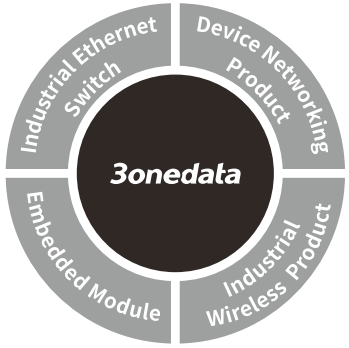
3onedata
Make network communication more reliable

RCU100-L02 Series Industrial IoT Edge Computing Intelligent Gateway Quick Installation Guide



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【Package Checklist】

Please check whether the package and accessories are intact while using the gateway for the first time.

1. Gateway
2. DIN-Rail mounting attachment
3. WiFi antenna (optional)
4. GNSS antenna (optional)
5. 4G antenna (optional)
6. 5G antenna (optional)
7. Warranty card
8. Certification

If any of these items are damaged or lost, please contact our company or dealers, we will solve it ASAP.

【Product Overview】

This series are DIN-Rail industrial IoT edge computing intelligent gateway. For convenience, the products of this series adopt the following number on the left in this guide, please confirm the number of your product.

Model I. RCU100-L02-P(9-36VDC) (2 100M copper ports + 1 RS-232 serial port + 4 RS-485 serial ports + 1 USB port + 1 TF card slot, 1*9~36VDC power input).

Model II. RCU100-L02-W0-P(9-36VDC) (2 100M copper ports + 1 RS-232 serial port + 4 RS-485 serial ports + 1 USB port + 1 TF card slot + 1 WiFi antenna interface, 1*9~36VDC power input).

Model III. RCU100-L02-W0-12IO-P(9-36VDC) (2 100M copper ports + 1 RS-232 serial port + 4 RS-485 serial ports + 1 USB port + 1 TF card slot + 12 IO ports + 1 WiFi antenna interface, 1*9~36VDC power input).

Model IV. RCU100-L02-G0-P(9-36VDC) (2 100M copper ports + 1 RS-232 serial port + 4 RS-485 serial ports + 1 USB port +1 SIM card slot + 1 TF card slot + 1 4G antenna interface, 1*9~36VDC power input).

Model V. RCU100-L02-G0-12IO-P(9-36VDC) (2 100M copper ports + 1 RS-232 serial port + 4 RS-485 serial ports + 1 USB port + 1 SIM card slot + 1 TF card slot + 12 IO ports + 1 4G antenna interface, 1*9~36VDC power input).

Model VI. RCU100-L02-G0W0-P(9-36VDC) (2 100M copper ports + 1 RS-232 serial port + 4 RS-485 serial ports + 1 USB port + 1 SIM card slot + 1 TF card slot + 1 4G antenna interface + 1 WiFi antenna interface, 1*9~36VDC power input).

Model VII. RCU100-L02-G0-GNSS-P(9-36VDC) (2 100M copper ports + 1 RS-232 serial port + 4 RS-485 serial ports + 1 USB port + 1 SIM card slot + 1 TF card slot + 1 4G antenna interface + 1 GNSS antenna interface, 1*9~36VDC power input).

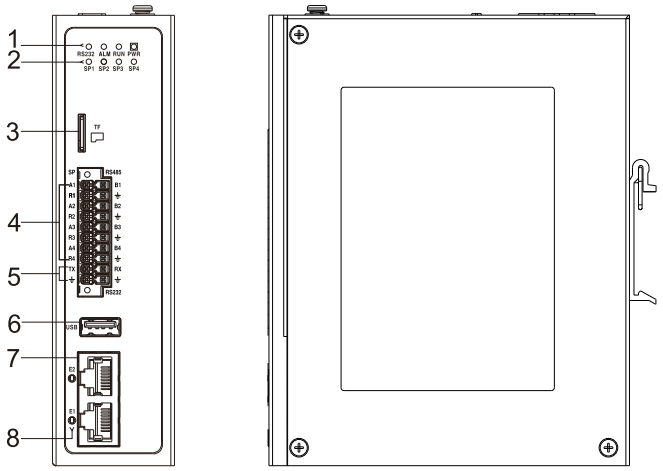
Model VIII. RCU100-L02-G0W0-12IO-P(9-36VDC) (2 100M copper ports + 1 RS-232 serial port + 4 RS-485 serial ports + 1 USB port + 1 SIM card slot + 1 TF card slot + 12 IO ports + 1 4G antenna interface + 1 WiFi antenna interface, 1*9~36VDC power input).

Model IX. RCU100-L02-5GW0-P(9-36VDC) (2 100M copper ports + 1 RS-232 serial port + 4 RS-485 serial ports + 1 USB port + 1 SIM card slot + 1 TF card slot + 2 5G antenna interfaces + 1 WiFi antenna interface, 1*9~36VDC power input).

Model X. RCU100-L02-5GW0-12IO-P(9-36VDC) (2 100M copper ports + 1 RS-232 serial port + 4 RS-485 serial ports + 1 USB port + 1 SIM card slot + 1 TF card slot + 12 IO ports + 2 5G antenna interfaces + 1 WiFi antenna interface, 1*9~36VDC power input).

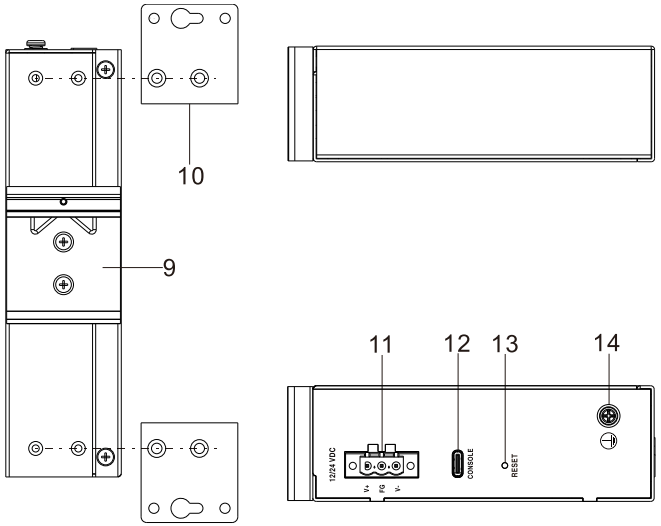
【Panel Design】

➢ **Front view and right view**



Model I

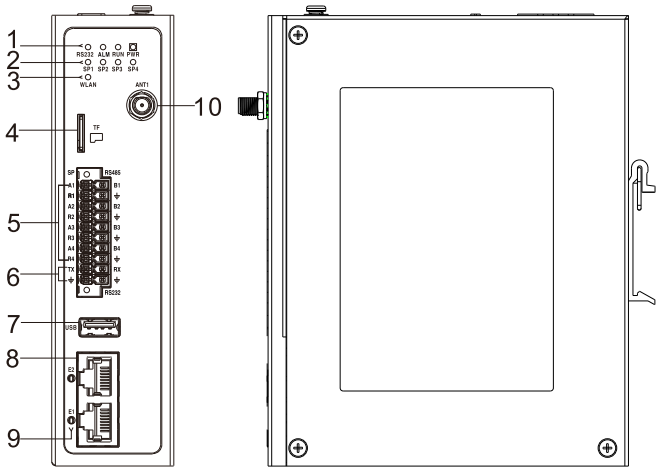
➢ **Rear view, bottom view and top view**



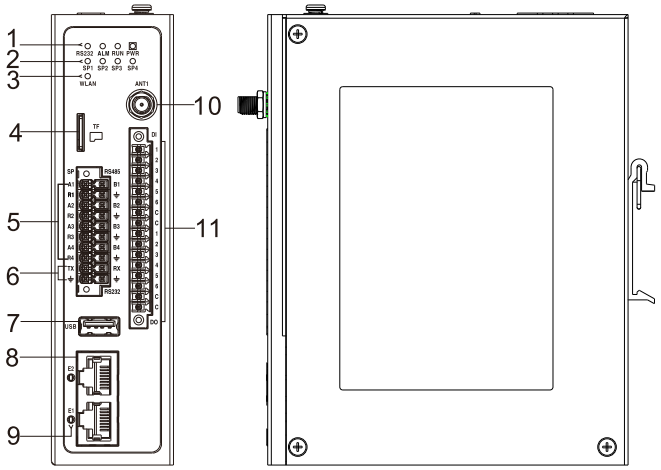
Model I

1. From left to right in order they are:
   - RS-232 serial port indicator
   - Alarm indicator (ALM)
   - Running indicator (RUN)
   - Power supply indicator PWR
2. RS-485 serial port indicators, from left to right in turn they are:
   - RS-485 Serial Port 1 indicator (SP1)
   - RS-485 Serial Port 2 indicator (SP2)
   - RS-485 Serial Port 3 indicator (SP3)
   - RS-485 Serial Port 4 indicator (SP4)
3. TF Slot
4. RS-485 serial port
5. RS-232 serial port
6. USB Slot
7. 100M copper port (FE2-1)
8. 100M copper port (FE2-1) indicator (2, 1)
9. DIN-Rail mounting kit
10. Wall-mounting panel
11. Terminal block for power input
12. CONSOLE port
13. RESET button
14. Grounding screw (M4)

➢ **Front view and right view**

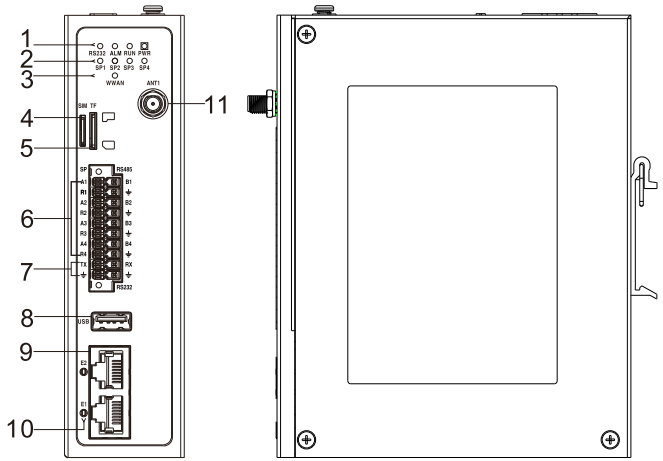


Model II

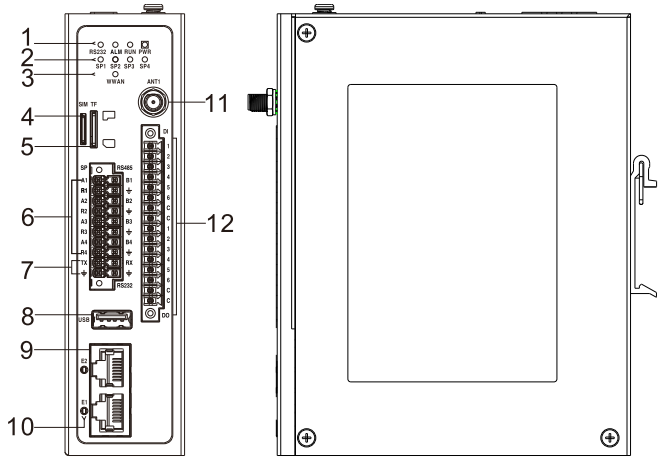


Model III

1. From left to right in order they are:
   - RS-232 serial port indicator
   - Alarm indicator (ALM)
   - Running indicator (RUN)
   - Power supply indicator PWR
2. RS-485 serial port indicators, from left to right in turn they are:
   - RS-485 Serial Port 1 indicator (SP1)
   - RS-485 Serial Port 2 indicator (SP2)
   - RS-485 Serial Port 3 indicator (SP3)
   - RS-485 Serial Port 4 indicator (SP4)
3. WiFi indicator (WLAN)
4. TF slot
5. RS-485 serial port
6. RS-232 serial port
7. USB slot
8. 100M copper port (FE2-1)
9. 100M copper port (FE2-1) indicator (2, 1)
10. WiFi antenna interface (ANT1)
11. IO/DO port

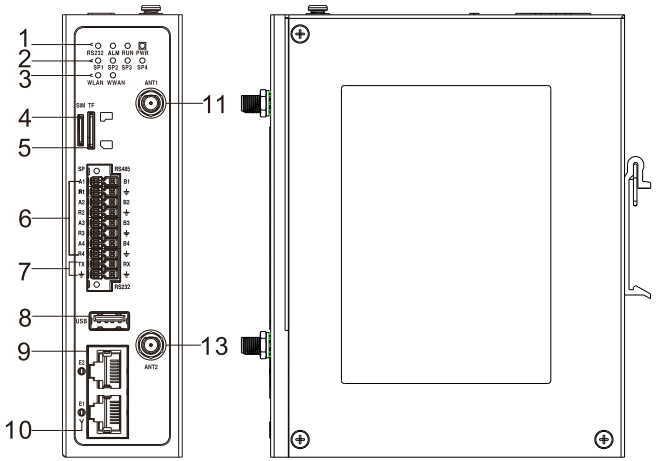


Model IV

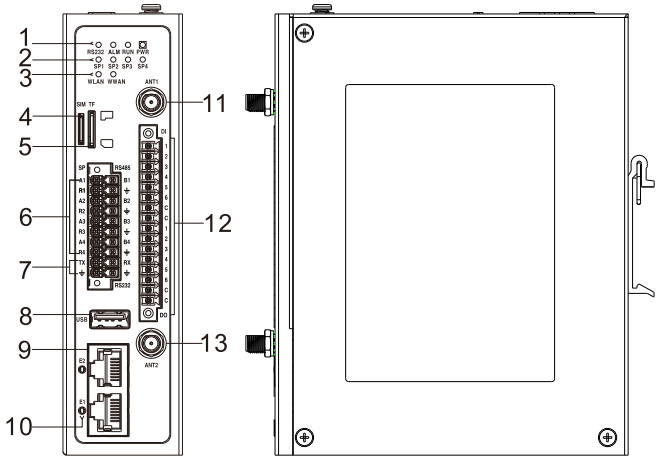


Model V

1. From left to right in order they are:
   - RS-232 serial port indicator
   - Alarm indicator (ALM)
   - Running indicator (RUN)
   - Power supply indicator PWR
2. RS-485 serial port indicators, from left to right in turn they are:
   - RS-485 Serial Port 1 indicator (SP1)
   - RS-485 Serial Port 2 indicator (SP2)
   - RS-485 Serial Port 3 indicator (SP3)
   - RS-485 Serial Port 4 indicator (SP4)
3. 4G indicator (WWAN)
4. SIM card slot
5. TF slot
6. RS-485 serial port
7. RS-232 serial port
8. USB slot
9. 100M copper port (FE2-1)
10. 100M copper port (FE2-1) indicator (2, 1)
11. 4G antenna interface (ANT1)
12. IO/DO port

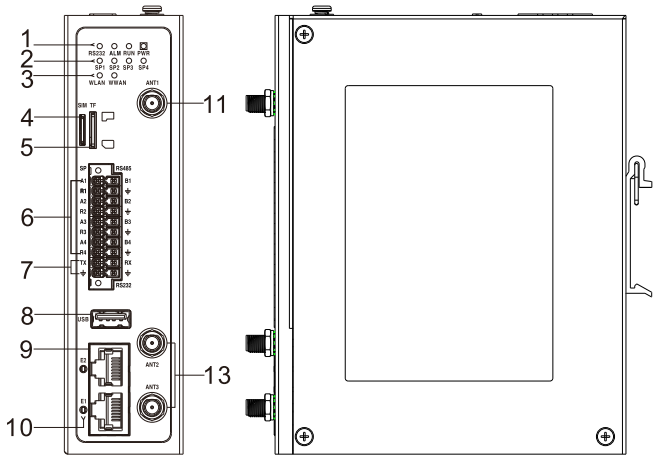


Model VI、VII

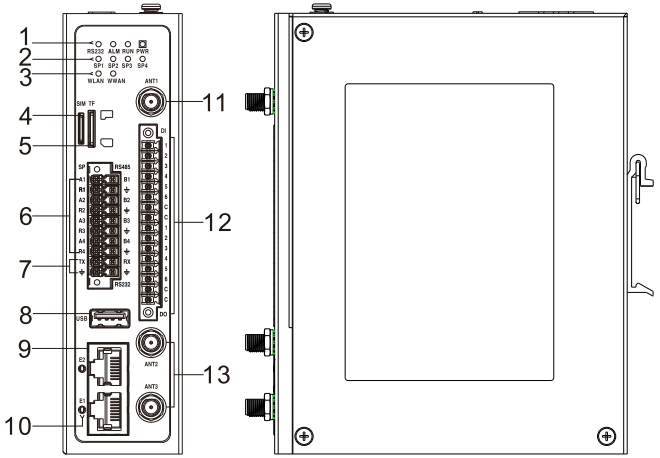


Model VIII

1. From left to right in order they are:
   - RS-232 serial port indicator
   - Alarm indicator (ALM)
   - Running indicator (RUN)
   - Power supply indicator PWR
2. RS-485 serial port indicators, from left to right in turn they are:
   - RS-485 Serial Port 1 indicator (SP1)
   - RS-485 Serial Port 2 indicator (SP2)
   - RS-485 Serial Port 3 indicator (SP3)
   - RS-485 Serial Port 4 indicator (SP4)
3. WiFi and 4G indicator (WLAN, WWAN)
4. SIM card slot
5. TF slot
6. RS-485 serial port
7. RS-232 serial port
8. USB slot
9. 100M copper port (FE2-1)
10. 100M copper port (FE2-1) indicator (2, 1)
11. WiFi / GNSS antenna interface (ANT1, Determined by the product model)
12. IO/DO port
13. 4G antenna interface (ANT2)



Model IX

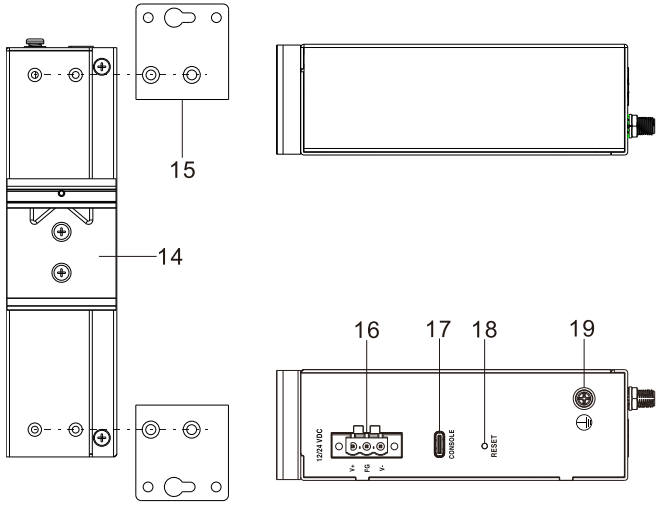


Model X

1. From left to right in order they are:
   - RS-232 serial port indicator
   - System alarm indicator (ALM)
   - Running indicator (RUN)
   - Power supply indicator PWR
2. RS-485 serial port indicators, from left to right in turn they are:
   - RS-485 Serial Port 1 indicator (SP1)
   - RS-485 Serial Port 2 indicator (SP2)
   - RS-485 Serial Port 3 indicator (SP3)
   - RS-485 Serial Port 4 indicator (SP4)
3. WiFi and 5G indicator (WLAN, WWAN)

4. SIM card slot
5. TF slot
6. RS-485 serial port
7. RS-232 serial port
8. USB Slot
9. 100M copper port (FE2-1)
10. 100M copper port (FE2-1) indicator (2, 1)
11. WiFi antenna interface (ANT1)
12. IO/DO port
13. 5G antenna interface (ANT2-ANT3)

➢ **Rear view, bottom view and top view**



Model II-X

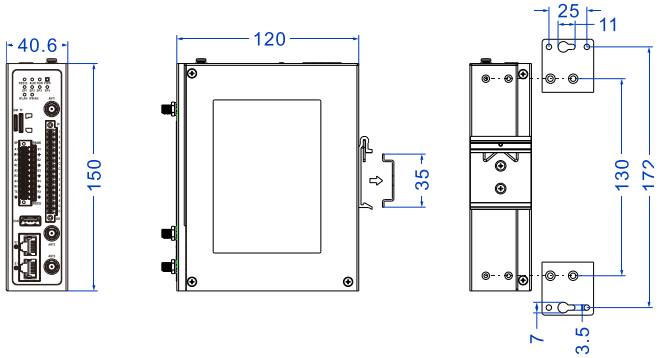
14. DIN-Rail mounting kit
15. Wall-mounting panel
16. Terminal block for power input
17. CONSOLE port
18. RESET button
19. Grounding screw (M4)

【Mounting Dimension】

Unit: mm

Notes:

- The wall mounting pegboard in the installation dimension figure is non-factory standard and need additional purchase.
- The two models of this series have the same dimensions.

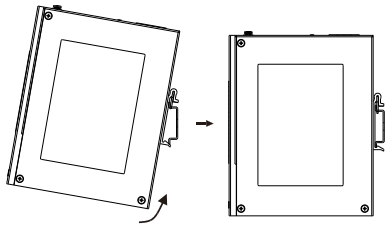


Notice Before Mounting:

- Don't place or install the device in area near water or moisture, keep the relative humidity of the device surrounding between 5%~95% without condensation.
- Before powering on the device, check the power specifications supported by the device to prevent device damage due to overvoltage.
- The device surface temperature is high after running; please don't directly contact to avoid scalding.

Installation and unloading method 1: 【DIN-Rail Mounting】

The product adopts 35mm standard DIN-Rail mounting which is suitable for most industrial scenes, mounting steps are as follows:



Step 1 Check whether the DIN-Rail mounting kit that comes with the device is installed firmly.

Step 2 Insert the top of DIN-Rail mounting kit (one side with spring support) into DIN-Rail, and then insert the bottom into DIN-Rail.

Tips:

Insert a little to the top, press downward and then insert to the bottom.

Step 3 Check and confirm the product is firmly installed on DIN-Rail, then mounting ends.

【Disassembling DIN-Rail】

Step 1 Power off the device.

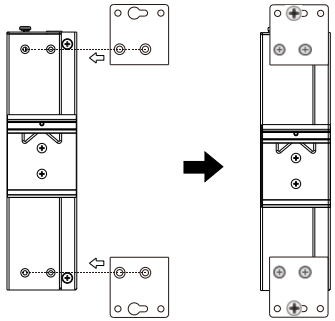
Step 2 After pressing the device downward slightly, first shift out the bottom of DIN-Rail mounting kit, and then shift out the top of DIN-Rail, disassembling ends.

Note:

- Power ON operation: First insert the power terminal of the power cord into the power interface of the device, and then plug in the power plug to power on.
- Power OFF operation: First, remove the power plug, then remove the wiring section of terminal block. Please pay attention to the above operation sequence.

Installation and unloading method 2: 【Wall-mounted Device Mounting】

Step 1 Use M3 screws to install the left/right hanging board on the device backboard.



Step 2 On the wall of device mounting, place the device on the wall for reference or refer to the mounting dimension to mark two screw positions.

Step 3 Nail M4 screws on the wall and keep 2mm interspace reserved.

Step 4 Hang the device on two screws and slide downward, then tighten the screw to enhance stability, mounting ends.

【Wall-mounted Device Disassembling】

Step 1 Power off the device.

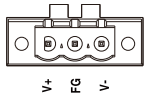
Step 2 Unscrew the screw on the wall about 2mm.

Step 3 Lift the device upward slightly, take out the device, disassembling ends.

Note:

- Power ON operation: First insert the power supply terminal block into the device power supply interface, and then plug the power supply plug contact and power on.
- Power OFF operation: First, remove the power plug, then remove the wiring section of terminal block. Please pay attention to the above operation sequence.

【Power Supply Connection】



The device provides 3-pin 5.08mm pitch terminal blocks for power input and supports 1 DC power supply input. The power supply supports non-polarity connection, and the equipment can still work normally after reverse connection. The definitions of power pin are shown in the left figure, and the device power input range is 9~36VDC.

【Reset Button Setting】

The device provides 1 RESET button that can be used to reboot the device and restore factory defaults. Press the RESET button for 1~5s and release it, and the device will restart automatically; Press and hold the RESET button for 6s and release it, and the device will automatically restore the factory defaults.

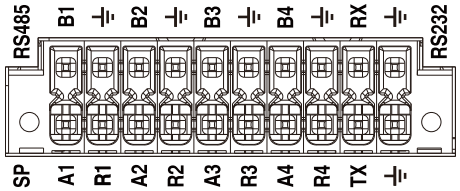
【Console Port Connection】



The device provides 1 program debugging port based on Type-C interface which can conduct device CLI command management after connecting to PC. Connect the CONSOLE port through software. The default configuration is as follows:

Serial Port Connection	Default
Baud rate	115200 bps
Data bit	8 bits
Parity bit	None
Stop bit	1 bit

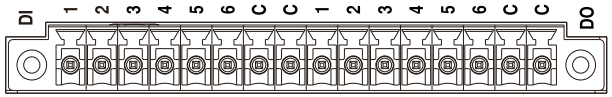
【Serial Port Connection】



The device provides 2*10 PIN 3.5mm pitch terminal blocks, supporting 1 RS-232 serial port, occupying 2*2 PIN. Supports 4 RS-485 serial ports, occupying 2*8 PIN; the pin definition of the terminal blocks is shown in the above figure:

- The port number has been marked on the figure.
- RS-485 signals are A and B
- RS-232 signals are TX and RX
- Terminating resistance for RS-485: 120Ω, with A and R controlled by short-circuiting
- ⏚Indicate signal ground

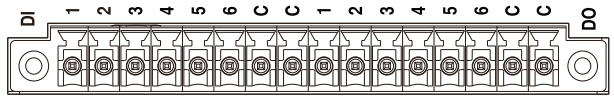
【DI Port Connection】



The device provides 6 DI ports (dry contact and wet contact), using 1*16PIN 3.5mm pitch terminal block, DI port occupies 1*8 PIN; When the negative terminal is connected to COM1 or COM2, it is a wet contact; when it is not connected to COM1 or COM2, it is a dry contact. The pin definitions of terminal blocks are shown in the figure.

- The port number has been marked on the figure.
- The input signal of DI is 1-6 on the left.
- The input signals of COM1 or COM2 are C/C respectively.

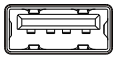
【DO Port Connection】



The device provides 6 DO ports (relay dry contacts), using 1*16PIN 3.5mm pitch terminal block, DO ports occupy 1*8 PIN; supports 6 alarm relay outputs, with current load capacity of 3A@30VDC. The pin definitions of terminal blocks are shown in the figure.

- The port number has been marked on the figure.
- The input signal of DO is 1-6 on the right.
- The input signals of COM1 or COM2 are C/C respectively.

【USB Port Connection】



This device provides 1 type-A USB 2.0 Female interface that supports system debugging and configuration file management.

【Mounting SIM Card】



The device provides a self-propelled SIM card slot. Insert SIM card into the card slot. Tap SIM card, and then take it out after the card pops up.

Notice:

If the SIM card needs to be changed, the device should be power off first in case of damaging the card.

【Insert/Unplug TF Card】



This device has 1 self-propelled TF card slot, and supports system debugging and configuration file

management. Insert TF card into the card slot. Tap TF card, and then take it out after the card pops up.

【Checking LED Indicator】

The device provides LED indicators to monitor its operating status, which has simplified the overall troubleshooting process. The function of each LED is described in the table below:

LED	Indicate	Description
PWR	ON	Power supply is running normally
	OFF	Power supply is disconnected or running abnormally
RUN	ON	The device is powering on or the device is abnormal
	OFF	The device is powered off or the device is abnormal.
	Blinking	The device is running normally
ALM	ON	System operation is abnormal
	OFF	The system is running normally
RS-232, SP1-SP4	ON	The serial port has data being transmitted
	OFF	No serial port connection or no data transfer
WWAN	Blinking	4G/5G wireless network is in an active network status
	OFF	4G/5G wireless network is running abnormally or turned off
WLAN	ON	WiFi wireless signal is running normally
	Blinking	WiFi wireless signal is transmitting data
	OFF	WiFi wireless signal is running abnormally or turned off
FE(1-2)	ON	LAN port has established valid network connection
	Blinking	LAN port is in network active status
	OFF	LAN port hasn't established a valid network connection

【Logging in to WEB Interface】

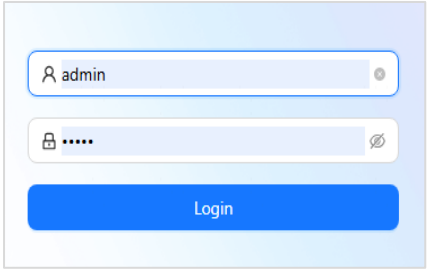
This device supports WEB management and configuration. Computer can access the device via Ethernet interface. The way of logging in to device's configuration interface via IE browser is shown as below:

Step 1 Configure the IP addresses of computer and the device to the same network segment, and the network between them can be mutually accessed.

Step 2 Enter device's IP address in the address bar of the computer browser.

http://192.168.1.250:8000/

Step 3 Enter device's username and password in the login window as shown below.



Step 4 Click "Login" button to login to the WEB interface of the device.

Note:

- The default IP address of the device is "192.168.1.250:8000".
- The default user name and password of the device are "admin/admin".
- If the user name or password is lost, user can restore it to factory settings via RESET button or management software; all modified configurations will be cleared after restoring to factory settings, so please backup configuration file in advance.
- Please refer to user manual for specific configuration method of logging in to WEB interface and other configurations about network management function.

【Specification】

Interface	
100M copper port	2 10/100Base-TX self-adaptive RJ45 ports, support full/half duplex self-adaption
RS-485 serial port	4 RS-485, using 2*10PIN 3.5mm pitch terminal blocks, serial port occupies 2*8PIN
RS-232 serial port	1 RS-232, using 2*10PIN 3.5mm pitch terminal blocks, serial port occupies 2*2PIN
DI port (optional)	6 DI ports (dry contact and wet contact), using 1*16PIN 3.5mm pitch terminal block, DI port occupies 1*8 PIN; When the negative terminal is connected to COM1 or COM2, it is a wet contact; when it is not connected to COM1 or COM2, it is a dry contact
DO port (optional)	6 DO ports (relay dry contacts), using 1*16PIN 3.5mm pitch terminal block, DO ports occupy 1*8 PIN; supports 6 alarm relay outputs, with current load capacity of 3A@30VDC.
USB	1 Type-A USB 2.0 Female
TF	1 self-propelled TF card slot
SIM	1 Nano-SIM card slot
4/5G antenna interface (Optional)	Cellular 4G/5G, 1 4G or 2 5G RP-SMA-K type (Female) interfaces
WiFi antenna interface (Optional)	WiFi site, IEEE802.11 b/g/n, 1 RP-SMA-K (Male) interface
GNSS antenna interface (Optional)	BDS, 1 RP-SMA-K (Male) interface
Indicator	Power indicator, running indicator,

	ALM indicator, serial port indicator, WLAN indicator, WWAN indicator
CONSOLE	Provide 1 program debugging port based on Type-C interface which can conduct device CLI command management after connecting to PC.
Power Supply	
Input power supply	1*9~36VDC power supply input, non-polarity
Access terminal block	3-pin 5.08mm pitch terminal blocks
Power Consumption	
Model VI, VII, VIII	No-load at normal temperature: 1.70W@24VDC Full-load at normal temperature: 2.57W@24VDC Full-load at high temperature: 3.19W@24VDC
Model IX, X	No-load at normal temperature: 2.40W@24VDC Full-load at normal temperature: 4.18W@24VDC Full-load at high temperature: 4.98W@24VDC
Working Environment	
Working temperature	-40℃~75℃
Storage temperature	-40℃~85℃
Working humidity	5%~95% (no condensation)
Protection grade	IP40 (metal shell)

【Disposal of Waste Electrical and Electronic Equipment (WEEE 2012/19/EU)】

(Applicable in the EU-member states)



The crossed-out wheeled bin symbol on the equipment or its packaging indicates that the product, at the end of its service life, shall not be mixed with unsorted municipal waste but should be collected separately, in accordance with local laws and regulations.

A proper separate collection of end-of-life equipment for the subsequent recycling, treatment and environmentally compatible disposal, will help prevent potential damage to the environment and human health, facilitating the reuse, recycling and/or recovery of its component materials.

Private users should contact their vendor or municipal waste management service and ask for disposal information.

Professional users should contact their suppliers and check the terms of their selling agreement.

This product must not be disposed of with other commercial waste.

Users' cooperation in the correct disposal of this product will contribute to saving valuable resources and protecting the environment.