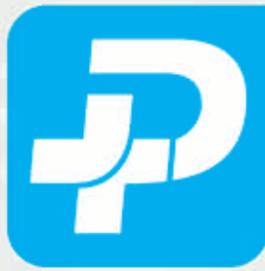


# CONNECTOR SAVERS

## D-subminiature Connectors



**Positronic**<sup>®</sup>  
global connector solutions



### CONNECTOR SAVERS FOR:

- STANDARD DENSITY D-SUBMINIATURE
- HIGH DENSITY D-SUBMINIATURE
- COMBINATION D-SUBMINIATURE
- HIGH PERFORMANCE D-SUBMINIATURE

Rev J

C001 Rev G  
*C004 Rev F*  
C005 Rev B1

# Connector Excellence®

## Positronic Provides Complete Capability

### Mission Statement

*"To utilize product flexibility and application assistance to present quality interconnect solutions which represent value to customers worldwide."*

### Experience

- Founded in **1966**
- **Involvement** in the development of international connector specifications through EIA®, IEC and ISO as well as PICMG®.
- Introduction of new and **unique connector products** to the electronics industry.
- Patent holder for many **unique connector features and manufacturing techniques**.
- **Vertically integrated** manufacturing – raw materials to finished connectors.

### Technology

- **Expertise** with solid machined contacts provides a variety of high reliability connectors including high current density power connectors.
- Quality Assurance lab is **capable of testing** to IEC, EIA, UL, CUL, military and customer-specified requirements.
- **In-house design and development** of connectors based on market need or individual customer requirements.
- **Internal manufacturing capabilities** include automatic precision contact machining, injection molding, stamping, plating operations and connector assembly.
- **Manufacturing locations** in southwest Missouri, U.S.A. (headquarters); Puerto Rico, France, China, Singapore, and India. Total square footage: 407,441.

### Support

- **Quality Systems:** Select locations qualified to ISO 9001, ISO 14001, AS9100, MIL-STD-790 and customer "dock to stock" programs. Applicable products qualified to MIL-DTL-24308, AS39029, DSCC 85039, MIL-DTL-28748, Space D32, GSFC S-311-P-4 and GSFC S-311-P-10.
- Compliance to a variety of international and customer specific **environmental requirements**.
- Large **in-house inventory** of finished connectors. Customer specific **stocking programs**.
- Factory direct **technical sales support** in major cities worldwide.
- **One-on-one customer support** from worldwide factory locations.
- World class **web site**.
- **Value-added solutions** and willingness to **develop custom products** with reasonable price and delivery.



### Regional Headquarters

Springfield, MO



Auch, France



Singapore



Products described within this catalog may be protected by one or more of the following US patents:

#4,900,261<sup>†</sup> #5,255,580 #5,329,697  
#6,260,268 #6,835,079 #7,115,002

<sup>†</sup>Patented in Canada, 1992 Other Patents Pending

Positronic Industries' **FEDERAL SUPPLY CODE** (Cage Code)  
FOR MANUFACTURERS is **28198**

Unless otherwise specified, **dimensional tolerances** are:

- 1)  $\pm 0.001$  inches [0.03 mm] for male contact mating diameters.
- 2)  $\pm 0.003$  inches [0.08 mm] for contact termination diameters.
- 3)  $\pm 0.005$  inches [0.13 mm] for all other diameters.
- 4)  $\pm 0.015$  inches [0.38 mm] for all other dimensions.

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*Connector Savers can be mated to a connector which would normally experience high numbers of mating cycles. The connector saver can be easily replaced, “saving” a connector which is not easily replaced.*



### STANDARD DENSITY CONNECTOR SAVER / GENDER CHANGER

AD and HAD Series available in five shell sizes. Standard density connector savers and gender changers. AD series female contacts feature a rugged open entry design for use with professional/industrial quality applications. HAD series female contacts feature the PosiBand® closed entry design for even higher reliability or military quality D-subminiature connectors.



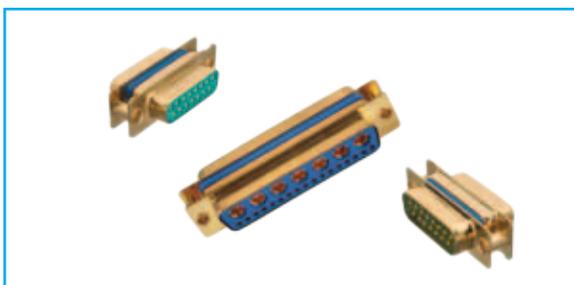
### HIGH DENSITY CONNECTOR SAVER / GENDER CHANGER

DAD Series available in six shell sizes. The high density connector savers and gender changers. DAD female contacts can be supplied in either open entry design for use with professional/military quality applications or PosiBand closed entry designs for use in any application requiring high performance characteristics including military.



### COMBO-D CONNECTOR SAVERS

ACBDP and ACBMP Series available for all standard Combo-D variants in shell sizes 1 through 6. Combo-D connector savers with size 20 and size 8 contacts. ACBDP series female contacts feature a rugged open entry design for use in professional/industrial quality applications. ACBMP series female contacts feature the PosiBand® closed entry design for even higher reliability including military.



### SPACE-D CONNECTOR SAVERS

SAD, SADD and SACBMP Series. Standard density, high density or Combo-D variants available. High reliability, non-outgassing, low magnetism connectors conforming to applicable material, dimensional and performance requirements of GSFC S-311-P4, GSFC S-311-P10 and DSCC specification 85039. All three series' female contacts feature the PosiBand® closed entry design suitable for high performance applications including space flight.



**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 75.

CONNECTOR SAVERS

## TECHNICAL CHARACTERISTICS

### MATERIALS AND FINISHES:

**Insulator:**  
**AD series:** Nylon resin, 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.

**Shells:** Steel with tin plate; zinc plate with chromate seal, 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:

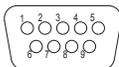
**Temperature Range:** -55°C to +125°C.



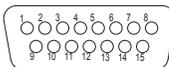
## AD AND HAD SERIES SIZE 20 CONTACT CONNECTOR SAVER

### CONTACT VARIANTS

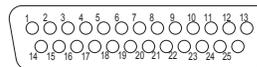
FACE VIEW OF MALE OR USE MIRROR IMAGE FOR FEMALE



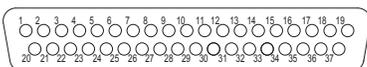
SIZE 9



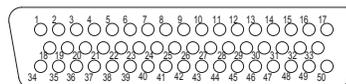
SIZE 15



SIZE 25

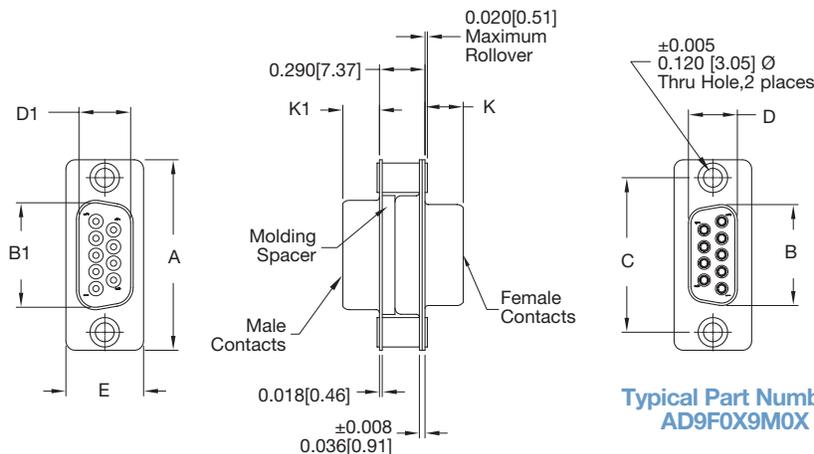


SIZE 37



SIZE 50

### STANDARD SHELL ASSEMBLY DIMENSIONS SIZE 20 CONTACTS



Typical Part Number:  
AD9FOX9M0X

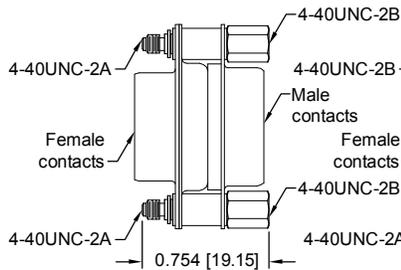
CONNECTOR VARIANT SIZES	A ±0.015 [0.38]	B ±0.005 [0.13]	B1 ±0.005 [0.13]	C ±0.005 [0.13]	D ±0.005 [0.13]	D1 ±0.005 [0.13]	E ±0.015 [0.38]	K ±0.005 [0.13]	K1 ±0.005 [0.13]
9 M	1.213 [30.81]		0.666 [16.92]	0.984 [24.99]		0.329 [8.36]	0.494 [12.55]		0.233 [5.92]
9 F	1.213 [30.81]	0.643 [16.33]		0.984 [24.99]	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

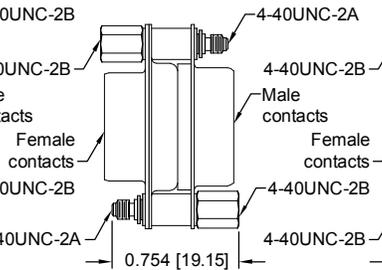
E



Example Part Number:  
AD9FEX9M0X

ROTATING  
MALE AND FEMALE  
POLARIZED  
JACKSCREWS

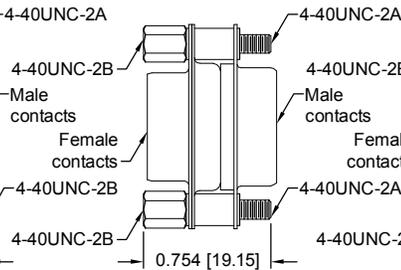
E6



Example Part Number:  
AD9FE6X9M0X

FIXED  
MALE AND FEMALE  
JACKSCREWS

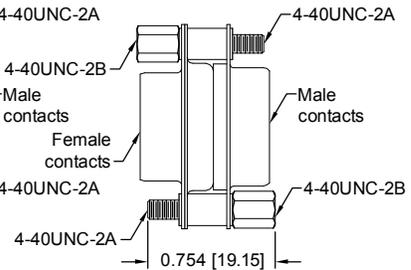
T



Example Part Number:  
AD9FTX9M0X

FIXED  
MALE AND FEMALE  
POLARIZED  
JACKSCREWS

T6



Example Part Number:  
AD9FT6X9M0X

**MATERIAL:** Brass or steel with zinc plate and chromate seal 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.*

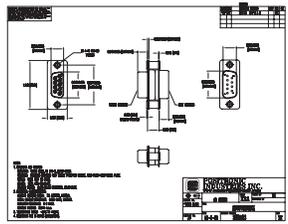
**Examples:** select loading of contacts for cost savings or to gain creepage and clearance distances; longer printed circuit board terminations; customer specified hardware; sealing for water resistance.

*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
<b>STEP 1 - BASIC SERIES</b> AD series - Open entry female contacts, nylon insulator HAD series - PosiBand closed entry female contacts, DAP insulator. <i>Military plating options available.</i>											
<b>STEP 2 - CONNECTOR VARIANT</b> 9, 15, 25, 37, 50											
<b>STEP 3 - 1<sup>ST</sup> CONNECTOR GENDER</b> M - Male F - Female											
<b>*1 STEP 4 - 1<sup>ST</sup> CONNECTOR MATING STYLE</b> 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)											
<b>STEP 5 - 1<sup>ST</sup> CONNECTOR SHELL OPTION</b> 0 - Zinc plated, with chromate seal. *4 S - Stainless steel, passivated. X - Tin plated. Z - Tin plated and dimpled (male connectors only).											
<b>NOTE:</b> 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.											
											
2-D Drawing											
											
3-D Model											
<b>STEP 6 - 2<sup>ND</sup> CONNECTOR VARIANT</b> 9, 15, 25, 37, 50											
<b>*2 STEP 7 - 2<sup>ND</sup> CONNECTOR GENDER</b> M - Male											
<b>*1 STEP 8 - 2<sup>ND</sup> CONNECTOR MATING STYLE</b> 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)											
<b>STEP 9 - 2<sup>ND</sup> CONNECTOR SHELL OPTION</b> 0 - Zinc plated, with chromate seal. *4 S - Stainless steel, passivated. X - Tin plated. Z - Tin plated and dimpled (male connectors only).											
<b>STEP 10 - ENVIRONMENTAL COMPLIANCE OPTIONS</b> /AA - RoHS Compliant <b>NOTE:</b> If compliance to environmental legislation is not required, this step will not be used. Example: AD9FSX9MSX											
<b>STEP 11 - SPECIAL OPTIONS</b> -14 - 0.000030 [0.76µ] gold over nickel. -15 - 0.000050 [1.27µ] gold over nickel. <b>CONTACT TECHNICAL SALES FOR SPECIAL OPTIONS</b>											

CONNECTOR SAVERS

\*2 STEP 6 - 2<sup>ND</sup> CONNECTOR VARIANT  
9, 15, 25, 37, 50

\*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 73.  
\*4 For stainless steel dimpled male versions contact Technical Sales.



**DAD Series  
Size 22  
“Open Entry” or  
PosiBand® “Closed Entry”  
Contact Design**

**Connector Saver**



DAD series connectors are suitable for use in any applications requiring high performance characteristic. The high density DAD series is available in six standard connector variants of 15, 26, 44, 62, 78 and 104 contacts.

DAD series connectors utilize precision machined contacts for strength and durability. The female contact features a rugged open entry design. Female PosiBand closed entry contacts can be chosen for even higher reliability, see page 1 for details.

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

Connectors are available in standard density versions, see page 71.

CONNECTOR SAVERS

## TECHNICAL CHARACTERISTICS

### MATERIALS AND FINISHES:

- Insulator:** Polyester glass-filled per ASTM D5927, UL 94V-0.
- Contacts:** Precision machined copper alloy.
- Contact Plating:** Gold flash over nickel plate. Other finishes available upon request.
- Shells:** Steel or brass with tin plate; zinc plate with chromate seal, stainless steel passivated. Other materials and finishes available upon request.

Low magnetic versions are available, contact Technical Sales.

### MECHANICAL CHARACTERISTICS:

- Fixed Contacts:** Size 22 contacts - male 0.030 inch [0.76 mm] mating diameter. Female contact: open entry or PosiBand closed entry design, see page 1 for details.
- Connector Saver:** Male to female.
- Contact Retention:** 9 lbs. [40 N].
- Shells:** Male shells may be dimpled for EMI/ESD ground paths.
- Polarization:** Trapezoidally shaped shells.

- Mechanical Operations:** 500 operations, minimum, per IEC 60512-5 for open entry.  
1000 operations, minimum, per IEC 60512-5 for closed entry.

### ELECTRICAL CHARACTERISTICS:

- Contact Current Rating:**
  - Open Entry Contacts:** 5 amperes nominal
  - Closed Entry Contacts, tested per UL 1977:**
    - 12 amperes, 2 contacts energized.
    - 10 amperes, 6 contacts energized.
    - 7.5 amperes, 26 contacts energized.
    - 6.5 amperes, 62 contacts energized.
    - 5.0 amperes, 104 contacts energized.

*See temperature rise curves on page 2 for details.*

- Initial Contact Resistance:** 0.010 ohms, maximum for open entry  
0.005 ohms, maximum for closed entry
- Proof Voltage:** 1,000 V r.m.s.
- Insulation Resistance:** 5 G ohms.
- Clearance and Creepage Distance:** 0.042 inch [1.06 mm], minimum.
- Working Voltage:** 300 V r.m.s.

### CLIMATIC CHARACTERISTICS:

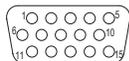
- Temperature Range:** -55°C to +125°C.



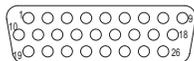
## DAD SERIES SIZE 22 CONTACT CONNECTOR SAVER

### CONTACT VARIANTS

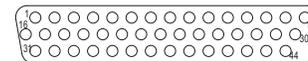
FACE VIEW OF MALE OR USE MIRROR IMAGE FOR FEMALE



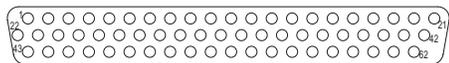
DAD 15



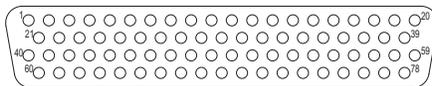
DAD 26



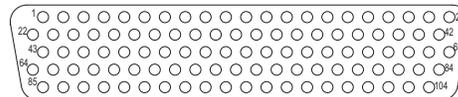
DAD 44



DAD 62



DAD 78

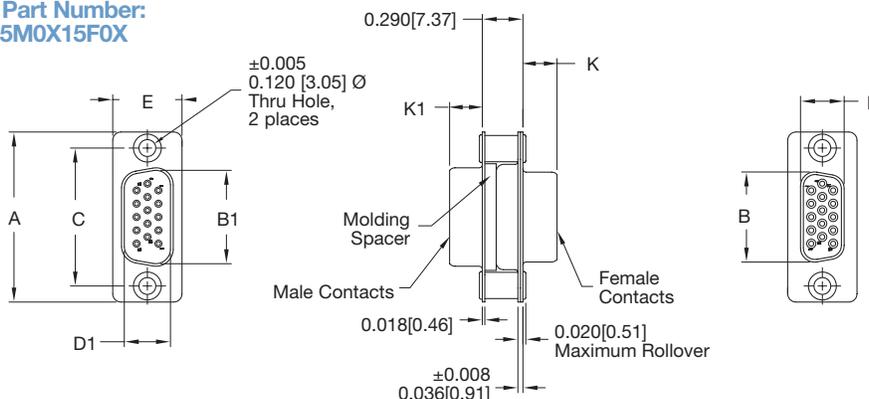


DAD 104

### STANDARD SHELL ASSEMBLY DIMENSIONS

#### SIZE 22 CONTACTS

Typical Part Number:  
DAD15M0X15FOX



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]
15 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]
15 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 S									
26 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]
26 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]	
26 S									
44 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]
44 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]	
44 S									
62 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]
62 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]	
62 S									
78 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]
78 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]	
78 S									
104 M	2.729 [69.32]		2.212 [56.18]	2.500 [63.50]		0.503 [12.78]	0.668 [16.97]		0.230 [5.84]
104 F	2.729 [69.32]	2.189 [55.60]		2.500 [63.50]	0.485 [12.32]		0.668 [16.97]	0.243 [6.17]	
104 S									



### 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	DAD	15	M	S	X	15	F	S	X	/AA	-14

#### STEP 1 - BASIC SERIES

DAD series

#### STEP 2 - CONNECTOR VARIANT

15, 26, 44, 62, 78, 104

#### STEP 3 - 1<sup>ST</sup> CONNECTOR GENDER

M - Male

#### \*2 STEP 4 - 1<sup>ST</sup> CONNECTOR MATING STYLE

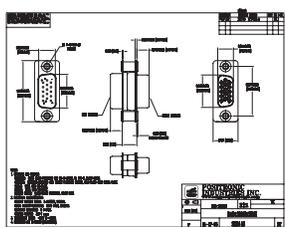
- 0 - Swaged spacer 0.120 [3.05µ] mounting hole
- S - Swaged spacer 4-40 UNC-2B threads
- \*3 E - Rotating male and female jackscrews (Select 0 in Step 8)
- \*3 E6 - Rotating male and female polarized jackscrew (Select 0 in Step 8)
- \*3 T - Fixed male and female jackscrews (Select 0 in Step 8)
- \*3 T6 - Fixed male and female polarized jackscrew (Select 0 in Step 8)

#### STEP 5 - 1<sup>ST</sup> CONNECTOR SHELL OPTION

- 0 - Zinc plated, with chromate seal.
- \*5 S - Stainless steel, passivated.
- X - Tin plated.
- Z - Tin plated and dimpled (male connectors only).

- \*1 Male option available only on connector variant 78.
- \*2 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.
- \*3 For hardware information, see page 73.
- \*4 Connector variant for both connectors must be the same as in Step 2.
- \*5 For stainless steel dimpled male versions contact Technical Sales.

**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.



2-D Drawing



3-D Model

#### STEP 11 - SPECIAL OPTIONS

- 14 - 0.000030 [0.76µ] gold over nickel.
  - 15 - 0.000050 [1.27µ] gold over nickel.
- CONTACT TECHNICAL SALES FOR SPECIAL OPTIONS**

#### STEP 10 - ENVIRONMENTAL COMPLIANCE OPTIONS

/AA - RoHS Compliant

**NOTE:** If compliance to environmental legislation is not required, this step will not be used. Example: DAD15MSX15FSX

#### STEP 9 - 2<sup>ND</sup> CONNECTOR SHELL OPTION

- 0 - Zinc plated, with chromate seal.
- \*5 S - Stainless steel, passivated.
- X - Tin plated.
- Z - Tin plated and dimpled (male connectors only).

#### \*\*STEP 8 - 2<sup>ND</sup> CONNECTOR MATING STYLE

- 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)

#### STEP 7 - 2<sup>ND</sup> CONNECTOR GENDER

- \*1 M - Male
- F - Female - Professional Level - open entry contacts
- S - Female - Industrial Level - PosiBand closed entry contacts

Military plating options available.

#### \*4 STEP 6 - 2<sup>ND</sup> CONNECTOR VARIANT

15, 26, 44, 62, 78, 104



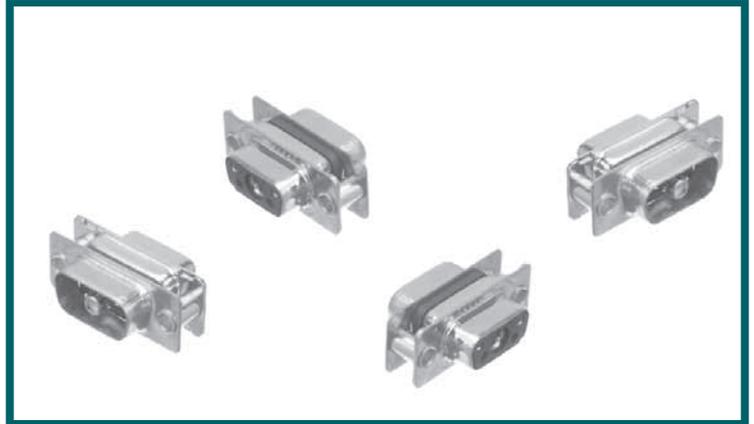
Positronic  
connectpositronic.com

## COMBO-D CONNECTOR SAVERS GENDER CHANGERS

Combo-D  
D-Sub

**Professional Quality Connectors  
ACBDP Series  
Size 20 "Open Entry" or  
PosiBand® "Closed Entry"  
Contact Design**

**Industrial /Military Quality Connectors  
- ACBMP Series  
Size 20 PosiBand®  
"Closed Entry" Contact Design  
Connector Saver**



ACBDP and ACBMP series connectors are suitable for use in any applications requiring high performance characteristic. The normal density ACBDP and ACBMP series are available in standard Combo-D connector variants.

ACBDP and ACBMP series connectors utilize precision machined contacts for strength and durability. The ACBDP female contact features a rugged "Open Entry" design or PosiBand "Closed Entry" design for even higher reliability. ACBMP connectors features PosiBand "Closed Entry" contacts and military contact plating.

ACBDP and ACBMP series connectors can be mated to a connector which would normally experience high numbers of mating cycles. The ACBDP/ACBMP connector can be easily replaced, "Saving" a connector which is not easily replaced.

These connectors can also be used as a "gender changer". Connector Savers are also available in standard and high density D-subminiature versions, please consult our Professional, Industrial and Military Performance D-subminiature Connectors catalog for more information.

For high density 8W2, 19W1 and 45W2 adapter variants contact Technical Sales.

## TECHNICAL CHARACTERISTICS

### MATERIALS AND FINISHES:

<b>Insulator:</b>	Glass filled polyester per ASTM D 5927 UL 94V-0, blue color.
<b>SIGNAL CONTACTS:</b>	
<b>ACBDP Series:</b>	Precision machined high tensile copper alloy open entry design.
<b>ACBMP Series:</b>	Precision machined copper alloy PosiBand closed entry design.
<b>POWER CONTACTS:</b>	Precision machined copper alloy closed entry design.
<b>Contact Plating:</b>	
<b>ACBDP Series:</b>	Gold flash over nickel plate.
<b>ACBMP Series:</b>	0.000050 [1.27µ] gold over nickel plate.
<b>Shells:</b>	Steel with tin plate; zinc plate with chromate seal; stainless steel passivated. Other materials and finishes available upon request.

**Jackscrew Systems:** Brass or steel with zinc plate and chromate seal or clear zinc plate or tin plate; stainless steel, passivated.

**Non-magnetic versions are available, contact Technical Sales.**

### MECHANICAL CHARACTERISTICS:

#### FIXED CONTACTS:

**SIGNAL CONTACTS:** Size 20 contacts, male - 0.040 inch [1.02 mm] diameter. ACBDP series has female open entry contact or PosiBand closed entry contacts optional, see page 69 for details. ACBMP series offer female PosiBand closed entry contacts.

**POWER CONTACTS:** Size 8 contacts, male - 0.142 inch [3.61 mm] diameter. Female contact features Large Surface Area (L.S.A.) closed entry contact design utilizing BeCu mechanical retention member.



TECHNICAL CHARACTERISTICS, continued

continued from previous page. . .

MECHANICAL CHARACTERISTICS, continued:

- Connector Saver: Male to female or male to male.
- Contact Retention:
  - Signal: 9 lbs. [40 N].
  - Power: 22 lbs. [98 N].
- Shells: Male shells may be dimpled for EMI/ESD ground paths.
- Polarization: Trapezoidally shaped shells.
- Mechanical Operations:
  - ACBDP Series: 500 operations, minimum, per IEC 60512-5.
  - ACBMP Series: 1,000 operations, minimum, per IEC 60512-5.

ELECTRICAL CHARACTERISTICS:

SIZE 20 CONTACTS

- Contact Current Rating: 7.5 amperes, nominal.
- Initial Contact Resistance: 0.008 ohms, maximum.
- Proof Voltage: 1,000 V r.m.s.

SIZE 8 CONTACTS

POWER CONTACTS

- Contact Current Rating: 70 amperes, per UL 1977. See *Temperature Rise Curves* on pages 1-2.
- Initial Contact Resistance: 0.0005 ohms, maximum
- Proof Voltage: 1,000 V r.m.s.

CONNECTOR

- Insulation Resistance: 5 G ohms.
- Clearance and Creepage Distance: 0.039 inch [1.0 mm], minimum.
- Working Voltage: 300 V r.m.s.

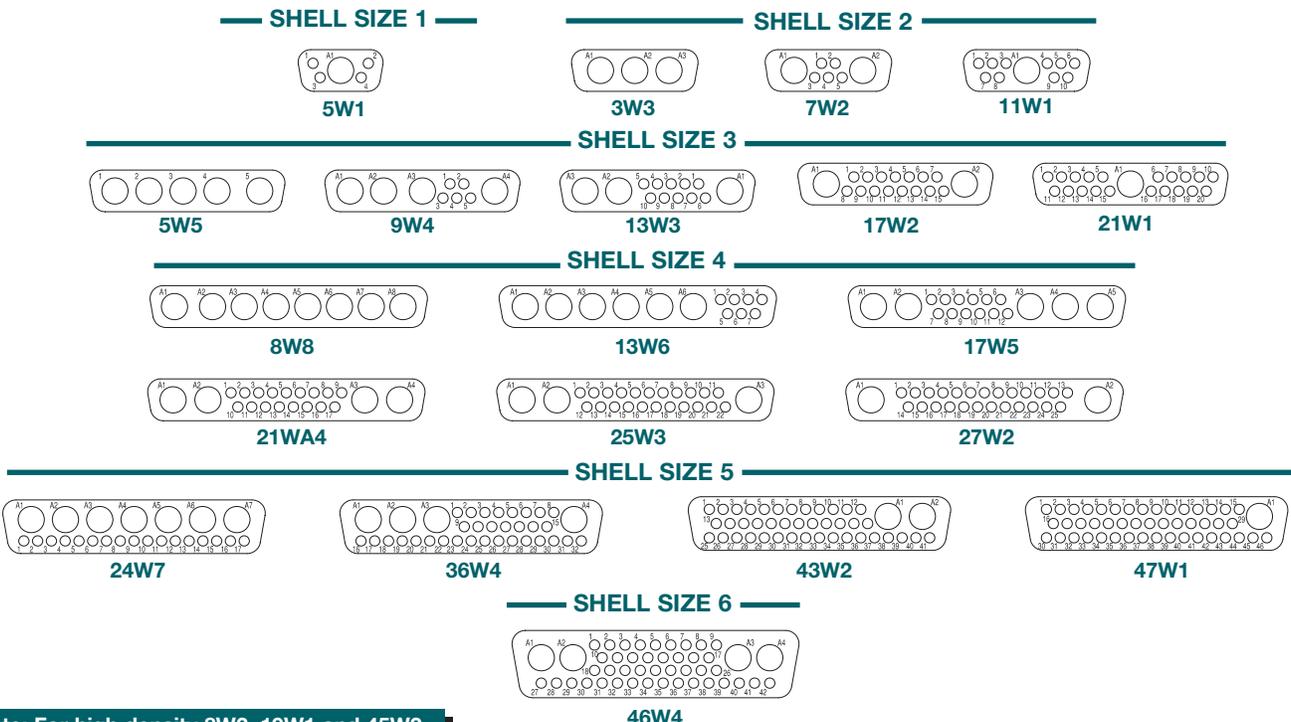
CLIMATIC CHARACTERISTICS:

- Temperature Range: -55°C to +125°C.

ACBDP/ACBMP SERIES SIZE 20 AND SIZE 8 CONTACT CONNECTOR SAVER

CONTACT VARIANTS

FACE VIEW OF MALE OR REAR VIEW OF FEMALE



Note: For high density 8W2, 19W1 and 45W2 variants contact Technical Sales for availability.



Positronic  
connectpositronic.com

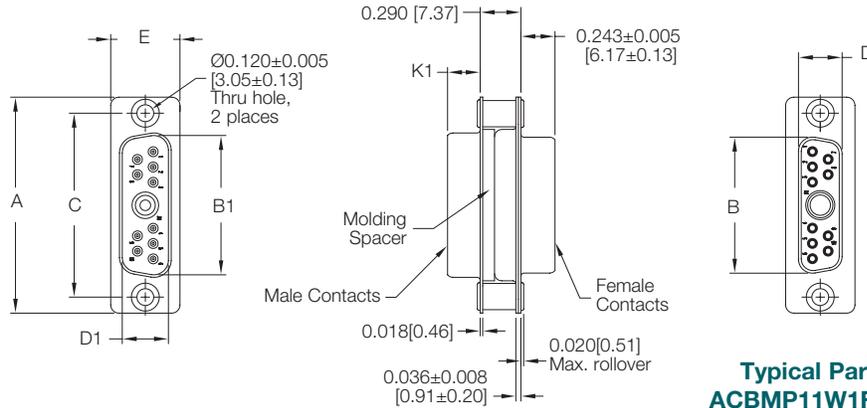
# COMBO-D CONNECTOR SAVERS GENDER CHANGERS

Combo-D  
D-Sub

## STANDARD SHELL ASSEMBLY DIMENSIONS SIZE 20 AND SIZE 8 CONTACTS CODE 0 AND S

**NOTE:**

Code S = Swaged spacer with 4-40 UNC-2B threads.



Typical Part Number:  
**ACBMP11W1F0011W1M00**

CONNECTOR SIZE	A ±0.015	B ±0.005	B1 ±0.005	C ±0.005	D ±0.005	D1 ±0.005	E ±0.015	K1 ±0.005
SHELL SIZE 1	1.213 [30.81]	0.643 [16.33]	0.666 [16.92]	0.984 [24.99]	0.311 [7.90]	0.329 [8.36]	0.494 [12.55]	0.233 [5.92]
SHELL SIZE 2	1.541 [39.14]	0.971 [24.66]	0.994 [25.25]	1.312 [33.32]	0.311 [7.90]	0.329 [8.36]	0.494 [12.55]	0.233 [5.92]
SHELL SIZE 3			1.534 [38.96]	1.852 [47.04]	0.311 [7.90]	0.329 [8.36]	0.494 [12.55]	0.230 [5.84]
SHELL SIZE 4	2.729 [69.32]	2.159 [54.84]	2.182 [55.42]	2.500 [63.50]	0.311 [7.90]	0.329 [8.36]	0.494 [12.55]	0.230 [5.84]
SHELL SIZE 5	2.635 [66.93]	2.064 [52.43]	2.079 [52.81]	2.406 [61.11]	0.423 [10.74]	0.441 [11.20]	0.605 [15.37]	0.230 [5.84]
SHELL SIZE 6	2.729 [69.32]	2.189 [55.60]	2.212 [56.18]	2.500 [63.50]	0.485 [12.32]	0.503 [12.78]	0.668 [16.97]	0.230 [5.84]

CONNECTOR SAVERS

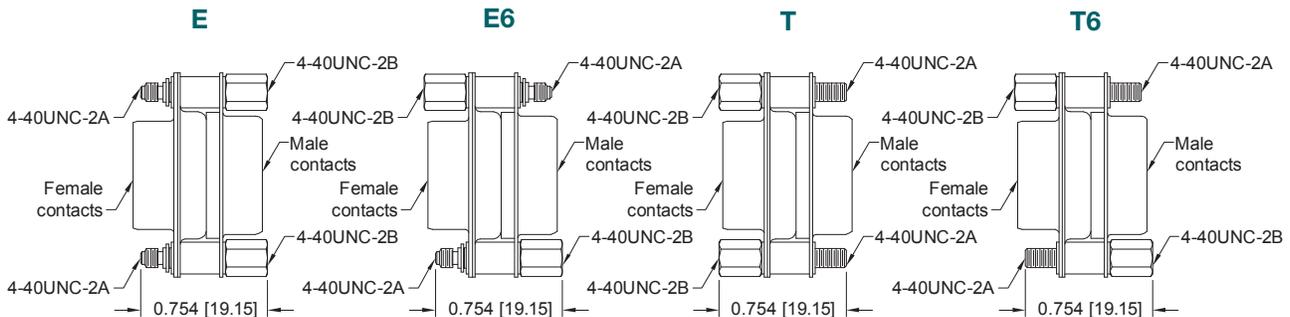
## JACKSCREW SYSTEMS CODE E, E6, T AND T6

**ROTATING  
MALE AND FEMALE  
JACKSCREWS**

**ROTATING  
MALE AND FEMALE  
POLARIZED JACKSCREWS**

**FIXED  
MALE AND FEMALE  
JACKSCREWS**

**FIXED  
MALE AND FEMALE  
POLARIZED JACKSCREWS**



Example Part Number:  
**ACBDP5W1FEX5W1M0X**

Example Part Number:  
**ACBDP5W1FE6X5W1M0X**

Example Part Number:  
**ACBDP5W1FTX5W1M0X**

Example Part Number:  
**ACBDP5W1FT6X5W1M0X**



## 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	ACBDP	11W1	F	S	X	11W1	M	S	X	/AA	-14

### STEP 1 - BASIC SERIES

ACBDP – Professional / Industrial Quality, see Step 3.  
ACBMP – Military conformance with “closed entry” female signal contacts plated 0.000050 [1.27µ] gold over nickel plate. Choose “S” or “M” in Step 3.

### STEP 2 - CONNECTOR VARIANT

**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

**Note: For high density 8W2, 19W1 and 45W2 variants contact Technical Sales for availability.**

### STEP 3 - 1ST CONNECTOR GENDER

F - Female - Professional Level - Open Entry Signal Contacts  
\*M - Male  
S - Female - Industrial / Military Level - PosiBand Closed Entry Signal Contacts. Military gold plating is optional.

### \*2 STEP 4 - 1ST CONNECTOR MATING STYLE

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)

### STEP 5 - 1ST CONNECTOR SHELL OPTION

0 – Zinc Plated, with Chromate Seal.  
\*S – Stainless Steel, passivated.  
X – Tin Plated.  
Z – Tin Plated and Dimpled (male connectors only).

### STEP 11 - SPECIAL OPTIONS

**FOR SPECIAL OPTIONS, SEE SPECIAL OPTIONS APPENDIX ON PAGE 81.**

### STEP 10 - ENVIRONMENTAL COMPLIANCE OPTIONS

/AA - RoHS Compliant

**NOTE:** If compliance to environmental legislation is not required, this step will not be used. Example: ACBDP11W1FSX11W1MSX

### STEP 9 - 2ND CONNECTOR SHELL OPTION

0 – Zinc Plated, with Chromate Seal.  
\*S – Stainless Steel, passivated.  
X – Tin Plated.  
Z – Tin Plated and Dimpled (male connectors only).

### \*2 STEP 8 - 2ND CONNECTOR MATING STYLE

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)

### STEP 7 - 2ND CONNECTOR GENDER

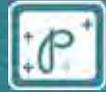
M - Male

### \*5 STEP 6 - 2ND CONNECTOR VARIANT

Select same variant as chosen in STEP 2.

### NOTES

- \*1 Male option in Step 3 available only on connector variants 5W1, 3W3, 7W2, 11W1, 17W2, 21W1, 21WA4, 27W2, 24W7, 46W4.
- \*2 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.
- \*3 For hardware information, see page 59.
- \*4 For stainless steel dimpled male versions, contact Technical Sales.
- \*5 Connector variant for both connectors must be the same.



-  High performance for use in harsh environments, including space flight.
-  Size 20 **fixed** contacts.
-  Female closed entry contacts utilize the “PosiBand®” system.  
*See page 1 for details.*
-  Five connector variants include 9, 15, 25, 37, and 50 contacts.
-  Suitable for use as connector saver or gender changer.
-  A wide variety of jackscrew options allows for mechanical keying.

**Conforming To Applicable Material, Dimensional and Performance Requirements:**

- GSFC S-311-P4 & GSFC S-311-P10
- MIL-DTL-24308 Class M

**Conforming To Outgassing Requirements:**

- ASTM E-595 & NASA-RP-1124

## TECHNICAL CHARACTERISTICS

### MATERIALS AND FINISHES:

**Connector Insulator:** Glass-filled DAP per ASTM-D-5948, UL 94V-0, ASTM E-595, NASA-RP-1124.

**Contacts:** Precision machined copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 95.

**Connector Housing (Shells), Spacers and Jackscrew Systems:** Brass with 0.000050 inch [1.27 microns] gold over copper plate.

### MECHANICAL CHARACTERISTICS:

**Size 20 Fixed:** Male contact - 0.040 inch [1.02 mm] mating diameter. Female contact - PosiBand closed entry design; *see page 1 for details.*

**Connector Saver:** Male to female, or male to male.

**Contact Retention:** 9 lbs. [40 N].

**Connector Housing (Shells):** Male connector housings may be dimpled for EMI/ESD ground paths.

**Polarization:** Trapezoidally-shaped connector housings.

**Mechanical Operations:** 1,000 operations, minimum, per IEC 60512-5.

### ELECTRICAL CHARACTERISTICS:

**Contact Current Rating:** 7.5 amperes, nominal.

**Initial Contact Resistance:** 0.008 ohms, maximum.

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

**Insulator 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.

Visit our website for the latest catalog updates and supplements at  
<http://www.connectpositronic.com/products/62/HighPerformanceD-subminiature/catalogs/>



Positronic Industries  
connectpositronic.com

# SAD SERIES

## MILITARY / SPACE FLIGHT QUALITY

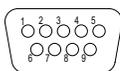
### STANDARD DENSITY CONNECTOR SAVER

High  
Performance  
D-sub

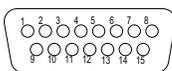
## SAD SERIES SIZE 20 CONTACT CONNECTOR SAVER

### CONTACT VARIANTS

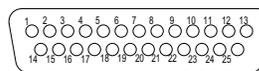
FACE VIEW OF MALE OR REAR VIEW OF FEMALE



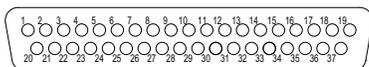
SAD 9



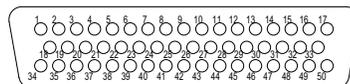
SAD 15



SAD 25



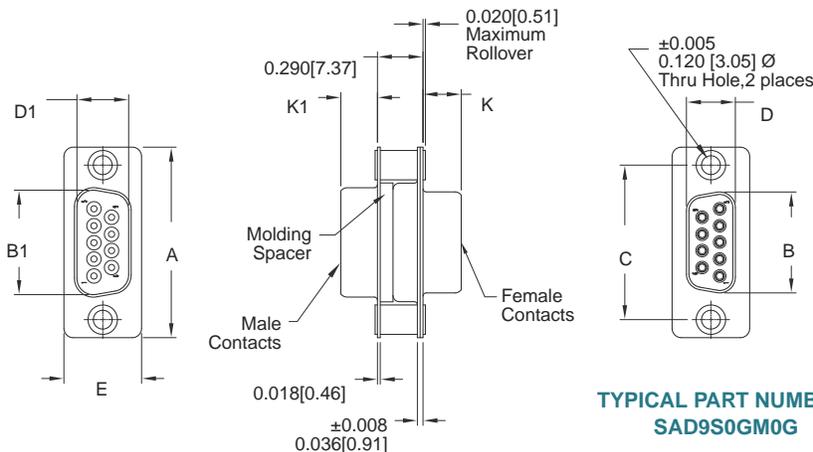
SAD 37



SAD 50

## STANDARD CONNECTOR HOUSING (SHELLS) ASSEMBLY DIMENSIONS

### SIZE 20 CONTACTS



TYPICAL PART NUMBER:  
SAD9S0GM0G

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 S	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 S	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 S	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 S	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]		
50 S	2.635 [66.93]	2.064 [52.43]		2.406 [61.11]	0.423 [10.74]		0.605 [15.37]	0.243 [6.17]	

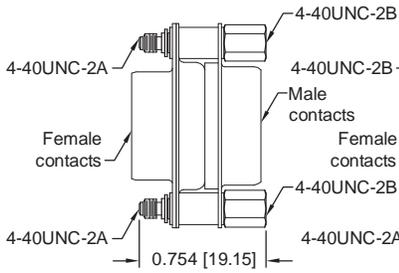


**JACKSCREW SYSTEMS**

CODE E, E6, T AND T6

ROTATING  
MALE AND FEMALE  
JACKSCREWS

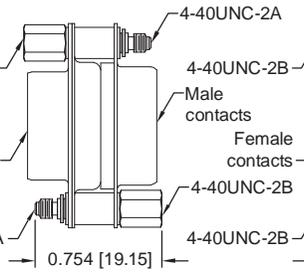
**E**



EXAMPLE PART NUMBER:  
SAD9SEGM0G

ROTATING  
MALE AND FEMALE  
POLARIZED  
JACKSCREWS

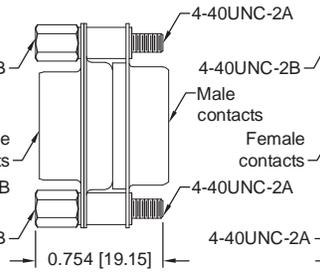
**E6**



EXAMPLE PART NUMBER:  
SAD9SE6GM0G

FIXED  
MALE AND FEMALE  
JACKSCREWS

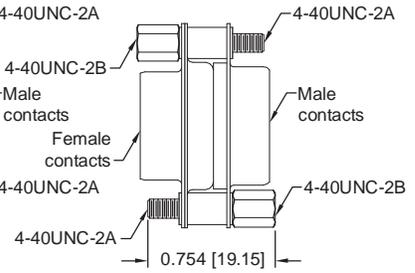
**T**



EXAMPLE PART NUMBER:  
SAD9STGM0G

FIXED  
MALE AND FEMALE  
POLARIZED  
JACKSCREWS

**T6**



EXAMPLE PART NUMBER:  
SAD9ST6GM0G



SAD15S0GM0G connector saver mated to  
SND15S5R70T2G connector.



## 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	SAD	9	S	S	G	M	S	D	—

### STEP 1 - BASIC SERIES

SAD series

### STEP 2 - CONNECTOR VARIANT

9, 15, 25, 37, 50

### STEP 3 - 1<sup>ST</sup> CONNECTOR GENDER

M - Male  
S - Female - PosiBand closed entry contacts,  
*see page 1 for more information.*

### \*1 STEP 4 - 1<sup>ST</sup> CONNECTOR MATING STYLE

- 0 - Swaged spacer 0.120 [3.05µ] mounting hole
- S - Swaged spacer 4-40 UNC-2B threads
- \*2 E - Rotating male and female jackscrews  
*(Select 0 in Step 7)*
- \*2 E6 - Rotating male and female polarized jackscrew  
*(Select 0 in Step 7)*
- \*2 T - Fixed male and female jackscrews  
*(Select 0 in Step 7)*
- \*2 T6 - Fixed male and female polarized jackscrew  
*(Select 0 in Step 7)*

### STEP 5 - 1<sup>ST</sup> CONNECTOR HOUSING (SHELLS) OPTION

G - Gold over copper plate.  
D - Gold over copper plate and dimpled  
*(male connectors only).*

### STEP 9 - SPECIAL OPTIONS

SEE APPENDIX ON PAGE 95.

### STEP 8 - 2<sup>ND</sup> CONNECTOR HOUSING (SHELLS) OPTION

G - Gold over copper plate.  
D - Gold over copper plate and dimpled  
*(male connectors only).*

### \*1 STEP 7 - 2<sup>ND</sup> CONNECTOR MATING STYLE

- 0 - Swaged spacer 0.120 [3.05µ] mounting hole
- S - Swaged spacer 4-40 UNC-2B threads
- \*2 E - Rotating male and female jackscrews  
*(Select 0 in Step 4)*
- \*2 E6 - Rotating male and female polarized jackscrew  
*(Select 0 in Step 4)*
- \*2 T - Fixed male and female jackscrews  
*(Select 0 in Step 4)*
- \*2 T6 - Fixed male and female polarized jackscrew  
*(Select 0 in Step 4)*

### STEP 6 - 2<sup>ND</sup> CONNECTOR GENDER

M - Male

### NOTES

- \*1 Connector mating style for both connectors must be the same if 0 or S is used. If E or E6 is used in either Step 4 or 8 the other step must be 0.
- \*2 For hardware information, see page 64.

*Do you need 2-D drawings or 3-D models?*

See page 18 for more information!



-  High performance for use in harsh environments, including space flight.
-  Size 22 **fixed** contacts.
-  Female closed entry contacts utilize the "PosiBand®" system. *See page 1 for details.*
-  Five connector variants include 15, 26, 44, 62, 78, and 104 contacts.
-  Suitable for use as connector saver or gender changer.
-  A wide variety of jackscrew options allows for mechanical keying.

### Conforming To Applicable Material, Dimensional and Performance Requirements:

- GSFC S-311-P4
- MIL-DTL-24308 Class M

### Conforming To Outgassing Requirements:

- ASTM E-595 & NASA-RP-1124

## TECHNICAL CHARACTERISTICS

### MATERIALS AND FINISHES:

<b>Connector Insulator:</b>	Polyester glass-filled per ASTM-D-5927, UL 94V-0, ASTM E-595, NASA-RP-1124.
<b>Contacts:</b>	Precision machined copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 95.
<b>Connector Housing (Shells), Spacers and Jackscrew Systems:</b>	Brass with 0.000050 inch [1.27 microns] gold over copper plate.

### MECHANICAL CHARACTERISTICS:

<b>Size 20 Fixed:</b>	Male contact - 0.030 inch [0.76 mm] mating diameter. Female contact - PosiBand closed entry design; <i>see page 1 for details.</i>
<b>Connector Saver:</b>	Male to female (or male to male, Size 78 only).
<b>Contact Retention:</b>	9 lbs. [40 N].

### Connector Housing (Shells):

Male connector housings may be dimpled for EMI/ESD ground paths.

### Polarization:

Trapezoidally-shaped connector housings.

### Mechanical Operations:

1,000 operations, minimum, per IEC 60512-5.

### ELECTRICAL CHARACTERISTICS:

<b>Contact Current Rating:</b>	5 amperes, nominal.
<b>Initial Contact Resistance:</b>	0.008 ohms, maximum.
<b>Proof Voltage:</b>	1,000 V r.m.s.
<b>Insulator Resistance:</b>	5 G ohms.
<b>Clearance and Creepage Distance:</b>	0.039 inch [1.0 mm], minimum.
<b>Working Voltage:</b>	300 V r.m.s.

### CLIMATIC CHARACTERISTICS:

<b>Temperature Range:</b>	-55°C to +125°C.
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<http://www.connectpositronic.com/products/62/HighPerformanceD-subminiature/catalogs/>



Positronic Industries  
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# SADD SERIES

## MILITARY / SPACE FLIGHT QUALITY

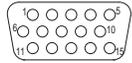
### HIGH DENSITY CONNECTOR SAVER

High  
Performance  
D-sub

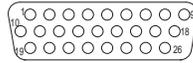
## SADD SERIES SIZE 22 CONTACT CONNECTOR SAVER

### CONTACT VARIANTS

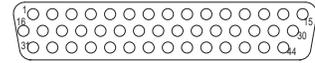
FACE VIEW OF MALE OR USE MIRROR IMAGE FOR FEMALE



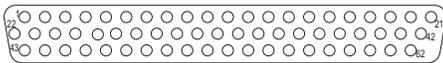
SADD 15



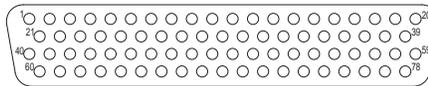
SADD 26



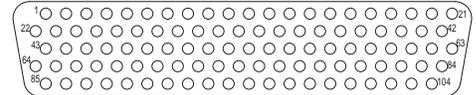
SADD 44



SADD 62



SADD 78

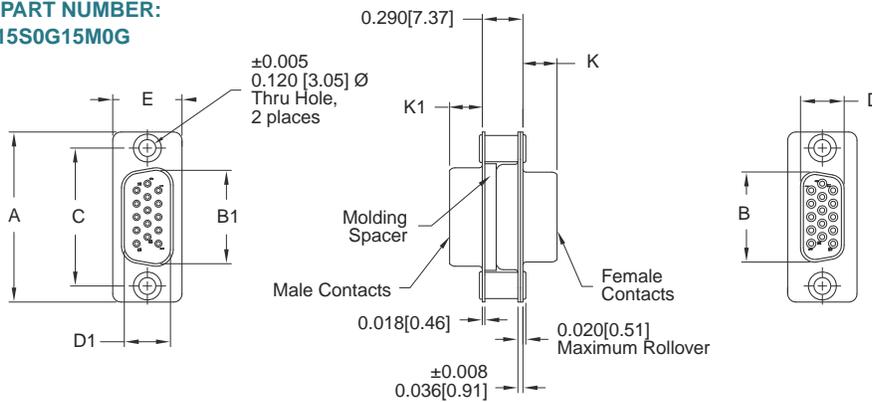


SADD 104

## STANDARD CONNECTOR HOUSING (SHELLS) ASSEMBLY DIMENSIONS

### SIZE 22 CONTACTS

TYPICAL PART NUMBER:  
SADD15S0G15M0G



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]
15 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]
15 S	1.213 [30.81]	0.643 [16.33]		0.984 [24.99]	0.311 [7.90]		0.494 [12.55]	0.243 [6.17]	
26 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]
26 S	1.541 [39.14]	0.971 [24.66]		1.312 [33.32]	0.311 [7.90]		0.494 [12.55]	0.243 [6.17]	
44 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]
44 S	2.088 [53.04]	1.511 [38.38]		1.852 [47.04]	0.311 [7.90]		0.494 [12.55]	0.243 [6.17]	
62 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]
62 S	2.729 [69.32]	2.159 [54.84]		2.500 [63.50]	0.311 [7.90]		0.494 [12.55]	0.243 [6.17]	
78 M	2.635 [66.93]		2.079 [52.81]	2.406 [61.11]		0.441 [11.20]	0.605 [15.37]		
78 S	2.635 [66.93]	2.064 [52.43]		2.406 [61.11]	0.423 [10.74]		0.605 [15.37]	0.243 [6.17]	
104 M	2.729 [69.32]		2.212 [56.18]	2.500 [63.50]		0.503 [12.78]	0.668 [16.97]		0.230 [5.84]
104 S	2.729 [69.32]	2.189 [55.60]		2.500 [63.50]	0.485 [12.32]		0.668 [16.97]	0.243 [6.17]	



## 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	SADD	15	S	S	G	M	S	D	—
<b>STEP 1 - BASIC SERIES</b> SADD series									<b>STEP 9 - SPECIAL OPTIONS</b> <i>SEE APPENDIX ON PAGE 95.</i>
<b>STEP 2 - CONNECTOR VARIANT</b> 15, 26, 44, 62, 78, 104									<b>STEP 8 - 2<sup>ND</sup> CONNECTOR HOUSING (SHELLS) OPTION</b> G - Gold over copper plate. D - Gold over copper plate and dimpled (male connectors only).
<b>STEP 3 - 1<sup>ST</sup> CONNECTOR GENDER</b> <sup>*3</sup> M - Male S - Female - PosiBand closed entry contacts, see page 1 for more information.									<b>*1 STEP 8 - 2<sup>ND</sup> CONNECTOR MATING STYLE</b> 0 - Swaged spacer 0.120 [3.05µ] mounting hole S - Swaged spacer 4-40 UNC-2B threads <sup>*2</sup> E - Rotating male and female jackscrews (Select 0 in Step 7) <sup>*2</sup> E6 - Rotating male and female polarized jackscrew (Select 0 in Step 7) <sup>*2</sup> T - Fixed male and female jackscrews (Select 0 in Step 7) <sup>*2</sup> T6 - Fixed male and female polarized jackscrew (Select 0 in Step 7)
<b>*1 STEP 4 - 1<sup>ST</sup> CONNECTOR MATING STYLE</b> 0 - Swaged spacer 0.120 [3.05µ] mounting hole S - Swaged spacer 4-40 UNC-2B threads <sup>*2</sup> E - Rotating male and female jackscrews (Select 0 in Step 7) <sup>*2</sup> E6 - Rotating male and female polarized jackscrew (Select 0 in Step 7) <sup>*2</sup> T - Fixed male and female jackscrews (Select 0 in Step 7) <sup>*2</sup> T6 - Fixed male and female polarized jackscrew (Select 0 in Step 7)									<b>STEP 6 - 2<sup>ND</sup> CONNECTOR GENDER</b> M - Male
<b>STEP 5 - 1<sup>ST</sup> CONNECTOR HOUSING (SHELLS) OPTION</b> G - Gold over copper plate. D - Gold over copper plate and dimpled (male connectors only).									<b>NOTES</b> <sup>*1</sup> Connector mating style for both connectors must be the same if 0 or S is used. If E or E6 is used in either Step 4 or 8 the other step must be 0. <sup>*2</sup> For hardware information, see page 64. <sup>*3</sup> Male option available only on connector variant 78.

SADD SERIES

*Do you need 2-D drawings or 3-D models?*  
See page 18 for more information!



Positronic Industries  
connectpositronic.com

# SACBMP SERIES

## MILITARY / SPACE FLIGHT QUALITY

### STANDARD DENSITY COMBO-D CONNECTOR SAVER

High  
Performance  
D-sub



- High performance for use in harsh environments, including space flight.
- Size 20 and Size 8 **fixed** contacts.
- All female closed entry signal contacts utilize the “PosiBand®” system. *See page 1 for details.*
- Twenty-two connector variants with a mixture of signal, power, shielded and high voltage contacts.
- Suitable for use as connector saver or gender changer.
- Current ratings: signal level to 7.5 amperes. *See temperature rise curves on page 2 for details.*
- A wide variety of jackscrew options allows for mechanical keying.

#### Conforming To Applicable Material, Dimensional and Performance Requirements:

- GSFC S-311-P4 & GSFC S-311-P10
- DSCC Specification 85039

#### Conforming To Outgassing Requirements:

- ASTM E-595 & NASA-RP-1124

## TECHNICAL CHARACTERISTICS

### MATERIALS AND FINISHES:

<b>Connector Insulator:</b>	Glass-filled polyester per ASTM-D-5927, UL 94-V0, ASTM E-595, NASA-RP-1124, blue color.
<b>Contacts:</b>	
<b>Size 20:</b>	Precision machined copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 95.
<b>Size 8:</b>	Precision machined high conductivity copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 95.
<b>Connector Housing (Shells), Spacers and Jackscrew Systems:</b>	Brass with 0.000050 inch [1.27 microns] gold over copper plate.

### MECHANICAL CHARACTERISTICS:

<b>Size 20 Fixed:</b>	Male contact - 0.040 inch [1.02 mm] mating diameter. Female contact - PosiBand closed entry design; <i>see page 1 for details.</i>
<b>Size 8 Fixed:</b>	Male - 0.142 inch [3.61mm] mating diameter. Female contact features Large Surface Area (L.S.A.) closed entry contact design utilizing BeCu mechanical retention member. Closed crimp barrel.
<b>Connector Saver:</b>	Male to female, male to male see page 72 for available variants.
<b>Contact Retention:</b>	9 lbs. [40 N].
<b>Connector Housing (Shells):</b>	Male connector housings may be dimpled for EMI/ESD ground paths.
<b>Polarization:</b>	Trapezoidally-shaped connector housings.
<b>Mechanical Operations:</b>	1,000 operations, minimum, per IEC 60512-5.

... continued on next page



## TECHNICAL CHARACTERISTICS, *continued*

continued from previous page. . .

### ELECTRICAL CHARACTERISTICS:

#### SIZE 20 CONTACTS

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

#### SIZE 8 CONTACTS

Contact Current Rating:	40 amperes, nominal
Initial Contact Resistance:	0.008 ohms maximum.
Proof Voltage:	1000 V r.m.s.

### CONNECTOR

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.
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<http://www.connectpositronic.com/products/62/HighPerformanceD-subminiature/catalogs/>

## SACBMP SERIES SIZE 20 AND SIZE 8 CONTACT CONNECTOR SAVER

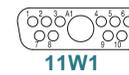
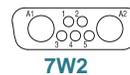
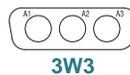
### CONTACT VARIANTS

FACE VIEW OF MALE OR REAR VIEW OF FEMALE

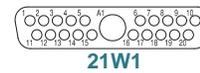
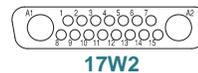
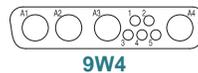
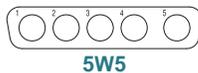
#### SHELL SIZE 1



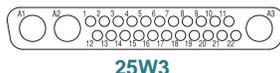
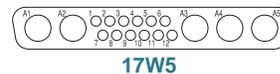
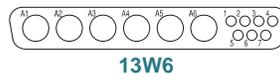
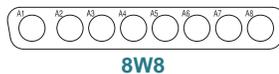
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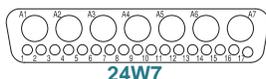
#### SHELL SIZE 3



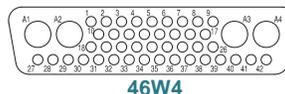
#### SHELL SIZE 4



#### SHELL SIZE 5



#### SHELL SIZE 6



Note: For high density 8W2, 19W1, 15W4 and 45W2 variants contact Technical Sales for availability.



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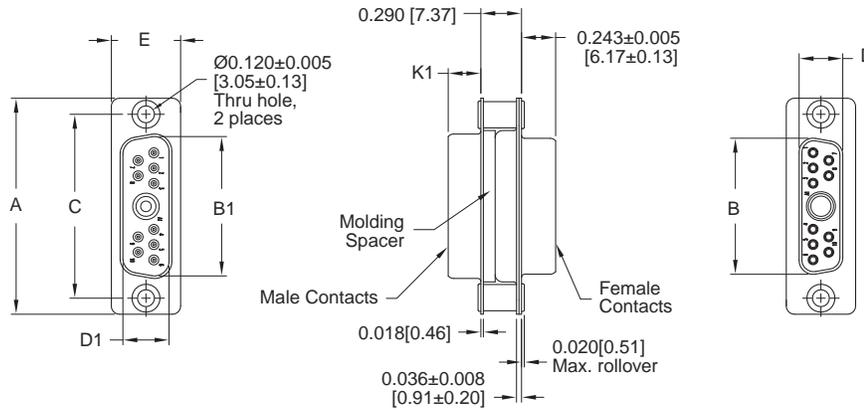
# SACBMP SERIES

## MILITARY / SPACE FLIGHT QUALITY

### STANDARD DENSITY COMBO-D CONNECTOR SAVER

High  
Performance  
D-sub

### STANDARD CONNECTOR HOUSING (SHELLS) ASSEMBLY DIMENSIONS SIZE 20 AND SIZE 8 CONTACTS

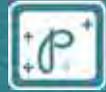


**NOTE:**  
Code S = Swaged spacer with 4-40 UNC-2B threads.

**TYPICAL PART NUMBER:  
SACBMP11W1S0GM0G**

SHELL SIZES	CONNECTOR VARIANT	A $\pm 0.015$ [0.38]	B $\pm 0.005$ [0.13]	B1 $\pm 0.005$ [0.13]	C $\pm 0.005$ [0.13]	D $\pm 0.005$ [0.13]	D1 $\pm 0.005$ [0.13]	E $\pm 0.015$ [0.38]	K1 $\pm 0.005$ [0.13]
1	5W1	1.213 [30.81]	0.643 [16.33]	0.666 [16.92]	0.984 [24.99]	0.311 [7.90]	0.329 [8.36]	0.494 [12.55]	0.233 [5.92]
2	3W3, 7W2, 11W1	1.541 [39.14]	0.971 [24.66]	0.994 [25.25]	1.312 [33.32]	0.311 [7.90]	0.329 [8.36]	0.494 [12.55]	0.233 [5.92]
3	5W5, 9W4, 13W3, 17W2, 21W1	2.088 [53.04]	1.511 [38.38]	1.534 [38.96]	1.852 [47.04]	0.311 [7.90]	0.329 [8.36]	0.494 [12.55]	0.230 [5.84]
4	8W8, 13W6, 17W5, 21WA4, 25W3, 27W2	2.729 [69.32]	2.159 [54.84]	2.182 [55.42]	2.500 [63.50]	0.311 [7.90]	0.329 [8.36]	0.494 [12.55]	0.230 [5.84]
5	24W7, 36W4, 43W2, 47W1	2.635 [66.93]	2.064 [52.43]	2.079 [52.81]	2.406 [61.11]	0.423 [10.74]	0.441 [11.20]	0.605 [15.37]	0.230 [5.84]
6	46W4	2.729 [69.32]	2.189 [55.60]	2.212 [56.18]	2.500 [63.50]	0.485 [12.32]	0.503 [12.78]	0.668 [16.97]	0.230 [5.84]

SACBMP SERIES



## 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	SACBMP	11W1	S	S	G	M	S	D	—
<b>STEP 1 - BASIC SERIES</b> SACBMP series									<b>STEP 9 - SPECIAL OPTIONS</b>  SEE APPENDIX ON PAGE 95.
<b>STEP 2 - CONNECTOR VARIANT</b> 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  <b>Note:</b> For high density 8W2, 19W1, 15W4 and 45W2 variants contact Technical Sales for availability.									<b>STEP 8 - 2<sup>ND</sup> CONNECTOR HOUSING (SHELLS) OPTION</b>  G - Gold over copper plate. D - Gold over copper plate and dimpled (male connectors only).  <b>*2 STEP 8 - 2<sup>ND</sup> CONNECTOR MATING STYLE</b> 0 - Swaged spacer 0.120 [3.05μ] mounting hole S - Swaged spacer 4-40 UNC-2B threads <b>*3 E</b> - Rotating male and female jackscrews (Select 0 in Step 4) <b>*3 E6</b> - Rotating male and female polarized jackscrew (Select 0 in Step 4) <b>*3 T</b> - Fixed male and female jackscrews (Select 0 in Step 4) <b>*3 T6</b> - Fixed male and female polarized jackscrew (Select 0 in Step 4)
<b>STEP 3 - 1<sup>ST</sup> CONNECTOR GENDER</b> <b>*1 M</b> - Male S - Female - PosiBand closed entry contacts, see page 1 for more information.									<b>STEP 6 - 2<sup>ND</sup> CONNECTOR GENDER</b> M - Male
<b>*2 STEP 4 - 1<sup>ST</sup> CONNECTOR MATING STYLE</b> 0 - Swaged spacer 0.120 [3.05μ] mounting hole S - Swaged spacer 4-40 UNC-2B threads <b>*3 E</b> - Rotating male and female jackscrews (Select 0 in Step 7) <b>*3 E6</b> - Rotating male and female polarized jackscrew (Select 0 in Step 7) <b>*3 T</b> - Fixed male and female jackscrews (Select 0 in Step 7) <b>*3 T6</b> - Fixed male and female polarized jackscrew (Select 0 in Step 7)									<b>NOTES</b> <b>*1</b> Male option in Step 3 available only on connector variants 5W1, 3W3, 7W2, 11W1, 17W2, 21W1, 21WA4, 27W2, 24W7, 46W4. <b>*2</b> 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. <b>*3</b> For hardware information, see page 64.
<b>STEP 5 - 1<sup>ST</sup> CONNECTOR HOUSING (SHELLS) OPTION</b> G - Gold over copper plate. D - Gold over copper plate and dimpled (male connectors only).									

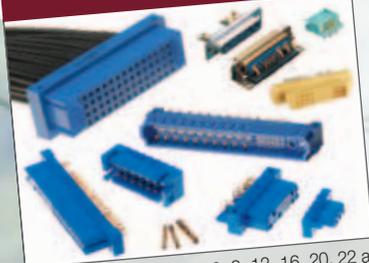
SACBMP SERIES

Do you need 2-D drawings or 3-D models?  
See page 18 for more information!

# Connector Excellence<sup>®</sup>

## Positronic HIGH RELIABILITY Products

### POWER



#### FEATURES:

- High current density
- Energy saving - low contact resistance
- AC/DC operation in a single connector
- Signal contacts for hardware management
- Blind mating
- Sequential mating
- Large surface area contact mating system
- Wide variety of accessories
- Customer-specified contact arrangements
- Modular tooling which produces a single piece connector insert

**Contact Sizes:** 0, 8, 12, 16, 20, 22 and 24  
**Current Ratings:** To 200 amperes per contact  
**Terminations:** Crimp and fixed cable connector, straight solder, right angle (90°) solder, straight compliant press-in and right angle (90°) compliant press-in  
**Configurations:** Multiple variants in a variety of package sizes  
**Compliance:** PICMG 2.11, PICMG 3.0, VITA 41, DSCC, GSFC S-311-P-4, GSFC S-311-P-10

### D - SUB MINIATURE



#### FEATURES:

- Four performance levels available for best cost/performance ratio: professional, industrial, military and space-flight quality
- Options include high voltage, coax, thermocouple and air coupling contacts; environmentally sealed and dual port connector packages including mixed density
- Broad selection of accessories
- Size 20 and 22 contacts suitable for use in carrying power
- IP65, IP67

**Contact Sizes:** 8, 16, 20 and 22  
**Current Ratings:** To 100 amperes  
**Terminations:** Crimp, wire solder, straight solder, right angle (90°) solder, straight compliant press-in and right angle (90°) compliant press-in  
**Configurations:** Multiple variants in both standard and high densities, seven connector housing sizes  
**Qualifications:** MIL-DTL-24308, GSFC S-311-P-4, GSFC S-311-P-10, AS39029, DSCC

### RECTANGULAR



#### FEATURES:

- Two performance levels available: industrial quality and military quality
- A wide variety of accessories
- Broad selection of contact arrangement and package sizes
- Connector coding device (keying) options

**Contact Sizes:** 16, 20 and 22  
**Current Ratings:** To 13 amperes nominal  
**Terminations:** Crimp, wire solder, straight solder, right angle (90°) solder, and straight compliant press-in  
**Configurations:** Multiple variants in both standard and high densities, thirty package sizes  
**Qualifications:** MIL-DTL-28748, AS39029, CCITT V.35

### CIRCULAR



#### FEATURES:

- Non-corrodible / lightweight composite construction
- EMI/RFI shielded versions
- Thermocouple contacts
- Environmentally sealed versions
- Rear insertion/ front release of removable contacts
- Two level sequential mating
- Overmolding available on full assemblies

**Contact Sizes:** 12, 16, 20 and 22  
**Current Ratings:** To 25 amperes nominal  
**Terminations:** Crimp, wire solder, straight solder, and right angle (90°) solder  
**Configurations:** Multiple variants in four package sizes  
**Qualifications:** Environmental protection to IP67

### CABLE



#### FEATURES:

- Shorten the supply chain and reduce additional costs and delays by "cabling" your Positronic connector selection
- Overmolding available
- Shielded and environmentally sealed versions available
- Power cables and access boxes which meet the SAE J2496 specification

- ✓ Design assemblies in accordance with customer specifications.
- ✓ Prepare wire harness connector configuration and performance specifications.
- ✓ Design each system in accordance with applicable customer, domestic, and international standards.
- ✓ Define and conduct performance and verification testing.

### HERMETIC



#### FEATURES:

- Intended for use as an electrical feedthrough in high vacuum applications
- Helium leakage rate at ambient temperature:  $< 5 \times 10^{-9}$  mbar.l/s under a vacuum  $1.5 \times 10^{-2}$  mbar
- Signal, power, coax and high voltage versions available
- Connectors can be mounted on flange assembly per customer specification

**Contact Sizes:** 8, 12, 16, 20 and 22  
**Current Ratings:** To 40 amperes nominal  
**Terminations:** Feedthrough is standard; flying leads and board mount available upon request  
**Configurations:** See D-subminiature and circular configurations above  
**Compliance:** Space-D32

For more information, visit [www.connectpositronic.com](http://www.connectpositronic.com) or call your nearest Positronic sales office listed on the back of this catalog.



**Positronic**<sup>®</sup>  
global connector solutions

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