Integration Layer Device

BACnet 10.1-inch Workstation HMI

NVT101E-xx

【Description】

The NVT101E-xx series is a micro-workstation compliant with the BACnet B-OWS functional class. This workstation fully ports the core functionalities of the BACsoft-OWS software to a microcomputer and optimizes them according to hardware performance limitations, ensuring it offers the same capabilities as the workstation software without sacrificing functionality due to lower hardware specifications. It can be integrated with the 10.1-inch touch panels most commonly used in field monitoring applications, enabling on-site HMI operations. Whether you require an on-site operating interface or a budget-conscious micro-monitoring system, the NVT101E-xx 10.1-inch series HMI products are the ideal solution for you!



【Features】

- Designed in accordance with the BACnet Operator Workstation (B-OWS) communication protocol established by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE).
- All workstations are shipped fully installed, tested, and configured, minimizing the various installation issues that can arise from differences in operating system environments during traditional software installations.
- A highly customizable graphical layout editor that uses the same graphical editing environment as BACsoft-AWS, so users do not need to learn a new editing method.
- Manage (create, delete, edit) dynamic objects (alarms, schedules, trend logs) for all BACnet devices in the system, regardless of manufacturer.
- Features a real-time data visualization interface that includes line charts, gauge charts, pie charts, and other real-time display options, allowing users to easily create their own custom real-time dashboards.
- In addition to its built-in 10.1-inch touch panel, it also supports external touch panels; when connected via HDMI and USB, it can function as a touch-operated human-machine interface.
- Supports BACnet IP and Ethernet with unlimited points, and can integrate non-BACnet data such as Modbus TCP/RTU, MQTT, and API (up to 100 points).
- Supports multiple real-time alert delivery methods (Line, Telegram, email, WhatsApp, SMS), enabling administrators to receive the latest system updates anytime, anywhere. Provides real-time alert message editing (which can be used to instruct recipients on follow-up actions, maintenance contacts, and other relevant information).
- Individual alarms can be configured with unique alert sounds. This allows operations personnel to identify the current alarm status by sound alone, without having to constantly monitor the surveillance screens.
- Features alarm statistical analysis capabilities, allowing users to freely select a specific time range or number of alarms for statistical analysis in order to develop improvement strategies.
- Features the ability to create a list of alarm contacts and organize them into groups, which can be used for time-based or zone-based alarm notifications).
- The advanced version (NVT101E-WB) features data analysis and processing capabilities, enabling it to calculate data stored in memory and generate various charts and reports for statistical analysis.
- The data statistics feature includes a filtering function, allowing you to filter out unwanted or abnormal data, or exclude time periods that do not need to be included in the analysis, eliminating the need for manual filtering.
- Equipped with Wi-Fi functionality, mobile devices such as smartphones and tablets can connect to BACsoft-OWS via Wi-Fi to monitor the system directly.

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【Specification】

Model	Protocol	Network	BACnet devices	nBP external points	Log / Alert	Cloud monitoring	BEMS
NVT101E-S	BACnet	Ethernet	8	X	X	X	X
NVT101E-OD	BACnet	Ethernet	8	X	X	X	X
NVT101E-BC	BACnet+nBP-XS	Eth+RS485	8	100	400/400	X	X
NVT101E-WB	BACnet+nBP-XS	Eth+RS485	8	100	400/400	V	V

※ HDR-15-24 is sold separately.

◆ Power Supply：

24 VDC/VAC, 10 VA power supply. Can be optionally paired with the HDR-15-24 power supply module to operate on 85–264 VAC.

◆ Processor：

Broadcom BCM2711, quad-core Cortex-A72 (ARM v8) 64-bit SoC @ 1.5GHz，4GB LPDDR4。

◆ Ethernet：

10/100 Mbps Ethernet, with optional support for either the BACnet Ethernet or BACnet/IP network layer protocols.

◆ Audio/Video Output：

HDMI (supports Rev. 1.3 and 1.4), composite video port (supports NTSC and PAL), and 3.5mm audio jack.

◆ RS-485：

1 RS-485 port, capable of connecting up to 32 Modbus RTU slave devices.

◆ USB：

2 USB 2.0 ports, 2 USB 3.0 ports; supports external input devices such as keyboards and mouse.

◆ Brightness：

400cd/m^2

◆ Resolution：

RGB 800*1280

◆ Touch：

10-point capacitive touchscreen

◆ Operating Environment：

0 ~ 50℃, 5 ~ 95%RH No condensation.

◆ Product Certification：

CE certified and compliant with RoHS environmental standards.

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【Features】

◆ Flexibility：

The modular HMI design allows for flexible configuration of screen size and mounting options based on application requirements, making it suitable for a wide range of applications.

◆ High performance：

Equipped with the latest processors and display technology, it ensures a smooth user experience and fast data processing capabilities.

◆ Easy to integrate：

Provides standard communication protocols for seamless integration into existing systems, reducing integration time and costs.

◆ Powerful features：

Includes most of the features found in the BACsoft-AWS workstation.

◆ User-friendly：

The intuitive user interface and wide range of features make it easy for users to get started.

◆ Mobile Monitoring：

Mobile devices can be remotely monitored and managed via the internet or Wi-Fi, allowing users to track system performance and improve management efficiency.

◆ Multimedia Alerts：

Alerts can be sent in real time via multiple channels, allowing you to receive first-hand information about system anomalies LINE / SMS /Whatsapp/ Telegram/ E-mail。

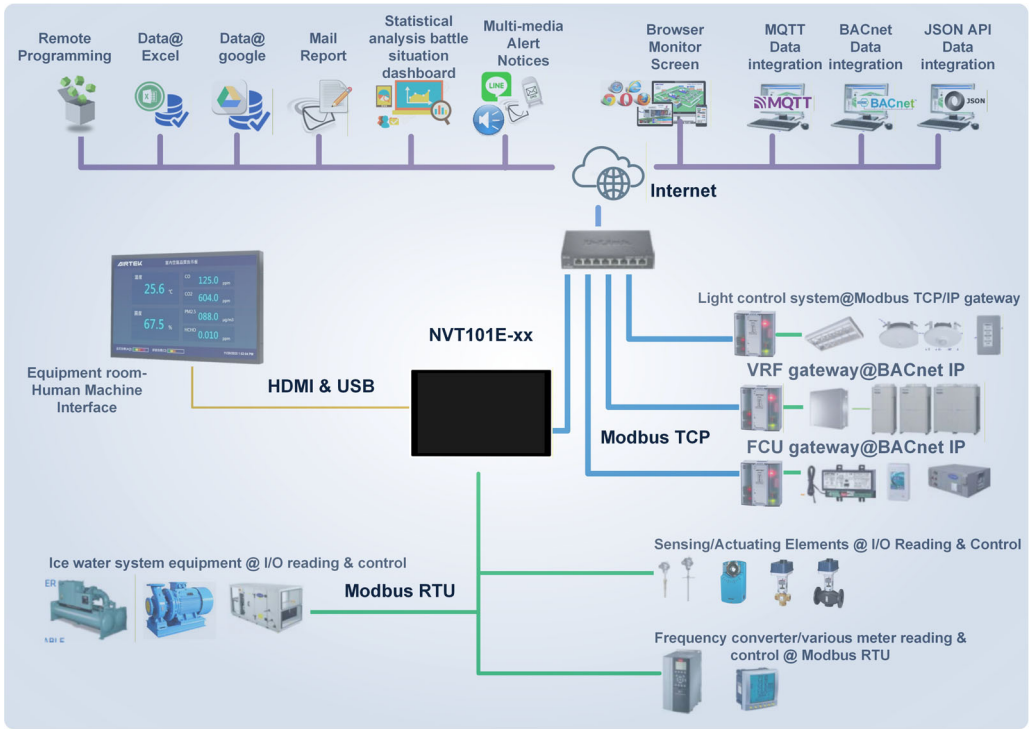
◆ Multi-format automated reports：

Excel / PDF / Customization / Scheduled export & delivery.

◆ Data Analysis and Visualization：

Data logging / Data cleaning and statistics / Support for a variety of charts.

【Network Architecture Diagram】



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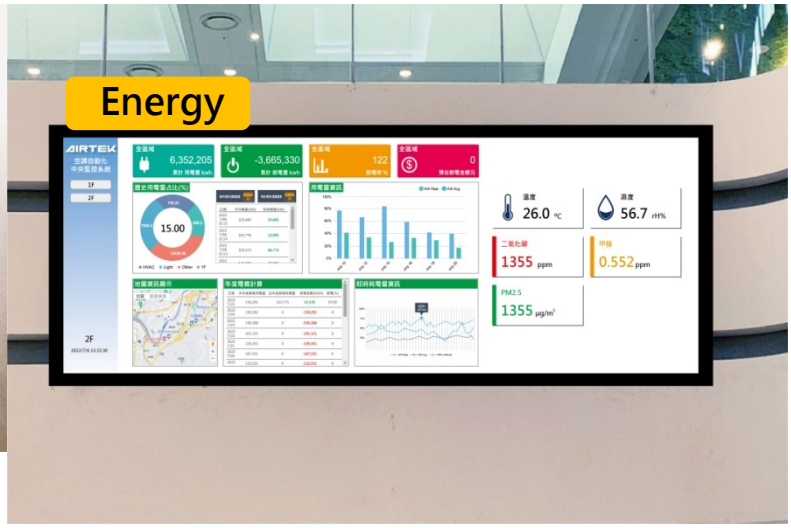
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【Application Examples】







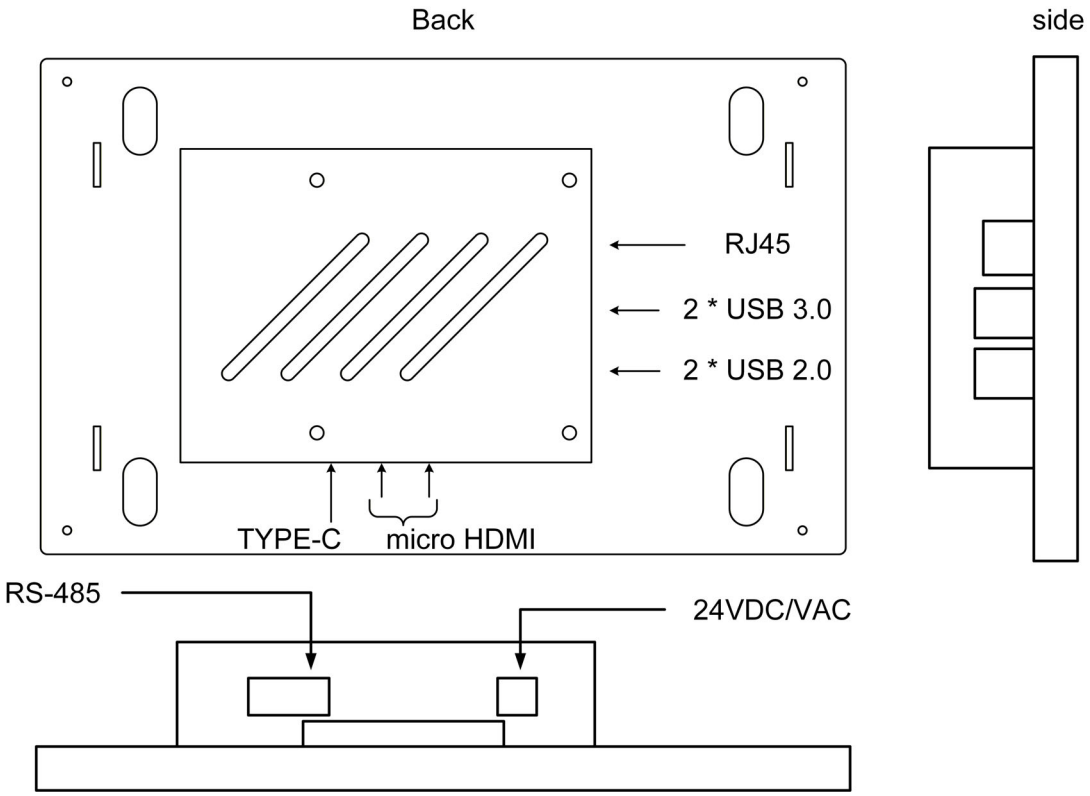


【Various Charts】

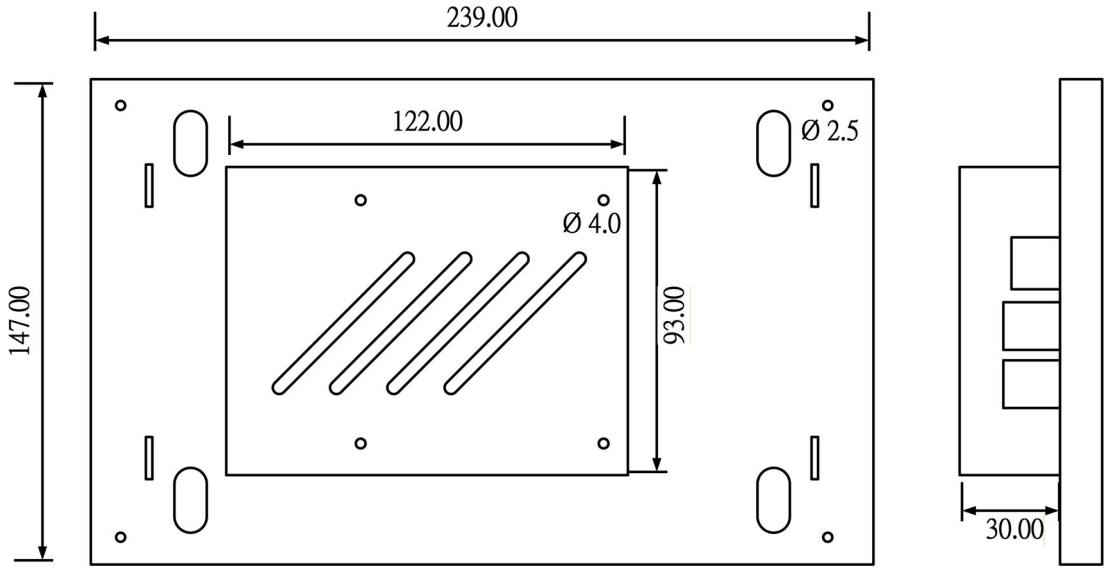


【Wiring Instructions】

◆ The power supply must be provided by a dedicated transformer and must not be shared with other controllers or converters to prevent the controller from burning out due to short-circuiting in the power loop.

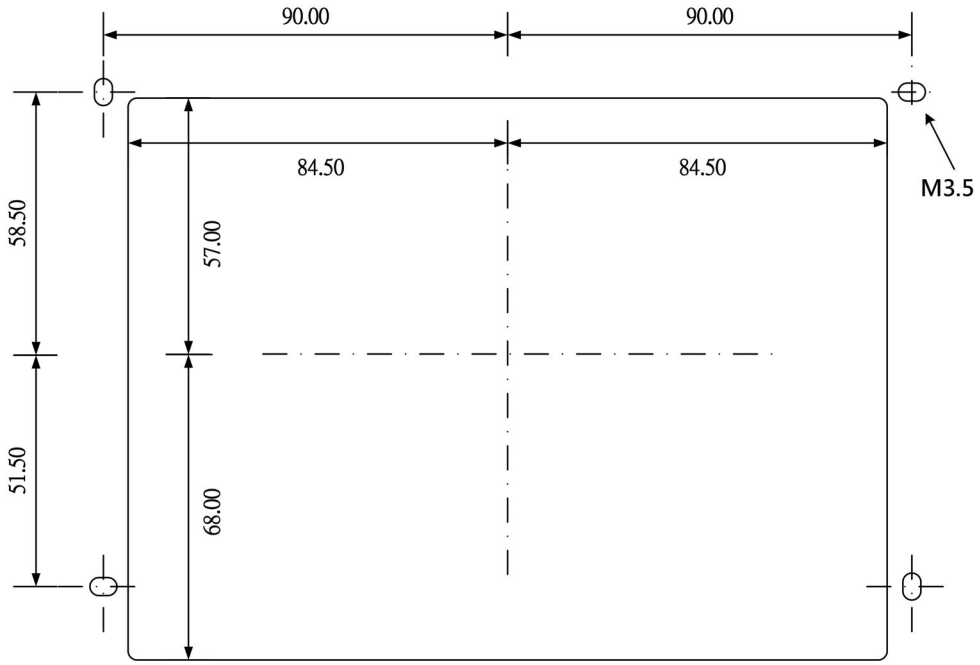


【Size】Unit：mm



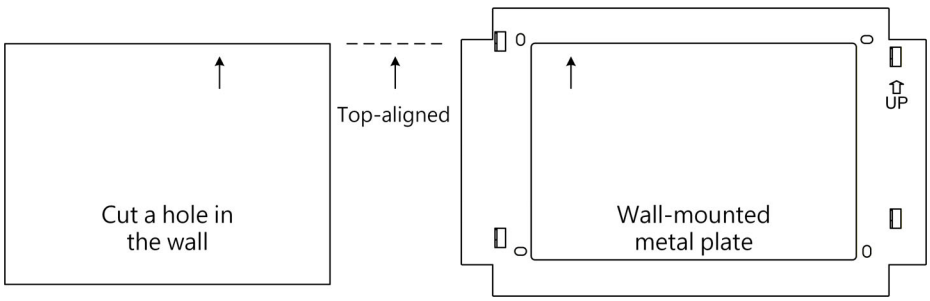
Installation Method

- Cut a hole in the wall measuring 169 × 125 mm



- Secure the metal plate using four M3.5 flat-head self-tapping screws

  (Align the top edge of the hole in the wall with the top edge of the cutout in the wall-mounted metal plate)



- Align the four elongated wall-mounting holes on the back of the panel with the hooks on the mounting plate, then push down to secure it in place.
- To remove it, follow the reverse order:

  first push the panel upward; once it is loose, you can remove it.

