

Municipal water supply/Drainage series

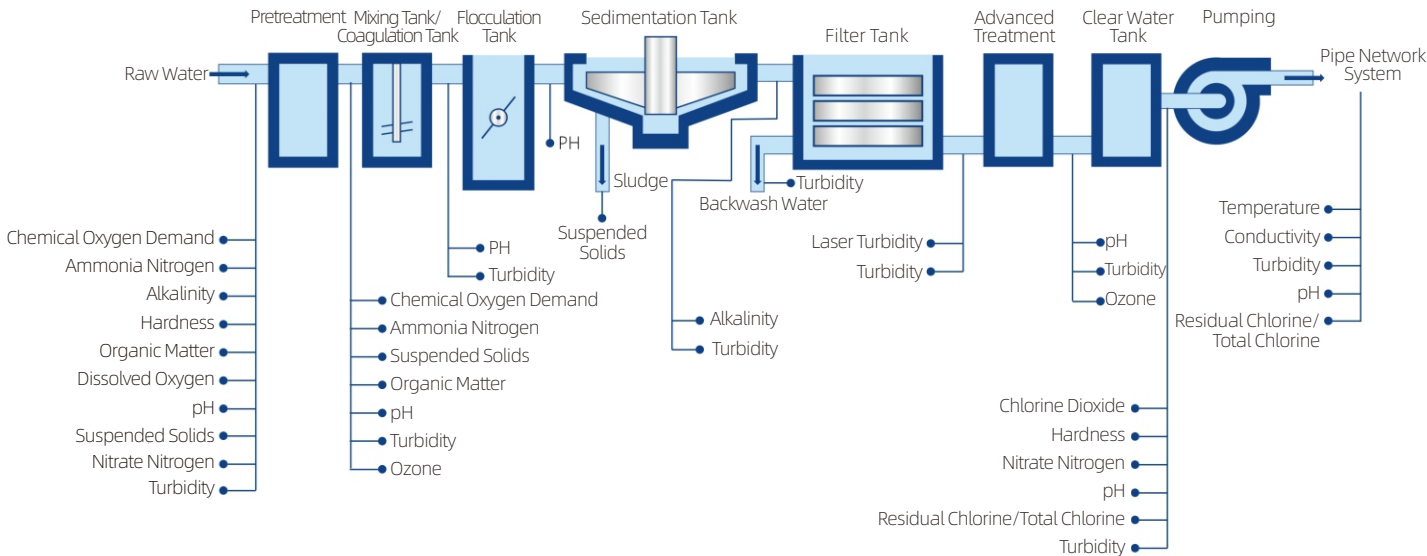
PRODUCT CATALOG



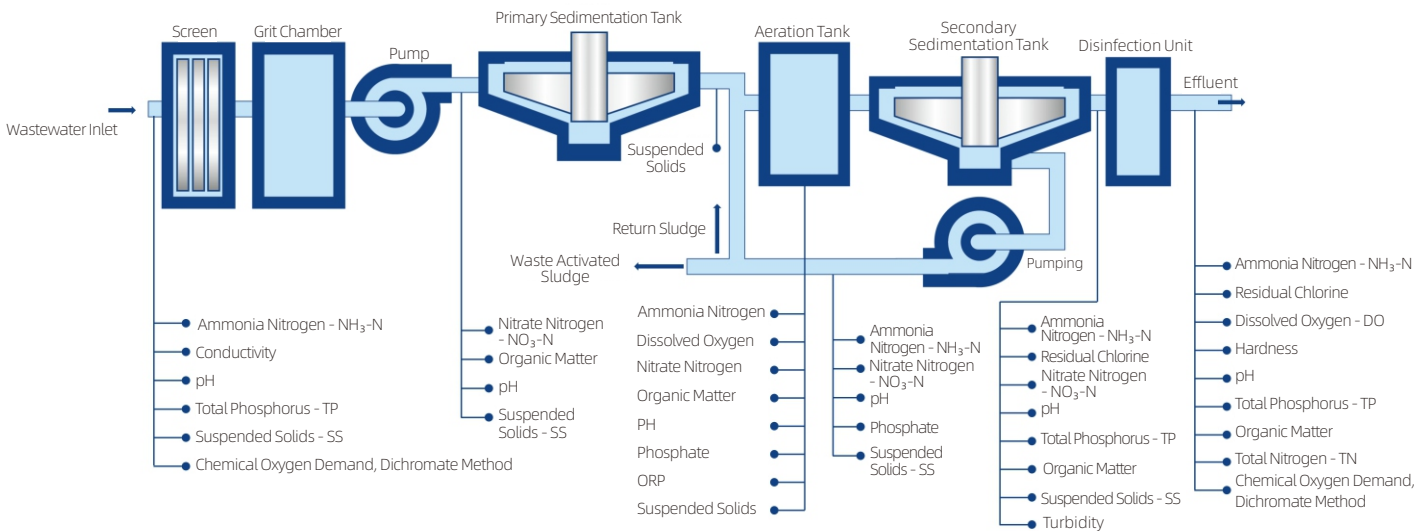
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Solutions for Water Quality Monitoring Equipment in Wastewater Treatment Processes



Solutions for Water Quality Monitoring Equipment in Drinking Water Treatment Processes





ZMING TECHNOLOGY

Founded in 2006, Shanghai ZEMING Environmental Technology Co., Ltd. is a company with extensive expertise in online water quality monitoring technologies, instrument applications, integrated equipment solutions, and operation & maintenance services. After seventeen years of dedicated development and industry refinement, the company has evolved into an eco-environmental IoT high-tech enterprise integrating independent R&D, production, and sales of instruments, integrated equipment solutions, O&M services, and global supply chain collaboration. Holding over 60 intellectual property rights (including patents and IC layout designs), it has been recognized as a National High-Tech Enterprise and a Shanghai Specialized and Sophisticated SME.

The company currently boasts over 30 self-developed instruments and equipment products. Moving forward, ZEMING will continue focusing on R&D of miniaturized and intelligent environmental monitoring instruments, expanding its product lines including portable/lab instruments, online water quality analyzers, and automatic monitoring systems. It delivers professional services across clean water sources, municipal wastewater, environmental monitoring, industrial control, water treatment & distribution, and marine/comprehensive eco-environmental monitoring.

Municipal Water Supply & Drainage:

We specialize in providing cutting-edge water quality monitoring solutions for municipal water supply and drainage systems. Our product portfolio covers every critical stage—from source water protection and water treatment plant processes to pipeline network monitoring and wastewater treatment—ensuring comprehensive oversight across the entire water cycle. Leveraging advanced sensor technology and precise data analytics, we deliver robust technical support for municipal water management. Our equipment not only meets national standards but also offers customizable configurations and services tailored to client needs. Committed to technological innovation, ZEMING drives industry advancement to safeguard urban water security, ensuring clean water flows into every household.

Conventional Online Water Quality Monitoring Equipment
HQ-3100 Ammonia Nitrogen Water Quality Auto-Analyzer

The HQ-3100 Ammonia Nitrogen Auto-Analyzer employs the national standard salicylate spectrophotometry method to achieve fully automated online monitoring of ammonia nitrogen in water bodies. It supports scheduled measurements or remote-controlled operation via a control system. Widely applicable for key monitoring scenarios including rivers, drinking water sources, industrial wastewater, sewage treatment plants, and effluent discharge points.



Product Features

- 01 Dual-beam measurement eliminates electromagnetic interference;
- 02 Capacitive metering ensures high precision and repeatability for samples/reagents;
- 03 Automatic chromaticity/turbidity compensation for high-turbidity water bodies;
- 04 Unique reagent formula extends shelf life to 3 months.

Technical Parameters

Measurement Item	Ammonia Nitrogen (NH ₃ -N)	Linearity	R ² ≥ 0.999
Method	Salicylate Spectrophotometry	Stability	≤±10% over 24 h
Range	(0-2/10) mg/L, expandable to 500 mg/L (adjustable per customer requirements)	Display	7-inch LCD
Detection Limit	0.01 mg/L	Ambient Temp.	5-40°C
Resolution	0.001 mg/L	Max. Power	100 W (Avg. 25 W)
Accuracy	±5%	Power Supply	(85-264) VAC, (47-63) Hz; expandable to 20V DC
Repeatability	≤5%	Dimensions (W×D×H)	≈400 × 300 × 640 mm (excluding protrusions)
Zero Drift	±5%	Communication	RS485 (MODBUS protocol)
Range Drift	±5%	Analog Output	(4-20) mA
Measurement Time	40 min	Ambient Humidity	≤85% RH (condensation-free)

HQ-3200 Total Phosphorus/Orthophosphate
Water Quality Auto-Analyzer

The HQ-3200 analyzer employs the national standard ammonium molybdate spectrophotometry method for online monitoring of total phosphorus (TP) and orthophosphate (PO₄) parameters. Its unique reaction system ensures rapid and precise measurements. Ideal for industrial wastewater, sewage treatment plants, and effluent discharge monitoring.



Product Features

- 01 High-Temperature & High-Pressure Digestion: High digestion efficiency with short processing time;
- 02 Automatic Turbidity/Chromaticity Compensation: Adapts to high-turbidity water bodies;
- 03 Capacitive Metering: Ensures high precision and repeatability for samples/reagents;
- 04 Smart Digital Temperature Control: Built-in adjustable heating system for precise temperature management;
- 05 Compliance & Quality Control: Meets latest international standards with multi-level QC functions.

Technical Parameters

Parameter	Total Phosphorus (TP)	Linearity	R ² ≥ 0.999
Measurement Method	Ammonium Molybdate Spectrophotometry	Stability	≤±10% (24h)
Range	(0-2/10) mg/L, ≤500 mg/L (adjustable)	Display	7-inch LCD
Detection Limit	0.01 mg/L	Ambient Temp.	5-40°C
Resolution	0.001 mg/L	Max. Power	100 W (Avg. 25 W)
Accuracy	±10%	Power Supply	(85-264) VAC, (47-63) Hz; Expandable to 24V DC (same for TP/PO ₄)
Repeatability	≤5%	Dimensions (W×D×H)	≈400 × 300 × 640 mm (excl. protrusions, same for TP/PO ₄)
Zero Drift	±5%	Communication	Rs485 (MODBUS)
Range Drift	±10%	Analog Output	(4-20) mA
Measurement Time	40 min	Ambient Humidity	≤85% RH (condensation-free)

HQ-3300 CODCr Water Quality Auto-Analyzer

The HQ-3300 is an online automatic COD monitor developed based on the national standard analytical method (Chromate method). It is suitable for COD measurement in various complex water bodies. With built-in quality control functions, it facilitates remote analysis of the instrument status. Featuring a simple structure and easy operation & maintenance, it is ideally suited for long-term unattended automatic monitoring.

Product Features



- 01 High-Temperature & High-Pressure Digestion: High digestion efficiency with short processing time;
- 02 Dual-Beam Measurement: Eliminates interference from electromagnetic fluctuations on measurement results;
- 03 Automatic Turbidity and Chromaticity Compensation: Adapts to high-turbidity water bodies;04 Capacitive Metering: Ensures high precision and repeatability for samples/reagents;
- 04 Capacitive Metering: Ensures high precision and repeatability for samples/reagents;
- 05 High Chloride Interference Resistance: Withstands chloride ions ≤ 75000 mg/L, making it suitable for high-salinity wastewater;
- Low Detection Limit: Capable of measuring water samples under complex working conditions.

Technical Parameters

Parameter	CODCr	Dimensions (W×D×H)	≈ 400 × 300 × 840 mm (excluding protrusions)
Measurement Method	Dichromate Digestion Spectrophotometry	Serial Communication	RS485 MODBUS
Range	(15-500) mg/L, maximum expandable range ≥ 2000 mg/L (Adjustable, can be configured according to customer requirements)	Analog Output	(4-20) mA
Repeatability	$\leq 5\%$	Ambient Temperature	(5-40) °C
Zero Drift	$\pm 5\%$	Ambient Humidity	$\leq 85\%$ RH (non-condensing)
Range Drift	$\pm 5\%$		
Accuracy	$\pm 10\%$		
Measurement Time	40 min		
Max. Power Consumption	100 W (Average 25 W)		
Power Supply	(85-264) VAC / (47-63) Hz, expandable to 24V DC power supply		

HQ-3501 Permanganate Index Water Quality Auto-Analyzer

The HQ-3501 is an online analyzer specifically developed to address the characteristics of China's water environment for monitoring the Permanganate Index. It employs the standard method of acidic potassium permanganate redox titration and utilizes micro-dosing pumps, ensuring the analyzer features high precision, excellent repeatability, and low maintenance requirements. This product is suitable for the analysis and measurement of surface water sources such as drinking water sources, lakes, and rivers, enabling long-term unattended automatic online monitoring.

Product Features



- 01 Utilizes the acidic potassium permanganate redox potentiometric titration method, eliminating interference from turbidity and colorimetric factors in the titration process;
- 02 Employs capacitive metering technology, ensuring high precision and excellent repeatability for samples/reagents;
- 03 Features a built-in high-efficiency intelligent digital temperature control system (with adjustable heating temperature) for precise temperature management;
- 04 Complies with the latest national standards and supports multiple quality control (QC) functions.

Technical Parameters

Measurement Method	Potassium Permanganate Oxidation Potentiometric Titration	Stability	$\leq \pm 10\%$ within 24 hours
Range	(0-10/20) mg/L, max expandable to 160 mg/L (Adjustable per customer requirements)	Display	7-inch LCD Screen
Detection Limit	0.5 mg/L	Ambient Temperature	5 ~ 40 °C
Resolution	0.01 mg/L	Max. Power	100 W (Average Power: 25 W)
Accuracy	$\pm 10\%$	Power Supply	(85-264) VAC / (47-63) Hz, expandable to 24V DC input
Repeatability	$\leq 5\%$	Dimensions (W×D×H)	≈ 400 × 300 × 640 mm (excluding protrusions)
Zero Drift	$\pm 5\%$	Serial Communication	RS485 MODBUS Protocol
Range Drift	$\pm 5\%$	Analog Output	(4-20) mA
Measurement Time	50 min	Ambient Humidity	$\leq 85\%$ RH (non-condensing)
Linearity	$R^2 \geq 0.995$ (Ra0.995 interpreted as Coefficient of Determination)		

HQ-3600

Total Nitrogen Water
Quality Auto-Analyzer

The HQ-3600 is an online automatic Total Nitrogen (TN) monitor developed based on national standard analytical methods. It is suitable for TN measurement in various water bodies. With built-in quality control functions, it facilitates remote analysis of the instrument's status. Featuring a simple structure and easy operation & maintenance, it is ideally suited for long-term unattended automatic monitoring.



Product Features

- 01Unique Digestion Technology: Eliminates the impact of turbidity, making it suitable for high-turbidity water samples.
- 02Capacitive Metering: Ensures high precision and excellent repeatability for samples and reagents.
- 03Intelligent Digital Temperature Control: A built-in, efficient system with adjustable heating ensures precise temperature management.
- 04Comprehensive Status Monitoring: Features multiple device status monitoring functions including hardware self-diagnosis alarms, power-off protection, and leak detection.

Technical Parameters

Parameter	Total Nitrogen (TN)	Linearity	$R^2 \geq 0.995$
Measurement Method	Potassium Persulfate Digestion UV Spectrophotometry	Stability	$\leq \pm 10\%$ within 24 hours
Range	(0-2/10) mg/L, maximum expandable range 500 mg/L (Adjustable per customer requirements)	Display	7-inch LCD Screen
Detection Limit	0.1 mg/L	Ambient Temperature	5 ~ 40 °C
Resolution	0.001 mg/L	Max. Power Consumption	100 W (Average 25 W)
Accuracy	$\pm 10\%$	Power Supply	(85-264) V AC / (47-63) Hz, expandable to 24V DC input
Repeatability	$\leq 5\%$	Dimensions (W×D×H)	≈ 400 × 300 × 640 mm (excluding protrusions)
Zero Drift	$\pm 5\%$	Serial Communication	RS485 MODBUS Protocol
Range Drift	$\pm 10\%$	Analog Output	(4-20) mA
Measurement Time	50 min	Ambient Humidity	$\leq 85\%$ RH (non-condensing)

HQ-3600(NO₂)

Nitrite Nitrogen Water
Quality Auto-Analyzer

The HQ-3600(NO₂) enables fully automated online monitoring of nitrite nitrogen in water bodies. It supports scheduled automatic measurements or remote-controlled operation via a control system. It is widely applicable for key monitoring of various water qualities such as seawater, river water, drinking water sources, and industrial wastewater.



Product Features

- 01Dual-Beam Measurement: Eliminates interference from electromagnetic fluctuations on measurement results.
- 02Capacitive Metering: Ensures high precision and excellent repeatability for samples and reagents.
- 03Automatic Chromaticity & Turbidity Compensation: Adapts to high-turbidity water bodies.
- 04Unique Reagent Formula: Extends reagent shelf life to 3 months.

Technical Parameters

Parameter	Nitrite Nitrogen (NO ₂ -N)	Linearity	$R^2 \geq 0.999$
Measurement Method	N-(1-Naphthyl)-ethylenediamine Dihydrochloride Spectrophotometry	Stability	$\leq \pm 10\%$ within 24 hours
Range	(0-1) mg/L, expandable (Adjustable per customer requirements)	Display	7-inch LCD Screen
Detection Limit	0.01 mg/L	Ambient Temperature	5 ~ 40 °C
Resolution	0.001 mg/L	Max. Power Consumption	100 W (Average 25 W)
Accuracy	$\pm 10\%$	Power Supply	(85-264) V AC / (47-63) Hz, expandable to 24V DC input
Repeatability	$\leq 5\%$	Dimensions (W×D×H)	≈ 400 × 300 × 640 mm (excluding protrusions)
Zero Drift	$\pm 5\%$	Serial Communication	RS485 MODBUS Protocol
Range Drift	$\pm 5\%$	Analog Output	(4-20) mA
Measurement Time	40 min	Ambient Humidity	$\leq 85\%$ RH (non-condensing)

HQ-3600(NO₃)

Nitrogen Water
Quality Auto-Analyzer

The HQ-3600(NO₃) is an online automatic nitrate nitrogen monitor based on UV spectrophotometry. It is suitable for measuring nitrate nitrogen in various water bodies. With built-in quality control functions, it facilitates remote analysis of the instrument's status. Featuring a simple structure and easy operation & maintenance, it is ideally suited for long-term unattended automatic monitoring. It is widely used for key monitoring applications in various water sources, including drinking water sources and industrial wastewater.



Product Features

- 01Unique Digestion Technology: Eliminates the effects of turbidity, making it suitable for high-turbidity water samples.
- 02Capacitive Metering System: Ensures high precision and excellent repeatability for samples and reagents.
- 03Intelligent Digital Temperature Control: A built-in, efficient system with adjustable heating guarantees precise temperature management.
- 04Comprehensive Status Monitoring: Incorporates multiple device status monitoring functions, including hardware self-diagnosis alarms, power-off protection, and leak detection.

Technical Parameters

Parameter	Nitrate Nitrogen (NO ₃ -N)	Linearity	R ² ≥ 0.995
Measurement Method	UV Spectrophotometry	Stability	≤ ±10% within 24 hours
Range	(0-2) mg/L, expandable (Adjustable per customer requirements)	Display	7-inch LCD Screen
Detection Limit	0.05 mg/L	Ambient Temperature	5 ~ 40 °C
Resolution	0.001 mg/L	Max. Power Consumption	100 W (Average 25 W)
Accuracy	±10%	Power Supply	(85-264) V AC / (47-63) Hz, expandable to 24V DC input
Repeatability	≤5%	Dimensions (W×D×H)	≈ 400 × 300 × 640 mm (excluding protrusions)
Zero Drift	±5%	Serial Communication	RS485 MODBUS Protocol
Range Drift	±10%	Analog Output	(4-20) mA
Measurement Time	50 min	Ambient Humidity	≤ 85% RH (non-condensing)

HQ-3700

Fluoride Water
Quality Auto-Analyzer

The HQ-3700 is an online automatic monitor based on the Fluorimetric Spectrophotometry method. It is suitable for measuring fluoride in various water bodies. With built-in quality control functions, it facilitates remote analysis of the instrument's status. Featuring a simple structure and easy operation & maintenance, it is ideally suited for long-term unattended automatic monitoring. It is widely used for monitoring fluoride concentrations in drinking water and surface water.



Product Features

- 01Unique Digestion Technology: Eliminates the effects of turbidity, making it suitable for high-turbidity water samples.
- 02Capacitive Metering System: Ensures high precision and excellent repeatability for samples and reagents.
- 03Intelligent Digital Temperature Control: A built-in, efficient system with adjustable heating guarantees precise temperature management.
- 04Comprehensive Status Monitoring: Incorporates multiple device status monitoring functions, including hardware self-diagnosis alarms, power-off protection, and leak detection.

Technical Parameters

Parameter	Fluoride	Ambient Temperature	5 ~ 40 °C
Measurement Method	Fluorimetric Spectrophotometry	Max. Power Consumption	100 W (Average 25 W)
Range	0.1 ~ 10 mg/L (Adjustable per customer requirements)	Power Supply	(85-264) V AC / (47-63) Hz, expandable to 24V DC input
Accuracy	±5% or ±0.05 mg/L (whichever is greater)	Dimensions (W×D×H)	≈ 400 × 300 × 640 mm (excluding protrusions)
Repeatability	±5% or ±0.05 mg/L (whichever is greater)	Serial Communication	RS485 MODBUS Protocol
Zero Drift	±0.05 mg/L	Analog Output	(4-20) mA
Range Drift	±10%	Ambient Humidity	≤ 85% RH (non-condensing)
Measurement Time	30 min		
Linearity	±5%		
Display	7-inch LCD Screen		

Microfluidic Online Water Quality Monitoring Equipment

HQ-6000 Series Microfluidic Analysis Platform

The HQ-6000 Series Microfluidic Analysis Platform is based on continuous flow analysis technology, with a single reaction volume as low as 0.4 mL and reagent consumption as low as 0.03 mL per measurement. The platform delivers high analytical precision with repeatability up to 0.1%, and offers strong range compatibility with optional analytical optical path lengths of 2, 5, 10, 20, 30, and 40 mm to meet diverse monitoring requirements for range and resolution. It supports analysis of parameters including residual (total) chlorine, residual chlorine dioxide, residual ozone, ammonia nitrogen, nitrite nitrogen, phosphate, silicate, fluoride, and more.

Product Features

- 01 Microfluidic technology: Single reaction volume < 1 mL, reagent consumption as low as 0.03 mL per test.
- 02 Compliant with national standard DPD method: Compatible with residual chlorine/total chlorine/residual chlorine dioxide/residual ozone measurements; range expandable.
- 03 Quick sample injection: No pressure relief device required.
- 04 Multiple measurement modes: Reagent level display, self-diagnostic, and alarm functions.
- 05 Flexible measurement modes: Single, continuous, periodic, and fixed-point measurements.
- 06 Rational structure and modular design: Easy operation, maintenance, and integration.
- 07 Rational structure and modular design: Easy operation, maintenance, and integration.



- 08 Low power consumption, minimal reagent waste, and short testing cycles.
- 09 Active water sampling: No external pressure relief device needed; compact installation (0.3 m² footprint); automatic cleaning without manual intervention.

Application Scenarios

- Municipal water treatment plants, secondary water supply, end-of-pipeline water quality monitoring.
- Swimming pool water disinfection monitoring (water treatment processes, disinfection stages, hospital wastewater, supply networks, swimming pools).
- Recirculating cooling water, medical wastewater, other water disinfection monitoring.
- Food & beverage, brewing, pharmaceuticals, steel, petroleum, electroplating, printing, and dyeing industries.

Technical Parameters

Model	Parameter	Method	Range (Adjustable)
HQ-6017	Residual (Total) Chlorine	DPD Colorimetry	(0-2/5/20) mg/L
HQ-6018	Residual ClO ₂	DPD Colorimetry	(0-0.5/2/5) mg/L
HQ-6019	Residual Ozone	DPD Colorimetry	(0-0.5/2) mg/L
HQ-6601	Nitrate Nitrogen	UV Spectrophotometry	(0-2) mg/L

Measurement Time	Default 2.5 min (adjustable cycle)
Repeatability	≤0.5%
Accuracy	≤10%
Quantification Limit	0.01 mg/L
Resolution	0.001 mg/L
Data Storage	2-year cyclic retention
Digital Communication	RS485 (MODBUS protocol)
Analog Output	(4-20) mA
Power Supply	220 V AC
Power Consumption	10 W
Dimensions (W×H×D)	240 mm × 250 mm × 88.5 mm

HQ-6200 Orthophosphate Analyzer

The HQ-6200 Orthophosphate Analyzer is developed based on ZEMING's latest generation microfluidic analysis platform. It employs high-performance colorimetric technology, offering advantages such as a wide measurement range, high sensitivity, ultra-low detection limit, rapid response, and minimal reagent consumption. It can measure orthophosphate concentration via continuous, periodic, or fixed-point modes. The unique automatic cleaning function makes the analyzer simple to use and easy to maintain, significantly reducing operational costs.

Product Features

- 01 Short Measurement Cycle & Wide Range: Completes a full measurement process in 5 minutes. Features a wide measurement range and low detection limit, making it suitable for various wastewater treatment applications.
- 02 Minimal Reagent Consumption & High Reliability: Consumes only microliter (uL) levels per measurement, ensuring low operational costs. The analysis method and measurement results are highly reliable.
- 03 Easy Installation & Built-in Pre-treatment: Easy to install at measurement points, featuring a built-in pre-treatment system.
- 04 Low Power Design: Consumes very little electricity.



Product Features

- Monitoring of cooling water, boiler systems, etc., in power plants, chemical, steel, and other industries.
- Monitoring of phosphorus removal processes in wastewater treatment plants.
- Monitoring of phosphates in the environment.
- Monitoring of agricultural irrigation water discharge / aquaculture water bodies.
- Scientific research and monitoring of nutrients in lakes, rivers, and other water bodies.

Application Scenarios

Measurement Principle	Photometric Colorimetric Method
Range	0.05-5.0 mg/L PO ₄ -P 0.5-50 mg/L PO ₄ -P
Response Time	5 min
Measurement Time	Default 2.5 min (adjustable cycle)
Repeatability	≤ 0.5%
Accuracy	2% or 0.05 mg/L (whichever is greater)
Detection Limit	0.02 mg/L
Resolution	0.001 mg/L

Data Storage	2-year cyclic retention
Digital Communication	RS485 (MODBUS protocol)
Analog Output	(4-20) mA
Power Supply	220 V AC
Power Consumption	10 W
Dimensions (W×H×D)	320 mm × 430 mm × 260 mm
Installation	Wall-mounted or Benchtop
Weight	12 kg

Online Low-Range Turbidimeter

HQ10-LT Online Low-Range Turbidimeter

The HQ10-LT Online Low-Range Turbidimeter is designed for online monitoring of drinking water quality. It features ultra-low turbidity detection limit, high-precision measurement, long-term maintenance-free operation, water-saving operation, and digital output. Supporting cloud platforms and mobile data remote monitoring, as well as RS485-Modbus communication, it is widely used for online turbidity monitoring scenarios such as outlet water of自来水厂, secondary water supply, end-of-pipeline water, direct drinking water, membrane-filtered water, wastewater treatment, and industrial wastewater.

Product Features

- 01
- High-precision measurement with a detection limit as low as 0.015 NTU, meeting various low-turbidity measurement environments.
- 02
- Built-in flow stabilization and debubbling system to minimize interference from flow rate and bubbles on measurements.
- 03
- Anti-condensation and anti-fogging functionality.
- 04
- Uses a laser light source with long life and maintenance-free operation.
- 05
- Built-in display screen for quick and easy data viewing.



Application Scenarios

- Turbidity monitoring in secondary water supply, water treatment plants, and municipal pipe networks.
- Turbidity monitoring in circulating cooling water and membrane filtration effluent.

Technical Parameters

Parameter	Specification	Calibration	Water sample calibration / Standard solution calibration
Range	0-20 NTU (other ranges optional)	Sample Flow Rate	300 mL/min ≤ X ≤ 800 mL/min
Resolution	0.001 NTU	Detection Module Protection Rating	IP67
Indication Error	±2% or ±0.02 NTU (whichever is greater)	Dimensions	367 × 213 × 115 mm
Zero Drift	≤0.015 NTU	Cable Length	1.5 meters (default)
Operating Temperature	0-50°C (non-freezing)	Digital Interface	MODBUS / RS485
Storage Temperature	-10-60°C	Main Material	ABS
Power Supply	12V / 0.03A		

Water Supply Network Water Quality Monitoring System

HQ-1001 Water Supply Network Water Quality Monitoring System

The ZEMING HQ-1001 Water Supply Network Water Quality Monitoring System is a multi-parameter online water quality analyzer specifically developed for monitoring water quality in supply networks. It can continuously monitor parameters such as residual chlorine, total chlorine, turbidity, pH, temperature, ORP, and conductivity. It is ideally suited for applications like secondary water supply and swimming pool water quality monitoring.

Product Features

- 01
- Integrated Design:Features a compact, integrated design with a small footprint, supporting wall-mounted or freestanding installation. Capable of continuously monitoring water quality parameters including residual chlorine, total chlorine, turbidity, pH, temperature, ORP, and conductivity.
- 02
- Low Maintenance:Designed specifically for unattended applications. Features automatic cleaning, automatic drainage, and automatic flow recognition (stops measurement when water flow stops). Automatically resumes operation after power loss. Utilizes a separated water-electricity design with leak alarm. The residual chlorine measurement cycle is adjustable, ensuring reagent replacement intervals can be set from 1 to 12 months.
- 03
- Classic Measurement Methods:Residual or total chlorine monitoring employs the classic DPD method. Electrochemical electrodes for pH, ORP, conductivity, etc., can be configured as needed. Capable of expanding to measure parameters like TOC and colority.
- 04
- Comprehensive Communication Functions:Includes RS485 digital output and optional multiple 4-20mA analog output channels for easy data transmission to monitoring centers. Multiple relays are used for alarm output, with freely configurable upper and lower alarm limits.



Application Areas

- Drinking water pipe network monitoring
- Secondary water supply monitoring
- Swimming pool water monitoring
- Water quality monitoring in rural centralized water supply facilities
- Process water monitoring in water treatment plants

Technical Parameters

Parameter	Method	Range	Accuracy	Power Supply	220 VAC ±10%, 50/60 Hz
Residual/Total Chlorine	DPD Method	(0-2), (0-5) mg/L	±5% of reading	Relay Output	Multiple relay outputs, freely configurable for corresponding measured parameters and customizable threshold settings.
Turbidity	90° Scattering Method	(0-5), (0-10) NTU	±0.01 NTU or ±2% of reading (whichever is greater)	Digital Output	RS485 (MODBUS RTU protocol)
pH	Electrochemical Method	0-14	±0.1	Optional Analog Output	Multiple 4-20mA analog output channels (optional)
Conductivity	Electrochemical Method	(0-50000) μS/cm (range optional)	±1%	Calibration	Interfaces for turbidity, residual chlorine, pH, conductivity, and analog output channels
ORP	Electrochemical Method	(-2000~2000) mV	±1 mV	Connection Ports	Inlet: 1/4" PE quick-connect fitting; Outlet: 14mm*18mm soft tubing
Temperature	Thermistor Method	(0-60) °C	±0.1 °C	Sample Flow Rate Range	(0.1-5.0) L/min
				Sample Temperature	(0-40) °C
				Data Storage	Adjustable saving cycle (0-60 minutes); stores one year of historical data
				Dimensions (L×H×W)	440 × 650 × 260 mm
				Consumables	Residual/Total Chlorine Reagent; pH Electrode (annual replacement); Low Turbidity Cleaning Brush (annual replacement)

HQ-1002

Water Supply Network Water Quality Monitoring System

The ZEMING HQ-1002 Water Supply Network Water Quality Monitoring System is a multi-parameter online water quality analyzer specifically designed for monitoring water quality in supply networks. It can continuously monitor parameters including residual chlorine, total chlorine, turbidity, pH, temperature, ORP, and conductivity. It is perfectly suited for applications such as secondary water supply and swimming pool water quality monitoring.

Product Features

- 01 Integrated Design: Features a compact, integrated design with a small footprint, supporting both wall-mounted and freestanding installation. Capable of continuously monitoring water quality parameters including residual chlorine, total chlorine, turbidity, pH, temperature, ORP, and conductivity.
- 02 Low Maintenance: Designed specifically for unattended applications. Utilizes sensor-based technology, reagent-free operation, automatic cleaning, and automatic drainage. Features automatic flow recognition (measurement pauses during no flow), automatic recovery after power failure, a separated water-electricity design, and leak alarm functionality.
- 03 Flexible and Optional Configuration: Optional monitoring of residual or total chlorine. Chlorine monitoring can use the electrode method. Electrochemical electrodes for pH, ORP, conductivity, etc., can be configured as needed. Capable of expanding to measure parameters like TOC and colority.
- 04 Comprehensive Communication Functions: Includes RS485 digital output and optional multiple 4-20mA analog output channels for easy data transmission to monitoring centers. Multiple relays are used for alarm output, with freely configurable upper and lower alarm limits.



Application Areas

- Drinking water pipe network monitoring
- Secondary water supply monitoring
- Swimming pool water monitoring
- Water quality monitoring in rural centralized water supply facilities
- Process water monitoring in water treatment plants

Technical Parameters

Parameter	Method	Range	Accuracy
Residual/ Total Chlorine	Electrode Method	(0-3) mg/L	±5% of reading
Turbidity	90° Scattering Method	(0-5), (0-10) NTU	±0.01 NTU or ±2% of reading (whichever is greater)
pH	Electrochemical Method	0-14	±0.1
Conductivity	Electrochemical Method	(0-50000) μS/cm (selectable)	±1%
ORP	Electrochemical Method	(-2000~2000) mV	±1 mV
Temperature	Thermistor Method	(0-60) °C	±0.1 °C

Power Supply	220 VAC ±10%, 50/60 Hz
Relay Output	Multiple relay outputs, freely configurable for corresponding parameters and thresholds.
Digital Output	RS485 (MODBUS RTU protocol)
Optional Analog Output	Multiple 4-20mA analog output channels (optional)
Calibration	Interfaces for turbidity, residual chlorine, pH, conductivity, analog output
Connection Ports	Inlet: 1/4" PE quick-connect fitting; Outlet: 14mm*18mm soft tubing
Sample Flow Rate	(0.1-5.0) L/min
Sample Temperature	(0-40) °C
Data Storage	Adjustable save cycle (0-60 min); 1 year of historical data
Dimensions (W×H×D)	390 × 550 × 255 mm (Note: "K390" interpreted as Width)
Consumables	pH Electrode (annual replacement); Low Turbidity Cleaning Brush (annual replacement)

HQ-1003

Water Supply Network (Raw Water) Quality Monitoring System

The ZEMING HQ-1003 Water Supply Network Water Quality Monitoring System is a multi-parameter online water quality analyzer specifically developed for monitoring water quality in supply networks. It can continuously monitor parameters such as turbidity (high range), pH, temperature, ORP, conductivity, and dissolved oxygen. It is perfectly suited for applications like the water intake points of water treatment plants.

Product Features

- 01 Integrated Design: Features a compact, integrated design with a small footprint, supporting both wall-mounted and freestanding installation. Capable of continuous or intermittent monitoring of water quality parameters including high-range turbidity, pH, temperature, ORP, and conductivity.
- 02 Low Maintenance: Designed specifically for unattended applications. Utilizes sensor-based technology, reagent-free operation, automatic cleaning, and automatic drainage. The turbidity sensor is equipped with a built-in wiper for automatic cleaning. Features automatic flow recognition (measurement pauses during no flow), automatic recovery after power failure, a separated water-electricity design, and leak alarm functionality.
- 03 Flexible and Optional Configuration: Electrochemical electrodes for pH, ORP, conductivity, etc., can be configured as needed. Capable of expanding to measure parameters like TOC and colority.
- 04 Comprehensive Communication Functions: Includes RS485 digital output and optional multiple 4-20mA analog output channels for easy data transmission to monitoring centers. Multiple relays are used for alarm output, with freely configurable upper and lower alarm limits.



Application Areas

- Raw Water Monitoring in Water Supply Networks
- Water Quality Monitoring in Rural Centralized Water Supply Facilities
- Water Intake Monitoring at Water Treatment Plants

Technical Parameters

Parameter	Method	Range	Accuracy
Turbidity	90° Scattering Method	(0-3000) NTU	±8%
pH	Electrochemical Method	0 - 14	±0.1
Conductivity	Electrochemical Method	(0-50000) μS/cm (selectable)	±1%
ORP	Electrochemical Method	(-2000~2000) mV	±1 mV
Temperature	Thermistor Method	(0-60) °C	±0.1 °C

Power Supply	220 VAC ±10%, 50/60 Hz
Relay Output	Multiple relay outputs, freely configurable for corresponding parameters and thresholds.
Digital Output	RS485 (MODBUS RTU protocol)
Analog Output (Optional)	Multiple 4-20mA analog output channels (optional). Configurable for Turbidity, pH, Conductivity.
Connection Ports	Inlet: 1/4" PE quick-connect fitting; Outlet: 14mm*18mm soft tubing
Sample Flow Rate	(0.1-5.0) L/min
Sample Temperature	(0-40) °C
Data Storage	Adjustable save cycle (0-60 min); 1 year of historical data
Dimensions (L×H×W)	390 × 550 × 255 mm
Consumables	pH Electrode (annual replacement)

HQ-1005

Water Supply Network (Raw Water)
Quality Monitoring System

The ZEMING HQ-1005 Water Supply Network Water Quality Monitoring System is a multi-parameter online water quality analyzer specifically developed for monitoring raw water quality in supply networks. It can continuously monitor parameters such as turbidity (high range), pH, temperature, ORP, conductivity, and dissolved oxygen. It is perfectly suited for applications like water intake points of water treatment plants.

Product Features

- 01 Integrated Design: Features a compact, integrated design with a small footprint, supporting both wall-mounted and freestanding installation. Capable of continuous or intermittent monitoring of water quality parameters including high-range turbidity, pH, temperature, ORP, and conductivity.
- 02 Low Maintenance: Designed specifically for unattended applications. Utilizes sensor-based technology, reagent-free operation, automatic cleaning, and automatic drainage. The turbidity sensor is equipped with a built-in wiper for automatic cleaning. Features automatic flow recognition (measurement pauses during no flow), automatic recovery after power failure, a separated water-electricity design, and leak alarm functionality.
- 03 Flexible and Optional Configuration: Electrochemical electrodes for pH, ORP, conductivity, etc., can be configured as needed. Capable of expanding to measure parameters like TOC and colority.
- 04 Comprehensive Communication Functions: Includes RS485 digital output and optional multiple 4-20mA analog output channels for easy data transmission to monitoring centers. Multiple relays are used for alarm output, with freely configurable upper and lower alarm limits.



Application Areas

- Drinking water pipe network monitoring
- Secondary water supply monitoring
- Swimming pool water monitoring
- Water quality monitoring in rural centralized water supply facilities
- Process water monitoring in water treatment plants

Technical Parameters

Parameter	Method	Range	Accuracy
Turbidity	90° Scattering Method	(0-3000) NTU	±8%
pH	Electrochemical Method	0 - 14	±0.1
Conductivity	Electrochemical Method	(0-50000) μS/cm (selectable)	±1%
ORP	Electrochemical Method	(-2000~2000) mV	±1 mV
Temperature	Thermistor Method	(0-60) °C	±0.1 °C
Dissolved Oxygen	Polarographic or Luminescent Method	(0-20) mg/L or (0-200)%	±0.3 mg/L

Power Supply	220 VAC ±10%, 50/60 Hz
Relay Output	Multiple relay outputs, freely configurable for corresponding parameters and thresholds.
Digital Output	RS485 (MODBUS RTU protocol)
Analog Output (Optional)	Multiple 4-20mA analog output channels (optional). Configurable for Turbidity, pH, Conductivity.
Connection Ports	Inlet: 1/4" PE quick-connect fitting; Outlet: 14mm*18mm soft tubing
Sample Flow Rate	(0.1-5.0) L/min
Sample Temperature	(0-40) °C
Data Storage	Adjustable save cycle (0-60 min); 1 year of historical data
Dimensions (LxHxW)	390 x 550 x 255 mm
Consumables	pH Electrode (annual replacement)

Portable Handheld Monitoring Equipment
HQ-5000 Series Handheld Water
Quality Analyzer

The HQ-5000 Series Handheld Water Quality Analyzer is a new product developed by ZEMING Environment over several years to meet customers' growing demand for rapid testing. It features comprehensive functionality, stable performance, and simple operation. The handheld terminal can directly power, calibrate, and perform measurements with intelligent digital probes, making it particularly suitable for field water quality testing. It provides users with accurate measurements of parameters such as water temperature, pH/ORP, dissolved oxygen, conductivity, turbidity, COD, and ammonia nitrogen.

Product Features

- 01 Portable Design: Ready for on-the-go testing; requires no other control terminal.
- 02 Durable Cable Joints: Bend-resistant connectors for long-term durability.
- 03 Backlit Operation: Glow-in-the-dark keys and backlit display for easy use in low-light conditions.
- 04 Ergonomic Design: Comfortable grip and sleek appearance.
- 05 Low Operating Costs: Long lifespan with minimal consumables.
- 06 User-Friendly Interface: Graphical display with built-in detailed help information.



Application Areas

- Surface water (lakes, rivers) quality monitoring
- Water quality monitoring in wastewater treatment plant processes
- Wetland testing
- Effluent quality monitoring at industrial discharge points
- Emergency monitoring of pollution incidents
- Water quality monitoring in drinking water sources, intake water, and treatment processes
- Rural water environment surveys
- Aquaculture water quality monitoring
- Hospital and medical institution wastewater monitoring
- Landscape rivers and ecological management water quality monitoring
- Industrial process water monitoring
- Urban pipeline network and groundwater monitoring

Parameter Overview

Memory: Stores 2000 data sets Dimensions: 8.3 cm (W) × 21.6 cm (L) × 2.3 cm (H)
Weight: 475 g (including batteries) Power Supply: Two AA alkaline batteries Cable: 1 m, 4 m, or 10 m (optional)

Technical Parameters

Parameter	COD	Chloride Ion	Dissolved Oxygen	Conductivity/Salinity	Turbidity	PH	ORP	Ammonia Nitrogen
Method	UV Absorption	UV Absorption	Polarographic or Luminescent	Graphene Electrode	Infrared Scattering	Glass Electrode	Glass Electrode	Ion Selective Electrode
Range	0.5 to 500mg/L equiv.KHP	0-10000mg/L equiv.KHP	(0-20) mg/L or (0-200) %	Cond: (0-500) mS/cm Sal: (0-100) ppt	(0-4000) NTU	0-14pH	(-2000 ~ +2000) mV	(0.1-1000) mg/L
Accuracy	±5% equiv.KHP	<10% or 0.1 mg/L (max)	±0.3mg/L	±1%	±2%	±0.1pH	±1 mV	±3%
Repeatability	≤3%	< 5%	±0.3mg/L	≤1%	≤1%	±0.1pH	±1 mV	≤2%
Resolution	0.01mg/L	0.01mg/L	0.01mg/L	0.01S/cm	0.01NTU	0.01 pH	0.1mV	Min: 0.01mg/L
Response Time	≤10s	< 30s	60s	≤20s	≤5S	≤10s	≤10s	≤60s
Drift	±3%F.S.	< 5%	±0.3mg/L	±1%F.S	±3%F.S	±0.1pH	±1 mV	±3%F.S.

Integrated Equipment

Third-Generation Water Quality Buoy Monitoring System

Water quality ecological buoys are commonly used for in-situ monitoring of water quality and ecology in natural environments such as oceans and lakes. ZEMING's third-generation water quality buoy monitoring system employs national standard methods and relevant specifications for monitoring, ensuring consistency with laboratory data. It features all-new upgrades in remote quality control, unattended operation, and intelligent technologies like a "Watchdog" one-click reboot system, ushering in a new era of smart monitoring!

Product Features Application Areas

- 01

Utilizes national standard methods and relevant specifications for monitoring, ensuring consistency with laboratory data.
- 01

Remote intelligent quality control for accurate and reliable data.
- 01

Enables remote smart operation and maintenance, significantly reducing the frequency of manual intervention and lowering costs.
- 01

Equipped with a "Watchdog" system for enhanced stability.
- 01

Pre-installed anti-biofouling + circulating sampling technology for superior environmental adaptability.
- 01

Excellent erosion resistance and stability, adaptable to harsh conditions.
- 01

Low-power design (average power 12W), with stronger endurance in cloudy/rainy weather!
- Water Quality Monitoring and Early Warning
- Red Tide and Algal Bloom Monitoring and Early Warning
- Ecological Research and Protection
- Smart Water Conservancy and Marine Engineering
- Emergency Environmental Response
- Eutrophication Status Monitoring and Investigation
- Algae and Rich Biomass Estimation and Other Distribution Surveys



Monitoring Parameters

Physical Parameters:

Dissolved Oxygen, Temperature, pH, Salinity, Turbidity, Chlorophyll, Cyanobacteria

Chemical Parameters:

Ammonia Nitrogen, Nitrate Nitrogen, Nitrite Nitrogen, Orthophosphate, Total Phosphorus/Total Nitrogen, COD

Buoy Characteristics

Material: Solid ionomer foam plastic / Polyurea / Steel / FRP (Fiber Reinforced Plastic)
Diameter: 1.2m, 2m, 3m (customizable)
Total Height: 2.7m-3m
Reserve Buoyancy: 300kg, 1000kg, 2000kg+
Navigation lights and radar reflectors comply with the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) requirements.
Mooring Method: Hall anchor or sinker; mooring rope and chain

Meteorological Parameters:

Wind Speed, Wind Direction, Atmospheric Pressure, Air Temperature, Humidity, Illuminance, Rainfall

Hydrodynamic Parameters:

Flow Velocity, Flow Direction, Non-directional Waves

Stainless Steel Support Frame:Used for mounting solar panels, waterproof antennas, warning lights, radar reflectors, etc., and for buoy hoisting and maintenance support.

Sealed Waterproof Electrical Chamber:Equipped with a data acquisition controller, battery system, and humidity/temperature sensors. The stainless steel bottom of the chamber is in direct contact with the water body through a stable silicon seal, balancing the internal temperature to an appropriate level and preventing equipment damage from high temperatures in summer.



HQ-9000

Micro Water Quality Automatic Monitoring Station

The Micro Water Quality Automatic Monitoring Station system consists of a sampling unit, water distribution unit, pre-treatment unit, analysis unit, control unit, and data acquisition & transmission unit. This system can monitor water quality changes, patterns, and trends at the monitoring section in real-time and rapidly, promptly identify environmental pollution incidents, and provide a scientific basis for watershed pollution prevention decision-making, supervision, and environmental management.

The station adopts a modular design principle, with the core unit being the analysis unit. The measurements for Total Phosphorus (TP), Total Nitrogen (TN), Chemical Oxygen Demand (COD), and Ammonia Nitrogen strictly adhere to the chemical analysis methods specified by national standards. The conventional five-parameter indicators (Dissolved Oxygen, Conductivity, Turbidity, Temperature, pH) are measured using a multi-electrode integrated approach. Excess source water and sample water are discharged through the main drainage pipeline. The water distribution unit employs an air compressor high-pressure flushing method to perform backflushing and cleaning of the sampling lines, ensuring the pipelines are clean and uncontaminated.



Product Features

01

Parameter Integration & Modular Measurement Design (Highly Integrated): Integrates measurement modules for Ammonia Nitrogen, Total Phosphorus (TP), Total Nitrogen (TN), COD_{Cr}, COD_{Mn}, as well as a conventional five-parameter measurement module (expandable to include Chlorophyll, Blue-Green Algae, etc.).

02

Compliance & Compatibility: Complies with the Technical Requirements for Outdoor Small Water Quality Automatic Monitoring Systems and the Applicability Testing Operation Guide (HJC-ZY73-2019). Compatible with the 212 national standard protocol and features remote data transmission functionality.

03

High Performance & Low Maintenance: High precision, excellent stability, minimal maintenance requirements, and low waste liquid generation.

04

Compact & Deployable: Small footprint, enabling rapid deployment. Particularly suitable for pollution source tracing and grid-based monitoring.

05

Low Power Consumption: Low power usage, allowing for solar power supply in some scenarios. Adapts to more complex working conditions and offers stronger endurance.

Parameter Overview

Conventional Five Parameters: Temperature, Conductivity, Dissolved Oxygen, pH, Turbidity
Nutrients: COD_{Cr}, COD_{Mn}, TP, TN, Ammonia Nitrogen

Application Areas



- Water quality monitoring at key sections of lakes, reservoirs, and rivers
- Water ecological environment monitoring, such as online water quality monitoring for wetlands, parks, and landscape rivers
- Online monitoring of river estuaries and sewage outfalls
- Water quality detection in pump stations

Technical Parameters

Parameter	Measurement Method	Range (Adjustable per customer requirements)	Accuracy	Precision
pH	Glass Electrode Method	(0-14) pH	≤±0.1 pH	≤±0.1 H
Temperature	Thermistor Method	(0-60) °C	±0.1 °C	≤±1 %
Turbidity	Infrared Scattering Method	(0-4000) NTU	≤±2 %	≤±1 %
Dissolved Oxygen (DO)	Polarographic or Luminescent Method	(0-20) mg/L or (0-200) % Saturation	±0.3 mg/L	±0.3 mg/L
Conductivity	4-Electrode Graphite Method	(0-500) mS/cm	≤±1 %	≤±1 %
Total Phosphorus (TP)	Ammonium Molybdate Spectrophotometry	(0-2/10) mg/L, expandable up to 500 mg/L	±10 %	±10 %
Total Nitrogen (TN)	Potassium Persulfate Oxidation Method	(0-2/10) mg/L, expandable up to 500 mg/L	±10 %	±10 %
Ammonia Nitrogen (NH ₃ -N)	Salicylate Spectrophotometry	(0-2/10) mg/L, expandable up to 500 mg/L	±5 %	±5 %
Permanganate Index (CODMn)	Redox Titration Method	(0-10/20) mg/L, expandable up to 160 mg/L	±10 %	±5 %

Display	Touch Color LCD Screen
Cabinet Protection Rating	Ip55
Cabinet Dimensions (H×W×D)	1810×1500×970 mm (Note: Order adjusted to Height×Width×Depth)
Power Supply	(100 ~ 240) VAC, 50/60 Hz
Power Consumption	Average: 1.2 kW, Maximum: 1.8 kW
UPS Backup Power	3000 VA / 2400 W
Sampling Pump	Self-priming pump, maximum lift: 7m (or submersible pump option)

Backflush Device	Air Compressor
Sample Pretreatment	Sedimentation + Coarse Filtration
PLC Communication Interface/Protocol	RS232 / RS485 (Modbus RTU Protocol)
Data Storage	≥ 12 months of raw data and operation logs
Data Transmission	Network transmission (Fiber optic / 4G modem)
Ambient Temperature	(-10 ~ 55) °C
Ambient Humidity	≤ 95% RH (non-condensing)

HQ-FC 600 Floating Buoy-Type Online Water Quality Monitoring System

The HQ-FC 600 Floating Buoy-Type Online Water Quality Monitoring System is an integrated online water quality monitoring system that combines water quality online analyzers, system control and data acquisition, remote monitoring, online quality control, and wind-solar hybrid power.

Leveraging modern communication technology, it automatically transmits instrument measurement results, system operational status, individual instrument status, system faults, and instrument failures to a central management unit in real-time. It can also receive various commands from the central server to perform real-time remote configuration, remote calibration, remote quality control, remote emergency monitoring, and other control functions for the entire system.



Product Features

- 01 In-Situ Measurement of Conventional Five Parameters:**The five parameters are measured in-situ, avoiding the influence of piping and water sampling distance, thus ensuring the representativeness of the measured water body.
- 02 Modular Design:**The system adopts a modular design, integrating multiple functional modules including auxiliary units, quality control units, analytical instruments, system control units, remote data transmission units, and security monitoring.
- 03 Power Supply Method:**Powered by solar and wind energy.

Product Features

- 01 Advanced Measurement Principle:**Eliminates turbidity interference through a reference value subtraction method and utilizes the most advanced dual-beam UV spectrophotometer design principle to ensure authentic and reliable test data.
- 01 Ultra-Low Power Consumption:**Eliminates the use of high-power-consumption components, employing all energy-saving electrical elements. With an average power consumption of 25W, it fully enables operation via solar power autonomy.
- 01 Low Detection Limit:**The equipment boasts a low detection limit, reaching down to 10 ppb.
- 01 Modular System Management:**The water quality monitoring system achieves modular systematic management, facilitating ease of use and management for customers.
- 01 Easy Functional Expansion:**Customers can easily implement functional switching and expansion of the automatic station and significantly reduce system upgrade costs.

Measured Parameters

Water Temperature, pH, Conductivity, Turbidity, Dissolved Oxygen, Total Phosphorus (TP), Total Nitrogen (TN), Ammonia Nitrogen (NH₃-N), Permanganate Index (COD_{Mn}), Chlorophyll, and Blue-Green Algae, etc.

Equipment Configuration:TP, TN, NH₃-N Analyzer

Model: Hq3000

Utilizes standard wet chemical methods for online measurement of: Ammonia Nitrogen, Phosphate, Total Phosphorus (TP), Nitrate Nitrogen, Nitrite Nitrogen, Total Nitrogen (TN). It is the first nutrient online monitoring equipment applicable to small solar-powered automatic water quality monitoring stations. The HQ3000 series successfully addresses the challenges of field operation without grid power (mains electricity) and tap water supply, thanks to its extremely low energy consumption, compact design, patented temperature control technology, and two-stage self-cleaning filtration.



Application Areas

Applied for automatic water quality monitoring in water sources, lakes, reservoirs, rivers, etc.

Permanganate Index Analyzer

Model: Hq3501

Employs the standard method of acidic potassium permanganate redox titration. Using an ORP electrode to detect the titration endpoint avoids interference from turbidity. Furthermore, the use of high-precision injection pumps and micro-dosing pumps ensures the analyzer features high accuracy, excellent repeatability, and low maintenance, enabling online monitoring of low-concentration water samples.



Smart Manhole Monitoring System 3.0

Addressing industry pain points in manhole monitoring such as low efficiency of manual inspections, significant data deviations, and high operational costs, the Smart Manhole Monitoring System 3.0 is officially launched. It empowers city managers to promptly grasp water quality conditions across various manhole monitoring scenarios, focusing on four core capabilities: Precision, Efficiency, Longevity, and Intelligence. Leveraging technological innovation, it redefines urban pipeline network management models and provides a full-scenario solution for smart water management development.

Product Features



- 01

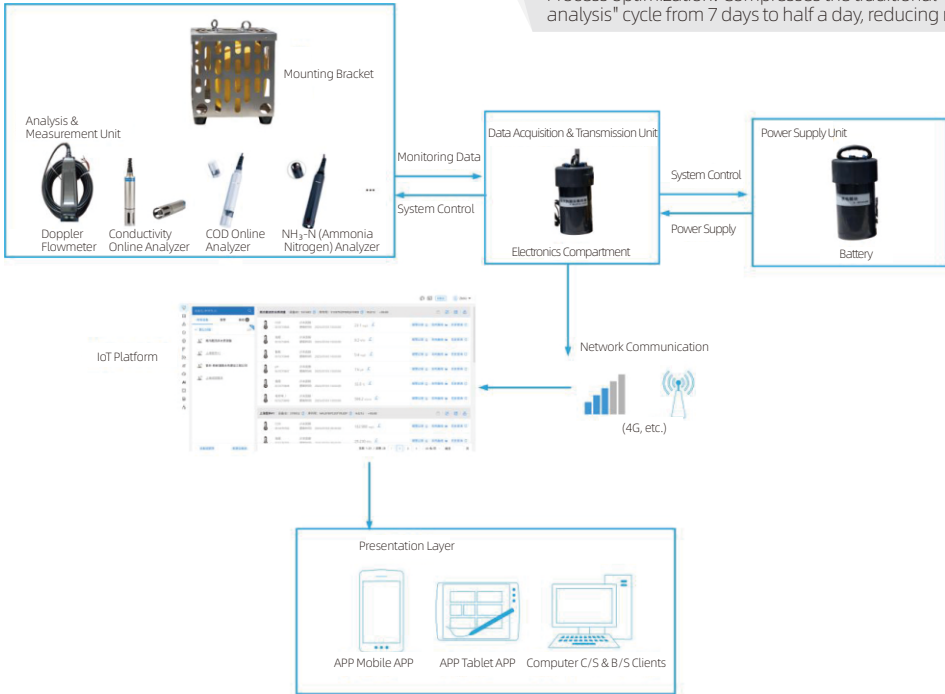
Simplified Installation: No entry required, deployed in 1 hour
Innovative floating ball bracket design: 50% smaller size, adaptable for monitoring in shallow water as low as 0.05 meters, with improved data stability in complex environments.No-entry installation technology: Entire process operable from the manhole opening; deployment time per unit ≤1 hour, ensuring speed and safety.
- 02

Long-Enduring Operation: 3-year ultra-long standby, drastically reducing operational costsSplit-type battery compartment design: Supports 1-minute rapid battery replacement, doubling maintenance efficiency. 76Ah Lithium Iron Phosphate (LiFePO4) battery pack (customizable): Combined with intelligent low-power algorithms, theoretical battery life reaches 3 years (*under standard operating conditions).
- 03

Smart IoT: Remote management and control, data overview on a single screenEdge computing IoT system: Supports remote parameter configuration, data download, and device diagnostics, reducing on-site maintenance needs. Cloud-based visualization platform: Integrates real-time monitoring, historical trend curves, alarm notifications, and other functions, enhancing decision-making and response speed.
- 04

Precision Calibration: In-situ operation, improving calibration efficiencySelf-developed national standard method calibration equipment: Portable instruments provide in-situ values using national standard methods. Process optimization: Compresses the traditional "sampling-lab analysis" cycle from 7 days to half a day, reducing required effort by 90%.

Application - Solutions



Product Features

Instrument Name	pH Sensor	Conductivity Sensor	DO Sensor	Turbidity Senso	Temp. Sensor	NH ₃ -N Sensor	COD Sensor
Parameter	pH	Conductivity	Dissolved Oxygen	Turbidity	Temperature	Ammonia Nitrogen	COD
Method	Glass Electrode	4-Electrode	Polarographic/Luminescent	Infrared Scattering	Thermistor	Ion Selective Ele.	UV Absorption
Range	0 ~ 14	(0~500) mS/cm	(0~20)mg/L or(0~200)%	(0~100)NTU、(0~500)NTU、(0~2000)NTU、(0~4000)NTU	(0~60)C	0.5-1000mg/L	0~500mg/L
Accuracy	≤±0.1	≤±1%	±0.3mg/L	≤±2%	±0.1C	5%FS	±10%FS
Repeatability	≤±0.1	≤1%	±0.3mg/L	≤1%	≤1%	±5%FS	COD: ≤±10%FS
Resolution	0.01	0.01μS/cm	0.01mg/L	0.01NTU	0.1C	0.01mg/L	0.01mg/L

Flow & Level Monitoring Technology - Probe Specifications

Doppler Ultrasonic Flowmeter

Measurement Principle: Flow Velocity: Acoustic Doppler; Liquid Level: Hydrostatic Pressure;

Flow Rate: Velocity-Area Method

Forward Flow Velocity: Range: 0.021 m/s ~ 6.00 m/s; Resolution: 0.001 m/s; Accuracy: ≤ 1.0% ± 1 cm/s

Reverse Flow Velocity (Optional): Range: -6.000 m/s ~ -0.021 m/s; Resolution: 0.001 m/s; Accuracy: ≤ 1.0% ± 1 cm/s

Water Level: Range: 0.03 m ~ 10 m (customizable); Resolution: 0.001 m; Accuracy: 0.25% F.S.;

Repeatability Error: ≤ 0.2 cm; Hysteresis: < 0.1 cm

Water Temperature: Range: -10 °C ~ 80 °C; Resolution: 0.1 °C; Accuracy: ± 0.5 °C

Radar Flowmeter

Radar Velocity Range: 0.03 ~ 20 m/s

Radar Velocity Resolution: 0.01 m/s

Radar Velocity Accuracy: ± 1% F.S.

Radar Velocity Output Power: 20 dBm

Radar Velocity Frequency: 24 GHz

Radar Velocity Beam Angle: 24°

Radar Distance Range: 0.1 ~ 10 m

Radar Distance Accuracy: 0.5% F.S.

Radar Distance Output Power: 13 dBm

Radar Distance Frequency: 80 Ghz

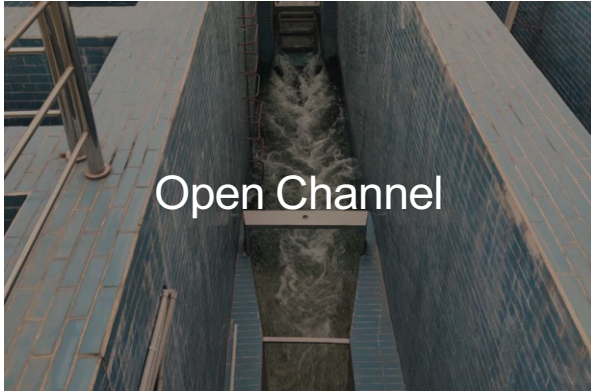
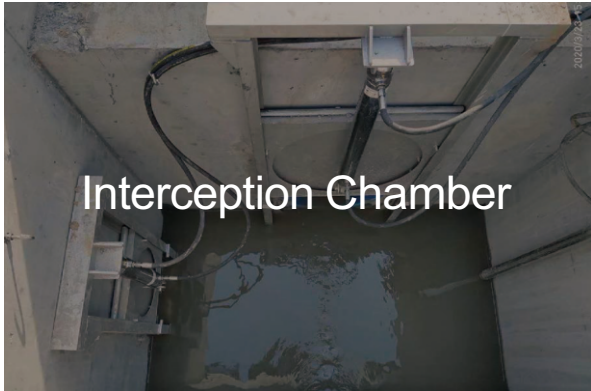
Integrated Ultrasonic-Radar Flowmeter Parameters

Parameter	Radar Velocity	Radar Level	Ultrasonic Velocity	Pressure Level
Principle	Acoustic Doppler	FMCW	Acoustic Doppler	Hydrostatic
Range	0.03~20 m/s	0.1 ~ 10 m	0.02~6 m/s	0 ~ 10 m
Resolution	0.01 m/s	1 mm	0.01 m/s	1 mm
Accuracy	±1% F.S.	0.5% F.S.	±1% F.S.	0.5% F.S.
Output Power	20 dBm	13 dBm	-	
Beam Angle	24°	14°	5°	
Frequency	24 GHz	80 Ghz	2 MHZ	

Smart Manhole Monitoring Parameters:

Item	Smart Manhole Monitoring System - 3.0	Auxiliary Functions	Voltage Detection, Sensor Status, Internal Temperature & Humidity Monitoring
Power Supply	12V	Ultra-Long Standby	Continuous operation for over 3 years
Lithium Battery	76Ah (Customizable/Expandable)	Mounting Method	Bracket Mounting
Communication Protocol	Standard Modbus-RTU Master-Slave Protocol, supports Environmental Protection 212 Protocol, Water Resources 651 Protocol, etc.	Dimensions	φ14*25CM (Control/Power Unit)
Upload Interval	15min (Default)	Material	UPVC
		Parameter Options	pH, Conductivity, Dissolved Oxygen, Turbidity, Temperature, COD, Ammonia Nitrogen, Level, Flow, etc.

Application Scenarios



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