ADLINK
LEADING EDGE COMPUTING

HMI Integrating PLC Accelerates the Digital Transformation of Smart Factories



PanKonix All-in-One Panel PC integrates PLC, EtherCAT, and IoT connectivity



SuperCAT

Use Case

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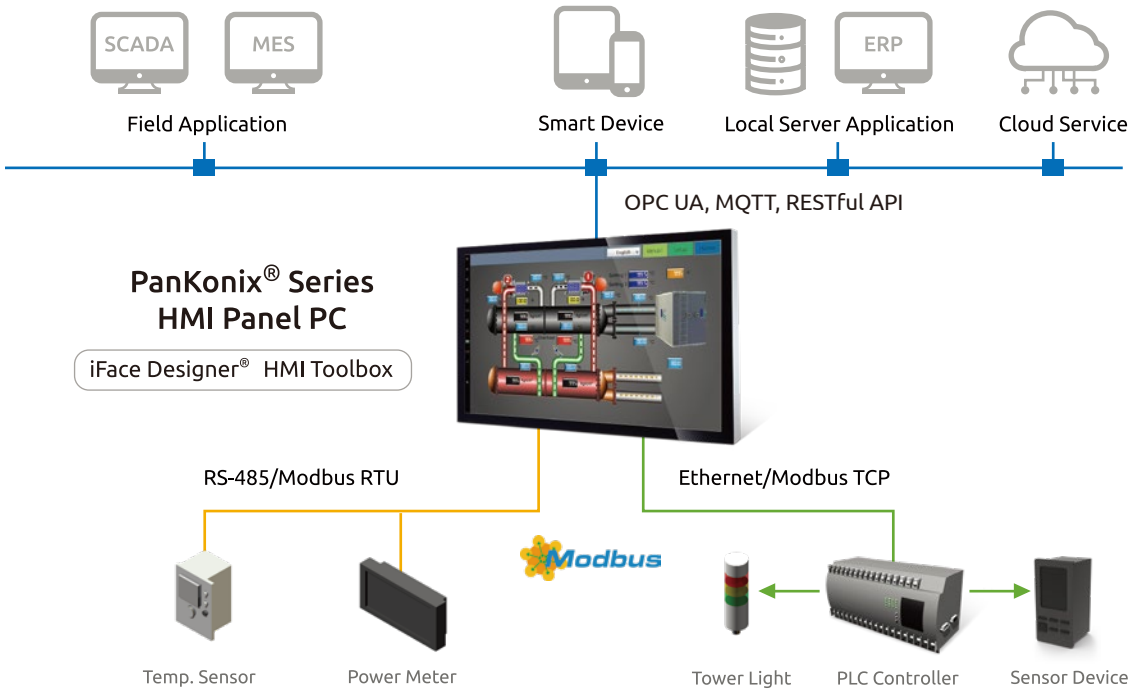
HMI Integrating PLC Accelerates the Digital Transformation of Smart Factories

In the current field of automation applications, Programmable Logic Controllers (PLCs) and Human Machine Interfaces (HMIs) are the two most important devices. As smart factories become more common, the first step to achieving IIoT is to visualize the information of PLC devices on the HMI for production machinery. However, upgrading production equipment to digitalization faces various challenges, such as the lack of automated data acquisition and anomaly reporting functions in production machinery, difficulties in communication across different communication protocols, user-unfriendly HMI operations, and labor-intensive and time-consuming development for diverse motion control applications.

Therefore, addressing the different scenarios commonly found in factories, integrating the PanKonix series of HMI touch panel computers with networking, display, and motion control capabilities provides corresponding advantages, assisting customers in upgrading equipment more effectively and quickly.

Scenario 1: Bridging IT to OT, Customizable Smart Factories

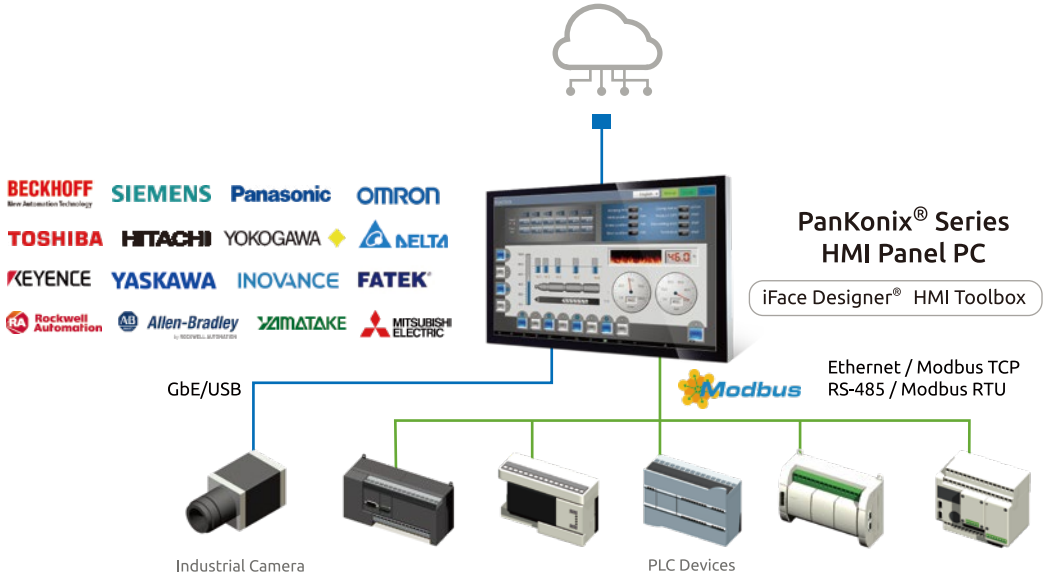
PanKonix enables Modbus communication for data transfer between devices like PLCs, motion controllers, and HMIs. It supports OPCUA and Restful API, connecting machine data to the cloud. This integration connects MES, SCADA, ERP, and cloud applications, reducing development time for IT personnel. It also allows remote monitoring via mobile devices, sending alerts to maintenance staff during equipment anomalies, minimizing downtime losses. The fusion of OT and IT enables intelligent upgrades for an entire factory.



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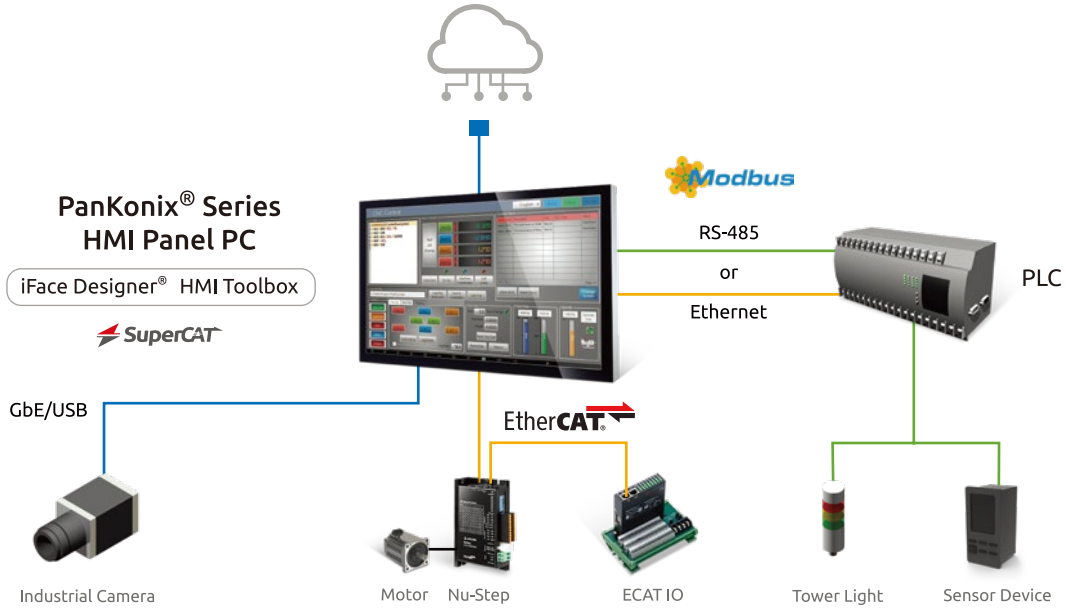
Scenario 2: Equipment Status Visualization

PanKonix supports the Modbus standard and is compatible with various PLC brands such as BECKHOFF, SIEMENS, TOSHIBA, and OMRON, among others. This allows for real-time data exchange and visualization, enabling clear visibility of equipment status. It also facilitates the effective extraction of OEE production data, enhancing machine performance.



Scenario 3: Integration of Advanced Motion Control

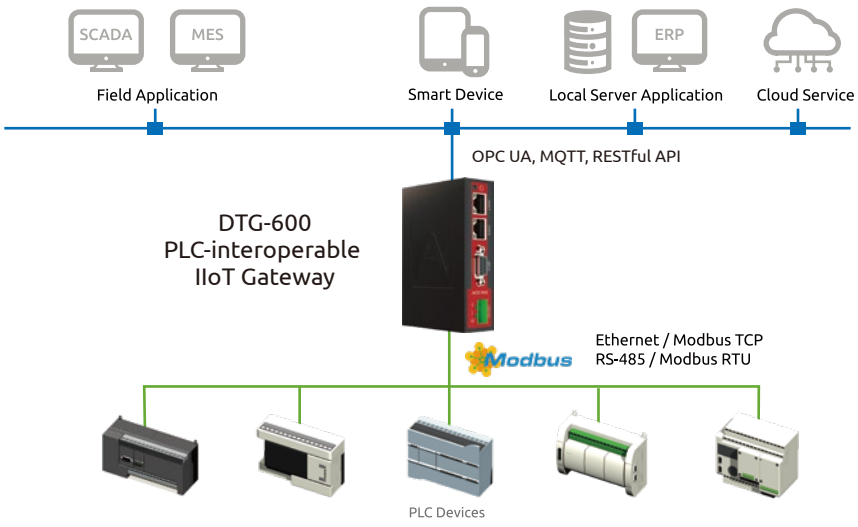
PanKonix incorporates ADLINK's SuperCAT EtherCAT motion controller, eliminating the need for additional high-end controllers in PLC systems. It enables command transmission to various EtherCAT motor drives without extra cost. PanKonix also supports ECAT IO for connecting multiple EtherCAT IO devices, offering precise motion control with a 125μs control cycle and support for up to 128 axes. Additionally, it supports Modbus TCP/IP, allowing industrial cameras to be connected via GbE/USB for real-time imaging and visual integration on the production line.



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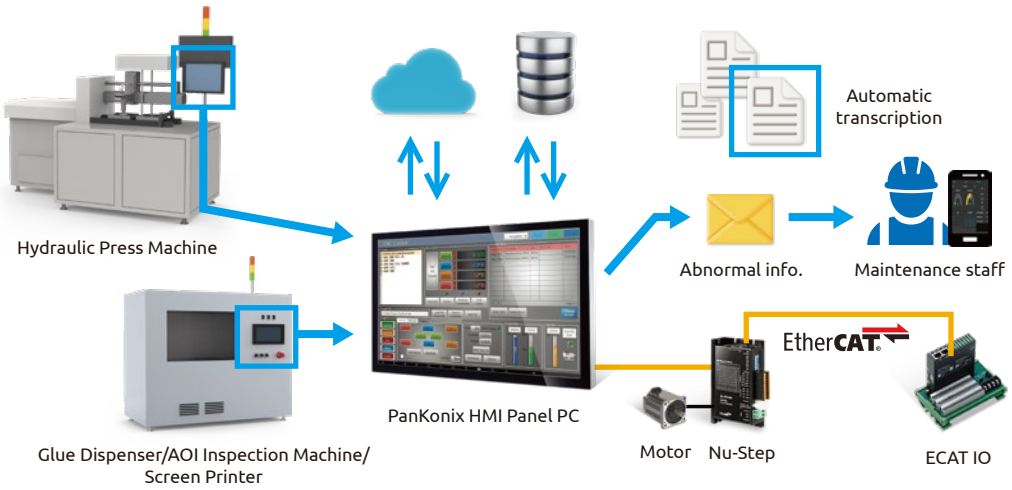
Scenario 4: Digitizing Upgrades through Ready-to-Use IIoT Industrial Gateways

When a factory already has a Human Machine Interface (HMI) but requires equipment networking capabilities, the ADLINK PLC-interoperable IIoT Gateway can provide point-to-point Modbus communication, ensuring extensive compatibility with various PLC brands. Additionally, it offers OPC UA, MQTT, and RESTful API, enabling seamless transmission of continuous data, such as temperature, humidity, pressure, power, and water level, to cloud services.



PanKonix HMI Panel PC Enables Successful Digitization of Production Equipment for Customers

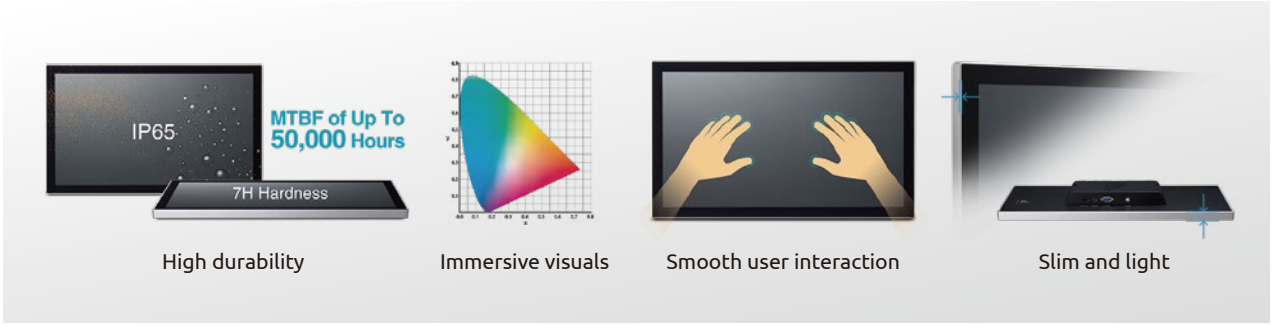
ADLINK facilitates digital transformation for electronic equipment manufacturers with the PanKonix series. This solution connects PLC and PC systems, enabling the simultaneous integration of various equipment, from punch presses to printing machines and AOI inspection machines. PanKonix not only connects existing PLC equipment but also visualizes data, captures production messages, and sends them to the cloud. It seamlessly integrates with EtherCAT motion control systems, eliminating the need for additional controllers, boosting manufacturing efficiency. This cost-effective solution provides fast data access, collection, edge analytics, anomaly notifications, cloud synchronization, and machine-to-machine communication. It enables real-time monitoring of on-site environmental parameters in data centers, leading to improved production information access and the achievement of IIoT objectives.



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PanKonix HMI Solution Key Features:

- Equipped with Intel® Core™ i3-7100U/i5-7300U/i7-7600U processors
- Supports OPCUA, MQTT, and RESTful API for easy implementation of IoT applications
- Supports Modbus and CANopen communication protocols for data exchange with PLCs and network cameras
- Built-in SuperCAT software-defined EtherCAT controller, providing 125μs, up to 128-axis motion control, and supporting APS function library
- Automated production data interpretation and abnormal alarm notifications to facilitate quick troubleshooting
- Utilizes high-quality AUO Display+ 10.1", 15.6", and 21.5" 16:9 LCD panels, suitable for various production scenarios
- IP65-rated waterproof, dustproof design with 50,000-hour LED backlight for stability and reliability
- Supports various installation options, including wall- mounting, VESA mounting, and desktop stand
- Offers flexible customization of IO configuration with multiple IO modules to meet diverse vertical application requirements
- Supports 10-point PCAP multi-touch technology for an excellent and smooth operating user experience



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