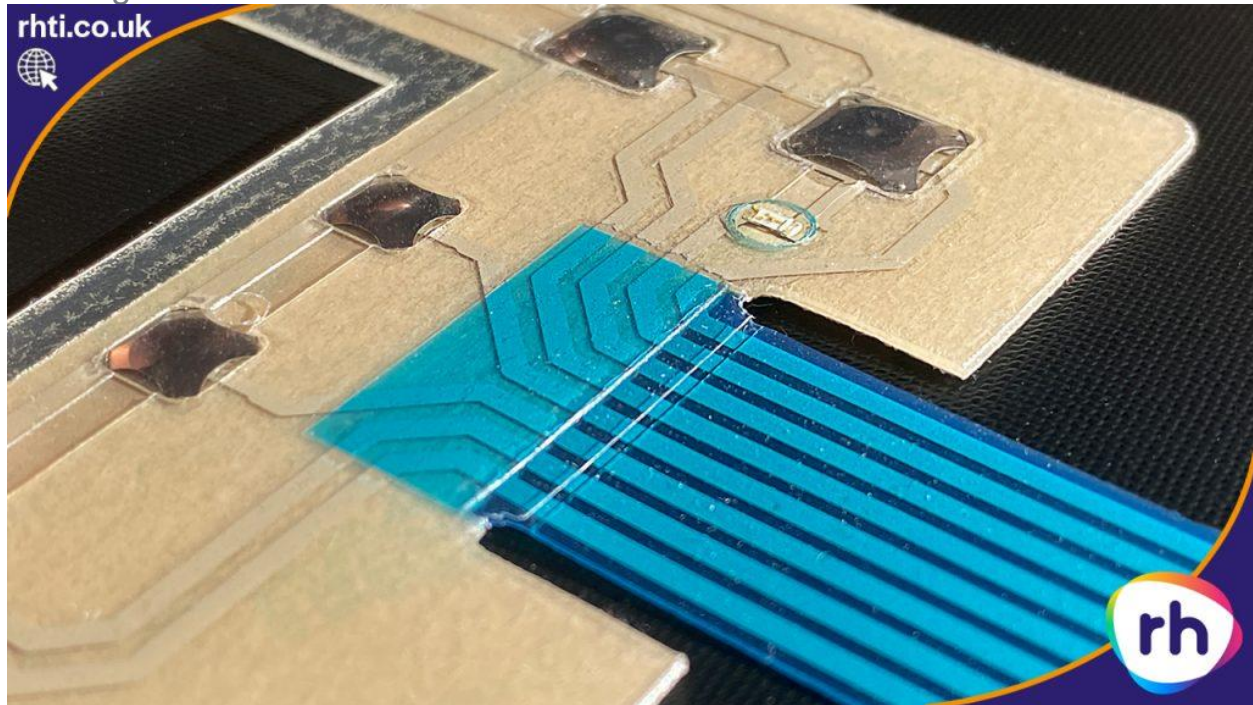


Essentially these components function as a switch to control when a circuit is open or closed. These switches provide similar functionality to physical knobs, dials, or buttons. However, because membrane keypads are constructed using durable polyester [graphic overlays](#), they work well as a reliable method for product interaction. They are easy to maintain even in the harshest of working environments.



Tactile Membrane Keypad with Metal Domes

What are your membrane switch options?

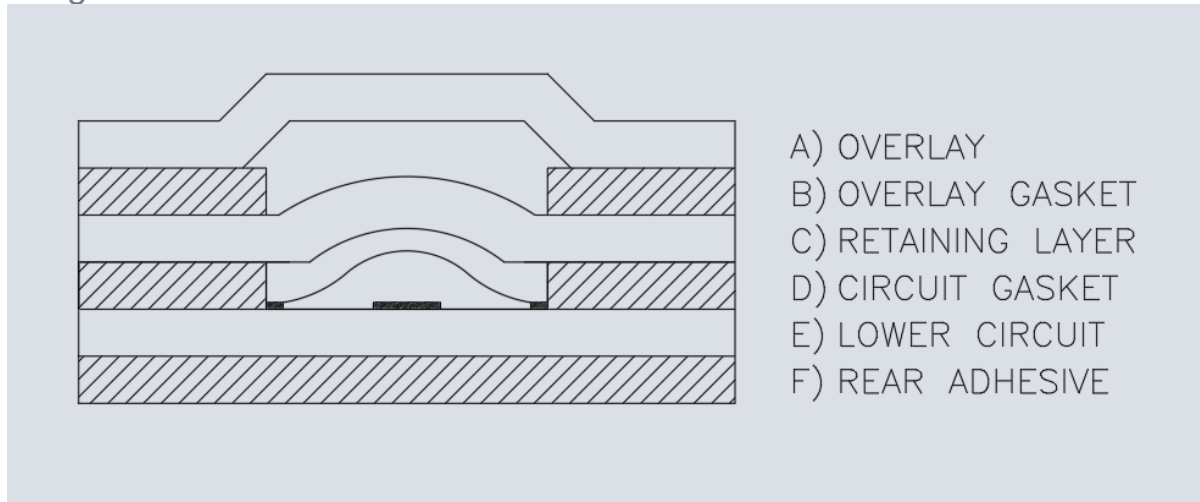
There are two types of membrane keypads; tactile and non-tactile. While each provides the same basic functionality, the user experience from the tactile to the non-tactile interaction is a noticeably different observation.

A tactile keypad design provides a palpable physical response when pressed. When operating a tactile switch, the user typically presses on a tactile metal dome beneath a protective graphic overlay. This response provides a unique feeling of the user's interaction with the button. The tactile membrane switches design fits various sizes and shapes. These switches may require different amounts of actuation force to allow operation, depending on the graphic overlay and specific dome pressure.

A Non-Tactile keypad does not provide a palpable physical response when pressed. As tactile feedback cannot be observed, operating a non-tactile

keypad typically triggers a display that illuminates or creates a sound to indicate that a function has been performed. A Non-tactile switch is generally less expensive as the interface requires fewer layers than a tactile switch.

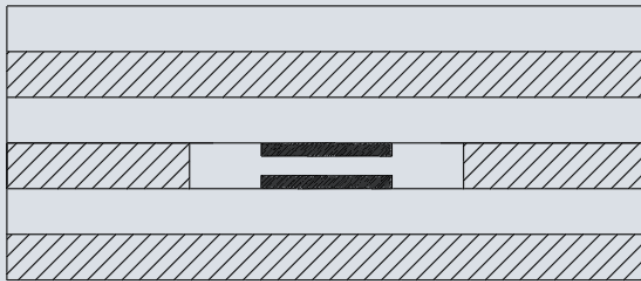
Choosing between a tactile and non-tactile membrane keypad in your [HMI](#) is highly dependent on the operation use, the preferred interaction, and the budgeted cost of the item.



Tactile Metal Dome Construction

So, what are the pros and cons of building a tactile membrane keypad?

A tactile switch is an ideal solution in a specific application where physical feedback is essential for the product's operation. Tactile membrane switches are very customizable, with construction being responsive to different amounts of operational force. This customisable design offers clear user interaction feedback and delivers a positive user experience. It is important to note that tactile switches require more physical components and may be more costly. This option may prove to be more costly, but the device's need for this feedback may significantly improve the user experience.



- A) OVERLAY
- B) OVERLAY GASKET
- C) UPPER CIRCUIT
- D) CIRCUIT GASKET
- E) LOWER CIRCUIT
- F) REAR ADHESIVE

Flat Non-Tactile Construction

What are the pros and cons of building a non-tactile membrane keypad?

A non-tactile membrane keypad is far less complex to produce. As these keypads are simpler to manufacture, and they are generally less expensive. However, an important caveat to consider is how user feedback is provided. Even though a non-tactile switch is actually simpler, the operation of displays, backlighting and audible tones will still need engineering into the product design.

As non-tactile membrane switches offer no physical feedback, users may sometimes be left in the dark, knowing if the operator pushed the button properly. Where tactile feedback is not a significant option, non-tactile membrane keypads and switches can provide a very cost-effective method of HMI product interaction.

When should a product designer select a tactile or non-tactile membrane keypad?

Selecting a tactile or non-tactile switch often depends on the particular operation or environment requirements. In general, tactile switches are ideal for circumstances in which it's important for a user to feel as if they have pressed a physical working button. This could possibly be important using medical equipment or in a factory setting. Typically, a tactile response is essential when a gloved hand is involved in the operation. There may not be a clear line of sight. Alternatively, non-tactile switches are a cost-effective

solution where a tactile response isn't needed. Then an audible or visual response may work as an indicator.

RH Technical Industries Ltd. has manufactured critical technology components to help companies bring their products to life. To determine whether a tactile keypad or non-tactile keypad fits with your product, best contact RH today!