DESCRIPTION	REQUIREMENT	PROCEDURE
Altitude Immersion	No evidence of moisture on connector interface or contacts. At the end of the third cycle, while still submersed, connectors shall meet 2000 Vac dielectric withstanding voltage and 1,000 megohms insulation resistance.	EIA-364-03 Simulated 75,000 feet altitude
Altitude- Low Temperature	Insulation resistance greater than 5,000 megohms while mated and exposed to simulated 110,000 feet altitude and -65°C.	EIA-364-105 Mated pair
Blowing Sand and Dust	Connectors shall meet electrical and mechanical requirements following exposure to sand and dust.	MIL-STD-810G Method 510.5 Mated connectors
Contact Insertion and Removal Force (Maintenance Aging)	Contact Size / Max. Pounds 16 / 20 12 / 30 8 / 35 4 / 40 1/0 / 40	EIA-364-24
Contact resistance (copper alloy)	Wire Size / Test Current / Voltage Drop 16 / 13 / 49 14 / 17 / 40 12 / 23 / 42 8 / 46 / 26 4 / 80 / 23 1/0 / 150 / 21	EIA-364-06 Test current in amperes. Maximum voltage drop in millivolts. Silver-coated copper wire, +25°C.
Contact resistance (ferrous alloy hermetic)	Wire Size / Test Current / Voltage Drop 16 / 10 / 539 14 / 13 / 440 12 / 17 / 462 8 / 33 / 286 4 / 60 / 253 1/0 / 100 / 231	EIA-364-06 Test current in amperes. Maximum voltage drop in millivolts. Silver-coated copper wire, +25°C.
Contact Retention	Contact Size / Min. Pounds 16 / 25 12 / 30 8 / 50 4 / 60 1/0 / 75	EIA-364-29 Method B
Salt Spray material/finish code ME	No exposure of base metal. Connectors shall meet DWV, contact resistance, shell-to-shell resistance and coupling torque	EIA-364-26 96 hours
Dynamic Salt Spray material/finish codes NF, ZR, MT, Z1	No exposure of base metal. Connectors shall meet DWV, contact resistance, shell-to-shell resistance and coupling torque	MIL-DTL-38999 Para. 4.5.13.2 50 cycles of mating and unmating prior to test 452 hours mated 48 hours unmated 450 cycles of mating and unmating following salt spray exposure
Coupling Torque	Shell Size / Maximum (in-lb.) 18 / 28 20 / 32 24 / 36 28 / 47 32 / 53 36 / 65 40 / 75	
Current Rating	Contact Size / Copper Alloy / Ferrous Alloy 16 / 13 / 10 12 / 23 / 17 8 / 60 / 33 4 / 100 / 60 1/0 / 175 / 125	EIA-364-70
Dielectric Withstanding Voltage at Sea Level (not applicable to filter connectors)	No breakdown or flashover at 2000 volts	EIA-364-20 AC rms 50-60 Hz 2mA max. leakage current

Series 970 Connectors and Accessories
Technical Reference
Product Specification

DESCRIPTION	REQUIREMENT	PROCEDURE
Dielectric Withstanding Voltage at Sea Level, filter connectors	No breakdown or flashover at 1250 volts	EIA-364-20 Volts DC 2mA max. leakage current
EMI Shielding Effectiveness	Frequency MHz / Min. Atten. dB 100 / 90 200 / 88 300 / 88 400 / 87 800 / 85 1000 / 85 1500 / 76 2000 / 70 3000 / 69 4000 / 68 6000 / 66 10000 / 65	EIA-364-66 1,000 MHz to 10,000 MHz. MIL-DTL-38999L Para. 4.5.28.1 100 MHz to 1,000 MHz Prior to EMI test, connectors shall be mated a minimum of 500 cycles.
External Bend Moment	No evidence of damage. SHELL SIZE / Bend Moment (in-lb.) 18 / 420 20 / 450 24 / 570 28 / 630 32 / 750 36 / 810 40 / 870	SAE AS50151 Para. 4.6.20
Fluid Immersion	No visual evidence of degradation from immersion in various fuels and oils. Following immersion connectors shall meet coupling torque and dielectric withstanding voltage at sea level.	EIA-364-10
Fungus Resistance	Connector materials shall be fungus inert	MIL-STD-810G Method 508.6
High-Impact Shock	No discontinuity, no cracking, breaking or loosening of parts. Connectors shall meet electrical requirements after shock test.	MIL-DTL-38999L Para. 4.5.23.2 MIL-S-901, grade A
Humidity, 21 Day (Damp heat, Long Term)	No deterioration which will adversely affect the connector. Following the drying period, connectors shall meet 100 megohms minimum, contact resistance, shell-to-shell resistance, DWV, mating and unmating requirements.	EIA-364-31 Condition C Method II 90-95% RH 40° C Apply 100 volts DC during test. 4 hours drying time at ambient temperature prior to final measurements.
Humidity, Cyclic (Damp Heat, Cyclic) (Moisture Resistance)	No deterioration which will adversely affect the connector. 100 megohms minimum insulation resistance during the final cycle. Following the recovery period, connectors shall meet contact resistance, shell-to-shell resistance and DWV requirements.	EIA-364-31 Condition B Method III 80-98% RH 10 cycles (10 days) +25° C to +65° C Step 7b vibration deleted. 24 hour recovery period.
Impact, Cable Connectors	No impairment of function. Connector shall meet contact resistance, insulation resistance and waterproof sealing.	EIA-364-42 1 meter 8 drops
Ingress Protection	IP67 rating	IEC-60529
Insert Retention	SHELL SIZE / FORCE (lbs.) 18 / 50 20 / 75 24 / 85 28 / 105 32 / 115 36 / 135 40 / 165	EIA-364-35 Unmated connectors 100 ± 5 pounds per square inch
Insulation Resistance at Ambient Temperature	5,000 megohms minimum	EIA-364-21 500 volts DC ± 50 volts.
Insulation Resistance at Elevated Temperature	1,000 megohms minimum following 30 minutes at +200°C	EIA-364-21 500 volts DC ± 50 volts.

DESCRIPTION	REQUIREMENT	PROCEDURE
Low Level Contact Resistance	Wire Size / Max. Milliohms 16 / 5 20 / 9	EIA-364-23 100 milliamperes maximum and 20 millivolts maximum open circuit voltage
Magnetic Permeability	2 µ maximum.	EIA-364-54
Mechanical Durability, at Ambient Temperature	No deterioration which will adversely affect the connector after 500 cycles of mating and unmating. Connectors shall meet contact resistance, insulation resistance, shell-to-shell resistance, DWV, and coupling torque.	EIA-364-09
Mechanical Shock	No discontinuity of greater than 1 microsecond, no cracking, breaking or loosening of parts, plug shall not become disengaged from receptacle. Connectors shall meet electrical requirements after shock test.	EIA-364-27 Condition D 3 shocks X 3 axes X 2 directions = 18 shocks 2941 m/s^2 (300 g's), 3 ms, half-sine
Operating Temperature	-65°C to +200°C Filter Connectors -55°C to +125°C	
Outgassing	Connectors, when specially processed for outgassing control, shall not exceed 1.0% Total Mass Loss (TML) and 0.1% Collected Volatile Condensable Material (CVCM)	ASTM E 595
Ozone Exposure	No evidence of degradation due to ozone exposure that will adversely affect performance	EIA-364-14 Wired, mated connectors
Resistance to Indirect Lightening Strike	No damage or degradation to material or finish that would affect subsequent use, no damage or hardening of elastomeric materials that adversely affects sealing effectiveness. Connector must meet coupling torque, DWV and IR and shell-to-shell conductivity.Applicable to connectors with conductive plating finishes.	EIA/ECA-364-75 Table XII, group 14 10,000 Amps peak current Test details per MIL-DTL-38999 Para. 4.5.47
Shell-To-Shell Conductivity	Finish Code ME 1 millivolt drop maximum Finish Code NF, MT 2.5 millivolt drop maximum Finish Code ZR 10 millivolt drop maximum Finish Code Z1 50 millivolt drop maximum	EIA-364-83 Unwired connectors
Socket Contact Engagement and Separation Force	Contact engagement and separation forces shall meet the requirements of SAE AS39029 Table 9	SAE AS39029
Thermal Shock	No mechanical damage or loosening of parts. Following thermal shock, connector shall meet contact resistance, DWV, insulation resistance and shell-to-shell resistance requirements.	EIA-364-32 Test Condition VI 5 cycles consisting of -65° C 30 minutes, +25° C 5 minutes max., +200° C 30 minutes, +25° C 5 minutes max.
Vibration, Random, at Ambient Temperature	No discontinuity of greater than 1 microseconds, no cracking, breaking or loosening of parts, plug shall not become disengaged from receptacle. Connectors shall meet electrical requirements after vibration test.	MIL-DTL-38999 Para. 4.5.23.2.4
Vibration, Random, at Elevated Temperature	No discontinuity of greater than 1 microseconds, no cracking, breaking or loosening of parts, plug shall not become disengaged from receptacle. Connectors shall meet electrical requirements after vibration test.	EIA-364-28 Test Condition VI Letter "J" 50- 2,000 Hz 43.92 g rms 200° C
Vibration, Sine	No discontinuity of greater than 1 microseconds, no cracking, breaking or loosening of parts, plug shall not become disengaged from receptacle. Connectors shall meet electrical requirements after vibration test.	MIL-DTL-38999L Para. 4.5.23.2.1
Water Immersion	No evidence of water penetration into mated connectors.	MIL-STD-810F Method 512.4,1 meter immersion for 1 hour
Water Pressure	No evidence of water penetration into mated connectors or backshell interface. ≥ 100 MΩ insulation resistance.	MIL-DTL- 28840 Paragraph 4.1.15. 6 feet immersion in tap water, 48 hours
Outgassing	Special Bakeout Required 1.0% Total Mass Loss (TML) 0.1% Collected Volatile Condensable Material (CVCM)	ASTM E595