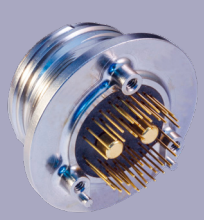
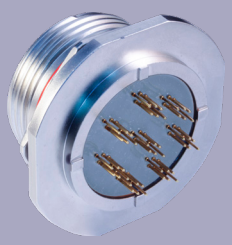
Glenair®

MISSION-DRIVEN DESIGN

CODE RED

Hermetically-sealed interconnects used in vacuum or high-altitude applications prevent moisture and other contaminants from damaging sensitive electronic equipment. Glass-to-metal hermetic sealing has been the gold standard in the aerospace and petrochemical industries for decades due to the strength and long-term durability of the materials used. But glass-to-metal seal hermetics come with a big price tag in both weight and electrical resistance. CODE RED is an innovative sealing encapsulant and application process invented by Glenair that provides durable hermetic sealing in a lightweight aluminum package. CODE RED allows for the use of gold-plated copper alloy contacts, significantly improving electrical performance. CODE RED hermetic connectors are available in SuperNine® (D38999 Series III type metal and composite), Mighty Mouse, M24308 D-Sub, HiPer-D, and Series 79; and deliver reliable, life-of-system $1X10^{-7}$ max leak-rate hermetic sealing. Special non-magnetic (zero residual magnetism) versions are also available, consult factory.

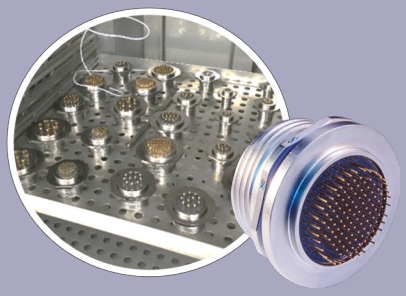




- **$1X10^{-7}$ hermetic sealing in a lightweight aluminum shell**
- **Low-resistance gold-plated copper contacts**
- **Passed full D38999/23 qualification testing**
- **Meets NASA outgassing and aerospace temperature/corrosion resistance standards**
- **Operating temperature -65°C to +200°C**
- **Up to +50% weight savings**
- **Improved current carrying capacity and electrical resistance compared to Kovar/ Inconel solutions**

Lightweight, Low-Resistance Hermetic Sealing Solution

CODE RED LIGHTWEIGHT HERMETIC CONNECTOR TESTING AND VALIDATION



Connectors utilizing CODE RED hermetic encapsulant sealing underwent a grueling qualification test and validation process to prove material durability and hermeticity. Validation testing including 100 cycles of thermal shock IAW EIA-364-32 Test Condition A -65°C to +200°C while maintaining hermeticity followed by 1000 hours of thermal aging at 200°C. Additional tests included:

- DWV, DWV at altitude
- IR, IR at temperature
- Highly Accelerated Life Testing (HALT)
- Insert and contact retention
- Mating durability
- Random vibration at temperature IAW MIL-DTL-38999
- Hermetic seal at 1 atm differential pressure

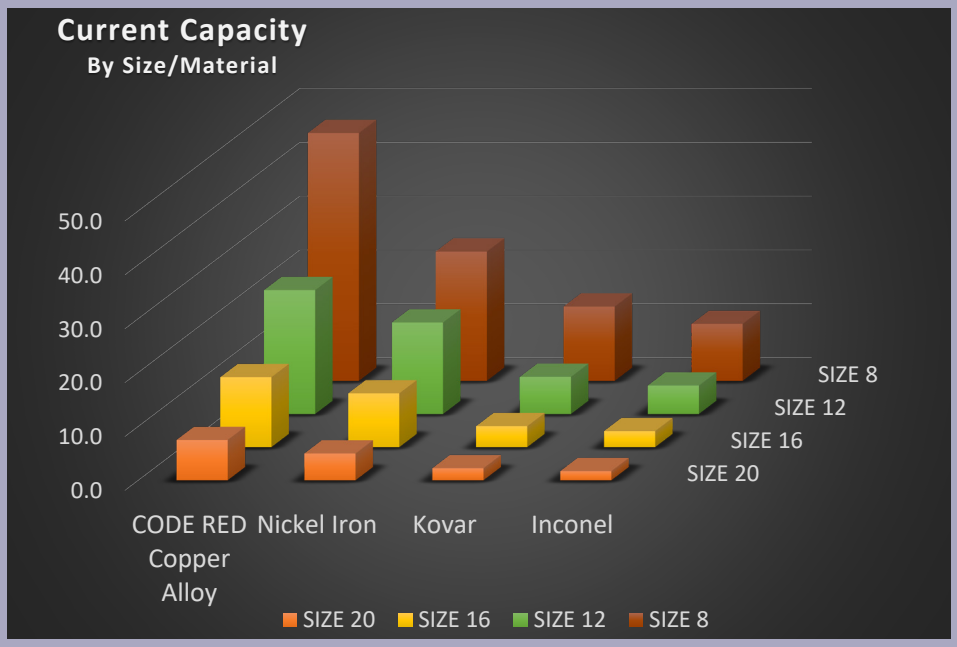
The entire qualification test cycle was repeated successfully with new parts to validate complete reliability.

CODE RED USES PROVEN-PERFORMANCE CONNECTOR AND CONTACT MATERIALS

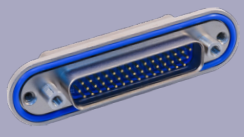
CODE RED MATERIALS / FINISH	
Sealing Adhesive	Proprietary Glenair compounds
Contacts*	Gold-plated beryllium copper alloy
Insulator	Rigid high-temp plastic
Seals	Blended fluorosilicone/ silicone elastomer
Receptacle Shell and Jam Nut*	Aluminum alloy
Finish*	Multiple mil-spec finishes
*zero residual magnetism materials also available	

PERCENTAGE WEIGHT SAVINGS CODE RED VS. GLASS-TO-METAL MIL-DTL-38999 SR. III	
Shell Size/Insert Arr.	Weight Reduction
9-35	52%
11-98	47%
13-35	47%
15-97	42%
19-32	40%
21-11	32%
23-21	28%
25-08	43%

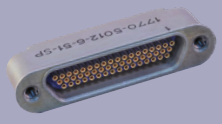
Graph illustrates Current Carrying Capacity of CODE RED copper alloy contacts compared to the Inconel, Kovar, and nickel iron contacts used in conventional glass-to-metal seal hermetics.



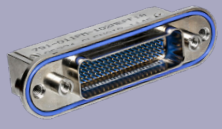
AVAILABLE CONNECTOR PACKAGES



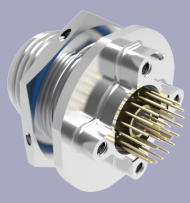
HiPer-D advanced-performance D-Sub



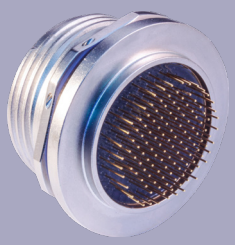
Micro-D M83513-intermateable



Series 79 crimp-contact micro



Sr. 806 Mil-Aero micro miniature



SuperNine "better-than-QPL" D38999

RF and high-speed