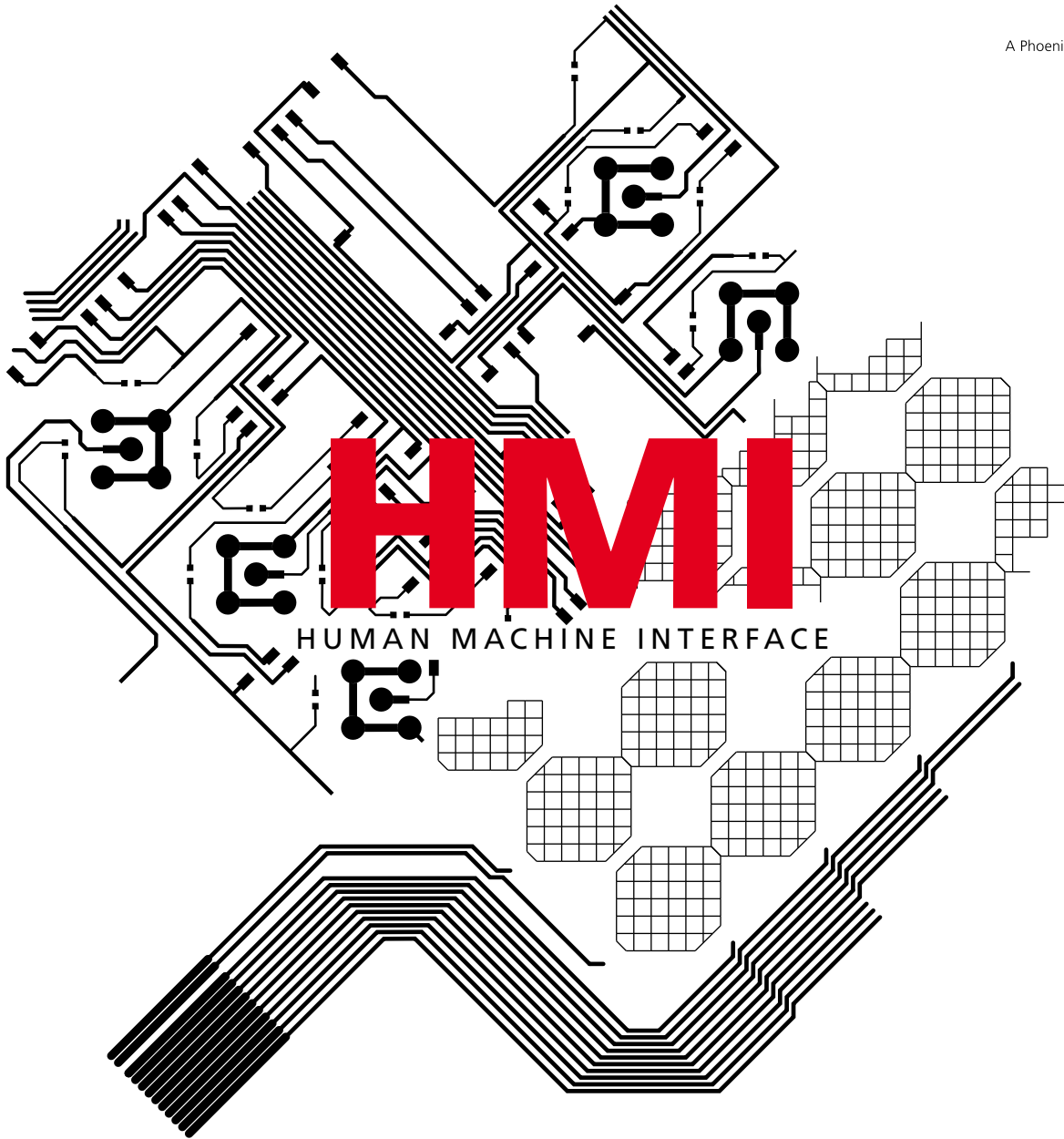
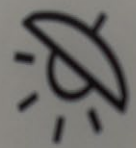




BOPLA

A Phoenix Mecano Company





TOUCH / DISPLAY INTEGRATION

Convince yourself of the advantages of this versatile technology and benefit from an all-in single-source system solution.

Touch the future!



schwer + kopka

16:36
22.06.2020

136
/min

Prozessübersicht



Auftragszähler

Soll	10.000.000	stop
Ist	429.333	4%
Rest	9.570.667	
Restzeit	>999:59	

Werkzeugzähler

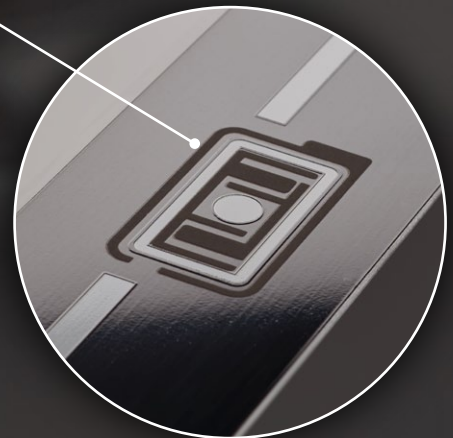
Soll	2.000.000	stop
Ist	615.773	30%
Rest	1.384.227	
Restzeit	169:38	

Infocenter

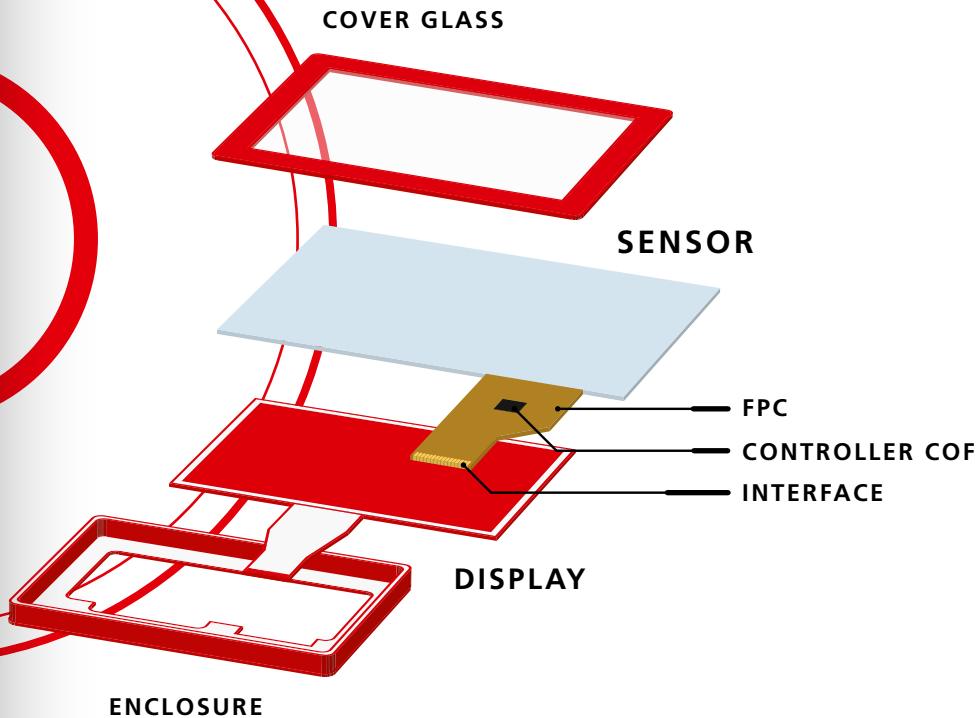
Artikel:
Produktion seit 00:00 h

SK 4.10

Printed silver conductors can also be implemented, depending on specific requirements.



CAPACITIVE TOUCH SCREEN



Further PCAP benefits (Projected Capacitive) solutions:

- /// Vandal-proof*
- /// Easy cleaning*
- /// Can be operated wearing gloves*
- /// Temperature resistance*
- /// UV resistance*
- /// Operation in wet environments no problem*
- /// Extremely high service-life*

Until recently, membrane keypads and conventional resistive touch screen solutions have been used in the industrial environment, but capacitive touch screen technology is now increasingly taking over. Future-orientated capacitive technology, definitively shaped by the consumer market, now meets the high demands made in all sectors of industry. This technology is noted for its exceptionally high reliability, intuitive operation and unique functionality.

For these reasons, more and more user systems / human machine interfaces (HMI) in use in industrial applications are now being converted to capacitive input systems.

Our engineering capabilities provide the solution optimally tailored to your needs. Ranging from the printed front glass featuring a laminated or bonded touch sensor and the matching evaluation function, up to and including an all-in system solution complete with display, supporting plate or enclosure.

And also in the form of a complete embedded processor-board solution if desired.

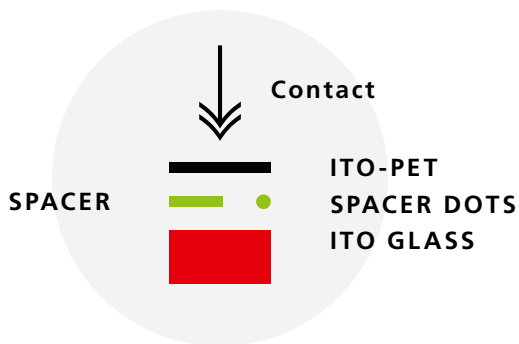


Our flexible and
rationally-priced touch
screen solution for
your product!

RESISTIVE TOUCH SCREEN

Selection of the optimum technology is of decisive importance, especially in the field of touch screen systems. We supply resistive and capacitive touch / display solutions, with their differing technical requirements, in numerous standard formats, or developed specifically to meet your individual needs. This is why detailed analysis of the operating requirements, covering all mechanical components, is a vital necessity at the very start of device development. We are at the side of our customers' technical departments to provide support on all of these items.

We analyse your needs together with you during the design phase to determine the implementation routes that we will use for your product.



Selection of our possible implementation routes:

- Full-surface lamination on a decorative foil*
- Viewing windows cut out in the decorative foil*
- Partial lamination on the decorative foil*
- Rear installation in the enclosure*
- Combination of touch screen with membrane keypad*

All the methods listed above are performed under clean-room / ISO-classified controlled area conditions in our production department for your products – to assure the optimum result for you.



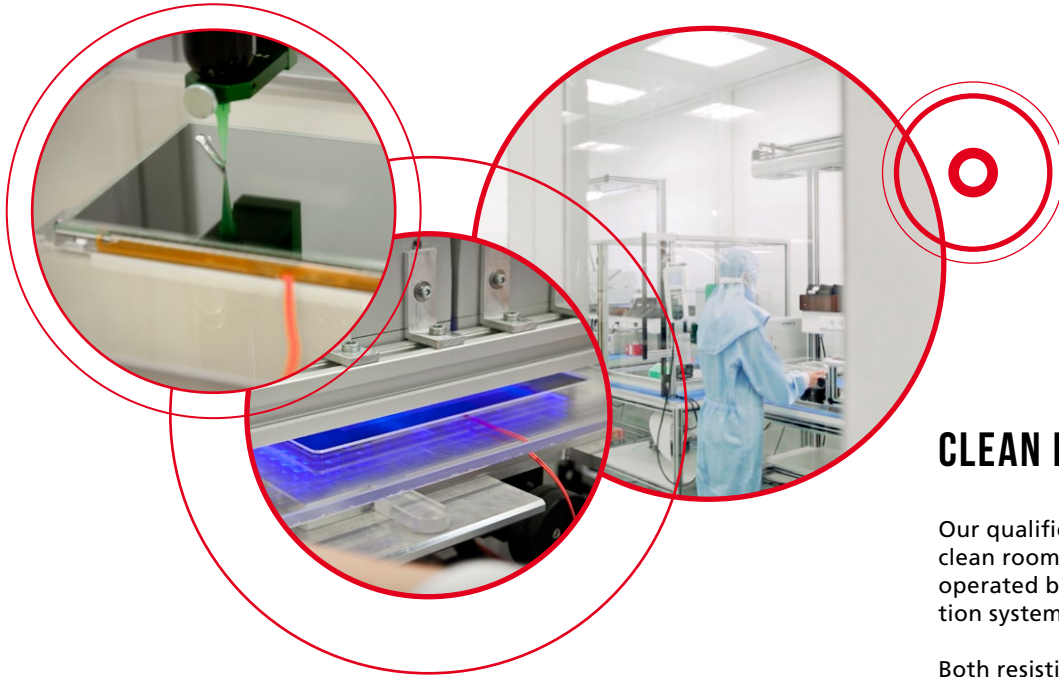
TOUCH / DISPLAY SOLUTIONS

Individual enclosures, optimised for the installation of capacitive and resistive touch screens

- /// *Individual solutions for all types of enclosures*
- /// *Enclosure, enclosure front / front membrane:
project-specific printing*
- /// *Special grouting compound technology for optimal
protection against harsh environment, shock and
vibration*
- /// *Project-specific display retaining plate made of alu-
minium ensures perfect connection between display
and electronics*

In addition to the integration of commercially-available displays, our enclosures also make possible the installation of resistive and capacitive touch screens. BOPLA has developed a special grouting compound technology for the mounting of the components, which often do not even have mounting points.

In both cases, the integration of the touch screen can be achieved in many ways. For applications which do not permit dirt-collecting edges (medical technology or the foodstuffs sector), BOPLA also has solutions with a continuous front membrane – laminated over the entire area, or with spacer dots on the back.



OPTICAL BONDING

Optical bonding signifies for us full-surface transparent bonding of touch sensors to a cover glass and display to make a complete unit.

You can select between various types of glass, customised printing and the PCAP sensors that are right for your project.

The available variants of optical bonding are LOCA, OCA and air-gap bonding.

LOCA and OCA bonding prevents parallax between the front glass, the sensor and the display and improves device structure in terms of functionality, stability and optics.

Together with you, we decide which of these processes is the most suitable for your application.

Benefits:

- Reduction of the danger of splintering in case of glass breakage*
- High resistance to vibration and shock*
- Improved legibility*
- Special contents*

CLEAN ROOM

Our qualified cleanroom in acc. with clean room class 6 / ISO 14644, part 1 is operated by means of a special ventilation system.

Both resistive and capacitive touch screens are full-surface laminated in the cleanroom.

ISO-CLASSIFIED CONTROLLED AREA

In the ISO-classified controlled area, our employees install the full-surface laminated touch screens into enclosures, or onto supporting plates or monitor front assemblies. These can be optionally moulded and then submitted to 100 percent testing. Moulding is accomplished either fully automatically on a metering system developed specially for BOPLA or with manual metering using pneumatic dispensers.

Our air-conditioned ISO-classified controlled area is operated by means of a special ventilation system.

In addition, front membrane keypads and displays can also be installed in standard and customised enclosures.

ISO- CLASSIFIED CONTROLLED AREA / CLEAN ROOM PRODUCTION



TOUCH SCREEN LAMINATION

Full-surface touch screen lamination is performed only in the cleanroom (ISO clean room class 6).

The pre-assembled and pre-cleaned touch screens are fed into the cleanroom via a materials airlock for further processing, i.e. lamination.

On the laminators, lamination can be performed using a roller with either a hard or soft rubber surface, depending on the touch screen type (capacitive/resistive and equipped with snap domes).

The laminating jigs are made in our own special department and consist of various conductive and non-conductive plastics.

LAMINATION PROCESS

Prior to the first process operation, a mounting specific to the touch screen is designed and constructed here at BOPLA. The touch screen is then positioned in this jig, in order to then correctly position the cut-to-size high-transparency OCA self-adhesive layer on it. The two elements are then permanently joined to one another with the exclusion of dust particles by means of the laminator and its heatable rollers.

The next operation is the lamination of the back-printed front membrane under the same conditions. Not only our cleanroom and our high-quality assembly equipment, but also our employees' many years of experience in design and

assembly, are the essential guarantors of visually perfect completion of this complex process.

The laminated touch screen is then inspected for inclusions and forwarded for further functional testing using test and documentation tools.