

## FULL SPECTRUM WATER QUALITY MONITOR

ATE2000

### FEATURE:

- Full-spectrum absorption, chemical reagents free, secondary pollution free
- Fast response (second-level)
- No sampling and pre-processing required
- Double beam measurement for optimum stability even for long-term monitoring
- Automatically compensate for turbidity interference using advanced algorithms
- RS485 signal output, strong anti-interference ability, transmission distance up to 200 meters
- Quickly download data via USB flash drive
- Reserved relay interface for secondary development
- Optical window with Nano-coating
- Automatic cleaning
- Low maintenance and low operating costs

### APPLICATION:

- Sewage treatment plant
- Environmental monitoring
- Water quality monitoring of natural water source such as rivers and lakes and reservoirs
- Aquaculture water quality monitoring
- Industrial production process control
- Surface water
- Trend analysis
- Water quality warning system

### DESCRIPTION:

The full-spectrum water quality monitor is a new generation of environmentally-friendly sensors introduced by Optosky. Easy-to-install cost less, it can measure multi-parameters real-time, automated and transportable. The product adopts rod structure and open flow cell, equipped with automatic cleaning device, which can be directly immersed in water to realize in-situ on-line detection of water quality. The test process has no chemical reagents, less maintenance work and long instrument life span.

The instrument has data storage and wireless transmission function, adopts RS485 interface and Modbus protocol, and has low power consumption. There are 4 analog signal output ports (4-20mA) and a USB port, as well as relays that can trigger an alarm or control an external device.

New solution traditional reagent photoelectric colorimetric instrument requires regular replacement of reagents, long measurement time, high failure rate, and the need to build a station.



## 1. TECHNICAL PARAMETER

### 1.1

SENSOR		
Measuring Principle	Ultraviolet visible light 200-720nm continuous spectrum	
Measurement Parameter	COD, turbidity	
Light Source	Hamamatsu xenon lamp, theoretical life span > 10 years	
Measuring Optical distance (optional between 1-35mm)	1/5/10/35mm	
Measurement Cycle	1-600min (adjustable)	
Measurement Range (customized)	10-150mg/L COD (Optical distance: 10mm)	10-100NTU turbidity (Optical distance: 10mm)
Measurement Accuracy	± 5%	± 5%
Repeatability	5%	5%
Zero-point Drift	± 2%	± 2%
Range Drift	± 2%	± 2%
Compensation Function	Double beam automatic compensation, turbidity compensation	
Automatic Cleaning	Probe configuration for automatic cleaning, maintenance free (with air compressor and solenoid valve)	
Shell Material	Stainless steel or titanium (base on water quality and customer requirements)	
Dimensions	600mm*136mm	
Weight	12kg	
Power Supply	12VDC	
Communication Method	RS485	
Power Consumption	12W	
Correction	Factory calibration / field correction (base on accuracy and customer requirements)	
Protection level	IP68	
Installation	Various installation methods such as immersion and extraction bypass installation (base on customer requirements)	
Storing Temp. °C	-20-40°C	
Warranty	1 Year	

### 1.2

CONTROLLER	
Display	Large screen dot matrix liquid crystal display
Communication Output	NB-IoT, WIFI, 4G
Data Storage	32GB

Protection Level	IP65
Sensor Interface	1 M12 industrial interface for connecting sensors
USB Interface	Yes
Analog Output	4-channel 4-20mA output
Relay Control	4-way 24V 1A relay high and low point control
Power Supply	220±10%VAC;50-60HZ
Cable Length	Standard 10 meters, can be customized
Storage T°C	-20-40°C
Warranty	1 Year

### 1.3

INSTALLATION CONDITION	
Protection Level	IP68 (Equipped with protective box)
Ambient T °C	0-40°C
Relative Humidity	0-95%RH (Non-condensing)
Test Liquid Temp °C	0~40°C
Flow Rate Requirement	<3m/s
PH Range	6-9

### 1.4

OPTICAL PATH SELECTION REFERENCE						
OPTICAL DISTANCE (mm)	PARAMETER	UNIT	MEASURING RANGE	DETECTION LIMIT	MEASURING LIMIT	ACCURACY
1	COD	mg/L	40-800	40	50	COD≤80mg/L, Accuracy≤3mg/L, or COD>80mg/L, Accuracy≤5%
	Turbidity	NTU	40-800	40	50	Turbidity≤80NTU, Accuracy≤2NTU, or Turbidity>80NTU, Accuracy≤5%
5	COD	mg/L	8-250	8	15	COD≤60mg/L, Accuracy≤3mg/L, or COD>60mg/L, Accuracy≤5%
	Turbidity	NTU	8-180	8	15	Turbidity≤40NTU, Accuracy≤2NTU, or Turbidity>40NTU, Accuracy≤5%

# Datasheet

10	COD	mg/L	5-140	4	10	COD $\leq$ 30mg/L, Accuracy $\leq$ 3mg/L, or COD > 30mg/L, Accuracy $\leq$ 5%
	Turbidity	NTU	5-100	5	10	Turbidity $\leq$ 20NTU, Accuracy $\leq$ 2NTU, or Turbidity > 20NTU, Accuracy $\leq$ 5%
35	COD	mg/L	1-60	1	3	COD $\leq$ 10mg/L, Accuracy $\leq$ 3mg/L, or COD > 10mg/L, Accuracy $\leq$ 5%
	Turbidity	NTU	2-40	2	5	Turbidity $\leq$ 10NTU, Accuracy $\leq$ 2NTU, or Turbidity > 10NTU, Accuracy $\leq$ 5%

## 1.5 Industry Application Examples

### Sewage Treatment Plant



### Environmental Monitoring



### Aquaculture