



LIGHTWEIGHT, LOW RESISTANCE

CODE RED

Lightweight hermetic adhesive sealing solution with better than 1×10^{-7} leak rate performance

Hermetically-sealed interconnects used in vacuum or high-altitude applications prevent moisture and other contaminants from polluting sensitive electronic equipment and other payload technologies. Glass-to-metal hermetic sealing has been the gold standard in the aerospace industry for decades due to its reliable long-term performance. But application engineers employing conventional hermetic interconnects pay a heavy price to prevent sensitive vacuum-sealed equipment from gas and moisture ingress/damage as these interconnects famously suffer from heavy weight and high electrical resistance.

CODE RED is a proprietary sealing adhesive and application process invented by Glenair that for the first time ever provides durable hermetic sealing in a lightweight aluminum package. In addition, CODE RED allows for the use of conventional gold-plated copper alloy contacts, significantly improving the electrical performance of the system. CODE RED is available now in Glenair SuperNine® (D38999 Series III type) and Series 80 Mighty Mouse connectors, and delivers reliable, life-of-system 1×10^{-7} max leak rate hermetic sealing.

- Full hermetic sealing, better than 1×10^{-7} in a lightweight aluminum shell with low electrical resistance copper contacts
- Meets NASA outgassing requirements, as well as aerospace temperature and corrosion resistance standards
- Operating temperature -65°C to $+200^{\circ}\text{C}$
- Available today as drop-in replacement for D38999/23 glass-to-metal seal hermetics
- Significant weight savings—up to +50%
- Order-of-magnitude improvement in current carrying capacity and electrical resistance performance compared to Kovar and Inconel material construction

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The Glenair adhesive hermetic sealing solution

CODE RED TESTING AND VALIDATION

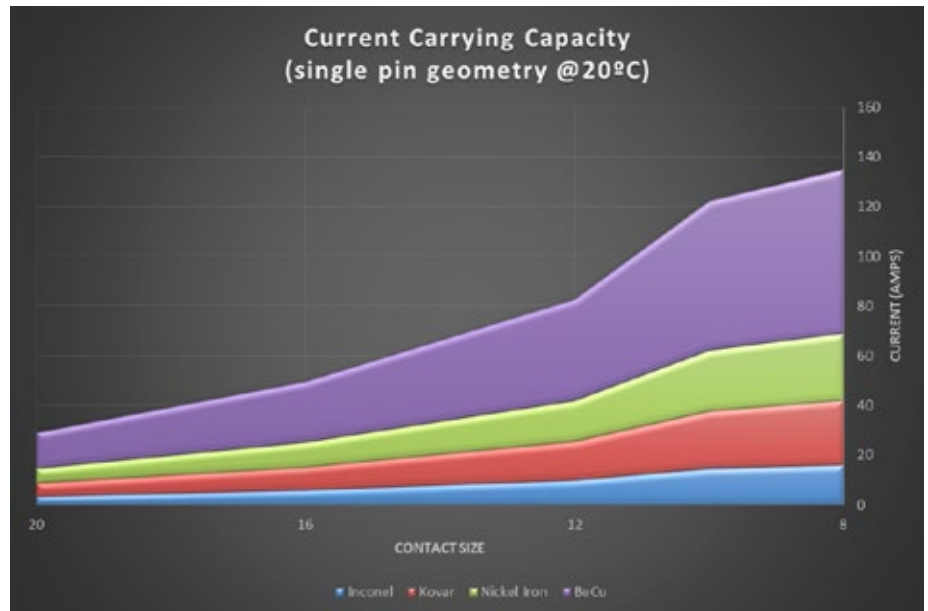


Connectors utilizing CODE RED hermetic adhesive sealing went through a grueling qualification test and validation process to validate material sealing durability and hermeticity. Validation testing included:

- 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
- DWV and IR
- Contact retention
- Insert retention
- Hermetic seal at 30 psi
- IR at temperature
- DWV at altitude
- Random vibration at temperature

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
SHELL AND JAM NUT
Aluminum alloy 6061-T6 per ASTM B 221
FINISH
Electroless nickel per ASTM B 733



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