

**MATERIALS AND FINISHES**

Contacts	Copper alloy, plated hard gold over nickel
Plug shell	Aluminum alloy, plated zinc-cobalt with black chromate
Receptacle shell	300 series stainless steel, with black chromate over nickel finish
Jam Nut	300 series stainless steel, with black chromate over nickel finish
Bayonet pin	Stainless steel
Insulators	Glass-filled nylon
O-ring, internal	Silicone rubber
Interfacial seal (receptacle)	Silicone rubber
Washer (jam nut)	300 series stainless steel, with black chromate over nickel
Spring, EMI (plug)	Beryllium copper alloy, gold plated

**SPECIFICATIONS**

Current rating	2.5 Amps per contact maximum
Voltage rating (DWV)	500 VAC
Insulation resistance	5000 MΩ
durability	5000 cycles of mating, minimum
Contact resistance	5 mΩ
Water ingress protection	IP68
Water immersion	2 meters, 48 hours
Air pressure	0.4 bar
Operating temperature	-55° C to +85° C
Shielding effectiveness	50 dB attenuation up to 100 MHz
Corrosion resistance (salt spray)	48 hours
Maximum wire size	1mm maximum diameter. Not recommended for 19/32 strand #20 wire.

**DETAILED PERFORMANCE SPECIFICATIONS**

DESCRIPTION	REQUIREMENT	PROCEDURE
Contact Resistance	+ 25° C ≤ 20 mΩ - 55° C ≤ 100 mΩ	EIA-364-06 IEC 60512-2-1
Insulation Resistance	5000 MΩ	EIA-364-21 IEC-60512-3-1 500 volts DC ± 50 volts. Test between adjacent contacts and contacts to shell.
Dielectric Withstanding Voltage	No breakdown or flashover	EIA-364-20 IEC-60512-4-1 Sea level 500 volts AC rms 50 or 60 Hz. One minute dwell.
Current Carrying Capacity	2.5 amp at 70° C	EIA-364-70 Method 1 IEC-60512-5 Test 9b
Shell-to-shell Resistance (connectors with ground springs)	2.5mV	EIA-364-83 IEC-60512-2-6
Shielding Effectiveness	70 dB attenuation up to 10MHz 50 dB attenuation at 100 MHz	VG 95214-13 Method KS 13 B

All dimensions in millimeters (mm). Information subject to change without notice.

## DETAILED PERFORMANCE SPECIFICATIONS

DESCRIPTION	REQUIREMENT	PROCEDURE
Water Immersion	No evidence of water penetration into mated connectors. No evidence of water penetration into an unmated panel mounted receptacle. $\geq 100 \text{ M}\Omega$ insulation resistance.	MIL-STD-810F Method 512.4 2 meters immersion 48 hours
Air Pressure	No detectable moisture. $\geq 5000 \text{ M}\Omega$ insulation resistance.	IEC-60512-7 Test 14b 0.4 bar overpressure 48 hours immersion at a depth of 150mm in 25° C tap water.
Ingress Protection	IP68 rating	IEC-60529
Vibration	No discontinuity of greater than 10 microseconds, no cracking, breaking or loosening of parts, plug shall not become disengaged from receptacle. Connectors shall meet electrical and air leakage requirements after vibration test.	EIA-364-28 Test Condition I IEC-60512-6-4 Severity B 100 milliampere test current
Mechanical Shock	No discontinuity of greater than 10 microseconds, no cracking, breaking or loosening of parts, plug shall not become disengaged from receptacle. Connectors shall meet electrical and air leakage requirements after shock test.	EIA-364-27 Method H IEC-60512-6-3 Severity A 3 shocks X 3 axes X 2 directions = 18 shocks 294 m/s <sup>2</sup> (30 g's), 11 ms, half-sine, 2.07 m/s velocity change
Thermal Shock	No mechanical damage or loosening of parts. Following thermal shock, connector shall meet contact resistance, shell-to-shell resistance and air leakage requirements.	EIA-364-32 Test Condition1 IEC-60512-11-4 Severity 3 5 cycles consisting of -55° C 30 minutes, +25° C 5 minutes max., +85° C 30 minutes, +25° C 5 minutes max.
Dry Heat	No breakdown in dielectric strength.	IEC-60512-11-9 16 hours at +85° C. Measure insulation resistance during the final 30 minutes.
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, DWV and waterproof sealing requirements.	EIA-364-31 Condition B Method III IEC-60512-11-12 80-98% RH 10 cycles (10 days) +25° C to +65° C Step 7b vibration deleted. 24 hour recovery period.
Flammability	Connector shall not burn for more than 5 sec. after removal of flame.	IEC-60512-9 Test 20a 15 sec. exposure to flame per fig. 4 VG 96934-1.
21 Day Humidity (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 and waterproof sealing requirements.	EIA-364-31 Condition C Method II IEC-60512-11-3 Severity C 90-95% RH 40° C Apply 100 volts DC during test. 4 hours drying time at ambient temperature prior to final measurements.

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## DETAILED PERFORMANCE SPECIFICATIONS

DESCRIPTION	REQUIREMENT	PROCEDURE
Mechanical Durability, at Ambient Temperature	No deterioration which will adversely affect the connector after 5000 cycles of mating and unmating. Connectors shall meet contact resistance, insulation resistance, shell-to-shell resistance, DWV, mating and unmating force and waterproof sealing requirements.	EIA-364-09 IEC-60512-5 Test 9a ≤ 50 mΩ contact resistance
Temperature Life (High Temperature Endurance)	No deterioration which will adversely affect the connector. Connectors shall meet contact resistance, insulation resistance, shell-to-shell resistance, DWV, and waterproof sealing requirements.	EIA-364-17 method A VG 95210-9 85° C 1000 hours ≥ 10 MΩ insulation resistance ≤ 50 mΩ contact resistance ≤ 20 mV shell-to-shell resistance
Corrosion (Salt Mist)	No exposure of base metal. Connectors shall meet DWV and contact resistance requirements following the test.	EIA-364-26 Condition B IEC 60512-11-6 Severity B 5% salt solution 35° C 48 hours exposure Unmated connectors
Solderability, PC Tail Contacts	95% solder coverage. Smooth, bright and even finish.	EIA-364-52 Category 3 IEC-60512-12-1 IEC-68-2-20 Test Ta, method 1 8 hours steam aging prior to test 245° C 4-5 sec. dwell 10X magnification
Solderability, Solder Cup Contacts	Smooth, bright and even finish	IEC-60512-12-2 Test 12b IEC-68-2-20 Test Ta, method 2 3mm soldering iron tip
Resistance To Soldering Heat	No damage to connector. Connectors shall meet insulation resistance and waterproof sealing requirements.	EIA-364-56 IEC-60512-12-5 Test 12e 360° C, 5 seconds (solder cups) 260° C, 10 seconds (PC tail)
Impact, Cable Connectors	No impairment of function. Connector shall meet contact resistance, insulation resistance and waterproof sealing.	EIA-364-42 IEC-60512-5 test 7b 1 meter 8 drops
Solvent Resistance (NATO)	No damage from immersion in NATO fuels F-40, F-50, D-156, D-236, N-515, N-542	VG 96934-1 Test 5.41.1
Fluid Immersion	No damage from immersion in lubricating oils, gasoline, gasohol, or hydraulic fluid	EIA-364-10
Contact Retention	No displacement of contact. No loss of sealing.	EIA-364-29 10 pounds (44 N.) Force to be applied to both ends of fixed contacts and the terminal end of spring-loaded contacts.

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