



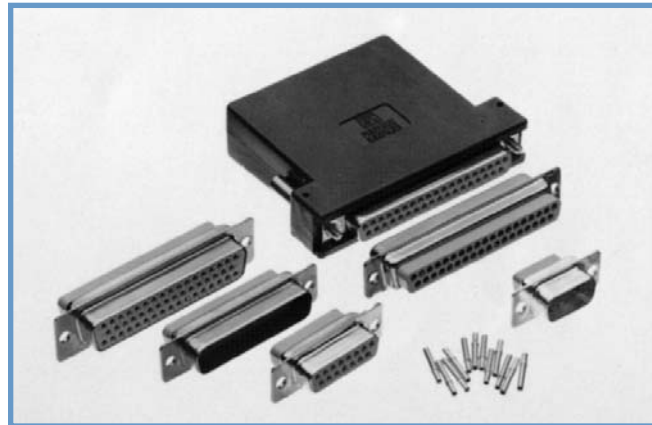
Size 20 Signal and
Thermocouple Contacts,
Crimp Removable
Military/Industrial
Quality Connectors
IEC Publication 807-3
Performance Level One

MIL-DTL-24308 and MIL-C-39029

U.L. Recognized
File #E49351

CSA Recognized
File #LR54219

Telecommunication
U.L. File #14098



Rhapsody-D 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. These crimp removable contact connectors are qualified to MIL-DTL-24308 and MIL-C-39029, and will meet the performance requirements of IEC 807-3, Performance Level One.

Rhapsody-D Series connectors utilize precision machined contacts with closed barrel, crimp terminations. The female contact features a rugged closed entry design contact with stainless steel shroud. A "Robi-D Open Entry" female contact is also available.

Six standard connector variants are offered in arrangements of 9, 15, 25, 29, 37 and 50 contacts. Rhapsody-D Series connectors are mateable and compatible with all D-Subminiature connectors conforming to MIL-DTL-24308, IEC 807-2 and IEC 807-3.

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

Rhapsody-D Series connectors conform to EIA RS 232 and RS 449, and CCITT X.24 interface connection requirements.



Contact Technical
Sales for details.

RHAPSO-D SERIES TECHNICAL CHARACTERISTICS

MATERIALS AND FINISHES:

Insulator:	Glass filled DAP per ASTM-D-5948, SDG-F, UL 94V-0, green color.
Contacts:	
Signal:	Male contacts – precision machined brass. Female contacts – precision machined high tensile copper alloy with stainless steel shroud or open entry Robi-D design.
Contact Plating:	Military performance – 0.000050 inch [1.27 microns] gold over copper plate. Industrial performance – gold flash over nickel plate. Other finishes available upon request.
Shells:	Steel with tin plate; zinc and cadmium plate with dichromate seal, stainless steel, passivated. Other materials and finishes available upon request.
Mounting Spacers:	Brass, zinc plate with dichromate seal.
Jackscrew Systems:	Steel with zinc plate and dichromate seal, or clear zinc plate.
Vibration Lock Systems:	Slide lock and lock tabs, steel with nickel plate.
Hoods:	Thermoplastic UL 94V-0. Composite, brass or steel with zinc plate and dichromate seal.

ELECTRICAL CHARACTERISTICS:

Contact Current Rating:	7.5 amperes nominal.
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.

CLIMATIC CHARACTERISTICS:

Temperature Range:	-55°C to +125°C.
Damp Heat, Steady State:	21 days.

MECHANICAL CHARACTERISTICS:

Removable Contacts:	Insert contact to rear face of insulator and release from rear face of insulator. Size 20 contact, 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. [40 N].
Contact Terminations:	Closed barrel crimp, wire sizes 18 AWG [1.0mm ²] through 30 AWG [0.05mm ²].
Shells:	Male shells may be dimpled for EM/ESD ground paths.
Polarization:	Trapezoidally shaped shells and polarized jackscrews.
Locking Systems:	Jackscrews and vibration locking systems.
Mechanical Operations:	1000 operations minimum per IEC 512-5 for closed entry female contact. 500 operations per IEC 512-5 for "Robi-D Open Entry" design female contact.

THERMOCOUPLE CONTACTS:

Size 20 crimp contacts are available, see page 29 for details.

PCB mount contacts are available in HDC series, see page 20 for details.



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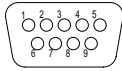
MILITARY QUALITY, CRIMP REMOVABLE CONTACT SUBMINIATURE-D CONNECTORS

D-Sub

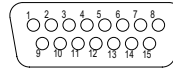
FOR MILITARY AND SEVERE INDUSTRIAL ENVIRONMENTAL APPLICATIONS

CONTACT VARIANTS

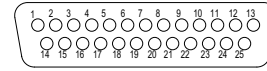
FACE VIEW OF MALE OR REAR VIEW OF FEMALE



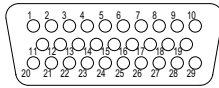
RD 9



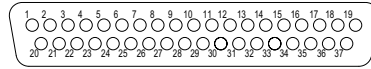
RD 15



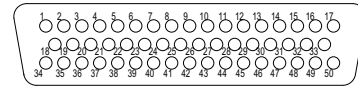
RD 25



RD 29

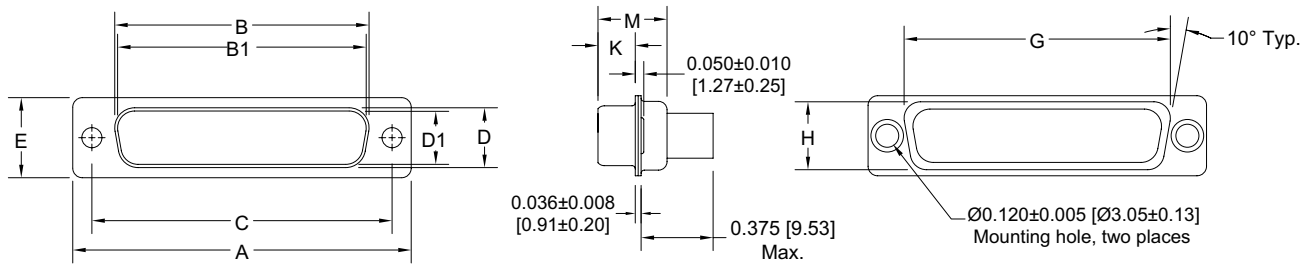


RD 37

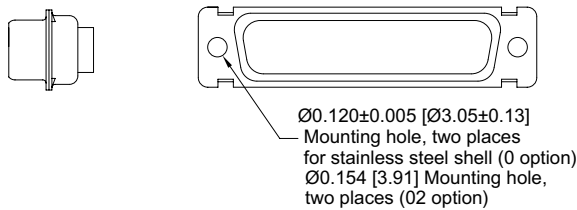


RD 50

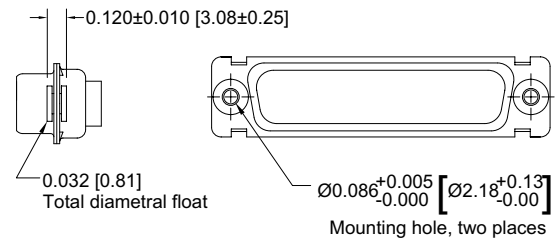
STANDARD SHELL ASSEMBLY



OPTIONAL SHELL ASSEMBLY [0, 02]



OPTIONAL SHELL ASSEMBLY WITH UNIVERSAL FLOAT MOUNTS [F]

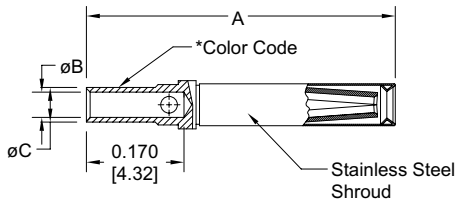


CONNECTOR VARIANT SIZES	A ±0.015 [0.38]	B ±0.005 [0.13]	B1 ±0.005 [0.13]	C ±0.005 [0.13]	D ±0.005 [0.13]	D1 ±0.005 [0.13]	E ±0.015 [0.38]	G ±0.010 [0.25]	H ±0.010 [0.25]	K ±0.005 [0.13]	M ±0.010 [0.25]
RD 9 M	1.213 [30.81]		0.666 [16.92]	0.984 [24.99]		0.329 [8.36]	0.494 [12.55]	0.759 [19.28]	0.422 [10.72]	0.233 [5.92]	0.422 [10.72]
RD 9 F	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]
RD 15 M	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]
RD 15 F	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]
RD 25 M	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]
RD 25 F	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]
RD 29 M	1.770 [44.96]		1.274 [32.36]	1.534 [38.96]		0.450 [11.43]	0.605 [15.37]	1.322 [33.58]	0.539 [13.69]	0.217 [5.51]	0.426 [10.82]
RD 29 F	1.770 [44.96]	1.251 [31.78]		1.534 [38.96]	0.431 [10.95]		0.605 [15.37]	1.322 [33.58]	0.539 [13.69]	0.237 [6.02]	0.429 [10.90]
RD 37 M	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]
RD 37 F	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]
RD 50 M	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]
RD 50 F	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]

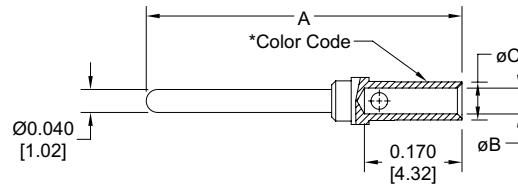


CRIMP CONTACTS
CLOSED CRIMP BARREL

FEMALE CONTACT
“CLOSED ENTRY” DESIGN



MALE CONTACT



Material - Leaded nickel copper.

Plating - Gold flash over nickel or 0.000050 inch [1.27µ] gold over copper for military specification contacts.

*Color Code - ORANGE/BLUE/GRAY for military specification contacts.

PART NUMBER	WIRE SIZE AWG/[mm ²]	A	øB	øC
FC6020D	20 / 22 / 24 [0.5/0.3/0.25]	0.538 [13.67]	0.045 [1.14]	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]	0.045 [1.14]	0.066 [1.68]

Material - Brass.

Plating - Gold flash over nickel or 0.000050 inch [1.27µ] gold over copper for military specification contacts.

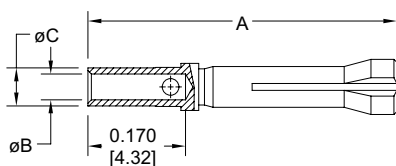
*Color Code - ORANGE/BLUE/WHITE for military specification contacts.

PART NUMBER	WIRE SIZE AWG/[mm ²]	A	øB	øC
MC6020D	20 / 22 / 24 [0.5/0.3/0.25]	0.550 [13.97]	0.045 [1.14]	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]	0.045 [1.14]	0.066 [1.68]

Note: *C60**D contacts can be used in the SD series.

Crimp contacts may be supplied kitted with connector or ordered separately. See page 30 for crimp tool information.

FEMALE CONTACT
“Robi-D Open Entry” DESIGN
20/22/24 AWG [0.5/0.3/0.25 mm²]

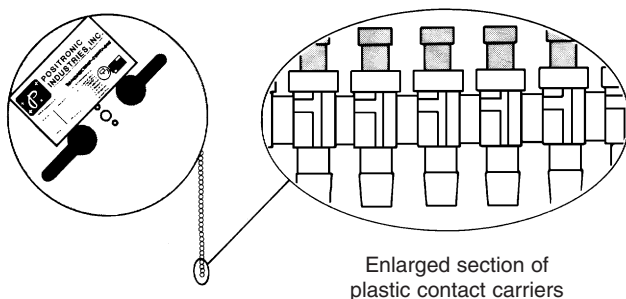


PART NUMBER	WIRE SIZE AWG/[mm ²]	A	Bø	Cø
FC6120D	20 / 22 / 24 [0.5/0.3/0.25]	0.538 [13.67]	0.045 [1.14]	0.066 [1.68]

Material - Phosphor bronze.
Plating - Gold flash over nickel.

For RD crimping information, see SD Series, page 16 and 17.

REELS FOR AUTOMATIC PNEUMATIC CRIMP TOOLS



Contacts may be supplied in plastic carriers, packaged in reels holding 2,000 contacts for use with the automatic 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.



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MILITARY QUALITY, CRIMP REMOVABLE CONTACT SUBMINIATURE-D CONNECTORS

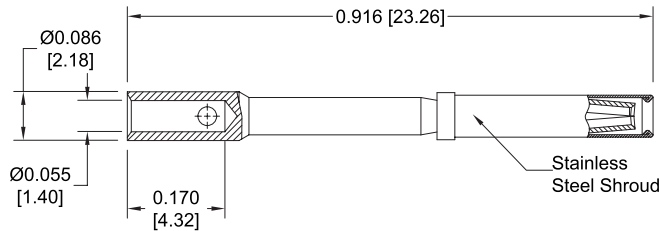
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CRIMP CONTACTS

18 AWG [1.0mm²] max.

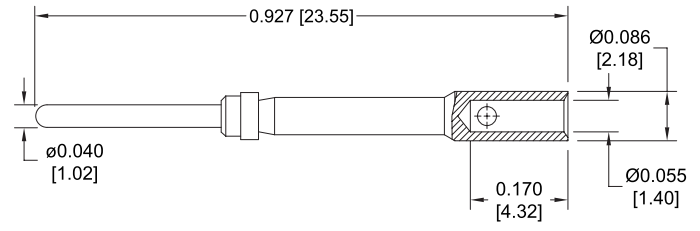
FEMALE CONTACT "CLOSED ENTRY" DESIGN



Part Number: FC6018D

Material - Phosphor bronze.
Plating - Gold flash over nickel.

MALE CONTACT



Part Number: MC6018D

Material - Brass.
Plating - Gold flash over nickel.

For RD crimping information, see SD Series, page 16 and 17.

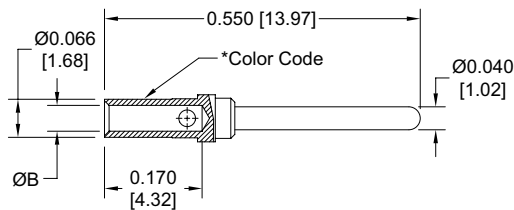
Additional plating options available by adding suffix to part number

add -14 for 0.000030 [0.76 microns] gold over nickel
Example: FC6018D-14

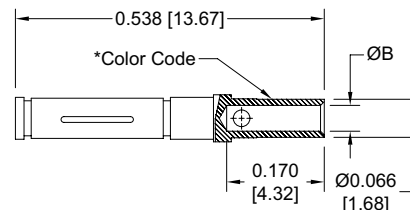
add -50 for 0.000050 [1.27 microns] gold over copper
Example: MC6018D-50

THERMOCOUPLE CONTACTS

MALE CONTACT



FEMALE CONTACT



For RD crimping information, see SD Series, page 16 and 17.

TYPE	MATERIAL	MALE PART NUMBER	FEMALE PART NUMBER	COLOR CODE	WIRE SIZE AWG [mm ²]	ØB
K	CHROMEL (+)	MC6020DCH [†]	FC6020DCH ^{††}	WHITE	20 / 22 / 24 [0.5 / 0.3 / 0.25]	0.045 [1.14]
		MC6026DCH	FC6026DCH		26 / 28 / 30 [0.12 / 0.08 / 0.05]	0.027 [0.69]
	ALUMEL (-)	MC6020DAL [†]	FC6020DAL ^{††}	GREEN	20 / 22 / 24 [0.5 / 0.3 / 0.25]	0.045 [1.14]
		MC6026DAL	FC6026DAL		26 / 28 / 30 [0.12 / 0.08 / 0.05]	0.027 [0.69]
T	COPPER (+)	MC6020DCU [†]	FC6020DCU ^{††}	RED	20 / 22 / 24 [0.5 / 0.3 / 0.25]	0.045 [1.14]
		MC6026DCU	FC6026DCU		26 / 28 / 30 [0.12 / 0.08 / 0.05]	0.027 [0.69]
	CONSTANTAN (-)	MC6020DCO [†]	FC6020DCO ^{††}	YELLOW	20 / 22 / 24 [0.5 / 0.3 / 0.25]	0.045 [1.14]
		MC6026DCO	FC6026DCO		26 / 28 / 30 [0.12 / 0.08 / 0.05]	0.027 [0.69]
E	CHROMEL (+)	MC6020DCH [†]	FC6020DCH ^{††}	WHITE	20 / 22 / 24 [0.5 / 0.3 / 0.25]	0.045 [1.14]
		MC6026DCH	FC6026DCH		26 / 28 / 30 [0.12 / 0.08 / 0.05]	0.027 [0.69]
	CONSTANTAN (-)	MC6020DCO [†]	FC6020DCO ^{††}	YELLOW	20 / 22 / 24 [0.5 / 0.3 / 0.25]	0.045 [1.14]
		MC6026DCO	FC6026DCO		26 / 28 / 30 [0.12 / 0.08 / 0.05]	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



**AUTOMATIC CRIMP TOOL,
PNEUMATICALLY ACTUATED**
Part No. 9550-1

This fast cycling automatic crimp tool produces an 8 indent crimp on wire sizes 20 AWG [0.5mm²] through 32 AWG [0.03mm²]. Rhapsody-D Series contacts must be ordered on reels.

To order, specify part number 9550-1. 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 Rhapsody-D Series contacts.



INSERTION/REMOVAL TOOL
(M81969/1-02)
Part No. 4711-2

One end of this tool is used to insert contacts into Rhapsody-D 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.



Positronic Recommended Conductor Tensile Strength

WIRE SIZE AWG/[mm ²]	18 [1.0]	20 [0.5]	22 [0.3]	24 [0.25]	26 [0.12]	28 [0.08]	30 [0.05]
AXIAL LOAD POUNDS/[N]	28 [125]	20 [89]	12 [53]	8 [36]	5 [22]	3 [13]	1.5 [6.7]

Conductor tensile strength values are derived using silver-tin plated copper wires.

Values may change depending upon what type of wire is used.

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

CRIMP TOOLS	POSITIONERS FOR FC6020D, MC6020D, FC6026D, MC6026D, FC6120D M39029/63-368 M39029/64-369	POSITIONERS FOR FC6018D, MC6018D, FC6118D
9507 HAND CRIMP TOOL	9502-5	9502-11
9550-1 AUTOMATIC PNEUMATIC CRIMP TOOL	Supplied in reels	Not Available



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MILITARY QUALITY, CRIMP REMOVABLE CONTACT SUBMINIATURE-D CONNECTORS

FOR MILITARY AND SEVERE INDUSTRIAL ENVIRONMENTAL APPLICATIONS

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ORDERING INFORMATION - CODE NUMBERING SYSTEM

Specify Complete Connector By Selecting An Option From Step 1 Through 8

STEP	1	2	3	4	5	6	7	8	9
EXAMPLE	RD	15	M	12	0	H	0	0	—
STEP 1 - BASIC SERIES RD Series									STEP 9 - SPECIAL OPTIONS CONTACT TECHNICAL SALES FOR SPECIAL OPTIONS
STEP 2 - CONNECTOR VARIANTS 9, 15, 25, 29, 37, 50									
STEP 3 - CONNECTOR GENDER M - Male F - Female									
STEP 4 - CONTACT TERMINATION TYPE 0 - Ordered Without Contacts. 1 - Crimp, 20 AWG–24 AWG [0.5mm ² –0.25mm ²]. 12 - Crimp, 26 AWG–30 AWG [0.12mm ² –0.08mm ²]. 14 - Crimp, 20 AWG–24 AWG [0.5mm ² –0.25mm ²] "Robi-D Open Entry" female contact.									
*STEP 5 - MOUNTING STYLE 0 - Mounting Hole, 0.120 [3.05] Ø. 02 - Mounting Hole, 0.154 [3.91] Ø. F - Float Mounts, Universal. S2 - Swaged Spacer, 4-40 Threads, 0.125 [3.18] Length. S5 - Swaged Locknut, 4-40 Threads.									
									STEP 8 - SHELL OPTIONS 0 - Zinc Plated with Dichromate Seal. S - Stainless Steel. X - Tin Plated. Z - Tin Plated and Dimpled (male connectors only). C - Cadmium plated with Dichromate Seal.
									*STEP 7 - LOCKING AND POLARIZING SYSTEMS 0 - None. V3 - Lock Tab, connector front panel mounted. V5 - Lock Tab, connector rear panel mounted. VL - Lock Lever, used with Hoods Only. T - Fixed Female Jackscrews. T2 - Fixed Female Jackscrews. T6 - Fixed Male and Female Polarized Jackscrews. E - Rotating Male Jackscrews. E2 - Rotating Male Screw Locks. E3 - Rotating Male with internal hex for 3/32 hex drives E6 - Rotating Male and Female Polarized Jackscrews.
									*STEP 6 - HOODS 0 - None. J - Hood, Top Opening, Plastic. L - Hood, Side Opening, Plastic. Y - Hood, Top Opening, Plastic with Rotating Male Jackscrews. Available in size 50 only. Y6 - Hood, Top Opening, Plastic with Rotating Male and Female Polarized Jackscrews. Available in size 50 only. Z - Hood, Top or Side Opening, Robust Extended Height, Composite and Plastic with Rotating Male Jackscrews. Available in size 9, 15, 25, 37, and 50 only. H - Hood, Top Opening, Metal. Available in size 15, 25, 37, and 50 only. G - Hood, EMI/RFI, Metal. Available in size 9, 15, 25, 37, and size 50 only. W - Hood, Top or Side Opening, Plastic. Available in size 9, 15, and 25 only.



Contact Technical
Sales for details.

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

For RD crimping information, see SD Series, page 16 and 17.