

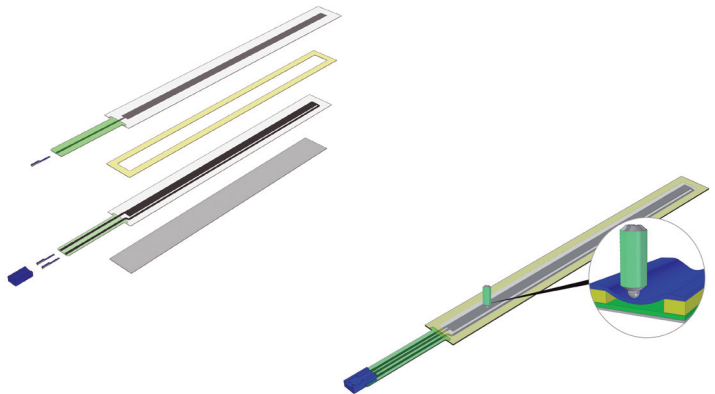
## SENSOFOIL® PRODUCT INFORMATION

### COMPOSITION

- Collector membrane as wiper tap for hand-, wiper- or magnet actuation
- Spacers between upper and lower membrane
- Basic membrane with potentiometer resistance track
- Adhesive film, selection according to application requirement

### HOW DOES IT WORK?

Sensofoil® membrane potentiometers are used as voltage dividers and consist of several layers, which are separated by a so called 'spacer'. These layers are connected to each other through mechanical or magnetic pressure. The contact can be made either by hand or by using a mechanical wiper (see image). Also possible is a non-contact operation by using a magnet instead of a wiper.



## SENSOFOIL® SAMPLE APPLICATIONS

### • AUTOMOTIVE INDUSTRY

The Sensofoil® potentiometer is currently used in the new Audi concept study e-tron to control various driver inputs such as radio, telephone, and navigation located on the steering wheel and dash board.

### • FORK LIFT APPLICATIONS

Sensofoil® PET is found in tiller heads of pallet trucks. Sensofoil® Hybrid can be implemented in forklift trucks for position recognition of the wheels and steering arm.

### • FOOD PROCESSING INDUSTRY

Sensofoil® is the ideal solution in fully sealed input devices to prevent external particles such as dust from entering the electronic unit. Due to the integration into membrane keypads, openings for set value actuators are no longer necessary. The ultra-flat, easy-to-clean Sensofoil is great for automated food processing systems.

### • AVIATION AND SPACE

Sensofoil® Hybrid is suited to determine the position of business and first class seats (memory function) in airplanes. It is the perfect solution as an actual value transmitter (potentiometer) as well as a reference value transmitter (keyboard). In a joint partnership with MOOG Inc., Hoffmann + Krippner developed a noise-free membrane potentiometer for spaceflight use on basis of the Sensofoil®-Hybrid technology. Unique features of this product are the missing noise and drop out characteristics commonly associated with conventional potentiometers, the ultra-flat design and the exceptional linearity (better than 0.25%).

### • MEDICAL TECHNOLOGY

An example application would be a specially configured Sensofoil® on dosing pumps to adjust the amount and rate for intravenous administering of medication. Sensofoil® are also integrated for height and angle adjustment in operating tables and positioning of mammogram equipment.

### • DOOR SYSTEMS

Based on the robustness of Sensofoil®, applications in facilities engineering have been realized to gather positions of doors and a radial Sensofoil® Magnet has been implemented in gate arms for parking decks. A modified version of the Sensofoil® Hybrid, featuring a length of up to 820mm, significantly increases the longevity of doors on streetcars.

### • ROBOTIC SYSTEMS AND AUTOMATION

Some customers in the field of robotics use the ultra-thin Sensofoil® in joint systems and joystick applications where space is limited. Motorized robots used for rescue missions in order to protect human lives are controlled using Sensofoil® FR4 technology. Sensofoil® Hybrid is also being used in moisture sensing technology for irrigation systems.

### • CYLINDERS AND ACTUATORS

The Sensofoil® Magnet (linear) has been successfully operated for years with pneumatic cylinders. Sensofoil® can be applied on both the inside and outside of the cylinder.