Preface

Thank you very much for choosing our company!

Please read this manual carefully before using this product, and save it for reference.

Please observe the operating procedures and precautions in this manual.

To ensure that the after-sale protection provided by this instrument is effective, please do not use and maintain the instrument in any way other than specified in this manual.

As the failure to observe the precautions specified in this operation manual, any failures and losses caused are not covered by the manufacturer's warranty, and the manufacturer does not assume any related responsibility. Please keep all documents in a safe place. If in doubt, please contact our after-sales service department.

When receiving the instrument, please carefully open the package and check whether the instrument and accessories are damaged due to shipping. If damage is found, please contact FLUIDINGS after-sales service department and keep the packaging for return.

When the instrument fails, please do not repair it by yourself, please contact our after-sales service department.

UV254 sensor User Manual (V1.0 Edition)

UV254 sensor
Light path: 1mm
TOC 1.5 to 410 mg/l equiv KHP
COD 2.5 to 2000 mg/l equiv. KHP
SAC 1.5 to 700 1/m
BOD 0~500mg/L
TSS 0~1000mg/L
+5~45 °C; IP68 protection level,
RS-485; MODBUS protocol compatible
1 or 2 point user calibration
UV LED light source

Technical parameters

Item	Parameters
Output signal	Support RS-485, MODBUS protocol
Range	TOC 1.5 to 410mg/l equiv KHP, COD 2.5 to 2000 mg/l equiv. KHP
Accuracy	0.01mg/L COD
Temperature range	+5 ~ 45°C
IP Grade	IP68
Maximum pressure	1 bar
Calibration	1 or 2 point COD calibration
Power Supply	DC 12V +/-5%, current <50mA (when there is no cleaning brush)
Sensor Size	54*325.5 mm
Cable length	10m (default)
Housing Material	POM/ SS316L

Calibration

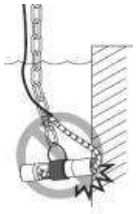
1. FLDBH500 UV254/COD sensor software (see modbus user manual for details) Provides 1- or 2-point COD calibration options in mg/L. KHP (potassium hydrogen

phthalate, C8H5KO4), CAS# 877-24-7, is a commonly used stain for environmental studies and can be used for COD calibration.
The conversion formula for COD254nm and TOC254nm is as follows:
c (TOC) = 0.4705 * c (KHP)
c (COD) = 1.176 * c (KHP)

2. Preparation
2.1 Accurately weigh 1.2754 g of KHP into a 1000 mL flask. Distilled or deionized water and filled until the highest scale. This solution contains 1500mg COD.
2.2 Take 100 mL of this solution into a 1000 mL flask and fill it to the highest mark with distilled or deionized water. Shake well to ensure a COD content of 150 mg/L.
2.3 Store the concentrated standard solution in a black glass bottle (step 2.1) and store at low temperature to prevent decomposition. The diluted standard (step 2.2) needs to be used within 24 hours of preparation.
3. Calibration (2-point calibration)
3.1 Restore user calibration data to default, K=1, B=0 (see modbus documentation for details).
3.2 Place the sensor in pure water (distilled or deionized water) and verify that all light paths are submerged under water >2 cm without bubbles. Note: Do not use tap water. The COD value is then read, for example COD = 0.2 mg/L, recorded as X.
3.3. Place the sensor in a 150mg/L COD solution and repeat step 3.2 to record the value as Y.
3.4 Record the K and B values as follows:
K=150/(YX), B= - KX
3.5 Write the K, B values to the sensor.
WARNING: KHP is a cancer risk and should be worn with gloves.

Installation

Spread the cables before handling.
When the sensor is suspended, the sensor caused by water flow should be prevented from hitting the wall or other water conservancy facilities. If the water flow is very urgent, please fix the sensor

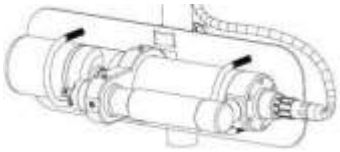


When installing the sensor, the depth from the water surface should not exceed 2 meters.

Considering the fluctuation of water level, submerge the sensor below the lowest possible water level of 30CM

The sensor is placed in a position where there are no bubbles in the water

1. Install a cable cover on the outside of the sensor cable.
2. Fix the sensor as shown below



3. Fixed firmly. The sensor needs to be placed horizontally.

Warning

Please install the cable cover correctly. Otherwise, the cable may be damaged due to damage during maintenance.

Do not use the sensor cable to lift the sensor.

Do not cover the measuring surface with the lifting attachment.

Maintenance schedule and method

1. Maintenance schedule

Cleaning is important to ensure accurate measurements.

Maintenance work	Maintenance frequency
Calibration (if required by the agent)	**Calibrate according to the required schedule**
Maintain and check the self-cleaning brush	**Every 18 months (see wiper doc for details)**

2.Maintenance methods

Routine maintenance

1) Surface: Flush the outer surface of the sensor. If any dirt remains, wipe it with a soft, damp cloth. For some dirt that is difficult to clean, add household detergent to the water and rinse it clean. .

2) Check the cable: Do not tighten the cable during normal operation, otherwise the internal conductor will be broken and the sensor will not work properly.

3) Check the sensor's measurement window for dirt and confirm that the cleaning brush is working properly.
4) Check the sensor surface for damage.

Note:
There are precision optics and electronics inside the sensor, so please avoid severe mechanical shock.

Common problem:

Error	Possible causes	Solutions
Unstable reading	Connection failure	Reconnect the controller and cables
	Cable failure	Please contact us
Measured values are too high, too low, or the values remain unstable	The sensor measurement window is blocked	Cleaning surface

Electrical connection
1.The size
54x325.5 mm (Φ xL)
2. Power supply
Supply voltage 12V +/-5%, current <50mA (no cleaning brush)
4.Sensor cable
4-wire AWG-24 or AWG-26 shielded wire. OD=5mm

1. Red - power cord (VCC)
2. White - 485 data line _B (485_B)
3. Yellow ---485 data line _A (485_A)
4. Black --- ground (GND)
5. Bare wire --- shielded wire

Quality assurance

The online COD warranty period is 1 year from the delivery date.
If the product is found to be faulty during the warranty period, our company promises to repair or replace the faulty product free of charge, or return the order for the faulty product to the user after deducting the first shipping fee. Repaired or replaced products will only

enjoy the remaining warranty period.

Vulnerable parts are not covered by the warranty, such as consumables (light source, pipes, etc.). During the warranty period, please contact our sales staff or their agents for technical support.

After receiving the product quality problem provided by the customer, our company will confirm whether the product needs repair within 2 weeks; if the repair permit is not obtained, the user must not send the product back without authorization.

Warranty limit

The warranty does not include the following

- Damage caused by force majeure such as natural disasters, riots, and wars.
- Damage caused by improper use, negligence, accident or improper use of the user.
- The freight incurred when the product is returned to us.
- Costs incurred by the delivery of product parts during the warranty period.
- Travel expenses for on-site maintenance during the warranty period.