3onedata
Reliable Connections



RCU100-L02 Series

DIN-Rail Mounting

ARM Architecture Industrial IoT Edge Computing Intelligent Gateway

- Support 2 100M copper ports, 1 RS-232 serial port, 4 RS-485 serial ports, 6 DI ports and 6 DO ports (optional)
- Support USB2.0, TF card, SIM card, 4G/5G antenna interface (optional) and WiFi/GNSS antenna interface (optional)
- Support all kinds of mainstream industrial communication protocols
- Support cellular 4/5G, WiFi networking, which can send data to the cloud
- Support 9~36VDC power supply input and nonpolarity
- Support -40~75℃ wide temperature operation

Industrial Grade

WiFi

CONNECTING FOR A BETTER FUTURE

3onedata Co.,Ltd.

Introduction

RCU100-L02 series products are quad-core architecture industrial IoT edge computing intelligent gateways, which can collect Ethernet, serial port and other terminal device information, and connect the third-party Internet of Things/cloud platform, realizing localization and cloud remote collaborative management and control. Provide 4G/5G, WiFi networking, BDS, 100M copper port, RS-232/485, USB, DI, DO and other interface types, using DIN-Rail installation mode that can meet the needs of different application sites.

RCU100-L02 series products are intelligent gateways that solve the communication problem of industrial Internet of Things. It can deal with the inconsistency of communication protocols between different software systems, controllers and data acquisition devices, and realize information integration and application support of the Internet of Things. It adopts high-performance embedded hardware platform, embedded industrial data collection and processing system, and has a variety of communication protocol libraries, which can realize centralized collection, preprocessing, protocol conversion and multiplexing and forwarding of data from different software systems, controllers and field devices, and support 4G/5G, WiFi networking to send data to the cloud.

The hardware adopts fanless, low power consumption and wide temperature and voltage design, which has passed rigorous industrial standard tests, and suits the industrial scene environment with harsh requirements for EMC. It can be widely used in smart grid, smart manufacturing, smart factories, smart water affairs, smart logistics, smart buildings, smart poles and other intelligent fields.

Features and Benefits

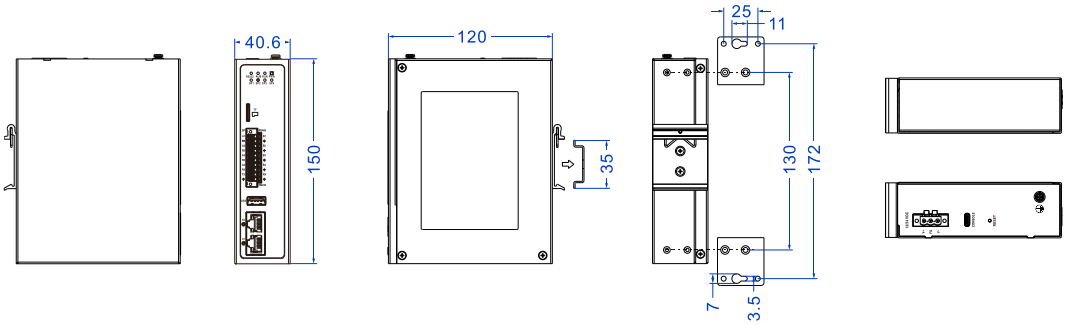
- Support mainstream industrial communication protocols: ModbusRTU, ModbusTCP, MQTT, OPC UA, etc
- Support a variety of power communication protocols: IEC 61850, IEC 60870-5-101, DL/T 645, etc.
- Support communication protocols of third-party devices such as Siemens, Fanuc, Omron, Mitsubishi, Rockwell, Haas, Schneider, Madzak and Jiexin.
- Support TLS and SSL data encryption, which can ensure data security in transmission
- Support 100Mbps Ethernet switch driver transplantation
- Support TF card function verification, data processing function (four operations) verification
- Support JavaScript scripts, Python scripts
- Support real-time monitoring of device connection status and operation status
- Support convenient customization, extension and development of northbound and southbound plug-ins according to requirements
- Support multi-source aggregation, can establish connections with various industrial protocol devices at the same time

- Support Web management pages, manage device connections, view real-time data of devices and monitor devices through Web pages
- Support streaming processing, and edge AI/ML analysis and logic control can be realized for the collected industrial data
- Support wireless 4G/5G, WiFi network, BDS enabling easy and convenient access to the Internet for devices, with stable and reliable network connection
- Support Ethernet, RS-232/485, USB multi-channel device data acquisition and protocol conversion access
- Support DI/DO interface to monitor the status of traditional inventory equipment

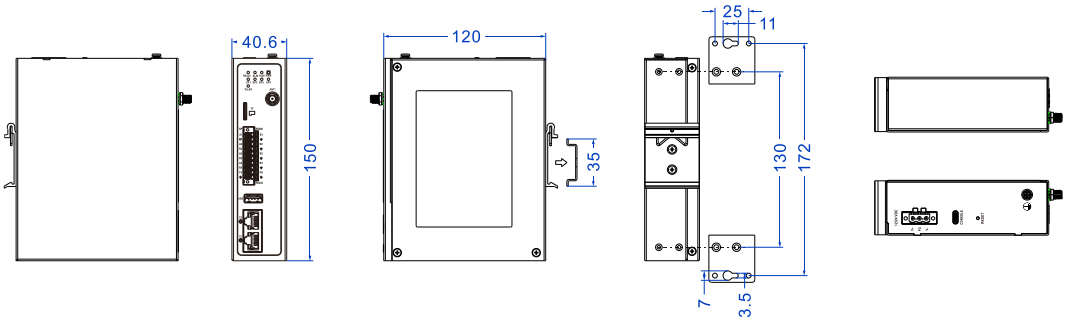
Dimension

Unit: mm

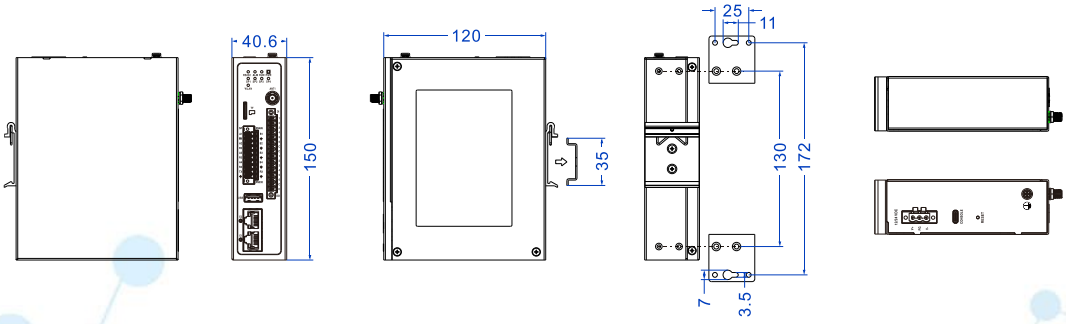
- RCU100-L02-P(9-36VDC)



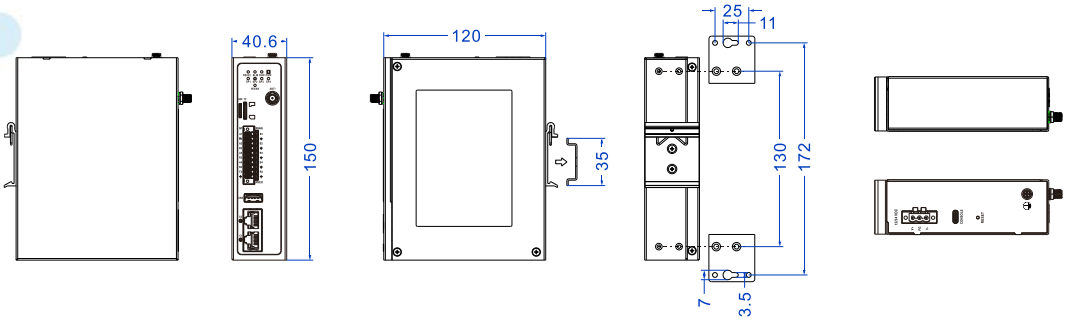
- RCU100-L02-W0-P(9-36VDC)



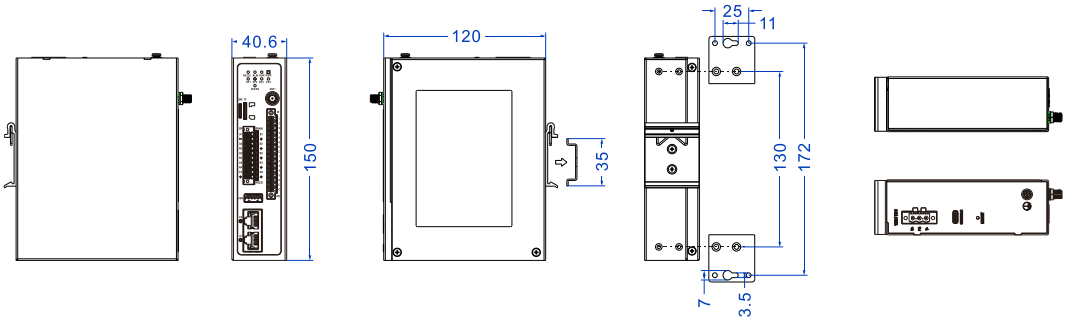
- RCU100-L02-W0-12IO-P(9-36VDC)



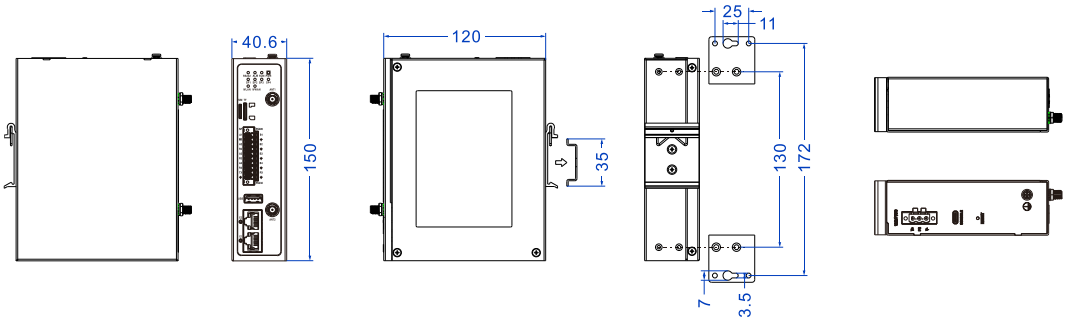
- RCU100-L02-G0-P(9-36VDC)



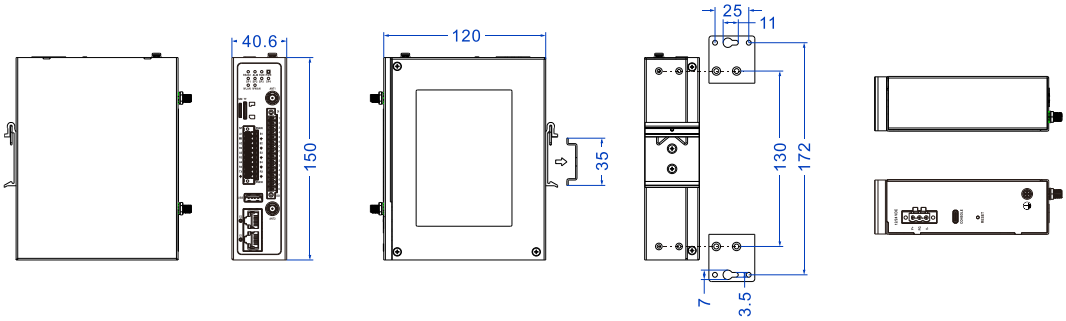
- RCU100-L02-G0-12IO-P(9-36VDC)



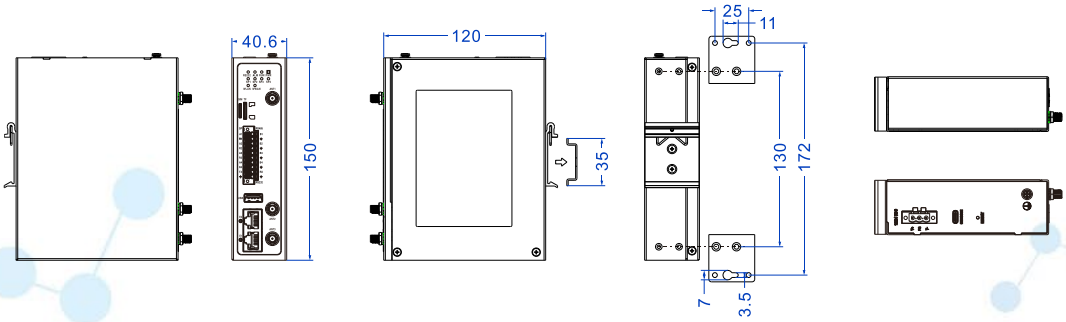
- RCU100-L02-G0W0-P(9-36VDC)、RCU100-L02-G0-GNSS-P(9-36VDC)



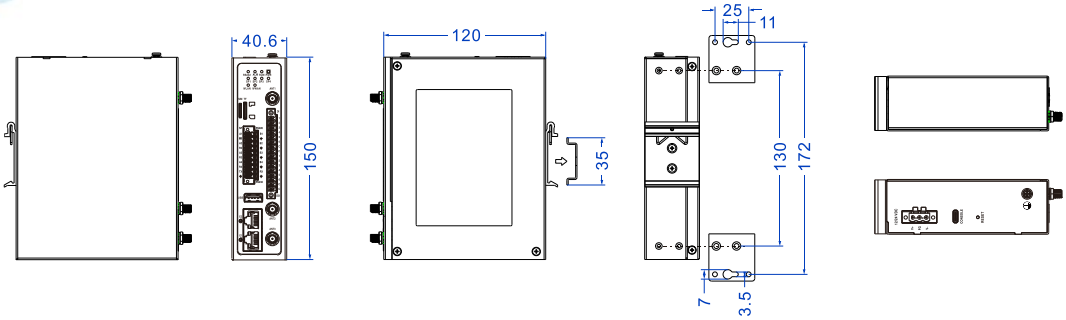
- RCU100-L02-G0W0-12IO-P(9-36VDC)



- RCU100-L02-5GW0-P(9-36VDC)



- RCU100-L02-5GW0-12IO-P(9-36VDC)



Specification

Standard & Protocol	IEEE 802.3 for 10Base-T IEEE802.3u for 100Base-TX
System Information	Processor: ARM dual-core, T113i CPU 1.2GHz System: Linux Memory: 1GB DDR3 Storage: 256MB
Software Functions	Security function: IP Address Filtering, MAC Address Filtering, Port Forwarding Diagnostic tools: Ping test, route tracking Network management: network configuration, cellular network System Management: Log management, time setting, communication monitoring, backup and restore, system recovery
Cellular Network	4/5G cellular network, network standard WCDMA, CDMA, EVDO, LTE FDD, LTE TDD, TD-SCDMA, 5G NR-FDD, 5G NR-TDD
Ethernet Port	100M copper port: 2 100M RJ45 copper ports, 10/100Base-TX, support 10M/100M self-adaption, full duplex/half duplex self-adaption
Serial Port	Standard: EIA RS-232C, RS-485 Quantity of serial ports: 1 RS-232, 4 RS-485 RS-232 signal: DCD, RXD, TXD, DTR, GND, DSR, RTS, CTS RS-485 signal: D+, D-, GND Baud rate: 1200bps-115200bps Data bit: 5bit, 6bit, 7bit, 8bit Parity bit: None, Even, Odd Stop bit: 1bit, 2bit Flow control: RTS/CTS, DTR/DSR, XON/XOFF Direction control: RS-485 direction adopts Automatic Data Direction Control

	(ADDC) Load capacity: RS-485 terminal supports 32-node polling environment Terminating resistance for RS-485: 120Ω, with A and R controlled by short-circuiting Parameters of electromagnetic isolation device: 3KVDC/2KVrms Transmission distance: RS-232, 15m; RS-485, 1200m Interface form: 2*10 PIN 3.5mm pitch terminal blocks, among which 1 RS-232 occupies 2*2 PIN and 4 RS-485 occupy 2*8 PIN
IO(Optional)	DI port: 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 node; when it is not connected to COM1 or COM2, it is a dry contact DO port: 6 DO ports (transistor output, drain type), using 1*16PIN 3.5mm pitch terminal block, DO port occupies 1*8 PIN.
USB Interface	1 type-A USB 2.0 Female, support system debugging and configuration file management
TF Slot	1 self-propelled TF card slot, software upgrade and configuration file management
SIM Slot	1 self-propelled SIM card slot
RESET	1 RESET button can realize device reboot and one-key factory default restoration.
CONSOLE	Provide 1 program debugging port based on Type-C interface which can conduct device CLI command management after connecting to PC.
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
Power Supply	1 9~36VDC power supply input

	3-pin 5.08mm pitch terminal block, support non-polarity and overcurrent protection
TPM	TPM 2.0/TCM 2.0 (Optional), enabling trusted system bootloading
Power Consumption	RCU100-L02-G0W0-P(9-36VDC), RCU100-L02-G0-GNSS-P(9-36VDC), RCU100-L02-G0W0-12IO-P(9-36VDC): No-load at normal temperature: 1.70W@24VDC Full-load at normal temperature: 2.57W@24VDC Full-load at high temperature: 3.19W@24VDC RCU100-L02-5GW0-P(9-36VDC), RCU100-L02-5GW0-12IO-P(9-36VDC): 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	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×150mm×120mm Weight: RCU100-L02-5GW0-12IO-P(9-36VDC): 0.669kg RCU100-L02-5GW0-P(9-36VDC): 0.669kg RCU100-L02-G0W0-12IO-P(9-36VDC): 0.656kg RCU100-L02-G0W0-P(9-36VDC): 0.656kg RCU100-L02-G0-GNSS-P(9-36VDC): 0.656kg
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 60068-2-31 Vibration: IEC 60068-2-6

Authentication	CE, FCC, RoHS
Warranty	3 years

Ordering Information

Model	100M Copper Port	RS-232 Serial Port	RS-485 Serial Port	USB Interface	TF Card Slot	SIM Card Slot	I/O Port	4G Interface	5G Interface	WiFi Interface	Memory + Storage	Power Supply
RCU100-L02-P(9-36VDC)	2	1	4	1	1	—	—	—	—	—	1GB+ 256MB	9~36VDC
RCU100-L02-W0-P(9-36VDC)	2	1	4	1	1	—	—	—	—	1	1GB+ 256MB	9~36VDC
RCU100-L02-W0-12IO-P(9-36VDC)	2	1	4	1	1	—	12	—	—	1	1GB+ 256MB	9~36VDC
RCU100-L02-G0-P(9-36VDC)	2	1	4	1	1	1	—	1	—	—	1GB+ 256MB	9~36VDC
RCU100-L02-G0-12IO-P(9-36VDC)	2	1	4	1	1	1	12	1	—	—	1GB+ 256MB	9~36VDC
RCU100-L02-G0W0-P(9-36VDC)	2	1	4	1	1	1	—	1	—	1	1GB+ 256MB	9~36VDC
RCU100-L02-G0-GNSS-P(9-36VDC)	2	1	4	1	1	1	—	1	—	GNSS	1GB+ 256MB	9~36VDC
RCU100-L02-G0W0-12IO-P(9-36VDC)	2	1	4	1	1	1	12	1	—	1	1GB+ 256MB	9~36VDC
RCU100-L02-5GW0-P(9-36VDC)	2	1	4	1	1	1	—	—	2	1	1GB+ 256MB	9~36VDC
RCU100-L02-5GW0-12IO-P(9-36VDC)	2	1	4	1	1	1	12	—	2	1	1GB+ 256MB	9~36VDC

Accessory Information

Type	Gain (dBi)	Count (pcs)	Remark
WiFi/GNSS/4G/5G Antenna	—	—	Optional

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◂ Please scan our QR code for more details

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