

Membrane switches for demanding applications

SCHURTER has a long tradition in the development and manufacturing of customized membrane switches for demanding applications. Based on our know-how, we find the optimal solution even for challenging applications and fields of use.



Our high-quality membrane switches are characterized by their reliability in all production processes and environmental conditions and are produced using the latest manufacturing technology and in accordance with the highest industry standards. The qualified materials and processes guarantee the highest quality and meet all requirements.

Membrane switches used in highly specialized applications such as in an industrial automation environment or for medical technology must be developed by a manufacturer with in-depth experience.

SCHURTER offers this know-how for the benefit of its customers' product development.

Case study 1: Agricultural automation

A membrane switch solution was required for use as an operator interface in an agricultural application. The membrane switch is exposed to extreme conditions such as large temperature fluctuations, high humidity or extreme cleaning conditions.

The customer had already installed a competitor's solution in their products, but these failed again and again and thus did not meet the lifetime expectations.

Previous solution

After a detailed investigation by SCHURTER staff, it was found that the competitor's solution failed mainly due to the ingress of liquids. These led to premature failure of the operating unit, causing functional failures of the keys and LEDs.

If the design and material selection of the membrane switches does not meet the high requirements, extreme environmental conditions lead to premature functional failures. In this application, malfunctions had led to maintenance calls, high replacement costs, a damaged reputation and frustrated users. All this damaged the brand and reputation of the company.



The use of membrane switch solutions in agricultural applications.

Our solution

Thanks to SCHURTER's experience, the membrane switch solution was designed to withstand the harsh environmental conditions in a qualified manner. This included a new circuit structure, additional printing of insulation layers in the relevant areas and the revision of the design of the conductor track. Our knowledge and experience in this area enabled the appropriate design with correct material selection. The production is carried out in our state-of-the-art machinery. This ensures that the membrane switches function perfectly even when used under extreme conditions in the agricultural environment.

Case study 2: Medical technology

A membrane switch solution was required for use as a control unit for hospital beds. The challenge here was the special lighting option. The membrane switch solution had to contain two homogeneously illuminated areas that could be controlled separately and did not scatter light on each other. The customer had already approached several competitors, but the realisation of the desired lighting failed.

Our solution

With our experience also in the special field of lighting options, prototypes of membrane switches with backlighting were quickly developed.

Due to the large illuminated area and the small number of LEDs, SCHURTER's experts developed a shaped light guide that was mechanically modified on a laser plotter. This design allows the keypad to be illuminated in the dark in the so-called night design. The patient recognises the keypad and glare caused by overdriving the lighting is prevented.

The housing with the membrane keyboard is connected with a semi-transparent plastic moulding. The selection of specially processed materials and a new design made it possible for the illumination to be guided and not to radiate laterally or to the rear.

The customer mounted the optimised membrane switches on the new type of hospital bed and thus successfully carried out the certification.



Control panels based on membrane switches in medical environments.

The right membrane keypad for every application

Every SCHURTER membrane switch solution is customised - regardless of whether small or large quantities are involved. A high degree of automation in production ensures consistently high quality and enables us to compete with Asian manufacturers.

A membrane switch is the face of your application and reflects your brand in its design. Customer-specific requirements are implemented with the expertise of our engineers. The specifications are also qualified and verified with regard to the lifetime of the membrane switch. The experts at SCHURTER will be happy to advise you on the selection of the optimum membrane switch solution.

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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