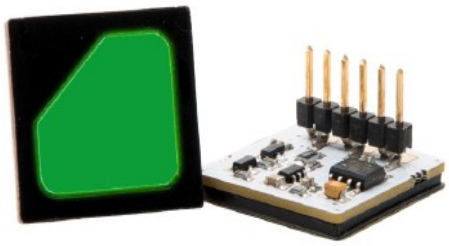
20MM ILLUMINATED CAPACITIVE SWITCH (MOMENTARY)

3323-57



Features:

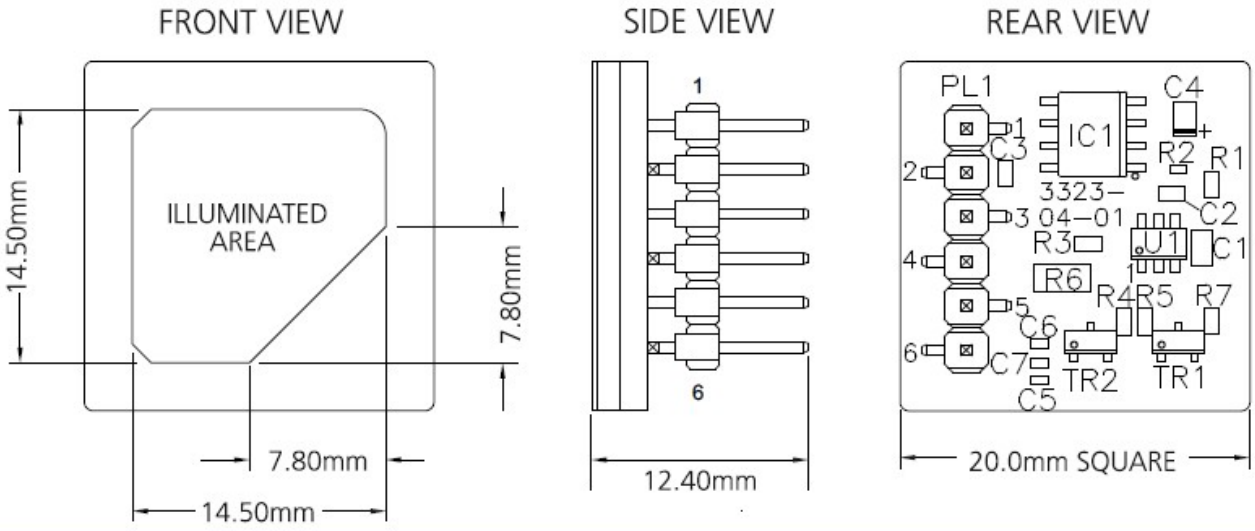
- High brightness, full RGB illumination of touch area.
- Momentary, solid state switch output.
- Cable assembly available separately.
- Self adhesive, suitable for panel thickness up to 7mm.

Description:

These illuminated, capacitive touch switches are a revolutionary design eliminating the need for panel cut-outs and the worry of ingress protection. When using these switches all you need to factor in when designing the panel lay out, is the position of the switches and the size of switches you require. Any glass, clear acrylic, plastic or similar panel sheet can be printed with your required design and these units simply stick to the back. The switch works through the panel giving full RGB illumination with an unmatched uniformity of illumination.

Specification	
Part Code	3323-57
Supply Voltage	6VDC to 24VDC
Outputs	Switch output 40mA (momentary) Red LED 20mA max Green LED 20mA max Blue LED 20mA max
Operating Temperature	0°C to 50°C
Storage Temperature	0°C to 70°C
Illumination *	Red, 290 cd/m² Green, 655 cd/m² Blue, 160 cd/m² *Typical Values

Mechanical Data:



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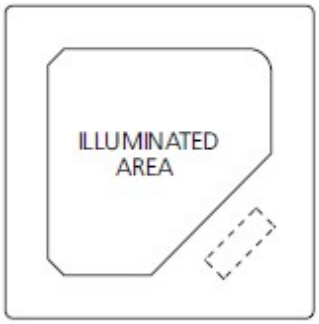
Diagrams

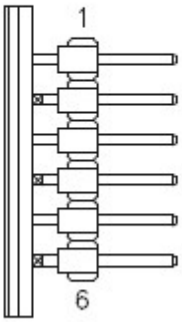
Electrical Outputs:

PL1	Function	Notes
Pin 1	Supply +ve	+6VDC to +24VDC
Pin 2	Supply GND	GND
Pin 3	Switched Output	Up to 40mA max source. Voltage as supply voltage
Pin 4	Green LED Output	20mA max
Pin 5	Red LED Output	20mA max
Pin 6	Blue LED Output	20mA max

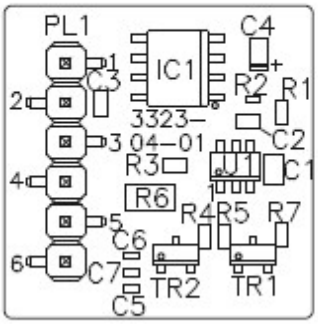
FRONT VIEW



SIDE VIEW



REAR VIEW



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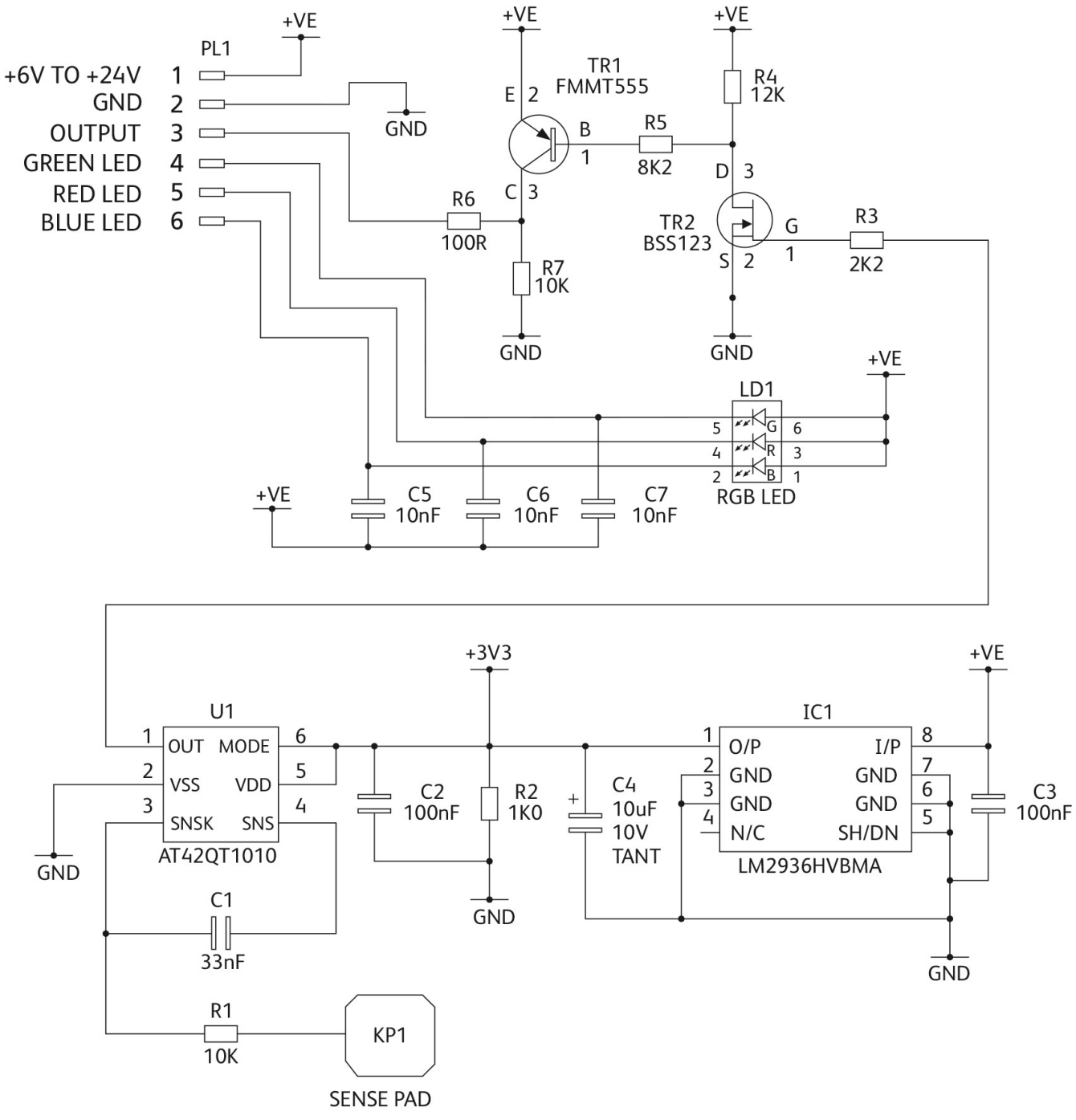
Circuit Diagram



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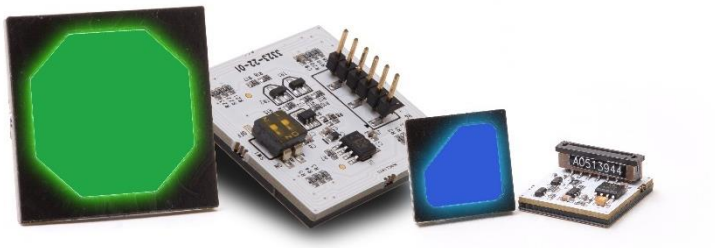
Make the Brake from Electro-mechanical Switches to Capacitive Switches



Every electrical and electronic product and increasingly industrial equipment and domestic appliances require some form of control, commonly referred to as the Human Machine Interface (HMI).

For many years the simplest, most reliable and lowest cost option has been an electro-mechanical switch of some kind. As equipment gets more complex, so do the number and type of switches required, for example the evolution of a rotary switch for hard-wired function selection to the latest rotary encoders for digitally controlled products.

In some applications illumination may be required to show function status, for use in low light or noisy conditions or to signal a fault condition. An LED incorporated into the switch is the most common means of illumination, frequently making the switch itself larger, requiring power to be supplied to the switch and in the case of illuminated control shafts, requiring a translucent control knob.

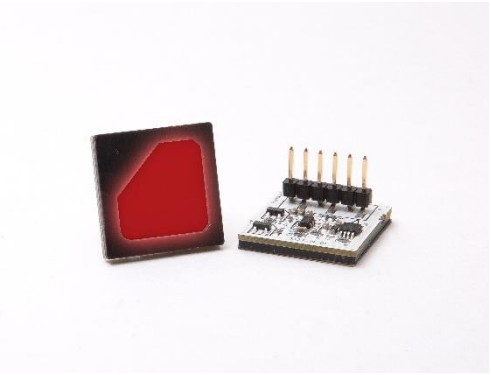
The task of the designer has been to accommodate all the various switching types and functions into a single ergonomic and aesthetically pleasing control panel, not always an easy task. The use of discrete switching components complicates control panel design, increases the number of components and quite possibly suppliers on the manufacturing BOM and increases the time required to manufacture and test.

There has been a major change in HMI fuelled by the rapid growth of smart phone and tablet sales featuring touch screen technology. Initially the domain of consumer equipment, those same consumers now expect industrial and domestic products to offer the look, feel and convenience of their tablet. A requirement not lost on the marketing departments of industrial OEM's who are always seeking a way to differentiate their products from competitors.

At the same time increased use of digital technology has meant less reliance on electro-mechanical switches. New micro-processor-based systems offer OEM's not only smaller, lower cost of manufacture products but also provide a means for external or remote control and diagnostics. New digital designs can incorporate machine-to-machine (M2M) communication making them ready for access to the internet-of-things (IoT)

Clearly, moving a conventional HMI interface using readily available electro-mechanical switches to a custom designed touch screen is a big step which may involve complicated design and development costs. And not all OEM products will benefit from a touch-screen solution.

How does a design engineer evaluate the cost/benefit or even feasibility of developing a touch-screen solution?



TT Electronics provides market leading 'off the shelf' LED Backlit Capacitive Switch Modules in component form which allow designers to evaluate touchscreen technology and even manufacture simple control solutions.

This technology is usually only available as part of a custom design package. The switches feature TT's innovative method of combining the benefits of capacitive switching with multi-colour area-specific backlighting.

Available in 20mm and 35mm diameter versions the capacitive switch modules are suitable for mounting into panel thicknesses of up to 7mm and 11mm respectively. The full RGB LED illumination provides a high brightness user touch area with unmatched uniformity of Illumination. The solid-state switch design has a non-latching output of 40mA maximum operating from a supply voltage of 6VDC to 28VDC. The 35mm version offers designers adjustable low, medium and high touch sensitivity to suit the application. The operating temperature of the switch modules is 0° to 50°C

TT's patented thin-film LED backlighting is a major selling point for our custom designed capacitive switch-based control panels. For smaller projects a custom panel may not be appropriate, and these stand-alone products enable simple integration and means to prototype and evaluate HMI designs without the need to develop custom capacitive sensors and backlighting.

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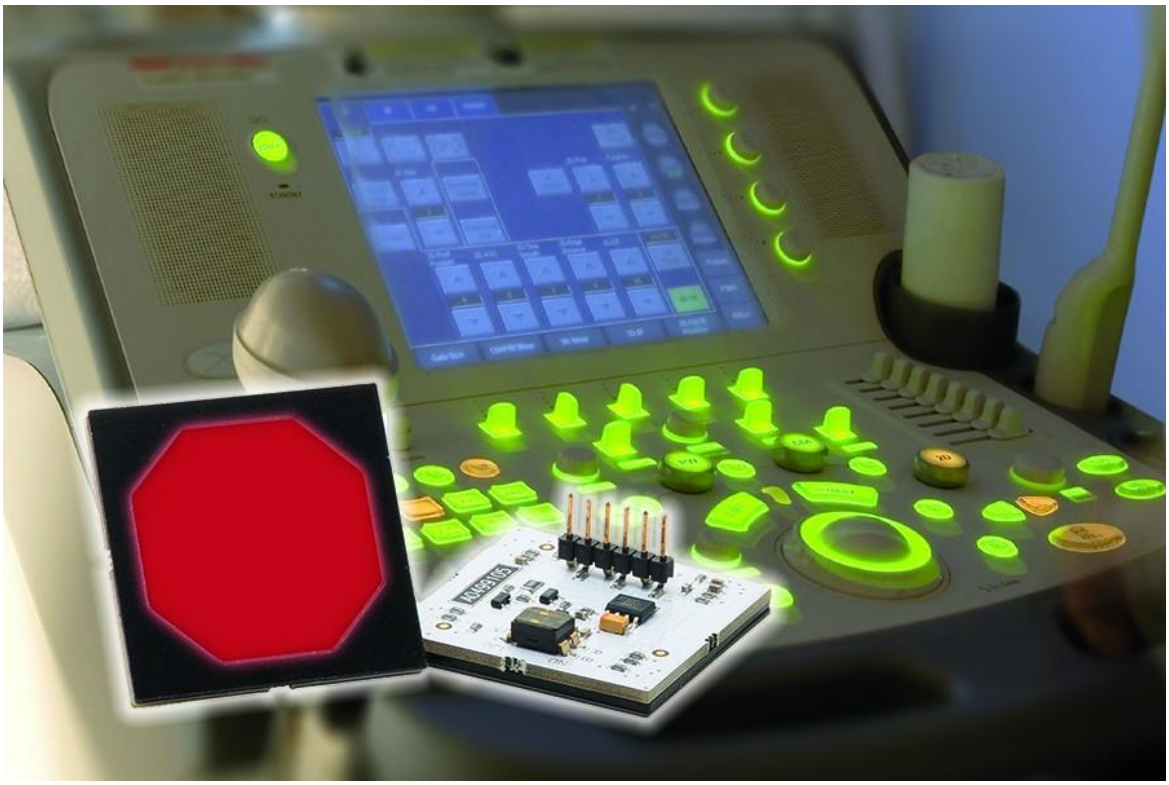
Case Study

Single Illuminated Capacitive Switches Prove ‘critical’ to High Performance Medical Monitor



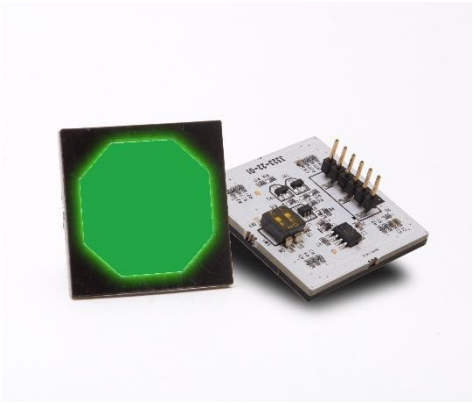
We provided a leading medical OEM with enhanced illumination technology for a hospital-grade high-performance acute foetal and maternal intrapartum monitoring system.

The product uses the most advanced technology available to acquire accurate data to support in clinical decisions. In the fast-paced labour ward environment the monitor must be easy to use and provide data that is quick to read.

TT Electronics’ single illuminated capacitive switch module provides an on/off pulse with bright light power indicator. The slim design allows the modules to be mounted behind a control panel providing an aesthetically pleasing display that can withstand the rigorous cleaning requirements for clinical environments.

TT’s solution provides advanced touch sensitivity with no-miss operation and thin-film backlighting providing light shaping and light spread from the LED. The modules are simple to connect with a simple plug in FFC cable and can be customised to fit space limitations of the end product.

Single Illuminated Capacitive Switch Modules



LED Backlit Capacitive Switch Modules from TT are available in component form which allow designers to evaluate touchscreen technology and even manufacture simple control solutions. The switches feature an innovative method of combining the benefits of capacitive switching with multi-colour area-specific backlighting.

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