Displays for HMI solutions

SCHURTER offers its customers complete HMI solutions with the right display to meet all desired requirements. With our knowledge and extensive sourcing channels, we select the optimal display for the customer's application.

The market for displays is undergoing a major change - the demand for consumer products has increased significantly. Well-known brands are focusing more and more on this market with large quantities in series production and are reducing the portfolio for the industrial sector. In the past, well-known producers have already merged, and currently a well-known manufacturer from Japan is completely discontinuing the production of industrial displays. This development is leading to a reduced choice with increased lead times and aggravates the long-term availability situation of displays.

Procurement channels

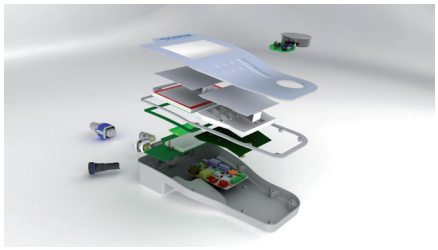
SCHURTER enables the availability of displays through a wide selection of sourcing channels. Sourcing is done both through direct access to various display manufacturers worldwide and indirectly through distributors and partners of the SCHURTER Group.
The choice of sourcing channel depends on a number of factors. For example, the project volume with cost framework, technical modifications of the displays or long-term availability regarding the application.

Long-term availability

The availability of the selected display must match the production life time span of the end-application. Especially in medical technology, a service life of at least 5 years is required. SCHURTER takes this requirement for long-term availability of displays into account with suppliers qualified for this.

Design-in

SCHURTER offers its customers the complete design package with a election of optimal displays including the control, based on each respective application. A wide range of display diagonals, formats and technologies are available.
The portfolio includes TFT colour LCD, OLED and e-paper displays and modules suitable for industrial and medical applications. Early involvement in the development process of the application and optimal selection with regard to the display are more important today than ever before.



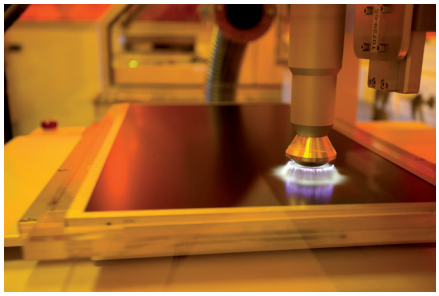
HMI unit including display - cross section

Display with front glass

Front glasses with an anti-glare surface can lead to a sparkling effect in combination with high-resolution displays with a high pixel density. To reduce this sparkling to a minimum, glasses with a special surface treatment are used. Qualification is carried out at SCHURTER with an optical sparkling measurement system and enables the selection of the optimum combination of front glass and display.

Bonding process

Due to the flexible construction of the display assembly via the airgap or optical bonding process, the displays are mechanically integrated into the application in various designs. By means of different bonding technologies, touch sensors, cover glasses and displays are connected (bonding) or laminated into one unit. Optical bonding of displays also improves and optimizes the performance characteristics of touch panels in order to adapt them to customer requirements and application conditions. In the meantime, optical bonding has become a must-have in industry and medicine as well as the most common and modern method of HMI display optimization. Bonding the display to the cover glass improves readability, increases contrast, colour brilliance and enhances mechanical robustness.



Optical Bonding process

Viewing angle

Colour fastness and good readability should be guaranteed under a defined viewing angle, regardless of the position from which the user looks at the display. Depending on the application and its requirements, the viewing angle is therefore a decisive factor in selecting the optimal display.

TFT, OLED or E-Paper

TFT displays with industrial specifications are the most widely used displays - a safe and reliable choice. They are available in a wide range.
OLED (Organic Light Emitting Diode) displays have so far been more common in the consumer market. These consist of small active LEDs printed directly onto the glass. However, OLED displays have so far only been qualified for the industrial sector in smaller diagonals. E-paper technology, often also called e-ink, is constantly being developed further. E-paper is used in various outdoor and indoor applications. For example, as a digital, static information display (e.g. timetables). The great advantage of e-paper displays is their very low power consumption.

Display interface

Every application has its own requirements for the interface to the display. Standard display controllers meet the growing demands for an efficient display solution. TFT-LCD and e-paper panels are integrated into a variety of terminals and controlled by the corresponding electronics. Various communication interfaces are supported by the standard display controller boards. The configuration of these boards is customer-specific - depending on the desired combination of input and output signals, dimensions and control voltages.

Choosing the optimal display technology

As a complete system provider, SCHURTER works with you to develop an input system that is tailored to your specific requirements. Our engineers are already involved in the development phase of an application. The design and functionality of your application will be created according to your wishes and requirements. At SCHURTER, all common display technologies and their options are available to you. Our experts will be happy to advise you on the optimum selection and integration of the display in your application.