ZD02
Turbidity transmitter analog type operating instruction

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1. Product Introduction

The ZD02 is a basic digital turbidity transmitter for routine water quality monitoring. It employs the mature 90° scattering light principle from abroad, using an infrared LED light source and fiber optic transmission design. The internal filter algorithm enhances its resistance to external light interference. Equipped with a built-in temperature transmitter, it can automatically compensate for temperature changes, making it suitable for long-term online environmental monitoring. It offers analog output options: 4~20mA; 0~5V; or 0~10V.

1.1 Functional features

- Turbidity measurement range 0~50NTU; 0~200NTU; 0~1000NTU; 0~4000NTU.
- Waterproof grade IP68.
- Analog output, 4~20mA; 0~5V; 0~10V optional.
- The filter algorithm has strong resistance to external light interference and automatic temperature compensation, which is suitable for long-term online detection environment.
- The equipment adopts wide voltage supply, DC 10~30V can be used.

1.2 Technical parameters

measuring range	0.00~50.00NTU;0.0~200.0NTU；0.0~1000.0NTU ;0~4000NTU
measurement error	±5%FS（25℃）；±0.5℃
resolution ratio	0.00~50.00NTU Range: 0.01NTU; 0.0~200.0NTU Range: 0.1NTU; 0.0~1000.0NTU Range: 0.1NTU; 0~4000NTU range: 1NTU;
response time	≤30sec
Analog output	4~20mA; 0~5V; 0~10V optional
Equipment operating conditions	Probe: 0~40℃ Wangzi shell: -40℃~60℃,0%RH~95%RH (non-condensation)
supply electricity	DC 10~30V (0~10V power supply DC 24V)
power dissipation	≤0.8W
measuring principle	90° Light scattering method
life span	It has been in use for 2 years
classification of waterproof	Probe: IP68 Wangzi shell: IP65
The electrode wires are long	The default is 5m

Shell material	Corrosion resistant plastic

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1.3 Product selection

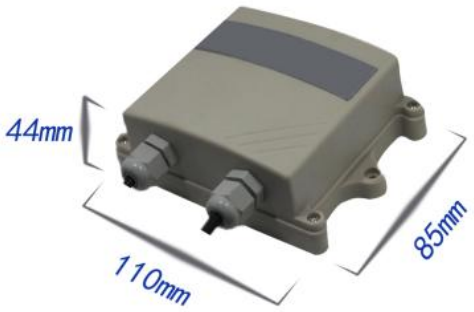
ZD-02				turbidity transmitter
	I20-			4~20mA
	V05-			0~5V
	V10-			0~10V
		1-		Shells
		1S-		Stainless steel shell
			50	Range 0-50NTU
			200	Range 0-200NTU
			1000	Range 0-1000NTU
			4000	Range 0-4000NTU

1.4 Product List

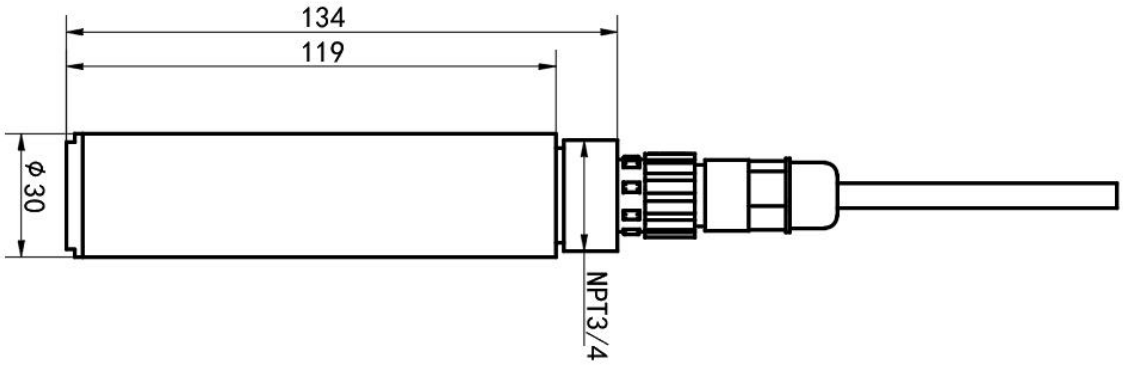
- One turbidity transmitter
- One Wang character shell conversion module
- 5m cable
- Certificate of conformity, warranty card, etc

1.5 Equipment size

壁挂王字壳：110×85×44mm



-1 Size:



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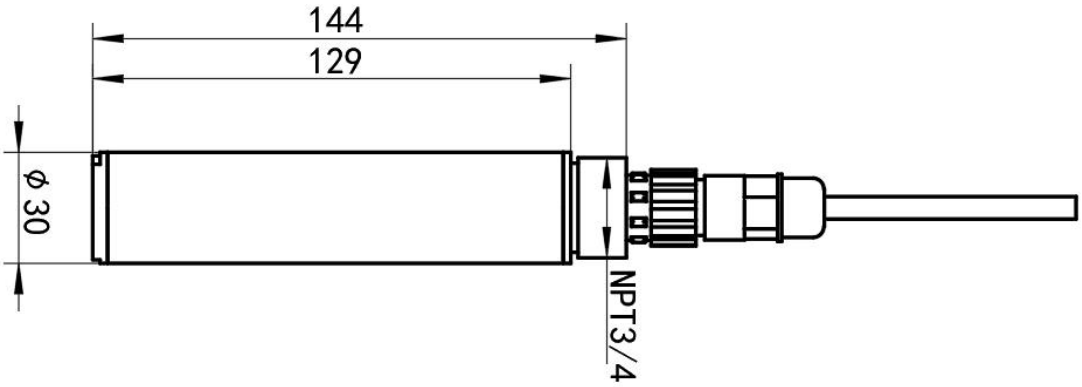
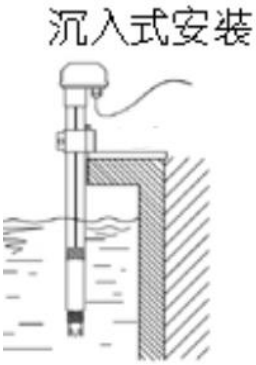


1.6 Equipment installation



With NPT3/4 thread, it can be used with our waterproof pipe. The cable is inserted from the pipe and the equipment is screwed into the thread of the waterproof pipe.

Note: The transmitter is installed in the area with slow water flow and no bubbles; the installation distance of the transmitter from the surrounding wall is 5cm, and there is no obstacle within 7cm below the sensor.

2. Equipment usage instructions

2.1 Wiring instructions

The default cable is a four-core bare cable

	explain	explain
electricity source	brown	Power supply positive (10~30V DC)
	black	The power supply is negative
letter Number	blue	The analog quantity is positive
	Yellow (green)	The analog quantity is negative

2.2 Calculation method

2.2.1 Calculation of current type output signal conversion

For example, with a range of 0~1000NTU and 4~20 mA, when the output signal is 12 mA, calculate the current turbidity value. The span of the turbidity range is 1000, expressed as 20-4=16mA current signal, 1000NTU/16mA=62.5NTU/mA, meaning that a 1mA change in current represents a 62.5NTU change in turbidity. The measured value 12mA-4mA=8mA.8mA*62.5NTU/mA=500NTU. 500 + 0 = 500 NTU, so the current turbidity value is 500 NTU.

2.2.2 Voltage type output signal conversion calculation

For example, with a range of 0 to 1000NTU and an output of 0-10V, when the output signal is 5V, calculate the current turbidity value. The span of the turbidity range is 1000, expressed as a 10V voltage signal: 1000 NTU / 10V = 100 NTU/V, meaning a 1V change in voltage represents a 100NTU change in turbidity. The measurement value is 5V-0V = 5V,5V * 100 NTU/V = 500 NTU. 500 + 0 = 500 NTU, so the current turbidity value is 500 NTU.

3. Precautions and maintenance

- If the equipment has obvious faults, please do not open it for self-repair, contact us as soon as possible!
- Before measurement, remove the black rubber protective cover.
- The transmitter measuring probe should be cleaned regularly according to the use environment, as the attachment will lead to measurement error; avoid scratching the light guide part of the probe during cleaning. (It is recommended to clean it once every 30 days)
- It is recommended to clean the outer surface of the transmitter with water flow. If there is still dirt residue, please wipe it with a soft wet cloth.

- The equipment should be calibrated before each use. It is recommended to calibrate the equipment every 3 months for long-term use. The calibration frequency should be adjusted appropriately according to different application conditions (the degree of dirt in the application site, the deposition of chemical substances, etc.).