

# FOR BOARD-TO-CABLE CONNECTION

## 240R SERIES

### ■ FEATURES

- 1.27 mm (0.050 in.) pitch contact arrangement enables high-density mounting.
- Bellows contacts ensure stable contact preventing pins from bending. The bellows contacts also have excellent stability with repeated insertion and extraction.
- Cables and connectors are assembled by discrete wire IDC.
- Connectors on the cable side provide superb EMI shielding/ESD protection with an inner-metal and outer-plastic dual cover.
- Conforms to IEEE 1284.C Interface
- 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.



### ■ SPECIFICATIONS

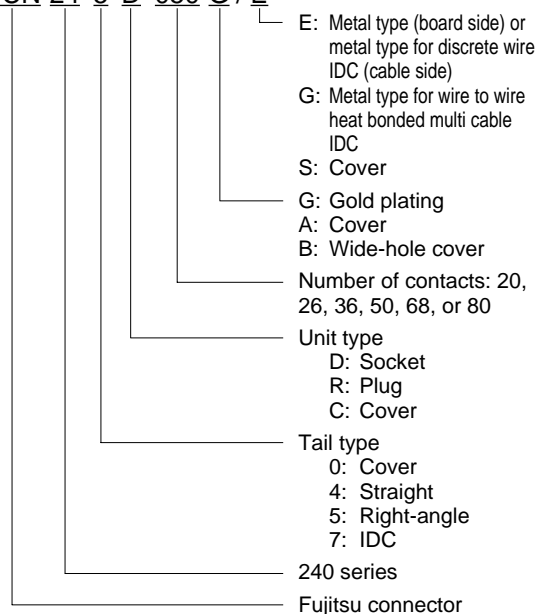
| Item                         | Specifications   |
|------------------------------|--|
| Operating temperature range  | -55°C to +85°C   |
| Current rating               | DC 1 A   |
| Voltage rating               | AC 240 V   |
| Contact resistance           | 50 mΩ max. (DC 20 mV, 10 mA)   |
| Insulation resistance        | 1,000 MΩ min. (DC 500 V)   |
| Dielectric withstand voltage | AC 750 V for 1 minute  |
| Applicable wire              | AWG #28 and #30 stranded wires with φ0.5 to 0.65 mm (0.020 to 0.026 in.) insulation diameter |

### ■ MATERIALS

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

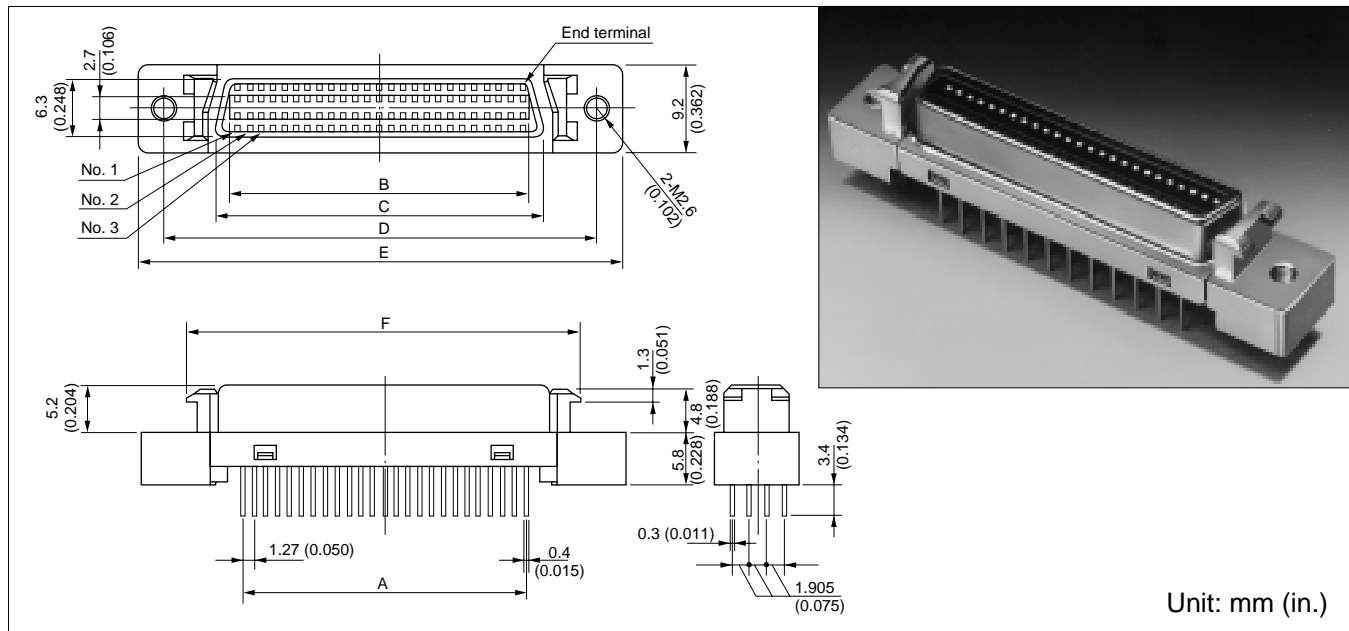
### ■ ORDERING CODE

FCN-24 5 D 050-G / E

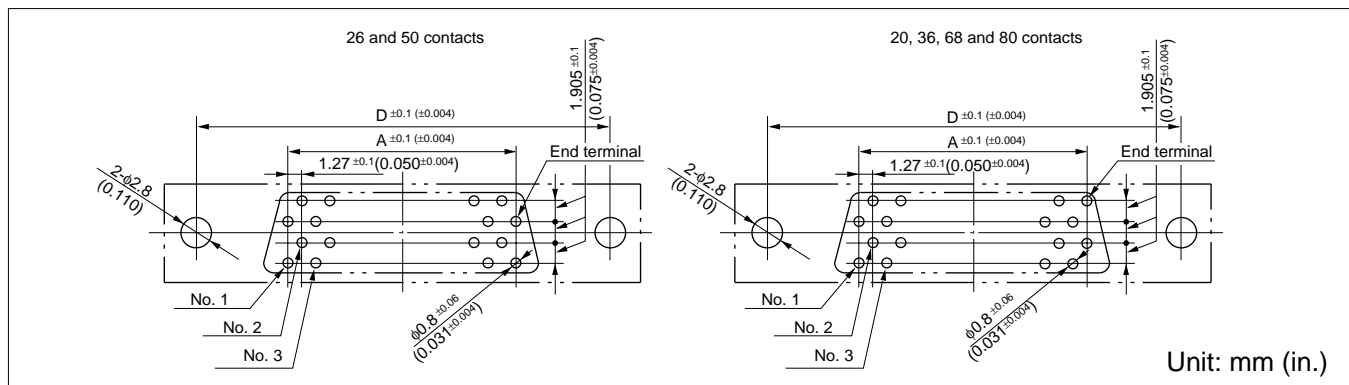


## STRAIGHT SOCKET

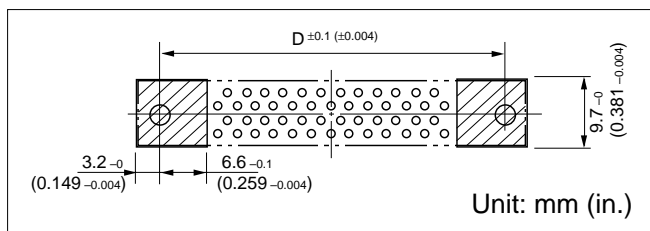
### ■ DIMENSIONS



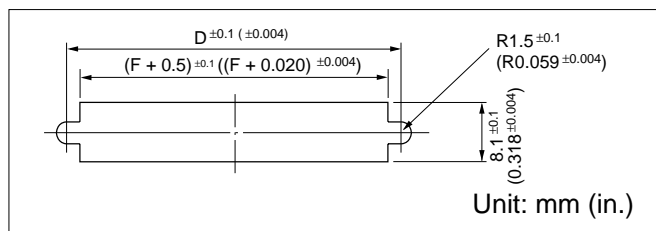
### ■ MOUNTING HOLE LAYOUT (COMPONENT SIDE)



### ■ PATTERN INHIBITED AREAS



### ■ RECOMMENDED PANEL DIMENSIONS



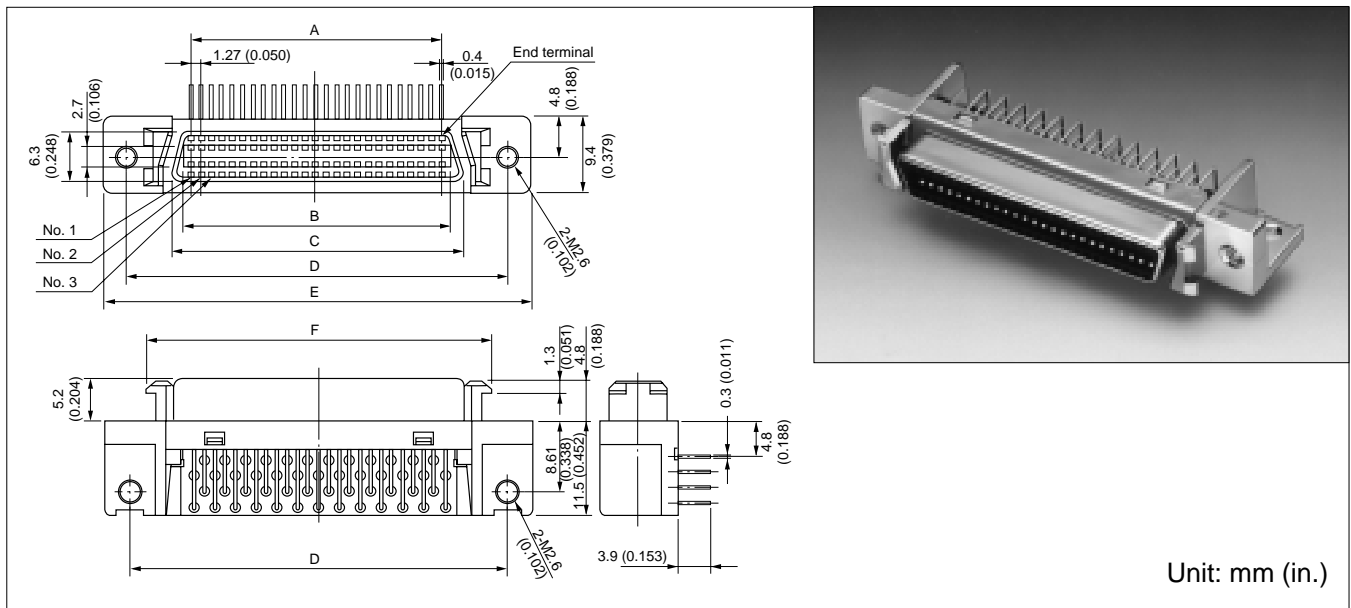
### ■ PART NUMBERS AND DIMENSIONS

Unit: mm (in.)

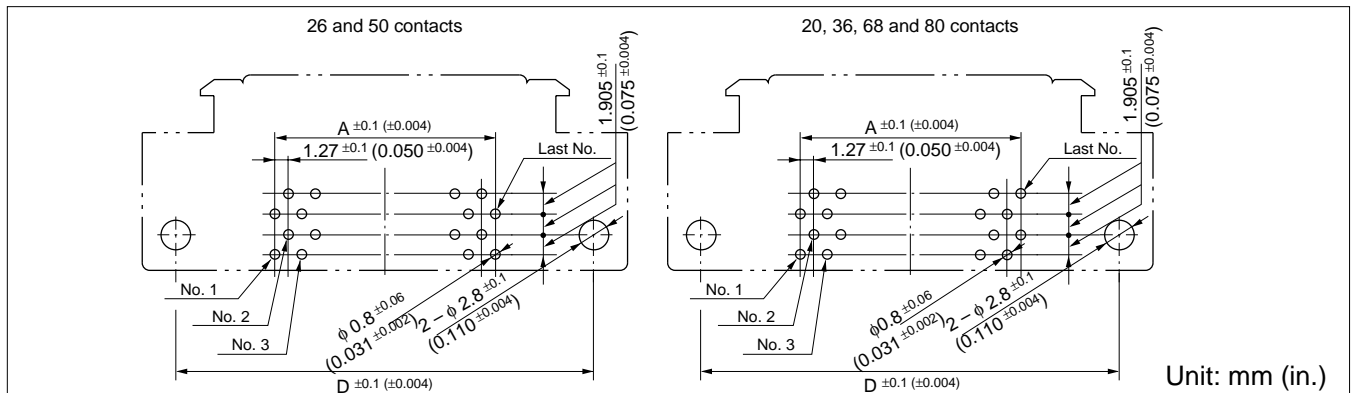
| Number of contacts | Part number     | A             | B             | C             | D             | E             | F             |
|--------------------|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 20                 | FCN-244D020-G/E | 11.43 (0.450) | 13.45 (0.529) | 16.45 (0.647) | 27.45 (1.080) | 33.35 (1.312) | 23.30 (0.917) |
| 26                 | FCN-244D026-G/E | 15.24 (0.600) | 17.26 (0.679) | 20.26 (0.797) | 31.26 (1.231) | 37.16 (1.462) | 27.11 (1.067) |
| 36                 | FCN-244D036-G/E | 21.59 (0.850) | 23.61 (0.929) | 26.61 (1.047) | 37.61 (1.480) | 43.51 (1.712) | 33.46 (1.317) |
| 50                 | FCN-244D050-G/E | 30.48 (1.200) | 32.50 (1.279) | 35.50 (1.397) | 46.50 (1.830) | 52.40 (2.062) | 42.35 (1.667) |
| 68                 | FCN-244D068-G/E | 41.91 (1.650) | 43.93 (1.729) | 46.93 (1.847) | 57.93 (2.280) | 63.83 (2.512) | 53.78 (2.117) |
| 80                 | FCN-244D080-G/E | 49.53 (1.950) | 51.55 (2.029) | 54.55 (2.147) | 65.55 (2.580) | 71.45 (2.812) | 61.40 (2.417) |

## RIGHT-ANGLE SOCKET [METAL SHELL]

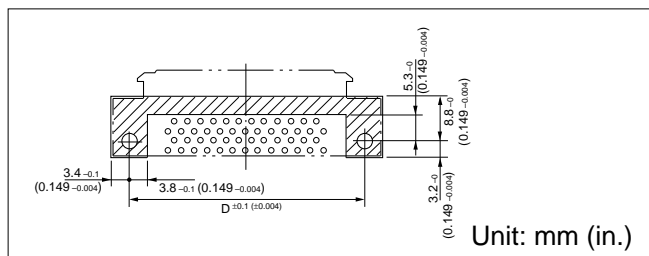
### ■ DIMENSIONS



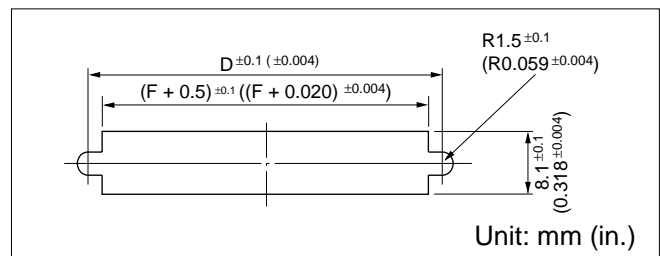
### ■ MOUNTING HOLE LAYOUT (COMPONENT SIDE)



### ■ PATTERN INHIBITED AREAS



### ■ RECOMMENDED PANEL DIMENSIONS



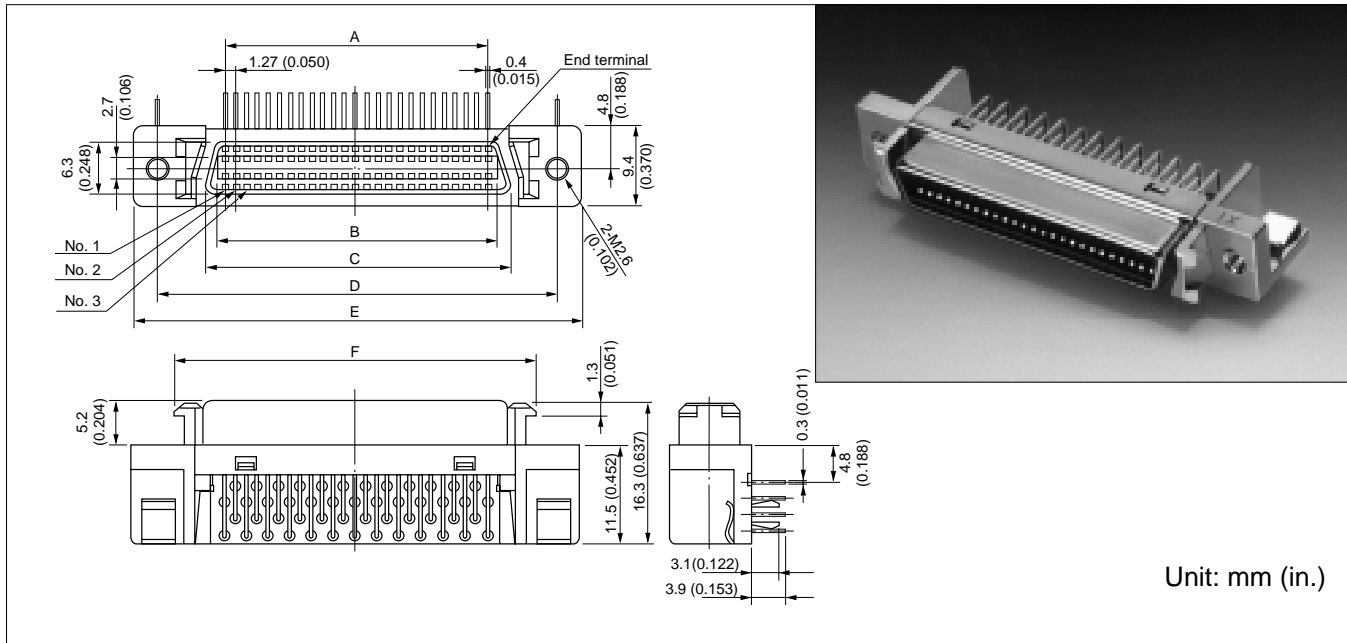
### ■ PART NUMBERS AND DIMENSIONS

Unit: mm (in.)

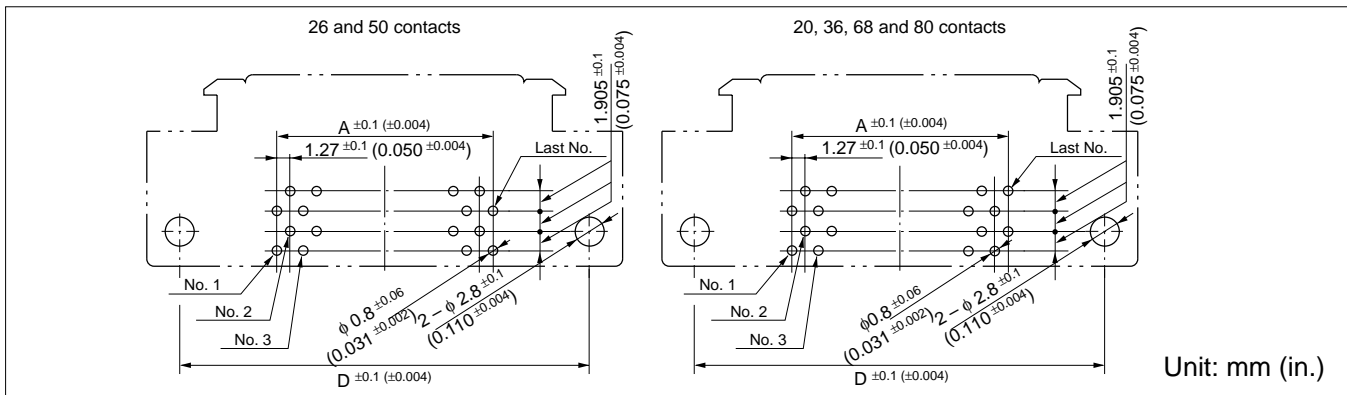
| Number of contacts | Part number     | A             | B             | C             | D             | E             | F             |
|--------------------|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 20                 | FCN-245D020-G/E | 11.43 (0.450) | 13.45 (0.529) | 16.45 (0.647) | 27.45 (1.080) | 33.35 (1.312) | 23.30 (0.917) |
| 26                 | FCN-245D026-G/E | 15.24 (0.600) | 17.26 (0.679) | 20.26 (0.797) | 31.26 (1.231) | 37.16 (1.462) | 27.11 (1.067) |
| 36                 | FCN-245D036-G/E | 21.59 (0.850) | 23.61 (0.929) | 26.61 (1.047) | 37.61 (1.480) | 43.51 (1.712) | 33.46 (1.317) |
| 50                 | FCN-245D050-G/E | 30.48 (1.200) | 32.50 (1.279) | 35.50 (1.397) | 46.50 (1.830) | 52.40 (2.062) | 42.35 (1.667) |
| 68                 | FCN-245D068-G/E | 41.91 (1.650) | 43.93 (1.729) | 46.93 (1.847) | 57.93 (2.280) | 63.83 (2.512) | 53.78 (2.117) |
| 80                 | FCN-245D080-G/E | 49.53 (1.950) | 51.55 (2.029) | 54.55 (2.147) | 65.55 (2.580) | 71.45 (2.812) | 61.40 (2.417) |

## RIGHT-ANGLE SOCKET [METAL SHELL] (WITH BOARDLOCKS)

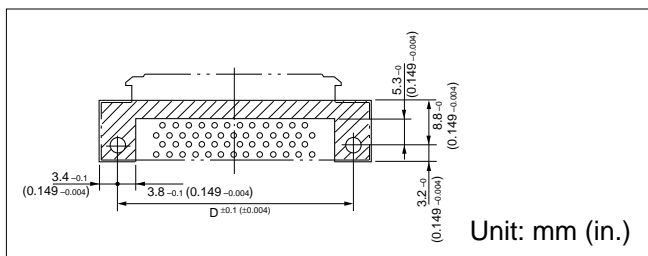
### ■ DIMENSIONS



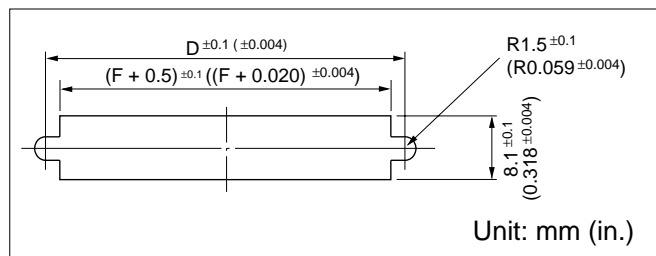
### ■ MOUNTING HOLE LAYOUT (COMPONENT SIDE)



### ■ PATTERN INHIBITED AREAS



### ■ RECOMMENDED PANEL DIMENSIONS



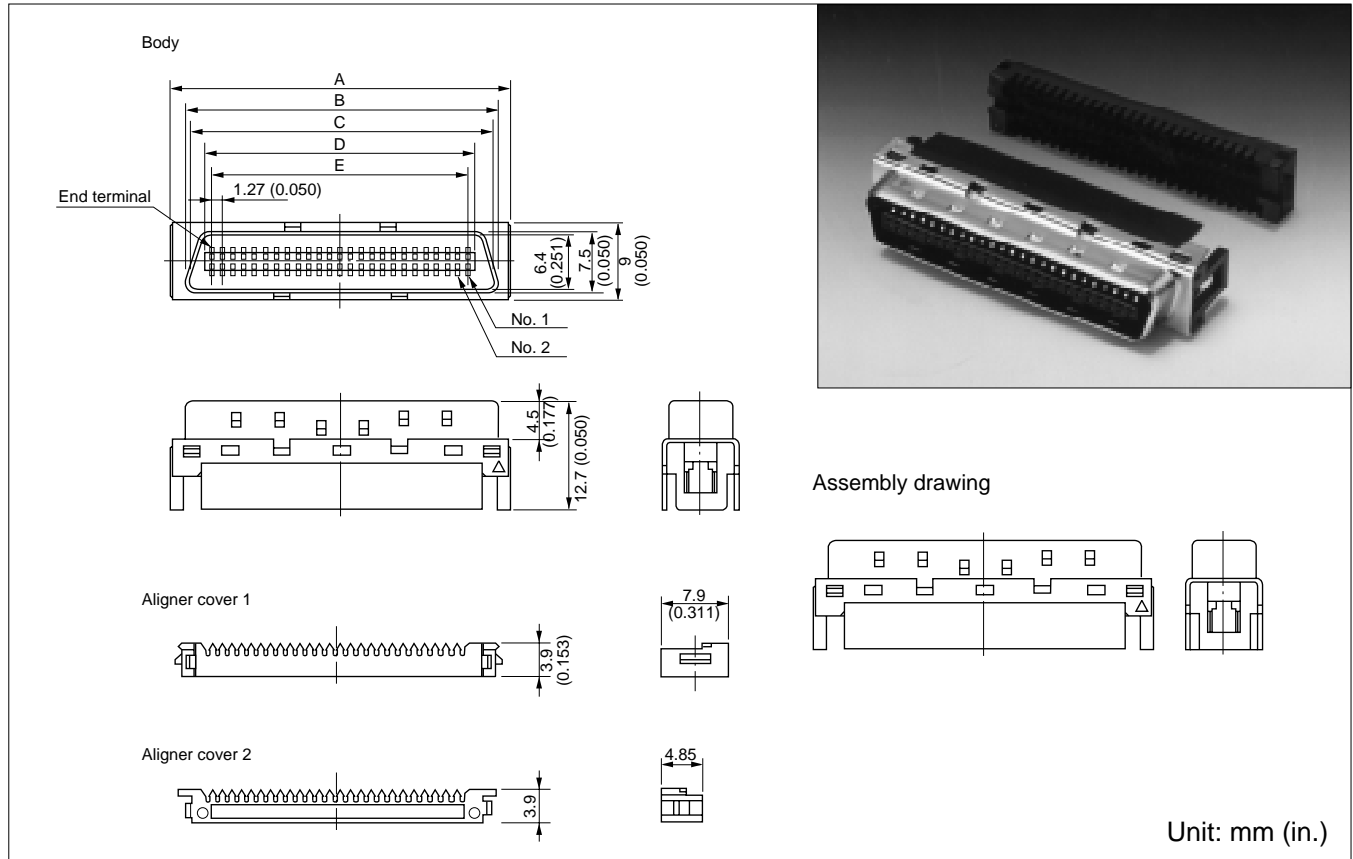
### ■ PART NUMBERS AND DIMENSIONS

Unit: mm (in.)

| Number of contacts | Part number     | A             | B             | C             | D             | E             | F             |
|--------------------|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 20                 | FCN-245D020-G/H | 11.43 (0.450) | 13.45 (0.529) | 16.45 (0.647) | 27.45 (1.080) | 33.35 (1.312) | 23.30 (0.917) |
| 26                 | FCN-245D026-G/H | 15.24 (0.600) | 17.26 (0.679) | 20.26 (0.797) | 31.26 (1.231) | 37.16 (1.462) | 27.11 (1.067) |
| 36                 | FCN-245D036-G/H | 21.59 (0.850) | 23.61 (0.929) | 26.61 (1.047) | 37.61 (1.480) | 43.51 (1.712) | 33.46 (1.317) |
| 50                 | FCN-245D050-G/H | 30.48 (1.200) | 32.50 (1.279) | 35.50 (1.397) | 46.50 (1.830) | 52.40 (2.062) | 42.35 (1.667) |
| 68                 | FCN-245D068-G/H | 41.91 (1.650) | 43.93 (1.729) | 46.93 (1.847) | 57.93 (2.280) | 63.83 (2.512) | 53.78 (2.117) |
| 80                 | FCN-245D080-G/H | 49.53 (1.950) | 51.55 (2.029) | 54.55 (2.147) | 65.55 (2.580) | 71.45 (2.812) | 61.40 (2.417) |

## INSULATION DISPLACEMENT CONNECTION (IDC) PLUG

### ■ DIMENSIONS



### ■ PART NUMBERS AND DIMENSIONS

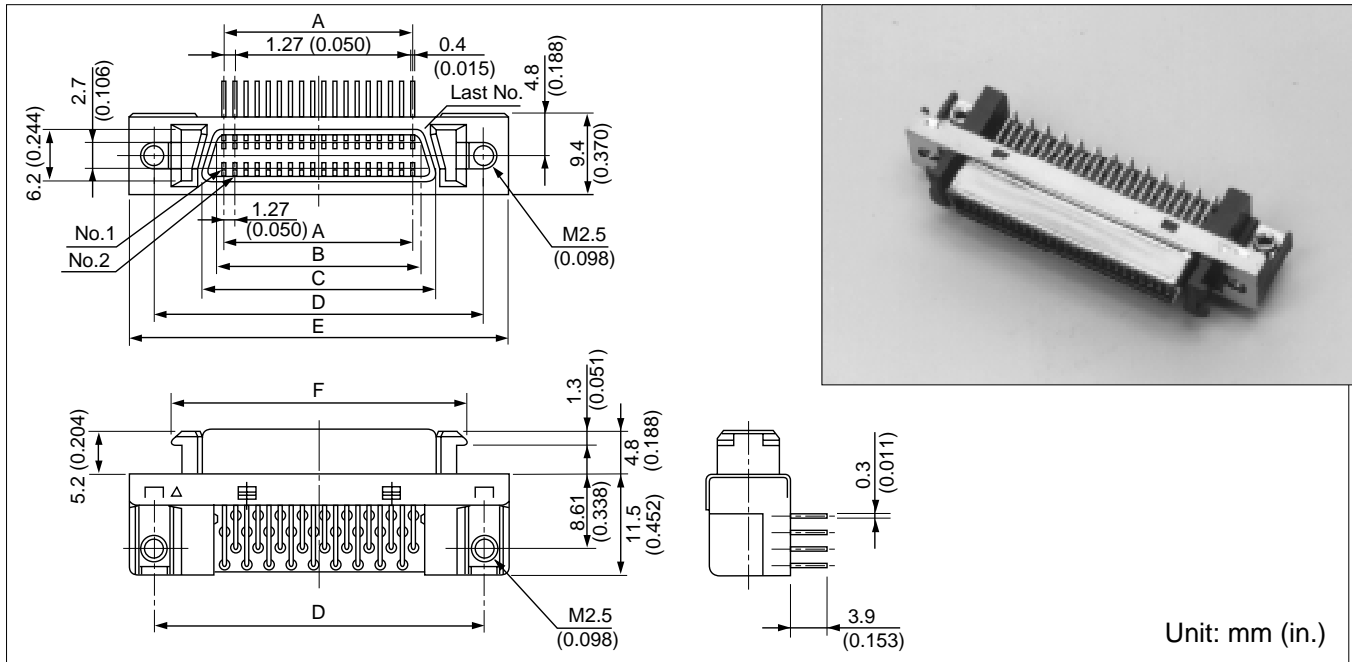
Unit: mm (in.)

| Number of contacts | Insulation diameter of applicable wire | Part number     | A             | B             | C             | D             | E             |
|--------------------|--|-----------------|---------------|---------------|---------------|---------------|---------------|
| 20                 | φ0.5 to 0.65 mm                        | FCN-247R020-G/E | 21.24 (0.836) | 17.55 (0.690) | 16.55 (0.651) | 13.25 (0.521) | 11.43 (0.450) |
| 26                 | φ0.5 to 0.65 mm                        | FCN-247R026-G/E | 25.05 (0.986) | 21.36 (0.840) | 20.36 (0.801) | 17.06 (0.671) | 15.24 (0.600) |
| 36                 | φ0.5 to 0.65 mm                        | FCN-247R036-G/E | 31.40 (1.236) | 27.71 (1.090) | 26.71 (1.051) | 23.41 (0.921) | 21.59 (0.850) |
| 50                 | φ0.5 to 0.65 mm                        | FCN-247R050-G/E | 40.29 (1.586) | 36.60 (1.440) | 35.60 (1.401) | 32.30 (1.271) | 30.48 (1.200) |
| 68                 | φ0.5 to 0.65 mm                        | FCN-247R068-G/E | 51.72 (2.036) | 48.03 (1.890) | 47.03 (1.851) | 43.73 (1.721) | 41.91 (1.650) |
| 80                 | φ0.5 to 0.65 mm                        | FCN-247R080-G/E | 59.34 (2.336) | 55.65 (2.190) | 54.65 (2.151) | 51.35 (2.021) | 49.53 (1.950) |

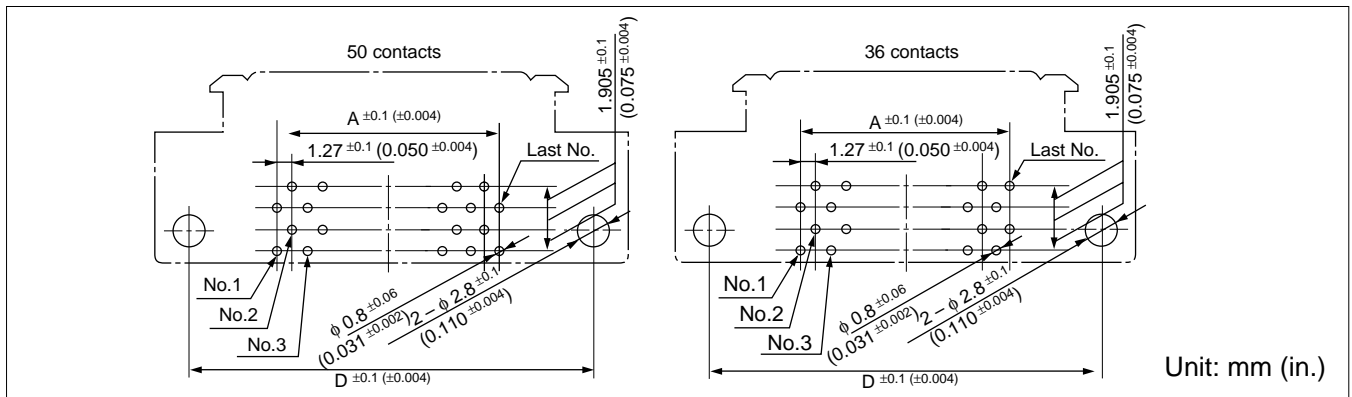
50-contact connectors for IDC of wires with φ0.8 mm (0.031 in.) to φ0.88 mm (0.035 in.) insulation diameter are also available. Specify a part number by replacing -G/E at the end with -G/F.

## RIGHT-ANGLE SOCKET [LIGHTWEIGHT TYPE]

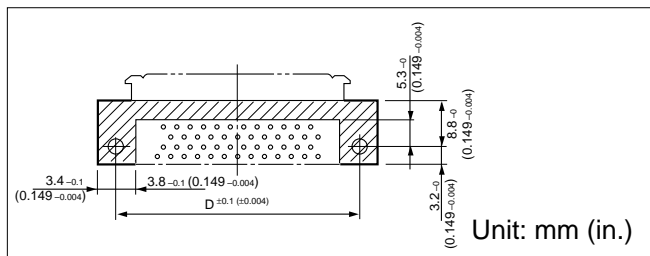
### ■ DIMENSIONS



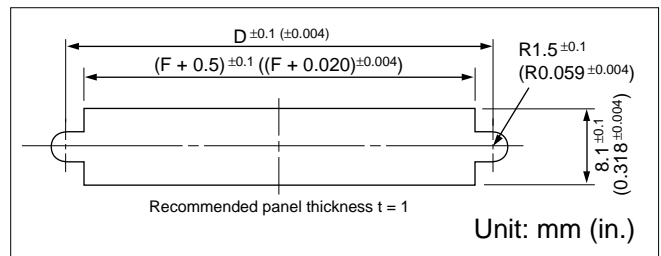
### ■ MOUNTING HOLE LAYOUT (COMPONENT SIDE)



### ■ PATTERN INHIBITED AREAS



### ■ RECOMMENDED PANEL DIMENSIONS



### ■ PART NUMBERS AND DIMENSIONS

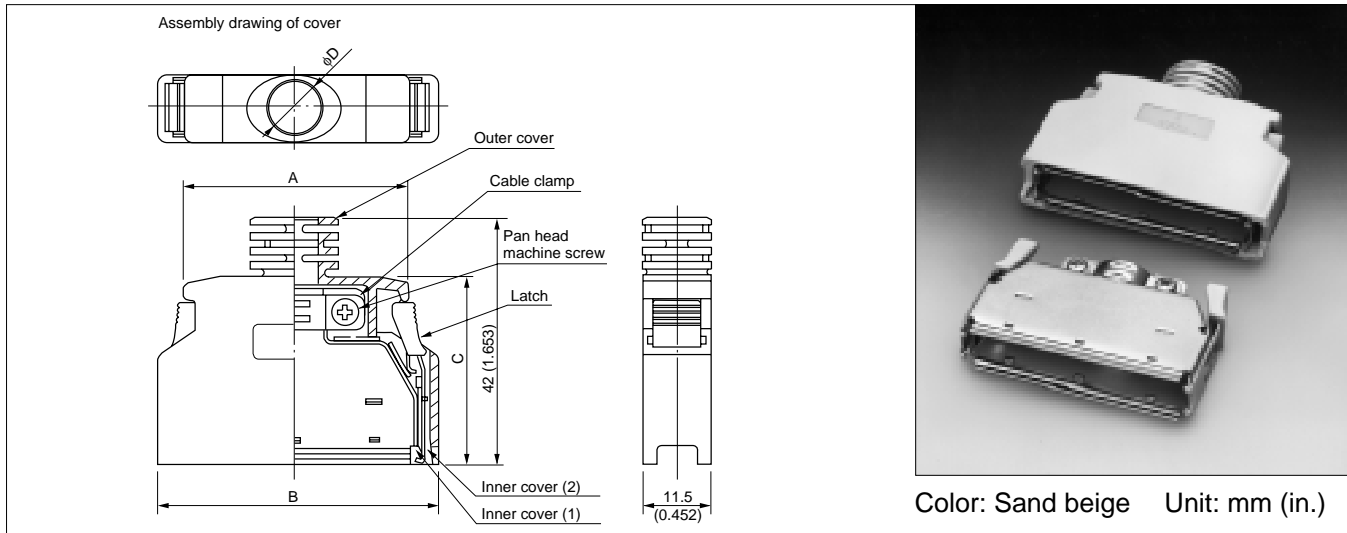
Unit: mm (in.)

| Number of contacts | Part number     | A             | B             | C             | D             | E             | F             |
|--------------------|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 36                 | FCN-245D036-L/L | 21.59 (0.850) | 23.61 (0.929) | 26.61 (1.047) | 37.61 (1.480) | 43.51 (1.712) | 33.46 (1.317) |
| 50                 | FCN-245D050-L/L | 30.48 (1.200) | 32.50 (1.279) | 35.50 (1.397) | 46.50 (1.830) | 52.40 (2.062) | 42.35 (1.667) |

\* This socket is 40% lighter than a socket with die cast shell.

## EMI/ESD RESISTANT COVER

### ■ DIMENSIONS



### ■ PART NUMBERS AND DIMENSIONS

Unit: mm (in.)

| Number of contacts | Part number     | A             | B             | C             | D           |
|--------------------|-----------------|---------------|---------------|---------------|-------------|
| 20                 | FCN-240C020-A/S | 19.95 (0.785) | 29.65 (1.167) | 34.50 (1.358) | 6.8 (0.268) |
| 26                 | FCN-240C026-A/S | 23.76 (0.935) | 33.46 (1.317) | 38.31 (1.508) | 7.1 (0.280) |
| 36                 | FCN-240C036-A/S | 30.11 (1.185) | 39.81 (1.507) | 32.00 (1.259) | 8.2 (0.323) |
| 50                 | FCN-240C050-A/S | 39.00 (1.535) | 48.70 (1.917) | 32.00 (1.259) | 9.0 (0.354) |
|                    | FCN-240C050-E/S |               |               |               | 9.8 (0.386) |
| 68                 | FCN-240C068-A/S | 50.43 (1.985) | 60.13 (2.367) | 32.00 (1.259) | 9.1 (0.358) |
| 80                 | FCN-240C080-A/S | 58.05 (2.285) | 67.75 (2.667) | 32.00 (1.259) | 9.7 (0.382) |

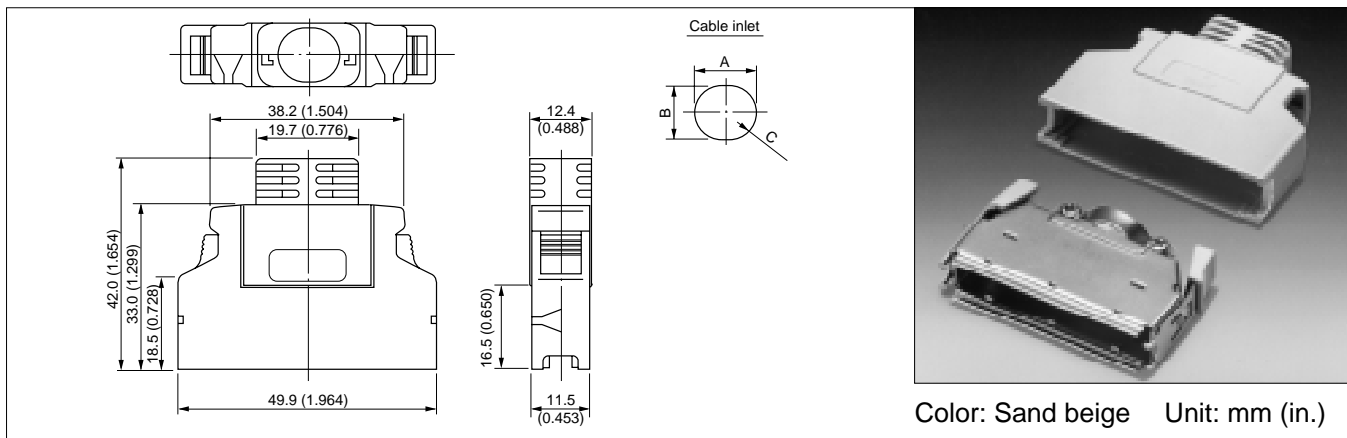
\*: The standard color of the EMI/ESD resistant covers is sand beige, but black, ivory, and art gray are also available. Specify a part number as follows:

Black: FCN-240C□□□-Δ/S-K0. Ivory: FCN-240C□□□-Δ/S-C0. Art gray: FCN-240C□□□-Δ/S-A0.

□□□: Number of contacts. Δ: Cover type.

## WIDE-HOLE COVER FOR SCSI CABLES

### ■ DIMENSIONS



### ■ PART NUMBERS AND DIMENSIONS

| Part number     | Cable inlet   |      |
|-----------------|---------------|------|
|                 | A × B         | C    |
| FCN-240C050-B/S | 12.45 × 11.00 | R5.5 |
| FCN-240C050-D/S | 11.05 × 9.40  | R4.7 |

\*: The standard color of the EMI/ESD resistant covers is sand beige, but black, ivory, and art gray are also available. Specify a part number as follows:

Black: FCN-240C□□□-Δ/S-K0. Ivory: FCN-240C□□□-Δ/S-C0.

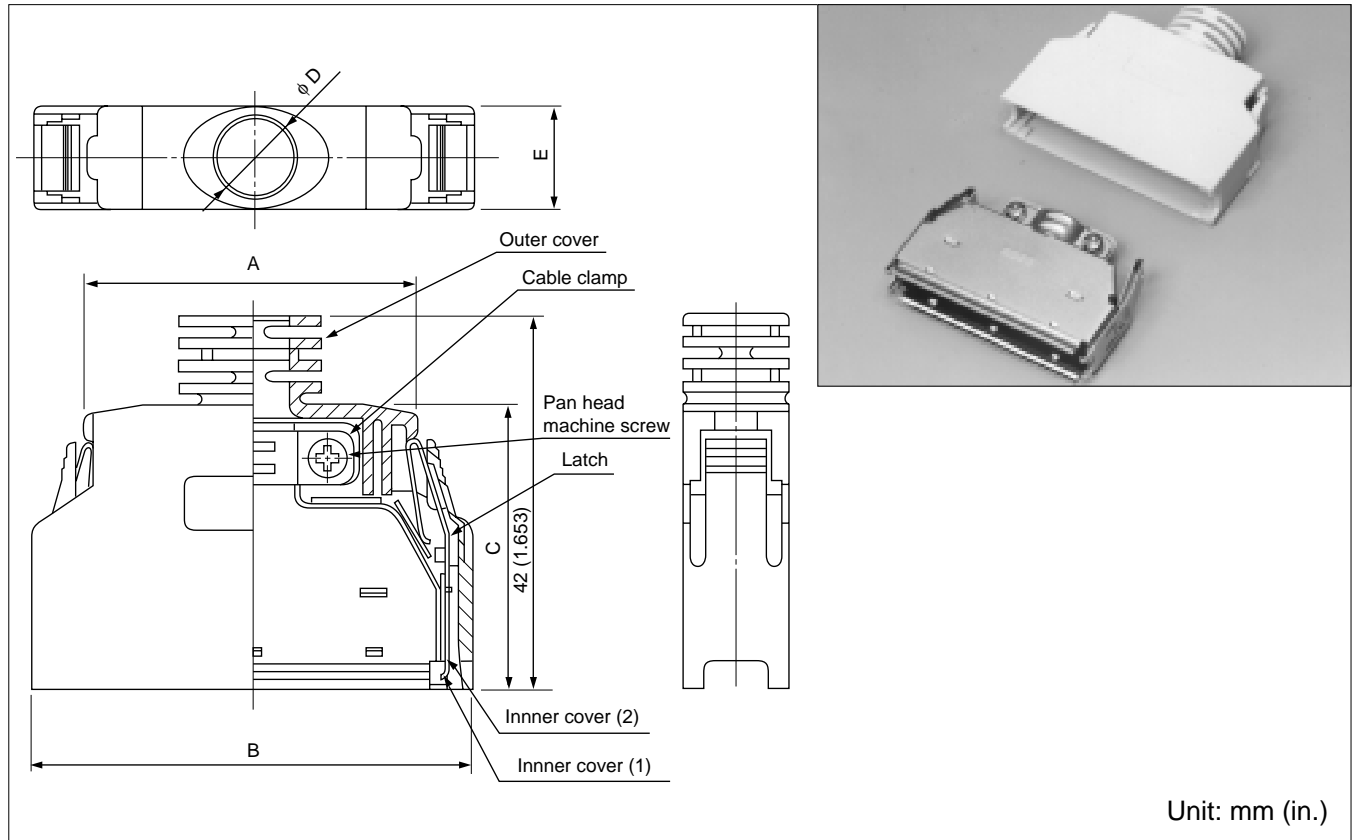
Art gray: FCN-240C□□□-Δ/S-A0.

□□□: Number of contacts. Δ: Cover type.

# 240R Series

## EMI/ESD RESISTANT COVER, LATCH-ON-HOOD TYPE

### ■ DIMENSIONS



Unit: mm (in.)

### ■ PART NUMBERS AND DIMENSIONS

Unit: mm (in.)

| Number of contacts | Part number      | A             | B             | C             | D           | E            |
|--------------------|------------------|---------------|---------------|---------------|-------------|--------------|
| 36                 | FCN-240C036-A/SC | 29.11 (1.146) | 39.81 (1.567) | 32.00 (1.259) | 8.2 (0.223) | 11.5 (0.223) |
| 50                 | FCN-240C050-A/SC | 38.00 (1.496) | 48.70 (1.917) | 32.00 (1.259) | 9.0 (0.223) | 11.5 (0.223) |
|                    | FCN-240C050-E/SC |               |               |               | 9.8 (0.223) | 11.4 (0.223) |

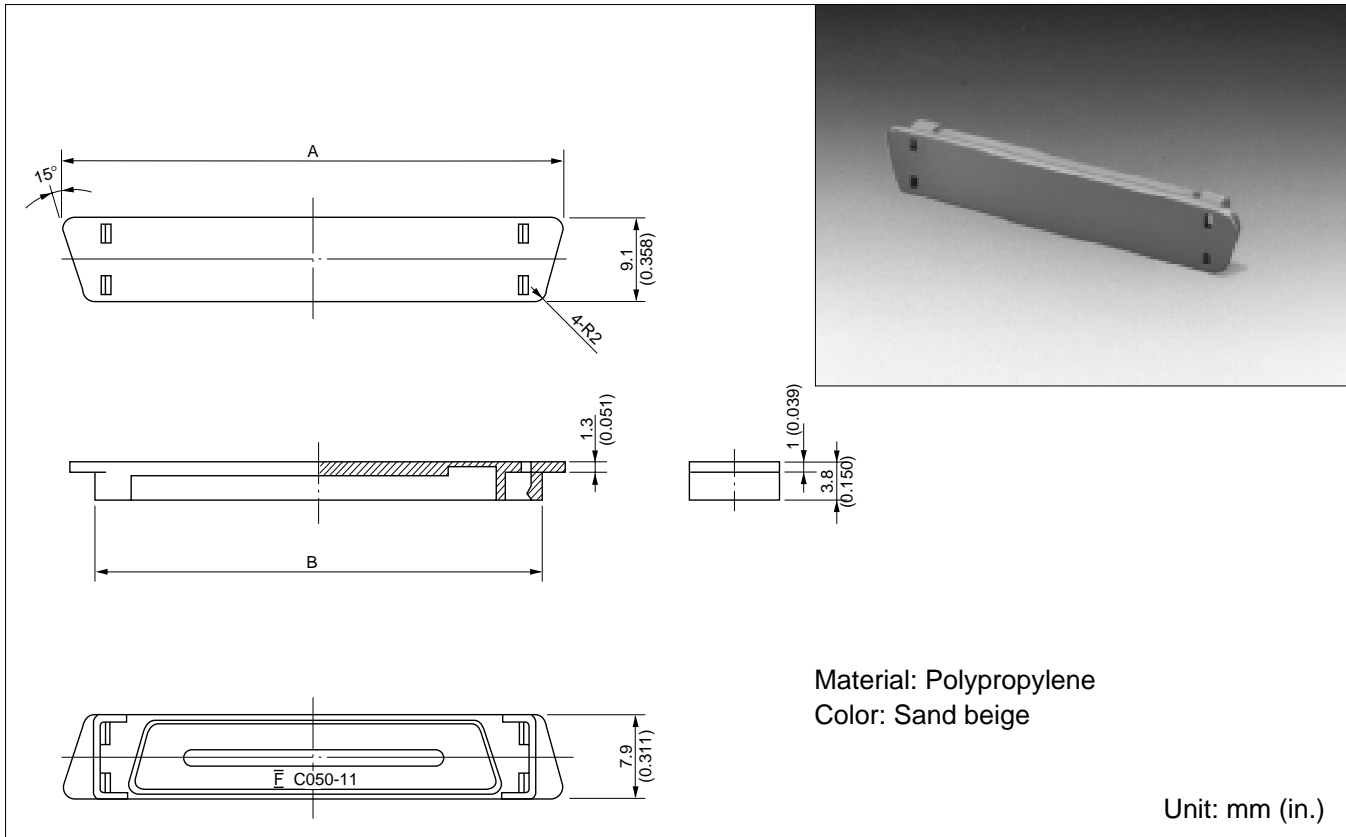


# 240R Series

## ACCESSORY (DUST CAP FOR SOCKET) (230R SERIES AND 240R SERIES)

Used to prevent dust from entering the contact section of a plug connector.

### ■ DIMENSIONS

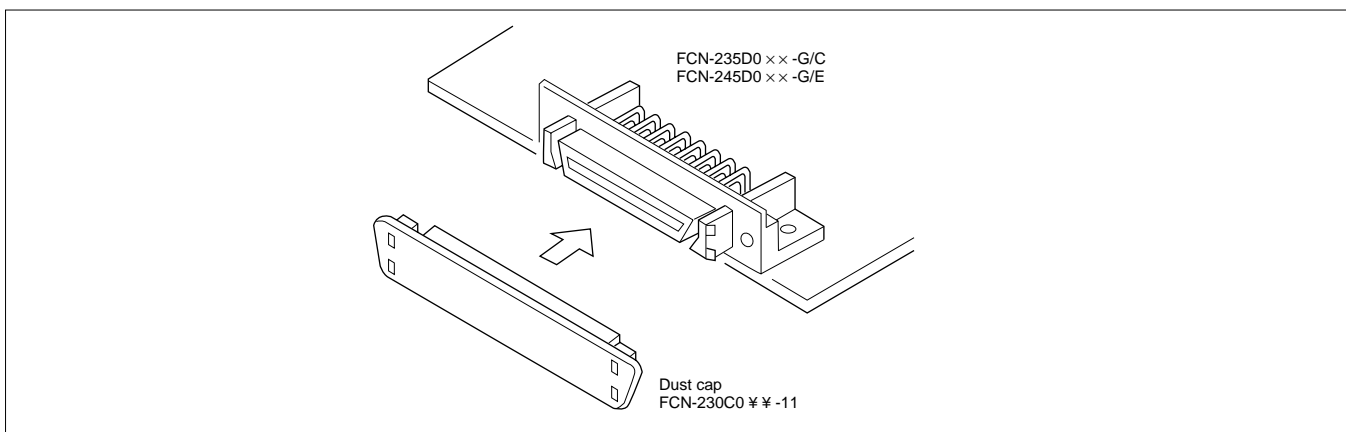


### ■ PART NUMBERS AND DIMENSIONS

Unit: mm (in.)

| Number of contacts | Part number    | A            | B            |
|--------------------|----------------|--------------|--------------|
| 28                 | FCN-230C028-11 | 35.7 (1.406) | 30.1 (1.185) |
| 36                 | FCN-230C036-11 | 40.8 (1.606) | 35.2 (1.386) |
| 50                 | FCN-230C050-11 | 49.7 (1.957) | 44.1 (1.736) |
| 68                 | FCN-230C068-11 | 61.1 (2.406) | 55.5 (2.185) |

### ■ APPLICATIONS



## 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

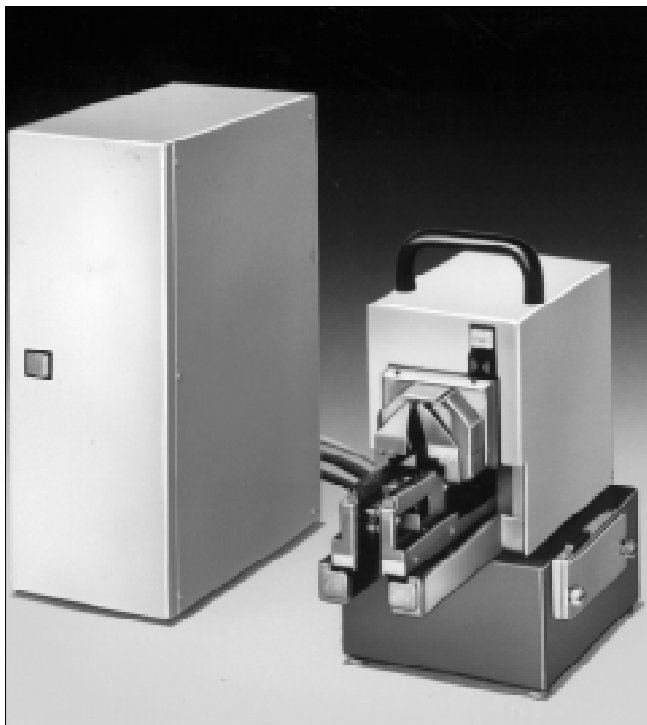
### 1. Cable Aligner

| 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 |

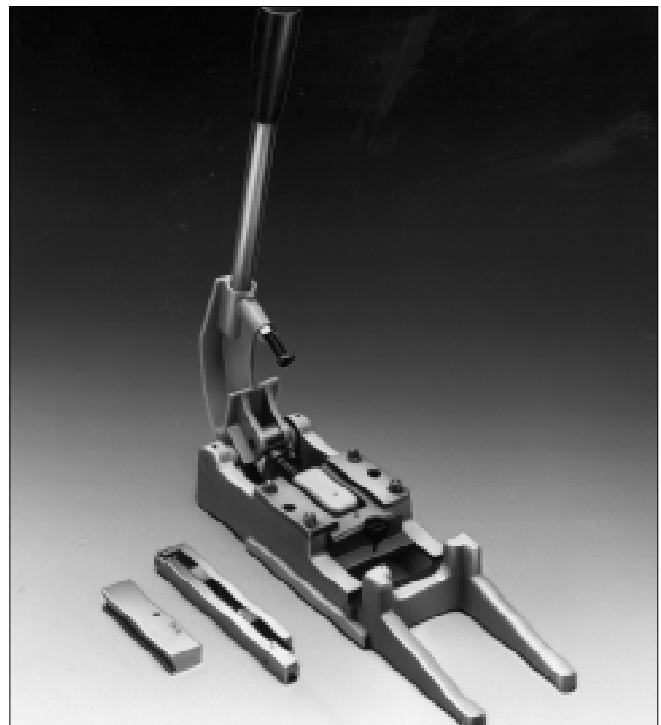
xxx indicates the number of contacts.

### 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

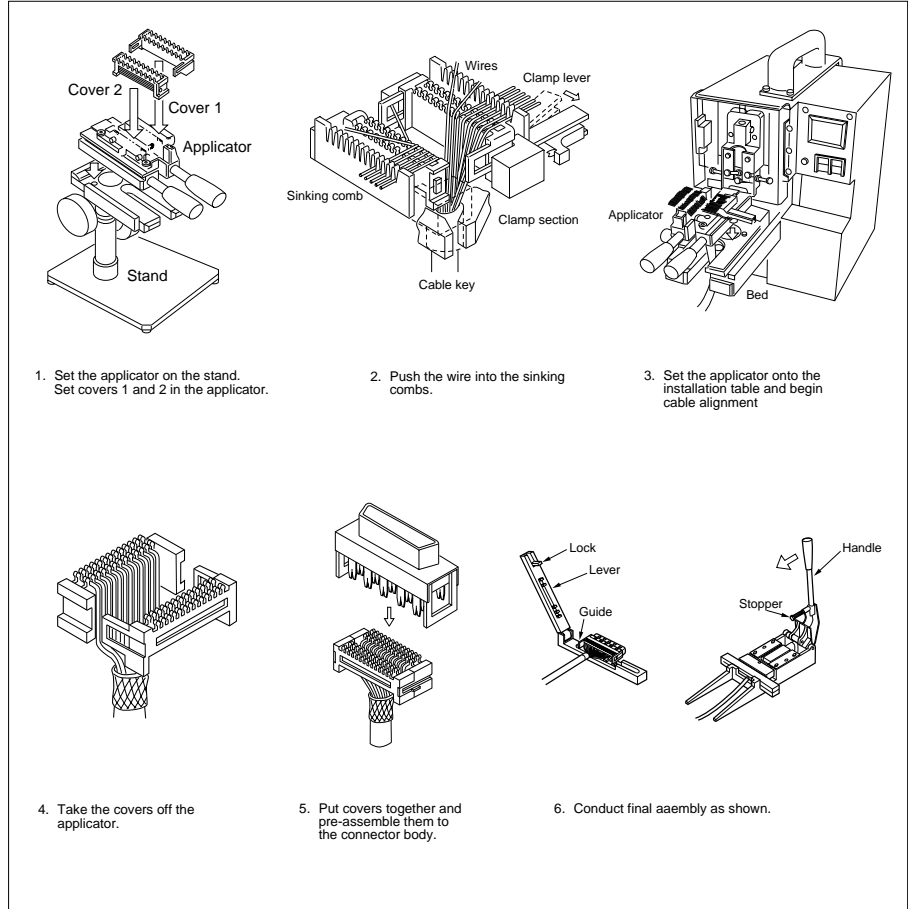
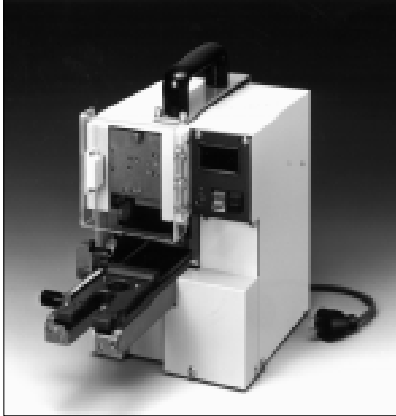


• Insulation displacement connection (IDC) tool

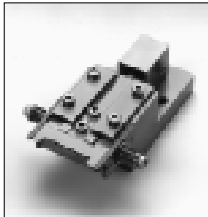
# 240R Series

## Semi-Automatic Tools Cable Aligning Machine

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



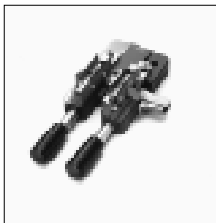
Head (FCN-H550-1/A)



Stand (FCN-D550)



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



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



## FCN-240R SERIES IDC ROUND-CABLE CONNECTORS

SOCKET: FCN-247R\*\*\*-G/E (\*\*\*: 020, 026, 036, 050, 068, 080)

| Pos No.       | Applied Wire<br>(wire Dia.: mm) | Connector Part<br>number                | Cable Aligner   |              | IDC Tool   |
|---------------|---------------------------------|---|-----------------|--------------|--|
|               |                                 |   | Hand Tool       | Semi-Auto    |  |
| 20<br> <br>68 | #28 to #30<br>(0.5 to 0.65)     | FCN-247R020-G/E<br> <br>FCN-247R080-G/E | FCN-247T-T061/H | (See below*) | HAND PRESS:<br>FCN-237T-T109/H<br>HEAD & Locator:<br>FCN-237T-T067/H |

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

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Fax: (31-23) 5560950  
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