OMRON

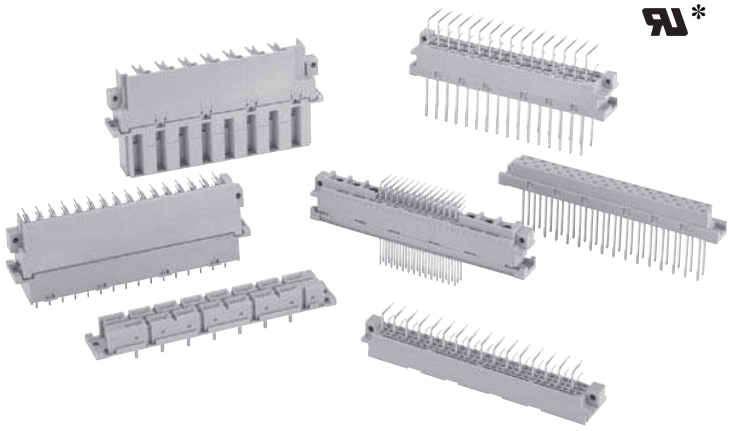
DIN Medium/High-Current Connectors

XC4

Medium/High-Current Connectors Conform to International Standards.

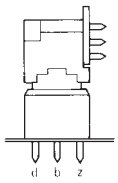
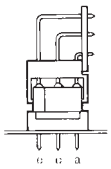
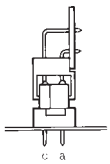
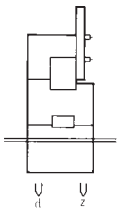
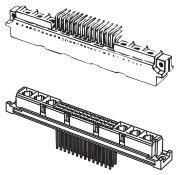
- DIN 41612 compliance ensures full interchangeability.
- Sufficient creepage distance for medium/high-current and high-voltage circuit applications.
- Mounts in XC5-series Racks.
- The product line also includes M-type (Mixed) DIN Connectors.
- The XC4 conforms to UL standards (No. E103202). (Some models are not included)

RoHS Compliant



✻ Some models are not included.

■ Connectors

Model	XC4A/B	XC4E/F	XC4G/H	XC4K/L	XC4M/N
DIN connector type	F type	E type	D type	H type	M type
Appearance					
Page	2 to 3	4 to 5	6 to 7	8 to 9	11 to 12

■ Ratings and Characteristics

Item \ Model	XC4A/B	XC4E/F	XC4G/H	XC4K/L	XC4M/N	Remarks
Rated current	6 A			15 A	2 A	
Rated voltage	380 VAC	500 VAC			300 VAC	
Contact resistance	15 mΩ max.			8 mΩ max.	20 mΩ max.	At 20 mV, 100 mA max.
Insulation resistance	10^6 MΩ min.					At 100 VDC
Dielectric strength	1,550 VAC			3,100 VAC	1,000 VAC	1 min (leakage current: 1 mA max.)
Total insertion force	74 N	1.23 N per contact	39 N	88 N	0.93 N per contact	Max. value
Removal force	0.20 N	0.15 N	0.20 N		0.15 N	Min. value with a test gauge
Insertion durability	400 times					
Ambient operating temperature	–55 to 125°C					With no icing at low temperature

■ Materials and Finish

Item			XC4A/B	XC4E/F	XC4G/H	XC4K/L	XC4M/N (See note 2.)
Housings		Plugs	Fiber-glass reinforced PC resin (UL94 V-1)/ gray	Fiber-glass reinforced PBT resin (UL94 V-0)/gray		PC resin with glass (UL94 V-1)/ gray (See note 1.)	Fiber-glass reinforced PBT resin (UL94 V-0)/gray
		Sockets					
Contacts	Mating end	Plugs	Brass/nickel base, gold plating			Brass/nickel base, silver plating	Brass/nickel base, gold plating
		Sockets	Phosphor bronze inlay/nickel base, gold plating			Phosphor bronze/nickel base, silver plating	Phosphor bronze/nickel base, gold plating
	Terminal	Plugs	Brass/nickel base, tin plating			Brass/nickel base, silver plating	Brass/nickel base, tin plating
		Sockets	Phosphor bronze/nickel base, tin plating			Phosphor bronze/nickel base, tin plating	Phosphor bronze/nickel base, tin plating

Note: **1.** The XC4L-1541 is made of fiber-glass reinforced PBT resin (UL94 V-0).
2. Connector materials and finishes.

■ Applicable Wrap Post Wire Sizes

AWG26, AWG24, AWG22, or AWG20
(Solid wire: 0.40 to 0.80 mm dia.)

■ Wrap Post Length

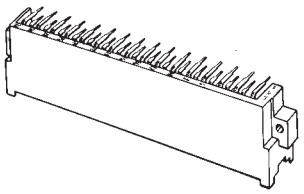
3 wires

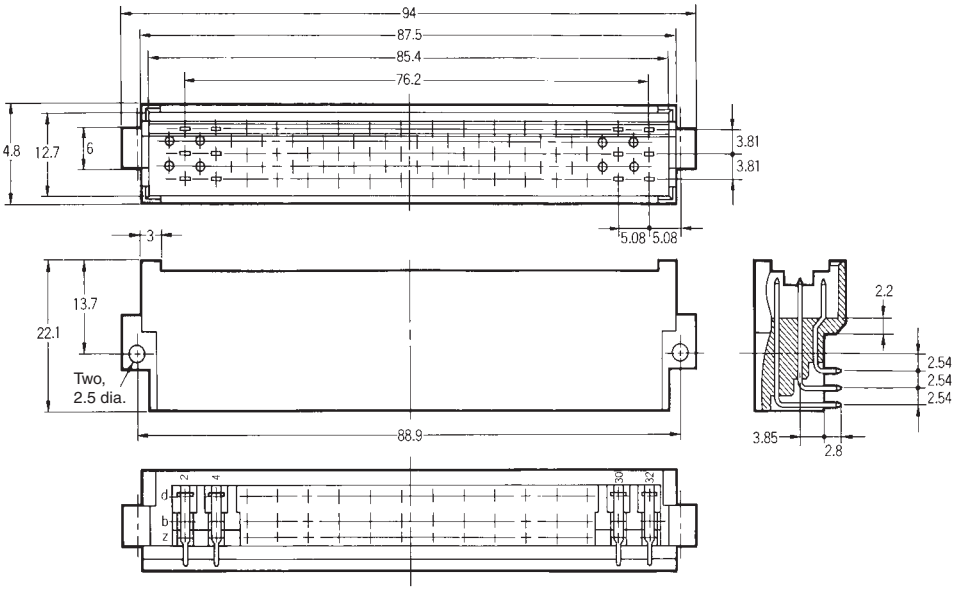
XC4A DIN F-type Plugs

■ Dimensions

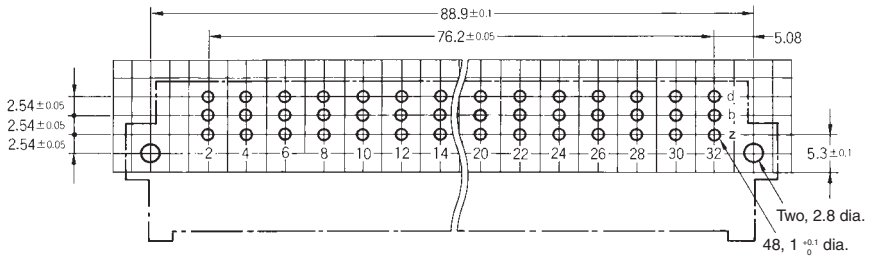
(unit: mm)

XC4A-4812
(With right-angle DIP terminals)

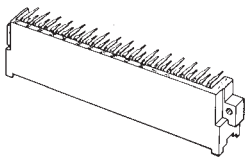




Mounting holes (bottom view)



■ Ordering Information

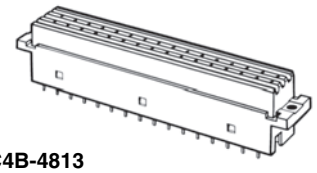
Appear-ance		
No. of contacts	**Terminal type**	**Model**
48	Right-angle DIP terminals	XC4A-4812

XC4B DIN F-type Sockets

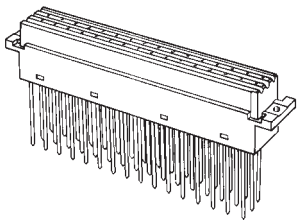
■ Dimensions

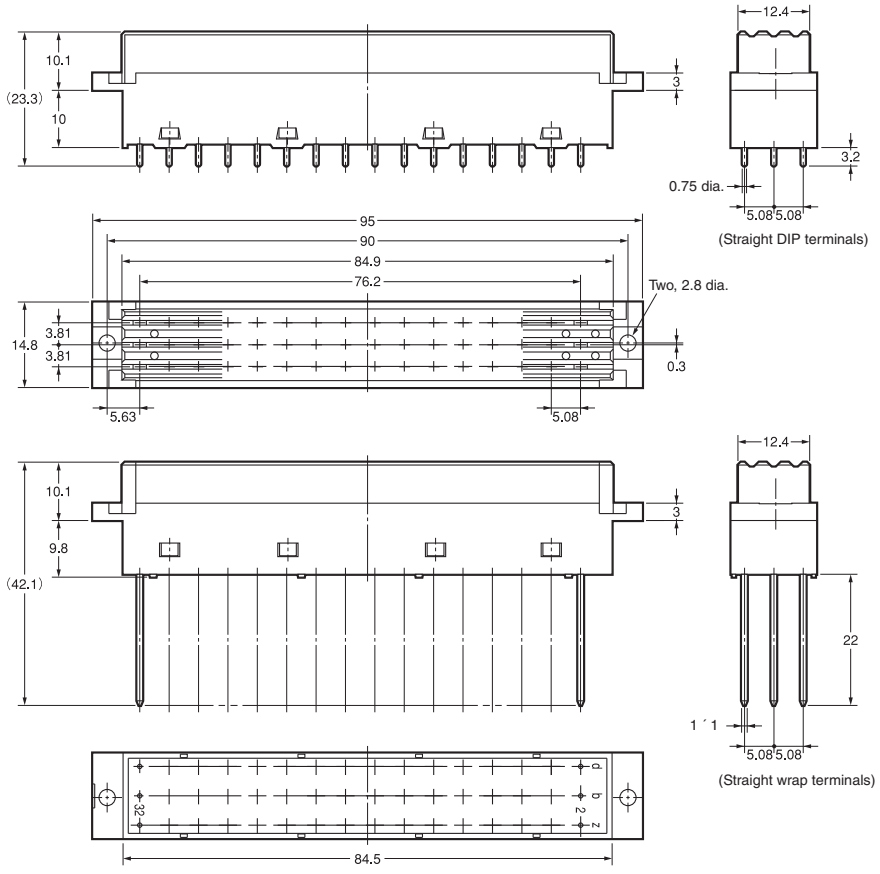
(unit: mm)

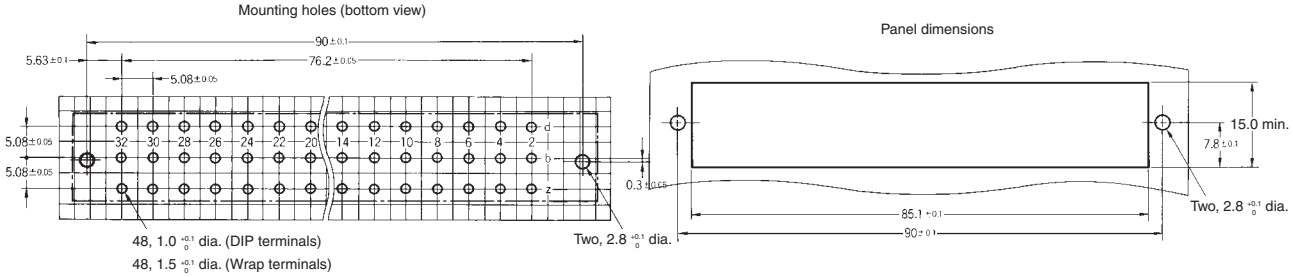
XC4B-4811
(With straight DIP terminals)



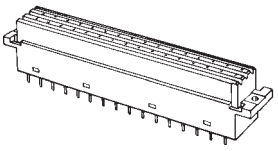
XC4B-4813
(With straight wrap terminals)







■ Ordering Information

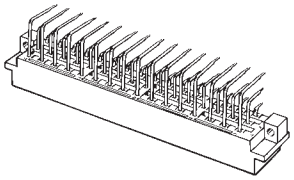
Appear-ance		
No. of contacts	**Terminal type**	**Model**
48	Straight DIP terminals	XC4B-4811
	Straight wrap terminals	XC4B-4813

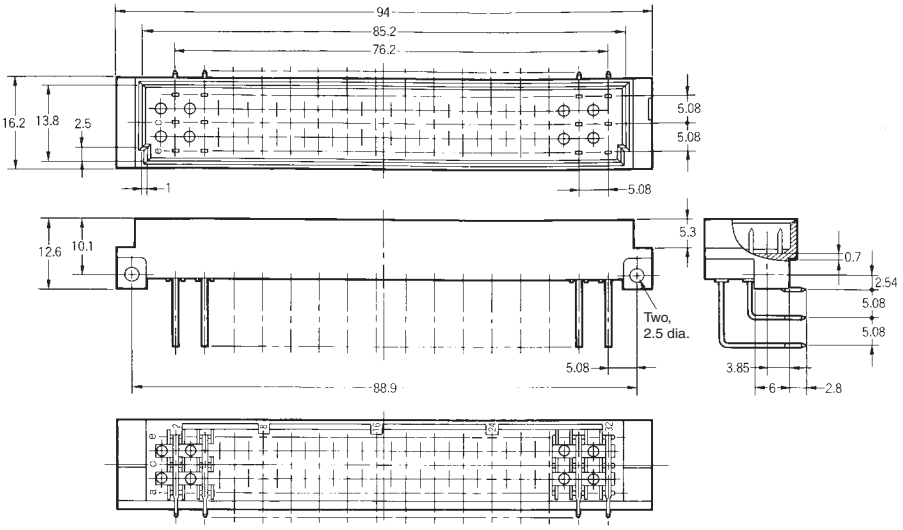
XC4E DIN E-type Plugs

■ Dimensions

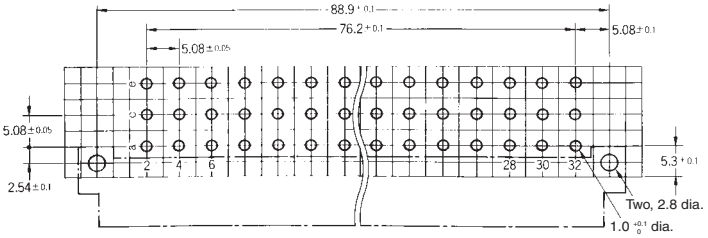
(unit: mm)

XC4E-4812
XC4E-3212
(With right-angle DIP terminals)



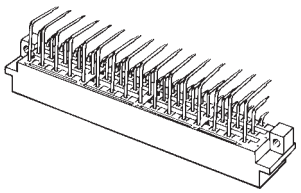


Mounting holes (bottom view)



Note: The mounting holes in the above diagrams are for the 48-contact Plug.
The 32-contact Plug does not have the center row (C in the above diagrams).

■ Ordering Information

Appear-ance		
No. of contacts	**Terminal type**	**Model**
48	Right-angle DIP terminals	XC4E-4812
32*	Right-angle DIP terminals	XC4E-3212

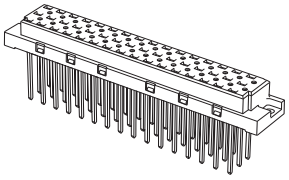
*Has no center row (row b).

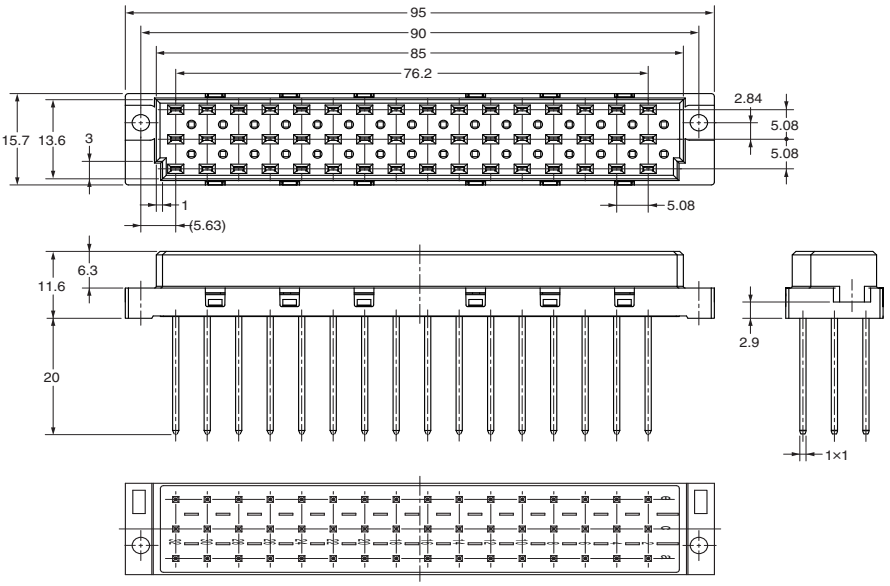
XC4F DIN E-type Sockets

■ Dimensions

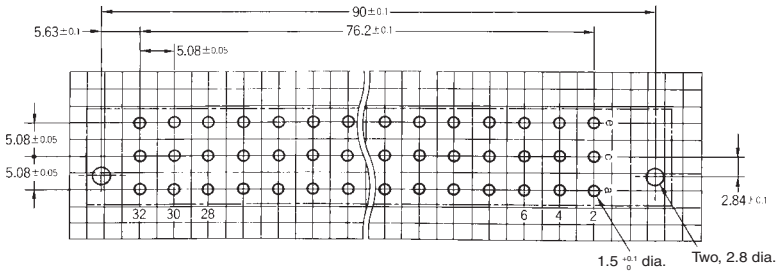
(unit: mm)

XC4F-4813
XC4F-3213
(With straight wrap terminals)



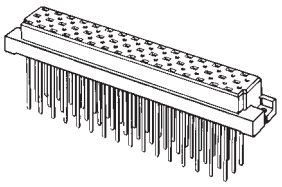


Mounting holes (bottom view)



Note: The mounting holes in the above diagrams are for the 48-contact Plug. The 32-contact Plug does not have the center row (C in the above diagrams).

■ Ordering Information

Appear-ance		
No. of contacts	**Terminal type**	**Model**
48	Straight wrap terminals	XC4F-4813
32*	Straight wrap terminals	XC4F-3213

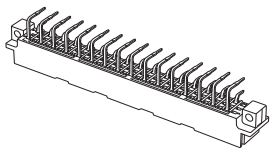
*Has no center row (row b).

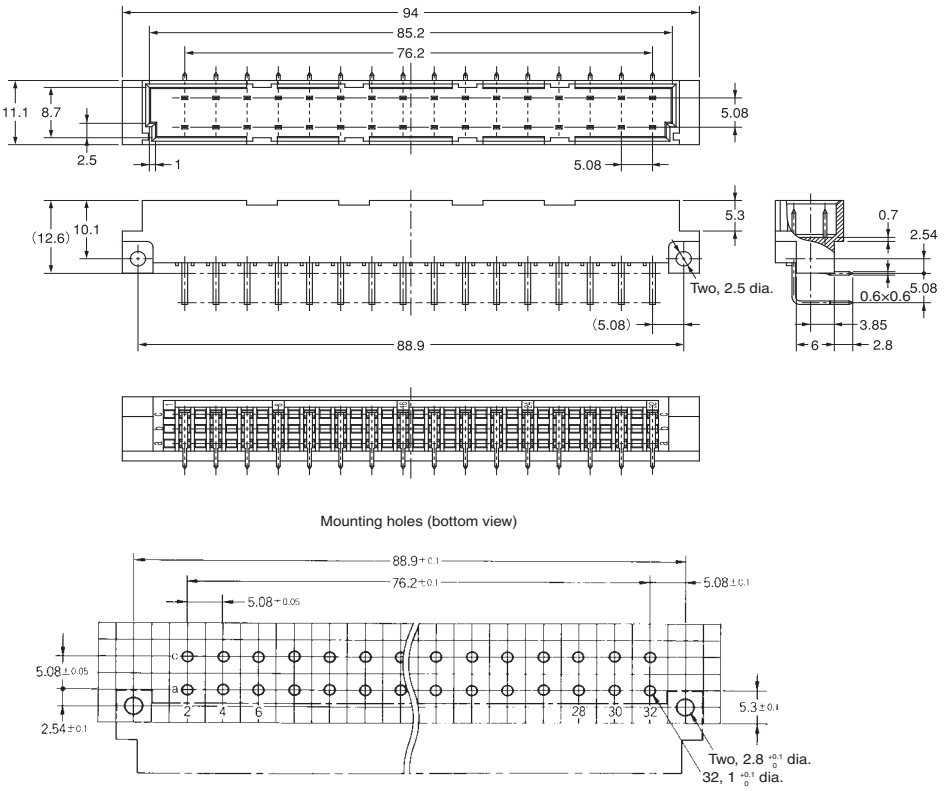
XC4G DIN D-type Plugs

■ Dimensions

(unit: mm)

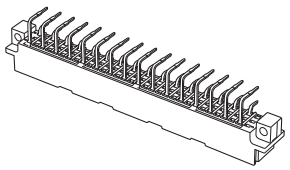
XC4G-3212
(With right-angle terminals)





Mounting holes (bottom view)

■ Ordering Information

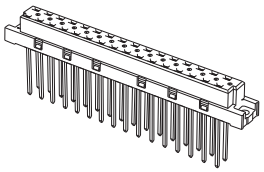
Appear-ance		
No. of contacts	**Terminal type**	**Model**
32	Right-angle terminals	XC4G-3212

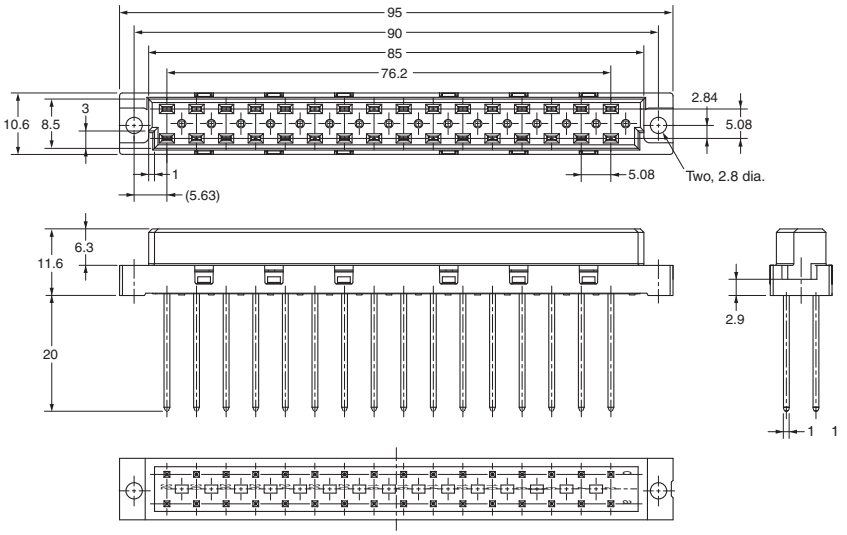
XC4H DIN D-type Sockets

■ Dimensions

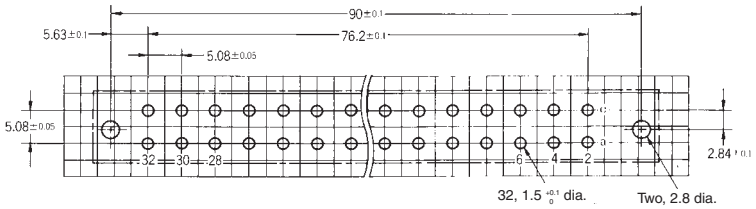
(unit: mm)

XC4H-3213
(With straight wrap terminals)

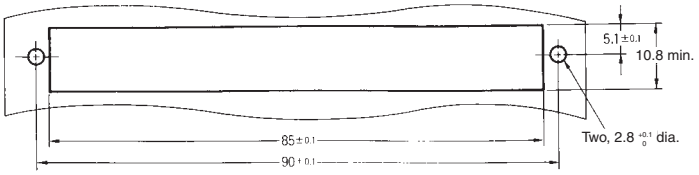




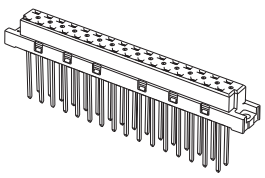
Mounting holes (bottom view)



Panel dimensions



■ Ordering Information

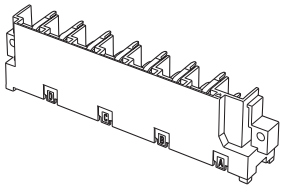
Appearance		
		
No. of contacts	**Terminal type**	**Model**
32	Straight wrap terminals	XC4H-3213

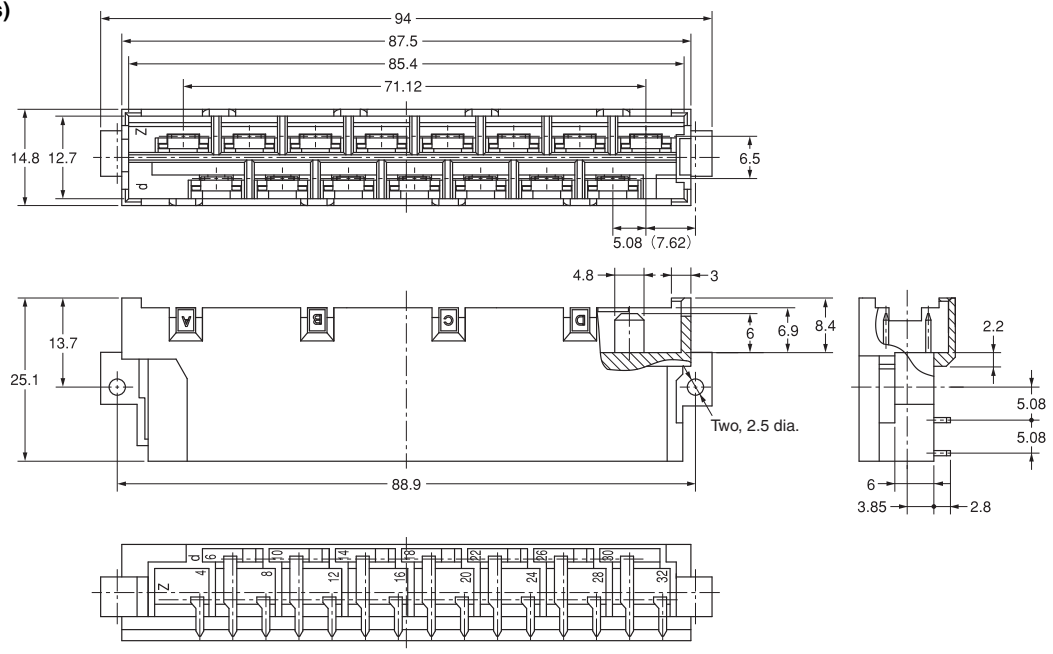
XC4K DIN H-type Plugs

■ Dimensions

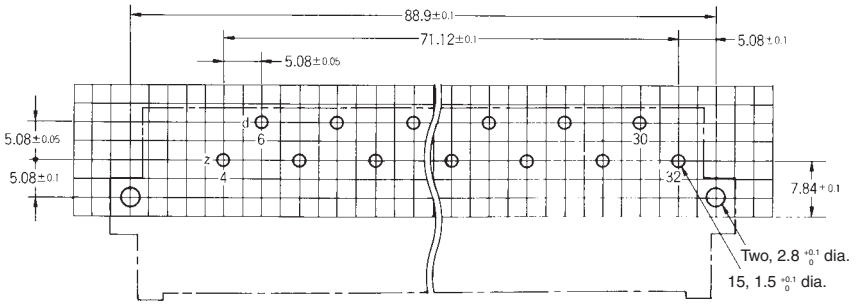
(unit: mm)

XC4K-1542
(With right-angle DIP terminals)

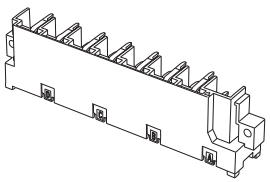




Mounting holes (bottom view)



■ Ordering Information

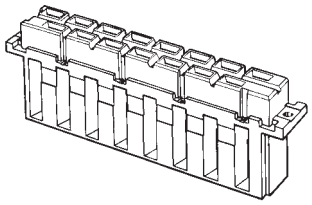
Appear-ance		
No. of contacts	**Terminal type**	**Model**
15	Right-angle DIP terminals	XC4K-1542

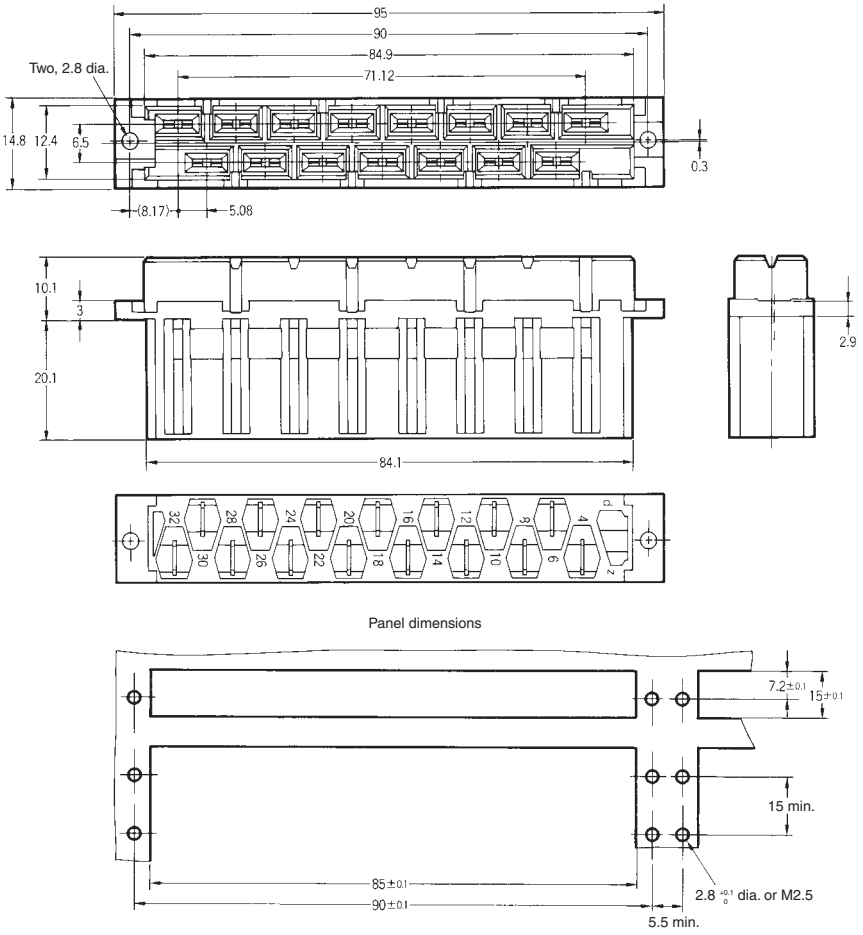
XC4L DIN H-type Sockets, Faston Tab Terminals

■ Dimensions

(unit: mm)

XC4L-1546
(With Faston tab terminals)





■ Ordering Information

No. of contacts	Terminal type	Model
15	Faston tab terminals (See note.)	XC4L-1546

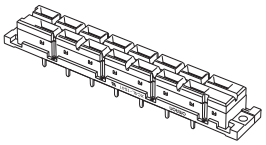
Note: The applicable contact is a #250 Faston receptacle.

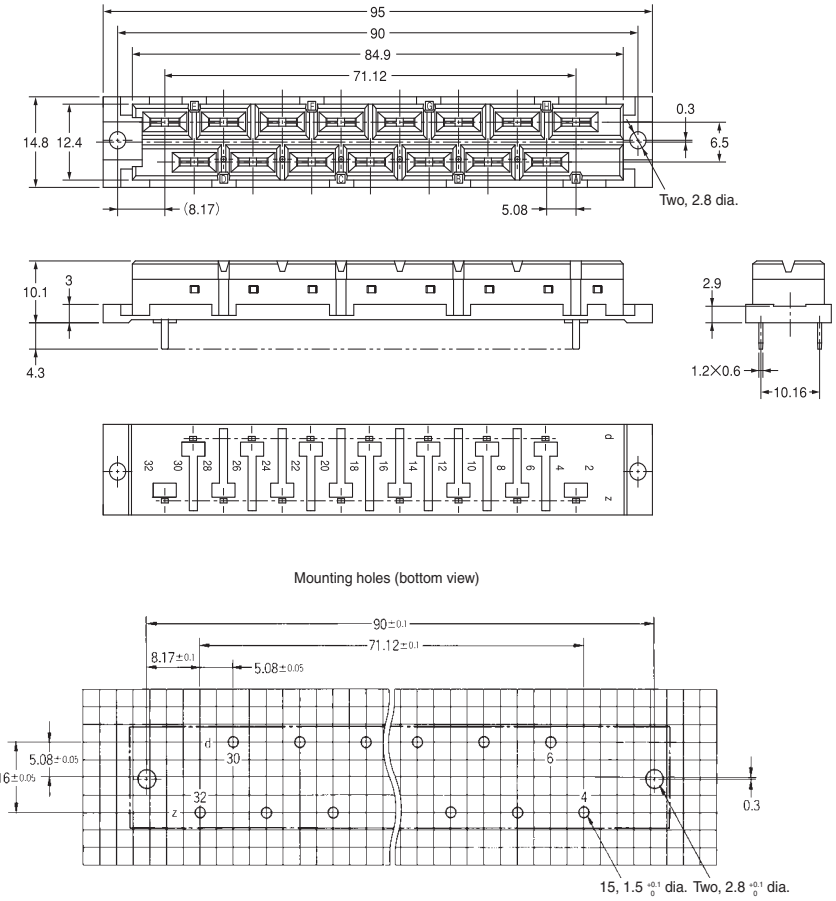
XC4L DIN H-type Sockets, Straight DIP Terminals

■ Dimensions

(unit: mm)

XC4L-1541
(With straight DIP terminals)





Mounting holes (bottom view)

■ Ordering Information

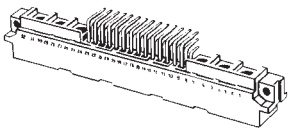
No. of contacts	Terminal type	Model
15	Straight DIP terminals	XC4L-1541

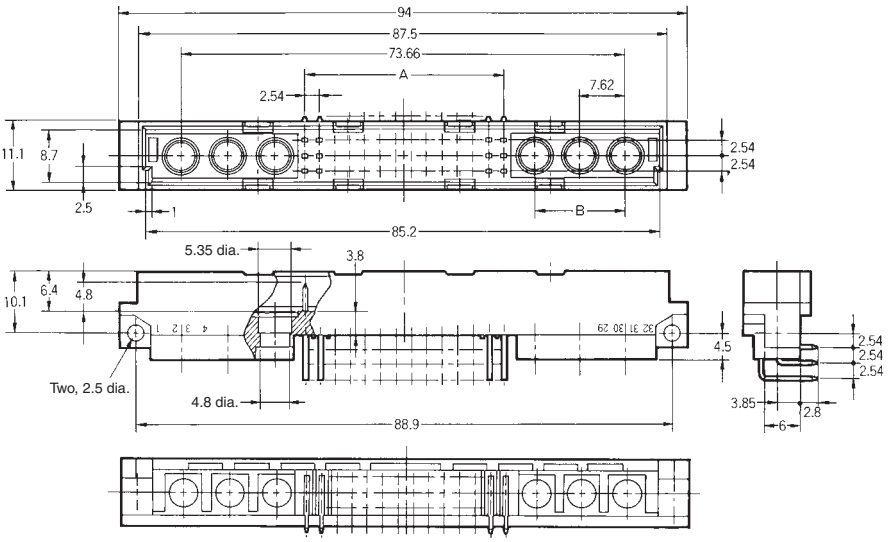
XC4M DIN M-type Plugs

■ Dimensions

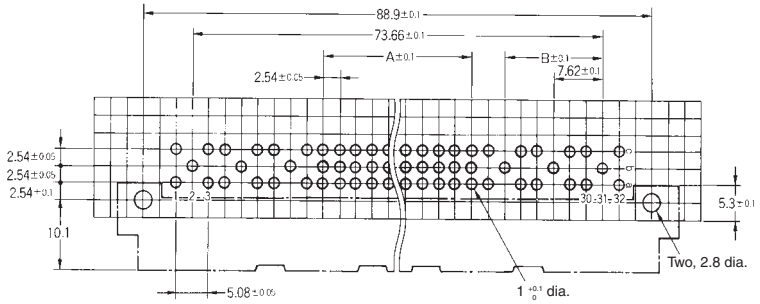
(unit: mm)

XC4M-0212 (2 slots)
XC4M-0412 (4 slots)
XC4M-0612 (6 slots)
(With right-angle DIP terminals)





Mounting holes (bottom view)



Dimensions

No. of contacts	No. of slots	No. of signal circuit contacts	A (mm)	B (mm)
2/78	2	78	63.50	---
4/60	4	60	48.26	7.62
6/42	6	42	33.02	15.24

■ Ordering Information

No. of contacts (See note.)	Terminal type	Model
2/78	Right-angle DIP terminals	XC4M-0212
4/60		XC4M-0412
6/42		XC4M-0612

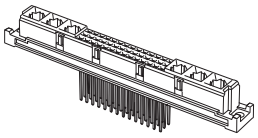
Note: The numbers shown are the number of slots/number of signal circuit contacts.

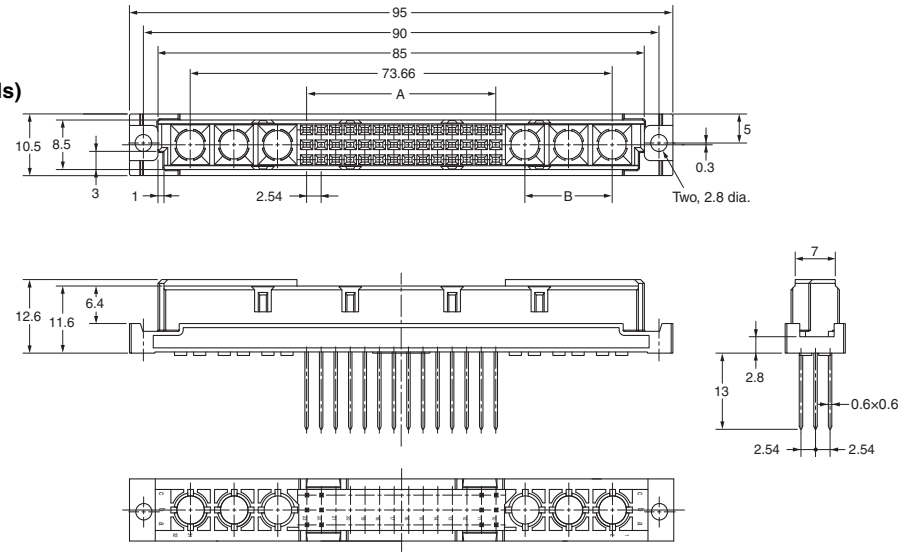
XC4N DIN M-type Sockets

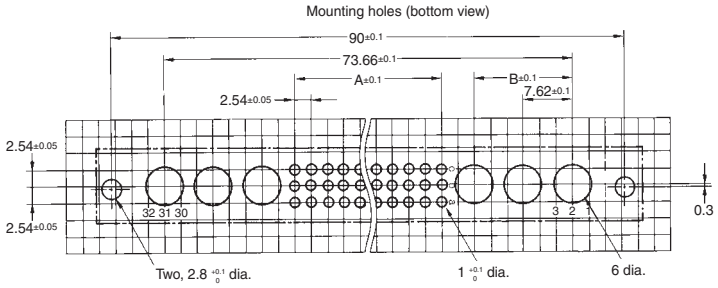
■ Dimensions

(unit: mm)

XC4N-0213 (2 slots)
XC4N-0413 (4 slots)
XC4N-0613 (6 slots)
(With straight wrap terminals)

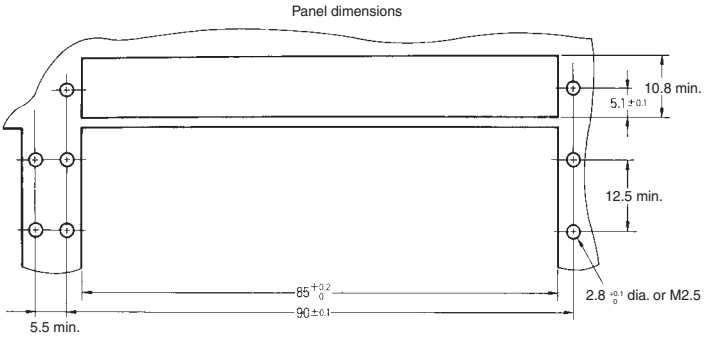






Dimensions

No. of contacts	No. of slots	No. of signal circuit contacts	A (mm)	B (mm)
2/78	2	78	63.50	---
4/60	4	60	48.26	7.62
6/42	6	42	33.02	15.24



■ Ordering Information

No. of contacts (See note.)	Terminal type	Model
2/78	Straight wrap terminals	XC4N-0213
4/60		XC4N-0413
6/42		XC4N-0613

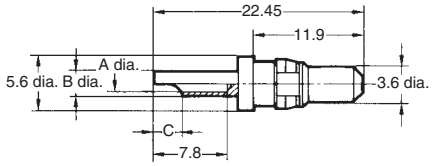
Note: The numbers shown are the number of slots/number of signal circuit contacts.

XC4W High-current Contacts for XC4M and XC4N

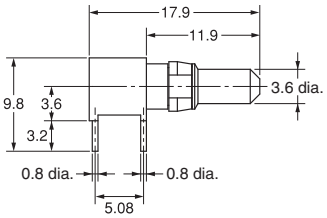
■ Dimensions

(unit: mm)

XC4W-0□11
Plugs with Solder-cup Terminals



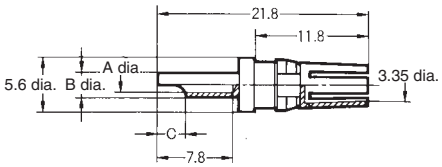
XC4W-0412
Plugs with Right-angle Solder-DIP Terminals



Dimensions (mm)

Model	A	B	C
XC4W-0411	4.8	5.6	5.2
XC4W-0211	2.8	3.7	4.0
XC4W-0111	1.7	2.6	3.0
XC4W-1411	4.8	5.6	5.2
XC4W-1211	2.8	3.7	4.0
XC4W-1111	1.7	2.6	3.0

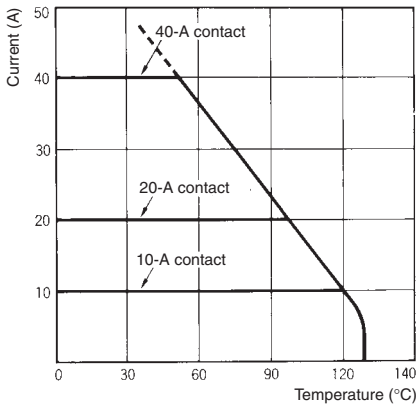
XC4W-1□11
Receptacle with Solder-cup Terminals



■ Ordering Information

Classification	Allowable current	Terminal type	Model
Plugs	40 A	Solder-cup terminals	XC4W-0411
	20 A		XC4W-0211
	10 A		XC4W-0111
	40 A	Right-angle solder-DIP terminals	XC4W-0412
Receptacles	40 A	Solder-cup terminals	XC4W-1411
	20 A		XC4W-1211
	10 A		XC4W-1111

■ High-current Contact Characteristics

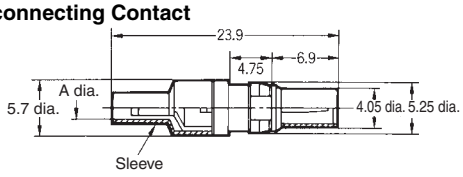


XC4W Coaxial Contacts for XC4M and XC4N

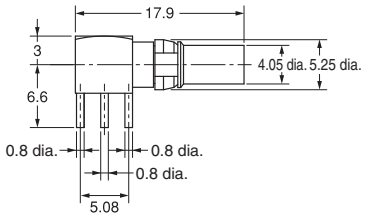
■ Dimensions

(unit: mm)

XC4W-2111 (2.2 dia.)
XC4W-2211 (3.2 dia.)
Plug Side with Straight Cable-connecting Contact



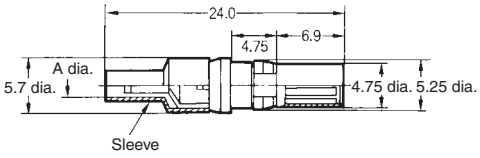
XC4W-2014
Plug Side with Right-angle Solder-DIP Terminals



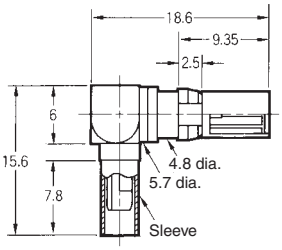
Dimensions (mm)

Model	A
XC4W-2111	2.2
XC4W-2211	3.2
XC4W-3111	2.2
XC4W-3211	3.2
XC4W-3112	2.2
XC4W-3212	3.2

XC4W-3111 (2.2 dia.)
XC4W-3211 (3.2 dia.)
Socket Side with Straight Cable-connecting Contact



XC4W-3112 (2.2 dia.)
XC4W-3212 (3.2 dia.)
Socket Side with Right-angle Cable-connecting Contact



■ Ordering Information

	Contact form	Sleeve diameter (mm)	Model
Plug	Straight cable-connecting contacts (solder and crimping)	2.2 dia.	XC4W-2111
		3.2 dia.	XC4W-2211
	Right-angle solder DIP contacts	---	XC4W-2014
Socket	Straight cable-connecting contacts (solder and crimping)	2.2 dia.	XC4W-3111
		3.2 dia.	XC4W-3211
	Right-angle cable-connecting contacts (solder and crimping)	2.2 dia.	XC4W-3112
		3.2 dia.	XC4W-3212

Note: The coaxial contact was designed for a 50-Ω cable, but a 75-Ω cable may be used at some frequencies.

■ Applicable Coaxial Cables

Sleeve diameter (mm)	Model	Characteristic impedance	
		50 Ω	75 Ω
2.2 dia.	XC4W-2111 XC4W-3111 XC4W-3112	RG178B/U RG196A/U	
3.2 dia.	XC4W-2211 XC4W-3211 XC4W-3212	RG188A/U RG316U RG174A/U	RG179B/U RG187A/U

■ Coaxial Cable Characteristics

50-Ω coaxial cable		75-Ω coaxial cable	
Frequency (GHz)	Reflection factor (max.)	Frequency (MHz)	Reflection factor (max.)
Up to 1	0.05	Up to 100	0.015
1 to 4	0.07	100 to 200	0.02
4 to 10	0.10	200 to 300	0.03

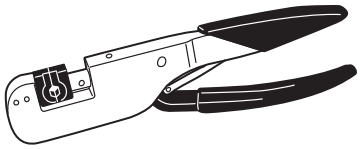
■ Mounting the XC4W to the XC4/XC4N

The C-shaped Spring supplied with the XC4W Contacts is needed to mount the XC4W to the XC4/XC4N Housing. It does not lock the Contacts securely to the housing, but is used for self-alignment to keep the contact terminals from bending when mating. The Contacts may bend slightly after they are connected if lateral force is applied to them. Make sure the Contacts are not bent prior to wiring.

■ XC4M/XC4N Tools

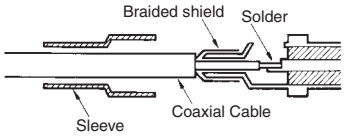
Crimping Tool and Die Set

XY2D-0011
(Crimping Tool)
XY2D-0012
(Die set for 2.2 mm dia. sleeve)
XY2D-0013
(Die set for 3.2 mm dia. sleeve)

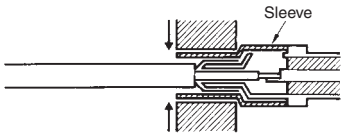


Model
XY2D-0011
XY2D-0012
XY2D-0013

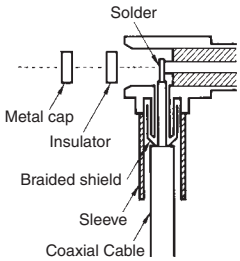
- The crimping Tool connects a coaxial cable to a coaxial contact.
- Place the sleeve over the terminal end of the coaxial cable and insert the contact. solder the core of the coaxial cable.



- Slide the sleeve in place and press fitting it with the crimping Tool.



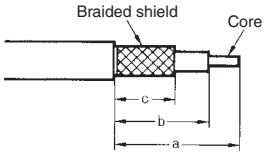
- Right-angle Contacts



Solder the core and press fitting the sleeve as you would a straight contact. Insert the insulator and cover it with a metal cap.

Do not solder the cap to the contact.

Cable Dimensions



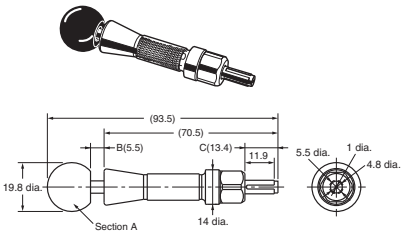
Unit: mm

Coaxial Contact	a	b	c
Straight cable-connecting contacts	9.5 $^{+0}/_{-0.3}$	7 $^{+0}/_{-0.3}$	4 ±0.3
Right-angle cable-connecting contacts	11.5 $^{+0}/_{-0.5}$	10 $^{+0}/_{-0.5}$	5.5 ±0.5

Contact Removal Tool

(unit: mm)

XY2D-0014



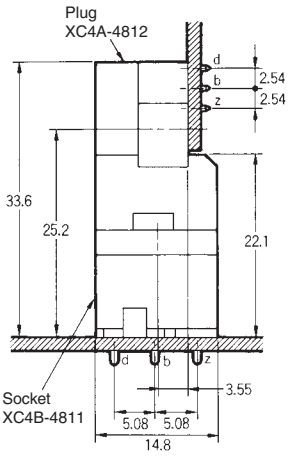
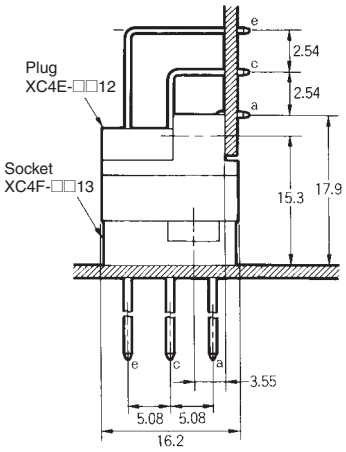
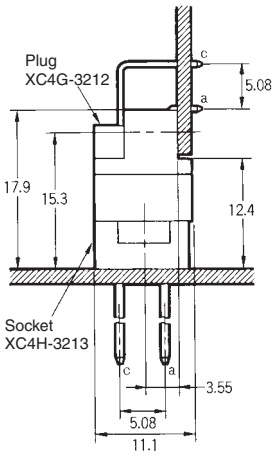
Note 1. Section A is covered.
Note 2. Section B moves from 5.5 to 26.
Note 3. Section C moves from 13.4 to 0.

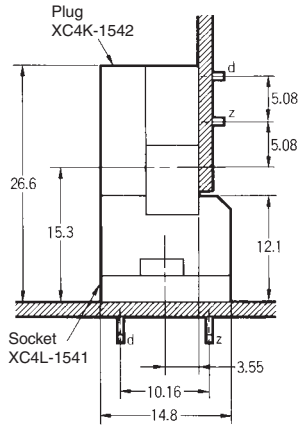
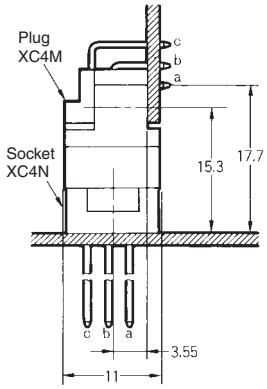
Model
XY2D-0014

- High-current Contacts and Coaxial Contacts can be inserted into the Contact Housing manually by pushing them in from the back of the Connector.
- Use the special tool shown above to remove Contacts.
- Pull out the Removal Tool lance. Align the four ridges on the end of the Tool with the four ridges on the Contact Housing. Push the lance in firmly.
- The Contact can then be easily removed by pushing in the lance.
- Perform these steps from the mating side of the Connector.

■ Mating Diagrams

(unit: mm)

Model	XC4A/B	XC4E/F	XC4G/H
DIN connector type	F type	E type	D type
Mating diagrams			

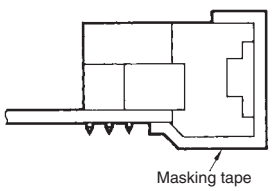
Model	XC4K/L	XC4M/N
DIN connector type	H type	M type
Mating diagrams		

■ Precautions

Correct Use

Automated Soldering

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



- PC resin is used to make the XC4A/B, XC4K, and XC4L-1546 Housing more rugged. Only use freon TF, freon TE, or an alcohol-based cleaning solution to wash the Housing, and keep washing time as short as possible.

Automated Soldering Conditions (Jet Flow)

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

- Application examples provided in this document are for reference only. In actual applications, confirm equipment functions and safety before using the product.
- Consult your OMRON representative before using the product under conditions which are not described in the manual or applying the product to nuclear control systems, railroad systems, aviation systems, vehicles, combustion systems, medical equipment, amusement machines, safety equipment, and other systems or equipment that may have a serious influence on lives and property if used improperly. Make sure that the ratings and performance characteristics of the product provide a margin of safety for the system or equipment, and be sure to provide the system or equipment with double safety mechanisms.

Note: Do not use this document to operate the Unit.

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