OPTOSKY Spectroscopy Solutions

Datasheet

Online Water Quality Monitoring System	ATE6500

Features

- Test Parameters: Water level, turbidity, pH, temperature, conductivity, dissolved oxygen, ORP, ammonia nitrogen, COD, residual chlorine, nitrite, etc., with support for expansion.
- Customers can choose different combinations of water quality monitoring parameters.
- Professional surge protection circuit design, equipped with a solar power supply system to ensure all-weather stable operation.
- Data transmission methods: RS485/NB-IoT/4G/5G, with data directly connected to the monitoring cloud platform.
- Touch-enabled large intelligent display screen, easy to operate.
- Warning module: Alerts are triggered on the platform when data exceeds set thresholds.
- Supports comprehensive monitoring via PC and mobile terminals, enabling timely and accurate understanding of water quality conditions.

Applications

- Aquaculture: Dissolved Oxygen, pH, ORP, Ammonia Nitrogen, Nitrite, etc.
- Industrial: Standard Five Parameters, SS, COD, Ammonia Nitrogen, etc.
- Water Conservancy: SS (Suspended Solids), Standard Five Parameters, etc.
- Agriculture: Standard Five Parameters, Ammonia Nitrogen, COD, etc.
- Lakes & Reservoirs: Standard Five Parameters, Ammonia Nitrogen, COD, Chlorophyll, Total Phosphorus, Total Nitrogen, etc.
- Note: "Standard Five Parameters" typically refer to Temperature, pH, Dissolved Oxygen, Conductivity, and Turbidity. stability of less than 0.005% and a drift of only ±0.5% per hour, it boasts features such as a long service life, minimal attenuation, and high output power. This makes it widely suitable for traditional benchtop spectrometers as well as portable miniature spectrometers for field applications.

Description

ATE6500 is a compact and integrated online water quality monitoring system, consisting of a cabinet, control system, power supply unit, analysis unit, and software cloud platform. The water quality monitoring parameters can be customized according to actual customer requirements, while signal output supports data transmission methods such as RS485, NB-IoT, 4G, and 5G, meeting diverse application scenarios.

With the ongoing development and widespread adoption of IoT technology, water quality monitoring centered on automation, intelligence, and networking has become an inevitable trend. The ATE6500 project is designed specifically to meet the current demands in fields such as aquaculture, water conservancy, and water services for high density, high frequency, and low-cost monitoring. It offers advantages such as a small footprint, no land acquisition required, flexible installation, short construction cycles, and low cost, enabling real-time online monitoring of multiple parameters.

Against the backdrop of the rapidly developing aquaculture industry, the ATE6500 provides a more efficient, accurate, and economical solution for monitoring aquaculture water quality. It has become a key factor in increasing yield, reducing costs, preventing fish diseases, and improving economic efficiency.

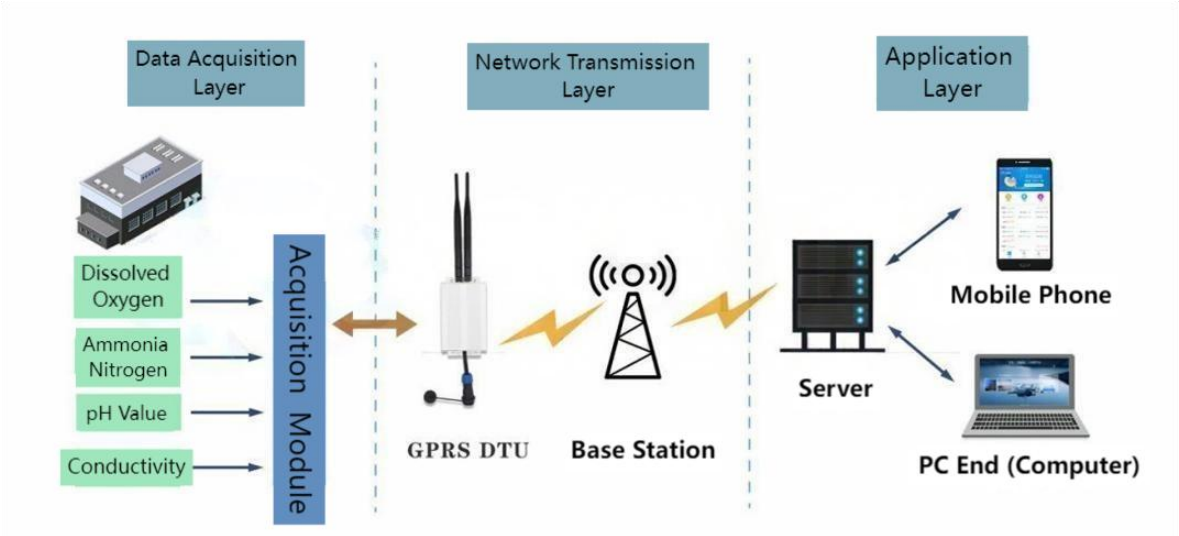
Model	Monitoring Parameters
ATE6500-YZ	Dissolved Oxygen
ATE6500-YZ3	Dissolved Oxygen, pH, Temperature
ATE6500-YZ3	SS (Suspended Solids), Water Level
AT6500-XX	Customizable sensor combinations (supports up to 5 types) based on actual requirements.

1. Product Appearance

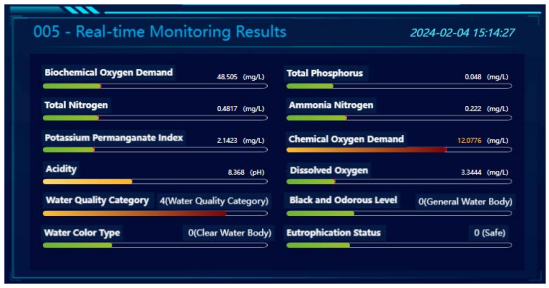
Product Appearance

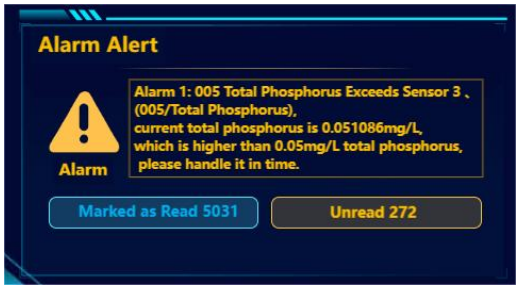
Field Installation Diagram

2. Software Platform

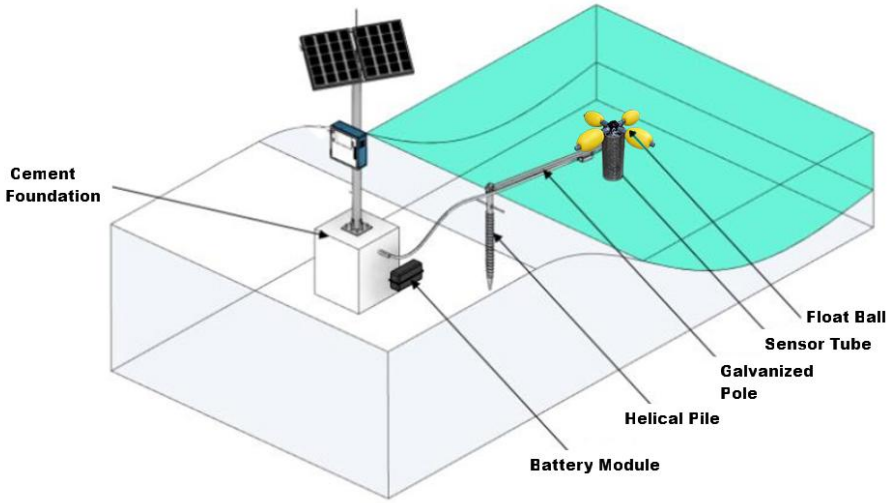


Monitoring indicators are transmitted through the data acquisition layer and network transmission layer to Optosky's cloud server. Users can log in to the platform system via a PC web page to view real-time information of the water quality system. At the same time, for user convenience, a mobile software platform compatible with Android/iOS systems has been designed and developed, enabling users to monitor water quality environmental parameters anytime, anywhere, and through multiple channels. Additionally, users can manually and remotely control execution devices via the client, operating field equipment based on the processing results of predictive control algorithms.





3. Installation Schematic Diagram



4. Parameter

No.	Item Name	Model	Configuration	Standard/Optional
1	Control System	ATE6500	1．7-inch HD Touch Screen, with a user-friendly interface and easy operation. (Standard Configuration, can be customized to remove) 2．Including system control unit, data acquisition unit, and data transmission unit. 3．Environmental Adaptability: Operating temperature -10℃-45℃, operating humidity 0-95%RH, no condensation. 4．Monitoring interval is 30min, and the monitoring frequency can be customized according to actual supervision requirements. Monitoring data is collected and uploaded in real time. 5．Data Storage, Query and Export: Local data query and historical data export are supported. Historical data can be stored and will not be lost in case	Standard

			of power failure. 6．Data Re-transmission: If the network communication is abnormal, the data shall be automatically re-transmitted to the data platform when the communication is normal next time. 7．Anti-electromagnetic Interference Function: The device shall pass the electrical fast transient burst immunity test and electrostatic discharge test. 8．The device shall pass the insulation resistance and electric strength test. 9．The device shall pass the constant damp heat test. 10．The device shall pass the vibration test. 11．The protection grade of the equipment electrical part shell is IP65, and the protection grade of the sensor shell is IP68. 12．Positioning: GPS system is supported. 13．The device supports remote automatic cleaning. 14．Parameter expansion is supported. 15．Transmission Mode: 4G wireless transmission. 16．Audible and visual alarm is optional. (Optional Configuration)	
2	Chassis		1．Composed of outer cabinet, internal sheet metal parts, and air cooling system. 2．The cold plate of the chassis is spray-plasted, with enterprise information and LOGO sprayed. 3．Easy to install and debug. 4．Equipped with safety facilities such as rainproof, dustproof, lightning-proof and anti-theft functions, with the protection grade reaching IP65. 5．Power Supply: Solar power supply or municipal power supply 6．Size: 400300150mm (Customization supported)	Standard
3	Power Supply Unit	ATE6500-GD	1．2 pieces of 120W solar panels 2．2 pieces of 38AH storage batteries 3．Including solar controller, 3m vertical pole, and lightning rod 4．The system can operate continuously for 2 days in rainy and cloudy weather. (Continuous monitoring)	Optional

4	Spectral Analysis Unit	ATE2000	1．Ultraviolet-Visible Light 190~800nm Continuous Spectrum 2．Measurement Parameters: TSS, COD, Ammonia Nitrogen, Turbidity, Temperature, Total Phosphorus, Total Nitrogen, BOD, TOC, Nitrate, etc.	Optional
5	Water Level	ATE6500-SW	Range: 0.05-10m; Resolution: 0.01m; Accuracy: ±1% FS	Optional
6	Temperature	ATE6500-WD	Range: 0-60℃; Accuracy: ±0.5℃	Optional
7	PH	ATE6500-PH	Range: 0-14; Accuracy: ±0.05 pH; Resolution: ±0.01 pH; Glass Electrode Method	Optional
8	ORP	ATE6500-ORP	Range: -1500-1500mV; Accuracy: ±3mV; Glass Electrode Method	Optional
9	Dissolved Oxygen (Fluorescence Method)	ATE6500-DOY	Range: 0-20mg/L; Accuracy: ±0.3mg/L; Resolution: 0.01mg/L	Optional
9	Dissolved Oxygen (Membrane Method)	ATE6500-DOM	Range: 0-20mg/L; Accuracy: ±0.3mg/L; Resolution: 0.01mg/L	Optional
10	Ammonia Nitrogen	ATE6500-AD	Range: 0-100mg/L; Accuracy: ±0.3mg/L; Ion Selective Electrode Method	Optional
11	Conductivity	ATE6500-DDL	Range: 0-5000μS/cm; Accuracy: ±1.5% F.S.; Resolution: 1μS; Graphite Electrode Method	Optional
12	Residual Chlorine	ATE6500-YL	Range: 0-10ppm; Accuracy: ±1%; Electrochemical Method	Optional
13	Turbidity	ATE6500-ZD	Range: 0-1000NTU; Accuracy: ±5% FS; Infrared Scattering Method	Optional
14	Chlorophyll	ATE6500-YLS	Range: 0-400μg/L; Accuracy: ±3% FS; Resolution: 0.1μg/L; Fluorescence Method	Optional
15	Cyanobacteria	ATE6500-LLZ	Range：100-300,000cells/mL ；Accuracy：100cells/mL Fluorescence Method	Optional
16	Chemical Oxygen Demand (COD)	ATE6500-COD	Range: 0-400mg/L; Accuracy: ±5% FS; Ultraviolet Spectroscopy Method	Optional
17	Salinity	ATE6500-YD	Range: 0-70PSU; Accuracy: ±1.5% F.S.; Electromagnetic Electrode	Optional
18	Suspended Solids (SS)	ATE6500-SS	Range: 0.01-120000 mg/L; Accuracy: ±5%; Optical Method	Optional
19	Cloud Platform	Water Quality Monitoring	1．Users can log in to the software monitoring platform through information terminals such as PCs and	Optional

		Cloud Platform	mobile phones to grasp water quality environment information in real time, obtain abnormal alarm information and water quality early warning information in a timely manner, and adjust control equipment in real time and automatically according to water quality monitoring results, so as to realize scientific application in industries such as aquaculture, and ultimately achieve the goals of energy saving, consumption reduction, environmental protection, and increased production and income. 2．There are manual mode and automatic mode for control 3．Intelligent automatic regulation, real-time online monitoring interface on the PC side, adopting a unified man-machine interface and flexible and convenient operation mode. 4．It is equipped with real-time data curve graph and trend graph query service, which can conveniently observe the detection points with large changes in detection values within a period of time. 5．In automatic mode, the equipment automatically adjusts and controls according to the upper and lower limits.	