

astron(elec-tron-ics)

verb: 1. representation defined

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Lines Represented

Alpha & Omega
E-Switch
EDI Diodes
Global Power
Globtek
I-Cum
Methode
Printec
SynQor
Tamura
TT Electronics
VCC
YS Tech



MEMBRANE SWITCHES

PRINTEC

With our state-of-the-art processes, we can design and manufacture the Membrane Switches as per Taiwan facility to meet the requirements set by the customer.

MEMBRANE SWITCHES

offer a unique set of advantages for a variety of applications. With a completely sealed design, they are the perfect solution for any harsh environment with a minimal risk of failure due to leakage of moving parts. Their low cost and reliable performance make membrane switches a popular choice when it comes to dependable user-interface solutions.

Because every membrane switch we create is designed custom for your unique application, certain specifications are required for each design. This set of design guidelines was created to assist you with the design and creation of your custom membrane switch. Our highly skilled engineering team will carefully review your requirements to assist in designing the optimum switch for your application.



Mechanical Specifications

Type	Specification
Active Area	4-16 in.
Switch Travel	.007" to .010"
Overall Thickness	Varies by materials used in design
Max. Tabular	Typically .010"
Tooling	Steel rule dies & hand tools, as well as laser-cutting for prototypes
Number of Actuators	Up to 7 million actuators, depending on design

Things to Consider when Designing your Membrane Switch
Environmental conditions (temperature, humidity, weight, etc.)
Mechanical requirements (actuator force, stroke, etc.)
Electrical requirements (voltage, current, loading, etc.)
Appearance (color-coding, etc.)
Compliance (UL, CE, etc.)

Overlay Materials

The overlay is the outermost layer, and will establish the design and feel of your membrane switch. Many overlay materials are available including polyurethanes, polycarbonates, and laminated materials. Polyurethane materials are utilized more frequently than others due to improved readability, durability, and chemical resistance. Polyurethane can come in thicknesses up to .010". Polycarbonate materials are best used for overlays without switches, or with switches with limited movement due to limitations in flexibility and chemical resistance, however it does provide improved readability, vivid colors, and dimensional stability when laminating. Polycarbonate and polyurethane blends combine the best of both materials for specific applications, however generally they are not as cost-effective as polyurethane or polycarbonate overlays.

Backlighting Options

We offer LED, electro-luminescent, fiber optic, and light guide film for backlighting options.

Design

We provide both serial and parallel designs. A design is a mechanical approach that provides mechanical-type feedback and closes the circuit when pressed. Serial designs are made of stainless steel or a composition of metals that are used to obtain a specific tactile feedback. Parallel designs are made using reinforced polyurethanes. Designers are considered an integral part of most circuits. They can vary in size from films up to 22mm, with forces of 100 grams up to 24 ounces.

Backer Adhesive Selection

- 100 MP Acrylic: Highest performing 3M PSA with resistance to solvents and up to 300°F.
- 200MP High Performance Acrylic: Excellent resistance to solvents and up to 400°F.
- 220 Industrial Acrylic: Good chemical resistance and shear strength. Resist up to 350°F.
- 300MP High Strength Acrylic: Break LSE plastics and metal bar up to 250°F.

Electrical Specifications

Switch Contact Rating	Absolute Max: 30V DC 100mA 1 watt 10V DC 10mA - Standard Design Typical 30V DC/50mA max.
Load Resistance	100 Ohms max (may be dependent on design)
Switch Configuration	SPST normally open
Surface-Mounted LED Specifications at 20°C	Available upon request ~ 100 milliseconds on time, ~10 ms make

