

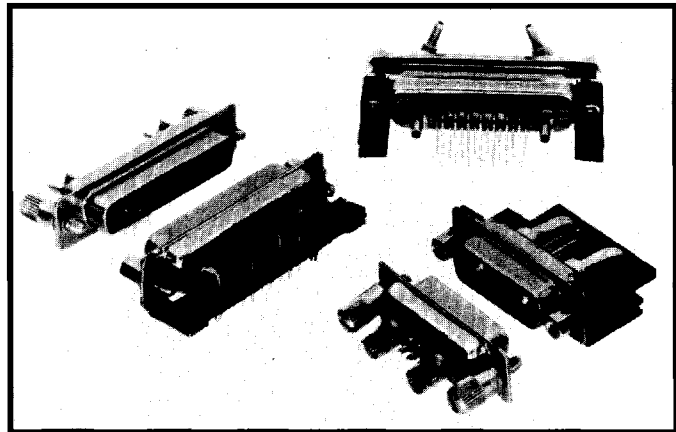
# Combo-D Series

## INDUSTRIAL AND MILITARY QUALITY SUBMINIATURE-D CONNECTORS FOR MILITARY AND SHELTERED INDOOR/OUTDOOR ENVIRONMENTAL APPLICATIONS

Size 20 Fixed Signal Contacts  
Size 8 Removable Power, Shielded  
and High Voltage Contacts

Military/Industrial  
Quality Connectors

U.L. Recognized      CSA Recognized  
File #E49351      File #LR54219  
D.E.S.C. 85039  
Telecommunication  
U.L. File #E140980



Combo-D Series connectors permit mixed contact combinations of power, shielded, high voltage and signal contacts within the same connector body. Twenty connector variants are offered in six standard shell sizes.

Two performance levels of Combo-D Series connectors are offered. The CBD Series connectors are professional quality connectors recommended for use in sheltered, noncorrosive indoor and outdoor environments having normal ventilation, but without temperature or humidity controls. The CBM Series connectors are military quality connectors recommended for use in sheltered, mildly corrosive environments having a wide range of temperature, pressure and humidity changes. These connectors will meet the applicable performance and dimensional requirements of IEC 807-2, Performance Level One and Two, and D.E.S.C. 85039.

Combo-D Series connectors utilize precision machined signal contacts. Connector variants are available with contact terminations for solder and straight and 90° printed board mount terminations featuring a

choice of inch or metric printed board footprints.

Power, shielded and high voltage contacts are removable, having solder and straight and 90° printed board mount terminations. Power and shielded contacts are available with crimp terminations.

For low level shielding requirements, ferrite inductors may be attached to both signal and power contacts of connectors having contact terminations which are straight or 90° angled for printed board mounting applications. Additional details may be obtained from the factory Applications Engineering Department.

The female power contacts feature the Large Surface Area (L.S.A.) closed entry contact design which provides maximum mating surfaces between male and female contacts and reduced contact resistance during operation.

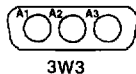
A wide assortment of printed board mounting hardware, cable support hoods, and locking systems is available from stock.

A blind mating system is available for applications requiring connector coupling in recessed areas or mobile power coupling systems.

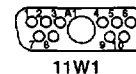
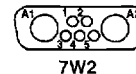
### CBD SERIES CONTACT VARIANTS

FACE VIEW OF MALE OR REAR VIEW OF FEMALE

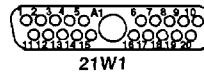
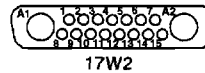
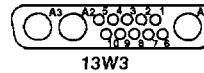
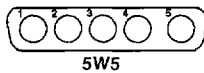
#### SHELL SIZE 1



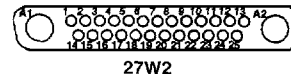
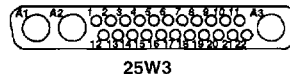
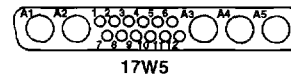
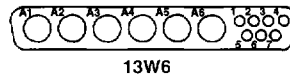
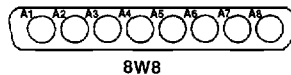
#### SHELL SIZE 2



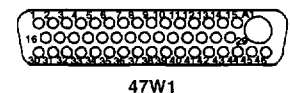
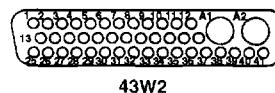
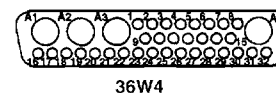
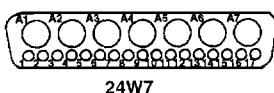
#### SHELL SIZE 3



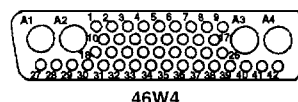
#### SHELL SIZE 4



#### SHELL SIZE 5



#### SHELL SIZE 6



**COMBO-D SERIES TECHNICAL CHARACTERISTICS**

**MATERIALS AND FINISHES:**

<b>Insulator:</b>	Glass filled polyester per MIL-M-24519 UL 94V-0, blue color, and composite.
<b>Signal Contacts:</b>	Male contacts-precision machined brass alloy. Female contacts-precision machined high tensile phosphor bronze.
<b>Signal Contact Plating:</b>	Gold flash over nickel plate and gold 0.000050 (1.25 microns) over nickel plate.
<b>Power Contacts:</b>	Machined of high conductivity copper alloy for both male and female contacts.
<b>Power Contact Plating:</b>	Gold flash over nickel.
<b>Shielded and High Voltage Contacts:</b>	Male contacts-precision machined brass. Female contacts-precision machined high tensile phosphor bronze.
<b>Shielded and High Voltage Contact Plating:</b>	Signal contact-gold flash over nickel.
<b>Shells:</b>	Steel or brass with tin plate; zinc plate with dichromate seal, stainless steel passivated.
<b>Mounting Spacers and Brackets:</b>	Nylon plastic, or brass with tin plate; zinc plate with dichromate seal.
<b>Push-On Fasteners:</b>	Phosphor bronze and beryllium copper with tin plate.
<b>Jackscrew Systems:</b>	Steel with zinc plate and dichromate seal, or clear zinc plate.
<b>Hoods:</b>	Composite and plastic, UL 94V-0, brass or steel with zinc plate and dichromate seal.

**ELECTRICAL CHARACTERISTICS:**

**SIGNAL CONTACTS**

<b>Contact Current Rating:</b>	7.5 amperes nominal.
<b>Initial Contact Resistance:</b>	0.008 ohms maximum.
<b>Proof Voltage:</b>	1000 V r.m.s.

**POWER CONTACTS**

<b>Contact Current Rating:</b>	10, 15, 20, 30 and 40 amperes nominal.
<b>Initial Contact Resistance:</b>	0.005 ohms maximum.
<b>Proof Voltage:</b>	1000 V r.m.s.

**SHIELDED CONTACTS**

<b>Initial Contact Resistance:</b>	0.008 ohms maximum.
<b>Nominal Impedance:</b>	50 ohms.
<b>Insertion Loss:</b>	-0.46 dB at 1 GHz -1.5 dB at 2 GHz
<b>VSWR:</b>	1.15 average at 1 GHz 1.56 average at 2 GHz

Above values measured using frequency domain techniques.  
**Proof Voltage:** 1000 V r.m.s.

**HIGH VOLTAGE CONTACTS**

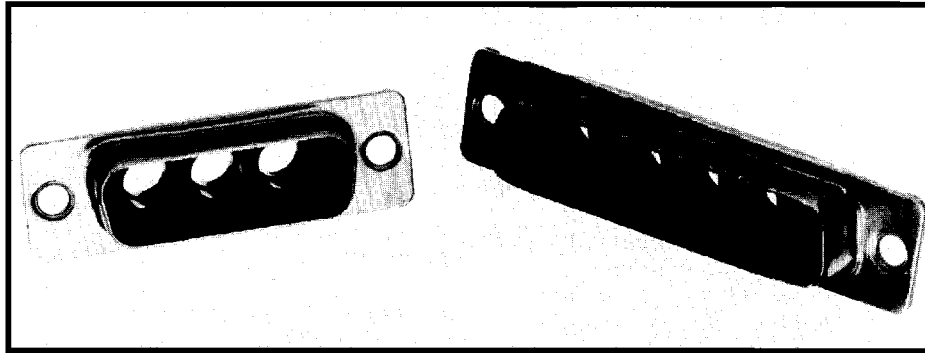
<b>Flash over Voltage:</b>	3600 V r.m.s.
<b>Proof Voltage:</b>	2700 V r.m.s.
<b>Initial Contact Resistance:</b>	0.008 ohms maximum.

**CONNECTOR**

<b>Insulator Resistance:</b>	5 G ohms.
<b>Clearance and Creepage Distance:</b>	0.039 inch (1.0mm) minimum.
<b>Working Voltage:</b>	300 V r.m.s.

**MECHANICAL CHARACTERISTICS:**

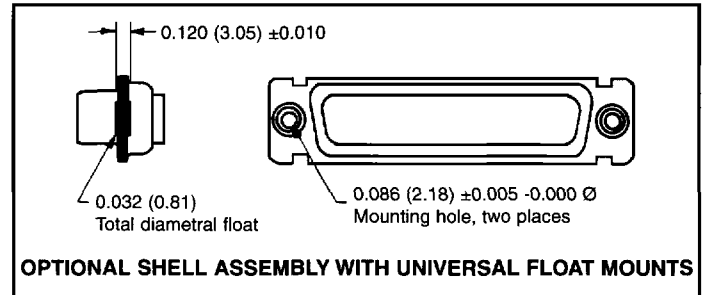
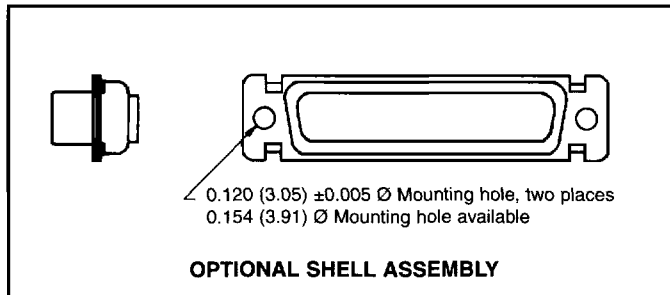
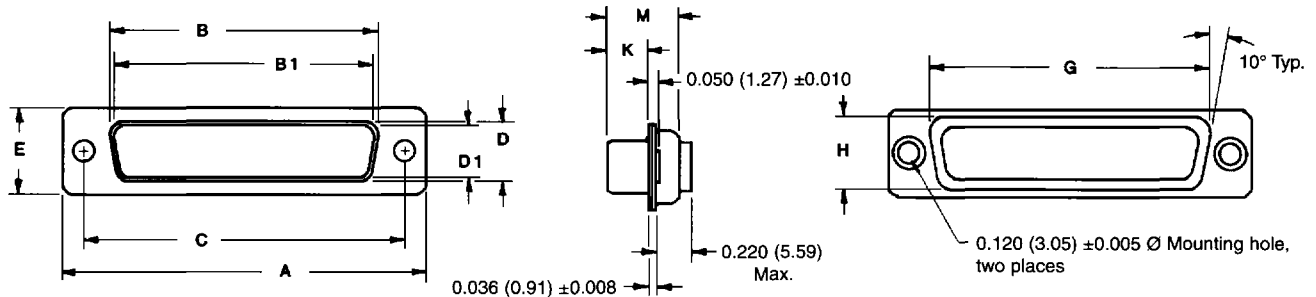
<b>Signal Contacts, Fixed:</b>	Size 20 contacts, male contact-0.040 inch (1.02mm) diameter. CBD Series has open entry design female contacts. CBM Series has closed entry design female contacts.
<b>Contact Retention in Insulator:</b>	Signal-9 lbs. (40N). Power, shielded and high voltage-22 lbs (98N).
<b>Resistance to Solder Iron Heat:</b>	500°F (260°C) for 10 seconds duration per IEC 512-6.
<b>Signal Contact Terminations:</b>	Solder contacts - 0.042 inch (1.06mm) minimum hole diameter for 20 AWG (0.5 mm <sup>2</sup> ) wire maximum. Straight Printed Board Mount – 0.028 inch (0.71mm) diameter. 90° Printed Board Mount – 0.028 inch (0.71 mm) diameter.
<b>Power Contacts, Removable, Crimp or Solder Termination:</b>	Size 8 contact, male contact – 0.142 inch (3.61mm) diameter. Female contact features Large Surface Area (L.S.A.) closed entry contact design utilizing BeCu mechanical retention member. Male and female contacts have terminations for wire sizes 8, 12 and 16 AWG.
<b>Power Contacts, Printed Board Mount:</b>	Size 8 contact, male contact – 0.142 inch (3.61mm) diameter. Printed board terminations with 0.078 inch (1.98mm), 0.093 inch (2.36mm) and 0.125 inch (3.18mm) diameters.
<b>Shielded Contacts, Removable:</b>	See table of maximum cable sizes for contact termination dimensions.
<b>High Voltage Contacts:</b>	Straight and 90° terminations – 0.041 inch (1.04mm) minimum hole diameter.
<b>Shells:</b>	Male shells may be dimpled for EMI/ESD ground paths.
<b>Polarization:</b>	Trapezoidally shaped shells and polarized jackscrews.
<b>Mounting to Angle Brackets:</b>	Jackscrews and riveted fasteners with 0.120 inch (3.05mm) diameter hole, and threaded riveted fasteners with 4-40 threads and nylon inserts.
<b>Mounting to Printed Board:</b>	Rapid installation push-on fasteners and threaded posts.
<b>Locking Systems:</b>	Jackscrews.
<b>Mechanical Operations, Signal Contacts:</b>	CBD Series, 500 operations, CBM Series, 1,000 operations per IEC 512-5.
<b>CLIMATIC CHARACTERISTICS:</b>	
<b>Temperature Range:</b>	-55°C to +125°C.
<b>Damp Heat, Steady State:</b>	10 days.



CBD3W3M00000

CBD5W5M00000

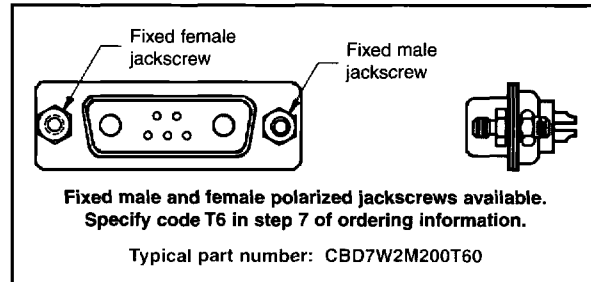
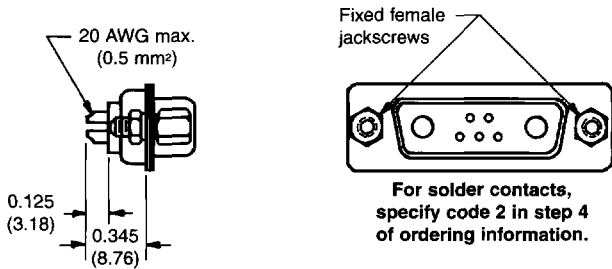
**STANDARD SHELL ASSEMBLY**



SHELL SIZES	A ±0.015	B ±0.005	B1 ±0.005	C ±0.005	D ±0.005	D1 ±0.005	E ±0.015	G ±0.010	H ±0.010	K ±0.005	M ±0.010
SHELL SIZE 1 MALE	1.213 (30.81)		0.666 (16.92)	0.984 (24.99)		0.329 (8.36)	0.494 (12.55)	0.759 (19.28)	0.422 (10.72)	0.233 (5.92)	0.422 (10.72)
SHELL SIZE 1 FEMALE	1.213 (30.81)	0.643 (16.33)		0.984 (24.99)	0.311 (7.90)		0.494 (12.55)	0.759 (19.28)	0.422 (10.72)	0.243 (6.17)	0.429 (10.90)
SHELL SIZE 2 MALE	1.541 (39.14)		0.994 (25.25)	1.312 (33.32)		0.329 (8.36)	0.494 (12.55)	1.083 (27.51)	0.422 (10.72)	0.233 (5.92)	0.422 (10.72)
SHELL SIZE 2 FEMALE	1.541 (39.14)	0.971 (24.66)		1.312 (33.32)	0.311 (7.90)		0.494 (12.55)	1.083 (27.51)	0.422 (10.72)	0.243 (6.17)	0.429 (10.90)
SHELL SIZE 3 MALE	2.088 (53.04)		1.534 (38.96)	1.852 (47.04)		0.329 (8.36)	0.494 (12.55)	1.625 (41.28)	0.422 (10.72)	0.230 (5.84)	0.426 (10.82)
SHELL SIZE 3 FEMALE	2.088 (53.04)	1.511 (38.38)		1.852 (47.04)	0.311 (7.90)		0.494 (12.55)	1.625 (41.28)	0.422 (10.72)	0.243 (6.17)	0.429 (10.90)
SHELL SIZE 4 MALE	2.729 (69.32)		2.182 (55.42)	2.500 (63.50)		0.329 (8.36)	0.494 (12.55)	2.272 (57.71)	0.422 (10.72)	0.230 (5.84)	0.426 (10.82)
SHELL SIZE 4 FEMALE	2.729 (69.32)	2.159 (54.84)		2.500 (63.50)	0.311 (7.90)		0.494 (12.55)	2.272 (57.71)	0.422 (10.72)	0.243 (6.17)	0.429 (10.90)
SHELL SIZE 5 MALE	2.635 (66.93)		2.079 (52.81)	2.406 (61.11)		0.441 (11.20)	0.605 (15.37)	2.178 (55.32)	0.534 (13.56)	0.230 (5.84)	0.426 (10.82)
SHELL SIZE 5 FEMALE	2.635 (66.93)	2.064 (52.43)		2.406 (61.11)	0.423 (10.74)		0.605 (15.37)	2.178 (55.32)	0.534 (13.56)	0.243 (6.17)	0.429 (10.90)
SHELL SIZE 6 MALE	2.729 (69.32)		2.212 (56.18)	2.500 (63.50)		0.503 (12.78)	0.668 (16.97)	2.302 (58.47)	0.596 (15.14)	0.230 (5.84)	0.426 (10.82)
SHELL SIZE 6 FEMALE	2.729 (69.32)	2.189 (55.60)		2.500 (63.50)	0.485 (12.32)		0.668 (16.97)	2.302 (58.47)	0.596 (15.14)	0.243 (6.17)	0.429 (10.90)

DIMENSIONS ARE IN INCHES (MILLIMETERS)  
ALL DIMENSIONS SUBJECT TO CHANGE

**SOLDER CONNECTOR**

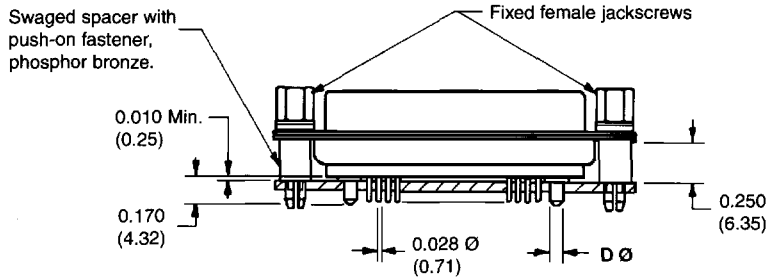


Typical part number: CBD7W2M200T0

**STRAIGHT PRINTED BOARD MOUNT CONNECTOR**

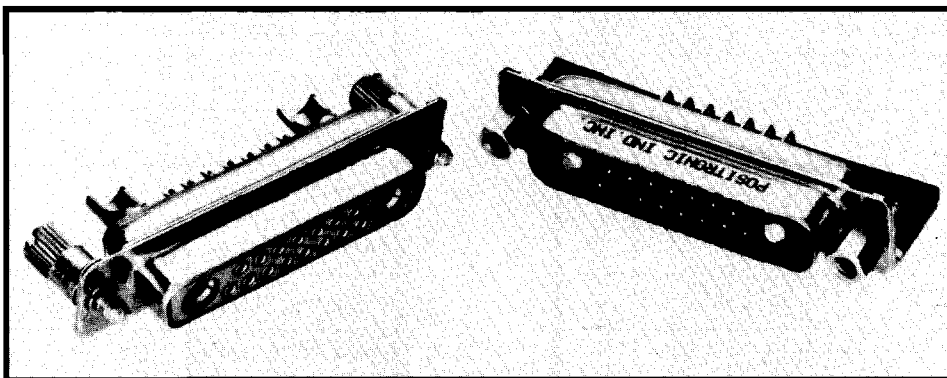
CODE NUMBER	D Ø
3	-----
35	0.078 (1.98)
36	0.093 (2.36)
37	0.125 (3.18)

For straight printed board mount contacts, specify code no. in step 4 of ordering information.



Typical part number: CBD17W2F35S60T2X

DIMENSIONS ARE IN INCHES (MILLIMETERS)  
ALL DIMENSIONS SUBJECT TO CHANGE



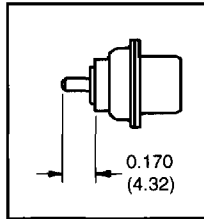
CBD17W2F200E0 with FS4008D contacts.

CBD17W2M55B30T20

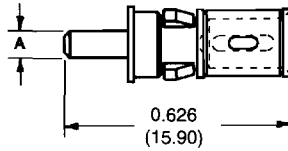
**PRINTED BOARD MOUNTED POWER CONTACTS**

**STRAIGHT PRINTED BOARD MOUNT POWER CONTACTS**

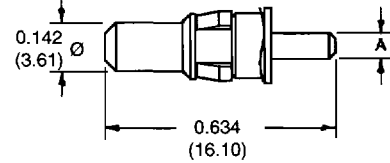
Straight printed board mount power contacts are mounted in connector when ordered.



**\*FEMALE CLOSED ENTRY, L.S.A.**



**MALE**



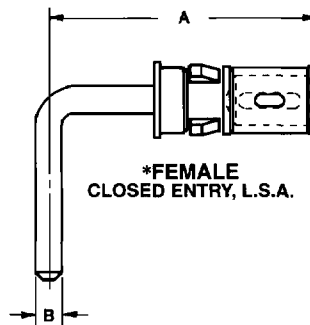
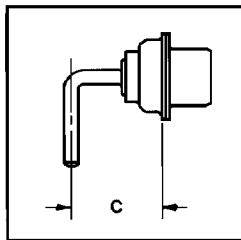
PART NUMBER	A Ø	CURRENT RATING
FDS4314D	0.078 (1.98)	15 Amps.
FDS4312D	0.094 (2.39)	20 Amps.
FDS4310D	0.125 (3.18)	30 Amps.

PART NUMBER	A Ø	CURRENT RATING
MDS4314D	0.078 (1.98)	15 Amps.
MDS4312D	0.094 (2.39)	20 Amps.
MDS4310D	0.125 (3.18)	30 Amps.

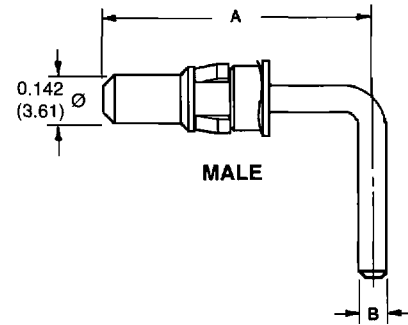
Material - High conductivity copper alloy.  
Plating - Gold flash over nickel.

**90° PRINTED BOARD MOUNT POWER CONTACTS**

90° printed board mount power contacts are mounted in connector when ordered.



**\*FEMALE CLOSED ENTRY, L.S.A.**



**MALE**

PART NUMBER	CURRENT	A REF.	B Ø	C	SHELL SIZE	BEND CODE
FRT4314D	15 Amps	0.580 (14.73)	0.078 (1.98)	0.339 (8.61)	1, 2, 3 & 4	55
FRT4414D	15 Amps	0.692 (17.58)	0.078 (1.98)	0.451 (11.46)	5	55
FRT4714D	15 Amps	0.661 (16.79)	0.078 (1.98)	0.420 (10.67)	1, 2, 3 & 4	75
FRT4814D	15 Amps	0.773 (19.63)	0.078 (1.98)	0.520 (13.21)	5	75
FRT4310D	30 Amps	1.036 (26.31)	0.125 (3.18)	0.810 (20.57)	1, 2, 3 & 4	57
FRT4410D	30 Amps	1.036 (26.31)	0.125 (3.18)	0.810 (20.57)	5	57

PART NUMBER	CURRENT	A REF.	B Ø	C	SHELL SIZE	BEND CODE
MRT4314D	15 Amps	0.580 (14.73)	0.078 (1.98)	0.339 (8.61)	1, 2, 3 & 4	55
MRT4414D	15 Amps	0.692 (17.58)	0.078 (1.98)	0.451 (11.46)	5	55
MRT4714D	15 Amps	0.661 (16.79)	0.078 (1.98)	0.420 (10.67)	1, 2, 3 & 4	75
MRT4814D	15 Amps	0.773 (19.63)	0.078 (1.98)	0.520 (13.21)	5	75
MRT4310D	30 Amps	1.036 (26.31)	0.125 (3.18)	0.810 (20.57)	1, 2, 3 & 4	57
MRT4410D	30 Amps	1.036 (26.31)	0.125 (3.18)	0.810 (20.57)	5	57

Material - High conductivity copper alloy.  
Plating - Gold flash over nickel.

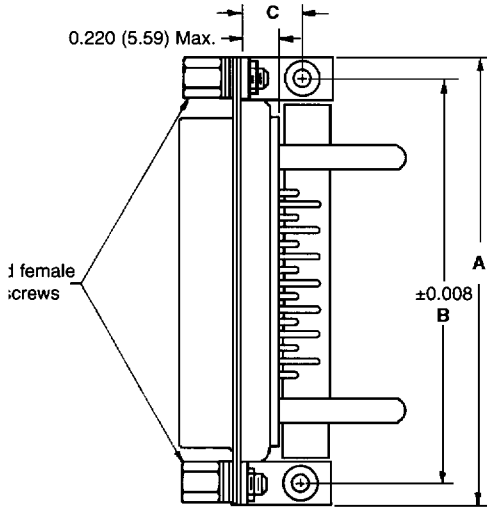
**\*Note:** Female power contacts feature Large Surface Area (L.S.A.) closed entry contact design which provides maximum mating surfaces between male and female contacts and reduced contact resistance during operation.

DIMENSIONS ARE IN INCHES (MILLIMETERS)  
ALL DIMENSIONS SUBJECT TO CHANGE

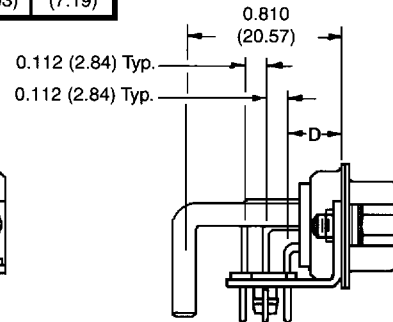
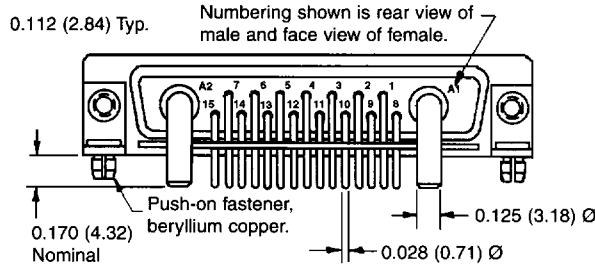
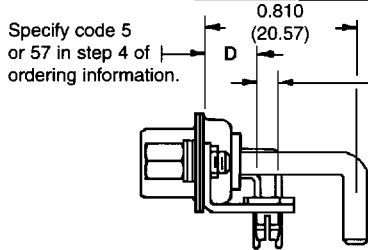
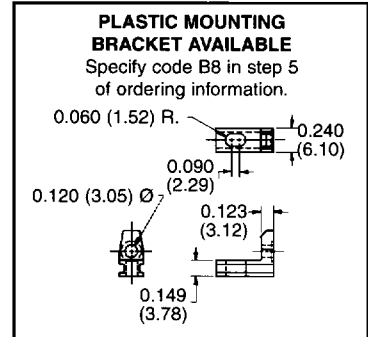
# CBD CBM Series

## INDUSTRIAL AND MILITARY QUALITY SUBMINIATURE-D CONNECTORS FOR MILITARY AND SHELTERED INDOOR/OUTDOOR ENVIRONMENTAL APPLICATIONS

### 90° PRINTED BOARD MOUNT CONNECTOR WITH 0.125 (3.18) Ø POWER CONTACTS CODE 5 AND 57, 0.283 (7.19) CONTACT EXTENSION (30 amps nominal)



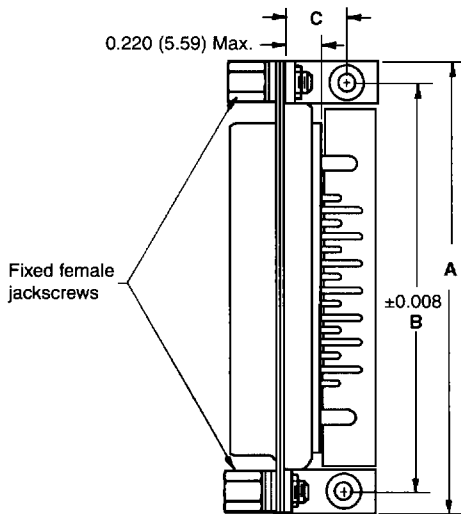
CBD00*R7000 0.283 (7.19) CONTACT EXTENSION				
SHELL SIZE	A	B	C	D
SHELL SIZE 1	1.204 (30.58)	0.984 (24.99)	0.339 (8.61)	0.283 (7.19)
SHELL SIZE 2	1.532 (38.91)	1.312 (33.32)	0.339 (8.61)	0.283 (7.19)
SHELL SIZE 3	2.072 (52.63)	1.852 (47.04)	0.339 (8.61)	0.283 (7.19)
SHELL SIZE 4	2.720 (69.09)	2.500 (63.50)	0.339 (8.61)	0.283 (7.19)
SHELL SIZE 5	2.626 (66.70)	2.406 (61.11)	0.395 (10.03)	0.283 (7.19)



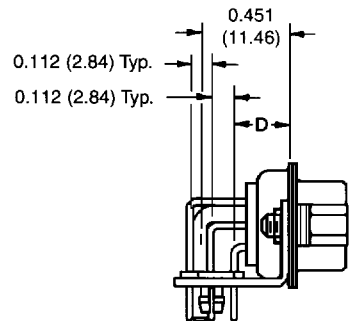
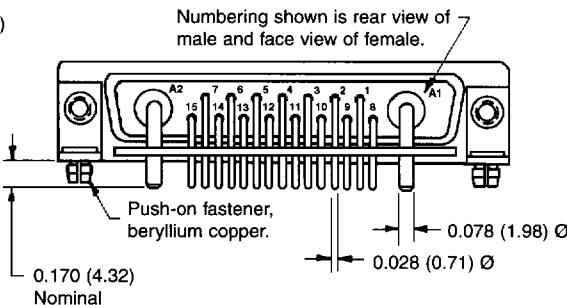
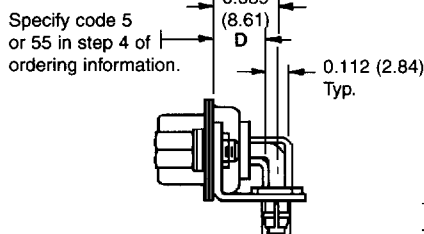
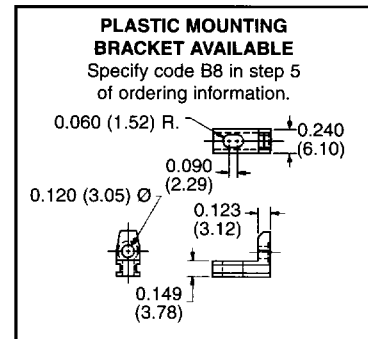
Typical part number:  
CBD17W2M57R7NT20

Typical part number:  
CBD36W4F57R7NT2X

### 90° PRINTED BOARD MOUNT CONNECTOR WITH 0.078 (1.98) Ø POWER CONTACTS CODE 5 AND 55, 0.283 (7.19) CONTACT EXTENSION (15 amps nominal)



CBD00*R7000 0.283 (7.19) CONTACT EXTENSION				
SHELL SIZE	A	B	C	D
SHELL SIZE 1	1.204 (30.58)	0.984 (24.99)	0.339 (8.61)	0.283 (7.19)
SHELL SIZE 2	1.532 (38.91)	1.312 (33.32)	0.339 (8.61)	0.283 (7.19)
SHELL SIZE 3	2.072 (52.63)	1.852 (47.04)	0.339 (8.61)	0.283 (7.19)
SHELL SIZE 4	2.720 (69.09)	2.500 (63.50)	0.339 (8.61)	0.283 (7.19)
SHELL SIZE 5	2.626 (66.70)	2.406 (61.11)	0.395 (10.03)	0.283 (7.19)



Typical part number:  
CBD17W2M55R7NT20

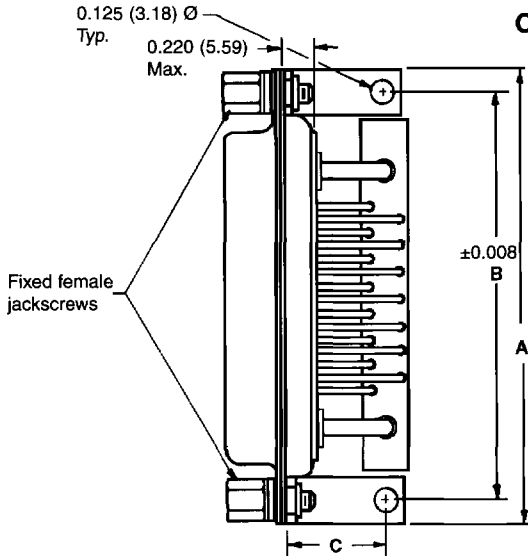
Typical part number:  
CBD36W4F55R7NT2X

**DIMENSIONS ARE IN INCHES (MILLIMETERS)  
ALL DIMENSIONS SUBJECT TO CHANGE**

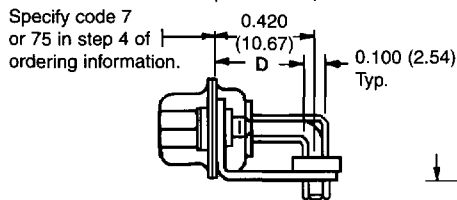
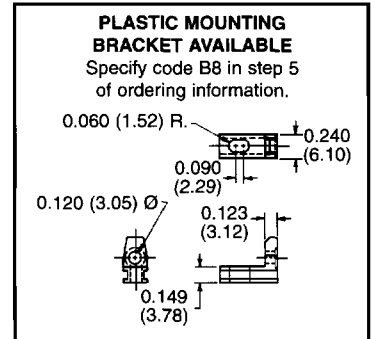


**Positronic  
Industries, Inc.**

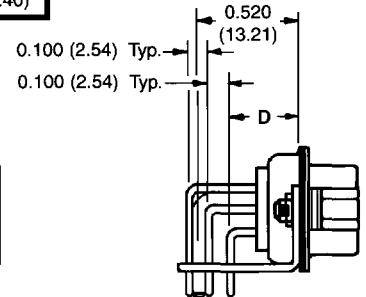
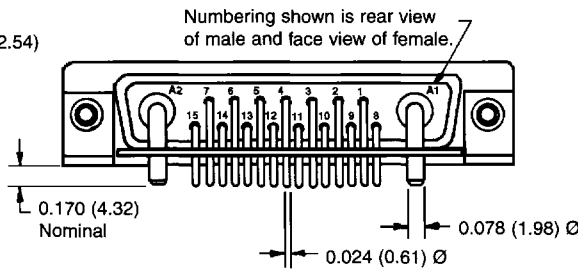
**METRIC SYSTEM 90° PRINTED BOARD MOUNT CONNECTOR  
WITH 0.078 (1.98) Ø POWER CONTACTS  
CODE 7 AND 75, 0.370 (9.40) CONTACT EXTENSION  
(15 amps nominal)**



CBD00*R7000 0.370 (9.40) CONTACT EXTENSION				
SHELL SIZE	A	B	C	D
SHELL SIZE 1	1.204 (30.58)	0.984 (24.99)	0.420 (10.67)	0.370 (9.40)
SHELL SIZE 2	1.532 (38.91)	1.312 (33.32)	0.420 (10.67)	0.370 (9.40)
SHELL SIZE 3	2.072 (52.63)	1.852 (47.04)	0.420 (10.67)	0.370 (9.40)
SHELL SIZE 4	2.720 (69.09)	2.500 (63.50)	0.420 (10.67)	0.370 (9.40)
SHELL SIZE 5	2.626 (66.70)	2.406 (61.11)	0.470 (11.94)	0.370 (9.40)

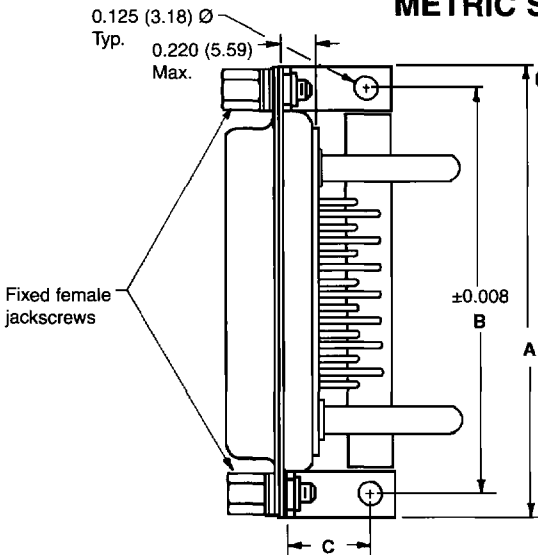


Typical part number:  
CBD17W2M75R70T20

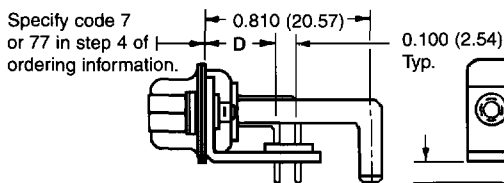
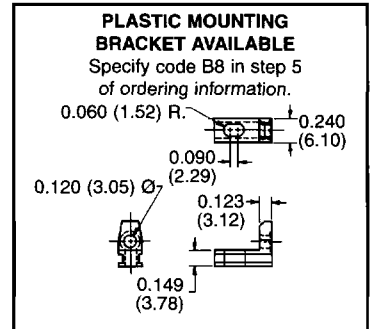


Typical part number:  
CBD36W4M75R70T20

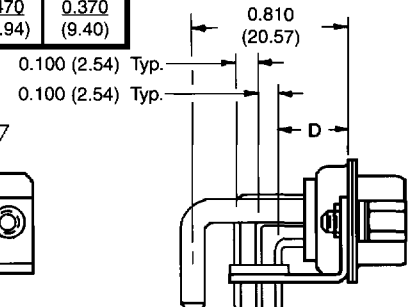
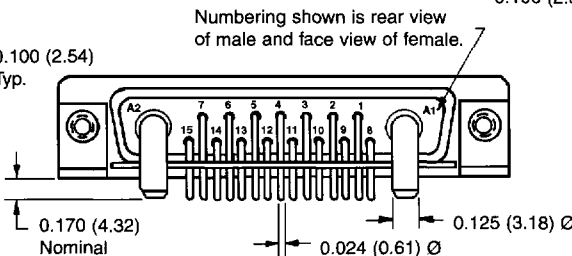
**METRIC SYSTEM 90° PRINTED BOARD MOUNT CONNECTOR  
WITH 0.125 (3.18) Ø POWER CONTACTS  
CODE 7 AND 77, 0.370 (9.40) CONTACT EXTENSION  
(30 amps nominal)**



CBD00*R7000 0.370 (9.40) CONTACT EXTENSION				
SHELL SIZE	A	B	C	D
SHELL SIZE 1	1.204 (30.58)	0.984 (24.99)	0.420 (10.67)	0.370 (9.40)
SHELL SIZE 2	1.532 (38.91)	1.312 (33.32)	0.420 (10.67)	0.370 (9.40)
SHELL SIZE 3	2.072 (52.63)	1.852 (47.04)	0.420 (10.67)	0.370 (9.40)
SHELL SIZE 4	2.720 (69.09)	2.500 (63.50)	0.420 (10.67)	0.370 (9.40)
SHELL SIZE 5	2.626 (66.70)	2.406 (61.11)	0.470 (11.94)	0.370 (9.40)



Typical part number:  
CBD17W2M77R70T20

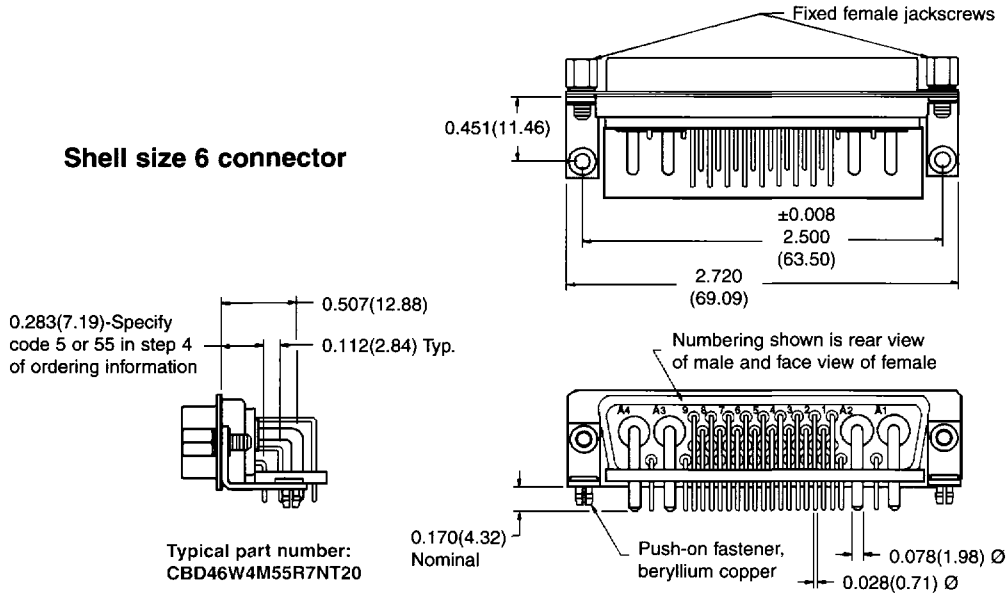


Typical part number:  
CBD36W4M77R70T20

**DIMENSIONS ARE IN INCHES (MILLIMETERS)  
ALL DIMENSIONS SUBJECT TO CHANGE**

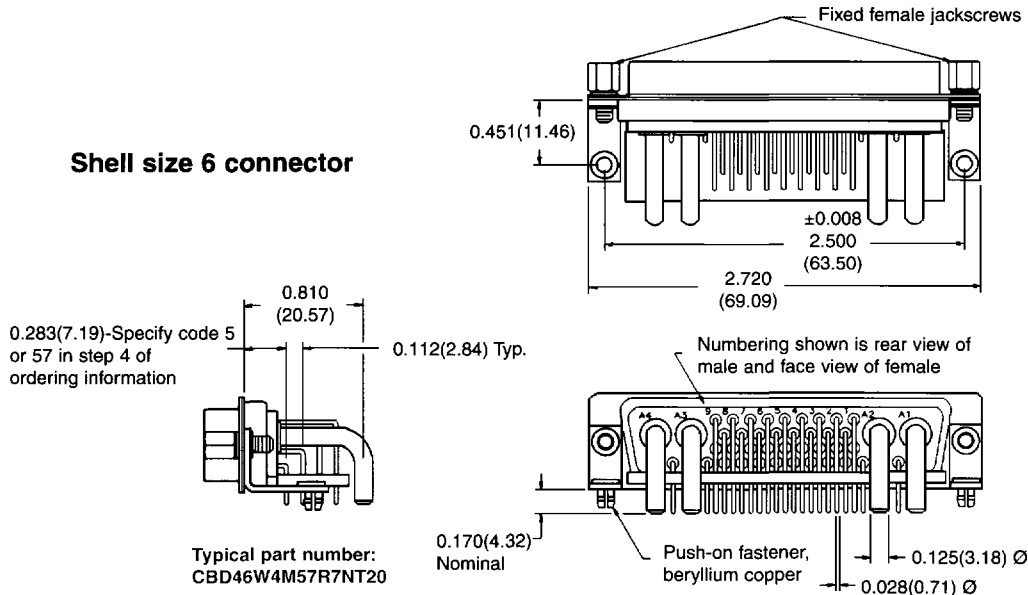
**SHELL SIZE 6  
90° PRINTED BOARD MOUNT CONNECTOR  
WITH 0.078 (1.98) Ø POWER CONTACTS  
CODE 5 AND 55, 0.283 (7.19) CONTACT EXTENSION  
CONNECTOR VARIANT 46W4  
(15 amps nominal)**

Shell size 6 connector



**SHELL SIZE 6  
90° PRINTED BOARD MOUNT CONNECTOR  
WITH 0.125 (3.18) Ø POWER CONTACTS  
CODE 5 OR 57, 0.283 (7.19) CONTACT EXTENSION  
CONNECTOR VARIANT 46W4  
(30 amps nominal)**

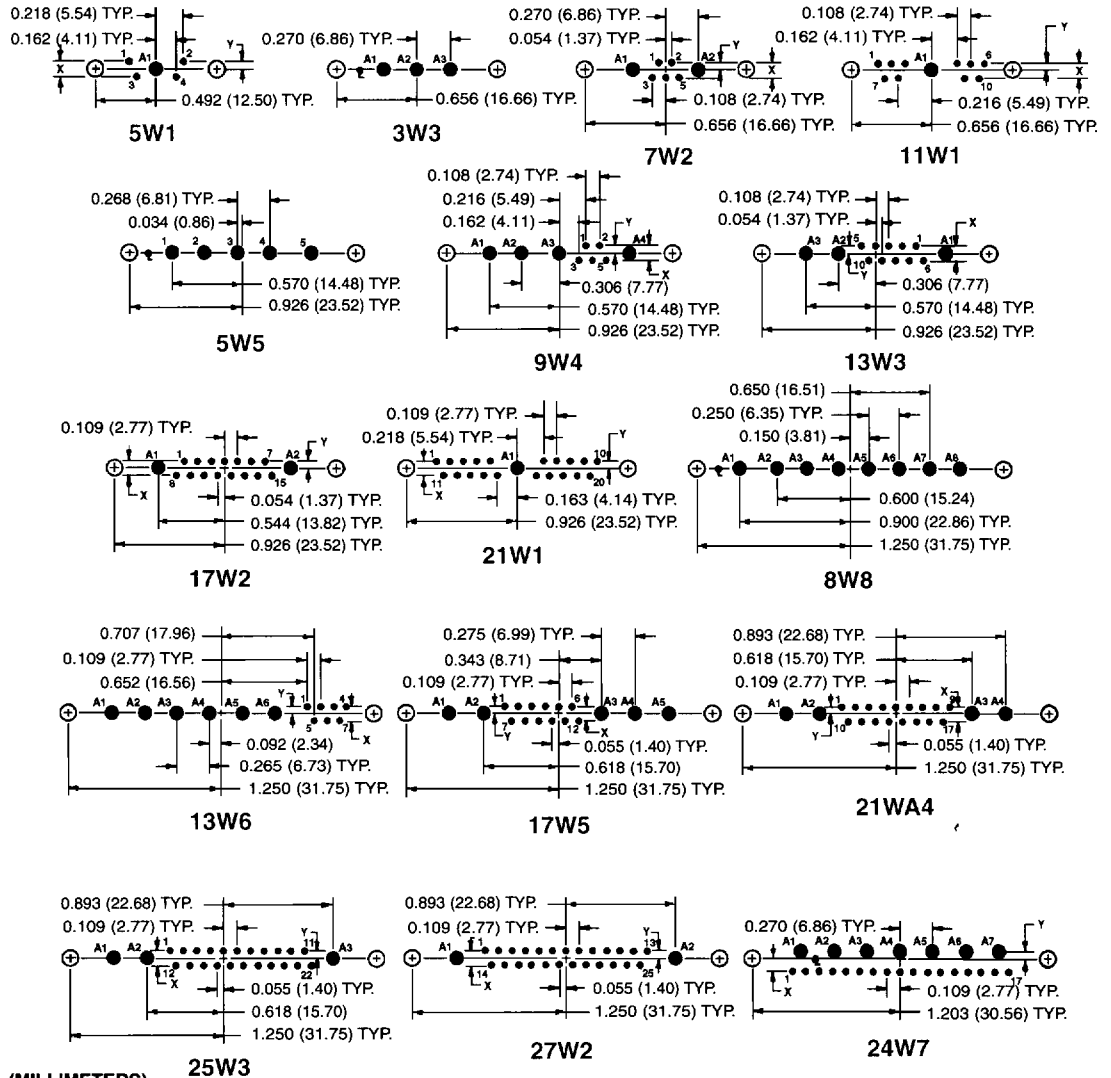
Shell size 6 connector





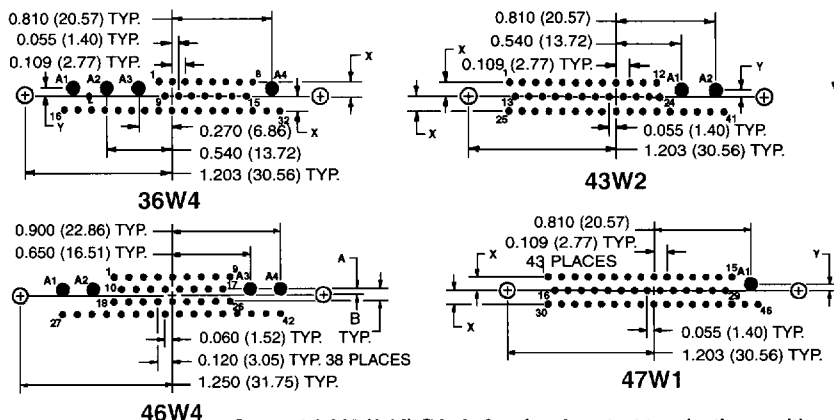
### 90° AND STRAIGHT PRINTED BOARD CONTACT HOLE PATTERN WITH 0.078 (1.98) Ø, 0.094 (2.39) Ø AND 0.125 (3.18) Ø POWER CONTACTS

Hole identification shown for male connector, use mirror image for female connector.  
Mount connector with mating face positioned to follow direction of arrow.



DIMENSIONS ARE IN INCHES (MILLIMETERS)  
ALL DIMENSIONS SUBJECT TO CHANGE

CODE NO.	3, 35 & 37	5 & 55	7 & 75
X	0.112 (2.84)	0.112 (2.84)	0.100 (2.54)
Y	0.056 (1.42)	0.056 (1.42)	0.050 (1.27)
A	0.100 (2.54)	0.112 (2.84)	0.100 (2.54)
B	0.050 (1.27)	0.056 (1.42)	0.050 (1.27)

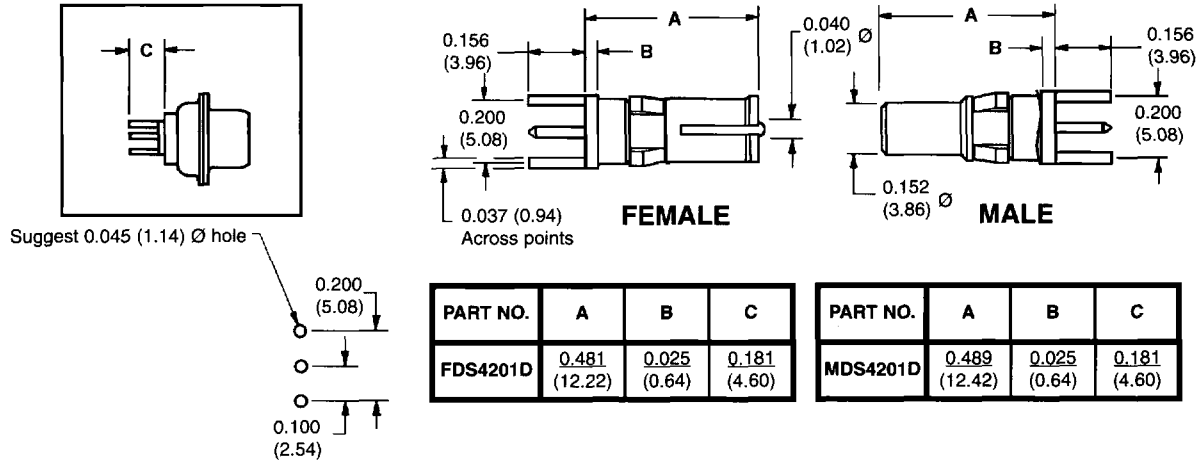


Suggest 0.045 (1.14) Ø hole for signal contact termination positions.  
Suggest 0.098 (2.49) Ø hole for 0.078 (1.98) Ø power contact termination positions.  
Suggest 0.114 (2.90) Ø hole for 0.094 (2.39) Ø power contact termination positions.  
Suggest 0.145 (3.68) Ø hole for 0.125 (3.18) Ø power contact termination positions.  
Suggest 0.123 ±0.003 (3.12) Ø hole for mounting connector with push-on fasteners.



**PRINTED BOARD MOUNTED SHIELDED CONTACTS  
STRAIGHT PRINTED BOARD MOUNT SHIELDED CONTACTS**

Straight printed board mount shielded contacts are mounted in connector when ordered.



PART NO.	A	B	C
FDS4201D	0.481 (12.22)	0.025 (0.64)	0.181 (4.60)

PART NO.	A	B	C
MDS4201D	0.489 (12.42)	0.025 (0.64)	0.181 (4.60)

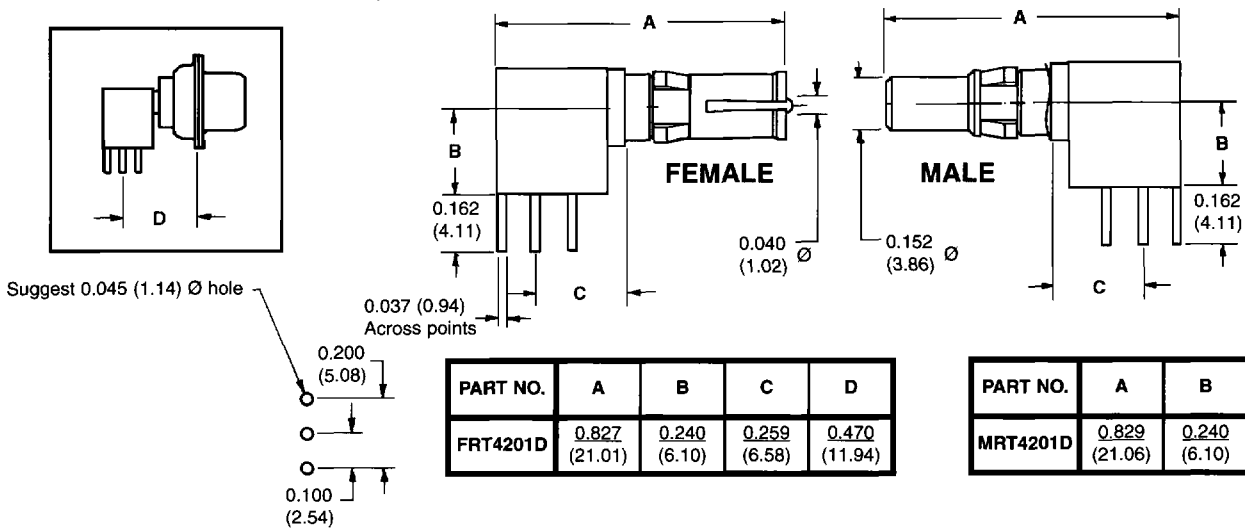
FDS4201D and MDS4201D  
Contact hole pattern

Material - Copper alloy with PTFE teflon insulator.  
Signal contact plating -0.000030 inch (0.75µ) gold over nickel or  
0.000050 inch (1.25µ) gold over nickel.  
Contact body plating -Gold flash over nickel.

\*Technical characteristics are listed on page 17.

**90° PRINTED BOARD MOUNT SHIELDED CONTACTS**

90° printed board mount shielded contacts are mounted in connector when ordered.



PART NO.	A	B	C	D
FRT4201D	0.827 (21.01)	0.240 (6.10)	0.259 (6.58)	0.470 (11.94)

PART NO.	A	B	C	D
MRT4201D	0.829 (21.06)	0.240 (6.10)	0.253 (6.43)	0.470 (11.94)

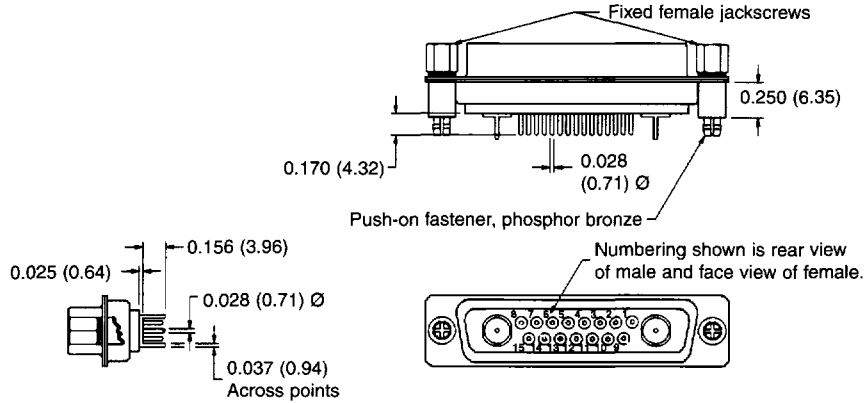
FRT4201D and MRT4201D  
Contact hole pattern

Material - Copper alloy with PTFE teflon insulator.  
Signal contact plating -0.000030 inch (0.75µ) gold over nickel or  
0.000050 inch (1.25µ) gold over nickel.  
Contact body plating -Gold flash over nickel.

\*Technical characteristics are listed on page 17.

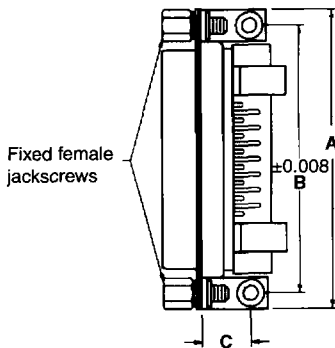
DIMENSIONS ARE IN INCHES (MILLIMETERS)  
ALL DIMENSIONS SUBJECT TO CHANGE

**STRAIGHT PRINTED BOARD MOUNT CONNECTOR WITH SHIELDED CONTACTS  
CODE 65, CONNECTOR WITH FDS4201D OR MDS4201D CONTACTS**

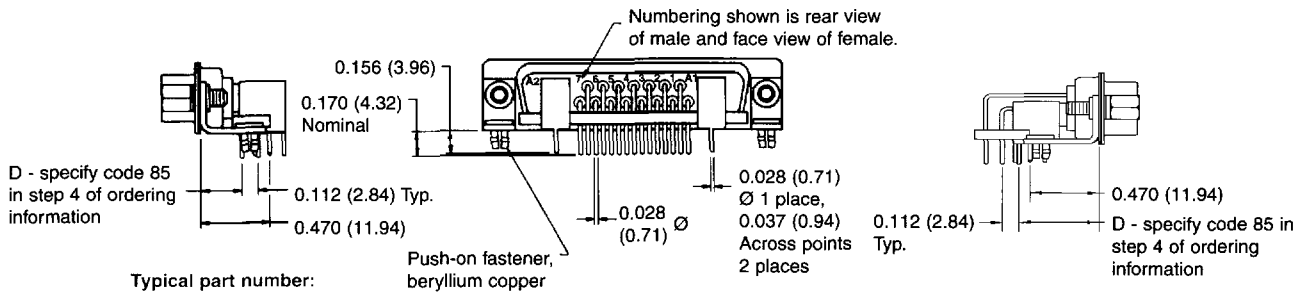


Typical part number:  
CBD17W2M65S60T20

**90° PRINTED BOARD MOUNT CONNECTOR WITH SHIELDED CONTACTS  
CODE 85, CONNECTOR WITH FRT4201D OR MRT4201D CONTACTS**



CBD00850000 0.283 (7.19) CONTACT EXTENSION				
SHELL SIZE	A	B	C	D
SHELL SIZE 1	1.204 (30.58)	0.984 (24.99)	0.339 (8.61)	0.283 (7.19)
SHELL SIZE 2	1.532 (38.91)	1.312 (33.32)	0.339 (8.61)	0.283 (7.19)
SHELL SIZE 3	2.072 (52.63)	1.852 (47.04)	0.339 (8.61)	0.283 (7.19)
SHELL SIZE 4	2.720 (69.09)	2.500 (63.50)	0.339 (8.61)	0.283 (7.19)
SHELL SIZE 5	2.620 (66.70)	2.406 (61.11)	0.395 (10.03)	0.545 (13.84)



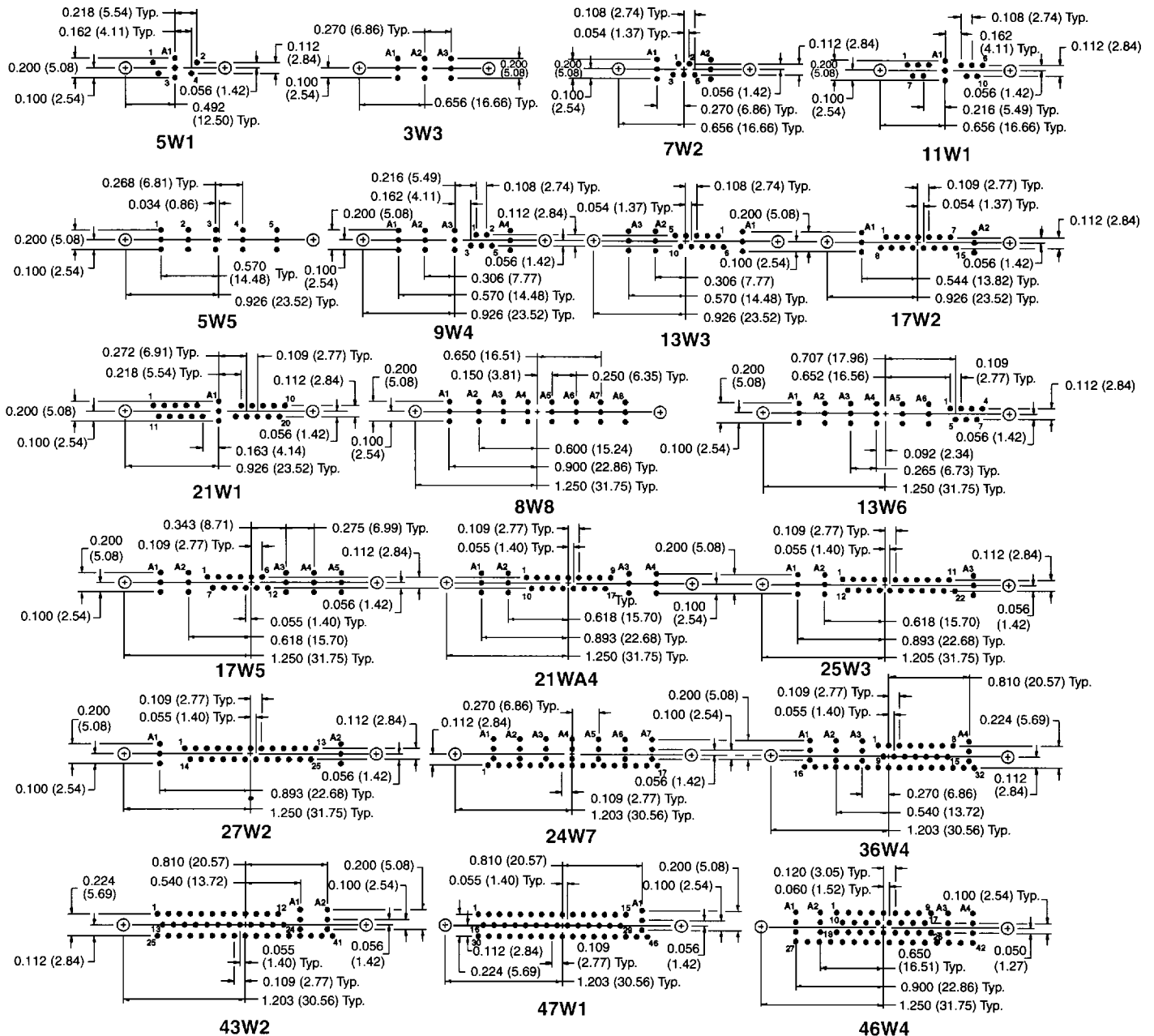
Typical part number:  
CBD17W2M85R7NT20

Typical part number:  
CBD36W4M85R7NT20

**Note:** Shell size 5 connectors are supplied inverted when ordered with 90° printed board mount shielded contacts.

**STRAIGHT PRINTED BOARD MOUNT CONTACT HOLE PATTERN  
WITH FDS4201D AND MDS4201D SHIELDED CONTACTS**

Hole identification shown is for male connector, use mirror image for female connector.

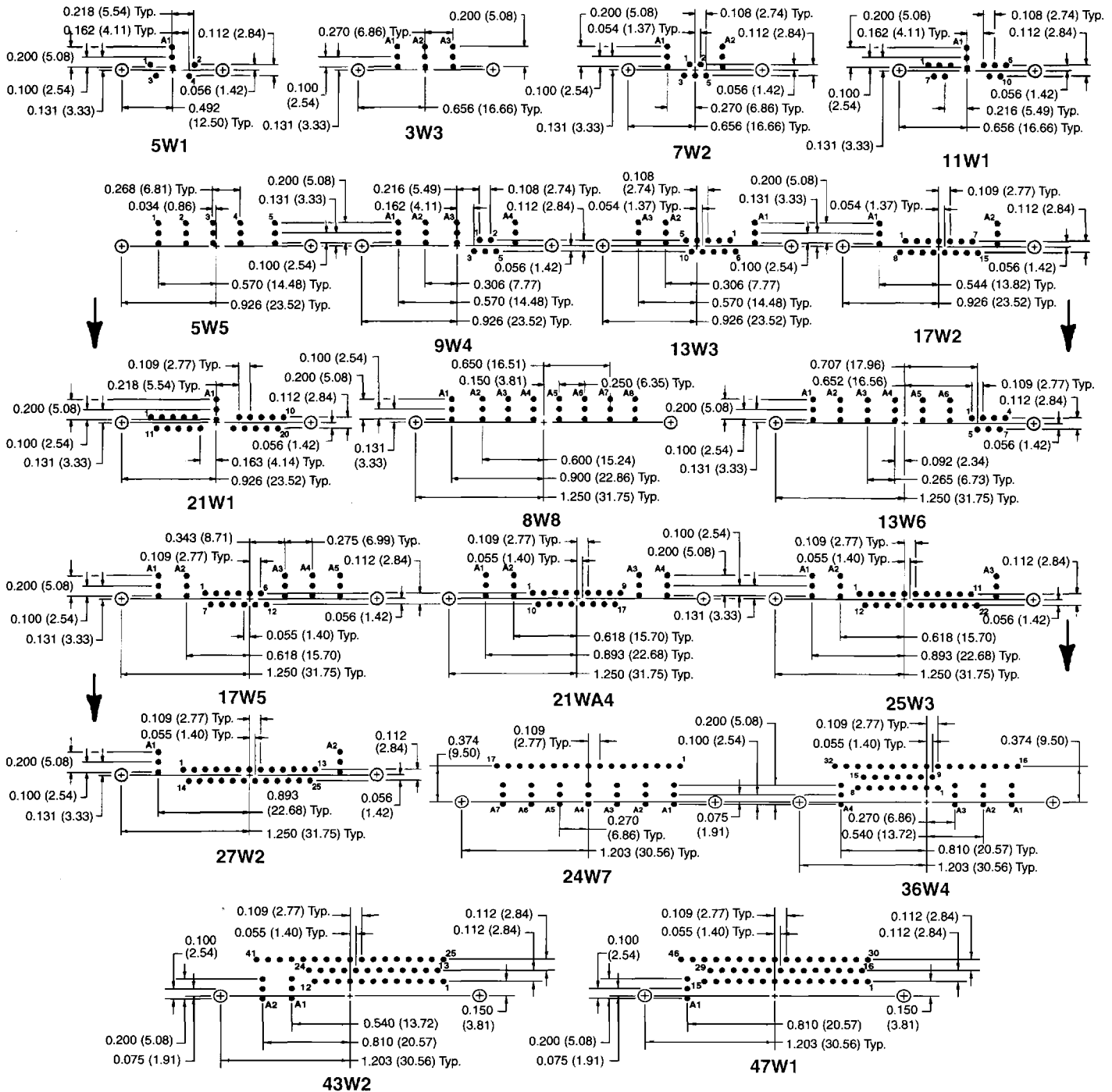


Suggest 0.045 (1.14) Ø hole for signal contact termination position.  
Suggest 0.123±0.003 (3.12) Ø hole for mounting connector with push-on fasteners.

**DIMENSIONS ARE IN INCHES (MILLIMETERS)  
ALL DIMENSIONS SUBJECT TO CHANGE**

**90° PRINTED BOARD MOUNT CONTACT HOLE PATTERN  
WITH FRT4201D AND MRT4201D SHIELDED CONTACTS**

Hole identification shown is for male connector, use mirror image for female connector.  
Mount connector with mating face positioned to follow direction of arrow.



Suggest 0.045 (1.14) Ø hole for signal contact termination positions.  
Suggest 0.123±0.003 (3.12) Ø hole for mounting connector with push-on fasteners.

Note: Shell size 5 connectors are supplied inverted when ordered with 90° printed board mount shielded contacts.

DIMENSIONS ARE IN INCHES (MILLIMETERS)  
ALL DIMENSIONS SUBJECT TO CHANGE

**ORDERING INFORMATION – CODE NUMBERING SYSTEM**

Specify Complete Connector By Following Steps 1 Through 9  
Insert "0" When Step Is Not Used

STEP	1	2	3	4	5	6	7	8	9
	CBD	17W2	F	55	R7	N	T2	X	

**STEP 1 - Basic Series**

CBD – Industrial Quality with Open Entry Signal Contacts  
CBM – Military Conformance with "Closed Entry" Signal Contacts

**STEP 2 - Combo-D Series Connector Variants**

**Shell Size 1**  
5W1

**Shell Size 2**  
3W3, 7W2, 11W1

**Shell Size 3**  
5W5, 9W4, 13W3, 17W2, 21W1

**Shell Size 4**  
8W8, 13W6, 17W5, 21WA4, 25W3, 27W2

**Shell Size 5**  
24W7, 36W4, 43W2, 47W1

**Shell Size 6**  
46W4

**STEP 3 - Connector Gender**

M – Male  
F – Female

**STEP 4 - Type of Contacts**

- 0 – Connector ordered without size 8 power shielded or high voltage removable contacts. See pages 16, 18, 20 for contact part numbers.
- 2 – Solder, Signal Contacts only.
- 3 – Solder, Straight Printed Board Mount with Signal Contacts, 0.170 (4.32) Tail Length.
- 35 – Solder, Straight Printed Board Mount with Signal and 0.078 (1.98) Ø Power Contacts, 0.170 (4.32) Tail Length.
- 36 – Solder, Straight Printed Board Mount with Signal and 0.094 (2.39) Ø Power Contacts, 0.170 (4.32) Tail Length.
- 37 – Solder, Straight Printed Board Mount with Signal and 0.125 (3.18) Ø Power Contacts, 0.170 (4.32) Tail Length.
- 5 – Solder, 90° Printed Board Mount with Signal Contacts only, 0.283 (7.19) Signal Contact Extension.
- 55 – Solder, 90° Printed Board Mount with Signal and 0.078 (1.98) Ø Power Contacts, 0.283 (7.19) Signal Contact Extension.
- 57 – Solder, 90° Printed Board Mount with Signal and 0.125 (3.18) Ø Power Contacts, 0.283 (7.19) Signal Contact Extension.
- 65 – Solder, Straight Printed Board Mount with Signal and Shielded Contacts MDS/FDS 4201D footprint, 0.170 (4.32) Signal Contact Tail Length.
- 7 – Solder, Metric System 90° Printed Board Mount with Signal Contacts only, 0.370 (9.40) Signal Contact Extension.
- 75 – Solder, Metric System 90° Printed Board Mount with Signal and 0.078 (1.98) Ø Power Contacts, 0.370 (9.40) Signal Contact Extension.
- 77 – Solder, Metric System 90° Printed Board Mount with Signal and 0.125 (3.18) Ø Power Contacts, 0.370 (9.40) Signal Contact Extension.
- \*\*\*85 – Solder, 90° Printed Board Mount with Signal and Shielded Contacts MRT/FRT 4201D footprint, 0.283 (7.19) Signal Contact Extension.

**\*\*STEP 9 - Special Options**

759.0 – Blind Mate Pilot  
759.1 – Blind Mate Panel

**STEP 8 - Shell Options**

0 – Zinc Plated with Dichromate Seal  
S – Stainless Steel  
X – Tin Plated  
Z – Tin Plated and Dimpled

**\*STEP 7 - Locking and Polarizing Systems**

0 – None  
T – Fixed Female Jackscrews  
T2 – Fixed Female Jackscrews  
E – Rotating Male Jackscrews

**\*STEP 6 - Hoods and Push-On Fasteners**

0 – None  
\*\*Z – Hood, Top or Side Opening, robust extended height, plastic and composite, with rotating male jackscrews, shell sizes 1 through 6  
H – Hood, Top Opening, Metal, shell sizes 2 through 5  
G – Hood, EMI/RFI, Metal, shell sizes 1 through 5  
N – Push-on Fastener, for 90° Mounting Brackets

**\*STEP 5 - Mounting Style**

- 0 – Mounting Hole, 0.120 (3.05) Ø
- B3 – Bracket, Mounting, 90° Metal with Cross Bar
- B8 – Bracket, Mounting, 90° Plastic with Cross Bar
- F – Float Mounts, Universal
- P – Threaded Post, Brass, 0.250 (6.35) Length
- P2 – Threaded Post, Nylon, 0.250 (6.35) Length
- R2 – Bracket, Mounting, 90° Metal, Swaged to Connector with 4-40 Thread Fixed Female Jackscrews with Cross Bar
- R6 – Bracket, Mounting, 90° Metal, Swaged to Connector with 0.120 (3.05) Ø Mounting Hole with Cross Bar
- R7 – Bracket, Mounting, 90° Metal, Swaged to Connector with 4-40 Threads with Cross Bar
- R8 – Bracket, Mounting, 90° Metal, Swaged to Connector with 4-40 Locknut with Cross Bar
- S – Swaged Spacer, 4-40 Threads, 0.250 (6.35) Length
- S2 – Swaged Spacer, 4-40 Threads, 0.125 (3.18) Length
- S5 – Swaged Locknut, 4-40 Threads
- S6 – Swaged Spacer with Push-on Fastener, 4-40 Threads, 0.250 (6.35) Length

\*For additional information on accessories listed in steps 5, 6, 7 & 9, see Accessory Catalog.

\*\*Z Hood recommended for use with CBD and CBM series for shell sizes 1 through 6.

\*\*\*Not available on shell size 6, CBD 46W4.