Always fits: The TX700 is available with 5, 7, 10, 15 and 21 inch screen diagonals

Retrofit for Industry 4.0

The new TX700 HMI/PLC generation combines established interfaces and machines with the production of the future

Multilingualism and translation expertise are also increasingly valued and required in the world of industrial automation. Modern languages and protocols such as OPC UA are required in order to retain connectivity for networking machines with office IT networks or cloud services,. However, nobody will sell their existing machine park just because it would be useful to remotely diagnose problems in their own production facility. Why should a working valve block or an industrial printer be removed just because of its outdated RS232 interface? That is neither efficient nor necessary. Smart automation does not mean ripping

QUICK READ

The new generation of the TX700 HMI/LC series can control and visualize even more complex processes and applications than before. Thanks to several interfaces and an integrated OPC UA server, the device generation is well set for the future of automation. The TX700 particularly enables customers looking for a versatile controller that is suitable for use in different applications to keep their stock at manageable levels. Users requiring elementary display devices without a control function will also find a solution in the devices of the TX100 series.

levels, temperatures or pressures can be displayed as required. The display of histograms or any maintenance work due increases the availability of a machine without the use of any elaborate concepts for predictive maintenance.

The interfaces of the TX700 also follow this strategy: Keeping what's been tried and tested and opening it for modern automation concepts. As already the case with the TX500 series, the TX700 series come as standard for use also as a master in Profinet, Ethernet/IP, Modbus TCP, Modbus RTU and CANopen networks without any additional licensing requirements. It can also be used as a slave in both Modbus networks.

Three Ethernet ports, a serial interface, two USB ports and an SD card slot are provided as physical interfaces. Thanks to the three Ethernet ports, different Ethernet communication to the corporate network or cloud services can be physically hard separated from the realtime communication with I/Os in machine and plant networks. The three RJ45 sockets are also useful for connecting a maintenance PC or establishing a switch for linear topologies by bridging two ports. The TX700 is available with 5, 7, 10, 15 and 21 inch screen diagonals.

Increased performance for demanding processes
Unlike the predecessors of the TX500 series, the TX700 devices run on a real-time Linux operating system instead of the Windows Embedded platform. This releases additional performance, which in conjunction with the increased processor performance enables applications with more complex visualizations and many stations in the Ethernet network to be implemented. The glass display is provided with a capacitive touch functionality and gesture control with swipe and zoom operation. Most users will not want to change the standard gesture control features to ensure intuitive device operation. However, this can be modified at any time during programming if required.

IoT gateway on board
Besides the increased performance, the TX700 offers a decisive benefit. In addition to its use as a PLC and HMI, users can also deploy the devices as an IoT

out all proven equipment from the halls, but enhancing tried and tested equipment with the benefits and extras of modern systems.

Proven components for modern automation
Existing actuators and mechanical components often continue to be used in retrofit projects and are upgraded with modern sensors and control technology. For example, modern HMIs can thus be used to replace basic pushbutton actuators and custom-built control panels. The TX700 HMI/PLC series is particularly used in these kinds of retrofit projects. Compared to basic pushbuttons and analog controllers, the touch display increases control flexibility for machinery. The direct visual feedback increases user-friendliness and enables additional data to be displayed in the field: Fill

More interfaces than an internet cafe: The TX700 can be used as a master in five networks. As a slave or server it supports Modbus TCP and RTU as well as OPC UA

gateway. This is made possible by the integrated OPC UA server that enables the transfer to higher-level systems. This simplifies the monitoring of machine states and processes via cloud services right through to data evaluation for predictive maintenance.

The connection to Turck's proprietary Turck cloud will be made even simpler in future. Values and variables for transfer to the cloud can then be defined via check boxes in Codesys. The Kolibri encrypted protocol makes the transfer to the Turck Cloud Solutions particularly secure. Anyone wishing to use the MQTT protocol for transferring their machine data to a different cloud can already purchase ready-to-use MQTT function blocks for Codesys and also use these on the TX700.

Remote maintenance saves nerves – and travel expenses
The TX700 devices can be easily configured via the system settings menu. External tools are not required. However, the system settings menu can also be opened via a browser on a PC. This enables the settings to be carried out conveniently via the mouse and keyboard. The integrated VNC server is another remote option. It can also be used to mirror the screen content of the TX700 with a VNC client on a PC. In this way, the entire HMI can be operated remotely. This option is particularly useful for support tasks for maintaining machines remotely. With an additional web visualization it is also possible for user groups other than the machine operator to display those graphics and visualizations that are important for them. Whether it is for management, work scheduling or maintenance – each user group has its own specific questions for a machine, which can be answered quickly with customized views for each group.

Codesys 3: Flexibility for PLC programmers
Like their predecessors, the TX700s use a Codesys 3 controller for programming the PLC functionality.

Codesys is widely used by many PLC programmers because the PLC software is designed as an open community solution, enabling all users to benefit from the experience of other users via the Codesys forums and free OSCAT libraries.

Anyone not wishing to design their visualizations with Codesys TargetVisu can switch to Turck's alternative TX VisuPro visualization editor at any time and at no extra charge. TX VisuPro is a state-of-the-art software package to develop modern and user-friendly graphical user interfaces. It supports a wide range of drivers which also enable connection to the controllers of many other manufacturers including for example Siemens, Beckhoff, Rockwell or Schneider. OPC UA is also integrated, both as a server and as a client. The HMI displays with TX VisuPro can also access the data of several different controllers. Depending on the device, up to eight communication relations can be established simultaneously. In this way, several plant and machine components with their own controllers can be combined and displayed on a central HMI. The web visualization function is also possible with TX VisuPro.

Conclusion
The TX700 cannot be put easily into a particular box. It is always a case of "not only but also" and never "either or". The device can be used both a PLC and HMI, both for established protocols as well as for modern Ethernet networks. It is both available in the five inch smartphone format as well as in the PC 21 inch format. The device can particularly help customers today using different types of PLCs and HMIs to effectively reduce the number of devices to be kept in stock.

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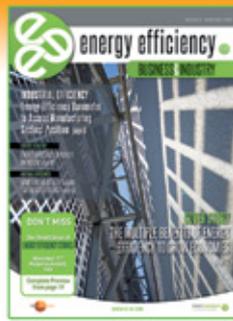
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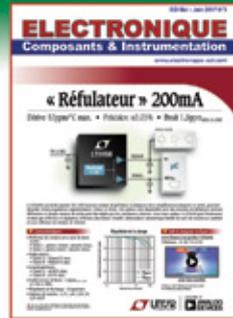
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