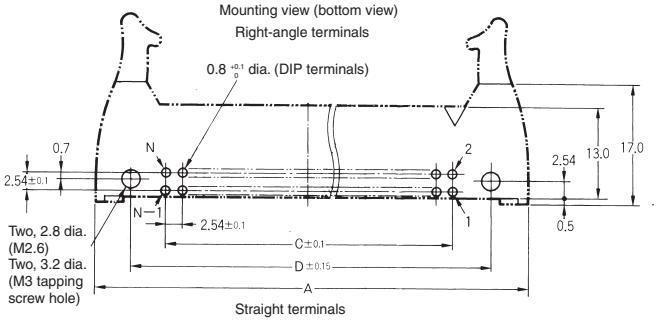


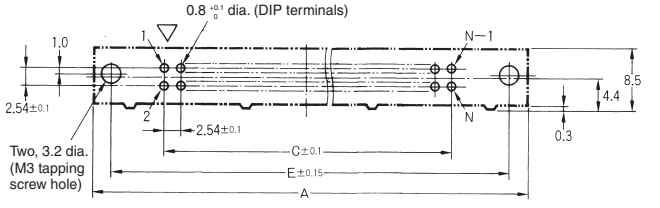










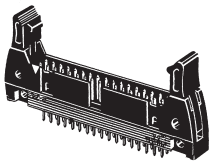
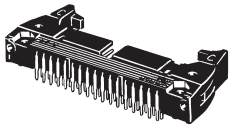


No. of contacts	Dimensions (mm)					
	A	B	C	D	E	F
10	32.0	17.5	10.16	21.8	27.9	46.4
14	37.1	22.6	15.24	26.9	33.0	51.5
16	39.6	25.2	17.78	29.5	35.6	54.1
20	44.7	30.2	22.86	34.5	40.6	59.1
26	52.3	37.9	30.48	42.2	48.3	66.8
30	57.4	42.9	35.56	47.2	53.3	71.8
34	62.5	48.0	40.64	52.3	58.4	76.9
40	70.1	55.6	48.26	59.9	66.0	84.5
50	82.8	68.3	60.96	72.6	78.7	97.2
60	95.5	81.0	73.66	85.3	91.4	109.9
64	100.6	86.1	78.74	90.4	96.5	115.0

Note: See the “Polarity Slot and Polarizing Key Slot Number and Position” section for details on the availability (10-contact Connectors) and pitch (with 50, 60, or 64-contact Connectors) of polarity slots.

Ordering Information

Use in Combination with XG4M-T cable mount Sockets with strain relief or XG5M Sockets for discrete wire.

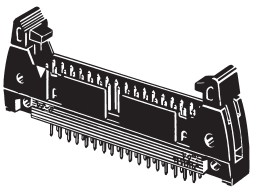
No. of contacts	No. of polarizing slots	Plugs with straight DIP terminals 	Plugs with right-angle DIP terminals 
10	0	**XG4A-1071**	**XG4A-1074**
	1	**XG4A-1031**	**XG4A-1034**
14	1	**XG4A-1431**	**XG4A-1434**
16	1	**XG4A-1631**	**XG4A-1634**
20	1	**XG4A-2031**	**XG4A-2034**
26	1	**XG4A-2631**	**XG4A-2634**
30	1	**XG4A-3031**	**XG4A-3034**
34	1	**XG4A-3431**	**XG4A-3434**
40	1	**XG4A-4031**	**XG4A-4034**
50	1	**XG4A-5031**	**XG4A-5034**
	2 (See note.)	**XG4A-5071**	**XG4A-5074**
60	1	**XG4A-6031**	**XG4A-6034**
	2 (See note.)	**XG4A-6071**	**XG4A-6074**
64	1	**XG4A-6431**	**XG4A-6434**
	2 (See note.)	**XG4A-6471**	**XG4A-6474**

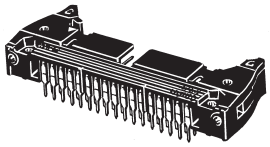
Note: Polarizing slot pitch is 22.86 mm.

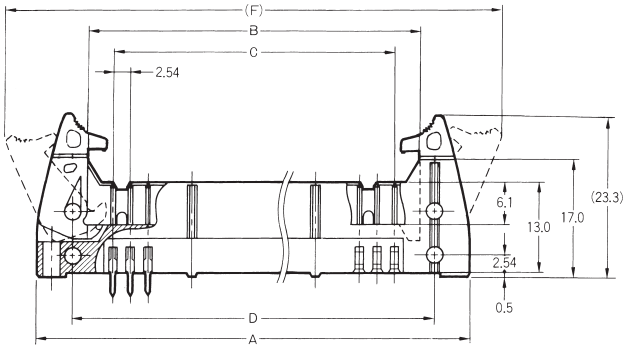
■ XG4A Plugs with Short Locks

Dimensions

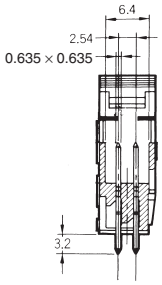
XG4A-□□32/-□□72 (With straight DIP terminals)
XG4A-□□35/-□□75 (With right-angle DIP terminals)



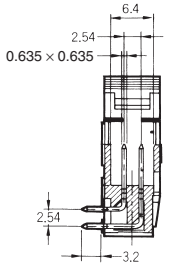




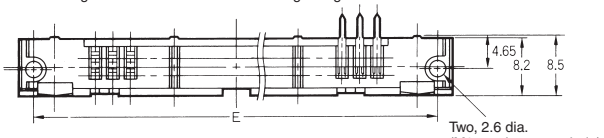
Straight DIP terminals



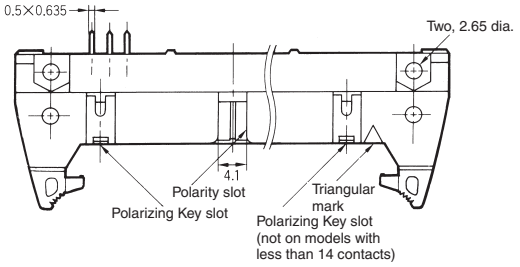
Right-angle DIP terminals



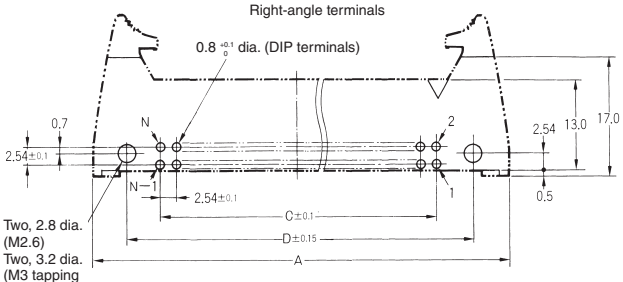
Straight DIP terminals Right-angle DIP terminals



Two, 2.6 dia.
(M3 tapping screw hole)

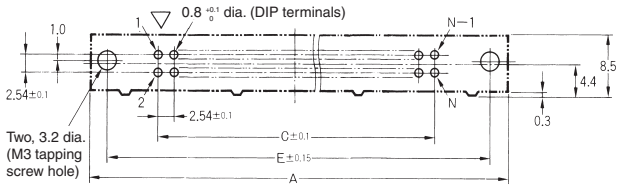


Mounting holes (bottom view)
Right-angle terminals



Two, 2.8 dia.
(M2.6)
Two, 3.2 dia.
(M3 tapping
screw hole)

Straight terminals



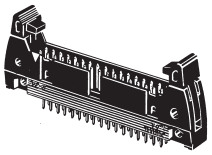
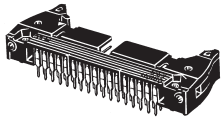
Two, 3.2 dia.
(M3 tapping
screw hole)

No. of contacts	Dimensions (mm)					
	A	B	C	D	E	F
10	32.0	17.5	10.16	21.8	27.9	40.4
14	37.1	22.6	15.24	26.9	33.0	45.5
16	39.6	25.2	17.78	29.5	35.6	48.0
20	44.7	30.2	22.86	34.5	40.6	53.1
26	52.3	37.9	30.48	42.2	48.3	60.7
30	57.4	42.9	35.56	47.2	53.3	65.8
34	62.5	48.0	40.64	52.3	58.4	70.9
40	70.1	55.6	48.26	59.9	66.0	78.5
50	82.8	68.3	60.96	72.6	78.7	91.2
60	95.5	81.0	73.66	85.3	91.4	103.9
64	100.6	86.1	78.74	90.4	96.5	109.0

Note: See the “Polarity Slot and Polarizing Key Slot Number and Position” section for details on the availability (10-contact Connectors) and pitch (with 50, 60, or 64-contact Connectors) of polarity slots.

Ordering Information

Use in Combination with XG4M cable mount Sockets without strain relief.

No. of contacts	No. of polarizing slots	Plugs with straight DIP terminals 	Plugs with right-angle DIP terminals 
10	0	**XG4A-1072**	**XG4A-1075**
	1	**XG4A-1032**	**XG4A-1035**
14	1	**XG4A-1432**	**XG4A-1435**
16	1	**XG4A-1632**	**XG4A-1635**
20	1	**XG4A-2032**	**XG4A-2035**
26	1	**XG4A-2632**	**XG4A-2635**
30	1	**XG4A-3032**	**XG4A-3035**
34	1	**XG4A-3432**	**XG4A-3435**
40	1	**XG4A-4032**	**XG4A-4035**
50	1	**XG4A-5032**	**XG4A-5035**
	2 (See note.)	**XG4A-5072**	**XG4A-5075**
60	1	**XG4A-6032**	**XG4A-6035**
	2 (See note.)	**XG4A-6072**	**XG4A-6075**
64	1	**XG4A-6432**	**XG4A-6435**
	2 (See note.)	**XG4A-6472**	**XG4A-6475**

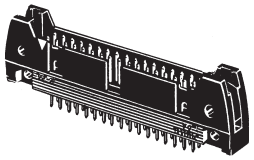
Note: Polarizing slot pitch is 22.86 mm.

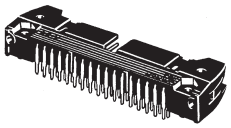
■ XG4A Plugs without Lock Levers

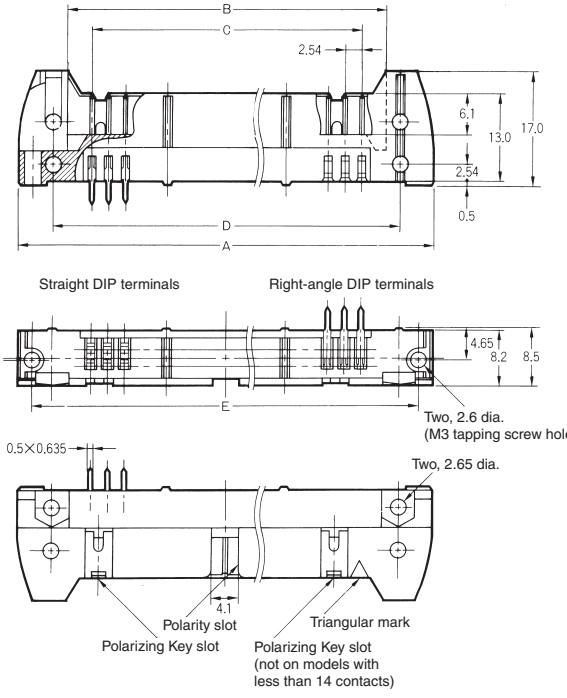
Note: XG4Z-001□ Lock Levers that can be installed after PCB assembly may be purchased separately. (See the following page.)

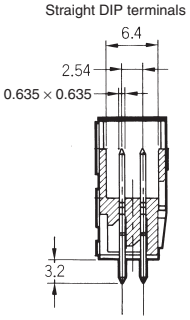
Dimensions

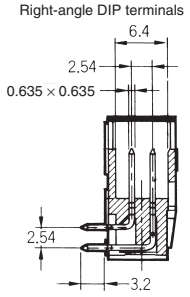
XG4A-□□33/-□□73 (With straight DIP terminals)
XG4A-□□36/-□□76 (With right-angle DIP terminals)

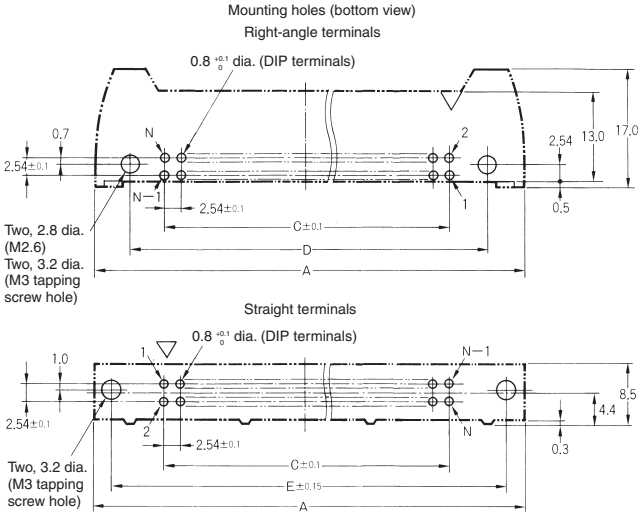








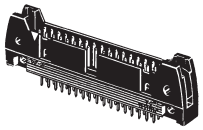
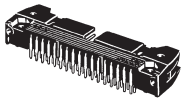




No. of contacts	Dimensions (mm)				
	A	B	C	D	E
10	32.0	17.5	10.16	21.8	27.9
14	37.1	22.6	15.24	26.9	33.0
16	39.6	25.2	17.78	29.5	35.6
20	44.7	30.2	22.86	34.5	40.6
26	52.3	37.9	30.48	42.2	48.3
30	57.4	42.9	35.56	47.2	53.3
34	62.5	48.0	40.64	52.3	58.4
40	70.1	55.6	48.26	59.9	66.0
50	82.8	68.3	60.96	72.6	78.7
60	95.5	81.0	73.66	85.3	91.4
64	100.6	86.1	78.74	90.4	96.5

Note: See the “Polarity Slot and Polarizing Key Slot Number and Position” section for details on the availability (10-contact Connectors) and pitch (with 50, 60, or 64-contact Connectors) of polarity slots.

Ordering Information

No. of contacts	No. of polarizing slots	Plugs with straight DIP terminals 	Plugs right-angle DIP terminals 
10	0	XG4A-1073	XG4A-1076
	1	XG4A-1033	XG4A-1036
14	1	XG4A-1433	XG4A-1436
16	1	XG4A-1633	XG4A-1636
20	1	XG4A-2033	XG4A-2036
26	1	XG4A-2633	XG4A-2636
30	1	XG4A-3033	XG4A-3036
34	1	XG4A-3433	XG4A-3436
40	1	XG4A-4033	XG4A-4036
50	1	XG4A-5033	XG4A-5036
	2 (See note.)	XG4A-5073	XG4A-5076
60	1	XG4A-6033	XG4A-6036
	2 (See note.)	XG4A-6073	XG4A-6076
64	1	XG4A-6433	XG4A-6436
	2 (See note.)	XG4A-6473	XG4A-6476

Note: Polarity slot pitch is 22.86 mm.

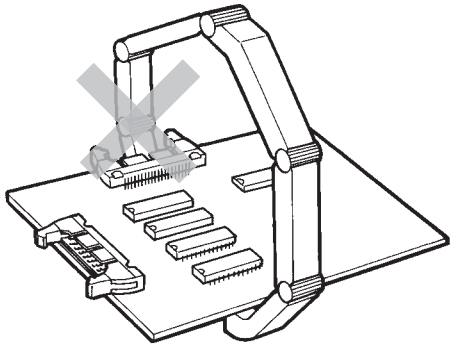
■ Lock Levers for XG4A-□□3□/7□

Attachment after Soldering

- Long Levers interfere with automated mounting.
- Long Levers are in the way when boards are packed.

↓

- These problems are resolved using Connectors with Long Levers that can be attached after soldering is completed.



- These versions of the XG4A connector allows you to attach Lock Levers on Right-angle Terminal Plugs after automated soldering is completed.
- Lock Levers can be easily mounted simply by manually pushing them in.
- Lock Levers can be used with either Straight or Right Angle versions of the XG4A.

Ordering Information

XG4Z-0010
Long Lock Lever

XG4Z-0011
Short Lock Lever

Type	Model	Min. order
Long Lock Levers	**XG4Z-0010**	20
Short Lock Levers	**XG4Z-0011**	
Slim Long Lock Levers	**XG4Z-0012**	
Slim Short Lock Levers	**XG4Z-0013**	

Note: 1. The left and right Lock Levers are identical. One pair is needed for each Plug.

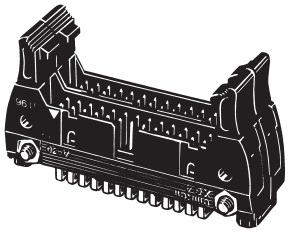
2. Use Long Lock Levers when mating XG4A plug to XG4M-T cable mount socket with strain relief or XG5M sockets for discrete wires.

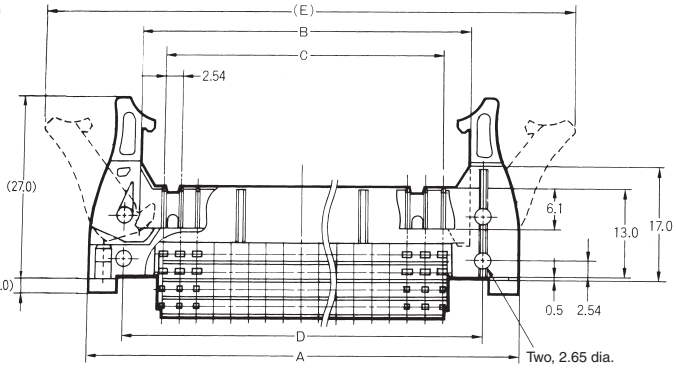
3. Use Short Lock Levers when mating XG4A plug to XG4M without strain relief attached.

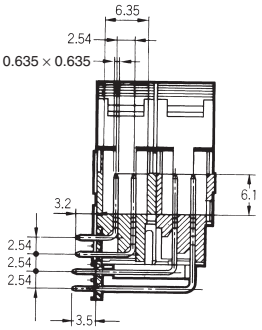
■ XG4A 2-tier Plugs with Long Lock Lever

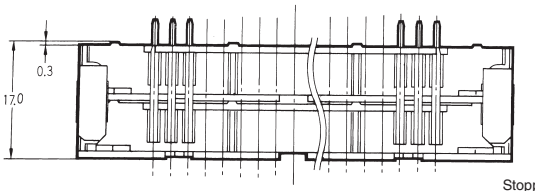
Dimensions

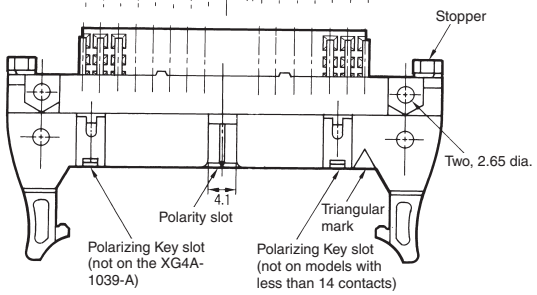
XG4A-□□39-A/-□□79-A
(With long locks and right-angle DIP terminals)

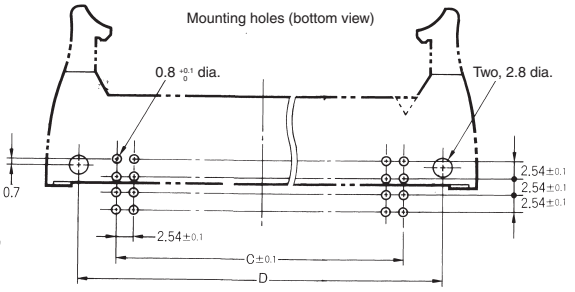












No. of contacts	Dimensions (mm)				
	A	B	C	D	E
10 × 2	32.0	17.5	10.16	21.8	46.4
14 × 2	37.1	22.6	15.24	26.9	51.5
16 × 2	39.6	25.2	17.78	29.5	54.1
20 × 2	44.7	30.2	22.86	34.5	59.1
26 × 2	52.3	37.9	30.48	42.2	66.8
30 × 2	57.4	42.9	35.56	47.2	71.8
34 × 2	62.5	48.0	40.64	52.3	76.9
40 × 2	70.1	55.6	48.26	59.9	84.9
50 × 2	82.8	68.3	60.96	72.6	97.2
60 × 2	95.5	81.0	73.66	85.3	109.9
64 × 2	100.6	86.1	78.74	90.4	115.0

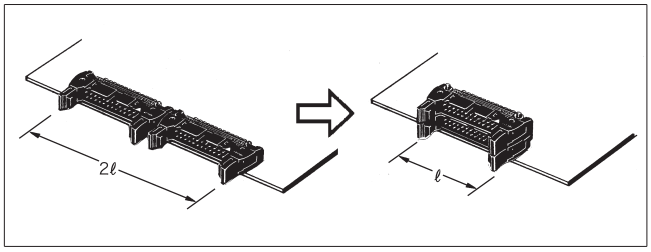
Note: Polarizing slot pitch is 22.86 mm for 50-, 60-, and 64-contact Connectors.

Ordering Information

No. of contacts	No. of polarizing slots	Model	No. of contacts	No. of polarity slots	Model
10 × 2	0	**XG4A-1079-A**	40 × 2	1	**XG4A-4039-A**
	1	**XG4A-1039-A**			
14 × 2	1	**XG4A-1439-A**	50 × 2	1	**XG4A-5039-A**
16 × 2	1	**XG4A-1639-A**		2 (See note 2.)	**XG4A-5079-A**
20 × 2	1	**XG4A-2039-A**	60 × 2	1	**XG4A-6039-A**
26 × 2	1	**XG4A-2639-A**		2 (See note 2.)	**XG4A-6079-A**
30 × 2	1	**XG4A-3039-A**	64 × 2	1	**XG4A-6439-A**
34 × 2	1	**XG4A-3439-A**		2 (See note 2.)	**XG4A-6479-A**

Note: 1. Comes in a set with stopper and screws included.
2. Polarizing slot pitch is 22.86 mm.

Mounting Example



2-tier Plug Features

- Recommended for high-density mounting.
- MIL-compliant cable ensures faster delivery times and lower cost than half-pitch board cable. The 2.54-mm pitch simplifies patterning.

Applicable Mating Sockets

No. of contacts	No. of polarity slots	2-tier Plug Model No.	Mating Socket	
			XG4M for flat cable (See note 1.)	XG5M-N for discrete wire (See note 2.)
10 × 2	0	XG4A-1079-A	XG4M-1031	XG5M-103□-N
	1	XG4A-1039-A	XG4M-1030	XG5M-103□-N
14 × 2	1	XG4A-1439-A	XG4M-1430	XG5M-143□-N
16 × 2	1	XG4A-1639-A	XG4M-1630	XG5M-163□-N
20 × 2	1	XG4A-2039-A	XG4M-2030	XG5M-203□-N
26 × 2	1	XG4A-2639-A	XG4M-2630	XG5M-263□-N
30 × 2	1	XG4A-3039-A	XG4M-3030	XG5M-303□-N
34 × 2	1	XG4A-3439-A	XG4M-3430	XG5M-343□-N
40 × 2	1	XG4A-4039-A	XG4M-4030	XG5M-403□-N
50 × 2	1	XG4A-5039-A	XG4M-5030	XG5M-503□-N
	2 (See note 3.)	XG4A-5079-A	XG4M-5031	
60 × 2	1	XG4A-6039-A	XG4M-6030	XG5M-603□-N
	2 (See note 3.)	XG4A-6079-A	XG4M-6031	
64 × 2	1	XG4A-6439-A	XG4M-6430	XG5M-643□-N
	2 (See note 3.)	XG4A-6479-A	XG4M-6431	

Note: 1. Use with the XG4T strain relief. (XG4M-T includes the connector and strain relief as a set.)
2. Use with the XG5S Semi-cover. XG5S Hood Cover cannot be used. (See XG5 Datasheet).
3. Polarity slot pitch is 22.86 mm.

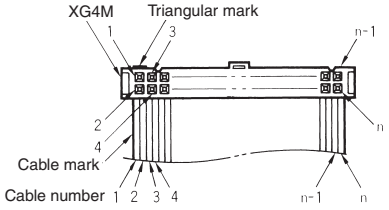
Cable Number and Contact Position

• Cable and Corresponding Contact Number

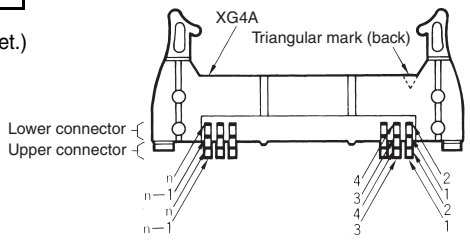
The contact numbers are not marked on the Connector. Use the triangular mark as a guide when wiring and designing circuit boards.

For the cable number, count starting from the cable mark side as shown below.

Socket (mating side)



Right-angle terminals



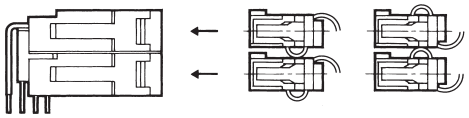
Correct Use of XG4A 2-tier Plug

Mounting

- Be sure to anchor the board with screws before mounting.
- Note that a Polarizing Key cannot be mounted on the lower Plug.

Connecting the Socket

- Before connecting the XG4M with Strain Relief, remove as much slack from the cable as possible. Insert as shown below.
- Attach an XG5S Semi-cover before connecting the XG5M-N. It is not possible to use an XG5S Hood Cover. (See XG5 Datasheet)



Soldering

- Automated Soldering Conditions (Jet Flow)

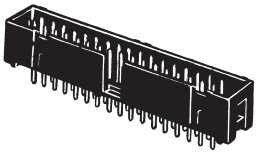
1. Soldering temperature: 250 ±5°C
2. Continuous soldering time: Within 5 s

■ XG4C Box-type (Shrouded) Plugs

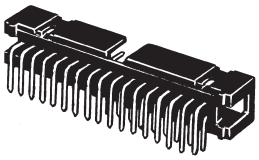
Note: See XG8 Datasheet for unshrouded PCB plugs / headers that mate with the XG4M-T cable mount sockets.

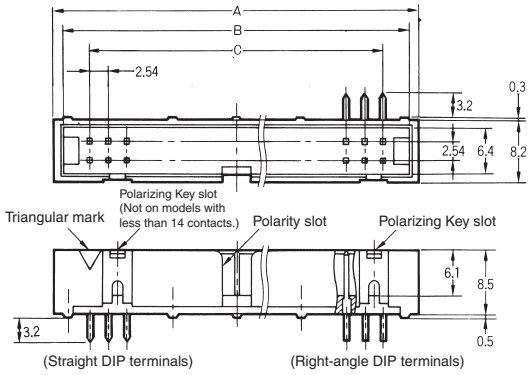
Dimensions

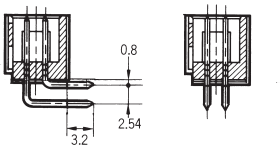
XG4C-□□31/-□□71
(With straight DIP terminals)



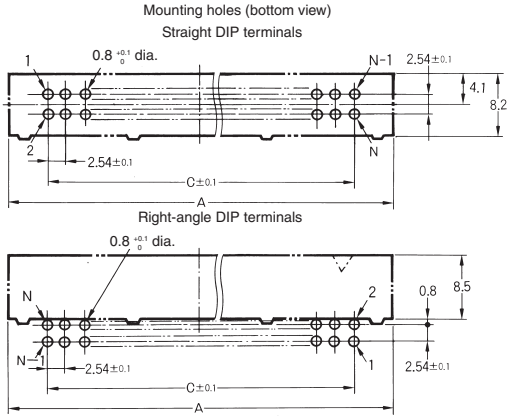
XG4C-□□34/-□□74
(With right-angle DIP terminals)







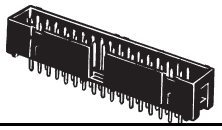
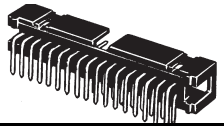
Right-angle DIP terminals Straight DIP terminals



No. of contacts	Dimensions (mm)		
	A	B	C
10	20.0	17.5	10.16
14	25.1	22.6	15.24
16	27.6	25.2	17.78
20	32.7	30.2	22.86
26	40.3	37.9	30.48
30	45.4	42.9	35.56
34	50.5	48.0	40.64
40	58.1	55.6	48.26
50	70.8	68.3	60.96
60	83.5	81.0	73.66
64	88.6	86.1	78.74

Note: See the "Polarity Slot and Polarizing Key Slot Number and Position" section for details on the availability (10-contact Connectors) and pitch (with 50, 60, or 64-contact Connectors) of polarity slots.

Ordering Information

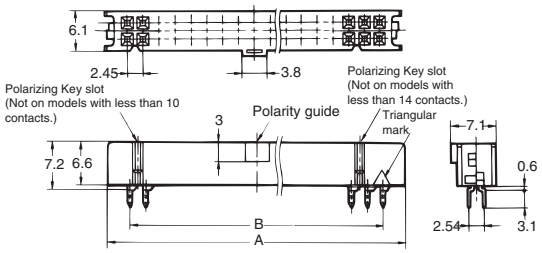
No. of contacts	No. of polarizing slots	Plugs with straight DIP terminals 	Plugs with right-angle DIP terminals 
10	0	**XG4C-1071**	**XG4C-1074**
	1	**XG4C-1031**	**XG4C-1034**
14	1	**XG4C-1431**	**XG4C-1434**
16	1	**XG4C-1631**	**XG4C-1634**
20	1	**XG4C-2031**	**XG4C-2034**
26	1	**XG4C-2631**	**XG4C-2634**
30	1	**XG4C-3031**	**XG4C-3034**
34	1	**XG4C-3431**	**XG4C-3434**
40	1	**XG4C-4031**	**XG4C-4034**
50	1	**XG4C-5031**	**XG4C-5034**
	2 (See note 1.)	**XG4C-5071**	**XG4C-5074**
60	1	**XG4C-6031**	**XG4C-6034**
	2 (See note 1.)	**XG4C-6071**	**XG4C-6074**
64	1	**XG4C-6431**	**XG4C-6434**
	2 (See note 1.)	**XG4C-6471**	**XG4C-6474**

Note: 1. Polarizing slot pitch is 22.86 mm.
2. The Box-type Plug can be locked to XG4M and XG5 using the "XG4Z-0002" Lock Lever II (sold separately).

■ XG4H Board-to-Board Sockets

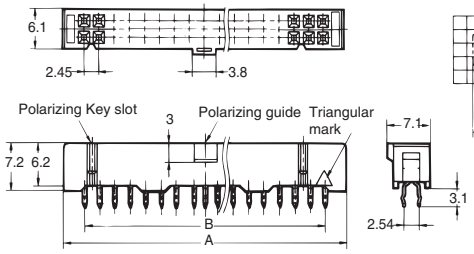
Dimensions

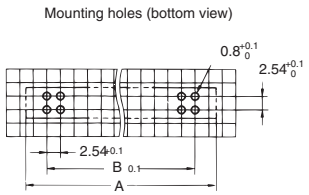
XG4H-□□31/-□□71
(With straight DIP terminals)



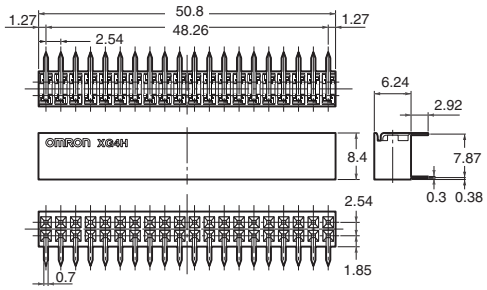
XG4H-3431-1
XG4H-4031-1
(With straight DIP terminals)

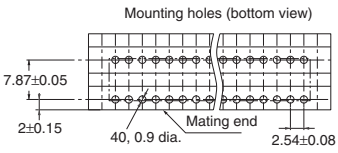
*Sockets with model numbers ending in -1 are available only with 34 or 40 contacts (provide kinked terminals and standoff to prevent the Sockets from falling over).





XG4H-4034
(With right-angle DIP terminals)



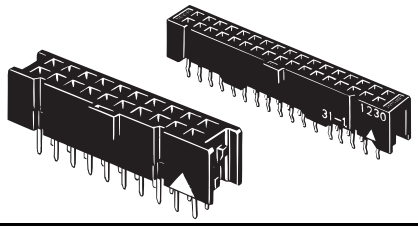


Dimensions

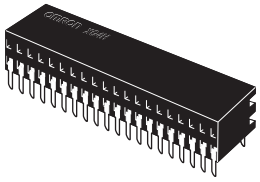
No. of contacts	A	B
10	17.3	10.16
14	22.3	15.24
16	24.9	17.78
20	30.0	22.86
26	37.6	30.48
30	42.7	35.56
34	47.7	40.64
40	55.4	48.26
50	68.1	60.96
60	80.8	73.66
64	85.8	78.74

Ordering Information

No. of contacts	No. of polarizing slots	Sockets with straight DIP terminals
10	1	**XG4H-1031**
14	1	**XG4H-1431**
16	1	**XG4H-1631**
20	1	**XG4H-2031**
26	1	**XG4H-2631**
30	1	**XG4H-3031**
34	1	**XG4H-3431-1**
40	1	**XG4H-4031-1**
50	1	**XG4H-5031**
	2 (See note.)	**XG4H-5071**
60	1	**XG4H-6031**
	2 (See note.)	**XG4H-6071**
64	1	**XG4H-6431**
	2 (See note.)	**XG4H-6471**

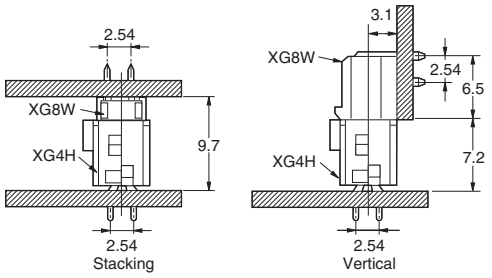
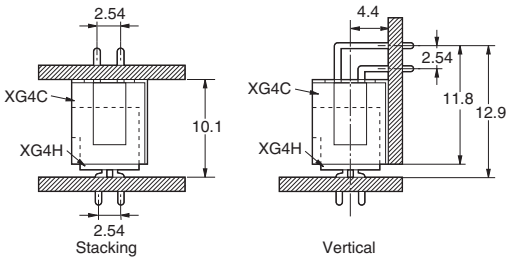
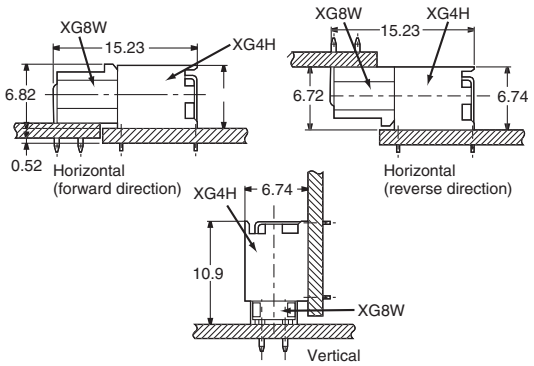


No. of contacts	Sockets with right-angle DIP terminals
40	**XG4H-4034**

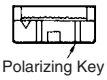
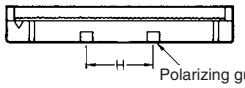
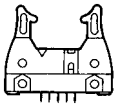
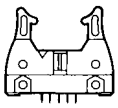
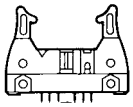
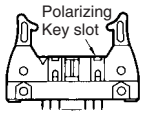
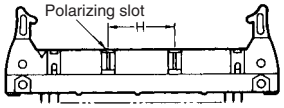
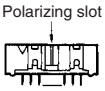
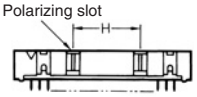


Note: Polarizing guide pitch is 22.86 mm.

■ Mating Diagrams for XG4H

Plug / Socket	XG8W Original Plugs (See XG8 Datasheet)	XG4C Box-type Plugs
XG4H-□□31/-□□71 (With straight DIP terminals)		
XG4H-4034 (With right-angle DIP terminals)		—

Polarity Slot and Polarizing Key Slot Number and Position

Classification	No. of contacts				
	10 contacts		14 contacts	16 to 40 contacts	50 to 64 contacts
XG4M Cable Socket	XG4M-1031 	XG4M-1030 	XG4M-1430 	XG4M-1630 to XG4M-6430 	
				—	XG4M-5031, XG4M-6031, XG4M-6431 
XG4A PCB Plug **XG4E Cable Plug**	XG4A-107□  XG4E-107□	XG4A-103□  XG4E-103□	XG4A-143□  XG4E-143□	XG4A-163□ to XG4A-643□  XG4E-163□ to XG4E-643□	
				—	XG4A-507□, XG4A-607□, XG4A-647□  XG4E-507□, XG4E-607□, XG4E-647□
XG4C Box-type PCB Plug	XG4C-107□ 	XG4C-103□ 	XG4C-143□ 	XG4C-163□ to XG4C-643□ 	
				—	XG4C-507□, XG4C-607□, XG4C-647□ 
No. of polarizing guides (Polarizing Slots)	0	1	1	1	1 2 (H = 22.86 mm)
No. of Polarizing Key slot (Polarizing Key Slots)	1	0	1	2	2

Tools and Accessories (Sold Separately)

See "XG□ - Assembly Tooling and Accessories" datasheet from additional information about cable termination tooling.

■ External Polarization Options

The following optional accessories can be used to provide polarization to sockets and plugs that do not have molded polarizing guides and slots built into their housings and shrouds.

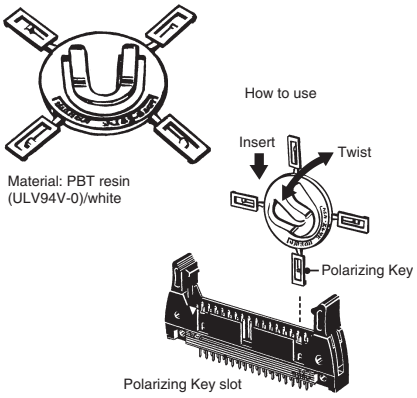
Solutions for Shrouded Connectors

XG4Z-0004 Polarizing Key

Typically, 10 contact versions of the XG4A, XG4E and XG4C are available with or without polarizing guides.

Install the XG4Z-0004 polarizing key on XG4A, XG4E and XG4C plugs that do not have a polarizing slot, to prevent reverse connection with XG4M cable sockets that do not have a polarizing guide.

For all other versions, the molded polarity guides and slots can be used by themselves to help prevent reverse insertion. However, use the polarizing key with these versions as well for best results.

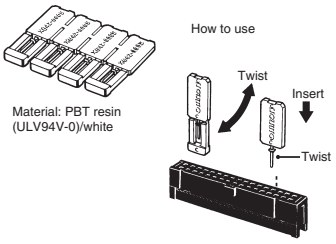


Note: Each XG4Z-0004 has 4 Polarizing Keys.

Solutions for Unshrouded Connectors

Use the XG4Z-0005 coding pin to fill a specific hole in one of the XG4 or XG5 sockets. Then, use the XY2E-0002 cutting pin to remove the corresponding terminal from an XG8 unshrouded plug.
(See XG5 and XG8 datasheets for details about those connectors.)

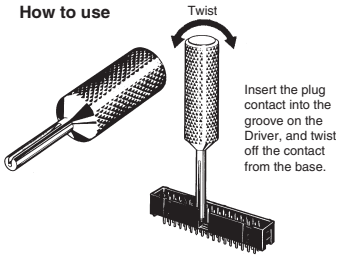
XG4Z-0005 Coding Pin



Note: 1. A contact with a Coding Pin inserted cannot be used.
2. Each XG4Z-0005 has 4 Polarizing Keys.

XY2E-0002 Contact Cutting Driver

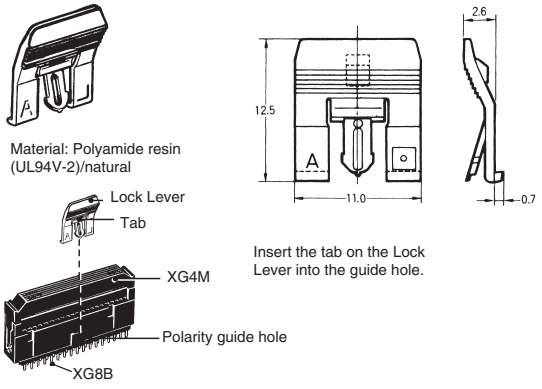
The Contact Cutting Driver is used to cut (twist off) a contact on the mating Plug when using an XG4Z-0005 Coding Pin.



■ Top Lock Levers

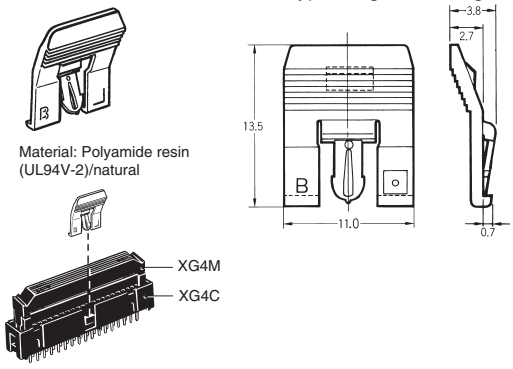
XG5Z-0002 - "Lock Lever"

Use to lock right angle XG8B and XG8W Plugs to mating sockets



XG4Z-0002 - "Lock Lever II"

Use to lock XG4C Box-type Plugs to mating sockets.



Precautions - PCB Mount Sockets and Plugs

Correct Use

Automated Soldering Conditions (Jet Flow)

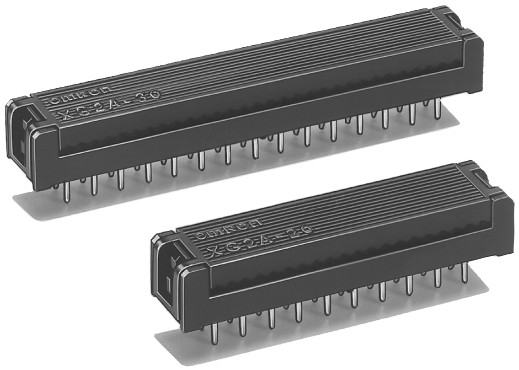
1. Soldering temperature: 250 ±5°C
2. Continuous soldering time: Within 5 s

Note: The coding pin and cutting tools can also be used to prevent incorrect wiring by removing different terminals from side-by-side connectors. For example, for connector set 1, remove terminal 1 and fill socket hole 1. Then, for connector set 2, remove terminal 2 and fill socket hole 2. This prevents socket 1 from mating with plug 2, ensuring correct wiring.

Flat Cable Connectors for PCBs
XG2

Ideal for high-density mounting.
IDC design allows for quick termination.

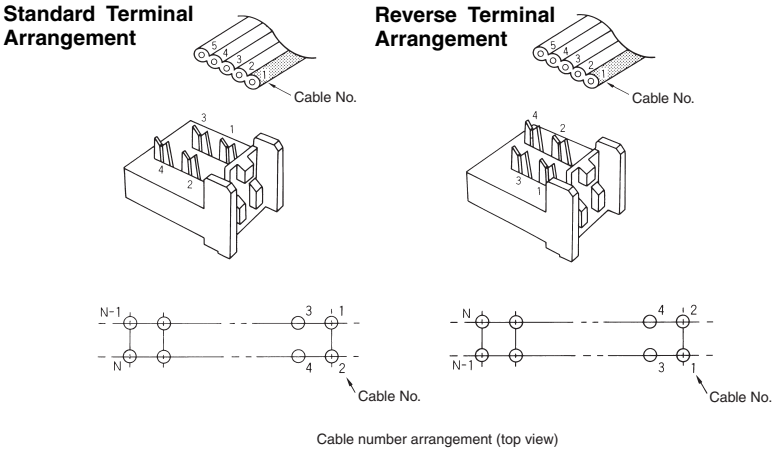
- Part of a total flat cable wiring solution, when used in conjunction with XG4, XG5 and XG8 sockets and plugs.
- End terminates cable to a PCB or acts as a pass through for connection to other cables or PCB's.
- Uses a standard 2.54-mm grid terminal arrangement for easier design of circuits.
- Terminal Arrangement: standard or reverse.
- Uses UL94V-0 approved insulation material.
- IDC Assembly Tools are available.



XG2 Connectors

■ Terminal Arrangement

The contact numbers are not marked on the Connector. If the cables are numbered from 1 starting from the edge, the relationship between the wires and the terminals would be as shown below.



Cable number arrangement (top view)

■ Ratings and Characteristics

Rated current	1 A
Rated voltage	250 VAC
Contact resistance	15 mΩ max. (at 20 mV, 100 mA max.)
Insulation resistance	1,000 MΩ min. (at 500 VDC)
Dielectric strength	500 VAC for 1 min. (leakage current: 1 mA max.)
Operating temperature	−55°C to 85°C (with no icing at low temperature)

■ Materials and Finish

Base		Fiber-glass reinforced PBT resin (UL94V-0)/black
Contacts	**Mating end**	Copper alloy/nickel base, tin plating
	Terminals	Copper alloy/nickel base, tin plating
Cover		Fiber-glass reinforced PBT resin (UL94V-0)/black

■ Applicable Wires

1.27-mm pitch, AWG28, 7-strand flat cable.

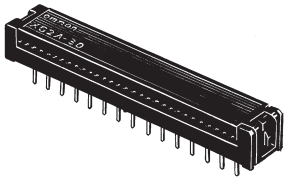
- UL2651 (standard cable)
- UL20012 (folding cable)
- UL20028 (color-coded cable)

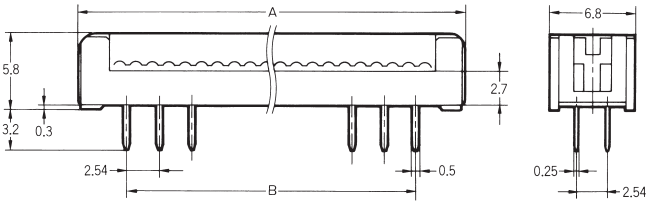
Double-row PCB Bus Connectors

■ XG2A

Dimensions

Standard Terminal Arrangement: XG2A-□□01
Reverse Terminal Arrangement: XG2A-□□02

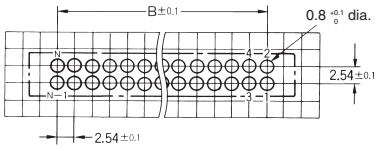




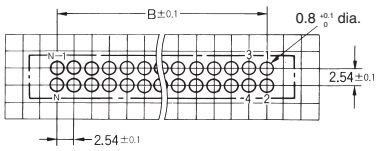
No. of contacts	Dimensions (mm)	
	A	B
10	17.9	10.16
14	22.9	15.24
16	25.5	17.78
20	30.6	22.86
26	38.2	30.46
30	43.3	35.56
34	48.3	40.64
40	56.0	48.26
50	68.7	60.96
60	81.4	73.66
64	86.4	78.74

Mounting holes (bottom view)

Standard terminal arrangement

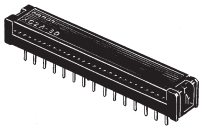


Reverse terminal arrangement



Note: The cover is an open-end type.

Ordering Information

Appearance		
No. of contacts	**Connectors with standard terminal arrangement**	**Connectors with reverse terminal arrangement**
10	XG2A-1001	XG2A-1002
14	XG2A-1401	XG2A-1402
16	XG2A-1601	XG2A-1602
20	XG2A-2001	XG2A-2002
26	XG2A-2601	XG2A-2602
30	XG2A-3001	XG2A-3002
34	XG2A-3401	XG2A-3402
40	XG2A-4001	XG2A-4002
50	XG2A-5001	XG2A-5002
60	XG2A-6001	XG2A-6002
64	XG2A-6401	XG2A-6402

Precautions

Correct Use

Handling

- There is no Strain Relief for the PCB Connector. Leave enough slack to avoid tension on the cable.
- Terminals can be press fit no matter which direction the base and cover are facing.
- See "XG□ - Assembly Tooling and Accessories" datasheet for information on flat cable / connector assembly tools.

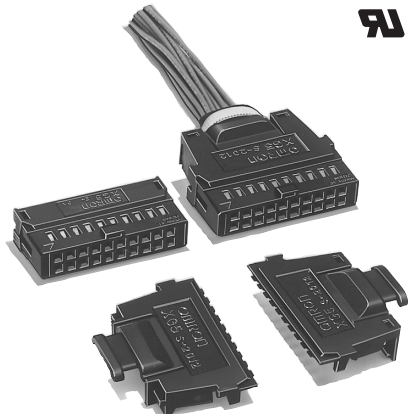
Automated Soldering Conditions (Jet Flow)

1. Soldering temperature: 250 ± 5°C
2. Continuous soldering time: Within 5 s

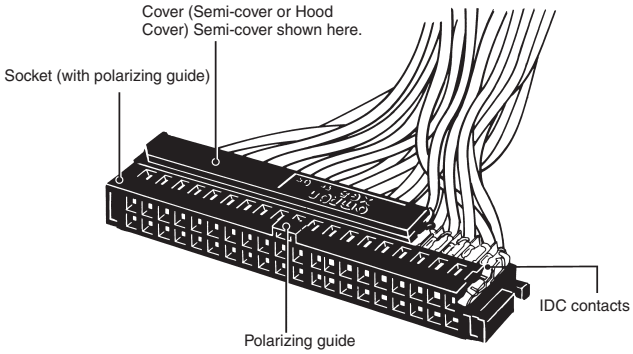
IDC Sockets for Discrete Wires
XG5

Trouble-free discrete-wire termination with IDC Sockets that mate with XG4 and XG8 Plugs.

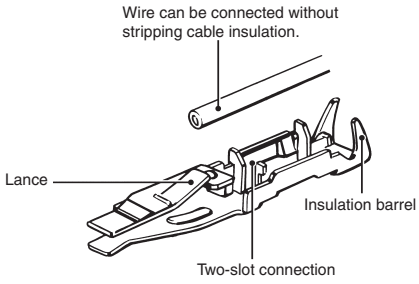
- Two-row, IDC construction and insulation barrel offers high reliability and large-current (3 A) discrete wiring capability.
- Adaptable to a variety of covers for space-saving and discrete wire termination.
- By using the simple, unique top lock-lever system, these Connectors can be locked to either the XG8W Unshrouded Plugs (with right-angle terminals) or XG4C Box-type Plugs.
- Conforms to UL standards (file no. E 103202) and CSA standards (file no. LR 62678).



■ Construction



Solderless Contact



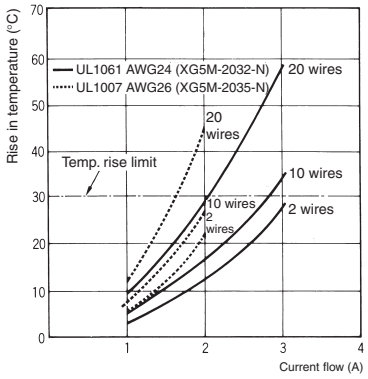
■ Ratings and Characteristics

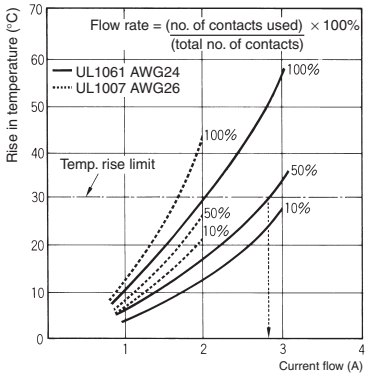
Rated current	3 A
Rated voltage	300 VAC
Contact resistance	20 mΩ max. (at 20 mV, 100 mA max.)
Insulation resistance	1,000 MΩ min. (at 500 VDC)
Dielectric strength	650 VAC for 1 min (leakage current: 1 mA max.)
Connector insertion	1.96 N max. per contact
Contact removal	0.29 N min. (with test gauge, 0.64 x 0.64 mm)
Insertion durability (See note.)	50 times
Ambient temperature	Operating: −55 to 85°C (with no icing)

Note: For standard 0.15-mm gold plating.

■ Current and Temperature Characteristics

Use the temperature data shown below as a reference for selecting current values and wires.





■ Materials and Finish

Housing		Fiber-glass reinforced PBT resin (UL94V-0)/black
Contacts	**Mating end**	Phosphor-bronze/nickel base, 0.15-μm gold plating (See note.)
	Terminals	Phosphor-bronze/nickel base, 2.0-μm solder plating
Cover		Fiber-glass reinforced polyamide resin (UL94V-0)/black
Cable tie		Polyamide resin (UL94V-0)/natural

Note: For non-standard plating, contact your OMRON representative.

■ Applicable Wires and Contact Sizes

Size #1	AWG24 (For UL-1061)	Insulation outside diameter: 1.1 to 1.3 mm} Core structure: 7 strands or more
Size #2	AWG28 or AWG26 (For UL-1007)	

Note: The contact numbers are marked on the contact insulation barrels.

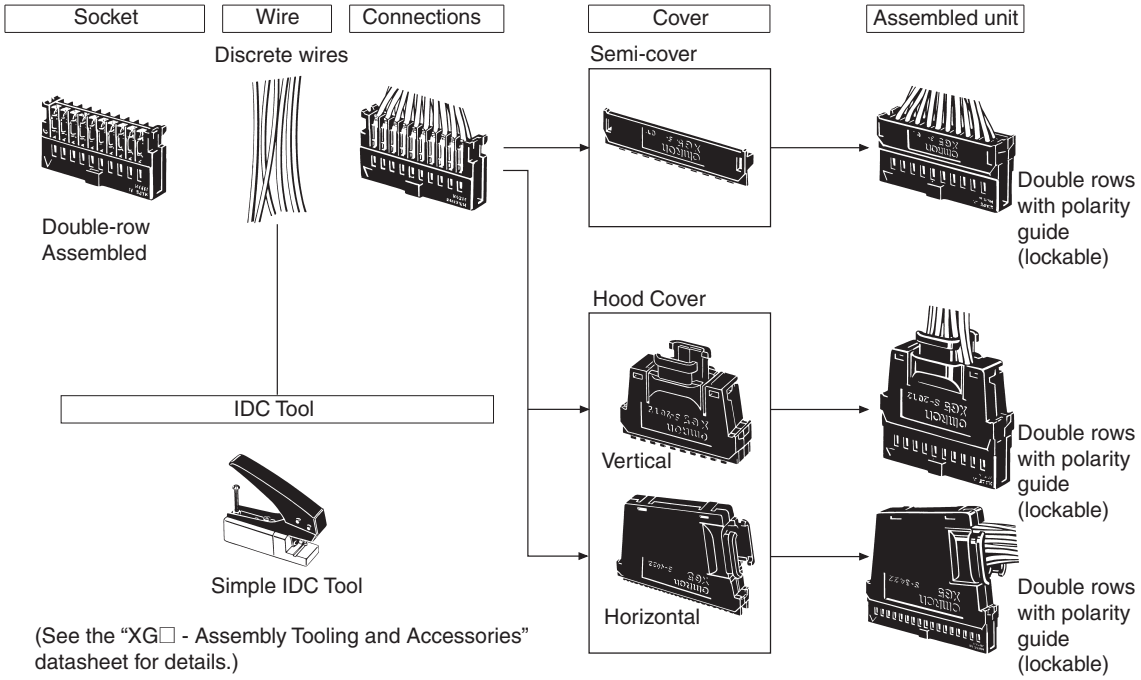
Assembled Configuration

■ Insulation Displacement (IDC) versus Crimp Termination

IDC termination provides the following advantages over crimp style termination, when using discrete wires;

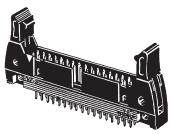
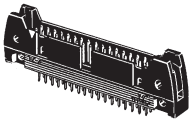
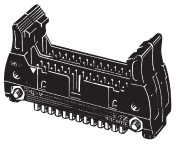
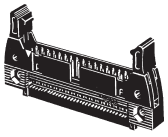
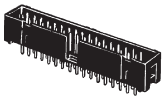
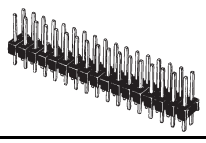
- Overall cost is lower, because less manhours are required. Wire stripping is eliminated and inspection is easier.
- IDC termination provides consistent quality, improving yield.
- XG5 terminals are installed in the socket housing at the factory, simplifying the Bill of Material and parts control.
- Optional replacement IDC terminals facilitates re-configuration of wiring.

Assembly



(See the "XG□ - Assembly Tooling and Accessories" datasheet for details.)

Applicable Mating Plugs

XG4A PCB Plugs with Long Locks	XG4A PCB Plugs w/o Lock Lever	XG4A PCB Double-row Plugs
	 (See Note 3)	
XG4E IDC Flat Cable Plugs	**XG4C PCB Box-type Plugs**	**XG8W/XG8B Double-row Unshrouded Plugs**
		

Note: 1. See XG4 and XG8 datasheets for plug dimensions.

2. When using the XG4A or XG4C, the number of XG4A or XG4C's polarity slots must be the same as the number of XG5M-N polarity guides.

3. Mount external Lock Levers after soldering.

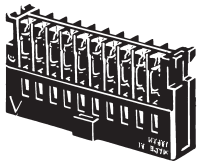
Double-row Sockets

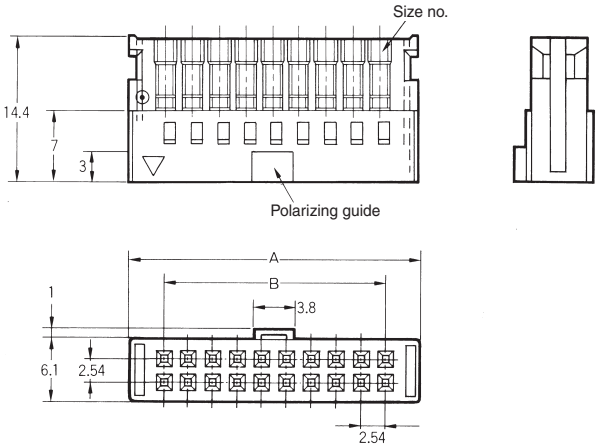
■ XG5M-N

Dimensions

Models with no polarizing guide
- **XG5M-1031-N (size #1)**
- **XG5M-1034-N (size #2)**

Models with polarizing guide
- **XG5M-□□32-N (size #1)**
- **XG5M-□□33-N (size #1)**
- **XG5M-□□35-N (size #2)**
- **XG5M-□□36-N (size #2)**

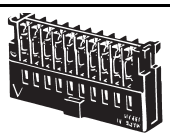




Dimensions

No. of contacts	Dimensions (mm)	
	A	B
10	17.3	10.16
14	22.3	15.24
16	24.9	17.78
20	30.0	22.86
26	37.6	30.48
30	42.7	35.56
34	47.7	40.64
40	55.4	48.26
50	68.1	60.96
60	80.8	73.66
64	85.8	78.74

Ordering Information

Appearance			
No. of contacts	**No. of polarizing guide**	**Size #1**	**Size #2**
10	0	**XG5M-1031-N**	**XG5M-1034-N**
	1	**XG5M-1032-N**	**XG5M-1035-N**
14	1	**XG5M-1432-N**	**XG5M-1435-N**
16	1	**XG5M-1632-N**	**XG5M-1635-N**
20	1	**XG5M-2032-N**	**XG5M-2035-N**
26	1	**XG5M-2632-N**	**XG5M-2635-N**
30	1	**XG5M-3032-N**	**XG5M-3035-N**
34	1	**XG5M-3432-N**	**XG5M-3435-N**
40	1	**XG5M-4032-N**	**XG5M-4035-N**
50	1	**XG5M-5032-N**	**XG5M-5035-N**
	2	**XG5M-5033-N**	**XG5M-5036-N**
60	1	**XG5M-6032-N**	**XG5M-6035-N**
	2	**XG5M-6033-N**	**XG5M-6036-N**
64	1	**XG5M-6432-N**	**XG5M-6435-N**
	2	**XG5M-6433-N**	**XG5M-6436-N**

Note: 1. The 10-contact XG5M-1031-N and XG5M-1034-N have no polarizing guides.
2. The distance between slots is 22.86 mm for the two guides on 50, 60, and 64-contact Connectors.
3. See the XG4 and XG8 datasheets for Mating Plug information.
4. Applicable discrete wire is AWG24 (UL1061) for size #1.
5. Applicable discrete wire is AWG28 to AWG26 (UL-1007) for size #2.

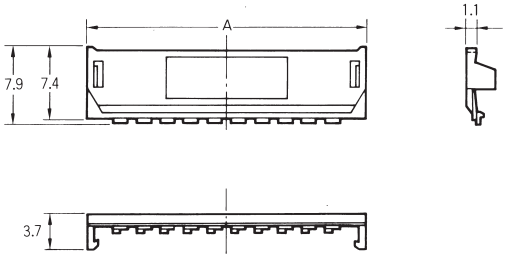
Semi-covers

■ XG5S

Semi-covers are used to cover the IDC termination area and insulation barrels, after wiring is completed. If the entire socket needs to covered, use XG5S Hood Covers.

Dimensions

XG5S-□□01



Dimensions

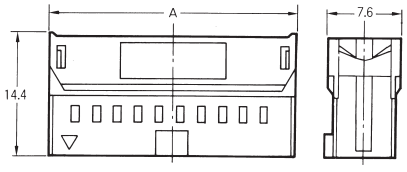
No. of contacts	Dimensions (mm)
	A
5	17.3
7	22.3
8	24.9
10	30.0
13	37.6
15	42.7
17	47.7
20	55.4
25	68.1
30	80.8
32	85.8

Ordering Information

No. of contacts	Model	Applicable Connector
5	**XG5S-0501**	**XG5M103□-N**
7	**XG5S-0701**	**XG5M-143□-N**
8	**XG5S-0801**	**XG5M-163□-N**
10	**XG5S-1001**	**XG5M-203□-N**
13	**XG5S-1301**	**XG5M-263□-N**
15	**XG5S-1501**	**XG5M-303□-N**
17	**XG5S-1701**	**XG5M-343□-N**
20	**XG5S-2001**	**XG5M-403□-N**
25	**XG5S-2501**	**XG5M-503□-N**
30	**XG5S-3001**	**XG5M-603□-N**
32	**XG5S-3201**	**XG5M-643□-N**

Note: One Semi-cover is used per termination row. Each XG5M Connector requires two semi-covers. Semi-covers are not packaged in pairs.

Assembled Dimensions (Socket with Semi-cover)

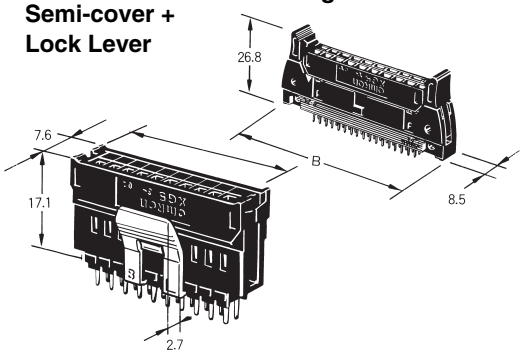


Dimensions

No. of contacts	Dimensions (mm)	
	A	B
10	17.3	32.0
14	22.3	37.1
16	24.9	39.6
20	30.0	44.7
26	37.6	52.3
30	42.7	57.4
34	47.7	62.5
40	55.4	70.1
50	68.1	82.8
60	80.8	95.5
64	85.8	100.6

Original Plug + Semi-cover + Lock Lever

MIL Plug + Semi-cover



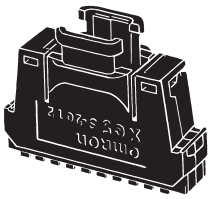
Hood Covers

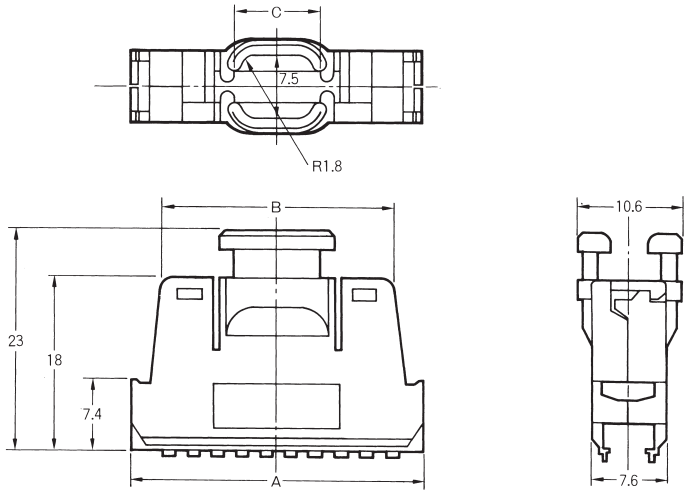
■ XG5S

Dimensions

Vertical

XG5S-□□12
(Left and right halves)



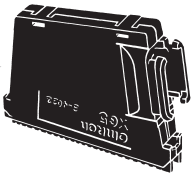


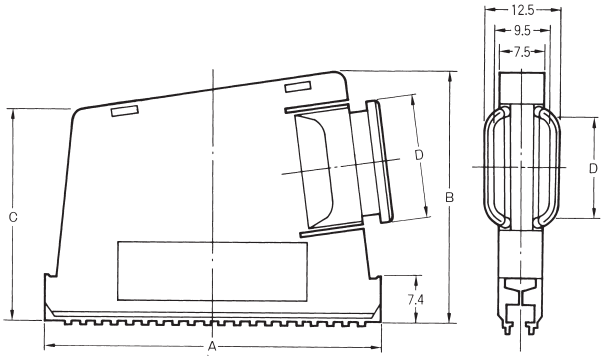
Dimensions

No. of contacts	Dimensions (mm)		
	A	B	C
20	30.0	23.8	8.8
26	37.6	31.4	11.4
30	42.7	36.5	15.1

Horizontal

XG5S-□□22
(Left and right halves)

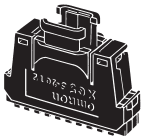
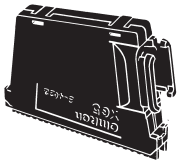




Dimensions

No. of contacts	Dimensions (mm)			
	A	B	C	D
34	47.7	38.7	32.0	14.6
40	55.4	40.7	34.0	16.6
50	68.1	44.1	39.4	20.0
60	80.8	47.4	42.8	23.4

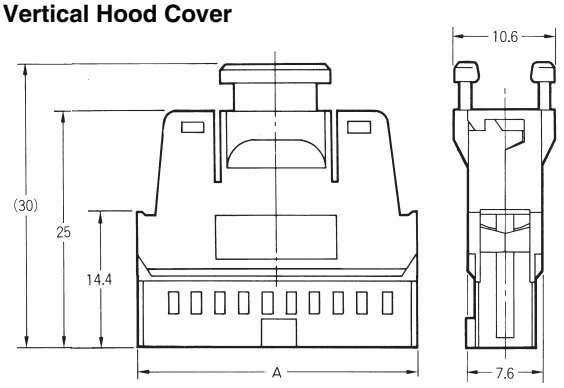
Ordering Information

Appearance	Vertical	Horizontal
		
No. of contacts (double rows)	Model (See note.)	Model (See note.)
20	**XG5S-2012**	**—**
26	**XG5S-2612**	**—**
30	**XG5S-3012**	**—**
34	**—**	**XG5S-3422**
40	**—**	**XG5S-4022**
50	**—**	**XG5S-5022**
60	**—**	**XG5S-6022**

Note: Hood Covers are packaged / shipped with left and right halves. Includes cable tie.

Assembled Dimensions (Socket and Hood Cover)

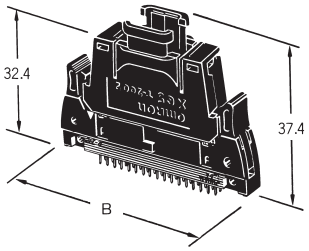
Vertical Hood Cover



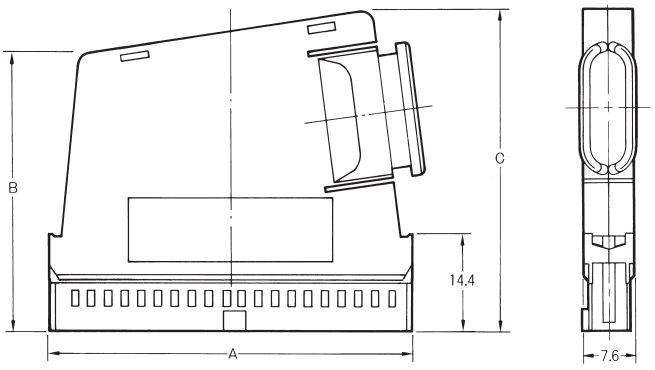
Dimensions

No. of contacts	Dimensions (mm)	
	A	B
20	30.0	44.7
26	37.6	52.3
30	42.7	57.4

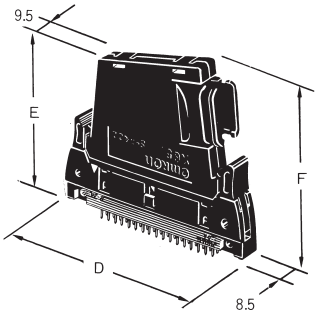
Assembled Unit
Plug + Vertical Hood Cover



Horizontal Hood Cover



Assembled Unit
Plug + Horizontal Hood Cover

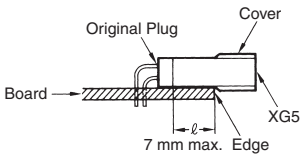


Dimensions

No. of contacts	Dimensions (mm)					
	A	B	C	D	E	F
34	47.7	39.0	45.7	62.5	46.4	53.1
40	55.4	41.0	47.7	70.1	48.4	55.1
50	68.1	46.4	51.1	82.8	53.8	58.5
60	80.8	49.8	54.4	95.5	57.2	61.8

Applicable Plugs

- XG4A, XG4C, XG4E and XG8 are recommended.
- XG4C and XG8 Plugs do not have locks. To prevent accidental removal, use a Lock Lever (XG4Z-0002, XG5Z-0002). (Lock Levers cannot be used with XG8W Straight Terminal Connectors.)
- When mounting the XG8 Original Plug (with right-angle terminals) to a circuit board, be sure that the cover is positioned off the board as shown below.

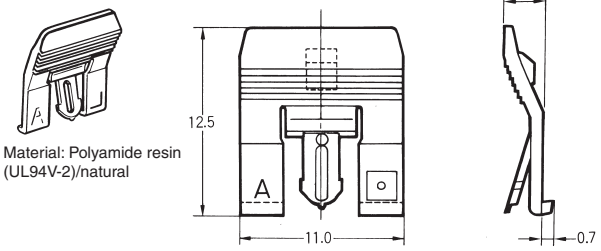


XG5 Accessories

■ Top Lock Levers

XG5Z-0002 - "Lock Lever"

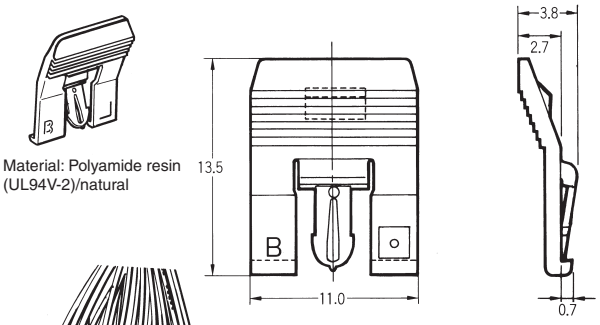
Use to lock unshrouded right-angle Plugs (XG8B and XG8W) to XG5 or XG4 mating sockets.



Material: Polyamide resin (UL94V-2)/natural

XG4Z-0002 - "Lock Lever II"

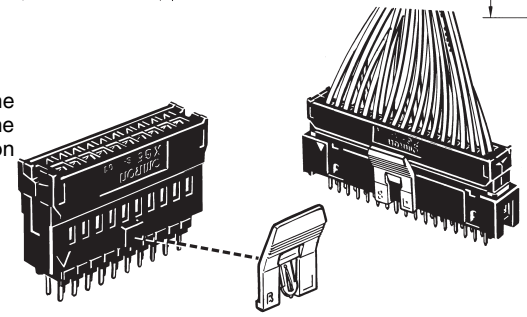
Use to lock XG4C Box-type Plugs.



Material: Polyamide resin (UL94V-2)/natural

Mounting the Lock Lever

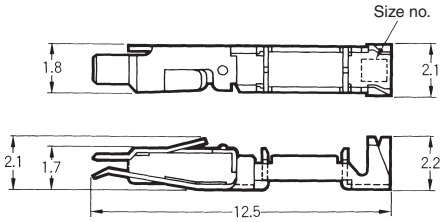
For Sockets with polarity guides, mount the Lock Lever to the tab to lock the Socket to the Unshrouded Plug as shown in the diagram on the right.



Model
XG5Z-0002
XG4Z-0002

■ Spare Contacts

XG5W-0031-N (Size #1)
XG5W-0034-N (Size #2)



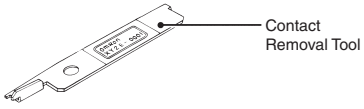
Model
XG5W-0031-N
XG5W-0034-N

Note: 1. These Contacts can be used as replacements if a wrong connection is made.

2. The applicable wire for size No. 1 is AWG24 (UL-1061). The applicable wire for size No. 2 is AWG26 to AWG28 (UL-1007).

Contact Removal Tool

XY2E-0001

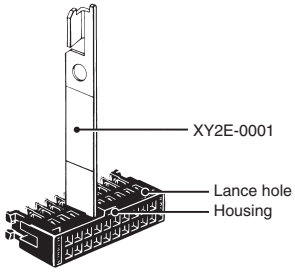


Used to remove from the housing, contacts which need to be replaced or reconfigured.

Replacing Contacts

Use only this tool to remove incorrect IDC contacts.

1. Remove the cover.
2. Insert the tool into the housing lance holes and push the lance into the housing.
3. Pull out the contact while holding the lance down.
4. Insert a new contact.



■ XG5 IDC Assembly Tools

See the "XG□ - Assembly Tooling and Accessories" datasheet for details regarding manual and automated IDC Termination tools (part numbers XY2B-7006 and XY2B-2104-N)

Precautions

■ Correct Use

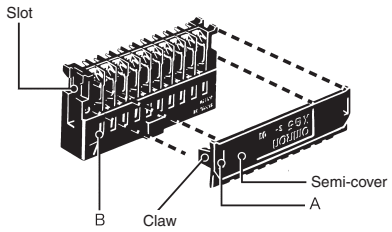
IDC Connectors

- For best results, use only the XG5 IDC Tool. (See the "XG□ - Assembly Tooling and Accessories" datasheet.)
- Contact your OMRON representative for details on the XG5 IDC Tool.
- Check the Contact size (No. 1 or No 2) and wire size before connecting.
- OMRON has a IDC Tool Reference Manual. Contact your OMRON representative to request a copy.

Mounting the Cover

- The cover is used to protect the connection position and prevent shorting out.

Mounting the Semi-cover

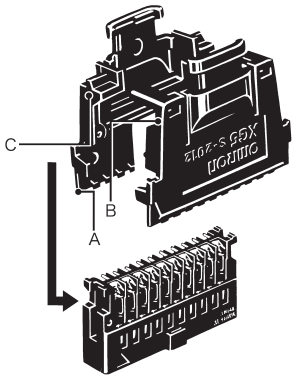


- See the above diagram.

1. Insert part A of the Semi-cover into part B of the Socket.
2. Push the claws on both sides of the Semi-cover onto the Socket.
3. Make sure the claws are firmly inserted in the slots.
4. To protect the wires, use cable ties to bind wires that may be subject to tension even when a Semi-cover is used.

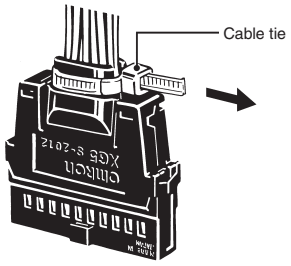
Mounting the Hood Cover

Vertical Hood Cover



- See the above diagram.

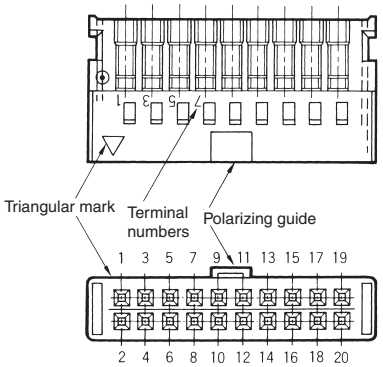
1. Insert the claws of part A of the Hood Cover into the slots.
2. Insert claws B on the Hood cover into part C on the other part of the Hood Cover.
3. Wrap the wires with a cable tie.



Horizontal Hood Cover

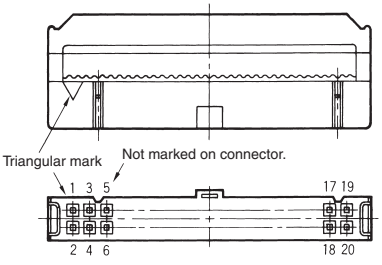
- Follow the mounting procedure for the vertical cover.
- The left and right parts of the cover are different. Assemble carefully.

XG5M-N Double-row Socket Contact Numbers



- The Contact numbers on the Double-row Assembled Socket match the numbers on the XG4M Flat Cable MIL Socket. (See the above diagrams.)

XG4M Terminal Numbers

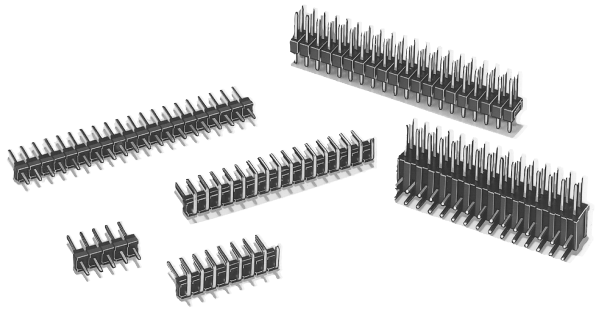


- When making IDC connections on the Double-row Assembled Connector, use the polarity guide to distinguish the front and back. (Note: The 10-contact Connector does not have a guide.)

Standard Unshrouded Header Plug
XG8

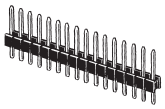
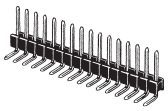
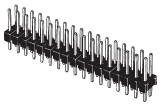
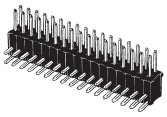
Standard Plugs can be used in a wide range of applications.

- The XG8 2 row plugs mates with different Omron 2 row Sockets:
  XG4M Flat Cable Connector, **XG4H** Board to Board Connector and **XG5** Discrete-wire IDC Connector
- XG8A and XG8B Header / Plugs are sold in strips of 50 (single row) or 100 (double row) terminals. Simply cut the strips to the desired length / number of contacts.
- XG5Z-0002 Top Lock Levers (sold separately) ensure secure connection to Omron Sockets when used with double row, right-angle XG8W



Unshrouded Plugs

Original Header / Plug

Model	XG8V		XG8W	
	Single Row		Double Row	
	Straight	Right-angle	Straight	Right-angle
Appearance				

Header / Plug Strips

Model	XG8A		XG8B	
	Single Row		Double Row	
	Straight	Right-angle	Straight	Right-angle
Appearance				

Note: 1. See the following pages for exact part numbers

■ Ratings and Characteristics

Rated current	3 A (See note 1.)
Rated voltage	300 VAC
Contact resistance	20 mΩ max. (at 20 mV, 100 mA max.) (See note 2.)
Insulation resistance	1,000 MΩ min. (at 500 VDC)
Dielectric strength	650 VAC for 1 min. (leakage current: 1 mA max.)
Ambient temperature	Operating: −55°C to 105°C (with no icing)

Note: 1. The rated current will depend on the Socket you are using. It is 1A if using the XG4M and 3A if using XG5, for example.
2. The contact resistance is measured with the Plug mated to an XG5M-N.

■ Materials and Finish

		XG8V and XG8W	XG8A and XG8B
Model			
Base		Fiber-glass reinforced PBT resin (UL94V-0)/black	
Contacts	**Mating end**	1) Brass/nickel base, 0.15-μm gold plating	Brass/nickel base, 0.15-μm gold plating
	Terminal	2) Brass/nickel base, tin plating	Brass/nickel base, tin plating

Note: Two types of contacts and mating ends, one with all gold plating and the other with all tin plating, are available. (XG8V and XG8W)

■ Applicable Sockets

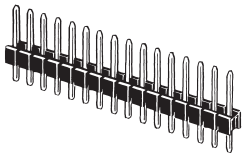
XG8W and XG8B (Double Row)	XG4M Flat Cable Connectors (Sockets) XG4H Board-to-Board Connectors (Sockets) XG5M-N Discrete-wire IDC Connectors (Double-row Sockets)

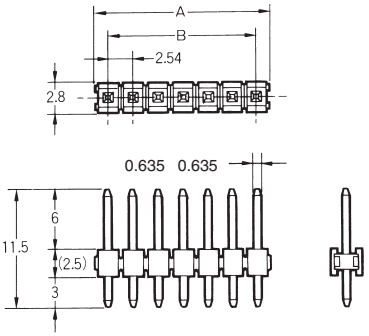
XG8V Single-row Header Plugs

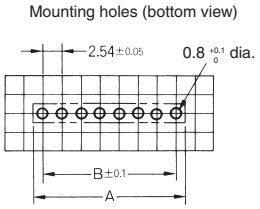
Dimensions

XG8V-□□31
(With gold-plated straight terminals)

XG8V-□□41
(With tin-plated straight terminals)



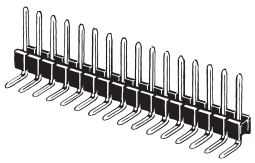


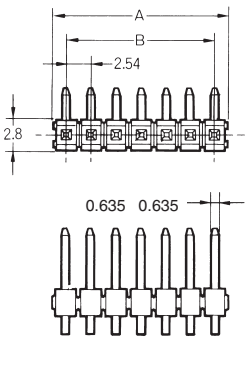


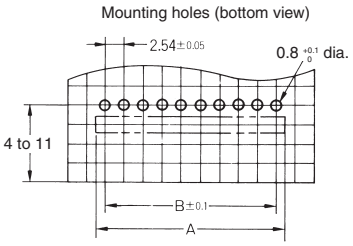
No. of contacts	Dimensions (mm)	
	A	B
3	7.6	5.08
4	10.2	7.62
5	12.7	10.16
6	15.2	12.70
7	17.8	15.24
8	20.3	17.78
10	25.4	22.86
12	30.5	27.94
13	33.0	30.48
15	38.1	35.56
16	40.6	38.10
17	43.2	40.64
20	50.8	48.26
36	91.4	88.90

XG8V-□□34
(With gold-plated right-angle terminals)

XG8V-□□44
(With tin-plated right-angle terminals)

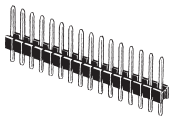
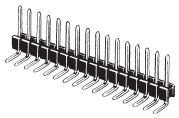






No. of contacts	Dimensions (mm)	
	A	B
3	7.6	5.08
4	10.2	7.62
5	12.7	10.16
6	15.2	12.70
7	17.8	15.24
8	20.3	17.78
10	25.4	22.86
12	30.5	27.94
13	33.0	30.48
15	38.1	35.56
16	40.6	38.10
17	43.2	40.64
20	50.8	48.26
36	91.4	88.90

Ordering Information

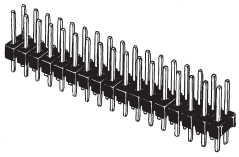
Appearance	Plugs with straight terminals 		Plugs with right-angle terminals 	
No. of contacts	Model (gold plated)	Model (tin plated)	Model (gold plated)	Model (tin plated)
3	**XG8V-0331**	**XG8V-0341**	**XG8V-0334**	**XG8V-0344**
4	**XG8V-0431**	**XG8V-0441**	**XG8V-0434**	**XG8V-0444**
5	**XG8V-0531**	**XG8V-0541**	**XG8V-0534**	**XG8V-0544**
6	**XG8V-0631**	**XG8V-0641**	**XG8V-0634**	**XG8V-0644**
7	**XG8V-0731**	**XG8V-0741**	**XG8V-0734**	**XG8V-0744**
8	**XG8V-0831**	**XG8V-0841**	**XG8V-0834**	**XG8V-0844**
10	**XG8V-1031**	**XG8V-1041**	**XG8V-1034**	**XG8V-1044**
12	**XG8V-1231**	**XG8V-1241**	**XG8V-1234**	**XG8V-1244**
13	**XG8V-1331**	**---**	**XG8V-1334**	**---**
15	**XG8V-1531**	**---**	**XG8V-1534**	**---**
16	**XG8V-1631**	**XG8V-1641**	**XG8V-1634**	**XG8V-1644**
17	**XG8V-1731**	**---**	**XG8V-1734**	**---**
20	**XG8V-2031**	**XG8V-2041**	**XG8V-2034**	**XG8V-2044**
36	**XG8V-3631**	**XG8V-3641**	**XG8V-3634**	**XG8V-3644**

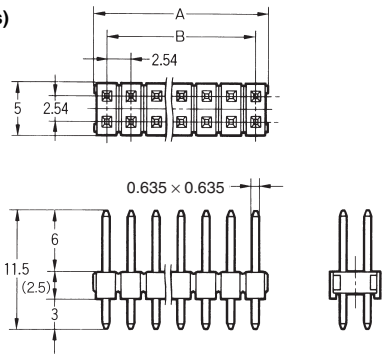
XG8W Double Row Plugs for MIL Connectors

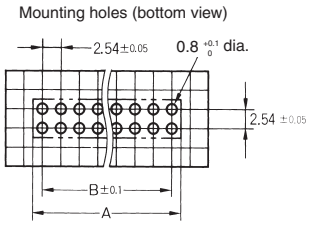
Dimensions

XG8W-□□31
(With gold-plated straight terminals)

XG8W-□□41
(With tin plated straight terminals)





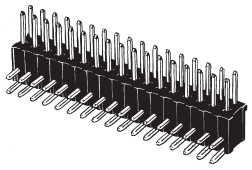


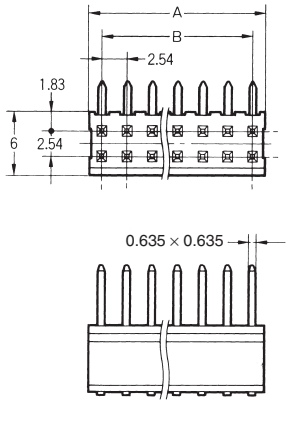
Dimensions

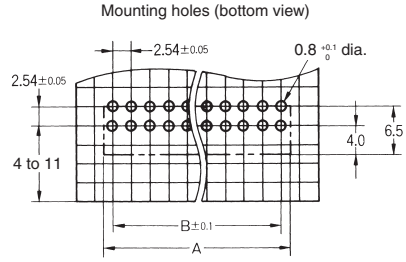
No. of contacts	Dimensions (mm)	
	A	B
10	12.7	10.16
14	17.8	15.24
16	20.3	17.78
20	25.4	22.86
26	33.0	30.48
30	38.1	35.56
34	43.2	40.46
40	50.8	48.26
50	63.5	60.96
60	76.2	73.66

XG8W-□□34
(With gold-plated right-angle terminals)

XG8W-□□44
(With tin-plated right-angle terminals)



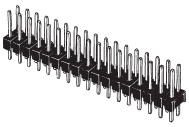
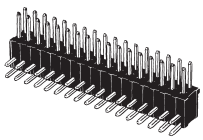




Dimensions

No. of contacts	Dimensions (mm)	
	A	B
20	25.4	22.86
26	33.0	30.48
30	38.1	35.56
34	43.2	40.64
40	50.8	48.26
50	63.5	60.96

Ordering Information

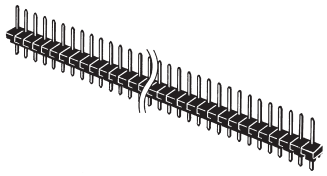
Appearance	Plugs with straight terminals		Plugs with right-angle terminals	
				
No. of contacts	Model (gold plated)	Model (tin plated)	Model (gold plated)	Model (tin plated)
10	**XG8W-1031**	**XG8W-1041**	—	—
14	**XG8W-1431**	**XG8W-1441**	—	—
16	**XG8W-1631**	**XG8W-1641**	—	—
20	**XG8W-2031**	**XG8W-2041**	**XG8W-2034**	**XG8W-2044**
26	**XG8W-2631**	**XG8W-2641**	**XG8W-2634**	**XG8W-2644**
30	**XG8W-3031**	**XG8W-3041**	**XG8W-3034**	**XG8W-3044**
34	**XG8W-3431**	**XG8W-3441**	**XG8W-3434**	**XG8W-3444**
40	**XG8W-4031**	**XG8W-4041**	**XG8W-4034**	**XG8W-4044**
50	**XG8W-5031**	**XG8W-5041**	**XG8W-5034**	**XG8W-5044**
60	**XG8W-6031**	**XG8W-6041**	—	—

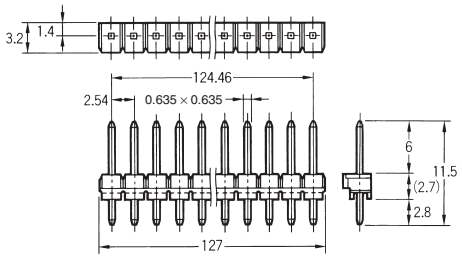
XG8A (Single-row)/XG8B (Double-row)
Header Plug Strips for MIL Connectors

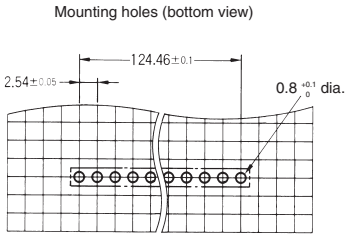
Dimensions

■ Single-row Plugs

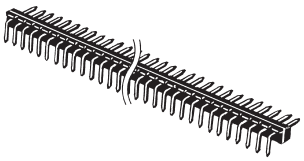
XG8A-5031
(With straight terminals)

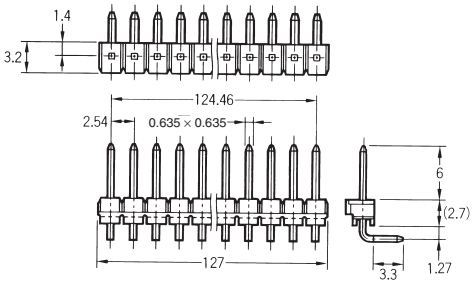


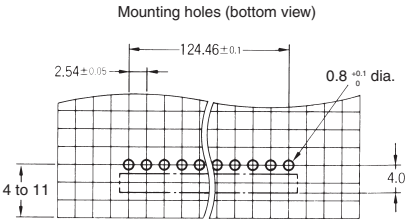




XG8A-5034
(With right-angle terminals)

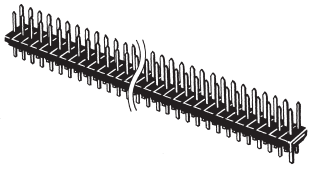


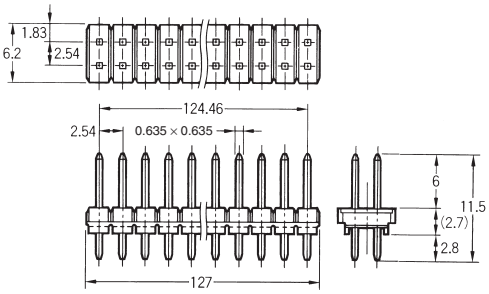


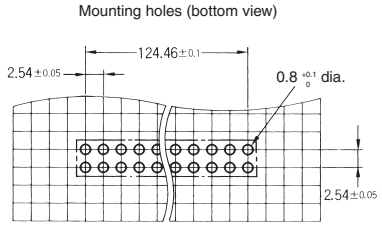


■ Double-row Plugs

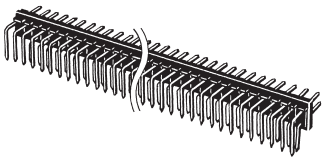
XG8B-0131
(With straight terminals)

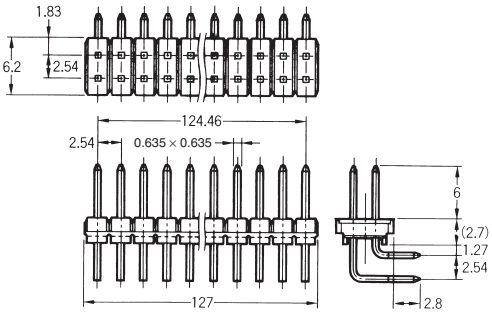


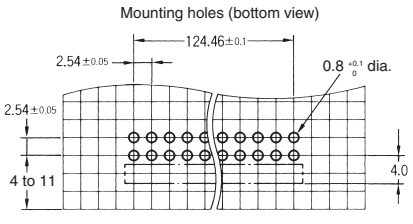




XG8B-0134
(With right-angle terminals)







Ordering Information

Terminal type / No. of contacts	Plugs with straight terminals Model (gold plated contacts)	Plugs with right-angle terminals Model (gold plated contacts)
50 (Single-row)	**XG8A-5031**	**XG8A-5034**
100 (Double-row)	**XG8B-0131**	**XG8B-0134**

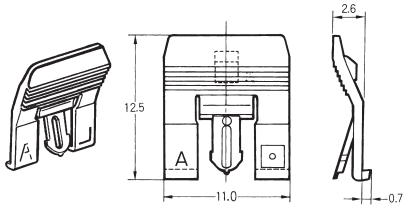
Accessories

■ Top Lock Levers

XG5Z-0002 - "Lock Lever"

Can be used to lock XG8W Double-row Right-angle Terminal Plugs to XG4M Flat Cables and XG5M-N Discrete-wire IDC Connectors. (See XG4 and XG5 Datasheets).

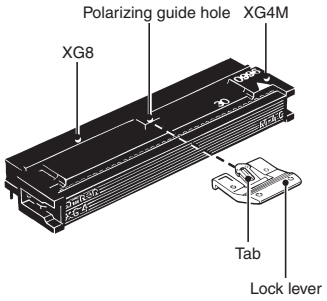
They cannot be used with XG8W Double-row Straight Terminal Plugs.



Note: Order the above model in multiples of 10 pieces.

Mounting the Lock Lever

Insert the tab on the Lock Lever into the hole on a Socket with a polarity guide. In this way, it can be locked with XG8W Right-angle Terminal Plugs.



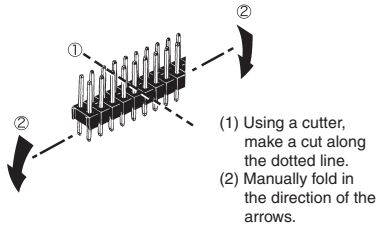
Precautions

■ Correct Use

Dividing the XG8W (with Straight Terminals), XG8V, XG8A, and XG8B

The above mentioned models may have the number of terminals and rows reduced prior to pcb assembly, using the following method:

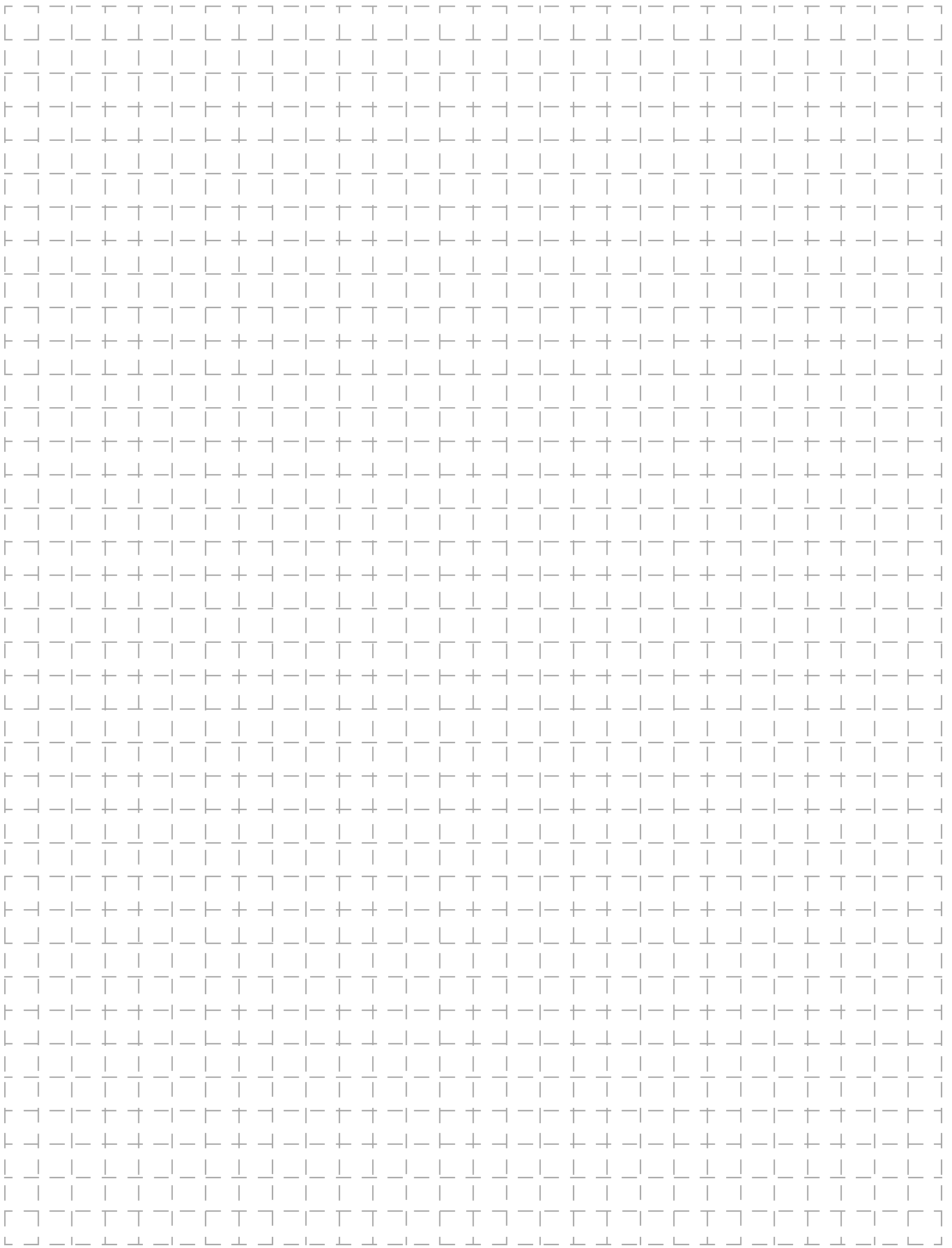
- Using a Cutter, make a cut on the slot as indicated by the dotted line in the diagram. Then fold the Plug manually in the direction of the arrows.
- XG8W's with right-angle terminals are not designed to be divided in this manner. Do not divide the XG8W with right-angle terminals. Instead, use the XG8B Header Plug Strip with right-angle terminals, if a double-row header plug with right-angle terminals must be divided to reduce the number of terminal rows.



Automated Soldering Conditions (Jet Flow)

1. Soldering temperature: 250 ±5°C
2. Continuous soldering time: Within 5 s

MEMO



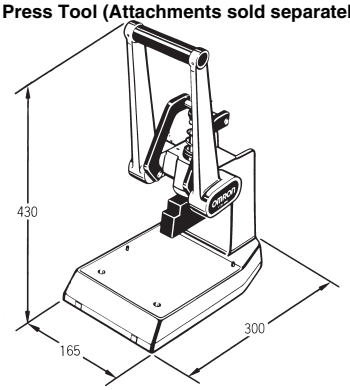
Tooling

■ XG4 / XG2 - Flat Cable Sockets and Bus Connectors

IDC Press

XY2B-0002

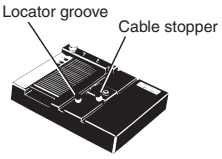
IDC Press Tool (Attachments sold separately)



IDC Press Attachments for terminating XG4M and XG2A

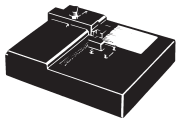
XY2B-1007

Base attachment for the XG4M



XY2B-1006

Base attachment for the XG2A



IDC Press	Base Attachment	Applicable Socket
XY2B-0002	XY2B-1007	XG4M (All contacts)
	XY2B-1006	XG2A (All contacts)

Operation

XG4M-series Connectors must be placed face down into the locator slot of the Attachment. (With the XG2A Series, place the terminal block in the Attachment.)

Insert the cable until it is flush against the cable stopper. Connections are made by pulling the handle towards you until it stops. For details on operation, see the user's manual supplied with the IDC Tool.

Note: An additional head attachment or spacer is not needed to terminate the XG4M and XG2A connectors.

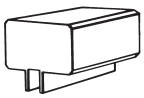
IDC Press Attachments for XG4E

XY2B-1004

Base attachment for the XG4E

XY2B-14□□

Spacer for the XG4E (See below)



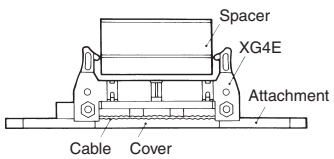
IDC Tool	Base Attachment	Spacer	Applicable Plug
XY2B-0002	XY2B-1004	XY2B-1401	XG4E-10□1/-10□2 XG4E-1431/-1432
		XY2B-1402	XG4E-1631/-1632 XG4E-2031/-2032
		XY2B-1403	XG4E-2631/-2632 XG4E-3031/-3032
		XY2B-1404	XG4E-3431/-3432
		XY2B-1405	XG4E-4031/-4032
		XY2B-1406	XG4E-50□1/-50□2
		XY2B-1407	XG4E-60□1/-60□2 XG4E-54□1/-64□2

Operation

XG4E-series Connectors must be placed face down into the locator slot of the Attachment. Insert the cable until it is flush against the cable stopper.

Next set the proper spacer for the Plug.

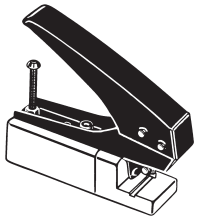
Connections are made by pulling the handle towards you until it stops.



■ XG5 - Discrete Wire Sockets

Manual IDC Termination Tool

XY2B-7006



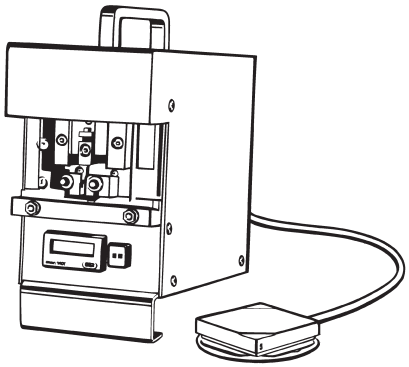
This tool is a compact, light-weight model, ideal for use in the laboratory or for maintenance.

Specifications

Applicable connector	XG5M-N
Applicable wire	AWG24 to AWG28 (with an insulation outer diameter of 1.1 to 1.3 mm)
Dimensions	25 (W) × 100 (L) × 80 (H)
Weight	Approx. 180 g

Automated Wire IDC Tool Set

XY2B-2104-N



This Wire IDC Tool Set is designed for XG5 Discrete-wire Connectors.

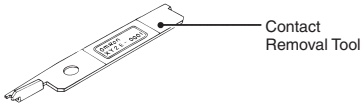
Specifications

Stroke	13 mm
Motor speed	83/100 rpm (50/60 Hz)
Feed pitch	2.54 mm
Operation	Foot switch
Weight	About 6 kg
Rated voltage	0.5 A, 100 VAC (50/60 Hz)
Fuse	1 A
Dimensions	120 × 200 × 225 mm (W × H × D)

Note: For function and operation details, see the user's manual for the Pressure Welder provided separately.

Contact Removal Tool

XY2E-0001

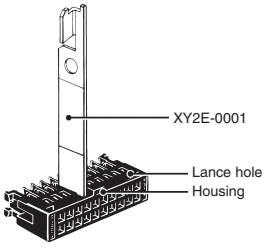


Used to remove from the housing, contacts which need to be replaced or reconfigured.

Replacing Contacts

Use only this tool to remove incorrect IDC contacts.

1. Remove the cover.
2. Insert the tool into the housing lance holes and push the lance into the housing.
3. Pull out the contact while holding the lance down.
4. Insert a new contact.



Applicable Connectors and Wires

Applicable Connector	Size No.	Applicable wires			
		UL file No.	Size [No. of wires/diameter] (mm)]	Cross-sectional area (mm)	Covering diameter (mm)
XG5M-□□31-N XG5M-□□32-N XG5M-□□33-N	No. 1	UL1061	AWG24 [7/0.203]	0.21	1.10
XG5M-□□34-N XG5M-□□35-N XG5M-□□36-N	No. 2	UL1007	AWG26 [7/0.16]	0.13	1.30
			AWG28 [7/0.127]	0.09	1.22

Note: Use only wires specified in the table above

Accessories - XG4 / XG5 / XG8

■ External Polarization Options

The following optional accessories can be used to provide polarization to sockets and plugs that do not have molded polarizing guides and slots built into their housings and shrouds.

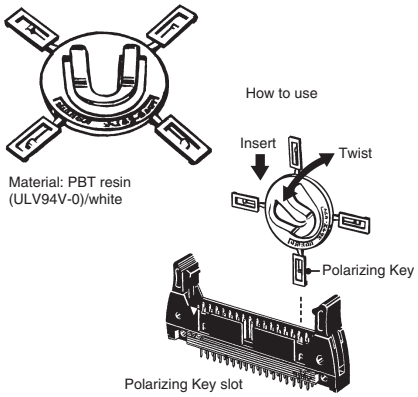
Solutions for Shrouded Connectors

XG4Z-0004 Polarizing Key

Typically, 10 contact versions of the XG4A, XG4E and XG4C are available with or without polarizing guides.

Install the XG4Z-0004 polarizing key on XG4A pcb sockets, XG4E plugs and XG4C pcb sockets that do not have a polarizing slot, to prevent reverse connection with XG4M cable sockets that do not have a polarizing guide.

For all other versions, the molded polarity guides and slots can be used by themselves to help prevent reverse insertion. However, use the polarizing key with these versions as well for best results.

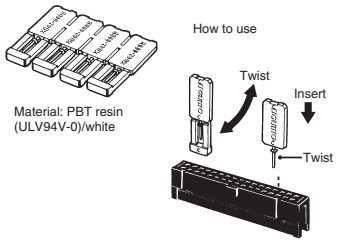


Note: Each XG4Z-0004 has 4 Polarizing Keys.

Solutions for Unshrouded Connectors

Use the XG4Z-0005 coding pin to fill a specific hole in one of the XG4 or XG5 sockets. Then, use the XY2E-0002 cutting pin to remove the corresponding terminal from an XG8 unshrouded plug.
(See XG5 and XG8 datasheets for details about those connectors.)

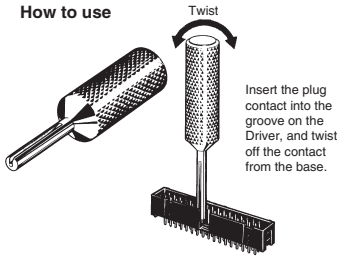
XG4Z-0005 Coding Pin



Note: 1. A contact with a Coding Pin inserted cannot be used.
2. Each XG4Z-0005 has 4 Polarizing Keys.

XY2E-0002 Contact Cutting Driver

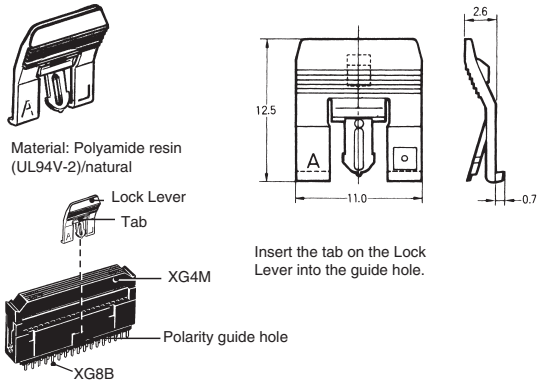
The Contact Cutting Driver is used to cut (twist off) a contact on the mating Plug when using an XG4Z-0005 Coding Pin.



■ Top Lock Levers

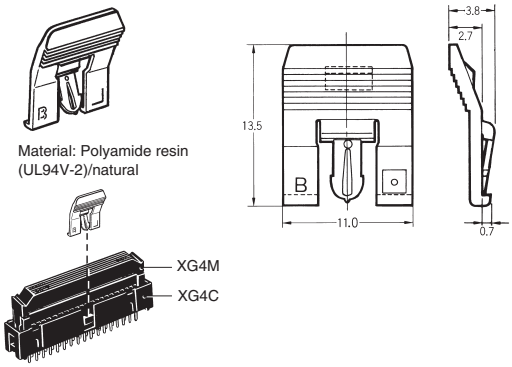
XG5Z-0002 - "Lock Lever"

Use to lock right angle XG8B and XG8W Plugs to mating sockets



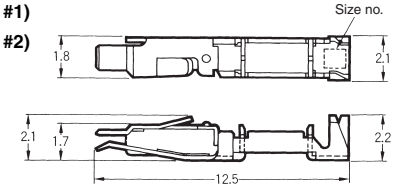
XG4Z-0002 - "Lock Lever II"

Use to lock XG4C Box-type Plugs to mating sockets.



■ XG5 - Spare Contacts

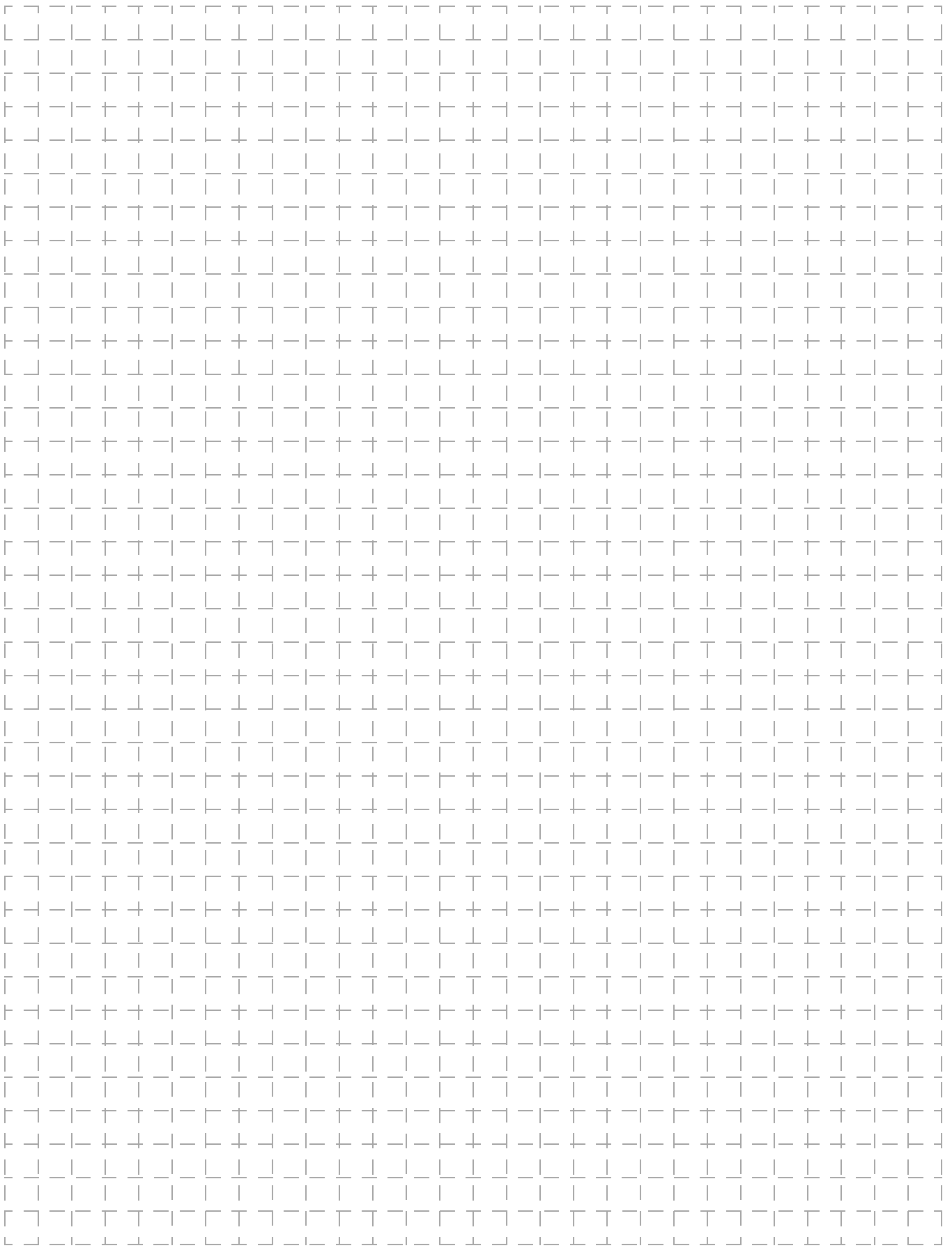
XG5W-0031-N (Size #1)
XG5W-0034-N (Size #2)



Model	Order in Multples of
XG5W-0031-N	100
XG5W-0034-N	

Note: 1. These Contacts can be used as replacements if a wrong connection is made.
2. The applicable wire for size No. 1 is AWG24 (UL-1061). The applicable wire for size No. 2 is AWG26 to AWG28 (UL-1007).

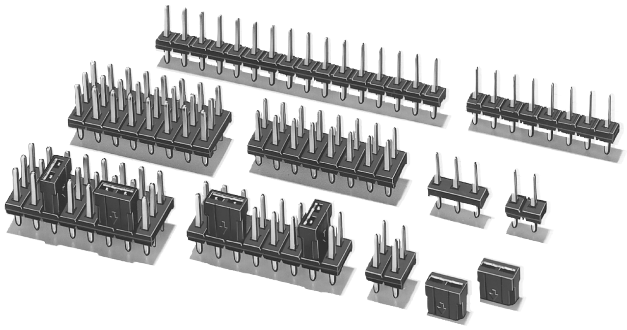
MEMO



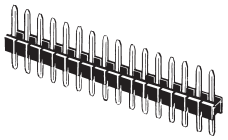
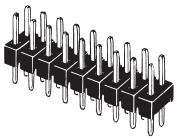
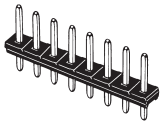
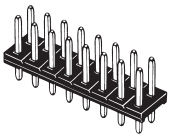
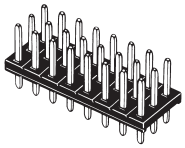
Header Plugs / Jumpers
XJ8/XG8S/XG8T

Low-profile Circuit Jumper Connectors

- Low profiles of 5.8 mm (XJ8) and 6.8 mm (XG8S/T).
- 2.54-mm grid can be mounted horizontally or vertically.
- Chose from Single-row, Double-row or Triple-row Connectors.
- Designed for easy insertion and protection against accidental removal.
- Highly-reliable Jumper with 2-point contacts (XJ8A).
- All versions employ flame-resistant materials for base and housing.
- XJ8 Connectors conform to UL standards (file no. E103202) and CSA standards (file no. LR 62678).



Header Plugs / Jumpers

Model	XG8S	XG8T	XJ8B	XJ8C	XJ8D	XJ8A
Appearance	Single-row	Double-row	Single-row	Double-row	Triple-row	Jumper
						

■ Ratings and Characteristics

Item	Gold plating	Tin plating
Rated voltage	2 A	
Rated current	300 VAC	
Contact resistance	20 mΩ max. (at 20 mV, 100 mA max.)	
Insulation resistance	1,000 MΩ min. (at 500 VDC)	
Withstand voltage	750 VAC for 1 min (leakage current: 1 mA max.)	
Insertion force (See note.)	200 gf (1.96 N) max.	800 gf (7.85 N) max.
Removal force (See note.)	40 gf (0.39 N) min.	100 gf (0.98 N) min.
Insertion durability	50 times	20 times
Ambient temperature	Operating: − 55 to 105°C (with no icing)	

Note: Insertion and removal force are for the XJ8A.

■ Materials and Finish

Item	XJ8A	XJ8B/C/D	XG8S/T
Base	Fiber-glass reinforced PBT resin (UL94V-0)/black	Fiber-glass reinforced PPS resin (UL94V-0)/black	Fiber-glass reinforced PBT resin (UL94V-0)/black
Contacts	Phosphor bronze/nickel base, 0.15-μm gold plating	Brass/nickel base, 0.15-μm gold plating (See note.)	Brass/nickel base, 0.15-μm gold plating
	Phosphor bronze/nickel base, tin plating	---	Brass/nickel base, tin plating

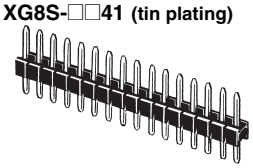
Note: For non-standard plating, contact your OMRON representative.

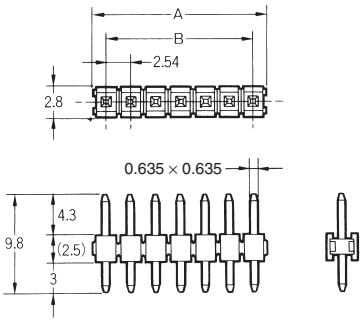
XG8S / XG8T - Headers / Jumper Plugs

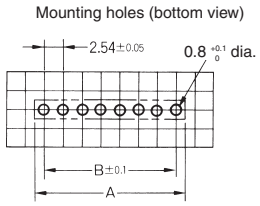
Dimensions

■ XG8S - Single Row

XG8S-□□31 (gold plating)
XG8S-□□41 (tin plating)



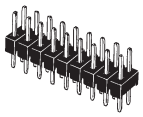


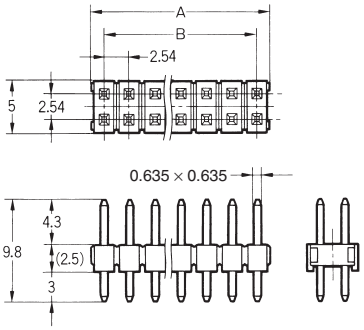


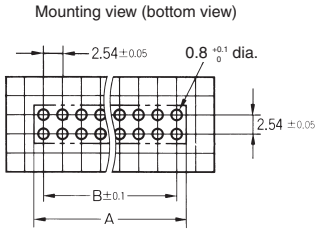
No. of contacts	Dimensions (mm)	
	A	B
2	5.1	2.54
3	7.6	5.08
4	10.2	7.62
6	15.2	12.70
8	20.3	17.78
16	40.6	38.10
18	45.7	43.18

■ XG8T - Double Row

XG8T-□□31 (gold plating)
XG8T-□□41 (tin plating)

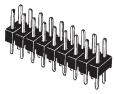






No. of contacts	Dimensions (mm)	
	A	B
2	2.5	---
4	5.1	2.54
6	7.6	5.08
8	10.2	7.62
10	12.7	10.16
12	15.2	12.70
14	17.8	15.24
16	20.3	17.78
18	22.9	20.32
20	25.4	22.86

Ordering Information

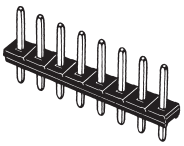
Model	XG8S (Single Row)		XG8T (Double Row)	
				
No. of contacts	Model (gold plating)	Model (tin plating)	Model (gold plating)	Model (tin plating)
2	**XG8S-0231**	**XG8S-0241**	**XG8T-0231**	**XG8T-0241**
3	**XG8S-0331**	**XG8S-0341**	---	---
4	**XG8S-0431**	**XG8S-0441**	**XG8T-0431**	**XG8T-0441**
6	**XG8S-0631**	---	**XG8T-0631**	**XG8T-0641**
8	**XG8S-0831**	**XG8S-0841**	**XG8T-0831**	**XG8T-0841**
10	---	---	**XG8T-1031**	**XG8T-1041**
12	---	---	**XG8T-1231**	**XG8T-1241**
14	---	---	**XG8T-1431**	**XG8T-1441**
16	**XG8S-1631**	**XG8S-1641**	**XG8T-1631**	**XG8T-1641**
18	**XG8S-1831**	---	**XG8T-1831**	**XG8T-1841**
20	---	---	**XG8T-2031**	**XG8T-2041**

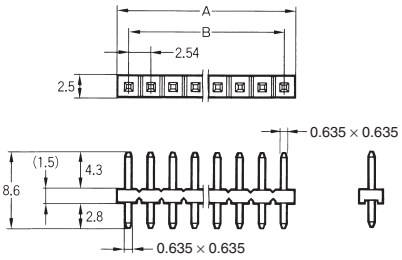
XJ8B/XJ8C/XJ8D - Low-profile Single-, Double-, and Triple-row Jumper Plugs

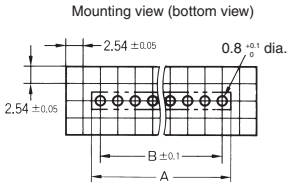
Dimensions

■ XJ8B - Single Row

XJ8B-□□11



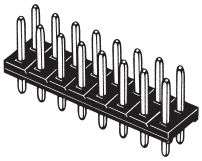


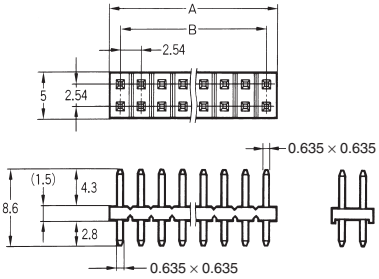


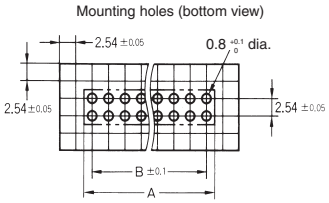
No. of contacts	Dimensions (mm)	
	A	B
2	5.1	2.54
3	7.6	5.08
4	10.2	7.62
8	20.3	17.78
16	40.6	38.10

■ XJ8C - Double Row

XJ8C-□□11



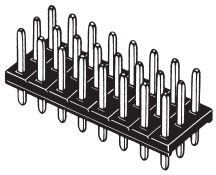


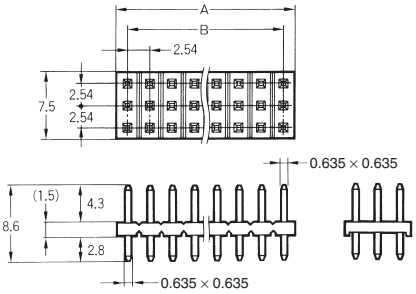


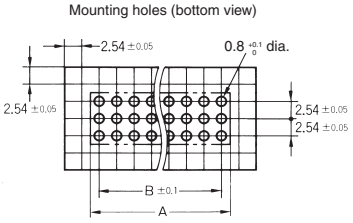
No. of contacts	Dimensions (mm)	
	A	B
2	2.5	---
4	5.1	2.54
6	7.6	5.08
8	10.2	7.62
10	12.7	10.16
12	15.2	12.70
14	17.8	15.24
16	20.3	17.78

■ XJ8D - Triple Row

XJ8D-□□11

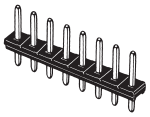
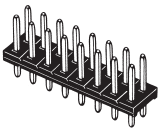
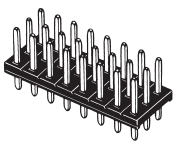






No. of contacts	Dimensions (mm)	
	A	B
3	2.5	---
6	5.1	2.54
9	7.6	5.08
12	10.2	7.62
15	12.7	10.16
18	15.2	12.70
21	17.8	15.24
24	20.3	17.78

Ordering Information

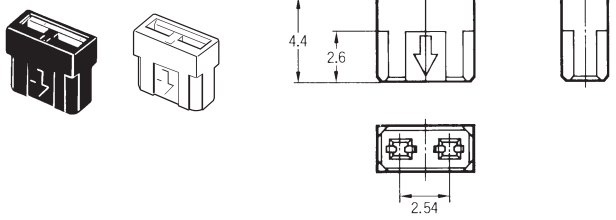
XJ8B (Single Row)		XJ8B (Double Row)		XJ8B (Triple Row)	
					
No. of contacts	**Model (gold plated)**	**No. of contacts**	**Model (gold plated)**	**No. of contacts**	**Model (gold plated)**
2	**XJ8B-0211**	2	**XJ8C-0211**	3	**XJ8D-0311**
3	**XJ8B-0311**	4	**XJ8C-0411**	6	**XJ8D-0611**
4	**XJ8B-0411**	6	**XJ8C-0611**	9	**XJ8D-0911**
8	**XJ8B-0811**	8	**XJ8C-0811**	12	**XJ8D-1211**
16	**XJ8B-1611**	10	**XJ8C-1011**	15	**XJ8D-1511**
		12	**XJ8C-1211**	18	**XJ8D-1811**
		14	**XJ8C-1411**	21	**XJ8D-2111**
		16	**XJ8C-1611**	24	**XJ8D-2411**

XJ8A Jumper Socket

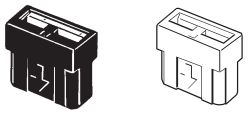
Dimensions

■ **XJ8A**

XJ8A-0211 **(gold plating/black)**
XJ8A-0241 **(tin plating/black)**
XJ8A-0214 **(gold plating/natural)**



Ordering Information

Appearance			
No. of contacts	**Plating**	**Housing color**	**Model**
2	Gold plating	Black	XJ8A-0211
	Tin plating	Black	XJ8A-0241
	Gold plating	Natural	XJ8A-0214

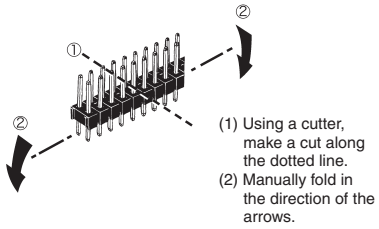
Precautions

■ Correct Use

Dividing the XJ8 / XG8S / XG8T

The above mentioned models may have the number of terminals and rows reduced prior to pcb assembly, using the following method:

- Plugs can be easily cut along the V-groove. Using a Cutter, make a cut on the slot as indicated by the dotted line in the diagram. Then fold the Plug manually in the direction of the arrows.

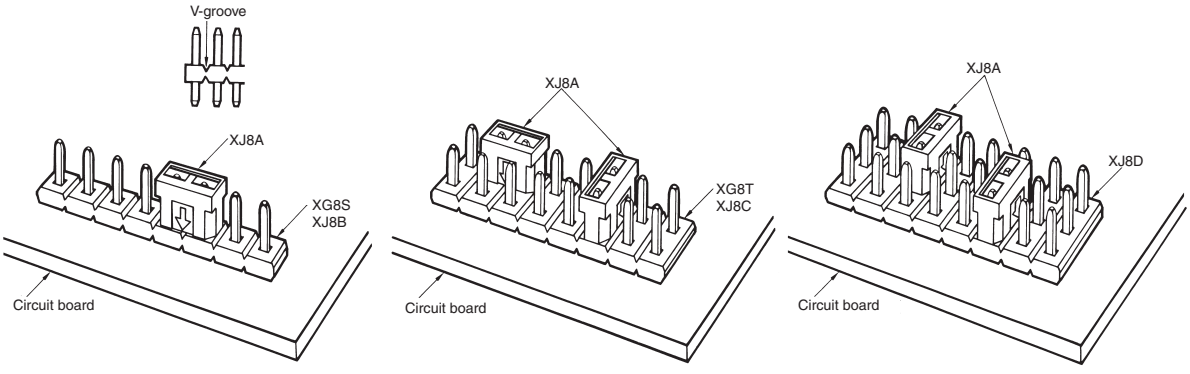


Automated Soldering Conditions (Jet Flow)

1. Soldering temperature: 250 ±5°C
2. Continuous soldering time: Within 5 s

Mounting Example

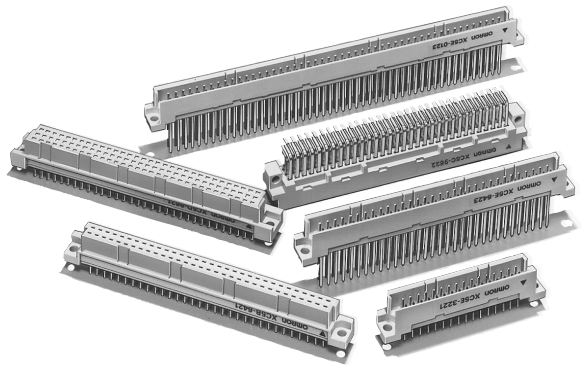
- Jumper Socket should be inserted so that the arrow points down.



DIN Twin-contact Connectors
XC5

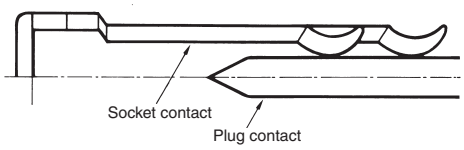
A Wide Variety of DIN Connectors That Conform to UL/CSA Standards.

- Fully preserves the characteristics of normal DIN connectors while increasing the number of terminals available.
- Meets world market needs with products ranging from one-piece connectors (card edge) to two-piece connectors.
- Uses a twin-contact system for high reliability and low cost.
- Lower insertion force as a result of FEM analysis techniques.
- Conform to UL standards (file no. E 103202) and CSA standards (file no. LR 62678).

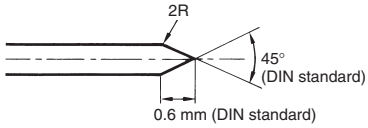


■ Structure

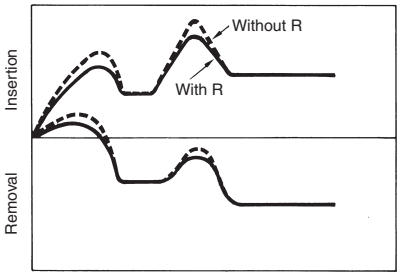
Twin Contacts
(2-point Contact System)



■ Low Insertion Force Design

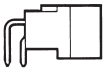
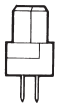
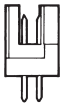
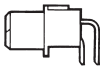


The shape of the Plug contact tip is based on the DIN standard dimensions, however, a small radius, R, has been introduced between the shaft and the tip. This results in less force being required for insertion.

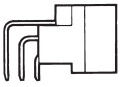
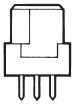
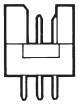
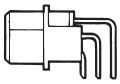


■ Connector Styles

Double-row Connectors

Model	XC5A B type	XC5B B type	XC5E Q type	XC5F Q type
Appearance	Plug with right-angle terminals 	Socket with straight terminals 	Plug with straight terminals 	Socket with right-angle terminals 

Triple-row Connectors

Model	XC5C C type	XC5D C type	XC5G R type	SC5H R type
Appearance	Plug with right-angle terminals 	Socket with straight terminals 	Plug with straight terminals 	Socket with right-angle terminals 

■ Ratings and Characteristics

Rated current	2 A
Rated voltage	300 VAC
Contact resistance	20 mΩ max. (at 20 mV, 100 mA max.)
Insulation resistance	10^6 MΩ min. (at 100 VDC)
Dielectric strength	1,000 VAC for 1 min (leakage current: 1 mA max.)
Connector insertion	0.59 N max. per contact
Contact removal	0.15 N min. (with test gauge, t = 0.56 mm)
Insertion durability	200 times
Ambient temperature	Operating: –55 to 125°C (with no icing)

■ Materials and Finish

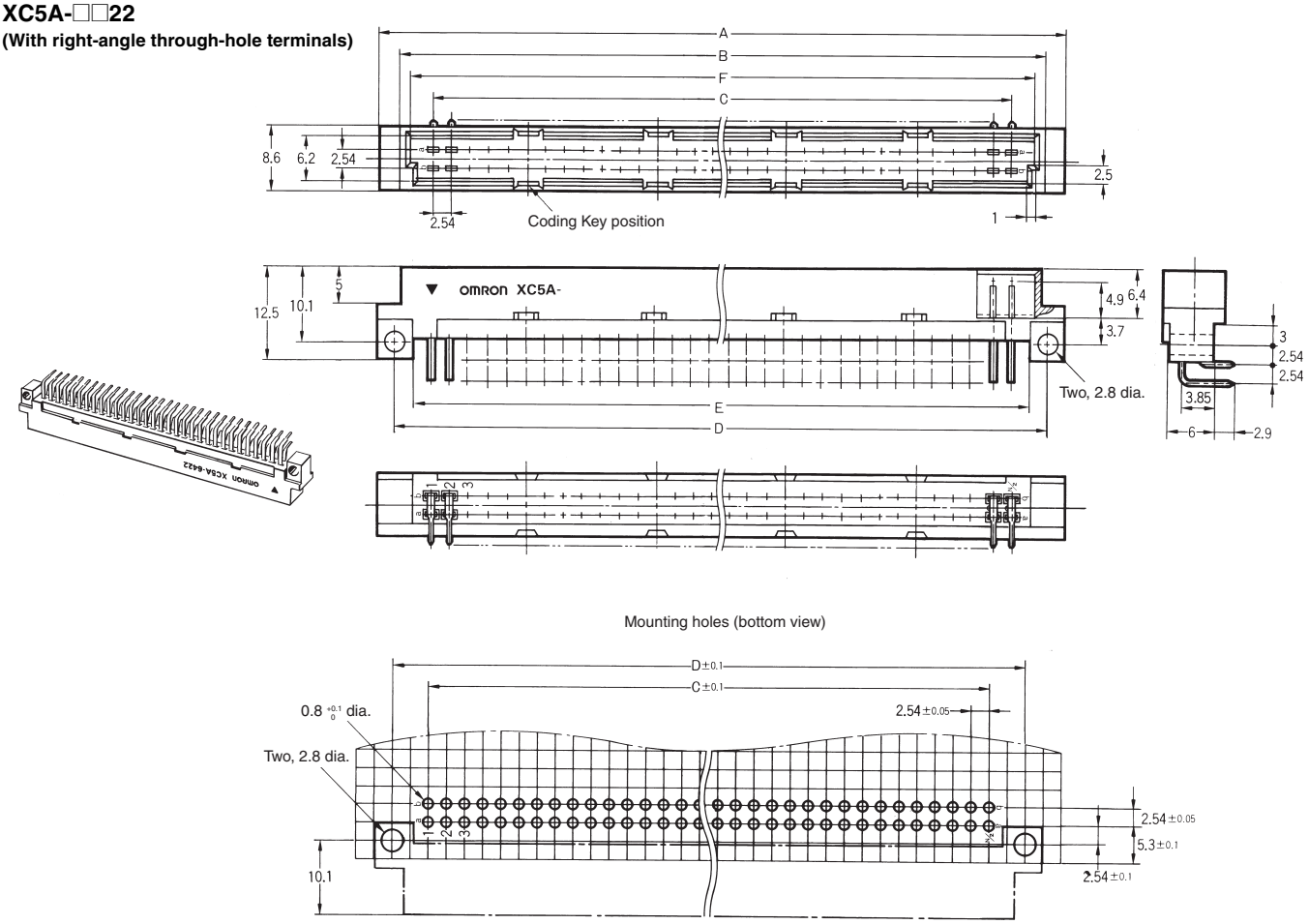
Item		Plugs	Sockets
Housings		Fiber-glass reinforced PBT resin (UL94V-0)/ gray	
Contacts	**Mating end**	Brass/nickel base, 0.4-μm gold plating (See note 1.)	Phosphor bronze/nickel base, 0.4-μm gold plating (See note 1.)
	Terminal	Brass/nickel base, tin plating	Phosphor bronze/nickel base, tin plating

Note: 1. For non-standard plating specifications, contact OMRON
2. Wrap terminal contacts are made from phosphor bronze.
3. See “Precautions” for information about Wire Wrap terminals

XC5A Double-row Plugs, DIN B-type (Standard)

■ Dimensions

XC5A-□□22
(With right-angle through-hole terminals)



No. of contacts	Dimensions (mm)						Coding Key positions (contact No.)
	A	B	C	D	E	F	
20	37.9	32.1	22.86	33.02	28.1	29.3	3, 8
32	53.2	47.4	38.10	48.26	43.3	44.6	5, 12
44	68.4	62.6	53.34	63.50	58.5	59.8	4, 9, 14, 19
50	76.0	70.2	60.96	71.12	66.2	67.4	5, 10, 16, 21
64	93.8	88.0	78.74	88.90	83.9	85.2	6, 13, 20, 27
100	139.5	133.7	124.46	134.62	129.7	130.9	10, 20, 31, 41

■ Ordering Information

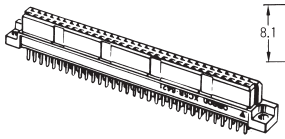
No. of contacts	Terminal type	Model
20*	Right-angle through-hole terminals	**XC5A-2022**
32		**XC5A-3222**
44*		**XC5A-4422**
50*		**XC5A-5022**
64		**XC5A-6422**
100*		**XC5A-0122**

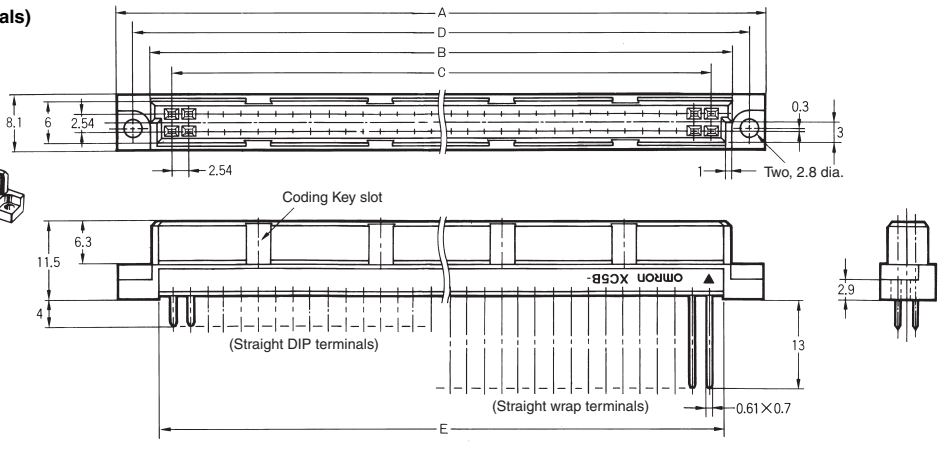
*Marked items have an increased number of contacts while following DIN standards.

XC5B Double-row Sockets, DIN B-type (Standard)

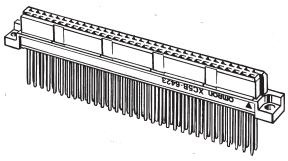
■ Dimensions

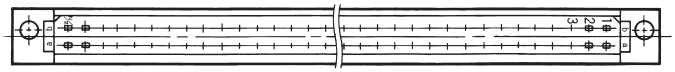
XC5B-□□21
(With straight through-hole terminals)

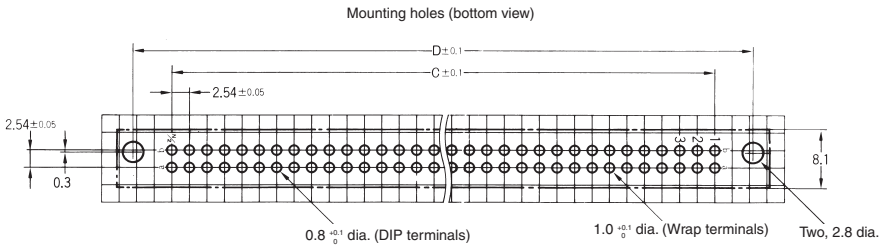




XC5B-□□23
(With straight wrap terminals)







No. of contacts	Dimensions (mm)					Coding Key slot positions (contact No.)
	A	B	C	D	E	
20	38.9	29.1	22.86	34.12	27.1	3, 8
32	54.2	44.4	38.10	49.36	42.3	5, 12
44	69.4	59.6	53.34	64.60	57.5	4, 9, 14, 19
50	77.0	67.2	60.96	72.22	65.2	5, 10, 16, 21
64	94.8	85.0	78.74	90.00	82.9	6, 13, 20, 27
100	140.5	130.7	124.46	135.72	128.7	10, 20, 31, 41

■ Ordering Information

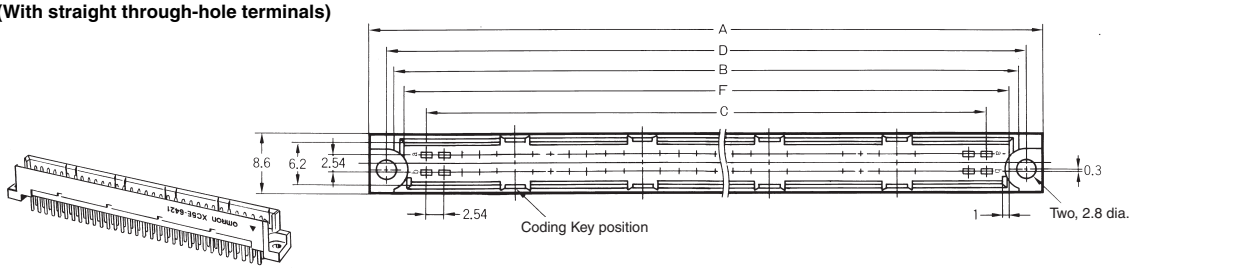
No. of contacts	Terminal type	
	Straight Through-hole terminals	Straight wrap terminals
20*	**XC5B-2021**	**XC5B-2023**
32	**XC5B-3221**	**XC5B-3223**
44*	**XC5B-4421**	**XC5B-4423**
50*	**XC5B-5021**	**XC5B-5023**
64	**XC5B-6421**	**XC5B-6423**
100*	**XC5B-0121**	**XC5B-0123**

*Marked items have an increased number of contacts while following DIN standards.

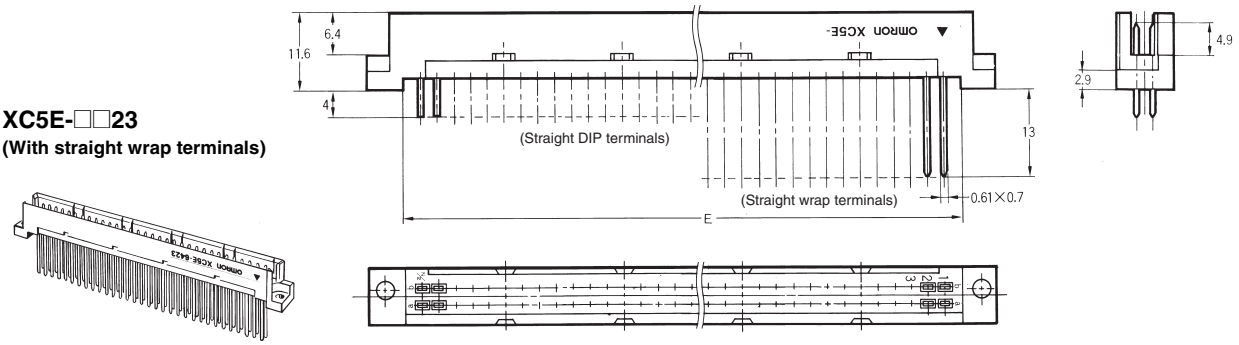
XC5E Double-row Plugs, DIN Q-type (Reverse)

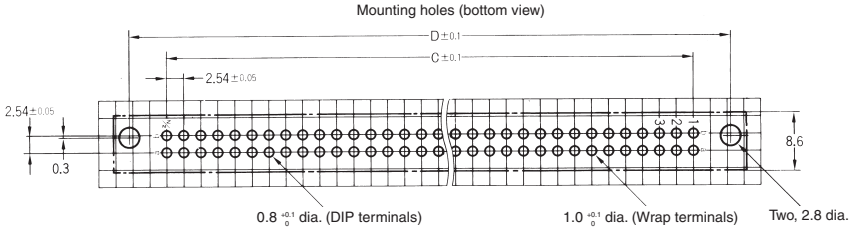
■ Dimensions

XC5E-□□21
(With straight through-hole terminals)



XC5E-□□23
(With straight wrap terminals)





No. of contacts	Dimensions (mm)						Coding Key positions (contact No.)
	A	B	C	D	E	F	
20	38.9	32.1	22.86	34.12	28.1	29.3	3, 8
32	54.2	47.4	38.10	49.36	43.3	44.6	5, 12
44	69.4	62.6	53.34	64.60	58.5	59.8	4, 9, 14, 19
50	77.0	70.2	60.96	72.22	66.2	67.4	5, 10, 16, 21
64	94.8	88.0	78.74	90.00	83.9	85.2	6, 13, 20, 27
100	140.5	133.7	124.46	135.72	129.7	130.9	10, 20, 31, 41

■ Ordering Information

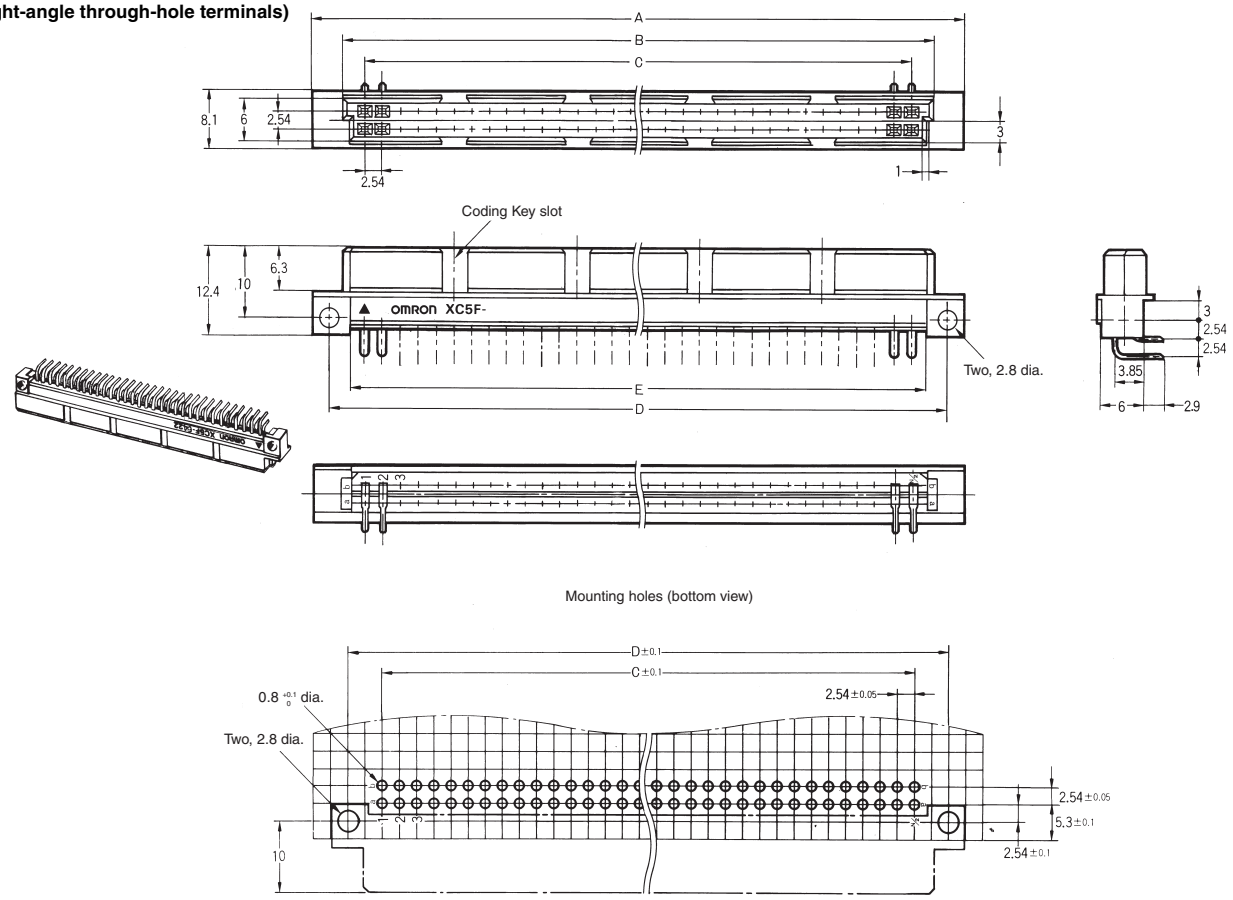
No. of contacts	Terminal type	
	Straight through-hole terminals	Straight wrap terminals
20*	**XC5E-2021**	**XC5E-2023**
32	**XC5E-3221**	**XC5E-3223**
44*	**XC5E-4421**	**XC5E-4423**
50*	**XC5E-5021**	**XC5E-5023**
64	**XC5E-6421**	**XC5E-6423**
100*	**XC5E-0121**	**XC5E-0123**

*Marked items have an increased number of contacts while following DIN standards.

XC5F Double-row Sockets, DIN Q-type (Reverse)

■ Dimensions

XC5F-□□22
(With right-angle through-hole terminals)



No. of contacts	Dimensions (mm)					Coding Key slot positions (contact No.)
	A	B	C	D	E	
20	37.9	29.1	22.86	33.02	27.1	3, 8
32	53.2	44.4	38.10	48.26	42.3	5, 12
44	68.4	59.6	53.34	63.50	57.5	4, 9, 14, 19
50	76.0	67.2	60.96	71.12	65.2	5, 10, 16, 21
64	93.8	85.0	78.74	88.90	82.9	6, 13, 20, 27
100	139.5	130.7	124.46	134.62	128.7	10, 20, 31, 41

■ Ordering Information

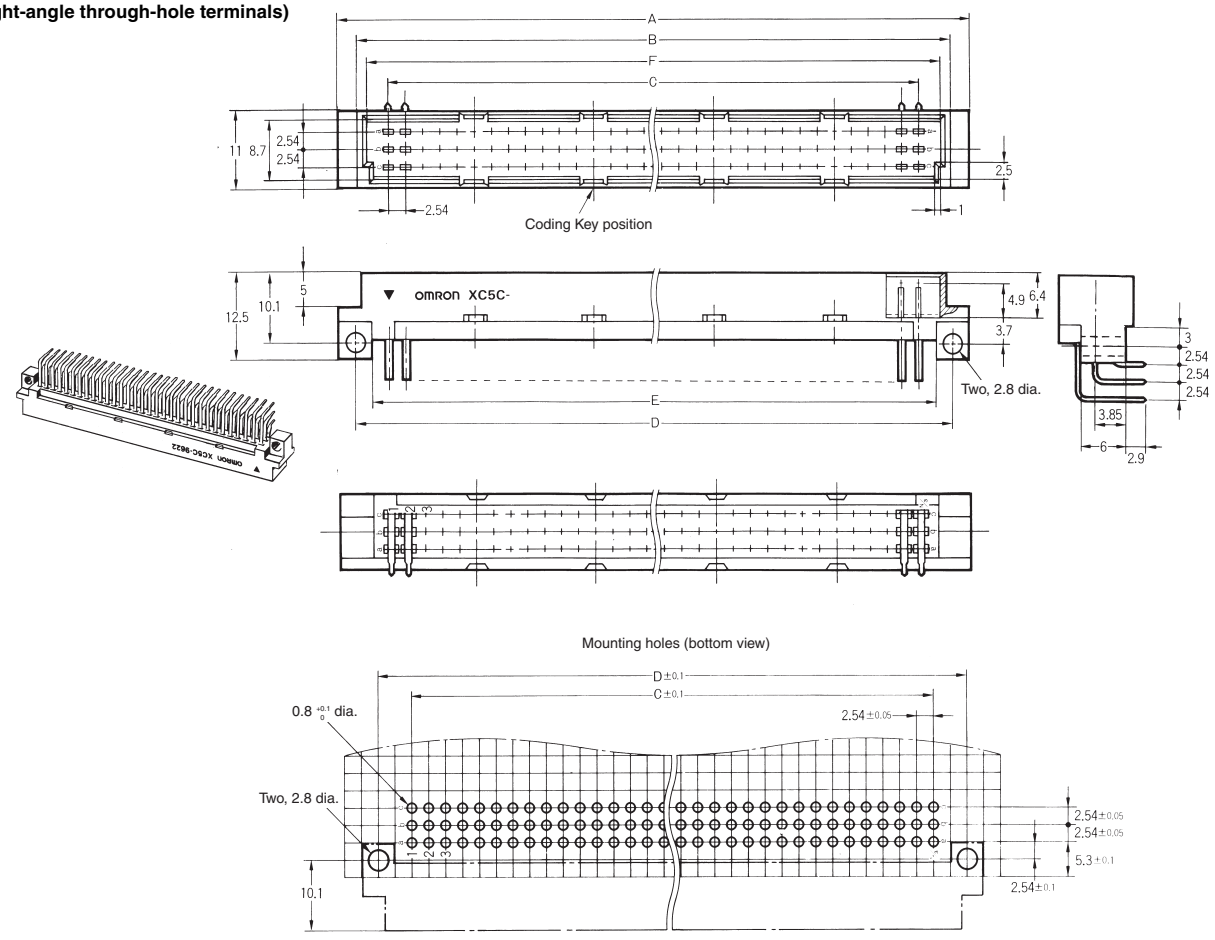
No. of contacts	Terminal type	Model
20*	Right-angle through-hole terminals	**XC5F-2022**
32		**XC5F-3222**
44*		**XC5F-4422**
50*		**XC5F-5022**
64		**XC5F-6422**
100*		**XC5F-0122**

*Marked items have an increased number of contacts while following DIN standards.

XC5C Triple-row Plugs, DIN C-type (Standard)

■ Dimensions

XC5C-□□22
(With right-angle through-hole terminals)



No. of contacts	Dimensions (mm)						Coding Key positions (contact No.)
	A	B	C	D	E	F	
32*	53.2	47.4	38.10	48.26	43.3	44.6	5, 12
48	53.2	47.4	38.10	48.26	43.3	44.6	5, 12
64*	93.8	88.0	78.74	88.90	83.9	85.2	6, 13, 20, 27
96	93.8	88.0	78.74	88.90	83.9	85.2	6, 13, 20, 27

*Has no center row (row b).

■ Ordering Information

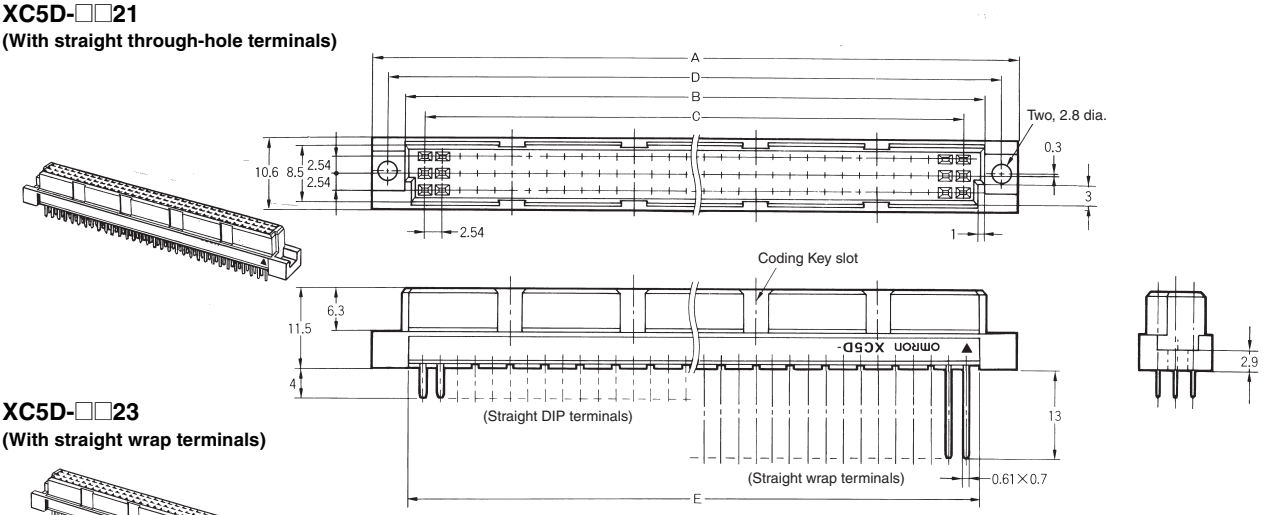
No. of contacts	Terminal type	Model
32*	Right-angle through-hole terminals	**XC5C-3222**
48		**XC5C-4822**
64*		**XC5C-6422**
96		**XC5C-9622**

*Has no center row (row b).

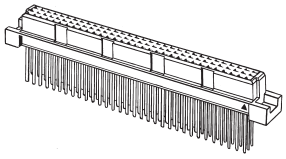
XC5D Triple-row Sockets, DIN C-type (Standard)

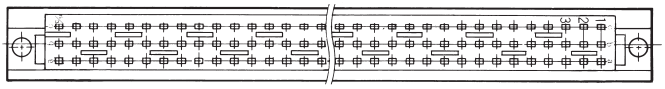
■ Dimensions

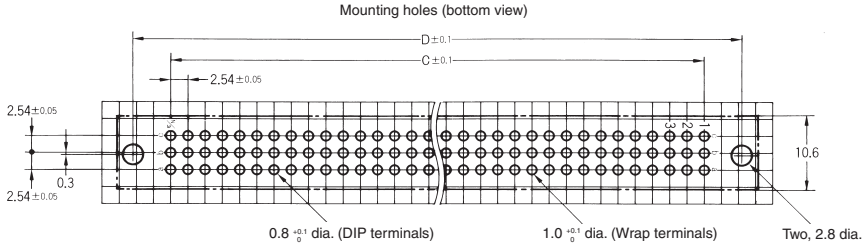
XC5D-□□21
(With straight through-hole terminals)



XC5D-□□23
(With straight wrap terminals)







No. of contacts	Dimensions (mm)					Coding Key slot positions (contact No.)
	A	B	C	D	E	
32*	54.2	44.4	38.10	49.36	42.3	5, 12
48	54.2	44.4	38.10	49.36	42.3	5, 12
64*	94.8	85.0	78.74	90.00	82.9	6, 13, 20, 27
96	94.8	85.0	78.74	90.00	82.9	6, 13, 20, 27

*Has no center row (row b).

■ Ordering Information

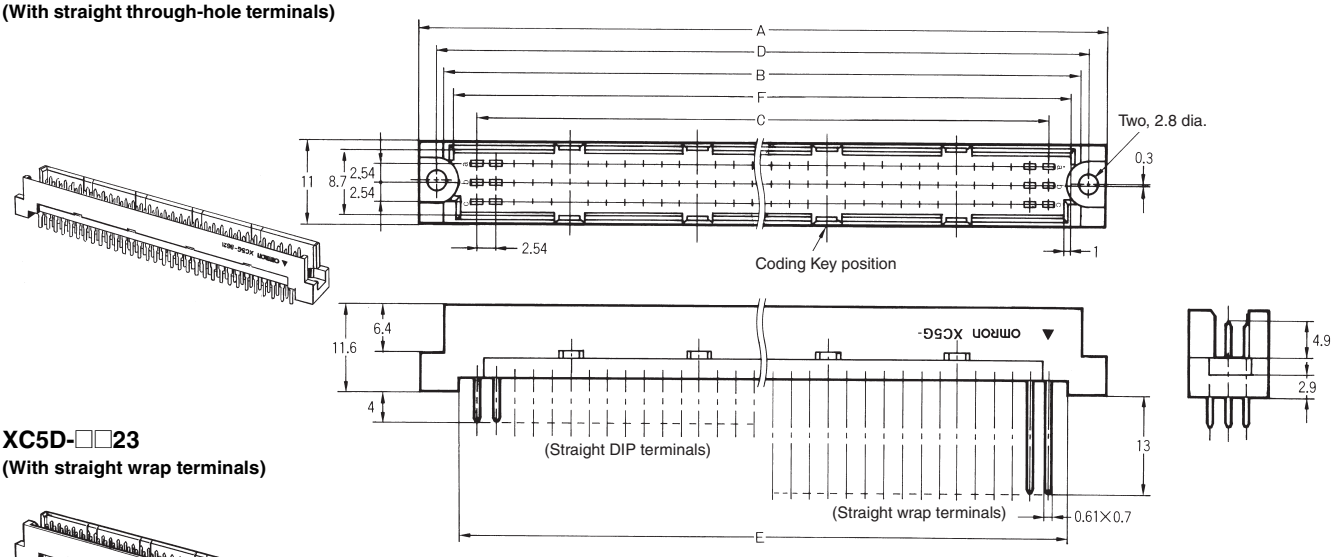
No. of contacts	Terminal type	
	Straight through-hole terminals	Straight wrap terminals
32*	**XC5D-3221**	---
48	**XC5D-4821**	**XC5D-4823**
64*	**XC5D-6421**	**XC5D-6423**
96	**XC5D-9621**	**XC5D-9623**

*Has no center row (row b).

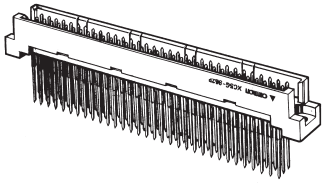
XC5G Triple-row Plugs, DIN R-type (Reverse)

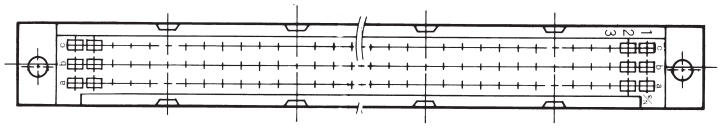
■ Dimensions

XC5G-□□21
(With straight through-hole terminals)

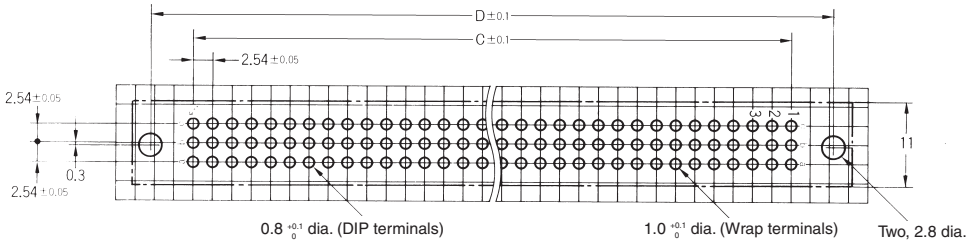


XC5D-□□23
(With straight wrap terminals)





Mounting holes (bottom view)



No. of contacts	Dimensions (mm)						Coding Key positions (contact No.)
	A	B	C	D	E	F	
48	54.2	47.4	38.10	49.36	43.3	44.6	5, 12
64*	94.8	88.0	78.74	90.00	83.9	85.2	6, 13, 20, 27
96	94.8	88.0	78.74	90.00	83.9	85.2	6, 13, 20, 27

*Has no center row (row b).

■ Ordering Information

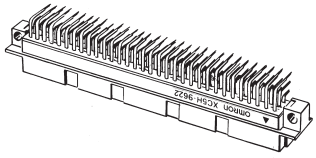
No. of contacts	Terminal type	
	Straight through-hole terminals	Straight wrap terminals
48	**XC5G-4821**	**XC5G-4823**
64*	**XC5G-6421**	**XC5G-6423**
96	**XC5G-9621**	**XC5G-9623**

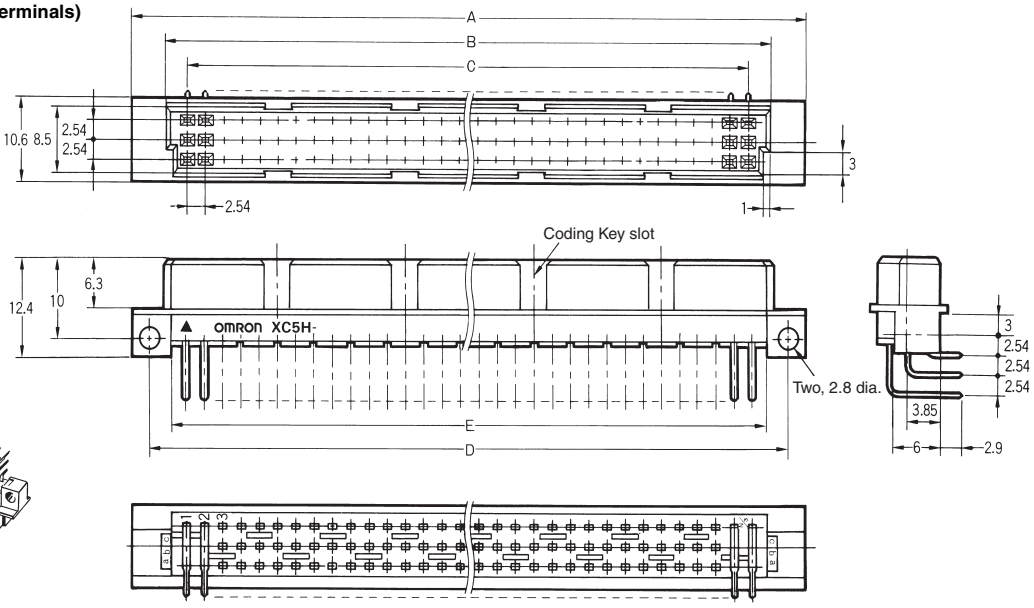
*Has no center row (row b).

XC5H Triple-row Sockets, DIN R-type (Reverse)

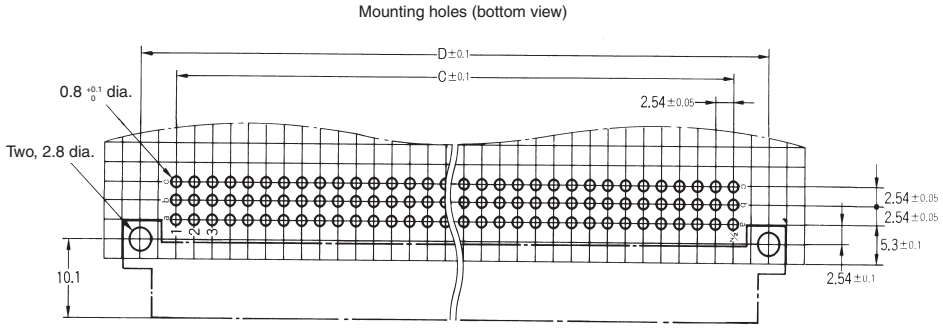
■ Dimensions

XC5H-□□22
(With right-angle through-hole terminals)





Mounting holes (bottom view)



No. of contacts	Dimensions (mm)					Coding Key slot positions (contact No.)
	A	B	C	D	E	
48	53.2	44.4	38.10	48.26	42.3	5, 12
64*	93.8	85.0	78.74	88.90	82.9	6, 13, 20, 27
96	93.8	85.0	78.74	88.90	82.9	6, 13, 20, 27

*Has no center row (row b).

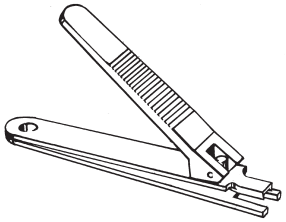
■ Ordering Information

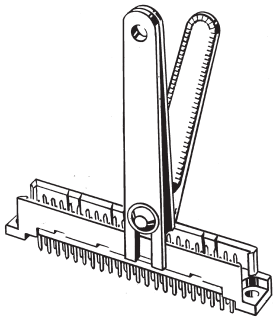
No. of contacts	Terminal type	Model
48	Right-angle through-hole terminals	**XC5H-4822**
64*		**XC5H-6422**
96		**XC5H-9622**

*Has no center row (row b).

Tools and Accessories (Sold Separately)

Coding Cutter
XY2D-0001



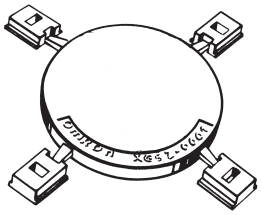


Cut the Coding Key on the Plug and insert the Coding Key in the Coding Key slots on the Socket to prevent improper insertion of the Plug into the Socket.

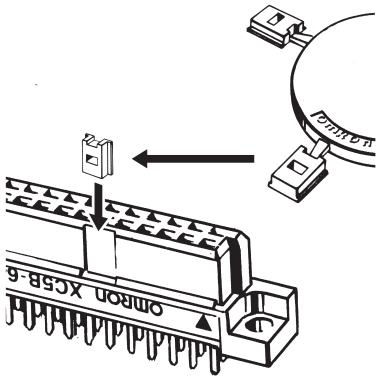
1. Cut the Coding Key(s) in the slot in the plug housing wall with the special cutting tool (XY2D-0001).

Note: Coding Cutters may not work with some DIN-style connector combinations. In that case, contact your OMRON representative.

Coding Key
XC5Z-0001



Material: PBT resin (UL94HB)/white



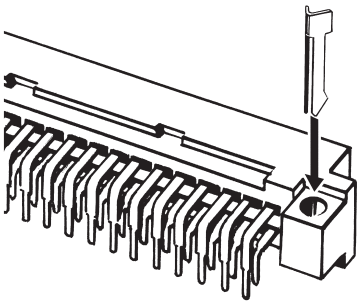
2. Insert the special Coding Key (XC5Z-0001) into the Coding Key slots in the housing wall of the corresponding Socket.

Note: 1. Each XC5Z-0001 has four Coding Keys.

2. Coding Keys may not work with some DIN-style connector combinations. In that case, contact your OMRON representative.

Temporary Fastening Pins
XC5Z-0002

(For use with 1.6-mm boards)



Fastening pins (XC5Z-0002) are used to keep the connector flush against the board during automated soldering.

Note: 1. For the XC5A, XC5F, XC5C, and XC5H.

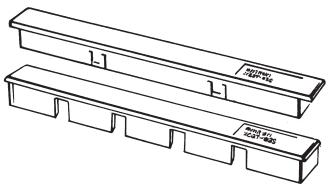
2. Temporary fastening pins cannot be used with DIN-style connectors.

Dust Cover
XC5T-962

(For DIN41612 C- or R-type Triple-row Plugs with 64 or 96 contacts)

XC5T-963

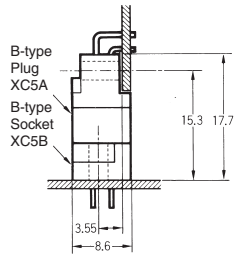
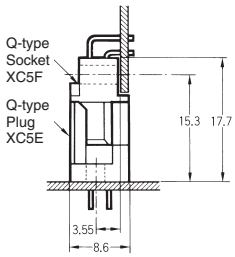
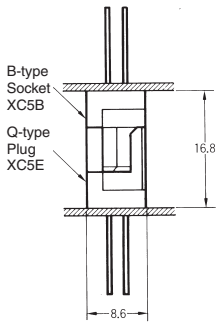
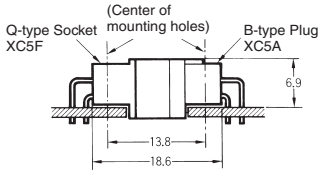
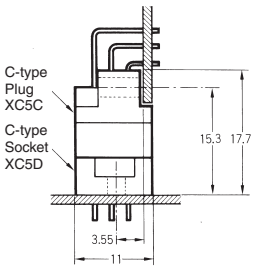
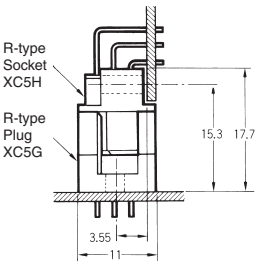
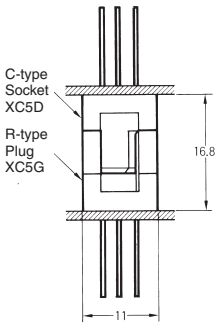
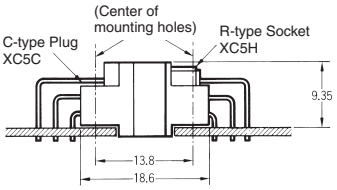
(For DIN41612 C- or R-type Triple-row Sockets with 64 or 96 contacts)



Material: Polyamide resin (UL94V-2)/white

This cover is for protection against dust only, and should not be used for flux protection during automated soldering.

Mating Diagrams

	Vertical (Standard)	Vertical (Reverse)	Stacking (See note.)	Horizontal (See note.)
Double-row Connectors				
Triple-row Connectors				

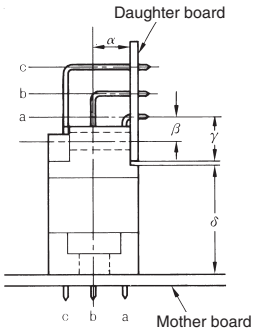
Note: By combining a Standard and a Reverse Connector, stacking and horizontal connections can be made. In this case, the triangular marks (terminal number 1) on the Plug and the Socket will not match.

Precautions

■ Correct Use

Basic Mating Dimensions

Mating dimensions for all Connectors should be as shown in the following diagram.



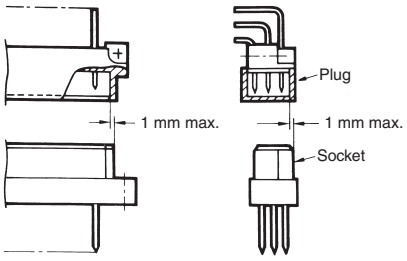
α: 3.55 mm
The distance between the center line of the mounting holes on the mother board and the daughter board. (This center line is shifted 0.3 mm toward row a from row b.)

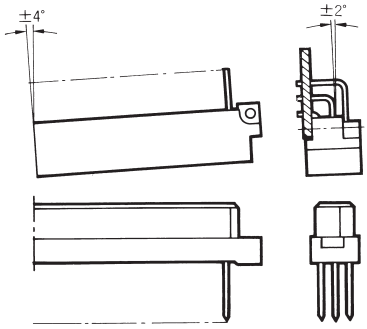
β: 2.54 mm
The distance between the mounting holes on the daughter board and row a.

γ: 5.3 mm
The distance between the edge of the daughter board and row a.

δ: 12.4 to 14.2 mm
To ensure reliability, be sure to keep the Connectors within these dimensions when mounting.

The allowable margins for mating the Connectors are shown below.





Applicable Wrap Post Wire Sizes

AWG30, AWG28, AWG26, or AWG24
(Solid wire: 0.25 to 0.51 mm dia.)

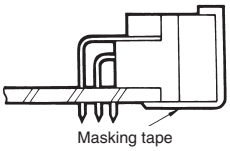
Wrap Post Length

3 wires

Soldering

Automated Soldering

Use masking tape to mask Right-angle Connectors before automated soldering.



(Recommended tape: 3M Sumitomo #214)

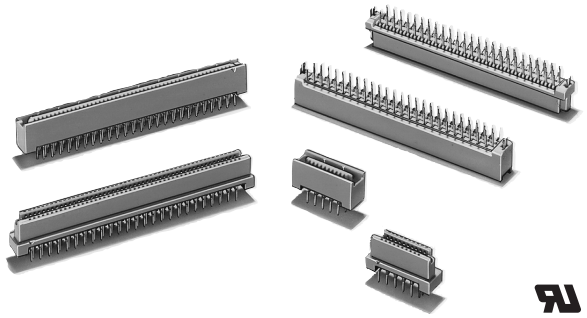
Automated Soldering Conditions (Jet Flow)

1. Soldering temperature: 250±5°C
2. Continuous soldering time: Within 5 s

Half-pitch Board-to-Board Connectors
XH3

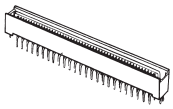
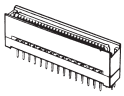
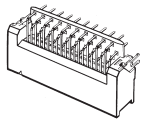
Screw Mount Eliminated to Save Space. Adjustable Stacking Height of 12 to 20 mm.

- The stacking height can be adjusted in 1-mm increments.
- Mating length of 3.1 mm and a pitch of 1.27 mm for high-density mounting in double-row arrangements.
- All models incorporate fastening pins to secure the terminals, thus preventing floating or falling over during soldering.
- Leaf contact construction enables smooth mating and resistance to bending.
- The XH3 conforms to EN, IEC, UL (file no. E103202), and CSA (file no. LR62678).



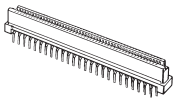
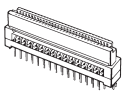
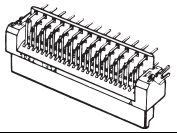
Ordering Information

Plugs - - Straight and Right-angle Through-hole PCB Terminals

Appearance					
	No Fastening Pin	With PCB Fastening Pins (See Note)			
	(Standard)	(Standard)	(2-mm increments)	(4-mm increments)	(Standard)
No. of contacts	Straight Terminals				Right-angle Terminals
20	XH3A-2041	XH3A-2041-A	XH3A-2041-2A	XH3A-2041-4A	- - -
30	XH3A-3041	XH3A-3041-A	XH3A-3041-2A	XH3A-3041-4A	XH3A-3042-A
40	XH3A-4041	XH3A-4041-A	XH3A-4041-2A	XH3A-4041-4A	XH3A-4042-A
50	XH3A-5041	XH3A-5041-A	XH3A-5041-2A	XH3A-5041-4A	XH3A-5042-A
60	XH3A-6041	XH3A-6041-A	XH3A-6041-2A	XH3A-6041-4A	XH3A-6042-A
68	XH3A-6841	XH3A-6841-A	XH3A-6841-2A	XH3A-6841-4A	XH3A-6842-A
80	XH3A-8041	XH3A-8041-A	XH3A-8041-2A	XH3A-8041-4A	XH3A-8042-A
100	XH3A-0141	XH3A-0141-A	XH3A-0141-2A	XH3A-0141-4A	XH3A-0142-A
120	XH3A-0241	XH3A-0241-A	XH3A-0241-2A	XH3A-0241-4A	- - -

Note: Applicable board thickness is 1.6 mm.

Sockets - - Straight and Right-angle Through-hole PCB Terminals

Appearance						
	No Fastening Pin	With PCB Fastening Pins (See Note)				
	(Standard)	(Standard)	(1-mm increment)	(3-mm increments)	(4-mm increments)	(Standard)
No. of contacts	Straight Terminals					Right-angle
20	XH3B-2041	XH3B-2041-A	XH3B-2041-1A	XH3B-2041-3A	XH3B-2041-4A	- - -
30	XH3B-3041	XH3B-3041-A	XH3B-3041-1A	XH3B-3041-3A	XH3B-3041-4A	XH3B-3042-A
40	XH3B-4041	XH3B-4041-A	XH3B-4041-1A	XH3B-4041-3A	XH3B-4041-4A	XH3B-4042-A
50	XH3B-5041	XH3B-5041-A	XH3B-5041-1A	XH3B-5041-3A	XH3B-5041-4A	XH3B-5042-A
60	XH3B-6041	XH3B-6041-A	XH3B-6041-1A	XH3B-6041-3A	XH3B-6041-4A	XH3B-6042-A
68	XH3B-6841	XH3B-6841-A	XH3B-6841-1A	XH3B-6841-3A	XH3B-6841-4A	XH3B-6842-A
80	XH3B-8041	XH3B-8041-A	XH3B-8041-1A	XH3B-8041-3A	XH3B-8041-4A	XH3B-8042-A
100	XH3B-0141	XH3B-0141-A	XH3B-0141-1A	XH3B-0141-3A	XH3B-0141-4A	XH3B-0142-A
120	XH3B-0241	XH3B-0241-A	XH3B-0241-1A	XH3B-0241-3A	XH3B-0241-4A	- - -

Note: Applicable board thickness is 1.6 mm.

Specifications

■ Ratings and Characteristics

Rated current	0.5 A
Rated voltage	125 VAC
Contact resistance (See note.)	30 mΩ max. (20 mV max., 100 mA max.)
Insulation resistance	1,000 MΩ min. (at 500 VDC)
Dielectric strength	650 VAC for 1 min (leakage current: 1 mA max.)
Overall insertion force	80 gf (0.78 N) max. per contact
Overall removal force	10 gf (0.10 N) min. per contact
Insertion tolerance	400 times
Ambient temperature	Operating: −55 to 105°C (with no icing)

Note: The contact resistance is for the XH3A-□□41 combined with the XH3B-□□41.

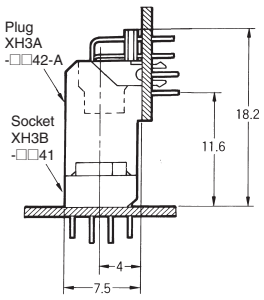
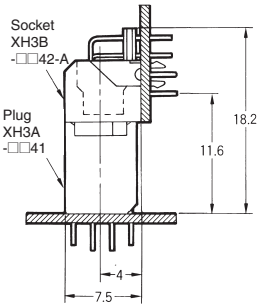
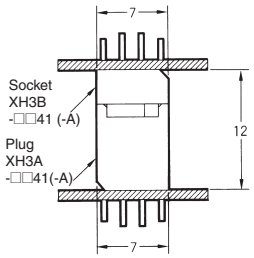
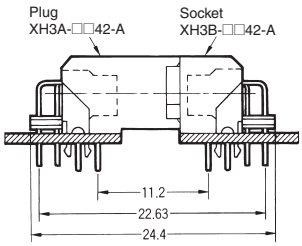
■ Materials and Finish

Item	Type	Plug	Socket
Housing		PBT resin with glass (UL94V-0)/gray	
Locator		PBT resin with glass (UL94V-0)/gray	
Contacts	**Mating end**	Phosphor bronze/nickel base, gold/palladium plating	
	Terminal	Phosphor bronze/nickel base, gold flash plating	
Fastening pins		Phosphor bronze/tin plating	

Engineering Data

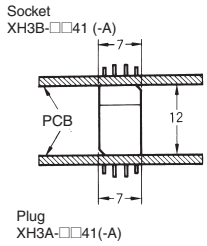
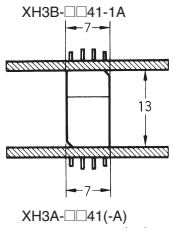
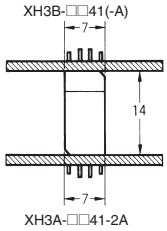
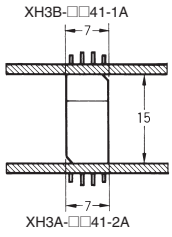
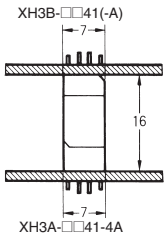
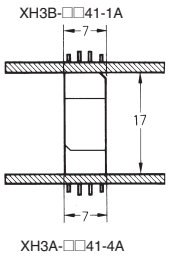
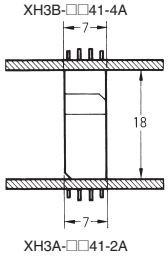
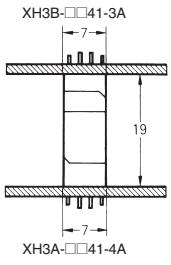
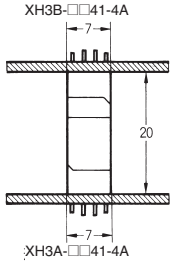
■ Mating Diagram

Vertical/Horizontal/Stacking

Vertical (standard) (See note.)	Vertical (reverse)	Stacking	Horizontal
			

Note: The function of the standard and reverse models is the same as that of the standard XC5 DIN Connectors.

Stacking Space Adjustable Models

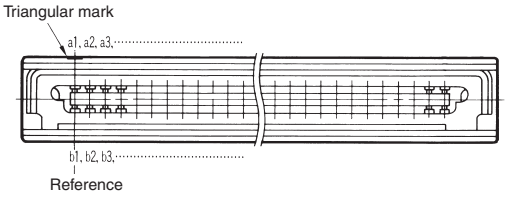
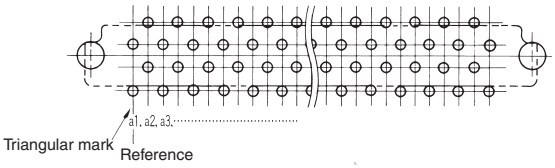
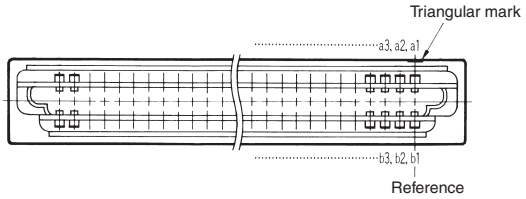
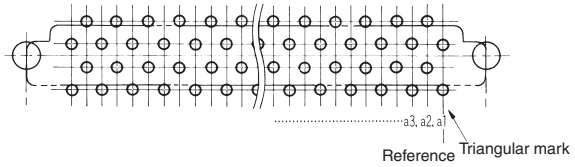
Stacking space	12 mm	13 mm	14 mm	15 mm	16 mm
Mating diagram					
Stacking space	**17 mm**	**18 mm**	**19 mm**	**20 mm**	
Mating diagram					

■ Combinations

Socket / Plug	XH3B-□□41 XH3B-□□41-A	1-mm increment XH3B-□□41-1A	3-mm increments XH3B-□□41-3A	4-mm increments XH3B-□□41-4A
XH3A-□□41, XH3A-□□41-A	12 mm	13 mm	(15 mm) (See note.)	(16 mm) (See note.)
2-mm increment XH3A-□□41-2A	14 mm	15 mm	(17 mm) (See note.)	18 mm
4-mm increment XH3A-□□41-4A	16 mm	17 mm	19 mm	20 mm

Note: Combinations marked with parentheses should be avoided if possible.

■ Contact Numbers

Item / Model	Mated diagram	Mounting holes (bottom view)
Plug, Straight Terminals		
Socket, Straight Terminals		

Note: 1. Contact numbers are not printed on the connectors. Use the triangular mark (▼) as a guide when designing and mounting to boards.

2. On the mating side, the row of terminals on the triangular mark side are called row a, and the row on the other side is called row b. The numbers are in the order shown.

3. The triangular marks on the plug and socket must be aligned when mated. The contact numbers on both sides must match.

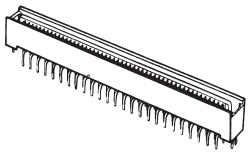
Dimensions

■ XH3A - Plugs

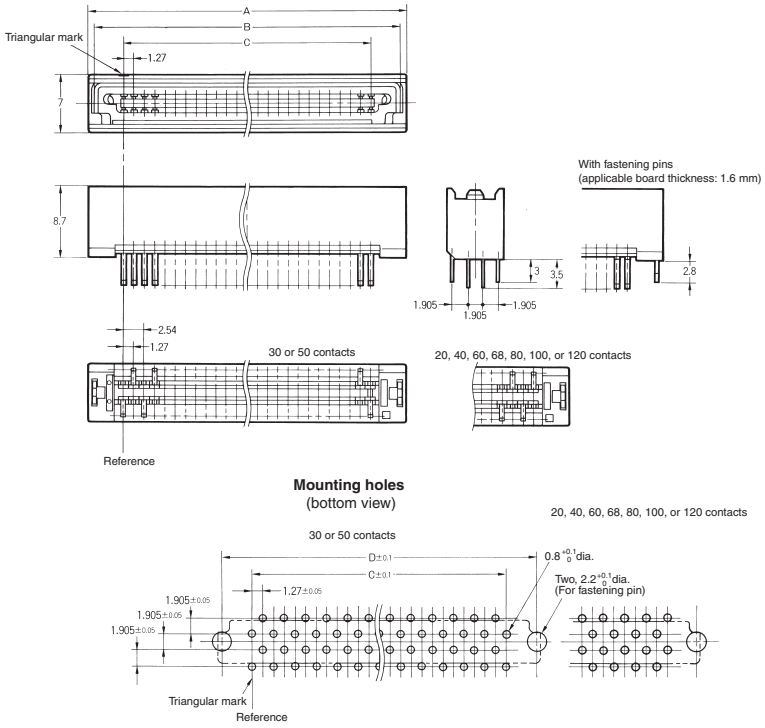
Straight Through-hole Terminals

XH3A-□□41
(without PCB Fastening Pins)

XH3A-□□41-A
(with Fastening Pins)



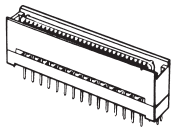
No. of contacts	Dimensions (mm)			
	A	B	C	D
20	20.0	18.7	11.43	18.54
30	26.4	25.1	17.78	24.89
40	32.7	31.4	24.13	31.24
50	39.1	37.8	30.48	37.59
60	45.4	44.1	36.83	43.94
68	50.5	49.2	41.91	49.02
80	58.1	56.8	49.53	56.64
100	70.8	69.5	62.23	69.34
120	83.5	82.2	74.93	82.04



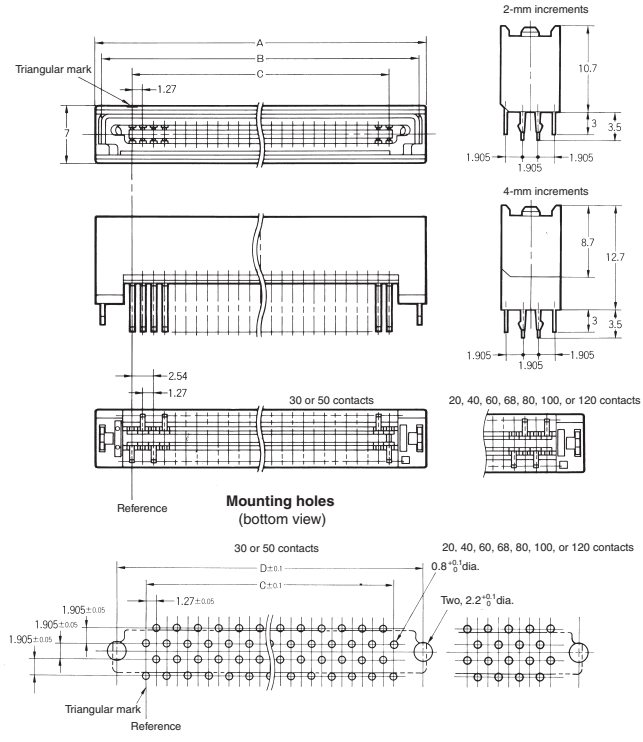
Straight Through-hole Terminals, with Fastening Pin

Stacking Space Adjustable in Increments of 2 or 4 mm

XH3A-□□41-2A (2-mm Increments)
XH3A-□□41-4A (4-mm Increments)

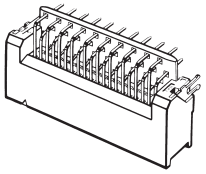


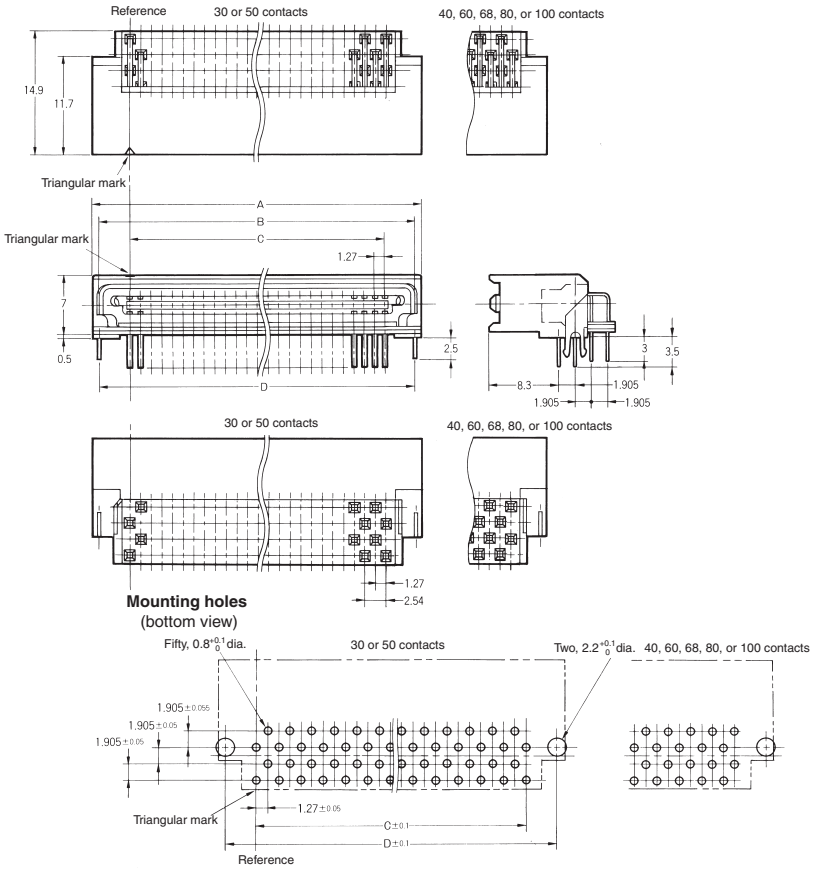
No. of contacts	Dimensions (mm)			
	A	B	C	D
20	20.0	18.7	11.43	18.54
30	26.4	25.1	17.78	24.89
40	32.7	31.4	24.13	31.24
50	39.1	37.8	30.48	37.59
60	45.4	44.1	36.83	43.94
68	50.5	49.2	41.91	49.02
80	58.1	56.8	49.53	56.64
100	70.8	69.5	62.23	69.34
120	83.5	82.2	74.93	82.04



Right-angle Through-hole Terminals, with Fastening Pin

XH3A-□□42-A





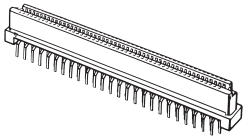
No. of contacts	Dimensions (mm)			
	A	B	C	D
30	26.4	25.1	17.78	24.89
40	32.7	31.4	24.13	31.24
50	39.1	37.8	30.48	37.59
60	45.4	44.1	36.83	43.94
68	50.5	49.2	41.91	49.02
80	58.1	56.8	49.53	56.64
100	70.8	69.5	62.23	69.34

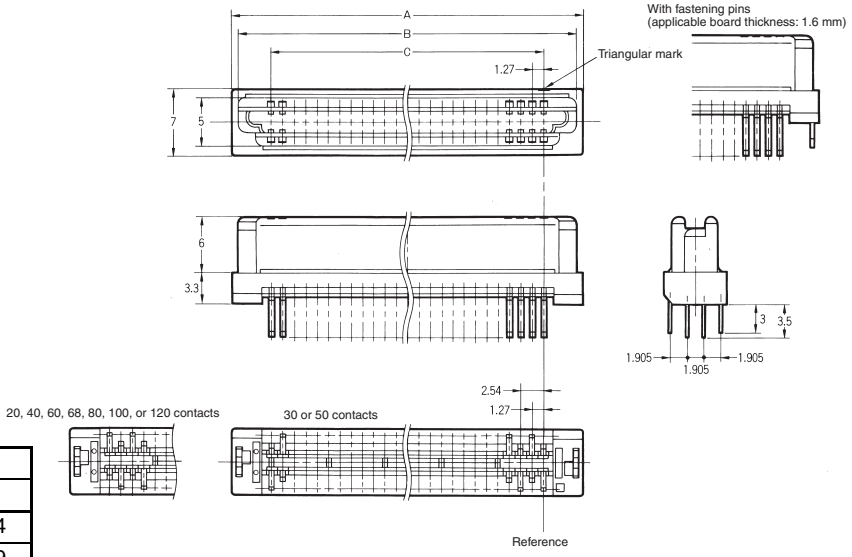
■ XH3B - Socket

Straight Through-hole Terminals

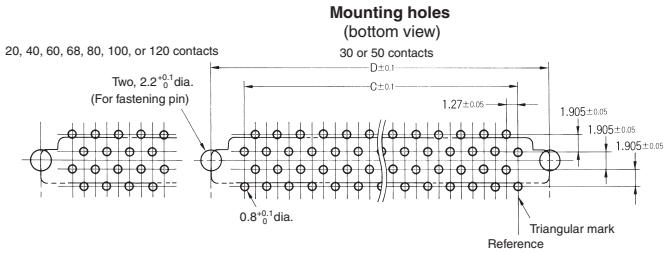
XH3B-□□41
(without Fastening Pins)

XH3B-□□41-A
(with Fastening Pins)





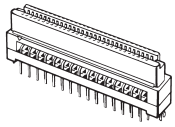
No. of contacts	Dimensions (mm)			
	A	B	C	D
20	20.0	18.6	11.43	18.54
30	26.4	25.0	17.78	24.89
40	32.7	31.3	24.13	31.24
50	39.1	37.7	30.48	37.59
60	45.4	44.0	36.83	43.94
68	50.5	49.1	41.91	49.02
80	58.1	56.7	49.53	56.64
100	70.8	69.4	62.23	69.34
120	83.5	82.1	74.93	82.04

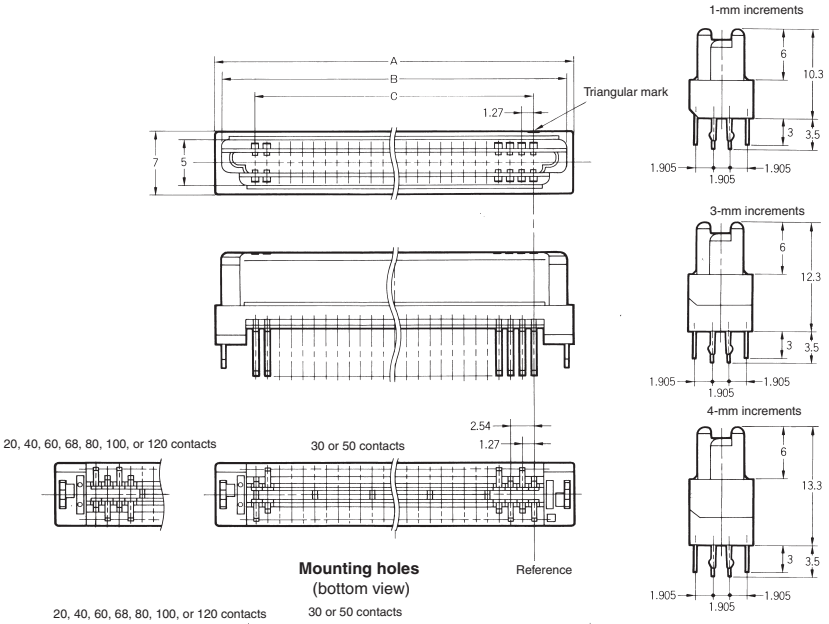


Straight Through-hole DIP Terminals, with Fastening Pin

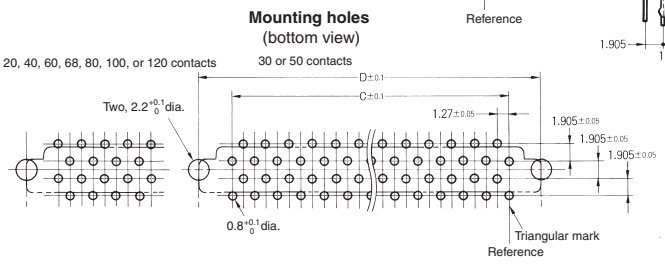
Stacking Space Adjustable in Increments of 1, 3 or 4 mm

XH3B-□□41-1A (1-mm Increment)
XH3B-□□41-3A (3-mm Increments)
XH3B-□□41-4A (4-mm Increments)



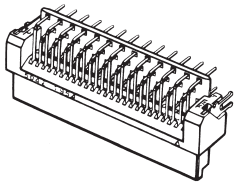


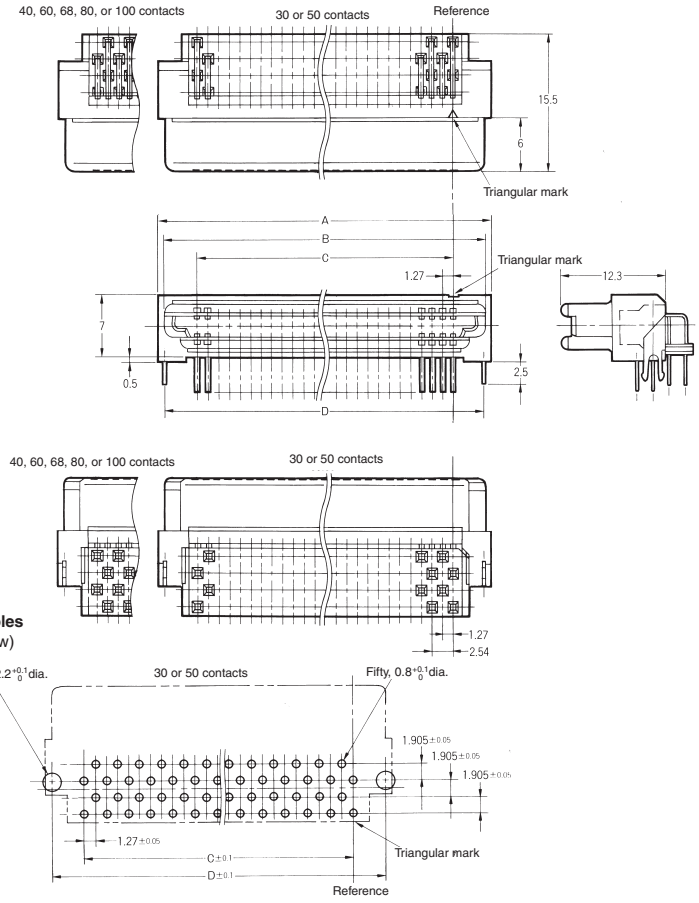
No. of contacts	Dimensions (mm)			
	A	B	C	D
20	20.0	18.6	11.43	18.54
30	26.4	25.0	17.78	24.89
40	32.7	31.3	24.13	31.24
50	39.1	37.7	30.48	37.59
60	45.4	44.0	36.83	43.94
68	50.5	49.1	41.91	49.02
80	58.1	56.7	49.53	56.64
100	70.8	69.4	62.23	69.34
120	83.5	82.1	74.93	82.04



Right-angle Through-hole Terminals, with Fastening Pin

XH3B-□□42-A





No. of contacts	Dimensions (mm)			
	A	B	C	D
30	26.4	25.0	17.78	24.89
40	32.7	31.3	24.13	31.24
50	39.1	37.7	30.48	37.59
60	45.4	44.0	36.83	43.94
68	50.5	49.1	41.91	49.02
80	58.1	56.7	49.53	56.64
100	70.8	69.4	62.23	69.34

Precautions

■ Correct Use

Mating Compatibility

XH3 Half-pitch Connectors do not mate with XH2 or XH4 Half-pitch Connectors.

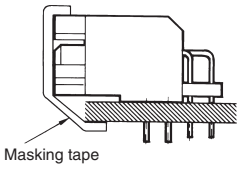
Special Finish for Preventing Flux Rise

XH3 Connectors (i.e., Straight Terminals and standard size, 1-, and 2-mm increments) have a special finish that prevents flux rise. (The Connectors are designed for automated soldering. Brush coating flux from the back of the board applies too much flux and may nullify the special finish. Never use this method to apply flux.)

Soldering

Automated soldering

Use tape to mask the Right-angle Terminal Connector prior to automated soldering.



Automated Soldering Conditions (Jet Flow)

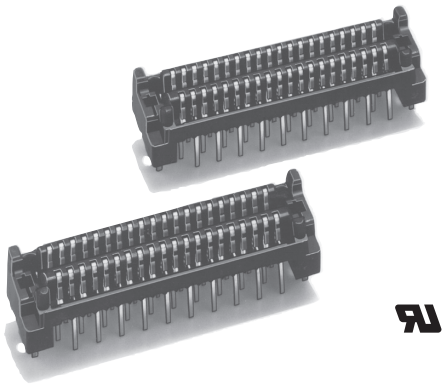
1. Soldering temperature: 250±5°C
2. Continuous soldering time: Within 5 s (Be sure to wash the board after continuous soldering is completed.)

MEMO

Half-pitch Low-profile Stacking Connectors
XH4A

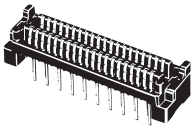
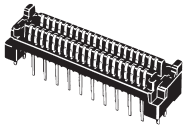
An Integrated Male/ Female Half-pitch Board-to-Board Stacking Connector.

- Board space can be adjusted from 5 to 11 mm in 1-mm increments. (5 to 9 mm in 1-mm increments for SMT versions.)
- The product line includes Through-hole and Surface-mounted Terminals (SMT) Connectors.
- The leaf contact construction resists bending
- All models incorporate fastening pins to secure the terminals, thus preventing floating or falling over during soldering.
- The XH4A conforms to EN, IEC, UL (file no. E103202), and CSA (file no. LR62678). (SMT Connectors not included)



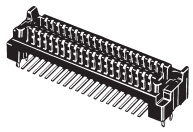
Ordering Information

Straight Through-hole PCB Terminals, with and without PCB Fastening Pins

Appearance					
	No Fastening Pin	With PCB Fastening Pins (See Note)			
No. of contacts	(Standard)	(Standard)	(1-mm increment)	(2-mm increments)	(3-mm increments)
40	XH4A-4031	XH4A-4031-A	XH4A-4031-1A	XH4A-4031-2A	XH4A-4031-3A
50	XH4A-5031	XH4A-5031-A	XH4A-5031-1A	XH4A-5031-2A	XH4A-5031-3A
60	XH4A-6031	XH4A-6031-A	XH4A-6031-1A	XH4A-6031-2A	XH4A-6031-3A
80	XH4A-8031	XH4A-8031-A	XH4A-8031-1A	XH4A-8031-2A	XH4A-8031-3A
100	XH4A-0131	XH4A-0131-A	XH4A-0131-1A	XH4A-0131-2A	XH4A-0131-3A

Note: Applicable board thickness is 1.6 mm.

SMT Terminals with PCB Fastening pins

Appearance			
	With PCB Fastening Pins (See Note)		
No. of contacts	(Standard)	(1-mm increment)	(2-mm increments)
40	XH4A-4035-A	XH4A-4035-1A	XH4A-4035-2A
50	XH4A-5035-A	XH4A-5035-1A	XH4A-5035-2A
60	XH4A-6035-A	XH4A-6035-1A	XH4A-6035-2A
80	XH4A-8035-A	XH4A-8035-1A	XH4A-8035-2A
100	XH4A-0135-A	XH4A-0135-1A	XH4A-0135-2A

Note: Applicable board thickness is 1.6 mm.

Specifications

■ Ratings and Characteristics

Rated current	0.5 A
Rated voltage	125 VAC
Contact resistance (See note.)	30 mΩ max. (20 mV max., 100 mA max.)
Insulation resistance	1,000 MΩ min. (at 500 VDC)
Dielectric strength	650 VAC for 1 min (leakage current: 1 mA max.)
Connector insertion force	150 gf (1.47 N) max. per contact
Connector removal force	15 gf (0.15 N) min. per contact
Insertion tolerance	50 times
Ambient temperature	Operating: –55 to 105°C (with no icing)

Note: The contact resistance depends on which XH4A-□□31 Connectors are mated to each other.

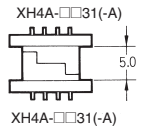
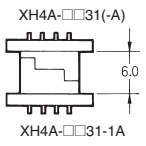
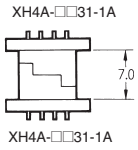
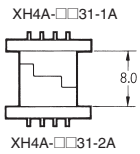
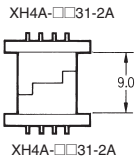
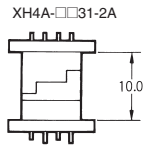
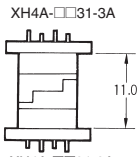
■ Materials and Finish

Housing		PPS resin with glass (UL94V-0)/black
Locator		PBT resin with glass (UL94V-0)/black
Contacts	**Mating end**	Phosphor bronze/nickel base, 0.15-μm gold plating
	Terminal	Phosphor bronze/nickel base, gold flash plating
Fastening pins		Phosphor bronze/tin plating

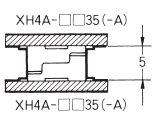
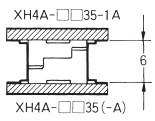
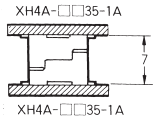
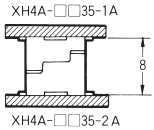
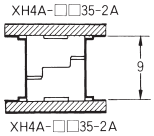
Engineering Data

■ Mating Diagrams

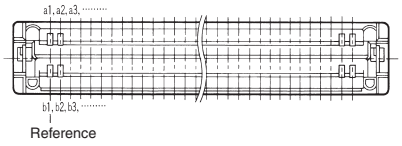
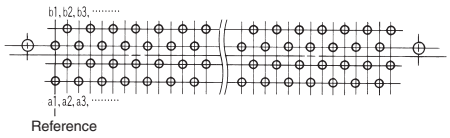
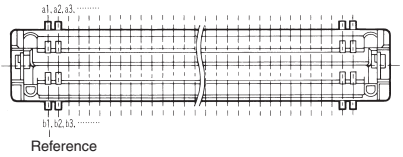
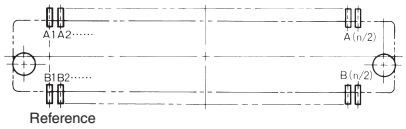
Stacked Through-hole DIP Terminals

Stacking space	**5 mm**	**6 mm**	**7 mm**	**8 mm**
Mating diagram				
Stacking space	**9 mm**	**10 mm**	**11 mm**	
Mating diagram				

Stacked SMT Terminals

Stacking space	**5 mm**	**6 mm**	**7 mm**	**8 mm**	**9 mm**
Mating diagram					

■ Contact Numbers

Item Model	Mated Diagram	Mounting holes
Through-hole Terminals		(bottom view) 
SMT Terminals		(top view) 

Note: 1. The triangular mark (▼) and contact numbers are not printed on the connectors. Use the raised reference point used to prevent reverse insertion as a guide when designing boards.

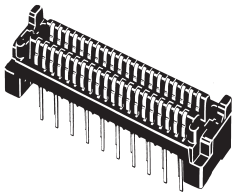
2. On the mating side, the row of terminals on the raised reference point side are called row a, and the row on the other side is called row b. The numbers are in the order shown.

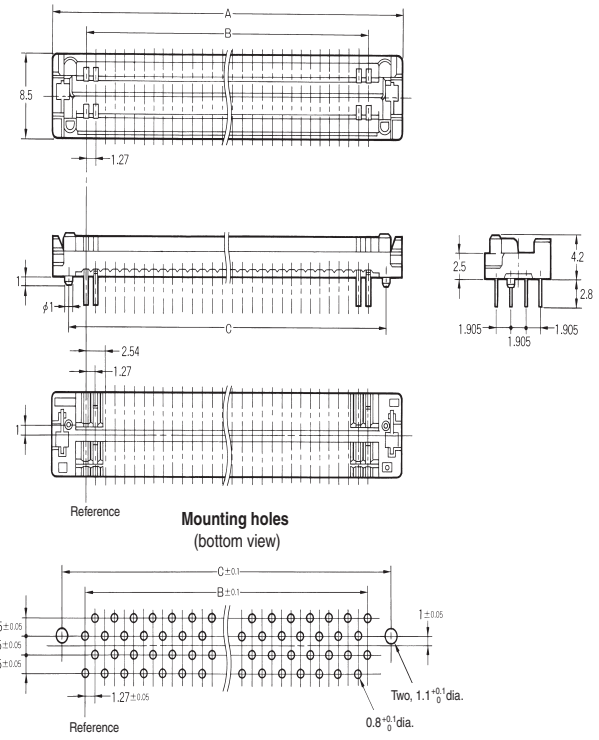
3. XH4A Half-pitch Connectors are integrated male/female connectors. The contact numbers on row a correspond to the contact numbers on row b. Be careful when using these connectors because they function slightly differently from separate male and female connectors (i.e., Plugs and Sockets).

Dimensions

■ Straight Through-hole DIP Terminals (without PCB fastening pins)

XH4A-□□31

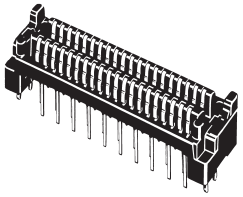


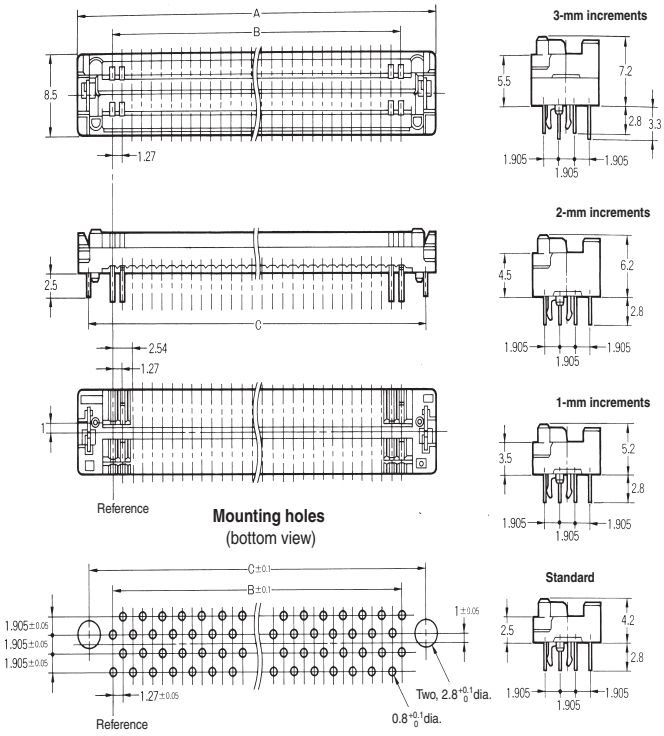


No. of contacts	Dimensions (mm)		
	A	B	C
40	32.73	24.13	28.63
50	39.08	30.48	34.98
60	45.43	36.83	41.33
80	58.13	49.53	54.03
100	70.83	62.23	66.73

■ XH4A Straight Through-hole Terminals (with PCB fastening pins) Stacking Space Adjustable in Standard Size and 1-, 2-, or 3-mm Increments

XH4A-□□31-A (Standard)
XH4A-□□31-1A (1-mm Increment)
XH4A-□□31-2A (2-mm Increments)
XH4A-□□31-3A (3-mm Increments)

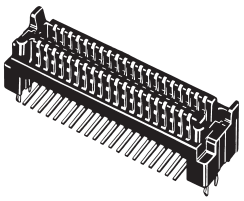


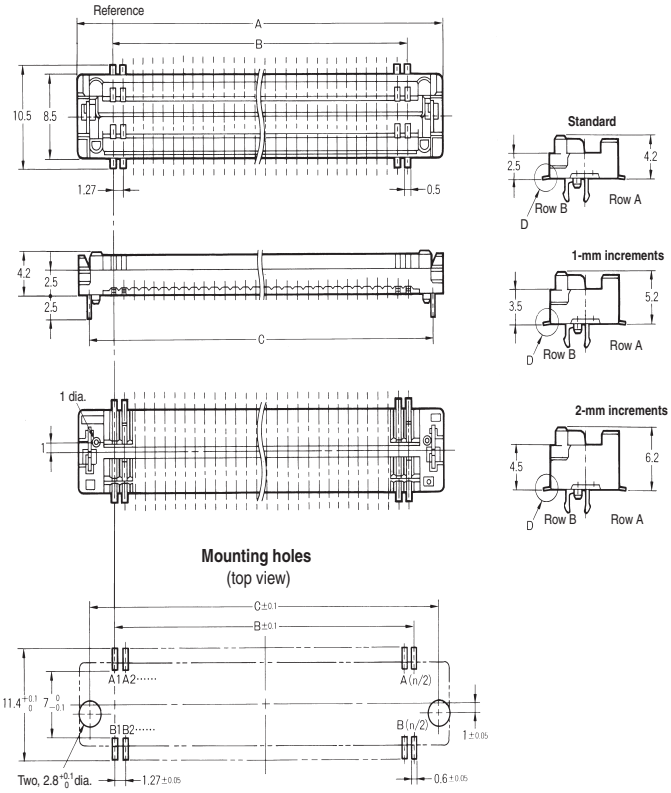


No. of contacts	Dimensions (mm)		
	A	B	C
40	32.73	24.13	30.23
50	39.08	30.48	36.58
60	45.43	36.83	42.93
80	58.13	49.53	55.63
100	70.83	62.23	68.33

■ XH4A SMT Terminals (with PCB fastening pins) Stacking Space Adjustable in Standard Size and 1- or 2-mm Increments

XH4A-□□35-A (Standard)
XH4A-□□35-1A (1-mm Increment)
XH4A-□□35-2A (2-mm Increments)





No. of contacts	Dimensions (mm)		
	A	B	C
40	32.73	24.13	30.23
50	39.08	30.48	36.58
60	45.43	36.83	42.93
80	58.13	49.53	55.63
100	70.83	62.23	68.33

Precautions

■ Correct Use

PCB settings

XH4A Half-pitch Connectors are male/female connectors with integrated plugs and sockets.

Refer to "*Contact Numbers"* in the "*Engineering Data*" section above when designing boards.

Mating Compatibility

XH4 Half-pitch Connectors do not mate with XH2 or XH3 Half-pitch Connectors.

Soldering Conditions

Straight DIP Terminals (Automated Soldering)

1. Soldering temperature: 230±5°C
2. Continuous soldering time: Within 3 s

Be sure to wash the board after automated soldering is completed.

SMT Terminals

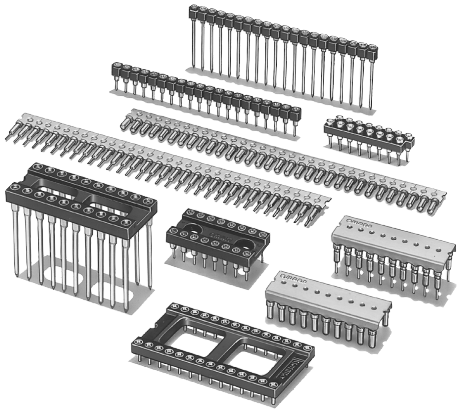
1. Recommended reflow conditions:
2. Pre-heat temperature: 150±10°C
3. Pre-heat time: 60 to 120s
4. Soldering temperature: 200 to 240°C
5. Soldering time: Within 30s (Within 10s at the maximum temperature of 240°C)

MEMO

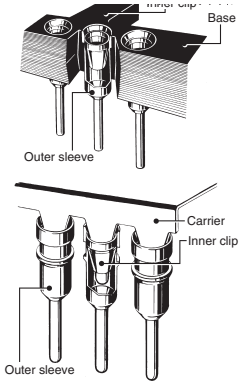
IC Sockets
XR2

OMRON's IC Connectors Have Excellent Reliability and Can Tolerate Momentary Interruptions in Power.

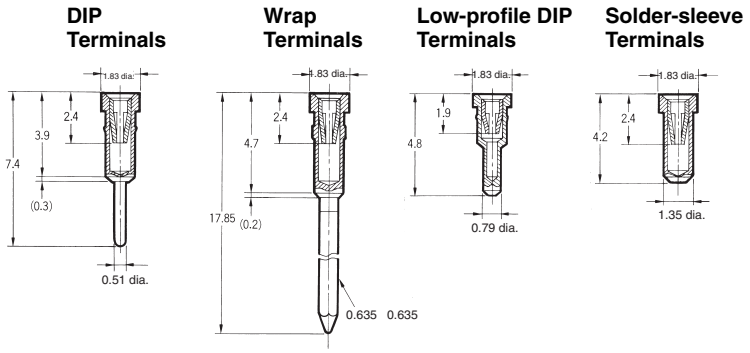
- Round pins and 4-point (4-finger) contact construction with contact entry holes that are large for easy insertion.
- IC lead contacts placed high for solid connections.
- A wide product range: open-frame, closed-frame, single-row, carrier-type DIP terminals, wrap terminals, solder-sleeve terminals, and low-profile DIP terminals.
- Conforms to UL standards (file no. E 103202) and CSA standards (file no. LR 62678).



■ Construction



■ Contact Dimensions



■ Ratings and Characteristics

Item	Gold plated	Gold flash plated
Rated current	1 A	
Rated voltage	300 VAC	
Contact resistance	20 mΩ max. (at 20 mV, 100 mA max.)	
Insulation resistance	1,000 MΩ min. (at 500 VDC)	
Dielectric strength	1,000 VAC for 1 min (leakage current: 1 mA max.)	
Contact insertion (See note.)	400 gf (3.92 N) max.	
Contact removal (See note.)	65 gf (0.64 N) min. with gold plating or with solder plating	
Insertion durability	100 times (0.75-μm gold plating), 50 times (0.25-μm gold plating)	20 times
Ambient temperature	Operating: –55 to 125°C (with no icing)	

Note: The contact insertion force and contact removal force are for a test gauge, t = 0.432 mm.

■ Materials and Finish

Base	Fiber-glass reinforced PBT resin (UL94V-0)/black
Carrier	Aluminum
Inner clip	Beryllium copper/nickel base, gold plated
Outer sleeve	Brass/nickel base, gold flash plating

Note: For non-standard plating, contact your OMRON representative.

■ Applicable Wrap Post Wire Sizes

AWG30, AWG28, AWG26, AWG24
(Solid wire: 0.25 to 0.51 mm dia.)

■ Wrap Post Length

3 wires

■ Applicable IC Lead Dimensions

DIP, Wrap, and Solder-sleeve Terminals

	Depth × width (mm)	
Flat lead	0.29 ±0.09 × 0.46 ±0.08 (See note.)	
Round lead	0.53 dia. max.	0.41 dia. min.

Note: Do not use wire where the diagonal is more than 0.56 mm.

Low-profile DIP Terminals

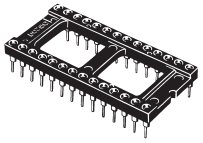
	Depth × width (mm)	
Flat lead	0.29 ±0.09 × 0.46 ±0.08 (See note.)	
Round lead	0.50 dia. max.	0.41 dia. min.

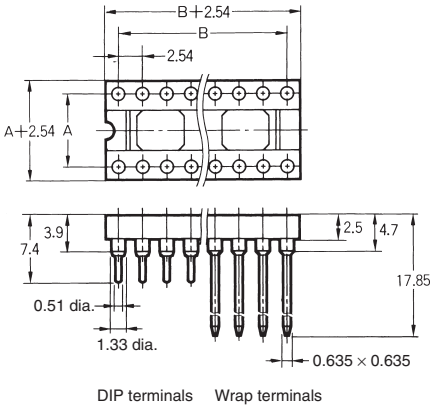
Note: Do not use wire where the diagonal is more than 0.52 mm.

XR2A Open-frame Sockets

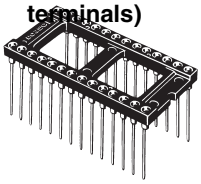
■ Dimensions

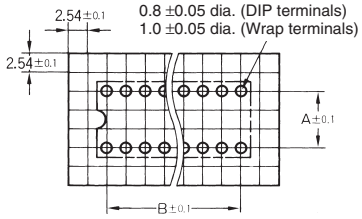
XR2A-□□11-N
XR2A-2463-N
XR2A-2473-N
XR2A-□□01-N
XR2A-2461-N
XR2A-2471-N
XR2A-□□21-N
XR2A-2467-N
XR2A-2477-N
(With DIP terminals)





XR2A-□□02
(With wrap terminals)



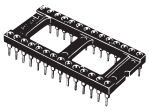
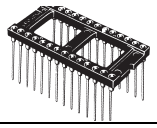


Dimensions

No. of contacts	Dimensions (mm)	
	A	B
8	7.62	7.62
14	7.62	15.24
16	7.62	17.78
18	7.62	20.32
20	7.62	22.86
22	10.16	25.40
24 (See note 1.)	15.24	27.94
24 (See note 2.)	10.16	27.94
24 (See note 3.)	7.62	27.94
28	15.24	33.02
32	15.24	38.10
40	15.24	48.26
42	15.24	50.80
48	15.24	58.42
50	22.86	60.96
64	22.86	78.74

Note: 1. XR2A-2401-N/XR2A-2402/ XR2A-2411N/XR2A-2421-N
2. XR2A-2461-N/XR2A-2463-N/ XR2A-2467-N
3. XR2A-2471-N/XR2A-2473-N/ XR2A-2477-N

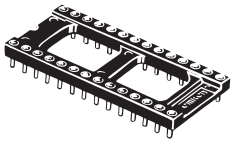
■ Ordering Information

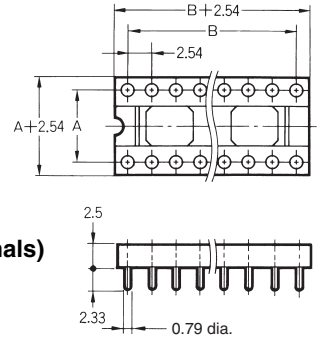
Appearance		Sockets with DIP terminals 			Sockets with wrap terminals 
No of contacts	Row pitch (A) (mm)	With 0.25-μm gold plating	With 0.75-μm gold plating	With gold flash plating	With 0.75-μm gold plating
8	7.62	XR2A-0811-N	XR2A-0801-N	XR2A-0821-N	XR2A-0802
14	7.62	XR2A-1411-N	XR2A-1401-N	XR2A-1421-N	XR2A-1402
16	7.62	XR2A-1611-N	XR2A-1601-N	XR2A-1621-N	XR2A-1602
18	7.62	XR2A-1811-N	XR2A-1801-N	XR2A-1821-N	XR2A-1802
20	7.62	XR2A-2011-N	XR2A-2001-N	XR2A-2021-N	XR2A-2002
22	10.16	XR2A-2211-N	XR2A-2201-N	XR2A-2221-N	XR2A-2202
24	15.24	XR2A-2411-N	XR2A-2401-N	XR2A-2421-N	XR2A-2402
24	10.16	XR2A-2463-N	XR2A-2461-N	XR2A-2467-N	—
24	7.62	XR2A-2473-N	XR2A-2471-N	XR2A-2477-N	XR2A-2472
28	15.24	XR2A-2811-N	XR2A-2801-N	XR2A-2821-N	XR2A-2802
32	15.24	XR2A-3211-N	XR2A-3201-N	XR2A-3221-N	XR2A-3202
40	15.24	XR2A-4011-N	XR2A-4001-N	XR2A-4021-N	XR2A-4002
42	15.24	XR2A-4211-N	XR2A-4201-N	XR2A-4221-N	XR2A-4202
48	15.24	XR2A-4811-N	XR2A-4801-N	—	XR2A-4802
50	22.86	XR2A-5011-N	XR2A-5001-N	—	—
64	22.86	XR2A-6411-N	XR2A-6401-N	—	XR2A-6402

XR2A Open-frame Sockets (with Low-profile DIP Terminals)

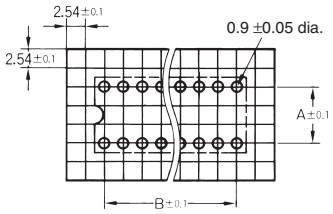
■ Dimensions

XR2A-□□15
XR2A-2466
XR2A-2476
XR2A-□□05
XR2A-2465
XR2A-2475
XR2A-□□25
XR2A-2468
XR2A-2478
(With low-profile DIP terminals)





Mounting holes (bottom view)

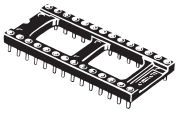


Dimensions

No. of contacts	Dimensions (mm)	
	A	B
8	7.62	7.62
14	7.62	15.24
16	7.62	17.78
18	7.62	20.32
20	7.62	22.86
22	10.16	25.40
24 (See note 1.)	15.24	27.94
24 (See note 2.)	10.16	27.94
24 (See note 3.)	7.62	27.94
28	15.24	33.02
32	15.24	38.10
40	15.24	48.26
42	15.24	50.80
48	15.24	58.42
64	22.86	78.74

Note: 1. XR2A-2415/XR2A-2405/ XR2A-2425
2. XR2A-2466/XR2A-2465/ XR2A-2468
3. XR2A-2476/XR2A-2475/ XR2A-2478

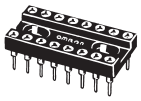
■ Ordering Information

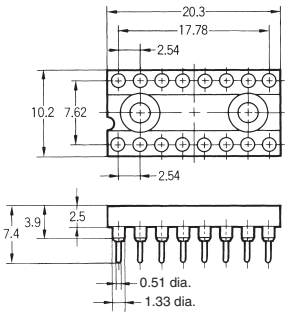
Appearance		Sockets with DIP terminals 		
No. of contacts	Row pitch (A) (mm)	With 0.25-μm gold plating	With 0.75-μm gold plating	With gold flash plating
8	7.62	XR2A-0815	XR2A-0805	XR2A-0825
14	7.62	XR2A-1415	XR2A-1405	XR2A-1425
16	7.62	XR2A-1615	XR2A-1605	XR2A-1625
18	7.62	XR2A-1815	XR2A-1805	XR2A-1825
20	7.62	XR2A-2015	XR2A-2005	XR2A-2025
22	10.16	XR2A-2215	XR2A-2205	XR2A-2225
24	15.24	XR2A-2415	XR2A-2405	XR2A-2425
24	10.16	XR2A-2466	XR2A-2465	XR2A-2468
24	7.62	XR2A-2476	XR2A-2475	XR2A-2478
28	15.24	XR2A-2815	XR2A-2805	XR2A-2825
32	15.24	XR2A-3215	XR2A-3205	XR2A-3225
40	15.24	XR2A-4015	XR2A-4005	XR2A-4025
42	15.24	XR2A-4215	XR2A-4205	—
48	15.24	XR2A-4815	XR2A-4805	—
64	22.86	XR2A-6415	XR2A-6405	—

XR2B Closed-frame Sockets

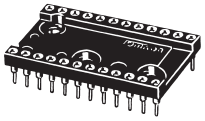
■ Dimensions

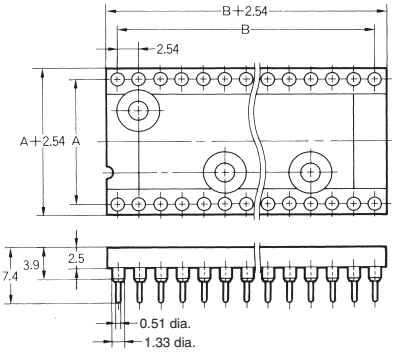
XR2B-1611-N
XR2B-1601-N



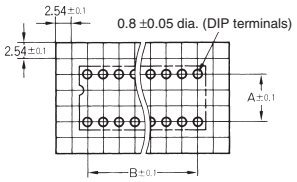


XR2B-□□11-N
XR2B-□□01-N





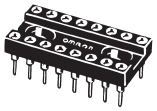
Mounting holes (bottom view)



Dimensions

No. of contacts	Dimensions (mm)	
	A	B
16	7.62	17.78
24	15.24	27.94
28	15.24	33.02
32	15.24	38.10
40	15.24	48.26

■ Ordering Information

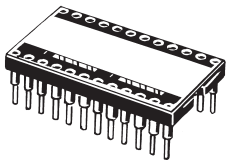
Appearance		Sockets with DIP terminals	
			
No. of contacts	**Row pitch (A) (mm)**	**With 0.25-μm gold plating**	**With 0.75-μm gold plating**
16	7.62	XR2B-1611-N	XR2B-1601-N
24	15.24	XR2B-2411-N	XR2B-2401-N
28	15.24	XR2B-2811-N	XR2B-2801-N
32	15.24	XR2B-3211-N	XR2B-3201-N
40	15.24	XR2B-4011-N	XR2B-4001-N

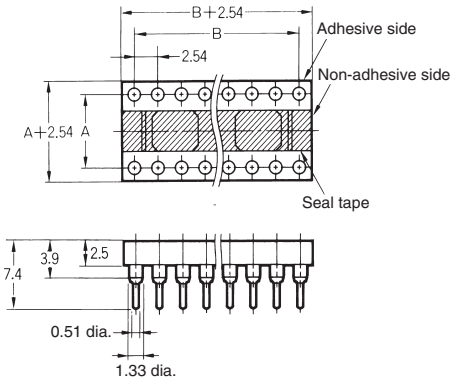
XR2T Open-frame Sockets with Seal Tape

- Equipped with seal tape to prevent flux cleaning liquids from entering the Socket.
- The same round-pin, 4-point contact structure as the RX2A is used for the contacts.
- The seal tape is made of transparent polyethyle (adhesive portion) and yellow polypropolyene (non-adhesive portion).

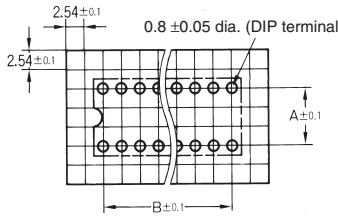
■ Dimensions

XR2T-□□11-N
XR2T-2463-N
XR2T-2473-N
XR2T-□□01-N
XR2T-2461-N
XR2T-2471-N
XR2T-□□21-N
XR2T-2467-N
XR2T-2477-N





Mounting holes (bottom view)



Dimensions

No. of contacts	Dimensions (mm)	
	A	B
8	7.62	7.62
14	7.62	15.24
16	7.62	17.78
18	7.62	20.32
20	7.62	22.86
22	10.16	25.40
24 (See note 1.)	15.24	27.94
24 (See note 2.)	10.16	27.94
24 (See note 3.)	7.62	27.94
28	15.24	33.02
32	15.24	38.10
40	15.24	48.26
48	15.24	58.42

Note: 1. XR2T-2411-N/XR2T-2401-N/ XR2A-2421-N
2. XR2T-2463-N/XR2T-2461-N/ XR2T-2467-N
3. XR2T-2473-N/XR2T-2471-N/ XR2T-2477-N

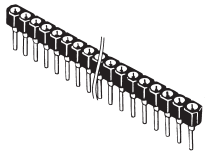
■ Ordering Information

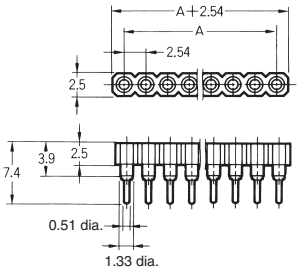
Appearance		Sockets with DIP terminals		
No. of contacts	Row pitch (A) (mm)	With 0.25-μm gold plating	With 0.75-μm gold plating	With gold flash plating
8	7.62	XR2T-0811-N	XR2T-0801-N	XR2T-0821-N
14	7.62	XR2T-1411-N	XR2T-1401-N	XR2T-1421-N
16	7.62	XR2T-1611-N	XR2T-1601-N	XR2T-1621-N
18	7.62	XR2T-1811-N	XR2T-1801-N	XR2T-1821-N
20	7.62	XR2T-2011-N	XR2T-2001-N	XR2T-2021-N
22	10.16	XR2T-2211-N	XR2T-2201-N	XR2T-2221-N
24	15.24	XR2T-2411-N	XR2T-2401-N	XR2T-2421-N
24	10.16	XR2T-2463-N	XR2T-2461-N	XR2T-2467-N
24	7.62	XR2T-2473-N	XR2T-2471-N	XR2T-2477-N
28	15.24	XR2T-2811-N	XR2T-2801-N	XR2T-2821-N
32	15.24	XR2T-3211-N	XR2T-3201-N	XR2T-3221-N
40	15.24	XR2T-4011-N	XR2T-4001-N	XR2T-4021-N
48	15.24	XR2T-4811-N	XR2T-4801-N	---

XR2C Single-row Sockets

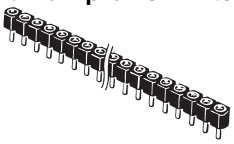
■ Dimensions

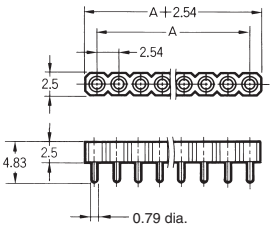
XR2C-□□11-N
XR2C-□□01-N
XR2C-□□21-N
(With DIP terminals)



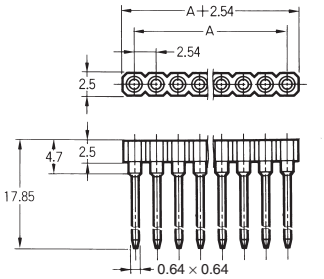


XR2C-□□15
XR2C-□□05
XR2C-□□25
(With low-profile DIP terminals)

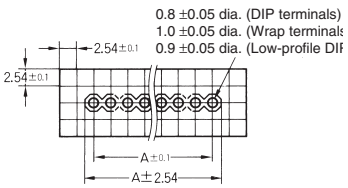




XR2C-□□02
(With wrap terminals)



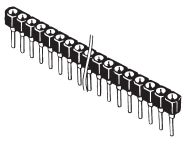
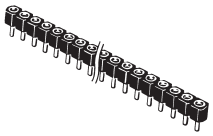
Mounting holes (bottom view)



Dimensions

No. of contacts	A (mm)
20	48.26
32	78.74

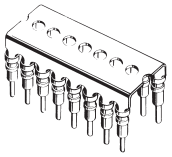
■ Ordering Information

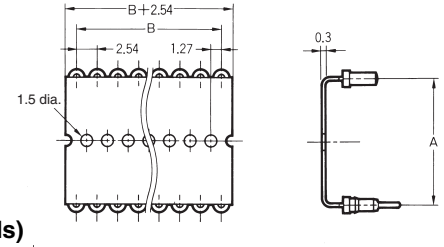
Appearance	No. of contacts	With 0.25-μm gold plating	With 0.75-μm gold plating	With gold flash plating
Sockets with DIP terminals 	10	XR2C-1011-N	—	—
	16	XR2C-1611-N	—	—
	20	XR2C-2011-N	XR2C-2001-N	XR2C-2021-N
	32	XR2C-3211-N	XR2C-3201-N	XR2C-3221-N
Sockets with low-profile DIP terminals 	20	XR2C-2015	XR2C-2005	XR2C-2025
	32	XR2C-3215	XR2C-3205	XR2C-3225
Sockets with wrap terminals 	20	—	XR2C-2002	—
	32	—	XR2C-3202	—

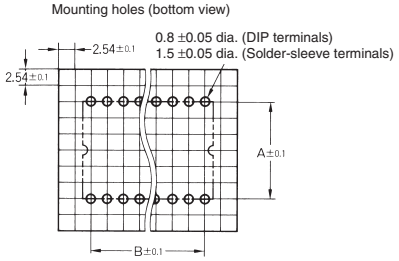
XR2D Double-row Carrier Sockets

■ Dimensions

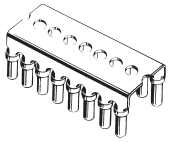
XR2D-□□01-N
(With DIP terminals)

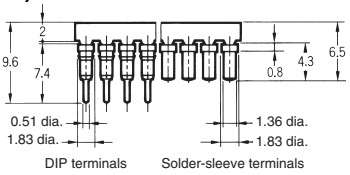






XR2D-□□04
(With solder-sleeve terminals)

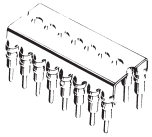
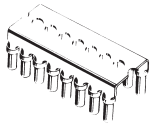




Dimensions

No. of contacts	Dimensions (mm)	
	A	B
8	7.62	7.62
14	7.62	15.24
16	7.62	17.78
18	7.62	20.32
20	7.62	22.86
24	15.24	27.94
28	15.24	33.02
32	15.24	38.10
40	15.24	48.26

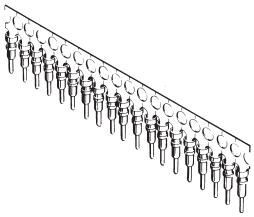
■ Ordering Information

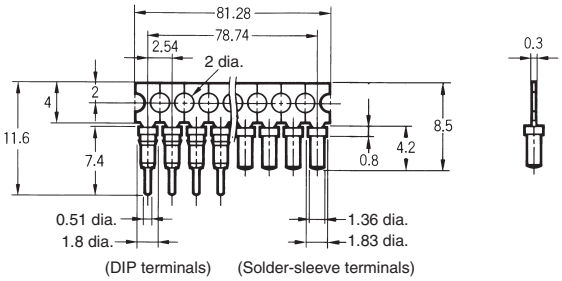
Appearance		Sockets with DIP terminals	Sockets with solder-sleeve terminals
			
No. of contacts	Row pitch (A) (mm)	With 0.75-μm gold plating	With 0.75-μm gold plating
8	7.62	XR2D-0801-N	XR2D-0804
14	7.62	XR2D-1401-N	XR2D-1404
16	7.62	XR2D-1601-N	XR2D-1604
18	7.62	XR2D-1801-N	XR2D-1804
20	7.62	XR2D-2001-N	XR2D-2004
24	15.24	XR2D-2401-N	XR2D-2404
28	15.24	XR2D-2801-N	XR2D-2804
32	15.24	XR2D-3201-N	XR2D-3204
40	15.24	XR2D-4001-N	XR2D-4004

XR2E Single-row Carrier Sockets

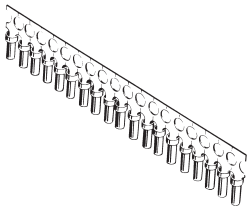
■ Dimensions

XR2E-3201-N
(With DIP terminals)

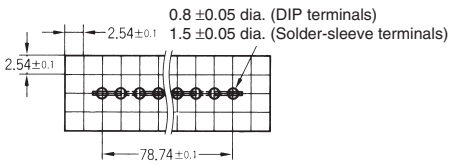




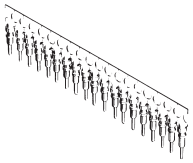
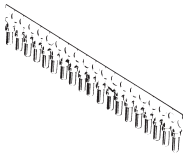
XR2E-3204
(With solder-sleeve terminals)



Mounting holes (bottom view)



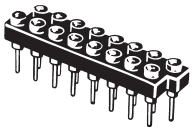
■ Ordering Information

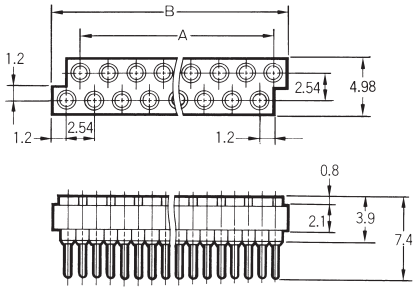
Appearance	Sockets with DIP Terminals	Sockets with Solder-sleeve Terminals
		
No. of contacts	With 0.75-μm gold plating	With 0.75-μm gold plating
32	XR2E-3201-N	XR2E-3204

XR2H ZIP (Zigzag) Sockets

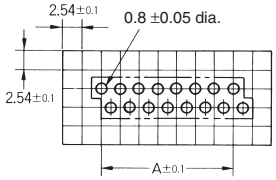
■ Dimensions

XR2H-□□11-N
(With DIP terminals)





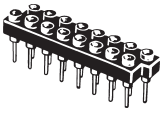
Mounting holes (bottom view)



Dimensions

No. of contacts	Dimensions (mm)	
	A	B
16	17.78	21.5
20	22.86	26.5
24	27.94	31.6
28	33.02	36.7

■ Ordering Information

Appearance	Sockets with DIP terminals
	
No. of contacts	With 0.25-μm gold plating
16	XR2H-1611-N
20	XR2H-2011-N
24	XR2H-2411-N
28	XR2H-2811-N

XR2P Single-row Round Pin Plugs

Single-row Round Pins for Low-profile Stacking

- Single row with 2.54-mm pitch.
- Low-profile stacking possible in combination with Single-row IC Sockets (XR2C).
- Easily divided into the desired number of contacts.

■ Ratings and Characteristics

Rated current	1 A
Rated voltage	300 VAC
Contact resistance (See note.)	20 mΩ max. (at 20 mV, 10 mA max.)
Insulation resistance	1,000 MΩ min. (at 500 VDC)
Dielectric strength	1,000 VAC for 1 min (leakage current: 1 mA max.)
Ambient operating temperature	–55 to 125°C (with no icing at low temperature)

Note: The contact and vibration resistance are the values when the Plug is mated with an XR2C.

■ Materials and Finish

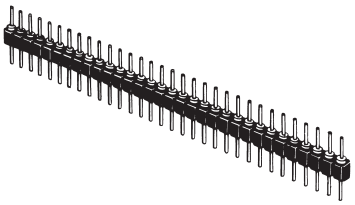
Base		Fiber-glass reinforced PBT resin (UL94V-0)/black
Contacts	**Mating end**	Brass/nickel base with 0.25-μm gold plating
	Terminal	

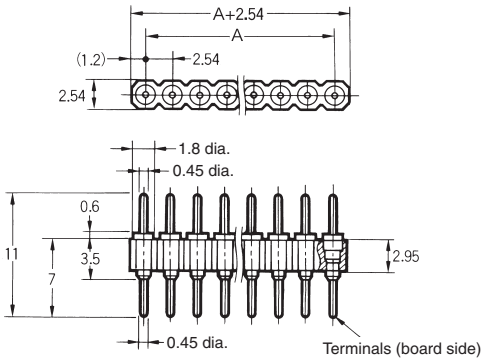
■ Applicable Sockets

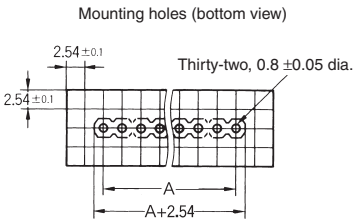
XR2C-□□11-N	IC Sockets (single row)
XR2C-3215	IC Socket (single row, low profile)

■ Dimensions

XR2P-□□41
(With DIP straight terminals)







Dimensions

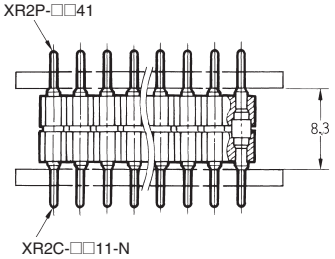
No. of contacts	A (mm)
10	22.86
16	38.1
20	48.26
32	78.74

■ Ordering Information

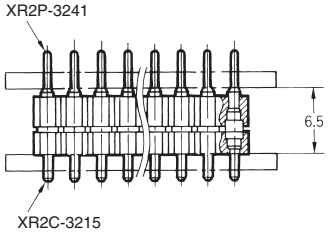
No. of contacts	Model
10	XR2P-1041
16	XR2P-1641
20	XR2P-2041
32	XR2P-3241

■ Mated Dimensions

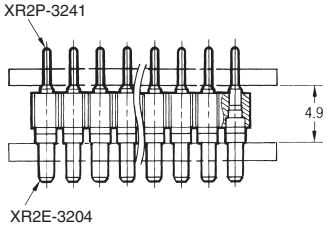
XR2P-□□41 with XR2C-□□11-N
Single-row IC Socket



XR2P-3241 with XR2C-3215
Single-row Low-profile IC Socket

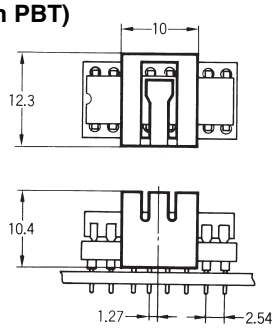


XR2P-3241 with XR2E-3204
Single-row Carrier Socket with Solder-sleeve Terminals

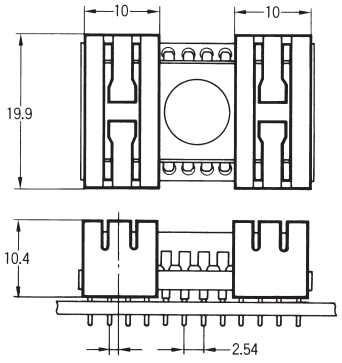


■ Tools and Accessories

XR2Z-11
IC Holder (made from PBT)



XR2Z-13

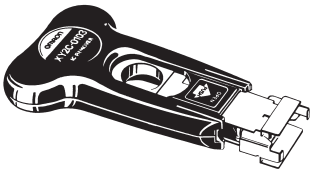


Note: Order the following models in multiples of the minimum order.

Model	No. of IC Socket contacts	IC socket width	Order in multiples of
XR2Z-11	14, 16, 18, 20, 24	7.62 m	100
XR2Z-13	24, 28, 32, 40, 42, 48	15.24 mm	500

Note: This Holder protects the IC from falling out due to shock. The IC will not fall out even with a 980 m/s^2 shock. Applicable IC height: 2.7 to 5.6 mm.

XY2C-0101
XY2C-0103
IC Removal Tool



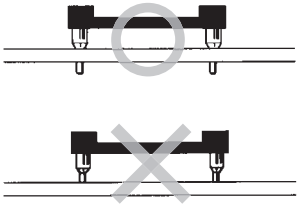
Model	No. of IC Socket contacts	IC socket width
XY2C-0101	14, 16, 18, 20	7.62 m
XY2C-0103	24, 28, 32, 40	15.24 mm

■ Precautions

Correct Use

Soldering

- When soldering, make sure that the outer sleeve of the IC Socket does not stick out of the circuit board through-holes.



- Make sure that no flux enters the IC Socket from the top.

Removing ICs

- Use the XY2C-0101 or XY2C-0103 IC Removal Tool to remove ICs.
- Do not use a screwdriver to remove the IC. It may damage the circuit board.
- Do not use a testing rod or check pin to check contacts or circuits. This may damage the inner clips or plating and may lead to improper contact.
- Four-point contact construction is used for plated products to make them more tolerant of momentary power interruptions. We recommend using gold-plated contacts in areas subject to vibration and shock.

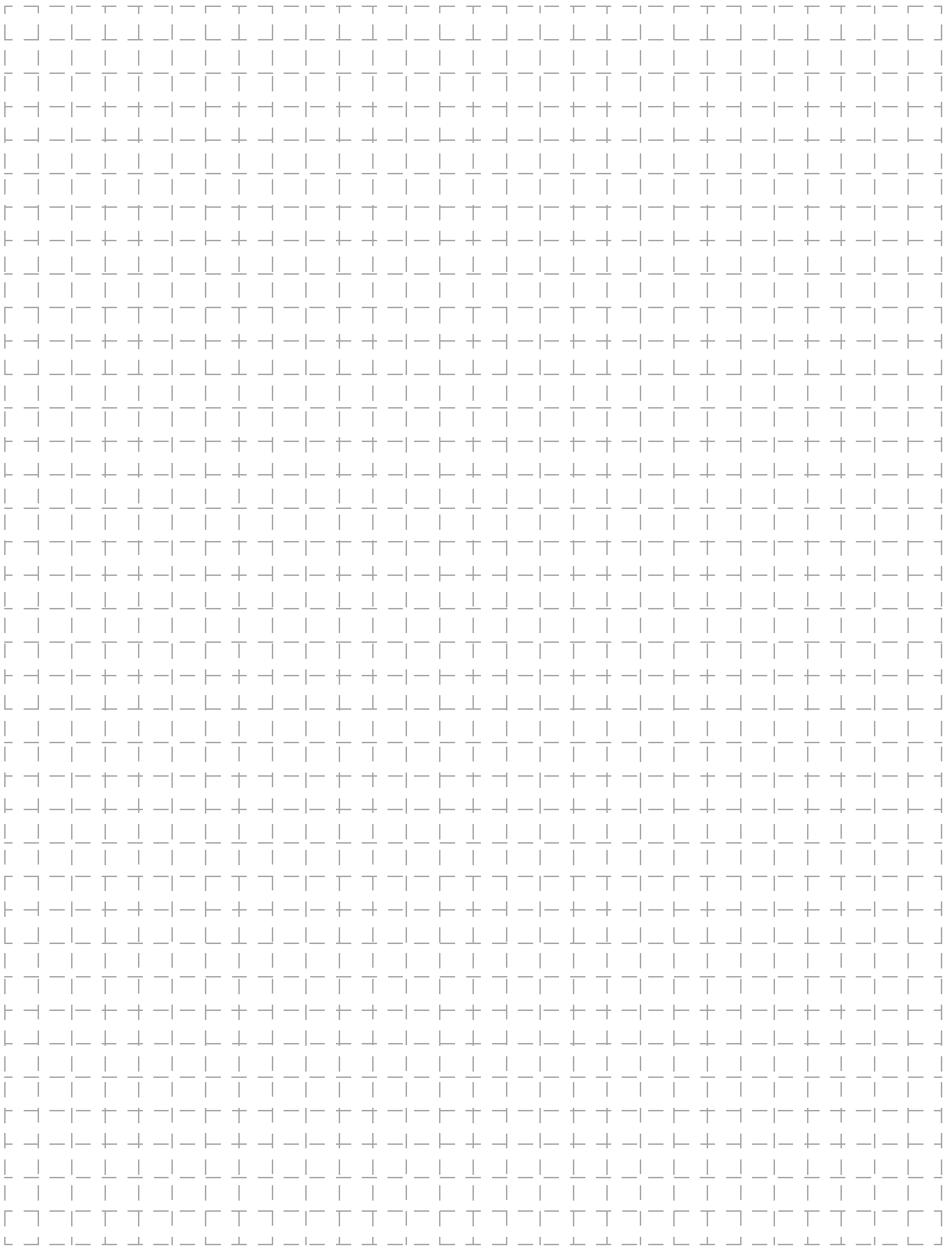
Automated Soldering Conditions (Jet Flow)

1. Soldering temperature: 250±5°C
2. Continuous soldering time: Within 5 s

Applicable IC Lead Dimensions

1. Use leads that are within the range shown here. For details, refer to the first page of this datasheet. Use an IC with leads longer than 3 mm. If the leads are too long, the IC will not sit flush on the board.
2. Use an IC with tapered leads for easy insertion, a minimum amount of bending, and minimum damage to the leads.

MEMO



Round Water-resistant Connectors (M12)
XS5

Water-resistant Smartclick Connectors That Reduce Installation Work

- A newly developed lock structure that maintains compatibility with conventional, screw-type M12 connectors.
- Simply insert the Connectors, then turn them approximately 1/8 of a turn to lock.
- A positive click indicates locking.
- Features the same degree of protection (IP67) as conventional, screw-type M12 connectors.
- Connector with cable are UL approved

■ Specifications

Rated current	4 A
Rated voltage	250 VDC
Contact resistance (connector)	40 mΩ max. (20 mV max., 100 mA max.)
Insulation resistance	1,000 MΩ min. (at 500 VDC)
Dielectric strength (connector)	1,500 VAC for 1 min. (leakage current: 1 mA max.)
Degree of protection	IP67 (IEC60529)
Insertion tolerance	50 times min.
Lock strength	Pulling: 100 N/15 s, Twisting: 1 N·m/15 s
Cable holding strength	100 N/15 s (for cable diameter of 6 mm)
Lock operating force	0.1 N·m to 0.25 N·m
Ambient operating temperature range	–25°C to 70°C

■ Recommended Cables

Cable outer diameter (mm)		Core sizes		
		Crimping models	**Soldering models**	**Screw-on models**
8 mm	7 to 8 mm	—	—	0.18 to 0.75mm²
7 mm	6 to 8 mm			
6 mm	5 to 6 mm	Two types of connectors are available. 0.18 to 0.3mm² 0.5 to 0.75mm²	0.5 mm² max.	
4 mm	4 to 5 mm			
3 mm	3 to 4 mm			

■ Materials and Finish

Item	**Model**	**XS5F/H/W/R**	**XS5M/P**	**XS5C/G**
Contacts	**Materials**	Phosphor bronze		Brass
	Finish	Nickel base, 0.4-μm gold-plating		
Fixtures		Nickel-plated zinc alloy		
Pin Block		PBT resin (UL94V-0)		
O-ring		Rubber		
Overmolding/Cover		Polyester elastomer	—	PBT resin (UL94V-0)
Cable	**Standard cable**	UL AWM2464, 6-mm dia. 4 cores × AWG20 (0.12/49)	—	
	Vibration-proof robot cable	UL CL3, 6-mm dia. 4 cores × AWG20 (0.08/110)	—	
	Oil-resistant polyurethane cable	6 dia. 4 cores × 0.5 mm² (0.12/45)	—	—
Seal Resin		—	Epoxy Resin (UL94V-0)	—
Power supply wires		—	UL 1007 AWG20	—

Note: 1. See "XS5/XS2 - Assembly Tooling and Accessories" datasheet for information regarding assembly, tooling and accessories that are common to the XS5 and XS2 connectors

2. See "XS2" datasheet for specifics regarding those connectors

■ Connection Combinations

OMRON model No.		**Smartclick Plug Connectors**	**M12 Plug Connectors**
		XS5H, XS5G, XS5M XS5W (plug side) XS5R (plug side)	**XS2H, XS2G, XS2M XS2W (plug side) XS2R (plug side)**
Smartclick Socket Connectors	**XS5F, XS5C, XS5P XS5W (socket side) XS5R, (socket side)**	◎	❍
M12 Socket Connectors	**XS2F, XS2C, XS2P XS2W (socket side) XS2R (socket side)**	❍	❍

◎: Connected by Smartclick™ twisting. ❍ : Connected by screwing.

Note: Smartclick™ is a registered trademark of the OMRON Corporation.

4-Pin Connectors with Cable Attached

■ XS5F - Socket on One Cable End

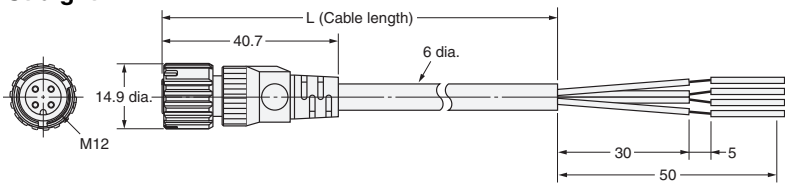
XS5F-D42□-□80-A Standard Cable
XS5F-D42□-□80-F Vibration-proof Robot Cable
XS5F-D42□-□80-P Oil-resistant Polyurethane Cable

c UL us (PENDING)
Smartclick™

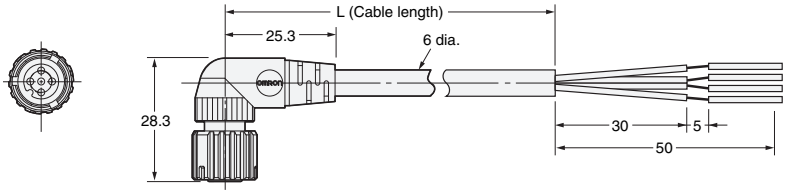
Dimensions

(Unit: mm)

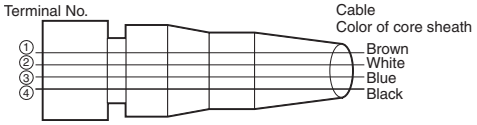
Straight



Angled



Wiring Diagram for 4 Cores



Note: The overmolding on the Standard Cable (XS5F-D42□-□80-A) and the Oil-resistant Polyurethane Cable (XS5F-D42□-□80-P)is black, and the overmolding on the Vibration-proof Robot Cable (XS5F-D42□-□80-F) is gray.

Ordering Information

Cable type	Cable length L (m)	Model		Standard pack quantity
		Straight	Angled	
Standard cable	1	**XS5F-D421-C80-A**	**XS5F-D422-C80-A**	10
	2	**XS5F-D421-D80-A**	**XS5F-D422-D80-A**	
	3	**XS5F-D421-E80-A**	**XS5F-D422-E80-A**	
	5	**XS5F-D421-G80-A**	**XS5F-D422-G80-A**	
	10	**XS5F-D421-J80-A**	**XS5F-D422-J80-A**	5
Vibration-proof robot cable	1	**XS5F-D421-C80-F**	**XS5F-D422-C80-F**	10
	2	**XS5F-D421-D80-F**	**XS5F-D422-D80-F**	
	3	**XS5F-D421-E80-F**	**XS5F-D422-E80-F**	
	5	**XS5F-D421-G80-F**	**XS5F-D422-G80-F**	
	10	**XS5F-D421-J80-F**	**XS5F-D422-J80-F**	5
Oil-resistant polyurethane cable	2	**XS5F-D421-D80-P**	**XS5F-D422-D80-P**	
	5	**XS5F-D421-G80-P**	**XS5F-D422-G80-P**	
	10	**XS5F-D421-J80-P**	**XS5F-D422-J80-P**	1

Note: Ask your OMRON representative about other specifications.

Model Number Legend

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

XS5F - D42□ - □80 - □
1 2 3 4 5 6 7 8 9

1. Type
- F: Connector connected to cable, socket on one cable end

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

3. Connector Poles
- 4: 4 poles

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

5. Cable Connection Direction
- 1: Straight
- 2: Angled

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

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

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

9. Cable Specification
- A: Standard cable
- F: Vibration-proof robot cable
- P: Oil-resistant polyurethane cable

■ XS5H - Plug on One Cable End

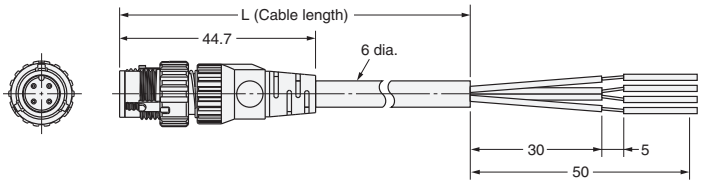
XS5H-D42□-□80-A Standard Cable
XS5H-D42□-□80-F Vibration-proof Robot Cable
XS5H-D42□-□80-P Oil-resistant Polyurethane Cable

c UL us (PENDING)
Smartclick™

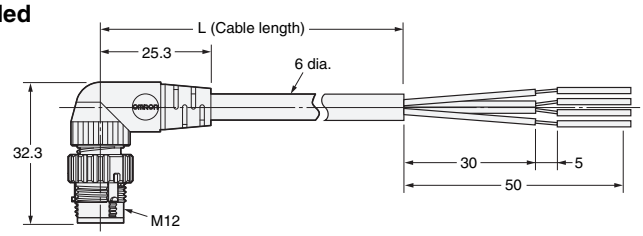
Dimensions

(Unit: mm)

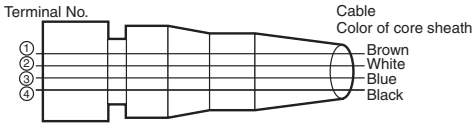
Straight



Angled



Wiring Diagram for 4 Cores



Note: The overmolding on the Standard Cable (XS5H-D42□-□80-A) and the Oil-resistant Polyurethane Cable (XS5H-D42□-□80-P) is black, and the overmolding of the Vibration-proof Robot Cable (XS5H-D42□-□81-F) is gray

Ordering Information

Cable type	Cable length L (m)	Model		Standard pack quantity
		Straight	Angled	
Standard cable	0.3	**XS5H-D421-A80-A**	**XS5H-D422-A80-A**	5
	1	**XS5H-D421-C80-A**	**XS5H-D422-C80-A**	
	2	**XS5H-D421-D80-A**	**XS5H-D422-D80-A**	
	5	**XS5H-D421-G80-A**	**XS5H-D422-G80-A**	
Vibration-proof robot cable	0.3	**XS5H-D421-A80-F**	**XS5H-D422-A80-F**	
	1	**XS5H-D421-C80-F**	**XS5H-D422-C80-F**	
	2	**XS5H-D421-D80-F**	**XS5H-D422-D80-F**	
	5	**XS5H-D421-G80-F**	**XS5H-D422-G80-F**	
Oil-resistant polyurethane cable	0.3	**XS5H-D421-A80-P**	**XS5H-D422-A80-P**	10
	2	**XS5H-D421-D80-P**	**XS5H-D422-D80-P**	5
	5	**XS5H-D421-G80-P**	**XS5H-D422-G80-P**	

Note: Ask your OMRON representative about other specifications.

Model Number Legend

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

XS5H - D42□ - □80 - □
1 2 3 4 5 6 7 8 9

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

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

3. Connector Poles
4: 4 poles

4. Contact Plating
2: 0.4-μm gold plating

5. Cable Connection Direction
1: Straight
2: Angled

6. Cable Length

A:	0.3 m	G:	5 m
B:	0.5 m	H:	7 m
C:	1 m	J:	10 m
D:	2 m	K:	15 m
E:	3 m	L:	20 m
F:	4 m		

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

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

9. Cable Specifications
A: Standard cable
F: Vibration-proof robot cable
P: Oil-resistant polyurethane cable

■ XS5W - Socket and Plug on Cable Ends

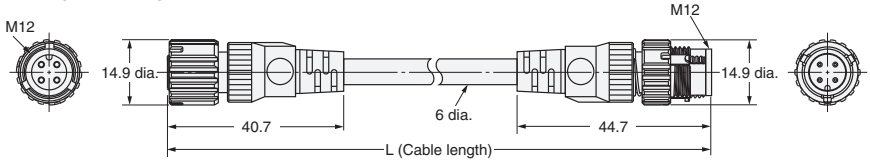
XS5W-D42□-□81-A Standard Cable
XS5W-D42□-□81-F Vibration-proof Robot Cable
XS5W-D42□-□81-P Oil-resistant Polyurethane Cable

c UL us (PENDING)
Smartclick™

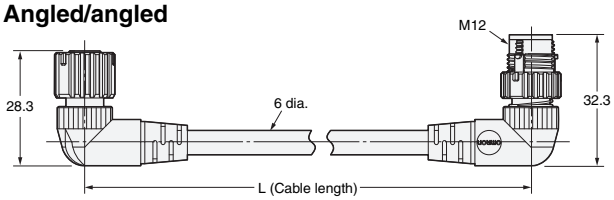
Dimensions

(Unit: mm)

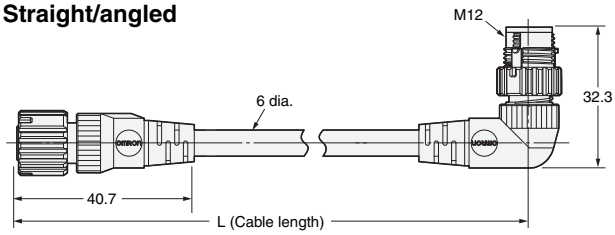
Straight/straight



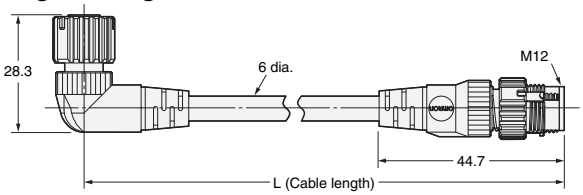
Angled/angled



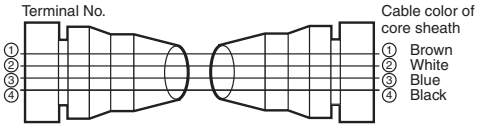
Straight/angled



Angled/straight



Wiring Diagram for 4 Cores



Note: The overmolding on the Standard Cable (XS5W-D42□-□81-A) and the Oil-resistant Polyerethane Cable (XS5W-D42□-□81-P) is black, and the overmolding of the Vibration-proof Robot Cable (XS5W-D42□-□81-F) is gray.

Ordering Information

Cable type	Cable length L (m)	Model		Standard pack quantity
		Straight/straight	Angled/angled	
Standard cable	1	**XS5W-D421-C81-A**	—	10
	2	**XS5W-D421-D81-A**	**XS5W-D422-D81-A**	
	3	**XS5W-D421-E81-A**	—	
	5	**XS5W-D421-G81-A**	**XS5W-D422-G81-A**	
	10	**XS5W-D421-J81-A**	—	5
Vibration-proof robot cable	1	**XS5W-D421-C81-F**	—	10
	2	**XS5W-D421-D81-F**	—	
	3	**XS5W-D421-E81-F**	—	
	5	**XS5W-D421-G81-F**	—	
	10	**XS5W-D421-J81-F**	—	5
Oil-resistant polyurethane cable	2	**XS5W-D421-D81-P**	—	5
	5	**XS5W-D421-G81-P**	—	
	10	**XS5W-D421-J81-P**	—	1

Cable type	Cable length L (m)	Model		Standard pack quantity
		Straight/angled	Angled/straight	
Standard cable	2	**XS5W-D423-D81-A**	**XS5W-D424-D81-A**	5
	5	**XS5W-D423-G81-A**	**XS5W-D424-G81-A**	

Note: Ask your OMRON representative about other specifications.

Model Number Legend

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

XS5W - D42□ - □81 - □
1 2 3 4 5 6 7 8 9

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

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

3. Connector Poles
4: 4 poles

4. Contact Plating
2: 0.4-μm gold plating

5. Cable Connection Directions
1: Straight/straight
2: Angled/angled
3: Straight (XS5F)/angled (XS5H)
4: Angled (XS5F)/straight (XS5H)

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

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

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

9. Cable Specifications
A: Standard cable
F: Vibration-proof robot cable
P: Oil-resistant polyurethane cable

4-Pin and 5-Pin Assembly Connector

■ XS5C Sockets

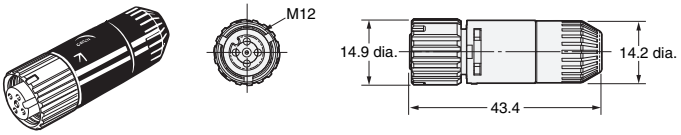
c UL us (PENDING)

Smartclick™

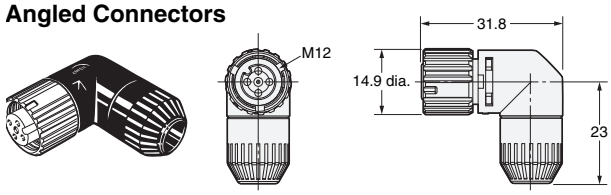
Dimensions

(Unit: mm)

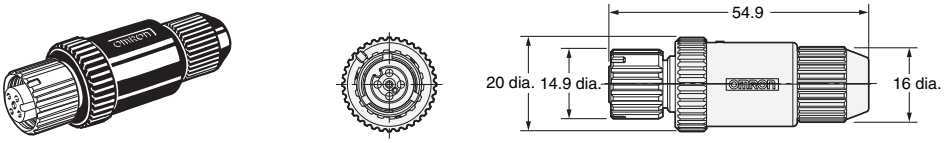
XS5C-D4C□ (Crimping Model)
XS5C-D42□ (Soldering Model)
Straight Connectors



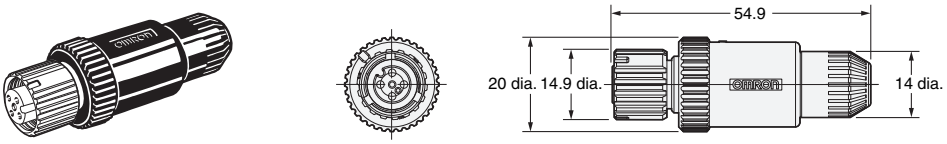
XS5C-D4C□ (Soldering Model)
XS5C-D42□ (Soldering Model)
Angled Connectors



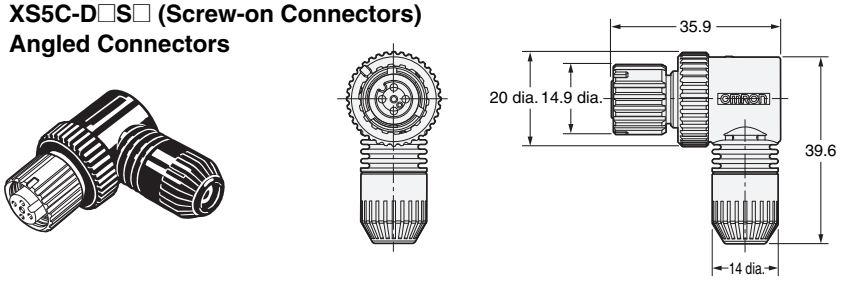
XS5C-D□S□ (Screw-on Connectors, Applicable Cable Outer Diameter: 7 or 8mm)
Straight Connectors



XS5C-D□S□ (Screw-on Connectors, Applicable Cable Outer Diameter: 3, 4, or 6mm)
Straight Connectors



XS5C-D□S□ (Screw-on Connectors)
Angled Connectors



Ordering Information

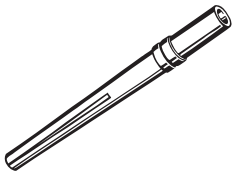
No. of Poles	Connection Method	Suitable cable dia. (mm)	Model		Standard pack quantity
			Straight	Angled	
4	Crimping	6 mm (5 to 6)	**XS5C-D4C1**	**XS5C-D4C2**	10
		4 mm (4 to 5)	**XS5C-D4C3**	**XS5C-D4C4**	
		3 mm (3 to 4)	**XS5C-D4C5**	**XS5C-D4C6**	
	Soldering	6 mm (5 to 6)	**XS5C-D421**	**XS5C-D422**	
		4 mm (4 to 5)	**XS5C-D423**	**XS5C-D424**	
		3 mm (3 to 4)	**XS5C-D425**	**XS5C-D426**	
	Screw-on	6 mm (5 to 6)	**XS5C-D4S1**	**XS5C-D4S2**	
		4 mm (4 to 5)	**XS5C-D4S3**	**XS5C-D4S4**	
		3 mm (3 to 4)	**XS5C-D4S5**	**XS5C-D4S6**	
		8 mm (7 to 8)	**XS5C-D4S7**	—	
		7 mm (6 to 7)	**XS5C-D4S9**	—	
5	Screw-on	6 mm (5 to 6)	**XS5C-D5S1**	—	
		4 mm (4 to 5)	**XS5C-D5S3**	—	
		3 mm (3 to 4)	**XS5C-D5S5**	—	
		8 mm (7 to 8)	**XS5C-D5S7**	—	
		7 mm (6 to 7)	**XS5C-D5S9**	—	

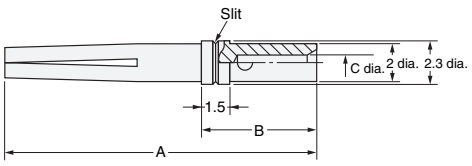
■ XS5U
(Crimping pin for XS5C)

Dimensions

(Unit: mm)

XS5U-222□
Socket Pin





Dimensions

Model	Suitable core size (mm^2)	Dimension (mm)			No. of slits
		A	B	C	
XS5U-2221	0.18 to 0.3 (22 to 24 AWG)	16.7	6.1	0.8	1
XS5U-2222	0.5 to 0.7 (18 to 20 AWG)	16.8	6.2	1.3	0

Note: 1. A special tool must be used for crimping. For details, refer to the "XS5/XS2 - Assembly Tooling and Accessories" datasheet.
2. AWG size is based on UL1007 wire.

Ordering Information

Suitable core size (mm2)	Model	Standard Pack Quantity
0.18 to 0.3	**XS5U-2221**	100
0.5 to 0.75	**XS5U-2222**	

■ XS5G - Plugs

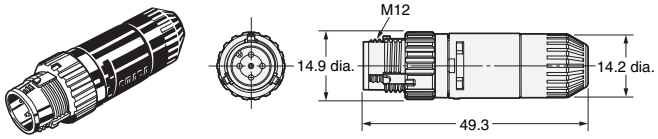
c UL us (PENDING)

Smartclick™

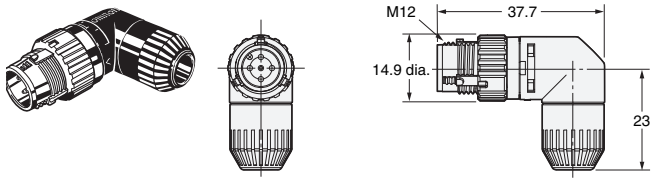
Dimensions

(Unit: mm)

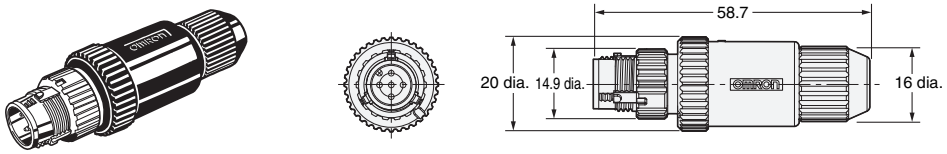
XS5G-D4C□ (Crimping Model)
XS5G-D42□ (Soldering Model)
Straight Connectors



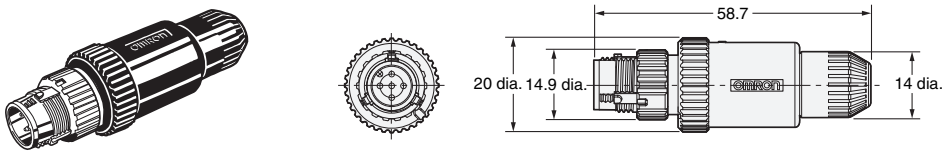
XS5G-D42□ (Soldering Model)
Angled Connectors



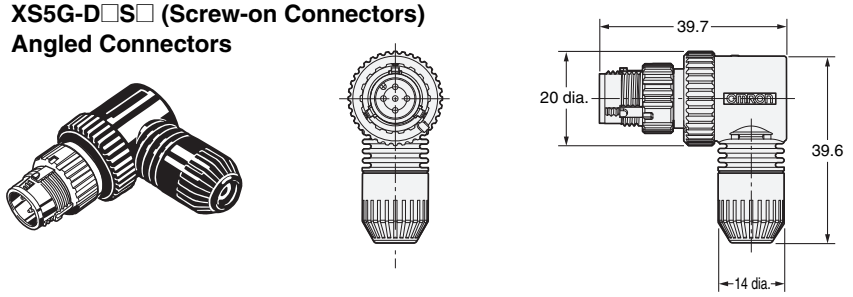
XS5G-D□S□ (Screw-on Connectors, Applicable Cable Outer Diameter: 7 or 8mm)
Straight Connectors



XS5G-D□S□ (Screw-on Connectors, Applicable Cable Outer Diameter: 3, 4, or 6mm)
Straight Connectors



XS5G-D□S□ (Screw-on Connectors)
Angled Connectors



Ordering Information

No. of Poles	Connection Method	Suitable cable dia. (mm)	Model		Standard pack quantity
			Straight	Angled	
4	Crimping	6 mm (5 to 6)	**XS5G-D4C1**	—	10
		4 mm (4 to 5)	**XS5G-D4C3**	—	
		3 mm (3 to 4)	**XS5G-D4C5**	—	
	Soldering	6 mm (5 to 6)	**XS5G-D421**	**XS5G-D422**	
		4 mm (4 to 5)	**XS5G-D423**	**XS5G-D424**	
		3 mm (3 to 4)	**XS5G-D425**	**XS5G-D426**	
	Screw-on	6 mm (5 to 6)	**XS5G-D4S1**	**XS5G-D4S2**	
		4 mm (4 to 5)	**XS5G-D4S3**	**XS5G-D4S4**	
		3 mm (3 to 4)	**XS5G-D4S5**	**XS5G-D4S6**	
		8 mm (7 to 8)	**XS5G-D4S7**	—	
		7 mm (6 to 7)	**XS5G-D4S9**	—	
5	Screw-on	6 mm (5 to 6)	**XS5G-D5S1**	—	
		4 mm (4 to 5)	**XS5G-D5S3**	—	
		3 mm (3 to 4)	**XS5G-D5S5**	—	
		8 mm (7 to 8)	**XS5G-D5S7**	—	
		7 mm (6 to 7)	**XS5G-D5S9**	—	

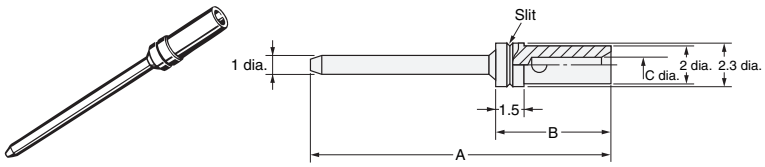
Note: XS5G Screw-on Plugs cannot be connected side-by-side to the CN1 and CN2 connectors of XS2R or XS5R Y-Joint Sockets / Plugs

■ XS5U
(Crimping pin for XS5G)

Dimensions

(Unit: mm)

XS5U-312□
Plug Pin



Dimensions

Model	Suitable core size (mm^2)	Dimension (mm)			No. of slits
		A	B	C	
XS5U-3121	0.18 to 0.3 (22 to 24 AWG)	22.6	6.1	0.8	1
XS5U-3122	0.5 to 0.7 (18 to 20 AWG)	22.7	6.2	1.3	0

Note: 1. A special tool must be used for crimping. For details, refer to the "XS5/XS2 - Assembly Tooling and Accessories" datasheet.
2. AWG size is based on UL1007 wire.

Ordering Information

Suitable core size (mm2)	Model	Standard Pack Quantity
0.18 to 0.3	**XS5U-3121**	100
0.5 to 0.75	**XS5U-3122**	

4-Pin Y-Joint Plug/Socket Connectors

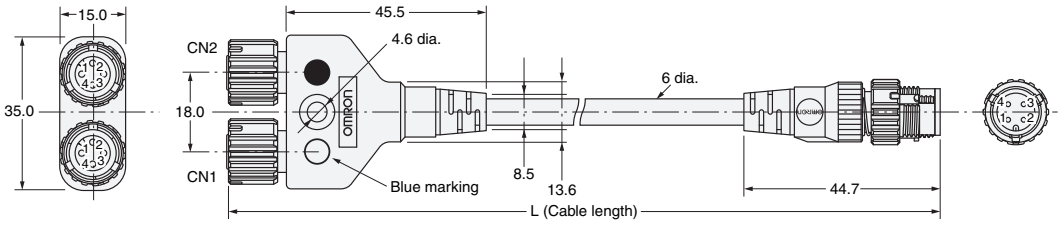
■ XS5R

Smartclick™

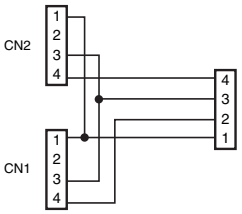
Dimensions

(Unit: mm)

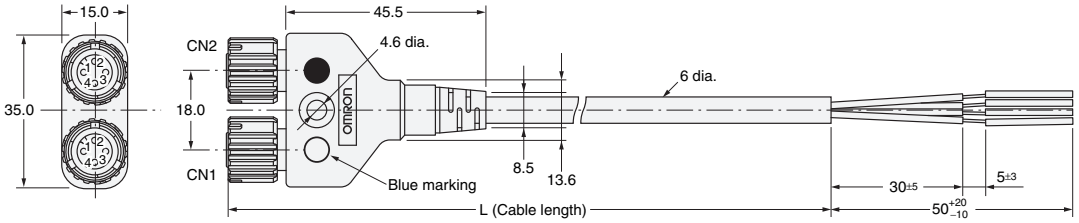
XS5R-D426-□11-F
Connectors on Both Ends (Y-Joint Plug/Socket)



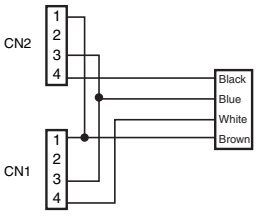
Wiring Diagram



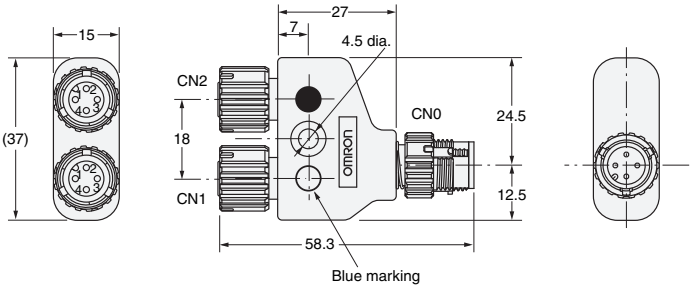
XS5R-D426-□10-F
Connectors on One Cable End (Y-Joint Socket)



Wiring Diagram

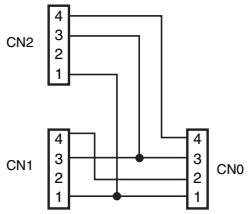


XS5R-D426-□
Y-Joint Plug/Socket without Cable

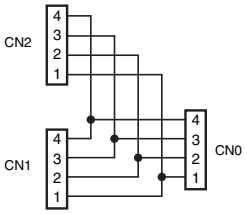


Wiring Diagram

XS5R-D426-1



XS5R-D426-5



Ordering Information

Cable	Connector	Cable length (m)	Model	Standard pack quantity
With cable	Connectors on both cable ends	0.5	**XS5R-D426-B11-F**	5
		1	**XS5R-D426-C11-F**	
		2	**XS5R-D426-D11-F**	
		3	**XS5R-D426-E11-F**	
	Connector on one cable end	2	**XS5R-D426-D10-F**	
		5	**XS5R-D426-G10-F**	
With no cable	Y-Joint Plug/Socket	---	**XS5R-D426-1**	10
			XS5R-D426-5	

Note: XS2G and XS5G Assembled Connectors with screw connections cannot be connected to both CN1 and CN2 at the same time.

4-Pin Panel-mount Connectors

■ XS5P - Sockets

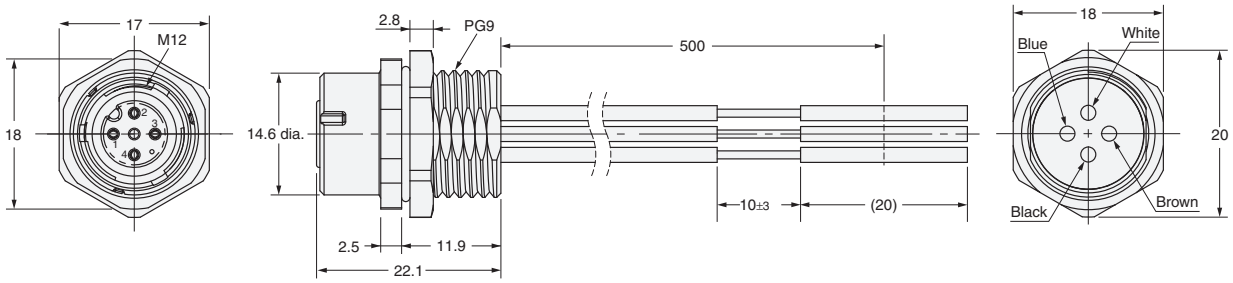
c UL us

Smartclick™

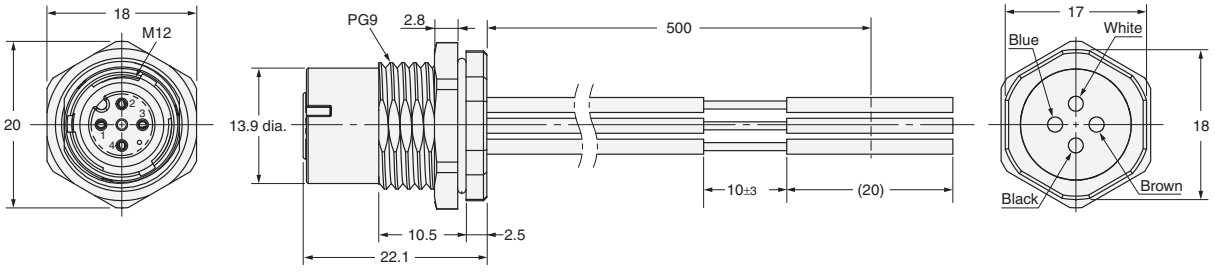
Dimensions

(Unit: mm)

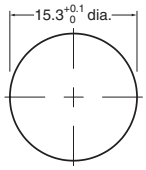
XS5P-D426-5
Front Panel-mounting Sockets for Rear Lock Nuts



XS5P-D427-5
Rear Panel-mounting Sockets for Front Lock Nuts



Panel Cutout



Panel Cutout Dimension
Panel thickness = 1 to 4 mm

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

Wiring and Wire Specifications

Wiring

Pin number	Color
1	Brown
2	White
3	Blue
4	Black

Wire Specifications

Item		Specification
Specification		UL1007
Nominal size		AWG20
Configuration	Number of wires	21
	Wire diameter	0.18
	Standard outer diameter	1.8

Ordering Information

Type	Lock	Cable length (m)	Model	Standard pack, quantity
With cable	Rear lock	0.5	**XS5P-D426-5**	10
	Front lock		**XS5P-D427-5**	

■ XS5M - Plugs

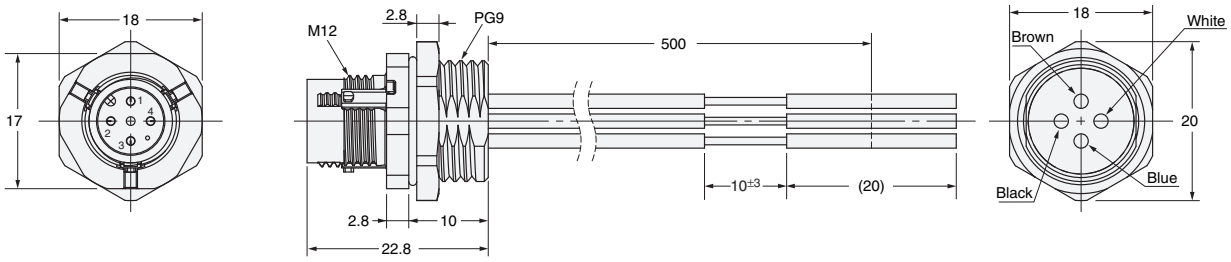
c UL us

Smartclick™

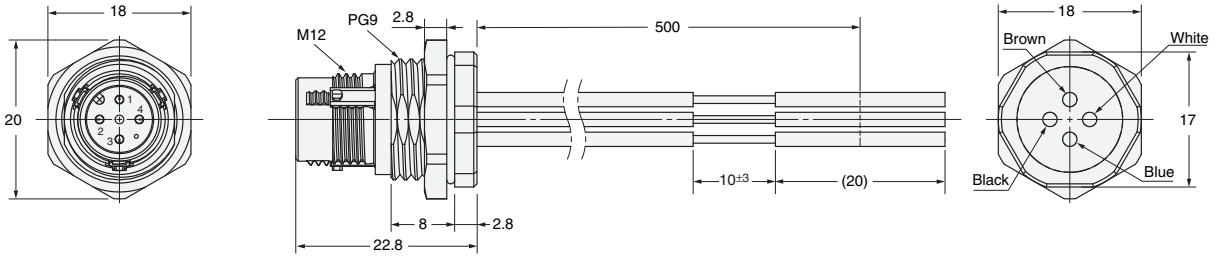
Dimensions

(Unit: mm)

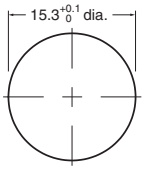
XS5M-D426-5
Front Panel-mounting Plugs for Rear Lock Nuts



XS5M-D427-5
Rear Panel-mounting Plugs for Front Lock Nuts



Panel Cutout



Panel Cutout Dimension
Panel thickness = 1 to 4 mm

Note: 1. The panel cutout dimension is the same for Front-locking and Rear-locking Sockets.

2. Rotational positioning is not possible for connector rotation.

Wiring and Wire Specifications

Wiring

Pin number	Color
1	Brown
2	White
3	Blue
4	Black

Wire Specifications

Item		Specification
Specification		UL1007
Nominal size		AWG20
Configuration	Number of wires	21
	Wire diameter	0.18
	Standard outer diameter	1.8

Ordering Information

Type	Lock	Cable length (m)	Model	Standard pack, quantity
With cable	Rear lock	0.5	XS5M-D426-5	10
	Front lock		XS5M-D427-5	

Precautions

Note: 1. See "XS5/XS2 - Assembly Tooling and Accessories" datasheet for information and precautions regarding assembly, tooling and accessories that are common to the XS5 and XS2 connectors

2. See "XS2" datasheet for specifics regarding those connectors

■ Correct Use

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

Connector Connection and Disconnection

- When connecting or disconnecting Connectors, be sure to hold the Connectors by hand.
- Do not hold the cable when disconnecting Connectors.
- When mating Connectors, be sure to insert the plug all the way to the back of the socket before attempting to lock the Connectors.
- Do not use tools of any sort to mate the Connectors. Always use your hands. Pliers or other tools may damage the Connectors.
- When mating the Connectors to XS2 or other M12 Connectors, tighten the lock by hand to a torque of 0.39 to 0.49 N·m.

Wiring

- Always confirm wiring diagrams before wiring sensors, limit switches, or other devices.
- Lay the cables so that external force is not applied to the Connectors. Otherwise, the degree of protection (IP67) may not be achieved.

Degree of Protection

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

■ General Precautions

- Do not pull excessively on the Connectors or cables. Do not install the Connectors or cables in any way that would place a load directly on the mating section or cable connections. Doing so can damage the Connectors or break the wires inside the cables.
- Install the Connectors and cables where they will not be stepped on to prevent the wires inside the cables from being broken and to prevent the Connectors from being damaged. If the Connectors or cables must be installed where they might be stepped on, protect them with covers.
- Refer to the specifications for your cables before bending the cables and do not bend them past their minimum bending radius.
- If sensors or switches are not attached during installation, protect the mating surface of the Connector with a XS2Z-22 Waterproof Cover of XS2Z-14/15 Dust Cover.

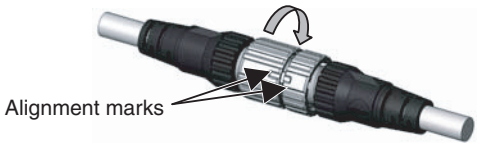
■ Connecting the XS5

1. Connecting the XS5 Plug and Socket

- Align the projection on the plug cover with the polarity key on the socket, then insert the plug all the way in.

- Hold the knurled socket grip, then insert the projection on the plug into the groove of the socket.

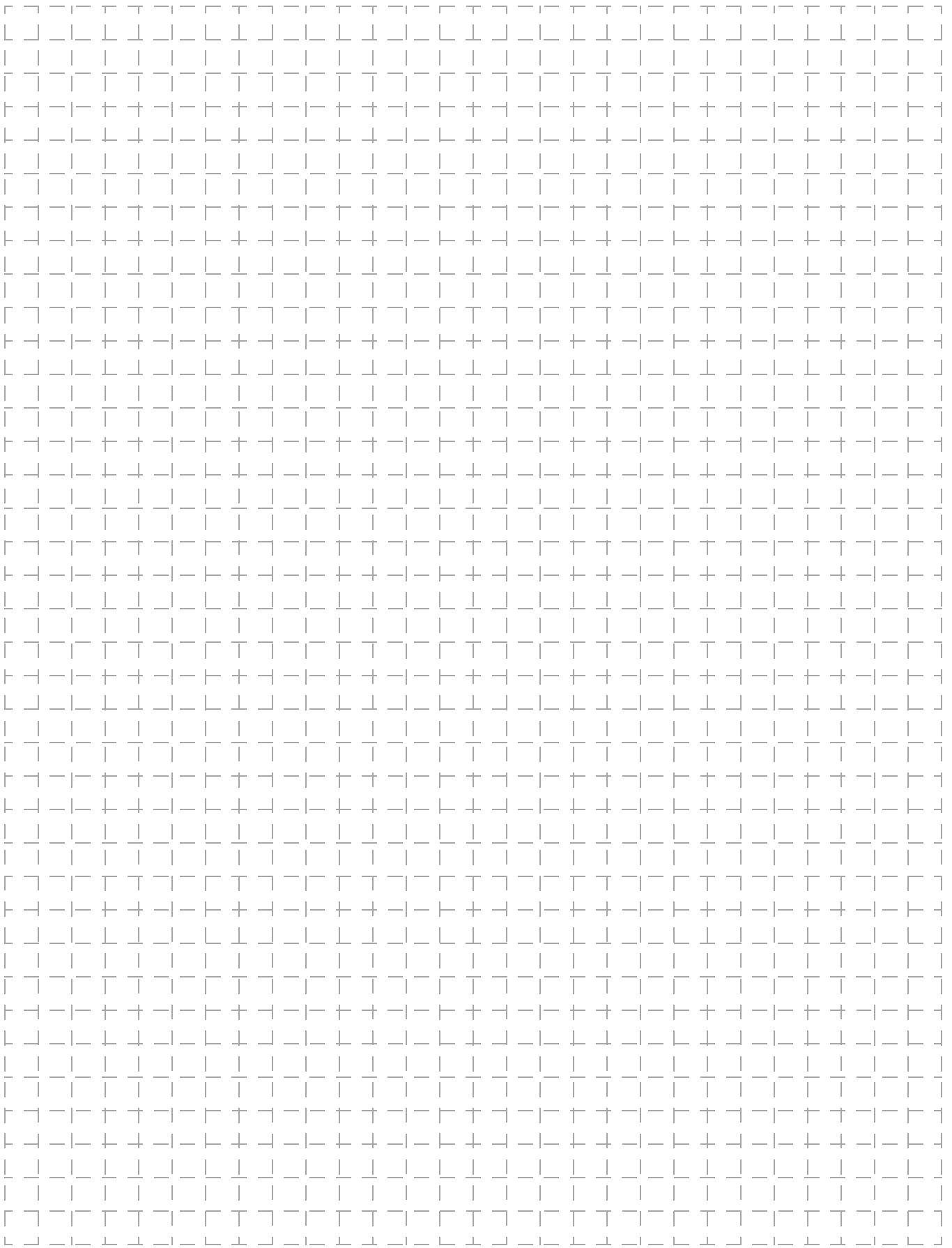
- Turn the knurled grips of the socket clockwise approximately 45 degrees in respect to the plug. A click will indicate that the Connectors are locked. The locking condition can also be confirmed by the alignment marks on the plug and socket.



2. Connecting the XS5 and XS2

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

MEMO



Round Water-resistant Connectors (M12)
XS2

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

- Compact FA connectors satisfy IP67 requirements and ensure a 94V-0 fire retardant rating.
- A wide array of connectors makes a wiring system more modular, simplifies maintenance, and reduces downtime.
- Connectors with Cables and Connector Assemblies are available.
- Three types of Connector Assembly: Crimping, soldering, and screw-on.

■ Ratings and Specifications

Item	4,5 Poles	8 Poles
Rated current	4 A	1.5 A
Rated voltage	125 VDC, 250 VAC	36 VDC
Contact resistance	40 mΩ max. (20 mV max., 100 mA max.)	
Insulation resistance	1,000 MΩ min. (at 500 VDC)	
Dielectric strength (leakage current: 1 mA max.)	1,500 VAC for 1 min	1,000 VAC for 1 min
Degree of protection	IP67 (IEC60529)	
Insertion tolerance	200 times min.	

■ Material

Contact / Surface	Copper Alloy / Nickel base, Au 0.4 μm
Connector housing	PBT resin (UL94V-0)
Nut / Surface	Copper Alloy / Nickel plated
Cover (XS2F/H/W/R)	PBT resin (UL94V-0)
Body (XS2C/G)	PBT resin (UL94V-0)

■ PVC Cable

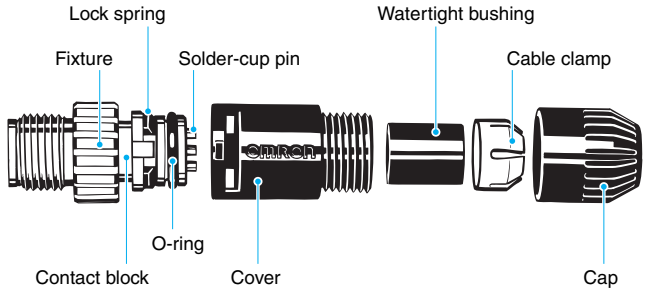
Item	3 cores	4 cores	5 cores	8 cores
Color	Black			Light Grey
Outer diameter	5 mm dia.	5.4 mm dia.	5.8 mm dia.	6 mm dia.
Conductor size	AWG22 0.34 mm² (43 × 0.1)			0.25 mm² (20 × 0.127)
Approvals	AWM			—
Features	Flame retardant			—
Temperature range	Cable fixed: -10 to +80°C / Cable moved: -0 to +60°C			-25°C to +70°C

■ PUR Cable

Item	3 cores	4 cores	5 cores
Color	Black		
Outer diameter	4.3 mm dia.	4.7 mm dia.	5 mm dia.
Conductor size	AWG22 0.34 mm² (43 × 0.1)		
Approvals	AWM		
Features	Flame retardant Halogen free Oil resistance		
Temperature range	Cable fixed: -50 to +80°C / Cable moved: -25 to +80°C		

■ Construction

(XS2G Soldering Plug Connector Assembly)



Note: 1. See "XS5/XS2 - Assembly Tooling and Accessories" datasheet for information regarding assembly, tooling and accessories that are common to the XS5 and XS2 connectors

2. See "XS5" datasheet for specifics regarding those connectors

4-Pin and 5-Pin Connectors with Cable Attached

■ XS2F - Socket on One Cable End

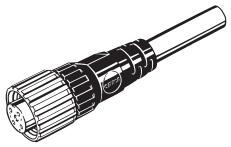
XS2F-M12PVC□□□□M PVC Cable
XS2F-M12PUR□□□□M PUR Cable

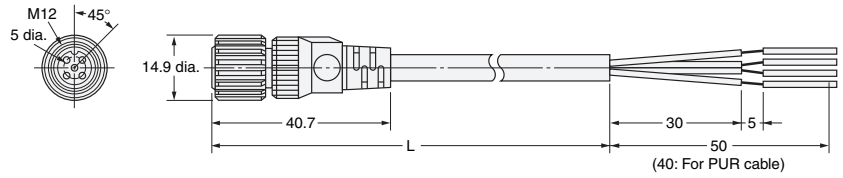
c UL us (PENDING)

Dimensions

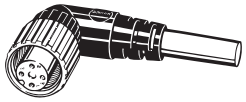
(Unit: mm)

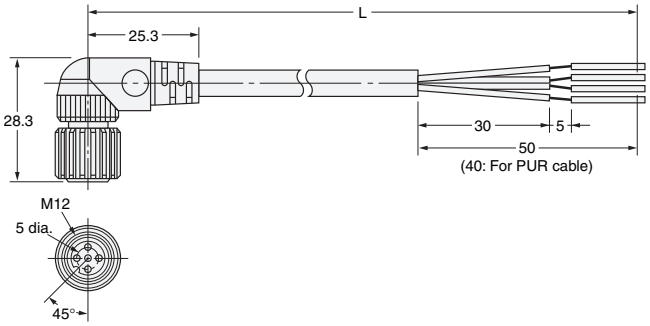
Straight



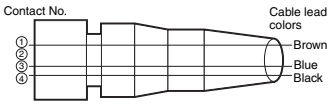
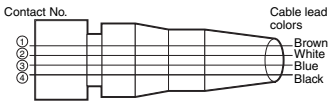
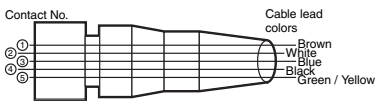


Angled





Wiring Diagram

3 cores	4 cores	5 cores
		

Ordering Information

Connector	Size	Cable material	Cores	Shape	Length (m)	Product description
Socket	M12	PVC	3	Angled	2	**XS2F-M12PVC3A2M**
					5	**XS2F-M12PVC3A5M**
					10	**XS2F-M12PVC3A10M**
				Straight	2	**XS2F-M12PVC3S2M**
					5	**XS2F-M12PVC3S5M**
					10	**XS2F-M12PVC3S10M**
			4	Angled	2	**XS2F-M12PVC4A2M**
					5	**XS2F-M12PVC4A5M**
					10	**XS2F-M12PVC4A10M**
				Straight	2	**XS2F-M12PVC4S2M**
					5	**XS2F-M12PVC4S5M**
					10	**XS2F-M12PVC4S10M**
			5	Angled	2	**XS2F-M12PVC5A2M**
					5	**XS2F-M12PVC5A5M**
				Straight	2	**XS2F-M12PVC5S2M**
					5	**XS2F-M12PVC5S5M**
		PUR	3	Angled	2	**XS2F-M12PUR3A2M**
					5	**XS2F-M12PUR3A5M**
					10	**XS2F-M12PUR3A10M**
				Straight	2	**XS2F-M12PUR3S2M**
					5	**XS2F-M12PUR3S5M**
					10	**XS2F-M12PUR3S10M**
			4	Angled	2	**XS2F-M12PUR4A2M**
					5	**XS2F-M12PUR4A5M**
					10	**XS2F-M12PUR4A10M**
				Straight	2	**XS2F-M12PUR4S2M**
					5	**XS2F-M12PUR4S5M**
					10	**XS2F-M12PUR4S10M**
			5	Angled	2	**XS2F-M12PUR5A2M**
					5	**XS2F-M12PUR5A5M**
				Straight	2	**XS2F-M12PUR5S2M**
					5	**XS2F-M12PUR5S5M**

Model Number Legend

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

XS2F - M12 □□□ □ □ □□M
1 2 3 4 5

1. Screw Type
M12: M12 size

2. Cable type
PVC: PVC cable
PUR: PUR cable

3. Number of Cores
3: 3 cores
4: 4 cores
5: 5 cores

4. Shape
A: Angled
S: Straight

5. Cable Length
2M: 2 m
5M: 5 m
10M: 10 m

■ XS2H - Plugs on One Cable End

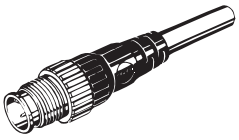
XS2H-M12PVC□S□□M PVC Cable
XS2H-M12PUR□S□□M PUR Cable

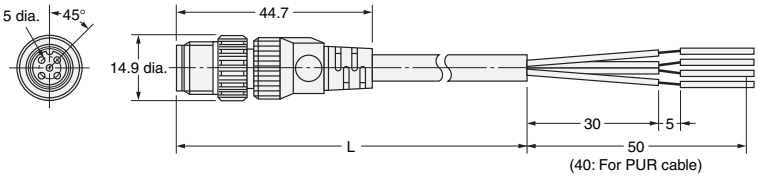
c UL us (PENDING)

Dimensions

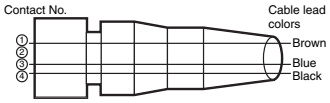
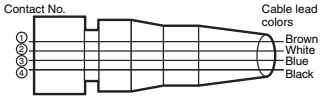
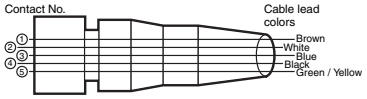
(Unit: mm)

Straight





Wiring Diagram

3 cores	4 cores	5 cores
		

Ordering Information

Connector	Size	Cable material	Cores	Shape	Length (m)	Product description
Plug	M12	PVC	3	Straight	2	**XS2H-M12PVC3S2M**
					5	**XS2H-M12PVC3S5M**
					10	**XS2H-M12PVC3S10M**
			4		2	**XS2H-M12PVC4S2M**
					5	**XS2H-M12PVC4S5M**
					10	**XS2H-M12PVC4S10M**
			5		2	**XS2H-M12PVC5S2M**
					5	**XS2H-M12PVC5S5M**
		PUR	3		2	**XS2H-M12PUR3S2M**
					5	**XS2H-M12PUR3S5M**
					10	**XS2H-M12PUR3S10M**
			4		2	**XS2H-M12PUR4S2M**
					5	**XS2H-M12PUR4S5M**
					10	**XS2H-M12PUR4S10M**
			5		2	**XS2H-M12PUR5S2M**
					5	**XS2H-M12PUR5S5M**

Model Number Legend

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

XS2H - M12 □□□ □S □□M
1 2 3 4 5

1. **Screw Type**
   M12: M12 size
2. **Cable type**
   PVC: PVC cable
   PUR: PUR cable
3. **Number of Poles**
   3: 3 cores
   4: 4 cores
   5: 5 cores
4. **Shape**
   S: Straight
5. **Cable Length**
   2M: 2 m
   5M: 5 m
   10M: 10 m

■ XS2W - Socket and Plug on Cable Ends

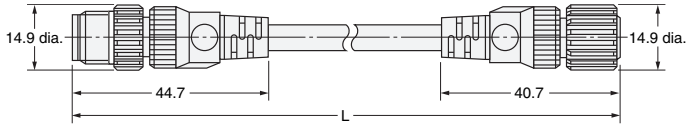
XS2W-M12PVC□SS□□M PVC Cable
XS2W-M12PUR□SS□□M PUR Cable

(PENDING)

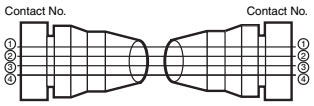
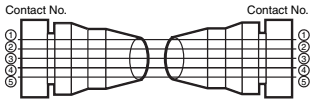
Dimensions

(Unit: mm)

Straight/Straight



Wiring Diagram

4 cores	5 cores
	

Ordering Information

Connector	Size	Cable material	Cores	Shape		Length (m)	Product description
				Plug	Socket		
Both	M12	PVC	4	Straight	Straight	2	**XS2W-M12PVC4SS2M**
						5	**XS2W-M12PVC4SS5M**
						10	**XS2W-M12PVC4SS10M**
			5			2	**XS2W-M12PVC5SS2M**
						5	**XS2W-M12PVC5SS5M**
						10	**XS2W-M12PVC5SS10M**
		PUR	4			2	**XS2W-M12PUR4SS2M**
						5	**XS2W-M12PUR4SS5M**
						10	**XS2W-M12PUR4SS10M**
			5			2	**XS2W-M12PUR5SS2M**
						5	**XS2W-M12PUR5SS5M**
						10	**XS2W-M12PUR5SS10M**

Model Number Legend

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

XS2W - M12 □□□ □SS □□M
1 2 3 4 5

1. **Screw Type**
   M12: M12 size
2. **Cable type**
   PVC: PVC cable
   PUR: PUR cable
3. **Number of Poles**
   4: 4 cores
   5: 5 cores
4. **Shape**
   SS: Straight / Straight
5. **Cable Length**
   2M: 2 m
   5M: 5 m
   1M: 10 m

4-Pin and 5-Pin Assembly Connector

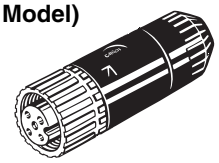
■ XS2C - Sockets, Crimping / Soldering Terminals

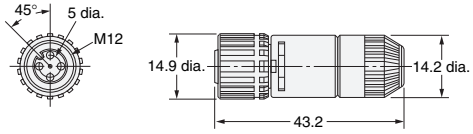
c UL us (PENDING)

Dimensions

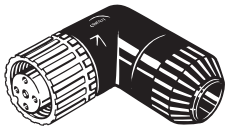
(Unit: mm)

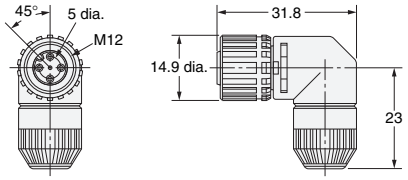
XS2C-□4C□ (Crimping Model)
XS2C-□42□ (Soldering Model)
Straight





Angled





Ordering Information

Suitable cable dia. (mm)	Cable connection direction	Connection method	Model	Minimum order
6-mm-dia. model (5 to 6 mm dia.)	Straight	Crimping	**XS2C-D4C1**	50
		Soldering	**XS2C-D421**	
	Angled	Crimping	**XS2C-D4C2**	
		Soldering	**XS2C-D422**	
4-mm-dia. model (4 to 5 mm dia.)	Straight	Crimping	**XS2C-D4C3**	
		Soldering	**XS2C-D423**	
	Angled	Crimping	**XS2C-D4C4**	
		Soldering	**XS2C-D424**	
3-mm-dia. model (3 to 4 mm dia.)	Straight	Crimping	**XS2C-D4C5**	
		Soldering	**XS2C-D425**	
	Angled	Crimping	**XS2C-D4C6**	
		Soldering	**XS2C-D426**	

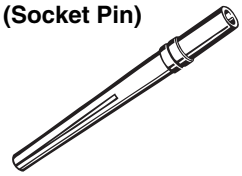
Note: Crimping plug contacts are sold separately.

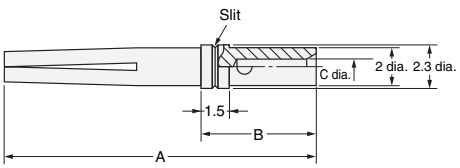
■ XS2U (Crimping Pin for XS2C)

Dimensions

(Unit: mm)

XS2U-222□ (Socket Pin)





Dimensions

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

Note: A special tool must be used for crimping. For details, refer to the “XS5/XS2 - Assembly Tooling and Accessories” datasheet.

Ordering Information

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

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

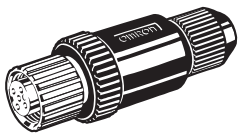
■ XS2C - Sockets, Screw Terminals

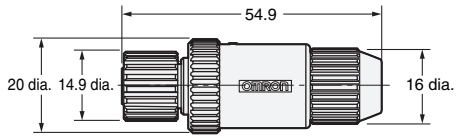
c UL us (PENDING)

Dimensions

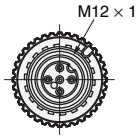
(Unit: mm)

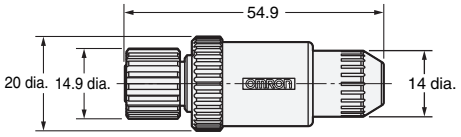
XS2C-D5S7 (5-core, Straight, Applicable Cable Outer Diameter: 8 mm)
XS2C-D5S9 (5-core, Straight, Applicable Cable Outer Diameter: 7 mm)
XS2C-D4S7 (4-core, Straight, Applicable Cable Outer Diameter: 8 mm)
XS2C-D4S9 (4-core, Straight, Applicable Cable Outer Diameter: 7 mm)



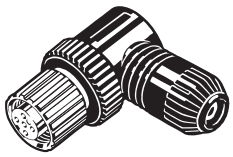
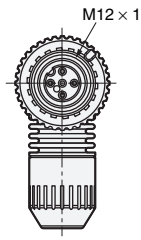


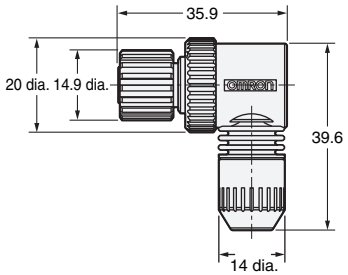
XS2C-D5S1 (5-core, Straight, Applicable Cable Outer Diameter: 6 mm)
XS2C-D4S□ (4-core, Straight, Applicable Cable Outer Diameter: 3, 4, or 6 mm)



XS2C-D5S2 (5-core, Angled, Applicable Cable Outer Diameter: 6 mm)
XS2C-D4S□ (4-core, Angled, Applicable Cable Outer Diameter: 3, 4, or 6 mm)



Ordering Information

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

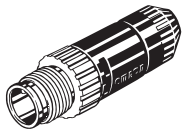
■ XS2G - Plugs, Crimping / Soldering Terminals

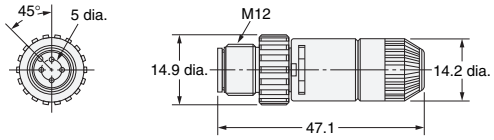
c UL us (PENDING)

Dimensions

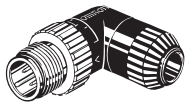
(Unit: mm)

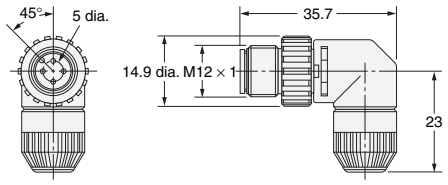
XS2G-□4C□ (Crimping Model)
XS2G-□42□ (Soldering Model)
Straight





XS2G-D42□ (Soldering Model)
Angled





Ordering Information

Suitable cable dia. (mm)	Cable connection direction	Connection method	Model	Minimum order
6-mm-dia. model (5 to 6 mm dia.)	Straight	Crimping	**XS2G-D4C1**	50
		Soldering	**XS2G-D421**	
	Angled	Soldering	**XS2G-D422**	
4-mm-dia. model (4 to 5 mm dia.)	Straight	Crimping	**XS2G-D4C3**	
		Soldering	**XS2G-D423**	
	Angled	Soldering	**XS2G-D424**	
3-mm-dia. model (3 to 4 mm dia.)	Straight	Crimping	**XS2G-D4C5**	
		Soldering	**XS2G-D425**	
	Angled	Soldering	**XS2G-D426**	

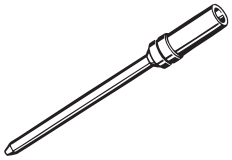
Note: Crimping plug contacts are sold separately.

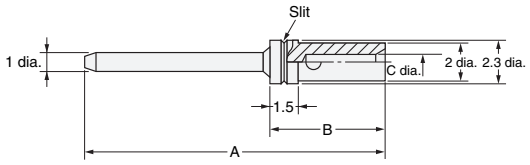
■ XS2U (Crimping Pin for XS2G)

Dimensions

(Unit: mm)

XS2U-312□ (Plug Pin)





Dimensions

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

Note: A special tool must be used for crimping. For details, refer to the “XS5/XS2 - Assembly Tooling and Accessories” datasheet.

Ordering Information

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

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

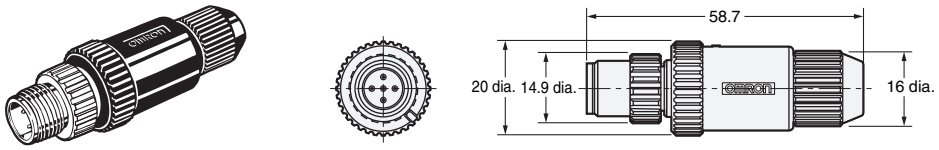
■ XS2G - Plugs, Screw Terminals

c UL us (PENDING)

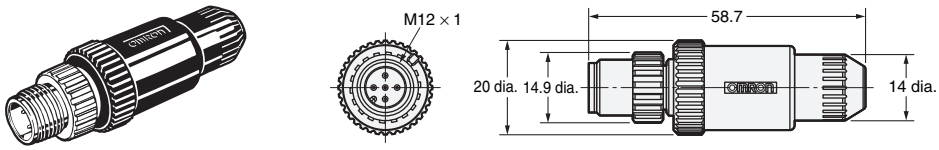
(Unit: mm)

Dimensions

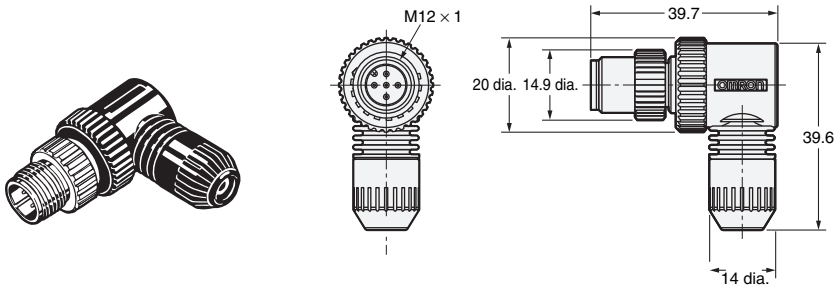
XS2G-D5S7 (5-core, Straight, Applicable Cable Outer Diameter: 8 mm)
XS2G-D5S9 (5-core, Straight, Applicable Cable Outer Diameter: 7 mm)
XS2G-D4S7 (4-core Straight, Applicable Cable Outer Diameter: 8 mm)
XS2G-D4S9 (4-core Straight, Applicable Cable Outer Diameter: 7 mm)



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



XS2G-D5S2 (5-core, Angled, Applicable Cable Outer Diameter: 6 mm)
XS2G-D4S□ (4-core, Angled, Applicable Cable Outer Diameter: 3, 4, or 6 mm)



Ordering Information

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

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

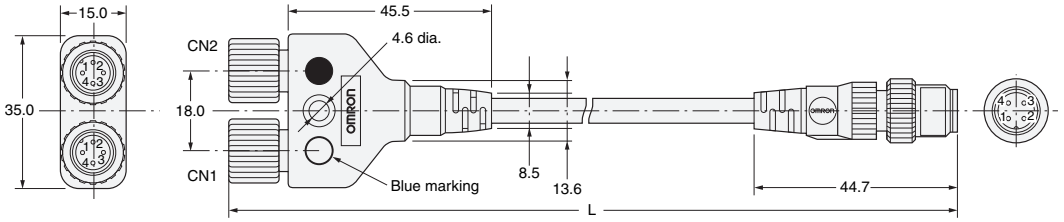
Y-Joint 4-Pin Plug/Socket Connectors

■ XS2R

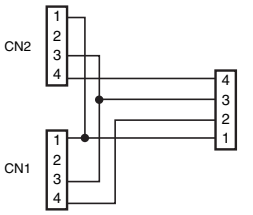
Dimensions

(Unit: mm)

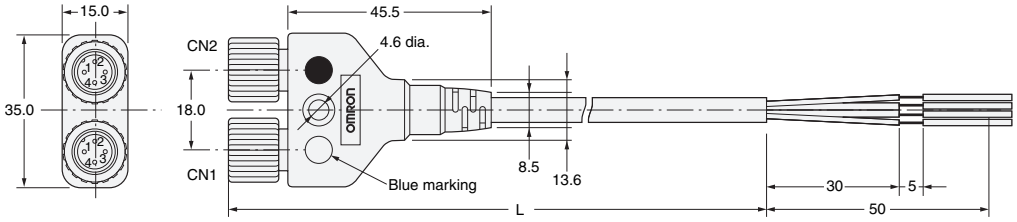
XS2R-D426-□11-F
Connectors on Both Cable Ends (Y-Joint Plug/Socket)



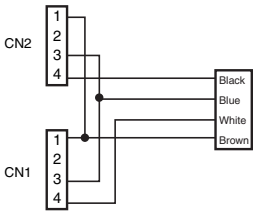
Wiring Diagram



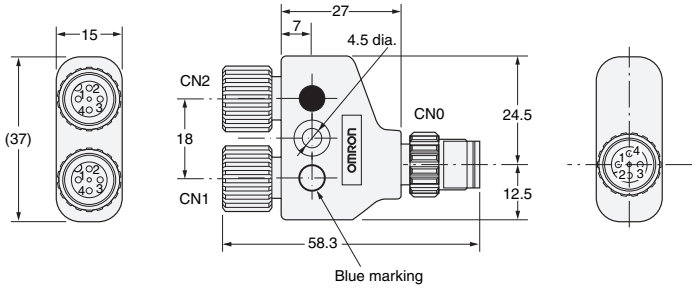
XS2R-D426-□10-F
Connectors on One Cable End (Y-Joint Plug/Socket)



Wiring Diagram

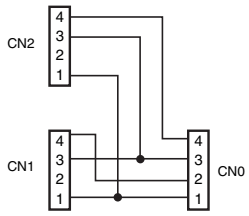


XS2R-D426-1
Y-Joint Plug/Socket without Cable

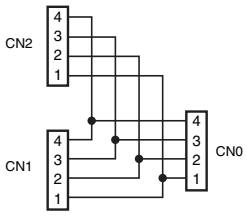


Wiring Diagram

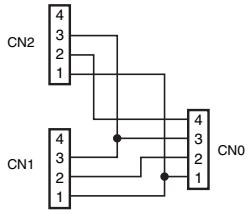
XS2R-D426-1



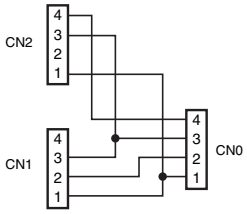
XS2R-D426-5



XS2R-D426-81



XS2R-D426-82



Ordering Information

Type	Connector	Cable length L (m)	Model	Minimum order
With cable	Connectors on 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 on one cable end	2	**XS2R-D426-D10-F**	
		5	**XS2R-D426-G10-F**	
Without cable	Y-Joint plug/socket	—	**XS2R-D426-1**	10
			XS2R-D426-5	
			XS2R-D426-81	
			XS2R-D426-82	

Note: XS2G Screw-on Plugs cannot be connected side-by-side to the CN1 and CN2 connectors. Consider using a crimping or soldering model instead.

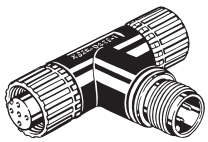
T-Joint Plug/Socket Connectors

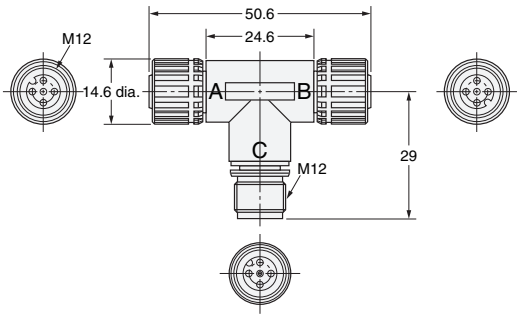
■ XS2R

Dimensions

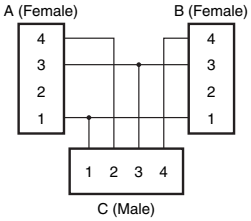
(Unit: mm)

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

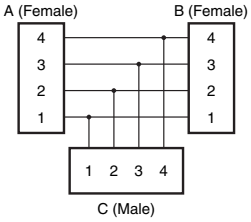




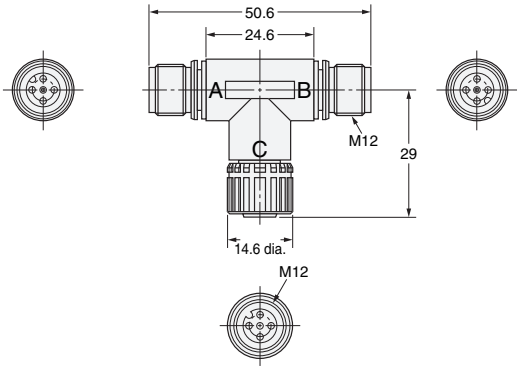
Wiring Diagram
XS2R-D422-1



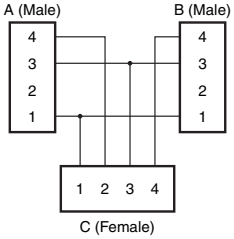
XS2R-D422-5



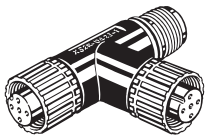
XS2R-D423-1
Bifurcated Model

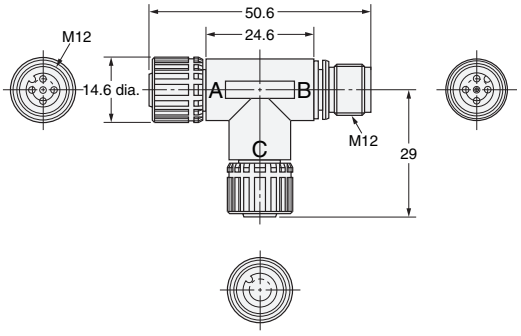


Wiring Diagram

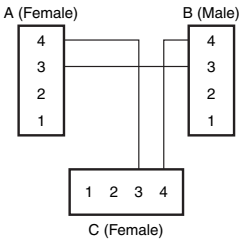


XS2R-D424-1
Daisy-chain Model





Wiring Diagram



Ordering Information

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

Safety Precautions

■ Correct Use - XS2R

Do not use this product under ambient conditions that exceed the ratings.

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

See the end of this datasheet for XS2R Application examples.

See “XS5/XS2 - Assembly Tooling and Accessories” datasheet for information regarding assembly, tooling and accessories that are common to the XS5 and XS2 connectors

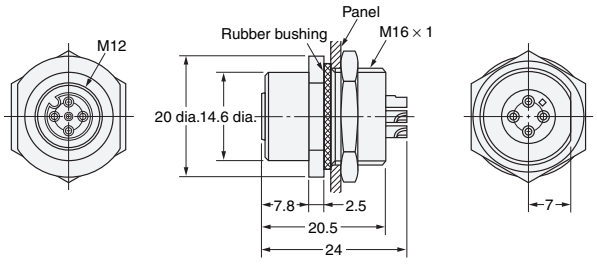
Panel-mount Connectors

■ XS2P - Sockets

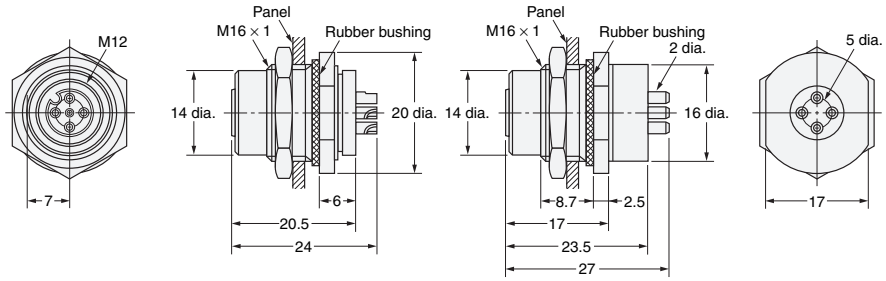
Dimensions

(Unit: mm)

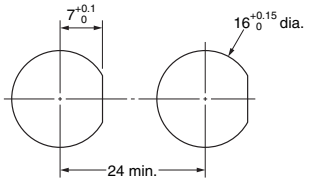
XS2P-D421-2 (with Solder Cup Pins)
Rear Lock Model



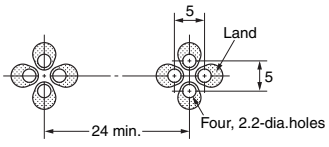
XS2P-D422-1 (with Through-hole PCB Pins)
XS2P-D422-2 (with Solder Cup Pins)
Front Lock Model



Panel Cutout



PCB-mounting Dimensions



Note: The panel thickness is 1 to 4 mm.

Ordering Information

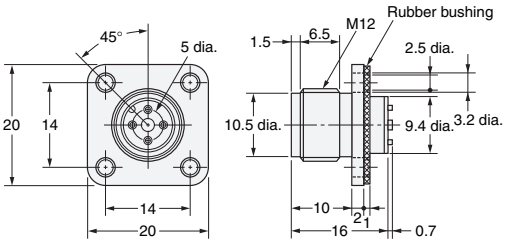
Lock method	Pin shape	Model	Minimum order
Rear lock	Solder cup pin	**XS2P-D421-2**	50
Front lock	Solder cup pin	**XS2P-D422-2**	
	Through-hole PCB pin	**XS2P-D422-1**	

■ XS2M - Plugs

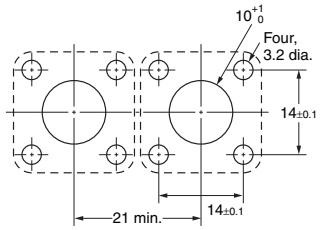
Dimensions

(Unit: mm)

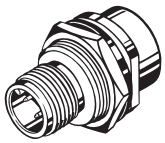
XS2M-D423
(Flange-mounting Model)

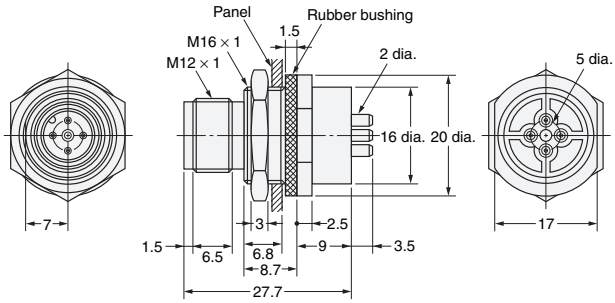


Panel Cutouts

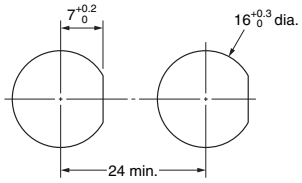


XS2M-D424-1 (With PCB Pins)
XS2M-D424-2 (With Solder Cup Pins)
(Screw-mounting Model)



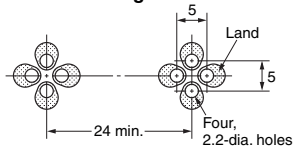


Panel Cutouts



Note: The panel thickness is 1 to 4 mm.

PCB-mounting Dimensions



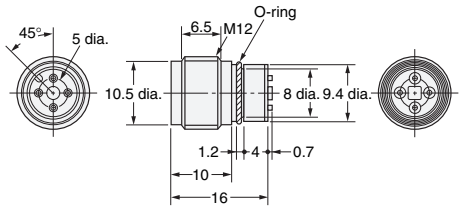
Connectors for Embedding in Sensors

■ XS2M - Plugs

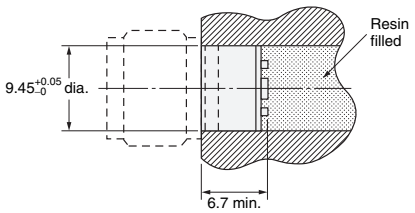
Dimensions

(Unit: mm)

XS2M-D421
(Embedded Plug with Screw Threads)

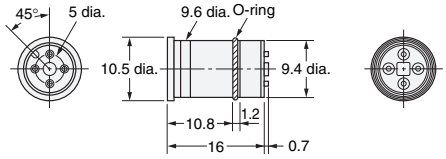


Mounted Dimensions

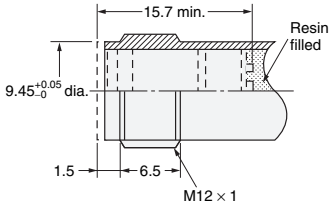


Note: After mounting, anchor the solder cups by injecting resin.

XS2M-D422
(Embedded Plug without Screw Threads)



Mounted Dimensions



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

8-Pin Connector with Cable Attached/Panel-mount

■ XS2□

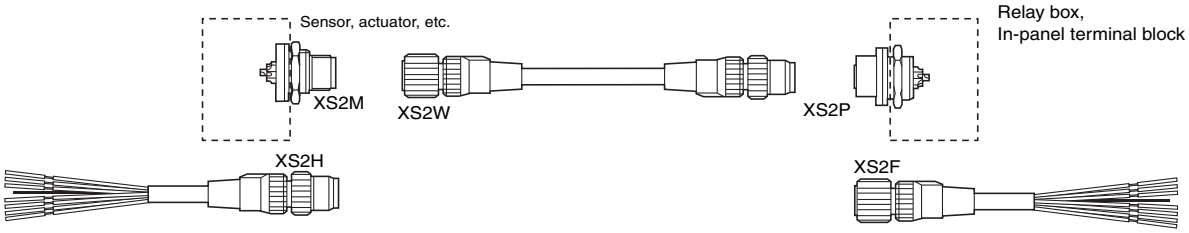
Ordering Information

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

Pin Numbers and Cable Lead Colors

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

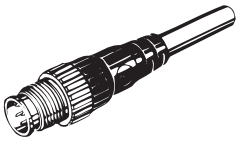
Wiring Example

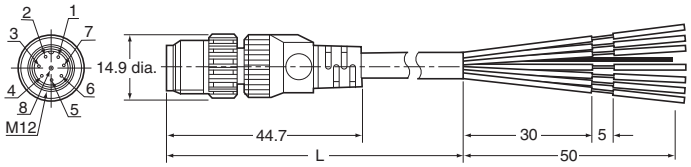


Dimensions

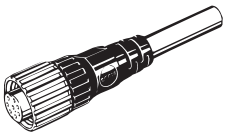
(Unit: mm)

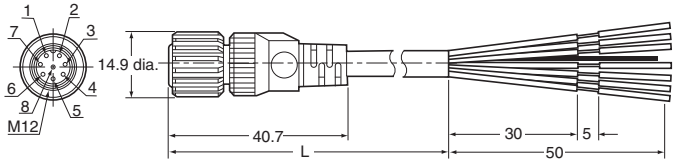
XS2H Plug on One Cable End (M12)



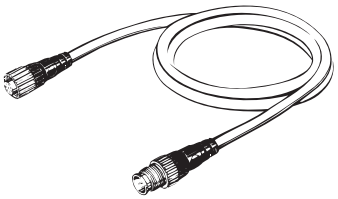


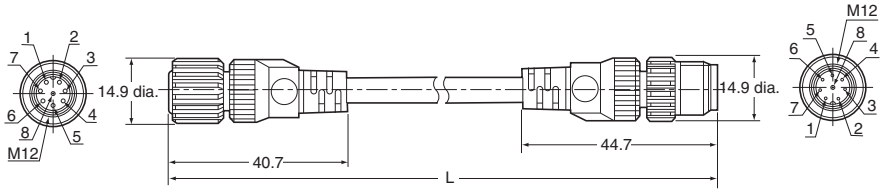
XS2F Socket on One Cable End (M12)



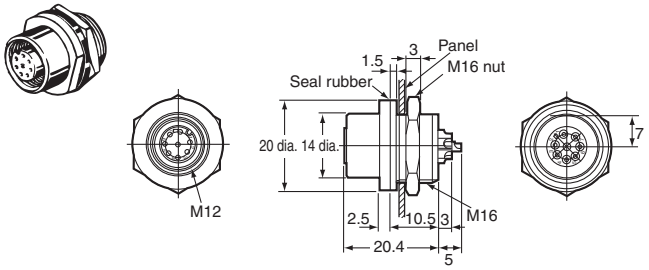


XS2W Plug and Socket on Cable Ends (M12)

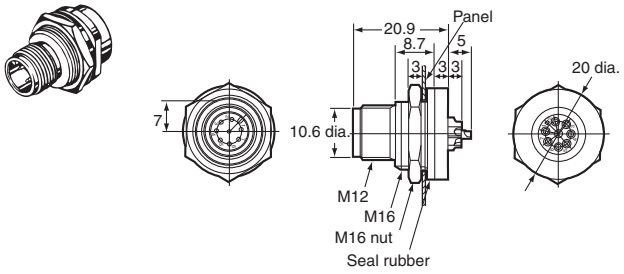




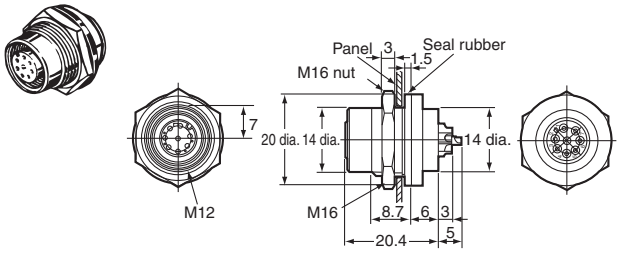
XS2P-D821-2 Panel-mounting Socket (M12) with Solder Cup Pins and Rear Lock



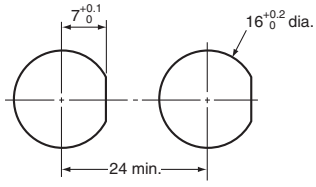
XS2M-D824-4 Panel-mounting Plug (M12) with Solder Cup Pins and Front Lock



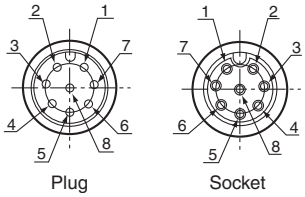
XS2P-D822-2 Panel-mounting Socket (M12) with Solder Cup Pins and Front Lock



Panel Cutouts



Connector Pin Numbers (from Mating Side)



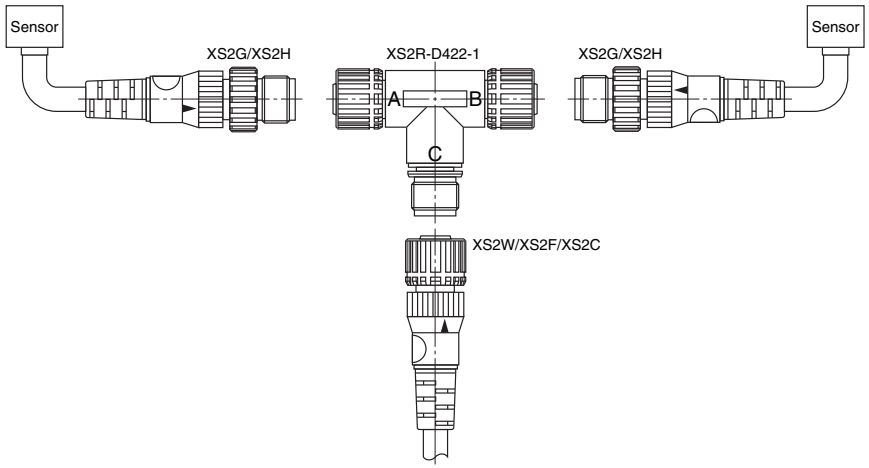
Note: 1. Mounting panel thickness: 1 to 4 mm.
2. Applicable core wire size for solder cup pins: 0.5 mm^2 max.
3. The M16 nut and seal rubber are included.

Ordering Information

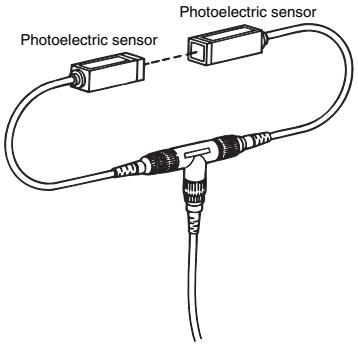
Mounting method	Pin shape	Model	Minimum order
Embedded with screw threads	Solder cup pin	**XS2M-D421**	50
Embedded with no screw threads		**XS2M-D422**	
Flange-mounting		**XS2M-D423**	
Screw-mounting	Through-hole PCB pin	**XS2M-D424-1**	
	Solder cup pin	**XS2M-D424-2**	

XS2R Application Examples

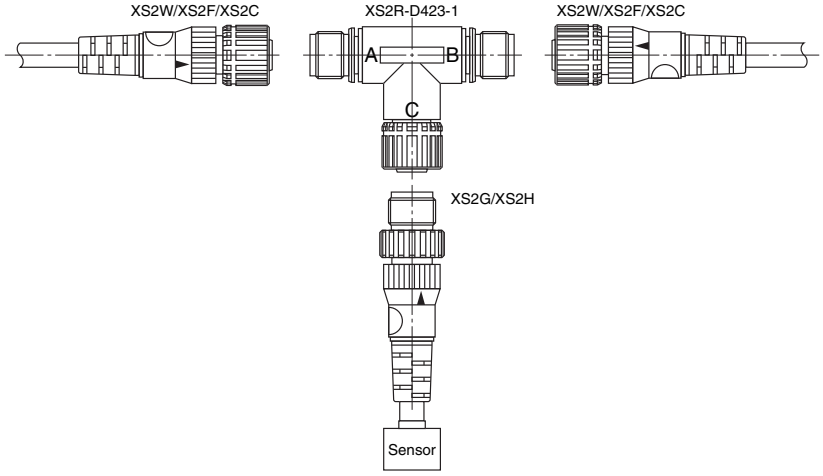
XS2R-D422-1 (Aggregate Model)



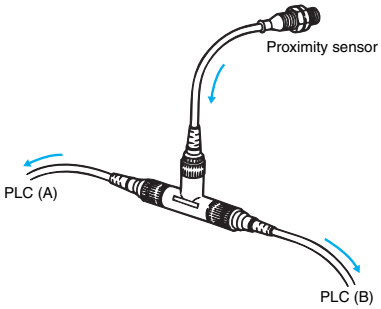
- A pair of Two-wire Sensors or Three-wire Sensors can be connected as shown in the illustration.
- The XS2R-D422-5 has feedthrough connections, thus working as a connector for the extension cable.



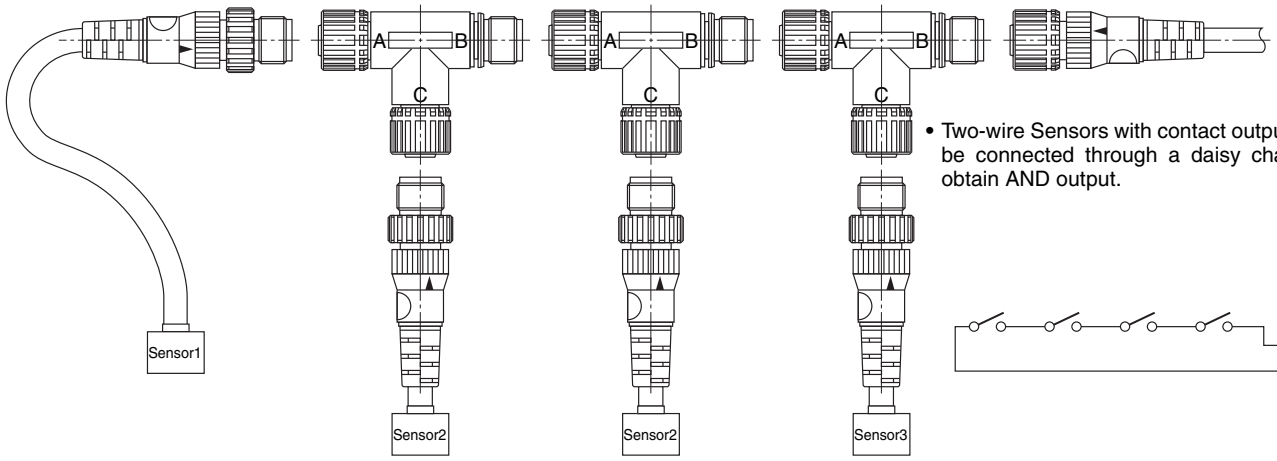
XS2R-D423-1 (Bifurcated Model)



- Two or Three-wire Sensor signals can be bifurcated.

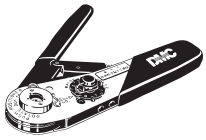
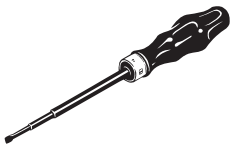
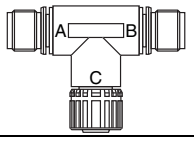
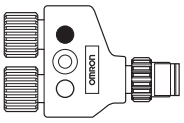
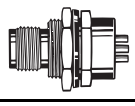


XS2R-D424-1 (Daisy Chain Model)



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

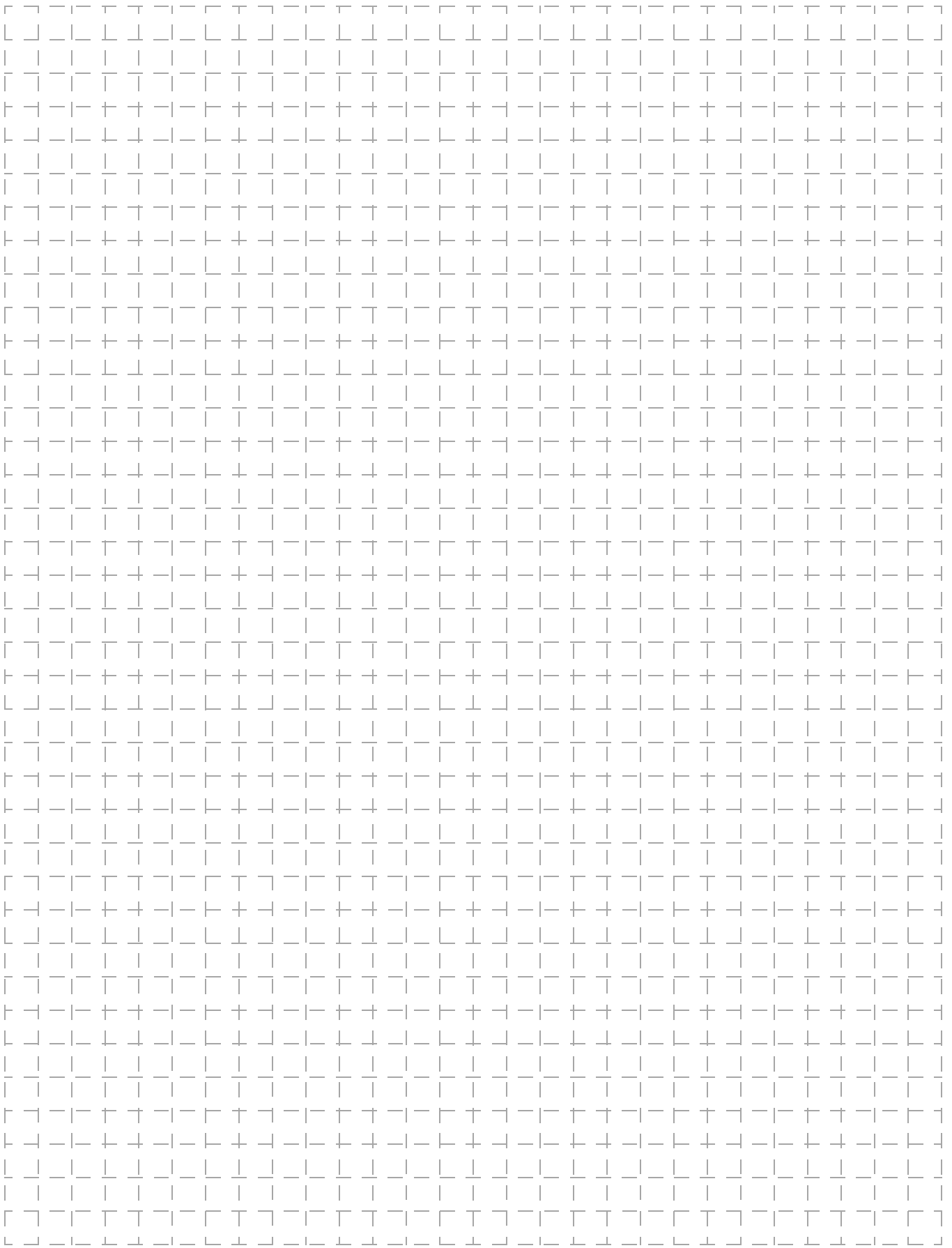
List of XS2 Products - Summary

Name	Model		Appearance
1.Connectors attached to Cable	XS2W Sockets and Plugs on Cable Ends		
	XS2F Sockets on One Cable End		
	XS2H Plugs on One Cable End		
2.Connector Assemblies (Crimping, Soldering, or Screw-on) **Used to enable using connectors for sensor cables and relay cables.**	XS2G Plug Assemblies		
	XS2C Socket Assemblies		
	XY2F Crimp Tool (for Crimping Connectors)		
	XW4Z Screwdriver (for Screw-on Connectors)		
3.Terminal Box Connectors **Used to enable using connectors for terminal boxes.**	XS2P Panel-mounting Sockets		
4.T-Joints and Y-Joints **Used for branching and for daisy-chain connections.**	XS2R T-Joint/Y-Joint Plug/ Socket Connectors	T-Joints	
		Y-Joints	
5.Sensor Connector Assemblies **Used to enable using connectors in sensors.**	XS2M Plugs	Embedded Plugs with Screw Threads	
		Embedded Plugs with No Screw Threads	
6. Panel-mounting Connectors **Used to enable using I/O box connectors mounted to panels.**	XS2M Plugs	Flange-mounting Plugs	
		Screw-mounting Plugs	

Note: 1. See “XS5/XS2 - Assembly Tooling and Accessories” datasheet for information regarding assembly, tooling and accessories that are common to the XS5 and XS2 connectors

2. See “XS5” datasheet for specifics regarding those connectors

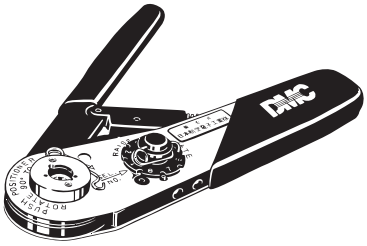
MEMO



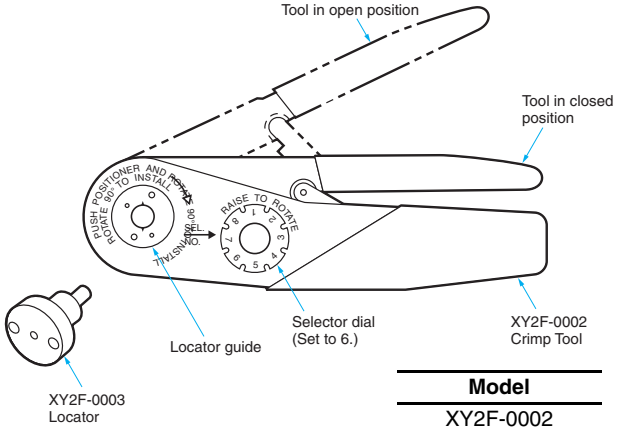
XS5/XS2 Assembly Tooling and Accessories

Tooling

Crimp Tool
XY2F-0002



Locator
XY2F-0003



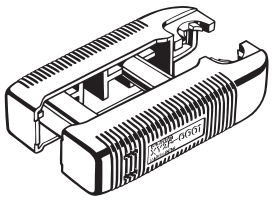
Use the Crimp Tool to crimp a cable core to the XS5U or XS2U Crimping Pin used with the XS□C or XS□G Crimping Connector.

- 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.

Model
XY2F-0002
XY2F-0003

Pin-block Extraction Tool
XY2F-0001

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

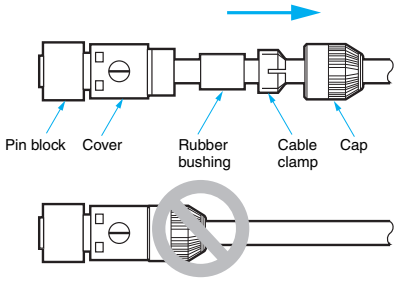


Model
XY2F-0001

Extraction Procedure

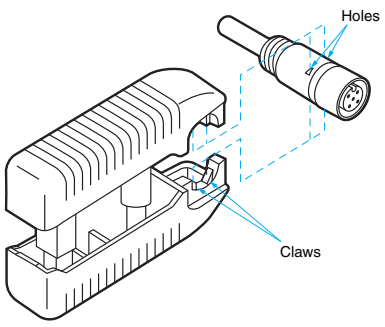
1. Disconnecting Components

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

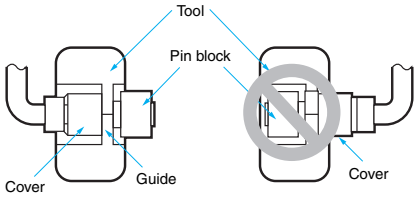


2. Extracting Pin Block

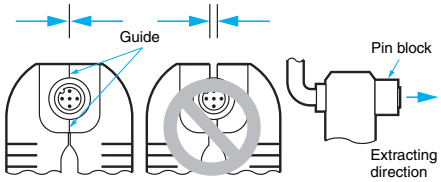
- Insert the claws of the Tool into the four holes of the cover.



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



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



Precaution for Safe Use

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

Assembly Procedure for XS□C/XS□G Connector Assemblies

1. Connector and Cable External Diameters

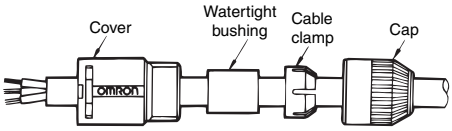
- Connectors for 6-, 4-, and 3-mm-diameter Cables (i.e., Cables that are 5 to 6, 4 to 5, and 3 to 4 mm in diameter respectively) are available. When assembling a Connector used with a cable, make sure that the external diameter of the Connector is suited to that of the cable.
- Connectors for 6-mm-diameter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

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

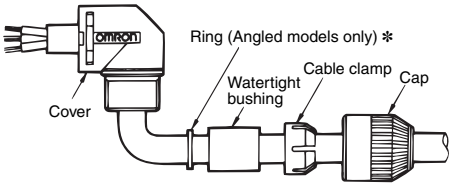
2. Component Insertion

Crimping/Soldering Connectors

Straight Connectors



Angled Connectors

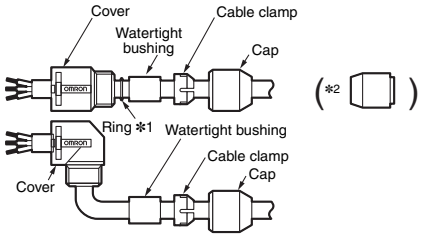


* A ring is not required for Screw-on Connectors.

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

Screw-on Connectors

Confirm that you have all of the required parts.

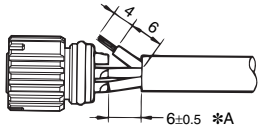


Insulation caps and insulation tubes are included with 5-pole Connectors (XS□C-D5S□ and XS□G-D5S□).

*1. Rings are not required with 7-mm and 8-mm cables.
*2. Insert the waterproof bushing for 7-mm and 8-mm cables in the direction shown in the diagram.

3. Wiring (Processing Cable Ends)

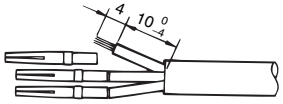
Soldering Connectors



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

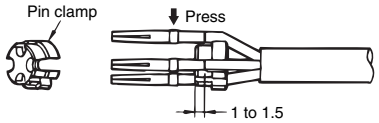
Crimping Connectors

Crimping



- Strip 14 mm of the Cable sheath and 4 mm of each core.
- Make sure that each core is not damaged and its end strands are not spread out.
- Mount the XY2F-0003 Locator to XY2F-0002 Crimping Tool, both of which are sold separately, and set the selector dial of the Crimping Tool to 6 for the XS5U-□□21 (XS2U-□□21) and to 7 for the XS5U-□□22 (XS2U-□□22).
- After mounting the crimping pins to the Locator, fully insert the cores to the crimping pins.
- Squeeze the handle of the Crimp Tool to press-fit the cores to the crimping pins.
  (Squeeze the handle firmly until the handle automatically returns to the release position.)

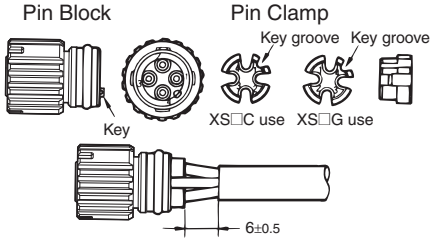
Wiring



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

Assembly Procedure (continued)

Insertion

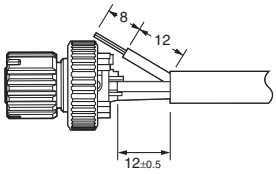


- Tentatively insert the pins to the pin block holes so that the key on the pin block will coincide with the key groove on the pin clamp. Then insert the cable along with the pin clamp.

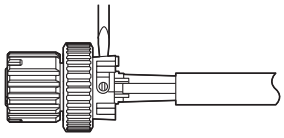
Screw-on Connectors

Cable End Processing

• Four-pole Connectors



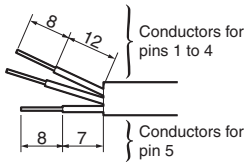
- Loosen the screws on pins 1 to 4 and insert the cores according to the pin numbers.



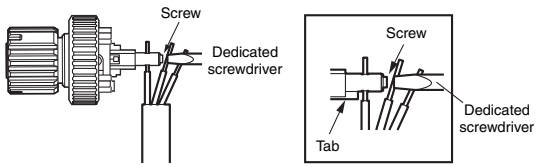
- Use the dedicated Screwdriver (XW4Z-00B)✻ and tighten the screws securely so that the cores do not pull out (tightening torque: 0.15 to 0.2 N·m).

• Five-pole Connectors

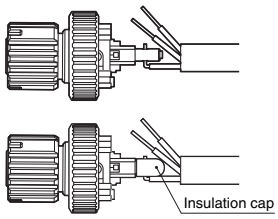
- Strip the cable sheath for a total of 15 mm and strip the core covering for 8 mm for the core to connect to pin 5.



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



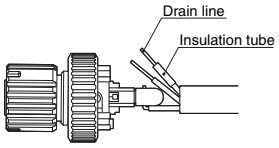
- Bend the cable as shown below, attached the enclosed insulation cap, and then strip the other cores.



- Connect the cores to pins 1 to 4.

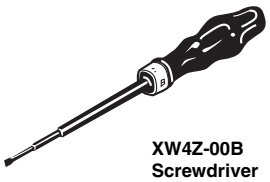
Connecting Shielded Cables to Five-pole Connectors

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



- Connect the cores to pins 1 to 4.

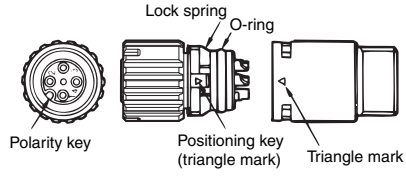
✻ When tightening the screws, use the dedicated XW4Z-00B Screwdriver that matches with the screw-slot dimensions.



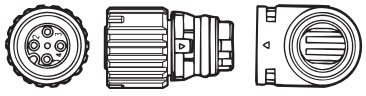
XW4Z-00B Screwdriver

4. Inserting Pin Block

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

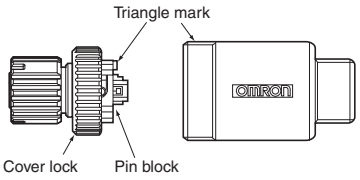


(Crimping Model) **(Angled Model)**



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

Pin Block (Screw-mounting Connectors) **Cover**

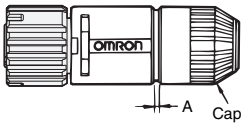


- Align the triangular marks on the pin block and cover and insert the pin block into the cover.
- Press them together firmly (0.39 to 0.49 N·m) until the pin block does not come out of the cover.

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.

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



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

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

6. After Assembly

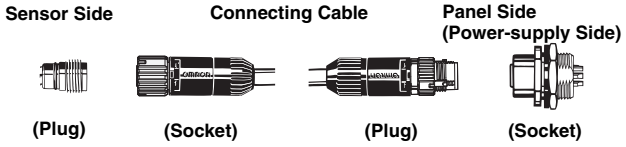
- Confirm the insulation between cores after completing assembly.

Recommended Cables

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

Connector Arrangement

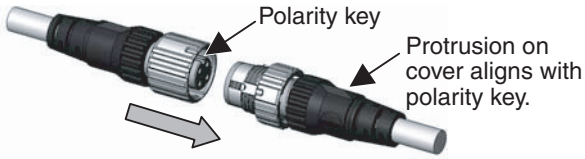
For safety, when constructing a connection system between a Sensor and panel with a connector, make sure that the connector plug is on the Sensor side and the connector socket is on the panel side (i.e., the female pins are located on the power-supply side).



Connecting the XS5

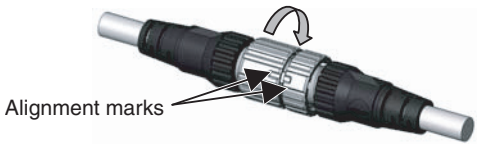
1. Connecting the XS5 Plug and Socket

- Align the projection on the plug cover with the polarity key on the socket, then insert the plug all the way in.



- Hold the knurled socket grip, then insert the projection on the plug into the groove of the socket.

- Turn the knurled grips of the socket clockwise approximately 45 degrees in respect to the plug. A click will indicate that the Connectors are locked. The locking condition can also be confirmed by the alignment marks on the plug and socket.



2. Connecting the XS5 and XS2

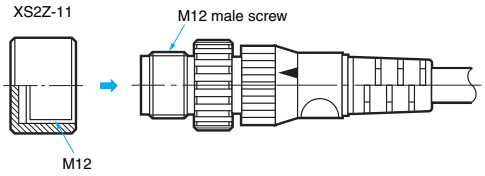
- Align the projection on the plug cover with the polarity key on the socket, then insert the plug all the way in.
- In the same way as when connecting two XS2 Connectors, screw the knurled grip in the clockwise direction.
- Use your fingers to tighten the Connectors sufficiently.

Accessories

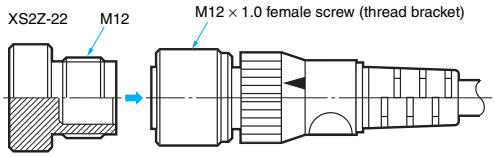
■ Connector Covers

Water-resistive Covers

XS2Z-11



XS2Z-22



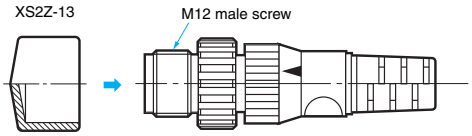
The Water-resistive Cover ensures IP67.

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

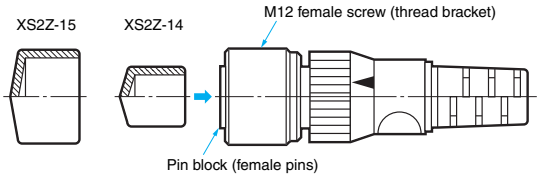
Model	Minimum order	Material	Suitable connector	
			Model	Mounting portion
XS2Z-11	50	Brass/nickel plated	XS2G/XS2H/XS2M/XS2R/XS2W/ XS5G/XS5H/XS5M/XS5R/XS5W	M12 male screw
XS2Z-22			XS2C/XS2R/XS2F/XS2P/XS2W/ XS5C/XS5R/XS5F/XS5P/XS5W/XW3D	M12 female screw (thread bracket)

Dust Covers

XS2Z-13



XS2Z-15/XS2Z-14



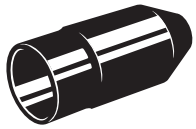
The Dust Cover is for dust prevention and does not ensure IP67 degree of protection.

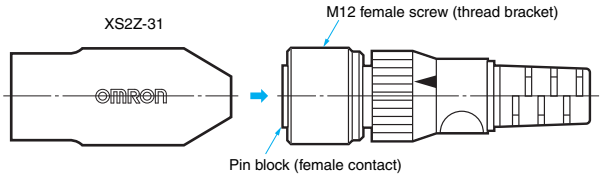
When mounting the Dust Cover to a connector, be sure to press the Dust Cover onto the Connector until the Connector is fully inserted into the Dust Cover.

Model	Minimum order	Material	Suitable connector	
			Model	Mounting portion
XS2Z-13	50	Rubber/black	XS2G/XS2H/XS2M/XS2R/XS2W/ XS5G/XS5H/XS5M/XS5R/XS5W	M12 male screw
XS2Z-14			XS2C/XS2R/XS2F/XS2P/XS2W/ XS5C/XS5R/XS5F/XS5P/XS5W/XW3D	Pin block (female pins)
XS2Z-15				M12 female screw (thread bracket)

Sputter Protective Cover

XS2Z-31





The Sputter Protective Cover protects the connector from weld sputter.

Make sure it covers the entire connector.

Model	Material	Applicable connector
XS2Z-31	Silicone rubber/black	XS2F/XS2H/XS2W XS5F/XS5H/XS5W

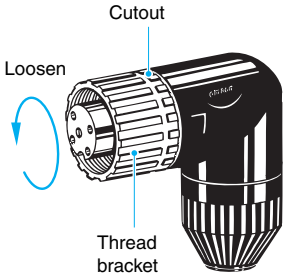
Safety Precautions

Precautions for Correct Use

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

Connector Connection and Disconnection

- When connecting or disconnecting Connectors, be sure to hold the Connectors by hand.
- Do not hold the cable when disconnecting Connectors.
- When mating Connectors, be sure to insert the plug all the way to the back of the socket before attempting to lock the Connectors.
- Do not use tools of any sort to mate the Connectors. Always use your hands. Pliers or other tools may damage the Connectors.
- When mating the Connectors to XS2, XS5 or other M12 Connectors, tighten the lock by hand to a torque of 0.39 to 0.49 N·m.
- When disconnecting Connectors, be sure to loosen the thread brackets first. Do not loosen the caps.
- Thread brackets must be loosened in the cutout direction.



Wiring

- Always confirm wiring diagrams before wiring sensors, limit switches, or other devices.
- Lay the cables so that external force is not applied to the Connectors. Otherwise, the degree of protection (IP67) may not be achieved.

Degree of Protection

- Do not impose external force continuously on the joints of pin blocks and covers, otherwise the Connectors may not keep their proper degree of protection (i.e., IP67).
- The degree of protection of Connectors (IP67) is not for a fully watertight structure. Do not the Connectors underwater.
- Do not step on or place any objects on the Connectors. Doing so may damage the Connectors.

General Precautions

- Do not pull excessively on the Connectors or cables. Do not install the Connectors or cables in any way that would place a load directly on the mating section or cable connections. Doing so can damage the Connectors or break the wires inside the cables.
- Install the Connectors and cables where they will not be stepped on to prevent the wires inside the cables from being broken and to prevent the Connectors from being damaged. If the Connectors or cables must be installed where they might be stepped on, protect them with covers.
- Refer to the specifications for your cables before bending the cables and do not bend them past their minimum bending radius.
- Cables supplied by Omron should not be bent near the base of the unit and must have a minimum radius of 40 mm.
- If sensors or switches are not attached during installation, protect the mating surface of the Connector with a XS2Z-22 Waterproof Cover of XS2Z-14/15 Dust Cover.

Smartclick XS5 - Problem Solving

1

Problem	Solution
It is troublesome to screw the connectors together.	**It's a twist-and-click connection.** An innovative new lock structure makes connection extremely simple. The lock mechanism is internal, so it will no longer become jammed by sputtered fluids or dust. Also the use of a movable lock bolt makes it possible to connect the Smartclick XS5 to a screw-type M12 connector.

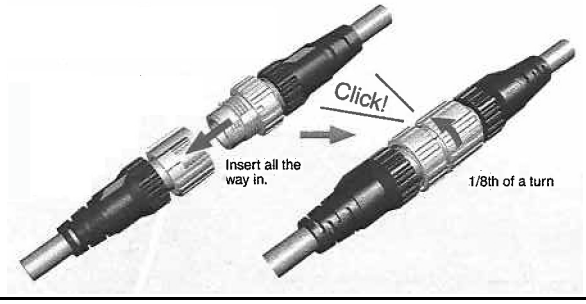
All combinations are connectable.

	XS5 Smartclick Plug Connector	M12 plug connector
XS5 Smartclick Socket Connector	Twist-and-click connection	Screw connection
M12 socket connector	Screw connection	Screw connection

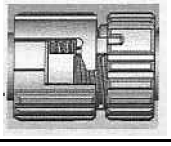
2

Problem	Solution
There's nothing to tell you that it's connected.	**The Smartclick XS5 "clicks" to tell you it's connected.** A positive clicking feel tells you for sure that the Connector is securely locked. 

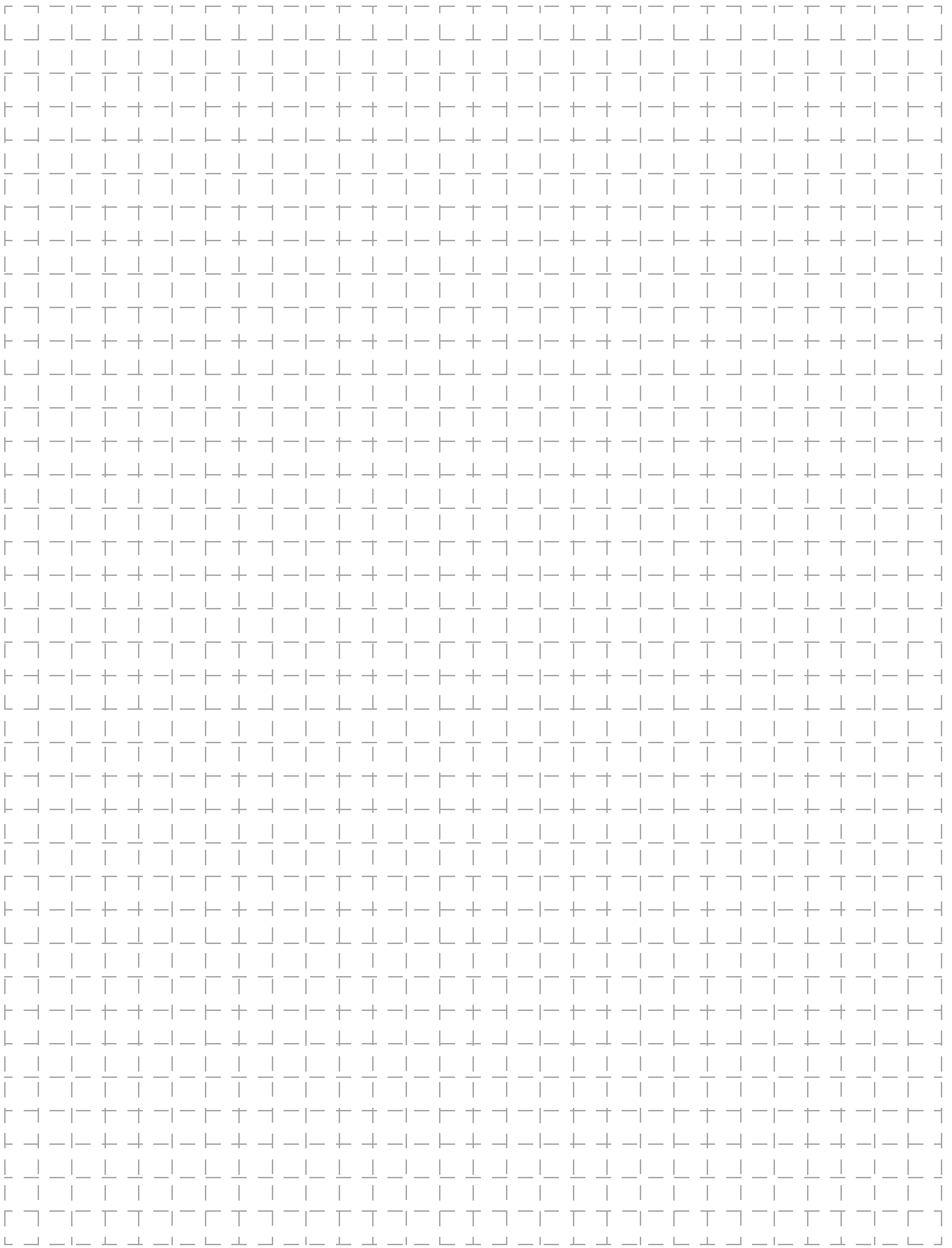
3

Problem	Solution
It's difficult to keep track of locking torque values.	**Locking is done with approximately 1/8th of a turn.** The Smartclick XS5 has the industry's shortest locking rotation of 1/8th of a turn. There's no need to keep track of locking torque, and this greatly reduces time and effort when wiring. 

4

Problem	Solution
The connection sometimes vibrates loose.	**A bayonet lock mechanism is used.** By using a bayonet mechanism, which is a common locking method, the Smartclick XS5 eliminates any concerns about loosening. 

MEMO



Round Water-resistant Connectors (M8)
XS3

Compact, Watertight, Round Connectors

- Water-resistive, compact connector meets IP67 requirements.
- Ideal for a wide variety of FA and OA applications.
- Using connectors for wiring ensures ease of equipment maintenance and reduces downtime required for equipment maintenance.

■ Ratings and Specifications

Rated current	3A
Rated voltage	125 VDC
Contact resistance	60 mΩ max. (20 mV max., 100 mA max.)
Insulation resistance	1,000 MΩ min. (at 500 VDC)
Dielectric strength	1,000 VAC for 1 min (leakage current: 1 mA max.)
Degree of protection	IP67 (IEC60529)
Insertion tolerance	200 times min.

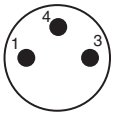
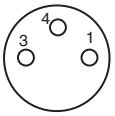
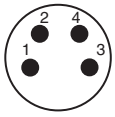
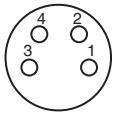
■ Material

Contact / Surface	Copper Alloy / Nickel base, Au0.4 μm
Connector housing	PBT resin (UL94V-0)
Nut / Surface	Copper Alloy / Nickel plated
Cover	PBT resin (UL94V-0)

■ PVC Cable

Item	3 cores	4 cores
Color	Black	
Outer diameter	5 mm dia.	4.8 mm dia.
Conductor size	AWG22 0.34 mm^2 (43 × 0.1)	0.25 mm^2 (32 × 0.1)
Approvals	AWM	
Features	Flame retardant	
Temperature range	-25 to +70°C	

■ Socket Appearance

3 poles		4 poles	
Male	**Female**	**Male**	**Female**
			

■ PUR Cable

Item	3 cores	4 cores
Color	Black	
Outer diameter	4.3 mm dia.	4.7 mm dia.
Conductor size	AWG22 0.34 mm^2 (43 × 0.1)	
Approvals	AWM	
Features	Flame retardant Halogen free Oil resistance	
Temperature range	Cable fixed: -50 to +80°C / Cable moved: -25 to +80°C	

Connectors with Cable Attached

■ XS3F - M8 Socket on One Cable End

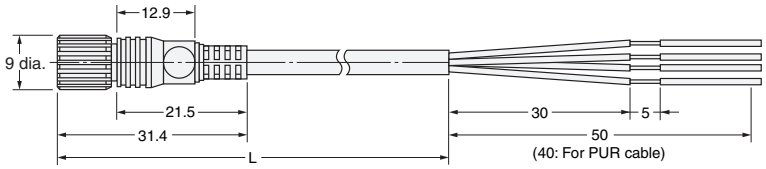
XS3F-M8PVC□□□□M PVC Cable
XS3F-M8PUR□□□□M PUR Cable

c UL us (PENDING)

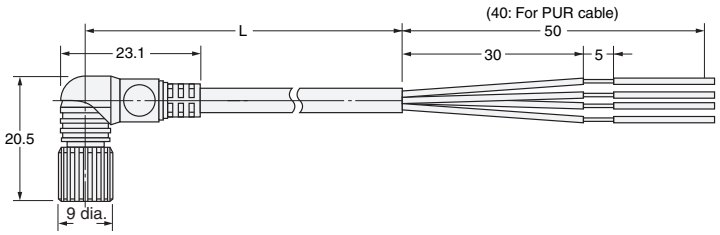
Dimensions

(Unit: mm)

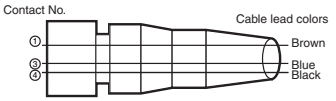
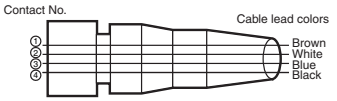
Straight



Angled



Wiring Diagram

3 Poles	4 Poles
	

Ordering Information

Connector	Size	Cable material	Poles	Type	Length (m)	Product description
Socket	M8	PVC	3	Angled	2	**XS3F-M8PVC3A2M**
					5	**XS3F-M8PVC3A5M**
					10	**XS3F-M8PVC3A10M**
				Straight	2	**XS3F-M8PVC3S2M**
					5	**XS3F-M8PVC3S5M**
					10	**XS3F-M8PVC3S10M**
			4	Angled	2	**XS3F-M8PVC4A2M**
					5	**XS3F-M8PVC4A5M**
					10	**XS3F-M8PVC4A10M**
				Straight	2	**XS3F-M8PVC4S2M**
					5	**XS3F-M8PVC4S5M**
					10	**XS3F-M8PVC4S10M**
		PUR	3	Angled	2	**XS3F-M8PUR3A2M**
					5	**XS3F-M8PUR3A5M**
					10	**XS3F-M8PUR3A10M**
				Straight	2	**XS3F-M8PUR3S2M**
					5	**XS3F-M8PUR3S5M**
					10	**XS3F-M8PUR3S10M**
			4	Angled	2	**XS3F-M8PUR4A2M**
					5	**XS3F-M8PUR4A5M**
					10	**XS3F-M8PUR4A10M**
				Straight	2	**XS3F-M8PUR4S2M**
					5	**XS3F-M8PUR4S5M**
					10	**XS3F-M8PUR4S10M**

Model Number Legend

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

XS3F - M8 □□□ □ □ □□M
1 2 3 4 5

1. Screw Type
M8: M8 size
2. Cable type
PVC: PVC cable
PUR: PUR cable
3. Number of Poles
3: 3 poles
4: 4 poles
4. Shape
A: Angled
S: Straight
5. Cable Length
2M: 2 m
5M: 5 m
10M: 10 m

■ XS3H - M8 Plugs on One Cable End

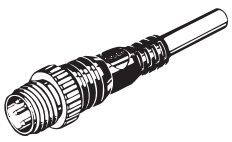
XS3H-M8PVC□□□□M PVC Cable
XS3H-M8PUR□□□□M PUR Cable

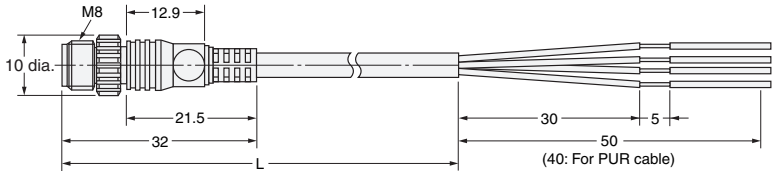
c UL us (PENDING)

Dimensions

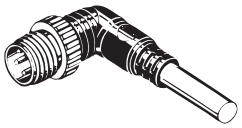
(Unit: mm)

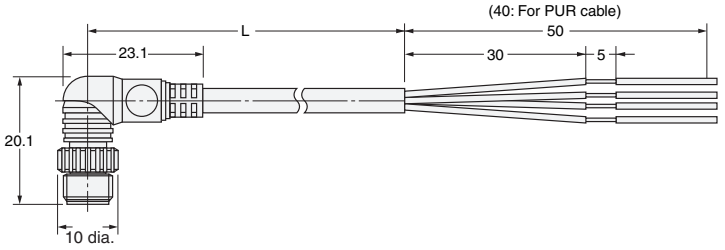
Straight



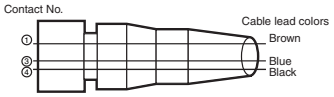
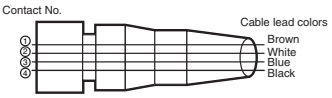


Angled





Wiring Diagram

3 Poles	4 Poles
	

Ordering Information

Connector	Size	Cable material	Poles	Type	Length (m)	Product description
plug	M8	PVC	3	Angled	0.3	**XS3H-M8PVC3A03M**
					1	**XS3H-M8PVC3A1M**
				Straight	0.3	**XS3H-M8PVC3S03M**
					1	**XS3H-M8PVC3S1M**
			4	Angled	0.3	**XS3H-M8PVC4A03M**
					1	**XS3H-M8PVC4A1M**
				Straight	0.3	**XS3H-M8PVC4S03M**
					1	**XS3H-M8PVC4S1M**
		PUR	3	Angled	0.3	**XS3H-M8PUR3A03M**
					1	**XS3H-M8PUR3A1M**
				Straight	0.3	**XS3H-M8PUR3S03M**
					1	**XS3H-M8PUR3S1M**
			4	Angled	0.3	**XS3H-M8PUR4A03M**
					1	**XS3H-M8PUR4A1M**
				Straight	0.3	**XS3H-M8PUR4S03M**
					1	**XS3H-M8PUR4S1M**

Model Number Legend

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

XS3H - M8 □□□ □ □ □□M
1 2 3 4 5

1. Screw Type
M8: M8 size
2. Cable type
PVC: PVC cable
PUR: PUR cable
3. Number of Poles
3: 3 poles
4: 4 poles
4. Shape
A: Angled
S: Straight
5. Cable Length
03M: 0.3 m
1M: 1 m

■ XS3W - M8 Sockets and M8 Plugs on Cable Ends

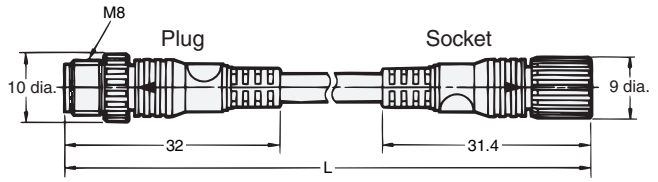
XS3W-M8PVC□□□□□M PVC Cable
XS3W-M8PUR□□□□□M PUR Cable

c UL us (PENDING)

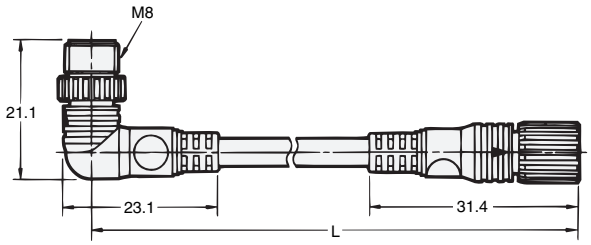
Dimensions

(Unit: mm)

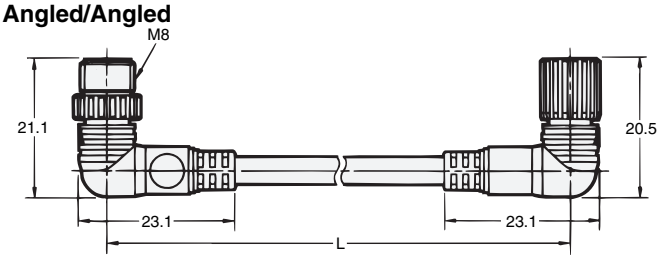
Straight/Straight



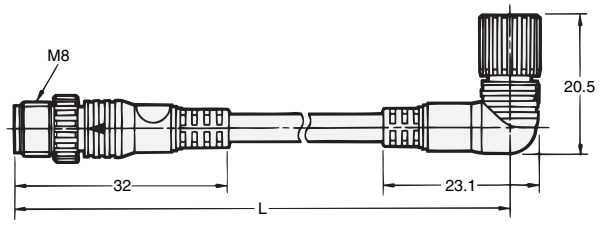
Straight/Angled



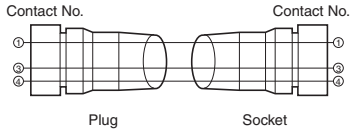
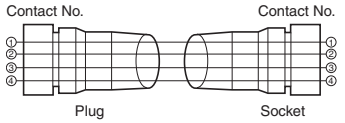
Angled/Angled



Angled/Straight



Wiring Diagram

3 Poles	4 Poles
	

Model Number Legend

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

XS3W - M8 □□□ □ □□ □□M
1 2 3 4 5

1. Screw Type
M8: M8 size
2. Cable type
PVC: PVC cable
PUR: PUR cable
3. Number of Poles
3: 3 poles
4: 4 poles
4. Shape
SS: Straight / Straight
AA: Angled / Angled
SA; Straight / Angled
AS: Angled / Straight
5. Cable Length
2M: 2 m
5M: 5 m
1M: 10 m

Ordering Information

Connector	Size	Cable material	Poles	Shape		Length (m)	Product description
				Plug	Socket		
Both	M8	PVC	3	Angled	Angled	2	**XS3W-M8PVC3AA2M**
						5	**XS3W-M8PVC3AA5M**
						10	**XS3W-M8PVC3AA10M**
				Straight	Straight	2	**XS3W-M8PVC3SS2M**
						5	**XS3W-M8PVC3SS5M**
						10	**XS3W-M8PVC3SS10M**
				Angled	Straight	2	**XS3W-M8PVC3AS2M**
						5	**XS3W-M8PVC3AS5M**
						10	**XS3W-M8PVC3AS10M**
				Straight	Angled	2	**XS3W-M8PVC3SA2M**
						5	**XS3W-M8PVC3SA5M**
						10	**XS3W-M8PVC3SA10M**
			4	Angled	Angled	2	**XS3W-M8PVC4AA2M**
						5	**XS3W-M8PVC4AA5M**
						10	**XS3W-M8PVC4AA10M**
				Straight	Straight	2	**XS3W-M8PVC4SS2M**
						5	**XS3W-M8PVC4SS5M**
						10	**XS3W-M8PVC4SS10M**
				Angled	Straight	2	**XS3W-M8PVC4AS2M**
						5	**XS3W-M8PVC4AS5M**
						10	**XS3W-M8PVC4AS10M**
				Straight	Angled	2	**XS3W-M8PVC4SA2M**
						5	**XS3W-M8PVC4SA5M**
						10	**XS3W-M8PVC4SA10M**
		PUR	3	Angled	Angled	2	**XS3W-M8PUR3AA2M**
						5	**XS3W-M8PUR3AA5M**
						10	**XS3W-M8PUR3AA10M**
				Straight	Straight	2	**XS3W-M8PUR3SS2M**
						5	**XS3W-M8PUR3SS5M**
						10	**XS3W-M8PUR3SS10M**
				Angled	Straight	2	**XS3W-M8PUR3AS2M**
						5	**XS3W-M8PUR3AS5M**
						10	**XS3W-M8PUR3AS10M**
				Straight	Angled	2	**XS3W-M8PUR3SA2M**
						5	**XS3W-M8PUR3SA5M**
						10	**XS3W-M8PUR3SA10M**
			4	Angled	Angled	2	**XS3W-M8PUR4AA2M**
						5	**XS3W-M8PUR4AA5M**
						10	**XS3W-M8PUR4AA10M**
				Straight	Straight	2	**XS3W-M8PUR4SS2M**
						5	**XS3W-M8PUR4SS5M**
						10	**XS3W-M8PUR4SS10M**
				Angled	Straight	2	**XS3W-M8PUR4AS2M**
						5	**XS3W-M8PUR4AS5M**
						10	**XS3W-M8PUR4AS10M**
				Straight	Angled	2	**XS3W-M8PUR4SA2M**
						5	**XS3W-M8PUR4SA5M**
						10	**XS3W-M8PUR4SA10M**

Y-Joint M8 Plug / M8 Socket Connectors

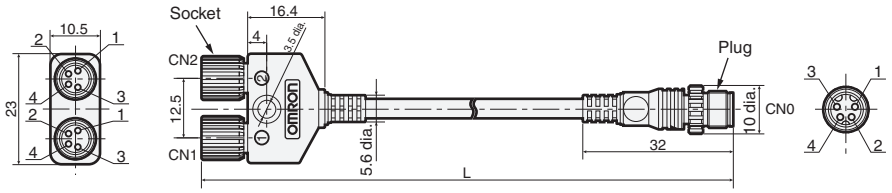
■ XS3R

XS3R-M426-1□□□-A With Standard Cable
XS3R-M426-□ Without Cable

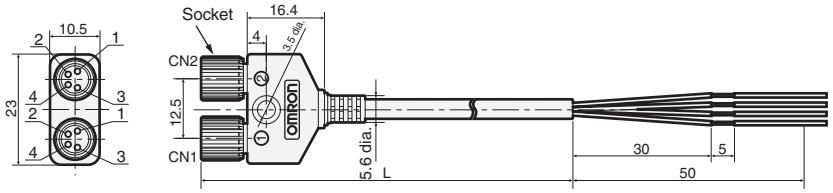
Dimensions

(Unit: mm)

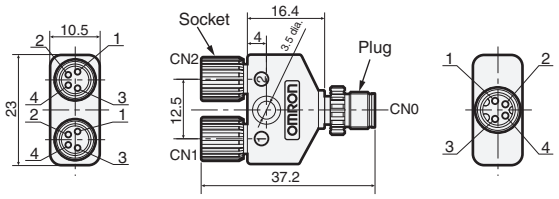
XS3R-M426-1□□1-A
Connectors on Both Cable Ends (Y-Joint Plug/Socket)



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

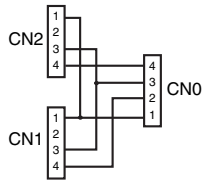


XS3R-M426-□
Connector on Both Ends (Y-Joint Plug/Socket) without Cable

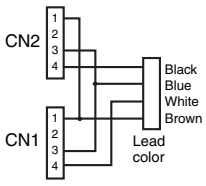


Wiring Diagram

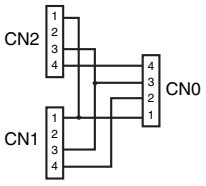
XS3R-M426-1□□1-A



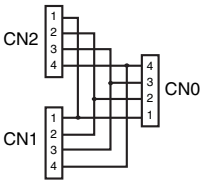
XS3R-M426-1□□0-A



XS3R-M426-1



XS3R-M426-5



Mating Connectors

Item	Model
XS3R(M8)	XS3F(M8)
	XS3H(M8)
	XS3W(M8)
	XS3P(M8)

Ordering Information

For M8 Connectors

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

Panel-mount Connectors

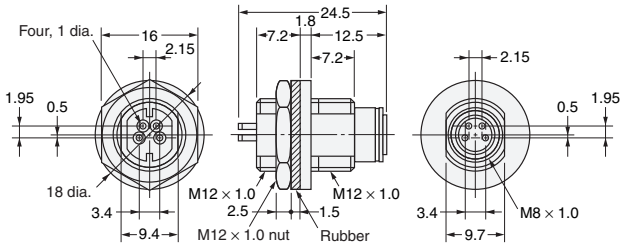
■ XS3P - M8 Sockets

XS3P-M421-1 **M8 Screw-mount sockets with Through-hole PCB Pins (front or rear lock)**
XS3P-M421-2 **M8 Screw-mount sockets with Solder Cup Pins (front or rear lock)**
XS3P-M422-2 **M8 Screw-mount sockets with Solder Cup Pins (rear lock, slim model)**

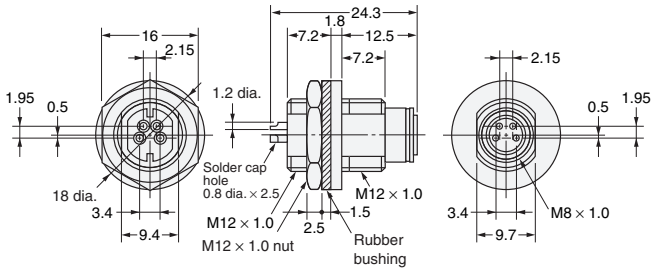
Dimensions

(Unit: mm)

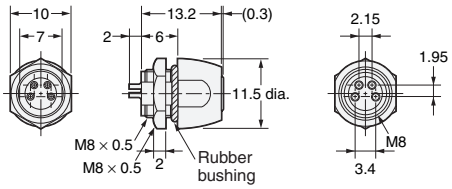
XS3P-M421-1 (Through-hole PCB Pins)



XS3P-M421-2 (Solder Cup Pins)



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

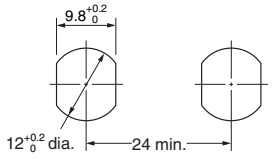


Mounting Dimensions for XS3P Screw-on Models and Snap-in Models

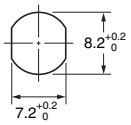
(Unit: mm)

Panel Cutouts

XS3P-□421

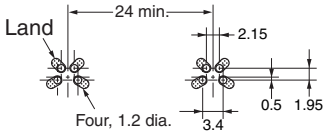


XS3P-M422-2



Note: The panel thickness is 1 to 3 mm.

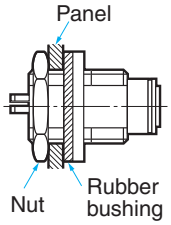
PCB-mounting Dimensions



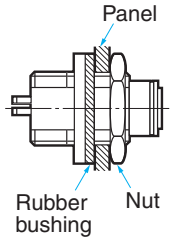
Note: The panel thickness is 2.4 mm maximum.

Panel-mounting Configuration

Rear Lock



Front Lock



Ordering Information

Connection method	Panel mounting	Pin shape	Model	Minimum order
M8 screw-mounting	Front lock or rear lock	Through-hole PCB pins	**XS3P-M421-1**	50
		Solder cup pins	**XS3P-M421-2**	
	Rear lock	Solder cup pins	**XS3P-M422-2**	

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

Safety Precautions

In addition to the following information, also refer to the 'Precautions' section at the end of this datasheet

■ Correct Use - Panel Mounting

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

Connectors for Embedding in Sensors

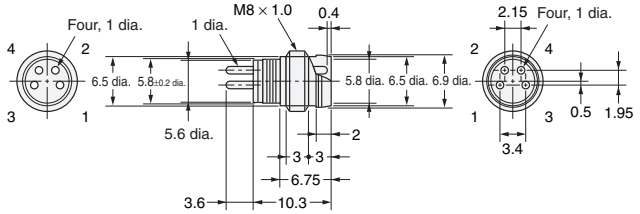
■ XS3M - Plugs

XS3M-K421-1 **Embedded Plugs with Screw Threads and Through-hole PCB Pins**
XS3M-K421-2 **Embedded plugs with Screw Threads and Solder Cup Pins**

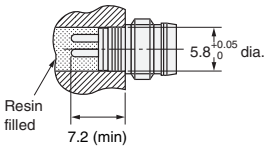
Dimensions

(Unit: mm)

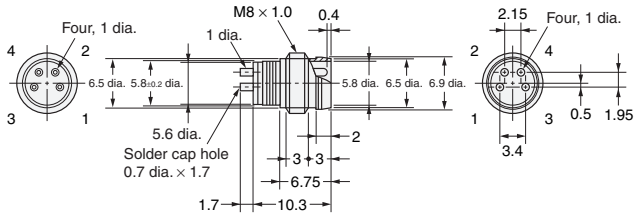
XS3M-K421-1
Embedded Model with Through-hole PCB Pins



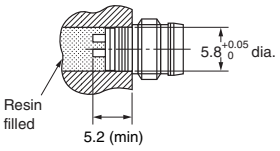
Mounting Dimensions



XS3M-K421-2
Embedded Model with Solder Cup Pins



Mounting Dimensions



Mating Connectors

Item	Model
XS3M	XS3F, XS3W

Ordering Information

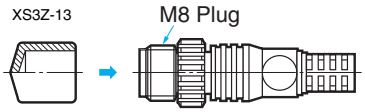
Connection method	Pin shape	Model	Minimum order
Embedded model	Through-hole PCB pins	**XS3M-K421-1**	200
	Solder cup pins	**XS3M-K421-2**	

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

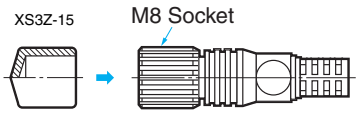
Accessories

Dust Covers

XS3Z-13



XS3Z-15



Model	Material	Suitable connector	
		Model	Mounting portion
XS3Z-13	Acrylic resin/transparent	XS3H/XS3M	M8 plug
XS3Z-15		XS3F	M8 socket

Note: The Dust Covers are for dust prevention and do not ensure IP67 sealability. When mounting a 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.

Precautions

■ Correct Use

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

Connections

- The XS3 and XS2 Sensor I/O Connectors cannot be connected to each other.
- When using Sensors with Connectors or Limit Switches, use the Sensor I/O Connectors specified in the catalog.

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 disconnect the Connectors by pulling the cable.
- Do not touch the engagement side of any Connector with wet hands. If there is any water on the Connector or near the Connector, be sure to wipe off the water before connecting or disconnecting the Connector, otherwise the Connector may short-circuit internally or not ensure good insulation.
- Make sure that engagement side of any Connector is free of metal dust or power.
- Do not use pliers to tighten mounting the thread bracket, otherwise the thread bracket may be damaged. Be sure to tighten each thread bracket by hand within a torque of 0.2 N·m. If the thread bracket is not tightened securely, the Connector may not maintain its proper degree of protection or the thread bracket may fall off due to vibration.

Cable Wire Color

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

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

Degree of Protection

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

Storage

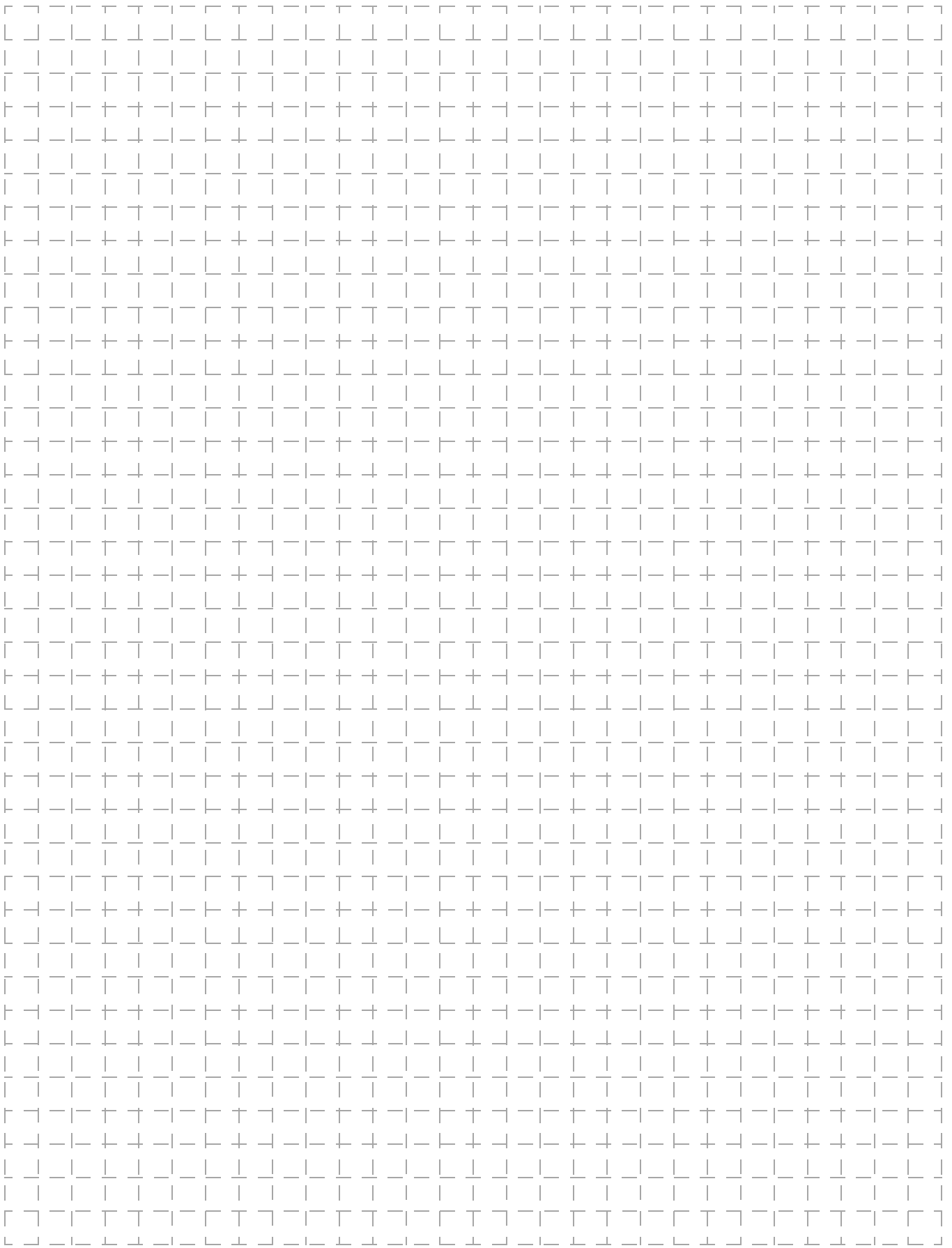
Do not store Connectors for long periods of time in the following locations

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

Installation

- Do not make any cable bends near the base of the Unit.
- Any bends made must have a minimum radius of 36 mm.

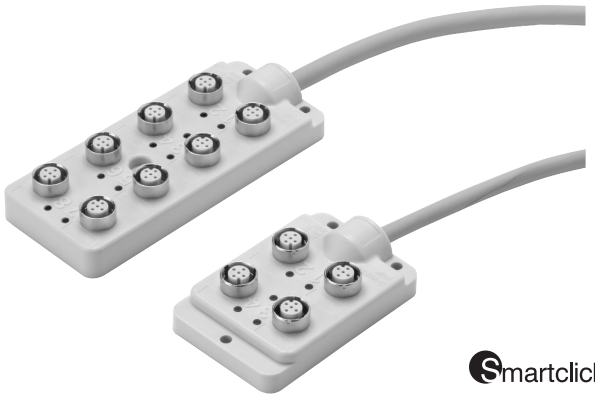
MEMO



Connector Terminal Boxes (M12)
XW3D

Simple Wiring of Sensor Actuators

- Compatible with XS5 and XS2 style M12 connectors
- Greatly reduces wiring work in combination with the XS5 Smartclick.
- Insert the connector and turn 1/8 of a turn to lock the connectors. (XS5 Smartclick connectors)
- Higher rated current to enable output applications.
- Compatible with other M12 screw connectors.
- Degree of protection : IP67 (IEC60529)



■ Ratings and Specifications

Rated current	4 A/port, 12 A/Box (power line)
Rated voltage	10 to 30 VDC
Contact resistance (connector)	40 mΩ max. (20 mV max., 100 mA max.)
Insulation resistance	100 MΩ min. (at 500 VDC)
Dielectric strength (connector)	500 VAC for 1 min (leakage current: 1 mA max.)
Degree of protection	IP67 (IEC60529)
Insertion tolerance	50 times min.
Lock strength	Pulling: 100 N/15 s, Twisting: 1 N·m/15 s
Cable holding strength	100 N/15 s
Lock operating force	0.1 N·m to 0.25 N·m
Ambient operating temperature range	−25 to 70°C

■ Materials and Finish

Item	Materials/finish
Contacts	Brass/nickel base, 0.4-μm gold-plating
Fixtures	Nickel-plated zinc alloy
Case	PBT resin (UL94V-O), light gray
Bushing	Rubber
O-ring	Rubber
PCB	Glass epoxy board
Sealing resin	Urethane resin (UL94V-0)
Cable	UL AWM2464 Signal lines: AWG22 Power and ground lines: AWG18

■ Connection Combinations

OMRON Model No.		Twist-and-Click Plug Connectors	M12 Plug Connectors
		XS5H, XS5G XS5W (plug end) XS5R (plug end)	**XS2H, XS2G XS2W (plug end) XS2R (plug end)**
Connector Terminal Box	**XW3D**	◎	❍

◎: Connected by Smartclick twisting.
❍: Connected by screwing.

Note: Smartclick™ is a registered trademark of the OMRON Corporation.

■ Ordering Information

Sensor type and wiring		3-Wire DC NPN/2-Wire DC 3-4	2-Wire DC 1-4/Without polarity 3-4	3-Wire DC PNP/2-Wire DC 1-4
Actuator wiring		Actuator wiring 1-4	—	Actuator wiring 3-4
No. of ports	No. of I/O	Model	Model	Model
4	4	XW3D-P455-G11	XW3D-P452-G11	XW3D-P453-G11
8	8	XW3D-P855-G11	XW3D-P852-G11	XW3D-P853-G11
4	8	XW3D-P458-G11	—	XW3D-P457-G11

Note: 1. "1-4" and "3-4" are the connector pin numbers that are wired.
2. All cables are 5 m long.

Waterproof Cover (Sold Separately)

XS2Z-22

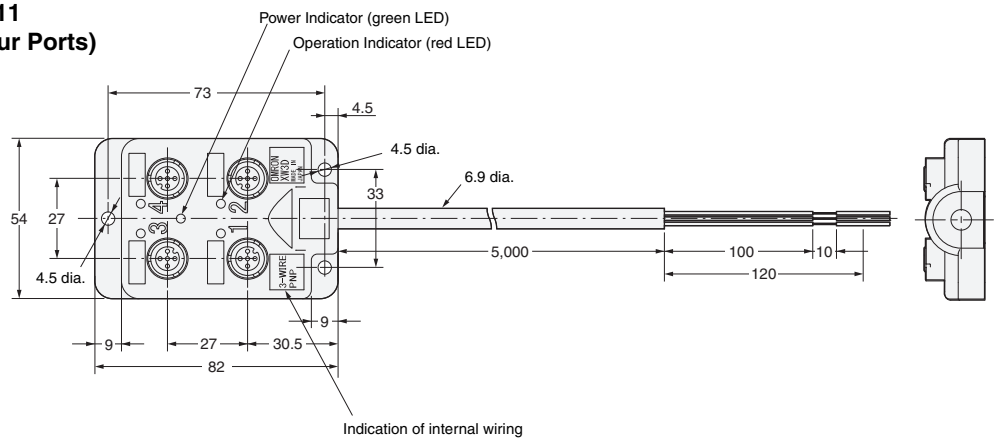
Model	No. per box	Material
XS2Z-22	50	Brass with Ni plating

Note: 1. The XW3D comes with a dust cover. Use the optional XS2Z-22 Waterproof Cover when an IP67 degree of protection is required.
2. The XS2Z-22 connection is threaded.

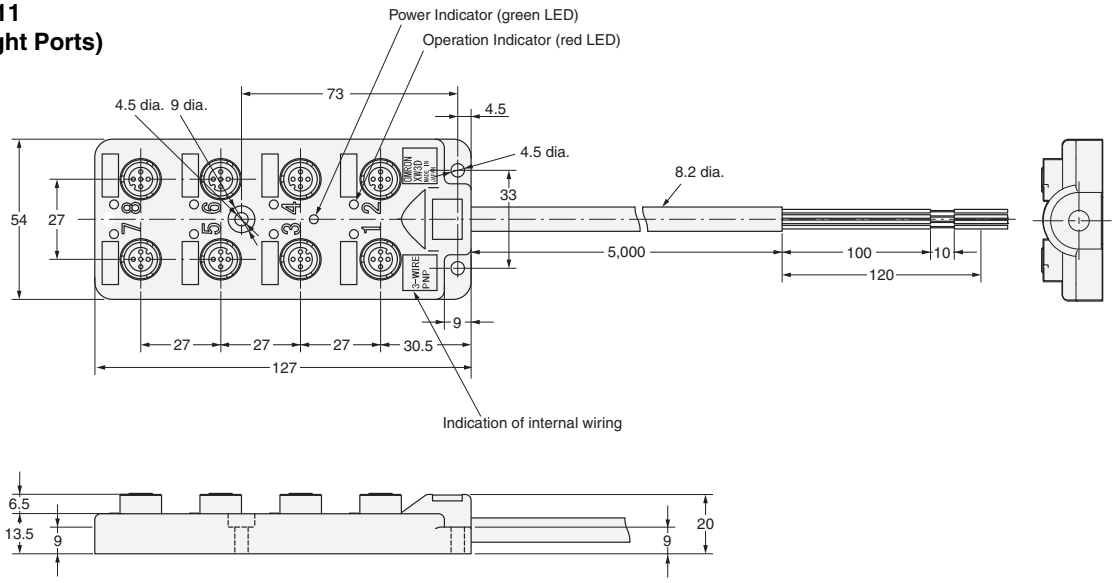
■ Dimensions

(Unit : mm)

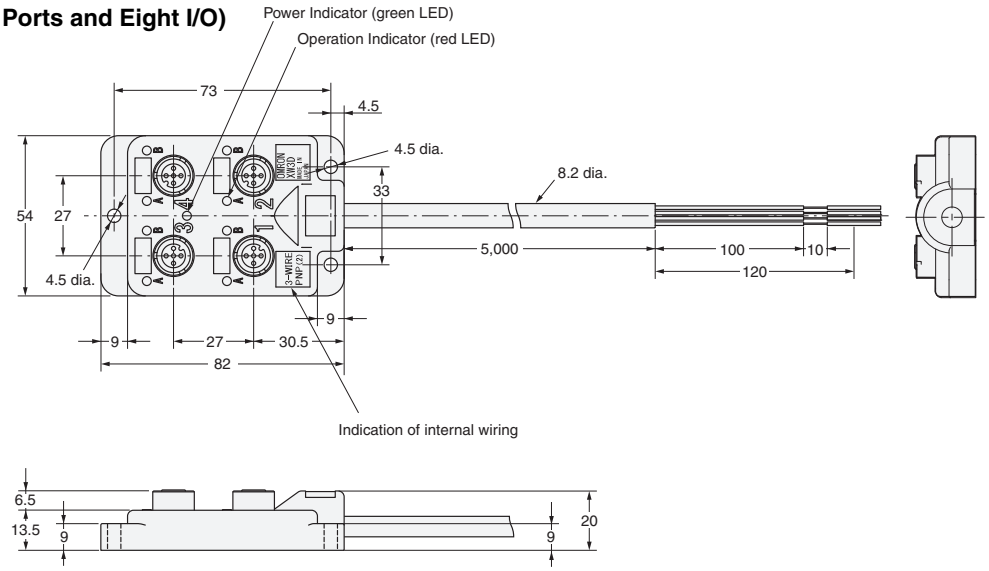
XW3D-P45□-G11
(Model with Four Ports)



XW3D-P85□-G11
(Model with Eight Ports)



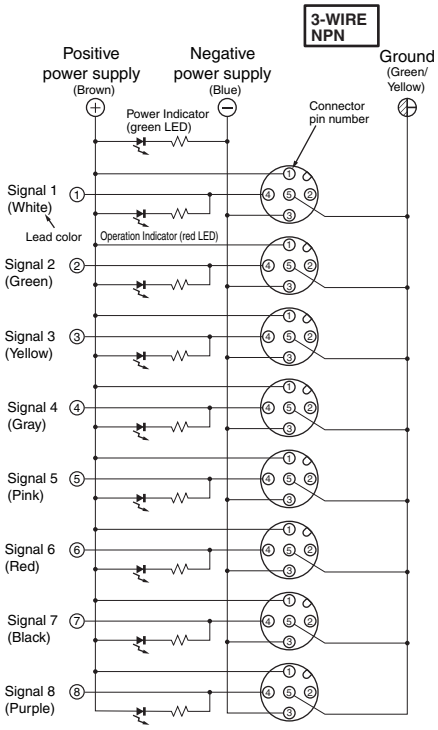
XW3D-P457-G11
(Model with Four Ports and Eight I/O)



■ Wiring Diagrams

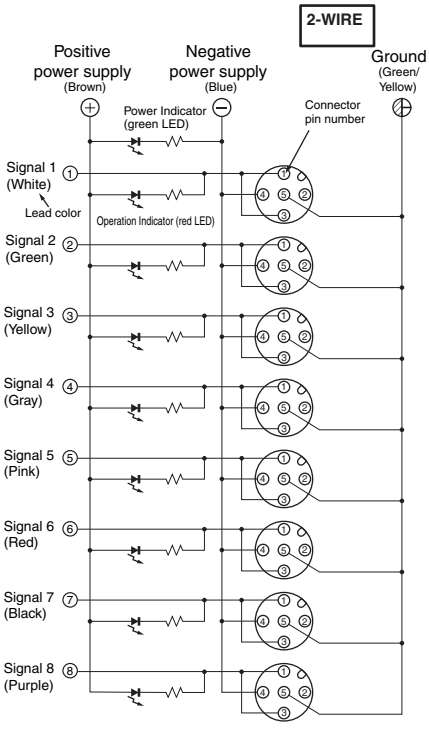
Models with One I/O and One Port

NPN Sensor Specifications
XW3D-P□55-□11
for 3-Wire DC NPN,
2-Wire DC (Without polarity 3-4), and
Actuator (1-4)

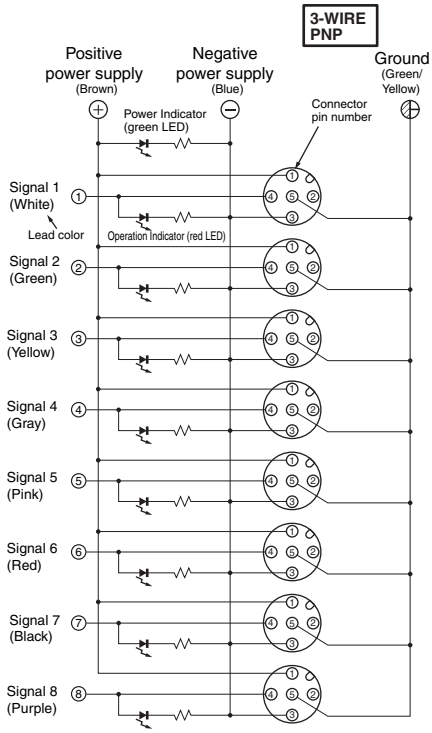


2-Wire Sensor Specifications
XW3D-P□52-□11
for 2-Wire DC (polarity 1-4, without polarity 3-4)

Note: Cannot be used with NPN-type Photoelectric and Proximity Sensors. Cannot be used with Proximity Sensors with polarity 3-4.



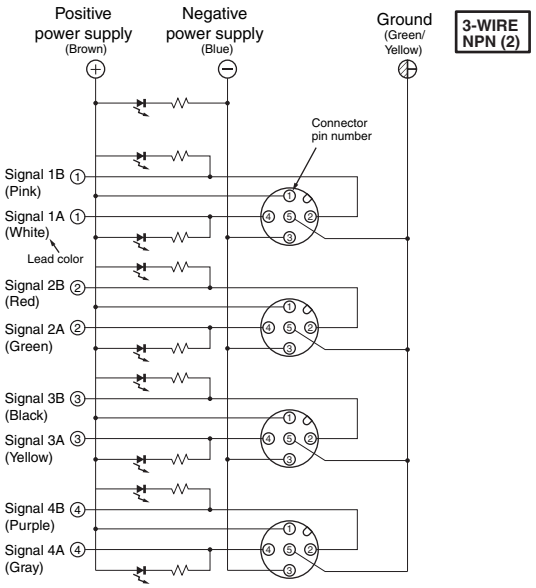
PNP Sensor Specifications
XW3D-P□53-□11
for 3-Wire DC PNP,
2-Wire DC (with polarity 1-4), and
Actuator (3-4)



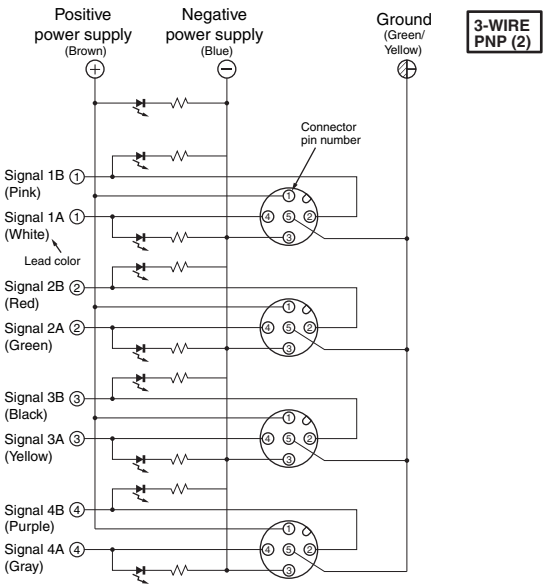
Note: 1. The above wiring diagrams are for eight-port use.
2. Figures in parentheses indicate lead colors.
3. The expression “white/red” means white and red stripes.
4. Here, “1-4” and “3-4” are pin numbers.
5. Contact numbers 5 through 8 in the above diagrams do not exist on Terminal Boxes with four ports. The lead colors for signals 1 through 4, power supply, and ground are the same.

Models with Two I/O and One Port

XW3D-P458-G11
for 3-Wire DC NPN and Actuator (1-4 or 1-2)



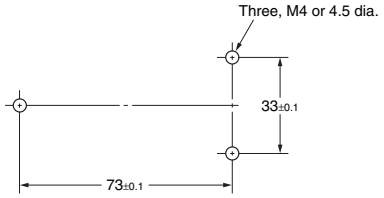
XW3D-P457-G11
for 3-Wire PNP and Actuator (3-4 or 3-2)



Note: Colors given in the connection diagram are lead colors.

■ Mounting Dimensions

(Unit: mm)



Note: Mounting dimensions are the same for any models.

Safety Precautions

Precautions for Correct Use

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

Connector Connection and Disconnection

- Mate the connectors according to the procedure given in this datasheet.
- When joining Connectors, be sure to insert the plug all the way to the back of the socket before attempting to lock the Connectors.
- Do not use tools of any sort to mate the Connectors. Always use your hands. Pliers or other tools may damage the Connectors.
- When mating the Connectors to XS2 or other screw on M12 Connectors, tighten the lock by hand to a torque of 0.39 to 0.49 N·m.
- Confirm in the catalog that sensors and actuators are applicable before using them.
- Always turn OFF the power supply before connecting or disconnecting connectors.
- Do not touch the mating surface of the connectors with wet hands.
- Wipe away any water around the connectors.
- Do not allow metal scraps or dust to enter the mating section.

Cable Lead Polarity

- Connect the cables leads using the correct polarity (Blue: Negative power supply, Brown: Positive power supply).
- If the polarity is not correct, the load may not operate or the operation indicator may not light.
- Always connect a load to the signal lines to operate a sensor or actuator.

Applicable Connectors

- Always mount a Waterproof Cover (XS2Z-22) or Dust Cover (XS2Z-15) to any unused connector on the Connector Terminal Box.

Power Supply and Operation Indicators

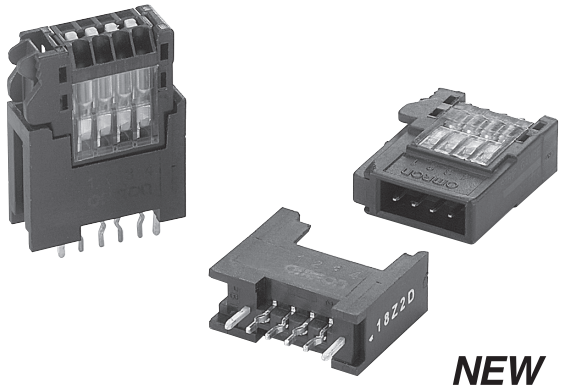
- The power supply indicator will be lit green while power is being supplied. The operation indicator will be lit red while the sensor or actuator is operating.
- The XW3D is for a DC sensor or actuator. Do not use it for an AC sensor or actuator.
- Connector Terminal Boxes are available with either 2-wire or 3-wire internal connections, as indicated on the case.

3-WIRE NPN | 2-WIRE | 3-WIRE PNP | 3-WIRE NPN (2) | 3-WIRE PNP (2)

Easy-wire connectors for Industrial Components
XN2

Easy-wire Connectors with *e-CON** Specifications; Ideal for Connecting Sensors.

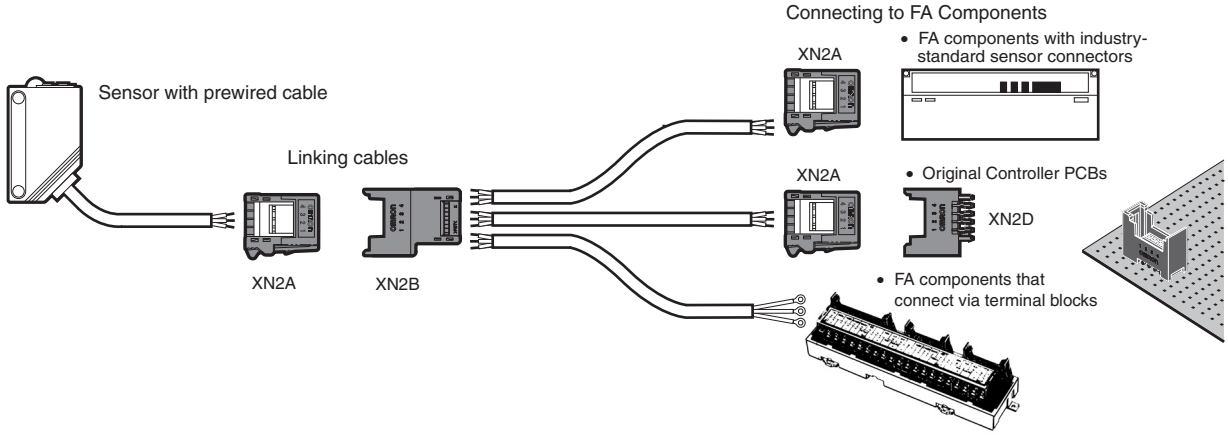
- Uses industry-proven spring clamps for wiring.
- No special tools required for easy wiring.
- Easy to rewire and repair
- Each Connector accepts any wire size from AWG28 (0.08 mm²) to AWG20 (0.5 mm²). (External sheath diameter: 1.5 mm max.)
- RoHS Compliant



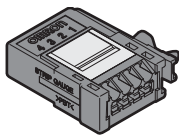
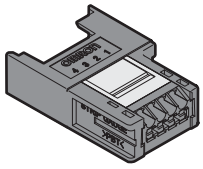
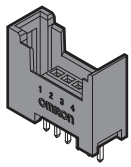
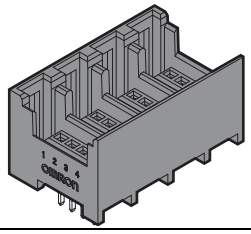
NEW

*E-con specifications are currently being promoted for standardization by manufacturers of FA components and connectors.

Wiring Configuration Example



Ordering Information

Type	Cable Plug Connector	Cable Socket Connector	Single-socket PCB Socket Connector	Four-socket PCB Socket Connector
Appearance				
No. of contacts	Model	Model	Model	Model
3	XN2A-1370	---	XN2D-1371	---
4	XN2A-1470	XN2B-1470	XN2D-1471	XN2D-4471
5	XN2A-1570	---	XN2D-1571	---
6	XN2A-1670	---	XN2D-1671	---
8	XN2A-1870	---	XN2D-1871	---

Ratings and Specifications

Rated current	3 A/pole, using AWG20 (0.5 mm^2) wire 2 A/pole, using AWG22 (0.3 mm^2) wire 1 A/pole, using AWG24 (0.2 mm^2) wire 0.5 A/pole, using AWG26 (0.1 mm^2)or AWG28 (0.08 mm^2) wire
Rated voltage	32 VDC
Contact resistance (See note 1.)	30 mΩ max. (20 mVDC max., 100 mA max.)
Insulation resistance	1,000 MΩ min. (at 500 VDC)
Dielectric strength	1,000 VAC for 60 s (leakage current: 1 mA max.)
Insertion tolerance	50 times
Ambient temperature (See note 2.)	Operating: −30°C to 75°C
Applicable wires (See note 3.)	0.08 mm^2 (AWG28) to 0.5mm^2 (AWG20) The external diameter of the cable sheath is 1.5 mm max.

Note: 1. This value is the contact resistance of the connector.

2. The temperature is limited, however, to the maximum operating temperature for the cables.

3. Avoid using wires with a single strand diameter of 0.16 mm or smaller.

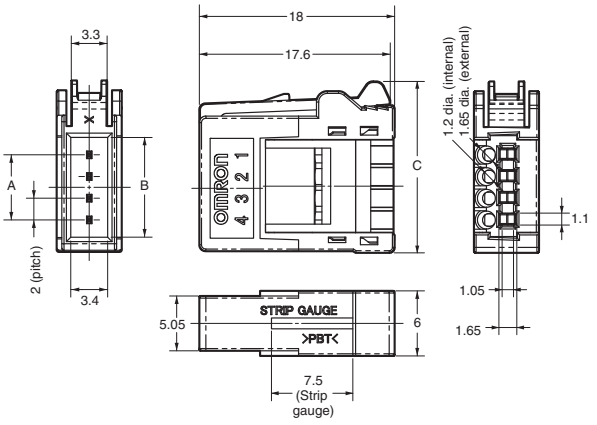
Materials and Finish

Item	Cable Types	PCB Types
Housing	Black PBT resin (UL94V-0)	
Cover	Black PBT resin (UL94V-0)	---
Base	Transparent PC resin (UL94V-0)	---
Lever	PA resin (UL94V-0)/natural (white)	---
Contact	Phosphor bronze/Underplating: Nickel (1.5 to 3.0 μm) Contacts: Gold (0.2 μm min.) Terminals: Tin plating (1.0 μm min.)	
Spring	Stainless steel	---
Fastening pins	---	Copper alloy/nickel base with tin plating

Dimensions (Unit: mm)

Cable Plug Connector

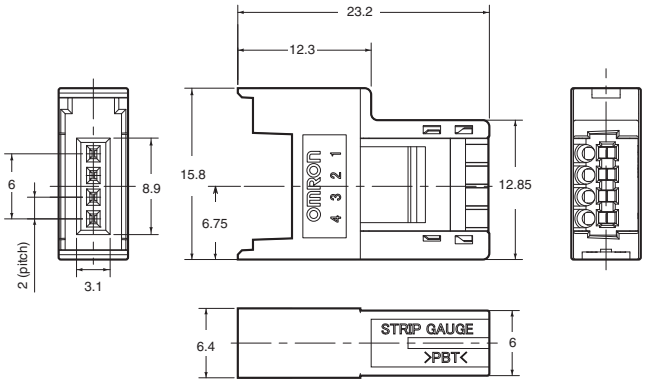
XN2A-1□70



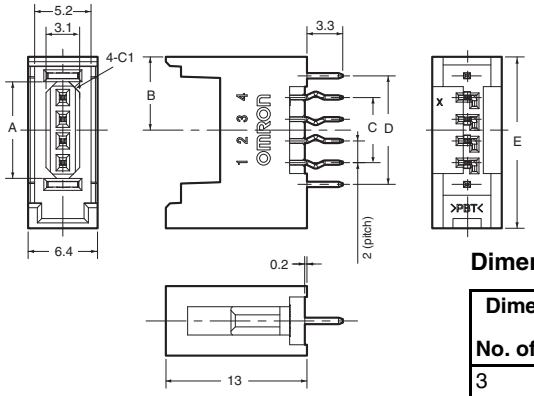
Dimensions

Dimension (mm) No. of contacts	A	B	C
3	4.0	7.2	13.8
4	6.0	9.2	15.8
5	8.0	11.2	17.8
6	10.0	13.2	19.8
8	14.0	17.2	23.8

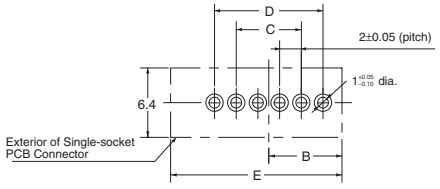
Cable Socket Connector
XN2B-1470



Single-socket PCB Socket Connector
XN2D-1□71



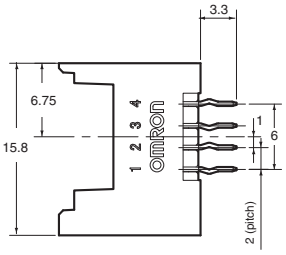
Applicable PCB Dimensions (Top View) t=1.6±0.2

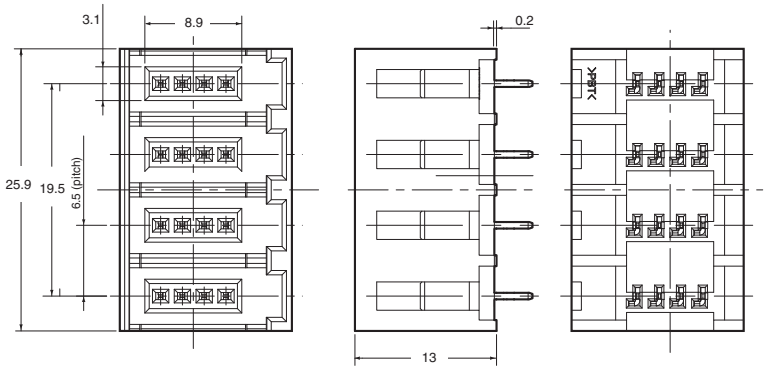


Dimensions

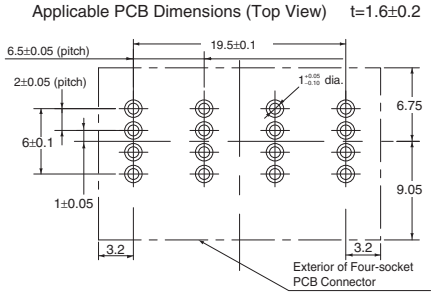
Dimension (mm) / No. of contacts	A	B	C	D	E
3	6.9	5.8	4.0	8.0	13.8
4	8.9	6.8	6.0	10.0	15.8
5	10.9	7.8	8.0	12.0	17.8
6	12.9	8.8	10.0	14.0	19.8
8	16.9	10.8	14.0	18.0	23.8

Four-socket PCB Socket Connector
XN2D-4471





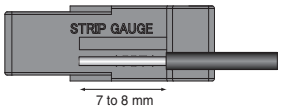
Applicable PCB Dimensions (Top View) t=1.6±0.2



Assembly Instructions

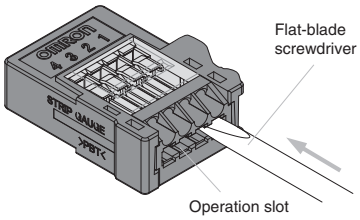
Preparing the Cable

Align the cable with the guide marked STRIP GAUGE on the side of the Connector, strip 7 to 8 mm of the cable sheath, and then twist the wires several times.

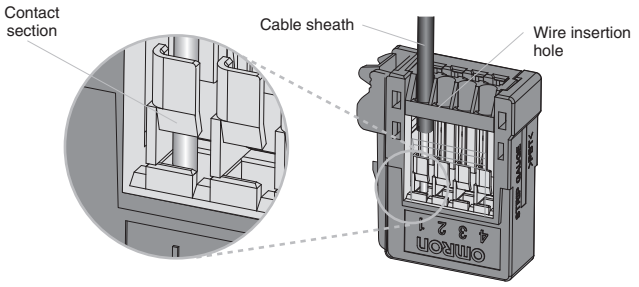


Connecting the Cable to the Connector

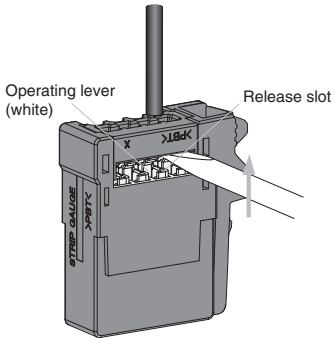
1. Use a flat-blade screwdriver to push down the operating lever inside the operation slot until it locks.



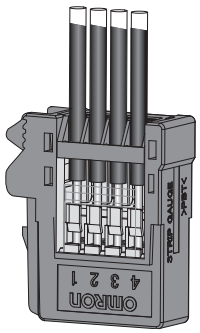
2. Insert the wire fully to the back of the wire insertion hole. Make sure that the cable sheath is inserted into the hole, and that the end of the wire has passed through the contact section.



3. Insert the screwdriver into the release slot, and gently pull back the lever until a click is heard by resetting the lever.

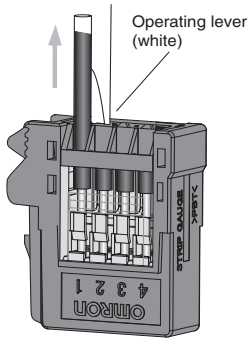


4. Make sure that the following operations have been performed.
   - Check that the operating lever is reset.
   - Check that the procedure in step 2 has been followed. (Pull gently on the cable to make sure that there is resistance, indicating that the Connectors are wired correctly.)



Removing Cables from the Connector

1. Press down on the operating lever to lock the lever before removing the cable.
2. After removing the cable from the Connector, always reset the operating lever, except when rewiring the Connector. The Connector can be rewired without resetting the operating lever.



Safety Precautions

■ General Precautions

- Do not pull on the Connectors or cables. Doing so may cause damage to the Connectors or cause the cables to disconnect.
- Install the Connectors in a location where they will not be stepped on, to prevent disconnection of the cables or damage to the Connectors. If the Connectors have to be installed in such a location, use a protective cover.
- Make sure that the Connectors are mated in the correct direction. Mating the Connectors incorrectly will damage to the Connectors.
- Do not use the Connectors if the lock lever is bent or broken. Doing so may cause the Connector to become loose or the device to malfunction.
- Before mounting Connectors to a PCB, make sure that the Connectors are positioned in the correct direction.
- Before bending a cable to connect it to a Connector, check the bending specifications of the cable to be used.
- Do not exceed the rated current of the cable. Always check the rated current of each cable to be used.
- Do not use pliers or other tools to remove the Connectors.
- Hold the Connectors firmly by hand when handling them. Do not use excessive force to push the Connectors. Forcing the Connectors may result in injury.
- These Connectors do not resist water. Do not use Connectors in places where water or oil may be sprayed onto the Connectors.

■ Precautions for Correct Use

Wiring

- Insert one wire into each insertion hole. Inserting two or more wires into a single hole may cause unexpected problems.
- Make sure that no power is being supplied to a Connector before wiring, inserting, or removing the Connector. Doing so may result in electric shock.
- Follow the wiring diagrams for the device being used when wiring the cables.
- Strip the cables according to the instructions in the applicable operation manual, making sure not to damage the wires.
- Do not use a screwdriver with a tip larger than the specified width when wiring the Connectors.
- Make sure short-circuits are not created, e.g., by protruding wires.

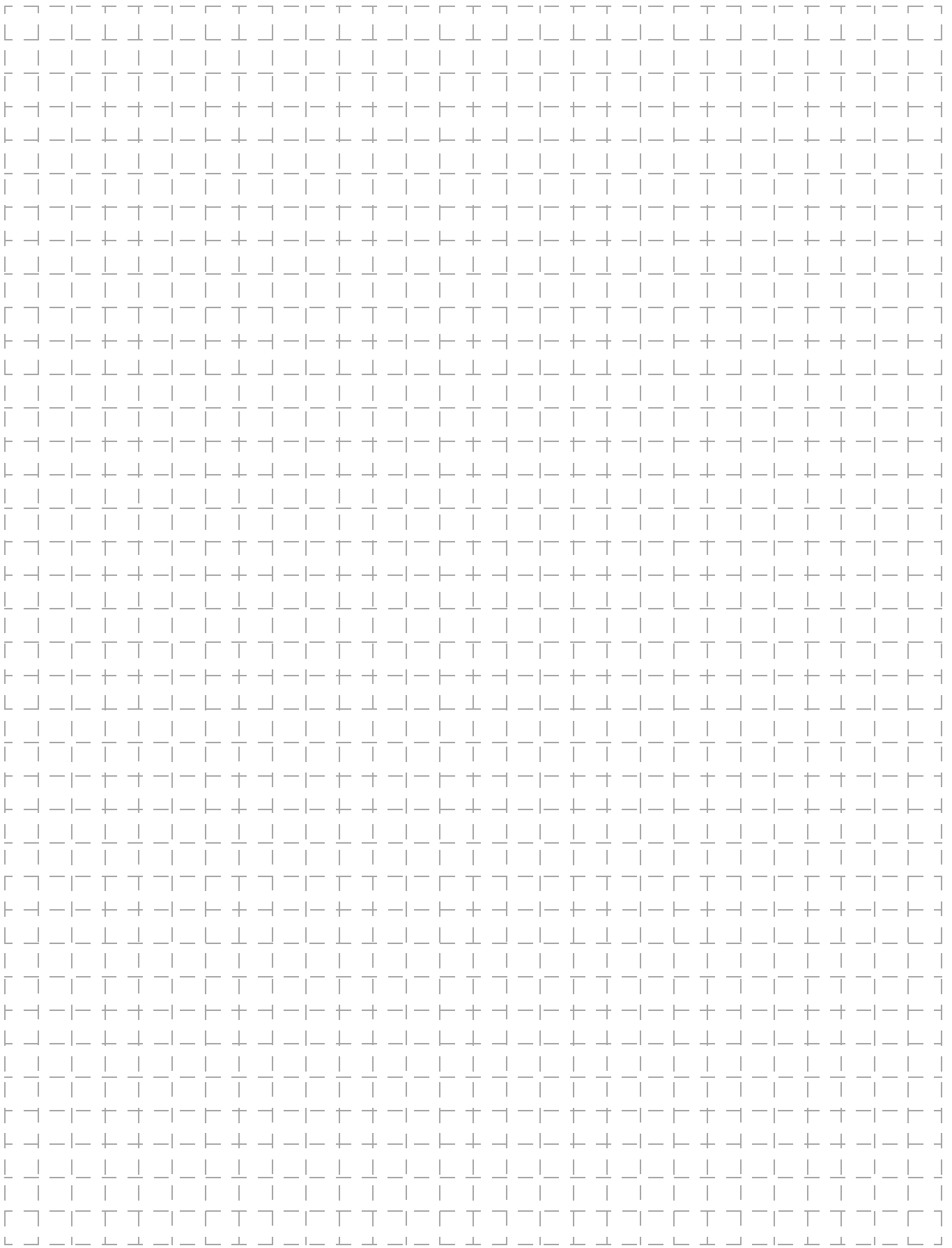
Inserting and Removing Connectors

- When connecting or disconnecting Connectors, always hold the case of the Connector.
- When mating Connectors, insert the Connector fully into the back of the socket, and then make sure that the Connector will not become loose by lightly pulling it in the opposite direction.

Recommended Screwdriver

- Use a flat-blade screwdriver with a tip of 2 mm max. Do not use screwdrivers that gradually widen towards the base of the screwdriver.
- Using other screwdrivers may cause damage to the adjacent poles.

MEMO



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PART NUMBER **PAGE**

Environmental Responsibility

Omron's commitment is to offer products that are environmentally warranted (warranted to be free from any banned substances) to customers all over the world. In accordance with this policy, Omron has taken action to completely eliminate all hazardous substances from its control devices as well. To-date, all relays fully comply with the Restriction of Hazardous Substances (RoHS) Directive for their lead and cadmium free construction. Omron strives to be an industry forerunner in regulating the use of chemical substances and working toward the goal of eliminating all hazardous substances in Omron products.

Omron considers addressing environmental issues to be its corporate responsibility and is working to reduce its negative impact on the environment by establishing an environmental action plan that designates six areas of core activities and clarifies the targets of those activities.

- **Eco-Management**
- **Eco-Products**
- **Eco-Factories/Laboratories/Offices**
- **Eco-Logistics**
- **Eco-Communication**
- **Eco-Mind**

These constitute our efforts to become an environmentally advanced company that balances environmental preservation with economic development.

Promoting environmentally concious business activities as we conserve natural resources.

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