SPS-D Dual-Wavelength Spectrum Water Quality Sensor

Product overview

The SPS-D dual-wavelength spectrum sensor is based on the principle of ultraviolet absorption spectroscopy, which can measure organic components in water, and has a turbidity compensation function, which can effectively improve the accuracy of actual water sample measurement. It is suitable for monitoring of domestic sewage, industrial waste water, watershed, etc. Compared with conventional chemical detection, it has the characteristics of high reliability, zero pollution and zero delay, and realizes real-time online monitoring of organic pollutants.

It can be matched with our MC series meter controller and SPS-Server cloud service to realize remote real-time monitoring of data and remote operation and maintenance of equipment.

Application

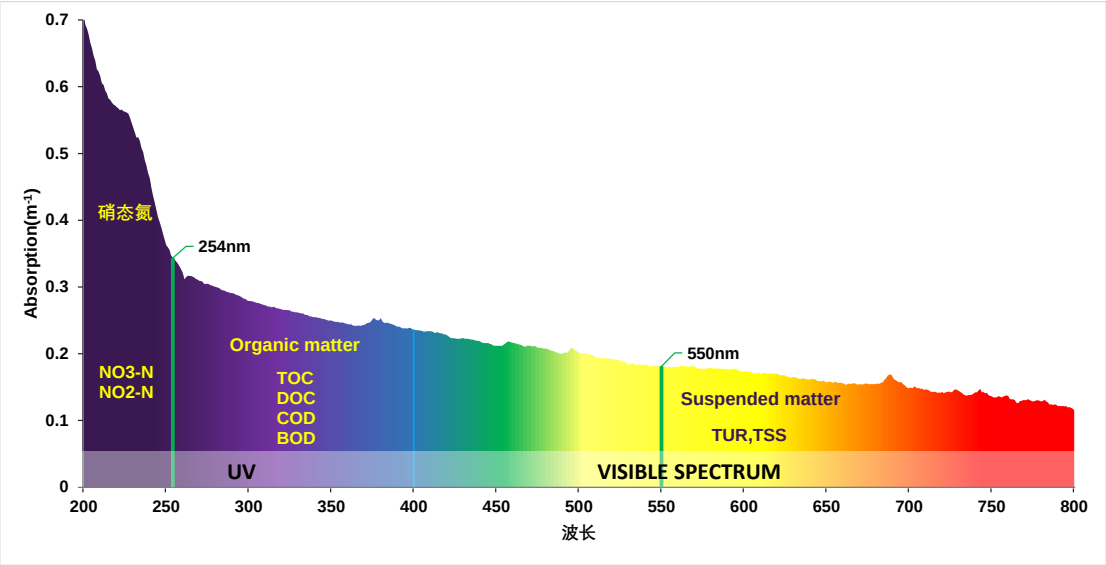
- Sewage treatment plant outlet monitoring
- Surface water, rainwater, groundwater monitoring
- Urban domestic sewage monitoring
- River, watershed monitoring

Features

- Optical in-situ measurement, no actual pollution, environmentally friendly
- Fast measurement, the fastest measurement cycle is 1 second
- Long maintenance-free cycle, with its own cleaning brush for cleaning
- RS485 communication mode, can quickly connect the meter head, control the sensor
- IP68 protection grade, can be used in harsh environments
- Low power consumption, can be powered by battery, convenient for equipment deployment

Principle

Two LEDs are used to identify the characteristics of the water sample and an innovative algorithm is used to measure it.



Sensor information

Model No.	Serial No.	Gap	Dimension /mm （D×L）	Material	Weight /kg
SPS-D-L10-P05	01-05-xxxxx	10 mm	φ45×325	AISI 316L	1.6
SPS-D-L05-P05	01-25-xxxxx	5 mm	φ45×325	AISI 316L	1.6

Note: The "x" in the Serial No. represents a number (0~9).

Basical parameters

Power requirements	DC+12 V to +24 V
Measurement period	10 to 65535 seconds
Operating temperature	0 to 50°C
Pressure	5 bar (73 psi) maximum compared to air, 2 to 40 °C (35.6 to 104 °F)
Power consumption	<6 W
Cleaning method	Cleaning brush
IP rating	IP68
Sample flow rate	<3 m/s

Communication interface

Hardware interface	RS485
Protocol	Modbus RTU

Parameter information

Parameter	Model No.	Range	Resolution	Accuracy （Standard solution）
COD	SPS-D-L10-P05	0-500 mg/L	0.01 mg/L	±2.5% or ±2.5 mg/L
	SPS-D-L05-P05	0-1000 mg/L	0.01 mg/L	±2.5% or ±2.5 mg/L
TOC	SPS-D-L10-P05	0～200 mg/L	0.01 mg/L	±2.5% or ±2.5 mg/L
	SPS-D-L05-P05	0～400 mg/L	0.01 mg/L	±2.5% or ±2.5 mg/L
BOD	SPS-D-L10-P05	0-300 mg/L	0.01 mg/L	±2.5% or ±2.5 mg/L
	SPS-D-L05-P05	0-600 mg/L	0.01 mg/L	±2.5% or ±2.5 mg/L
TUR	SPS-D-L10-P05	0-500 NTU	0.01 NTU	±2.5% or ±5 NTU
	SPS-D-L05-P05	0-1000 NTU	0.01 NTU	±2.5% or ±10 NTU
TSS	SPS-D-L10-P05	0-500 mg/L	1 mg/L	±5% or ±5 mg/L
	SPS-D-L05-P05	0-1000 mg/L	1 mg/L	±5% or ±10 mg/L
UV254	SPS-D-L10-P05	0-400	0.01	±2.5% or ±2.5
	SPS-D-L05-P05	0-850	0.01	±2.5% or ±2.5
Temperature	SPS-D-Lxx-P05	0-60 °C	0.0625 °C	±1 °C

Note:

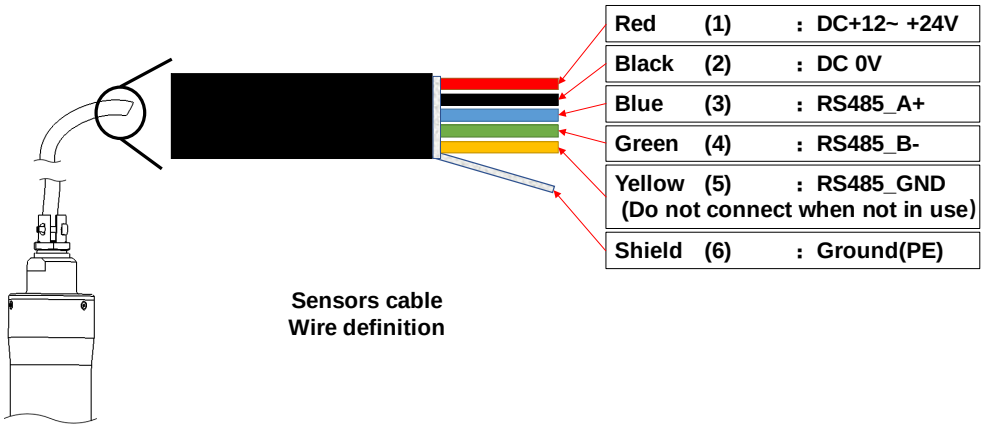
1. Only in the use of our **MC series controller** can use the same sensor at the same time to read the parameters **COD** and **BOD**, the use of other equipment connected to read the sensor, **COD** or **BOD** can only read one of the parameters, the customer needs to be informed in advance of the parameter selection.
2. The same sensor can only select one parameter of **turbidity** or **total suspended solids**, the customer needs to be informed in advance of the parameter selection.
3. The "x" in the Serial No. represents a number (0~9).

Quality assurance

Certification	CE/RoHS
Warranty period	one year

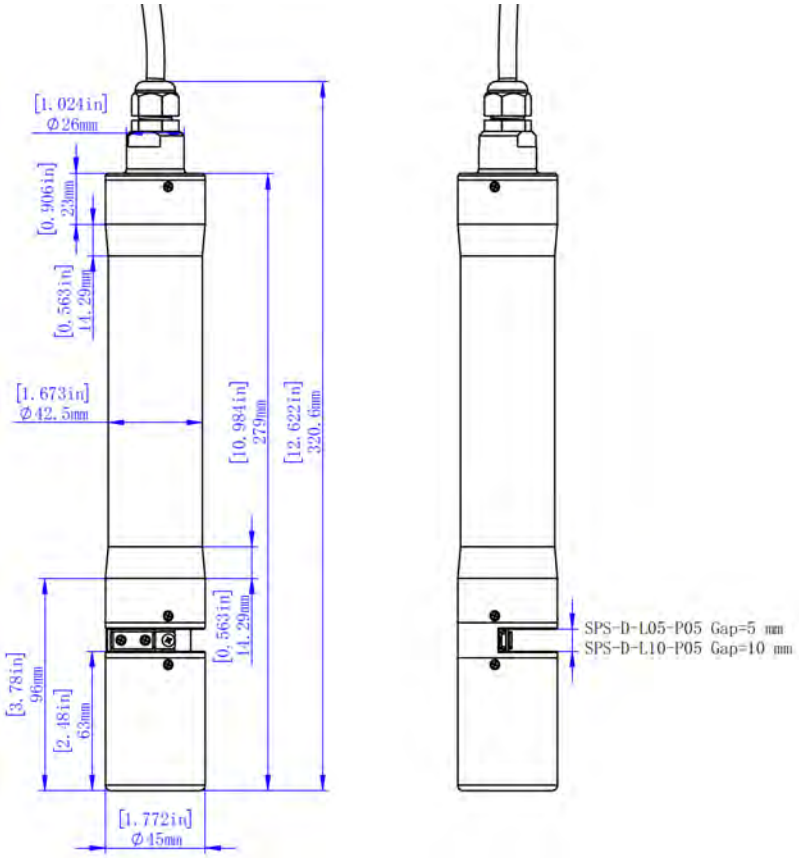
Interface definition

SPS-D sensor electrical connection, adopts 5-wire + shielding interface design, anti-corrosion cable, standard 6 m (line length can be customized).



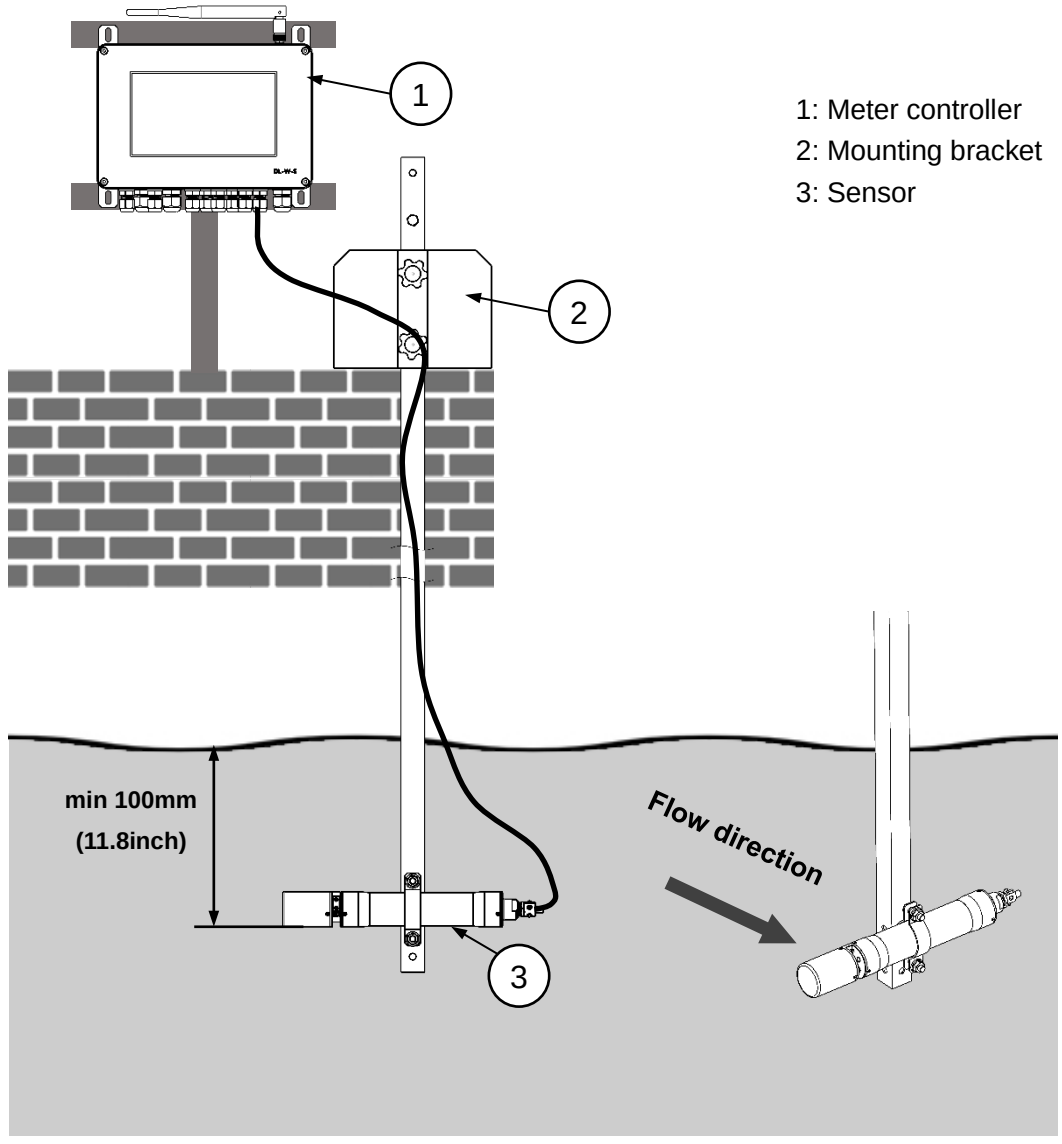
Sensors cable
Wire definition

Dimensions

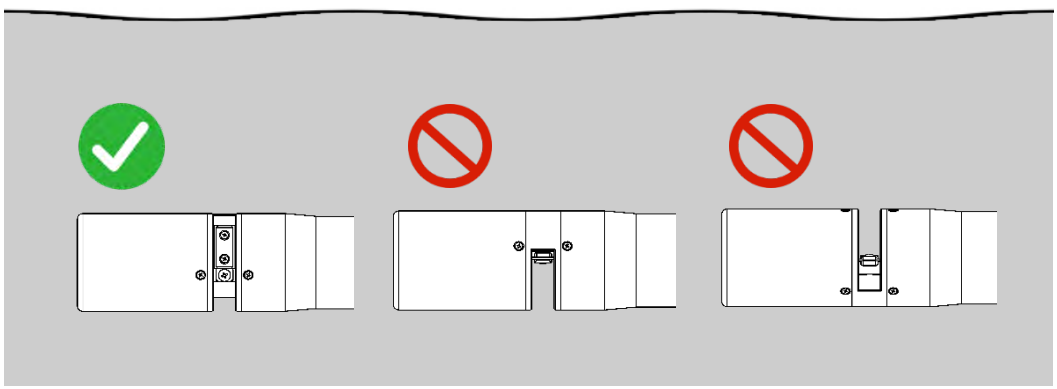


Installation

SPS-D sensor is recommended for submerged horizontal installation, as shown in the figure below.



1: Meter controller
2: Mounting bracket
3: Sensor



Applications

Centralized/decentralized water treatment effluent monitoring

Industry pain points

- High cost of operation and maintenance of chemical online equipment
- Traditional methods cannot provide effective operation

Solution

- Real-time monitoring of export optical sensors
- Real-time monitoring of export optical sensors

Urban-level rainwater and sewage pipe network monitoring

Industry pain points

- Misconnection of urban rain and sewage pipe network
- Sewage overflow, river pollution
- Mixed rainwater, high treatment cost

Solution

- Pipe network construction: separation of rain and sewage
- Pipe network management: real-time monitoring, early warning

watershed monitoring

Industry pain points

- Site conditions are not conducive to frequent maintenance of equipment
- Difficulty in disposal of waste liquid from chemical equipment
- Unable to grasp sudden pollution events in real time

Solution

- Real-time monitoring by optical sensor, long maintenance cycle, no waste liquid