MC-BW-B Meter Controller Datasheet

Product overview

MC-BW-B meter controller can connect multiple sensors at the same time. This series of meter controllers supports a variety of power supply methods, and the built-in battery can be adapted to difficult scenarios of field power supply, providing customers with a complete field water quality monitoring data transmission program.

MC-BW-B

MC-BW-B meter controller supports RS485 bus communication, using standard Modbus RTU protocol, and can support up to 4 channels of sub-devices at the same time; through analog signal acquisition, using 4-20mA and 0-10V two channels can support simultaneous access of 1 sub-device each. Users can quickly configure sensor information, connect to the Meter controller, and transmit data in real time. The MC-BW-B meter controller supports wireless data output. Through WiFi and 4G networks, users can upload the collected data to the cloud and support HTTP and MQTT protocols. Users can realize remote data viewing through SPS-Server (SPS cloud service). MC-BW-B also supports wired data output, through the RS485 host connection interface, users can read data through Modbus RTU protocol.

Application

- All our sensors or devices
- Data acquisition and signaling for pipe network equipment
- Signal transmission or relay

Features

- Supports use in field and other unpowered environments
- Support 4-20 mA or 0-10 V analog input, I/O input and output
- Wireless communication, supports 2G/4G, Wi-Fi.
- Strong compatibility, can connect to all our sensors and other RS485 communication mode sensors.
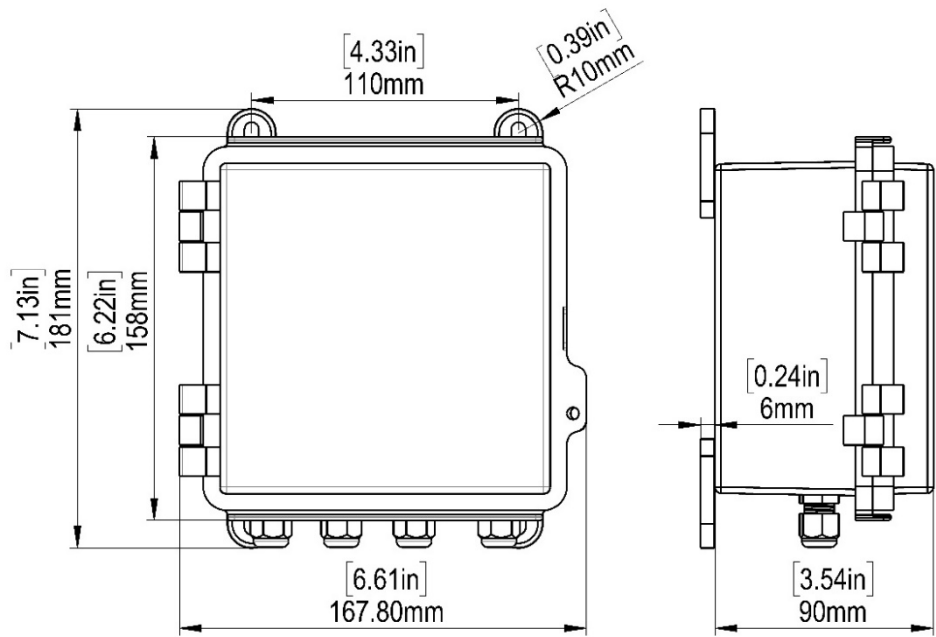- Compact size, easy to install

Specification

Specification	Detail
Product Description	Meter controller, connect digital/analog sensor, and upload data.
Dimensions(W×H×D)	170×170×90 mm (6.7×6.7×3.54 in)
Weight	1kg
Power requirements	External power supply: DC12 V to DC24 V
	Internal power supply: 4 x 3.6 V D-type power battery / 16.8 V rechargeable lithium battery pack (optional)
Protection class	IP65
Mounting	Indoor on a wall
Operating temperature	-20~70 ℃ (32~158 ℉)
Storage temperature	≤30 ℃ (86 ℉)
Host communication	RS485 (ModbusRTU protocol); 4G, WIFI (HTTP, MQTT protocol); BLE (SPS-App private protocol)
Slave digital communication	Four channels RS485 (ModbusRTU protocol) interface
Analog interface	One channel 4-20 mA analog input; One channel 0-10 V analog input
IO input	One channel low input is valid, one channel high input is valid
IO output	Two channels of low output are valid, two channels of high output are valid
Data storage	TF card (default 32 G)
Warranty	One year

Product selection

Model No.	Power supply mode
MC-BW-B-P00	External power supply
MC-BW-B-P01	External power supply / 4 x 3.6 V D-type power battery
MC-BW-B-P02	External power supply / 16.8 V rechargeable lithium battery pack

Dimension

[4.33in] 110mm

[0.39in] R10mm

[7.13in] 181mm
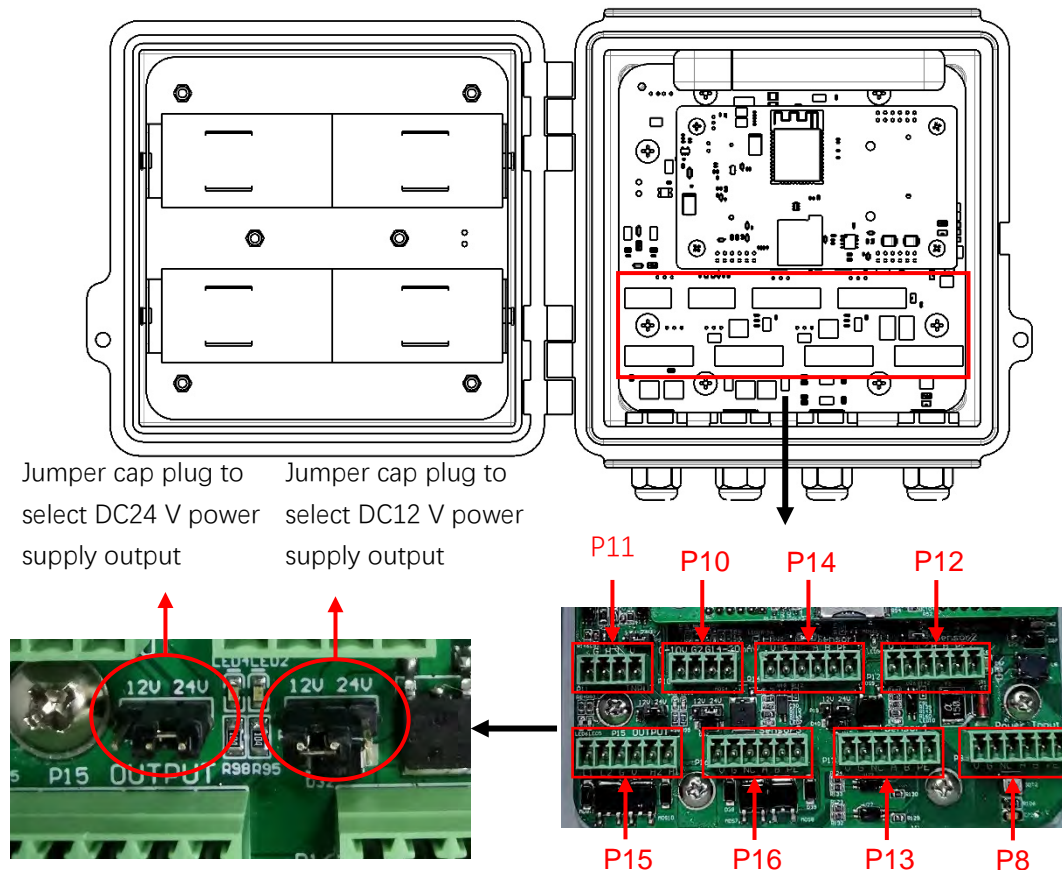
[6.22in] 158mm

[0.24in] 6mm

[6.61in] 167.80mm

[3.54in] 90mm

Internal Board Interface

There are a total of 8 interfaces on the internal board end of the controller, and the interface definitions are described in the following table. Except for the P8 interface, the remaining 7 interfaces are used to connect to sensor devices. There is a jumper cap on the upper left corner of the interface, and you can select DC24 V or DC12 V power supply output according to the power supply specifications of the external equipment.
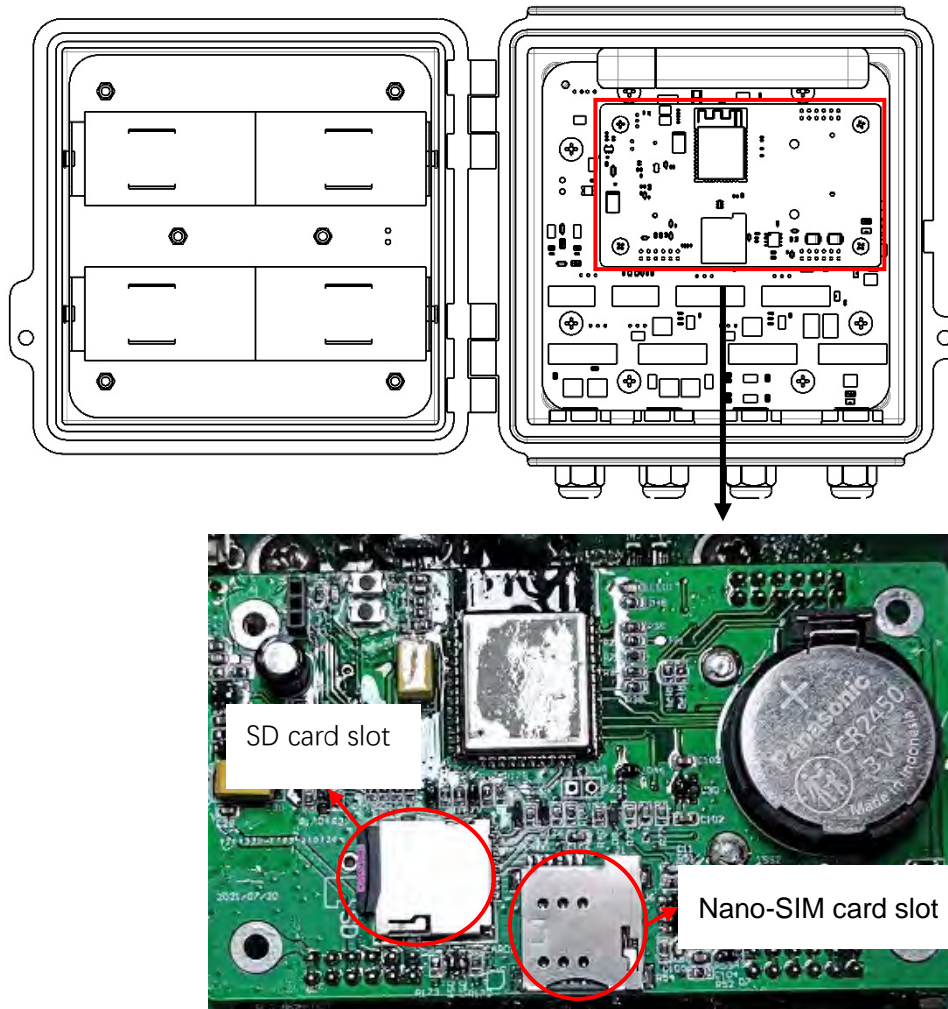

Jumper cap plug to select DC24 V power supply output

Jumper cap plug to select DC12 V power supply output

P11 P10 P14 P12

P15 P16 P13 P8

Internal interface pin definition				
Interface	Pin#	Name	Description	Connected equipment
P11	1	G	GND	Switch input signal interface
	2	H	High input effective	
	3	L	Low input effective	
	4	V	VCC	
P10	1	0-10V	0-10V analog	Analog input signal interface
	2	G2	GND2	
	3	G1	GND1	
	4	4-20mA	4-20mA analog	
P14	1	V	VCC	Sensor interface Slot1
	2	G	GND	
	3	NC	Undefined	
	4	A	RS485 A+	
	5	B	RS485 B-	

	6	PE	Ground	
P12	1	V	VCC	Sensor interface Slot2
	2	G	GND	
	3	NC	Undefined	
	4	A	RS485 A+	
	5	B	RS485 B-	
	6	PE	Ground	
P15	1	L1	Low output 1	Switch signal output interface
	2	L2	Low output 2	
	3	G	GND	
	4	V	VCC	
	5	H2	High output 2	
	6	H1	High output 1	
P16	1	V	VCC	Sensor interface Slot3
	2	G	GND	
	3	NC	Undefined	
	4	A	RS485 A+	
	5	B	RS485 B-	
	6	PE	Ground	
P13	1	V	VCC	Sensor interface Slot4
	2	G	GND	
	3	NC	Undefined	
	4	A	RS485 A+	
	5	B	RS485 B-	
	6	PE	Ground	
P8	1	V	Power input VCC (DC12~DC24 V)	DC 12 V~24 V power input RS485 output interface
	2	G	Power input negative, GND	
	3	NC	Undefined	
	4	A	RS485 A+	
	5	B	RS485 B-	
	6	PE	Ground	

Nano-SIM card slot and SD card slot
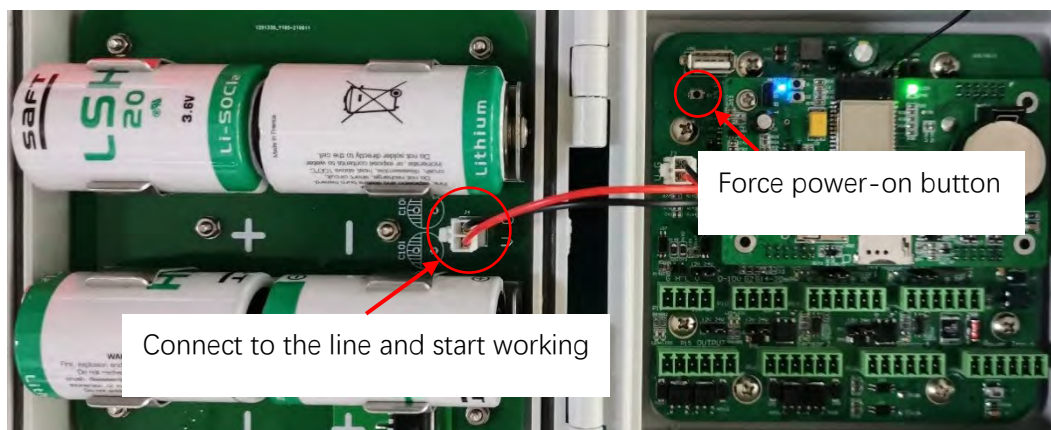

SD card slot

Nano-SIM card slot

MC-BW-B meter controller is equipped with Nano-SIM card slot and SD card slot (using TF memory card). Insert the Nano-SIM card, the controller will automatically connect to the network and upload the data to the cloud platform. Upload to the company's cloud platform by default. To switch to other data platforms, please check the configuration information. The controller comes standard with a 32 GB memory card.
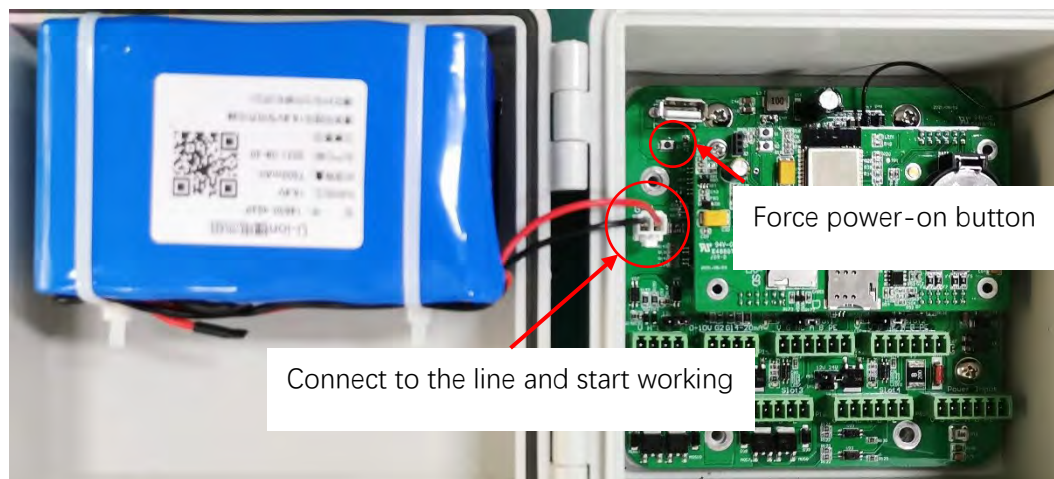
Battery powered

When using it for the first time, plug the wire connecting the battery into the socket, and the controller will start to work normally. When the controller is in the sleep standby state, you can press and hold the forced start button for 2 seconds, and the controller will start to work.

4×3.6V D-type power battery

Force power-on button

Connect to the line and start working

14.8V rechargeable lithium battery pack

Force power-on button

Connect to the line and start working

The battery power supply adopts intermittent working mode. The user can set the normal power-on time and standby sleep time. Users can set it according to their needs.

External power supply

MC-BW-B meter controller can use external DC12 V~DC24 V power supply. External power supply and battery power supply are independent of each other. The external power supply will not charge the battery. After the external power supply is adopted, the battery power supply will be disconnected. After adopting the external power supply mode, the controller will work according to the configured data collection time and data upload time. The P8 interface is an external power input interface, and the interface is defined as follows:

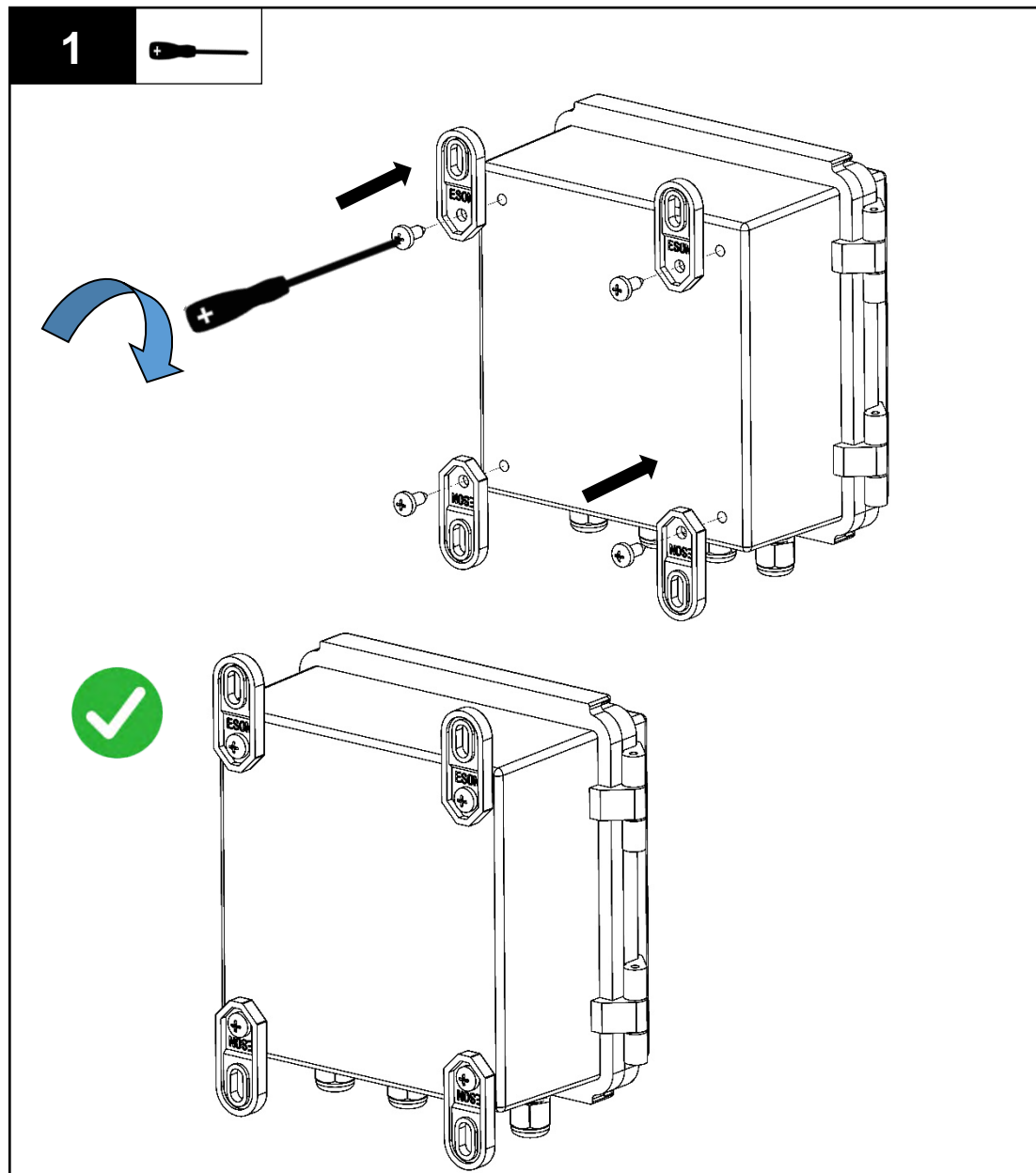| P8 interface definition				
Interface	Pin#	Name	Description	Connected equipment
P8	1	V	Power input VCC (DC12~DC24 V)	DC 12 V~24 V power input
	2	G	Power input negative, GND	
	3	NC	Undefined	
	4	A	RS485 A+	RS485 output interface
	5	B	RS485 B-	
	6	PE	Ground	

Controller parameter configuration

MC-BW-B meter controller supports on-site use of mobile phone SPS-App to connect sensors via Bluetooth for parameter reading and debugging. For specific usage, please refer to "MC-BW-B Meter controller App Application Manual". For more information, please go to:

http: //wqs.googolcjit.com: 510/firmware/wqs-app/bin/WQS-App.apk Download the mobile client. Or use a browser to scan the QR code below to download.

Wall-mounted installation

2