UV254 Sensor User Manual

(Version V1.0)

www.yosemitech.com

Introduction

Thanks for choosing Yosemite Technologies' instrument!

Please read this manual carefully before using this product, and keep this manual in safe place for future reference. Please follow the instructions and procedures stated in this manual.

To ensure after sales warranty coverage, please follow the user instructions and maintenance procedures stated in this manual. Any damage and lost caused by improper use of this product will not be covered by factory warranty. Please keep all documents, and if you have any questions, please do not hesitate to contact Yosemite Technologies' customer services.

Before use, remove the instrument from package material and examine it to make sure that there is no damage occurred during shipment. If there is any damage, please contact Yosemite Technologies Customer Service immediately. Save all materials until you are sure that the instrument functions properly. Any damage or defective items must be returned in their original packaging material.

UV254 Sensor

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Optical path: 6 mm

COD 0.75 to 370mg/L equiv.KHP

Pathlength: 1mm

1000 mg/L equiv.KHP

+5~45 ℃； IP68 rating，

RS-485; MODBUS protocol compatible

One or two points user calibration

UVC LED source

Ordering：

Model Description	Model #
6mm Pathlength	Y551-B
1 mm Pathlength	Y551-C

Y551 Technical Parameters

Item	parameter
Interface	Support RS-485， MODBUS protocols
Range	COD 0.75 to 370mg/L equiv. KHP TOC 0.3 to 150mg/L equiv. KHP
Resolution	0.01mg/L COD
Temperature Range	+5 ~ 45℃
Housing IP Rating	IP68
Maximum pressure	1 bar
User Calibration	one or two points
Power Requirements	DC 12V +/-5%，current<50mA(without wiper)
Sensor OD	50 mm
Sensor Length	214 mm
Cable Length	10m (default)
Body Materials	POM and 316L

Y551 Calibration

Calibration

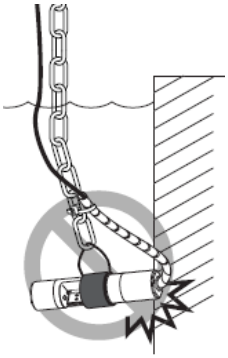
1, For calibrating the Y551 UV254/COD sensor, the sensor software(see modbus instruction doc) offers the option of 1-point or 2-points calibration procedures in mg/L of COD. KHP(potassium hydrogen phthalate C8H5KO4) CAS# 877-24-7, a more common dye for environmental studies, can be used to calibrate the sensor about COD.
The conversion to COD254nm and TOC254nm is performed in the following way:
c (TOC) = 0.4705 * c (KHP)
c (COD) = 1.176 * c (KHP)
2, Preparation
2.1 Accurately weigh 1.2754 g of the KHP solid and quantitatively transfer to a 1000 mL volumetric flask. Dissolve the solid in purified (distilled or deionized) water and then fill the flask to the top graduation. This solution contains 1500mg COD 1000 mL of water(1500mg/L COD).
2.2 Accurately transfer 100 mL of the solution prepared in the above step to a 1000 mL volumetric flask and then fill the flask to the top graduation with purified water. Mix well to obtain a solution, which is 150 mg/L COD in water.
2.3 Store the concentrated standard solution in a darkened glass bottle in a refrigerator to retard decomposition. The dilute standard prepared in the previous step should be used within 24 hours of its preparation.
3, Use and calibrate(two point calibration)
3.1 restore the user calibration data, K=1, B=0(see the modbus doc for details).
3.2 put the sensor to purified (distilled or deionized) water and make sure all of optical path is under water >2cm without bubble. Note: Tap water is forbidden. Then read the COD value. E.g COD= 0.2mg/L, record it as X.
3.3, put the sensor to 150mg/L COD solution and repeat step 3.2, record the value as Y.
3.4 Calculate K and B value as below:
K=150/(Y-X), B= - KX
3.5 Write the K, B value to the sensor.

CAUTION: KHP is listed as a possible carcinogen/mutagen and should be handled with gloves.

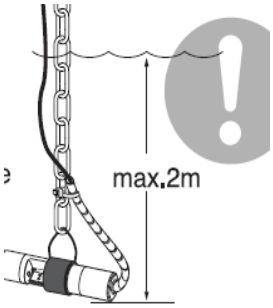
Installation

Make sure the cable is separated from the power supply before opening the unit.

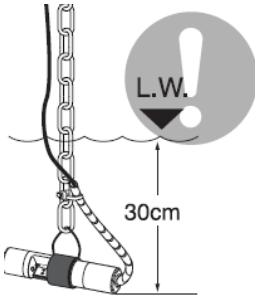
Suspend the sensor so as not to impinge upon a wall or facility equipment due to water flow. In the case of higher water flow, fix the sensor.



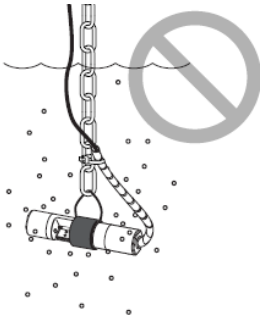
Install the sensor Max.2m below the surface of water.



With fluctuation of water level taken into account, dispose the sensor so as to be immersed up to of the order of 30 cm below the expected lowest water level.



Dispose the sensor in water without air bubbles.



CAUTION:

Attach a cable protective cover without fail. Otherwise, there is a possibility that a cable is scratched during maintenance operation and water intrudes.
Do not hang a sensor with the sensor cable.
Do not cover measuring surface by a hanging attachment.

Y551 Maintenance

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Maintenance schedule and methods

1、 Maintenance Schedule

cleanliness is very important for maintaining accurate readings.

Maintenance tasks	Maintenance frequency
Calibration（if required of agency）	Calibration based on required schedule
Maintain and check wiper system	**Every 18 months（see wiper doc for detail）**

2、 Maintenance

Routine Maintenance

1）surface： Wash the outer surface of sensor with tap water, if there is still a clastic residues, using wet soft cloth to wipe, for some stubborn dirt, can add household detergents in tap water to clean.

2）Check the cable ： The cable should not be tight when work properly, otherwise it easy to make the internal wire break and the sensor can't work normally.

3） Check the sensor measurement window whether have smudge and cleaning wiper whether is normal or not.

4） Check the sensor shell whether is damaged or not.

Attention:

Probe contains sensitive optical components and electronic components. Ensure that the probe far away from severe mechanical impact.

FAQ:

ERROR	POSSIBLE CAUSE	SOLUTION
Unstable reading	connection error	Reconnect controller and cable
	Cable failure	Contact customer service
Measured value is too high, too low or instability	Sensor outside window is attached	Wash the surface

Y551 Cable Definition

1、 Y551 Sensor Dimensions

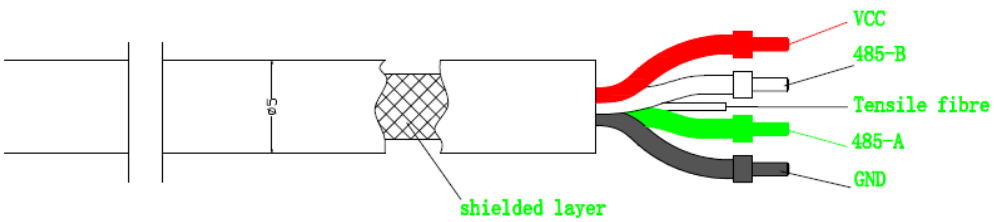
50x214 mm(Φ x L)

2、Power Supply Requirements

Power Supply 12V +/-5%, Current <50mA(without wiper)

3、Sensor Cable

4 wire AWG-24 OR AWG-26 shielding wire. OD=5mm



1, Red—Power (VCC)

2, White—485 Date_B (485_B)

3, Green ---485 Date_A (485_A)

4, Black --- Ground (GND)

5, Bare wire ---- shield

Quality Assurance

Yosemite Technologies online self-cleaning UV254 sensor and controller are warranted for one (1) year from date of purchase against any material and manufacturing workmanship.

If there are defects found during the warranty period, Yosemite technologies promises to repair or replace the defective products, or return the payment of product except the charge for the first time for transport and related formalities. In the warranty period, repair or replacement of any product will only enjoy the rest of the original warranty.

This warranty does not apply to consumables, such as the consumption parts (including but not limited to the lamp, piping, etc.).

Contact Yosemite technologies or your agents to start technical support within the guarantee period.

After receiving feedback for the product quality problems from the customer, Yosemite technologies will confirm whether the product need repair within two weeks; It can't be returned without approval to repair the product.

Limitation of Warranty

This warranty does not include the following

- Damage caused due to force majeure, natural disasters, social unrest, war(published or unpublished), terrorism, civil war or any government forced.
- Damage caused due to improper use, negligence, accident, or caused by the improper application and installation.
- Freight for the product shipped back to Yosemite technologies
- Freight for parts or products express or express delivery within the warranty.
- Travel expense for repair in local in warranty

Quality Assurance

The quality assurance includes all content of products provided by Yosemite technologies.

It constitutes the final, complete and exclusive statement about the quality guarantee, no person or agent is authorized in the name of Yosemite technologies to develop other warranty.

As described above, the remedial measures such as repair, replacement or return the payment for product is not in violation of the warranty, and it aim at our own products only. Based on the strict liability or other legal theory, Yosemite technologies is not responsible for defects or any other damage due to careless operation , including the subsequent damage with a causal connection between these situations.

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