Glenair®

Series 970
PowerTrip™ Hermetic Connectors
Introduction

Series 970 PowerTrip™ *Connectors:* Superior Contacts, Mating Interface, and Backshell Attachment than Standard MS Type Power Connectors

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

Series 970 PowerTrip™ hermetic receptacles feature 316L stainless steel shells and compression glass insulators. Solder cup contacts are nickel-iron alloy and are non-removable. Coupling threads are triple-start ACME type. Contacts are silver plated high conductivity copper alloy, or choose gold-plated contacts. Fluorosilicone rubber face seal on pin connector. Stainless steel shells are passivated, or choose nickel plating for improved shell-to-shell conductivity and EMI protection. Hermeticity is 1 X 10^{-7} cc/sec maximum helium leak rate with one atmosphere pressure differential.

- **Compression Glass Seal**
- **1 X 10^{-7} cc/sec He leak rate**
- **Both Pin and Socket Versions**
- **Stainless Steel Shell**

PRODUCT FACTS
2000 VAC Sea Level DWV Rating
-65°C to +200°C Operating Temperature
6 Feet Water Immersion, 48 Hours
65 dB min. Attenuation, up to 10GHz
2000 Cycles Mating Durability
MIL-S 901 Grade A High-Impact Shock
43 g Random Vibration

- ***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***

CAGE CODE 06324
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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.

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

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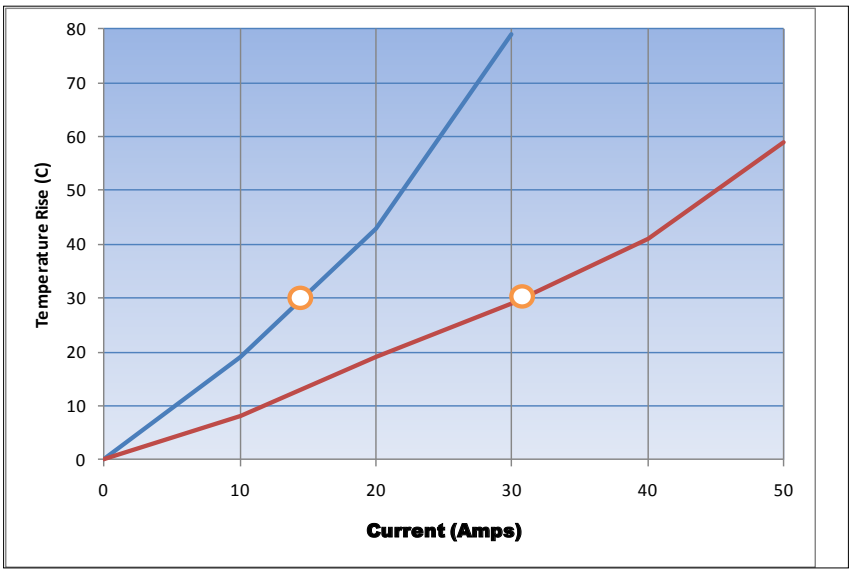
About LouverBand Contacts

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.



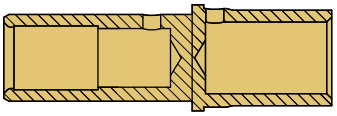


Figure 1
Socket Contact Body

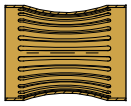


Figure 2
LouverBand Spring

Figure 3
Assembled Contact

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