

SuperNine® High-Speed Connectors

Performance Specifications



Performance Specification, IAW MIL-DTL-32546, MIL-DTL-38999 Series III Rev. M, TIA-568-C.2, and Glenair SpeedMaster™

Test	Test Requirement	Requirement Met																													
High-speed Performance*	Individual contact modules meet the performance requirements of TIA-568-C.2: • Return Loss • Insertion Loss • NEXT • PS NEXT • ACR-F • PS ACR-F • ACR-N	Meets TIA-568-C.2, section 6.2																													
Temperature Cycling†	Mated connectors shall be tested as specified in EIA-364-32, Method A, Condition VI -65°C to +200°C																														
Mating/Unmating Forces	<table border="1"> <thead> <tr> <th rowspan="2">Shell Size</th> <th colspan="2">Maximum Engagement & Disengagement</th> <th colspan="2">Minimum Disengagement</th> </tr> <tr> <th>Pound inch</th> <th>Newton meters</th> <th>Pound inch</th> <th>Newton meters</th> </tr> </thead> <tbody> <tr> <td>11*</td> <td>12</td> <td>1.4</td> <td>2</td> <td>0.2</td> </tr> <tr> <td>19‡</td> <td>28</td> <td>3.2</td> <td>3</td> <td>0.3</td> </tr> <tr> <td>21‡</td> <td>32</td> <td>3.6</td> <td>5</td> <td>0.6</td> </tr> <tr> <td>25*</td> <td>40</td> <td>4.6</td> <td>5</td> <td>0.6</td> </tr> </tbody> </table>	Shell Size	Maximum Engagement & Disengagement		Minimum Disengagement		Pound inch	Newton meters	Pound inch	Newton meters	11*	12	1.4	2	0.2	19‡	28	3.2	3	0.3	21‡	32	3.6	5	0.6	25*	40	4.6	5	0.6	Meets MIL-DTL-38999, paragraph 3.11
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Durability*	No electrical or mechanical defects after 500 cycles of engagement and disengagement	Meets MIL-DTL-32546, paragraph 3.11																													
Altitude Immersion	Mated connectors shall be tested as specified in EIA-364-03 75,000 ft equivalent																														
Insulation Resistance at Ambient Temperature*	Unmated connectors shall be tested as specified in EIA-364-21 5000 megaohms min. at 25°C	Meets MIL-DTL-32546, paragraph 3.13.1																													
Insulation Resistance at Elevated Temperature*	Unmated connectors shall be tested as specified in EIA-364-21 1000 megaohms min. at 200°C																														
Salt Spray‡	<table border="1"> <thead> <tr> <th>Finish</th> <th>Corrosion Resistance</th> </tr> </thead> <tbody> <tr> <td>Electroless Nickel (ME)</td> <td>48 hrs</td> </tr> <tr> <td>PTFE/Nickel (MT)</td> <td>500 hrs</td> </tr> <tr> <td>OD Cadmium (NF)</td> <td>500 hrs</td> </tr> <tr> <td>Black Zinc-Nickel (ZR)</td> <td>500 hrs</td> </tr> </tbody> </table>	Finish	Corrosion Resistance	Electroless Nickel (ME)	48 hrs	PTFE/Nickel (MT)	500 hrs	OD Cadmium (NF)	500 hrs	Black Zinc-Nickel (ZR)	500 hrs	MIL-DTL-32546, paragraph 3.16 Finish ME: Meets Finishes MT, NF, & ZR: Exceeds																			
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Vibration, Sine	No discontinuity greater than 1 microsecond, no cracking, breaking, or loosening of parts, plug shall not become disengaged from the receptacle. Connectors shall meet electrical requirements after test. 60 G's																														
Vibration, Random at Ambient Temperature*	No discontinuity greater than 1 microsecond, no cracking, breaking, or loosening of parts, plug shall not become disengaged from the receptacle. Connectors shall meet electrical requirements after test. 49 G's rms	Meets MIL-DTL-32546, paragraph 3.21																													
Standard Shock*	No loosening of parts, cracking, or other deleterious results hindering further part operation after 300 G's in each of 3 mutually perpendicular planes	Meets MIL-DTL-32546, paragraph 3.22																													
High Impact Shock	Mated connectors equipped with straight environmentally sealed backshells shall withstand high impact shock per MIL-S-901, lightweight, Grade A																														
Shell-to-Shell Conductivity‡	<table border="1"> <thead> <tr> <th>Finish</th> <th>Maximum Millivolt Drop</th> </tr> </thead> <tbody> <tr> <td>Electroless Nickel (ME)</td> <td>1.0 mv</td> </tr> <tr> <td>PTFE/Nickel (MT)</td> <td>2.5 mv</td> </tr> <tr> <td>OD Cadmium (NF)</td> <td>2.5 mv</td> </tr> <tr> <td>Black Zinc-Nickel (ZR)</td> <td>2.5 mv</td> </tr> </tbody> </table>	Finish	Maximum Millivolt Drop	Electroless Nickel (ME)	1.0 mv	PTFE/Nickel (MT)	2.5 mv	OD Cadmium (NF)	2.5 mv	Black Zinc-Nickel (ZR)	2.5 mv	Exceeds MIL-DTL-32546, paragraph 3.23																			
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Humidity*

Testing shall be performed as specified in EIA-364-21, Method IV

Meets MIL-DTL-32546, paragraph 3.25

	Frequency (MHz)	Leakage Attenuation Min (dB)		Frequency (MHz)	Leakage Attenuation Min (dB)		
		Finish ME	Finishes MT, NF, ZR		Finish ME	Finishes MT, NF, ZR	
Shielding Effectiveness‡	100	90	90	1,500	76	69	Meets MIL-DTL-32546, paragraph 3.27
	200	88	88	2,000	70	65	
	300	88	88	3,000	69	61	
	400	87	87	4,000	68	58	
	800	85	85	6,000	66	55	
	1,000	85	85	10,000	65	50	

Fluid Immersion

No visible damage from immersion in various fuels and oils. Electrical performance requirements shall still be met.

* Indicates that test has been performed/data is available

† Thermal cycling has been done from -55°C to +200°C

‡ Qualification by similarity

38999 SPEEDMASTER SUMMARY

Standard Material and Finishes

- Shell, Barrel, Coupling Nut, Jam-nut: Aluminum alloy per ASTM-B211.
- Grounding spring: BeCu alloy/electroless nickel finish
- Seals, O-Ring: Fluorosilicone Blend

Shell Type and Sizes

- Shell Type: D38999 Series III Type, sizes 11, 19, 21, 25