

# USR-M100 Specification

## Remote IoT Gateway



### Introduction

USR-M100 is designed for edge computing applications in IoT, Smart Manufacturing, Industrial Automation etc. It provides rich network protocols, like TCP, UDP, HTTP, MQTT, SSL, etc. The USR-M100 integrates comprehensive interface such as: RS232, RS485, Ethernet port, Cellular antenna, DI, DO, AI etc. It also supports Modbus RTU to TCP /JSON. The product features edge computing capabilities to reduce cloud-end computing resources and realize data optimization on the IoT application.

## Product Features

- High-performance CPU processing ability, using 32-bit Arm Cortex-M7 core SoC, up to 400MHz frequency.
- Provides remote serial access over the Internet for industrial serial devices
- 10/100Mbps Ethernet port and support Auto MDI/MDIX
- Supports a wide industrial operating temperature, -25°C~75°C
- 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 USB-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, PUSR remote Upgrading.
- 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 2 x analog input (AI, 4~20ma), 2 x digital input (DI), 2 x digital output (DO), expandable with I/O modules, digital out support linkage control.
- Support 2 serial ports: 1 x RS232/485, 1 x RS485.
- Cloud support: MQTT via AWS IOT, Microsoft Azure, Thingsboard, Alibaba Cloud, \*EMQX, \*Tuya, \*Cumulocity IoT and so on.

## Ordering Guide

### For USR-M100:

Model	USR-M100-ETH	USR-M100-EAU
Ethernet Port	√	√
Cellular Network	None	LTE Cat4
Region	Global	Europe, Asia, Africa, Oceania, Brazil,
Band frequency	/	LTE FDD: B1/3/5/7/8/20/28 LTE TDD: B38/40/41 WCDMA: B1/5/8 GSM/GPRS/EDGE: 850/900/1800
Extended Modules	√	√

### For Extended Modules:

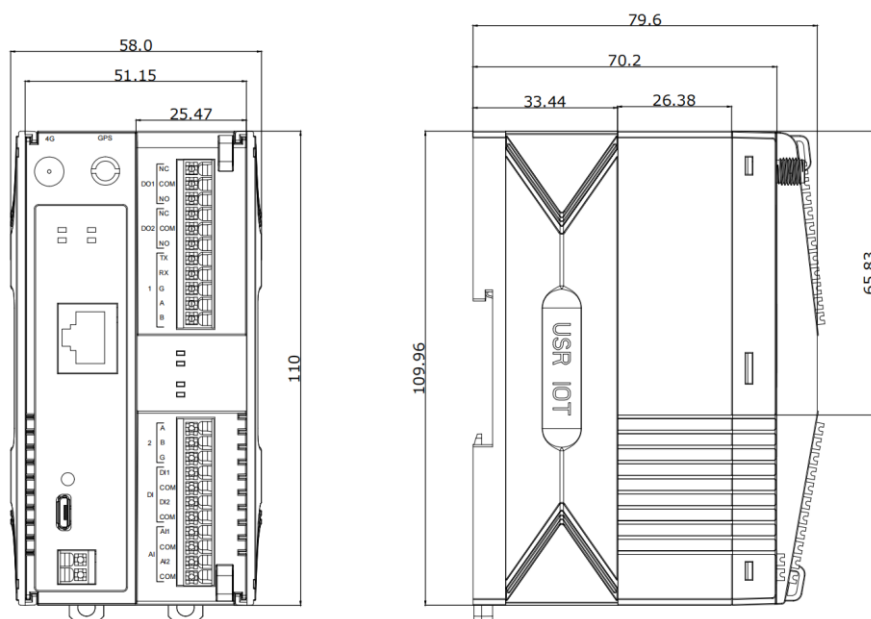
Model	USR-IO4040	USR-IO0440	USR-IO0080	*USR-IO8000
Number of DI	4	0	0	8
Number of AI	0	4	0	0
Number of DO	4	4	8	0
Number of AO	0	0	0	0
Type of AI	/	Current	/	/
Signal range of AI	/	4~20mA	/	/
Voltage range of DI	9~36V	/	/	9~36V
Type of DO	Relay	Relay	Relay	/
Capability of DO	3A	3A	3A	/
Communication port	RS485	RS485	RS485	RS485
Support extendable	√	√	√	√

## Specifications

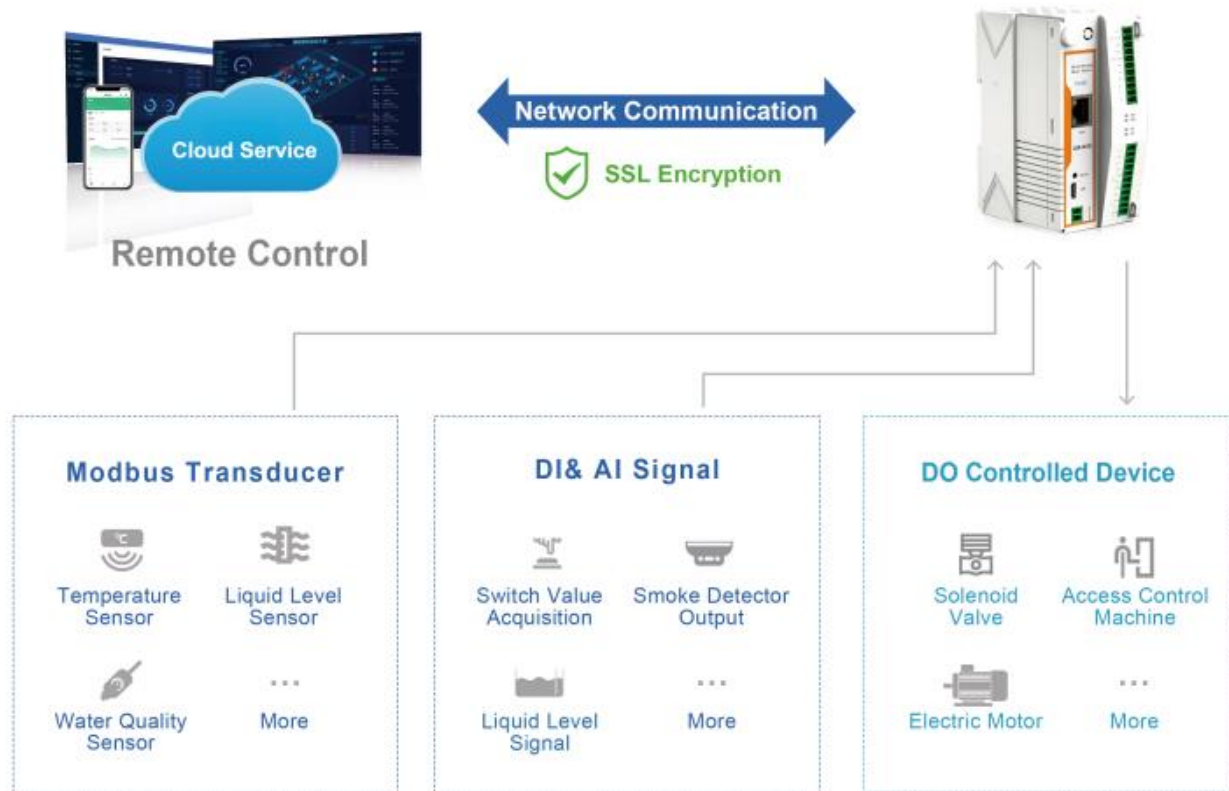
USR-M100 Parameters		
Power Supply	Input Voltage	9 - 36 VDC, reverse polarity protection, surge protection
	Power Consumption	Idle: < 2.4W, Max: < 4.8W
Serial Port	No.	2 serial ports: 1 x RS232/485, 1 x RS485
		RS232 Terminal block connector: TX, RX
		RS485 Terminal block connector: A, B
	Baud rates	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 opto-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
	AI	2 x Analog input 4-20mA
	Extendable I/O modules	USR-IO4040: 4 x Digital input, 4 x Digital output
		USR-IO0440: 4 x Analog input(4-20mA), 4 x Digital output USR-IO0080: 8 x Digital output
Antennas	1 x SMA-K Connectors (Center PIN: SMA Female)	
SIM Slot	1 x (3 V/1.8 V) Micro-SIM(3FF)	
Physical Spec	Dimensions (W x H x D)	79.6 x 58 x 110 (mm)
	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	1 x Power, 1 x WORK, 1x NET, 1 x DATA, 2 x DI, 2 x DO
Network	Cellular	<p><i>Frequency:</i></p> <p>LTE FDD: B1/3/5/7/8/20/28</p> <p>LTE TDD: B38/40/41</p> <p>WCDMA: B1/5/8</p> <p>GSM/GPRS/EDGE: 850/900/1800</p> <p><i>Maximum Transmission Data Rate:</i></p> <p>LTE FDD: 150(DL)/ 50(UL) Mbps</p>

		LTE FDD: 130(DL)/ 30.5(UL) Mbps WCDMA: 384(DL)/ 384(UL) Kbps
	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/Static IP
	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, Thingsboard
	User Configuring	Windows Utility, web console (HTTP)
Operating Environment	Operating temperature	-25 °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	CE/RED, RoHS

## Dimensions(mm)



## Application



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