Capacitive Switches

General Specifications

All capacitive switches are close-tolerance, near field projected capacitive electrical switches with thin-gauge plastic or glass graphic first-surface layers. Functioning very similar to today's popular projective capacitive touchscreens, they work by detecting the electrical change from a human finger or other conductive object. And like our popular membrane assemblies, graphic overlays, and advanced user interface solutions supplied by Valmark Interface Solutions, and because every part VIS provides is application specific, each of the characteristics below can be, to greater or lesser extent, customized to a particular application and use-model. The following is a set of typical capacitive switch specifications that VIS can provide:

Mechanical

Characteristics	Typical Values	Test Methods
1. Life - Operations:	1 to 35 millions	IAW ASTM F1578
2. Actuation Force:	0.0 oz. non-contract	IAW ASTM F1597
3. Travel:	0.000"	Non travel, contact required only
4. Bend:	1.0"R, 10-20 cycles	IAW ASTM F1683 - for tail connector only
5. Crease:	1 to5 cycles	IAW ASTM F1683 - for tail connector only

Electrical

Characteristics	Typical Values	Test Methods
1. Close Loop Resistance:	≤ 100Ω	Function of controller
2. Open Loop Resistance:	>10MΩ	IAW ASTM F1680
3. Insultation Resistance:	>10MΩ	IAW ASTM F1689
4. Dielectric Resistance:	250VDC – 1k VDC	N/A
5. Contact Bounce:	≤ 10ms	Software dependent, typ.
6. Volume Resistivity:	>1015 Ω-m	IAW ASTM D257 (higher for glass cover)
7. Dielectric Constant:	2.9	IAW ASTMD150 (higher for glass cover)

Environmental

Characteristics	Typical Values	Test Methods
1. Temperature – Operational: Temperature – Storage:	-20 °C to +65 °C -40 °C to +85 °C"	IAW ASTM F1596 Level 4 IAW ASTM F1596 Level 1
2. Humidity:	0 – 95% RH (NC	IAW ASTM F1596 Level 4
3. Travel:	50 (g for 11ms)	IAW MIL-STD 810E Method 516.4
4. Vibration:	10 (g 10 to 2 kHz)	IAW ASTM F2188
5. Altitude:	0 to 40,000 ft.	IAW ASTM F1762, no effect.

VIS (Valmark Interface Solutions™) is the industry leader in engineering, manufacturing and testing of human machine interface (HMI) products. These products include membrane switches, touch screens/sensors, key panel assemblies, graphic overlays, EL lamps, EMI/RFI shielding and printed compliance labeling. For over forty years, high-tech leaders like Apple Computer, Agilent Technologies, Fresenius, Sun Microsystems, and Abbott Laboratories have trusted VIS quality, on-time delivery, and technical innovation to support cutting-edge products in the most competitive markets. Electronic, medical, automotive, and office technology control panels depend on sophisticated membrane switch, touch screens/sensor, elastomer touch, and PCB assemblies. With multi-platform CAD/CAM systems, unique ink, dielectric, shielding, silver coating, and encapsulating technologies, VIS works with each customer to develop their optimal solution.

VALMARK INTERFACE SOLUTIONS
A Nidec GROUP COMPANY

Innovative Interface TECHONOLOGY Drives our Comprehensive HMI Solutions

Customer-Focused APPROACH Leads to Inspired Solutions

Pursuing Perfection in MARKETS that Demand Higher Complexity Solutions

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