

Performance specifications summary

POWERLOAD™ PERFORMANCE SPECIFICATION					
Test Description	Requirement			Procedure	
Dielectric withstanding voltage (DWV)	Insert Arrangement	Altitude	Voltage		
	All Shown Herein	Sea level	5,000 Vac		
		50,000 ft	2,250 Vac		
Partial discharge, typical values	Inception/Extinction	Altitude	Voltage		
	PDIV	Sea level	4,500 Vac		
		15,000 ft	3,800 Vac		
		35,000 ft	3,000 Vac		
		50,000 ft	2,000 Vac		
		70,000 ft	1,000 Vac		
	PDEV	Sea level	3,700 Vac		
		15,000 ft	3,100 Vac		
		35,000 ft	2,500 Vac		
		50,000 ft	1,500 Vac		
70,000 ft		800 Vac			
Insulation resistance at ambient	5000 megohms minimum			EIA-364-21, at 500 VDC	
Insulation resistance at elevated temperature	400 megohms minimum at max. rated temp.			EIA-364-21, at 500 VDC	
Contact resistance at 25°C, crimp contacts	Contact / Wire Size	Test Current Amperes	Voltage Drop (millivolts)		
			Initial Max	Crown Ring Typical	
	0000	225	53	13	AS39029 Para. 3.5.4 (Table 6), EIA-364-06
	00	185	48	11	
	0	150	53	14	
	2	100	43	12	
	4	80	58	14	
8	46	65	17		
Shell-to-shell conductivity	Finish Code	Shell Mat'l/ Finish	Millivolt Drop (mV)		
	ME	Al / EN	1.0		
	MT	Al / Ni-PTFE	2.5		
	NF	Al / OD Cad	2.5		
	ZR	Al / Zn-Ni	2.5		
	Z1	SST / pass.	10.0		
ZL	SST / Ni	1.0			
Contact engaging /separation force	Contact forces shall meet AS39029 Table 9 requirements			AS39029 Para. 3.5.5, EIA-364-37	
Temperature cycling (thermal shock)	No evidence of damage detrimental to the function of the connector			EIA-364-32, Method A, Duration A, Mated connectors, max/min temps in accordance with temperature rating of connector	
Random vibration, 37.8 grms	No discontinuities of 1 microsecond or longer			EIA-364-28, Test Condition V, Letter J, Ambient, 8 Hrs, 2 Axis	
Mechanical shock, 50g	No discontinuities of 1 microsecond or longer			EIA-364-27, Test Condition A	

Performance specifications and test summary

INTRODUCTION

POWERLOAD™ PERFORMANCE SPECIFICATION			
Test Description	Requirement		Procedure
Fluid immersion	No damage to plastic, elastomeric or bonding materials detrimental to the function of the connector. Connector shall mate and unmate properly and meet coupling torque and DWV requirements after immersion.		EIA-364-10 Various aviation fluids, fuels and oils (See GT-21-155)
Altitude immersion	At the end of the third cycle, while still submersed, connectors shall meet dielectric withstanding voltage and 1,000 megohms insulation resistance.		EIA-364-03 50,000 feet
Salt spray, dynamic	Finish Code	Shell Mat'l/ Finish	Hours
	ME	Al / EN	96
	MT	Al / Ni-PTFE	500
	NF	Al / OD Cad	500
	ZR	Al / Zn-Ni	500
	Z1	SST / pass.	1000
ZL	SST / Ni	1000	MIL-DTL-38999 Para. 4.5.13.2 EIA-364-26 150 mating cycles total

GT-20-277 POWERLOAD™ TEST SUMMARY					
Test Description	Test Specification	Result	Test Description	Test Specification	Result
Altitude Immersion	EIA-364-03	Pass	Firewall ²	EIA-364-45	Pass
Backshell & Connector Durability	EIA-364-83	Pass	Insert Retention	EIA-364-35	Pass
Backshell Coupling Strength	–	Pass	Insulation Resistance at Ambient Temperature	EIA-364-21	Pass
Backshell-To-Connector Shell Conductivity	EIA-364-83	Pass	Maintenance Aging	EIA-364-24	Pass
Contact Engagement and Separation Forces	EIA-364-37	Pass	Post Test Examination	–	Pass
Contact Insertion and Removal Force	EIA-364-05	Pass	Shell-To-Shell Conductivity	EIA-364-83	Pass
Contact Resistance	EIA-364-06	Pass	Shock	EIA-364-27	Pass
Contact Retention (100%)	EIA-364-29	Pass	Temperature Cycling (thermal shock)	EIA-364-32	Pass
Corrosion (Dynamic)	EIA-364-26	Pass	Vibration, Random	EIA-364-28	Pass
Coupling and Uncoupling Torque	EIA-364-114	Pass	Vibration, Wing Tip	EIA-364-28	Pass
Dielectric Withstanding Voltage at Sea Level	EIA-364-20	Pass	Visual, Mechanical, and Workmanship Inspection	ASTM B 571	Pass

Unless otherwise noted, all testing performed on shell size 28 connectors with 6x size #8 contacts
 Firewall testing performed separately on similar connectors, shell size 32 with 3x size 1/0 and 1x size #4 contacts