



REMOVABLE CONTACT TECHNICAL CHARACTERISTICS

SIZE 22 REMOVABLE CONTACT



MATERIALS AND FINISHES:

Precision machined copper alloy with gold flash over nickel. Other finishes are available, see page 69 for optional finishes.

MECHANICAL CHARACTERISTICS:

Insert contact to rear face of insulator, release from rear face of insulator. Size 22 contacts, 0.030 inch [0.76 mm] mating diameter male contacts. Female PosiBand closed entry contact design. Terminations for 20, 22, 24, 26, 28, and 30 AWG. Closed barrel crimp.

ELECTRICAL CHARACTERISTICS:

Contact Current Rating: 5 amperes nominal.
Initial Contact Resistance: 0.010 ohms maximum.

THERMOCOUPLE CONTACTS:

Straight and right angle (90°) PCB mount contacts are available, contact Technical Sales for details.

Size 22 crimp contacts are available, see page 71 for details.

SIZE 20 REMOVABLE CONTACT

MATERIALS AND FINISHES:

Precision machined copper alloy with gold flash over nickel. Other finishes are available, see page 69 for optional finishes.

MECHANICAL CHARACTERISTICS:

Insert contact to rear face of insulator, release from rear face of insulator. Size 20 contacts, 0.040 inch [1.02 mm] mating diameter male contacts. Female PosiBand closed entry or "Robi-D" open entry contact design.

ELECTRICAL CHARACTERISTICS:

Contact Current Rating: 7.5 amperes nominal.
Initial Contact Resistance: 0.008 ohms max. per IEC 512-2, test 2b.

THERMOCOUPLE CONTACTS:

Straight and right angle (90°) PCB mount contacts are available, contact Technical Sales for details.

Size 20 crimp contacts are available, see page 74 for details.

SIZE 16 REMOVABLE CONTACT



MATERIALS AND FINISHES:

STANDARD: Precision machined copper alloy with gold flash over nickel. Other finishes are available, see page 69 for optional finishes.

HIGH CONDUCTIVITY: High conductivity copper alloy, gold flash over nickel. Other finishes are available, see page 69 for optional finishes.

MECHANICAL CHARACTERISTICS:

STANDARD AND HIGH CONDUCTIVITY: Insert contact to rear face of insulator, release from front face of insulator. Size 16 contacts, 0.062 inch [1.57 mm] mating diam-

eter male contacts. Female PosiBand closed entry contact design. Terminations for 12, 14, 16, 18, 20, 22, 24, 26, and 28 AWG.

ELECTRICAL CHARACTERISTICS:

Contact Current Rating - Tested per U.L. 1977:

Standard Contact Material: 28 amperes.

High Conductivity Contact Material: 40 amperes.

See Temperature Rise Curves on page 2 for details.

Initial Contact Resistance:

Standard Contact Material: 0.0016 ohms max. Per IEC 512-2, Test 2b.

High Conductivity Contact Material: 0.001 ohms max. Per IEC 512-2, Test 2b.

SIZE 8 REMOVABLE CONTACT

MATERIALS AND FINISHES:

STANDARD: Precision machined copper alloy with gold flash over nickel. Other finishes are available, see page 69 for optional finishes.

HIGH CONDUCTIVITY: High conductivity copper alloy, gold flash over nickel. Other finishes are available, see page 69 for optional finishes.

HIGH VOLTAGE:

Insulator Material: PTFE teflon
Contacts: Precision machined copper alloy with 0.000030 inch [0.76µ] gold over nickel. Other finishes are available, see page 69 for optional finishes.

SHIELDED:

Dielectric Material: PTFE teflon
Inner Contacts: Precision machined copper alloy with 0.000030 inch [0.76µ] gold over nickel. Other finishes are available, see page 69 for optional finishes.

Outer Contacts: Precision machined copper alloy with gold flash over nickel. Other finishes are available, see page 69 for optional finishes.

AIR LINE COUPLER:

Stainless steel, see page 80.

MECHANICAL CHARACTERISTICS:

STANDARD AND

HIGH CONDUCTIVITY: Insert contact to rear face of insulator, release from front face of insulator. Size 8 contacts, 0.142 inch [3.61 mm] mating diameter male contacts, closed entry female contacts.

HIGH VOLTAGE:

Insert contact to rear face of insulator, release from front face of insulator. Size 8 contacts. Straight and right angle (90°) terminations. 0.041 inch [1.04 mm] minimum hole diameter.

Durability: 500 cycles minimum.

Vibration: 20g from 10 Hz to 500 Hz.

Shock: 30g-11ms.

... continued on next page

For information regarding crimp tool and crimping tool techniques, see Application Tools section, pages 81-89.



Positronic Industries
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REMOVABLE CONTACTS

Combo-D
D-Sub

REMOVABLE CONTACT TECHNICAL CHARACTERISTICS

continued from previous page . . .

MECHANICAL CHARACTERISTICS, continued:

SHIELDED: Insert contact to rear face of insulator, release from front face of insulator. Size 8 contacts. See page 78 table of cable sizes for contact termination dimensions.

Durability: 500 cycles minimum.
Vibration: 20g from 10 Hz to 500 Hz.
Shock: 30g-11ms.

AIR LINE COUPLER: Insert contact to rear face of insulator, release from front face of insulator.

ELECTRICAL CHARACTERISTICS:

POWER CONTACTS:

For electrical characteristics, see page 4.

HIGH VOLTAGE:

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

SHIELDED:

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.

OPTIONAL PLATING FINISHES



-14 0.000030 [0.76 μ] gold over nickel by adding "-14" suffix onto part number. *Example: FC120N4-14.*

-15 0.000050 inch [1.27μ] gold over nickel by adding "-15". *Example: FC120N4-15.*

RoHS OPTIONS:



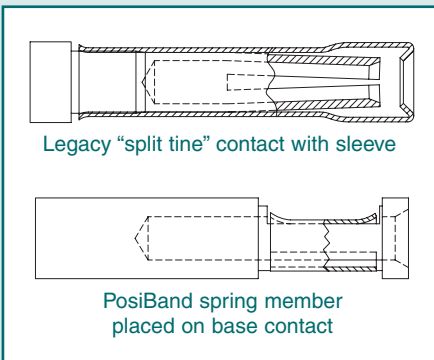
/AA Environmental Compliance Option (RoHS), compliant per EU Directive 2002/95/EC can be achieved by adding "/AA" suffix onto part number. *Examples: FC120N4/AA or for optional finishes use FC120N4/AA-14.*

What makes Positronic's PosiBand® contact interface significant?



Authentic POSITRONIC®
PosiBand®

These contacts utilize authentic Positronic™ PosiBand® technology.



- ✓ Higher reliability in harsh environments and repeated mating cycles.
- ✓ PosiBand crimp contacts do not need to be annealed. Split tine D-subminiature contacts are commonly annealed at the crimp barrel, with the possibility of reliability problems at the contact interface if the annealing is performed incorrectly.
- ✓ Electrical and mechanical function of the contact interface are separated since the PosiBand contact is a two-piece design. Contact normal force is provided by the "Posiband spring member", which allows higher mechanical reliability. The electrical continuity path is supported through the base contact, which allows a greater number of electrical paths on a "micro" level when compared to split tine contact design.
- ✓ Higher reliability at prices comparable to the "split tine" design.

For a detailed white paper visit: www.connectpositronic.com/content/37/

For information regarding crimp tool and crimping tool techniques, see Application Tools section, pages 81-89.



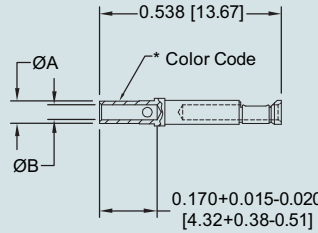
REMOVABLE THERMOCOUPLE CRIMP SIGNAL CONTACT

FOR USE WITH CBC SERIES CONNECTORS

SIZE 20

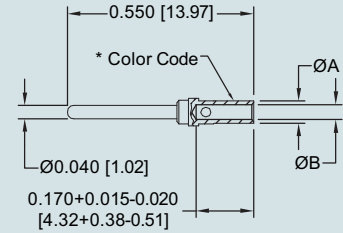
FEMALE CONTACT

“CLOSED ENTRY” DESIGN



Note: Connectors can be kitted with all applicable crimp contacts, contact Technical Sales for connector part number.

MALE CONTACT



TYPE	MATERIAL	FEMALE PART NUMBER	MALE PART NUMBER	COLOR CODE	WIRE SIZE AWG [mm ²]	ØA	ØB
K	CHROMEL (+)	FC6020D2CH ^{††}	MC6020DCH ^{††}	WHITE	20 / 22 / 24 [0.5 / 0.3 / 0.25]	0.066 [1.68]	0.045 [1.14]
		FC6026D2CH	MC6026DCH		26 / 28 / 30 [0.12 / 0.08 / 0.05]	0.048 [1.23]	0.027 [0.69]
	ALUMEL (-)	FC6020D2AL ^{††}	MC6020DAL ^{††}	GREEN	20 / 22 / 24 [0.5 / 0.3 / 0.25]	0.066 [1.68]	0.045 [1.14]
		FC6026D2AL	MC6026DAL		26 / 28 / 30 [0.12 / 0.08 / 0.05]	0.048 [1.23]	0.027 [0.69]
T	COPPER (+)	FC6020D2CU ^{††}	MC6020DCU ^{††}	RED	20 / 22 / 24 [0.5 / 0.3 / 0.25]	0.066 [1.68]	0.045 [1.14]
		FC6026D2CU	MC6026DCU		26 / 28 / 30 [0.12 / 0.08 / 0.05]	0.048 [1.23]	0.027 [0.69]
	CONSTANTAN (-)	FC6020D2CO ^{††}	MC6020DCO ^{††}	YELLOW	20 / 22 / 24 [0.5 / 0.3 / 0.25]	0.066 [1.68]	0.045 [1.14]
		FC6026D2CO	MC6026DCO		26 / 28 / 30 [0.12 / 0.08 / 0.05]	0.048 [1.23]	0.027 [0.69]
E	CHROMEL (+)	FC6020D2CH ^{††}	MC6020DCH ^{††}	WHITE	20 / 22 / 24 [0.5 / 0.3 / 0.25]	0.066 [1.68]	0.045 [1.14]
		FC6026D2CH	MC6026DCH		26 / 28 / 30 [0.12 / 0.08 / 0.05]	0.048 [1.23]	0.027 [0.69]
	CONSTANTAN (-)	FC6020D2CO ^{††}	MC6020DCO ^{††}	YELLOW	20 / 22 / 24 [0.5 / 0.3 / 0.25]	0.066 [1.68]	0.045 [1.14]
		FC6026D2CO	MC6026DCO		26 / 28 / 30 [0.12 / 0.08 / 0.05]	0.048 [1.23]	0.027 [0.69]

For more information on the availability of Type J thermocouple contacts, and information about thermocouple contacts with PCB solder termination, please contact Technical Sales.

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[†]Dimensionally equivalent to M39029/64-369

^{††}Dimensionally equivalent to M39029/63-368

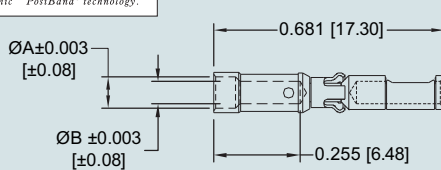
REMOVABLE CRIMP POWER CONTACT

FOR USE WITH CBCD SERIES CONNECTORS

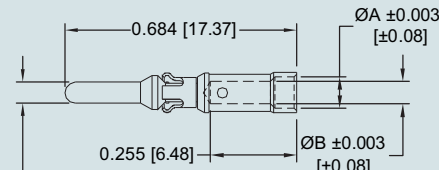
SIZE 16

*1 FEMALE CONTACT

“CLOSED ENTRY” DESIGN, L.S.A.



MALE CONTACT



Note: Connectors can be kitted with all applicable crimp contacts, contact Technical Sales for connector part number.



FEMALE PART NUMBER	WIRE SIZE [AWG] mm ²	ØA	ØB
FC112N4S	12 / [4.0]	N/A	0.098 [2.49]
FC112N4	12 / [4.0]	N/A	0.098 [2.49]
FC114N4	14-16 [2.5-1.5]	0.105 [2.67]	0.081 [2.06]
FC116N4	16-18 [1.5-1.0]	0.093 [2.36]	0.067 [1.70]
FC120N4	20-22-24 [0.5-0.3-0.25]	0.065 [1.65]	0.045 [1.14]

“S” in part number indicates high conductivity copper alloy material.

MALE PART NUMBER	WIRE SIZE mm ² [AWG]	ØA	ØB
MC112NS-133.0	12 / [4.0]	N/A	0.098 [2.49]
MC112N-133.0	12 / [4.0]	N/A	0.098 [2.49]
MC114N-133.0	14-16 [2.5-1.5]	0.105 [2.67]	0.081 [2.06]
MC116N-133.0	16-18 [1.5-1.0]	0.093 [2.36]	0.067 [1.70]
MC120N-133.0	20-22-24 [0.5-0.3-0.25]	0.065 [1.65]	0.045 [1.14]

*1 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.

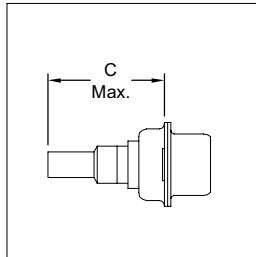
For information regarding crimp tool and crimping tool techniques, see Application Tools section, pages 81-89.



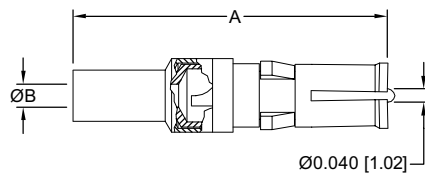
REMOVABLE SHIELDED CONTACT
FOR USE WITH CBD, CBC, CBCD AND CBDD SERIES CONNECTORS
SIZE 8

Note: Connectors can be kitted with all applicable crimp contacts, contact Technical Sales for connector part number.

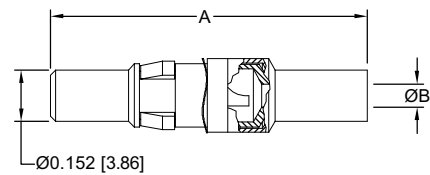
STRAIGHT SOLDER/CRIMP CONTACTS



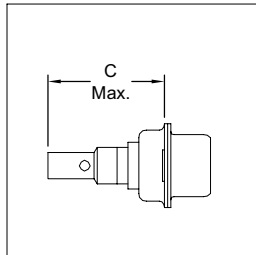
FEMALE CONTACT



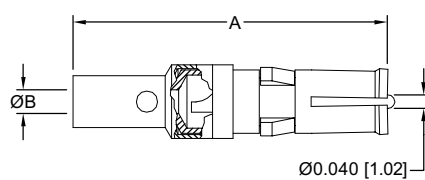
MALE CONTACT



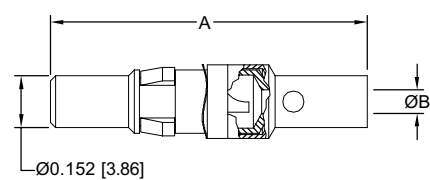
STRAIGHT SOLDER/SOLDER CONTACTS



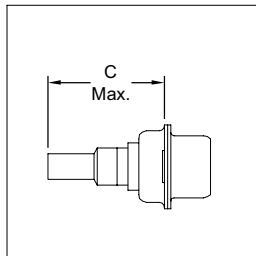
FEMALE CONTACT



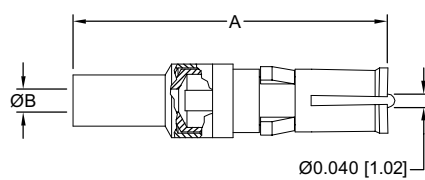
MALE CONTACT



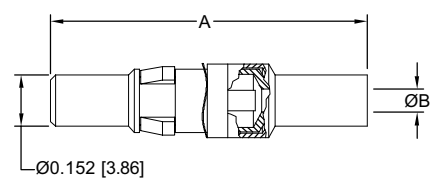
STRAIGHT CRIMP/CRIMP CONTACTS



FEMALE CONTACT



MALE CONTACT



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



SHIELDED CONTACTS

Two-step crimping action for signal and shielding conductors.

For information regarding crimp tool and crimping tool techniques, see Application Tools section, pages 81-89.