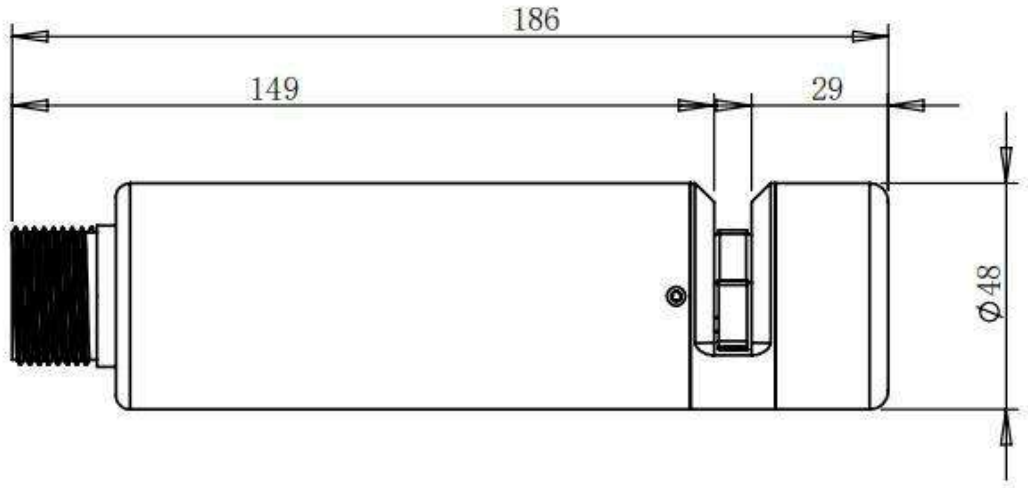
FLDBH6605D COD,BOD,TSS Sensor

Product features

FLDBH6605D is a new UV254 COD sensor launched by our company. It adopts ultraviolet absorption method and brings together many years of application and development experience in the industry. The sensor is compact in size, with integrated internal self-cleaning and anticorrosive treatment on the surface. The reaction analysis speed is fast, does not need chemical reagents, the use of foreign imports of deep UV LED cold light source, luminous measurement life is long, at the same time the use of 850nm compensation light source, effectively eliminate turbidity and chromaticity on the sensor measurement of the impact, with higher reliability.

Features:
1. Digital sensor, direct output RS-485 digital signal, support Modbus /RTU
2. Double optical path measurement; The 254nm and 550nm compensating light source eliminates the influence of turbidity and chroma
3. Imported UV254 LED cold light source, long life, small drift; Filter design, small interference, stable
4. It can measure COD, BOD, turbidity, temperature and other parameters without chemical reagents and sample digestion treatment
5. Compact size, internal integrated automatic cleaning brush, effectively prevent biological attachment;
6. The surface shall be treated with anticorrosion and passivation
7. Low sensor power consumption, anti-interference design of internal circuit

Dimension drawing



Technical parameters

Description	Parameters
HDMI	Rs-485,MODBUS/RTU
Measurement Methods	UV 254 Dual-wavelength ultraviolet absorption method
COD Range	0～2000mg/L or Customize
COD Accuracy	±5%F.S.
COD Resolution	0.1mg/L or 0.01mg/L
BOD Range	0~500mg/L or Customize
TSS Range	0～1000mg/L
Repeatability	±1%F.S.
Working Condition	0.1～50℃、<0.3MPa
Calibration	Two points
Response Time	10s T90
Power Supply	12 or 24VDC±10%, 15mA; 200mA when the brush rotates
Dimensions	Diameter 48 mm ; Length 186 mm; Optional protection cover
IP Grade	IP68 , 10m
Flow Rate	Less than 3m/s
Life Time	Sensor 3 years, cleaning brush system 18 months
Cable Length	5m(default), customizable
Sensor Material	Titanium alloy, 316L, quartz glass
Maintenance	Sensor 3 months, cleaning brush 6 months

Installation note and cable definition

1. Installation

Avoid collision when installing the sensor; avoid shaking back and forth during measurement. If the water flow in the monitoring area is turbulent, the sensor needs to be fixed;

When the sensor is installed and measured, it must be installed horizontally to prevent foreign matter from depositing on the measurement monitoring window, resulting in inaccurate measurement data;

The measurement area, such as branches and attachments, is easy to jam the cleaning brush shaft and cause the sensor to jam. You need to consider choosing a protective cover for protection installation, as shown in the following figure:

- Install the sensor, the depth from the water surface is no more than 2 meters; the sensor is submerged below the water level of 30cm;
- The sensor is installed in an area with slow water flow and no bubbles

2. Wiring connection

- Brown - Power supply（ 12 or 24VDC ）
- Black—GND
- Blue—485A
- White—485B
- bare wire - shield

Sensor cable: 4-wire AWG-24 or AWG-26 shielded cable.
External diameter: 6.0-6.2mm; Bending-resistant shielded pair cable.

Calibration

1. TSS calibration

1.1 Zero point calibration: Use a beaker to measure an appropriate amount of zero tss liquid, and place the sensor vertically in the solution. The sensor is about 2cm away from the circumference of the beaker. After the value is stable, perform zero point calibration for about 1 minute. Refer to the appendix for instructions.

1.2 Slope calibration: Put the sensor in the solution and place it in a 500mg/L standard solution, and perform slope calibration after the value stabilizes for about 1 minute. Refer to the appendix for instructions.

COD calibration

2.1 KHP (potassium hydrogen phthalate, C8H5KO4), CAS# 877-24-7 is used as a staining agent commonly used in environmental research and can be used for COD calibration.

2.2 Preparation of standard solution

①Accurately weigh 0.8503 g of KHP into a 1000 mL flask. Fill it with distilled or deionized water to the highest mark. This solution is a COD solution with a concentration of 1000 mg/L.

②Take 100 mL of this solution into a 1000 mL flask, and then pour it to the highest mark with distilled water or deionized water. After shaking, the COD concentration is 100mg/L.

③Store this concentrated standard solution in a black glass bottle (step 2.1) and store it at low temperature to prevent it from decomposing. The diluted standard solution (step 2.2) needs to be used within 24 hours of preparation.

2.3 Calibration (2-point calibration)

①Put the sensor into distilled water or deionized water, the sensor electrode is immersed in the water for at least 2cm, and there are no bubbles or obstructions blocking the light path. After the reading is stable, perform zero point calibration according to the appendix commands.

②Put the sensor into the 100mg/L COD solution, and perform slope calibration according to the appendix commands after the reading is stable.

Note: When calibrating, calibrate the turbidity first, and then calibrate the COD.

Warning: KHP is carcinogenic, please wear gloves when handling

Maintenance and precautions

1. Maintenance

1) Measuring window: Check whether the measuring window is attached to and fouling; use a moist dust-free cloth to wipe the window; if the scale is difficult to wipe, use a dust-free cloth dampened with detergent to clean; or use diluted hydrochloric acid to wipe. Be careful not to touch it directly with your hands when using diluted hydrochloric acid.

2) Cleaning brush: Prevent foreign objects from blocking the rotation stroke of the cleaning brush, and ensure that no foreign objects are blocked at the cleaning rotating shaft; if there are many branches and attachments in the monitoring area, you need to consider selecting a protective cover for protection installation. The protective cover can be selected separately by contacting the sales staff of our company.

3) The outer surface of the sensor: regularly clean the surface attachments, you can use washing liquid to clean

4) Automatic cleaning and continuous use for 18 months, need to return to the factory to replace the dynamic sealing device.

2. Matters needing attention

1) Measurement window: Sharp objects cannot be used to scratch the measurement monitoring window; avoid air bubbles adhesion during monitoring and measurement.

2) Automatic cleaning brush: Do not force the rotating shaft of the cleaning brush.

3) Installation attention: The sensor is best installed horizontally to avoid foreign matter depositing in the measurement monitoring window; when the foreign matter such as tree branches in the monitoring measurement area is easily blocked to the shaft, a protective cover should be selected for protection installation as much as possible.

The others

Problem	Reason	Solution
The operation interface cannot be connected or the measurement result is not displayed	The cable wiring method is wrong	Check the wiring connection
	The sensor address is incorrect	Check the address out
The measured value is too high, too low or the value is continuously unstable	Sensor window is attached to foreign objects	Clean the surface of the sensor window
	Sensor self-cleaning damage	Contact after-sales

Maintenance and precautions

1. Quality Assurance

Thank you for choosing our products!

Since our establishment, our company has always positioned product quality as the core of the company's participation in market competition.

The company has established a strict quality inspection system in accordance with product quality requirements. The company strictly controls and manages all links related to product quality, establishes scientific inspection procedures, and quantifies inspection indicators, with responsibility to individuals to ensure the company's continuous and stable production of qualified products. The company strictly controls raw materials, eliminates three-no products, selects products from domestic and foreign famous brand manufacturers, establishes strict product process indicators, and establishes a good supply-demand relationship with suppliers.

The company has established a regular employee quality training system, learns new knowledge and information on quality management, establishes the quality awareness of each employee, and regulates their own behavior, ranging from a solder joint, a wire, to a whole machine. To be meticulous and strive for perfection. The quality inspection department has established standardized inspection procedures, equipped with advanced and complete inspection equipment and methods, and inspected strictly in accordance with the procedures, doing every link of product quality inspection, and not letting a substandard product leave the factory.

Our company provides after-sales service of this product within one year from the date of sale, but does not include damage caused by improper use. If you need to repair or adjust, please send it back, but the freight must be paid by yourself.

Parts and spare parts

Description	Unit
Sensor	1
Manual	1
Safety guard	1（Optional）