

Flexible operating concepts for HMIs, thanks to HTML5

BRILLIANT IMAGES

For industrial machines and systems, the human-machine interface is their business card. It should have a modern look, provide data in a clearly organized form and above all, be intuitive to operate. Web panels are predestined for this purpose. They have high visualization power and, thanks to the HTML5 web standard, are also highly flexible and user-friendly.

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HMIs are used wherever people work on machines and systems - whether for visualizing, operating or monitoring. Operating comfort and safety are important factors. Multi-touch control panels enable intuitive operation, which provides a positive user experience. Frequent actions such as zooming in and out using two fingers, scrolling in lists and going to the next page by quickly swiping can be comfortably performed thanks to the projective capacitive touch technology. Important operating steps in multi-touch systems can also be safeguarded via two-hand controls. System malfunctions can be thereby avoided and greater safety ensured.

Demanding, modern (web) visualization concepts require a fluid page layout that creates a positive user experience. For this reason, Sigmatek's ETT 764, 1064 and 1264 control panels are equipped with powerful Edge3 Technology processors with four precisely tuned processor cores (4x 1.6 GHz), which deliver the necessary visualization power – with low power consumption. With 2 GB DDR4 RAM and 8 GB eMMC, sufficient memory space is available. The Web-HMIs with 7-, 10.1- or 12.1-inch widescreen Multi-touch displays convince with a modern design, IP65 protection and low installation depth. OPC UA capability and many standard interfaces such as 2x Gigabit Ethernet, 2x USB 2.0, Type A, 1x USB 2.0 Type Mini-B OTG, as well as 1x microSD card slot (SD 3.0) ensure simple connection of the web panels.

For Mobile Application

A handheld operating device makes sense for complex machines and systems, and interacting with robots whereby the operator changes his position more frequently.



High-performance processors and multi-touch displays provide high operating comfort with Sigmatek panels

The machine/robot operator can intervene in the operation of the application directly on-site. The HGT 1053 mobile operating panel comes with a high-resolution 10.1-inch multi-touch display in portrait format (WXGA 800 x 1280px) and is also equipped with an Edge-3-Technology quad-core processor – the best conditions for demanding web visualizations. With the OPC UA-capable handheld panel, it is possible to operate, test, service and teach machines, systems and robots on-site. The integrated safety elements – emergency stop button, 3-stage confirmation switch and key switch – provide safety for the user and machine (SIL 3, PL e). Communication is established over Gigabit Ethernet.

Software and Hardware go Hand in Hand

For modern operating concepts, the hardware is only half the battle. Flexible software, which enables efficient application design and easy reusability, is at least equally important. This allows customer-specific machine software to be quickly programmed or configured in different variations. Engineering times and therewith, time-to-market are reduced.

These benefits are combined in the object-oriented engineering environment LASAL. In the HMI tools LASAL Screen and the web-based VisuDesigner, modern visualization concepts can be comfortably implemented in the graphical editor without programming. With current web technologies such as HTML5, CSS3 and JavaScript, complex and demanding visualization projects can also be very flexibly configured in the LASAL VisuDesigner. The modern HMI tool is

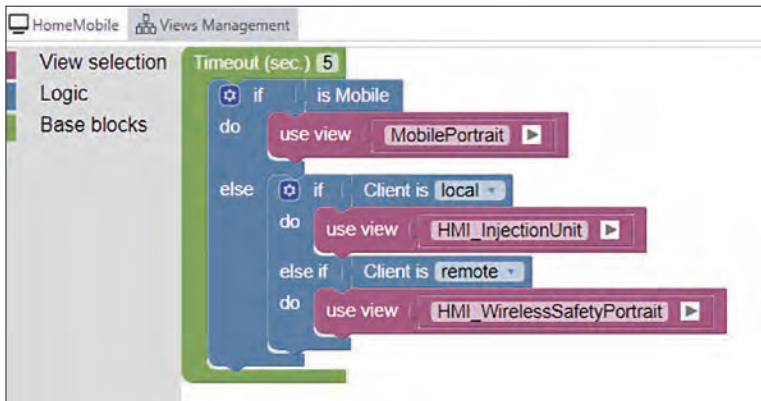
constructed as a modular toolkit. In the LASAL VisuDesigner, scalable vector graphics (.svg) can be used. This allows easy adaptation to different screen formats and makes it easy to create a visualization solution with variations for different target devices.

QUICKINFO: LASAL VISUDESIGNER



With current web technologies such as HTML5, CSS3 and JavaScript, even complex visualization projects can be configured and designed flexibly and user-friendly with LASAL VisuDesigner. The HMI tool is characterized by the following features:

- Hardware-independent visualization design without programming knowledge
- Fluid visualization thanks to optimized browser
- Modern design themes and library of operating elements
- Open source controls provide freedom to individualize
- Integration of animation, video and audio files



Graphical logic editor view in the Views Management of the LASAL VisuDesigner

It provides specialists with complete freedom to use web technology. Individually designed graphics, controls, animations and videos can be easily integrated.

The graphic interface is designed and configured in the fully graphical editor with intuitive operation. This follows the “What you see is what you get” principle. Visualization developers can see the screen mask in progress in the online preview as it will be later displayed. They can use web technologies in the LASAL VisuDesigner, but do not need to master them. Modern design themes and predefined display- and control elements simply work. The extensive library contains buttons, sliders or menus, as well as frequently required functions such as those for trend display or recipe management.

Content and layout are deliberately kept separate. The logic behind the graphic elements can also be created in a graphical Logic editor without in-depth programming knowledge. It is simply assembled from puzzle-like elements (function blocks). Optics and functions are connected via simple referencing in the graphical editor. This separation of content and appearance of the visualization solution allows the user to create visualization projects in many display variations.

Different Devices, Different Expertise

It is increasingly important for machine manufacturers to precisely determine the size and positioning of all elements used in their operating concepts. When the layout is transferred to other aspect ratios, these must be located in a precisely defined position. With LASAL from SIGMATEK, not only can the resolution and aspect ratio of HTML5 applications be easily adjusted, but the “View” option can also be flexibly defined.

Depending on whether the machine is accessed on-site or remotely, which end device is used and the access rights as well as the operator’s expertise, the appropriate landing page with the corresponding rights can be stored in the “Views-Management”.

In the LASAL VisuDesigner’s “Views Management”, the conditions under which a view should be loaded can be defined in the graphically programmed logic. The dashboards can also be designed for a special view. The view itself thereby determines which dashboard it contains.