



## MIL-DTL-38999 and Other Glass-Sealed Hermetic Connectors



- Enhanced Reliability
- Superior Pressure Resistance to 32,000+ PSI
- Higher Resistance to Extreme Operating Temperatures to 260°+ C
- Superior Mechanical Strength
- No Material Breakdown or Aging Over Time
- Helium Leak rate <math>< 1 \times 10^{-7}</math> cc/sec to <math>1 \times 10^{-10}</math>

### Resolve gas, moisture and particle ingress problems with advanced-performance glass-sealed hermetic connectors

Glass-sealed MIL-DTL-24308, MIL-DTL-83513 and Series 79 Micro-Crimp hermetic connectors



Range of Standard Catalog Glass-Sealed Hermetic Connector Series Available with Accelerated Lead Times



MIL-DTL-26482



MIL-DTL-83723



MIL-DTL-38999 (QPL)

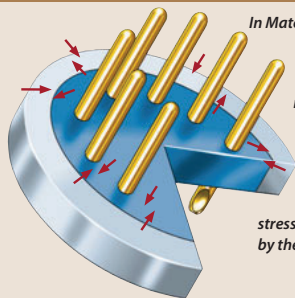


MIL-DTL-5015



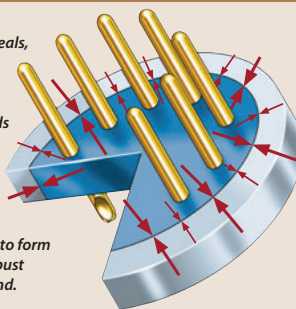
Series 80 Mighty Mouse

#### Matched vs. Compression Seal Technologies



In Matched Seal hermetics, thermal expansion of the glass and metal materials is relatively small—an important factor in the design of Micro-D hermetic connectors, due to varying degrees of stress on the glass caused by the rectangular shape.

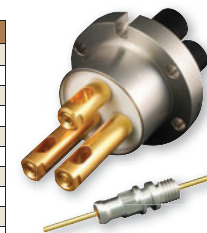
In Mismatched (Compression) Seals, the thermal expansion/contraction of the metal exceeds that of the glass. During cooling, the metal contracts into the already solidifying glass to form an extremely robust compression bond.



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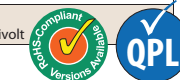
Industry-Wide Sealing Rating System			
Connector Type	Ingress Protection	Helium Leak Rates Over Time	Sealing Method
Dust Tight	IP 65 (water jets)		Elastomer and/or epoxy
Environmental	IP 66 (powerful water jets)		Elastomer and/or epoxy
Environmental	IP 67 (immersion up to 1m)		Elastomer and/or epoxy
Environmental	IP 68 (immersion beyond 1m)		Elastomer and/or epoxy
Semi Hermetic		1 X 10 <sup>-4</sup> (1 cc/3 hours)	Epoxy Special
Hermetic		1 X 10 <sup>-4</sup> (1 cc/3 hours)	Glass (soft) to Metal
Hermetic		1 x 10 <sup>-5</sup> (1 cc/24 hours)	Glass to Metal
Hermetic		1 X 10 <sup>-6</sup> (1 cc/2 weeks)	Glass to Metal
Hermetic		1 x 10 <sup>-7</sup> (3 cc/year)	Glass to Metal
Hermetic		1 X 10 <sup>-8</sup> (1 cc/3 years)	Glass to Metal
Hermetic		1 X 10 <sup>-10</sup> (1 cc/300 years)	Glass to Metal

Kovar shell and contact are optimum for rectangular hermetic connectors • Hermetic leak rate = CC He/Sec



Hermetics for geophysical and offshore applications

MIL-DTL-38999 Hermetic Specifications	
Shock and Vibration	300 G's Shock; 37 G's Random Vibration
Thermal Shock	-40° C to +90° C
Operating Temperature	D (FT) -65° C to +150° C; E and Y (Z1), and N (ZL) -65° C to +200° C
Mating Cycles	500 Mating Cycles
Corrosion Resistance	1000 Hours on Stainless Steel Shells
Shielding Effectiveness	Effective over a range of 100MHz to 10GHz with a minimum 50dB effectiveness at 10GHz, IAW test method EIA-364-10
Shell-to-Shell Resistance Series I & II (with spring fingers)	E (Z1) 2.5 Millivolt drop maximum N (ZL) 1 Millivolt drop maximum D (FT) N/A
Shell-to-Shell Resistance Series I & II	ALL - 200 Millivolt
Shell-to-Shell Resistance Series III & IV	N (ZL) 1 Millivolt H & Y (Z1S, Z1) 10 Millivolt



MS and Commercial Part Number Cross Reference		
MS Part Number	Glenair Part Number	Description
MS27469	231-100-H0	Series I Wall Mount
MS27470	231-100-H7	Series I Jam Nut
MS27471	231-100-H5	Series I Solder Mount
MS27475	232-100-H0	Series II Wall Mount
MS27476	232-100-H2	Series II Box Mount
MS27477	232-100-H7	Series II Jam Nut
MS27478	232-100-H5	Series II Solder Mount
D38999/21	233-100-H2	Series III Box Mount
D38999/23	233-100-H7	Series III Jam Nut
D38999/25	233-100-H5	Series III Solder Mount
D38999/27	233-100-H8	Series III Weld Mount
D38999/41	234-100-H2	Series IV Box Mount
D38999/43	234-100-H7	Series IV Jam Nut
D38999/45	234-100-H5	Series IV Solder Mount
D38999/48	234-100-H8	Series IV Weld Mount

#### MIL-DTL-38999 QPL Pin and Socket Hermetics



Series I  
Scoop-Proof, 3 Point Bayonet Coupling  
Four Alternate Key Positions:  
A, B, C, D



Series II  
Low Profile, 3 Point Bayonet Coupling  
Four Alternate Key Positions:  
A, B, C, D



Series III  
Scoop-Proof, Triple Start, Self-Locking  
Five Alternate Key Positions:  
A, B, C, D, E



Series IV  
Scoop-Proof, Breech Lock  
Nine Alternate Key Positions:  
A, B, C, D, K, L, M, R, U