3onedata
Reliable Connections



TCU1200-U03 Series

DIN-Rail or Wall Mounting

ARM architecture industrial IoT Edge Computing Intelligent Gateway

- Support 4 Gigabit copper ports, 1 RS-232 serial port, 4 RS-485 serial ports, 2 CAN ports, 8 I/O ports, 2 USB, 1 HDMI, 1 TF card slot, 2 SIM card slots, and 1 4G antenna
- Support 4G networking, which can send data to the cloud
- Support edge network expansion, local computing and storage and other functions, and provide intelligent management and services
- Support 1 12~48VDC wide voltage power input
- Support -40~75℃ wide operating temperature range

Industrial Grade

+75℃
-40℃

IP40

CONNECTING FOR A BETTER FUTURE

3onedata Co.,Ltd.

Introduction

TCU1200-U03 series products are quad-core architecture industrial IoT edge computing intelligent gateways, which can collect Ethernet, serial port, CAN and other terminal device information, and connect the third-party Internet of Things/cloud platform, realizing localization and cloud remote collaborative management and control. The product provides 4G networking, Gigabit copper port, RS-232, RS-485, CAN, DI, DO and other interface types, using rail or wall-mounted installation mode, can meet the needs of different application sites.

TCU1200-U03 series has the ability of edge AI processing expansion, and supports multilingual secondary development; it has strong edge computing capability, and realizes data optimization, real-time response, agile connection and intelligent analysis at the edge nodes of the Internet of Things. Significantly reduce the data traffic at the site and the center, and avoid the bottleneck of cloud computing capability. Optimize the network architecture, make it safer and more responsive, and at the same time realize the on-site business more intelligently.

Hardware adopts fanless, low power consumption, wide temperature and voltage design, which has passed rigorous industrial standard tests, and adapt to the industrial scene environment with harsh requirements for EMC. It can be widely used in smart pole, smart pipe gallery, smart water, smart lighting, smart grid, smart buildings, public security, intelligent transportation, intelligent logistics, intelligent healthcare, intelligent plant and other intelligent fields.

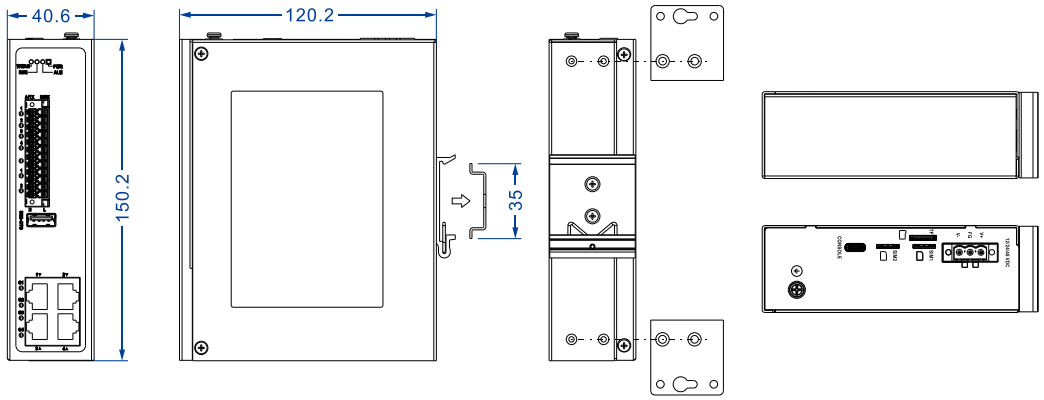
Features and Benefits

- Adopt quad-core 1.2GHz high-performance processor, 2GB memory, 16GB storage and nationalize key components
- Embedded Ubuntu operating system, system software architecture developed for IoT edge computing application scenarios
- Support secondary development, provide relevant guidance documents and sample codes, which can help users quickly apply and deploy
- Support TF card function verification, data processing function (four operations) verification
- Support RS-485/232 device and CAN device access
- Support DI/DO interface to monitor the status of traditional inventory equipment
- Support TF card, SIM card, HDMI, and USB device access
- Support wireless 4G network, enabling easy and convenient access to the Internet for devices, with stable and reliable network connection

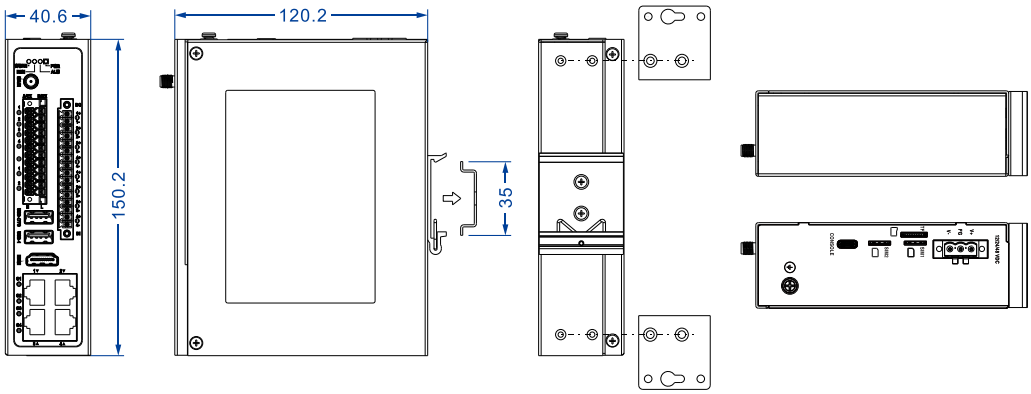
Dimension

Unit: mm

- TCU1200-U03-LV



- TCU1200-U03-G0-8IO-LV



Specification

Standard & Protocol	IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX IEEE 802.3a for 1000Base-T LTE for CAT4
System Information	Processor: ARM quad-core CPU 1.2GHz System: Linux Memory: 2GB DDR3 Storage: Support 16GB eMMC (optional 8GB, 32GB)
Cellular Network	network type LTE FDD and LTE TDD
Ethernet Port	Gigabit copper port: 4 Gigabit RJ45 copper ports, 10/100/1000Base-T(X), support 10M/100M/Gigabit self-adaption, full

	duplex/half duplex self-adaption
Serial Port	Standard: EIA RS-232C, RS-485 Interface quantity: 1 RS-232 serial port, 4 RS-485 serial ports RS-485 signal: A, B, GND RS-232 signal: TX, RX, GND Interface form: 1 RS-232, adopt 2*12 PIN, 3.5mm pitch terminal blocks, which occupy 2*2 PIN; 4 RS-485, adopt 2*12 PIN, 3.5mm pitch terminal blocks, which occupy 2*6 PIN Directional control: RS-485 direction adopts Automatic Data Direction Control technology
I/O Port	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 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
Can Port	Standard: CAN2.0A, CAN2.0B Interface quantity: 2 CAN ports CAN signal: CANH, CANL Interface form: adopt 2* 12 PIN, 3.5mm pitch terminal blocks, CAN port occupies 2*4 PIN
USB Interface	2 type-A USB 2.0 Female, support system debugging and configuration file management
HDMI Interface	1 HDMI, and the interface type is Type-A.
TF Card Slot	1 self-propelled TF card slot, support extended storage
SIM Card Slot	2 self-propelled SIM card slot
Antenna Interface	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	1 12-48VDC wide voltage power input, 3-core 5.08mm pitch terminal blocks Power supply supports non-polarity and 5A overcurrent protection

Power Consumption	• No-load at normal temperature: – 4.9w@12VDC – 4.8w@24VDC – 4.8w@36VDC – 4.8w@48VDC • Full-load at normal temperature: – 5.9w@12VDC – 5.7w@24VDC – 5.7w@36VDC – 5.9w@48VDC
Working Environment	Operating temperature: -40~75℃ Storage temperature:-40~85℃ Relative humidity: 5%~95% (no condensation)
Mechanical Structure	Housing: IP40 protection, metal Installation: DIN-Rail (standard) or wall (Optional) mounting Dimension (W x H x D): 40.6mm×150.2mm×120.2mm
Industrial Standard	IEC 61000-4-2 (ESD, electrostatic discharge), Level 3 • Air discharge: ±8kV • Contact discharge: ±6kV IEC 61000-4-4 (EFT, electrical fast transient pulses), Level 3 • Power supply: ±2kV • Signal: ±1kV IEC 61000-4-5 (Surge), Level 3 • Power supply: common mode ±2kV, differential mode ±1kV • Signal: common mode±2kV, differential mode±1kV Shock: IEC 60068-2-27 Free fall: IEC 60068-2-32 Vibration: IEC 60068-2-6
Authentication	CE, FCC, RoHS
Warranty	5 years

Ordering Information

Model	Gigabit Copper Port	RS-232 Serial Port	RS-485 Serial Port	CAN Port	I/O Port	USB Interface	HDMI Interface	SIM Card Slot	TF Card Slot	4G Antenna	Power Supply
TCU1200-U03-LV	4	1	4	2	—	1	—	2	1	—	1 12~48VDC power supply input
TCU1200-U03-G0-8IO-LV	4	1	4	2	8	2	1	2	1	1	

Note:

The SIM of the TCU1200-U03-LV is reserved.

Accessory Information

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

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