SPS-T-SC1 Turbidity/Suspended Solids (Sludge Concentration) Water Quality Sensor Datasheet

Product overview

SPS-T-SC1 Turbidity/Suspended Solids (Sludge Concentration) Sensor is a water quality sensor that measures turbidity and suspended solids based on 90° and backscattered light measurement principles. Mainly used in the fields of surface water, domestic sewage and industrial sewage. The turbidity sensor is equipped with an automatic optical window cleaning function, which greatly reduces the amount of manual maintenance and ensures the normal operation of the sensor even in harsh environments. In addition, with the DL-W-S series meter controller and SPS-Server (SPS cloud service), users can realize on-site and remote data viewing.

Application scenarios

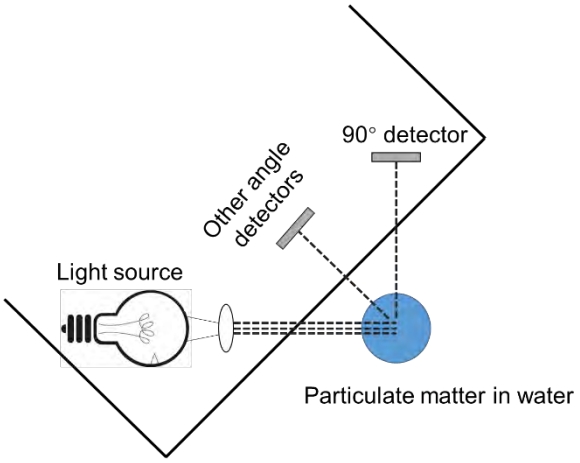
- Influent and effluent monitoring of sewage treatment plant
- Watershed, surface water, groundwater monitoring
- Urban domestic sewage monitoring
- Industrial water monitoring
- Raw water monitoring of water works
- Water pipe network monitoring

Advantage

- Optical in-situ measurement
- Fast measurement, the fastest measurement cycle is 3 seconds
- The maintenance-free period is long, and the sensor has its own cleaning brush
- RS485 communication mode, can quickly connect the meter
- IP68 protection grade, can be used in harsh environment
- Low power consumption, can be powered by battery, convenient for equipment deployment

Principle

The SPS-T-SC1 sensor adopts the principle of scattered light measurement. The 860nm laser light source emits light, the 90° detector receives the light scattered by the suspended matter in the water and generates a signal, and the detectors at other point angles receive signals from other angles. . According to the proportional relationship between the two angle signal values and the concentration of suspended solids in the water body, the turbidity and suspended solids concentration of the water body can be calculated.



Specifications

Specification	Detail
Measurement method	Scattering
Dimensions (W×D×H)	φ55×212 mm (φ2.17×8.35 in)
Weight	1.6 kg
Power requirements	DC+12 V to +24 V
Power	<3 W
Protection class	IP68
Mounting	Submerged,flow-through
Operating temperature	0 to 50 ℃ (32 to 122 ℉)
Storage temperature	-10 to 50 ℃ (-10 to 122 ℉)
Humidity	5% to 95% relative humidity, non-condensing
Sensor cable length	6 m (19.69 ft), Please contact us for other sizes
Range	Turbidity: 0-4000 NTU/FNU Suspended matter: 0-10 g/L (diatomaceous earth), 0-5 g/L (kaolin)
Method detection limit	Turbidity: 0.2 NTU at 25 ℃ (77 ℉) Suspended matter: 1 mg/L
Measurement period	Minimum 3 s, adjustable
Accuracy	Turbidity: ±5% or ±0.015 NTU (the larger value); Suspended matter: ±5% or ±1 mg/L (the larger value)
Resolution (display)	0.001 NTU
Sample requirements	Temperature: 2-50 ℃ (35.6-122℉) Flow rate：Max 3 m/s Pressure：6 bar (87 psi) maximum compared to air, 2 to 50 ℃ (35.6 to 122 ℉) sample
Calibration options	Support for single point calibration
Warranty	1 year

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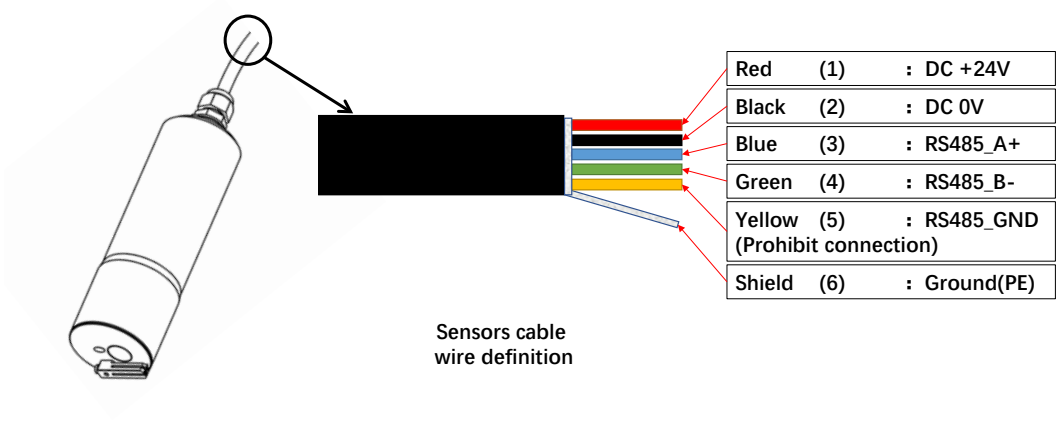
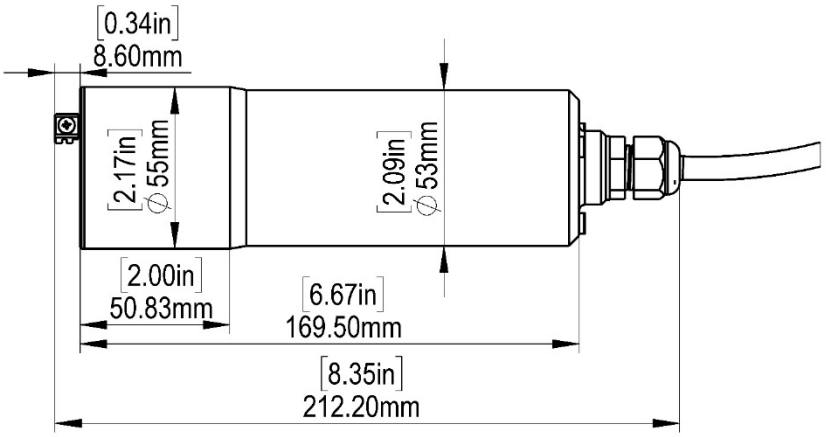
Interface definition

SPS-T-SC1 sensor cable connection, adopts 5-wire shielding interface design, anti-corrosion cable, standard 6 m (customizable cable length).



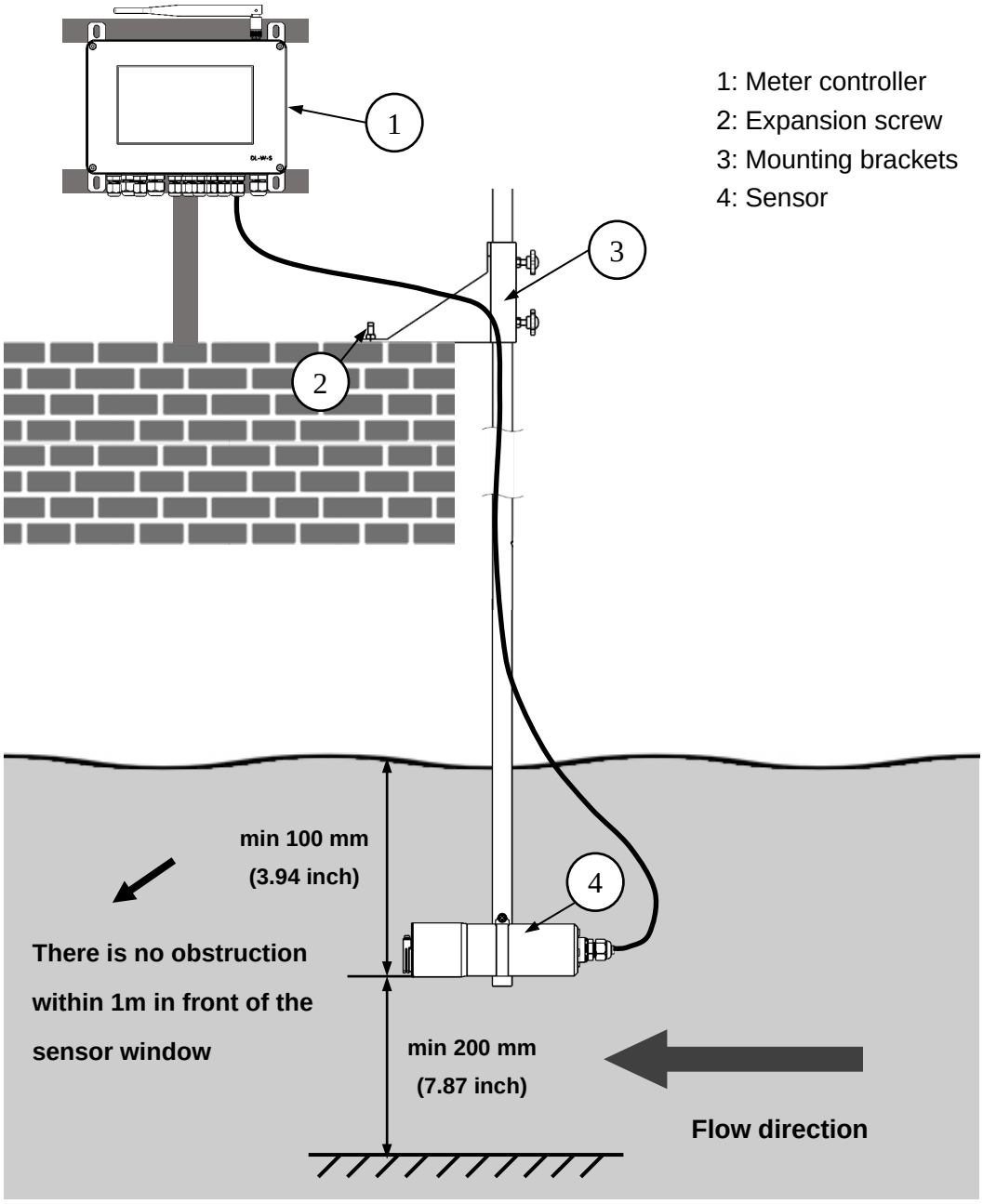
Sensors cable wire definition

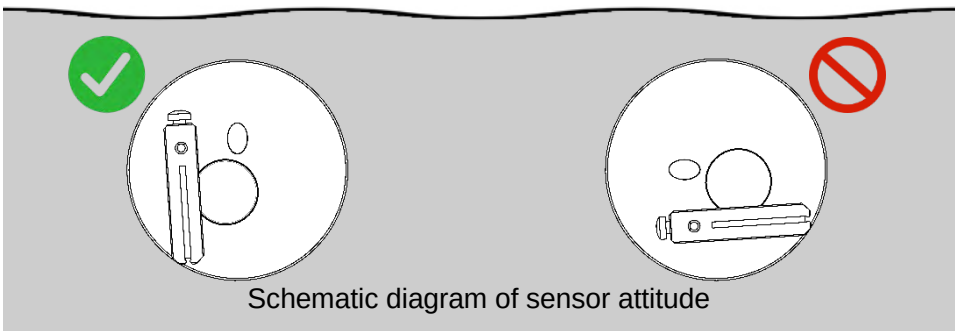
Sensor dimensions



Installation

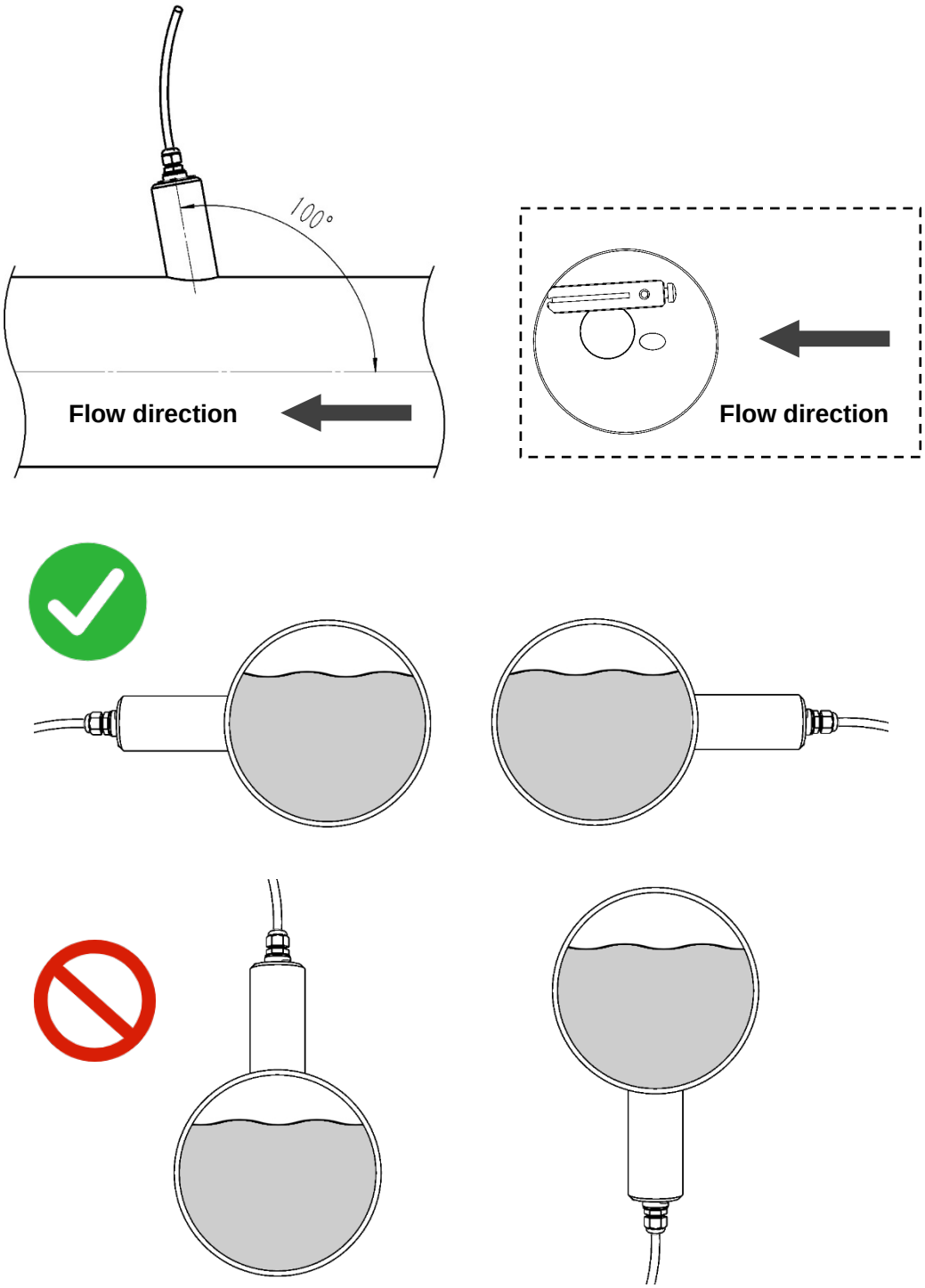
Submerged installation





Schematic diagram of sensor attitude

Pipe Installation



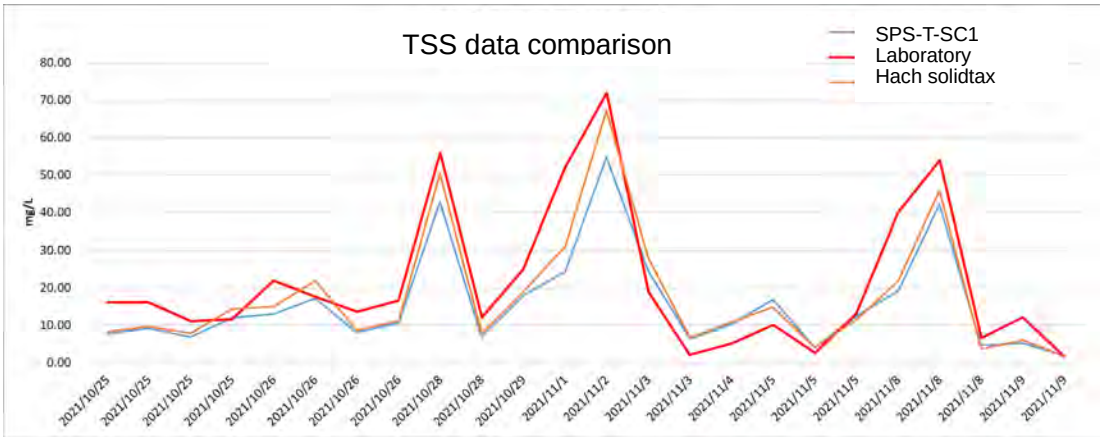
Schematic diagram of pipeline installation

Note: The pipe installation diagram is only to provide customers with the installation method. The specific installation equipment and accessories can be designed by the user according to the pipeline conditions. If necessary, you can contact us to customize.

Applications

Comparison of domestic and foreign sensors

The figure below is the comparison data between Specsens sensor and Hach sensor and laboratory.



The picture below shows the comparison between the Specsens SPS-T-SC1 sensor and the Hach TU5300 sensor to measure tap water turbidity