

Invisible Switches

The integration of switches in user interfaces usually requires milling or drilling. Today, certain applications, especially those that are highly sensitive to hygiene or particularly demanding in terms of design, often want to avoid this. And it is precisely for this purpose that SCHURTER has created a new line of switches.



SCHURTER CHS 1: capacitive switch for invisible installation with surface illumination

CHS stands for "Capacitive Hidden Switch". It can be installed invisibly behind almost any non-conductive user interface. This approach offers completely new possibilities for the design of user interfaces. Let's take a closer look at two applications.

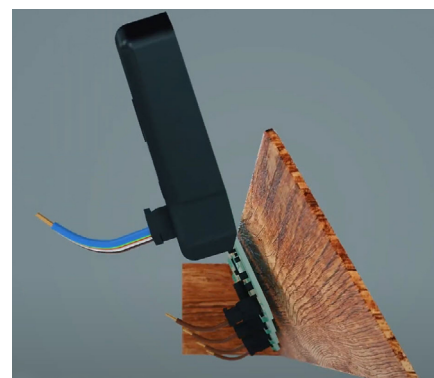
How does it work?

But first, a brief excursus on the function of the CHS. Capacitive control elements require a power supply; this generates a constant electric field on the surface of the sensor (actuator). Touching the sensor with a finger, which is itself surrounded by an electric field, causes a reaction on the sensor's side. The switch notices: Now I have to do something. The switching process is thus triggered by the interaction of two electrical fields. Touchscreens in smartphones or tablet computers work according to this

principle. But the SCHURTER CHS goes one step further. Even a proximity with the finger is sufficient for this field change. This is achieved by the fact that the sensitivity of the new switch can be adjusted particularly finely. This means that a field change can be detected even through an inserted operating surface made of almost any non-conductive material (glass, wood, plastic or similar).

Application 1: highly sensitive environments

Medical devices or those used in the food processing industry must meet the highest standards of hygiene. Mechanical switches with moving parts in particular have a tiny gap between the housing and the actuator. Dirt particles as well as undesirable microbes can accumulate here. Mechanical switches are therefore only suitable for these applications to a



The installation of the CHS is extremely simple: it is attached to the control panel from behind with a self-adhesive foil

limited extent. Completely closed systems (piezoelectric or capacitive control elements) are better. But these also require openings in the user interface. The only perfect solution would be a continuous front without any gaps, slots or cut-outs.



No gap, no openings: ultra-hygienic, translucent user interface for medical technology or the food industry

This is where the new SCHURTER CHS comes into play. The switch can simply be glued behind the front panel of the user interface. The illuminated CHS switches are particularly suitable for translucent operating surfaces such as glass or plastic. The ultra-hygienic user interface is ready.

False triggering due to cleaning

The CHS is also designed to protect against possible false triggering during cleaning of the unit. The CHS is programmed as standard so that it will not trigger in the event of contact with liquids (e.g. splashing water) or light wiping contact.

Application 2: Designer products

Sometimes beauty and a pleasing design are indispensable. In recent years, retro designs have been gaining ground again, but a new trend is emerging: appliances

that often don't even show their actual function. No switch or button on the front. The appliance only comes to life with a light touch.

Control elements for industrial designers - especially in the consumer sector - are a real challenge for every manufacturer. The ideas of how the end product should look are very clear. Holes, cut-outs, drillings - all these interventions in the structure and appearance of the control surface are extremely undesirable. The desire for an invisible switch is particularly great. Compromises at the expense of design can be avoided thanks to the CHS. The design freedom is almost limitless.

Material thickness

The requirement for a suitable material for the user interface is first and foremost its property of being electrically non-conductive. Of course, the material thickness also plays a role. By default, the sensitivity is set for a glass thickness of up to 2 mm, but it can be extended. The sensitivity of the CHS can be adjusted to the material at the factory.



Real wood as a user interface for a consumer product? No problem. The CHS can handle that task as well

Conclusion

With the new CHS, SCHURTER offers a switch that can be used in a wide range of applications. For some, it is a dream solution that has been a long time coming. New application possibilities are opening up. SCHURTER CHS - the invisible switch!

About SCHURTER

The SCHURTER Group is a globally successful Swiss family business. With our components ensuring the clean and safe supply of power, input systems for ease of use and sophisticated overall solutions, we impress our customers with agility and excellent product and service quality.

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References:

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