

# D-DF

D-Sub connectors - Screw-machined Contacts

## FIXED MACHINED CONTACT CONNECTOR



### CHARACTERISTICS

#### Specifications

- Connectors according to MIL C24308 - NFC93425-HE5

| Materials and Platings |                                                                                                                                                                                                                                             |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Shells</b>          | Steel tinned with dimples on plug connector                                                                                                                                                                                                 |
| <b>Insulator</b>       | Glass-filled thermoplastic, UL 94V-0                                                                                                                                                                                                        |
| <b>Rear insert</b>     | Brass, 3µm up to 5µm (118µ" up to 197µ")<br>tinned over nickel 2µm up to 3µm<br>(78µ" up to 118µ")                                                                                                                                          |
| <b>Boardlock</b>       | Tin plating 4µm up to 6µm<br>(157µ" up to 236µ") over nickel 2µm up to 3µm<br>(78µ" up to 118µ")                                                                                                                                            |
| <b>Screwlock</b>       | Brass, 6µm up to 10µm (236µ" up to 394µ")<br>tinned over nickel 2µm up to 3µm<br>(78µ" up to 118µ")                                                                                                                                         |
| <b>Contacts</b>        | <b>D:</b> brass<br><b>DF:</b> pin = brass<br>socket = copper alloy<br><b>Right angle version:</b> full gold plating over 2µm to<br>3µm nickel<br><b>Straight version:</b> full gold plating over 2µm up to<br>3µm (78µ" up to 118µ") nickel |

| Electrical Data              |                                           |
|------------------------------|-------------------------------------------|
| <b>Current rating</b>        | 7.5A                                      |
| <b>Voltage rating</b>        | 300V AC/rms 50Hz                          |
| <b>Withstanding voltage</b>  | 1000V AC/rms 50Hz for one minute          |
| <b>Insulation resistance</b> | 5000MΩ                                    |
| <b>Contact resistance</b>    | <b>D:</b> 8.5mΩ max<br><b>DF:</b> 5mΩ max |

| Climatic Data                |                                                                         |
|------------------------------|-------------------------------------------------------------------------|
| <b>Operating temperature</b> | <b>D / DF:</b> -55°C to + 125°C                                         |
| <b>Salt spray</b>            | 48 hours                                                                |
| <b>Humidity</b>              | <b>D:</b> 21 days (40°C - 95% HR)<br><b>DF:</b> 56 days (40°C - 95% HR) |

| Mechanical Data                                    |               |              |
|----------------------------------------------------|---------------|--------------|
| <b>Mating and unmating force</b><br>Unit: kg ( lb) |               |              |
| No. of Cts                                         | Mate (max)    | Unmate (min) |
| 9 (size E)                                         | 3.05 (6.74)   | 0.36 (0.79)  |
| 15 (size A)                                        | 5.09 (11.24)  | 0.46 (1.01)  |
| 25 (size B)                                        | 8.44 (18.66)  | 0.81 (1.8)   |
| 37 (size C)                                        | 12.51 (27.65) | 1.1 (2.47)   |
| 50 (size D)                                        | 14.65 (32.38) | 1.6 (3.56)   |

### DESCRIPTION

Amphenol's 17D and 17DF series fixed contact D-Subminiature connector is suitable for industrial or telecom use.

The machined contact provide stability and reliability.

This series offers the broadest range of termination options in the Amphenol line.

*Connectors  
for industrial  
and  
telecom use*

### APPLICATIONS

- Medical
- Industrial
- Telecom
- Any industry standard I / O connections



**Amphenol**

**D-DF / E18**

## Shell size dimensions



| Shell size | Contact<br>P: Pin<br>S: Socket | A<br>±0.25<br>(±.010) | B<br>0/-0.20<br>(0/- .008) | B'<br>+0.20/0<br>(+.008/0) | C<br>±0.10<br>(±.004) | D<br>0/-0.25<br>(0/- .010) | D'<br>+0.25/0<br>(+.010/0) | E<br>±0.20<br>(±.008) | F<br>+0.05/-0.20<br>(+.002/- .008) | F'<br>+0.10/-0.20<br>(+.004/- .008) | G<br>+0.10/-0.20<br>(+.004/- .008) | G'<br>±0.10<br>(±.004) | H<br>+0.10/-0.40<br>(+.004/- .016) | J<br>0/-0.50<br>(0/- .020) |
|------------|--------------------------------|-----------------------|----------------------------|----------------------------|-----------------------|----------------------------|----------------------------|-----------------------|------------------------------------|-------------------------------------|------------------------------------|------------------------|------------------------------------|----------------------------|
| E          | P                              | 30.7<br>(1.209")      |                            | 16.8<br>(.661")            | 25.0<br>(.984")       |                            | 8.2<br>(.323")             | 12.4<br>(.488")       |                                    | 10.9<br>(.429")                     |                                    | 5.9<br>(.232")         | 19.4<br>(.764")                    | 11.0<br>(.433")            |
|            | S                              |                       | 16.4<br>(.646")            |                            |                       | 8.0<br>(.315")             |                            |                       | 11.1<br>(.437)                     |                                     | 6.2<br>(.244")                     |                        |                                    |                            |
| A          | P                              | 39.0<br>(1.535")      |                            | 25.1<br>(.988")            | 33.3<br>(1.311")      |                            | 8.2<br>(.323")             | 12.4<br>(.488")       |                                    | 10.9<br>(.429")                     |                                    | 5.9<br>(.232")         | 27.7<br>(1.091")                   | 11.0<br>(.433")            |
|            | S                              |                       | 24.8<br>(.976")            |                            |                       | 8.0<br>(.315")             |                            |                       | 11.1<br>(.437)                     |                                     | 6.2<br>(.244")                     |                        |                                    |                            |
| B          | P                              | 52.9<br>(2.083")      |                            | 38.8<br>(1.528")           | 47.0<br>(1.850")      |                            | 8.2<br>(.323")             | 12.4<br>(.488")       |                                    | 11.0<br>(.433")                     |                                    | 5.8<br>(.228")         | 41.4<br>(1.630")                   | 11.0<br>(.433")            |
|            | S                              |                       | 38.5<br>(1.513")           |                            |                       | 8.0<br>(.315")             |                            |                       | 11.1<br>(.437)                     |                                     | 6.2<br>(.244")                     |                        |                                    |                            |
| C          | P                              | 69.2<br>(2.724")      |                            | 55.3<br>(2.177")           | 63.5<br>(2.500")      |                            | 8.2<br>(.323")             | 12.4<br>(.488")       |                                    | 11.0<br>(.433")                     |                                    | 5.8<br>(.228")         | 57.9<br>(2.280")                   | 11.0<br>(.433")            |
|            | S                              |                       | 54.9<br>(2.161")           |                            |                       | 8.0<br>(.315")             |                            |                       | 11.1<br>(.437)                     |                                     | 6.2<br>(.244")                     |                        |                                    |                            |
| D          | P                              | 66.8<br>(2.630")      |                            | 52.7<br>(2.075")           | 61.1<br>(2.406")      |                            | 11.0<br>(.433")            | 15.2<br>(.598")       |                                    | 11.0<br>(.433")                     |                                    | 5.8<br>(.228")         | 55.5<br>(2.185")                   | 13.8<br>(.543")            |
|            | S                              |                       | 52.5<br>(2.067")           |                            |                       | 10.9<br>(.429")            |                            |                       | 11.1<br>(.437)                     |                                     | 6.2<br>(.244")                     |                        |                                    |                            |

## Panel cutouts

Optimal cutout for rear mounting



Standard cutout



| Shell size | Mounting method | A<br>±0.20<br>(±.008) | B<br>±0.20<br>(±.008) | C<br>±0.20<br>(±.008) | D<br>±0.20<br>(±.008) | E<br>±0.20<br>(±.008) | F<br>±0.20<br>(±.008) | G<br>±0.20<br>(±.008) | H<br>±0.20<br>(±.008) | J<br>±0.20<br>(±.008) |
|------------|-----------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| E          | Front           | 22.2<br>(.874")       | 11.1<br>(.437")       | 25.0<br>(.984")       | 12.5<br>(.492")       | 13.0<br>(.512")       | 6.5<br>(.256")        | 3.0<br>(.118")        | 1.5<br>(.059")        | 2.1<br>(.083")        |
|            | Rear            | 20.5<br>(.807")       | 10.2<br>(.402")       |                       |                       | 11.4<br>(.449")       | 5.7<br>(.224")        |                       |                       | 3.4<br>(.134")        |
| A          | Front           | 30.5<br>(1.201")      | 15.3<br>(.602")       | 33.3<br>(1.311")      | 16.7<br>(.657")       | 13.0<br>(.512")       | 6.5<br>(.256")        | 3.0<br>(.118")        | 1.5<br>(.059")        | 2.1<br>(.083")        |
|            | Rear            | 28.8<br>(1.134")      | 14.4<br>(.567")       |                       |                       | 11.4<br>(.449")       | 5.7<br>(.224")        |                       |                       | 3.4<br>(.134")        |
| B          | Front           | 44.3<br>(1.744")      | 22.1<br>(.870")       | 47.0<br>(1.850")      | 23.5<br>(.925")       | 13.0<br>(.512")       | 6.5<br>(.256")        | 3.0<br>(.118")        | 1.5<br>(.059")        | 2.1<br>(.083")        |
|            | Rear            | 42.5<br>(1.673")      | 21.3<br>(.839")       |                       |                       | 11.4<br>(.449")       | 5.7<br>(.224")        |                       |                       | 3.4<br>(.134")        |
| C          | Front           | 60.7<br>(2.390")      | 30.4<br>(1.197")      | 63.5<br>(2.500")      | 31.7<br>(1.248")      | 13.0<br>(.512")       | 6.5<br>(.256")        | 3.0<br>(.118")        | 1.5<br>(.059")        | 2.1<br>(.083")        |
|            | Rear            | 59.1<br>(2.327")      | 29.5<br>(1.161")      |                       |                       | 11.4<br>(.449")       | 5.7<br>(.224")        |                       |                       | 3.4<br>(.134")        |
| D          | Front           | 58.3<br>(2.295")      | 29.2<br>(1.150")      | 61.1<br>(2.406")      | 30.6<br>(1.205")      | 15.8<br>(.622")       | 7.9<br>(.311")        | 3.0<br>(.118")        | 1.5<br>(.059")        | 2.1<br>(.083")        |
|            | Rear            | 56.3<br>(2.217")      | 28.2<br>(1.110")      |                       |                       | 14.1<br>(.555")       | 7.1<br>(.280")        |                       |                       | 3.4<br>(.134")        |

## Termination

### Right angle

#### MIL Footprint

without bracket:



**C**



**A4**

plastic bracket:



**AJ3**



**AJ4**

metal bracket:



**A**



**AM4: A=13.2mm**  
**AZ4: A=11.5mm**



**AM4B**

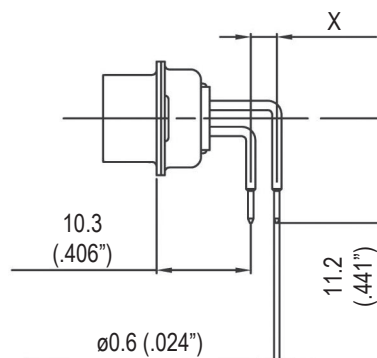
50 contacts:



## Termination

### European footprint

without bracket:



**1AON: X=2.54mm**

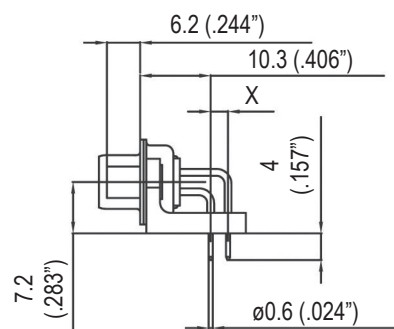
**1BON: X=2.84mm**

plastic bracket:



**1APN: X=2.54mm**

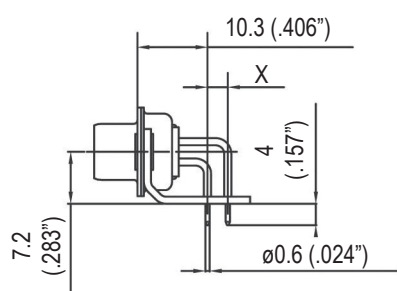
**1BPN: X=2.84mm**



**1AUN: X=2.54mm**

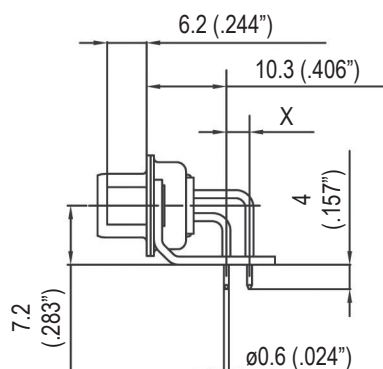
**1BUN: X=2.84mm**

metal bracket:



**1AMN: X=2.54mm**

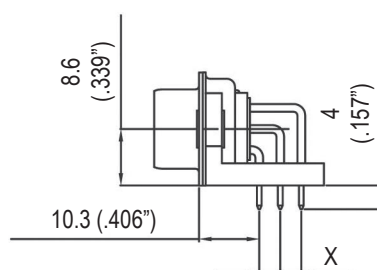
**1BMN: X=2.84mm**



**1ATN: X=2.54mm**

**1BTN: X=2.84mm**

50 contacts:



# Termination

## Solder Cup:



## Wire Wrap:



| termination | Nb of wraps | L             |
|-------------|-------------|---------------|
| F179        | 2           | 9.6mm (.378") |
| F179A       | 3           | 13mm (.512")  |

## Straight PCB:



| termination | Ø              | L             |
|-------------|----------------|---------------|
| U           | 0.6mm (.024")  | 3.2mm (.126") |
| V           | 1.02mm (.040") | 2.4mm (.095") |
| T           | 0.6mm (.024")  | 4mm (.157")   |
| OL2         | 0.6mm (.024")  | 5.5mm (.217") |

## Grounding tabs:

### For straight termination



RM5



RM8

### For R/A termination

FOR PCB 1.6



RM6

## Panel mounting option

For straight and R/A termination



## Recommended PCB Layout



For straight PCB:  $X = 2.84\text{mm} (.112")$

For right angle PCB: MIL:  $X = 2.84\text{mm} (.112")$

European:  $X = 2.54\text{mm} (.100")$ , 2.84mm in option

|                                      | size E       | size A       | size B        | size C        | size D       |
|--------------------------------------|--------------|--------------|---------------|---------------|--------------|
| <b>C<math>\pm 0,1 (.004)</math></b>  | 25 (.984)    | 33.3 (1.311) | 47 (1.85)     | 63.5 (2.5)    | 61.1 (2.406) |
| <b>F<math>\pm 0,05 (.002)</math></b> | 10.96 (.431) | 19.18 (.755) | 33.12 (1.304) | 49.68 (1.956) | 44.2 (1.74)  |

## How to order

**L**

RoHS Compliant

|                      |                                                                                                           |
|----------------------|-----------------------------------------------------------------------------------------------------------|
| <b>0.2µm (8µ")</b>   | <b>77D:</b> tinned shell for receptacle<br><b>717D:</b> tinned shell + dimples for plug                   |
| <b>0.5µm (20µ")</b>  | <b>77DF or 177D:</b> tinned shell for receptacle<br><b>717DF or 777D:</b> tinned shell + dimples for plug |
| <b>0.76µm (30µ")</b> | <b>177DF :</b> tinned shell for receptacle<br><b>777DF :</b> tinned shell + dimples for plug              |

shell size: E,A,B,C, D

**mounting options:**  
**H** = rear insert 4-40  
**G** = rear insert M3  
**F** = float mounting  
**no digit** = standard rivet ø3.1mm  
 \*H, G must also be used to specify the threading of RM5 grounding tabs.

configuration: 09,15,25,37, 50

**contact type:**  
**P** = pin  
**S** = socket

**for specific product**

**grounding tabs:**  
**RM5** = for straight PCB mounting\*  
**RM8** = for straight PCB mounting + female lock  
**RM6** = for right angle PCB mounting  
**VF** = front screwlock 4-40  
**VFM** = front screwlock M3  
**VF2** = removable screwlock 4-40  
**VFM2** = removable screwlock M3

**termination:**  
**-solder cup:** no digit  
**-wire wrap:**  
**F179** = length 9.6mm  
**F179A** = length 13mm  
**-straight PCB:**  
**U** = length 3.2mm, tail ø0.6mm  
**V** = length 2.4mm, tail ø1.02mm  
**T** = length 4mm, tail ø0.6mm  
**OL2** = length 5.5mm, tail ø0.6mm  
**-right angle connector:**  
**MIL footprint**  
 without bracket: **C** = tail ø1.02mm  
**A4** = tail ø0.6mm  
 plastic bracket: **AJ3** = tail ø1.02mm  
**AJ4** = tail ø0.6mm  
 metal bracket: **A** = tail ø1.02mm  
**AM4** = A = 13.2mm  
**AZ4** = A = 11.5mm  
**AM4B** = footprint 14.99mm (.590")  
**European footprint**  
 without bracket: **1AON** = X = 2.54mm  
**1BON** = X = 2.84mm  
 plastic bracket: **1APN** = X = 2.54mm  
**1BPN** = X = 2.84mm  
**1AUN** = X = 2.54mm  
**1BUN** = X = 2.84mm  
 metal bracket: **1AMN** = X = 2.54mm  
**1BMN** = X = 2.84mm  
**1ATN** = X = 2.54mm  
**1BTN** = X = 2.84mm

■ : Standard options

**For special request, please consult factory**

*[The following information was obtained from the records of the Department of Health, Education and Welfare, Division of Child Development Services, Bureau of Early Childhood Programs, Office of Special Projects, dated 12/1/78.]*

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