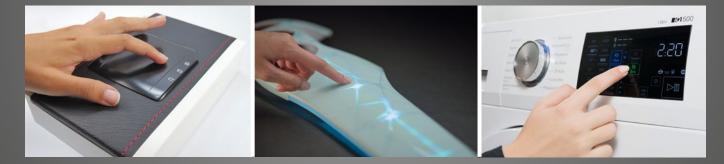# POLY IC

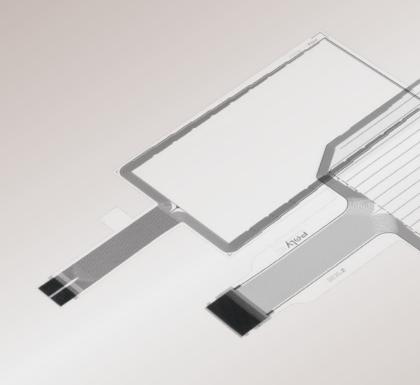a **KURZ** company

# PolyTC®
## Touch sensors

# PolyTC®

## Transparent and conductive foils as a basis for touch sensors

Our revolutionary PolyTC® technology provides you with enhanced functionality, design freedom and customization. Trends like capacitive keys, touch screens, multi-touch sensors, curved surfaces and backlighting are smoothly implemented.

Typical for PolyTC® is a conductive coating with a metal mesh in high optical resolution, which is applied to a transparent polyester substrate (PET). The lattice-like silver microstructures provide maximum electrical conductivity and at the same time high mechanical flexibility. Even designs with real 3D shapes can be furnished with our sensor technology.

We customize every sensor to the individual needs of our customers.

| Features | Typical value |
|---|---|
| Functionality | Multi-touch, touch and gesture, individual keys, sliders, jog dials, proximity switch, 3D gestures |
| Transparency | > 85 % (depending on layout) |
| Surface resistance | 15 – 30 Ω □ |
| Structure size | Min. 6 µm |
| Sensor size | From individual keys to ~ 12" (depending on image format) |
| Conductive material | Silver (Ag) |
| Contact stiffening | Carbon black |
| Contact options | Integrated tail for ZIF connectors, direct contact for ACF bonding, others possible |
| Substrate | Polyester (PET), transparent |
| Standard substrate thickness | 50; 75 µm |
| Set-up | See layer stack below, total thickness without adhesive layer ~ 100 µm |
| Optical characteristics | Suitable sensor layout, e.g. moiré-free, no color change |
| Layout design | Custom, e.g. backgammon, diamond pattern, individual keys |
| Selection process | Self-cap, mutual-cap |
| Input lead | Directly integrated for Chip on Board (CoB) or without tail for Chip on Flex (CoF) |
| Resistance | Customer-specific, e.g. moisture, temperature fluctuations during storage |
| Delivery form | Individual labels, other forms of delivery on request |

*This table shows a selection of our product benefits.*

**Example layer stack**

Contact stiffener
Protective film
Protective layer
PolyTC® layer (Ag)
Substrate
IML primer/OCA/FFB
Protective film
Stiffener

## Industry-spanning sensor solutions

Intuitive, convenient operation, maximum design freedom, and even greater hygiene – modern touch and gesture features provide end users with plenty of benefits. Whether it's home appliances, home automation, automotive or consumer electronics, with PolyTC® sensor technology you create innovative operational controls for the Human Machine Interface (HMI).

## Latest generation touch sensors

As a specialist in touch applications, our focus is on producing powerful sensor labels. The secret of our worldwide success is based on a unique technology: PolyTC®. This patented capability makes it possible to integrate very thin, flexible and transparent touch sensors into a wide variety of display applications.
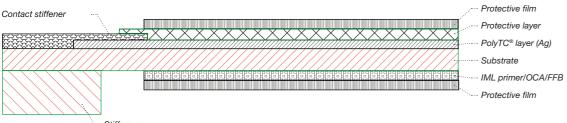
In addition to functionality, design is also a major pillar of our work. We use the synergies we share with parent company LEONHARD KURZ. Together with the decoration specialist we create attractive designs with integrated touch technology for multi-sensory product experiences.

**www.kurz.de**

### Take advantage of our unique benefits:

✓ **Flexible and transparent sensor film**

✓ **High optical transparency and true color effect**

✓ **Bendable, stable and heat resistant**

✓ **Off-the-shelf and customer-specific manufactured sensors**

✓ **High signal quality and sampling rate thanks to excellent metallic conductivity**

✓ **Customer-specific and uncomplicated integration**

✓ **Freedom of design**

# Applications

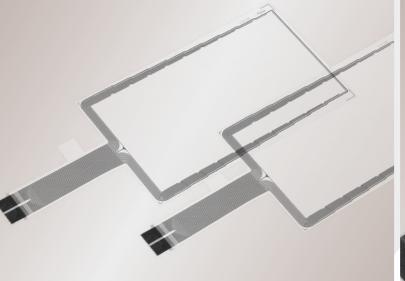## Bridging form and function

### PolyTC® in touch screens



Outstanding features like very high conductivity and flexibility, as well as premium appearance, make PolyTC® foils ideal for touch-screen use on any type of display. As an economical and powerful replacement for Indium Tin Oxide (ITO), we provide custom-tailored single- or multi-touch applications for your touch screens.

### Capacitive sensor buttons, sliders and gesture control



PolyTC® makes its highly functional, thin and flexible sensor foils available for your customized product development. Without the physical limitations of conventional circuit boards for button applications, modern designs with 3D curvature and appealing dead-front look are easily realized. Integrating additional smart functions such as gesture control and backlighting turn your device into a high-end product.

# Integration

## Merging of design and technology

Thanks to its robust nature, PolyTC® is suited to a wide variety of applications in coating and injection-molding applications. We include fully finished sensor labels which are adapted to your specifically selected integration method.

The bonding of the sensor foils is thus flexibly oriented to your specifications and the material properties of your product. We offer various integration methods by closely working with LEONHARD KURZ:



**Mechanical fixation**

as basic application for integrating our sensor foils
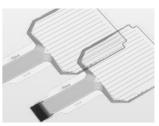


**Laminating with Optical Clear Adhesive (OCA)**

for touch screens with high optical quality



**Functional Foil Bonding (FFB)**

for subsequent sensor integration in previously decorated plastic components without adhesive



**Pressure Sensitive Adhesive labels (PSA)**

for semi-transparent button backlighting solutions



**Inmold Labeling (IML)**

as a time-saving injection molding procedure – also in combination with Inmold Decoration (IMD)

We supply our sensor foils as single, ready-to-use sensor labels, including input leads and adhesive layer. This means they can be directly and easily further processed. Moreover, additional protective foils protect against scratches and ensure the absence of particles. Other forms of supply are possible.

# POLY IC

a **KURZ** company

**Follow us on:**



We are looking forward
to hearing from you!

## Contact:

**PolyIC GmbH & Co. KG**
Tucherstrasse 2
90763 Fuerth/Germany

Phone:   +49 911 / 20249-0
E-Mail:   info@polyic.com
Internet: www.polyic.com