



**AD Series
Size 20 “Open Entry”
Contact Design**

**HAD Series
Size 20 PosiBand® “Closed
Entry” Contact Design**

Connector Saver



AD and HAD series connectors are suitable for use in any applications requiring high performance characteristic. The normal density AD and HAD series are available in five standard connector variants of 9, 15, 25, 37 and 50 contacts.

AD and HAD series connectors utilize precision machined contacts for strength and durability. AD series female contact features a rugged open entry design. HAD series female contact features the PosiBand closed entry design for even higher reliability, see page 1 for details.

AD and HAD series connectors can be mated to a connector which would normally experience high numbers of mating cycles. The AD/HAD connector can be easily replaced, “saving” a connector which is not easily replaced.

These connectors can also be used as a “gender changer”. Connectors are available in high density versions, see page 66.

TECHNICAL CHARACTERISTICS

MATERIALS AND FINISHES:

Insulator:

AD series: Glass filled polyester per ASTM D5927, UL 94V-0, black color.

HAD series: Glass-filled DAP per ASTM-D-5948, UL 94V-0.

Contacts: Precision machined copper alloy.

Contact Plating: Gold flash over nickel plate. Other finishes available upon request.

Interfacial Seal:
AD series: Thermoplastic Elastomer (TPE), Santoprene™ or equivalent

HAD series: Fluorosilicone Rubber per MIL-R-25988

Shells: Steel with tin plate; zinc plate, stainless steel passivated. Other materials and finishes available upon request.

Low magnetic versions are available, contact Technical Sales.

MECHANICAL CHARACTERISTICS:

Fixed Contacts: Size 20 contacts, male - 0.040 inch [1.02 mm] mating diameter. AD series female contact offers open entry design. HAD series female contact features PosiBand closed entry design, see page 1 for details.

Connector Saver: Male to female or male to male.

Contact Retention: 9 lbs. [40 N].

Shells: Male shells may be dimpled for EMI/ESD ground paths.

Polarization: Trapezoidally shaped shells.

Mechanical Operations:

AD series: 500 operations, minimum, per IEC 60512-5.

HAD series: 1,000 operations, minimum, per IEC 60512-5.

ELECTRICAL CHARACTERISTICS:

Contact Current Rating:

Open Entry Contacts: 7.5 amperes nominal

Closed Entry Contacts, tested per UL 1977:

18 amperes, 2 contacts energized.

14 amperes, 6 contacts energized.

11 amperes, 15 contacts energized.

10 amperes, 25 contacts energized.

9 amperes, 50 contacts energized.

See temperature rise curves on page 2 for details.

Initial Contact Resistance: 0.008 ohms, maximum for AD series.
0.004 ohms, maximum for HAD series.

Proof Voltage: 1,000 V r.m.s.

Insulation Resistance: 5 G ohms.

Clearance and Creepage Distance: 0.039 inch [1.0 mm], minimum.

Working Voltage: 300 V r.m.s.

CLIMATIC CHARACTERISTICS:

Temperature Range: -55°C to +125°C.



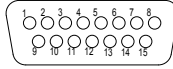
AD AND HAD SERIES SIZE 20 CONTACT CONNECTOR SAVER

CONTACT VARIANTS

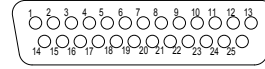
FACE VIEW OF MALE OR USE MIRROR IMAGE FOR FEMALE



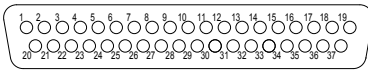
SIZE 9



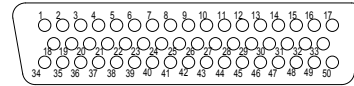
SIZE 15



SIZE 25

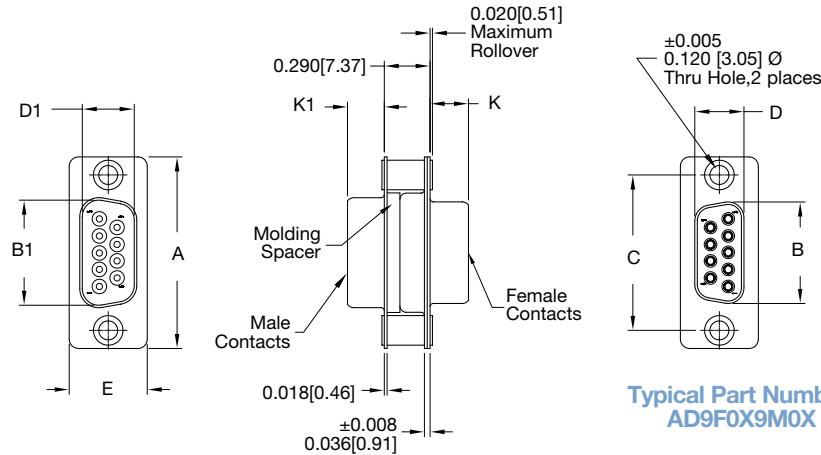


SIZE 37



SIZE 50

STANDARD SHELL ASSEMBLY DIMENSIONS
SIZE 20 CONTACTS



Typical Part Number:
AD9FOX9M0X

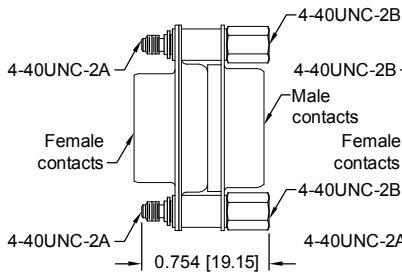
CONNECTOR VARIANT SIZES	A ±0.015 [0.38]	B ±0.005 [0.13]	B1 ±0.005 [0.13]	C ±0.005 [0.13]	D ±0.005 [0.13]	D1 ±0.005 [0.13]	E ±0.015 [0.38]	K ±0.005 [0.13]	K1 ±0.005 [0.13]
9 M	1.213 [30.81]		0.666 [16.92]	0.984 [24.99]		0.329 [8.36]	0.494 [12.55]		0.233 [5.92]
9 F	1.213 [30.81]	0.643 [16.33]		0.984 [24.99]	0.311 [7.90]		0.494 [12.55]	0.243 [6.17]	
15 M	1.541 [39.14]		0.994 [25.25]	1.312 [33.32]		0.329 [8.36]	0.494 [12.55]		0.233 [5.92]
15 F	1.541 [39.14]	0.971 [24.66]		1.312 [33.32]	0.311 [7.90]		0.494 [12.55]	0.243 [6.17]	
25 M	2.088 [53.04]		1.534 [38.96]	1.852 [47.04]		0.329 [8.36]	0.494 [12.55]		0.230 [5.84]
25 F	2.088 [53.04]	1.511 [38.38]		1.852 [47.04]	0.311 [7.90]		0.494 [12.55]	0.243 [6.17]	
37 M	2.729 [69.32]		2.182 [55.42]	2.500 [63.50]		0.329 [8.36]	0.494 [12.55]		0.230 [5.84]
37 F	2.729 [69.32]	2.159 [54.84]		2.500 [63.50]	0.311 [7.90]		0.494 [12.55]	0.243 [6.17]	
50 M	2.635 [66.93]		2.079 [52.81]	2.406 [61.11]		0.441 [11.20]	0.605 [15.37]		0.230 [5.84]
50 F	2.635 [66.93]	2.064 [52.43]		2.406 [61.11]	0.423 [10.74]		0.605 [15.37]	0.243 [6.17]	



JACKSCREW SYSTEMS
CODE E, E6, T AND T6

ROTATING
MALE AND FEMALE
JACKSCREWS

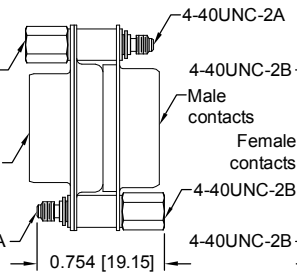
E



Example Part Number:
AD9FEX9M0X

ROTATING
MALE AND FEMALE
POLARIZED
JACKSCREWS

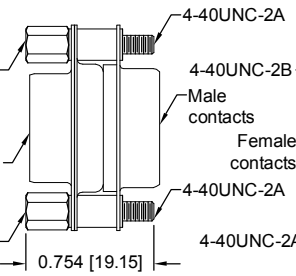
E6



Example Part Number:
AD9FE6X9M0X

FIXED
MALE AND FEMALE
JACKSCREWS

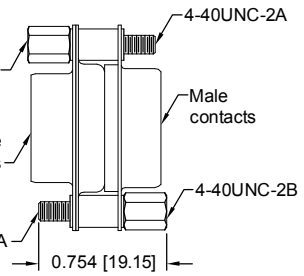
T



Example Part Number:
AD9FTX9M0X

FIXED
MALE AND FEMALE
POLARIZED
JACKSCREWS

T6



Example Part Number:
AD9FT6X9M0X

MATERIAL: Brass or steel with zinc plate or clear zinc plate or tin plate; stainless steel, passivated.

Connectors Designed To Customer Specifications

Positronic D-subminiature connectors can be modified to customer specifications.

Examples: select loading of contacts for cost savings or to gain creepage and clearance distances; longer printed circuit board terminations; customer specified hardware; sealing for water resistance.

[Contact Technical Sales with your particular requirements.](#)



ORDERING INFORMATION - CODE NUMBERING SYSTEM

Specify Complete Connector By Selecting An Option From Step 1 Through 9

STEP	1	2	3	4	5	6	7	8	9	10	11
EXAMPLE	AD	9	F	S	X	9	M	S	X	/AA	-14
<p>STEP 1 - BASIC SERIES</p> <p>AD series - Open entry female contacts, polyester insulator</p> <p>HAD series - PosiBand closed entry female contacts, DAP insulator.</p> <p><i>Military plating options available.</i></p> <p>STEP 2 - CONNECTOR VARIANT</p> <p>9, 15, 25, 37, 50</p> <p>STEP 3 - 1ST CONNECTOR GENDER</p> <p>M - Male P - Male with interfacial seal F - Female open entry, AD series only S - Female PosiBand closed entry, HAD series only</p> <p>*1 STEP 4 - 1ST CONNECTOR MATING STYLE</p> <p>0 - Swaged spacer 0.120 [3.05µ] mounting hole S - Swaged spacer 4-40 UNC-2B threads *3 E - Rotating male and female jackscrews (Select 0 in Step 8) *3 E6 - Rotating male and female polarized jackscrew (Select 0 in Step 8) *3 T - Fixed male and female jackscrews (Select 0 in Step 8) *3 T6 - Fixed male and female polarized jackscrew (Select 0 in Step 8)</p> <p>STEP 5 - 1ST CONNECTOR SHELL OPTION</p> <p>0 - Zinc plated. *4 S - Stainless steel, passivated. X - Tin plated. Z - Tin plated and dimpled (male connectors only).</p>										<p>STEP 11 - SPECIAL OPTIONS</p> <p>-14 - 0.000030 [0.76µ] gold over nickel. -15 - 0.000050 [1.27µ] gold over nickel.</p> <p>CONTACT TECHNICAL SALES FOR SPECIAL OPTIONS</p> <p>STEP 10 - ENVIRONMENTAL COMPLIANCE OPTIONS</p> <p>/AA - RoHS Compliant</p> <p>NOTE: If compliance to environmental legislation is not required, this step will not be used. Example: AD9FSX9MSX</p> <p>STEP 9 - 2ND CONNECTOR SHELL OPTION</p> <p>0 - Zinc plated. S - Stainless steel, passivated. X - Tin plated. Z - Tin plated and dimpled (male connectors only).</p> <p>*1 STEP 8 - 2ND CONNECTOR MATING STYLE</p> <p>0 - Swaged spacer 0.120 [3.05µ] mounting hole S - Swaged spacer 4-40 UNC-2B threads *3 E - Rotating male and female jackscrews (Select 0 in Step 4) *3 E6 - Rotating male and female polarized jackscrew (Select 0 in Step 4) *3 T - Fixed male and female jackscrews (Select 0 in Step 4) *3 T6 - Fixed male and female polarized jackscrew (Select 0 in Step 4)</p> <p>STEP 7 - 2ND CONNECTOR GENDER</p> <p>M - Male P - Male with interfacial seal</p> <p>*2 STEP 6 - 2ND CONNECTOR VARIANT</p> <p>9, 15, 25, 37, 50</p>	

CONNECTOR SAVERS

*1 Connector mating style for both connectors must be the same if 0 or S is used. If E, E6, T or T6 is used in either Step 4 or 8 the other step must be 0.
*2 Connector variant for both connectors must be the same.
*3 For hardware information, see page 68.