

Membrane Switch Technologies
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CHARACTERISTICS OF A MEMBRANE SWITCH

ASTM Standard	Required	* Designation	Level 1	Level 2	Level 3	Level 4	Units
Operating Voltage	M1		5 Volt	12 Volt	24 Volt	To be Specified	Volts
Operating Current	M2		<=5mA	<=10A	<=25mA	To be Specified	Amps
Circuit Resistance	M3	F1680	<=10K Ohms	<=5K Ohms	<=100 Ohms	To be Specified	Ohms
Contact Closure Cycles	M4	F1578	10K Cycles	500K Cycles	1M Cycles	To be Specified	# of Cycles
Temperature / Humidity	R1	F1596	-25C to 70C 05% RH	-10C to 55C 05% RH	-40C to 85C 05% RH	To be Specified	Temp range Humidity Cycle schedule
Visual Inspection	R2	F1595	To be Specified				time
Contact Bounce Time	R3	F1661	20ms	10ms	5ms	To be Specified	time
Actuation & Contact Force	O	F1597	+/-50% change	+/-35% change	+/-20% change	To be Specified	tolerance
Chemical / Solvent	O	F1598	To be Specified				Duration Chemicals
Dielectric Withstand Voltage	O	F1662	250 V 1 sec	500 V 1 sec	1K V 1 sec	To be Specified	Volts time
Capacitance	O	F1663	<=50 pf change	10% change	15% change	To be Specified	picofarads
Travel	O	F1682	To be Specified				distance
Tactile Ratio	O	F1570	100% change	50% change	20% change	To be Specified	tolerance
Crease / Bend	O	F1683	Crease 1 cycle	Bend .031" Radius 5 cycles	Bend 1.0" Radius 1M cycles	To be Specified	Type Mandrel Radius # of cycles
Insulation Resistance	O	F1689	10M Ohms	5M Ohms	1M Ohms	To be Specified	Ohms
Atmospheric Pressure	O	F1762	Sea Level 2000 ft/min	to 10K ft 2000 ft/min	to 40K ft 2000 ft/min	To be Specified	Altitude (feet) Altitude rate change
ESD	O	F1812	Air 2KV Contact 2KV	Air 8KV Contact 4KV	Air 15KV Contact 8KV	To be Specified	Air DisCharge Contact Discharge
Gloss Preparation Gloss Reading	O	F1843 D523	Units	Units	Units	To be Specified	Gloss units Gloss Reading

Submersion	O	F1895	1" depth H2O 24 hrs	1" depth Salt Water 24 hrs	1" depth Clorinated H2O 24 hrs	To be Specified	Depth Liquid Duration
SMD Shear	O	F1995	TBD	TBD	TBD	TBD	
Silver Migration	O	F1996	2x Operating 10% change 24 hours	2x Operating 10% change 48 hours	2x operating 10% change 96 hours	To be Specified	Voltage InsulRes Change Duration
Sensitivity (Teasing)	O	F1997	TBD	TBD	TBD	TBD	
Color Matching	O		+/- 2	+/- 1	+/- .5	To be Specified	Δe

Table 1 Characteristics of a Membrane Switch

M - Mandatory

R - Recommended

O – Optional

*** All Designations refer to latest revision**