CASE STUDY

Innovative concepts for the automotive industry
SENSOFOIL® in the AUDI e-tron
THE REQUIREMENTS
The development of the automotive study e-tron conducted by AUDI AG, represents the highest engineering skills in the field of alternative drive systems. The primary purpose of this project was to design an electric sports car following the high quality and performance standards that AUDI represents. During this project a further focus was placed on the realization of a new interior design concept matching the special needs of an AUDI sports car.

The goal behind this particular development project was to reduce the controls currently arranged on the dashboard by implementing a multi-functional panel concept as a replacement. Without compromising on the familiar functionality, the central control unit (Multi Media Interface – MMI) in the AUDI e-tron was to become more user-friendly.

THE IMPLEMENTATION
Hoffmann + Krippner was faced with a unique challenge, including tremendous space limitations, the guarantee for reliable operation of the MMI, as well as the adaptation to the supreme design of the AUDI interior.

The initial proposal, a capacitive solution for the control unit, turned out to be ineffective, as the space constraints prevented reliable operation and created a risk for operating errors due to accidental contact. Within a short amount of time, the concept using a resistive solution was adopted, based on the SENSOFOIL® technology by Hoffmann + Krippner.

Due to the implementation of several SENSOFOIL® product variations, the initial concept of multi-functionality was maintained. Control commands can now be activated through a light touch while providing the driver with tactile feedback, as to support reliable operation.

THE RESULT
The interior of the AUDI e-tron is characterized by the nearly complete absence of universally recognized buttons and detailed components. Instead of the classic segmented display, the study entails a large display with integrated MMI-functions. It can be operated through both the touch sensitive controls on the steering wheel as well as the central MMI-panel conveniently located in the center console.

A round SENSOTOUCH® was integrated into the center MMI console, embedded with a character recognition software in order to make quick data entry for telephonenumbers, etc. possible. Due to the implementation of a resistive solution, the operation of the MMI is possible without restrictions by hand, when wearing gloves or even with a pen.

SENSOFOIL® membrane potentiometer based on FR4 with tactile feedback were integrated into the steering wheel, for the purpose of central control of various functions such as volume adjustment and temperature control.

INNOVATION MADE IN GERMANY
HOFFMANN + Krippner
TECHNICAL INNOVATION AT THE HIGHEST LEVEL

Hoffmann + Krippner opens up new vistas, solves problems and realizes visions in the three main business areas complex input devices, ultra-flat position sensors and industrial PC systems.

In business for more than 40 years, we now have become the leading manufacturer of customized keyboards and complex input systems and are a market leader in Europe.

We develop and produce innovative input devices, control units and sensors for international customers in numerous industries, from consumer electronics, medical technology and aviation to mechanical engineering and military technology.

Hoffmann + Krippner’s product portfolio meets the highest expectations, from simple membrane keyboards to complex designs including enclosure, electronics and software.