

Reagent-Free Optical Water Quality Sensor

ATE2100

Features

- Based on UV absorption method, no chemical reagents needed, no secondary pollution
- High efficiency and speed: detection within seconds
- Measurement parameters: COD, turbidity, TSS, and water temperature
- Equipped with an automatic cleaning device to clean window residues, maintenance-free
- Equipped with a temperature sensor and built-in temperature compensation algorithm to improve detection accuracy
- Dual optical path measurement effectively compensates for the impact of turbidity on COD measurement
- Standard RS485 Modbus communication protocol
- Protection rating: IP68, suitable for long-term underwater operation
- Material: 316L, corrosion-resistant

Description

The ATE2100 project is an advanced UV absorption-based COD sensor for determining organic matter in water. This reagent-free COD sensor is environmentally friendly, causes no pollution, and offers economic benefits. It can rapidly measure water quality parameters such as COD, turbidity, TSS, and water temperature within seconds, with multiple range options available for customers. The sensor utilizes a 485 communication interface and the standard ModBus/RTU communication protocol.

The ATE2100 is equipped with an automatic cleaning device to remove window attachments and features Optosky's unique turbidity and temperature interference compensation algorithm, significantly reducing maintenance efforts.

This reagent-free optical water quality sensor is crucial for applications in water quality monitoring, industrial water analysis, environmental monitoring, and laboratory testing. It plays a vital role in water resource protection, environmental conservation, and production discharge management.

Application

1. Water Quality Monitoring

COD sensors are commonly used in water quality monitoring, including in drinking water plants, wastewater treatment plants, and the monitoring of rivers and lakes. By continuously monitoring the chemical oxygen demand (COD) in water bodies, it is possible to promptly understand pollution levels, providing crucial data support for environmental protection and water quality management.

2. Industrial Production

In certain industrial processes, it is essential to monitor the COD levels in wastewater to ensure that discharges comply with environmental standards. COD sensors can be used in industrial wastewater treatment systems for monitoring and control, helping enterprises to discharge wastewater in compliance with regulations.

3. Environmental Monitoring

COD sensors can also be used in environmental monitoring to assess the pollution levels of surface water, groundwater, lakes, and rivers. This provides essential data support for environmental management departments.

4. Laboratory Applications

In research laboratories, COD sensors are often used for analyzing and studying water samples. They help researchers understand the COD content of different water samples, aiding in scientific research.





Drinking water plants



Wastewater treatment



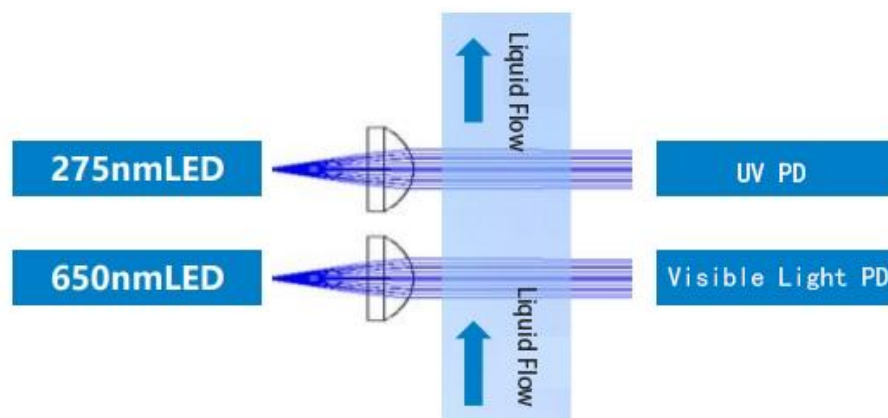
water quality monitoring



Laboratory water quality analysis

Principle

The detection of substance composition and concentration is based on the absorption intensity of specific wavelengths of light by substances in water. When a parallel monochromatic light beam passes perpendicularly through a uniform, non-scattering absorbing substance, its absorbance is directly proportional to the concentration of the absorbing substance, in accordance with the Lambert-Beer law. Thus, the concentration of the target substance is measured based on absorbance.



1. Parameter

sensor				
Measurement Principle	UV Absorption Method			
Measurement Parameters	COD, Turbidity, TSS, Temperature, etc.			
Light Source	UV LED Light Source, Long Life, High Stability			
Measurement Cycle	≥1min (Adjustable)			
Response Time	≤1s			
Measurement Parameter	COD	Turbidity	TSS	Temperature
Range (Customizable)	0~400mg/L	0~400NTU	0~400mg/L	0-50℃
Accuracy	5%FS	5%FS	5%FS	±0.5℃
Repeatability	2%FS	2%FS	2%FS	±0.1℃
Resolution	0.1mg/L	0.1NTU	0.1mg/L	0.1℃
Compensation Function	Temperature Compensation, Turbidity Compensation			
Automatic Cleaning	Equipped with Automatic Cleaning Brush, Maintenance-Free			
Flow Rate Requirement	<3m/s			
Housing Material	316L			
Dimensions	Φ46mm*307mm			
Weight	1.5kg			
Power Supply	12-24V			
Communication Interface	RS485 (Isolated)			
Power Consumption	6W/3W (Cleaning Brush Working/Not Working)			
Calibration	Factory Calibration/On-Site Calibration			
Protection Level	IP68			
Cable Length	Standard 5m (Customizable Length)			
Operating Temperature Range	1-40℃ (Submerged Temperature)			
Installation Method	Immersion			
Storage Temperature	-20~40℃			
Warranty Period	1 Year			

2. Accessories list

NO.	Item	Quantity	Optional/Standard
1	Reagent-Free Optical Water Quality Sensor	1	Standard
2	Parameter Configuration Software	1	Standard
3	5m Cable	1	Customizable Length
4	Product Manual	1	Standard