

Lightweight, Low Resistance Code Red Lightweight Hermetic Connectors

The lightweight hermetic sealing solution



Micro-D
Hermetic

CODE RED LIGHTWEIGHT HERMETIC CONNECTOR TESTING AND VALIDATION



Connectors utilizing CODE RED hermetic encapsulant sealing went through 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 30 psi

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

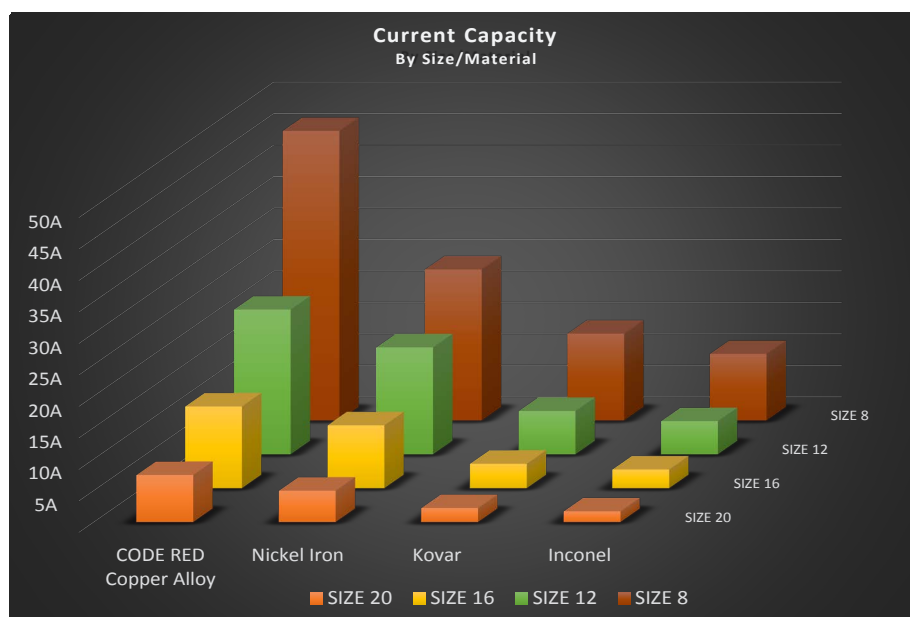
CODE RED USES PROVEN-PERFORMANCE CONNECTOR AND CONTACT MATERIALS

CODE RED Materials / Finish	
Sealing Adhesive	Proprietary Glenair compound
Contacts*	Gold-plated beryllium copper alloy per ASTM B 197 or equivalent
Insulator	Rigid plastic
Seals	Blended fluorosilicone/silicone elastomer
Receptacle Shell and Jam Nut*	Aluminum alloy 6061-T6 per ASTM B 221
Finish*	Electroless nickel per ASTM B 733

*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.



APPLICATION NOTES: CODE RED is a viable drop-in solution for conventional glass-to-metal seal hermetic connectors with the following exceptions:

- 1. Fuel Cells:** Although CODE RED exhibits outstanding resistance to caustic chemicals and fuels, its use in fuel tanks/fuel cell applications is not recommended.
- 2. Cryogenics:** CODE RED has been tested and qualified to -65°C IAW MIL-DTL-38999
- 3. Sustained High-Operating Temperatures:** CODE RED has been tested and qualified to +200°C IAW MIL-DTL-38999
- 4. High Radiation:** Exposure to no more than 6 Megarads of radiation
- 5. Deep Subsea:** CODE RED is ideally suited for aerospace and downhole applications that do not exceed 2 BAR (30 psi) atmospheric pressure differential.
- 6. Space Life Support Systems:** Requires additional qualification testing not yet performed by Glenair.