

International DIN standards; Solderless Connection Series (Fine Fit)

- Backplane systems can be designed with ease with XC5 Connectors as conforming with DIN standards.
- Using unique W-shaped pins, these Connectors prevent contacts from being bent or falling out. Ensures highly reliable connections.
- Less damage to the through-holes in circuit boards.
- The XC6-series Connectors can be used as Backplane Connectors.
- Uses highly-reliable Twin-contact Sockets.
- A special Press-fit Tool is available.

RoHS Compliant

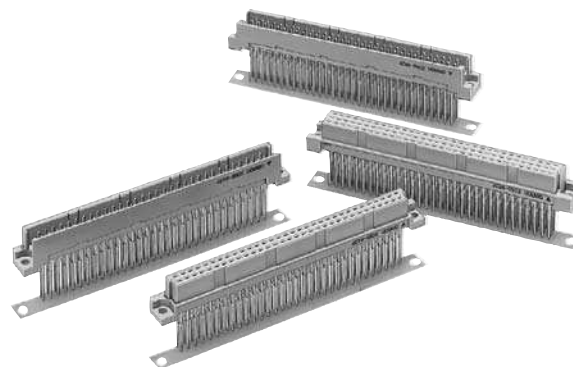
■ Ratings and Characteristics

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 min.)
Total insertion force	0.59 N max. per contact
Removal force	0.15 N min. (with test gauge, t = 0.56 mm)
Insertion durability	200 times
Ambient operating temperature	–55 to 125°C (with no icing at low temperature)

■ Materials and Finish

Type	Plugs	Sockets
Housings	Fiber-glass reinforced PBT resin (UL94 V-0)/gray	
Contacts (See note.)	Mating end	Copper alloy/nickel base, 0.4-μm gold plating
	Fine fit	Copper alloy/nickel base, gold flash plating
	Terminal	Copper alloy/nickel base, 0.15-μm gold plating (See note.)

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



■ Applicable Wrap Post Wire Sizes

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

■ Wrap Post Length

3 wires for the 13-mm contacts
4 wires for the 17-mm contacts

■ Ratings for Fine-fit Connectors

Rated current	2 A
Contact resistance	5 mΩ max. (at 20 mV, 100 mA max.)
Pressure input	196 N max. per contact
Holding force	44.1 N min.
Unit torque durability	0.022 N·m min.
Vibration	At 10 to 2,000 Hz, 1.52-mm amplitude, or 147 m/s ² will not interrupt current for more than 1 μ sec.
Shock	At 980 m/s ² , will not break current for more than 1 μ sec.

■ Applicable Fine-fit Boards

- Width 1.6 to 3.2 mm
- Through-hole diameter 1.0 ±0.08 mm (Drill diameter 1.15 ±0.05 mm)
Plating: Copper 25 mm min., or solder 5 mm min. on a copper base at least 25 mm thick.
- Pitch error: ±0.03 mm max.

XC5B Double-row Sockets, DIN B-type, Fine-fit

■ Dimensions

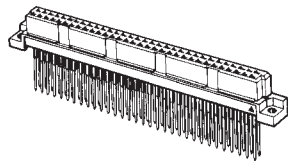
(unit: mm)

XC5B-□□2P-11□□

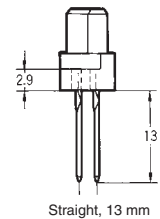
(With straight terminals)

Two, 2.8 dia.

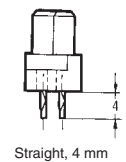
Coding Key slot



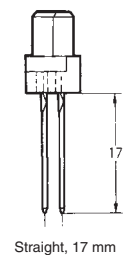
Mounting holes (bottom view)



Straight, 13 mm



Straight, 4 mm



Straight, 17 mm

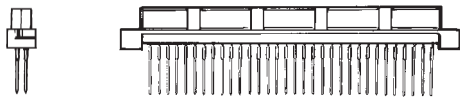
1±0.08 dia.

Two, 2.8 dia.

Dimensions

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
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

Appearance			
No. of contacts	Terminal type		
	Straight terminals, 4 mm	Straight terminals, 13 mm	Straight terminals, 17 mm
32	XC5B-322P-1140	XC5B-322P-1131	XC5B-322P-1132
64	XC5B-642P-1140	XC5B-642P-1131	XC5B-642P-1132
100	XC5B-012P-1140	---	---

XC5E Double-row Plugs, DIN Q-type, Fine-fit

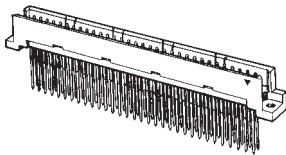
■ Dimensions

(unit: mm)

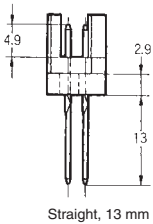
XC5E-□□2P-11□□
(With straight terminals)

Two, 2.8 dia.

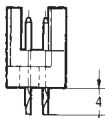
Coding Key position



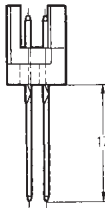
Mounting holes (bottom view)



Straight, 13 mm



Straight, 4 mm



Straight, 17 mm

1±0.08 dia.

Two, 2.8 dia.

Dimensions

No. of contacts	Dimensions (mm)						Coding Key positions (contact No.)
	A	B	C	D	E	F	
32	54.2	47.4	38.10	44.6	43.3	49.36	5, 12
64	94.8	88.0	78.74	85.2	83.9	90.00	6, 13, 20, 27
100	140.5	133.7	124.46	130.9	129.7	135.72	10, 20, 31, 41

■ Ordering Information

Appearance			
No. of contacts	Terminal type		
	Straight terminals, 4 mm	Straight terminals, 13 mm	Straight terminals, 17 mm
32	XC5E-322P-1140	XC5E-322P-1131	XC5E-322P-1132
64	XC5E-642P-1140	XC5E-642P-1131	XC5E-642P-1132
100	XC5E-012P-1140	---	---

XC5D Triple-row Sockets, DIN C-type, Fine-fit

■ Dimensions

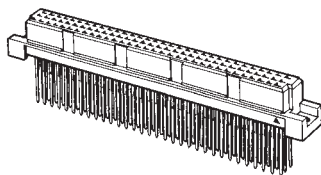
(unit: mm)

XC5D-□□2P-11□□

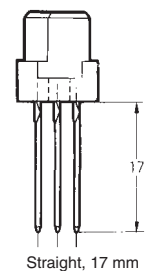
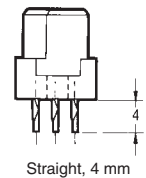
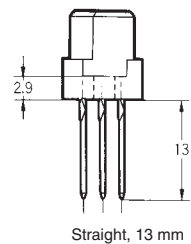
(With straight terminals)

Two, 2.8 dia.

Coding Key slot



Mounting holes (bottom view)



1±0.08 dia.

Two, 2.8 dia.

Dimensions

No. of contacts	Dimensions (mm)					Coding Key slot positions (contact No.)
	A	B	C	D	E	
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

Appearance	Terminal type		
No. of contacts	Straight terminals, 4 mm	Straight terminals, 13 mm	Straight terminals, 17 mm
48	XC5D-482P-1140	XC5D-482P-1131	XC5D-482P-1132
64*	XC5D-642P-1140	XC5D-642P-1131	XC5D-642P-1132
96	XC5D-962P-1140	XC5D-962P-1131	XC5D-962P-1132

*Has no center row (row b).

XC5G Triple-row Plugs, DIN R-type, Fine-fit

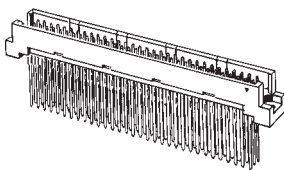
■ Dimensions

(unit: mm)

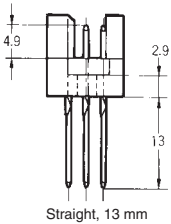
XC5G-□□2P-11□□
(With straight terminals)

Two, 2.8 dia.

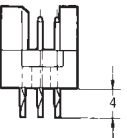
Coding Key position



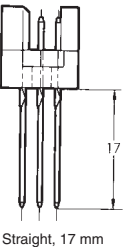
Mounting holes (bottom view)



Straight, 13 mm



Straight, 4 mm



Straight, 17 mm

Dimensions

No. of contacts	Dimensions (mm)						Coding Key positions (contact No.)
	A	B	C	D	E	F	
48	54.1	47.4	38.10	44.6	43.3	49.36	5, 12
64*	94.8	88.0	78.74	85.2	83.9	90.00	6, 13, 20, 27
96	94.8	88.0	78.74	85.2	83.9	90.00	6, 13, 20, 27

*Has no center row (row b).

■ Ordering Information

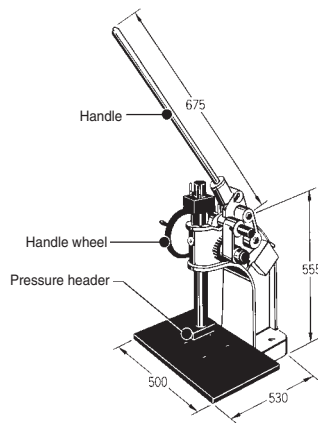
No. of contacts	Terminal type		
	Straight terminals, 4 mm	Straight terminals, 13 mm	Straight terminals, 17 mm
48	XC5G-482P-1140	XC5G-482P-1131	XC5G-482P-1132
64*	XC5G-642P-1140	XC5G-642P-1131	XC5G-642P-1132
96	XC5G-962P-1140	XC5G-962P-1131	XC5G-962P-1132

*Has no center row (row b).

XC5 Accessories

Press-fit Tool (XY2D-1005)

- Hand-operated tool designed especially for mounting Fine-fit Connectors to a board.
- Hand-operated for ease and safety.
- The Press-fit Tool User's Manual must be ordered separately.



Specifications

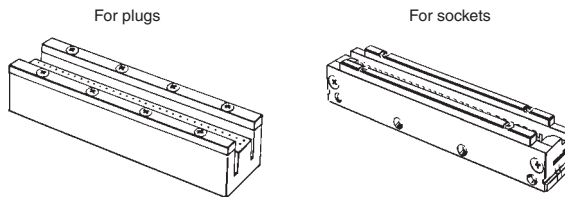
Applicable Connectors	XC5□-□□□P Fine-fit
Max. pressure	2 t
Stroke (max.)	8 mm (handle) 283 mm (handle wheel)
Weight	80 kg
Base area	500 mm × 530 mm

Model

Model	XY2D-1005
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Contact Repair Tools

- The tool works on top of the Connector.
- This tool is used for correcting mistakes made with the Press-fit Tool. (plugs only)
- For details on use, see the Fine-fit Connector Press-fit Tool User's Manual. The User's manual must be ordered separately.



For Plugs

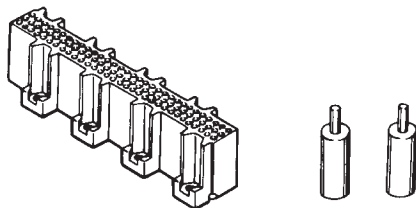
Rows	No. of contacts	Model
Double rows (XC5E)	32	XY2D-1007
	64	XY2D-1006
	100	XY2D-1035
Triple rows (XC5G)	48	XY2D-1009
	96 (64)	XY2D-1008

For Sockets

Rows	No. of contacts	Model
Double rows (XC5B)	32	XY2D-1011
	64	XY2D-1010
	100	XY2D-1036
Triple rows (XC5D)	48	XY2D-1013
	96 (64)	XY2D-1012

Support Block and Plungers

- The Support Block and Plungers (2) are set on top of the base board.
- The Support Block is used to protect the fine-fit pins while the Press-fit Tool is being used.
- The Plunger is inserted into the mounting holes. It functions as a positioner for the Connector and cushions the Contact Repair Tool.



Support Blocks

Rows	No. of contacts	Model
Double rows	64	XY2D-1014
Triple rows	96	XY2D-1015

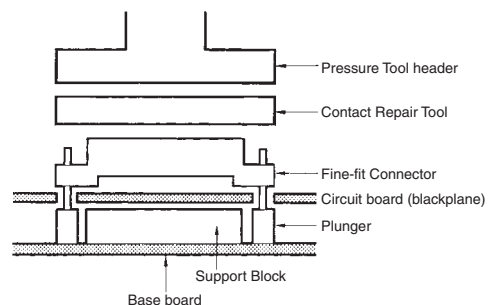
Note: Cut the XY2D-1014 when using Double-row Connectors with 100 or 32 contacts. Cut the XY2D-1015 when using Triple-row Connectors with 100 or 32 contacts (no center row).

Plungers

Applicable board thickness	Model
1.6 to 3.2 mm	XY2D-1017

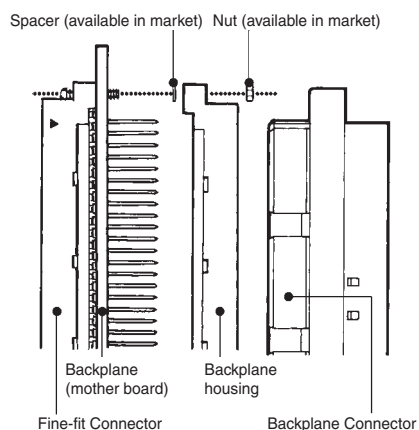
Setting the Repair Tool, Support Block, and Plunger

- Base board is not supplied by OMRON.
- The base board including the Support Block and Plunger are collectively called the Support Assembly.
- Place the circuit board on top of the Support Assembly and place the whole thing on the Press-fit Tool.
- Insert the Fine-fit Connectors into the board one at a time by moving the Support Assembly left and right.



Accessories for Backplane Systems

Daughter board side Rear Side



Note: When ordering the following Housings, order according to the number per box.

Backplane Housings (for DIN Connectors) Double-row Type

No. of contacts	Model
32	XC5E-32
64	XC5E-64

Triple-row Type

No. of contacts	Model
48	XC5G-48
96 (64)	XC5G-96

Spacer

When using the housing, use the correct spacer for the board as shown below.

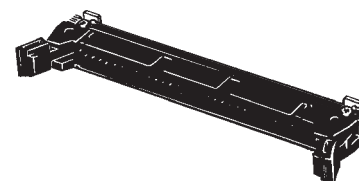
Terminal length	2.4-mm board	3.2-mm board	1.6-mm board
13 mm	0.5 mm	(See note.)	1.3 mm
17 mm	4.5 mm	3.7 mm	5.3 mm

Note: For wrap terminals only.

Backplane Housing (MIL Flat, Double-row Type)

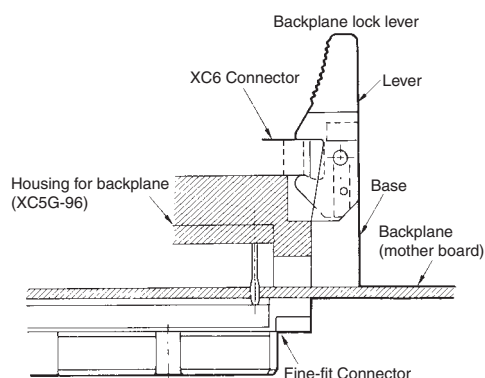
No. of contacts	Model
64	XG4A-64A

Note: The housing can be used only when the board thickness is 2.4 mm. It can be used only when the length of the DIN Fine-fit Connector is 17 mm.



Backplane Lock Lever

The XC6 Connector with a DIN Connector Cable can be locked with this lock lever. The lock lever also works as a spacer.



Terminal length of Fine-fit Connector (mm)	Thickness of backplane (mm)	Model (See note.)	Thickness of spacer base (mm)	Securing screw
13	3.0	XC6Z-0001-1	0	M2.6 × 14
13	2.4	XC6Z-0001-2	0.5	M2.6 × 14
13	1.6	XC6Z-0001-3	1.3	M2.6 × 14
17	3.2	XC6Z-0001-4	3.7	M2.6 × 18
17	3.0	XC6Z-0001-5	3.9	M2.6 × 18
17	2.4	XC6Z-0001-6	4.5	M2.6 × 18
17	1.6	XC6Z-0001-7	5.3	M2.6 × 18

Note: A set consists of a pair of levers, bases, screws, and nuts.

Precautions

Correct Use

Basic Mating Dimensions

The basic mating dimensions conform to those of the XC5. See page 11 of DIN Twin-contact Connectors XC5.

Press-fit Tools and Press-fit Precautions

OMRON provides manuals for Press-fit Tools and precautions. Contact your OMRON representative to request copies.

Through-hole Diameters

Holes with 1.0 mm dia. are required by the above Fine-fit Connector.

Storage

If the XG4A or XC6Z is stored with the lock half open, the resin parts may deteriorate, causing the lock to feel loose.
When a Connector is not used, close or open the lock completely before you store the Connector.

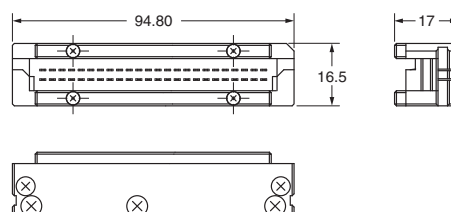
Mounting Prohibited area

Top jig side: Mounting of parts is prohibited in the area of the max. outer shape + 1 mm.

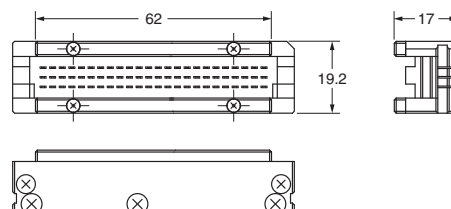
Bottom jig: Mounting of parts is prohibited in an area of the support block max. outer shape and plunger max. outer shape.

Top jig (Unit: mm)

Double rows

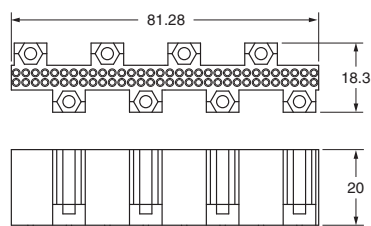


Triple rows

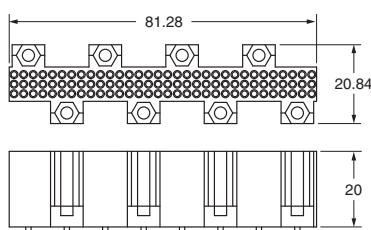


Support Blocks (unit: mm)

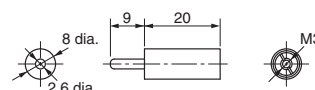
Double rows



Triple rows



Plungers (unit: mm)



Note: An outline drawing of the 64-pin and 96-pin top jigs and support blocks is shown as a sample. For parts with other number of pins, contact your OMRON sales representative.

- 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.