

TEST REPORT  
GT-21-251  
3/31/2021



*Glenair, Inc. 1211 Air Way, Glendale, California, 91201*  
*Tel: (818) 247-6000 Fax: (818) 247-7240*

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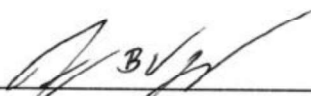
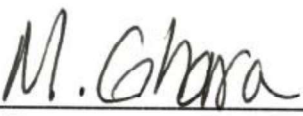
**QUALIFICATION TEST REPORT  
FOR  
MIL-DTL-38999  
Series I, II, III, & IV Hermetic Connectors  
24-MONTH PERIODIC**

**REPORT NO. GT-21-251**



**Glenair, Inc. 1211 Air Way, Glendale, California, 91201**  
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**APPROVALS**

 _____ <b>Walter Ortiz</b> VP of Engineering Operations Glenair, Inc.	<u>03/31/21</u> Date
 _____ <b>Fernando Vega</b> Design Engineer Glenair, Inc.	<u>3/31/21</u> Date
<u>GEOFF BOOTH</u> _____ <b>Geoff Booth</b> Senior Quality Engineer Glenair, Inc.	<u>3/31/21</u> Date
 _____ <b>Mike Ghara</b> Director of Engineering Glenair, Inc.	<u>3/31/21</u> Date

Prepared by: D. Donner

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REVISION LETTER	DESCRIPTION OF REVISION	PAGE	DATE	APPROVAL
A	Initial Release	All	3/31/2021	W. Ortiz, G. Booth, M. Ghara



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## 1.0 SCOPE

This Report documents results of the 24-Month Periodic qualification program conducted on MIL-DTL-38999M Series I, II, III, & IV connectors manufactured by Glenair, Inc. Testing was performed by Environmental Associates, Inc.

## 2.0 ABSTRACT

Connector samples for all series passed all test requirements, per paragraph 4.3.4b of MIL-DTL-38999M, Group C, for this periodic testing.

Any test deviations notices were addressed by Glenair, Inc. and dispositions approved by a DLA representative. Test deviations and related correspondence are located in **Appendix A**.

## 3.0 TEST SAMPLES

Test samples and mating parts are listed in EA test report OC29192-1021755 (**Appendix B**) starting on page 23 of EA's report (page 57 of GT-21-251.)

## 4.0 APPLICABLE DOCUMENTS

MIL-DTL-38999M w/ Amendment 2	Connectors, Electrical, Circular, Miniature, High Density, Quick Disconnect (Bayonet, Threaded, and Breech Coupling), Environment Resistant, Removable Crimp and Hermetic Solder Contacts, General Specification for
EIA-364	Electrical Connector/Socket Test Procedures Including Environmental Classifications
SAE-AS39029	Contacts, Electrical Connector, General Specification for



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## 5.0 SUMMARY OF TESTS AND RESULTS

### Group 1 Connectors

TEST OR INSPECTION	MIL-DTL-38999M REQUIREMENT PARAGRAPH	MIL-DTL-38999M TEST PARAGRAPH	QTP – 558 PARAGRAPH	TEST RESULTS
Visual and Mechanical Examination	3.1, 3.3, 3.4, 3.5, 3.5.2 & 3.5.3	4.5.1	4.4.1	Pass
Magnetic Permeability (except finish D of series I and II)	3.3.4	4.5.48	4.4.2	Pass
Thermal shock (hermetics only)	3.7	4.5.3	4.4.4	Pass
Air leakage (hermetics only)	3.10	4.5.6	4.4.6	Pass
Coupling and uncoupling torque	3.11	4.5.7	4.4.12	Pass
Durability	3.12	4.5.8	4.4.5	Pass
Insert retention	3.16	4.5.12	4.4.9	Pass
Shell-to-shell conductivity (not applicable to class C and finish C)	3.29	4.5.25	4.4.16	Pass
Salt spray (corrosion) (standard test applicable to series I and II finishes A, D, F, N, R, U, and series III and IV classes F, G, N only)	3.17	4.5.13.1	4.4.10	Pass (see NOTD 1-1)
Coupling and uncoupling torque	3.11	4.5.7	4.4.12	Pass
Shell-to-shell conductivity (not applicable to class C and finish C)	3.29	4.5.25	4.4.16	Pass
Contact resistance (hermetics with sockets only)	3.18.2	4.5.14.2	4.4.11	Pass
Electrical engagement	3.19	4.5.15	4.4.13	Pass
External bending moment	3.20	4.5.16	4.4.18	Pass
Bayonet coupling pin strength (series I and II only)	3.21	4.5.17	4.4.19	Pass
Post Test Examination	3.52 & 3.53	4.5.49	4.4.22	Pass (See NOTD 1-2)



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**Group 3 Connectors**

TEST OR INSPECTION	MIL-DTL-38999M REQUIREMENT PARAGRAPH	MIL-DTL-38999M TEST PARAGRAPH	QTP – 558 PARAGRAPH	TEST RESULTS
Visual and Mechanical Examination	3.1, 3.3, 3.4, 3.5, 3.5.2 & 3.5.3	4.5.1	4.4.1	Pass
Thermal shock (hermetics only)	3.7	4.5.3	4.4.4	Pass
Air leakage (hermetics only)	3.10	4.5.6	4.4.6	Pass
Insulation resistance at elevated temperature	3.14.2	4.5.10.2	4.4.7.2	Pass
Durability	3.12	4.5.8	4.4.5	Pass
Coupling and uncoupling torque	3.11	4.5.7	4.4.12	Pass (see NOTD 3-1)
Contact resistance (hermetics with sockets only)	3.18.2	4.5.14.2	4.4.11	Pass
Vibration (for periodic requalification, series III only, random vibration testing at elevated temperature is required)	3.27	4.5.23	4.4.14.1	Pass (see NOTDs: 3-2, 3-3, 3-4, 3-5, 3-6, and 3-7)
Contact resistance (for periodic requalification, series III, hermetics with sockets only)	3.18.2	4.5.14.2	4.4.11	Pass
Shock	3.28	4.5.24.1	4.4.15 & 4.4.15.1	Pass
Insulation resistance at ambient temperature	3.14.1	4.5.10.1	4.4.7.1	Pass
Dielectric withstanding voltage at sea level	3.15	4.5.11.1	4.4.8.1	Pass
Humidity	3.30	4.5.26	4.4.17	Pass (see NOTD 3-9)
Insulation resistance at ambient temperature	3.14.1	4.5.10.1	4.4.7.1	Pass
Dielectric withstanding voltage at sea level	3.15	4.5.11.1	4.4.8.1	Pass
Post Test Examination	3.52 & 3.53	4.5.49	4.4.22	Pass



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**Group 8 Connectors**

TEST OR INSPECTION	MIL-DTL-38999M REQUIREMENT PARAGRAPH	MIL-DTL-38999M TEST PARAGRAPH	QTP – 558 PARAGRAPH	TEST RESULTS
Visual and Mechanical Examination	3.1, 3.3, 3.4, 3.5, 3.5.2 & 3.5.3	4.5.1	4.4.1	Pass
Contact resistance (hermetics with sockets only)	3.18.2	4.5.14.2	4.4.11	Pass
Contact engagement and separating force	3.42	4.5.38	4.4.3	Pass
Resistance to probe damage	3.43	4.5.39	4.4.20	Pass
Contact engagement and separating force	3.42	4.5.38	4.4.3	Pass
Contact plating thickness (hermetic)	3.41	4.5.37	4.4.21	Pass
Post Test Examination	3.52 & 3.53	4.5.49	4.4.22	Pass

**Salt Spray Connectors**

TEST OR INSPECTION	MIL-DTL-38999M REQUIREMENT PARAGRAPH	MIL-DTL-38999M TEST PARAGRAPH	QTP – 558 PARAGRAPH	TEST RESULTS
Visual and Mechanical Examination	3.1, 3.3, 3.4, 3.5, 3.5.2 & 3.5.3	4.5.1	4.4.1	Pass
Dynamic salt spray	3.17	4.5.13.2	4.4.10.2	Pass
Post Test Examination	3.52 & 3.53	4.5.49	4.4.22	Pass

**Humidity Connectors**

TEST OR INSPECTION	MIL-DTL-38999M REQUIREMENT PARAGRAPH	MIL-DTL-38999M TEST PARAGRAPH	QTP – 558 PARAGRAPH	TEST RESULTS
Humidity	3.30	4.5.26	4.4.17	Pass