

Modular Edge IoT Gateway

USR-M300



Introduction

USR-M300 is a high-performance and scalable edge IOT gateway. This device integrates edge collection, data calculation, data reading and writing, active reporting, linkage control, IO collection and control and other functions. The collection protocol includes standard Modbus protocol and a variety of common PLC protocols, as well as industry-specific protocols. At the same time, the product also has routing and VPN as well as graphical programming functions to ensure data transmission security. Using graphical programming, users can develop independently to achieve the required functions.

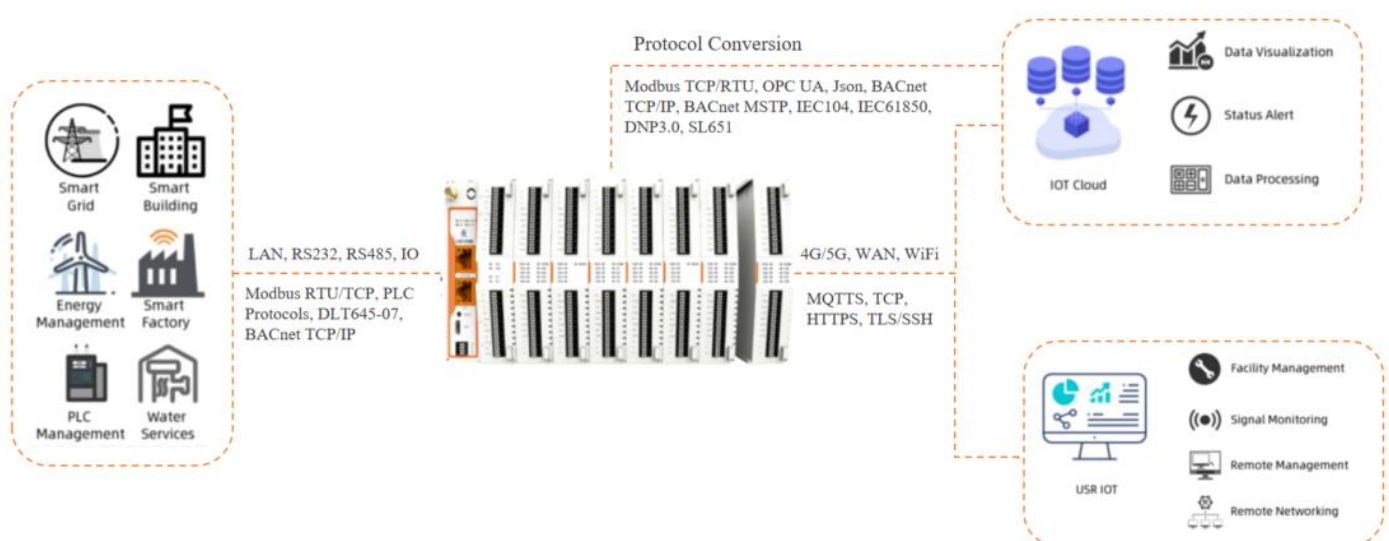
USR-M300 is embedded in Linux kernel, with a main frequency of up to 1.2Ghz. It can access the Internet via Ethernet port, ADSL and LTE cat4 cellular network to achieve easy network deployment.

It is widely used in various industrial intelligent solutions such as industrial robot, smart factories, smart agriculture, smart water management system etc.

Product Features

- Dual-core professor with ultra-high performance, the main frequency is up to 1.2Ghz, providing high-performance processing resources for edge computing.
- Supports Node-RED graphical programming to facilitate user development.
- LTE 4G and Ethernet network serve as backups for each other to ensure stable network transmission without downtime.
- Integrated 1*WAN/LAN and 1*LAN Ethernet port, VPN and firewall protection to ensure safe data transmission.
- Integrated 2 serial ports: 1*RS232/485, 1*RS485, which can transform traditional serial devices into IOT devices.
- Comes with IO interface: 2*DI, 2*DO, 2*AI, flexible expandable IO module is supported.
- GPS function is supported,
- Rich VPN protocols: PPTP, L2TP, OpenVPN are supported,
- Routing and firewall are supported,
- Remote management: PUSR cloud and DM platform management,
- Data cache is up to 2G to ensure the data can be save when the network is now stable,
- Powerful edge gateway function: supports edge collection, edge computing, group reporting, and supports real-time collection of up to 2000 edge computing points and 500 virtual points.
- Supports major industrial protocols including Modbus TCP/RTU, PLC protocols, OPC UA, BACNET, DLT645
- Support 2 socket channels, each channel supports TCP(SS)/UDP, MQTT(S) protocols.
- Cloud support: MQTT via AWS IOT, Alibaba Cloud, and PUSR Cloud.

Application



Specifications

Power supply	
Power input	DC 9~36V
Working current	Average: 194.6mA @12V, MAX: 240mA @12V
Serial port	
No.	2*serial port Serial port 1: RS232/485 Serial port 2: RS485
Band rate	600~230400bps, user-defined baud rate is supported
Data bits	7, 8
Stop bits	1, 2
Parity	None, Even, Odd
IO interface	
DI	2*DI, 0 - 2 V detected as logic low, 9 - 36 V detected as logic high
DO	2*Relays, DC contacts rating @R(at resistive load)10A / 28V DC AC contacts rating @R(at resistive load)10A / 277V AC,NO AC contacts rating @R(at resistive load)5A /250V AC, NC
AI	2 x Analog input 4-20mA
Physical characteristics	
Dimension	79.6x 58 x110 (mm)
Housing	ABS housing, IP30 protection
Installation	Din rail mounting, wall mounting
Weight	<300g
Environment characteristics	
Operating temperature	-25°C ~ +70°C
Storage temperature	-40°C ~ +85°C
Operating humidity	5% to 95% non-condensing
EMC protection	
ESD	IEC61000-4-2,Level 3,class B,contact 6KV,air 8KV
Surge	IEC61000-4-5,Level 3,class B
EFT	IEC61000-4-4,Level 3,class B
Indicator	
POW	ON: Gateway is powered up OFF: Gateway is not power up
WORK	When the device is working properly, it blinks for 1s frequency
NET	Blinking when the wan connects to internet OFF when there is no network
DATA	Blinking when serial port is transmitting data
DO status	Light on, the channel output is activated

DI status	Light on, the channel is activated by input signal
Network	
Cellular	LTE Cat4, Global Frequency
Ethernet	1*WAN/LAN + 1*LAN 10/100 Mbps, compliance IEEE 802.3, IEEE 802.3u standards, supports auto MDI/MDIX
Cellular	
Frequency	TDD-LTE: B34/38/39/40/41 FDD-LTE: B1/2/3/4/5/7/8/12/13/18/19/20/25/26/28/66 WCDMA: B1/2/4/5/6/8/19 GSM/EDGE: B2/3/5/8
SIM	1*Micro SIM
Antenna	1*SMA-Female
WiFi(only -EW support)	
WiFi standard	2.4G: IEEE 802.11b/g/n/ax 5.8G: IEEE802.11a/n/ac/ax
Wi-Fi security	WPA-PSK、WPA2-PSK、WPA3-PSK, TKIP、AES
Mode	STA
Transmission distance	Covering radius: 150 meters by line of sight. Actual transmission distance depends on environment of the site.
GPS(Only -GL support)	
Antenna Interface	1 * SMA-K
Accuracy	The theoretical value for positioning accuracy is 2.5 meters, this accuracy is influenced by factors such as the number of available satellites.
Software	
Network Protocols	ICMP,IPv4,IP,ARP,TCP,UDP,DHCP,DNS,HTTP,MQTT,SNMP
Acquisition Protocols	Mainstream PLC protocols, DLT645-2007, Modbus TCP, Modbus RTU, BACnet TCP/IP
Reporting Protocols	Modbus RTU, Modbus TCP, OPC UA, Json, BACNET TCP/IP, BACnet MSTP, IEC104, IEC61850, SL651, DNP3.0
Configuration method	Built-in webpage
Modbus Gateway	Modbus RTU/TCP protocol conversion
Data cache	2G
Linkage control	Supported. Data collection points, DI, and AI can be used as trigger and executed by DO
IP Routing	Static routing
Firewall	√
NTP	√
VPN	PPTP, L2TP, OpenVPN
SNMP	√
Extended Modular	√

Others

Approvals

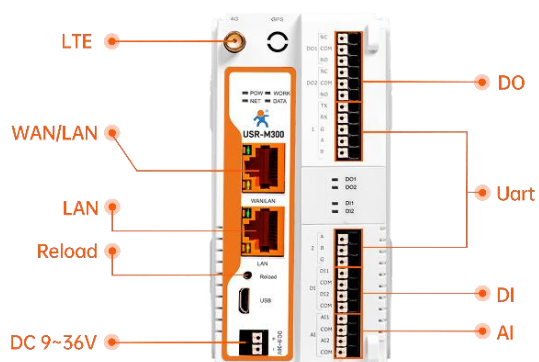
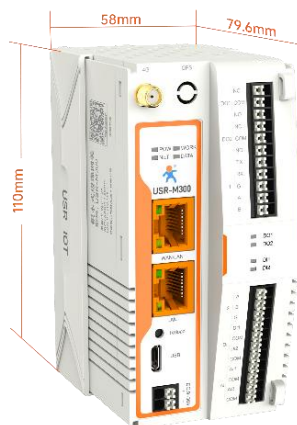
CE, FCC, ROHS, WEEE

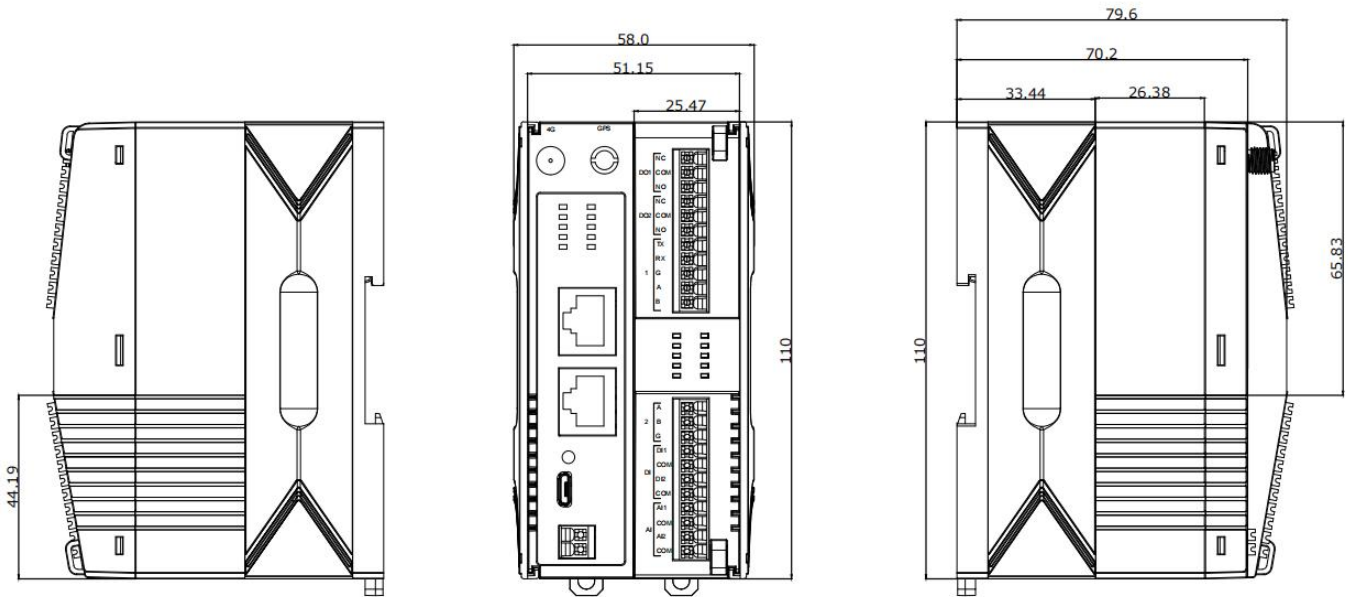
Ordering Guide

Model	Ethernet	Cellular	WiFi	Area	Band
USR-M300-GL	√	LTE Cat4	--	Global	TDD-LTE: B34/38/39/40/41 FDD-LTE: B1/2/3/4/5/7/8/12/13/18/19/20/25/26/28/66 WCDMA: B1/2/4/5/6/8/19 GSM/EDGE: B2/3/5/8
USR-M300-ETH	√	--	--	Global	--
USR-M300-EW	√	--	2.4G & 5.8G	Global	IEEE802.11 b/g/n/ac

Details

Unit: mm





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