Smart HMI Solutions

Intuitive Machine Visualization with WOP Series & HMINavi Software

Vertrieb durch AMC

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HMINavi

AMC

ADVANTECH iAutomation
Premier Partner

ADVANTECH
Enabling an Intelligent Planet

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Smart HMI Solutions -
Elevating Industrial Automation

Advantech's Smart HMI solution, embedded within WOP series operator panels and powered by HMINavi software, is engineered for the intricate demands of industrial automation. In the heart of modern manufacturing, from the rigorous environments of automotive assembly lines to the meticulous processes in pharmaceutical production, this solution is designed to enhance operational efficacy and adaptability.

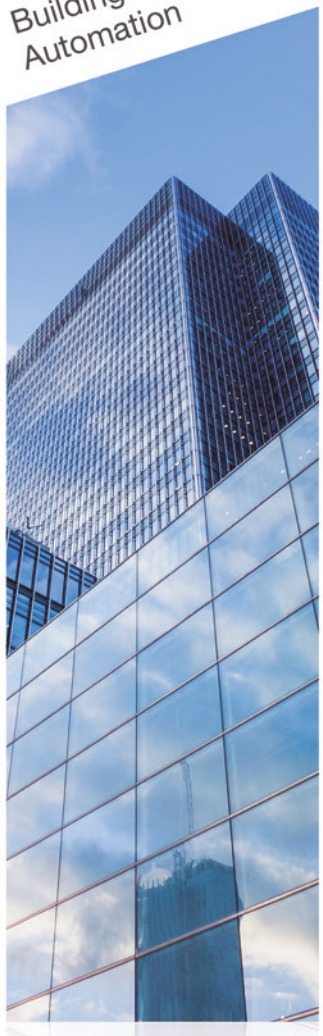
Industrial applications are complex and varied – they range from managing the high-speed precision of packaging machinery to maintaining the critical environmental conditions in food & beverage production. The WOP series panels provide a sturdy and reliable interface that stands up to the challenges of these diverse industrial settings, offering seamless integration with a wide range of programmable logic controllers.

WOP Series

HMINavi

On the software side, HMINavi bridges the gap between complex machinery and the user, delivering an intuitive experience even in scenarios involving intricate data streams and requiring split-second decision-making. It's more than an interface; it's a comprehensive visualization tool that offers data management, alarm monitoring, and detailed analytics, empowering industries to step into the realm of smart manufacturing.

Whether it's ensuring the safety and compliance in pharmaceutical labs or achieving the fine balance of efficiency and quality in food processing, Advantech's Smart HMI solutions provide the necessary tools for businesses to optimize their operations, ensuring that they not only keep up with industry standards, but set new benchmarks for innovation and productivity.



Controller Connectivity

Equipment Monitoring

Process Visualization

Data Management

Cloud & DB Data Sharing

Domain Focus Integration


IT System
ERP
SCADA
Data Base
ADVANTECH
WISE-IoT
amazon web services
Microsoft Azure
Alibaba Cloud
HMINavi

HMINavi

Revolutionizing Intuitive Machine Visualization with Advanced HMI Software

HMINavi stands out as a comprehensive open HMI software, equipped with an HMI Runtime Engine tailored for streamlined HMI operations. The software includes the HMINavi Designer, an engineering tool known for its user-friendly interface, which provides solution-oriented screen objects designed to simplify HMI project development. This powerful software is engineered to facilitate intuitive machine visualization, making it easier for users to manage and optimize industrial processes effectively.

Revolutionizing Intuitive Machine Visualization with Advanced HMI Software

HMINavi can connect to 90% of global PLC devices. The data exchanger function can easily exchange various types of PLC data. Its powerful connectivity makes HMINavi a perfect fit for existing or future IoT solutions

Attain Effortless Cloud Access via the MQTT Protocol

HMINavi simplifies OT & IT integration using the latest MQTT uplink communication protocol. Users can effortlessly transform legacy machinery into intelligent systems, with all critical data and backups handled by cloud services.

Simplified 3-Step PLC Controller Integration

1 Create a Project & Link

- Initiate a new project and create a new link.
- Select the connection type (Serial/Ethernet).

2 Select your PLC Model

- Choose the PLC brand.
- Select the PLC type/model.

3 Parameter Setup

- Configure baud rate transmission.
- Set up the IP address/port/sub-link.

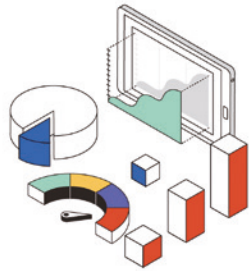
/ Comprehensive Visualization Functions

Object-Oriented

- Switch Button Object Unit
- Unlimited Internal Tags
- Schedule Table Control
- Macros Script Control
- Data Exchange
- Uplink Communication

Data Visualization

- Lamps Display
- Data Historic Curve & Trend
- Single Record Line Chart
- Historic Path Trend Graphic
- Bar Chart Display
- Animated Graphic
- Bar Graphic Display
- Meter & Circular Display
- Pipeline Display
- Path Display
- Rotation Indicator
- Historic Radar Chart



Data Management

- Alarm Management
- Historical Data Logger
- Operation Data Logger
- Recipe Management
- Documentation CSV Format
- Documentation PDF Format

Security Protection

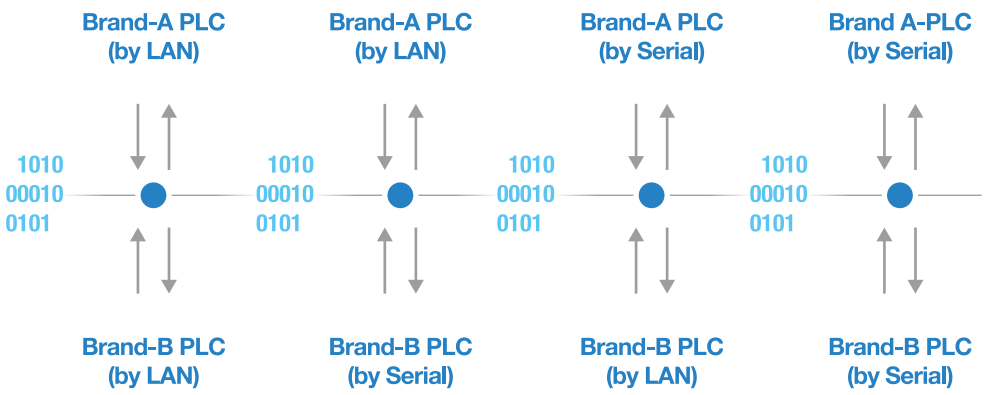
- Project File Protection
- Screen Protection
- Due Date Protection
- Runtime Load Protection
- User Level Protection
- User Group Protection

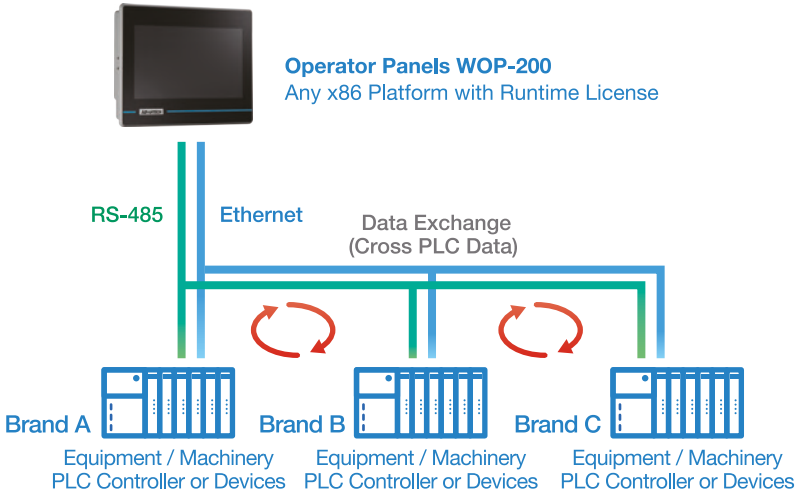
Data Exchange

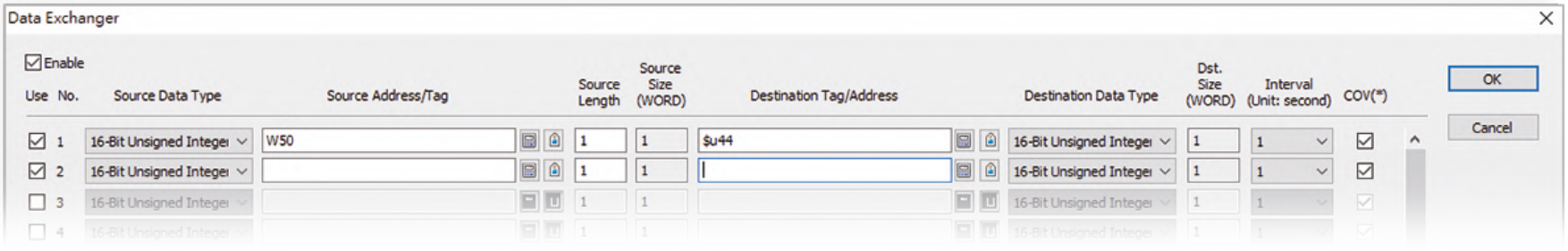
- Breakpoint Resume
- OPC UA Server/Client
- VB Script User Coding
- JScript User Coding
- Browser/Media Container
- Database Connection

Streamlined Data Exchange Functions for Multiple Controllers

- Efficient management of up to 64 data exchange settings
- Direct modification of specific data zones with real-time value changes

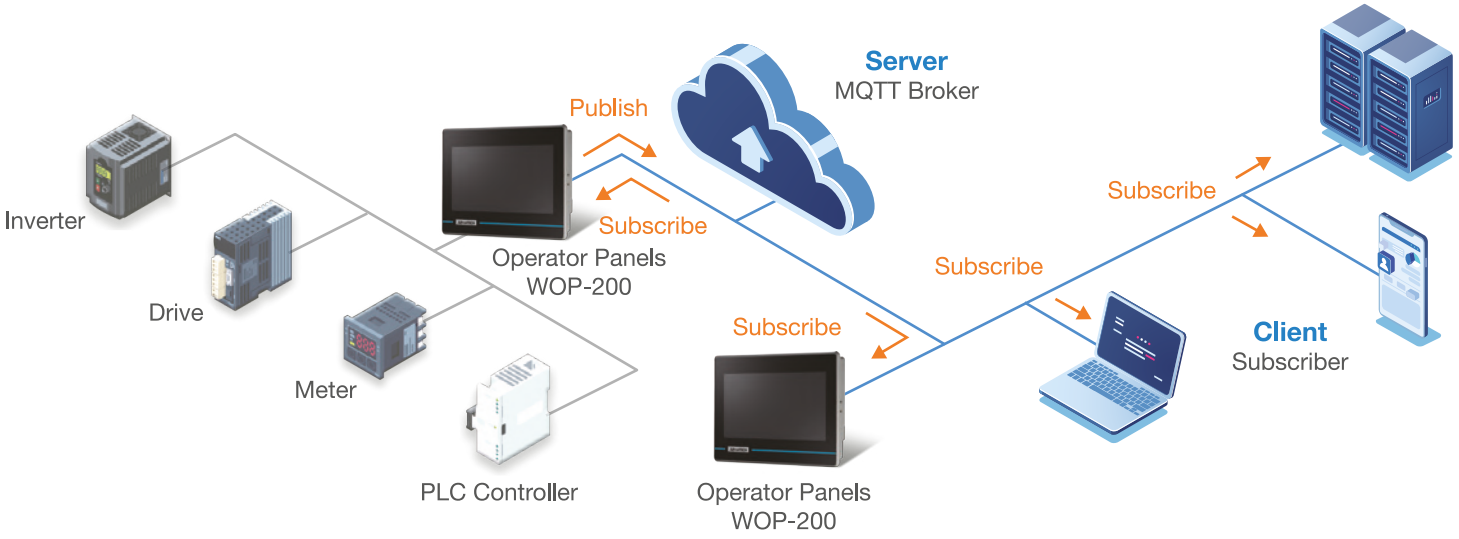


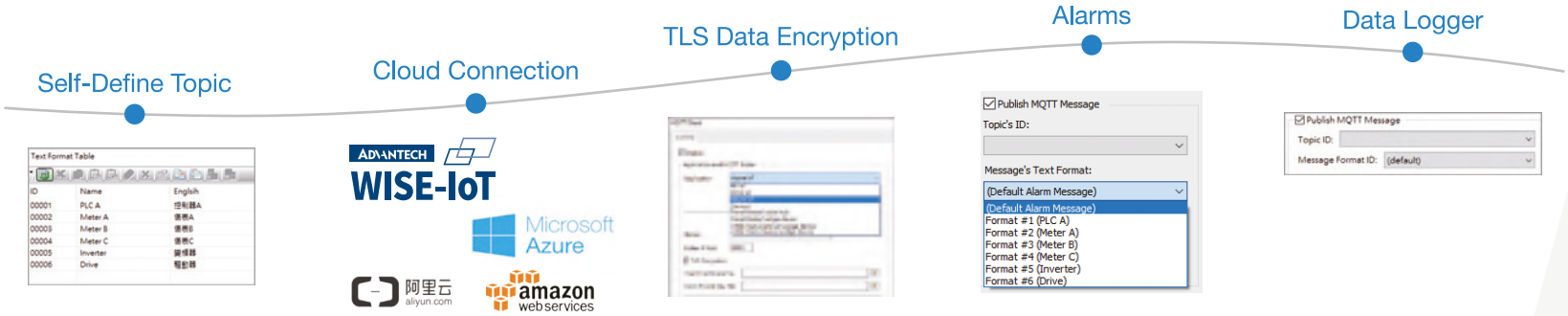




Empowering IoT Connectivity with MQTT Uplink Communication

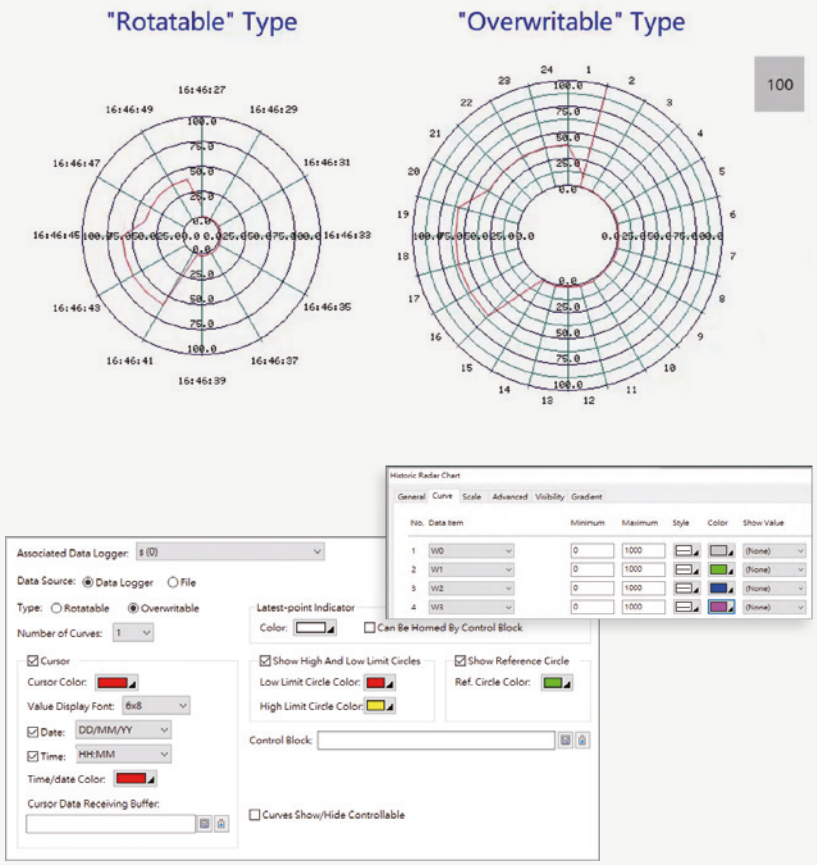
- Seamlessly transmit data to the cloud via MQTT protocol
- Facilitate IoT integration with efficient messaging and data exchange protocols

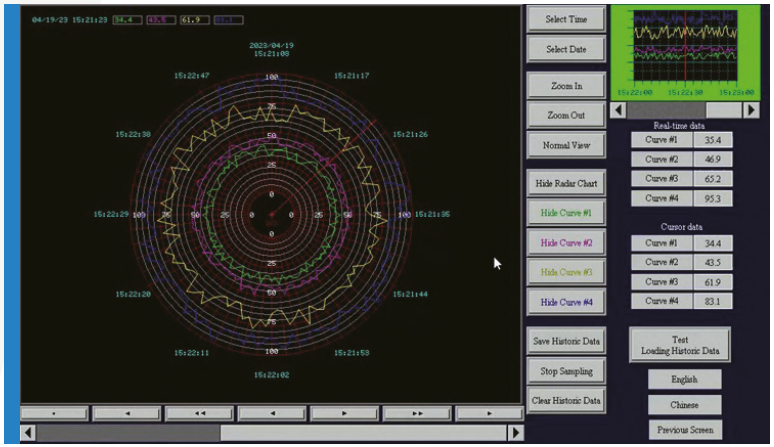




Historic Radar Chart Functionality for Data Visualization

- Utilize historic radar chart settings and functions for comprehensive data analysis
- Display up to 16 trend curves for in-depth trend analysis
- Features include cursor line selection for specific time data, zooming capabilities, and dynamic curve hiding



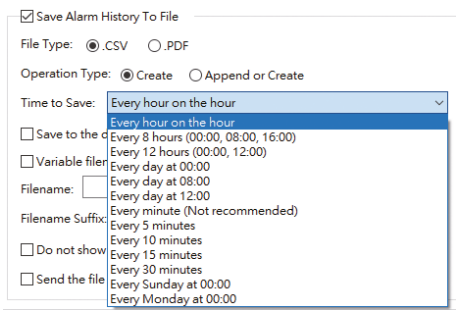


Applied in machinery for true roundness display in vulcanization machinery for rubber industry and tire manufacturing.

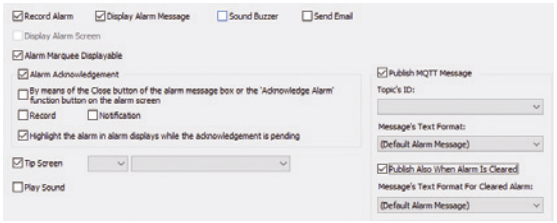
Advanced Alarm Monitoring for Enhanced Equipment Management

- Access powerful settings and functions, including up to 128 alarm blocks, for advanced machinery oversight
- Monitor a wide range of alarms, with 64 discrete and 64 analog alarm blocks, ensuring thorough equipment surveillance
- Record up to 8 specified data items for detailed monitoring, enhancing analysis and troubleshooting capabilities

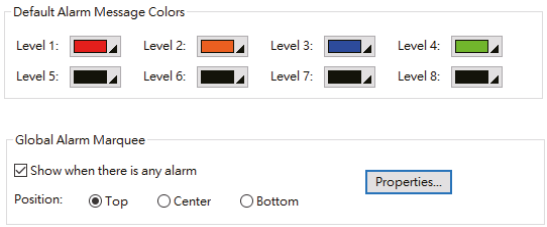
Archive alarm history to file for reference

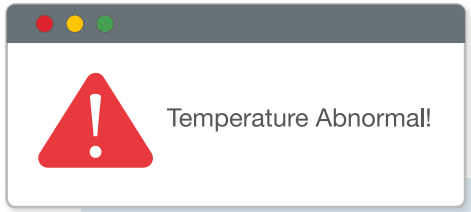


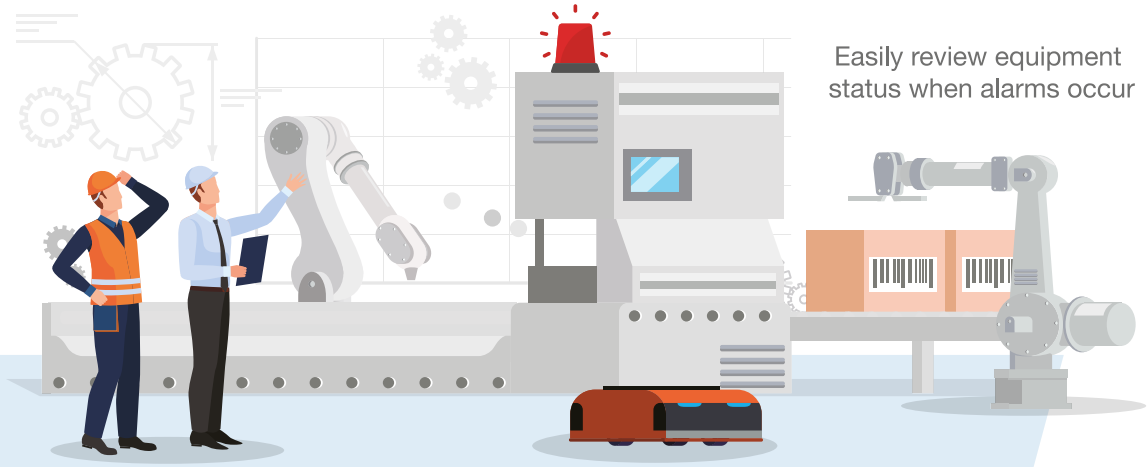
Receive alarm notifications via email or MQTT message publication



Customize Alarm Display Screens for User Preference



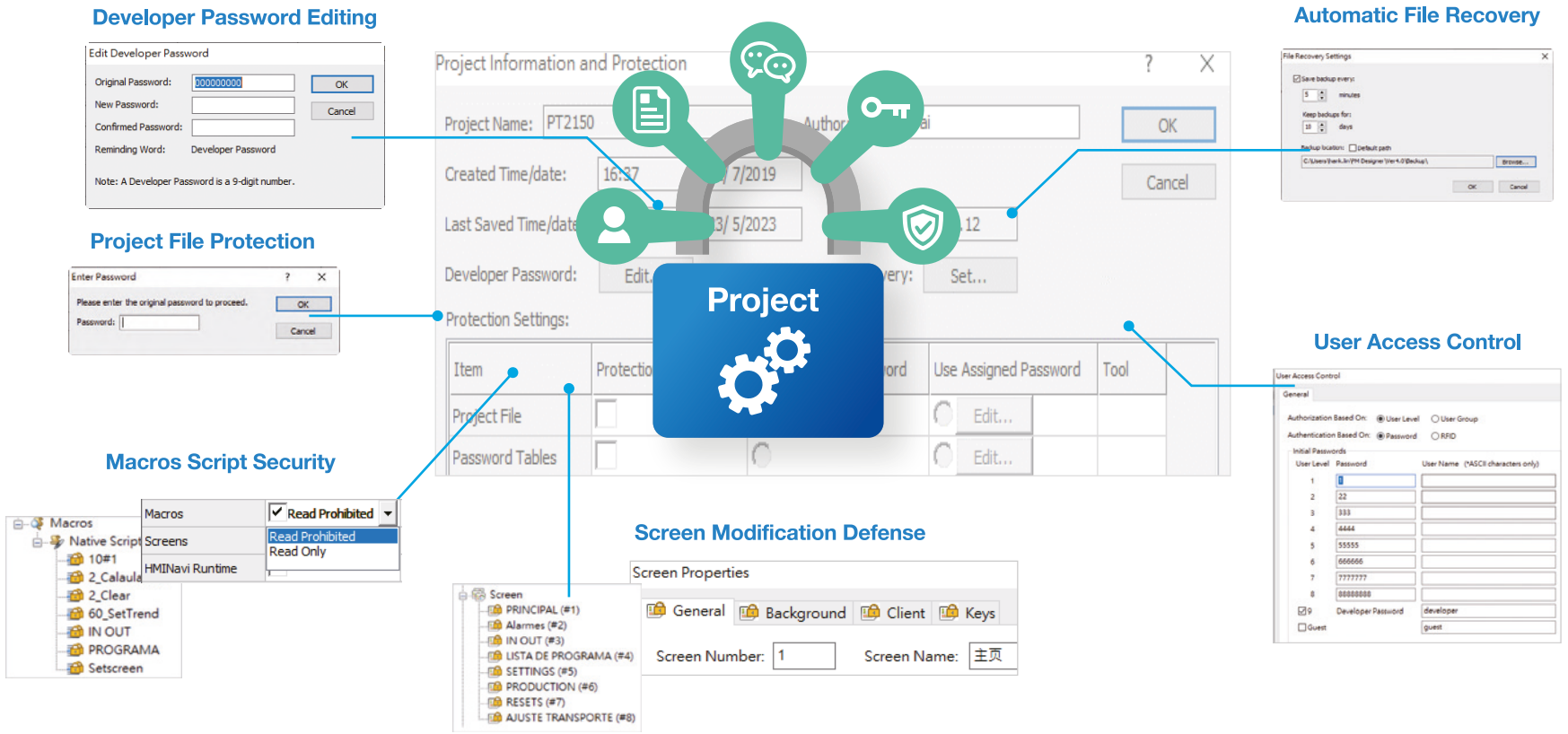




Easily review equipment status when alarms occur

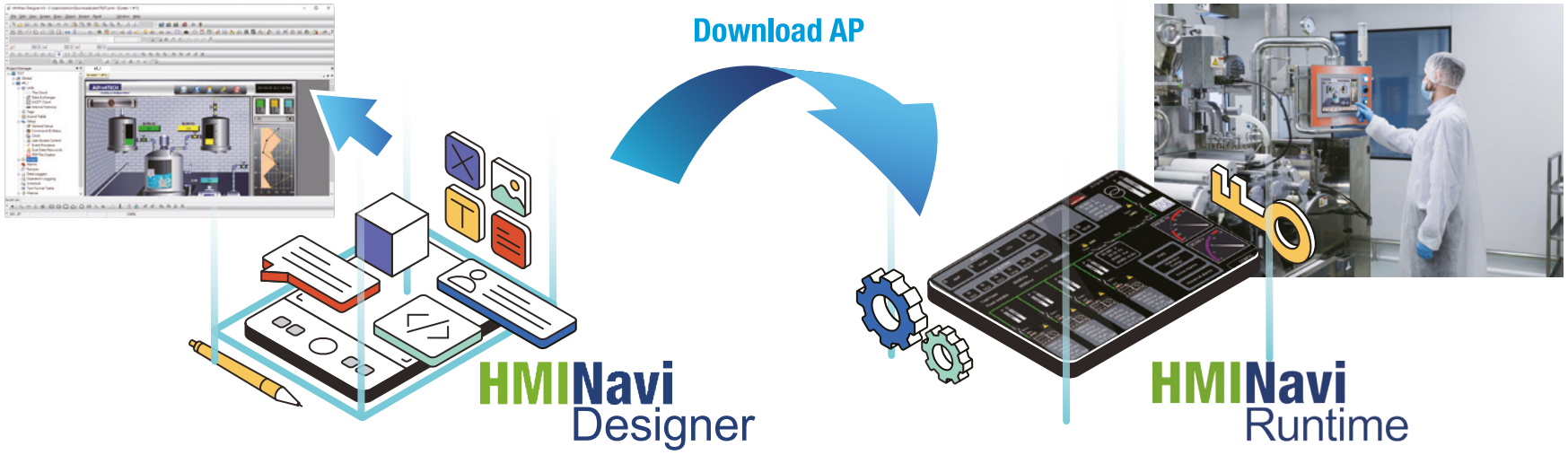
Reliable Security for Project and Screen Protection

- Safeguard software development projects with cutting-edge file protection features
- Use the "Project Information & Protection" dialog to set passwords for files, screens, and tables
- Ensure confidentiality and integrity by securing global macros with password protection



Engineering Design Tool & Runtime Engine

HMINavi stands as a potent Open HMI software, integrating an advanced HMI Runtime Engine for seamless operation. Complemented by the HMI Designer Tool, featuring an intuitive interface and solution-driven screen objects, it facilitates smooth HMI project development.



HMINavi Designer

Intuitive Interface Development Software

- Free for all users
- Compatible with Windows 7/10
- Supports 500+ communication protocols and drivers for industrial devices
- Multilingual support (up to 10 languages)
- Offers over 60 types of application objects

HMINavi Runtime

Operating Engine Software

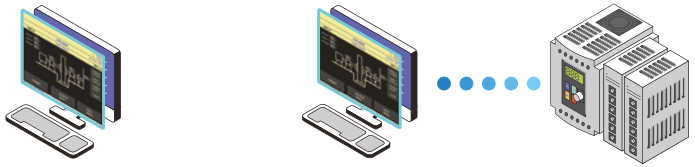
- Free for all WOP series operator panels; others require a runtime license
- Compatible with any x86 Windows platform
- Connection of multiple WOP operator panels
- Present on large split-screen LCD displays
- Integration with 3rd party software programming

Validate Your Project with HMINavi Designer Offline and Online Simulation Testing

- Ensure accuracy of all settings and designs
- Streamline controller communication for optimal performance
- Translate macros into executable code
- Navigate to program lines by clicking on fault messages
- Verify designs before purchasing a license

Unlock 60 Minutes of License-Free Work

Offline Simulation **Online Simulation**



Exceeded the 60 minute limit?

Simply re-engage the simulation function to access another 60 minutes of simulation work.

Download HMINavi for Free

WOP-200 Series

Comprehensive Smart HMI Panels for Industrial Automation

The Advantech WOP-200 series features robust operator panels that integrate seamlessly with HMINavi software to support over 500 PLC protocols. This compatibility enhances connectivity across various sectors, including manufacturing and pharmaceuticals. The panels provide advanced visualization and real-time data monitoring with user-friendly interfaces, improving process efficiency and control. Ideal for upgrades or new installations, the WOP-200 series offers a reliable and intuitive solution that boosts industrial productivity.

Exceptional Connectivity

Comprehensive links between PLCs with easy access to the cloud

Intuitive Visualization

Object-oriented HMI Software HMINavi free support in WOP series operator panels

Reliable Design

WOP series boasts wide operating temperatures and an IP66-rated front panel

WOP-200K Series

General Operator Panel Installed with HMINavi

6 sizes: 4.3/ 7/ 8/ 10.1/ 12/ 15”
Safety certification UL 61010
-

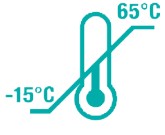
WOP-200T Series

Advanced Operator Panel Installed with HMINavi

2 sizes: 7/ 10.1”
Safety certification UL 61010 & CID2
Modular I/O expansion

Conformal coating mother boards increase 80% lifecycle

IP66-rated waterproof front panel



-15 ~ 65°C wide operating temperature

Safety certification UL 61010-1 & UL 61010-2-201

Isolation power input design and 20W low power consumption

Reliable Real-Time OS Reduces Security Issues

Selection Guide




Model		WOP-204K-NAE	WOP-207K-NAE	WOP-208K-NAE	WOP-210K-NAE
CPU		RISC ARM9 300 MHz 32-bit			
Backup Memory		128 KB			
Backup Battery: Type/Voltage/Capacity		Manganese dioxide–Li/Organic Electrolyte, 3 V, 650 mAh			
Working Memory		64 MB SDRAM			
Storage		128 MB NAND Flash			
Application Software	Operating System	HMI RTOS, HMINavi Designer V4.0			
	Runtime Max Size	64 MB (in NAND Flash)			
	Data Logger Max Size	64 MB (in NAND Flash)			
	Max Programming Screen	7999 Pages			
	Max Macro Commands	Unlimited			
Display	Type	WQVGA TFT LCD	WVGA TFT LCD	SVGA TFT LCD	WSVGA TFT LCD
	Size	4.3"	7"	8"	10.1"
	Max. Resolution	480 x 272	800 x 480	800 x 600	1024 x 600
	Max. Colors	65,536 colors (16-bit)			
	Luminance (cd/m²)	400	400	250	350
Touchscreen		4-wire analog resistive			
Communication Interface	COM1	RS-232 (5-Pin Terminal)	RS-232 (DB9 Female)	RS-232 (DB9 Female)	RS-232 (DB9 Female)
	COM2	RS-422/485 (5-Pin Terminal)	RS-422/485 (DB9 Female)	RS-422/485 (DB9 Female)	RS-422/485 (DB9 Female)
	COM3	RS-485 (5-Pin Terminal)	RS-485 (DB9 Female)	RS-485 (DB9 Female)	RS-485 (DB9 Female)
	Ethernet (RJ-45)	10/100-Base-T Ethernet	10/100-Base-T Ethernet	10/100-Base-T Ethernet	10/100-Base-T Ethernet
I/O	USB Client	✓	✓	✓	✓
	USB Host	✓	✓	✓	✓
	Power Isolation	✓	✓	✓	✓
Power Supply Input Voltage		24 V_{DC} ± 10%			
Power Consumption		10 W	20 W	20 W	20 W
Reliability Certification	Operating Temperature	-15 ~ 65°C (5 ~ 149°F)			
	Humidity	95% RH @ 40°C			
	Vibration Protection	5 ~ 500 Hz (X, Y, Z directions, 1 Grms, 1 hour per axis)			
	Ingress Protection	Front Panel IP66			
	CE, EMI, UL	EN 61000-6-2, EN 61000-6-4; FCC Part 15 Class A; UL-61010-1, UL-61010-2-201			




Model		WOP-212K-NAE	WOP-215K-NAE	WOP-207T-NAE	WOP-210T-NAE
CPU		RISC ARM9 300 MHz 32-bit		RISC ARM9 300 MHz 32-bit	
Backup Memory		128 KB		1 MB	
Backup Battery: Type/Voltage/Capacity		Manganese Dioxide–Li/Organic Electrolyte, 3 V, 650 mAh		Manganese Dioxide–Li/Organic Electrolyte, 3 V, 650 mAh	
Working Memory		64 MB SDRAM		128 MB SDRAM	
Storage		128 MB NAND Flash		128 MB NAND Flash	
Application Software	Operating System	HMI RTOS, HMINavi Designer V4.0		HMI RTOS, HMINavi Designer V4.0	
	Runtime Max Size	64 MB (in NAND Flash)		64 MB (in NAND Flash)	
	Data Logger Max Size	64 MB (in NAND Flash)		64 MB (in NAND Flash)	
	Max Programming Screen	7999 Pages		7999 Pages	
	Max Macro Commands	Unlimited		Unlimited	
Display	Type	XGA TFT LCD	XGA TFT LCD	WVGA TFT LCD	WSVGA TFT LCD
	Size	12"	15"	7"	10.1"
	Max. Resolution	1024 x 768	1024 x 768	800 x 480	1024 x 600
	Max. Colors	65,536 colors (16-bit)		65,536 colors (16-bit)	
	Luminance (cd/m²)	500	350	1000	1000
Touchscreen		4-wire analog resistive		4-wire analog resistive	
Communication Interface	COM1	RS-232 (DB9 Female)	RS-232 (DB9 Female)	RS-232 (5-Pin Terminal)	RS-232 (5-Pin Terminal)
	COM2	RS-422/485 (DB9 Female)	RS-422/485 (DB9 Female)	RS-485 (5-Pin Terminal)	RS-485 (5-Pin Terminal)
	COM3	RS-485 (DB9 Female)	RS-485 (DB9 Female)	Optional	Optional
	Ethernet (RJ-45)	10/100-Base-T Ethernet	10/100-Base-T Ethernet	2 x 10/100-Base-T Ethernet	2 x 10/100-Base-T Ethernet
I/O	USB Client	✓	✓	✓	✓
	USB Host	✓	✓	✓	✓
	Power Isolation	✓	✓	✓	✓
Power Supply Input Voltage		24 V_{DC} ± 10%		24 V_{DC} ± 10%	
Power Consumption		20 W	20 W	20 W	20 W
Reliability Certification	Operating Temperature	-15 ~ 65°C (5 ~ 149°F)		-25 ~ 75°C (-13 ~ 167°F)	
	Humidity	95% RH @ 40°C		95% RH @ 40°C	
	Vibration Protection	5 ~ 500 Hz (X, Y, Z directions, 1 Grms, 1 hour per axis)		5 ~ 500 Hz (X, Y, Z directions, 1 Grms, 1 hour per axis)	
	Ingress Protection	Front Panel IP66		Front Panel IP66	
	CE, EMI, UL	EN 61000-6-2, EN 61000-6-4; FCC Part 15 Class A; UL-61010-1, UL-61010-2-201		EN 61000-6-2, EN 61000-6-4; FCC Part 15 Class A; UL-61010-1, UL-61010-2-201, CID2	

Metal Process Machinery

Overview:

Metal processing machinery refers to various types of equipment used for the processing, forming, and manufacturing of metal products. The collection of large amounts of real-time data, along with the ability to quickly switch recipes according to different production requirements, is an essential and significant challenge.

Challenges / Requirements:

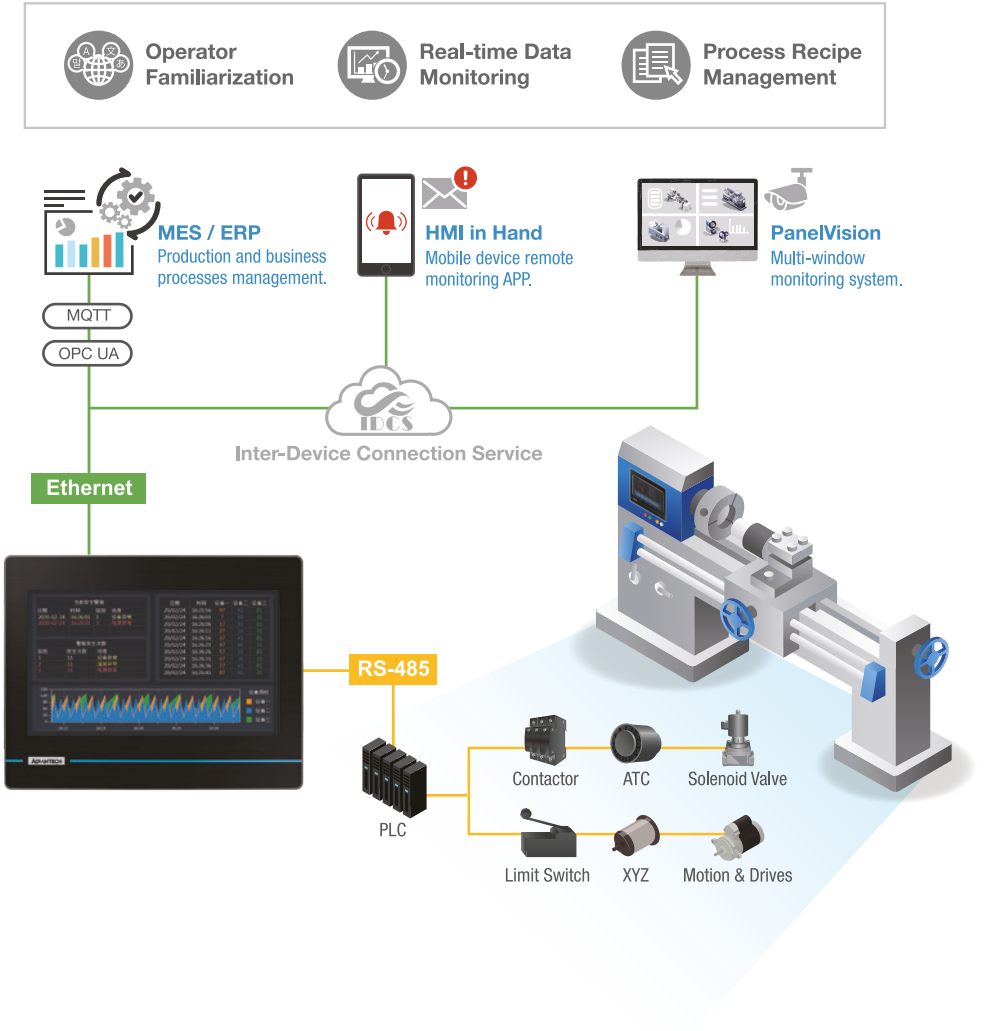
- Operators need to quickly familiarize themselves with complex equipment operations.
- Improving equipment productivity and quality control.
- Different brands and models often lack compatibility, hindering unified management and control.

Solution:

- Provides real-time data monitoring functionality to display equipment status in an intuitive manner, with multilingual support to help operators quickly familiarize themselves with the equipment.
- Supports process recipe management for operators to quickly access predefined process recipes based on different processing needs, improving production efficiency and quality consistency.
- Supports over 500 different communication protocols to effectively integrate various data sources, and integrates with ERP & MES data via OPC UA or MQTT for unified management and control.

Benefits:

- Operators can quickly get started and easily monitor and control the production process.
- Minimize changeover wait times due to differing production requirements for various orders.
- Remote maintenance enables efficient equipment utilization rates and production capacity.



Oil & Gas Pipeline Electronic Cabinet

Overview:

Manufacturers of oil and gas pipeline electrical control cabinets typically specialize in producing and supplying solutions for controlling and monitoring pipeline systems. Harsh environments have always been their greatest challenge in this domain.

Challenges / Requirements:

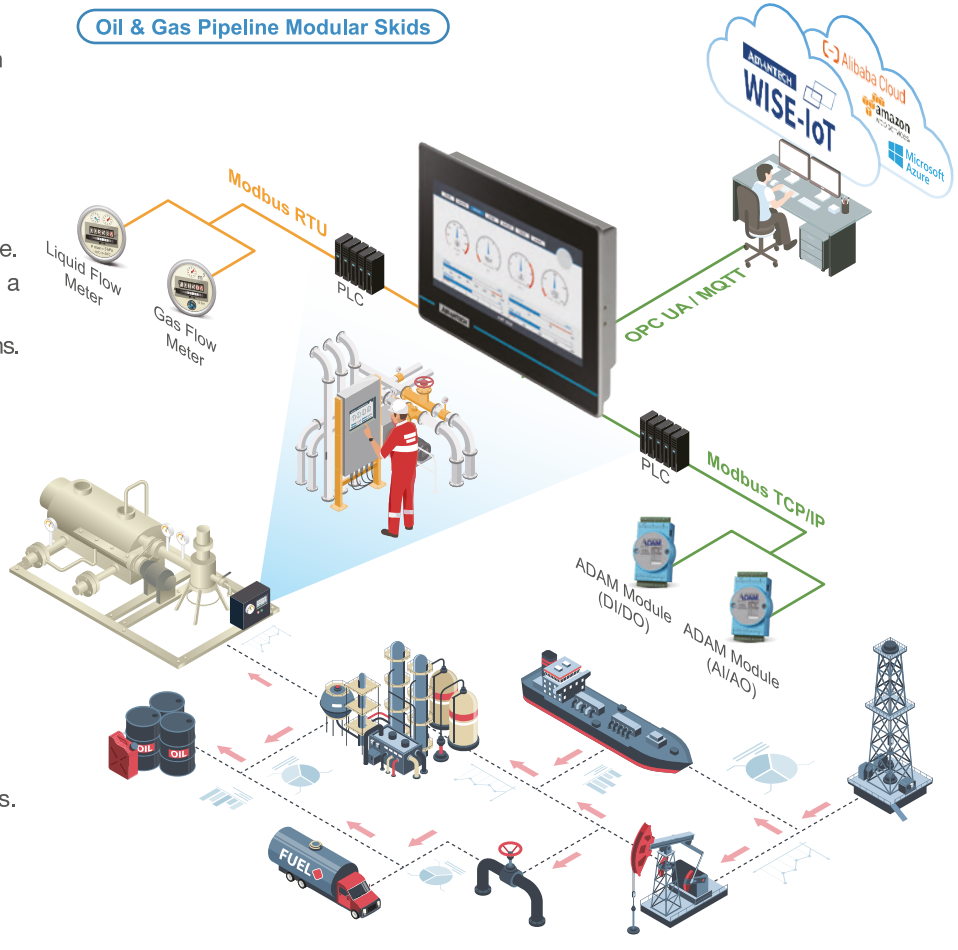
- Operating frequently in extreme environments, product reliability is of utmost importance.
- Any malfunction or cyberattack could lead to serious consequences, necessitating a high level of security.
- Reliable remote monitoring and maintenance solutions are crucial for cost-effective operations.

Solution:

- Wide operating temperature range design from -15 ~ 65°C, with an IP66-rated front panel for water and dust resistance. Additionally, conformal coating M/B increases the lifecycle by 80% for reliability enhancement.
- The product operates on RTOS (Real-Time Operating System), effectively reducing security risks such as system shutdowns or data breaches caused by cyberattacks.
- Supports remote access and monitoring functions, ensuring that operators and technical support teams can monitor system status and perform operations anytime, anywhere.

Benefits:

- Effectively reduces maintenance costs and downtime caused by equipment failures.
- Possesses high security and reliability to prevent environmental disasters and personnel injuries.
- Promptly and accurately alert operators to handle abnormal situations, increasing production efficiency.



Plastic Injection Molding Machinery

Overview:

The primary challenges faced by traditional plastic injection molding equipment include controlling production quality, enhancing production efficiency, and maintaining the machinery. These challenges require continuous optimization and improvement in the production process to maintain a competitive edge.

Challenges / Requirements:

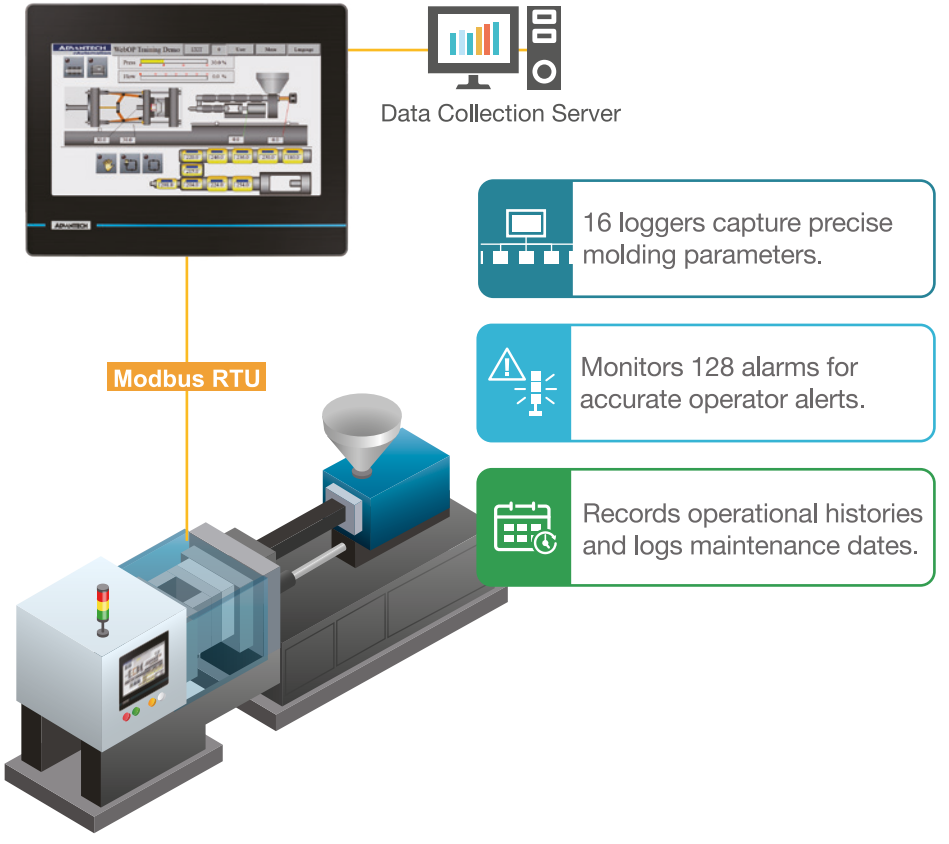
- Detailed and precise settings of injection molding parameters.
- Flexible alarm management system.
- Maintenance and energy consumption monitoring.

Solution:

- Up to 16 data loggers are available to collect detailed and precise injection molding parameter settings, including temperature, pressure, speed which can be saved and recalled for various product profiles.
- Supports monitoring up to 128 alarm blocks, with various types and levels of alarms to ensure timely and accurate alerts for operators to handle abnormal situations effectively.
- The comprehensive operation logging feature not only records operational histories, but also logs maintenance dates, providing advance notifications to minimize downtime.

Benefits:

- Improve product quality through data management and optimization.
- Promptly and accurately alert operators to handle abnormal situations, increasing production efficiency.
- Perform maintenance and regular servicing in advance to minimize downtime and repair costs.



Food & Beverage

Overview:

Food and beverage manufacturing requires precise process control and quality management. HMI solutions are essential for real-time monitoring, efficient production management, and ensuring regulatory compliance, adapting to diverse production needs and food safety standards.

Challenges / Requirements:

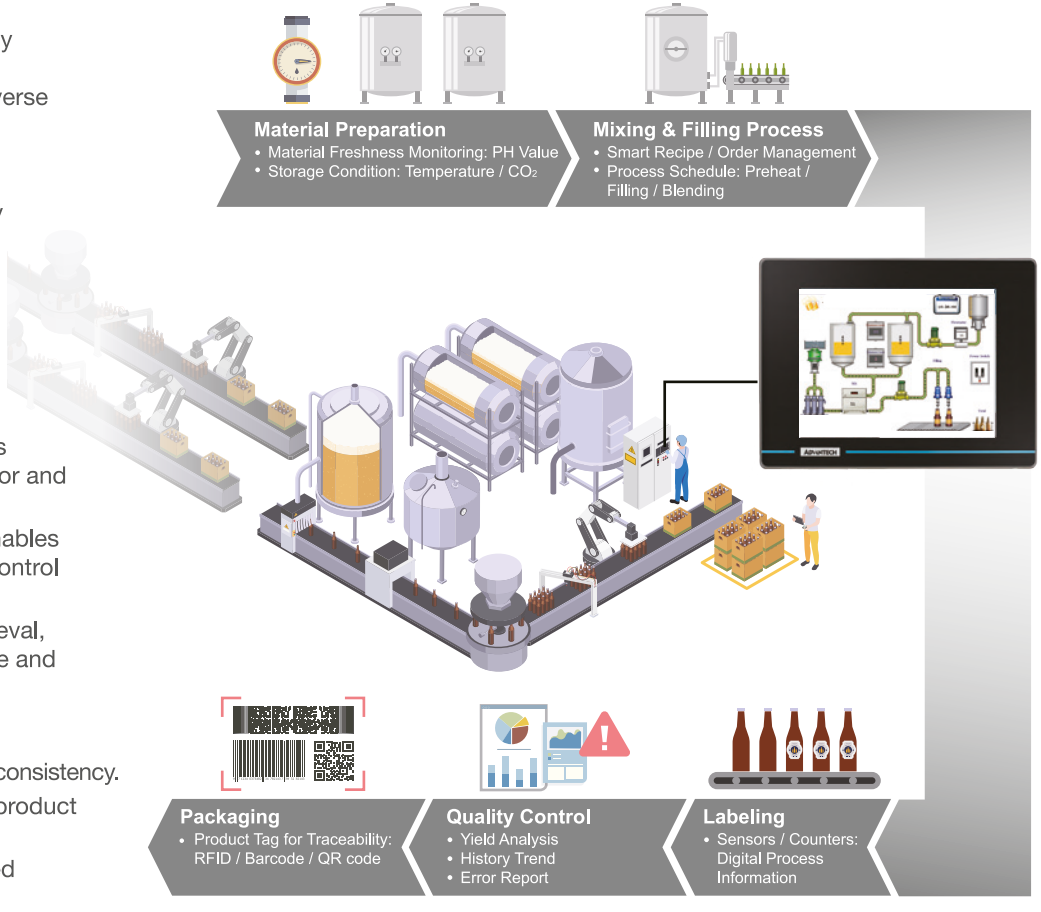
- Complex manufacturing processes difficult to monitor and control efficiently multiple production lines.
- Managing diverse recipes and frequent production changeovers while maintaining quality and efficiency.
- Meeting strict regulatory requirements for food safety and traceability while managing production data.

Solution:

- A high-resolution, multi-touch interface with customizable graphics provides real-time visualization of production processes, enabling operators to monitor and control multiple lines simultaneously.
- An intuitive recipe management system with secure database integration enables quick recipe adjustments, seamless production changeovers, and precise control of processing parameters.
- Comprehensive data logging capabilities with secure storage and easy retrieval, combined with automated report generation, facilitate regulatory compliance and enable detailed production analysis.

Benefits:

- Improved operational efficiency, reduced human errors, and enhanced product consistency.
- Increased production flexibility, reduced changeover times, and consistent product quality across batches.
- Simplified compliance processes, enhanced food safety measures, improved production for continuous improvement.



Packing Machinery

Overview:

Packing machinery requires precise control and high efficiency. HMI solutions are essential for real-time monitoring, rapid changeovers, and quality assurance, adapting to diverse product types and packaging requirements.

Challenges / Requirements:

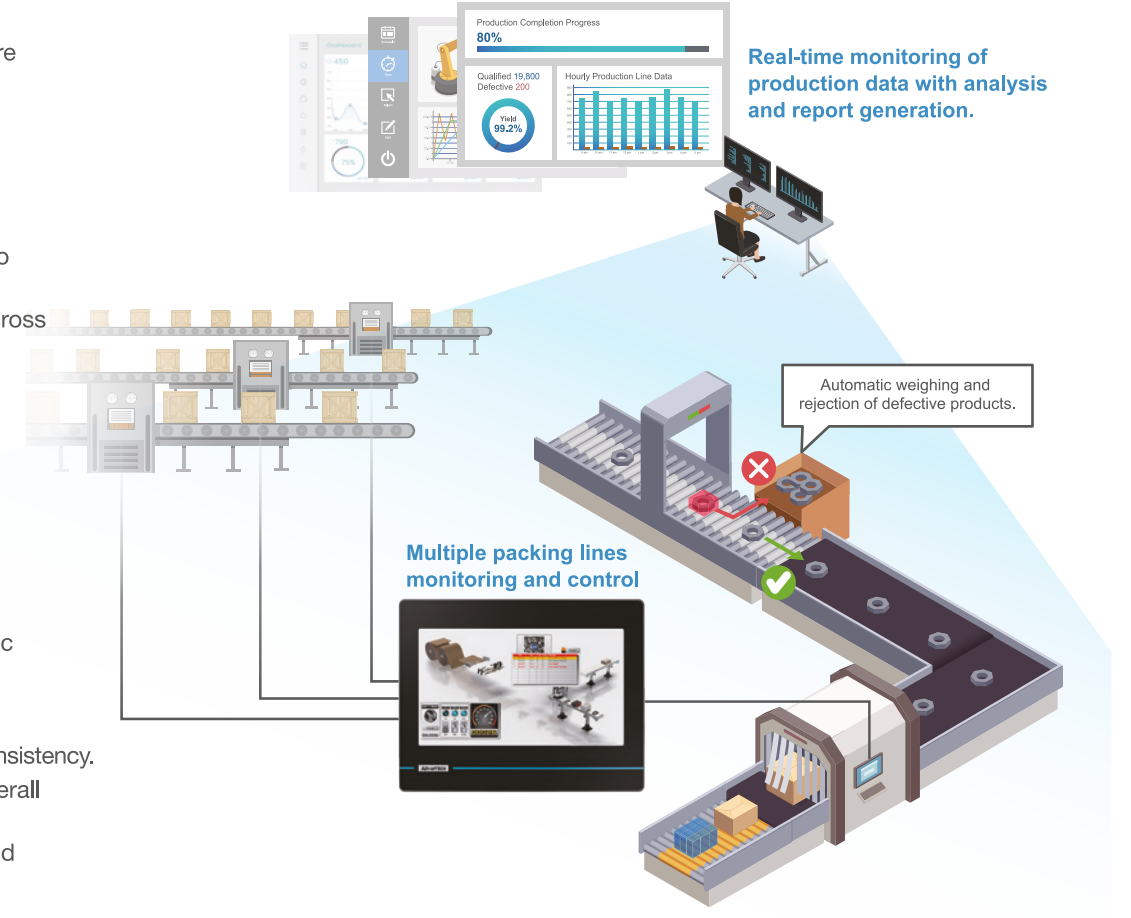
- Complex packing processes difficult to monitor and control efficiently across multiple product lines.
- Frequent product changeovers and varying packaging requirements leading to production downtime.
- Ensuring consistent packaging quality and maintaining product traceability across production lines.

Solution:

- A comprehensive interface with real-time visualization enables operators to monitor and control multiple packing lines simultaneously, supporting quick adjustments and remote management.
- Intuitive recipe management system with rapid setup features allows quick adjustments to machine parameters, enabling seamless transitions between different product types and packaging formats.
- Integrated quality control tools with real-time data logging and analysis capabilities enable continuous monitoring of packaging integrity and automatic detection of defects.

Benefits:

- Improved operational efficiency, reduced errors, and enhanced product quality consistency.
- Reduced changeover times, increased production flexibility, and improved overall equipment effectiveness.
- Enhanced product quality, improved traceability for regulatory compliance, and reduced waste from packaging errors.



Home Hybrid Energy Saving

Overview:

Residential hybrid energy systems integrate multiple power sources and advanced control technologies to optimize energy efficiency and cost-effectiveness. These systems require sophisticated HMI to manage complex data, provide user-friendly controls, and adapt to diverse household energy needs.

Challenges / Requirements:

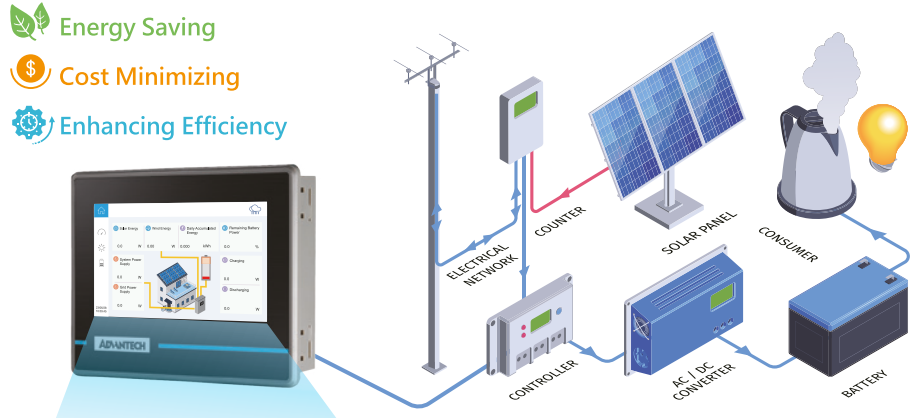
- Complex energy data difficult to understand and manage for average users.
- Integrating multiple energy sources while providing real-time monitoring and rapid response to anomalies.
- Long-term data storage and analysis for energy optimization, adapting to diverse household patterns.

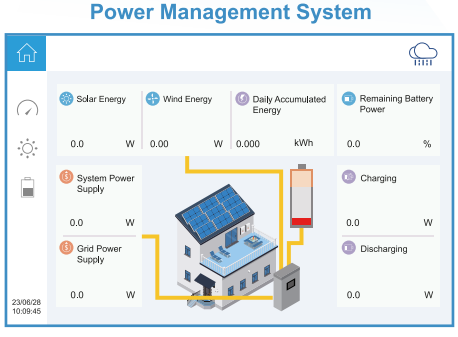
Solution:

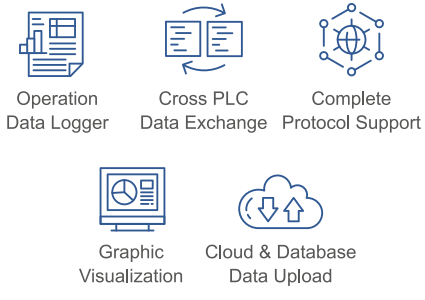
- High-resolution display combined with a comprehensive graphics suite enables intuitive data visualization through customizable interfaces, supporting various chart types for clear data presentation.
- Leveraging wide protocol support and an advanced alarm management system on a real-time operating system ensures seamless integration, real-time data handling, and quick response to system anomalies.
- Utilizing multiple data loggers with storage capacity and a flexible interface enables comprehensive data collection, long-term analysis, and the creation of personalized energy management strategies.

Benefits:

- Enhanced user engagement, improved decision-making, and increased energy efficiency.
- Optimized energy usage, improved system reliability, and reduced operational costs.
- Precise energy planning, optimized consumption, and increased user satisfaction through personalization.







HVAC (Heating Ventilation Air Conditioning)

Overview:

HVAC systems require precise control and energy efficiency optimization. HMI solutions are crucial for real-time monitoring, intelligent climate management, and predictive maintenance, adapting to diverse environmental conditions and user comfort preferences.

Challenges / Requirements:

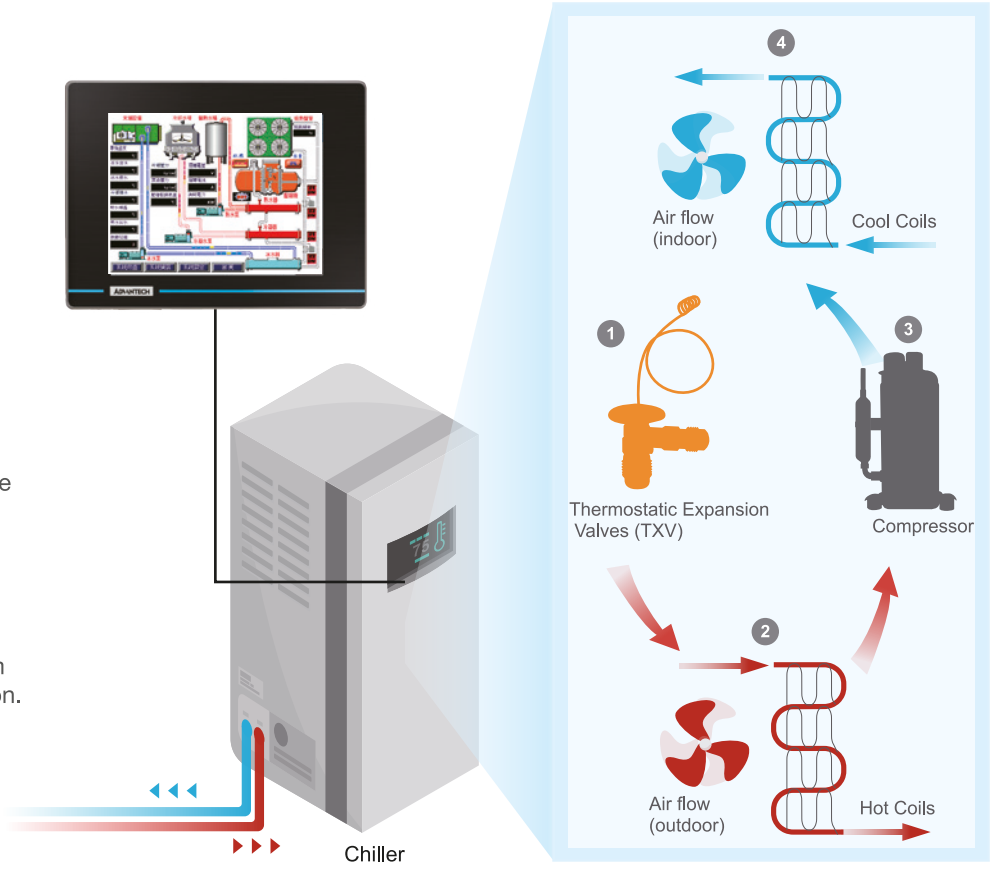
- Complex HVAC systems difficult to monitor and control efficiently across multiple zones and buildings.
- Balancing energy efficiency with occupant comfort while adapting to varying conditions and usage patterns.
- Preventing system failures and minimizing downtime while managing maintenance schedules efficiently.

Solution:

- A user-friendly interface with comprehensive system visualization enables real-time monitoring and control of multiple HVAC components, supporting remote access and centralized management.
- Intelligent algorithms integrating real-time environmental data, occupancy information, and user preferences enable dynamic system adjustments and predictive climate control.
- Advanced diagnostic tools with data analytics capabilities enable real-time system health monitoring, predictive maintenance scheduling, and rapid issue identification.

Benefits:

- Improved system performance, enhanced energy efficiency, and increased occupant comfort.
- Optimized energy consumption, improved comfort levels, and reduced operational costs.
- Reduced system downtime, extended equipment lifespan, and lower maintenance costs.



Precision Agriculture in Greenhouses

Overview:

Precision agriculture in greenhouses requires sophisticated environmental control and crop management. HMI solutions are crucial for real-time monitoring, climate optimization, and automated operations, adapting to diverse crop needs and maximizing yield efficiency.

Challenges / Requirements:

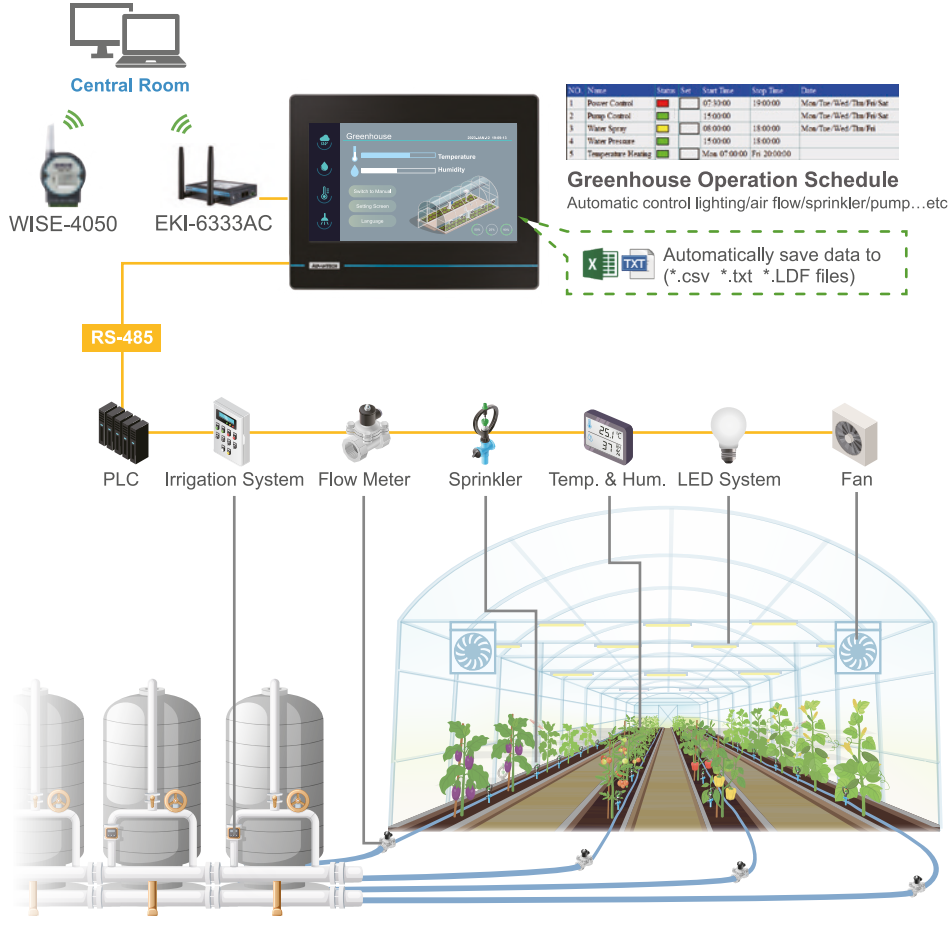
- Maintaining optimal growing conditions across multiple climate zones within the greenhouse.
- Efficiently managing water, nutrients, and energy usage while minimizing environmental impact.
- Early detection of crop health issues and optimizing harvest timing across various plant varieties.

Solution:

- An integrated control system with real-time sensor data visualization enables precise management of temperature, humidity, CO2 levels, and lighting for each crop zone.
- Smart resource allocation algorithms combined with predictive analytics allow for precise irrigation, fertilization, and energy utilization based on real-time crop needs and environmental conditions.
- Data analysis tools enable automated plant health monitoring, pest detection, and harvest prediction, integrated with the greenhouse management system.

Benefits:

- Optimized growing conditions, improved crop quality, and increased yield consistency.
- Reduced resource consumption, lower operational costs, and enhanced sustainability of greenhouse.
- Improved crop health, reduced crop losses, and maximized yield through optimized harvest timing.



Livestock Husbandry

Overview:

Modern livestock husbandry demands precise animal management and environmental control. HMI solutions are essential for real-time monitoring, health management, and automated feeding systems, adapting to diverse species needs and optimizing production efficiency.

Challenges / Requirements:

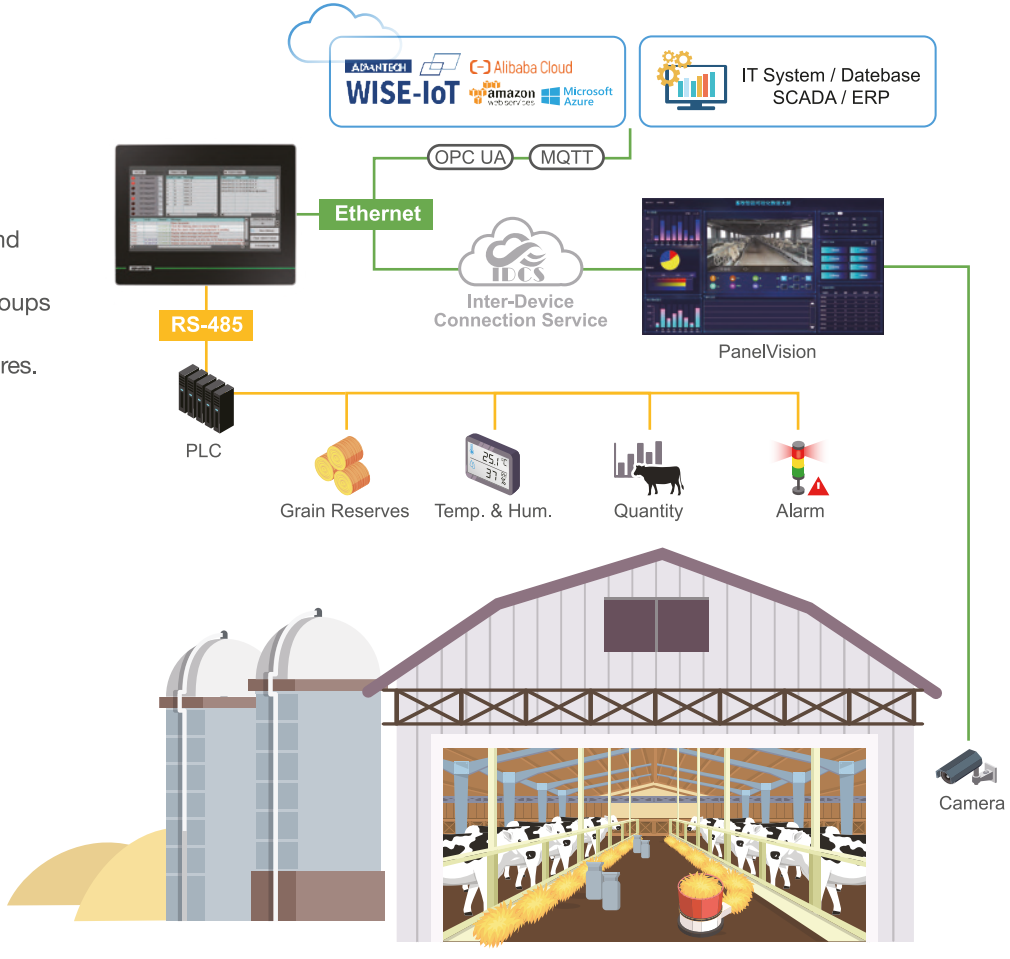
- Maintaining optimal living conditions for livestock across various housing units and growth stages.
- Efficiently managing feed distribution and ensuring optimal for different animal groups and life stages.
- Early detection of health issues and implementing effective disease prevention measures.

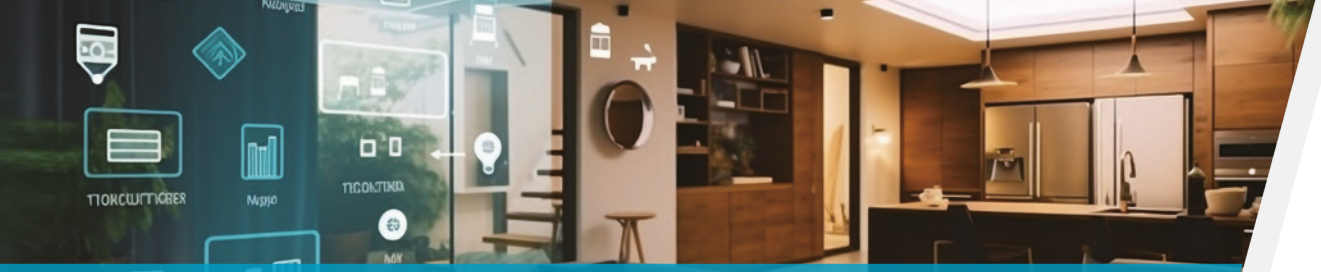
Solution:

- An integrated control system with real-time sensor data visualization enables precise management of temperature, humidity, ventilation, and lighting for each animal group.
- Automated feeding systems with customizable schedules and rations, integrated with real-time weight monitoring and health data analysis.
- Behavior analysis and health monitoring tools, combined with automated alert systems for quick identification of potential health issues or abnormal behavior patterns.

Benefits:

- Improved animal welfare, reduced stress-related health issues, and enhanced growth rates.
- Optimized feed conversion rates, reduced feed waste, and improved overall animal health and productivity.
- Reduced disease outbreaks, lower mortality rates, and decreased reliance on antibiotics, leading to improved product quality and safety.





Smart Building Automation

Overview:

Smart building automation requires integrated management of multiple systems and energy efficiency optimization. HMI software solutions are crucial for centralized control, real-time monitoring, and predictive maintenance, adapting to diverse building needs and enhancing occupant comfort and safety.

Challenges / Requirements:

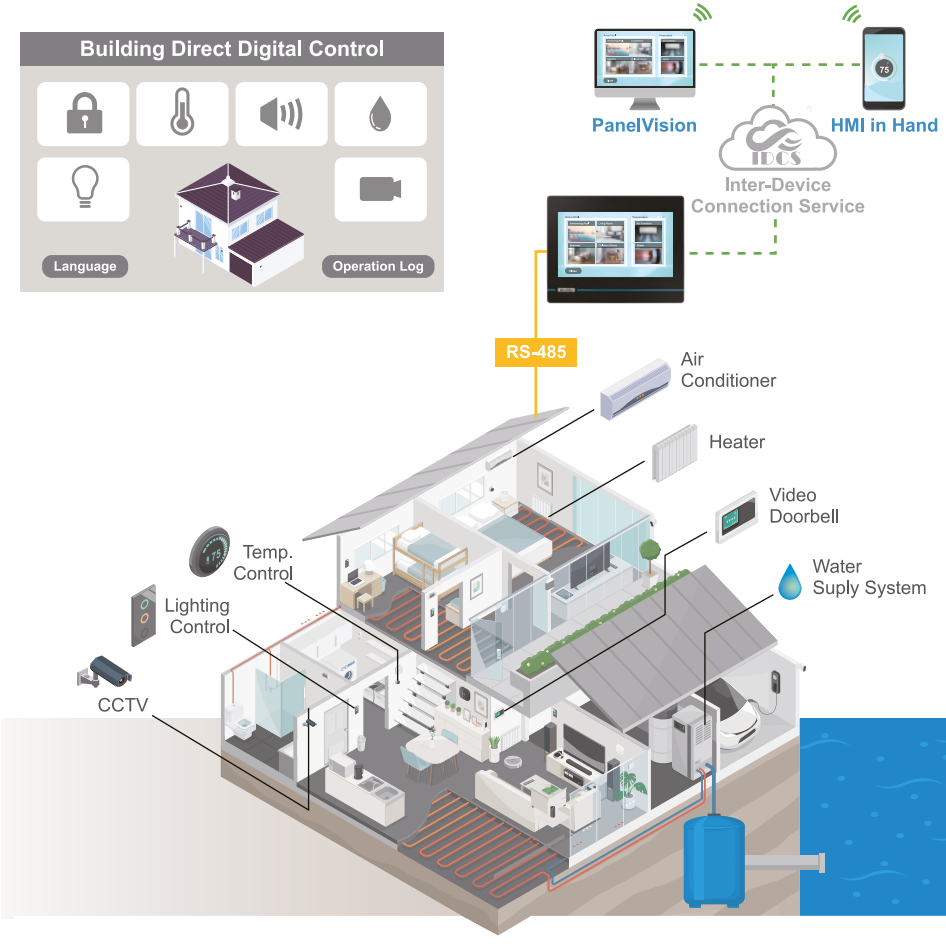
- Managing diverse building systems (HVAC, lighting, security, etc.) efficiently from a single platform.
- Balancing energy efficiency with occupant comfort while adapting to varying environmental conditions.
- Preventing system failures and minimizing downtime while efficiently managing maintenance.

Solution:

- HMI software with multi-protocol support and customizable dashboards enables seamless integration and control of various building systems.
- Energy management within the real-time data from IoT sensors, enabling dynamic adjustments to building systems. Data visualization tools provide clear insights into energy consumption patterns.
- Remote access features allow for off-site monitoring and control, with robust security protocols ensuring data protection.

Benefits:

- Streamlined operations, improved system synergy, and enhanced building management efficiency.
- Significant energy savings, reduced carbon footprint, and improved building sustainability ratings.
- Reduced system downtime, lower maintenance costs, and improved long-term reliability of systems.



Global Customer Support Services

Advantech's global customer support network allows the company to provide localized service and optimized support plans that leverage its full service portfolio to reduce costs and proactively mitigate business risks. In addition to complete technical support, Advantech provides a variety of after-sales services, including warranty extension, advance replacement, upgrades, rapid repairs, etc. With knowledgeable local service teams located around the world, Advantech has the ability to provide consistent and highly responsive support tailored to your requirements.

24/7 Technical Support

- Hotline Call
- Email
- Online Chat
- Web-based Logitics & RMA Info System
- Intelligent Support Portal

Global deployment with local full-line repair capability

Easy-to-use web-based repair and tracking system (eRMA)

Various value-add, after-sales service packages

- Upgrade Service
- Onsite Service
- Pick-up Service
- Fast Repair Service
- Advanced Replacement Service
- Extended Warranty Service
- Technology Update Service
- Preventive Maintenance Service
- Health Checkup Service

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Enabling an Intelligent Planet