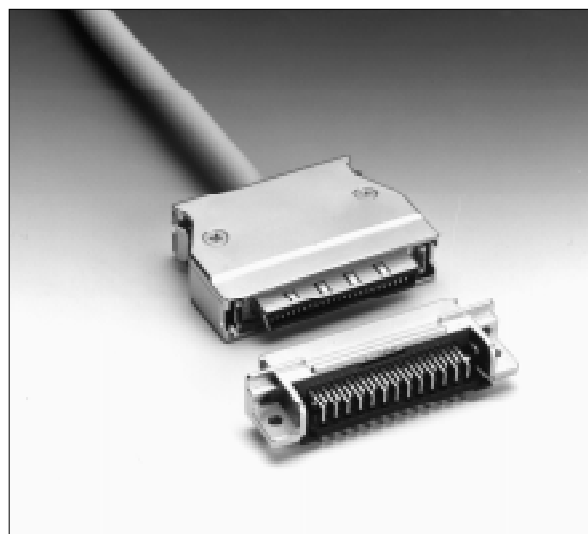


FOR BOARD-TO-CABLE CONNECTION

240 SERIES (GENERAL-PURPOSE TYPE)

■ FEATURES

- 1.27 mm (0.050 in.) pitch contact arrangement in two rows enables high-density mounting.
- Connectors with 20 to 96 contacts are available for various purposes.
- Discrete-wire (AWG #28, #30) I/O cables can be assembled by IDC. Metal covers completely protect sockets from EMI.
- Bellows contacts ensure stable contact preventing pins from bending. The bellows contacts also have excellent stability with repeated insertion and extraction.
- Tails are spaced in a four-row staggered arrangement (2.54 mm × 1.905 mm) (0.100 in. × 0.075 in.) for easy PC board design.
- Insulation is UL-approved (94V-0) and is washable.
- An FCN-230 EMI cover and dust cap can be used together.



■ SPECIFICATIONS

Item	Specifications
Operating temperature range	−55°C to +105°C
Current rating	DC 1 A
Voltage rating	AC 240 V
Contact resistance	35 mΩ max. (DC 6 V, 0.1A)
Insulation resistance	1000 MΩ min. (DC 500 V)
Dielectric withstand voltage	AC 750 V for 1 minute
Insertion force (kg)	4.5 kg max. (20 pins)
Withdrawal force (kg)	0.6 kg min. (20 pins)
Applicable PC board	1.6 mm (0.063 in.) thick
Applicable wire (standard)	IDC: AWG #28 and #30 stranded wires with ϕ 0.5 to 0.88 mm (0.020 to 0.035 in.) insulation diameter. Soldering: AWG #26 max. (reference) (The applicable wires depend on the number of contacts. See the descriptions of IDC sockets and metal covers.)

■ MATERIALS

Item	Materials	
Insulator	Polyester (UL94V-0)	
Conductor	Copper alloy	
Plating	Contact	Gold plating
	Terminal	Palladium plating

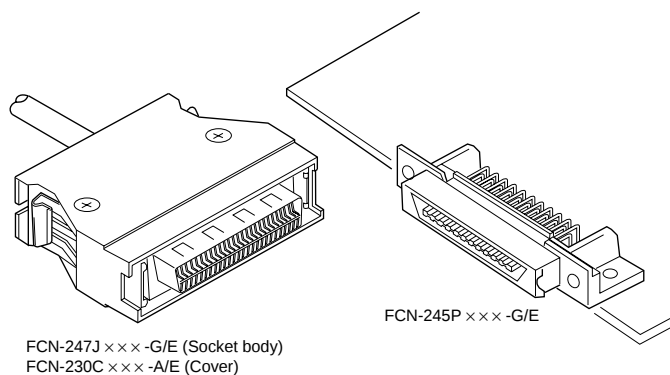
240 Series (General-Purpose Type)

■ ORDERING CODE

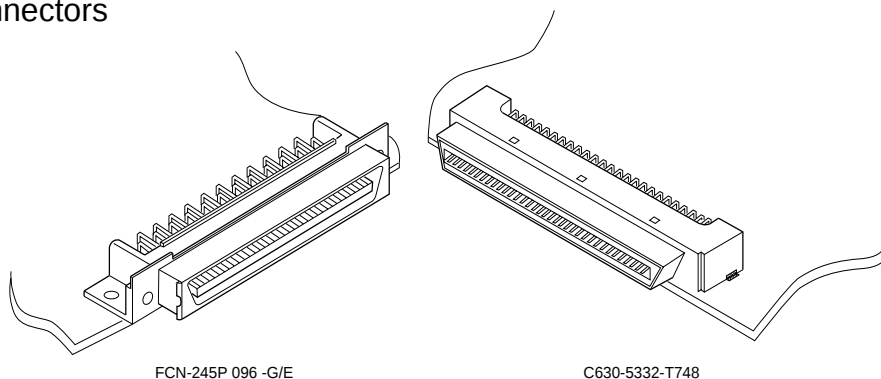
FCN-24 5 P 050-G / E

- E: Metal type
- Plating
 - G: Gold plating
- Number of contacts: 20, 28, 36, 50, 68, 80, and 96
 - Soldering eyelet: 20, 28, 36, 50, and 96
 - Straight: 36 and 50
- Body
 - J: Socket
 - P: Plug
- Tail type
 - 4: Straight
 - 5: Right-angle
 - 7: Insulation displacement connection (IDC) socket
- 240 series connector
- Fujitsu connector

■ APPLICATIONS



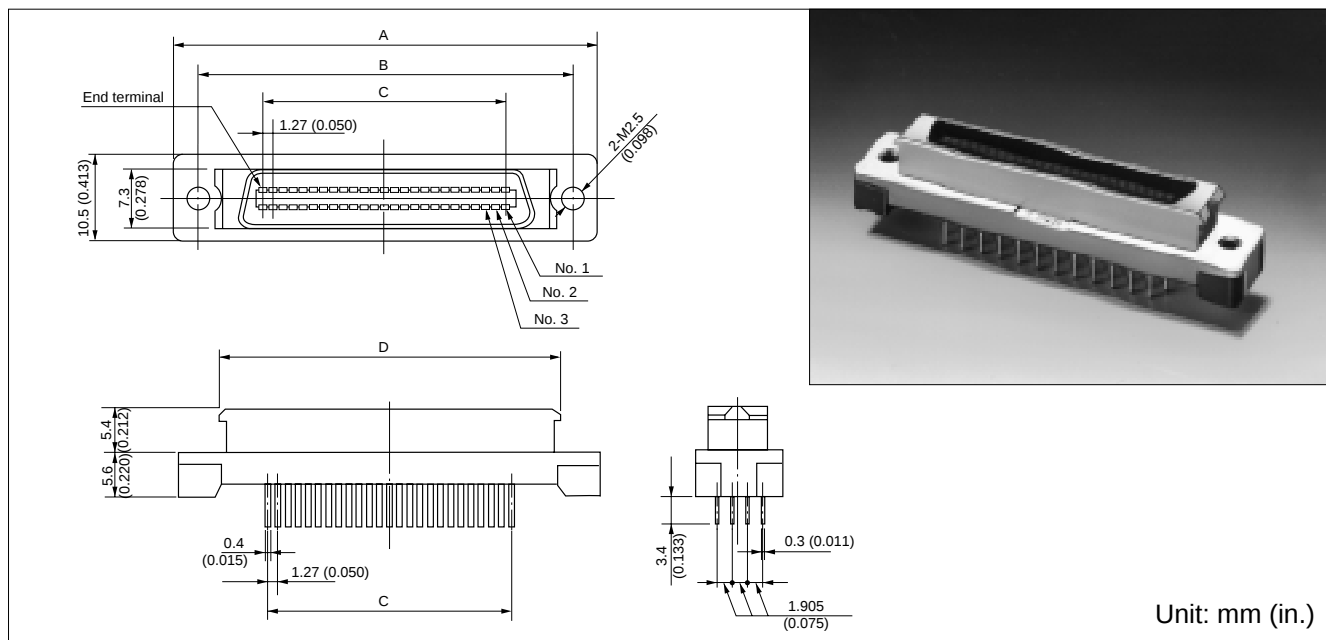
Docking Connectors



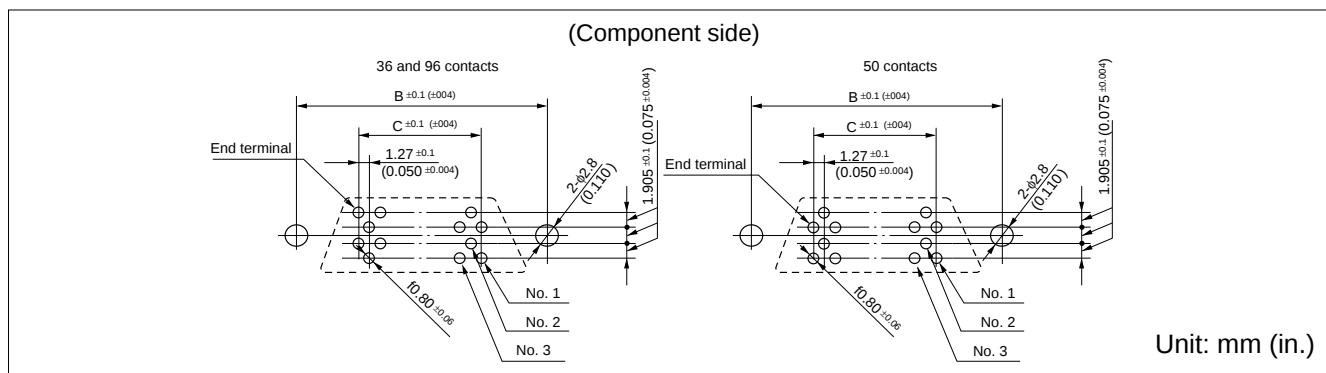
240 Series (General-Purpose Type)

STRAIGHT PLUG

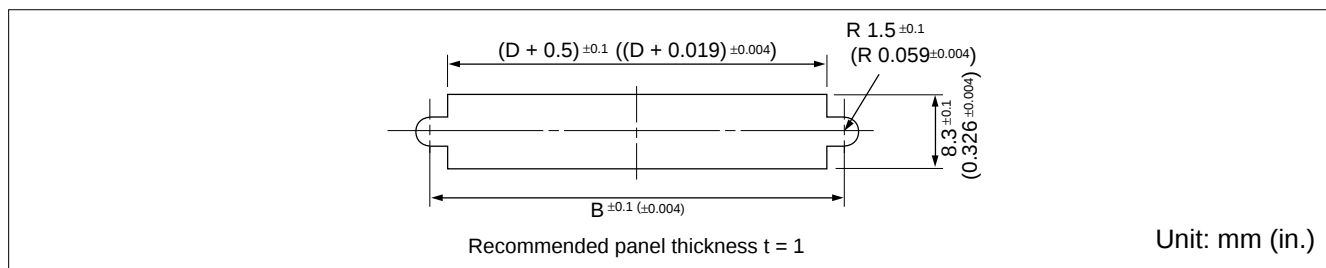
■ DIMENSIONS



■ MOUNTING HOLE LAYOUT



■ RECOMMENDED PANEL DIMENSIONS



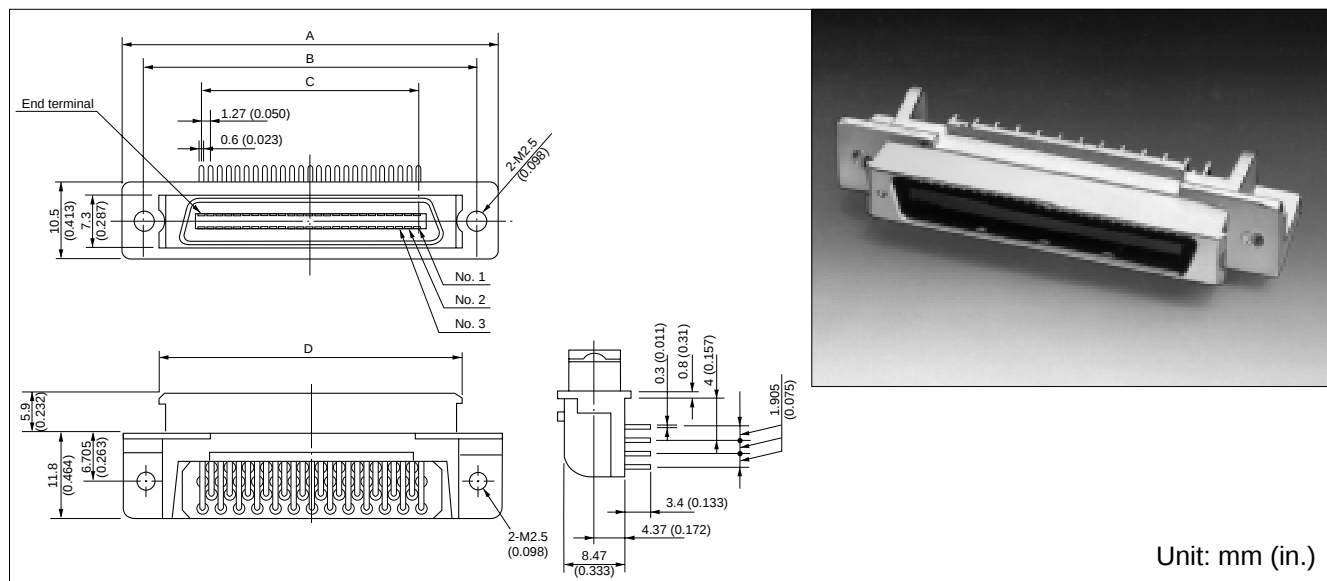
■ PART NUMBERS AND DIMENSIONS

Number of contacts	Part number	Dimensions: mm (in.)			
		A	B	C	D
36	FCN-244P036-G/E	43.56 (1.714)	37.56 (1.478)	21.59 (0.850)	33.46 (1.317)
50	FCN-244P050-G/E	52.45 (2.064)	46.45 (1.828)	30.48 (1.200)	42.35 (1.607)
96	FCN-244P096-G/E	81.66 (3.214)	75.66 (2.978)	59.69 (2.350)	71.56 (2.817)

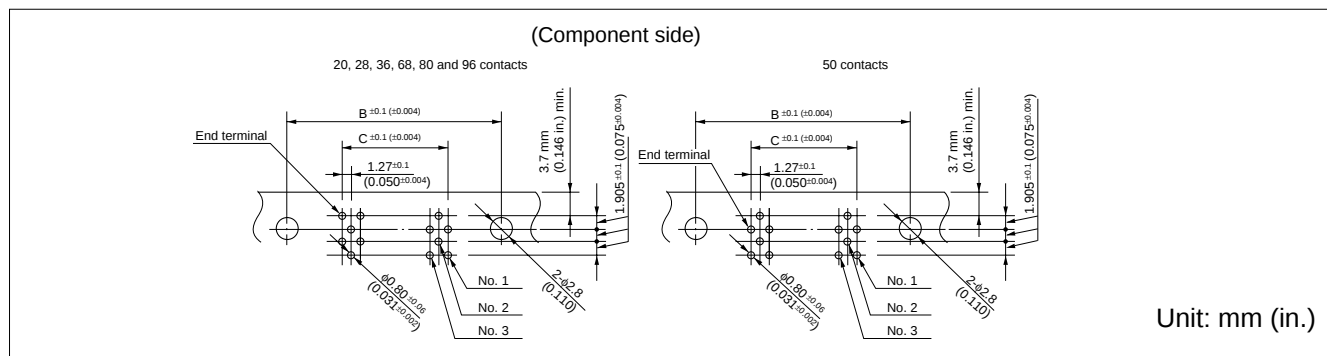
240 Series (General-Purpose Type)

RIGHT-ANGLE PLUG

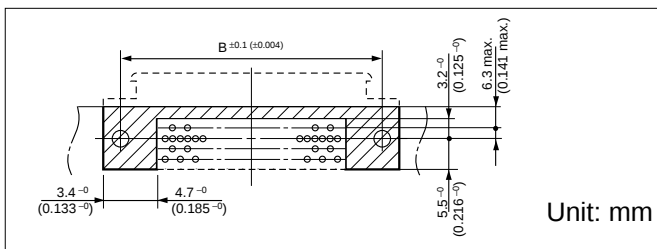
■ DIMENSIONS



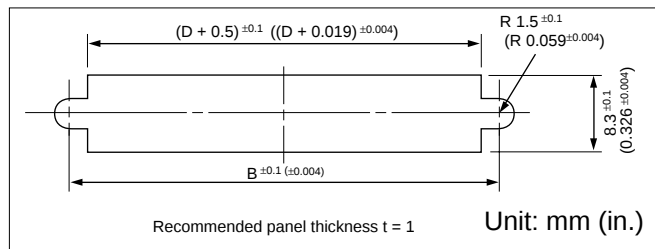
■ MOUNTING HOLE LAYOUT



■ PANEL INHIBITED AREAS



■ RECOMMENDED PANEL DIMENSIONS



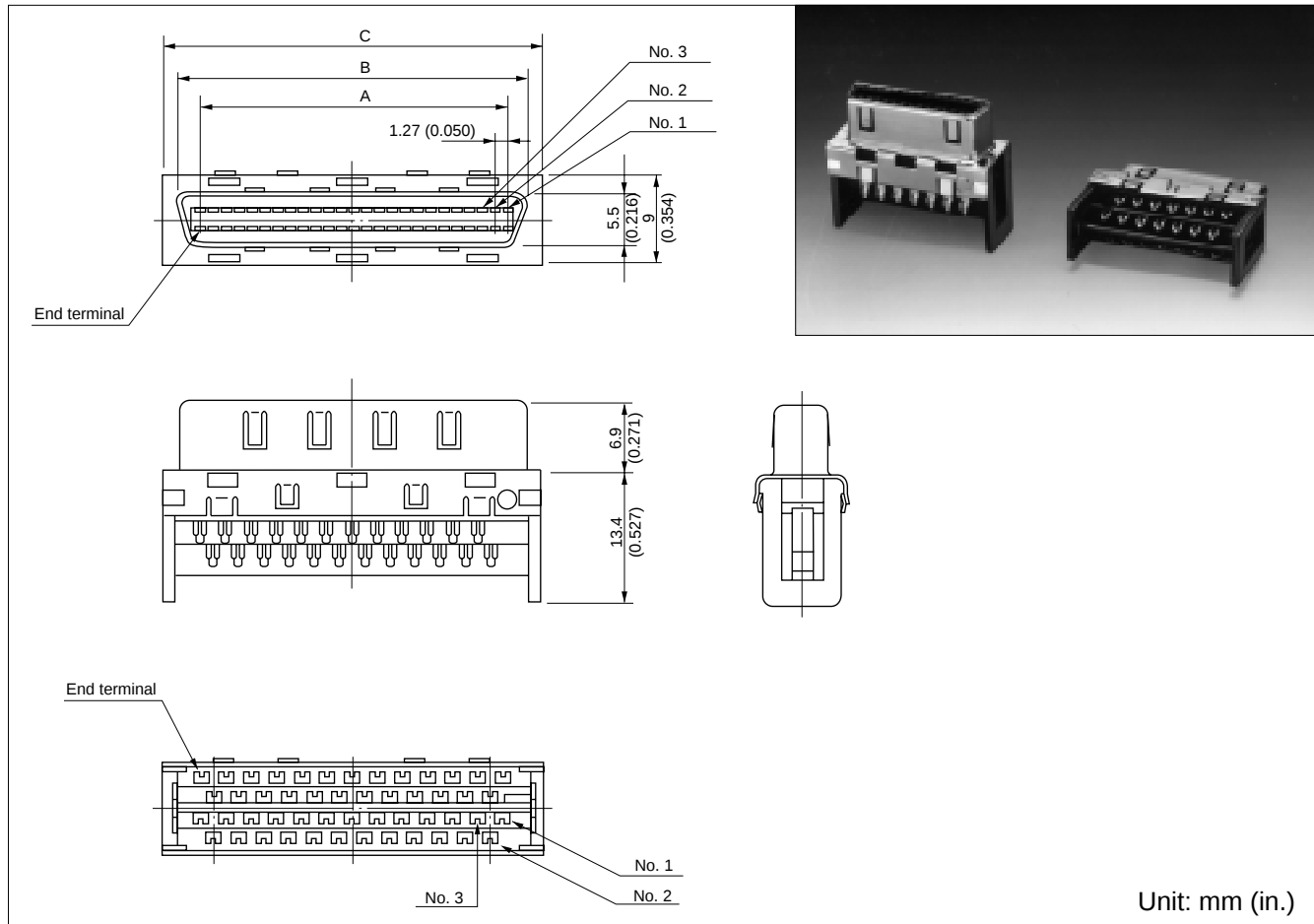
■ PART NUMBERS AND DIMENSIONS

Number of contacts	Part number	Dimensions: mm (in.)			
		A	B	C	D
20	FCN-245P020-G/E	33.40 (1.314)	27.40 (1.078)	11.43 (0.450)	23.30 (0.917)
28	FCN-245P028-G/E	38.48 (1.514)	32.48 (1.278)	16.51 (0.650)	28.38 (1.117)
36	FCN-245P036-G/E	43.56 (1.714)	37.56 (1.478)	21.59 (0.850)	33.46 (1.317)
50	FCN-245P050-G/E	52.45 (2.064)	46.45 (1.828)	30.48 (1.200)	42.35 (1.667)
68	FCN-245P068-G/E	63.88 (2.514)	57.88 (2.278)	41.91 (1.650)	53.78 (2.117)
80	FCN-245P080-G/E	71.50 (2.814)	65.50 (2.578)	49.53 (1.950)	61.40 (2.417)
96	FCN-245P096-G/E	81.66 (3.214)	75.66 (2.978)	59.69 (2.350)	71.56 (2.817)

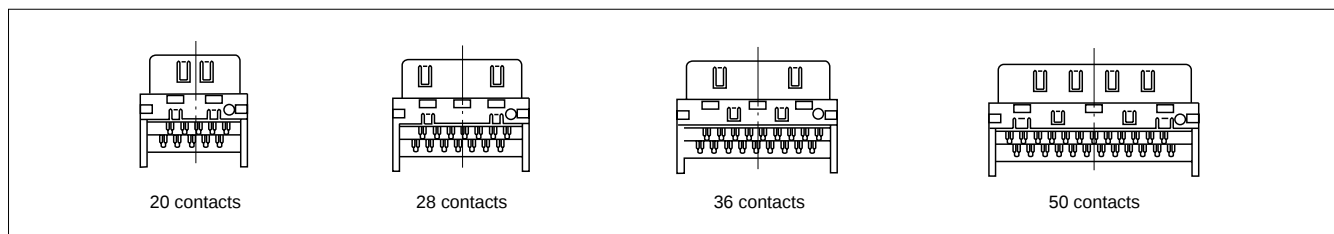
240 Series (General-Purpose Type)

SOLDERING EYELET SOCKET

■ DIMENSIONS



■ SHAPES OF MAIN BODY DEPENDING ON THE NUMBER OF CONTACTS



■ PART NUMBERS AND DIMENSIONS

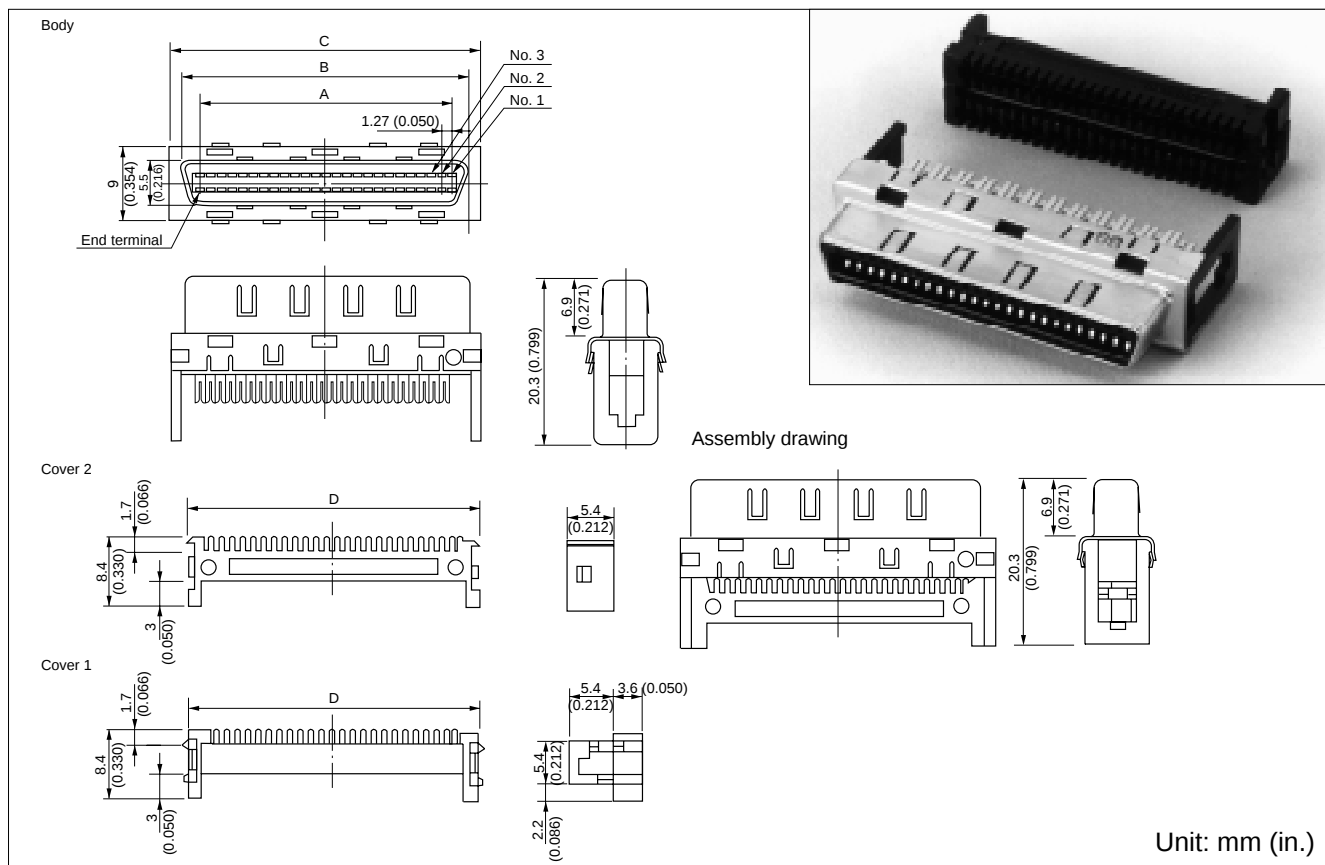
Number of contacts	Part number	Dimensions: mm (in.)		
		A	B	C
20	FCN-241J020-G/E	11.43 (0.450)	16.25 (0.639)	19.25 (0.757)
28	FCN-241J028-G/E	16.51 (0.650)	21.33 (0.839)	24.33 (0.957)
36	FCN-241J036-G/E	21.59 (0.850)	26.41 (1.039)	29.41 (1.157)
50	FCN-241J050-G/E	30.48 (1.200)	35.30 (1.389)	38.30 (1.507)

These accessories are also used for the FCN-230 series (general-purpose). Refer to the data sheet for the FCN-230 series for details.

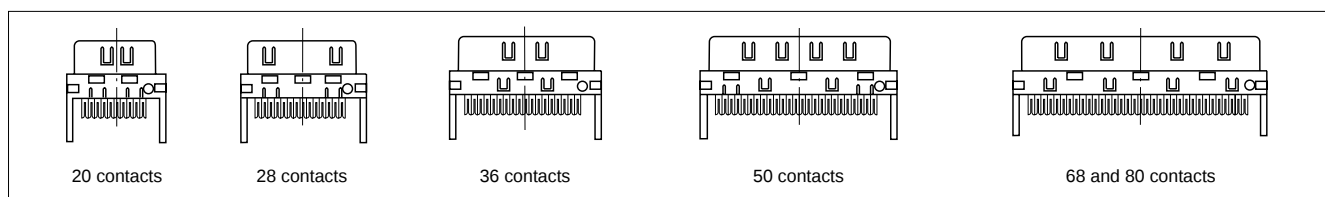
240 Series (General-Purpose Type)

INSULATION DISPLACEMENT CONNECTION (IDC) SOCKET

■ DIMENSIONS



■ SHAPES OF MAIN BODY DEPENDING ON THE NUMBER OF CONTACTS



■ PART NUMBERS AND DIMENSIONS

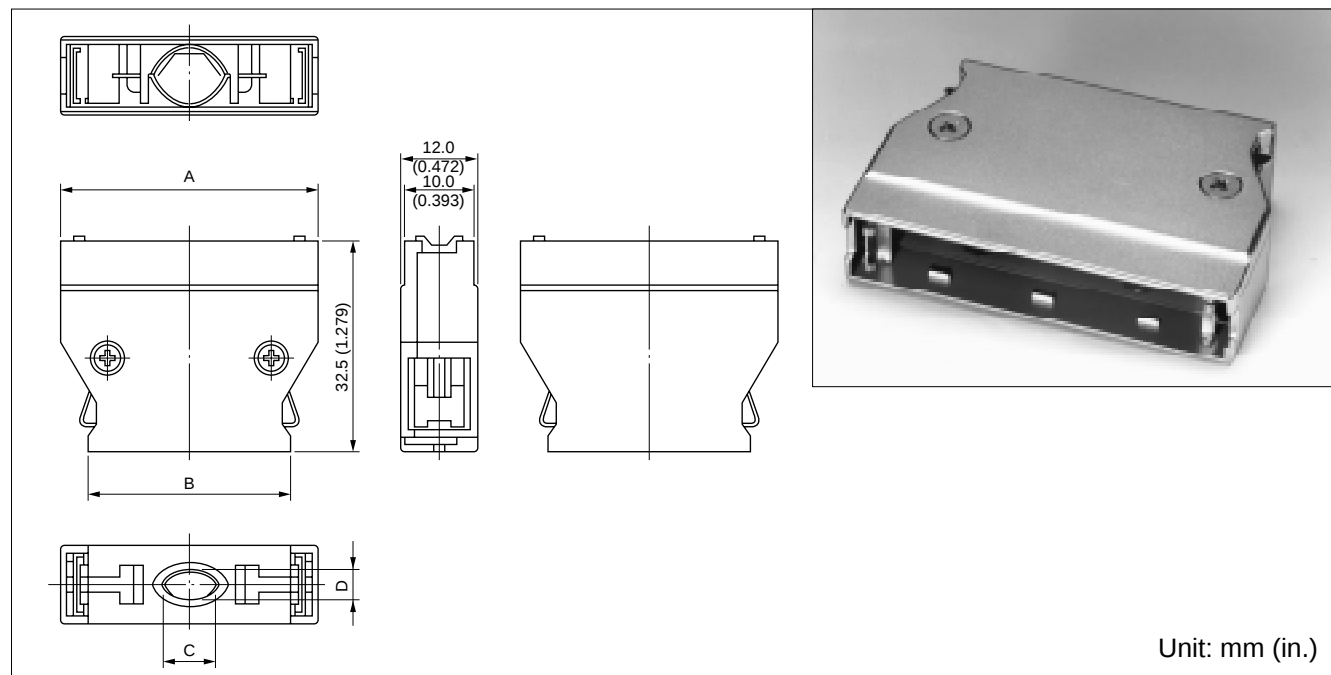
Number of contacts	Insulation diameter of applicable wire	Part number	Dimensions: mm (in.)			
			A	B	C	D
20	φ0.5 to 0.65 mm	FCN-247J020-G/E	11.43 (0.450)	16.25 (0.639)	19.25 (0.757)	16.75 (0.659)
	φ0.65 to 0.8 mm	FCN-247J020-G/G				
	φ0.8 to 0.88 mm	FCN-247J020-G/F				
28	φ0.5 to 0.65 mm	FCN-247J028-G/E	16.51 (0.650)	21.33 (0.839)	24.33 (0.957)	21.83 (0.859)
	φ0.8 to 0.88 mm	FCN-247J028-G/F				
36	φ0.5 to 0.65 mm	FCN-247J036-G/E	21.59 (0.850)	26.41 (1.039)	29.41 (1.157)	26.91 (1.059)
	φ0.8 to 0.88 mm	FCN-247J036-G/F				
50	φ0.5 to 0.65 mm	FCN-247J050-G/E	30.48 (1.200)	35.30 (1.339)	38.30 (1.507)	35.80 (1.409)
	φ0.65 to 0.8 mm	FCN-247J050-G/G				
	φ0.8 to 0.88 mm	FCN-247J050-G/F				
68	φ0.5 to 0.65 mm	FCN-247J068-G/E	41.91 (1.650)	46.73 (1.839)	49.73 (1.957)	47.23 (1.859)
	φ0.65 to 0.8 mm	FCN-247J068-G/G				
	φ0.8 to 0.88 mm	FCN-247J068-G/F				
80	φ0.5 to 0.65 mm	FCN-247J080-G/E	49.53 (1.950)	54.35 (2.139)	57.35 (2.257)	54.85 (2.159)
96	φ0.5 to 0.65 mm	FCN-247J096-G/E	59.69 (2.350)	64.51 (2.539)	67.51 (2.657)	65.01 (2.559)

These accessories are also used for the FCN-230 series (general-purpose). Refer to the data sheet for the FCN-230 series for details.

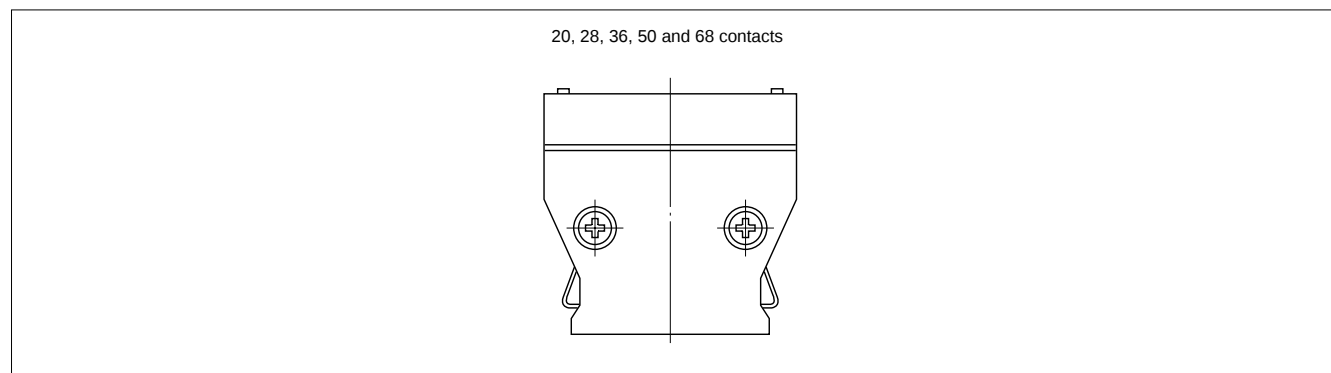
240 Series (General-Purpose Type)

METAL COVER (230 SERIES (GENERAL-PURPOSE) AND 240 SERIES (GENERAL-PURPOSE))

■ DIMENSIONS



■ SHAPES OF MAIN BODY DEPENDING ON THE NUMBER OF CONTACTS



■ PART NUMBERS AND DIMENSIONS

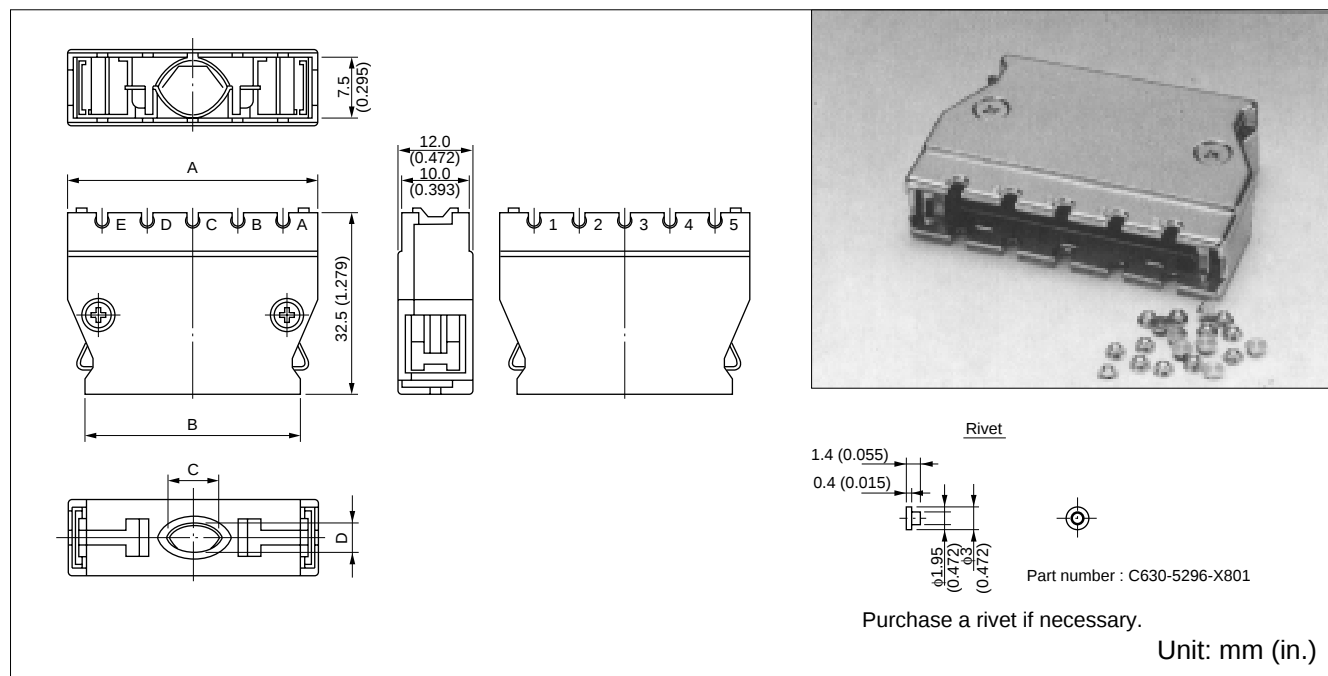
Number of contacts	Part number	Dimensions: mm (in.)		
		A	B	C × D
20	FCN-230C020-A/E	28.95 (1.139)	21.15 (0.832)	6.5 × 4.5 (0.255 × 0.177)
	FCN-230C020-C/E			8.5 × 8.2 (0.334 × 0.322)
28	FCN-230C028-A/E	34.03 (1.339)	26.23 (1.032)	6.5 × 6.0 (0.255 × 0.236)
	FCN-230C028-C/E			7.2 × 8.5 (0.283 × 0.334)
36	FCN-230C036-A/E	39.11 (1.539)	31.31 (1.232)	9.5 × 8.0 (0.374 × 0.314)
	FCN-230C036-C/E			10.0 × 9.7 (0.393 × 0.381)
50	FCN-230C050-A/E	48.00 (1.889)	40.20 (1.582)	8.5 × 7.0 (0.334 × 0.275)
	FCN-230C050-C/E			10.0 × 9.7 (0.393 × 0.381)
68	FCN-230C068-A/E	59.43 (2.339)	51.63 (2.032)	9.0 × 8.0 (0.354 × 0.314)
	FCN-230C068-C/E			10.0 × 9.0 (0.393 × 0.354)
96	FCN-230C096-C/E	77.21 (3.039)	69.41 (2.732)	9.0 × 11.5 (0.381 × 0.452)

240 Series (General-Purpose Type)

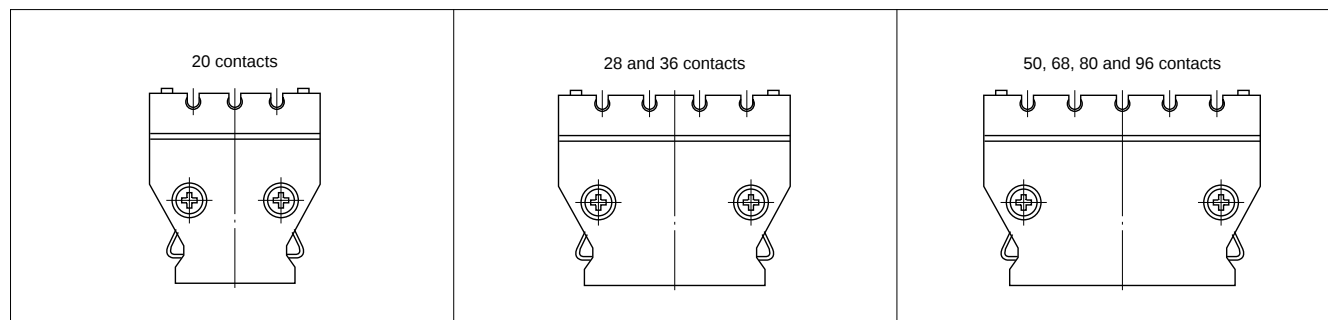
METAL COVER WITH POLARIZATION [230 SERIES (GENERAL-PURPOSE) AND 240 SERIES (GENERAL-PURPOSE)]

This metal cover prevents a connector from being incorrectly inserted when two or more connectors with the same number of contacts are mounted on a PC board. Use the metal cover together with the polarization guide.

■ DIMENSIONS



■ SHAPES OF MAIN BODY DEPENDING ON THE NUMBER OF CONTACTS



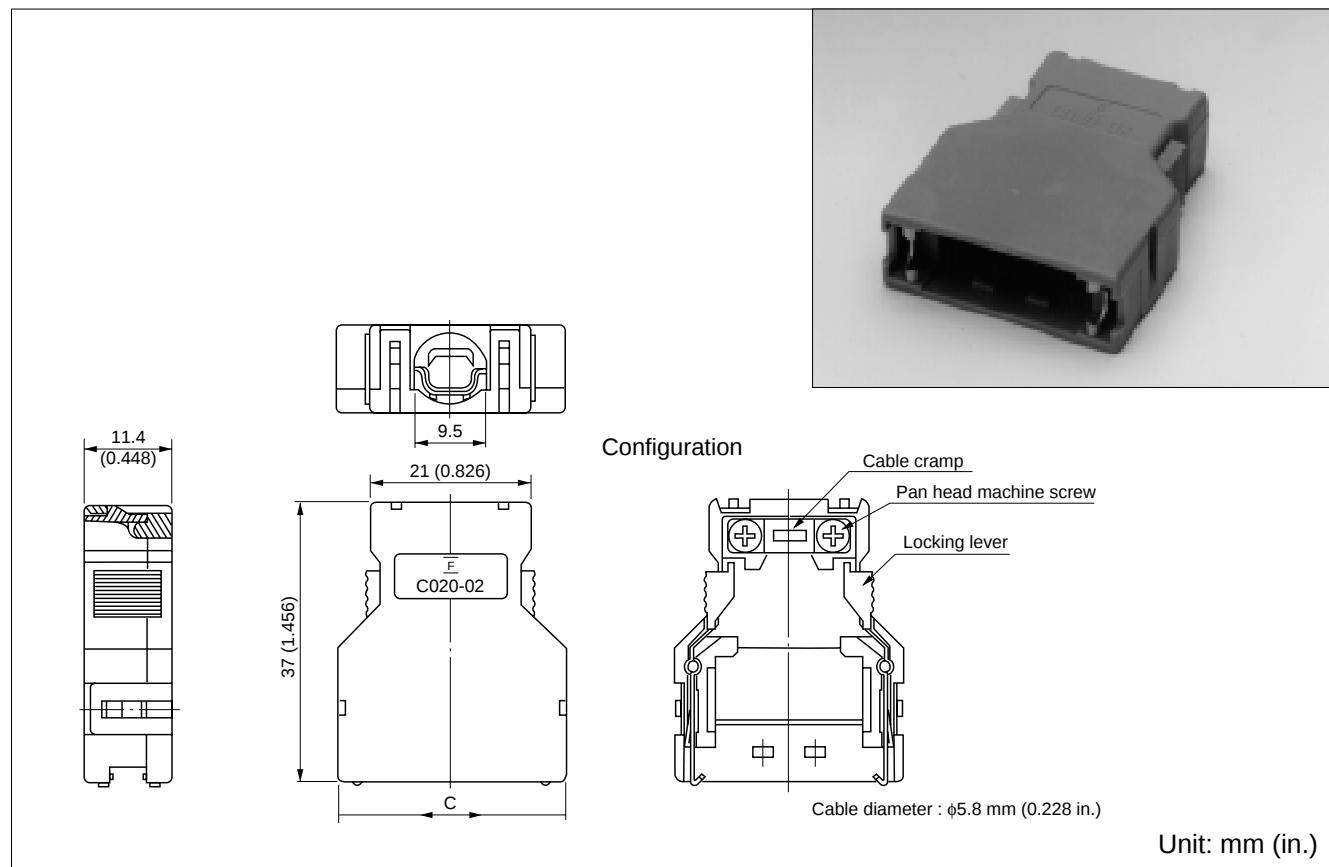
■ PART NUMBERS AND DIMENSIONS

Number of contacts	Part number	Dimensions: mm (in.)		
		A	B	C x D
20	FCN-230C020-B/E	28.95 (1.139)	21.15 (0.852)	6.5 x 4.5 (0.255 x 0.177)
28	FCN-230C028-B/E	34.03 (1.339)	26.23 (1.032)	6.5 x 6.0 (0.255 x 0.236)
36	FCN-230C036-B/E	39.11 (1.539)	31.31 (1.232)	9.5 x 8.0 (0.374 x 0.314)
	FCN-230C036-D/E			10.0 x 9.0 (0.393 x 0.354)
50	FCN-230C050-B/E	48.00 (1.899)	40.20 (1.582)	8.5 x 7.0 (0.334 x 0.275)
	FCN-230C050-D/E			14.7 x 10.4 (0.578 x 0.409)
68	FCN-230C068-B/E	59.43 (2.339)	51.63 (2.032)	9.0 x 8.0 (0.354 x 0.314)
	FCN-230C068-D/E			14.7 x 10.4 (0.578 x 0.409)
80	FCN-230C080-D/E	67.05 (2.639)	59.25 (2.322)	9.0 x 10.0 (0.354 x 0.393)
96	FCN-230C096-B/E	77.21 (3.039)	59.25 (2.332)	8.0 x 10.0 (0.314 x 0.393)
	FCN-230C096-D/E	77.21 (3.039)	51.00 (2.007)	9.0 x 11.5 (0.374 x 0.452)

240 Series (General-Purpose Type)

PLASTIC COVER

■ DIMENSIONS



■ PART NUMBERS

FCN-240C020-Y/S

240 Series (General-Purpose Type)

CABLE ASSEMBLY TOOLS

The following tools are needed to assemble FCN-230/230R/240/240R series connectors.

- Cable aligner (semiautomatic cable aligner or hand tool)
- IDC tool

1. Cable Aligner

Item	Semiautomatic cable aligner			Hand tool
	Body/Controller	Bed	Adaptor	
FCN-237J	FCN-M561-A/C	FCN-P560-2/A	FCN-K560-A-xxx	FCN-237T-T062/H
FCN-237R			FCN-K560-R-xxx	
FCN-247J			FCN-K560-K-xxx	
FCN-247R		FCN-P560-2/J	FCN-K560-J-xxx	FCN-247T-T061/H

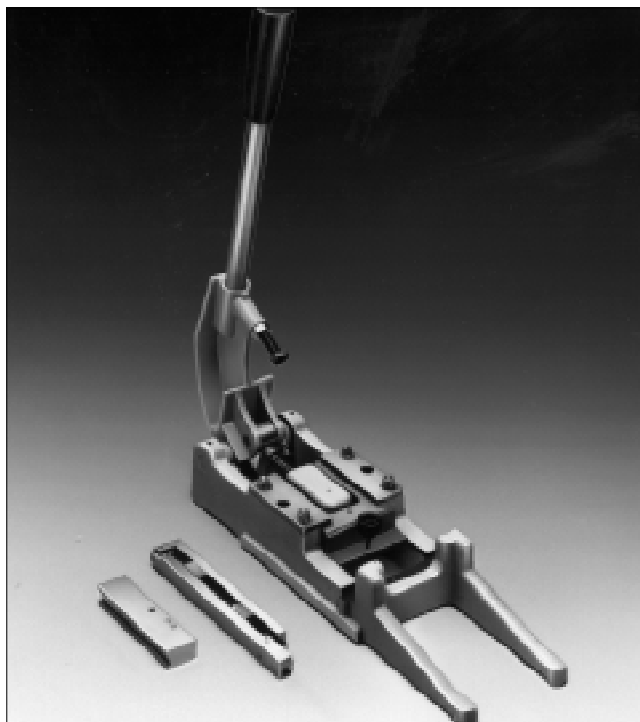
xxx indicates the number of contacts.

2. Insulation Displacement Connection (IDC) tool

Item	Hand press	Head/Table
FCN-237J	FCN-237T-T109/H	FCN-237T-T064/H
FCN-237R		FCN-237T-T067/H
FCN-237D		FCN-237T-T075/H
FCN-247J		FCN-247T-T066/H
FCN-247R		FCN-247T-T068/H
FCN-247D		FCN-247T-T077/H



• Cable aligner



• Insulation displacement connection (IDC) tool

240 Series (General-Purpose Type)

Semi-Automatic Tools Cable Aligning Machine

Main Body (FCN-M551-120, FCN-M551-220)



Head (FCN-H550-1/A)



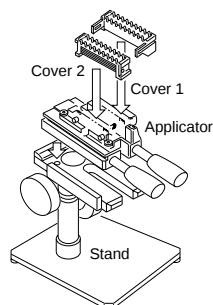
Stand (FCN-D550)



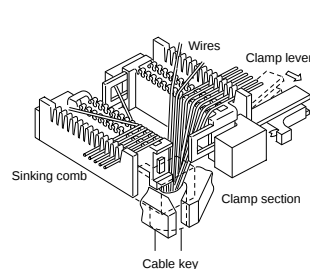
Applicator (FCN-A550-1/A-xxx)



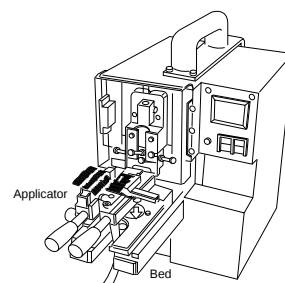
IDC Tool (FCN-237T-T109/H,
FCN-237T-T067/H locator)



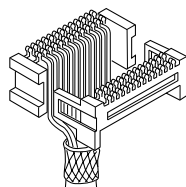
1. Set the applicator on the stand.
Set covers 1 and 2 in the applicator.



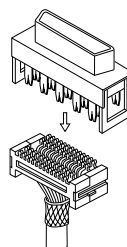
2. Push the wire into the sinking
combs.



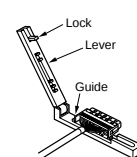
3. Set the applicator onto the
installation table and begin
cable alignment



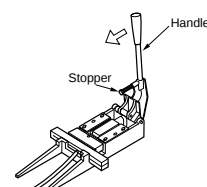
4. Take the covers off the
applicator.



5. Put covers together and
pre-assemble them to
the connector body.



6. Conduct final assembly as shown.



FCN-240R SERIES IDC ROUND-CABLE CONNECTORS

SOCKET: FCN-247J***-G/E (***: 020, 028, 036, 050, 068, 080, 096)

Pos No.	Applied Wire (wire Dia.: mm)	Connector Part number	Cable Aligner		IDC Tool
			Hand Tool	Semi-Auto	
20 68	#28 to #30 (0.5 to 0.65)	FCN-247J020-G/F FCN-247J080-G/F	FCN-237T-T062/H FCN-237T-T043/H	(See below*)	HAND PRESS: FCN-237T-T109/H HEAD & Locator: FCN-247T-T066/H
96		FCN-247J096-G/E	FCN-237T-T062/H		

Semi-automatic-Medium Level
Body: :FCN-M551-120
Head Assembly: :FCN-H550
Applicator: :FCN-A550-1/A-*** (***: 020, 028, 036, 050, 068, 080)
Stand: :FCN-D550

240 Series (General-Purpose Type)

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