Size 20 Signal and Thermocouple Contacts, Crimp Removable

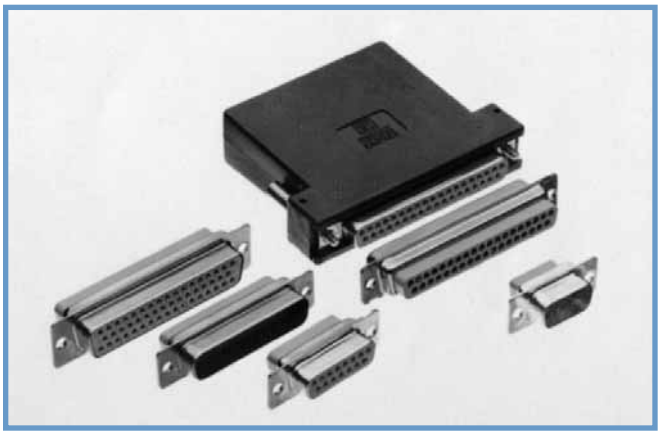
PosiBand® Closed Entry

IEC Publication 60807-3 Performance Level One, MIL-DTL-24308 & SAE AS 39029

U.L. Recognized
File #E49351

CSA Recognized
File #LR54219

Telecommunication
U.L. File #14098



Rhapso-D series connectors are military quality connectors designed for use in sheltered, mildly corrosive environments having a wide range of temperature, pressure and humidity changes. Applicable crimp removable contact connectors are qualified to MIL-DTL-24308 and SAE AS 39029 (see pages 84-94 for listing), and will meet the performance requirements of IEC 60807-3, Performance Level One.

Rhapso-D series connectors utilize precision machined contacts with closed barrel, crimp terminations. The female utilizes Positronic's unique PosiBand closed entry system, see page 1 for details. "Robi-D" open entry female contacts are also available.

Six standard connector variants are offered in arrangements of 9, 15, 25, 29, 37 and 50 contacts. Rhapso-D series connectors are mateable and compatible with all D-subminiature connectors conforming to MIL-DTL-24308, IEC 60807-2 and IEC 60807-3.

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

POSITRONIC INDUSTRIES RoHS Compliant per EU Directive 2002/95/EC

For RoHS options see page 37.

RHAPSO-D SERIES TECHNICAL CHARACTERISTICS

MATERIALS AND FINISHES:

Insulator:	Glass filled DAP per ASTM-D-5948, SDG-F, UL 94V-0, green color.
Contacts:	Precision machined copper alloy.
Contact Plating:	Military performance - 0.000050 inch [1.27 microns] gold over nickel plate. IEC 60807-3, Performance Level One - gold flash over nickel plate. Other finishes available upon request.
Shells:	Steel or brass with tin plate; zinc and cadmium plate with chromate seal, stainless steel passivated. Other materials and finishes available upon request.
Mounting Spacers:	Nylon; copper alloy or steel with zinc plate and chromate seal or tin plate; phosphor bronze with tin plate; stainless steel, passivated.
Jackscrew Systems:	Brass or steel with zinc plate and chromate seal or clear zinc plate or tin plate; stainless steel, passivated.
Vibration Lock Systems:	Slide lock and lock tabs, steel with nickel plate.
Hoods:	Composite and plastic, UL 94V-0; brass or steel with zinc plate and chromate seal; aluminum or aluminum with electroless nickel plate; die cast zinc.

Non-magnetic versions are available, contact Technical Sales.

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] mating diameter. Female - PosiBand closed entry design, see page 1 for details.
Contact Retention In Insulator:	9 lbs. [40 N].
Contact Terminations:	Closed barrel crimp, wire sizes 18 AWG [1.0mm²] through 30 AWG [0.05mm²].
Shells:	Male shells may be dimpled for EMI/ESD ground paths.
Polarization:	Trapezoidally shaped shells and polarized jackscrews.
Locking Systems:	Jackscrews and vibration locking systems.
Mechanical Operations:	1000 operations minimum per IEC 60512-5 for PosiBand closed entry female contact.

ELECTRICAL CHARACTERISTICS:

Contact Current Rating:	14 amperes, tested per U.L. 1977, six contacts energized. *See temperature rise curve on page 2 for details.*
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.

THERMOCOUPLE CONTACTS:

Size 20 crimp contacts are available, see page 36 for details.

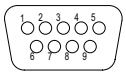
PCB mount contacts are available in HDC series, see page 27 for details.

DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

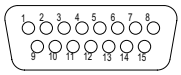
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CONTACT VARIANTS

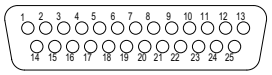
FACE VIEW OF MALE OR REAR VIEW OF FEMALE



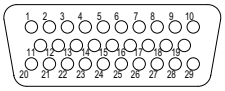
RD 9



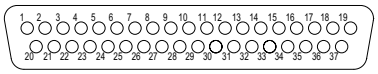
RD 15



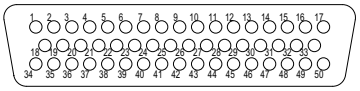
RD 25



RD 29

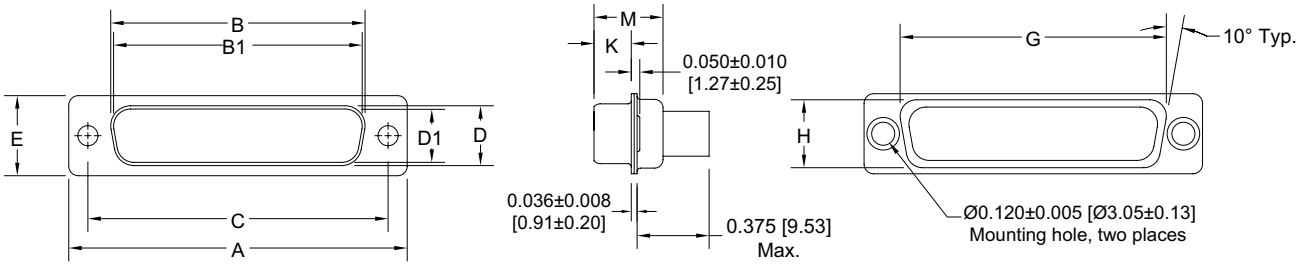


RD 37

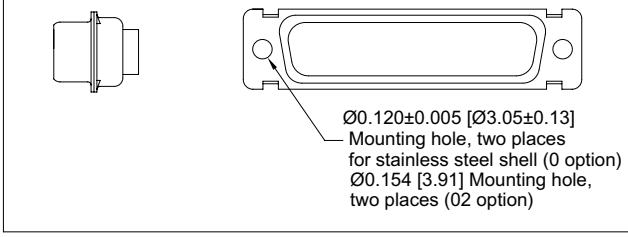


RD 50

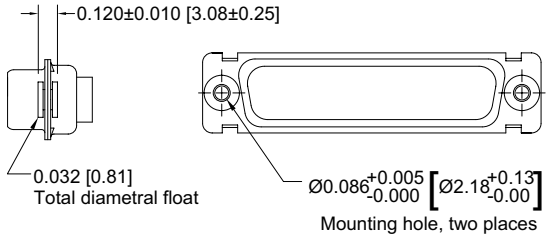
STANDARD SHELL ASSEMBLY



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 S	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 S	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 S	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 S	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 S	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 S	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]

DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

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REMOVABLE CRIMP CONTACTS

CODE 1 AND 12

CONTACTS MAY BE SUPPLIED WITH CONNECTOR OR ORDERED SEPARATELY.

CLOSED CRIMP BARREL

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

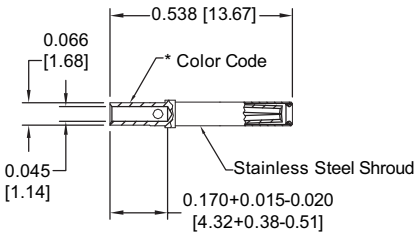
***MILITARY SPECIFICATION CONTACTS**

STANDARD FINISH:
0.000050 inch [1.27µ] gold over nickel

COLOR CODE:
MALE CONTACT:
ORANGE/BLUE/WHITE
FEMALE CONTACT:
ORANGE/BLUE/GRAY

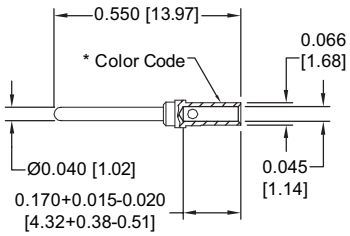
FEMALE CONTACT

"CLOSED ENTRY" DESIGN



FEMALE PART NUMBER	WIRE SIZE AWG/[mm²]
*M39029/63-368	20 / 22 / 24 [0.5/0.3/0.25]

MALE CONTACT



MALE PART NUMBER	WIRE SIZE AWG/[mm²]
*M39029/64-369	20 / 22 / 24 [0.5/0.3/0.25]

REMOVABLE CRIMP CONTACTS

CODE 1 AND 12

CONTACTS MAY BE SUPPLIED WITH CONNECTOR OR ORDERED SEPARATELY.

Authentic POSITRONIC™ PosiBand®
These contacts utilize authentic Positronic™ PosiBand® technology.

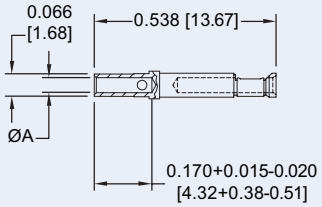
CLOSED CRIMP BARREL

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

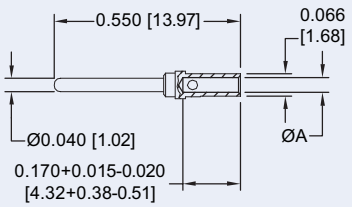
PLATING:
STANDARD FINISH:
Gold flash over nickel plate.
OPTIONAL FINISHES:
0.000030 [0.76] gold over nickel by adding "-14" suffix onto part number. Example: FC6020D2-14
0.000050 inch [1.27] gold over nickel by adding "-15" suffix onto part number. Example: MC6026D-15

FEMALE CONTACT

"CLOSED ENTRY" DESIGN



MALE CONTACT



FEMALE PART NUMBER	WIRE SIZE AWG/[mm²]	ØA
FC6020D2	20 / 22 / 24 [0.5/0.3/0.25]	0.045 [1.14]
FC6026D2	26 / 28 / 30 [0.12/0.08/0.05]	0.027 [0.69]

MALE PART NUMBER	WIRE SIZE AWG/[mm²]	ØA
MC6020D	20 / 22 / 24 [0.5/0.3/0.25]	0.045 [1.14]
MC6026D	26 / 28 / 30 [0.12/0.08/0.05]	0.027 [0.69]

Note: FC602*D2 and MC602*D contacts can be used in the SD series.

For information regarding crimp tool and crimping tool techniques, see Application Tools section, pages 78-83.

DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

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Authentic POSITRONIC™ PosiBand®
These contacts utilize authentic Positronic™ PosiBand® technology.

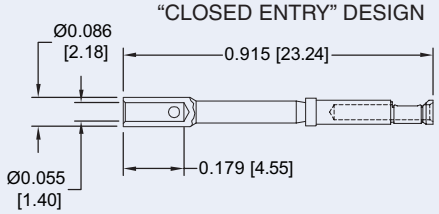
REMOVABLE CRIMP CONTACTS
18 AWG CRIMP CONTACTS
18 AWG [1.0mm2]

The crimp area of this contact is not protected when fully seated in the connector molding. These contacts require shrink tubing after installation. Not suitable for fully loaded connector.

CONTACTS MAY BE SUPPLIED WITH CONNECTOR OR ORDERED SEPARATELY.

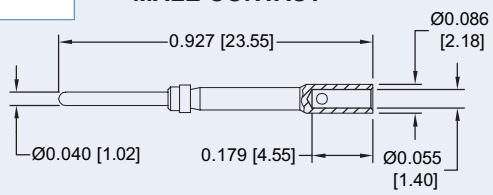
Note: Connectors can be kitted with all applicable crimp contacts, contact Technical Sales for connector part number.

FEMALE CONTACT
"CLOSED ENTRY" DESIGN



Note: FC6018D2 and MC6018D contacts can be used in the ORD series.

MALE CONTACT



FEMALE PART NUMBER	WIRE SIZE AWG/[mm²]
FC6018D2	18 [1.0] max

MALE PART NUMBER	WIRE SIZE AWG/[mm²]
MC6018D	18 [1.0] max

PLATING:
STANDARD FINISH: Gold flash over nickel plate.

OPTIONAL FINISHES: 0.000030 [0.76] gold over nickel by adding "-14" suffix onto part number. Example: FC6018D2-14
0.000050 inch [1.27] gold over nickel by adding "-15" suffix onto part number. Example: MC6018D-15

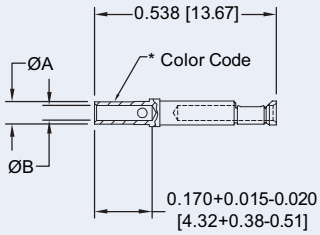
REMOVABLE THERMOCOUPLE CRIMP CONTACT

CONTACTS MAY BE SUPPLIED WITH CONNECTOR OR ORDERED SEPARATELY.

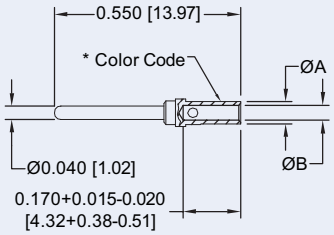
Note: Connectors can be kitted with all applicable crimp contacts, contact Technical Sales for connector part number.

Authentic POSITRONIC™ PosiBand®
These contacts utilize authentic Positronic™ PosiBand® technology.

FEMALE CONTACT
"CLOSED ENTRY" DESIGN



MALE CONTACT



TYPE	MATERIAL	FEMALE PART NUMBER	MALE PART NUMBER	COLOR CODE	WIRE SIZE AWG [mm²]	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]

†Dimensionally equivalent to M39029/64-369 *††Dimensionally equivalent to M39029/63-368*

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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For information regarding crimp tool and crimping tool techniques, see Application Tools section, pages 78-83.

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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		10
EXAMPLE	RD	25	S	1	0	J	VL	0	/AA	—	-50

STEP 1 - BASIC SERIES

RD series.

STEP 2 - CONNECTOR VARIANTS

9, 15, 25, 29, 37, 50

STEP 3 - CONNECTOR GENDER

M - Male
S - Female - PosiBand closed entry contacts

STEP 4 - CONTACT TERMINATION TYPE

0 - Ordered Without Contacts.
1 - Crimp, 20 AWG-24 AWG [0.5mm²-0.25mm²].
12 - Crimp, 26 AWG-30 AWG [0.12mm²-0.05mm²].

*1 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.

*1 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.
*3 AN - Lightweight Aluminum Hood, nickel finish.
*3 AC - Lightweight Aluminum Hood, no finish.
W - Hood, Top or Side Opening, Plastic. Available in size 9,15, and 25 only.

*1 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 8 -SHELL OPTIONS

0 - Zinc Plated with Chromate Seal.
*2 S - Stainless steel, passivated.
X - Tin Plated.
Z - Tin Plated and Dimpled (male connectors only).
C - Cadmium plated with Chromate Seal.

STEP 9 - ENVIRONMENTAL COMPLIANCE OPTIONS

POSITRONIC INDUSTRIES · RoHS Compliant · Per EU Directive 2002/95/EC

/AA - Compliant per EU Directive 2002/95/EC (RoHS)

NOTE: If compliance to environmental legislation is not required, this step will not be used. Example: RD25S10JVLO

STEP 10 - SPECIAL OPTIONS

-14 - 0.000030 [0.76µ] gold over nickel.
-15 - 0.000050 [1.27µ] gold over nickel.
-50 - 0.000050 [1.27µ] gold over copper.

CONTACT TECHNICAL SALES FOR SPECIAL OPTIONS

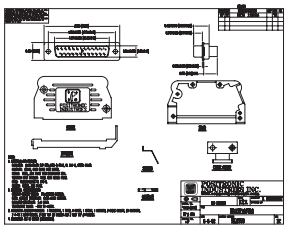
*1 For additional information on accessories listed in steps 5, 6 and 7, see Accessory Catalog.

*2 For stainless steel dimpled male versions contact Technical Sales.

*3 AN and AC hood are not available for connector variant 29. Consult Technical Sales for availability.

For crimping information and crimp tools, see Application Tools section, pages 78-83.

NOTE: Once you have made a connector selection, contact Technical Sales if you would like to receive a drawing in DXF, PDF format or a 3-dimensional IGES, STEP, or SOLIDWORKS file.



SK Drawing



3-dimensional model

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