AEROSPACE AIC8660-9000 All-Information Intelligent Data Processor Instruction Manual

AEROSPACE AIC8660-9000 All-Information Intelligent Data Processor

Contents

Statement

During the Warranty Period, AIC will repair, at no charge, products or parts of a product that proves defective because of improper material or workmanship for our wireless intelligent temperature-vibration sensor in one year after the date of delivery. The recognized distributors can only provide replacement or repair services to returned devices or parts with normal use and maintenance, the returned devices or parts must be without any neglection or improper installation, repaired or replaced, and involved in any accidents. Distributors disclaim warranty or liability for damages. This statement will supersede any other statement, representation, implication or provision; any derivative or modified terms proposed by distributors will not be recognized unless confirmed by a formal written signature of our personnel.

Acceptance

All sensors produced by Aerospace Intelligent Control (Beijing) Monitoring Technology Co., Ltd. have undergone complete procedures and strict inspections before leaving the factory, and purchasers should inspect them immediately after receiving the products. If the product is damaged or dysfunctional, a statement should be made to the shipping company immediately.

Service

If users of Aerospace Intelligence Control (Beijing) Monitoring Technology Co., Ltd. need service, they should first contact the company's local representative office. They can usually solve the problem without returning to the factory. If it is confirmed that the problem must be solved by the factory, call the local customer service office to get a return code before returning the product.

Replacement

All products need a return code to be accepted by the factory. Contact local customer service to get the code, and provide the following information: product model, quantity, serial number, problem description, and purchase order number.

Consultation

For any operational and application questions, please consult with your nearest sales representative or application support.

Warning:
This product or its electronic components are vulnerable to ESD events. Please take necessary anti-static or electrostatic discharge actions when unpacking or replacing batteries.

ATTENTION
OBSERVE PRECAUTIONS
ELECTROSTATIC
SENSITIVE DEVICES

Features

As a front-end data processing centre, AIC8660-9000/AIC8660-9001 multi-working-condition full-information intelligent data processor integrates edge data computing and data transmission technology. Using the high-performance ARM processor and FPGA logic array hardware platform, the equipment can connect to various data acquisition modules, such as vibration, temperature, rotational speed and other collector models which realize the state measurement of both steady-state and non-steady-state equipment. It can collect data from up to 29 holographic intelligent data collectors at high speed and has powerful floating-point computing capabilities. Data compression, fftw, eigenvalue extraction, data communication, etc can be processed easily.
Our product is reliable, and stable while able to effectively release the pressure of the platform server. In addition, AIC8660-9001 integrates a wireless ZigBee transceiver inside, which can receive up to 100 wireless ZigBee terminals. The data received by the processor can be transmitted to the server using wired Ethernet, optical fibre, GPRS, 4G/5G, etc., with strong adaptability to all industrial applications.

Parameter

Environmental parameter

1. Working environment temperature: -40℃ 85℃
2. Working environment humidity 10% 90% RH (no condensation)
3. Storage environment temperature -40℃ 90℃
4. Storage environment humidity 10% 95% RH (no condensation)

Intrinsically safe parameters

1. Safety level Ex ia IIC T4 Ga Ex ib I Mb

2. Certificate number CCRI 21.2370X

3. Environment temperature -40℃ 85℃

4. Scope of application & standard this product is used in the environment with explosive gas in Zone 0,1,2

5. Application standard:

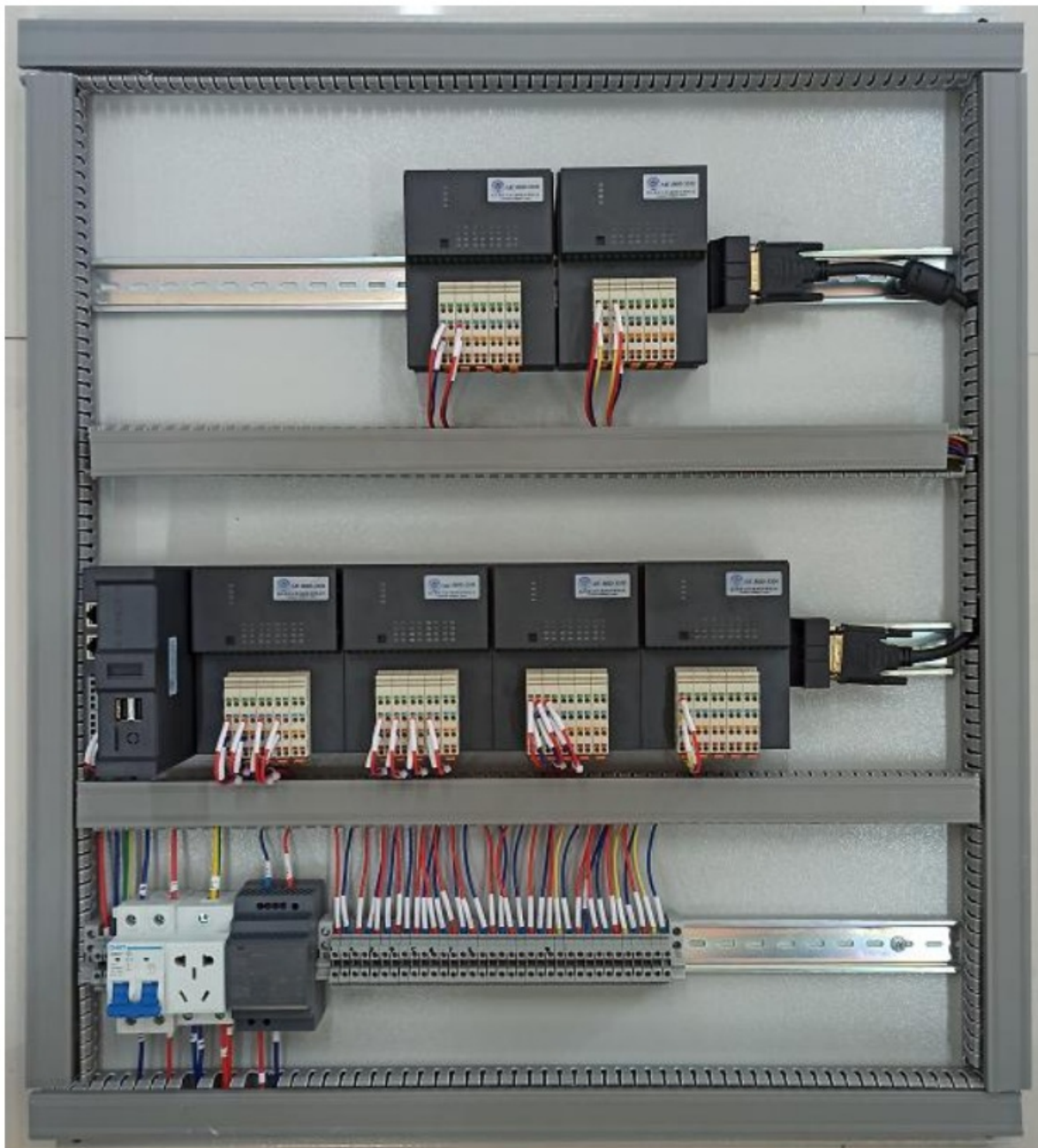GB3836.1-2010 Explosive atmospheres Part 1: general requirement for equipment
GB3836.4-2010 Explosive atmospheres Part 4: Equipment protected by intrinsic safety type "i"
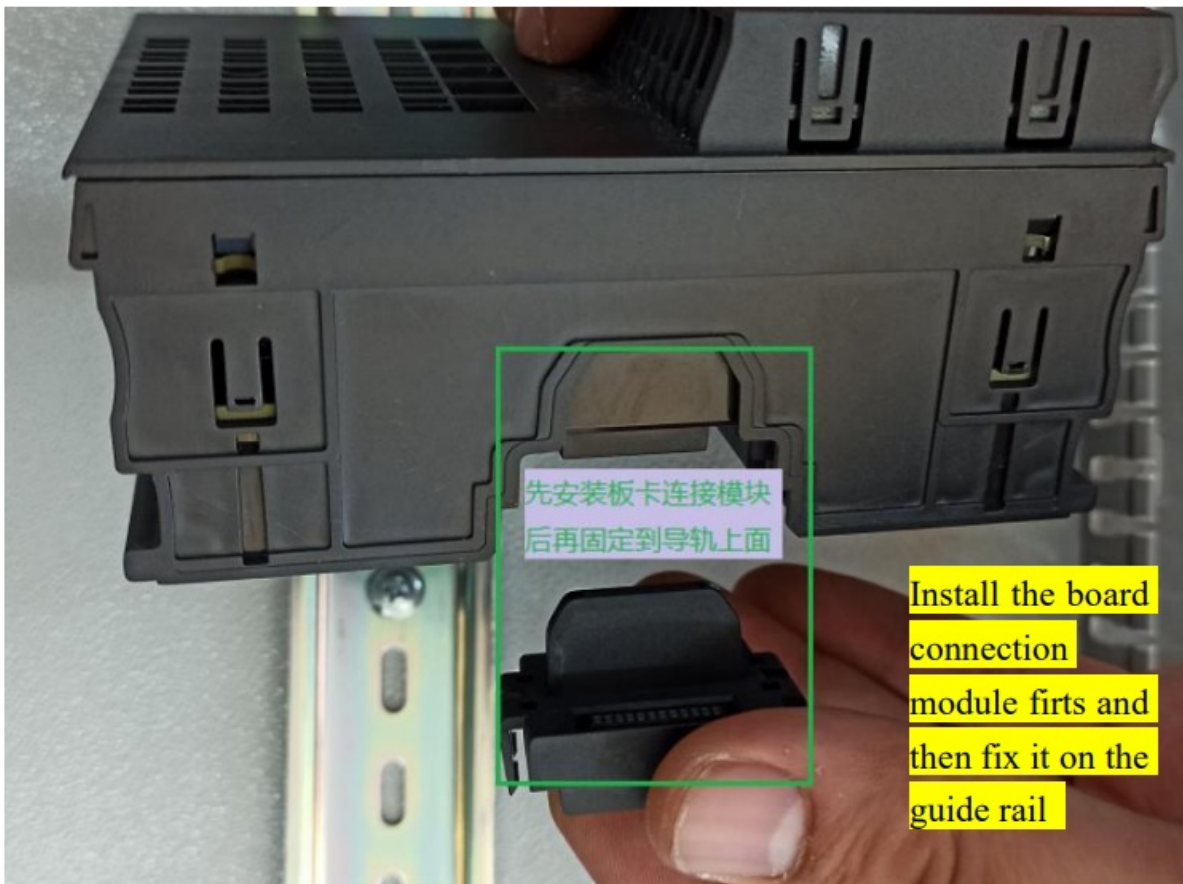
Electrical parameter

1. Data processing ARM DSP FPGA Triple-core intelligent processor

2. Acquisition channel

   AIC8660-9000 120 channels of vibration, 120 channels of temperature

   AIC8660-9001 120 wireless sensors

3. Data storage: Maximum 64GB, able to save no less than 10,000,000 pieces of data, and store for more than 10 years.

4. Communication interface:

   USB2.0*2

   RJ45*2 10/100Mbps Ethernet

   SMA*1 ZigBee

   DB9*1 RS232

5. Power

   Voltage 12VDC or 24VDC

   Power consumption <3W

6. Transmission type 10M-100M Ethernet optical fiber, wireless Wi-Fi, 4G optional

7. Communication distance

   ZigBee wireless communication distance: up to 1000 meters

   Ethernet communication distance: ≤150m

Equipment Installation

The full-information intelligent data processor is fixed and installed with a 35mm guide rail. The bottom of the data processor is designed as a standard guide rail buckle. Please choose the appropriate length of the guide rail based on the number of connected boards. Moreover, the data processor needs to be placed on the left side of the board. During installation, align the buckle with the guide rail and press lightly. This product is a precious electronic component, and it is recommended to be installed together with the power supply module and data acquisition module in a metal acquisition box with protective functions.
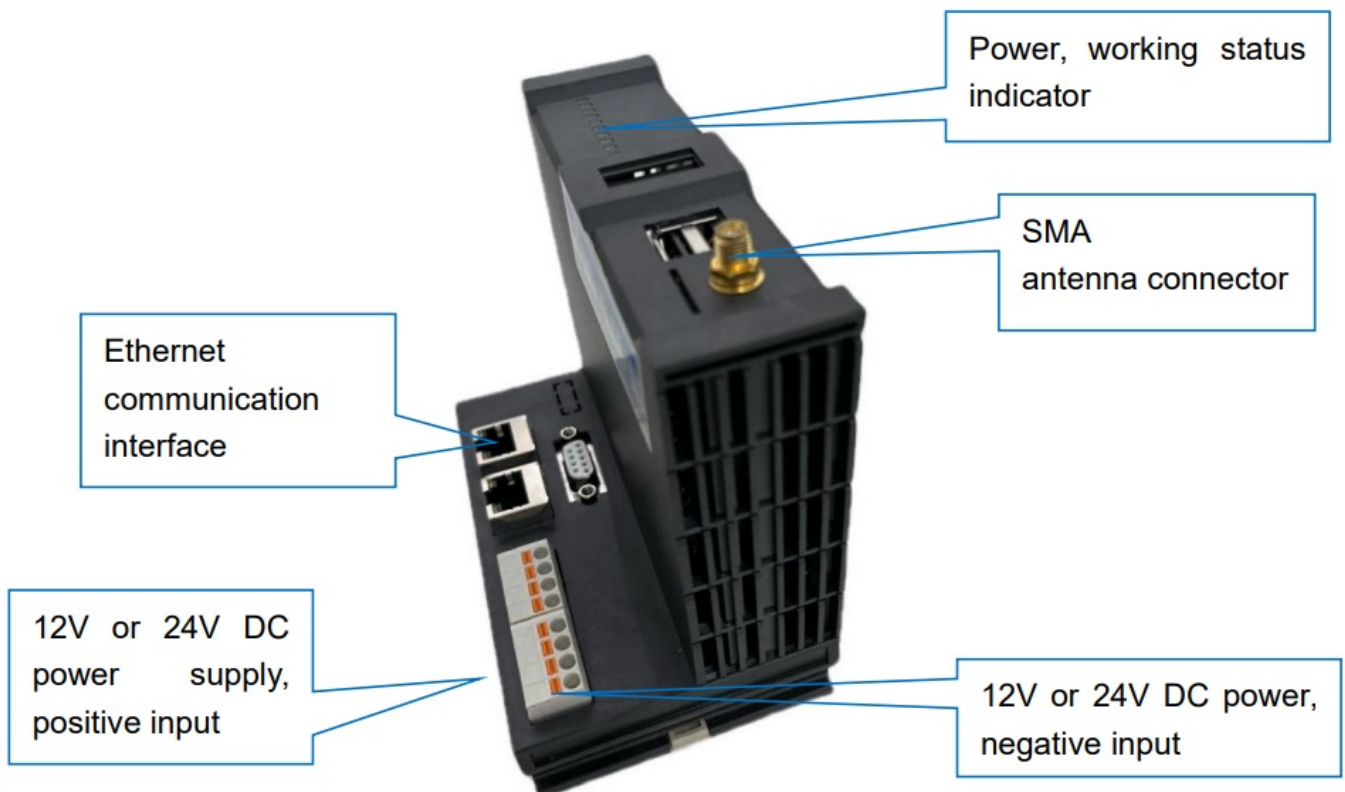
AIC8669-9000 full information intelligent data processor is connected to various data acquisition modules (also installed on the standard rails) by special electrical connectors.

先安装板卡连接模块
后再固定到导轨上面

Install the board connection module firts and then fix it on the guide rail

The full information intelligent data processor is connected to the external 100M Ethernet network through the RJ45 interface (which can be directly connected to the user server through the intranet or connected to the user server through the Internet).
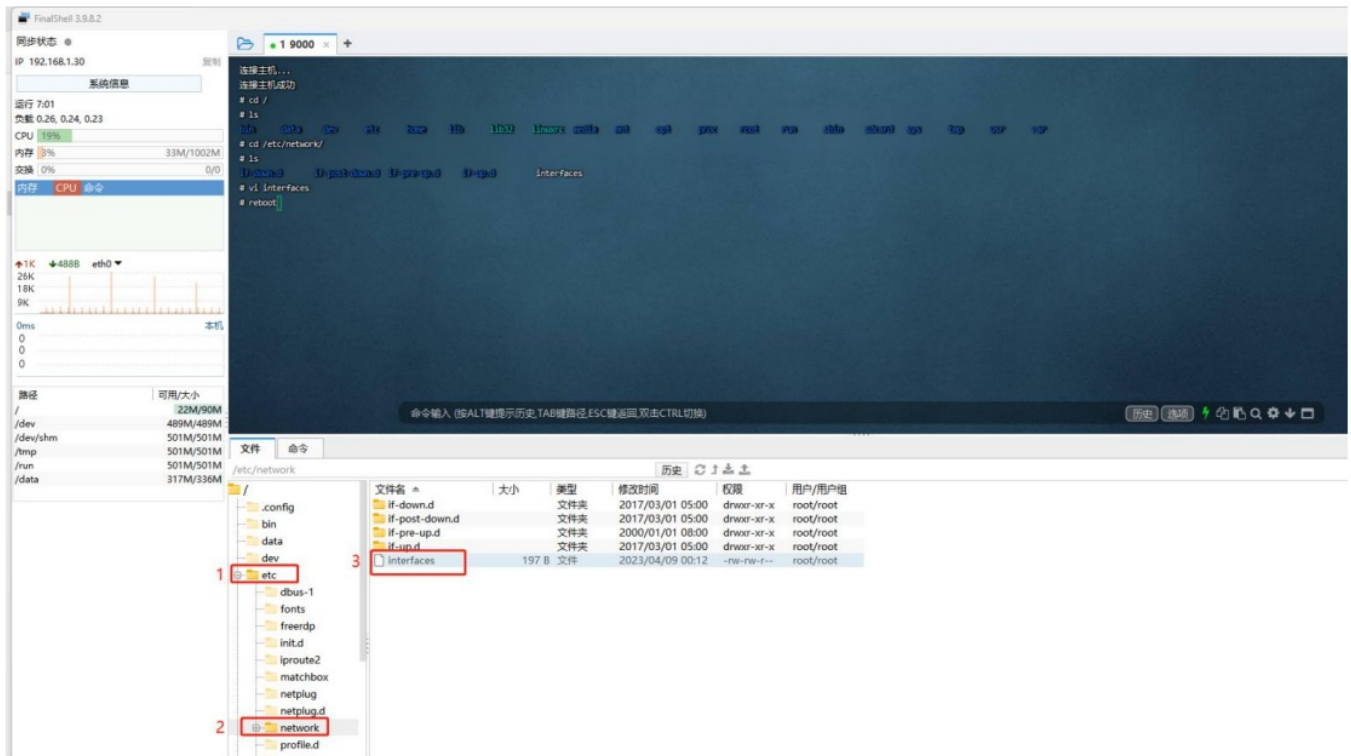
The full information intelligent data processor is connected to an external 12V or 24V DC power supply through quick-connect terminals.
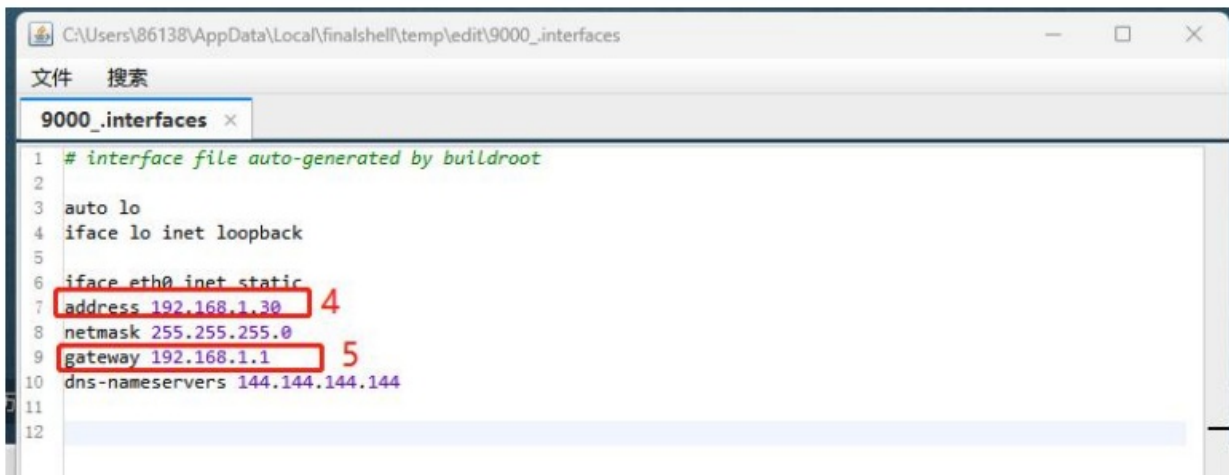

Power, working status indicator

SMA antenna connector

Ethernet communication interface

12V or 24V DC power supply, positive input

12V or 24V DC power, negative input

Parameter Configuration

The full information intelligent data processor is designed as a plug-and-play product, and the data collector module and wireless intelligent sensor can be automatically identified and connected. However, in a more complex integrated system, the default factory IP address (192.168.1.54) needs to be modified according to the needs of the project. The method of modification through "Final shell" tool software is as follows:
Use "Final shell" and the factory IP address to connect to the instrument, and find the "Interfaces" file under the file path as the figure below.

Double-click on the file "Interfaces", and change the IP address and gateway address of "address" and "gateway" in the file to the values required by the project as shown in the figure below.
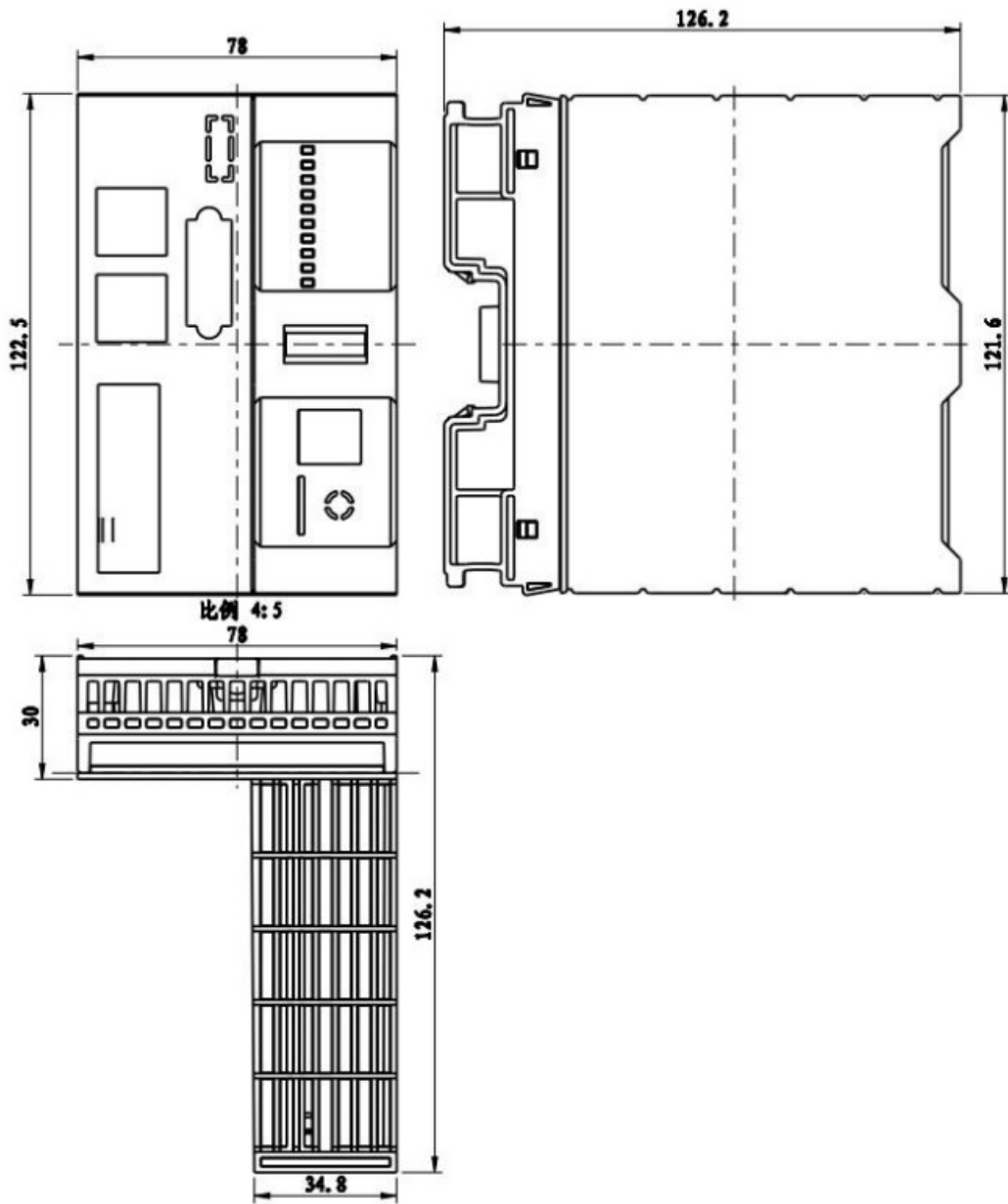

For the wireless data acquisition parameter setting of AIC8660-9001 intelligent data processor, please refer to "AIC8641-03 wireless temperature-vibration intelligent sensor instruction Manual".

Mechanical Parameter

Appearance structure and size

122mm*78mm*126mm Width*Depth*Height

比例 4:5

Weight: About 288g
Protection level IP66 Inside the acquisition box
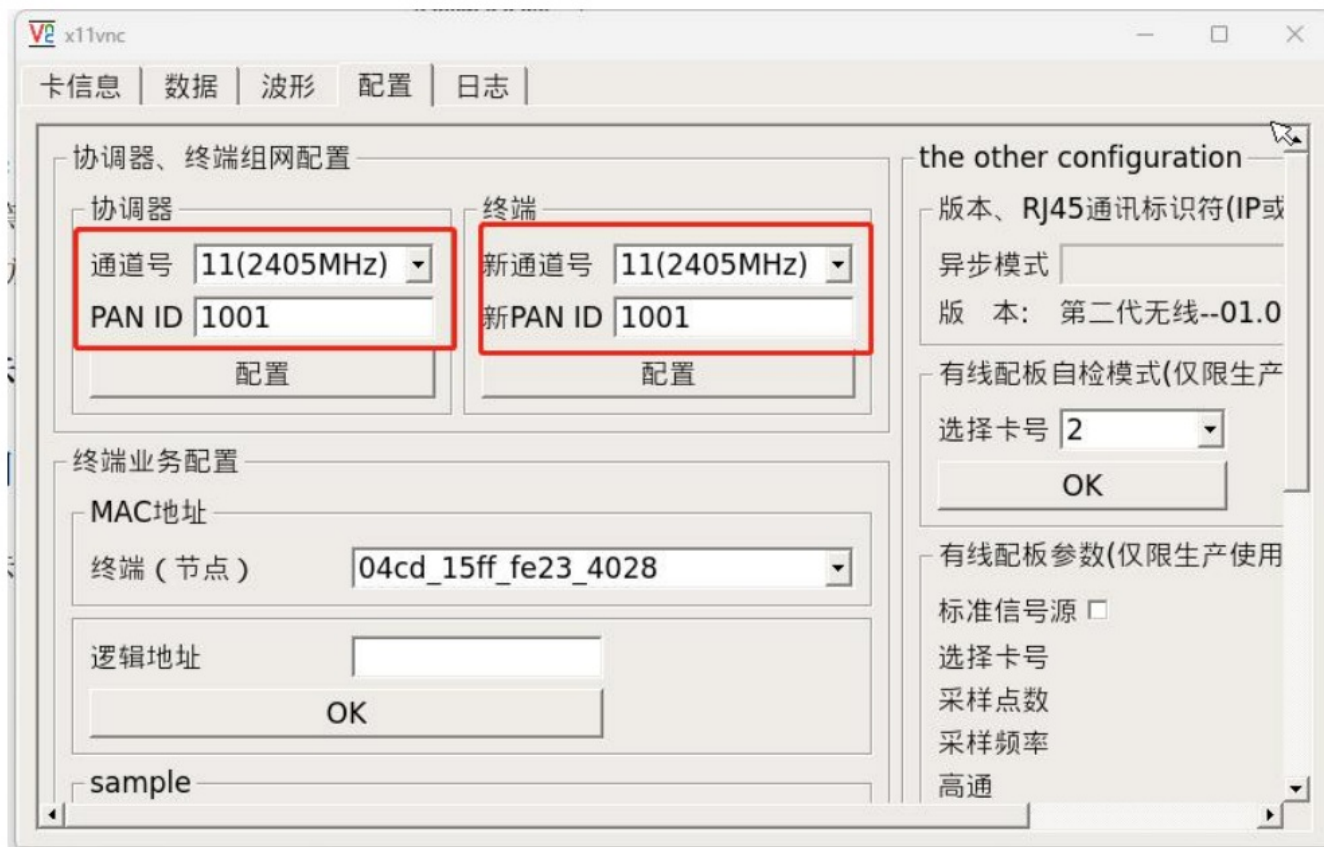Installation method 35mm guide rail standard installation

Tips for use (handling of common problems)

Problem 1: The equipment has trouble turning on after powering, and no indicator light is on.
Reasons and solution: Check and confirm whether the positive and negative poles of the wiring holes are correctly inserted into the positive and negative holes of the power cord as shown in Section "3.4" in this manual.
Problem 2: AIC8660-9001 intelligent data processor cannot establish a connection with wireless sensor
Reasons and solution: Use VNC Viewer software to check whether the wireless communication channel and PAN ID of the AIC8660-9001 are consistent with the wireless sensor.

Problem 3: Platform software is unable to connect to an intelligent data processor via Ethernet.

Reasons and solution: Check and confirm whether the RJ45 plug of the network cable is plugged into the network port shown in Section "3.4" of this manual, and whether the network port indicator is in the normal working state as the green light is always on while the yellow light flashing.

FCC Statement

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment.

This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Documents / Resources

AEROSPACE AIC8660-9000 All-Information Intelligent Data Processor [pdf] Instruction Manual
AIC8660-9000, AIC8660-9001, All-Information Intelligent Data Processor, AIC8660-9000 All-Information Intelligent Data Processor, All-Information Intelligent Data Processor, Intelligent Data Processor, Data Processor, Processor

References

- **User Manual**