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Make network communication more reliable

TCU1200-U04 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 Intelligent gateway
2. DIN-Rail mounting attachment
3. 4G antenna
4. Warranty card
5. Certificate

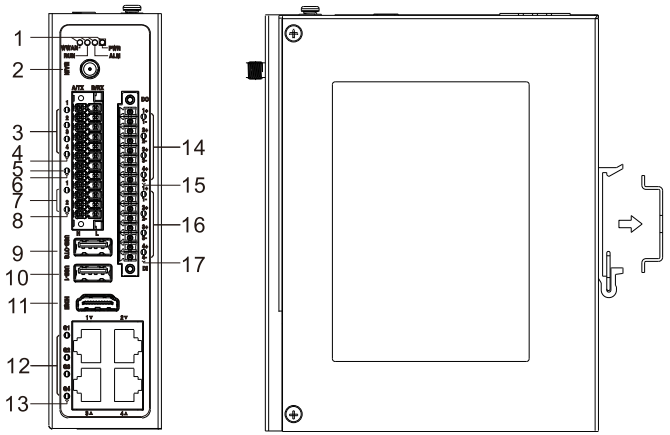
If any of these items are damaged or lost, please contact our company or dealers, we will solve it ASAP.

【Product Overview】

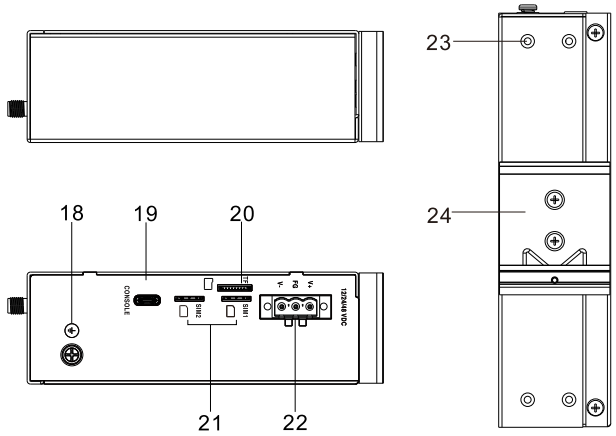
The product is DIN-Rail industrial IoT edge computing intelligent gateway. The product model is TCU1200-U04-G0-8IO-LV (4 Gigabit copper ports + 4 RS-485 serial ports + 1 RS-232 serial port + 2 CAN ports + 4 DO ports + 4 DI ports + 2 USB ports + 1 HDMI port + 1 TF card slot + 2 SIM card slots + 1 4G antenna + 1 12~48VDC power input).

【Panel Design】

➢ **Main view and right view**



➢ **Top view, bottom view and rear view**



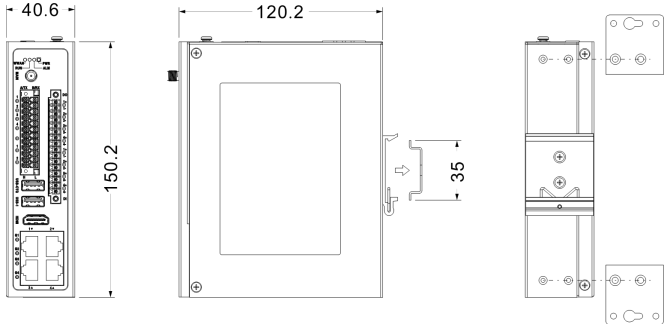
1. Indicators, from left to right in turn they are:
   - WiFi indicator (WWAN)
   - Running indicator (RUN)
   - Alarm indicator (ALM)
   - Power supply indicator PWR
2. 4G antenna interface (MAIN)
3. RS-485 serial port
4. RS-485 serial port indicator (1-4)
5. RS-232 serial port
6. RS-232 serial port indicator
7. CAN Port
8. CAN port indicator (1-2)
9. USB interface 2.0 (USB-OTG, white)
10. USB interface 2.0 (USB-1, blue)
11. HDMI Interface
12. Gigabit Ethernet copper port (G1-G4)
13. Gigabit Ethernet copper port indicator (G1-G4)
14. DO output terminal block
15. DO indicator (1-4)
16. DI input terminal block
17. DI indicator (1-4)
18. Grounding screw (M4)
19. CONSOLE port (Type-C)
20. TF card slot
21. SIM card slot
22. Power supply input terminal block
23. Wall-mounting location hole
24. DIN-Rail mounting kit

【Mounting Dimension】

Unit: mm

Notes:

In the installation dimension figure, the right side is wall mounting panel, the accessories are non-factory standard and need additional purchase.

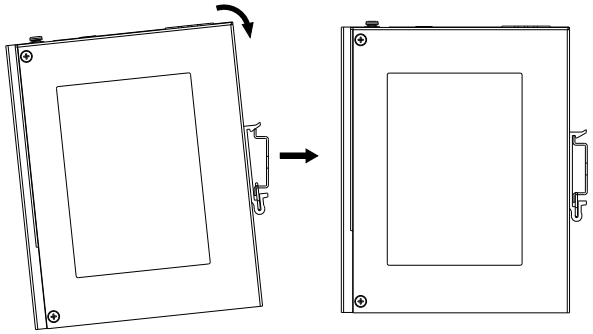


Notice Before Mounting:

- 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.

【DIN-Rail Mounting】

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



Step 1 Check if the DIN-Rail mounting kit is installed firmly.

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

Tips:

Insert a little to the bottom, lift upward and then insert to the top.

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

【Disassembling DIN-Rail】

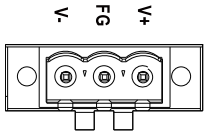
Step 1 Power off the device.

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

Notice Before Powering on:

- Power ON operation: First insert the power supply terminal block into the device power supply interface, and then plug the power supply plug 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】



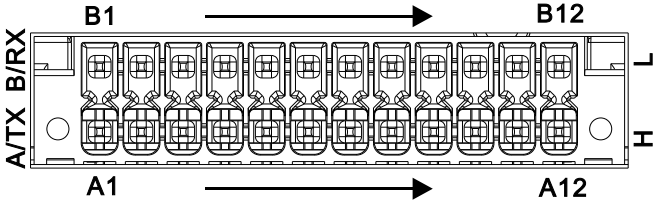
Provide 3-pin 5.08mm pitch terminal blocks for power input and support 1 DC power supply input. The power supply supports non-polarity connection, and the equipment can still work normally after reverse connection. The definitions of power pin are shown in the left figure, and the power input range is 12~48VDC.

【Console Port Connection】



Provide 1 program debugging port based on Type-C interface which can conduct device CLI command management after connecting to PC.

【Serial Port and CAN Port Connection】

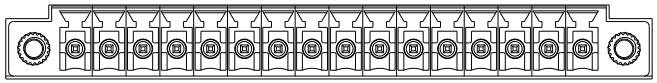


Provide 2 * 12-pin 3.5mm pitch wiring terminals, supporting 1 isolated serial port RS-232, occupying 2 * 2PIN and 4 isolated serial port RS-485, occupying 2 * 6 PIN and 2 CAN ports, occupying 2 * 4PIN.

The pin definitions of serial port and CAN port are shown in the following table.

Serial Port	PIN	Note	PIN	Note
RS-485 (serial port 1)	A1	A Signal	B1	B Signal
RS-485 (serial port 1 grounding)	A2			
RS-485 (serial port 2)	A3	A Signal	B3	B Signal
RS-485 (serial port 2 grounding)	B2			
RS-485 (serial port 3)	A4	A Signal	B4	B Signal
RS-485 (serial port 3 grounding)	A5			
RS-485 (serial port 4)	A6	A Signal	B6	B Signal
RS-485 (serial port 4 grounding)	B5			
RS-232 (serial port 5)	A7	RX	B7	TX-
RS-232 (serial port 5)	A8, B8			
CAN Port 6	A9	CANH Signal	B9	CANL Signal
CAN Port 6 grounding	A10, B10			
CAN Port 7	A11	CANH Signal	B11	CANL Signal
CAN Port 7 grounding	A12, B12			

【I/O Port Connection】

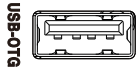


Provide 1 * 16-pin 3.5mm pitch wiring terminals, supporting 4 DO outputs, occupying 1 * 8 PIN; Support 4 DI inputs, occupying 1 * 8PIN. The pin definitions of I/O interface are shown in the following table.

CAN Port and I/O Port	PIN	Note
DO digital signal output channel 1	DO1+, DO1-	I/O opto-isolator output
DO digital signal output channel 2	DO2+, DO2-	
DO digital signal output channel 3	DO3+, DO3-	
DO digital signal output channel 4	DO4+, DO4-	
DI digital signal input	DI1+, DI1-	I/O

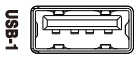
CAN Port and I/O Port	PIN	Note
channel 1		opto-isolator input
DI digital signal input channel 2	DI2+, DI2-	
DI digital signal input channel 3	DI3+, DI3-	
DI digital signal input channel 4	DI4+, DI4-	

【USB2.0 Connection】



Provide 1 type-A USB 2.0 Female interface (white) that supports system debugging and configuration file management.

【USB3.0 Interface Connection】



Provide 1 type-A USB 3.0 Female interface (blue) that supports system debugging and configuration file management.

【HDMI Port Connection】



Provide 1 HDMI, and the interface type is Type-A.

【Insert/Unplug SIM Card】



Provide 2 self-propelled SIM card slots. 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】



Support 1 self-propelled TF card slot and extended storage. Insert TF card into the card slot. Tap TF card, and then take it out after the card pops up.

【Antenna Connection】

Provide 1 antenna, the antenna specifications are shown below:

Type	Gain (dBi)	Count (pcs)
2.4G wireless	3	1

【Check LED Indicator】

Provide 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
WWAN	ON	Wireless network is enabled
	Blinking	Wireless network is in an active network status
	OFF	Wireless network is running abnormally or disabled
PWR	ON	Power is connected and running normally
	OFF	Power supply is disconnected or running abnormally
RUN	ON	The device is powering on or the device is abnormal
	Blinking	Blinking 1 time per second, system is running normally
	OFF	The device is powered off or the device is abnormal.
ALM	ON	Port link has alarm
	OFF	Port link has no alarm
CAN (1-2)	Blinking	The CAN port has data being transmitted
	OFF	The CAN port has no connection or no data transmission
RS-485(1-4), RS-232	Blinking	The serial port has data being transmitted
	OFF	No serial port connection or no data transfer
DO (1-4)	ON	Opto-isolator at the DO end is in conducting state
	OFF	Opto-isolator at the DO end is in open circuit state
DI (1-4)	ON	DI end connects to high level
	OFF	DI end connects to low level
G1-G4	ON	Ethernet port has established a valid network connection
	Blinking	Ethernet port is in an active network status
	OFF	Ethernet port has not established a valid network connection.

【Specification】

Panel	
Gigabit copper port	4 10/100/1000Base-T(X) self-adaptive RJ45, full/half-duplex mode, MDI/MDI-X automatic detection
RS-485	4 RS-485, using 2*12PIN, 3.5mm pitch terminal blocks, serial port occupies 2*6PIN
RS-232	1 RS-232, using 2*12PIN, 3.5mm pitch terminal blocks, serial port occupies 2*2PIN
CAN	2 CAN, using 2*12PIN, 3.5mm pitch terminal blocks, CAN port occupies 2*4PIN
DO port	4 DO outputs, adopt 1*16 PIN, 3.5mm pitch terminal blocks, DO port occupies 1*8 PIN; Support passive output of optoelectronic isolator
DI port	4 DI inputs, adopt 1*16 PIN, 3.5mm pitch terminal blocks, DI port occupies 1*8 PIN; Support dry contact active input, ON: 5~24VDC, OFF: 0~3VDC
USB	1 Type-A USB 2.0 Female, white 1 Type-A USB 3.0 Female, blue
HDMI port	1 HDMI, and the interface type is

	Type-A.
TF	1 self-propelled TF card slot
SIM	2 self-propelled SIM card slot
4G antenna	1 RP-SMA-K (Female) interface for 4G signal receiving
CONSOLE port	Provide 1 program debugging port based on Type-C interface which can conduct device CLI command management after connecting to PC.
Indicator	Running indicator, Alarm indicator, Power indicator, Port indicator, RS-232/485 serial port indicator, CAN port indicator, DI indicator, DO indicator, WWAN indicator
Power Supply	
Input power supply	1 12~48VDC power supply input Power non-polarity, support 5A overcurrent protection
Access terminal block	Adopt 3-pin 5.08mm pitch terminal block
Power Consumption	
Normal temperature no-load	4.0w@12VDC 4.0w@24VDC 4.0w@36VDC 4.0w@48VDC
Normal temperature full load	9.5w@12VDC 9.5w@24VDC 9.5w@36VDC 9.5w@48VDC
High temperature full load	10.5w@12VDC 10.5w@24VDC 10.5w@36VDC 10.5w@48VDC
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.