



# The Future of Automotive Interfaces

**KURZ Solutions for Human Machine Interfaces (HMI)**



KURZ HMI concepts:

# The future has already begun

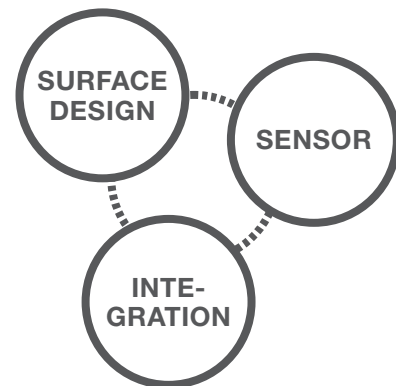
A cockpit like a futuristic sculpture: the homogeneous, organically shaped surface reveals its various functions through touch. Buttons and operating elements light up, ambient lighting can be individually controlled throughout the vehicle.

Operating concepts for autonomous driving are already being developed, which have a decisive influence on the interior design. What sounded like science fiction just a few years ago, KURZ has since brought to series maturity.

[www.plastic-decoration.com](http://www.plastic-decoration.com)

For example, intelligent surfaces provide context-related functions, are ergonomically shaped and have low material thicknesses and weight.

Our many years of experience in the decoration of plastic surfaces can be ideally combined with the innovative sensor technology of KURZ subsidiary PolyIC. This enables us to implement design and operating concepts today for the automotive future.



## KURZ HMI offers:

- organically shaped surfaces
- seamless control panels until lit (deadfront)
- ambient lighting
- day and night design
- active touch control
- capacitive sensor technology
- homogeneously closed surfaces
- no mechanical control components
- design competence by KURZ

## Customer focus at all levels

Surface design and sensor functionality combined in a single component: The functional elements can be seamlessly integrated into the decor and three-dimensional part geometries. In the production process existing systems can be used or extended.

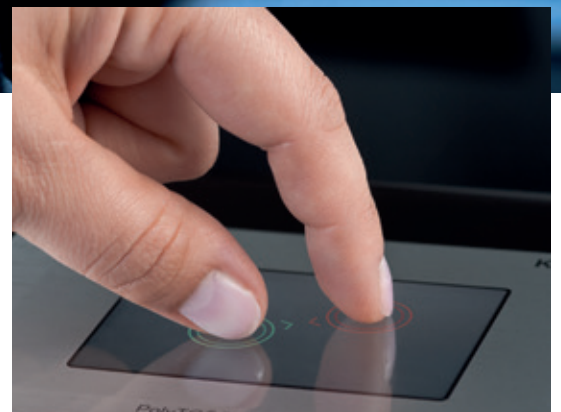
These new design options offer the best conditions for further expanding your value chain and are available to you worldwide. And so that you can produce particularly economically, we also develop individual production concepts for you on request.



## Topcoats for your style

For the automotive industry, we offer three topcoat variants for special design requirements in terms of gloss level and reflection properties, suited to each application.

Of course, our topcoats meet the high demands of the automotive industry.



### KURZ BRIGHT VIEW

The **high-gloss** topcoat enables particularly bright and high-contrast colors.

- scratch resistant
- highly abrasion resistant
- chemical resistant
- sun cream resistant
- super transparent
- easy-to-clean

### KURZ COMFORT VIEW

This topcoat with a  **matt**  surface finish meets the desire for a low-glare and low-reflection representation. Nevertheless, it shows an astonishingly clear color contrast.

- scratch resistant
- highly abrasion resistant
- chemical resistant
- sun cream resistant
- anti-reflective
- high color contrast even in sunlight

### KURZ EASY EYE

This topcoat is particularly suitable for the  **anti-reflection**  coating of displays. The glare-free, impassible surface allows a high-contrast color representation and is particularly pleasant for the eye.

- scratch resistant
- highly abrasion resistant
- chemical resistant
- sun cream resistant
- good color contrast even in sunlight
- easy-to-clean
- anti-reflective
- anti-smudge



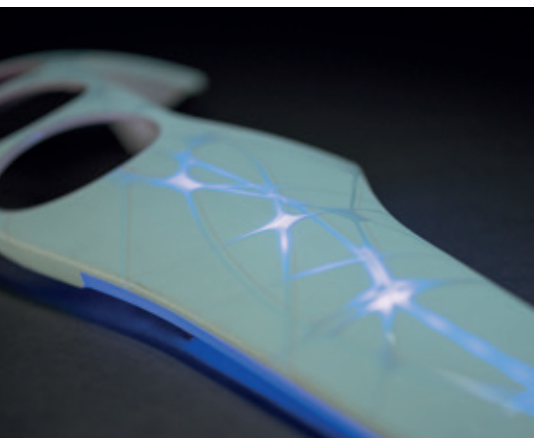
# Design and backlighting: Function meets emotion

KURZ opens up an infinite wealth of exclusive design possibilities. Our design team develops individual surfaces with exactly the optical properties you desire. For ambient or deadfront applications, for organic, three-dimensional or flat component geometries. For innovative interior design with visionary, individual and exclusive demands.



Experience our  
individual surfaces

## Ready for your design



Exclusive individual surface designs

We develop and produce your individual decors exclusively for you. A wide variety of combination options are open to your design wishes – from continuous decors to single image decors with high register accuracy. Even security features can be integrated in this way.

The use of thermoformable sheets, which are silkscreen printed on the front and back, creates spectacular depth effects in the decor and haptic surface structures. In combination with touch functions, completely new and spectacular multi-sense components can be realized.



### KURZ designs:

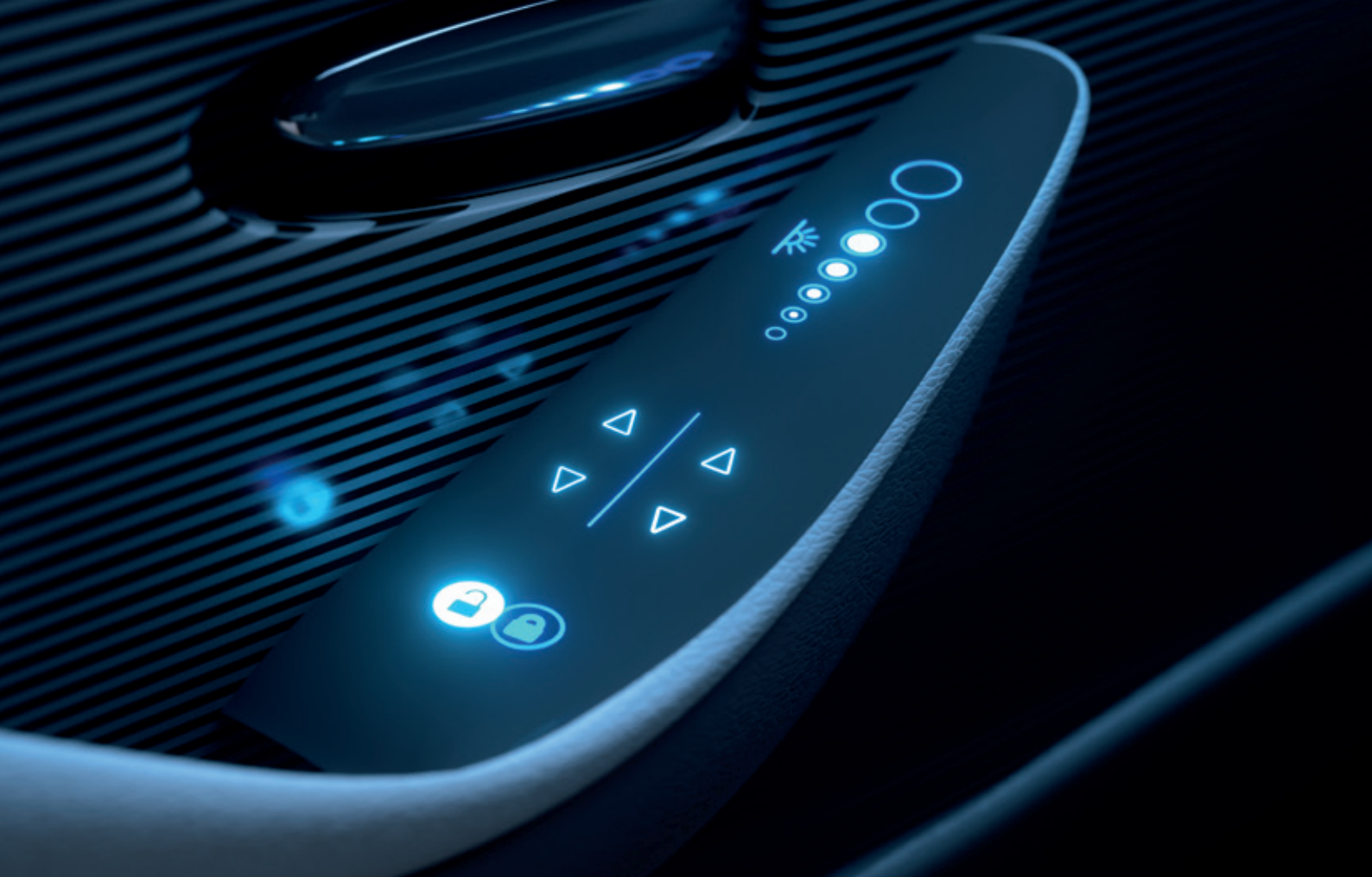
- metallized
- holographic
- pigmented
- tactile surfaces
- soft touch
- matt to high-gloss
- classic and individual designs
- NCVM (Non Conductive Vacuum Metallization)

### Application alternatives:

- Hot stamping
- IMD
- Insert molding
- PMD (Print-Mold-Design)



Learn more about  
the processes:  
[www.plastic-decoration.com](http://www.plastic-decoration.com)



## Unlimited lighting effects

The backlighting of symbols plays a decisive role for touch functionality. Surfaces can be designed so that control panels are invisible when inactive and only show sensitive fields by backlighting when activated (deadfront).

Another option is the so-called day and night design: depending on the lighting conditions, the surface shows different decors.

With ambient lighting, the decor sets the mood. In combination with controllable light colors, the interior of an automobile becomes an individual experience space.

### Illumination effects:

- day and night design
- invisible control panels until lit (deadfront)
- intuitive control
- ambient lighting
- backlighting

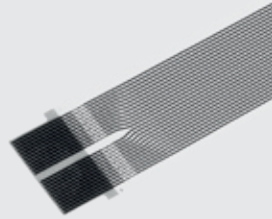


Door trim with day and night design

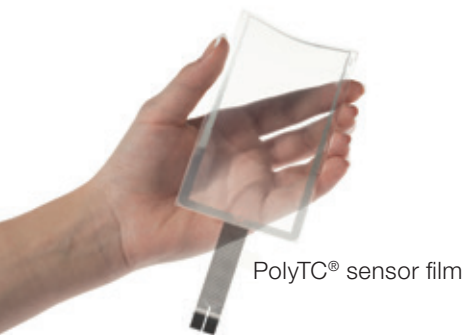
PolyTC<sup>®</sup> touch sensor:

# Make your product sensitive

PolyTC<sup>®</sup> metal-mesh sensors turn plastic surfaces into control panels. Whether flat or shaped, they can be integrated very economically into your component using various processes and offer great freedom for the product design. They have already proven their high reliability millions of times.



[www.polyic.com](http://www.polyic.com)



PolyTC<sup>®</sup> sensor film

## Possibilities clearly visible

PolyTC<sup>®</sup> sensor films offer numerous significant advantages: They are highly transparent and have a high electrical signal quality. They are flexible, work capacitively and can be integrated into components in many different ways. They are ideally suited for three-dimensional deformation in the injection molding process.

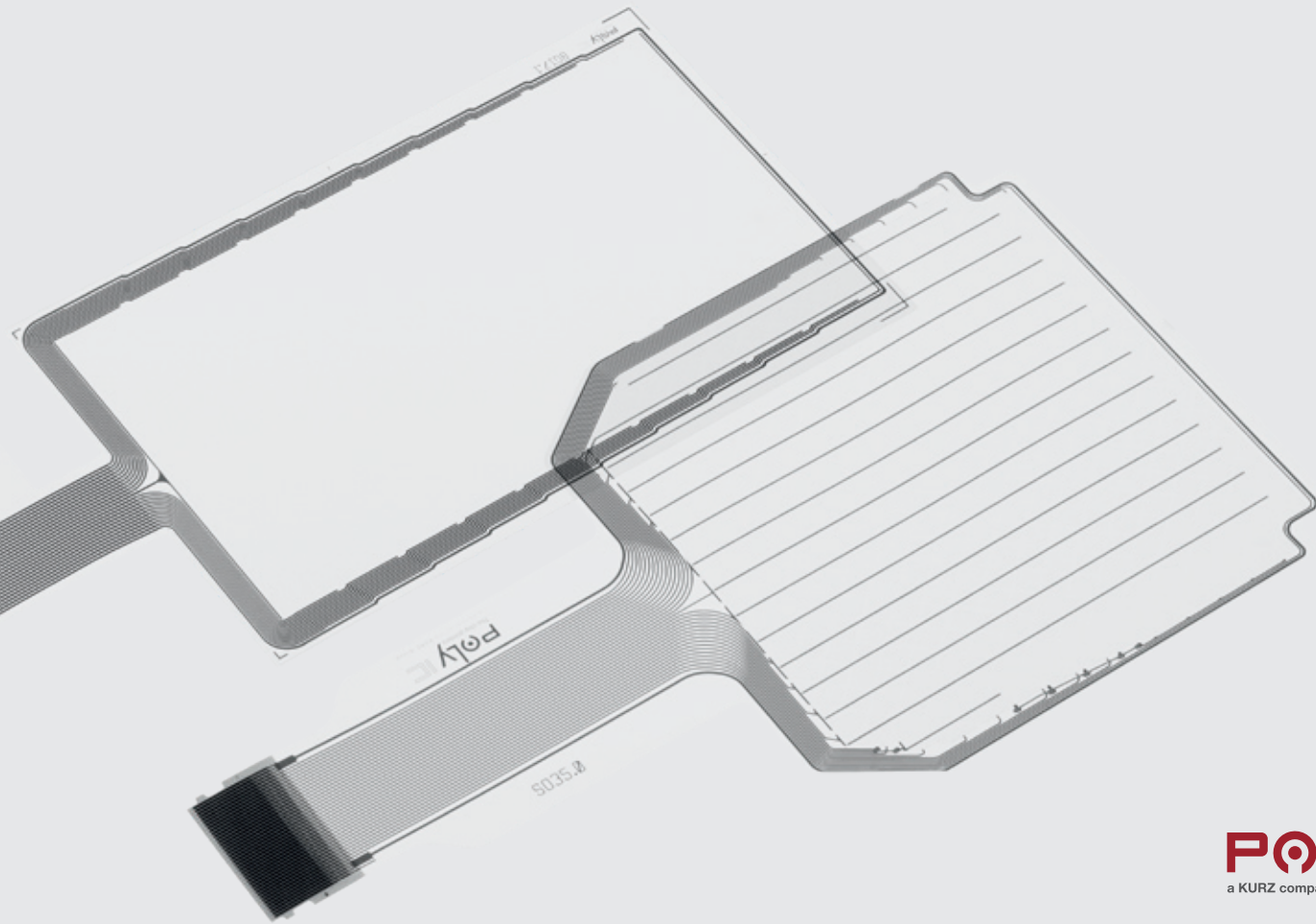
Due to their high electrical quality, they enable perfect function even with thicker materials. And because of their high transparency and color neutrality, they are ideal for touch screens and backlit controls.

### PolyTC<sup>®</sup> sensor film at a glance:

- capacitive sensor function
- high transparency
- high conductivity due to silver metal-mesh
- integrated tail for direct contacting
- 2.5-3D deformation possible
- ideal for buttons, slider, touch screen
- cost-effective due to roll production
- made in Germany
- customized setup







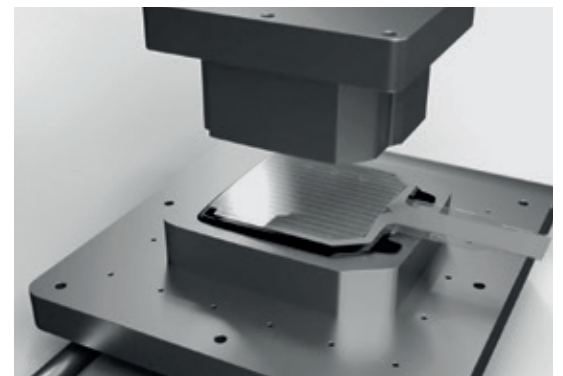
## Efficient in process

Sensors are usually held mechanically, applied by PSA or OCA or glued manually.

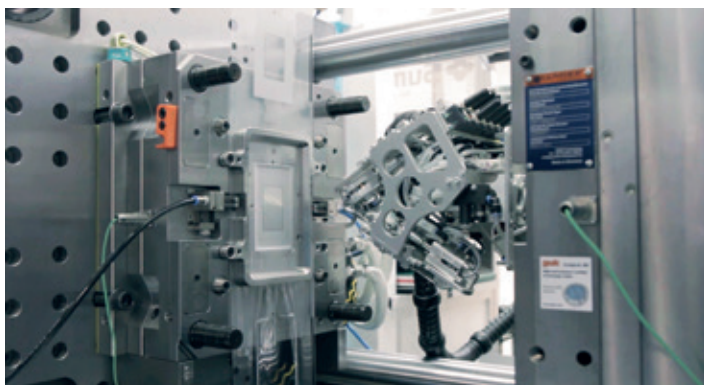
Depending on the component geometry or your specific requirements, various semi or fully automated application processes are also available.

With KURZ's patent-pending Functional Foil Bonding (FFB) process, the sensor is applied to the component by hot stamping in a semi- or fully automated process.

In the combined IMD/IML process, the decor is applied on the front and the sensor foils on the back in a single step during the injection molding process.



Functional Foil Bonding (FFB) for application of the sensor in a molded and decorated part



IMD/IML process for inline manufacture in a single production step

### Application processes for PolyTC® sensor films:

- PSA (Pressure Sensitive Adhesive)
- OCA (Optical Clear Adhesive)
- FFB (Functional Foil Bonding)
- IML (Inmold Labeling) during the molding process



KURZ is a major international supplier of thin layer technology with more than 5,000 employees, as well as 14 production facilities, 24 international branch offices and distributors located throughout Europe, North- and South America, Asia, Australia, Africa and the Pacific region. This worldwide presence implements the requirements of every single customer to provide the ideal full-service solution.

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