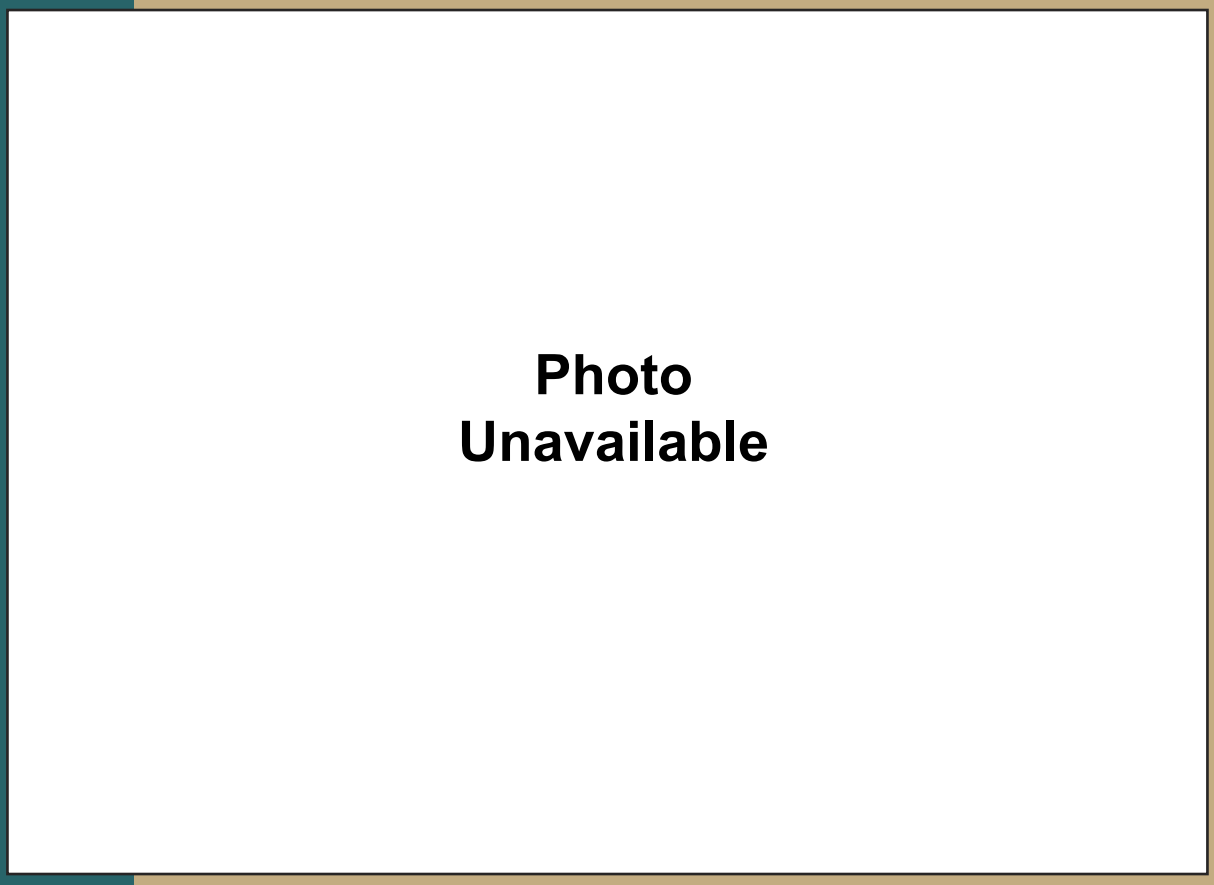
Positronic Industries

www.connectpositronic.com

Combo-D

Subminiature-D Connectors



Signal, Power, Coaxial or
High Voltage Contacts in
a Single Package

High Energy Innovation

Maximum Torque Values for 4-40 UNC Threads

MATERIAL	TORQUE Nm	in-lb	in-oz
Phos. Bronze	0.90	8.0	128
Brass	0.68	6.0	96
Aluminum	0.45	4.0	64
Nylon	0.11	1.0	16

These torque values are applicable for threads only and do not apply to hardware assemblies. These torque values are approximate and should not be accepted as accurate limits. Indeterminant factors in specific applications preclude the publication of accurate torque values for universal use.

Unless specified otherwise, dimensional tolerances are:

1) **±0.001 inches (0.03 mm) for male contact mating diameters.**
2) **±0.003 inches (0.08 mm) for contact termination diameters.**
3) **±0.005 inches (0.13 mm) for all other diameters.**
4) **±0.015 inches (0.38 mm) for all other dimensions.**

CATALOG NUMBER:
C–004 REV. B

PUBLISHED IN THE UNITED STATES OF AMERICA

Positronic Industries' FEDERAL SUPPLY CODE FOR MANUFACTURERS is number 28198.

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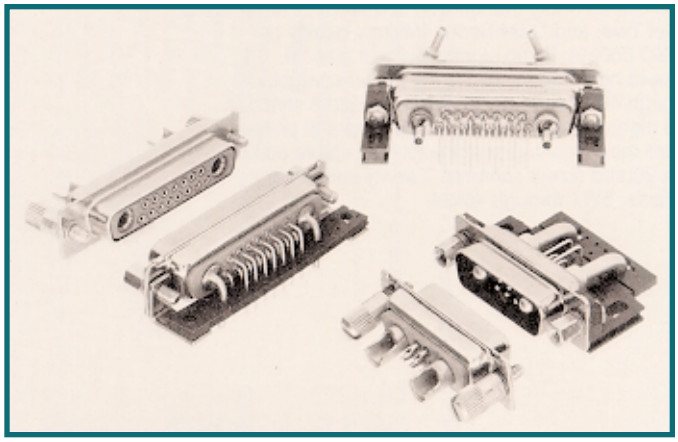
Combo-D Series

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 File #E49351
CSA Recognized 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.

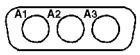
A blind mating system is available for applications requiring connector coupling in recessed areas or mobile power coupling systems.

CBD SERIES CONTACT VARIANTS

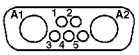
FACE VIEW OF MALE OR REAR VIEW OF FEMALE

SHELL SIZE 1


5W1


3W3

SHELL SIZE 2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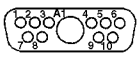
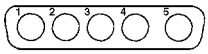

11W1

SHELL SIZE 3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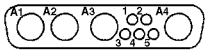
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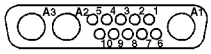
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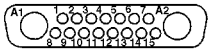
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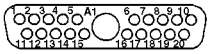
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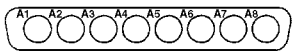
SHELL SIZE 4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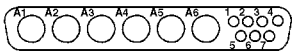
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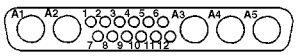
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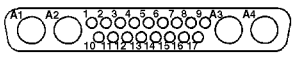
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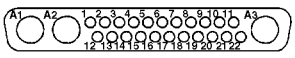
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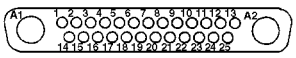
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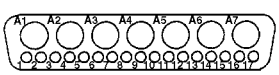
SHELL SIZE 5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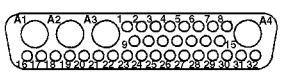
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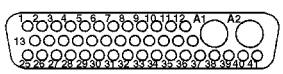
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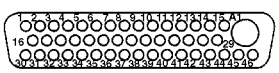
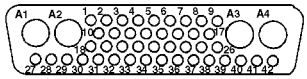

47W1

SHELL SIZE 6


46W4

COMBO-D SERIES TECHNICAL CHARACTERISTICS

MATERIALS AND FINISHES:

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

ELECTRICAL CHARACTERISTICS:

SIGNAL CONTACTS

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

POWER CONTACTS

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

SHIELDED CONTACTS

Initial Contact Resistance:	0.008 ohms maximum.
Nominal Impedance:	50 ohms.
Insertion Loss:	-0.46 dB at 1 GHz -1.5 dB at 2 GHz
VSWR:	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

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

CONNECTOR

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

MECHANICAL CHARACTERISTICS:

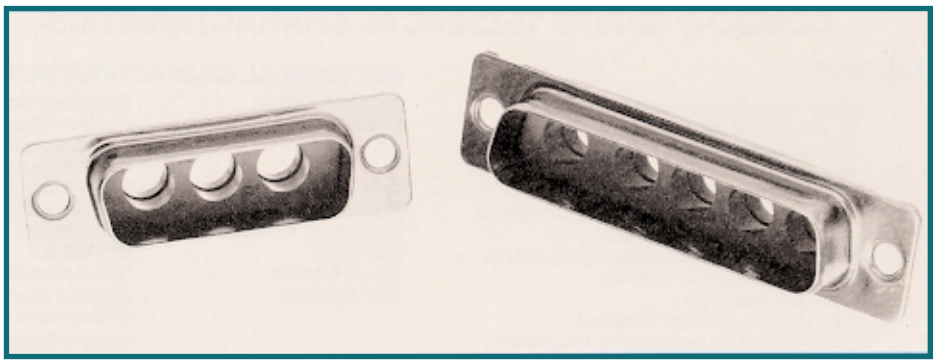
Signal Contacts, Fixed:	Size 20 contacts, male contact-0.040 inch (1.02mm) diameter. CBD Series has open entry design female contacts. CBM Series has closed entry design female contacts.
Contact Retention in Insulator:	Signal-9 lbs. (40N). Power, shielded and high voltage-22 lbs (98N).
Resistance to Solder Iron Heat:	500˚F (260˚C) for 10 seconds duration per IEC 512-6.
Signal Contact Terminations:	Solder contacts - 0.042 inch (1.06mm) minimum hole diameter for 20 AWG (0.5 mm^2) wire maximum. Straight Printed Board Mount – 0.028 inch (0.71mm) diameter. 90° Printed Board Mount – 0.028 inch (0.71 mm) diameter.
Power Contacts, Removable, Crimp or Solder Termination:	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.
Power Contacts, Printed Board Mount:	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.
Shielded Contacts, Removable:	See table of maximum cable sizes for contact termination dimensions.
High Voltage Contacts:	Straight and 90° terminations – 0.041 inch (1.04mm) minimum hole diameter.
Shells:	Male shells may be dimpled for EMI/ESD ground paths.
Polarization:	Trapezoidally shaped shells and polarized jackscrews.
Mounting to Angle Brackets:	Jackscrews and riveted fasteners with 0.120 inch (3.05mm) diameter hole, and threaded riveted fasteners with 4-40 threads and nylon inserts.
Mounting to Printed Board:	Rapid installation push-on fasteners and threaded posts.
Locking Systems:	Jackscrews.
Mechanical Operations, Signal Contacts:	CBD Series, 500 operations, CBM Series, 1,000 operations per IEC 512-5.

CLIMATIC CHARACTERISTICS:

Temperature Range:	-55°C to +125°C.
Damp Heat, Steady State:	10 days.

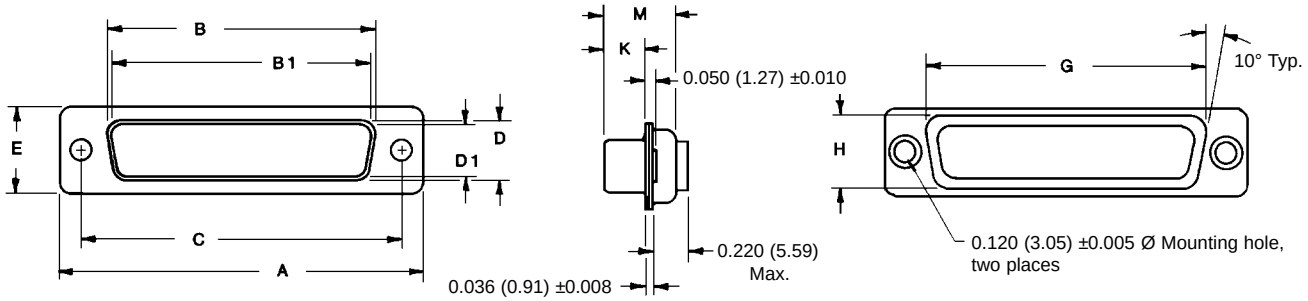
INDUSTRIAL AND MILITARY QUALITY SUBMINIATURE-D CONNECTORS

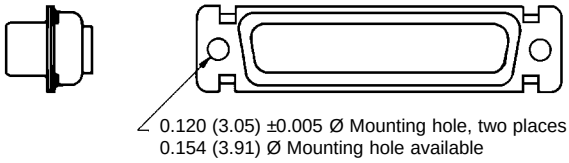
FOR MILITARY AND SHELTERED INDOOR/OUTDOOR ENVIRONMENTAL APPLICATIONS



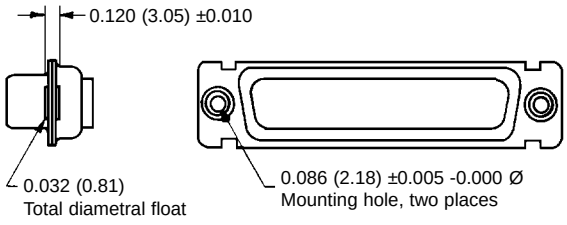
CBD3W3M00000 CBD5W5M00000

STANDARD SHELL ASSEMBLY





OPTIONAL SHELL ASSEMBLY

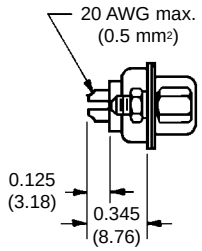


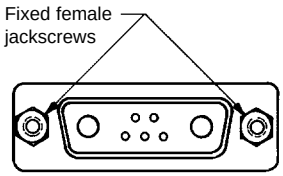
OPTIONAL SHELL ASSEMBLY WITH UNIVERSAL FLOAT MOUNTS

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)

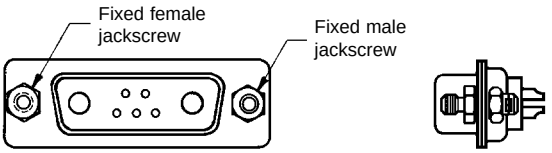
DIMENSIONS ARE IN INCHES (MILLIMETERS)
ALL DIMENSIONS SUBJECT TO CHANGE

SOLDER CONNECTOR





For solder contacts, specify code 2 in step 4 of ordering information.



Fixed male and female polarized jackscrews available. Specify code T6 in step 7 of ordering information.

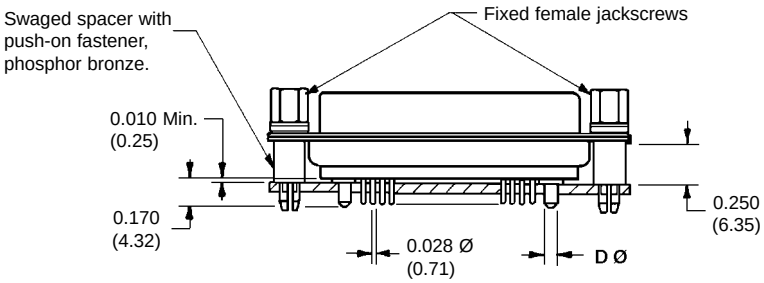
Typical part number: CBD7W2M200T60

Typical part number: CBD7W2M200T0

STRAIGHT PRINTED BOARD MOUNT CONNECTOR

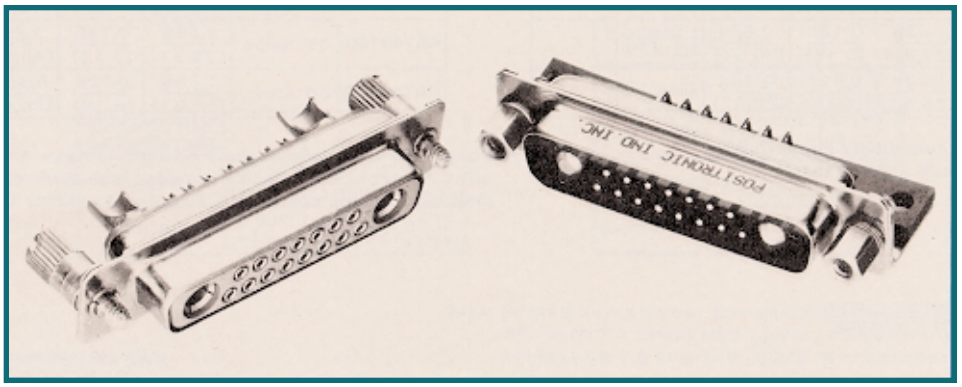
CODE NUMBER	D Ø
3	---------
35	0.078 (1.98)
36	0.093 (2.36)
37	0.125 (3.18)

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**



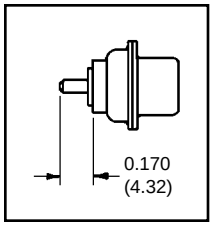
CBD17W2F200E0 with FS4008D contacts.

CBD17W2M55B30T20

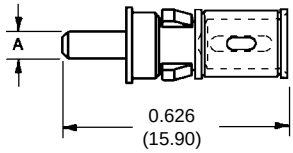
PRINTED BOARD MOUNTED POWER CONTACTS

STRAIGHT PRINTED BOARD MOUNT POWER CONTACTS

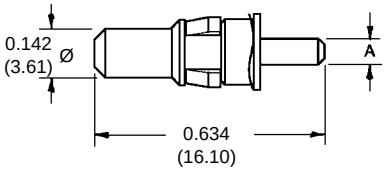
Straight printed board mount power contacts are mounted in connector when ordered.



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



MALE



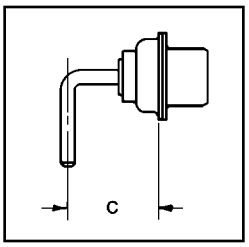
PART NUMBER	A Ø	CURRENT RATING
FDS4314D	0.078 (1.98)	15 Amps.
FDS4312D	0.094 (2.39)	20 Amps.
FDS4310D	0.125 (3.18)	30 Amps.

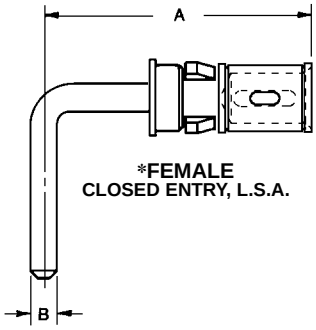
PART NUMBER	A Ø	CURRENT RATING
MDS4314D	0.078 (1.98)	15 Amps.
MDS4312D	0.094 (2.39)	20 Amps.
MDS4310D	0.125 (3.18)	30 Amps.

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

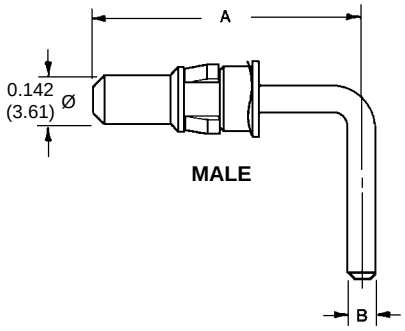
90° PRINTED BOARD MOUNT POWER CONTACTS

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	1.051 (26.70)	0.125 (3.18)	0.810 (20.57)	1, 2, 3 & 4	57
FRT4410D	30 Amps	1.051 (26.70)	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	1.051 (26.70)	0.125 (3.18)	0.810 (20.57)	1, 2, 3 & 4	57
MRT4410D	30 Amps	1.051 (26.70)	0.125 (3.18)	0.810 (20.57)	5	57

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

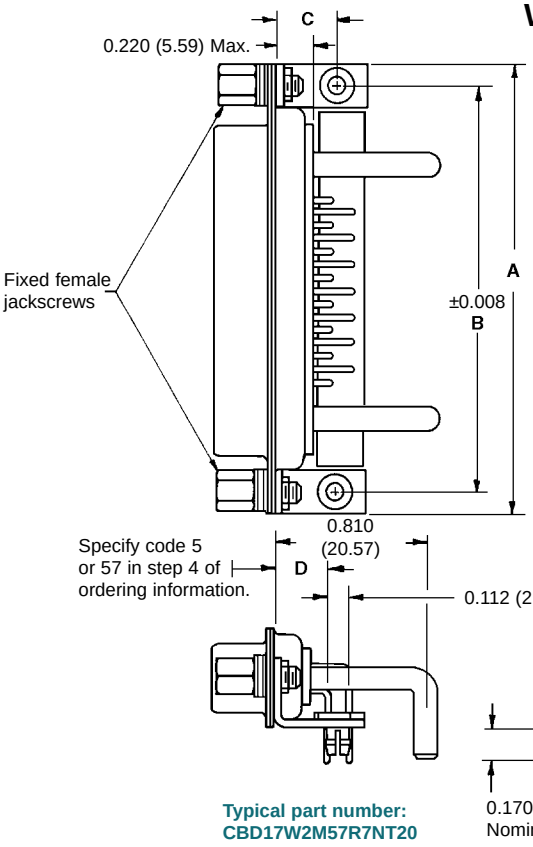
DIMENSIONS ARE IN INCHES (MILLIMETERS)
ALL DIMENSIONS SUBJECT TO CHANGE

***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.**

90° PRINTED BOARD MOUNT CONNECTOR WITH 0.125 (3.18) Ø POWER CONTACTS

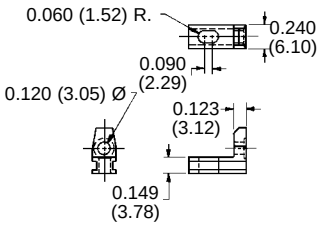
CODE 5 AND 57, 0.283 (7.19) CONTACT EXTENSION

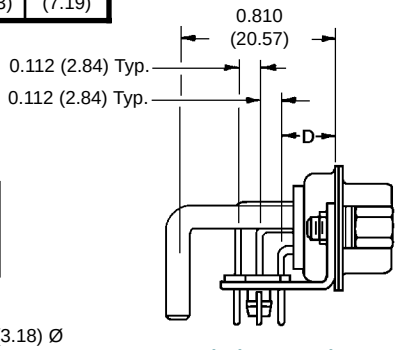
(30 amps nominal)



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)

PLASTIC MOUNTING BRACKET AVAILABLE
Specify code B8 in step 5
of ordering information.





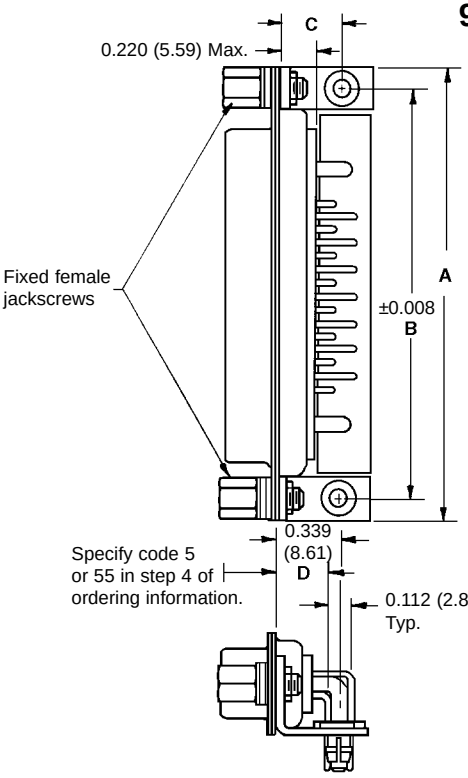
Typical part number:
CBD17W2M57R7NT20

Typical part number:
CBD36W4F57R7NT2X

90° PRINTED BOARD MOUNT CONNECTOR WITH 0.078 (1.98) Ø POWER CONTACTS

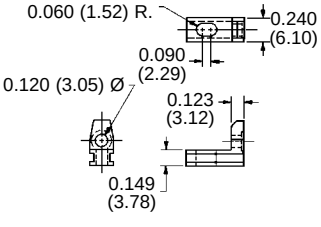
CODE 5 AND 55, 0.283 (7.19) CONTACT EXTENSION

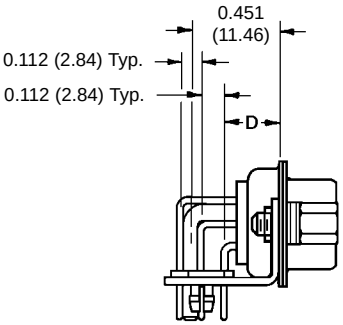
(15 amps nominal)



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)

PLASTIC MOUNTING BRACKET AVAILABLE
Specify code B8 in step 5
of ordering information.





Typical part number:
CBD17W2M55R7NT20

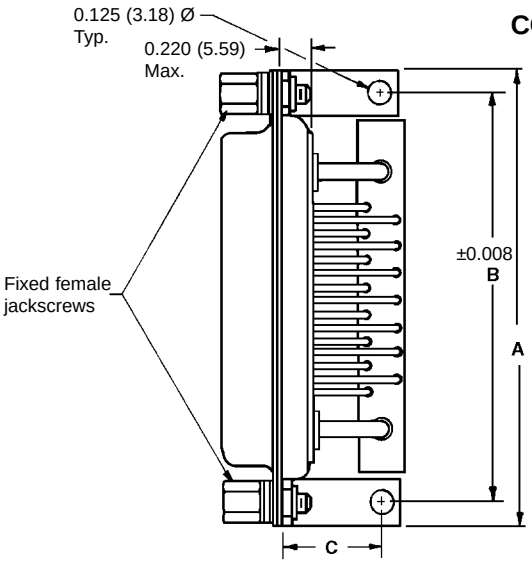
Typical part number:
CBD36W4F55R7NT2X

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

METRIC SYSTEM 90° PRINTED BOARD MOUNT CONNECTOR WITH 0.078 (1.98) Ø POWER CONTACTS

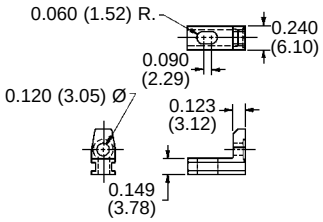
CODE 7 AND 75, 0.370 (9.40) CONTACT EXTENSION

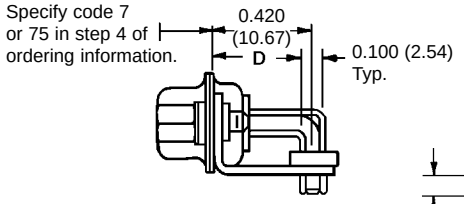
(15 amps nominal)

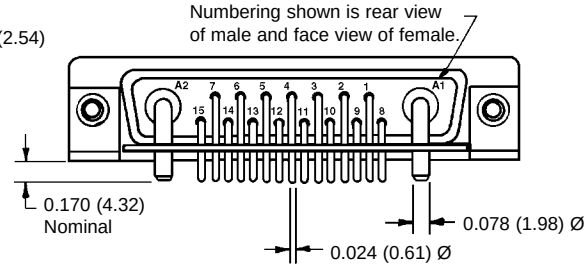


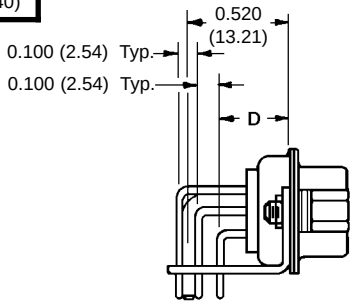
CBD00*R7000 0.370 (9.40) CONTACT EXTENSION				
SHELL SIZE	A	B	C	D
SHELL SIZE 1	1.204 (30.58)	0.984 (24.99)	0.420 (10.67)	0.370 (9.40)
SHELL SIZE 2	1.532 (38.91)	1.312 (33.32)	0.420 (10.67)	0.370 (9.40)
SHELL SIZE 3	2.072 (52.63)	1.852 (47.04)	0.420 (10.67)	0.370 (9.40)
SHELL SIZE 4	2.720 (69.09)	2.500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

PLASTIC MOUNTING BRACKET AVAILABLE
Specify code B8 in step 5 of ordering information.









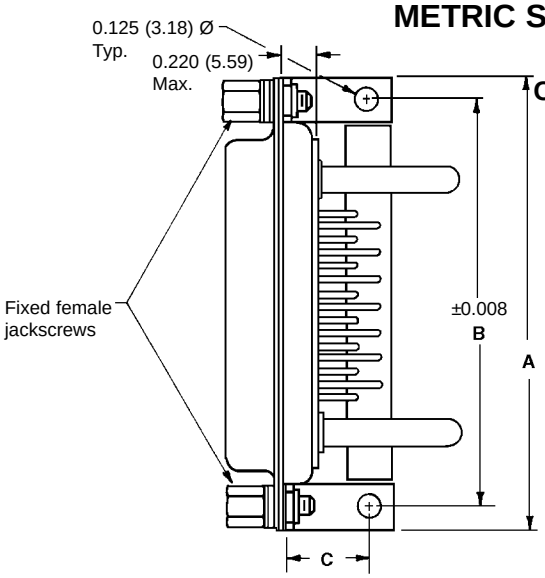
Typical part number:
CBD17W2M75R70T20

Typical part number:
CBD36W4M75R70T20

METRIC SYSTEM 90° PRINTED BOARD MOUNT CONNECTOR WITH 0.125 (3.18) Ø POWER CONTACTS

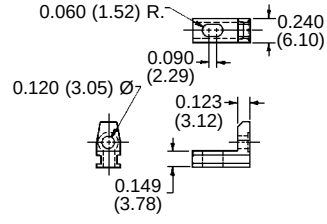
CODE 7 AND 77, 0.370 (9.40) CONTACT EXTENSION

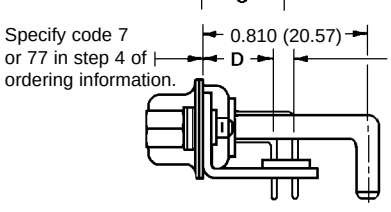
(30 amps nominal)

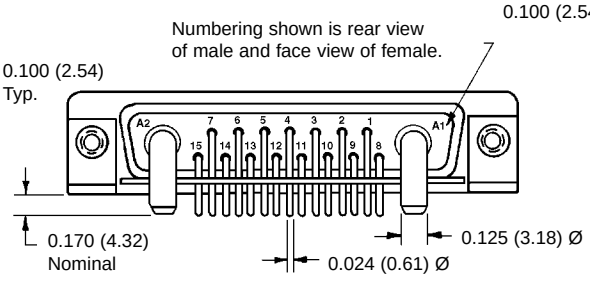


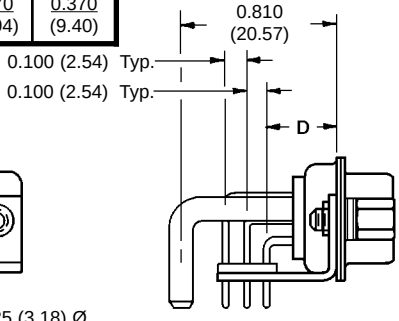
CBD00*R7000 0.370 (9,40) CONTACT EXTENSION				
SHELL SIZE	A	B	C	D
SHELL SIZE 1	1.204 (30.58)	0.984 (24.99)	0.420 (10.67)	0.370 (9.40)
SHELL SIZE 2	1.532 (38.91)	1.312 (33.32)	0.420 (10.67)	0.370 (9.40)
SHELL SIZE 3	2.072 (52.63)	1.852 (47.04)	0.420 (10.67)	0.370 (9.40)
SHELL SIZE 4	2.720 (69.09)	2.500 (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)

PLASTIC MOUNTING BRACKET AVAILABLE
Specify code B8 in step 5 of ordering information.









Typical part number:
CBD17W2M77R70T20

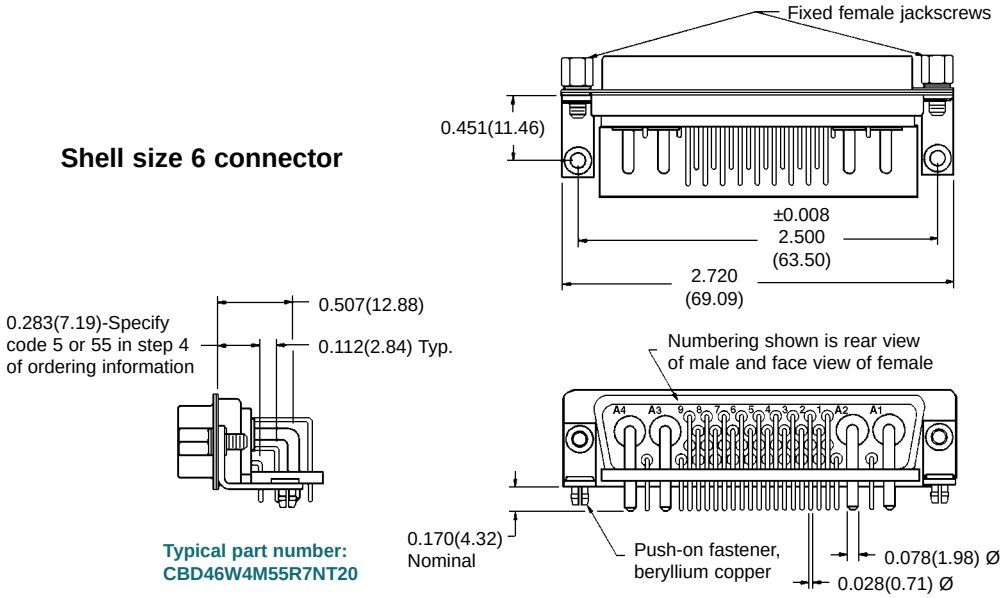
Typical part number:
CBD36W4M77R70T20

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

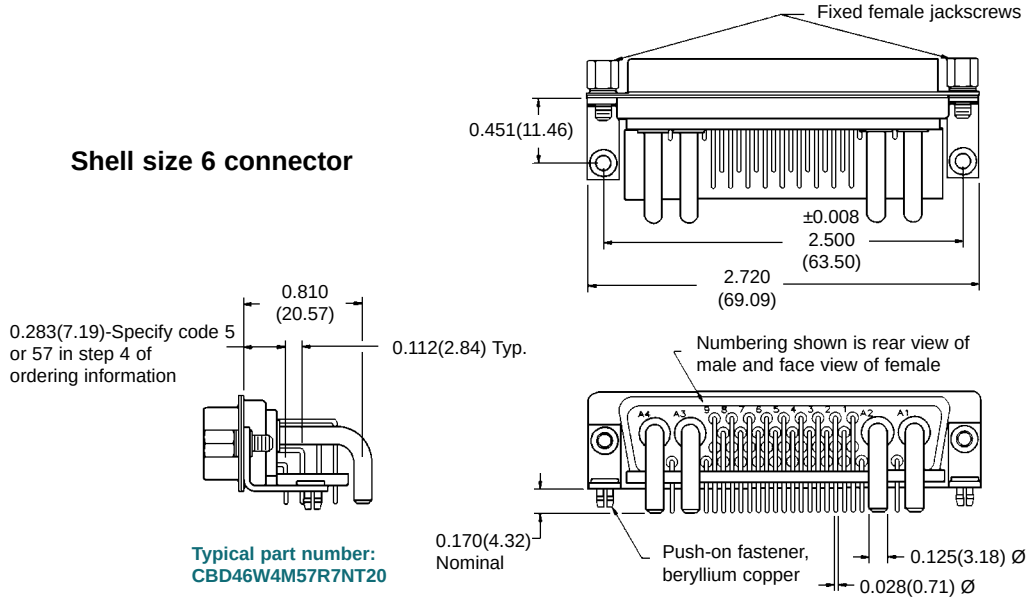


Typical part number:
CBD46W4M55R7NT20

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

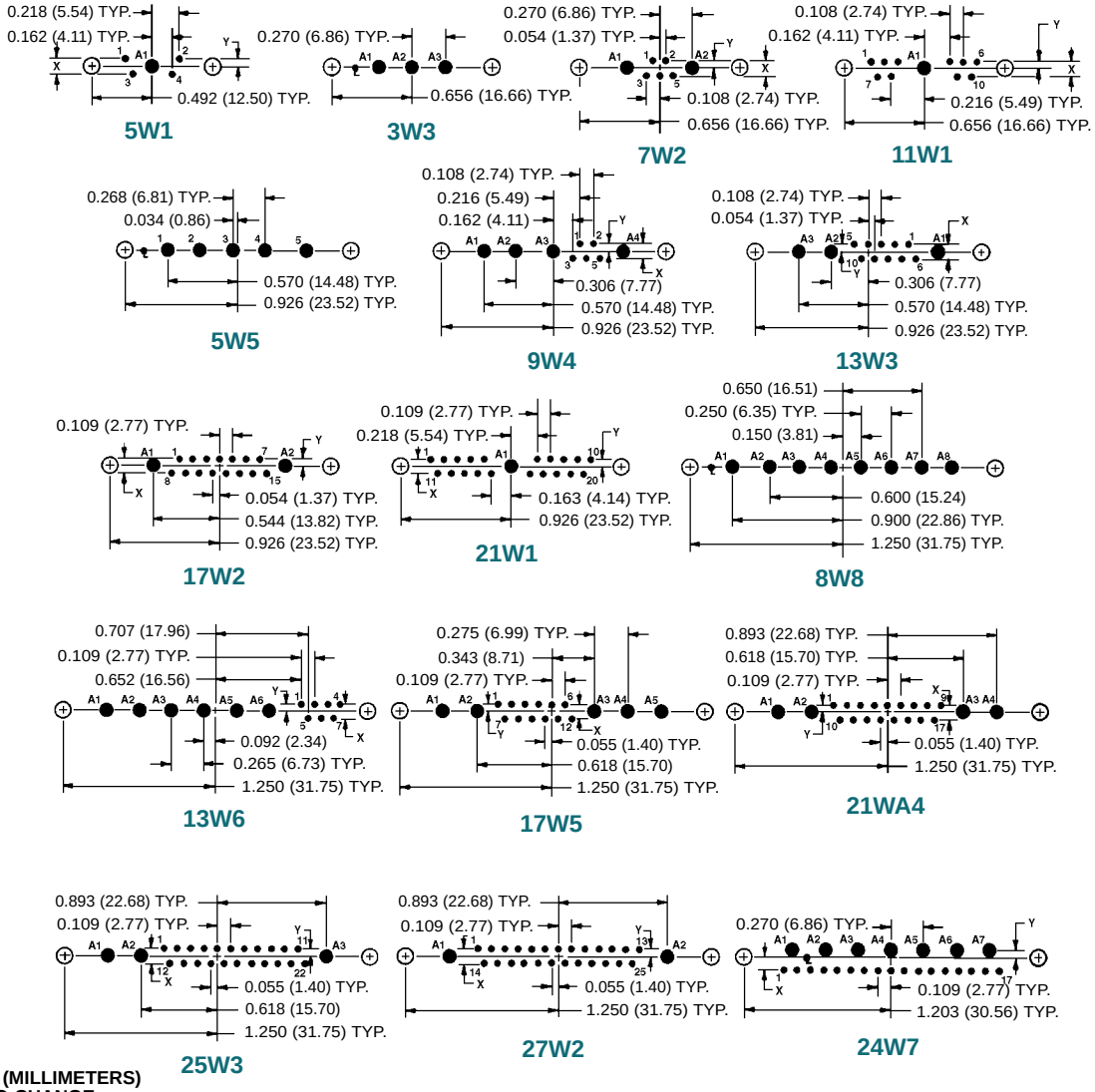


Typical part number:
CBD46W4M57R7NT20

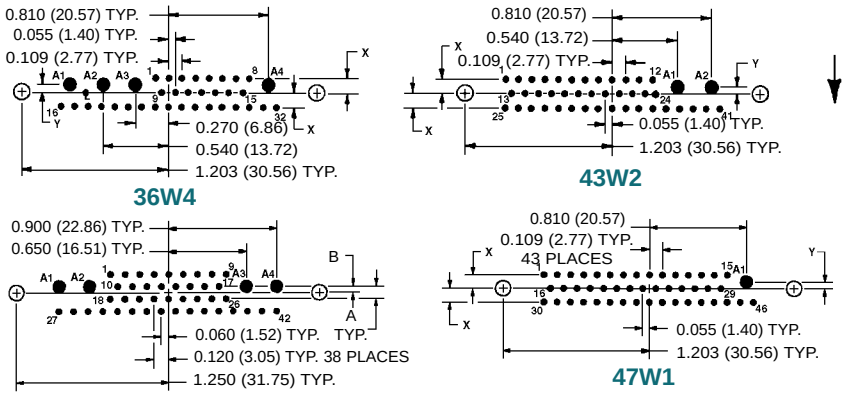
DIMENSIONS ARE IN INCHES (MILLIMETERS)
ALL DIMENSIONS SUBJECT TO CHANGE

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

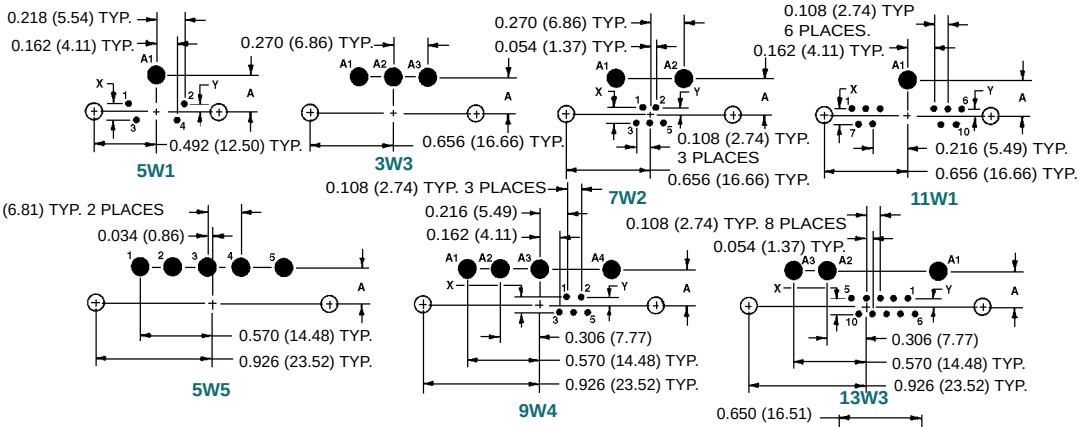


CODE NO.	3, 35 & 37	5 & 55	7 & 75
X	0.112 (2.84)	0.112 (2.84)	0.100 (2.54)
Y	0.056 (1.42)	0.056 (1.42)	0.050 (1.27)
A	0.100 (2.54)	0.112 (2.84)	0.100 (2.54)
B	0.050 (1.27)	0.056 (1.42)	0.050 (1.27)

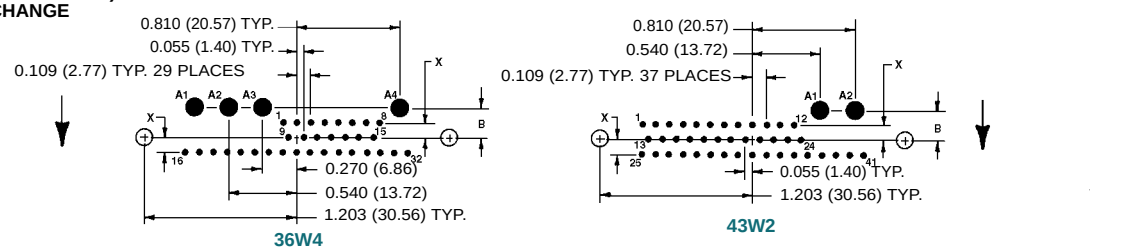
Suggest 0.045 (1.14) Ø hole for signal contact termination positions.
Suggest 0.098 (2.49) Ø hole for 0.078 (1.98) Ø power contact termination positions.
Suggest 0.114 (2.90) Ø hole for 0.094 (2.39) Ø power contact termination positions.
Suggest 0.145 (3.68) Ø hole for 0.125 (3.18) Ø power contact termination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

90° PRINTED BOARD CONTACT HOLE PATTERN WITH 0.125 (3.18) Ø POWER CONTACTS

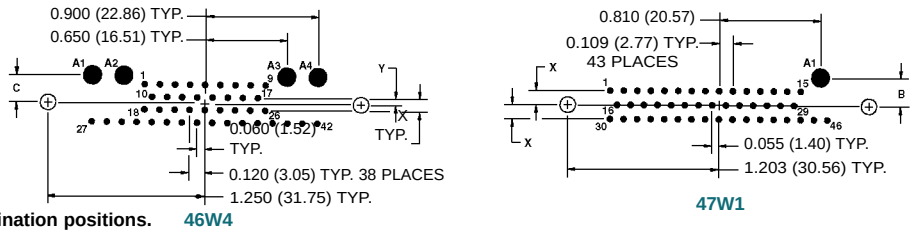
Hole identification shown for male connector, use mirror image for female connector.
Mount connector with mating face positioned to follow direction of arrow.



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



CODE NO.	A	B	C	X	Y
5 & 57	0.471 (11.96)	0.415 (10.54)	0.359 (9.12)	0.112 (2.84)	0.056 (1.42)
7 & 77	0.390 (9.91)	0.340 (8.64)	0.290 (7.37)	0.100 (2.54)	0.050 (1.27)

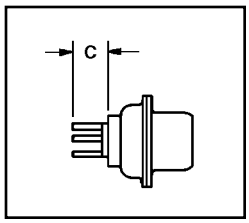


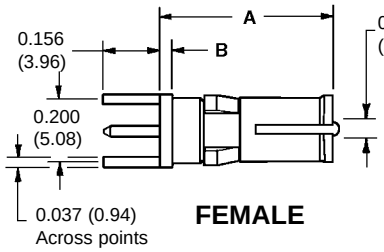
Suggest 0.045 (1.14) Ø hole for signal contact termination positions.
Suggest 0.145 (3.68) Ø hole for power contact termination positions.
Suggest 0.123±0.003 (3.12) Ø hole for mounting connector with push-on fasteners.

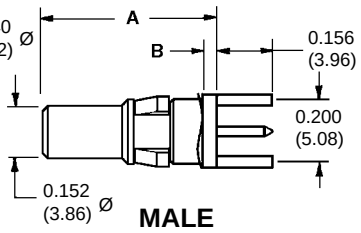
PRINTED BOARD MOUNTED SHIELDED CONTACTS

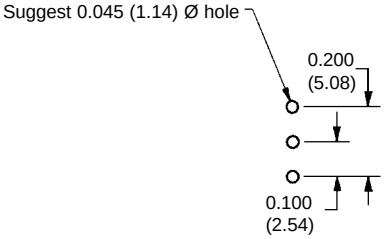
STRAIGHT PRINTED BOARD MOUNT SHIELDED CONTACTS

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.

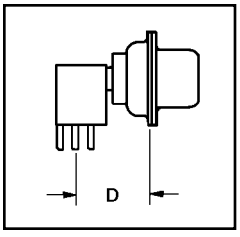
Signal contact plating -0.000030 inch (0.75µ) gold over nickel or 0.000050 inch (1.25µ) gold over nickel.

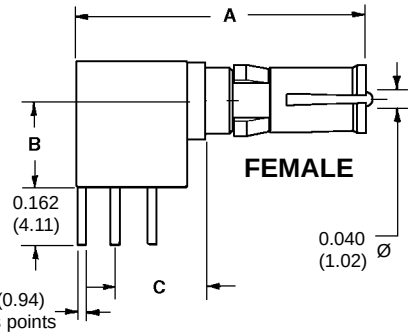
Contact body plating -Gold flash over nickel.

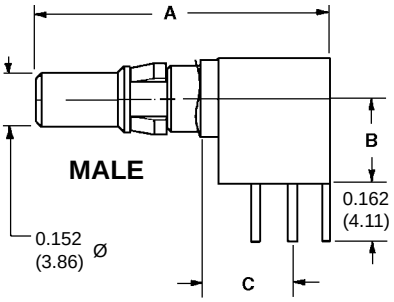
***Technical characteristics are listed on page 17.**

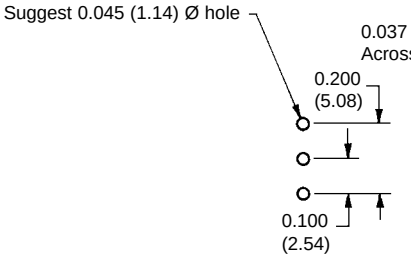
90° PRINTED BOARD MOUNT SHIELDED CONTACTS

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.

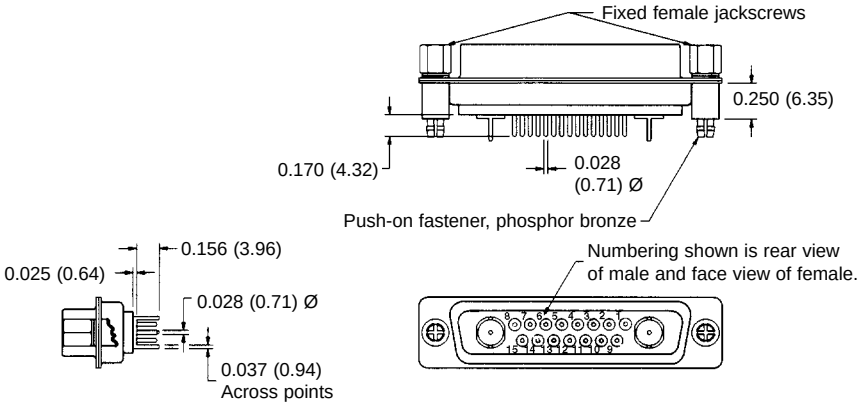
Contact body plating -Gold flash over nickel.

***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

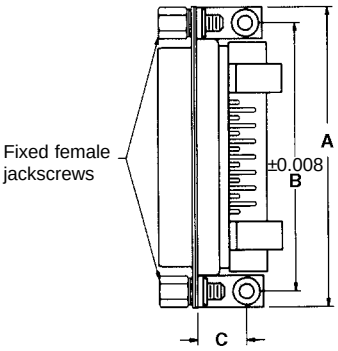
CODE 65, CONNECTOR WITH FDS4201D OR MDS4201D CONTACTS



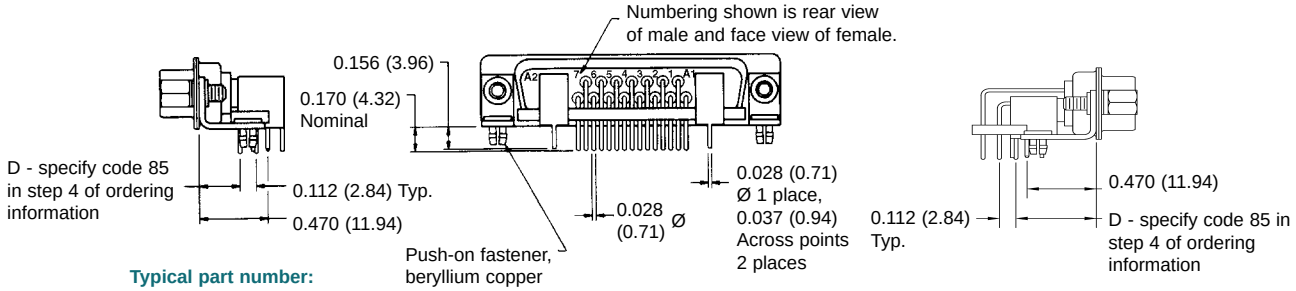
Typical part number:
CBD17W2M65S60T20

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

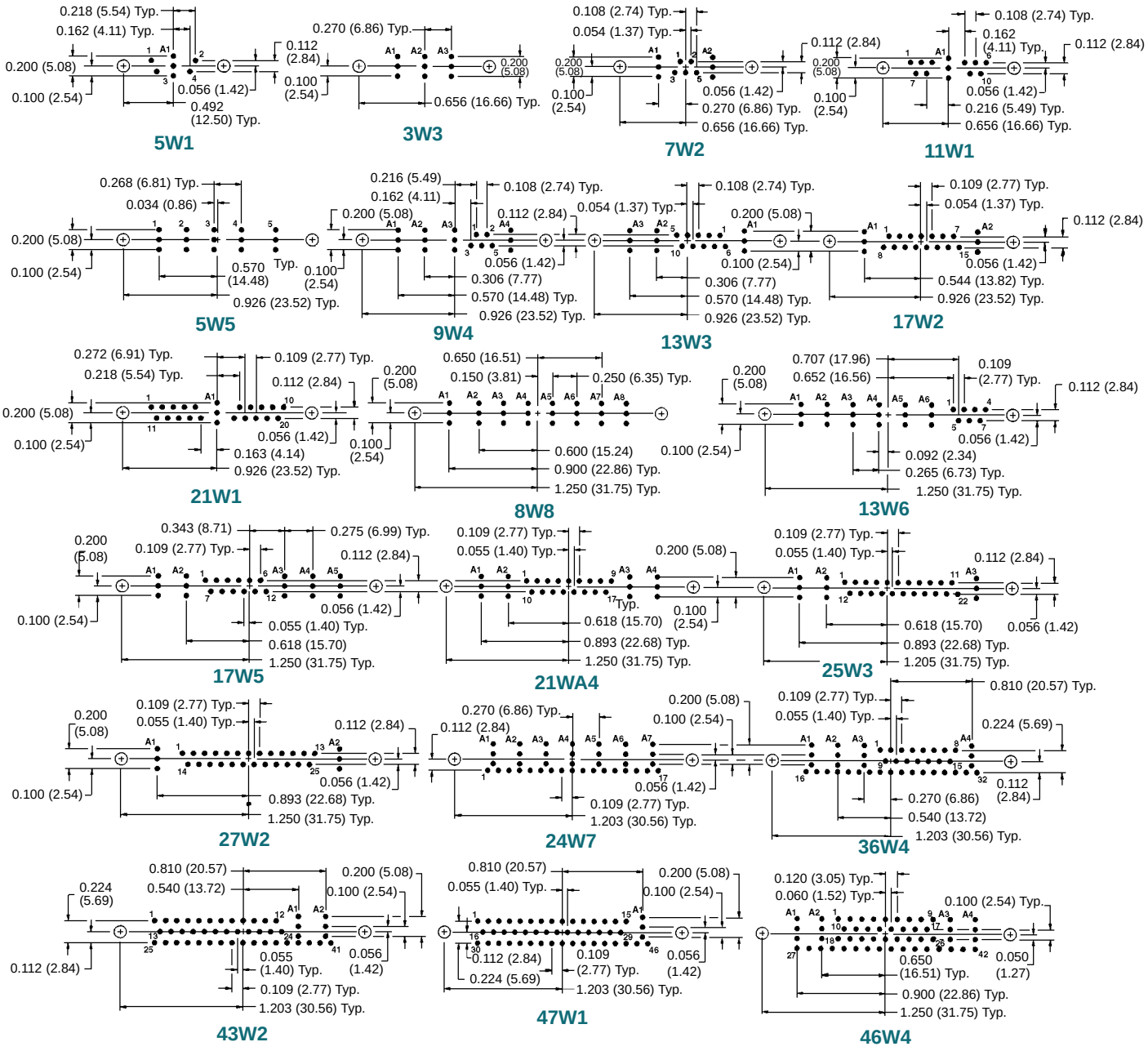
Typical part number:
CBD36W4M85R7NT20

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

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

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.

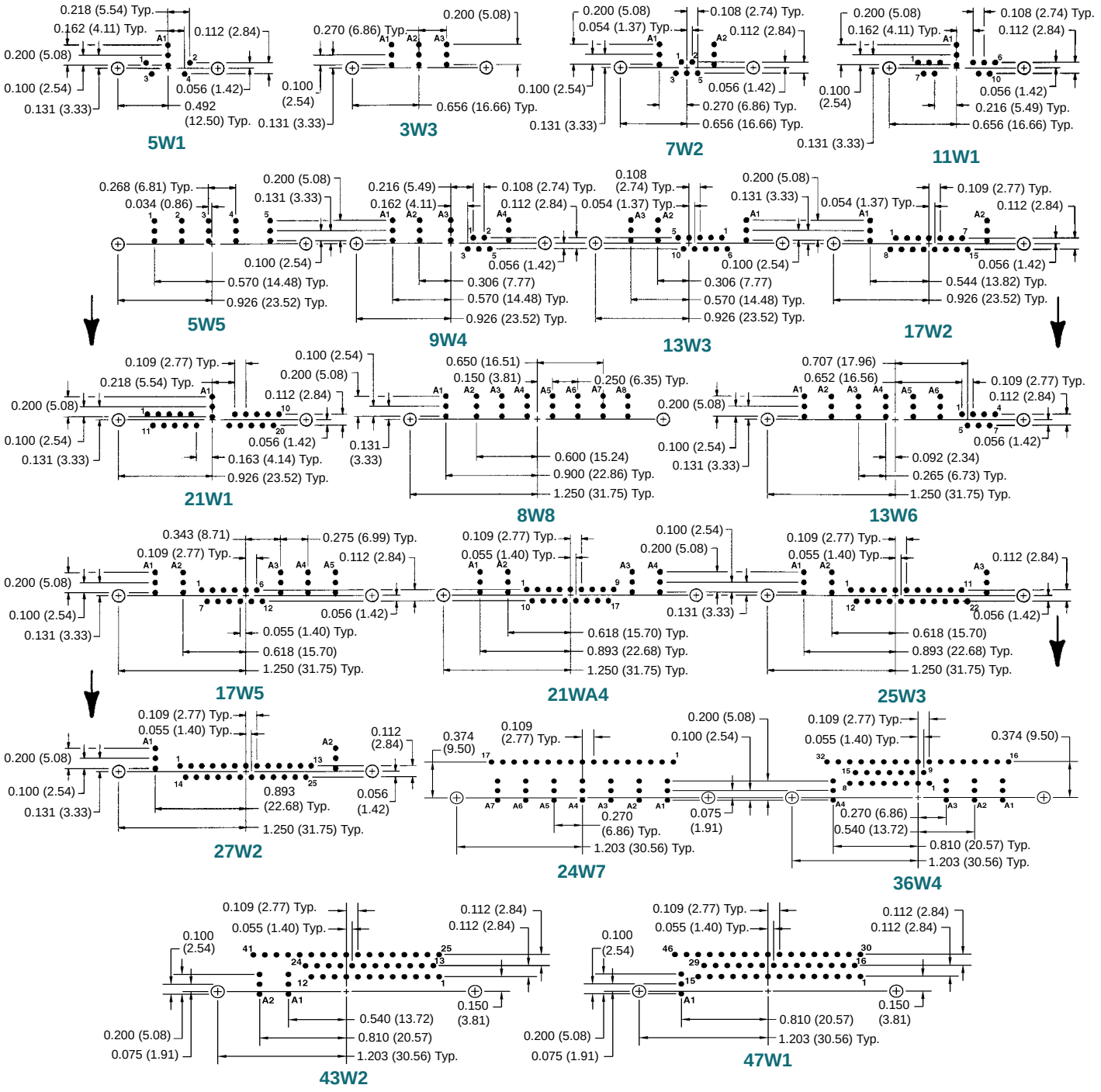


Suggest 0.045 (1.14) Ø hole for signal contact termination position.
Suggest 0.123±0.003 (3.12) Ø hole for mounting connector with push-on fasteners.

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 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

*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 7 - Locking and Polarizing Systems
0 – None
T – Fixed Female Jackscrews
T2 – Fixed Female Jackscrews
E – Rotating Male Jackscrews

STEP 8 - Shell Options
0 – Zinc Plated with Dichromate Seal
S – Stainless Steel
X – Tin Plated
Z – Tin Plated and Dimpled

**STEP 9 - Special Options
759.0 – Blind Mate Pilot
759.1 – Blind Mate Panel

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

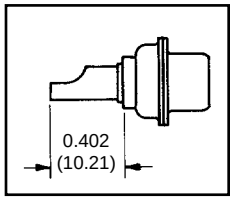
****Z Hood recommended for use with CBD and CBM series for shell sizes 1 through 6.**

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

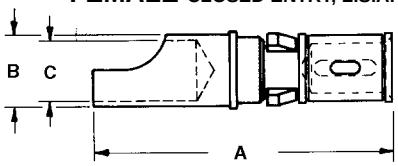
SIZE 8 REMOVABLE CONTACTS, POWER, SHIELDED AND HIGH VOLTAGE

REMOVABLE POWER CONTACTS

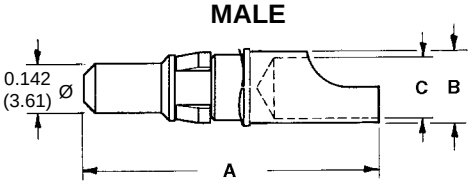
SOLDER POWER CONTACTS



*FEMALE CLOSED ENTRY, L.S.A.



MALE



Solder power contacts may be supplied kitted with connector or ordered separately.

PART NUMBER	CURRENT RATING	WIRE SIZE	A REF.	B Ø	C Ø
FS4008D	40 Amps	8	0.858 (21.79)	0.219 (5.56)	0.188 (4.78)
FS4012D	20 Amps	12	0.858 (21.79)	0.143 (3.63)	0.112 (2.84)
FS4016D	10 Amps	16	0.858 (21.79)	0.100 (2.54)	0.069 (1.75)

PART NUMBER	CURRENT RATING	WIRE SIZE	A REF.	B Ø	C Ø
MS4008D	40 Amps	8	0.868 (22.05)	0.219 (5.56)	0.188 (4.78)
MS4012D	20 Amps	12	0.868 (22.05)	0.143 (3.63)	0.112 (2.84)
MS4016D	10 Amps	16	0.868 (22.05)	0.100 (2.54)	0.069 (1.75)

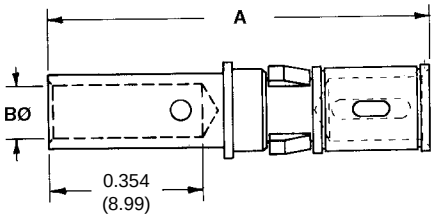
Material - High conductivity copper alloy. **Plating - Gold flash over nickel.**

REMOVABLE CRIMP CONTACTS

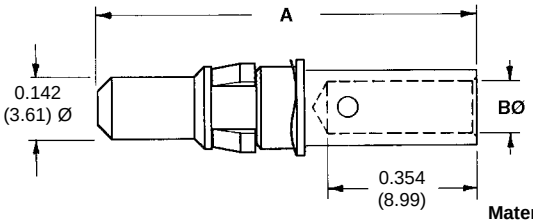
Crimp power contacts may be supplied kitted with connector or ordered separately.

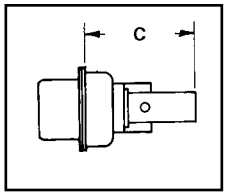
POWER CONTACTS

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



MALE CONTACT



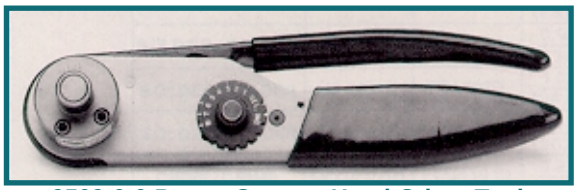


Material - High conductivity copper alloy.
Plating - Gold flash over nickel.

PART NUMBER	CURRENT RATING	WIRE SIZE	A	B Ø	C MAX.
FC4008D	40 Amps	8	0.858 (21.79)	0.181 (4.60)	0.640 (16.26)
FC4010D	30 Amps	10	0.858 (21.79)	0.122 (3.10)	0.640 (16.26)
FC4012D	20 Amps	12	0.858 (21.79)	0.101 (2.57)	0.640 (16.26)
FC4016D	10 Amps	16	0.858 (21.79)	0.067 (1.70)	0.640 (16.26)

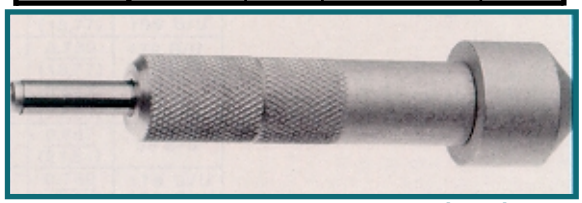
PART NUMBER	CURRENT RATING	WIRE SIZE	A	B Ø	C MAX.
MC4008D	40 Amps	8	0.882 (22.40)	0.181 (4.60)	0.640 (16.26)
MC4010D	30 Amps	10	0.882 (22.40)	0.122 (3.10)	0.640 (16.26)
MC4012D	20 Amps	12	0.882 (22.40)	0.101 (2.57)	0.640 (16.26)
MC4016D	10 Amps	16	0.882 (22.40)	0.067 (1.70)	0.640 (16.26)

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



9509-0-0 Power Contact Hand Crimp Tool
For use with *C4010D, *C4012D and *C4016D Contacts

9504-19-0 Power Contact Hand Crimp Tool
For use with *C4008D Contacts
(tool not shown)



4311-0-0 Power Contact Removal Tool

REELS FOR AUTOMATIC FEED PNEUMATIC CRIMP TOOLS

Contacts may be supplied in plastic carriers, packaged in reels holding 1,000 contacts for use with the automatic feed pneumatic crimp tools, catalog part number 9555-10. The same type carrier is used for both male and female contacts.

All male and female crimp contacts can be ordered in reels by adding letter "R" after the contact part number, such as MC4008DR for a male contact and FC4008DR for a female contact.

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

SHIELDED CONTACTS
TECHNICAL CHARACTERISTICS

MATERIALS AND FINISHES:

Insulating Material:	(Dielectric) PTFE, Teflon
Inner Contacts:	Brass & Phosphor bronze, 0.000030 inch (0.8 microns) gold over nickel and 0.000050 inch (1.25µ) gold over nickel.
Contact Body:	Brass and Phosphor bronze, gold flash over nickel.

ELECTRICAL CHARACTERISTICS:

Initial Contact Resistance:	0.008 ohms maximum.
* **Nominal Impedance:**	50 ohms.
* **Insertion Loss:**	-0.46 dB at 1 GHz -1.5 dB at 2 GHz
* **VSWR:**	1.15 average at 1 GHz 1.56 average at 2 GHz
Proof Voltage:	1000 V r.m.s.

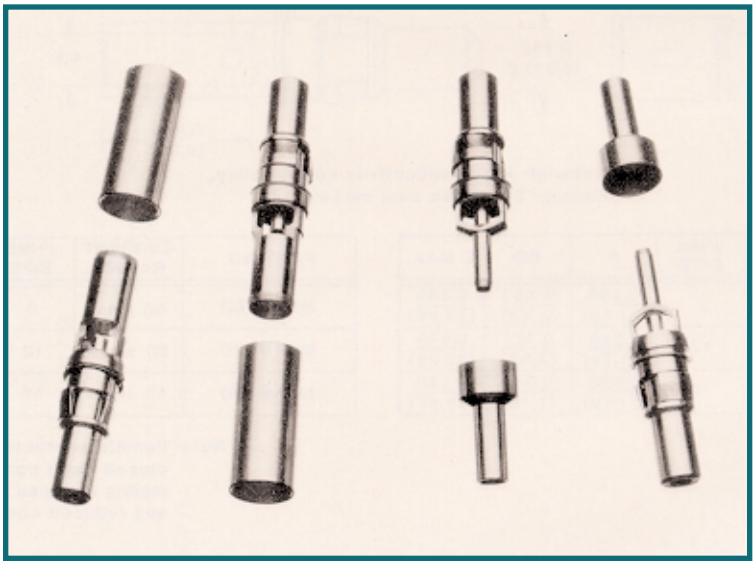
* **Above values measured using frequency domain techniques.**

MECHANICAL CHARACTERISTICS:

Removable Contacts:	Rear insertion, front release.
Durability:	500 cycles minimum.
Vibration:	20g from 10 HZ to 500 HZ
Shock:	30g-11 ms

CLIMATIC CHARACTERISTICS:

Temperature Range:	-55˚C to +125˚C.

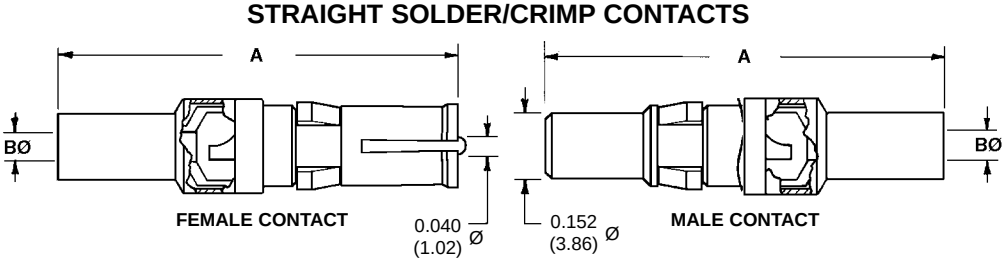


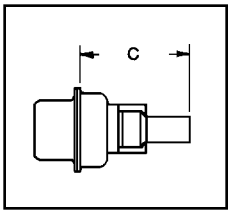
SIZE 8 REMOVABLE CONTACTS, POWER, SHIELDED AND HIGH VOLTAGE

REMOVABLE SHIELDED CONTACTS

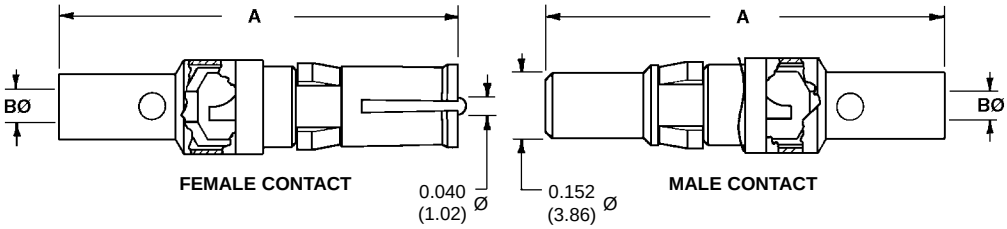
Shielded contacts may be supplied kitted with connector or ordered separately.

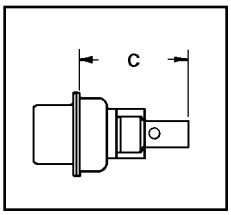
STRAIGHT SOLDER/CRIMP CONTACTS



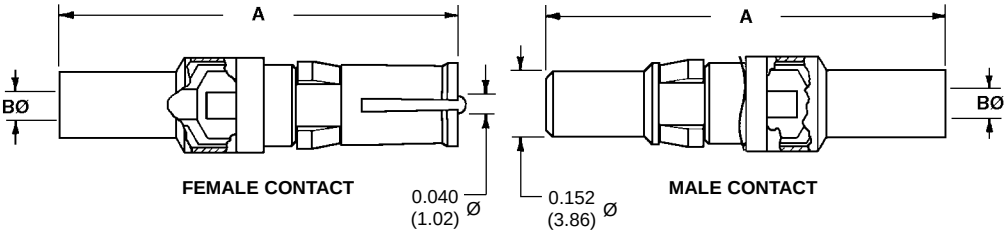


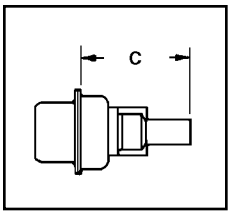
STRAIGHT SOLDER/SOLDER CONTACTS





STRAIGHT CRIMP/CRIMP CONTACTS





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.

TYPE OF CONTACT	PART NUMBER		A	B Ø	C MAX.	RG CABLE NUMBER
	MALE	FEMALE				
SOLDER/CRIMP	MC4101D	FC4101D	0.929 (23.60)	0.040 (1.02)	0.739 (18.77)	178 B/U 196 B/U
SOLDER/CRIMP	MC4102D	FC4102D	0.929 (23.60)	0.067 (1.70)	0.739 (18.77)	179 B/U 316 /U
SOLDER/CRIMP	MC4103D	FC4103D	1.037 (26.34)	0.108 (2.74)	0.847 (21.51)	180 B/U
SOLDER/CRIMP	MC4104D	FC4104D	1.037 (26.34)	0.120 (3.05)	0.847 (21.51)	58 B/U
SOLDER/SOLDER	MS4101D	FS4101D	0.929 (23.60)	0.040 (1.02)	0.739 (18.77)	178 B/U 196 B/U
SOLDER/SOLDER	MS4102D	FS4102D	0.929 (23.60)	0.067 (1.70)	0.739 (18.77)	179 B/U 316 /U
SOLDER/SOLDER	MS4103D	FS4103D	1.037 (26.34)	0.108 (2.74)	0.847 (21.51)	180 B/U
SOLDER/SOLDER	MS4104D	FS4104D	1.037 (26.34)	0.120 (3.05)	0.847 (21.51)	58 B/U
CRIMP/CRIMP	MCC4101D	FCC4101D	0.929 (23.60)	0.040 (1.02)	0.739 (18.77)	178 B/U 196 B/U
CRIMP/CRIMP	MCC4102D	FCC4102D	0.929 (23.60)	0.067 (1.70)	0.739 (18.77)	179 B/U 316 /U
CRIMP/CRIMP	MCC4103D	FCC4103D	1.037 (26.34)	0.108 (2.74)	0.847 (21.51)	180 B/U
CRIMP/CRIMP	MCC4104D	FCC4104D	1.037 (26.34)	0.120 (3.05)	0.847 (21.51)	58 B/U

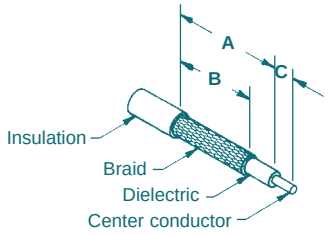
Two-step crimping action for signal and shielding conductors.

See page 19 for crimp tool and crimping information.

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

SOLDERING AND CRIMPING INFORMATION FOR COMBINATION D SERIES COAXIAL CONTACTS

STEP 1: STRIP WIRE TO INDICATED LENGTH



TAKE CARE NOT TO:
–Damage or remove strands.
–Untwist or overtwist strands.
–Leave insulation particles on strands.
–Damage insulation.

STEP 2: SOLDER WIRE TO CONTACT

–Trim cable. Tin center conductor.
–Slide ferrule over jacket. Insert dielectric and center conductor into barrel. Solder center conductor into contact.
–Butt ferrule against shoulder. Solder cable to barrel through hole in ferrule. Solder cap into body.

STEP 2: SOLDER/CRIMP WIRE TO CONTACT

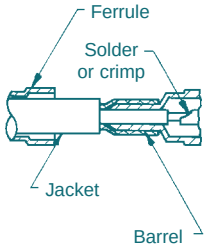
–Trim cable. Tin center conductor.
–Slide ferrule over jacket. Insert dielectric and center conductor into barrel. Solder center conductor into contact.
–Butt ferrule against shoulder. Crimp ferrule over braid. Solder cap into body.

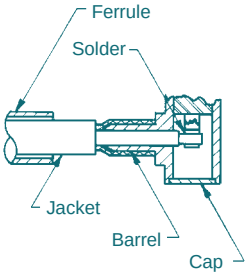
STEP 2: CRIMP WIRE TO CONTACT

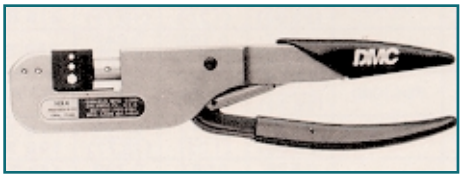
–Trim cable.
–Slide ferrule over jacket. Insert dielectric and center conductor into barrel. Crimp center conductor into contact.
–Butt ferrule against shoulder. Crimp ferrule over braid.

PART NUMBER	RG CABLE NUMBER	A	B	C	CRIMP TOOL
✻C4101D	178 B/U	0.281 (7.14)	0.250 (6.35)	0.078 (1.98)	9504-0
✻S4101D					NONE
✻C4102D	179 B/U 316 /U	0.281 (7.14)	0.250 (6.35)	0.078 (1.98)	9504-0
✻S4102D					NONE
✻C4103D	180 B/U	0.375 (9.53)	0.312 (7.92)	0.078 (1.98)	9504-0
✻S4103D					NONE
✻C4104D	58 B/U	0.375 (9.53)	0.312 (7.92)	0.078 (1.98)	9504-0
✻S4104D					NONE
✻CC4101D	178 B/U	0.281 (7.14)	0.250 (6.35)	0.120 (3.05)	9504-14
✻CC4102D	179 B/U 316 /U	0.281 (7.14)	0.250 (6.35)	0.120 (3.05)	9504-13
✻CC4103D	180 B/U	0.375 (9.53)	0.312 (7.92)	0.120 (3.05)	9504-15
✻CC4104D	58 B/U	0.375 (9.53)	0.312 (7.92)	0.120 (3.05)	9504-15

✻ Contact gender is designated by M for male contacts or F for female contacts.





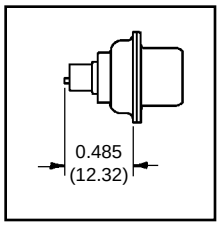


Shielded Contact Hand Crimp Tool

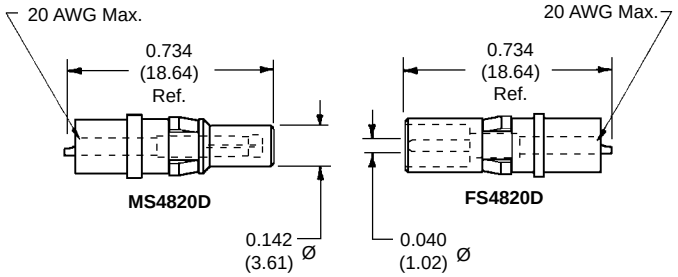
See Chart Above for Crimp Tool Part Numbers.

REMOVABLE HIGH VOLTAGE CONTACTS

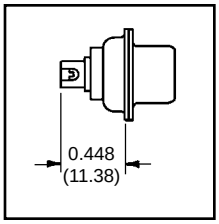
High voltage contacts are not supplied with connectors and must be ordered separately.



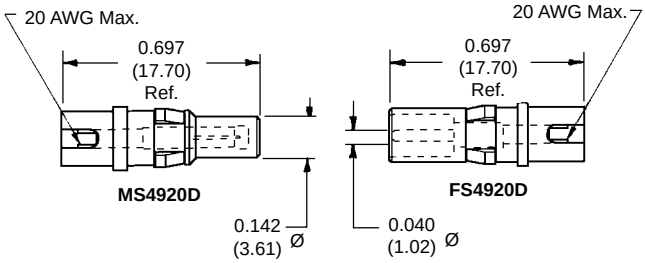
STRAIGHT SOLDER WIRE TERMINATION



MALE CONTACT FEMALE CONTACT



90° SOLDER WIRE TERMINATION



MALE CONTACT FEMALE CONTACT

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

TECHNICAL CHARACTERISTICS

MATERIALS AND FINISHES:

Insulators: Teflon, PTFE.

Contacts: Male contacts, brass. Female contacts, phosphor bronze.

Plating: 0.000030 inch (0.75µ) gold over nickel, or 0.000050 inch (1.25µ) gold over nickel.

ELECTRICAL CHARACTERISTICS:

HIGH VOLTAGE CONTACTS

Flash Over Voltage: 3600 V r.m.s.

Proof Voltage: 2700 V r.m.s.

Initial Contact Resistance: 0.008 ohms maximum.

MECHANICAL CHARACTERISTICS:

Size 8 Removable Contacts: Rear insertion, front release.

Durability: 500 cycles minimum.

Vibration: 20g from 10 Hz to 500 Hz.

Shock: 30g-11ms.

CLIMATIC CHARACTERISTICS:

Temperature Range: -55˚C to +125˚C.

CBC Series

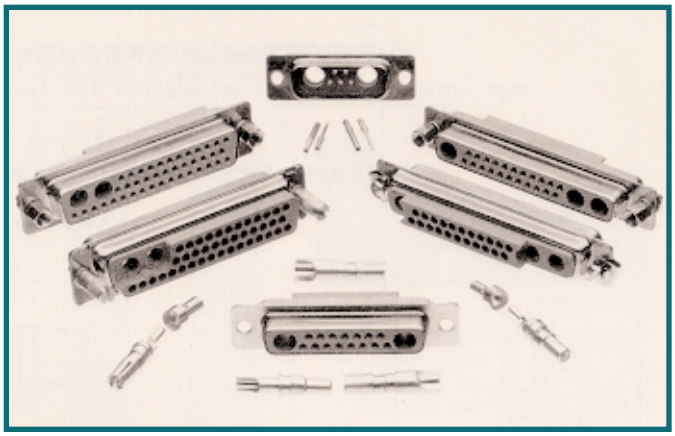
INDUSTRIAL AND MILITARY QUALITY SUBMINIATURE-D CONNECTORS

FOR MILITARY AND SHELTERED INDOOR/OUTDOOR ENVIRONMENTAL APPLICATIONS

CRIMP REMOVABLE CONTACT SERIES

Size 20 Contacts
Crimp Removable
Military/Industrial
Quality Connectors
D.E.S.C. 85039

U.L. Recognized File #E49351
CSA Recognized File #LR54219
IEC 807-3
Telecommunication
U.L. File #E140980



CBC Series connectors are military/industrial quality rectangular connectors designed for use in sheltered, mildly corrosive environments having a wide range of temperature, pressure and humidity changes. CBC Series connectors offer mixed crimp-removable contact combinations of power, shielded, high voltage and signal contacts within the same connector body. Refer to size 8 removable contacts power, shielded, and high voltage section, page 16 through 20 for technical characteristics. Ten connector variants are offered in six standard shell sizes.

A wide assortment of cable support hoods and locking systems is available from stock.

CBC Series connectors also offer a Blind Mating connector system for applications requiring connector couplings in recessed areas or for mobile power coupling systems.

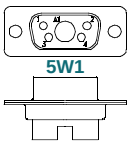
CBC Series connectors utilize precision machined contacts and they meet the applicable performance and dimensional requirements of IEC 807-3, D.E.S.C. 85039 and MIL-DTL-24308.

*CBC SERIES CONTACT VARIANTS

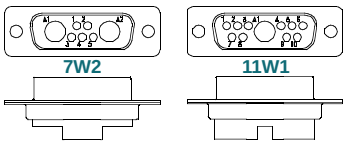
FACE VIEW OF MALE OR REAR VIEW OF FEMALE

Note: Additional contact variants may be tooled at customer request. 27W2 variant currently available in female only.

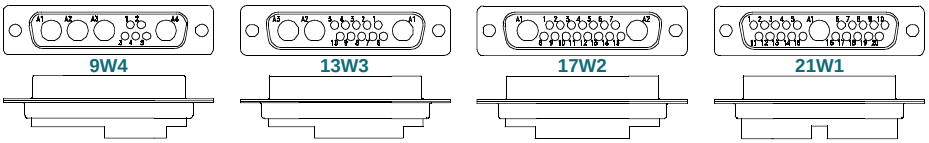
SHELL SIZE 1



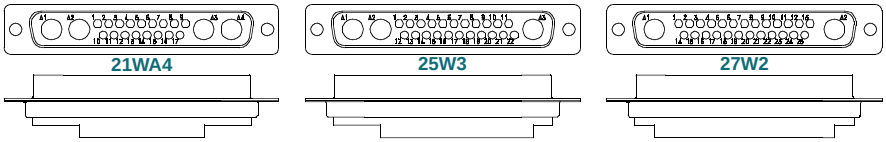
SHELL SIZE 2



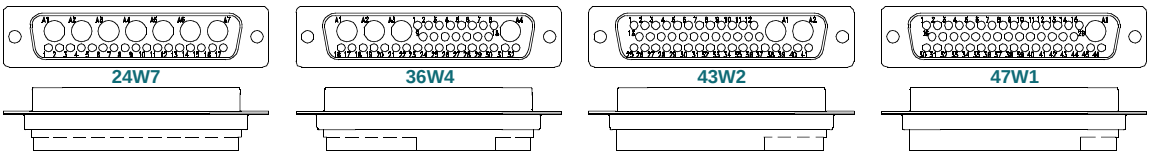
SHELL SIZE 3



SHELL SIZE 4



SHELL SIZE 5



CBC SERIES TECHNICAL CHARACTERISTICS

MATERIALS AND FINISHES:

Insulator:	Glass filled polyester per MIL-M-24519, UL 94V-0, blue color.
Signal Contacts:	Male contacts – precision machined brass alloy. Female contacts – precision machined high tensile copper alloy with stainless steel shroud or open entry Robi-D design.
Signal Contact Plating:	Gold flash over nickel plate and gold 0.000050 (1.25 microns) over nickel plate.
Power, Shielded and High Voltage Contacts:	Precision machined copper alloy male contacts and female contacts. Retainers of beryllium copper.
Power Contact Plating:	Gold flash over nickel.
Shielded and High Voltage Contact Plating:	Signal contact plating, gold 0.000030 inch (0.75 microns) over nickel. Shielded body plating, gold flash over nickel.
Shells:	Steel or brass with tin plate; zinc with dichromate seal, stainless steel passivated.
Mounting Spacers and Brackets:	Nylon plastic, or brass with tin plate; zinc with dichromate seal.
Jackscrew Systems:	Steel with zinc and dichromate seal, or clear zinc plate.
Hoods:	Composite and plastic UL94V-0, brass or steel with zinc plate and dichromate seal.

ELECTRICAL CHARACTERISTICS:

SIGNAL CONTACTS

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

POWER CONTACTS

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

SHIELDED CONTACTS

Initial Contact Resistance:	0.008 ohms maximum.
Nominal Impedance:	50 ohms.
Insertion Loss:	-0.46 dB at 1 GHz -1.5 dB at 2 GHz
VSWR:	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

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

CONNECTOR

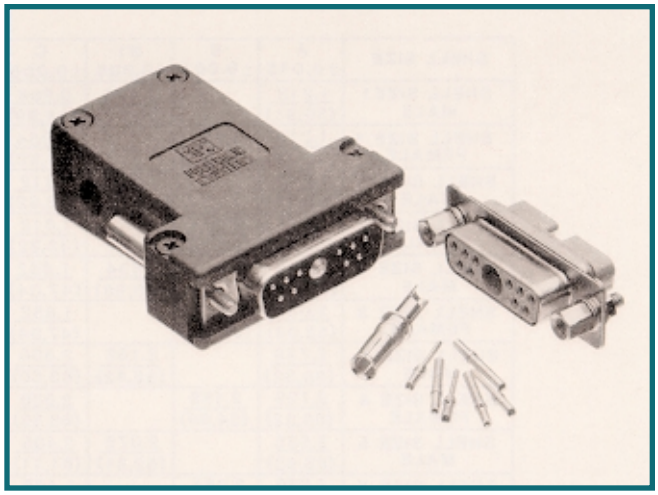
Insulator Resistance:	5 G ohms.
Clearance and Creepage Distance:	0.039 inch (1.0mm) minimum.
Working Voltage:	300 V r.m.s.

MECHANICAL CHARACTERISTICS:

Signal Contacts, Crimp Removable:	Size 20 contacts male – 0.040 inch (1.02mm) diameter; Female closed entry design with stainless steel shroud or open entry Robi-D design.
Contact Retention In Insulator:	9 lbs. (40N). Power, shielded and high voltage – 22 lbs. (98N)
Crimp Contact Terminations:	Closed barrel crimp, wire sizes 18 AWG (1.0mm²) through 30 AWG (0.05 mm²)
Power Contacts, Removable, Crimp or Solder Termination:	Size 8 contact, male contact – 0.142 inch (3.61mm) diameter. Male and female contacts have terminations for wire sizes 8,12 and 16 AWG.
Shielded Contacts, Removable:	See table of maximum cable sizes for contact termination dimensions, page 18.
High Voltage Contacts:	Straight and 90° terminations – 0.041 inch (1.04mm) minimum hole diameter.
Shells:	Male shells may be dimpled for EMI/ESD ground paths.
Polarization:	Trapezoidally shaped shells and polarized jackscrews.
Locking Systems:	Jackscrews.
Mechanical Operations, Signal Contacts:	CBC Series, 500 operations, open entry contact, 1000 operations, closed entry contact with 0.000050 (1.25 microns) gold plating. Per IEC 512-5.

CLIMATIC CHARACTERISTICS:

Temperature Range:	-55˚C to +125˚C.
Damp Heat, Steady State:	10 days.



CBC11W1M10Z00
WITH MS4012D CONTACT

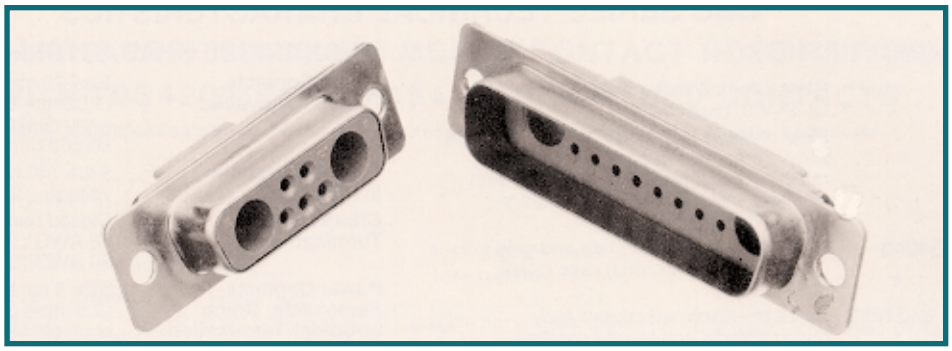
CBC11W1F100T20
WITH FS4012D CONTACT

CBC Series

INDUSTRIAL AND MILITARY QUALITY SUBMINIATURE-D CONNECTORS

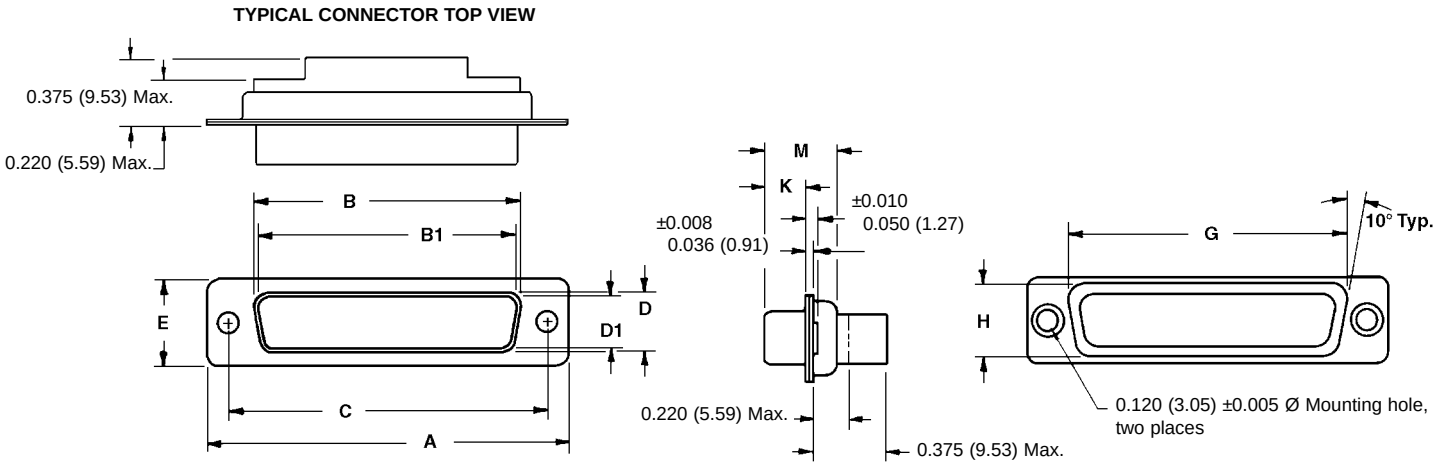
FOR MILITARY AND SHELTERED INDOOR/OUTDOOR ENVIRONMENTAL APPLICATIONS

CRIMP REMOVABLE CONTACT SERIES



CBC7W2F00000 CBC17W2M00000

STANDARD SHELL ASSEMBLY

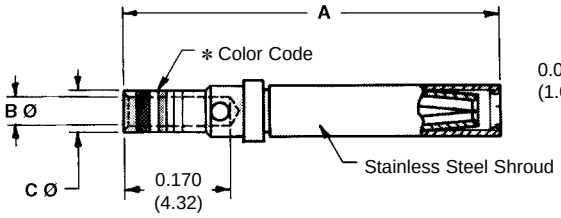


SHELL SIZE	A ±0.015	B ±0.005	B1 ±0.005	C ±0.005	D ±0.005	D1 ±0.005	E ±0.015	G ±0.010	H ±0.010	K ±0.005	M ±0.010
SHELL SIZE 1 MALE	1.213 (30.81)		0.666 (16.92)	0.984 (24.99)		0.329 (8.36)	0.494 (12.55)	0.759 (19.28)	0.422 (10.72)	0.233 (5.92)	0.422 (10.72)
SHELL SIZE 1 FEMALE	1.213 (30.81)	0.643 (16.33)		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

CRIMP REMOVABLE CONTACT CONNECTOR
SIGNAL CRIMP CONTACTS
CLOSED CRIMP BARREL

FEMALE CONTACT ("CLOSED ENTRY" DESIGN)



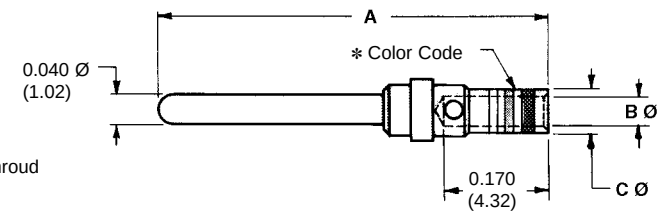
Material – Leaded nickel copper.

Plating – Gold flash over nickel or 0.000050 inch (1.25μ) gold over copper for military specification contacts.

✻ Color Code – ORANGE/BLUE/GRAY for military specification contacts.

PART NUMBER	WIRE SIZE AWG/(mm²)	A	B Ø	C Ø
FC6020D	20 / 22 / 24 (0.5/0.3/0.25)	0.538 (13.67)	0.044 (1.12)	0.066 (1.68)
FC6026D	26 / 28 / 30 (0.12/0.08/0.05)	0.538 (13.67)	0.027 (0.69)	0.066 (1.68)
✻M39029/63-368	20 / 22 / 24 (0.5/0.3/0.25)	0.538 (13.67)	0.044 (1.12)	0.066 (1.68)

MALE CONTACT



Material – Brass.

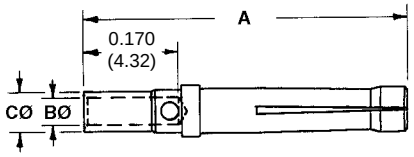
Plating – Gold flash over nickel or 0.000050 inch (1.25μ) gold over copper for military specification contacts.

✻ Color Code – ORANGE/BLUE/WHITE for military specification contacts.

PART NUMBER	WIRE SIZE AWG/(mm²)	A	B Ø	C Ø
MC6020D	20 / 22 / 24 (0.5/0.3/0.25)	0.550 (13.97)	0.044 (1.12)	0.066 (1.68)
MC6026D	26 / 28 / 30 (0.12/0.08/0.05)	0.550 (13.97)	0.027 (0.69)	0.066 (1.68)
✻M39029/64-369	20 / 22 / 24 (0.5/0.3/0.25)	0.550 (13.97)	0.044 (1.12)	0.066 (1.68)

Crimp contacts may be supplied kitted with connector or ordered separately.
See page 28 for crimp tool information.

FEMALE CONTACT ("ROBI-D OPEN ENTRY" DESIGN)

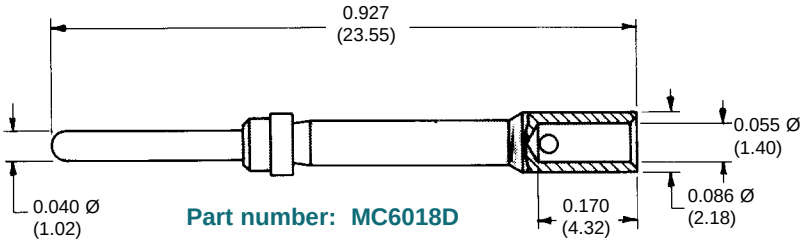


Material – Phosphor bronze.

Plating – Gold flash over nickel.

PART NUMBER	WIRE SIZE AWG/(mm²)	A	B Ø	C Ø
FC6520D	20 / 22 / 24 (0.5/0.3/0.25)	0.538 (13.67)	0.044 (1.12)	0.066 (1.68)

MALE CONTACT
18 AWG (1.0mm²) max.

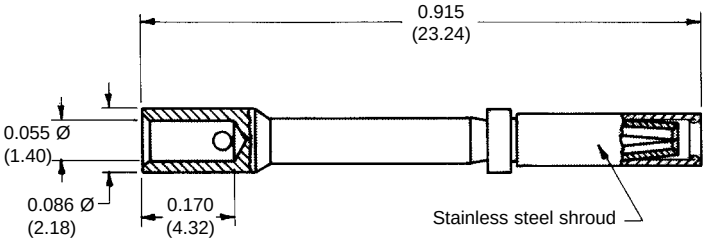


Part number: MC6018D

Material – Brass.

Plating – Gold flash over nickel.

FEMALE CONTACT ("CLOSED ENTRY" DESIGN)
18 AWG (1.0mm²) max.



Part number: FC6018D

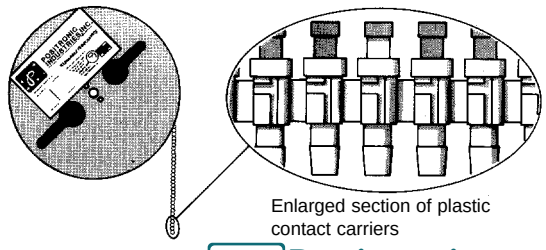
Material – Phosphor bronze.

Plating – Gold flash over nickel.

REELS FOR AUTOMATIC FEED PNEUMATIC CRIMP TOOLS

Contacts may be supplied in plastic carriers, packaged in reels holding 2,000 contacts for use with the automatic feed pneumatic crimp tools, catalog part number 9550-1. The same type carrier is used for both male and female contacts.

All male and female crimp contacts can be ordered in reels by adding letter "R" after the contact part number, such as MC6020DR for a male contact and FC6026DR for a female contact.



Enlarged section of plastic contact carriers

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
	CBC	7W2	M	12	0	Z	0	Z	0

STEP 1 - Basic Series
CBC Series.

STEP 2 - CBC Connector Variants
Shell Size 1
5W1

Shell Size 2
7W2, 11W1

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

Shell Size 4
21WA4, 25W3, 27W2***

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

STEP 3 - Connector Gender
M – Male
F – Female

STEP 4 - Type of Contacts
0 – Connector ordered without contacts. Order Signal, Power, Shielded and High Voltage contacts separately. See pages 16, 18, 20 and 24 for contact part numbers. Kitted contacts supplied in sealed bags.
1 – Signal contacts, 20 AWG-24 AWG (0.5mm²-0.25mm²).
11 – Signal contacts, 20 AWG-24 AWG (0.5mm²-0.25mm²) with MC/FC 4012D 20A Power Contact.
12 – Signal contacts, 20 AWG-24 AWG (0.5mm²-0.25mm²) with MC/FC 4016D 10A power contact.
13 – Signal contacts, 20 AWG-24 AWG (0.5mm²-0.25mm²) with MCC/FCC 4101D shielded contacts.
14 – Signal contacts, 20 AWG-24 AWG (0.5mm²-0.25mm²) with MCC/FCC 4102D shielded contacts.

*STEP 5 - Mounting Style
0 – Mounting Hole, 0.120 (3.05) Ø
F – Float Mounts, Universal
S2 – Swaged Spacer, 4-40 Threads, 0.125 (3.18) Length
S5 – Swaged Locknut, 4-40 Threads

*STEP 6 - Hoods
0 – None
H – Hood, Top Opening, Metal, shell sizes 2 through 5
G – Hood, EMI/RFI, Metal, shell sizes 1 through 5
**Z – Hood, Top or Side Opening, robust extended height, plastic and composite, with rotating jackscrews, shell sizes 1 through 6

*STEP 7 - Locking and Polarizing Systems
0 – None
T – Fixed Female Jackscrews
T2 – Fixed Female Jackscrews
T6 – Fixed Male and Female Polarized Jackscrews
E – Rotating Male Jackscrews
E2 – Rotating Male Screw Locks
E6 – Rotating Male and Female Polarized Jackscrews

STEP 8 - Shell Options
0 – Zinc plated with Dichromate Seal
S – Stainless Steel
X – Tin Plated
Z – Tin Plated and Dimpled

*STEP 9 - Special Options
Consult Sales Department
759.0 – Blind Mate Pilot
759.1 – Blind Mate Panel

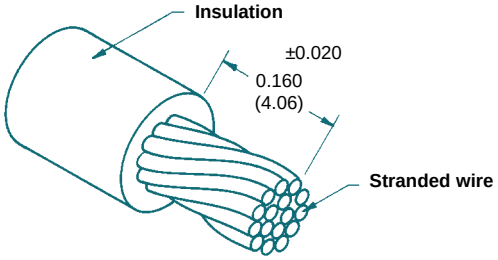
*For additional information on accessories listed in steps 5, 6, 7 & 9, see Accessory Catalog.

**Z Hood recommended for use with CBC series for shell sizes 1 through 6.

*** Connector variant 27W2 is currently available in female only.

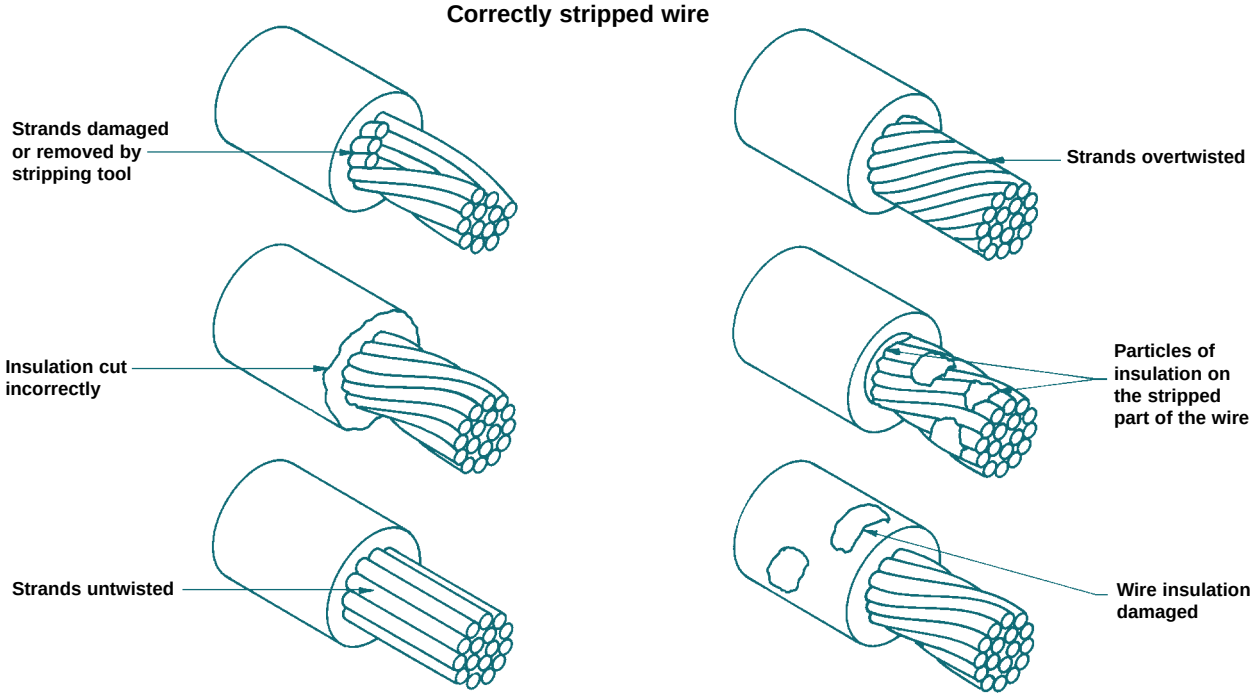
CRIMP REMOVABLE CONTACT CONNECTOR
CRIMPING INFORMATION FOR CBC SERIES CRIMP SIGNAL CONTACTS

Step 1: Strip wire to indicated length



Take care not to: -Damage or remove strands
-Untwist or overtwist strands
-Leave insulation particles on strands
-Damage insulation

Correctly stripped wire



Examples of stripping faults

Step 2: Crimp wire to contact

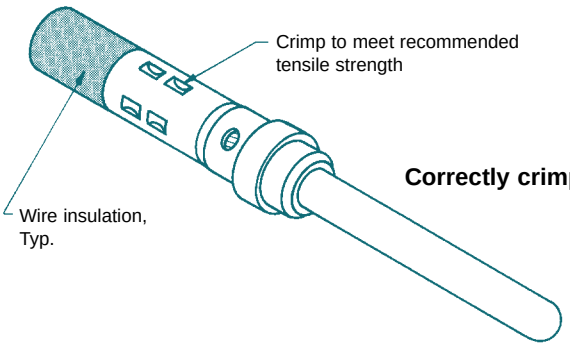
For hand crimp tool: -Place contact into crimping tool
-Insert wire into contact
-Center contact by slowly closing crimping tool until crimp indenters make contact with crimp barrel
-Complete the cycle of the crimping tool in one smooth motion
-Remove crimped contact

For automatic feed pneumatic crimp tool: -Insert wire into the contact, positioned in the crimp tool by the plastic carrier
-Depress the activating devise of the crimping tool to start crimping cycle
-Remove crimped contact

CRIMP REMOVABLE CONTACT CONNECTOR
CRIMPING INFORMATION FOR CBC SERIES CRIMP SIGNAL CONTACTS

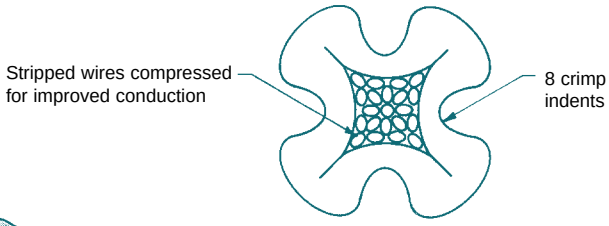
Step 3: Inspect crimp

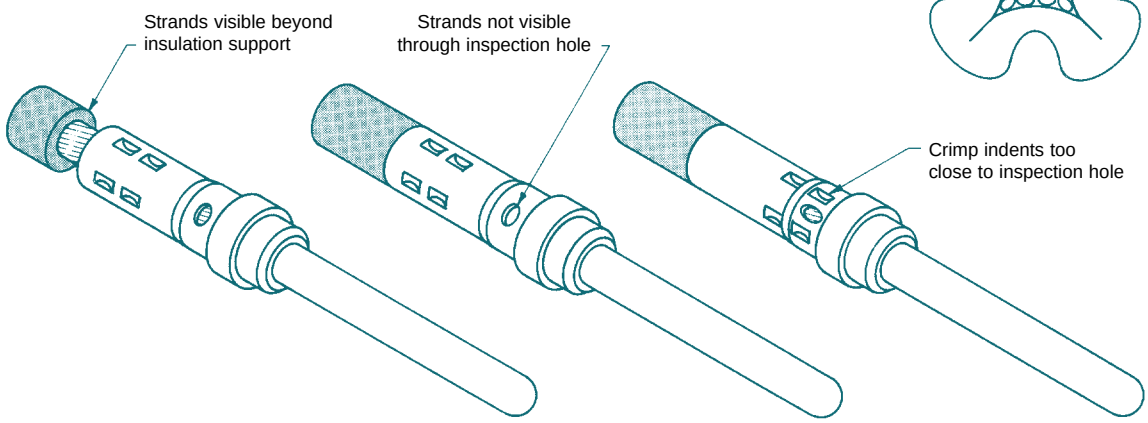
For all tools: –Strands to be visible through the inspection hole
–Strands not to be visible beyond the insulation support
–Crimped contact to meet recommended conductor tensile force shown in chart
–Check for peeled gold and bent contact



Correctly crimped contact

Cross section of correctly crimped contact





Stripped part of the wire too long | **Stripped part of the wire too short** | **Crimp indents incorrectly located**

Examples of crimping faults

Positronic recommended conductor tensile strength

WIRE SIZE	AXIAL LOAD
18AWG (1.0mm²)	28 lbs. (125 N)
20AWG (0.5mm²)	20 lbs. (89 N)
22AWG (0.3mm²)	12 lbs. (53 N)
24AWG (0.25mm²)	8 lbs. (36 N)
26AWG (0.12mm²)	5 lbs. (22 N)
28AWG (0.08mm²)	3 lbs. (13 N)
30AWG (0.05mm²)	1.5 lbs. (6.7 N)

Positronic recommended tools for signal contacts.
For more information see crimp tools and accessories page.

CRIMP TOOLS	POSITIONERS FOR FC6018D, MC6018D	POSITIONERS FOR FC6020D, FC6026D, MC6020D, MC6026D, M39029/63-368, M39029/64-369
9507, HAND CRIMP TOOL	9502-11	9502-5
9550-1, AUTOMATIC FEED PNEUMATIC STRIP AND CRIMP TOOL		Supplied in reels

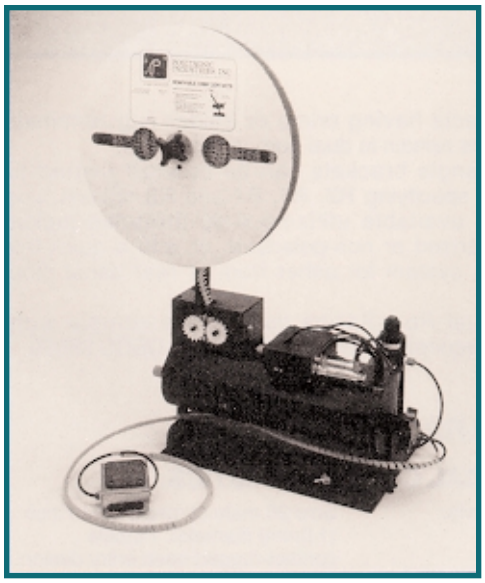
Conductor tensile strength values are derived using silver-tin plated copper wires.
Values may change depending upon what type of wire is used.

AUTOMATIC FEED, STRIP AND CRIMP TOOLS, PNEUMATICALLY ACTUATED

Part No. 9550-1

This fast cycling automatic feed strip and crimp tool produces an 8 indent crimp on wire sizes 18 AWG (1.0mm²) through 32 AWG (0.03mm²). CBC Series contacts must be ordered on reels.

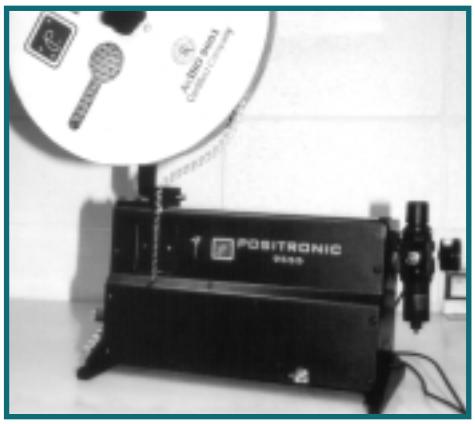
To order, specify part number 9550-1. Foot control valve is supplied as a standard accessory.



Part No. 9555-10

This fast cycling automatic feed strip and crimp tool produces an 8 indent crimp on wire sizes 8 AWG (10.0mm²) through 12 AWG (4.0mm²). Contacts must be ordered on reels.

To order, specify part number 9555-10. Foot control valve is supplied as a standard accessory.

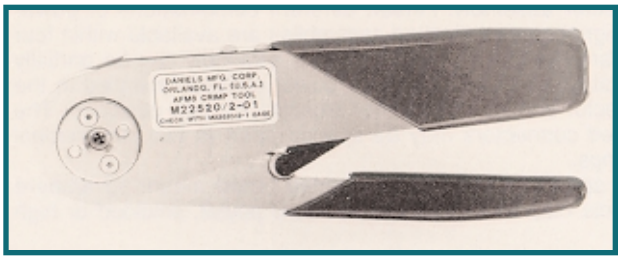


MINIATURE STEP ADJUSTABLE TOOL (M22520/2-01)

Part No. 9507

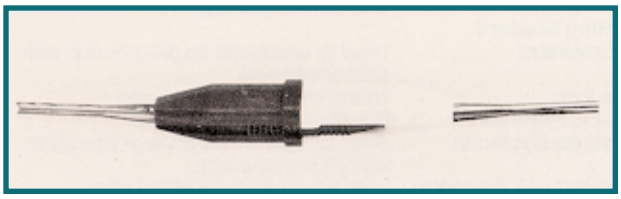
This miniature 8 step adjustable hand crimping tool produces an 8 indent crimp configuration and will crimp wire sizes 18 AWG (1.0mm²) through 32 AWG (0.03mm²).

To crimp wire size 18 AWG (1.0mm²), order contact positioner 9502-11. To crimp wire size 20 AWG (0.5mm²) through 30 AWG (0.05mm²) order contact positioner 9502-5. Each positioner is equipped with a data plate which gives the correct crimp-depth setting for each wire size, and must be used with 9507 tool frame for best results when crimping CBC Series contacts.



INSERTION/REMOVAL TOOL (M81969/1-02)

One end of this tool is used to insert contacts into CBC Series connectors. The other end is used to extract contacts. This is accomplished by sliding the extraction tip down the wire into the connector until it bottoms against the contact. A slight rotation while pushing will release the contacts, which are then extracted by simultaneously pulling on the wire.



Combo Dual Port Series

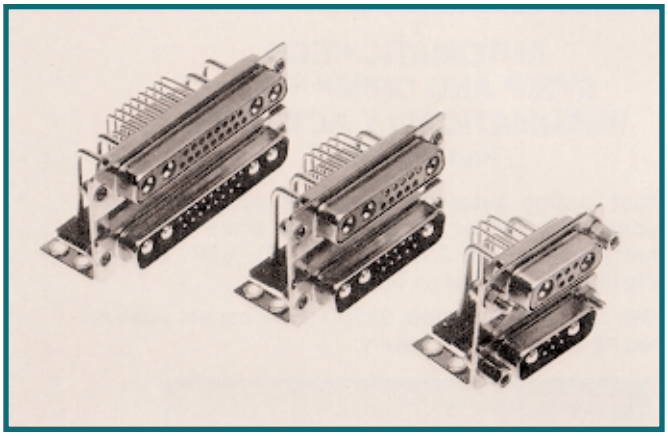
PROFESSIONAL QUALITY PRINTED BOARD MOUNT COMBINATION POWER AND SIGNAL CONTACT DUAL PORT VERTICALLY STACKED CONNECTOR ASSEMBLY FOR SHELTERED INDOOR/OUTDOOR ENVIRONMENTAL APPLICATIONS

Power and Signal Contacts

U.L. Recognized
File #E49351

CSA Recognized
File #LR54219

Telecommunication
U.L. File #14095



The Combo-Dual Port connector series offers several combinations of power and signal contacts within the same connector assembly. Fifteen different combinations of power and signal contact stacked assemblies are available within four standard shell sizes. The connector assembly can be partially populated with either signal or power contacts installed in the connector bodies to customer selected contact positions. The stacked connectors may be spaced apart to two dimensional spacings.

On special order, the 90° printed board mount 15 ampere contacts may be replaced with size 8 power, shielded or high voltage contacts having crimp or solder cup terminations. Signal contacts remain in dual port configuration.

Mounting angle brackets can be ordered riveted to the connector by specifying R2, R6, R7 and R8 options. Locking systems are available utilizing 4-40 threaded jackscrew systems, polarized or non-polarized, or with a quick-release vibration lock system for either front or rear panel mounted connectors.

Combo-Dual Port Series connectors comply with the dimensional requirements of IEC 807-2 and DESC 85039.

COMBO-DUAL PORT TECHNICAL CHARACTERISTICS

MATERIALS AND FINISHES:

Insulator:	Polyester, glass filled per MIL-M-24519, UL 94V-0, blue color.
Signal Contacts:	Male contacts–precision machined copper alloy. Female contacts–precision machined high tensile phosphor bronze.
Plating:	Gold flash over nickel plate.
Power Contacts:	Male contacts-precision machined copper alloy. Female contacts-precision machined high tensile copper alloy.
Plating:	Gold flash over nickel.
Shells:	Steel or brass with tin plate or zinc plate with dichromate seal.
Mounting Spacers and Brackets:	Steel or brass with tin plate or zinc with dichromate seal.
Cross Bar:	Nylon, UL 94V-0, black color.
Push-On Fasteners:	Beryllium copper, tin plated.
Jackscrew Systems:	Steel with clear zinc plate or zinc plate with dichromate seal.
Vibration Lock Systems:	Lock tabs, steel with nickel plate.

ELECTRICAL CHARACTERISTICS:

Signal Contacts:	7.5 amperes nominal.
Initial Contact Resistance:	0.008 ohms maximum.
Power Contacts:	15 ampere nominal for 90° board mount. 10, 20 and 40 ampere nominal are removable contacts with solder or crimp terminations.
Initial Contact Resistance:	0.005 ohms maximum.
Proof Voltage:	1000 V r.m.s.
Insulator Resistance:	5 G ohms.
Clearance and Creepage Distance (minimum):	0.039 inch (1.0mm)
Working Voltage:	300 V r.m.s.

MECHANICAL CHARACTERISTICS:

Signal Contacts:	Size 20 male contacts–0.040 inch (1.0mm) diameter. Female contact-rugged open entry design.
Contact Retention In Insulator:	9 lbs. (40N)
Contact Terminations:	Printed board mount with 90° terminations supported by alignment bar. Termination diameter 0.028 inch (0.71mm).
Power Contacts:	Size 8 male contact-0.142 inch (3.61mm) diameter. Female contact-open entry and closed entry options.
Contact Retention In Insulator:	22 lbs. (92N)
Contact Terminations:	Printed board mount with 90° terminations of 0.078 inch (1.98mm) diameter. Size 8 removable solder cup contacts with wire hole diameters of 0.188 inch (4.78mm), 0.112 inch (2.84mm) and 0.069 inch (1.75mm).
Shells:	Male connector shells may be dimpled for EMI/ESD ground paths.
Polarization:	Trapezoidally shaped shells and polarized jackscrews.
Mounting Bracket Riveted to Connector:	Riveted fasteners with 0.120 inch (3.05mm) diameter clearance hole, with 4-40 threads or 4-40 threads with nylon lock insert.
Mounting To Printed Board:	Rapid installation push-on fasteners.
Locking Systems:	Jackscrews and vibration locking system for either front or rear panel mounted connectors.
Mechanical Operations:	500 operations minimum per IEC 512-5.

CLIMATIC CHARACTERISTICS:

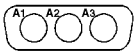
Temperature Range:	-55°C to +125°C.
Damp Heat, Steady State:	10 days.

CONTACT VARIANTS

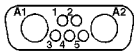
FACE VIEW OF MALE OR REAR VIEW OF FEMALE

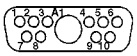
SHELL SIZE 1


5W1

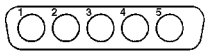

3W3

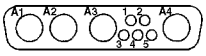
SHELL SIZE 2

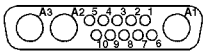

7W2

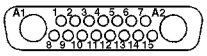

11W1

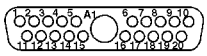
SHELL SIZE 3


5W5

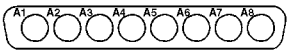

9W4

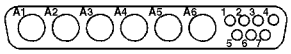

13W3

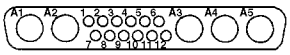

17W2


21W1

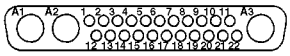
SHELL SIZE 4

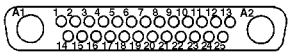

8W8


13W6


17W5


21WA4


25W3

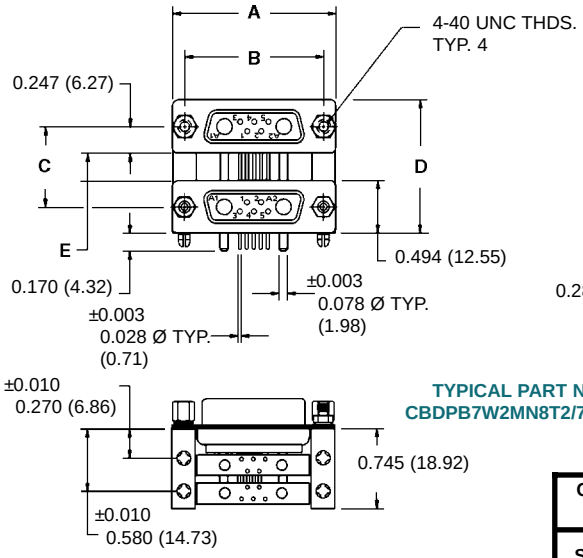

27W2

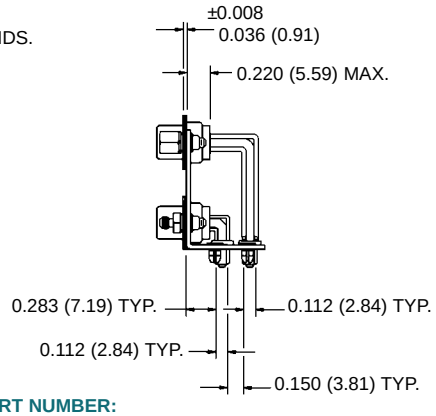
90° PRINTED BOARD MOUNT CONNECTOR

4 ROW CONNECTOR UNIT, 0.283 (7.19) CONTACT EXTENSION

15 AMPERE MAXIMUM RATED POWER CONTACTS

Note: 30 ampere 0.125 (3.18) Ø power contacts may be ordered at special request for a limited number of CBDP variants. Contact factory for details.





TYPICAL PART NUMBER:
CBDPB7W2MN8T2/7W2MN8T6X

CONNECTOR DESIGNATION	C	D	E
CBDPB	0.750 (19.05)	1.244 (31.60)	0.256 (6.50)
CBDPC	0.900 (22.86)	1.394 (35.41)	0.406 (10.31)

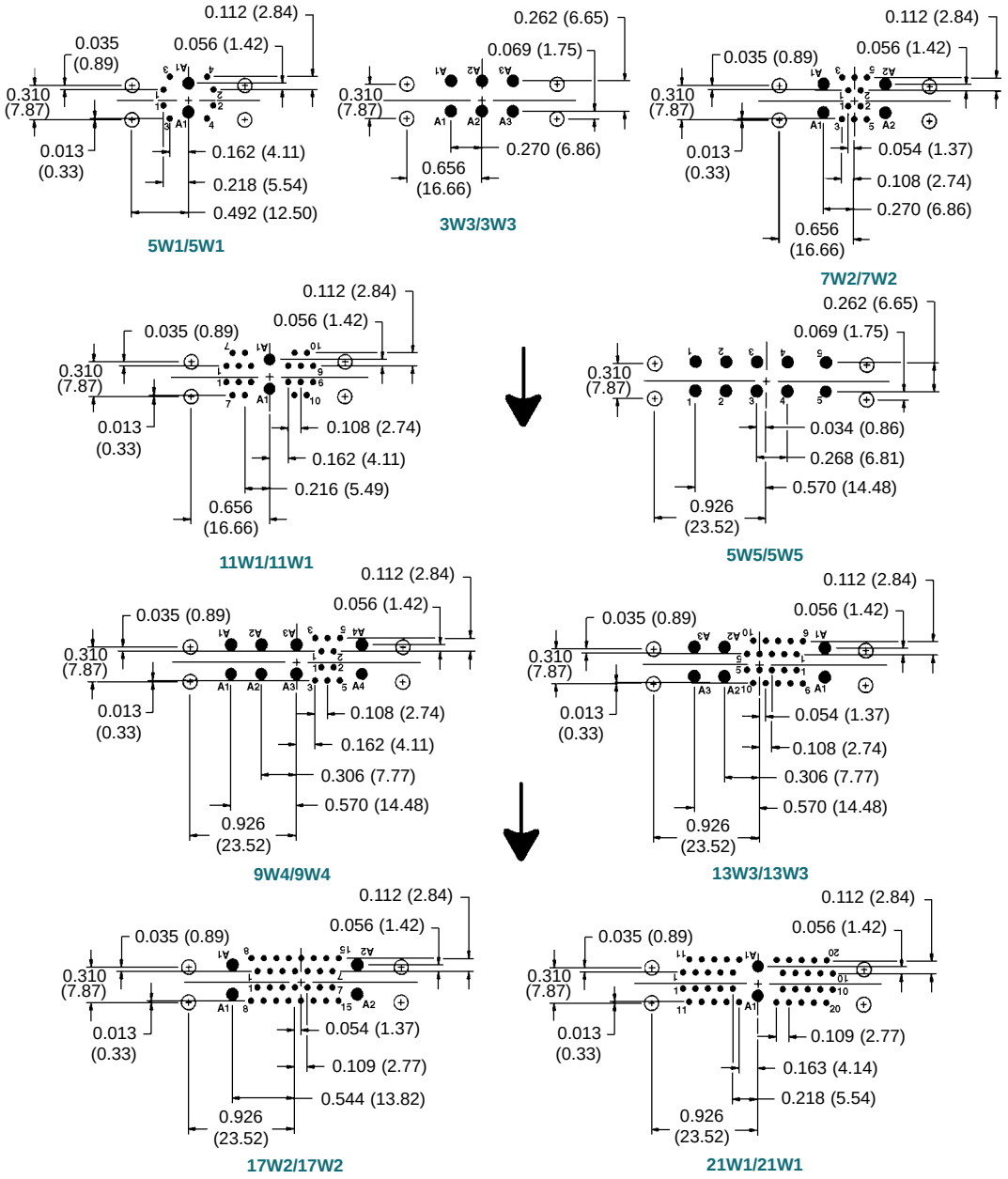
CONNECTOR VARIANT	A	B
SHELL SIZE 1	1.213 (30.81)	0.984 (24.99)
SHELL SIZE 2	1.541 (39.14)	1.312 (33.32)
SHELL SIZE 3	2.088 (53.04)	1.852 (47.04)
SHELL SIZE 4	2.729 (69.32)	2.500 (63.50)

Note: Printed board power contacts (size 8) may be replaced with a size 8 removable power, shielded or high voltage contact having solder or crimp terminations.

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

90° PRINTED BOARD CONTACT HOLE PATTERN

Hole identification shown is for female connector over male connector.
Mount connector with mating face positioned to follow direction of arrow.



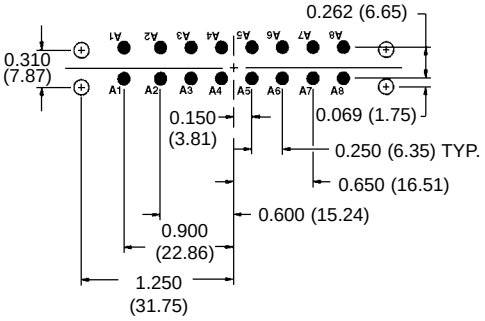
Suggest 0.045 (1.14) Ø hole for signal contact termination positions.
Suggest 0.098 (2.49) Ø hole for 0.078 (1.98) Ø power contact termination positions.
Suggest 0.123 ±0.003 (3.12) Ø hole for mounting connector with push-on fasteners.

Mounting holes must move 0.020 (0.51) ±0.010 opposite direction of arrow for use of unriveted mounting bracket with connectors.

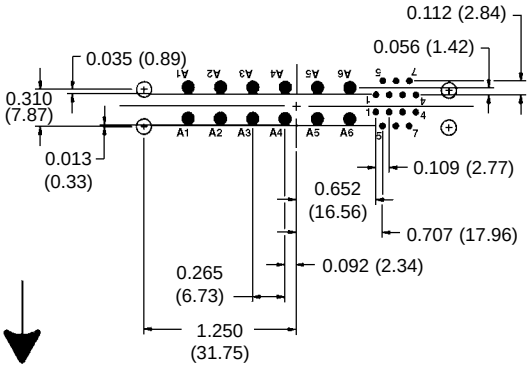
DIMENSIONS ARE IN INCHES (MILLIMETERS)
ALL DIMENSIONS SUBJECT TO CHANGE

90° PRINTED BOARD CONTACT HOLE PATTERN

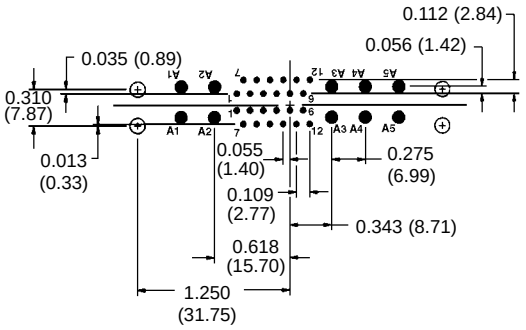
Hole identification shown is for female connector over male connector.
Mount connector with mating face positioned to follow direction of arrow.



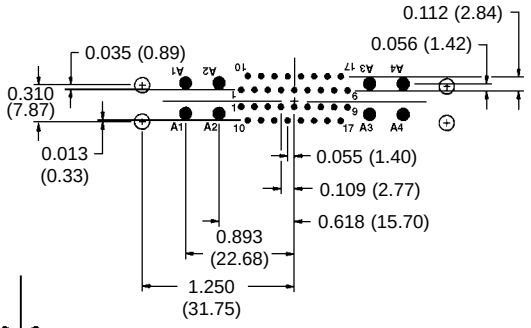
8W8/8W8



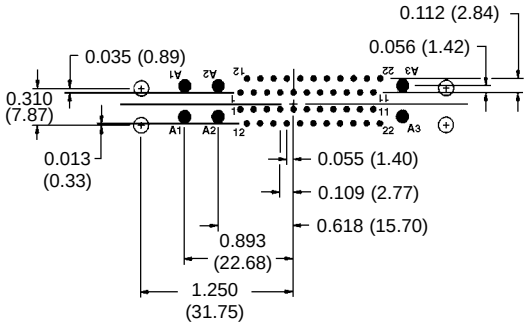
13W6/13W6



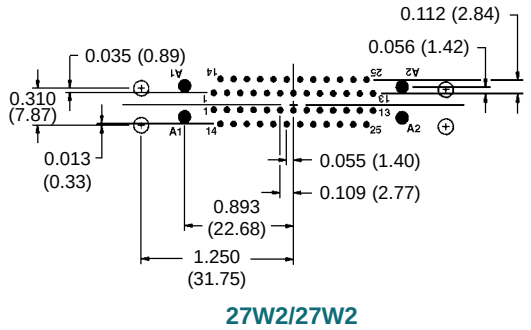
17W5/17W5



21WA4/21WA4



25W3/25W3



27W2/27W2

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 0.123 ±0.003 (3.12) Ø hole for mounting connector with push-on fasteners.

Mounting holes must move 0.020 (0.51) ±0.010 opposite direction of arrow for use of unriveted mounting bracket with connectors.

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
Upper Connector	CBDPB	7W2	F	R7T		7W2	M	R7T	0		

Lower Connector

Options are the same as for Upper Connector Steps 2, 3, and 4

STEP 1 - Basic Series
CBDPB Series
CBDPC Series

STEP 2 - CBDP 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

STEP 3 - Connector Gender
M – Male
F – Female

STEP 4 - Locking, Polarizing, Mounting and Push-on Fastener Systems
0 – None
R2 – Bracket, Mounting, 90° Metal, Swaged to Connector with 4-40 Thread, Fixed Female Jackscrews and 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
N2 – Bracket, Mounting, 90° Metal, Swaged to Connector with 4-40 Thread, Fixed Female Jackscrews with Cross Bar and Push-On Fastener
N6 – Bracket, Mounting, 90° Metal, Swaged to Connector with 4-40 Threads with Cross Bar and Push-on Fastener
N7 – Bracket, Mounting, 90° Metal, Swaged to Connector with 4-40 Threads with Cross Bar and Push-on Fastener
N8 – Bracket, Mounting, 90° Metal, Swaged to Connector with 4-40 Locknut with Cross Bar and Push-on Fastener
T – Fixed Female Jackscrews
T2 – Fixed Female Jackscrews
T6 – Fixed Male and Female Polarized Jackscrews

STEP 8 - Shell Options
0 – Zinc Plate with Dichromate Seal
X – Tin Plated
Z – Tin Plated and Dimpled

STEP 9 - Special Options
Consult Sales Department

Note: Size 8 removable power contacts with solder or crimp terminations with power ratings of 10, 20 and 40 amperes may be ordered in lieu of the 90° board mounted power contact. Removable size 8 shielded and high voltage contacts may also be ordered separately in lieu of the power contact. See pages 16 through 20 for contact part numbers.

DESC CROSS REFERENCE

DESC P/N	POSITRONIC P/N
85040DAEPT	CBC7W2M1F000-50-799.2
85040DAEST	CBC7W2F1F000-50-799.2
85040DAEPR	CBC7W2M10000-50-799.0
85040DAESR	CBC7W2F10000-50-799.0
85040GAEPT	CBC7W2M1F00C-50
85040GAEST	CBC7W2F1F00C-50
85040GAEPR	CBC7W2M1000C-50
85040GAESR	CBC7W2F1000C-50
85040GBEPT	CBM7W2M2F00C-50
85040GBEST	CBM7W2F2F00C-50
85040GBEPR	CBM7W2M2000C-50
85040GBESR	CBM7W2F2000C-50
85040NAEPT	CBC7W2M1F000-50-403.0
85040NAEST	CBC7W2F1F000-50-403.0
85040NAEPR	CBC7W2M10000-50-403.0
85040NAESR	CBC7W2F10000-50-403.0
85040MAEPT	CBC7W2M1F000-50-403.4
85040MAEST	CBC7W2F1F000-50-403.4
85040MAEPR	CBC7W2M10000-50-403.3
85040MAESR	CBC7W2F10000-50-403.3
85041DAEPT	CBC11W1M1F000-50-799.2
85041DAEST	CBC11W1F1F000-50-799.2
85041DAEPR	CBC11W1M10000-50-799.0
85041DAESR	CBC11W1F10000-50-799.0
85041GAEPT	CBC11W1M1F00C-50
85041GAEST	CBC11W1F1F00C-50
85041GAEPR	CBC11W1M1000C-50
85041GAESR	CBC11W1F1000C-50
85041GBEPT	CBM11W1M2F00C-50
85041GBEST	CBM11W1F2F00C-50
85041GBEPR	CBM11W1M2000C-50
85041GBESR	CBM11W1F2000C-50
85041NAEPT	CBC11W1M1F000-50-403.0
85041NAEST	CBC11W1F1F000-50-403.0
85041NAEPR	CBC11W1M10000-50-403.0
85041NAESR	CBC11W1F10000-50-403.0
85041MAEPT	CBC11W1M1F000-50-403.4
85041MAEST	CBC11W1F1F000-50-403.4
85041MAEPR	CBC11W1M10000-50-403.3
85041MAESR	CBC11W1F10000-50-403.3
85043GULPT	CBM5W5M0F00C
85043GULST	CBM5W5F0F00C
85043GULPR	CBM5W5M0000C
85043GULSR	CBM5W5F0000C
85044DAEPT	CBC17W2M1F000-50-799.2
85044DAEST	CBC17W2F1F000-50-799.2
85044DAEPR	CBC17W2M10000-50-799.0
85044DAESR	CBC17W2F10000-50-799.0
85044GAEPT	CBC17W2M1F00C-50
85044GAEST	CBC17W2F1F00C-50
85044GAEPR	CBC17W2M1000C-50
85044GAESR	CBC17W2F1000C-50
85044GBEPT	CBM17W2M2F00C-50
85044GBEST	CBM17W2F2F00C-50
85044GBEPR	CBM17W2M2000C-50
85044GBESR	CBM17W2F2000C-50

DESC P/N	POSITRONIC P/N
85044NAEPT	CBC17W2M1F000-50-403.0
85044NAEST	CBC17W2F1F000-50-403.0
85044NAEPR	CBC17W2M10000-50-403.0
85044NAESR	CBC17W2F10000-50-403.0
85044MAEPT	CBC17W2M1F000-50-403.4
85044MAEST	CBC17W2F1F000-50-403.4
85044MAEPR	CBC17W2M10000-50-403.3
85044MAESR	CBC17W2F10000-50-403.3
85045DAEPT	CBC13W3M1F000-50-799.2
85045DAEST	CBC13W3F1F000-50-799.2
85045DAEPR	CBC13W3M10000-50-799.0
85045DAESR	CBC13W3F10000-50-799.0
85045GAEPT	CBC13W3M1F00C-50
85045GAEST	CBC13W3F1F00C-50
85045GAEPR	CBC13W3M1000C-50
85045GAESR	CBC13W3F1000C-50
85045GBEPT	CBM13W3M2F00C-50
85045GBEST	CBM13W3F2F00C-50
85045GBEPR	CBM13W3M2000C-50
85045GBESR	CBM13W3F2000C-50
85045NAEPT	CBC13W3M1F000-50-403.0
85045NAEST	CBC13W3F1F000-50-403.0
85045NAEPR	CBC13W3M10000-50-403.0
85045NAESR	CBC13W3F10000-50-403.0
85045MAEPT	CBC13W3M1F000-50-403.4
85045MAEST	CBC13W3F1F000-50-403.4
85045MAEPR	CBC13W3M10000-50-403.3
85045MAESR	CBC13W3F10000-50-403.3
85047GULPT	CBM8W8M0F00C
85047GULST	CBM8W8F0F00C
85047GULPR	CBM8W8M0000C
85047GULSR	CBM8W8F0000C
85048GBEPT	CBM21WA4M2F00C-50
85048GBEST	CBM21WA4F2F00C-50
85048GBEPR	CBM21WA4M2000C-50
85048GBESR	CBM21WA4F2000C-50
85049	NOT OFFERED
85050	NOT OFFERED
85051	NOT OFFERED
85052	NOT OFFERED
85053	NOT OFFERED
85054GBEPT	CBM24W7M2F00C-50
85054GBEST	CBM24W7F2F00C-50
85054GBEPR	CBM24W7M2000C-50
85054GBESR	CBM24W7F2000C-50
89046-001	MS4016D-50
89047-001	FS4016D-50
89048-001	NOT OFFERED
89049-001	NOT OFFERED
89050-001	MS4008D-50

Removable contacts were tested for shock and vibration using connectors as the holding fixture. Tests were performed to the connector specifications.

DESC CROSS REFERENCE

DESC P/N	POSITRONIC P/N
89051-001	FS4008D-50
89052-001	NOT OFFERED
89053-001	NOT OFFERED
89054-001	MS4820-50
89055-001	FS4820-50
89056-001	FS4920-50
89057-001	MS4920-50
89058-A	MC4101M
89058-B	MC4102M
89058-C	MC4103M
89058-D	MC4104M
89059-A	FC4101M
89059-B	FC4102M
89059-C	FC4103M
89059-D	FC4104M
89060-A	MC4201M
89060-B	MC4202M
89060-C	MC4203M
89060-D	MC4204M
89061-A	FC4201M
89061-B	FC4202M
89061-C	FC4203M
89061-D	FC4204M
89074DAEPT	CBC5W1M1F000-50-799.2
89074DAEST	CBC5W1F1F000-50-799.2
89074DAEPR	CBC5W1M10000-50-799.0
89074DAESR	CBC5W1F10000-50-799.0
89074GAEPT	CBC5W1M1F00C-50
89074GAEST	CBC5W1F1F00C-50
89074GAEPR	CBC5W1M1000C-50
89074GAESR	CBC5W1F1000C-50
89074GBEPT	CBM5W1M2F00C-50
89074GBEST	CBM5W1F2F00C-50
89074GBEPR	CBM5W1M2000C-50
89074GBESR	CBM5W1F2000C-50
89074NAEPT	CBC5W1M1F000-50-403.0
89074NAEST	CBC5W1F1F000-50-403.0
89074NAEPR	CBC5W1M10000-50-403.0
89074NAESR	CBC5W1F10000-50-403.0
89074MAEPT	CBC5W1M1F000-50-403.4
89074MAEST	CBC5W1F1F000-50-403.4
89074MAEPR	CBC5W1M10000-50-403.3
89074MAESR	CBC5W1F10000-50-403.3
89075GULPT	CBM3W3M0F00C
89075GULST	CBM3W3F0F00C
89075GULPR	CBM3W3M0000C
89075GULSR	CBM3W3F0000C
89076GBEPT	CBM9W4M2F00C-50
89076GBEST	CBM9W4F2F00C-50
89076GBEPR	CBM9W4M2000C-50
89076GBESR	CBM9W4F2000C-50
89077GBEPT	CBM21W1M2F00C-50
89077GBEST	CBM21W1F2F00C-50
89077GBEPR	CBM21W1M2000C-50
89077GBESR	CBM21W1F2000C-50

DESC P/N	POSITRONIC P/N
89078GBEPT	CBM13W6M2F00C-50
89078GBEST	CBM13W6F2F00C-50
89078GBEPR	CBM13W6M2000C-50
89078GBESR	CBM13W6F2000C-50
89079GBEPT	CBM17W5M2F00C-50
89079GBEST	CBM17W5F2F00C-50
89079GBEPR	CBM17W5M2000C-50
89079GBESR	CBM17W5F2000C-50
89080DAEPT	CBC25W3M1F000-50-799.2
89080DAEST	CBC25W3F1F000-50-799.2
89080DAEPR	CBC25W3M10000-50-799.0
89080DAESR	CBC25W3F10000-50-799.0
89080GAEPT	CBC25W3M1F00C-50
89080GAEST	CBC25W3F1F00C-50
89080GAEPR	CBC25W3M1000C-50
89080GAESR	CBC25W3F1000C-50
89080GBEPT	CBM25W3M2F00C-50
89080GBEST	CBM25W3F2F00C-50
89080GBEPR	CBM25W3M2000C-50
89080GBESR	CBM25W3F2000C-50
89080NAEPT	CBC25W3M1F000-50-403.0
89080NAEST	CBC25W3F1F000-50-403.0
89080NAEPR	CBC25W3M10000-50-403.0
89080NAESR	CBC25W3F10000-50-403.0
89080MAEPT	CBC25W3M1F000-50-403.4
89080MAEST	CBC25W3F1F000-50-403.4
89080MAEPR	CBC25W3M10000-50-403.3
89080MAESR	CBC25W3F10000-50-403.3
89081GBEPT	CBM27W2M2F00C-50
89081GBEST	CBM27W2F2F00C-50
89081GBEPR	CBM27W2M2000C-50
89081GBESR	CBM27W2F2000C-50
89082GBEPT	CBM36W4M2F00C-50
89082GBEST	CBM36W4F2F00C-50
89082GBEPR	CBM36W4M2000C-50
89082GBESR	CBM36W4F2000C-50
89083DAEPT	CBC43W2M1F000-50-799.2
89083DAEST	CBC43W2F1F000-50-799.2
89083DAEPR	CBC43W2M10000-50-799.0
89083DAESR	CBC43W2F10000-50-799.0
89083GAEPT	CBC43W2M1F00C-50
89083GAEST	CBC43W2F1F00C-50
89083GAEPR	CBC43W2M1000C-50
89083GAESR	CBC43W2F1000C-50
89083GBEPT	CBM43W2M2F00C-50
89083GBEST	CBM43W2F2F00C-50
89083GBEPR	CBM43W2M2000C-50
89083GBESR	CBM43W2F2000C-50
89083NAEPT	CBC43W2M1F000-50-403.0
89083NAEST	CBC43W2F1F000-50-403.0
89083NAEPR	CBC43W2M10000-50-403.0
89083NAESR	CBC43W2F10000-50-403.0
89083MAEPT	CBC43W2M1F000-50-403.4
89083MAEST	CBC43W2F1F000-50-403.4
89083MAEPR	CBC43W2M10000-50-403.3
89083MAESR	CBC43W2F10000-50-403.3

Removable contacts were tested for shock and vibration using connectors as the holding fixture. Tests were performed to the connector specifications.

NORTH AMERICAN HEADQUARTERS

UNITED STATES, Springfield, Missouri

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PUERTO RICO, Ponce Factory

Factory Sales and Engineering Offices	(787)841-0920

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Technical Agents in Israel and Turkey

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