Remote IO Edge Gateway

USR-M100 specification

Introduction

The USR-M100 is an intelligent IoT I/O gateway with comprehensive functions like on-board I/O support and RS-485/232/Ethernet interface, is an advanced modular RTU product with a unique hardware and software design, making it an ideal solution for a variety of industrial data acquisition applications.

The USR-M100 has a unique mechanical design that reduces the amount of time required for installation and removal, simplifying deployment and maintenance. In addition, the USR-M100 supports Modbus RTU Master protocol for retrieving field site serial data from serial meters and also supports OT/IT protocol conversion.

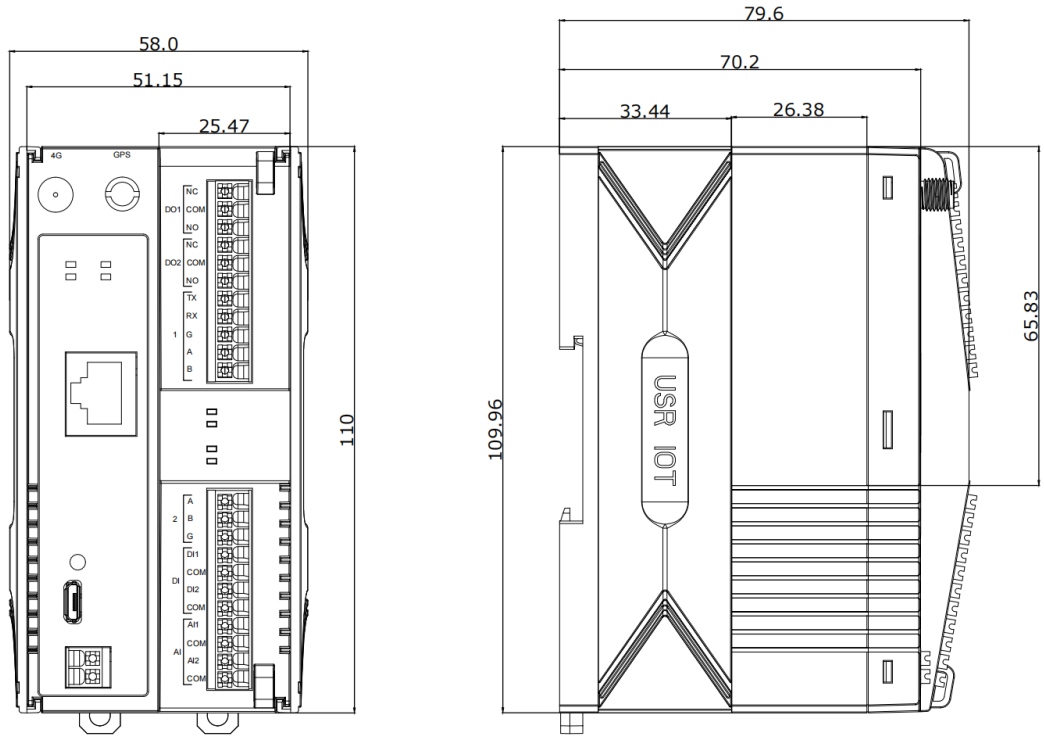
With the ability to convert between multiple protocols, USR-M100 can convert the collected I/O and serial

data to protocols suitable for different upper-level software. For example, cloud service via MQTT, SCADA via Modbus TCP, web server via HTTP, and more. This two-in-one design reduces system complexity, the amount of space required in the network topology, and overall installation time. Users can also connect your legacy devices to Ethernet, thereby increasing the lifetime of the devices since you can continue using the devices' original protocols.

Features

- High-performance CPU processing ability,using 32-bit Arm Cortex-M7 core CPU, up to 400MHz frequency
- Provides remote serial access over the Internet for industrial serial devices
- 10/100Mbps Ethernet port and support Auto MDI/MDIX
- Built-in 15KV ESD serial port protection
- Supports a wide industrial operating temperature,-40℃~85℃
- Baud rate: 0.6~230.4 Kbps, and any baud rate setting, support None, Odd, Even, Mark, Space Parity bit
- Flexible serial port data framing packing, which can satisfy user's various demands for data packets segmentation
- Versatile operation modes: TCP Server, TCP Client, UDP, HTTP client, Websocket server
- Support virtual COM USR-VCOM(windows)
- Modbus Ethernet-to-Serial support (Modbus/TCP, Modbus/RTU) for seamless integration of serial Modbus devices
- Provides rich configuration access, including: Windows configuration tool, and Web Browser
- Firmware upgrading via Web Browser and Windows configuration tool
- High security via certificate verification SSL/TLS encryption for serial data transmission,HTTPS,TCPS,MQTTS
- Support modbus RTU master,edge computing, modbus gateway,MQTT gateway
- Support SNMP V1/V2c
- Support on board I/O for analog input(2 AI), digital input(2 DI), digital output(SSR relay,2 DO), expandable with I/O modules, digital out support linkage control
- Support 2 RS485 serial port, the first one can also be RS232
- Cloud support: MQTT via AWS IOT, Microsoft Azure, Thingsboard, Alibaba Cloud, EMQX, Tuya,Cumulocity IoT and so on

Dimensions(mm)



Specifications

Power supply	
Input Voltage	9 - 36 VDC, reverse polarity protection, surge protection
Power Consumption	Idle: < 2.4W, Max: < 4.8W
Serial port	
No.	2 RS485 serial port, the first one can also be RS232 RS232 Terminal block connector: TX, RX RS485 Terminal block connector: A, B
Baud rates	600~230400 bps
Data bits	7,8
Stop bits	1,2
Parity	None,Even,Odd,Mark,Space
Flow	None,XON/XOFF
Physical interface	
DI	2 x Digital non-isolated input (0 - 2 V detected as logic low, 9 - 36 V detected as logic high)
DO	2 x 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 spec	
Dimensions (W x H x	79.6 x 58 x 110 (mm)

D)	
Mounting options	DIN rail, wall mounting
Hardware 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
Status LEDS	
Power	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 work
DATA	Blinking when serial port is transmitting data
DO	Light on, the channel output is activated
DI	Light on, the channel is activated by input signal
Network	
ETHERNET	1 x WAN port 10/100 Mbps, compliance IEEE 802.3, IEEE 802.3u standards, supports auto MDI/MDIX
Software	
Network protocols	ICMP,IPv4,IPv4,ARP,ICMP,TCP,UDP,DHCP,DNS,HTTPS,MQTT,SNMP,Telnet,NTP,SSL v3
IP	DHCP/StaticIP
Websocket	Supported
MQTT	Supported, standard MQTT protocol, 16 subscription topics and 16 publish topics
Linkage control	Supported. Data collection points, DI, and AI can be used as trigger and executed by DO
IOT PLATFORMS	Alibaba cloud, AWS IOT ,PUSR cloud, Microsoft Azure, ThingsBoard
User Configuring	Windows Utility, web console(HTTP)
Operating environment	
Operating temperature	-40 ° C to 75 ° C
Operating humidity	10% to 90% non-condensing
Ingress Protection Rating	IP30
MODBUS RTU master	
Supported functions	01, 02, 03, 04
Supported data formats	8 bit: INT, UINT; 16 bit: INT, UINT (MSB first); 32 bit: float, INT, UINT (ABCD (big-endian), DCBA (little-endian), CDAB);64bit:float
Supported data points	128
APPROVALS	
Regulatory	CCC,CE/RED*,RoHS*

Application