PSS-334012

Oil-in-Water Sensor

Related Products

Product No.	Interf.	Descriptions
PSS-232011	RS485	Water Quality Residule Chlorine Sensor (IP68)
PSS-232021	RS485	Quad-electrode Salinity Sensor (IP68)
PSS-232031	RS485	Quad-electrode Conductivity Sensor (IP68)
PSS-232041	RS485	Water Quality Digital ORP Sensor (IP68)
PSS-232051	RS485	Water Quality NH4 Sensor (IP68)
PSS-232081	RS485	Water Quality Total Hardness Sensor(IP68)
PSS-234011	RS485	Water Quality Digital PH Sensor (IP68)
PSS-332011	RS485	Optical Dissolved Oxygen Sensor (Optical Fluorensce Principle, IP68, ASTM D888-09)
PSS-332012	RS485	Aquaculture ODO (Optical Fluorensce Principle,IP68)
PSS-332021	RS485	Optical Chlorophyll Sensor (Fluorescent，Self Cleaning， Immersible, IP68)
PSS-332022	RS485	Optical Chlorophyll Sensor (Fluorescent, Flow Cell/Immersible, IP68)
PSS-332031	RS485	Blue Green Algea (Fresh Water, Fluorescence, Self Cleaning, Immersible,IP68)
PSS-332032	RS485	Blue Green Algea (Fresh Water, Fluorescence, Flow cell/Immersible, IP68)
PSS-333011	RS485	Suspended Solid Sensor (Back Scattering Light,Self Cleaning,0-4,000mg/L, IP68)
PSS-333012	RS485	Suspended Solid Sensor (UV254,Self Cleaning,0-10,000mg/L, IP68)
PSS-334012	RS485	Oil-in-Water Sensor (UV Fluorescent,Cruide Oil , Self Cleaning, IP68)
PSS-334014	RS485	Oil-in-Water Sensor (UVFluorescent,Refined Oil, Self Cleaning, IP68)
PSS-334021	RS485	UV254 COD Sensor (Waster Water/Surface Water, IP68)
PSS-334022	RS485	UV254 COD Sensor (Industrial Waster Water, IP68)
PSS-334031	RS485	Optical Turbidity Sensor (Flow cell/Immersible, IP68)
PSS-334032	RS485	Optical Turbidity Sensor (Immersible,Self Cleaning,IP68)
PSS-334041	RS485	Water quality monitoring Colored soluble organic matter CDOM sensor -- ultraviolet - fluorescence method (input type, self-cleaning, IP68)
PSS-334051	RS485	Water color Sensor(Dual Wavelength UV254,immersible,Self Cleaning,IP68)
PSS-BUOY01	Large floating station (ocean version, including floating body, solar panel, battery and controller; without sensor)	
PSS-BUOY02	Small floating station (river version, including floating body, solar panel, battery and controller; without sensor)	

Product introduction

PSS-334012 The on-line oil sensor in water adopts the principle of fluorescence method. Compared with several commonly used methods, the fluorescence method is more efficient, fast and reproducible, and can be used for on-line real-time monitoring. The sensor has better repeatability and stability. With an automatic cleaning brush, it can eliminate bubbles, reduce the impact of contamination on measurement, make the maintenance cycle longer, and maintain excellent stability for long-term online use. It can play an early warning role for oil pollution in water.

Detection principle

The oil content in water is monitored by ultraviolet fluorescence method, and the concentration of oil in water is quantitatively analyzed according to the fluorescence intensity emitted by oil and its aromatic compounds and compounds containing conjugated double bonds after absorbing ultraviolet light. Aromatic hydrocarbons in petroleum can produce fluorescence under the excitation of ultraviolet light, and the value of oil in water can be calculated according to the intensity of fluorescence.

Product features

- Intelligent sensor detection item: crude oil in water

- Cable connection, can be put into use directly, and the installation is simple
- Fully waterproof and gas resistant for any harsh environment
- Strong lightning protection and anti-interference capability
- Adopt imported chips, components and new surface mounting production process to ensure stable and reliable operation of the instrument
- Advanced fluorescence sensing technology
- With automatic cleaning brush, eliminate the influence of oil stain on measurement
- Adopt unique optical and electronic filtering technology to eliminate the influence of ambient light on measurement
- Not affected by suspended solids in water

Product parameters

Parameters	
Monitoring content	Crude oil
Detection principle	Fluorimetry
Measuring range	0～50ppm or 0～0.40FLU
Accuracy	±3% FS
Resolution	0.01ppm
Material	316L
Probe cable length	10m (default) customizable
Communication	
Output signal	RS485
Mechanical	
Work environment	0 ℃～ 50 ℃ (the part directly contacting the liquid level)
Degree of protection	IP68
The deepest depth	10m underwater
Weight	1.5kg (probe part)
Size	175.8*45mm (probe size length * diameter)
Power	
Power	5-12V DC

Sensor installation

- The sensor is recommended to be installed vertically and fixedly in the downward direction of the measuring light window. The sensor caused by water flow shall not impact the wall or other water conservancy facilities.
- The sensor shall be installed at the position without bubbles in the water, as far away from the aeration port as possible
- Considering the basic principle of sensor optics, the distance between the end face of the sensor light window and the bottom of the container/related device shall not be less than 10cm
- Considering the fluctuation of water level, install the sensor below the lowest possible water level of 30cm, and try to install it at the position where there is no bubble in the water
- Do not use the sensor cable to lift the sensor! It is recommended to install cable protective sleeve to ensure good power supply and water tightness of the cable
- Please ensure that the connector between the sensor and the cable is correctly connected and tightened, and be careful not to damage the sealing ring

Maintenance method

- Maintenance method:

  - Clean the outer surface of the sensor with tap water. If there is still debris left, wipe it with a wet soft cloth. For some stubborn dirt, add some household detergent in tap water to clean it;
  - External surface of the measuring mouth: clean the external surface of the sensor with tap water. For some stubborn dirt, traditional cleaner and soft cloth can be used for cleaning;
  - Check the cable of the sensor: the cable shall not be tightened during normal operation, otherwise the wire inside the cable may break, causing the sensor to fail to work normally;
  - Check the cleaning brush: check whether the brush cover can effectively contact the light window, whether it rotates normally, and whether it is loose; If the window surface cannot be scratched due to severe wear, replace it; if the rotary brush is loose, retighten it;
  - If it has been used continuously for 18 months, it is necessary to return to the factory to replace the dynamic sealing device.

Calibration period

- It is recommended to check and calibrate the sensor once 3 months (or determine the calibration and maintenance cycle according to the requirements of the local competent department for measurement accuracy and the on-site water quality environment)
- Maintenance, the more frequent the correction, the more effective and accurate the test

Calibration solution method

- First put 0.1g of quinine sulfate into 1000mL reagent bottle A, then add 0.5mol/L of sulfuric acid to 1000mL and fully shake it to 100ppm;
- Take 1mL of the above solution and put it into 1000mL reagent bottle B, then add 0.5mol/L sulfuric acid to 1000mL and fully shake it. Then the solution concentration of reagent bottle B is 100 ppb;
- It is better to use the prepared solution within 24 hours;
- Correction precautions:

  - Before sensor calibration, clean the measuring end surface of the sensor with deionized water and wipe the measuring window with a dust-free paper towel
  - During the test, put the calibration solution into the brown jar and fix the sensor with an iron stand
  - Put it slowly and obliquely to avoid bubbles
  - After placing, the distance between the front end of the sensor and the bottom of the container should be>10cm, and the distance from the side wall should be>3cm

Matters need attention

- Before operation, please disperse the cables to avoid winding, knotting, etc
- The probe contains sensitive optical and electronic components. Make sure that the probe is not subjected to severe mechanical impact. There are no parts requiring user maintenance inside the probe;

Application

Widely used in rivers, lakes, ponds, marine surveys, aquaculture, drinking water and other scenes.

Ordering Guide

- PSS-334012 sensor is a sensor only, it needs to use with WxS terminals to combine to different product series; On the basis of the combination, multiple PSS sensors can be loaded through the Multiple Purpose Interface (MPI) of the intelligent IoT terminal.
- According to the specific scenario of use case, the enclosure and antenna of intelligent IoT terminal will be replaced to ensure the product quality and performance.
- PSS sensors can be integrated with the WxS terminal via the MPI interface to form different product series.
- Example of products are as follows:

    - WxS7800-334012 WiFi Series Oil-in-Water Smart Sensor & RTU 2-in-1 Terminal
    - WxS8800-334012 LoRaWAN Series Oil-in-Water Smart Sensor & RTU 2-in-1 Terminal
    - WxS9800-334012 NB-IoT (China) Series Oil-in-Water Smart Sensor & RTU 2-in-1 Terminal
    - WxS9900-334012 NB-IoT (Global) Series Oil-in-Water Smart Sensor & RTU 2-in-1 Terminal

- WxSC800-334012 LTE Cat1 Series Oil-in-Water Smart Sensor & RTU 2-in-1 Terminal
- WxSC900-334012 LTE Cat1 w/GPS Series Oil-in-Water Smart Sensor & RTU 2-in-1 Terminal
- WxSD800-334012 LTE Cat4 Series Oil-in-Water Smart Sensor & RTU 2-in-1 Terminal
- CxS1800-334012 Ethernet (RJ45) Series Oil-in-Water Smart Sensor & RTU 2-in-1 Terminal