Turbidity Water Quality Sensor Module

(Model：ZW-TUR103)

Manual

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Zhengzhou Winsen Electronics Technology Co., Ltd

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Zhengzhou Winsen Electronics Technology CO., LTD

ZW-TUR103 Turbidity water quality sensor module

Profile

ZW-TUR103 turbidity detection module is a universal module with high precision and high range, which reflects the turbidity of the water by detecting the content of suspended solids in the water.

The module adopts RS485 standard signal output, which has the characteristics of high detection accuracy and good stability, and is widely used in the detection of various low-turbidity water environments.

Fig1. Sensor module image

Main application

It is widely used in the turbidity detection of industrial water use, secondary water supply, water treatment and other scenarios

Technical indicators

Power supply	12-24V DC
Power consumption	＜0.15W
Measure accuracy	±5% or±3NTU，±3% or±2NTU
Measure range	0-100/0-1000/0-4000NTU
Resolution	1NTU 0.1℃
Working temperature	0-50℃
Repetitiveness	±0.5%
Installation	Immersive installation
Light source	860nm
Levels of protection	IP68
Output signal	RS485
Response time	≤1s
Working pressure range	0-0.2Mpa(The water depth is 20m)

The electrode wiring

	Wire color	Description
Power supply	Brown	Power positive (12-24VDC)
	Black	Power negative
Communication	Yellow(Gray)	485-A
	Blue	485-B

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Communication protocol

1. General Settings

Baud rate	9600
Data bits	8 bit
Stop bit	1 bit
Check bit	None
Address	1(default)

2. Communication protocol

Read the turbidity value at device address 0x01

Send instructions：01 03 00 02 00 01 25 CA

Receive the value：01 03 02 00 BD 78 35

Meaning of each byte：

Address code	Function code	Number of effective bytes	Turbidity value	Low bytes of the check code	High bytes of the check code
0x01	0x03	0x02	0x00 0xBD	0x78	0x35

That's turbidity value：00BD H(hexadecimal)=189   Turbidity=189NTU

Read the turbidity value at device address 0x01

Send instructions: 01 03 00 01 00 01 D5 CA

Receive the value: 01 03 02 00 AF DB BF

Meaning of each byte：

Address code	Function code	Number of effective bytes	Temperature value	Low bytes of the check code	High bytes of the check code
0x01	0x03	0x02	0x00 0xAF	0xDB	0xBF

Temperature：

00AF H(hexadecimal)=175   Temperature=17.5℃

Read the temperature、 turbidity value at device address 0x01

Send instructions: 01 03 00 01 00 02 95 CB

Receive the value: 01 03 04 01 1b 00 28 DB BF

Meaning of each byte：

Address code	Function code	Number of effective bytes	Temperature value	Turbidity value	Low bytes of the check code	High bytes of the check code
0x01	0x03	0x04	0x01 0x1b	0x00 0x28	0xDB	0xBF

Temperature：

011B H(hexadecimal)=283 Temperature=28.3℃

Turbidity ：

0028 H(hexadecima)=40   Turbidity =40NTU

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Precautions

1. Pay attention to not connecting the wrong wiring sequence, incorrect wiring will lead to the equipment cannot operate normally or burn the equipment.

2. Sensors should be protected from contact with organic solvents, alcohol, coatings, oils and high concentration gases, as well as silicone and other adhesives.

3. After the sensor is used, clean and place the sensor.

4. The cable joint should be kept dry and clean to prevent moisture corrosion.

5. When the sensor is not use or water supply is interrupted,it should be removed and cleaned thoroughly,dried or air-dried before storage.

6. It is recommended to clean and check the sensor every 30 days to ensure that it works properly.

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