

# Switch Mat Dev Kit v1.7



## About the Switch Mat

The Switch Mat Platform is based on a patented technology using proprietary conductive inks to create stretchable, thin, film pressure sensitive textiles. Sensing Tex manufacturing technology allows the customization, then conductive inks can be applied in any pattern, allowing a pressure sensing element of any shape which follows the form and flow of the textile. The surface of the fabric is thus transformed into a textile area with sensing properties.

The products consist of an area of fabric with resistive switches distributed across its surface. The number, size and distribution of switches are completely flexible in order to fulfill the client requirements. The fabric allows the switch to function while retaining its textile properties: flexibility, washable, elasticity, etc.

Sensing Tex offers feasibility and development services for textile based sensing products with its SDK in the Development Kit: an electronic module, with enough inputs to be connected with any of our Sensing Mat. The SDK is a data acquisition system that allows real-time pressure maps and logging the pressure data of sensors, the Sensing Mats can be connected by Bluetooth® or USB.

The SDK and the Sensing Mat allow you to boost your projects and be able to work with quick prototyping. Visit our website [www.sensingtex.com](http://www.sensingtex.com) to see either more specialized Dev Kits for Mats or some of the developed products based on this Dev Kits.

Please ask more info to [info@sensingtex.com](mailto:info@sensingtex.com) if you are interested.

## 2. Technical Data

The Switch Mat allows the X-Y positions of points of low pressure points, acting on the surface of the fabric, to be determined (switch functionality). The sensor is composed of a sequence of elements: one or two layers are used to detect position (coordinates X-Y) and the third layer is used to establish the minimum pressure that must be applied in order to activate the detection.

Property	Unit	Value
<b>Operating Conditions</b>		
Temperature Range ( <sup>1</sup> )	[°C]	-15 – 90
Relative Humidity Range	[%]	0-100
Repetitions (lifespan)	#	>10 <sup>8</sup>
Minimum Pressure to Activate	[N/cm <sup>2</sup> ]	0,2 -3 ( <sup>2</sup> )

<sup>1</sup> Tested in the laboratory. The range of measurements described should not be considered as a limit.

<sup>2</sup> Depending on isolating textile used, minimum pressure level can be controlled.

Physical Characteristics		
Minimum Sensor Thickness	[ $\mu\text{m}$ ]	400
Minimum Resolution	[mm]	1,5
Electrical Characteristics		
Dynamic Response Time Rising	[ms]	10
Dynamic Response Time Falling	[ms]	60
Contact Resistance	[ $\Omega$ ]	$\Omega$ Level
Sensitivity Error (0,2-0,5N)	[%]	0,2

Table 1: Technical properties X-Y position detection layer

## System Components



