

AirBorn  
Product Technical Bulletin #4

M55302 PRODUCT SPECIFICATION SUMMARY

Connector Materials (General)

Molding Types: W-Series: Polyphenylene Sulfide (PPS) per MIL-M-24519, Type GST-40F.  
Optional Material: Diallyl Phthalate per ASTM-D-5948, Type SDG-F.  
R-Series: Polyphenylene Sulfide, (PPS) per MIL-M-24519, Type GST-40F.

Pin Contacts: Copper Alloy per MIL-DTL-55302.

Socket Contacts: Beryllium Copper Alloy, ASTM-B196, ASTM-B197 and/or ASTM-B194.

Plating & Finish: Engaging area: Gold per ASTM-B488, Type II, Grade C, Class 1.27, over Nickel, Class 2, 50-150 microinches.  
Termination area: Gold per ASTM-B488, Type II, Grade C, Class .51 over Nickel, Class 2, 50-150 microinches.

Hardware: Stainless Steel per ASTM-A582, passivated per AMS-QQ-P-35 or AMS-2700.  
D-shaped polarizing guidesocket: Beryllium Copper Alloy, Nickel plated per SAE-AMS-QQ-N-290.

Specifications

Contact Engagement: W-Series: 4 ounce maximum with  $\varnothing$ .031 test pin, Method 2014 of MIL-STD-1344  
R-Series: 4 ounce maximum  $\varnothing$ .026 test pin, Method 2014 of MIL-STD-1344.

Contact Separation: W-Series: .5 ounce minimum with a  $\varnothing$ .029 test pin.  
R-Series: .5 ounce minimum with a  $\varnothing$ .024 test pin.

Contact Rating: W-Series: 5 amperes, R-Series: 3 amperes.

Contact Resistance: W-Series: .100 volt maximum drop @ 5 amperes (.020 ohms), Method 3004 of MIL-STD-1344.  
R-Series: .045 volt maximum drop @ 3 amps (.015 ohms).

Durability: 500 mating cycles, Method 2016 of MIL-STD-1344.

Humidity: Method 1002, Type II of MIL-STD-1344, except steps 7A & 7B.

Insulation Resistance: 5000 megohms minimum @ 500 volts DC, Method 3003 of MIL-STD-1344.

Operating Temperature: -65 to 125° C, (-85 to 257° F).

Salt Spray: Method 1001 of MIL-STD-1344, Condition B

Shock: Method 2004 of MIL-STD-1344, Condition G.

Solderability: Method 208 of MIL-STD-202, except Wire Wrap and crimp. See PTB2.

Temperature Cycling: Method 1003 of MIL-STD-1344, Condition A.

Test Voltage (DWV): W-series: 1000 v RMS, 60Hz, @ sea level, and 300 v RMS, 60 Hz, @ 70,000 feet  
R-series: 750 v RMS, 60Hz @ sea level; 250 v RMS, 60 Hz, @ 70,000 feet  
Method 3001 of MIL-STD-1344.

Vibration: Method 2005 of MIL-STD-1344, Condition III.

Wire size: W-series: #22 AWG stranded (larger adapter sleeves available).  
R-series: #26 AWG stranded

Tolerances: Unless otherwise specified: Fractions  $\pm 1/64$ , decimals  $\pm .010$ , angles  $\pm 2^\circ$ .

Plating

Copper: SAE-AMS-2418, ASTM-B734 or MIL-C-14550, electrodeposited

Gold: ASTM-B488, electrodeposited

Nickel: SAE-AMS-QQ-N-290 or QQ-N-290, electrodeposited

Tin-Lead: SAE-AMS-P-81728 or MIL-P-81728, electrodeposited

### Materials List

Aluminum Alloys:	QQ-A-250, plate & sheet.
Bonding Adhesive:	Emerson & Cuming A316 or Tra-bond 789-3.
Brass:	ASTM-B36, plate, bar, sheet & strip.
Brass:	ASTM-B16 or ASTM-B124, rod, shapes, forgings & flat products.
Brass:	ASTM-B134, wire
Phosphor Bronze	ASTM-B139, bar, plate, rod, sheet & strip.
Phosphor Bronze	ASTM-B159, wire
Copper, Beryllium:	ASTM-B196, rod and bar.
Copper, Beryllium:	ASTM-B197, wire.
Copper, Beryllium:	ASTM-B194, strip, alloy 170 & 172.
Face Seal Gaskets:	A-A-59588, Silicone Rubber (red); SAE-AMS-R-25988, Fluorosilicone (blue).
Floating Mounts:	Series 300 Stainless Steel
Stainless Steel:	ASTM-A582, free-machining bars, rods.
Steel (M55302):	QQ-S-763, bars, wire, shapes & forgings.
Steel (M55302):	QQ-S-766, plates, sheets & strips.
Thread Locking:	Loctite™ 242.

### Methods, Reference and Standards

Calibration System:	MIL-STD-45662.
Environmental Tests:	MIL-STD-810.
Finishes:	MIL-DTL-55302, MIL-F-14072.
Gage Pin Standard:	AS31971
General Requirements for	
Electrical Equipment:	MIL-STD-454.
Heat Treat:	MIL-H-7199, for Copper-Beryllium Alloys.
Quality System:	ISO 9001, AS9100
Marking:	MIL-STD-1285 (MIL-STD-130 references MIL-STD-1285).
Packaging:	MIL-C-55330.
Passivation of Steel:	AMS 2700 or AMS-QQ-P-35, for corrosion-resisting steel.
Printed Wiring Boards:	MIL-PRF-55110
Sampling Plans:	MIL-STD-105 or ANSI/ASQC Z1.4
Screw Threads:	FED-STD-H28
Solderability:	MIL-STD-202, Method 208; WS-6536.
Test Methods:	MIL-STD-1344 & MIL-STD-202.
Workmanship:	MIL-DTL-55302.
Dissimilar Metals:	MIL-STD-889

### Miscellaneous

Connector Markings:	Contact numbers are marked on the side of the connector. Numbers are marked on the low numbered side only on right angle connectors.
Letter Designators:	W-series: S = Socket; P = Pin; C = Solder Cup; F = Flex circuit; R = Right Angle; W = Wire Wrap; D = Dip Solder; SA, SE, SO = 2-4 oz. Engagement (gang mate)
Torque:	Polarizing Guides and Floating Mounts: 16 +8 –0 in/oz.. (Minimum of 7 in/oz. reverse torque per MIL-DTL -55302). Mounting & Hood Hardware: 24 in/oz. maximum. Mating Jacksets: #2-56: 32 in/oz. maximum; #4-40: 64 in/oz. maximum Wrap Post: 2 in/oz. minimum per MIL-STD-1130. Helicoil Inserts: #2-56 – 24 in/oz. maximum. #4-40 – 32 in/oz. maximum.