

Series 970 PowerTrip™ Connectors & Accessories

The Power Connector for Extreme Environments

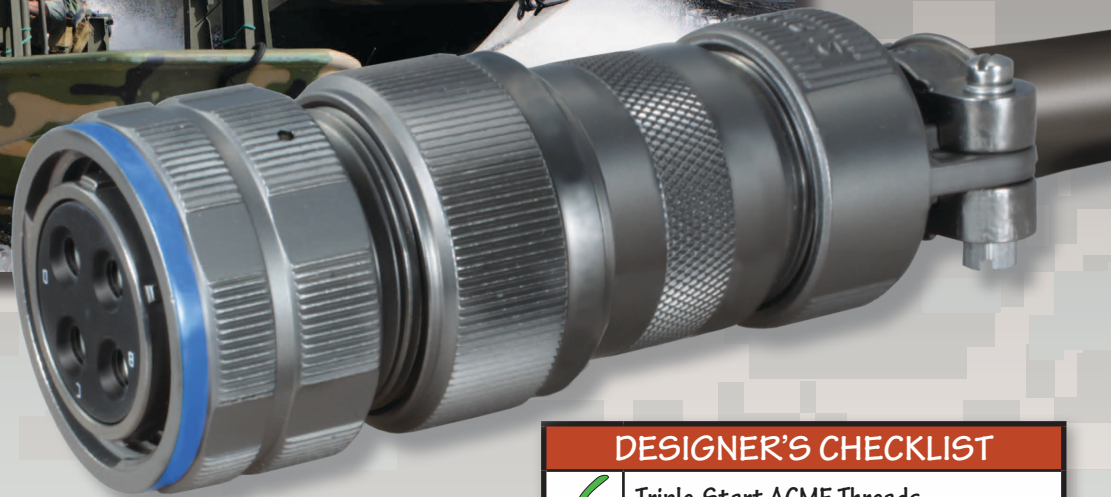
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Soft Launch Edition • May 19, 2011

SERIES 970

PowerTrip™

The Power Connector for Extreme Environments



The Series 970 PowerTrip™ connector is ideal for extreme environment DC, single-phase and three-phase AC power applications. Available in aluminum or stainless steel, the Series 970 features a high ampacity louverband socket contact for reduced joule heating and stable resistance.

DESIGNER'S CHECKLIST

- | | |
|---|------------------------------|
| ✓ | Triple-Start ACME Threads |
| ✓ | Watertight Rubber Seals |
| ✓ | High Shock and Vibration |
| ✓ | High Temperature |
| ✓ | EMI Protection |
| ✓ | High Durability |
| ✓ | Low Resistance |
| ✓ | Crimp, Snap-In Contacts |
| ✓ | No. 1/0, 4 and 8 AWG |
| ✓ | Improved Backshell Interface |
| ✓ | Nickel-PTFE Plating |



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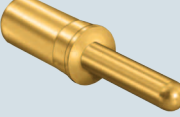


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Series 970 PowerTrip™ Connectors Accessories
Section A: Introduction



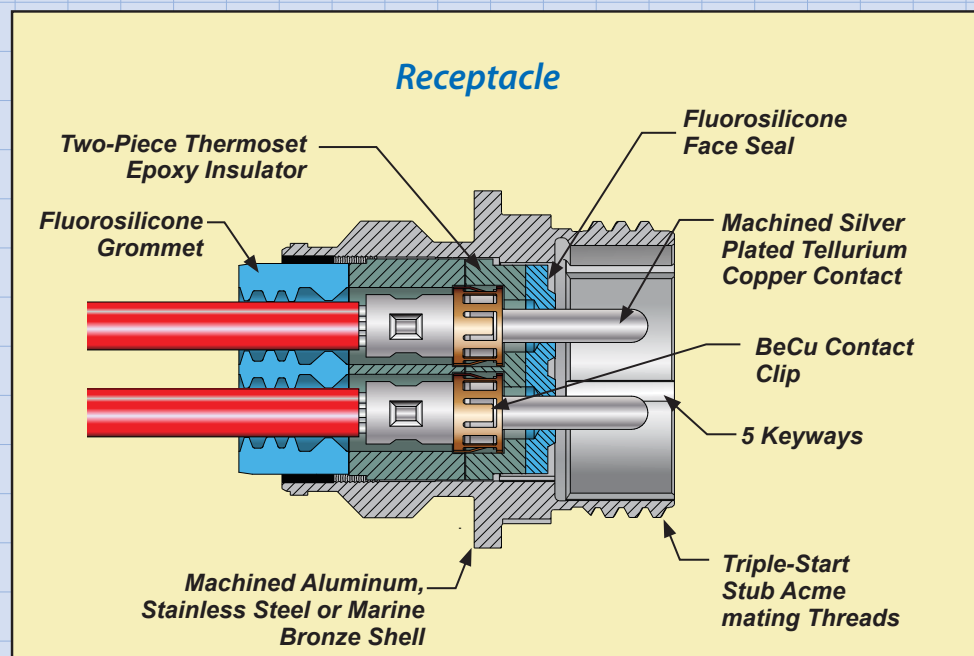
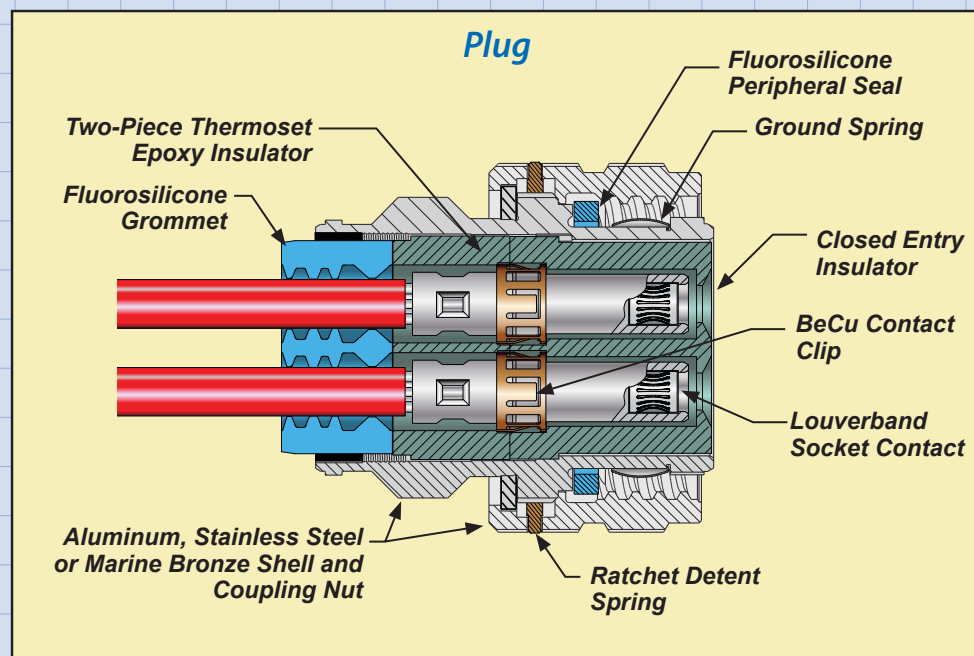
Series 970
PowerTrip™

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Dimensions in inches (millimeters) and are subject to change without notice.

Series 970 PowerTrip™ Connectors

The Series 970 connector is a high ampacity, harsh environment connector capable of meeting the demanding requirements of modern defense and aerospace systems.



- Fast, easy connector mating with triple-start ACME thread. 360° turn for full mating
- 5 polarizing keys
- Reduced size and weight
- Louverband sockets for improved ampacity and longer life
- High conductivity copper alloy contacts
- Crimp, rear release contact system
- Splined backshell interface for improved EMI protection
- Ratcheting coupling nut for secure mating
- -65° C to +200° C
- Size 8, 4 and 1/0 contact sizes

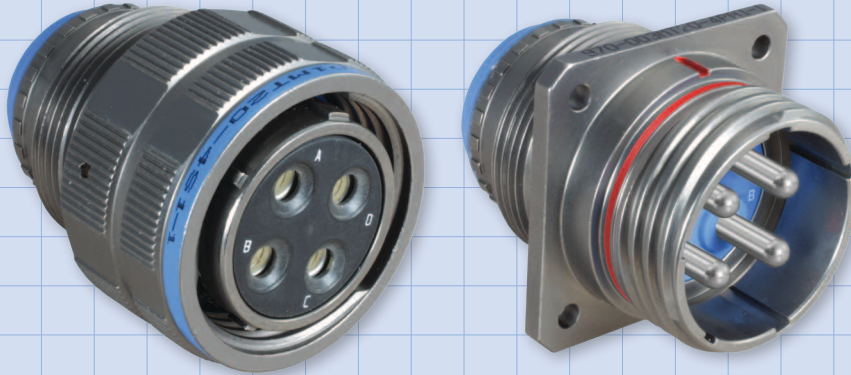
Dimensions in inches (millimeters) and are subject to change without notice.

Series 970 PowerTrip™ Connectors Accessories Section A: Introduction



Series 970
PowerTrip™

A



Louverband Contacts

High ampacity contacts with up to 44 points of contact for improved wear and lower voltage drop.

Triple-Start Coupling

Rugged ACME threads resist cross-threading and allow fast mating.

Ratchet Mechanism

Ratcheting anti-decoupling mechanism prevents coupling ring backoff when subjected to vibration.

Protect High Current Circuits with Glenair's Series 970 PowerTrip™ Connector

The Series 970 connector fills the need for a military-grade harsh environment power connector with improved mechanical, environmental and electrical performance. Featuring triple-start mating threads, crimp rear-release contacts, upgraded material and finish choices and improved EMI protection, the PowerTrip™ connector is ideal for power distribution units, hybrid electric drives, motors, and other high current applications. The louverband socket contact and the pin contact are machined from high conductivity copper alloy for low resistance and higher ampacity. High performance thermoset epoxy resin insulators withstand high heat and harsh chemicals.



Louverband Contact

SPECIFICATIONS

Current Rating	Up to 225 A.
Dielectric Withstanding Voltage	2000 VAC
Insulation Resistance	5000 megohms minimum
Operating Temperature	-65° C. to +200° C.
Shock	300 g.
Vibration	37 g.
Shielding Effectiveness	65 dB minimum from 1GHz to 10GHz.
Durability	2000 mating cycles

MATERIALS AND FINISHES

Shells, Jam Nuts	Aluminum alloy, stainless steel or marine bronze
Contacts	High conductivity copper alloy, gold or silver-plated
Insulators	Glass-reinforced epoxy
Contact Retention Clip	Beryllium copper alloy
Seal, O-rings, Grommet	Fluorosilicone rubber
Spring	Nickel-plated beryllium copper

Dimensions in inches (millimeters) and are subject to change without notice.

CAGE Code 06324

Printed in U.S.A.

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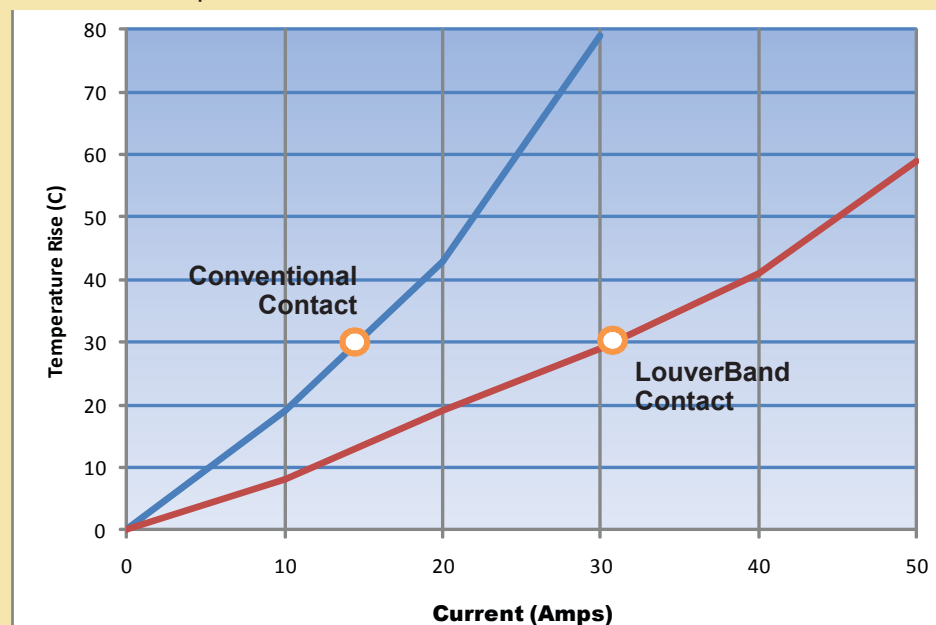
A-3

E-Mail: sales@glenair.com

About LouverBand Contacts

LouverBand contacts outperform conventional contacts in the areas of durability (2000 cycles), lower mating force, and resistance.

LouverBand socket contacts consist of two parts: a copper alloy contact body (Fig. 1) and a beryllium copper band (Fig. 2). The spring is seated into the contact body (fig. 3). LouverBand contacts offer significant advantages over other contact designs. Each louver functions as an independent leaf spring. The multiple louvers in each spring distribute current more evenly, lowering the voltage drop compared to conventional contacts. A multi-spring louverband contact also reduces hotspots. Conventional contacts, such as the split-tine contact shown in (figure 4), are known to have relatively few points of contact at the microscopic level.



Connector current ratings are usually determined by establishing the equilibrium current resulting in a 30° C temperature rise (T-rise) above ambient. Louverband contacts typically exhibit much higher current ratings than conventional split-tine contacts. However, this higher current rating can exceed the de-rated current-carrying capacity of the wire. So why not use a conventional contact as long as the contact current rating exceeds the amount of current in the circuit? Louverband contacts are much less susceptible to damage from superheating caused by momentary current overloads. AC induction motors can cause transient currents ten times greater than the steady state current. These transient currents have a duration of only a few milliseconds. Contacts with relatively few points of contact are susceptible to melting when exposed to transient currents. The contact interface becomes welded, and de-mating the connectors breaks the weld, damaging the interface and eventually leading to high resistance, corrosion and even catastrophic failure.

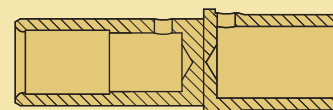


Figure 1
Socket Contact Body

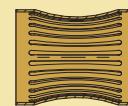


Figure 2
LouverBand Spring



Figure 3
Assembled Contact



Figure 4
Split-tine Contact on the Left,
LouverBand Contact on the
Right

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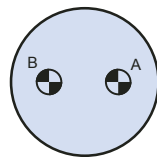
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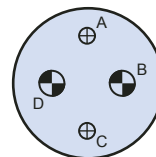
SERIES 970 CONTACT ARRANGEMENTS						
Contact Size	Contact Arrangement	Contact Size and Qty				
		#16	#12	#8	#4	#1/0
Size #8	18-2			2		
	18-4		2	2		
	20-3			3		
	20-5		2	3		
	20-7	4		3		
	20-4			4		
	24-5			5		
Size #4	24-2				2	
	24-6		4		2	
	24-3				3	
	24-A6		3		3	
	28-4				4	
	28-9	5			4	
	32-5				5	
Size #1/0	32-2					2
	32-4				2	2
	32-3					3
	32-6		3			3
	36-4					4
	40-5					5

Contact Arrangements shown are mating face views of pin connectors.
 Socket arrangements are reversed.

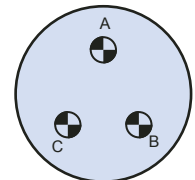
CONTACT ARRANGEMENTS WITH SIZE #8 CONTACTS



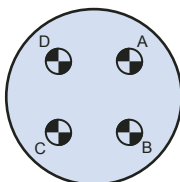
18-2
2 #8



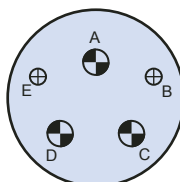
18-4
2 #8, 2 #12



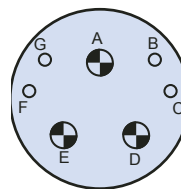
20-3
3 #8



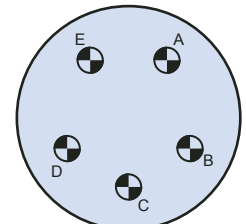
20-4
4 #8



20-5
3 #8, 2 #12



20-7
3 #8, 4 #16



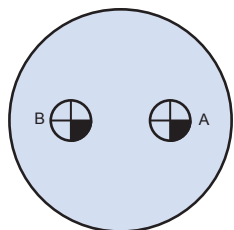
24-5
5 #8

Dimensions in inches (millimeters) and are subject to change without notice.

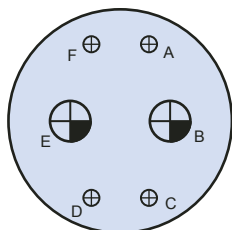
Contact Arrangements shown are mating face views of pin connectors.
Socket arrangements are reversed.

CONTACT ARRANGEMENTS WITH SIZE #4 CONTACTS

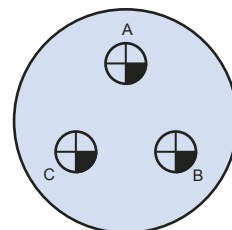
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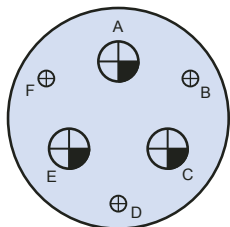
24-2
2 #4



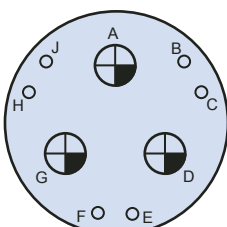
24-6
2 #4, 4 #12



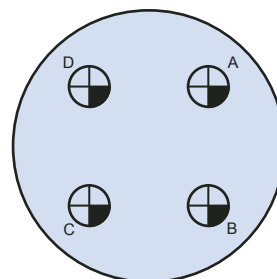
24-3
3 #4



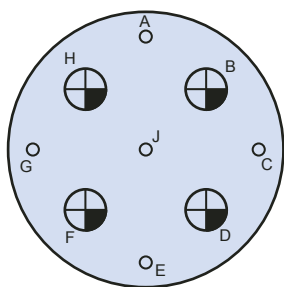
24-A6
3 #4, 3 #12



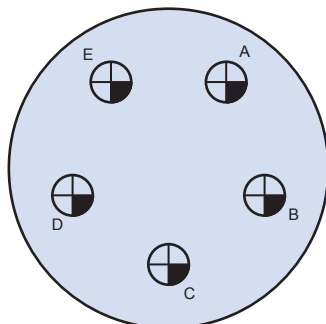
24-9
3 #4, 6 #16



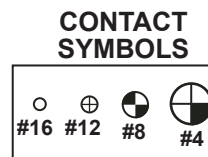
28-4
4 #4



28-9
4 #4, 5 #16



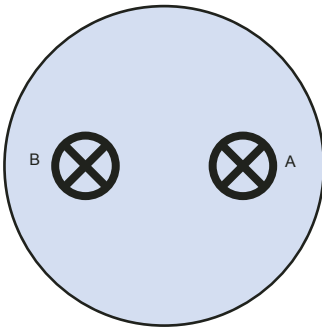
32-5
5 #4



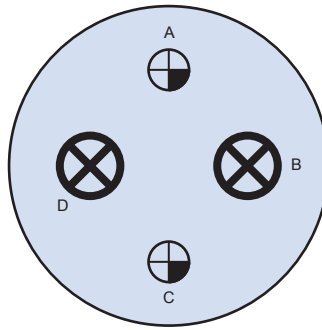
Dimensions in inches (millimeters) and are subject to change without notice.

Contact Arrangements shown are mating face views of pin connectors.
 Socket arrangements are reversed.

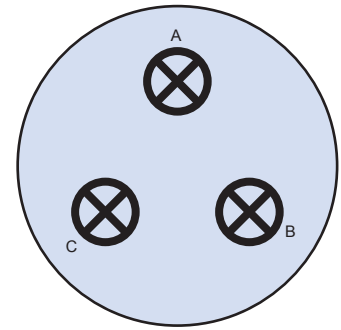
CONTACT ARRANGEMENTS WITH SIZE #1/0 CONTACTS



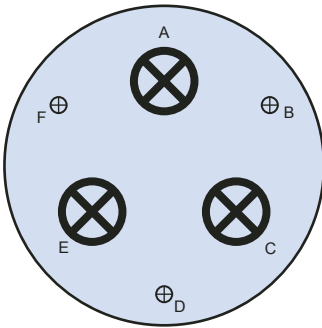
32-2
 2 #1/0



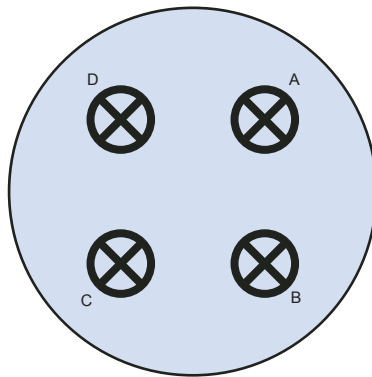
32-4
 2 #1/0, 2 #4



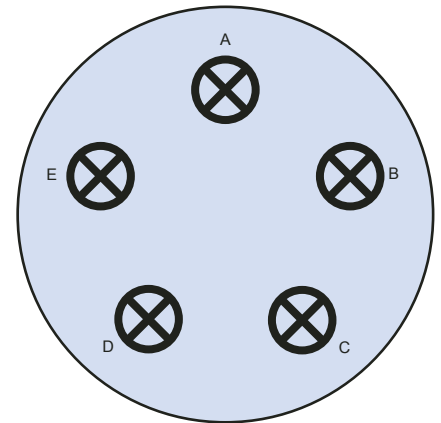
32-3
 3 #1/0



32-6
 3 #1/0, 3 #12

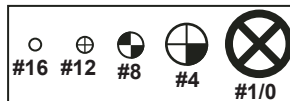


36-4
 4 #1/0



40-5
 5 #1/0

CONTACT SYMBOLS



Dimensions in inches (millimeters) and are subject to change without notice.

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Series 970 PowerTrip™ Connectors and Accessories

Section B: Technical Specifications

Wire Ampacity and Wire Diameter

NEC Table 310.18

Allowable Ampacities of Insulated Conductors Rated 0 through 2000 Volts, 200° C. Types FEP, FEPB, PFA, SA. Not More Than Three Current-Carrying Conductors in Raceway or Cable.

Ambient Temp. (°C)	Wire Size AWG								
	14	12	10	8	6	4	2	1	1/0
40°	36	45	60	83	110	125	171	197	229
41-50°	35	44	58	81	107	121	166	191	222
51-60°	34	42	56	78	103	118	161	185	215
61-70°	32	41	54	75	99	113	154	177	206
71-80°	31	39	52	72	96	109	149	171	199
81-90°	30	37	50	69	91	104	142	164	190
91-100°	28	36	47	66	87	99	135	156	181
101-120°	26	32	43	59	78	89	121	140	163
121-140°	22	27	37	51	67	76	104	120	140
141-160°	18	23	30	42	55	63	86	99	115
161-180°	13	16	21	29	39	44	60	69	80
Above 180°	-	-	-	-	-	-	-	-	-

Wire Insulation Diameters

This table shows the minimum and maximum wire diameters compatible with Series 970 connectors. Wires smaller than specified will not seal properly. Wires larger than specified will be difficult to install and extract.

Contact Size	Wire Size (AWG)	Finished Wire Outside Dimensions			
		Minimum Diameter		Maximum Diameter	
		Inches	mm	Inches	mm
16	16, 18 20	.053	1.35	.103	2.62
12	12, 14	.085	2.16	.158	4.01
8	8, 10	.132	3.35	.255	6.48
4	4, 6	.237	6.02	.370	9.40
1/0	0, 2	.360	9.14	.550	14.0

Dimensions in inches (millimeters) and are subject to change without notice.

Series 970 PowerTrip™ Connectors and Accessories
 Section B: Technical Specifications
 Materials and Finishes



MATERIALS AND FINISHES		
Contacts	High-conductivity copper alloy per ASTM B301	<p>Code 1: Silver per ASTM-B700, 0.0002 – 0.0003 thick over nickel plate per QQ-N-290 class 2 .000050-.000100 thick</p> <p>Code 2: Gold per ASTM B488, Type II, Code C, Class 1.25, .000050-.000100 thick over nickel plate per QQ-N-290, Class 2, .000050-.000100 thick</p>
Socket Contact Spring	Beryllium copper	<p>Code 1: Silver per ASTM-B700, 0.0002 – 0.0003 thick over nickel plate per QQ-N-290 class 2 .000050-.000100 thick</p> <p>Code 2: Gold per ASTM B488, Type II, Code C, Class 1.25, .000050-.000100 thick over nickel plate per QQ-N-290, Class 2, .000050-.000100 thick</p>
Aluminum Shells, Coupling Nuts	Aluminum alloy 6061	See Ordering Information
Stainless Steel Shells, Coupling Nuts	Stainless steel, AISI 316	See Ordering Information
Marine Bronze Shells, Coupling Nuts	Nickel-aluminum-bronze alloy per ASTM B 150	None
Insulators	Fiberglass-reinforced thermosetting epoxy resin per ASTM-D-5948, Type GEI-5, black	None
Interfacial Seals, Grommets	Fluorosilicone/silicone blend, blue	None
EMI Spring	Beryllium copper	Nickel-plated
Contact Retention Clip	Beryllium copper	None
Anti-Decoupling Ratchet Spring	Stainless Steel	None

Dimensions in inches (millimeters) and are subject to change without notice.



Series 970 PowerTrip™ Connectors and Accessories

Section B: Technical Specifications

Product Specification

DESCRIPTION	REQUIREMENT	PROCEDURE																					
Altitude Immersion	No evidence of moisture on connector interface or contacts. At the end of the third cycle, while still submersed, connectors shall meet 2000 Vac dielectric withstanding voltage and 1,000 megohms insulation resistance.	EIA-364-03 Simulated 75,000 feet altitude Connector wire finished outside diameter to conform to the minimum diameter defined by this specification.																					
Altitude- Low Temperature	Insulation resistance greater than 5,000 megohms while mated and exposed to simulated 110,000 feet altitude and -65°C. DWV 2000 Vac following return to ambient temperature and pressure.	EIA-364-105 Mated pair																					
Blowing Sand and Dust	Connectors shall meet electrical and mechanical requirements following exposure to sand and dust.	MIL-STD-810G Method 510.5 Mated connectors with jacketed cable and environmental cable strain reliefs. Procedure I Blowing Dust Procedure II Blowing Sand																					
Contact Insertion and Removal Force (Maintenance Aging)	<table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Contact Size</th> <th>Force Max. Pounds</th> </tr> </thead> <tbody> <tr> <td>16</td> <td>20</td> </tr> <tr> <td>12</td> <td>30</td> </tr> <tr> <td>8</td> <td>35</td> </tr> <tr> <td>4</td> <td>40</td> </tr> <tr> <td>1/0</td> <td>40</td> </tr> </tbody> </table>	Contact Size	Force Max. Pounds	16	20	12	30	8	35	4	40	1/0	40	EIA-364-24									
Contact Size	Force Max. Pounds																						
16	20																						
12	30																						
8	35																						
4	40																						
1/0	40																						
Contact resistance	SAE AS39029 Table 5 <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Max Wire Size</th> <th>Test Current</th> <th>Voltage Drop</th> </tr> </thead> <tbody> <tr> <td>16</td> <td>13</td> <td>49</td> </tr> <tr> <td>14</td> <td>17</td> <td>40</td> </tr> <tr> <td>12</td> <td>23</td> <td>42</td> </tr> <tr> <td>8</td> <td>46</td> <td>26</td> </tr> <tr> <td>4</td> <td>80</td> <td>23</td> </tr> <tr> <td>1/0</td> <td>150</td> <td>21</td> </tr> </tbody> </table>	Max Wire Size	Test Current	Voltage Drop	16	13	49	14	17	40	12	23	42	8	46	26	4	80	23	1/0	150	21	EIA-364-06 Test current in amperes. Voltage drop in millivolts. Silver-coated copper wire, +25°C.
Max Wire Size	Test Current	Voltage Drop																					
16	13	49																					
14	17	40																					
12	23	42																					
8	46	26																					
4	80	23																					
1/0	150	21																					
Contact Retention	Contacts shall not be axially displaced more than .025 inches when subjected the following loads: <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Contact Size</th> <th>Min. Pounds</th> </tr> </thead> <tbody> <tr> <td>16</td> <td>25</td> </tr> <tr> <td>12</td> <td>30</td> </tr> <tr> <td>8</td> <td>50</td> </tr> <tr> <td>4</td> <td>60</td> </tr> <tr> <td>1/0</td> <td>75</td> </tr> </tbody> </table>	Contact Size	Min. Pounds	16	25	12	30	8	50	4	60	1/0	75	EIA-364-29 Method B									
Contact Size	Min. Pounds																						
16	25																						
12	30																						
8	50																						
4	60																						
1/0	75																						

Dimensions in inches (millimeters) and are subject to change without notice.

Series 970 PowerTrip™ Connectors and Accessories
Section B: Technical Specifications
Product Specification



DESCRIPTION	REQUIREMENT	PROCEDURE																
Corrosion (Salt Mist)	No exposure of base metal. Connectors shall meet DWV and contact resistance requirements following the test.	EIA-364-26 IEC 60512-11-6 5% salt solution 35° C Unmated connectors Code G2: anodize 336 hours Code ME: electroless nickel 96 hours Code NF: Olive drab cadmium over electroless nickel 500 hours Code ZR: Black zinc nickel 500 hours																
Coupling Torque	<table border="1"> <thead> <tr> <th>SHELL SIZE</th> <th>Maximum (in-lb.)</th> </tr> </thead> <tbody> <tr><td>18</td><td>28</td></tr> <tr><td>20</td><td>32</td></tr> <tr><td>24</td><td>36</td></tr> <tr><td>28</td><td>47</td></tr> <tr><td>32</td><td>53</td></tr> <tr><td>36</td><td>65</td></tr> <tr><td>40</td><td>75</td></tr> </tbody> </table>	SHELL SIZE	Maximum (in-lb.)	18	28	20	32	24	36	28	47	32	53	36	65	40	75	
SHELL SIZE	Maximum (in-lb.)																	
18	28																	
20	32																	
24	36																	
28	47																	
32	53																	
36	65																	
40	75																	
Current carrying capacity	<table border="1"> <thead> <tr> <th>Contact Size</th> <th>Max Current</th> </tr> </thead> <tbody> <tr><td>16</td><td>13</td></tr> <tr><td>12</td><td>23</td></tr> <tr><td>8</td><td>46</td></tr> <tr><td>4</td><td>80</td></tr> <tr><td>1/0</td><td>150</td></tr> </tbody> </table>	Contact Size	Max Current	16	13	12	23	8	46	4	80	1/0	150	EIA-364-70				
Contact Size	Max Current																	
16	13																	
12	23																	
8	46																	
4	80																	
1/0	150																	
Dielectric Withstanding Voltage at Altitude.	No breakdown or flashover, leakage current shall not exceed 2 mA. when tested in a barometric chamber simulating altitude.	EIA-364-20, Method A, Test Condition III, IV, and V. Mated connectors shall withstand 1000 V. Unmated connectors shall withstand: Condition III 600 volts (50,000 feet) Condition IV: 400 volts (70,000 feet) Condition V: 200 volts (100,000 feet)																
Dielectric Withstanding Voltage at Sea Level.	No breakdown or flashover at 2000 volts.	EIA-364-20																

Dimensions in inches (millimeters) and are subject to change without notice.



Series 970 PowerTrip™ Connectors and Accessories

Section B: Technical Specifications

Product Specification

DESCRIPTION	REQUIREMENT	PROCEDURE
EMI Shielding Effectiveness	Frequency	Min. Atten.
	MHz	dB
	100	90
	200	88
	300	88
	400	87
	800	85
	1000	85
	1500	76
	2000	70
3000	69	
4000	68	
6000	66	
10000	65	
EIA-364-66 1,000 MHz to 10,000 MHz. MIL-DTL-38999L Para. 4.5.28.1 100 MHz to 1,000 MHz Prior to EMI test, connectors shall be mated a minimum of 500 cycles.		
External Bend Moment	No evidence of damage.	
	SHELL Bend Moment	
	SIZE (in-lb.)	
	18 420	
	20 450	
	24 570	
28 630		
32 750		
36 810		
40 870		
SAE AS50151 Para. 4.6.20		
Fluid Immersion	No visual evidence of degradation from immersion in various fuels and oils. Following immersion connectors shall meet coupling torque and dielectric withstanding voltage at sea level.	EIA-364-10
Fungus Resistance	Connector materials shall be fungus inert	MIL-STD-810G Method 508.6
High-Impact Shock	No discontinuity, no cracking, breaking or loosening of parts. Connectors shall meet electrical requirements after shock test.	MIL-DTL-38999L Para. 4.5.23.2 MIL-S-901, grade A
Humidity, 21 Day (Damp heat, Long Term)	No deterioration which will adversely affect the connector. Following the drying period, connectors shall meet 100 megohms minimum, contact resistance, shell-to-shell resistance, DWV, mating and unmating requirements.	EIA-364-31 Condition C Method II 90-95% RH 40° C Apply 100 volts DC during test. 4 hours drying time at ambient temperature prior to final measurements.
Humidity, Cyclic (Damp Heat, Cyclic) (Moisture Resistance)	No deterioration which will adversely affect the connector. 100 megohms minimum insulation resistance during the final cycle. Following the recovery period, connectors shall meet contact resistance, shell-to-shell resistance and DWV requirements.	EIA-364-31 Condition B Method III 80-98% RH 10 cycles (10 days) +25° C to +65° C Step 7b vibration deleted. 24 hour recovery period.
Impact, Cable Connectors	No impairment of function. Connector shall meet contact resistance, insulation resistance and waterproof sealing.	EIA-364-42 1 meter 8 drops
Ingress Protection	IP67 rating	IEC-60529

Dimensions in inches (millimeters) and are subject to change without notice.

Series 970 PowerTrip™ Connectors and Accessories
 Section B: Technical Specifications
 Product Specification



DESCRIPTION	REQUIREMENT	PROCEDURE																
Insert Retention	Inserts shall show no evidence of cracking, breaking, dislocation, or separation from the shell. <table border="1"> <thead> <tr> <th>SHELL SIZE</th> <th>FORCE (lbs.)</th> </tr> </thead> <tbody> <tr> <td>18</td> <td>50</td> </tr> <tr> <td>20</td> <td>75</td> </tr> <tr> <td>24</td> <td>85</td> </tr> <tr> <td>28</td> <td>105</td> </tr> <tr> <td>32</td> <td>115</td> </tr> <tr> <td>36</td> <td>135</td> </tr> <tr> <td>40</td> <td>165</td> </tr> </tbody> </table>	SHELL SIZE	FORCE (lbs.)	18	50	20	75	24	85	28	105	32	115	36	135	40	165	EIA-364-35 Unmated connectors 100 ± 5 pounds per square inch
SHELL SIZE	FORCE (lbs.)																	
18	50																	
20	75																	
24	85																	
28	105																	
32	115																	
36	135																	
40	165																	
Insulation Resistance at Ambient Temperature	5,000 megohms minimum	EIA-364-21 500 volts DC ± 50 volts.																
Insulation Resistance at Elevated Temperature	5,000 megohms minimum following 30 minutes at +200°C	EIA-364-21 500 volts DC ± 50 volts.																
Low Level Contact Resistance	SAE AS39029 Table 4 <table border="1"> <thead> <tr> <th>Wire Size</th> <th>Max. Milliohms</th> </tr> </thead> <tbody> <tr> <td>16</td> <td>5</td> </tr> <tr> <td>20</td> <td>9</td> </tr> </tbody> </table>	Wire Size	Max. Milliohms	16	5	20	9	EIA-364-23 100 milliamperes maximum and 20 millivolts maximum open circuit voltage										
Wire Size	Max. Milliohms																	
16	5																	
20	9																	
Magnetic Permeability	2 μ maximum.	EIA-364-54																
Mechanical Durability, at Ambient Temperature	No deterioration which will adversely affect the connector after 2000 cycles of mating and unmating. Connectors shall meet contact resistance, insulation resistance, shell-to-shell resistance, DWV, and coupling torque.	EIA-364-09																
Mechanical Shock	No discontinuity of greater than 1 microsecond, no cracking, breaking or loosening of parts, plug shall not become disengaged from receptacle. Connectors shall meet electrical requirements after shock test.	EIA-364-27 Condition D 3 shocks X 3 axes X 2 directions = 18 shocks 2941 m/s ² (300 g's), 3 ms, half-sine																
Outgassing	Connectors, when specially processed for outgassing control, shall not exceed 1.0% Total Mass Loss (TML) and 0.1% Collected Volatile Condensable Material (CVCM)	ASTM E 595																
Ozone Exposure	No evidence of degradation due to ozone exposure that will adversely affect performance	EIA-364-14 Wired, mated connectors																
Resistance to Indirect Lightning Strike	No damage or degradation to material or finish that would affect subsequent use, no damage or hardening of elastomeric materials that adversely affects sealing effectiveness. Connector must meet coupling torque, DWV and IR and shell-to-shell conductivity. Applicable to connectors with conductive plating finishes.	EIA/ECA-364-75 Table XII, group 14 10,000 Amps peak current Test details per MIL-DTL-38999 Para. 4.5.47																

Dimensions in inches (millimeters) and are subject to change without notice.



Series 970 PowerTrip™ Connectors and Accessories

Section B: Technical Specifications

Product Specification

DESCRIPTION	REQUIREMENT	PROCEDURE
Shell-To-Shell Conductivity	Finish Code ME 1 millivolt drop maximum Finish Code NF, ME, MT 2.5 millivolt drop maximum Finish Code ZR 10 millivolt drop maximum Finish Code Z1 50 millivolt drop maximum Finish Code G2 Not applicable	EIA-364-83 Unwired connectors
Socket Contact Engagement and Separation Force	Contact engagement and separation forces shall meet the requirements of SAE AS39029 Table 9	SAE AS39029
Thermal Shock	No mechanical damage or loosening of parts. Following thermal shock, connector shall meet contact resistance, DWV, insulation resistance and shell-to-shell resistance requirements.	EIA-364-32 Test Condition IV 5 cycles consisting of -65° C 30 minutes, +25° C 5 minutes max., +200° C 30 minutes, +25° C 5 minutes max.
Vibration, Random, at Ambient Temperature	No discontinuity of greater than 1 microseconds, no cracking, breaking or loosening of parts, plug shall not become disengaged from receptacle. Connectors shall meet electrical requirements after vibration test.	MIL-DTL-38999 Para. 4.5.23.2.4
Vibration, Random, at Elevated Temperature	No discontinuity of greater than 1 microseconds, no cracking, breaking or loosening of parts, plug shall not become disengaged from receptacle. Connectors shall meet electrical requirements after vibration test.	EIA-364-28 Test Condition VI Letter "J" 50- 2,000 Hz 43.92 g rms 200° C
Vibration, Sine	No discontinuity of greater than 1 microseconds, no cracking, breaking or loosening of parts, plug shall not become disengaged from receptacle. Connectors shall meet electrical requirements after vibration test.	MIL-DTL-38999L Para. 4.5.23.2.1
Water Immersion	No evidence of water penetration into mated connectors.	MIL-STD-810F Method 512.4 1 meter immersion 1 hour
Water Pressure	No evidence of water penetration into mated connectors or backshell interface. ≥ 100 M Ω insulation resistance.	MIL-DTL- 28840 Paragraph 4.1.15. 6 feet immersion in tap water 48 hours Plugs with backshells shall be terminated to test cables. Receptacles shall be panel mounted with gaskets and wire ends shall be external to tank.

Dimensions in inches (millimeters) and are subject to change without notice.

970-001 Plug Connectors



Series 970 PowerTrip™ plug connectors feature high ampacity LouverBand contacts and rugged water resistant construction for the most demanding environments. Coupling threads are triple-start ACME type. EMI protected with ground spring and splined backshell interface. Anti-decoupling ratchet prevents de-mating under vibration. Standard contacts are silver plated high conductivity copper alloy, or choose gold-plated contacts for improved corrosion protection in space or petrochemical environments. Fluorosilicone rubber gaskets and grommets provide watertight sealing. Contacts are packaged with connector.

Requires crimp tool and contact removal tool, sold separately.

HOW TO ORDER

Sample Part Number

970-001

MT

18-2

P

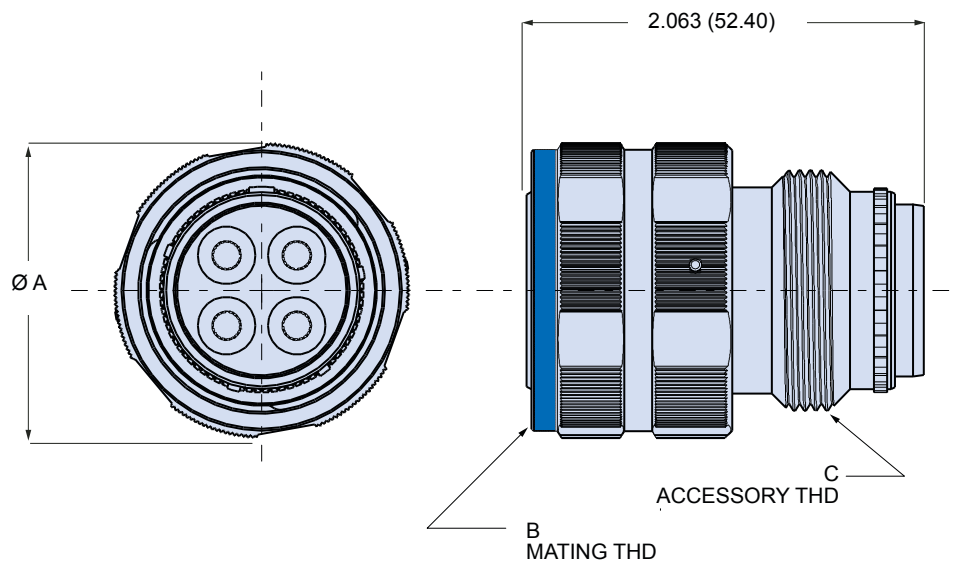
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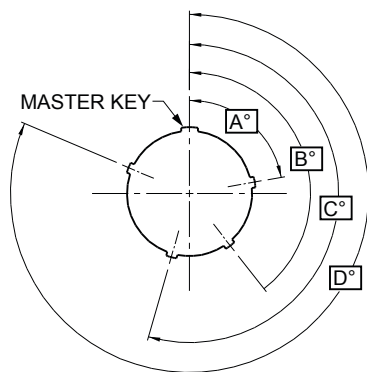
Series	Shell Material and Finish	Shell Size - Insert Arrangement					Contact Type	Contact Plating	Key Position	
		Contact Arr.	Contact Size and Qty							
970-001 Plug Connector	ME Aluminum, Electroless Nickel Finish		#16	#12	#8	#4	#1/0	P Pin Contacts	1 Silver Plated Contacts	-1 Position 1
		18-2			2					
	MT Aluminum, Nickel-PTFE Finish	18-4		2	2			S Socket Contacts	2 Gold Plated Contacts	-2 Position 2
		20-3			3					
		20-5		2	3					
		20-7	4		3					
	ZR Aluminum, Black Zinc-Nickel Finish	20-4			4			A Pin Connector, Supplied without Contacts		-3 Position 3
		24-5			5					
		24-2				2				
	Z1 Passivated Stainless Steel	24-6		4		2		B Socket Connector, Supplied without Contacts		-4 Position 4
		24-3				3				
	ZMT Stainless Steel, Nickel-PTFE Finish	24-A6		3		3				-5 Position 5
		28-4				4				
		28-9	5			4				
		32-5				5				
		32-2					2			
		32-4				2	2			
		32-3					3			
		32-6		3			3			
	36-4					4				
40-5					5					

Dimensions in inches (millimeters) and are subject to change without notice.

970-001 Plug Connector Dimensions



DIMENSIONS				
Shell Size	Ø A		B Mating Thread	C Accessory Thread
	In.	mm.		
18	1.440	36.58	1.125-0.1P-.3L-TS-2B	1.125-18 UNEF-2A
20	1.537	39.04	1.250-0.1P-.3L-TS-2B	1.250-18 UNEF-2A
24	1.793	45.54	1.500-0.1P-.3L-TS-2B	1.4375-18 UNEF-2A
28	2.166	55.02	1.750-0.1P-.3L-TS-2B	1.8125-16 UN-2A
32	2.294	58.27	2.000-0.1P-.3L-TS-2B	2.0625-16 UNS-2A
36	2.603	66.12	2.250-0.1P-.3L-TS-2B	2.250-16 UN-2A
40	2.905	73.79	2.500-0.1P-.3L-TS-2B	2.750-16 UN-2A



KEY POSITIONS				
Position	A°	B°	C°	D°
1	80	142	196	293
2	135	170	200	310
3	49	169	200	244
4	66	140	200	257
5	62	145	180	280
6	79	153	197	272

Dimensions in inches (millimeters) and are subject to change without notice.

Series 970 PowerTrip™ Connectors and Accessories

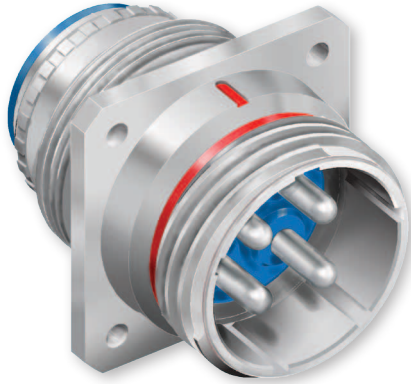
Section D: Square Flange Receptacles

970-003



Series 97
PowerTrip™

970-003 Square Flange Receptacles



Series 970 PowerTrip™ extreme environment receptacle connectors are intended for high current applications where size 8 AWG to size 1/0 AWG wires are used. Contacts snap into connector through rear grommet and can be removed with a plastic tool. These connectors feature high ampacity *LouverBand* contacts. Coupling threads are triple-start ACME type. EMI protected with ground spring and splined backshell interface. Standard contacts are silver plated high conductivity copper alloy, or choose gold-plated contacts for improved corrosion protection in space or petrochemical environments. Fluorosilicone rubber gaskets and grommets provide watertight sealing. Contacts are packaged with connector. Red stripe indicates full mating condition when the plug connector coupling ring fully covers the stripe.

Requires crimp tool and contact removal tool, sold separately.

HOW TO ORDER

Sample Part Number

970-003 MT 24-5 P 1 N -1

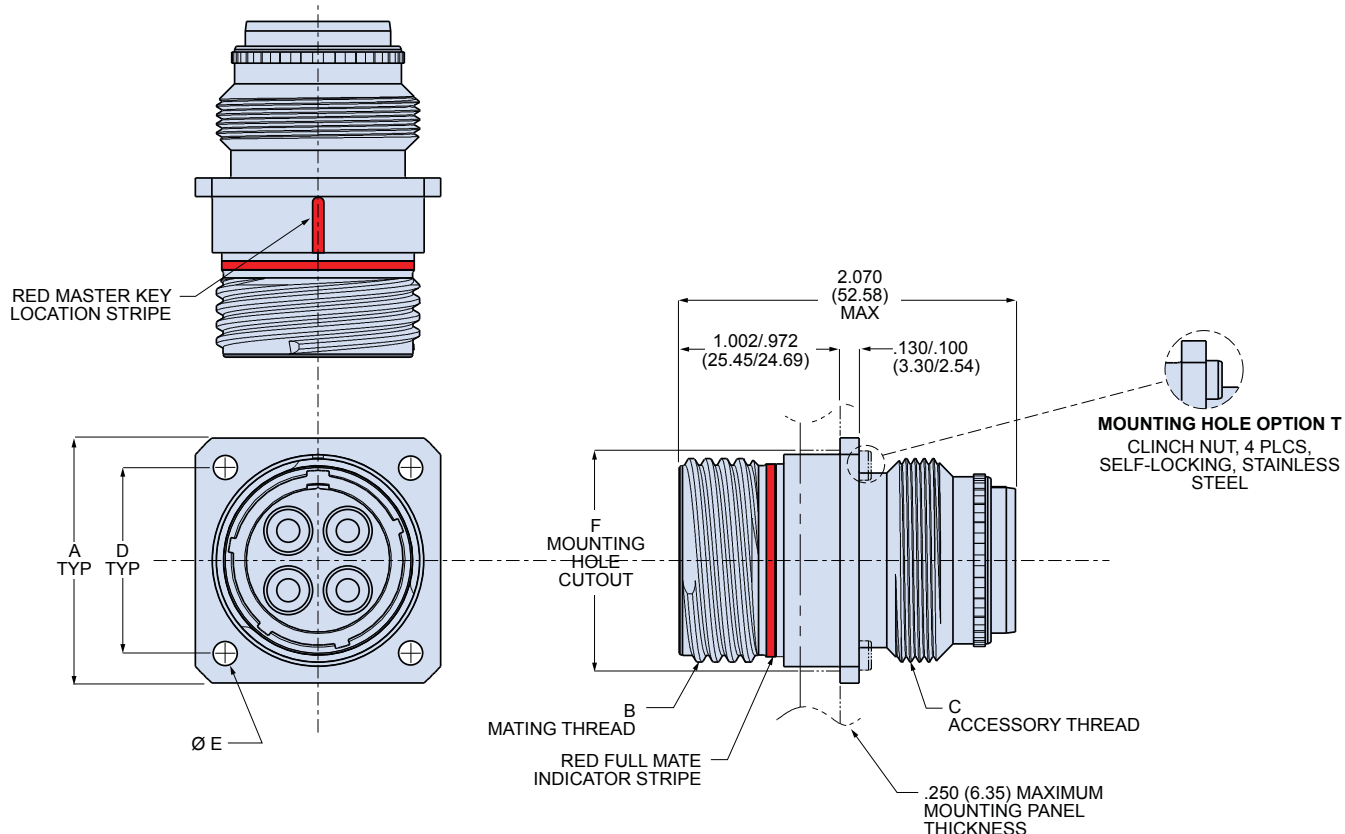
Series	Shell Material and Finish	Shell Size - Insert Arrangement					Contact Type	Contact Plating	Mounting Hole Option	Key Position
		Contact Arr.	#16	#12	#8	#4				
970-003 Square Flange Panel Mount Receptacle	ME Aluminum, Electroless Nickel Finish	18-2			2		P Pin Contacts	1 Silver Plated Contacts	N Thru-Hole	-1 Position 1
		18-4		2	2					-2 Position 2
	MT Aluminum, Nickel-PTFE Finish	20-3			3		S Socket Contacts	2 Gold Plated Contacts	T Cinch Nuts Installed in Mounting Holes for Back Panel Mounting. Self-locking stainless steel	-3 Position 3
		20-5		2	3					-4 Position 4
		20-7	4		3					-5 Position 5
		20-4			4					-6 Position 6
	ZR Aluminum, Black Zinc-Nickel Finish	24-5			5		A Pin Connector, Supplied Less Contacts			
		24-2				2				
		24-6		4		2				
	Z1 Passivated Stainless Steel	24-3				3	B Socket Connector, Supplied Less Contacts			
		24-A6		3		3				
	ZMT Stainless Steel, Nickel-PTFE Finish	28-4				4				
		28-9	5			4				
		32-5				5				
		32-2								2
		32-4				2				2
		32-3								3
		32-6		3						3
	36-4					4				
	40-5					5				

Dimensions in inches (millimeters) and are subject to change without notice.



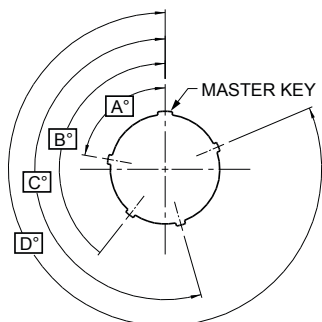
Series 970 PowerTrip™ Connectors and Accessories
Section D: Square Flange Receptacles
970-003

970-003 Square Flange Receptacle Connector Dimensions



DIMENSIONS

Shell Size	A		B Mating Thread	C Accessory Thd	D		Ø E		E Clinch Nut Thd	Ø F	
	In.	mm.			In.	mm.	In.	mm.		In.	mm.
18	1.383	35.13	1.125-.1P-.3L-TS-2A	1.125-18 UNEF-2A	1.015	25.78	.146	3.71	6-32 UNC-2B	1.187	30.15
20	1.508	38.30	1.250-.1P-.3L-TS-2A	1.250-18 UNEF-2A	1.140	28.96	.146	3.71	6-32 UNC-2B	1.374	34.90
24	1.718	43.64	1.500-.1P-.3L-TS-2A	1.4375-18 UNEF-2A	1.281	32.54	.146	3.71	6-32 UNC-2B	1.562	39.67
28	2.138	54.31	1.750-.1P-.3L-TS-2A	1.8125-16 UN-2A	1.568	39.83	.170	4.32	8-32 UNC-2B	1.874	47.60
32	2.328	59.13	2.000-.1P-.3L-TS-2A	2.0625-16 UNS-2A	1.734	44.04	.170	4.32	8-32 UNC-2B	2.062	52.37
36	2.578	65.48	2.250-.1P-.3L-TS-2A	2.250-16 UN-2A	1.984	50.39	.170	4.32	8-32 UNC-2B	2.302	58.47
40	2.828	71.83	2.500-.1P-.3L-TS-2A	2.750-16 UN-2A	2.234	56.74	.170	4.32	8-32 UNC-2B	2.562	65.07



KEY POSITIONS

Position	A°	B°	C°	D°
1	80	142	196	293
2	135	170	200	310
3	49	169	200	244
4	66	140	200	257
5	62	145	180	280
6	79	153	197	272

Dimensions in inches (millimeters) and are subject to change without notice.

970-004 Jam Nut Receptacles



These jam nut connectors are “rear panel mounting” for panel thicknesses up to .300 inch (7.62mm). Series 970 PowerTrip™ extreme environment receptacle connectors are intended for high current applications where size 8 AWG to size 1/0 AWG wires are used. Contacts snap into connector through rear grommet and can be removed with a plastic tool. These connectors feature high ampacity *LouverBand* contacts. Coupling threads are triple-start ACME type. EMI protected with ground spring and splined backshell interface. Standard contacts are silver plated high conductivity copper alloy, or choose gold-plated contacts for improved corrosion protection in space or petrochemical environments. Fluorosilicone rubber gaskets and grommets provide watertight sealing. Contacts are packaged with connector. Red stripe indicates full mating condition when the plug connector coupling ring fully covers the stripe.

Requires crimp tool and contact removal tool, sold separately.

HOW TO ORDER

Sample Part Number

970-004

MT

24-5

P

1

-1

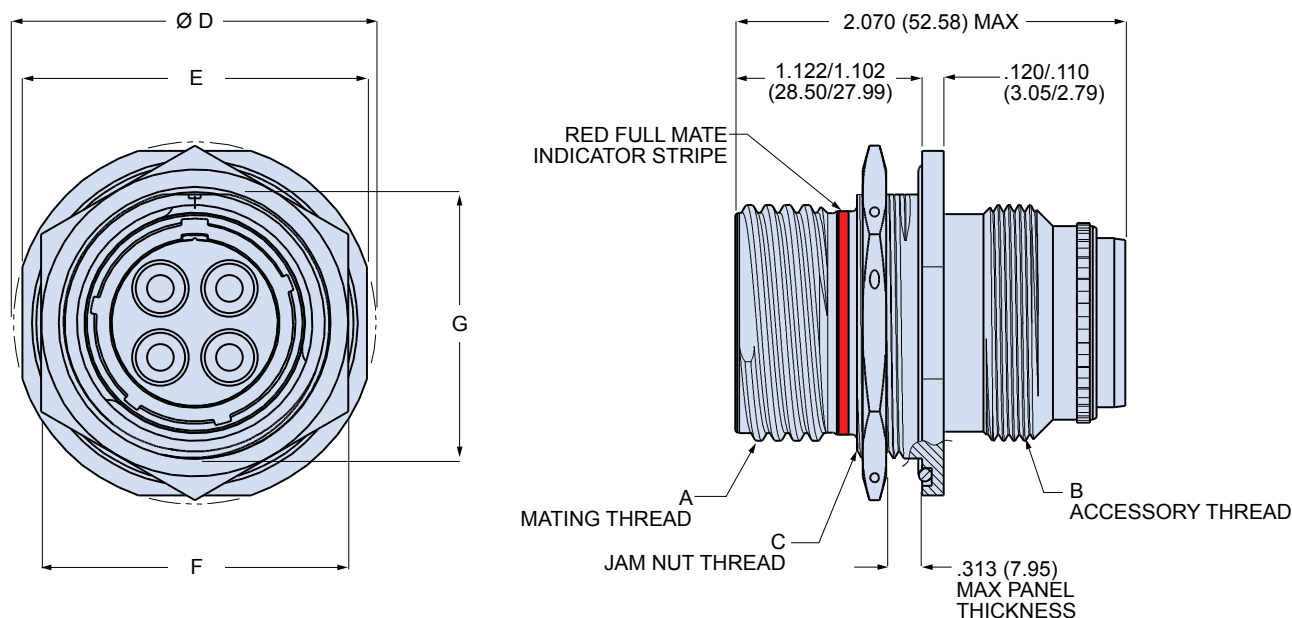
Series	Shell Material and Finish	Shell Size - Insert Arrangement					Contact Type	Contact Plating	Key Position
		Contact Arr.	Contact Size and Qty						
		#16	#12	#8	#4	#1/0			
970-004 Jam Nut Receptacle, for Rear Panel Mounting	ME Aluminum, Electroless Nickel Finish			2			P Pin Contacts	1 Silver Plated Contacts	-1 Position 1
		18-2							
		18-4		2	2				
	MT Aluminum, Nickel-PTFE Finish			3			S Socket Contacts	2 Gold Plated Contacts	-2 Position 2
		20-3							
		20-5		2	3				
		20-7	4		3				
	ZR Aluminum, Black Zinc- Nickel Finish				4		A Pin Connector, Supplied Less Contacts		-3 Position 3
		20-4							
		24-5			5				-4 Position 4
		24-2				2			
	Z1 Passivated Stainless Steel			4		2			-5 Position 5
		24-6							
		24-3				3			
		24-A6		3		3		B Socket Connector, Supplied Less Contacts	-6 Position 6
	ZMT Stainless Steel, Nickel- PTFE Finish					4			
		28-4							
		28-9	5			4			
	32-5				5				
	32-2					2			
	32-4				2	2			
	32-3					3			
	32-6		3			3			
	36-4					4			
	40-5					5			

Dimensions in inches (millimeters) and are subject to change without notice.

CAGE Code 06324

Printed in U.S.A.

970-004 Jam Nut Receptacle Connector Dimensions

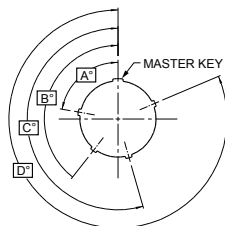


DIMENSIONS

Shell Size	A Mating Thd.	B Accessory Thd.	C Jam Nut Thd.	Ø D		E		F		G	
				In.	mm.	In.	mm.	In.	mm.	In.	mm.
18	1.125-.1P-.3L-TS-2A	1.125-18 UNEF-2A	1.250-18 UNEF-2A	1.733	44.02	1.639	41.63	1.438	36.53	1.212	31.06
20	1.250-.1P-.3L-TS-2A	1.250-18 UNEF-2A	1.4375-18 UNEF-2A	1.921	48.79	1.827	46.41	1.625	41.28	1.399	35.81
24	1.500-.1P-.3L-TS-2A	1.4375-18 UNEF-2A	1.625-18 UNEF-2A	2.108	53.54	2.014	51.16	2.000	50.80	1.587	40.36
28	1.750-.1P-.3L-TS-2A	1.8125-16 UN-2A	1.9375-16 UN-2A	2.425	61.60	2.327	59.11	2.188	55.58	1.899	48.51
32	2.000-.1P-.3L-TS-2A	2.0625-16 UNS-2A	2.125-16 UN-2A	2.607	66.24	2.514	63.86	2.375	60.33	2.084	52.93
36	2.250-.1P-.3L-TS-2A	2.250-16 UN-2A	2.375-16 UN-2A	2.857	72.57	2.763	70.18	2.625	66.68	2.323	59.00
40	2.500-.1P-.3L-TS-2A	2.750-16 UN-2A	2.875-16 UN-2A	3.107	78.92	3.013	76.53	2.875	73.03	2.548	64.72

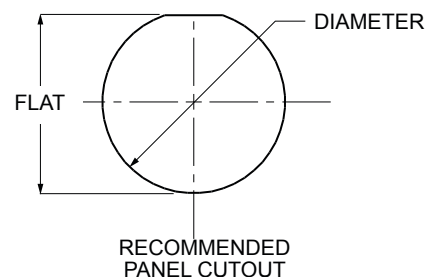
KEY POSITIONS

Position	A°	B°	C°	D°
1	80	142	196	293
2	135	170	200	310
3	49	169	200	244
4	66	140	200	257
5	62	145	180	280
6	79	153	197	272



PANEL CUTOUT

Shell Size	Diameter		Flat	
	In.	mm.	In.	mm.
	-.000 +.010	-.00 +.025	-.000 +.010	-.00 +.025
18	1.254	31.85	1.217	30.91
20	1.441	36.60	1.404	35.66
24	1.629	41.38	1.592	40.64
28	1.941	49.30	1.904	48.36
32	2.129	54.08	2.092	53.14
36	2.379	60.43	2.328	59.13
40	2.629	66.78	2.553	64.85



Dimensions in inches (millimeters) and are subject to change without notice.



970-005 Cable Receptacles

These connectors, often called “in-line”, “line” or “free-hanging” receptacles, are installed on cables for cord-to-cord applications. Series 970 PowerTrip™ extreme environment receptacle connectors are intended for high current applications where size 8 AWG to size 1/0 AWG wires are used. Contacts snap into connector through rear grommet and can be removed with a plastic tool. These connectors feature high ampacity *LouverBand* contacts. Coupling threads are triple-start ACME type. EMI protected with ground spring and splined backshell interface. Standard contacts are silver plated high conductivity copper alloy, or choose gold-plated contacts for improved corrosion protection in space or petrochemical environments. Fluorosilicone rubber gaskets and grommets provide watertight sealing. Unassembled contacts are packaged with connector.

Requires crimp tool and contact removal tool, sold separately.

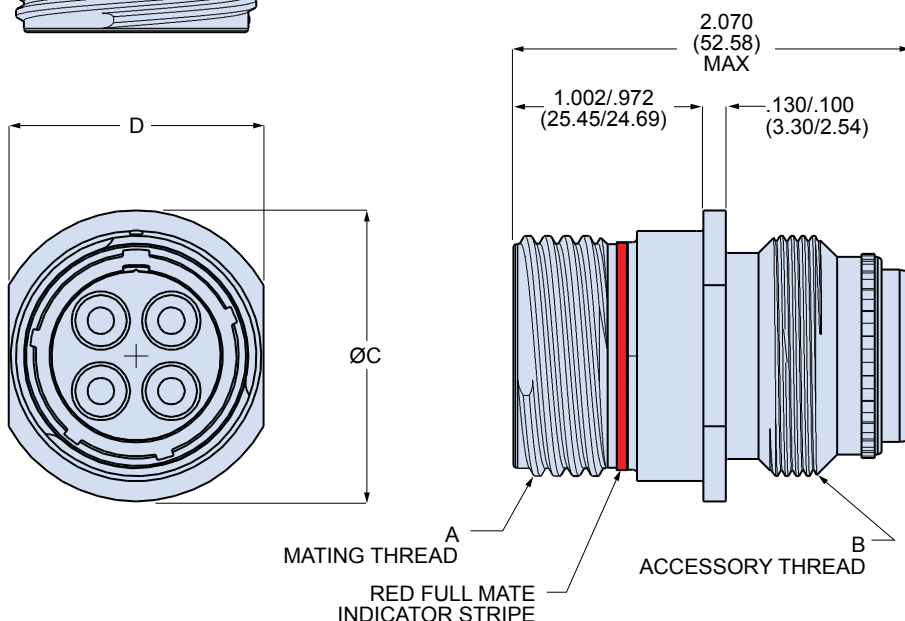
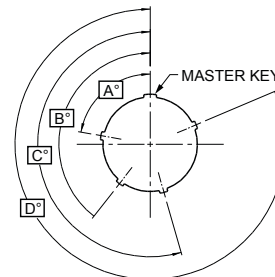
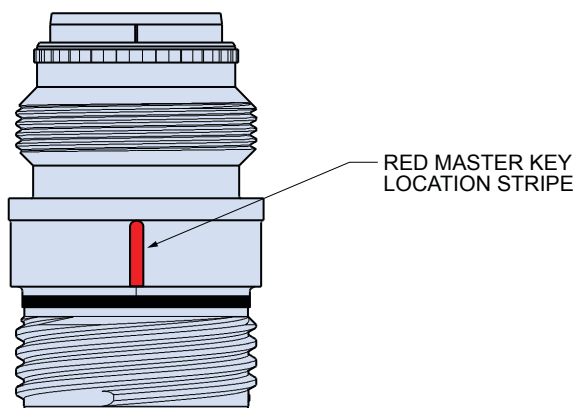
HOW TO ORDER										
Sample Part Number										
970-005	MT	24-5			P	1	-1			
Series	Shell Material and Finish	Shell Size - Insert Arrangement					Contact Type	Contact Plating	Key Position	
970-005 Cable Receptacle	ME Aluminum, Electroless Nickel Finish	Contact Arr.					P Pin Contacts	1 Silver Plated Contacts	-1 Position 1	
		Contact Size and Qty								
		#16	#12	#8	#4	#1/0				
		18-2		2						
		18-4	2	2						
	MT Aluminum, Nickel-PTFE Finish		20-3		3			S Socket Contacts	2 Gold Plated Contacts	-2 Position 2
			20-5	2	3					
		20-7	4		3					
	ZR Aluminum, Black Zinc-Nickel Finish		20-4		4			A Pin Connector, Supplied Less Contacts	-3 Position 3	
			24-5		5					
		24-2				2				
	Z1 Passivated Stainless Steel		24-6	4		2		B Socket Connector, Supplied Less Contacts	-4 Position 4	
			24-3			3				
		24-A6		3		3				
	ZMT Stainless Steel, Nickel-PTFE Finish		28-4			4			-5 Position 5	
			28-9	5		4				
			32-5				5			
			32-2				2			
			32-4			2	2			
			32-3				3			
	32-6		3		3					
	36-4				4					
	40-5				5			-6 Position 6		

Dimensions in inches (millimeters) and are subject to change without notice.

CAGE Code 06324

Printed in U.S.A.

970-005 Cable Receptacle Connector Dimensions



KEY POSITIONS				
Position	A°	B°	C°	D°
1	80	142	196	293
2	135	170	200	310
3	49	169	200	244
4	66	140	200	257
5	62	145	180	280
6	79	153	197	272

DIMENSIONS

Shell Size	A Mating Thread	B Accessory Thd	C		D	
			In. ±.010	mm. ±0.25	In. ±.005	mm. ±0.13
18	1.125-.1P-.3L-TS-2A	1.125-18 UNEF-2A	1.328	33.73	1.138	28.91
20	1.250-.1P-.3L-TS-2A	1.250-18 UNEF-2A	1.515	38.48	1.325	33.66
24	1.500-.1P-.3L-TS-2A	1.4375-18 UNEF-2A	1.703	43.26	1.513	38.43
28	1.750-.1P-.3L-TS-2A	1.8125-16 UN-2A	2.078	52.02	1.888	47.96
32	2.000-.1P-.3L-TS-2A	2.0625-16 UNS-2A	2.265	57.53	2.075	52.71
36	2.250-.1P-.3L-TS-2A	2.250-16 UN-2A	2.515	63.89	2.325	55.06
40	2.500-.1P-.3L-TS-2A	2.750-16 UN-2A	2.765	70.23	2.575	65.41

Dimensions in inches (millimeters) and are subject to change without notice.



970-006 Feed-Thru Bulkhead Receptacles

Series 970 PowerTrip™ feed-thru bulkhead receptacles have pin contacts on one side and socket contacts on the other side. Mount to bulkhead and attach mating plug connectors to both sides. Series 970 PowerTrip™ extreme environment receptacle connectors are intended for high current applications where size 8 AWG to size 1/0 AWG wires are used. Coupling threads are triple-start ACME type. Contacts are factory-installed and are non-removable. Standard contacts are silver plated high conductivity copper alloy for excellent conductivity, or choose gold-plated contacts for improved corrosion protection in space or petrochemical environments. Fluorosilicone O-ring and face seal provide water resistant sealing. Jam nut mounting, for panel thicknesses from 1/16 inch (1.58mm) to 1/2 inch (12.7mm).

HOW TO ORDER

Sample Part Number

970-006

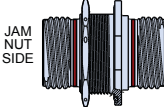
ME

24-5

P

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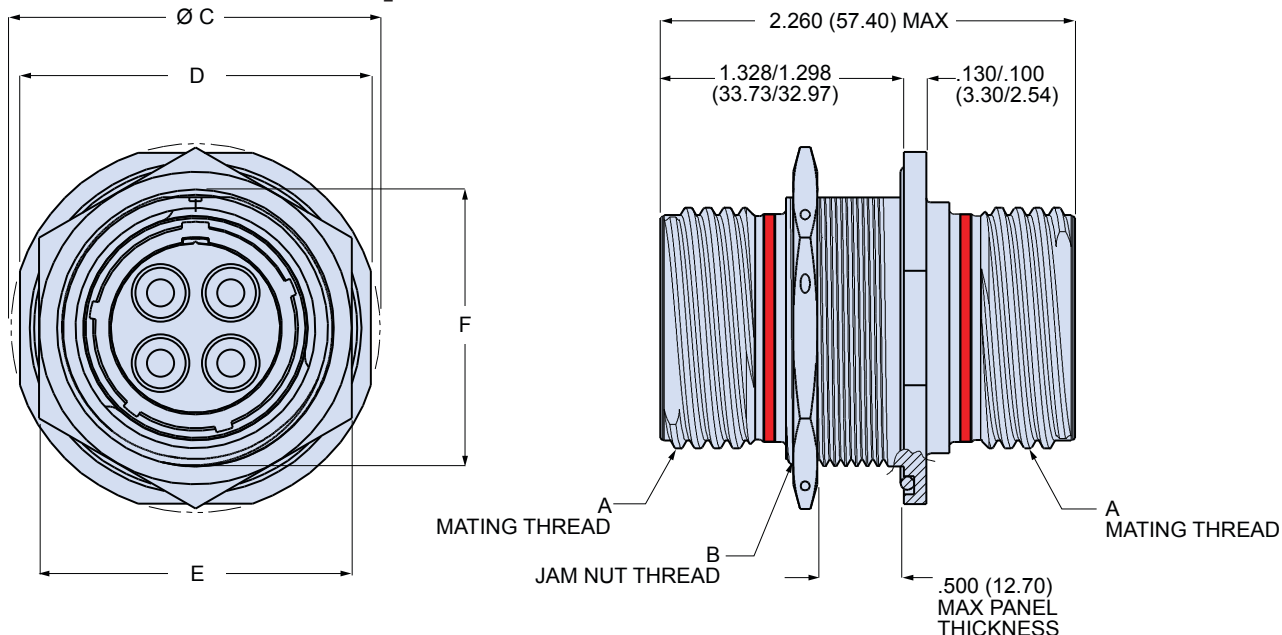
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Series	Shell Material and Finish	Shell Size - Insert Arrangement					Contact Type	Contact Plating	Key Position		
		Contact Arr.	#16	#12	#8	#4				#1/0	
970-006 Series 970 Feed-Thru Bulkhead Receptacle, Jam Nut Mounting	ME Aluminum, Electroless Nickel Finish	18-2			2		P Pin Contacts on Jam Nut Side	1 Silver Plated Contacts	-1 Position 1		
		18-4		2	2						
		20-3			3						
		20-5		2	3						
		20-7	4		3						
	MT Aluminum, Nickel-PTFE Finish	20-4			4		S Socket Contacts on Jam Nut Side 	2 Gold Plated Contacts	-2 Position 2		
		24-5			5						
		24-2				2					
		24-6		4		2					
		24-3				3					
	ZR Aluminum, Black Zinc-Nickel Finish	24-A6		3		3					-3 Position 3
		28-4				4					
		28-9	5			4					
		32-5				5					
		32-2								2	
	Z1 Passivated Stainless Steel	32-4				2	2	-4 Position 4			
		32-3					3				
		32-6		3			3				
		36-4					4				
		40-5					5				
ZMT Stainless Steel, Nickel-PTFE Finish									-5 Position 5		

Dimensions in inches (millimeters) and are subject to change without notice.



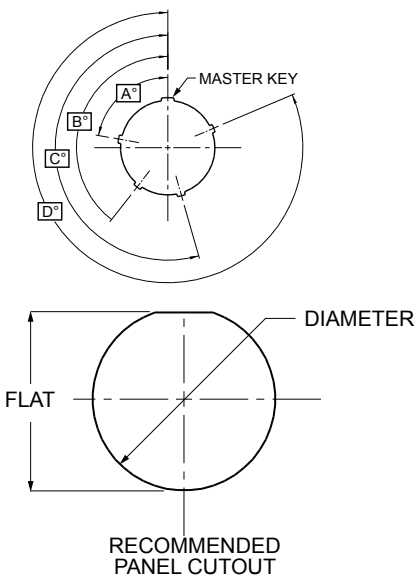
970-006 Feed-Thru Receptacle Connector Dimensions



DIMENSIONS										
Shell Size	A Mating Thd.	B Jam Nut Thd.	Ø C		D		E		F	
			In.	mm.	In.	mm.	In.	mm.	In.	mm.
18	1.125-.1P-.3L-TS-2A	1.250-18 UNEF-2A	1.733	44.02	1.639	41.63	1.438	36.53	1.212	31.06
20	1.250-.1P-.3L-TS-2A	1.4375-18 UNEF-2A	1.921	48.79	1.827	46.41	1.625	41.28	1.399	35.81
24	1.500-.1P-.3L-TS-2A	1.625-18 UNEF-2A	2.108	53.54	2.014	51.16	2.000	50.80	1.587	43.76
28	1.750-.1P-.3L-TS-2A	1.9375-16 UN-2A	2.425	61.60	2.327	59.11	2.188	55.58	1.899	48.51
32	2.000-.1P-.3L-TS-2A	2.125-16 UN-2A	2.607	66.24	2.513	63.86	2.375	60.33	2.087	53.29
36	2.250-.1P-.3L-TS-2A	2.375-16 UN-2A	2.857	72.57	2.763	70.18	2.625	66.68	2.323	59.00
40	2.500-.1P-.3L-TS-2A	2.875-16 UN-2A	3.107	78.92	3.013	76.53	2.875	73.03	2.548	64.72

G

KEY POSITIONS				
Position	A°	B°	C°	D°
1	80	142	196	293
2	135	170	200	310
3	49	169	200	244
4	66	140	200	257
5	62	145	180	280
6	79	153	197	272



Shell Size	Diameter		Flat	
	In.	mm.	In.	mm.
	-.000 +.010	-.00 +.025	-.000 +.010	-.00 +.025
18	1.254	31.85	1.217	30.91
20	1.441	36.60	1.404	35.66
24	1.629	41.38	1.592	40.64
28	1.941	49.30	1.904	48.36
32	2.129	54.08	2.092	53.14
36	2.379	60.43	2.328	59.13
40	2.629	66.78	2.553	64.85

Dimensions in inches (millimeters) and are subject to change without notice.

Series 970 Hermetic Feed-Thru Bulkhead



Series 970 PowerTrip™ hermetic feed-thru bulkhead receptacles have pin contacts on one side and socket contacts on the other side. Attach mating plug connectors to both sides. Compression glass hermetic seal. 100% tested to meet helium leak rate of 1×10^{-7} cc/second at 15 psi pressure differential. Pin contact end is iron alloy, socket end is copper alloy with beryllium copper louverband spring. Coupling threads are triple-start ACME type. Contacts are factory-installed and are non-removable. Standard contacts are silver plated, or choose gold-plated contacts for improved corrosion protection in space or petrochemical environments. Fluorosilicone O-ring and face seal provide water resistant sealing. Jam nut rear panel mounting, for panel thicknesses from 1/16 -inch (1.58mm) to 1/2 inch (12.7mm).

HOW TO ORDER

Sample Part Number

970-007

Z1

24-5

P

1

-1

Series	Shell Material and Finish	Shell Size - Insert Arrangement					Contact Type	Contact Plating	Key Position	
		Contact Arr.	Contact Size and Qty							
		#16	#12	#8	#4	#1/0				
970-007 Series 970 Feed-Thru Bulkhead Receptacle, Jam Nut Mounting	Stainless Steel Shell Z1 Passivated SST ZL Electrodeposited Nickel over SST			2			P Pin Contacts on Jam Nut Side S Socket Contacts on Jam Nut Side 	1 Silver Plated Contacts 2 Gold Plated Contacts	-1 Position 1 -2 Position 2 -3 Position 3 -4 Position 4 -5 Position 5 -6 Position 6	
		18-2			2					
		18-4		2	2					
		20-3			3					
		20-5			2	3				
		20-7	4		3					
		20-4			4					
		24-5			5					
		24-2				2				
		24-6		4		2				
		24-3				3				
		24-A6			3	3				
		28-4				4				
		28-9	5			4				
		32-5				5				
		32-2								2
		32-4				2				2
		32-3								3
32-6		3			3					
36-4					4					
40-5					5					

Dimensions in inches (millimeters) and are subject to change without notice.

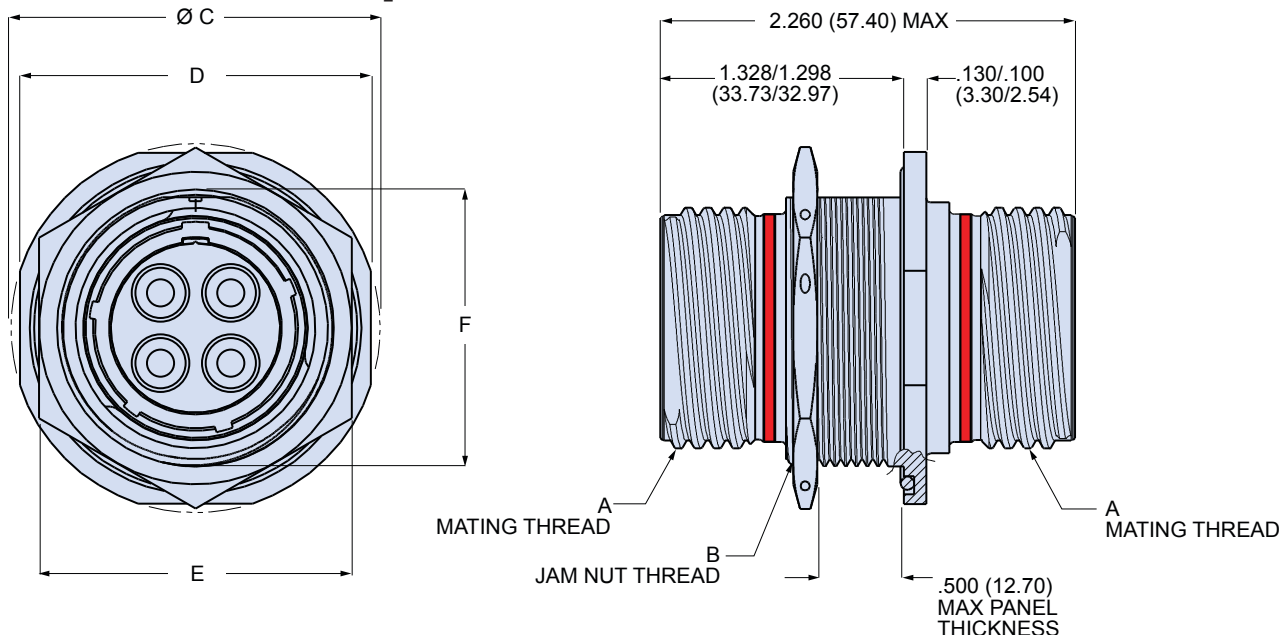
CAGE Code 06324

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Series 970 PowerTrip™ Connectors and Accessories
Section H: Hermetic Feed-Thru Bulkhead Receptacles
970-007

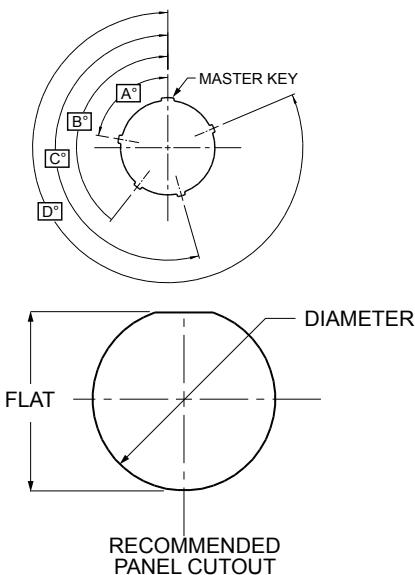
970-007 Feed-Thru Receptacle Connector Dimensions



DIMENSIONS										
Shell Size	A Mating Thd.	B Jam Nut Thd.	Ø C		D		E		F	
			In.	mm.	In.	mm.	In.	mm.	In.	mm.
18	1.125-.1P-.3L-TS-2A	1.250-18 UNEF-2A	1.733	44.02	1.639	41.63	1.438	36.53	1.212	31.06
20	1.250-.1P-.3L-TS-2A	1.4375-18 UNEF-2A	1.921	48.79	1.827	46.41	1.625	41.28	1.399	35.81
24	1.500-.1P-.3L-TS-2A	1.625-18 UNEF-2A	2.108	53.54	2.014	51.16	2.000	50.80	1.587	43.76
28	1.750-.1P-.3L-TS-2A	1.9375-16 UN-2A	2.425	61.60	2.327	59.11	2.188	55.58	1.899	48.51
32	2.000-.1P-.3L-TS-2A	2.125-16 UN-2A	2.607	66.24	2.513	63.86	2.375	60.33	2.087	53.29
36	2.250-.1P-.3L-TS-2A	2.375-16 UN-2A	2.857	72.57	2.763	70.18	2.625	66.68	2.323	59.00
40	2.500-.1P-.3L-TS-2A	2.875-16 UN-2A	3.107	78.92	3.013	76.53	2.875	73.03	2.548	64.72

H

KEY POSITIONS				
Position	A°	B°	C°	D°
1	80	142	196	293
2	135	170	200	310
3	49	169	200	244
4	66	140	200	257
5	62	145	180	280
6	79	153	197	272



Shell Size	Diameter		Flat	
	In.	mm.	In.	mm.
	-.000 +.010	-.00 +.025	-.000 +.010	-.00 +.025
18	1.254	31.85	1.217	30.91
20	1.441	36.60	1.404	35.66
24	1.629	41.38	1.592	40.64
28	1.941	49.30	1.904	48.36
32	2.129	54.08	2.092	53.14
36	2.379	60.43	2.328	59.13
40	2.629	66.78	2.553	64.85

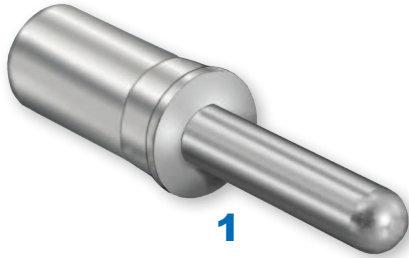
Dimensions in inches (millimeters) and are subject to change without notice.

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Series 970 PowerTrip™ Pin Contacts

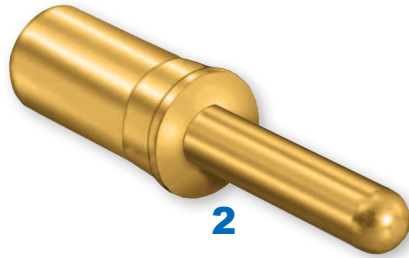
Series 970 PowerTrip™ contacts for size #16 through Size #1/0 wire. Tellurium copper alloy with silver or gold plating. Terminate to wire with standard crimp tools. Contacts are snap-in, rear-release and meet the performance requirements of SAE AS39029. Use in Series 970 PowerTrip™ connectors.



1

1 Pin contact with heavy silver plating. Plating conforms to ASTM B 700, 0.00020 inch minimum thickness. Highly conductive silver plating is ideal for high current applications.

2 Pin contact with gold plating for improved protection from corrosive environments. Suitable for space applications where silver plated contacts are prohibited. Plating conforms to ASTM B 488, 0.000050 inch minimum thickness over electrodeposited nickel.



2

Silver Plated Pin Contacts

Fig.	Size	Wire Size	Part Number
1	16	#16-#20	850-026-16-16-1
1	12	#12-#14	850-026-12-12-1
1	8	#8	850-026-8-8-1
1	8	#10	850-026-8-10-1
1	4	#4	850-026-4-4-1
1	4	#6	850-026-4-6-1
1	1/0	1/0	850-026-0-0-1
1	1/0	#2	850-026-0-2-1

Gold Plated Pin Contacts

Fig.	Size	Wire Size	Part Number
2	16	#16-#20	850-026-16-16-2
2	12	#12-#14	850-026-12-12-2
2	8	#8	850-026-8-8-2
2	8	#10	850-026-8-10-2
2	4	#4	850-026-4-4-2
2	4	#6	850-026-4-6-2
2	1/0	1/0	850-026-0-0-2
2	1/0	#2	850-026-0-2-2

Contact Current Ratings and Resistance

Contact and Wire Size	Current Rating at 20° C (Amperes)	Current Rating at 80° C (Amperes)	Max. Contact Resistance (milliohms)
#16	22	13	6.0
#12	41	23	3.0
#8	73	46	1.0
#4	135	80	0.5
#1/0	245	150	0.3

Tools for Contact Crimping and Installation

Contact Size	Insertion/Extraction Tool	Extraction Tool	Crimp Tool	Positioner	Die Set	Locator
#16	809-131	—	809-136	859-032	—	—
#12	809-132	—	809-136	859-032	—	—
#8	—	859-022	859-025	—	859-026	859-029
#4	—	859-023	859-025	—	859-027	859-030
#1/0	—	859-024	859-025	—	859-028	859-031

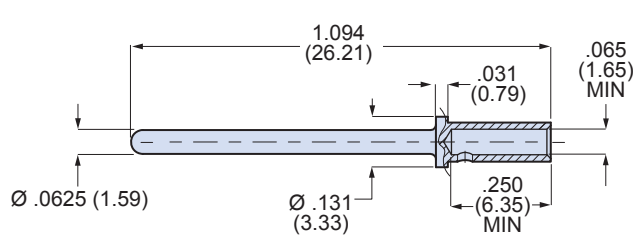
Specifications

Operating Temperature	-65° C. to +200° C.
Shock	300 g.
Vibration	37 g.
Durability	2000 mating cycles

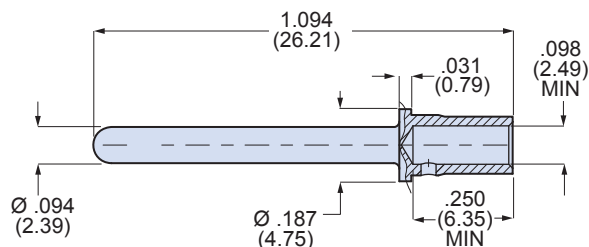
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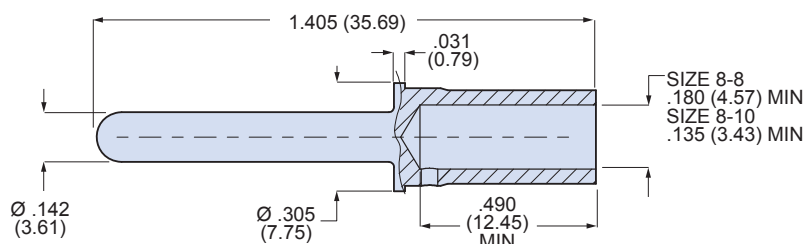
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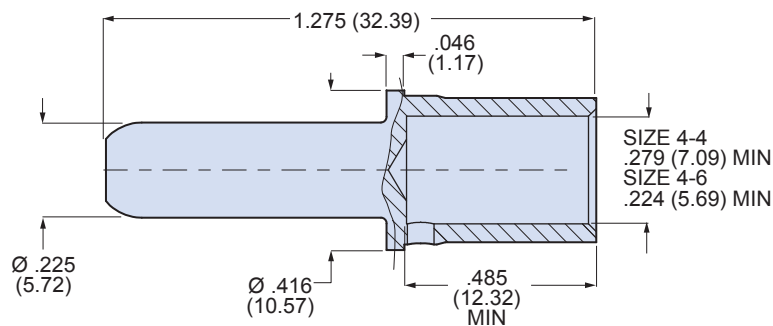
#16 Pin Contact Dimensions 850-026-16



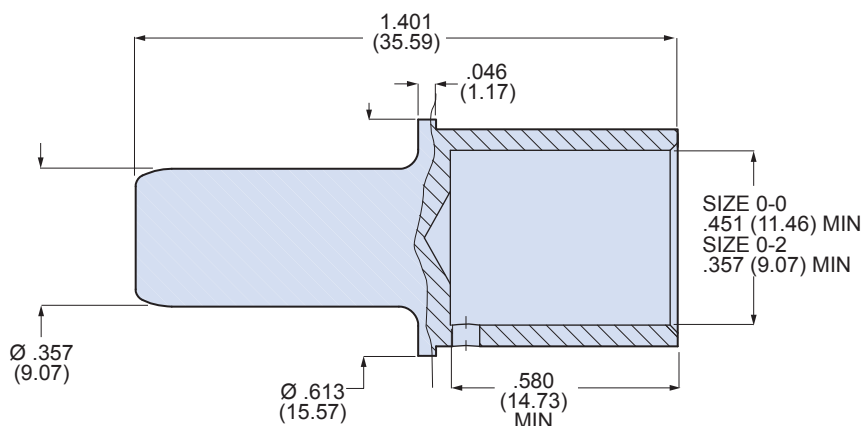
#12 Pin Contact Dimensions 850-026-12



#8 Pin Contact Dimensions 850-026-8



#4 Pin Contact Dimensions 850-026-4

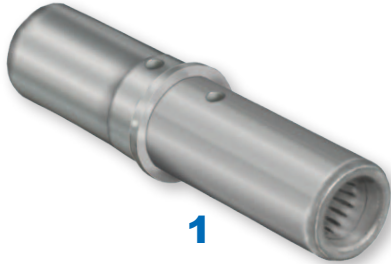


#1/0 Pin Contact Dimensions 850-026-0

Dimensions in inches (millimeters) and are subject to change without notice.

Series 970 PowerTrip™ Crimp Socket Contacts

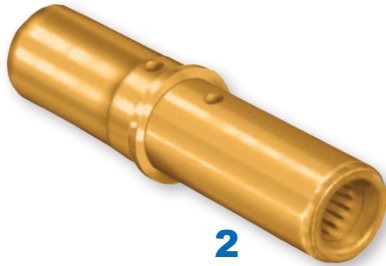
Series 970 PowerTrip™ contacts for size #16 through Size #1/0 wire. Tellurium copper alloy with silver or gold plating. Terminate to wire with standard crimp tools. Contacts are snap-in, rear-release and meet the performance requirements of SAE AS39029. Use in Series 970 PowerTrip™ connectors.



1

1 Socket contact with heavy silver plating. Plating conforms to ASTM B 700, 0.00020 inch minimum thickness. Highly conductive silver plating is ideal for high current applications.

2 Socket contact with gold plating for improved protection from corrosive environments. Suitable for space applications where silver plated contacts are prohibited. Plating conforms to ASTM B 488, 0.000050 inch minimum thickness over electrodeposited nickel.



2

Silver Plated Socket Contacts

Fig.	Size	Wire Size	Part Number
1	16	#16-#20	850-027-16-16-1
1	12	#12-#14	850-027-12-12-1
1	8	#8	850-027-8-8-1
1	8	#10	850-027-8-10-1
1	4	#4	850-027-4-4-1
1	4	#6	850-027-4-6-1
1	1/0	1/0	850-027-0-0-1
1	1/0	#2	850-027-0-2-1

Gold Plated Socket Contacts

Fig.	Size	Wire Size	Part Number
2	16	#16-#20	850-027-16-16-2
2	12	#12-#14	850-027-12-12-2
2	8	#8	850-027-8-8-2
2	8	#10	850-027-8-10-2
2	4	#4	850-027-4-4-2
2	4	#6	850-027-4-6-2
2	1/0	1/0	850-027-0-0-2
2	1/0	#2	850-027-0-2-2

Contact Current Ratings and Resistance

Contact and Wire Size	Current Rating at 20° C (Amperes)	Current Rating at 80° C (Amperes)	Max. Contact Resistance (milliohms)
#16	22	13	6.0
#12	41	23	3.0
#8	73	46	1.0
#4	135	80	0.5
#1/0	245	150	0.3

Tools for Contact Crimping and Installation

Contact Size	Insertion/Extraction Tool	Extraction Tool	Crimp Tool	Positioner	Die Set	Locator
#16	809-131	—	809-136	859-032	—	—
#12	809-132	—	809-136	859-032	—	—
#8	—	859-022	859-025	—	859-026	859-029
#4	—	859-023	859-025	—	859-027	859-030
#1/0	—	859-024	859-025	—	859-028	859-031

Specifications

Operating Temperature	-65° C. to +200° C.
Shock	300 g.
Vibration	37 g.
Durability	2000 mating cycles

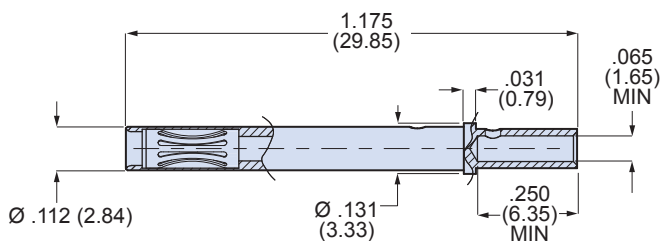
Dimensions in inches (millimeters) and are subject to change without notice.

CAGE Code 06324

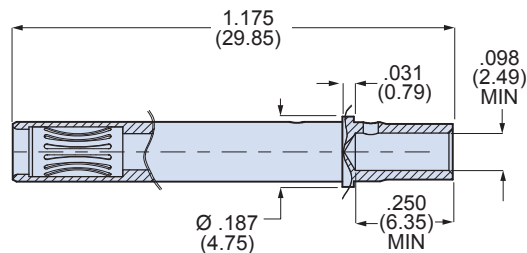
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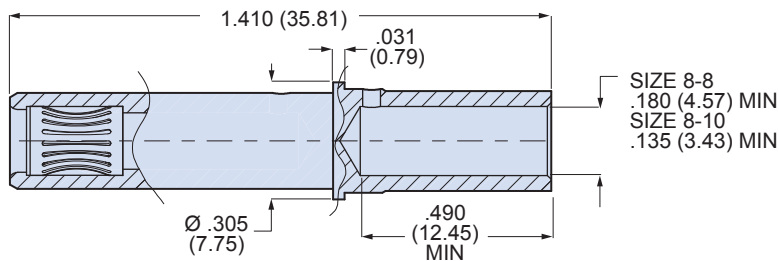
Series 970 PowerTrip™ Connectors and Accessories
Section I: Contacts
850-027 Socket Contacts



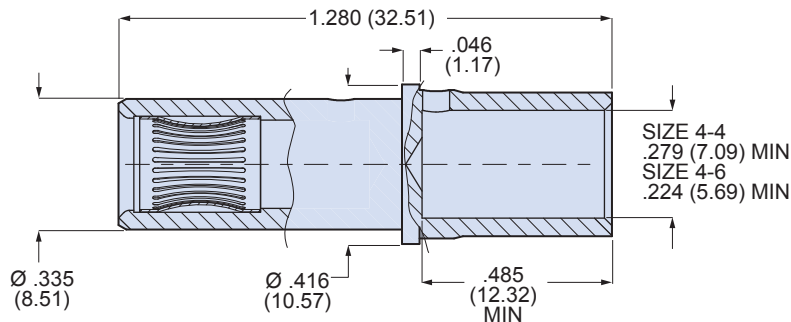
#16 Socket Contact Dimensions 850-027-16



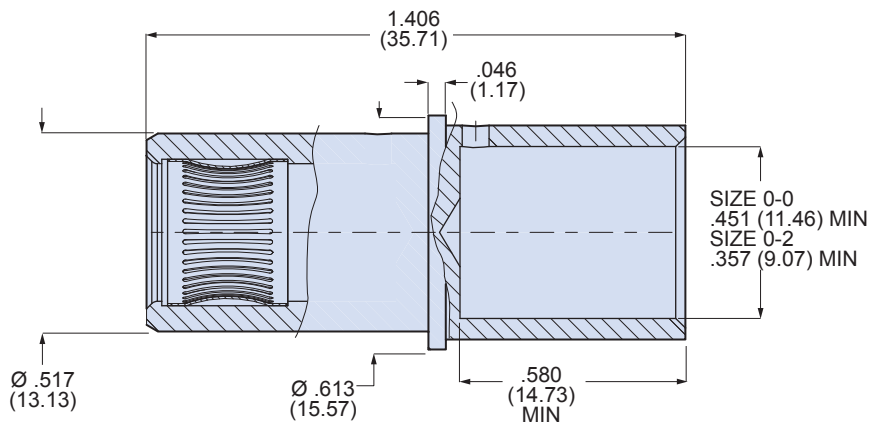
#12 Socket Contact Dimensions 850-027-12



#8 Socket Contact Dimensions 850-027-8



#4 Socket Contact Dimensions 850-027-4



#1/0 Socket Contact Dimensions 850-027-0

Dimensions in inches (millimeters) and are subject to change without notice.

CAGE Code 06324

Printed in U.S.A.

Hand Crimp Tool And Positioner For #12 and #16 Contacts



A Crimp tool for use with size #16 and #12 Series 970 pin and socket contacts. Use with turret-type positioner 859-032. 9.75 inches OAL, 1.25 pounds.

B Positioner for use with size #12 and #16 contacts. Rotate turret head to blue position for #16 contact termination, yellow position for #12 contacts.

Figure	Part Number	Military Part Number	Daniels Part Number
A	809-136	M22520/1-01	AF8
B	859-032	M22520/1-02	TH1A

Pneumatic Crimp Tool For #8, #4 and #1/0 Contactss



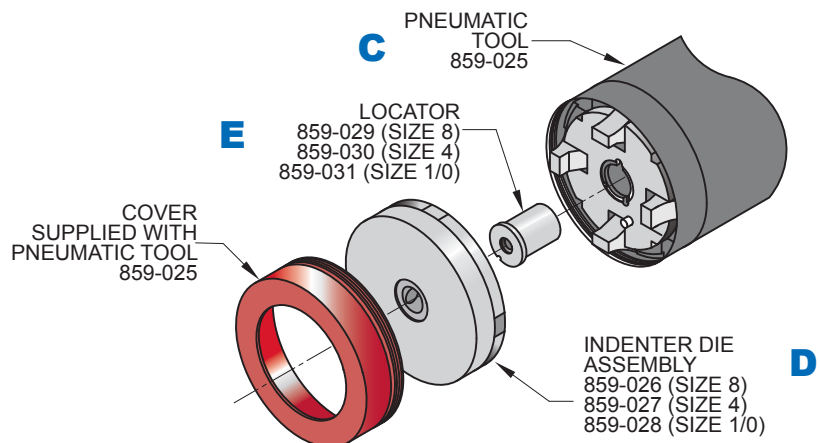
C Bench mount pneumatic crimp tool. Heavy duty, four-indent crimp termination. Attach to air supply with quick-disconnect fitting or install 1/4 NPT fitting into tapped port. 90-120 psi air supply. Requires die assemblies and locators, sold separately. Hand actuate with push-button valve trigger on handle. Steel with black wrinkle enamel coating. 13 inches overall length, 9.2 inches tall, 17 pounds (7.7 Kg).

D Indenter Die Assembly. Precision four-indent die with hardened tool steel indenters, stainless steel housing. Separate die assembly required for each contact size.

E Locator. Aluminum locator positions contact at correct depth for crimping. Separate locator required for each contact size.



Figure	Contact Size	Description	Part Number	Military Part Number	Daniels Part Number
C	—	Pneumatic Crimper	859-025	M22520/23-01	WA23
D	8	Die Assembly	859-026	M22520/23-02	WA23-2
D	4	Die Assembly	859-027	M22520/23-04	WA23-4
D	1/0	Die Assembly	859-028	M22520/23-05	WA23-5
E	8	Locator	859-029	M22520/23-09	WA23-9
E	4	Locator	859-030	M22520/23-11	WA23-11
E	1/0	Locator	859-031	M22520/23-13	WA23-13



Dimensions in inches (millimeters) and are subject to change without notice.

CAGE Code 06324

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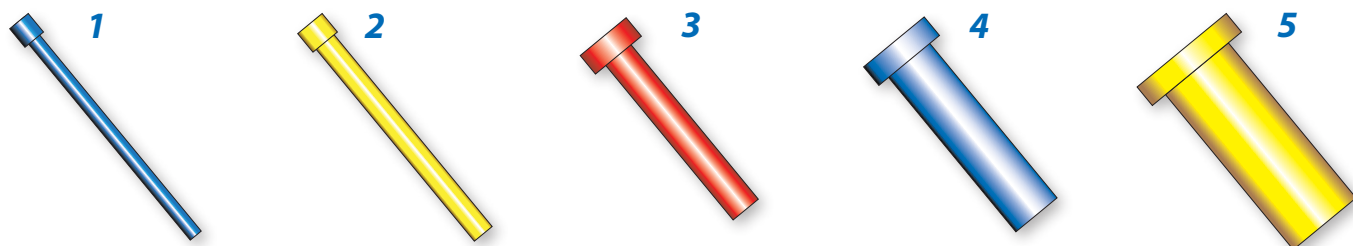
Contact Insertion and Removal Tools



Install and remove PowerTrip™ contacts with plastic tools. Size #12 and #16 tools are used for both insertion and extraction. Size 8, 4 and 1/0 tools are used for contact removal only.

Figure	Size	Type	Part Number	Military Part Number
1	#16	Insertion/Extraction	809-131	M81969/14-03
2	#12	Insertion/Extraction	809-132	M81969/14-04
3	#8	Extraction only	859-022	M81969/14-06
4	#4	Extraction only	859-023	M81969/14-07
5	#1/0	Extraction only	859-024	M81969/14-08

Grommet Sealing Plugs



Grommet sealing plugs prevent moisture or contamination from entering unwired connector positions. Install unterminated contact into unused cavity of connector, then insert sealing plug head end first. Molded thermoplastic in accordance with MS27488. Size 12 and size 16 plugs can be inserted with contact insertion tools. Size 8 and larger can be inserted by hand with no tool. Bulk packaged.

Figure	Size	Color	Part Number	Military Part Number
1	#16	Blue	859-036	MS27488-16-3
2	#12	Yellow	859-037	MS27488-12-3
3	#8	Red	859-038	MS27488-8-3
4	#4	Blue	859-039	MS27488-4-3
5	#1/0	Yellow	859-040	MS27488-0-3

Dimensions in inches (millimeters) and are subject to change without notice.

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About Accessories for Series 970 Connectors

The Series 970 connector has splines, or radial teeth, for improved attachment of accessories such as backshells or strain reliefs (*fig. 1*). These splines mesh with teeth in the accessory (*Fig. 2*). These splines provide an unbeaten combination of mechanical robustness and EMI shielding performance.

The ABC's of Accessory Part Numbers

The letter **P** designates the Series 970 PowerTrip™ connector. If you are familiar with Glenair Circular Connector Designator Codes, you know that this code appears in the accessory part number following the first three digits. For example, Code H designates accessories that fit connectors conforming to MIL-DTL-38999 Series III. Part number 310**HS**001 specifies a shrink boot adapter for this connector.

How to Order an Accessory for Series 970 Connectors

Future editions of this catalog will contain full accessories ordering information. Until then, please contact a Glenair technical sales representative for assistance. Connector Designator P does not appear in our accessory catalogs or sales literature. Many Glenair accessories can simply be ordered using the P designator. However, not all Glenair backshells are available with splines to fit the PowerTrip™ connector.

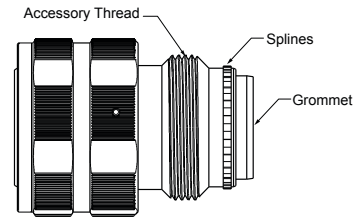


Figure 1
Series 970 Plug Connector



Figure 2
Detail of Backshell Coupling Ring



Part Number 390PS013MT2012H6

This is an example of a standard accessory ordered with Connector Designator P.

Dimensions in inches (millimeters) and are subject to change without notice.

SERIES 79

Micro-Crimp



The Micro-D Connector with Enhanced Capability

Meet the new member of Glenair's Micro-D family, the Series 79 Micro-Crimp. The Micro-Crimp connector features crimp, rear-release size #23 contacts on .075 inch (1.9 mm) spacing, as well as size #12 and #16 power and coaxial crimp contacts in a range of hybrid layouts. Available in 29 insert arrangements, the Micro-Crimp provides a wide selection of arrangements for data and power transmission.



Today's defense/aerospace systems require advanced levels of environmental protection, electromagnetic shielding and size/weight reduction. The Series 79 was developed to meet these needs. Panel mounted connectors feature conductive sealing gaskets. Right angle printed circuit board connectors have an EMI shroud to prevent electromagnetic interference. Wire sealing grommets and interfacial seals protect circuits from moisture and contamination.

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