

SERIES 253-020

AS81703 Series 3 Type Connectors



Series overview · test report summary

Standard-density contact arrangements

Validation Test Summary. Tested IAW AS81703							
Test	Requirement						Result
Magnetic Permeability	Relative Magnetic Permeability: $\leq 2.0 \text{ Mu}$						Pass
Maintenance Aging and Contact Forces	Insertion Force: $\leq 15 \text{ lbs.}$ Removal Force: $\leq 10 \text{ lbs.}$						Pass
Gage Location and Retention	Axial Displacement of the Test Gages: ≤ 0.012						Pass
Operating Forces	Shell Size	Max Engagement force (lb)	Measured Engagement force (lb)	Min Disengagement force (lb)	Max Disengagement force (lb)	Measured Disengagement force (lb)	Pass
	12	34	15.2	2	34	3.80	
			16.8			4.05	
	19	38	16.2	3	38	6.75	
			15.8			8.06	
	37	44	19.7	6	44	7.56	
			20.1			7.72	
	Insulation Resistance, Room Temperature	Insulation resistance shall be $>10,000$ megohms					
Dielectric Withstanding Voltage	No evidence of breakdown or flashover. Leakage Current $\leq 5 \text{ mA}$						Pass
	Condition		Service Rating I	Service Rating II			
	Sea Level		600 V AC	1000 V AC			
	70,000 ft.		300 V AC	450 V AC			
Thermal Shock	Low Temperature: $-55^{\circ} \pm 3^{\circ}\text{C}$ • High Temperature: Class L $175^{\circ} \pm 3^{\circ}\text{C}$; Class E, $200^{\circ} \pm 3^{\circ}\text{C}$. 5 cycles, 2 hour minimum soak. No damage detrimental to the connector						Pass
Insert Retention	Inserts shall not be dislocated from the specified insert position as shown on the applicable MS drawing when an effective pressure differential of 75 lbs./in^2 is applied						Pass
Vibration	10 to 2,000 Hz and return to 10 Hz in 20 minutes. 12 cycles in 4 hours for X,Y, and Z Axes. Total 12 hrs. Amplitude of 0.06" double amplitude or 20g, whichever is less. Support wires 8" both ends. Electrical load 100 mA max, open circuit $<5\text{V}$. Maximum initial R not to exceed 3 Ohms on individual loops. All samples measured no discontinuity on any axis.						Pass
Shock	150G peak value, half-sine pulse, 11ms duration. One shock each direction on 3 major axes.Mated connectors shall not be damaged and there shall be no loosening of parts. All samples measured no discontinuity on any axis.						Pass
Insulation Resistance, Elevated Temperature	After an exposure for 1000 hours at 200°C , the insulation resistance shall be greater than 500 megohms, unmated condition						Pass
Moisture Resistance	10 cycles, low temperature subcycle 5 cycles. Initial and final mated insulation resistance measured $>100\text{Mohms}$ for all samples at 25° , 500V, 12s.						Pass
Insulation Resistance	Unmated, 500V, 120x, 10,000 megohms						Pass
Contact Resistance	#24 AWG wires crimped to size 20 contacts. Test current 3A, maximum mV drop 45 mV						Pass
Contact Retention	Axial load: 15 lb. Duration: 5 sec min. Rate: approx. 1lb/sec. Initial load of 2 lb before measuring contact displacement. Force applied in the direction tending to dislodge the contacts toward the rear of the connector. Displacement shall not exceed 0.012"						Pass
Magnetic Permeability	Relative magnetic permeability of connector assemblies $< 2.0 \text{ Mu}$						Pass
Durability	500 mating cycles with no mechanical or electrical defects detrimental to operation						Pass
Salt Spray	Unmated, 48 hours, 20% salt concentration. No exposure of basic metal due to corrosion which will affect performance.						Pass
Fluid Immersion, Lubricating Oil	Unmated connectors immersed in MIL-PRF-7808 oil, 20 hours.						Pass
Contact Glenair for complete validation test reports: GT-15-93 (AS81703, series 3, class E) and GT-15-94 (AS81703, series 3, class L).							

ADAPTER CODE A
"A" adapter code accessories fit AS81703 Series 3 (imperial thread) connectors

MATERIALS/FINISHES

Shells, Jam Nuts, Lockwashers - Aluminum alloy
 Insulators - High-grade rigid dielectric
 O-Rings, Grommets, Peripheral Seals - Fluorosilicone or equivalent