Product introduction

The louver box type PM100 sensor is a fully digital detection, high-precision sensor, which is integrated by the PM100 sensor. The built-in signal processing unit can output corresponding signals according to user needs. The high-strength structure design can accurately detect in harsh weather environments, and can sensitively detect PM100 values in the environment. Imported lasers and photosensitive components are used, and the data is stable and reliable; it can be widely used in weather , marine, environment, airports, ports, laboratories, industry and agriculture and transportation and other fields.

Technical Parameters

Measuring range: PM100
0～10000 μg/m3
Error: PM100: ±15%
Minimum detection particle: diameter 0.3μm
Power supply mode: ☐ DC 12V
☐ DC 24V
☐ Other
Output form: ☐ Current: 4～20mA
☐ Voltage: 0～2.5V
☐ RS485
☐ Other
Load resistance: Voltage type: RL≥1K
Current type: RL≤300Ω

Connection method

1. If equipped with the collector produced by our company, directly use the sensor cable to connect the sensor to the corresponding interface on the collector.
2. If the transmitter is purchased separately, the matching line sequence of the transmitter is:

Line color	Output signals		
			communication
Red			+
Black（Green）			-
Yellow			A
Blue			B

Dimensions
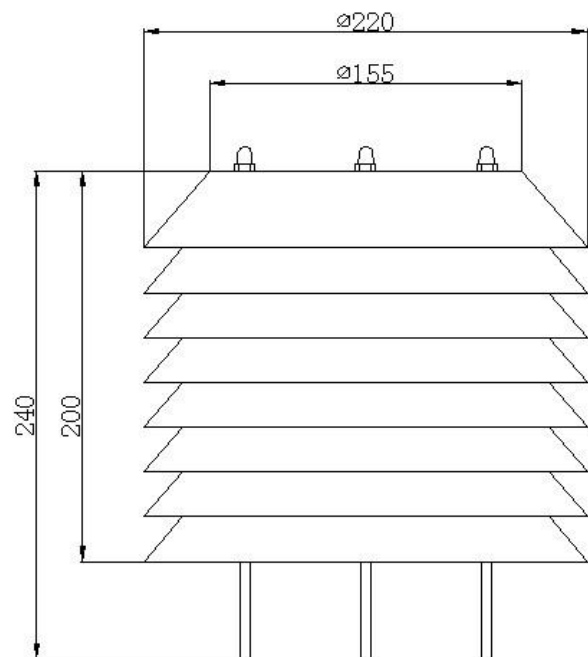
MODBUS-RTUCommunication protocol

Ⅰ Serial port format
8 data bits
stop bit 1 or 2
no check digit
The baud rate is 9600, and the interval between two communications is at least 1000ms.

Ⅱ Communication format

【1】 Write the device address

Send: 00 10 Address CRC (5 bytes)

Returns: 00 10 CRC (4 bytes)

Instructions: 1. The address bit of the read/write address command must be 00.

2. Address is 1 byte, the range is 0-255.

For example: send 00 10 01 BD C0

return 00 10 00 7C

【2】 Read the device address

Send: 00 20 CRC (4 bytes)

Returns: 00 20 Address CRC (5 bytes)

Description: Address is 1 byte, the range is 0-255

For example: send 00 20 00 68

Return 00 20 01 A9 C0

【3】Read real-time data

Send: Address 03 00 00 00 01 CRC

Description: As shown in the figure below:

Code	Functional Definition	Remark
Address	Station number (address)	
03	Function Code	
00　00	Start address	
00　01	Read points	
XX XX	CRC Check code, low front and high back	

Return：Address 03 02 AA AA XX XX

Description：

Code	Functional Definition	Remark
Address	Station number (address)	
03	Function Code	
02	Read unit bytes	
AA AA	PM100 date（high front and low back）	Hex
XX XX	CRC Check Code	

Steps to calculate CRC code:

1. The preset 16-bit register is hexadecimal FFFF (that is, all 1s). Call this register the CRC register;

2. XOR the first 8-bit data with the lower bits of the 16-bit CRC register, and place the result in the CRC register;

3. Shift the contents of the register one bit to the right (toward the lower bit), fill the highest bit with 0, and check the lowest bit;

4. If the lowest bit is 0: repeat step 3 (shift again)
   If the lowest bit is 1: XOR the CRC register with the polynomial A001 (1010 0000 0000 0001);

5. Repeat steps 3 and 4 until the right shift is performed 8 times, so that the entire 8-bit data is processed;

6. Repeat steps 2 to 5 to process the next 8-bit data;

7. The final CRC register is the CRC code;

8. When the CRC result is put into the information frame, the high and low bits are exchanged, and the low bits are first.

Notice

1. Please check whether the packaging is in good condition, and check whether the product model is consistent with the selection;

2. Do not connect with live power. After the wiring is completed and checked, the power can be turned on;

3. Do not arbitrarily change the components or wires that have been welded when the product leaves the factory;

4. The sensor is a precision device, please do not disassemble it by yourself, or touch the surface of the sensor with sharp objects or corrosive liquids, so as not to damage the product;

5. Please keep the verification certificate and qualification certificate, and return it together with the product during maintenance.

Trouble clearing

1. When detecting the output, the indicator indicates that the value is 0 or not within the range. Check whether there is any obstruction by foreign objects. The collector may not be able to obtain information correctly due to wiring problems. Please check whether the wiring is correct and firm;

2. If it is not for the above reasons, please contact the manufacturer.

Contact Us

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