ZEMING

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PRODUCT CATALOG

SHANGHAI ZEMING
ENVIRONMENTAL TECHNOLOGY CO.,LTD

Clean The Environment With Technology

ZEMING

Clean The Environment
With Technology

CONTENTS

ZEMING

ZMING TECHNOLOGY

Zeming Environmental Technology Co., Ltd. was established in 2006 in Shanghai, China and is a high-tech enterprise that covers research, manufacturing, system integration, maintenance, and related data analysis of water quality monitoring instruments and systems. We have a rich range of product lines of online, lab, and portable water quality monitoring instruments and systems providing service to users in the fields of surface water (including ocean), sewage, drinking water, and industrial process water, etc.

The company currently has over 30 independently developed instruments and equipment products. In the future, the company will continue to focus on the research and development of miniaturized and intelligent environmental monitoring instruments, continuously improve and enrich product lines such as portable and laboratory instruments, online water quality analyzers, automatic monitoring systems, etc., and provide professional services in the fields of municipal sewage, environmental monitoring, industrial control, water treatment and transportation, marine and comprehensive ecological environment monitoring.

70+
Patents / Software Copyrights / Intellectual Property Assets

30+
Independently Developed Products

3000+
Water Quality Instruments Produced Annually

17+
Years of Professional Service

CORPORATE CULTURE

Corporate Philosophy

Dedication & Focus Application Innovation
Superior Service

Corporate Mission

Purifying the Earth with Technology

Value Proposition

Making Monitoring More Accurate and Reliable

Corporate Vision

Driving progress through technology, delivering heartfelt service, and sustaining operations to create a better environment.

CORPORATE DEVELOPMENT HISTORY

Shanghai ZEMING Environment Technology Co., Ltd.

- **2006** — Company Founded
- **2008** — Cyanobacteria Early Warning Buoy deployed in Taihu Lake
- **2010** — Suzhou Urban River Monitoring Project Launched
- **2013** — R&D Team Established
- **2014** — Suzhou Subsidiary Established
- **2021** — First Round of Financing Completed
- **2024** — Product Lines for Water Supply and Drainage Industries Initially Formed

COMPANY HONOR

Independent R&D: After over a decade of dedicated research and continuous innovation, our company has established a comprehensive product line. This includes portable water quality analyzers, conventional and miniaturized online water quality analyzers, and high-precision in-situ nutrient analyzers. We have achieved extensive coverage and in-depth analysis of water quality monitoring parameters, providing robust technical support and solutions for the water quality monitoring sector.

Self-Owned Factory: Our self-operated factory in Suzhou, covering an area of over 1,000 square meters, focuses on core operations such as instrument production, system integration, and debugging. Utilizing a unified and efficient management model, it boasts an annual production capacity of approximately 3,000 high-precision instruments and 500 micro water quality automatic stations, delivering stable and reliable water quality monitoring solutions to our clients.

Renowned Partners: As an authorized agent for internationally renowned brands such as Xylem (YSI, WTW, Sontek), Hach, and Eutech, we possess a broad and well-established instrument supply chain. We are committed to providing customers with high-quality products, complemented by exceptional after-sales service and professional technical support, ensuring a satisfactory user experience and effective solutions for every client.

ZEMING

Honorary Certificates

Software Copyright Certificates

National Patent Certificates

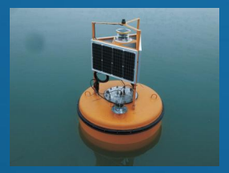
Classic Cases

1.Shanghai Qingcaosha Reservoir Fixed Water Quality Profiling System Project

In 2013, four profiling winch buoy systems equipped with multi-parameter water quality sondes were deployed in the Shanghai Qingcaosha Reservoir (a drinking water source for Shanghai). These systems enable real-time monitoring of water flow velocity and water quality at different depths, providing crucial data support for raw water treatment.

2.Zhejiang Provincial Freshwater Fisheries Research Institute Aquaculture Zone Water Quality Monitoring System

In 2015, ZEMING Technology deployed an environmental monitoring buoy system in the aquaculture zone of the Zhejiang Provincial Freshwater Fisheries Research Institute. The system is equipped with a multi-parameter online monitor, an in-situ total phosphorus/total nitrogen online analyzer, a COD online analyzer, and a data management platform. It performs real-time monitoring, diagnostics, data acquisition, data statistics, and generates various charts and reports. This allows for timely detection of the concentrations of various chemical ions and nutrients in the water, enabling a real-time understanding of water quality status and its variation patterns. Testing the water quality early during fry stocking can effectively improve the survival rate of juvenile fish.



3. Qinghai Lake CTD and Dynamic Water Quality Monitoring System Project

In 2020, ZEMING Technology deployed a buoy on Qinghai Lake equipped with an automatic winch. This system achieves real-time, in-situ online monitoring of parameters such as dissolved oxygen, temperature, pH, salinity, turbidity, and chlorophyll at different water depths. The system features a solar power supply that can maintain normal power supply to the water quality monitoring system even during 15 consecutive days of rainy weather (without sunlight), without affecting the system's operation.

4.State Oceanic Administration, East China Sea Branch, Zhoushan Marine Station Ocean Buoy Project

In 2018, ZEMING deployed a Zhoushan Marine Meteorological Buoy System for the real-time online monitoring of discharge conditions from rivers entering the sea and sewage outfalls. The monitored parameters included the standard five-parameter suite, chlorophyll a, petroleum hydrocarbons, ammonia nitrogen, nitrite nitrogen, nitrate nitrogen, orthophosphate, and meteorological parameters such as air temperature, atmospheric pressure, relative humidity, wind speed, and wind direction. This system conducted real-time, continuous monitoring of the adjacent sea area, hydrology, and meteorology near the outfall of the Zhoushan Dinghai Wastewater Treatment Plant.

5. Suzhou Xiangcheng Ecological Environment Bureau Buoy Construction Project

In 2022, ZEMING Technology deployed four buoys in Suzhou. These buoys were equipped with instruments including the HQ-800 series in-situ nutrient analyzers and water quality parameter analyzers. They monitor conventional five parameters, chlorophyll, cyanobacteria, COD(Mn), ammonia nitrogen, total phosphorus, and meteorological parameters. This project provides technical support for improving water quality and enhancing the automatic surface water environmental monitoring network in Xiangcheng District.

6.Suzhou Industrial Park Ecological Environment Bureau Yangcheng Lake New Buoy Project

In 2018, ZEMING deployed a Zhoushan Marine Meteorological Buoy System for the real-time online monitoring of discharge conditions from rivers entering the sea and sewage outfalls. The monitored parameters included the standard five-parameter suite, chlorophyll a, petroleum hydrocarbons, ammonia nitrogen, nitrite nitrogen, nitrate nitrogen, orthophosphate, and meteorological parameters such as air temperature, atmospheric pressure, relative humidity, wind speed, and wind direction. This system conducted real-time, continuous monitoring of the adjacent sea area, hydrology, and meteorology near the outfall of the Zhoushan Dinghai Wastewater Treatment Plant.

7.Fuxian Lake Deep-Water Lake Profiling Monitoring System

In 2017, the Nanjing Institute of Geography and Limnology, Chinese Academy of Sciences, deployed a real-time online monitoring system in Fuxian Lake, Yunnan. This system integrated water quality parameter monitoring instruments, a multi-functional meteorological station, nutrient analyzers, and other equipment. It monitors factors including the conventional five parameters, chlorophyll, cyanobacteria, flow velocity, wind speed, wind direction, air temperature, and atmospheric pressure in real time. The water quality monitoring instruments within this system are capable of performing profile measurements from 0 to 100 meters depth in Fuxian Lake.

Cases of Micro Water Quality Auto-Monitoring Stations

1.Suzhou Municipal Ecology and Environment Bureau Micro Shore-Based Water Quality Auto-Monitoring Station

In 2013, ZEMING Technology deployed a total of 10 sets of shore-based water quality auto-monitoring stations in the urban rivers of Suzhou. These stations monitor parameters including the conventional five water quality parameters, permanganate index, and ammonia nitrogen. The implementation of these stations enabled real-time dynamic monitoring of the water environment, enhanced the early warning and forecasting capabilities for water quality and cyanobacterial blooms, and ensured water supply safety and scientific water diversion.

2.Changshu Municipal Ecology and Environment Bureau Water Quality Auto-Monitoring Station Project

In 2018, ZEMING Technology constructed 16 sets of solar-powered water quality auto-monitoring systems in the urban area of Changshu City. The monitored parameters include water temperature, pH, dissolved oxygen, conductivity, ammonia nitrogen, total phosphorus, and permanganate index. Among the equipment, the total phosphorus analyzer was independently developed by ZEMING. It features low power consumption, a built-in temperature control device, eliminates the need for external air conditioning, and can be powered by solar energy.

3.Kunshan Environmental Monitoring Station Micro Shore-Based Station Project

In 2017, ZEMING Technology established 7 new micro water quality stations in Kunshan. These stations monitor water quality parameters such as the conventional five parameters, permanganate index, and ammonia nitrogen. The real-time online water quality monitoring provided by these stations offers strong technical support for the urban river water quality improvement project.

4.Taizhou Water Resources Bureau Water Quality Auto-Monitoring Station Project

In 2018, ZEMING deployed a Zhoushan Marine Meteorological Buoy System for the real-time online monitoring of discharge conditions from rivers entering the sea and sewage outfalls. The monitored parameters included the standard five-parameter suite, chlorophyll a, petroleum hydrocarbons, ammonia nitrogen, nitrite nitrogen, nitrate nitrogen, orthophosphate, and meteorological parameters such as air temperature, atmospheric pressure, relative humidity, wind speed, and wind direction. This system conducted real-time, continuous monitoring of the adjacent sea area, hydrology, and meteorology near the outfall of the Zhoushan Dinghai Wastewater Treatment Plant.

5. Wuhan Water Authority Water Quality Auto-Monitoring Station Project

In 2021, ZEMING Technology constructed micro water quality auto-monitoring stations at locations including Dongsha Lake and Nanhu Lake in Wuhan. Equipped with instruments such as ZEMING's HQ600 water quality analyzers, these stations conduct long-term, intensive, and dynamic intelligent online real-time monitoring of water quality and quantity at key river and lake discharge outlets. This aims to achieve forecasting and traceability of water pollution incidents.

6.Henan Provincial Housing and Urban-Rural Development System Water Quality Auto-Monitoring Station Project

In 2024, ZEMING Technology constructed micro water quality auto-monitoring stations in Luohe, Henan Province. Equipped with instruments including ZEMING's HQ-3300 CODCr water quality auto-analyzer, the project, through the establishment of a drainage and pipeline network monitoring system, enables real-time collection of data such as pipeline liquid level, flow rate, and water quality. This facilitates real-time mastery of the operational status of the drainage network. It provides effective data support for rapid response, allowing managers to grasp the actual conditions within the pipeline network.

Product Introduction

Portable Water Quality Monitoring Equipment

HQ-5000 Series Handheld Water Quality Analyzer

HQ-5200 Portable Total Phosphorus Water Quality Analyzer

HQ-7005/7007 In-Situ Multi-Parameter Analyzer

Conventional Water Quality Online Monitoring Equipment

HQ-3100 Ammonia Nitrogen Water Quality Auto-Analyzer

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

HQ-3300 CODCr Water Quality Auto-Analyzer

HQ-3501 Permanganate Index Water Quality Auto-Analyzer

HQ-3600 Total Nitrogen Water Quality Auto-Analyzer

HQ-3600(NO_3) Nitrate Nitrogen Water Quality Auto-Analyzer

HQ-3600(NO_2) Nitrite Nitrogen Water Quality Auto-Analyzer

HQ11-TA5030 Total Phosphorus Analyzer

Microfluidic Water Quality Online Monitoring Equipment

HQ-6000 Series Microfluidic Analysis Platform

HQ-8000 Series In-Situ Auto-Analyzer

Controllers & Sensors

HQ10-ZMT Digital Sensor

HQ100 Multi-Parameter Online Water Quality Analyzer

HQ10-TUR-HT Online High-Range Turbidimeter

HQ-10-PH pH Water Quality Sensor

HQ100-COD-STD

HQ100-NH4N-STD Ammonia Nitrogen Sensor

HQ100-STD Conventional Parameter Sensor

HQ100 Chlorophyll, Cyanobacteria Sensor

Digital Solutions

HQ-1001 Water Supply Network Quality Monitoring System

HQ-1002 Water Supply Network Quality Monitoring System

Water Quality Monitoring Buoy

HQ-FC600 Floating Pontoon Water Quality Online Monitoring System

HQ-9000 Micro Water Quality Auto-Monitoring Station

Micro Shore-Based Water Quality Auto-Monitoring Station

Simplified Water Quality Auto-Monitoring Station

TSC-10 Temperature Chain Profiling Measurement System

Smart Manhole Monitoring System

Fixed Pollution Source Exhaust Gas Non-Methane Hydrocarbons Online Monitoring System

Aquatic Online Ecological Auto-Monitoring Fixed Platform

Product Advantages

Microfluidic Water Quality Online Monitoring Equipment

Microfluidic Design

Reduces traditional reagent consumption from milliliter to microliter level, decreasing reagent usage and waste liquid discharge.

Turbidity Compensation Function

Eliminates turbidity interference through baseline subtraction, utilizing the most advanced dual-beam UV spectrophotometer design principle to ensure authentic and reliable test data.

Low Power Consumption Application

Eliminates the use of high-power components, entirely adopts energy-saving electrical components. Average power consumption is 5W, fully enabling self-sufficient solar power supply.

Waste Liquid Separation Technology

Employs waste liquid separation technology to segregate toxic and non-toxic waste liquids, achieving zero pollution discharge.

Conventional Water Quality Online Monitoring Equipment

01 Dual-beam design with strong anti-turbidity interference capability; automatic chromaticity, turbidity, and temperature compensation.
02 Complies with new national standards and capable of multiple quality control functions.
03 Unique flow path design prevents cross-contamination with water samples.
04 Features multiple device status monitoring functions including hardware self-diagnosis alarms, power-off protection, and leak detection.
05 Utilizes latest capacitive metering technology for higher metering repeatability, ensuring accurate sample intake.
06 Low power consumption, supports solar or DC power supply.
07 High-temperature, high-pressure digestion module design for more thorough and rapid digestion.

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	±1mV	±3%
Repeatability	≤3%	< 5%	±0.3mg/L	≤1%	≤1%	±0.1pH	±1mV	≤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	±1mV	±3%F.S.

HQ-5200 HQ-5200 Portable Total Phosphorus Water Quality Analyzer

The HQ-5200 Portable Total Phosphorus Water Quality Analyzer employs the national standard Ammonium Molybdate Spectrophotometry method for monitoring total phosphorus parameters in water bodies. Its unique reaction system design ensures fast and precise measurements.

Product Features

01 High-Temperature & High-Pressure Digestion: High digestion efficiency with short processing time.

02 Automatic Turbidity & Chromaticity Compensation: Adaptable for high-turbidity water bodies.

03 Capacitive Metering System: Ensures high precision and excellent repeatability for samples and reagents.

04 Intelligent Digital Temperature Control: A built-in, efficient system with adjustable heating guarantees precise temperature management.

05 Suitable for Complex Scenarios: Ideal for emergency monitoring, law enforcement inspections, and other demanding fieldwork.

06 Optional Battery Pack: Supports water quality monitoring in any environment with the add-on battery configuration.

Technical Parameters

Measurement Parameter	Total Phosphorus
Measurement Method	Ammonium Molybdate Spectrophotometry
Range	(0-2/10) mg/L, maximum expandable range 500 mg/L (Adjustable per customer requirements)
Detection Limit	0.01 mg/L
Resolution	0.001 mg/L
Accuracy	±10%
Repeatability	≤5%
Zero Drift	±5%
Range Drift	±10%
Measurement Time	40 min

Linearity	$R^2 \geq 0.995$
Stability	≤ ±10% within 24 hours
Display	7-inch LCD Screen
Ambient Temperature	5 ~ 40 °C
Max. Power Consumption	100 W (Average 25 W)
Power Supply	(85-264) V AC / (47-63) Hz, expandable to 24V DC input
Dimensions (W×D×H)	≈ 400 × 300 × 640 mm (excluding protrusions)
Serial Communication	RS485 MODBUS Protocol
Analog Output	(4-20) mA
Ambient Humidity	≤ 85% RH (non-condensing)

HQ-7005/7007 In-Situ Multi-Parameter Analyzer

The HQ-7005/7007 In-Situ Multi-Parameter Analyzer is based on miniaturized water quality sensor technology, integrating the synchronous monitoring of over ten water quality parameters—including pH, ORP, and conductivity—into a single unit. Each miniaturized digital sensor operates independently, supports on-site quick replacement and expansion, and is suitable for applications such as marine/freshwater buoys, unmanned surface vessel (USV) patrols, and groundwater monitoring.

Product Features

01 Equipped with 16mm miniaturized digital sensors; the full series is adaptable to confined spaces.

02 Modular design supports synchronous multi-parameter monitoring and field hot-swappable expansion.

03 Corrosion-resistant POM housing combined with an ultra-low power consumption architecture, adaptable for buoy/USV/groundwater scenarios.

04 RS485/Modbus output, plug-and-play, enabling rapid network integration.

Technical Parameters

Item	HQ-7007	HQ-7005
Sensor Ports	7 (6 sensors + 1 cleaning brush)	4
Sensors	pH Sensor, ORP Sensor, Temperature Sensor, Dissolved Oxygen Sensor, Conductivity Sensor, Chlorophyll Sensor, Algal Acidity Sensor, Total Nitrogen Sensor	
Communication	Rs485 (Modbus RTU)	
Depth Sensor	Standard (0-60) m, other ranges customizable	
Operating Temp.	-5°C ~ 60°C	
Supply Voltage	9-26 V DC	
Protection Rating	IP68	
MTBF	≥1440 hours	
Power Consumption	1.8 W	
Material	POM	
Weight	≤3 kg	
Dimensions	567 mm × ϕ85 mm	

Sensor	Range	Resolution	Accuracy
pH	0 - 14	0.01 pH	≤±0.1pH
ORP	-2000 ~ +2000 mV	0.1 mV	≤±1mV
Conductivity	0 - 500 mS/cm, Salinity: 0 - 70 ppt	0.01 μS/cm	≤±1%
Dissolved Oxygen	0 - 20 mg/L	0.01 mg/L	±0.3mg/L
Turbidity	0 - 4000 NTU	0.01 NTU	≤±2%
Depth	0-10/60/100 m	0.001 m	≤±0.15%FS
Chlorophyll a	0 - 50 / 500 μg/L	0.01 μg/L	≤±3%
Cyanobacteria	0 - 200,000 / 2,000,000 Cells/mL	1 Cell/mL	≤±3%
Total Algae	Chlorophyll a: 0 - 50 / 500 μg/L	0.01 μg/L	≤±3%
	Cyanobacteria: 0 - 200,000 / 2,000,000 Cells/mL	1 Cell/mL	≤±3%

Controller & Sensor
HQ-100 Multi-Parameter Online Water Quality Analyzer

The HQ-100 Multi-Parameter Online Analyzer is a versatile water quality monitoring platform that provides users with accurate measurements of parameters including water temperature, pH/ORP, dissolved oxygen, conductivity, turbidity, chlorophyll, cyanobacteria, COD, and ammonia nitrogen. The HQ-100 features a 7-inch TFT touch LCD display and a customized software platform, enabling fast and simple on-site operation. It utilizes digital intelligent probes with internally stored instrument information and calibration data. All probes achieve a waterproof rating of Ip68.

Main Unit Parameters

Power Input: 88-245 VAC wide range or 24 VDC (customizable)
Power Consumption: 5W (Energy Saving Mode), 7W (Normal Mode)
Operating Environment: -20 to 55℃, 0-95% relative humidity (non-condensing)
Output: RS-485/232
Display: 7-inch TFT true color touch LCD, resolution 800 × 480
Storage Temperature: -20 to 70℃, 0-95% relative humidity (non-condensing)

Product Features

- Large color touchscreen for easy operation, supports software system upgrades.
- Measurement and calibration data can be directly exported to a USB drive.
- Can connect to no less than 8 probes; features digital auto-identification system for plug-and-play operation.
- Digital sensors store calibration data internally; sensor replacement requires no recalibration.
- Automatic cleaning with self-diagnostic function; customizable cleaning service reminders significantly reduce maintenance workload.
- Built-in temperature sensor for real-time temperature compensation (0-60℃).
- Digital functionality: Provides digital communication capabilities such as MODBUS and Profibus DP for remote diagnosis and control.

HQ10-ZMT Digital Sensor Universal Controller

Suitable for various water quality sensors, including parameters such as dissolved oxygen, pH, ammonia nitrogen, residual chlorine, ozone, turbidity, conductivity, and COD. This controller is simple to operate and supports multiple communication methods such as RS485 (MODBUS) and 4-20mA.

Product Features

01 High Versatility: A universal controller supporting connection to all digital sensors based on the RS485 (MODBUS) protocol.

02 Simplified Operation & Maintenance: Intuitive user interface and guided calibration steps minimize operational errors.

03 High Reliability & Stability: Designed with a focus on reliability and stability, ensuring consistent operation under various working conditions.

04 Flexible Expandability: Supports various external devices and communication protocols, facilitating easy system upgrades and expansion.

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Technical Parameters

Display	Screen: TFT-LCD, with LED backlight, semi-transmissive reflective
	Size: 3.5 inch, 55.26 × 84.52 mm
	Resolution: 320 × 480 pixels
Controller	Dimensions: 162.4 × 145.5 × 178.7 mm

Power Input	(100~240)VAC，50/60 Hz
	24 VDC
Operating Conditions	Operating Temperature: -20 ~ 60℃
	Storage Temperature: -20 ~ 70℃
	Relative Humidity: 0 ~ 95% RH, non-condensing

Analog Output Signal	Two independent 4-20 mA current outputs, maximum load 500 Ω
Relay Outputs	Two relay outputs
Digital Communication	MODBUS RS485
Housing Material	Polycarbonate, aluminum powder filled, stainless steel
Installation	Wall-mounted, Flush-mounted, or Field pipe-mounted

Application Areas

- Surface water (lakes, rivers) quality monitoring
- Water quality monitoring in wastewater treatment plant processes
- Effluent quality monitoring at industrial discharge points
- Water quality monitoring in drinking water sources, intake water, and treatment processes
- Aquaculture water quality monitoring
- Hospital and medical institution wastewater monitoring
- Landscape river water quality monitoring
- Industrial process water monitoring

Technical Parameters

Sensor	Measurement Method	Range (Adjustable per customer requirements)	Accuracy	Repeatability	Resolution	Response Time	Drift	Detection Limit
Dissolved Oxygen	Electrode Method	(0-20)mg/LOr (0-200)%	±0.3mg/L	±0.3mg/L	0.01mg/L	60s	±0.3mg/L	/
Conductivity	Conductivity Cell Method	0 uS/cm ~ 5000uS/cm, auto-ranging	±1%	≤1%	0.01μS/cm	≤20s	±1%F.S.	/
Turbidity	Light Scattering Method	(0-4000)NTU	±2%	≤1%	0.01NTU	≤5s	±3%F.S.	/
pH	Glass Electrode Method	0~14pH	±0.1pH	±0.1pH	0.01pH	≤10s	±0.1pH	/
ORP	Glass Electrode Method	(-2000 ~ +2000) mV	±1mV	±1mV	0.1mV	≤10s	±1mV	/
Temperature	Thermistor Method	(0-60) ℃	±0.1℃	≤1%	0.1℃	≤10s	/	/
TSS	Infrared Scattering Method	(0-10000/ 20000)mg/L	±5%	≤3%	1mg/L	≤5s	±3%F.S.	/
COD	UV Spectrometry Method	(0-1000/ 2000)mg/L	±3%	≤3%	Min: 0.01mg/L	≤10s	±3%F.S.	0.1mg/L
Ammonia Nitrogen	Ion Selective Electrode Method	(0.1-1000)mg/L	±3%	≤2%	Min: 0.01mg/L	≤60s	±3%F.S.	0.1mg/L
Residual/ Total Chlorine	Membrane Electrode Method	(0~2/20)mg/L	±3%	/	0.01mg/L	T90 2min	/	/
Chlorophylla	Fluorescence Method	(0-50/500)μg/L	±3%	≤2%	0.01μg/L	≤10s	±1%F.S.	0.05μg/L
Cyanobacteria	Fluorescence Method	(0-200000) cells/mL	±3%	≤2%	1cells/mL	≤10s	±1%F.S.	200 cells/mL

HQ10-TUR-HT Online High-Range Turbidimeter

The HQ10-TUR-HT is based on the ISO 7027 standard, utilizing a near-infrared light source combined with the 90° scattered light method to effectively eliminate chromaticity interference. When the LED projects near-infrared light at a specific angle, suspended particles produce a scattering effect. A photosensitive element positioned at a vertical angle captures this scattered signal. Since the intensity of the scattered light exhibits a linear positive correlation with the concentration of suspended matter, the turbidity and suspended solids concentration can be measured simultaneously by detecting the scattered light intensity.

Product Features

01 Standard Communication: Equipped with industrial-grade RS-485/4-20mA interfaces and supports the MODBUS-RTU full-duplex communication protocol.

02 Safety Architecture: Features fully isolated power supply and signal output modules, ensuring system safety through electrical double isolation.

03 Environmental Resilience: Integrated EMC protection circuit optimizes performance against surge and electromagnetic interference in industrial settings.

04 Engineering Design: 316L stainless steel housing meets IP68 protection rating, configured with 3/4" standard pipe thread interfaces.

05 Maintenance Optimization: Integrated self-cleaning system equipped with a rotating wiper effectively prevents contamination of the optical interface.

06 Precision Compensation: Built-in high-precision temperature sensor, coupled with a dynamic calibration algorithm, enables real-time water temperature compensation.

Technical Parameters

Measuring Range	0~20	0~200	0~1000	0~3000
Resolution	0.01、1		0.01、1	
Indication Error	≤ ±0.1 NTU (@ <1 NTU); ≤ ±0.15 NTU (@ 1-2 NTU); ≤ ±5% (@ ≥2 NTU);		≤±0.5NTU@10<NTU; ≤±5%@≥10NTU;	
Repeatability	≤±0.1NTU@<10NTU;≤±1%@>10NTU;			
Zero Drift	≤ ±0.3% FS / 30 minutes			
Operating Temp.	5-40 °C			
Storage Temp.	-10-55 °C			
Max. Submersion	5 meters underwater			
Power Supply	12-24 VDC, 0.5A			
Communication	MODBUS RS485			
Protection Rating	IP68			
Installation	Flow-through cell installation, Submersible installation			
Material	316 Stainless Steel			
Cable Length	5 meters (default)			
Dimensions	ϕ54 × 165 mm			
Flow Chamber (Optional)	287 × 221 × 165 mm			

HQ-10-pH Water Quality Sensor

The ZEMING HQ-10-pH pH Water Quality Sensor is a high-precision online monitoring instrument developed based on a digital water quality analysis platform. It adopts an integrated design, is equipped with an industrial-grade online electrode, and incorporates digital and intelligent sensor technologies to achieve electrode signal detection, automatic temperature compensation, and digital signal conversion. It supports RS485 output, facilitating system networking and integration. Widely used in surface water, pollution sources, and other industries, it ensures stable and reliable water quality monitoring.

Product Features

01 Integrated Design: Anti-electromagnetic interference capability ensures accurate and reliable data.

02 Industrial-Grade Electrode: Industrial-grade combination electrode ensures long-term stable operation and reduces maintenance requirements.

03 Automatic Temperature Compensation: Built-in high-precision temperature sensor adapts to environmental changes.

04 Rugged Construction: Stainless steel housing with IP68 waterproof rating, suitable for harsh working conditions.

05 Smart Networking: RS485 output supporting Modbus protocol, allowing easy integration into monitoring systems.

Technical Parameters

Range	0~14pH
Resolution	0.01pH
Accuracy	-0.07ph
Repeatability	0.08pH
Calibration Point Deviation	(pH=4. 00) -0.02 pH
	(pH-6.86) 0.03 pH
	(pH=9.18) -0.05pH
Response Time	15S
Temp. Comp. Accuracy	0.04pH

HQ100-COD-STD
Sensor

This product is a digital Chemical Oxygen Demand (COD) online sensor based on the UV absorption method. The sensor features an RS485 communication interface and standard Modbus protocol, a built-in automatic cleaning brush, and an IP68 protection rating. It is suitable for long-term online monitoring of various complex water bodies, such as wastewater discharge outlets, early warning stations, and stormwater wells. Its dual-beam design effectively compensates for turbidity and chromaticity interference, enabling reagent-free, fast, and accurate measurement.

Product Features

01 Multi-Parameter Integration: Simultaneously measures COD, Turbidity, SAC, and Temperature.

02 Advanced Method: Utilizes UV absorption at 254nm and transmission method at 546nm for turbidity compensation, offering strong anti-interference capability.

03 Easy Maintenance: Built-in mechanical wiper; automatic cleaning cycle can be set, reducing maintenance frequency.

04 Digital & Smart: RS485 output with Modbus protocol, facilitating integration into various monitoring systems.

05 Reagent-Free: No chemical reagents required during measurement, preventing secondary pollution and lowering operating costs.

06 Multiple Operation Modes: Supports continuous monitoring, single measurement, low-power mode, and other application scenarios.

07 Rugged & Durable: Corrosion-resistant housing with IP68 rating, suitable for harsh working conditions.

Technical Parameters

Measurement Method	UV Absorption (UV254nm)
Measurement Range	0-500 mg/L
Accuracy	≤ ±10% FS (Full Scale) (Note: "F5" interpreted as "FS")
Resolution	0.01 mg/L
Optical Path Length	20 mm
Compensation Method	546nm Dual-beam Turbidity Compensation
Response Time	≤ 30 seconds (adjustable)
Output Interface	RS485, Modbus Protocol

HQ100-NH4N-STD
Ammonia Nitrogen Sensor

The NH_4^+ ion electrode and reference electrode offer advantages such as long service life and low drift, significantly reducing maintenance frequency. Samples can be measured directly without pre-treatment. The sensor supports RS485 communication and the Modbus protocol, facilitating system integration. The built-in isolator provides strong anti-interference capability, ensuring data accuracy. It also features a water leakage alarm function and boasts an IP68 waterproof rating, making it suitable for various complex underwater and outdoor scenarios.

Product Features

01 Real-Time Online Monitoring: Enables continuous, uninterrupted measurement without complex sample pre-treatment.

02 Long Lifespan & Low Drift: Self-developed electrode technology and special liquid junction design ensure more stable performance and less maintenance.

03 Robust Communication & Integration: RS485 Modbus output for easy connection to control systems.

04 Excellent Anti-Interference: Built-in isolation ensures data accuracy even in harsh electrical environments.

05 High Protection & Safety: IP68 waterproof rating, supports water leakage alarm, highly adaptable, and ensures safe operation.

Technical Parameters

Measurement Method	Ion Selective Electrode Method
Range	0.5 - 1000 mg/L
Resolution	0.01 mg/L
Accuracy	±5% FS (Full Scale)
Detection Limit	0.05 mg/L
Response Time (T90)	≤ 45 seconds
Electrode Life	6 - 8 months
Recommended Calibration Frequency	Every 2 - 4 weeks

HQ-100-STD

Conventional Five-Parameter Sensor

The Five-Parameter Sensor is an integrated, high-precision comprehensive water quality monitoring system capable of simultaneously monitoring five core parameters online: pH, Dissolved Oxygen (DO), Conductivity (EC), Turbidity, and Temperature. The system consists of high-performance digital sensors and a multi-functional controller. It employs RS485 Modbus communication, offers strong anti-interference capability, and supports automatic temperature compensation. The sensors boast an IP68 protection rating, and the controller supports multiple analog/digital outputs. It is widely used for real-time water quality monitoring and management in areas such as wastewater treatment plants, drinking water treatment, surface water, and industrial process water.

Product Features

01 Multi-Parameter Integration: One host unit simultaneously connects to and displays five core water quality parameters.

02 Advanced Methods: Polarographic/Fluorescent method for DO, four-electrode method for conductivity, infrared scattering method for turbidity; ensuring precise measurement.

03 Digital & Smart: Independent digital signal output for each sensor, anti-interference, supports remote transmission and system integration.

04 Easy Maintenance: Turbidity sensor equipped with an automatic cleaning brush; clear guidance for electrode replacement and calibration.

05 Rich Interfaces: The controller provides 6 channels of 4-20mA output, 6 relay channels, RS485/232; high integration.

06 Rugged & Durable: Stainless steel sensor housing, IP68 rating, adaptable to various underwater installation environments.

Technical Parameters

Parameter	pH	Dissolved Oxygen (DO)	Conductivity (EC)	Turbidity	Temperature
Method	Glass Electrode	Polarographic or Fluorometric	Four-Electrode	Infrared Scattering (ISO 7027)	Thermistor
Range	0-14	(0-20) mg/L or (0-200)%	0-500 mS/cm	(0-4000) NTU	(0-60) °C
Accuracy	≤ ±0.1 pH	±0.3 mg/L	≤ ±1% F.S.	≤ ±2%	±0.1 °C
Resolution	0.01 pH	0.01 mg/L	0.01 µS/cm	0.01 NTU	0.1 °C
Note	/	/	/	Equipped with me chanical auto-cleaning brush	/

General Specifications

Item	Specification
Communication	RS485 (Modbus RTU protocol, up to 115200 bps)
Protection Rating	IP68 (Note: "lp68" corrected to "Ip68")
Power Supply	12/24 V DC
Power Consumption	< 0.5 W (non-cleaning mode)
Process Connection	NPT 3/4" external thread
Material	Stainless Steel, POM

HQ100-ChlA-STD/HQ100-Cyabo-STD

Chlorophyll/Cyanobacteria Sensor

This online Cyanobacteria/Chlorophyll analyzer, consisting of a sensor and a controller, is a professional instrument for real-time monitoring of algal concentration in water bodies. The sensor operates on the fluorescence principle, using specific light sources to excite phycocyanin or chlorophyll a and detecting their fluorescent signals to accurately measure concentration. The product is equipped with an automatic cleaning brush, effectively reducing maintenance, and supports RS485 Modbus output for easy integration. Its IP68 high protection rating design makes it suitable for long-term online monitoring in various water environments such as surface water, drinking water sources, and wastewater treatment.

Product Features

01 Fluorescence Method: High precision, fast response.

02 Automatic Cleaning: Built-in mechanical brush significantly reduces maintenance.

03 Digital Signal Output: RS485 interface, supports Modbus protocol, strong anti-interference.

04 Smart Compensation: Automatically compensates for temperature and environmental changes.

05 Rugged & Durable: Stainless steel housing, Ip68 protection rating.

06 Multiple Installation Methods: Supports installation in pipelines, open channels, tanks, and various other scenarios.

Technical Parameters

Parameter	Cyanobacteria Sensor	Chlorophyll a Sensor
Measurement Parameter	Cyanobacteria Cell Count, Temperature	Chlorophyll a Concentration, Temperature
Range	0-200,000 / 2,000,000 cells/mL	0-50 / 500 µg/L
Resolution	1 cell/mL	0.01 µg/L
Accuracy	≤ ±3% F.S.	≤ ±3% F.S.
Detection Limit	100 cells/mL	/
Calibration Interval	3 months	3 months
Cleaning Method	Mechanical brush auto-cleaning	Mechanical brush auto-cleaning
Protection Rating	IP68 (Note: "lp68" corrected to "IP68")	IP68 (Note: "lp68" corrected to "IP68")
Power Supply/ Consumption	12/24 V DC, <1W (when not cleaning)	12/24 V DC, <1W (when not cleaning)
Communication Interface	RS485 (Modbus RTU)	RS485 (Modbus RTU)
Process Connection	NPT 3/4" thread	NPT 3/4" thread
Sensor Dimensions	Ø40 mm × 160 mm	Ø40 mm × 160 mm

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)
Method	Salicylate Spectrophotometry
Range	(0-2/10) mg/L, expandable to 500 mg/L (adjustable per customer requirements)
Detection Limit	0.01 mg/L
Resolution	0.001 mg/L
Accuracy	±5%
Repeatability	≤5%
Zero Drift	±5%
Range Drift	±5%
Measurement Time	40 min

Linearity	$R^2 \geq 0.999$
Stability	≤±10% over 24 h
Display	7-inch LCD
Ambient Temp.	5-40°C
Max. Power	100 W (Avg. 25 W)
Power Supply	(85-264) VAC, (47-63) Hz; expandable to 20V DC
Dimensions (W×D×H)	≈400 × 300 × 640 mm (excluding protrusions)
Communication	RS485 (MODBUS protocol)
Analog Output	(4-20) mA
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 (PO_4) 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)
Measurement Method	Ammonium Molybdate Spectrophotometry
Range	(0-2/10) mg/L, ≤500 mg/L (adjustable)
Detection Limit	0.01 mg/L
Resolution	0.001 mg/L
Accuracy	±10%
Repeatability	≤5%
Zero Drift	±5%
Range Drift	±10%
Measurement Time	40 min

Linearity	$R^2 \geq 0.999$
Stability	≤±10% (24h)
Display	7-inch LCD
Ambient Temp.	5-40°C
Max. Power	100 W (Avg. 25 W)
Power Supply	(85-264) VAC, (47-63) Hz; Expandable to 24V DC (same for TP/PO_4)
Dimensions (W×D×H)	≈400 × 300 × 640 mm (excl. protrusions, same for TP/PO_4)
Communication	Rs485 (MODBUS)
Analog Output	(4-20) mA
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
Measurement Method	Dichromate Digestion Spectrophotometry
Range	(15-500) mg/L, maximum expandable range ≥ 2000 mg/L (Adjustable, can be configured according to customer requirements)
Repeatability	≤ 5%
Zero Drift	± 5%
Range Drift	± 5%
Accuracy	± 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

Dimensions (W×D×H)	≈ 400 × 300 × 840 mm (excluding protrusions)
Serial Communication	Rs485 MODBUS
Analog Output	(4-20) mA
Ambient Temperature	(5-40) °C
Ambient Humidity	≤ 85% RH (non-condensing)

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
Range	(0-10/20) mg/L, max expandable to 160 mg/L (Adjustable per customer requirements)
Detection Limit	0.5 mg/L
Resolution	0.01 mg/L
Accuracy	±10%
Repeatability	≤5%
Zero Drift	±5%
Range Drift	±5%
Measurement Time	50 min
Linearity	$R^2 \geq 0.995$ (Ra0.995 interpreted as Coefficient of Determination)

Stability	≤±10% within 24 hours
Display	7-inch LCD Screen
Ambient Temperature	5～40 °C
Max. Power	100 W (Average Power: 25 W)
Power Supply	(85-264) V AC / (47-63) Hz, expandable to 24V DC input
Dimensions (W×D×H)	≈400×300×640 mm (excluding protrusions)
Serial Communication	RS485 MODBUS Protocol
Analog Output	(4-20) mA
Ambient Humidity	≤85% RH (non-condensing)

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

01 Unique Digestion Technology: Eliminates the impact of turbidity, making it suitable for high-turbidity water samples.

02 Capacitive Metering: Ensures high precision and excellent repeatability for samples and reagents.

03 Intelligent Digital Temperature Control: A built-in, efficient system with adjustable heating ensures precise temperature management.

04 Comprehensive 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)
Measurement Method	Potassium Persulfate Digestion UV Spectrophotometry
Range	(0-2/10) mg/L, maximum expandable range 500 mg/L (Adjustable per customer requirements)
Detection Limit	0.1 mg/L
Resolution	0.001 mg/L
Accuracy	±10%
Repeatability	≤5%
Zero Drift	±5%
Range Drift	±10%
Measurement Time	50 min

Linearity	$R^2 \geq 0.995$
Stability	≤±10% within 24 hours
Display	7-inch LCD Screen
Ambient Temperature	5～40 ℃
Max. Power Consumption	100 W (Average 25 W)
Power Supply	(85-264) V AC / (47-63) Hz, expandable to 24V DC input
Dimensions (W×D×H)	≈ 400 × 300 × 640 mm (excluding protrusions)
Serial Communication	RS485 MODBUS Protocol
Analog Output	(4-20) mA
Ambient Humidity	≤ 85% RH (non-condensing)

HQ-3600(NO_2) Nitrite Nitrogen Water Quality Auto-Analyzer

The HQ-3600(NO_2) 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

01 Dual-Beam Measurement: Eliminates interference from electromagnetic fluctuations on measurement results.

02 Capacitive Metering: Ensures high precision and excellent repeatability for samples and reagents.

03 Automatic Chromaticity & Turbidity Compensation: Adapts to high-turbidity water bodies.

04 Unique Reagent Formula: Extends reagent shelf life to 3 months.

Technical Parameters

Parameter	Nitrite Nitrogen (NO_2-N)
Measurement Method	N-(1-Naphthyl)-ethylenediamine Dihydrochloride Spectrophotometry
Range	(0-1) mg/L, expandable (Adjustable per customer requirements)
Detection Limit	0.01 mg/L
Resolution	0.001 mg/L
Accuracy	±10%
Repeatability	≤5%
Zero Drift	±5%
Range Drift	±5%
Measurement Time	40 min

Linearity	$R^2 \geq 0.999$
Stability	≤±10% within 24 hours
Display	7-inch LCD Screen
Ambient Temperature	5～40 ℃
Max. Power Consumption	100 W (Average 25 W)
Power Supply	(85-264) V AC / (47-63) Hz, expandable to 24V DC input
Dimensions (W×D×H)	≈ 400 × 300 × 640 mm (excluding protrusions)
Serial Communication	RS485 MODBUS Protocol
Analog Output	(4-20) mA
Ambient Humidity	≤ 85% RH (non-condensing)

HQ-3600(NO_3) Nitrogen Water Quality Auto-Analyzer

The HQ-3600(NO_3) 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

01 Unique Digestion Technology: Eliminates the effects of turbidity, making it suitable for high-turbidity water samples.

02 Capacitive Metering System: Ensures high precision and excellent repeatability for samples and reagents.

03 Intelligent Digital Temperature Control: A built-in, efficient system with adjustable heating guarantees precise temperature management.

04 Comprehensive 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)
Measurement Method	UV Spectrophotometry
Range	(0-2) mg/L, expandable (Adjustable per customer requirements)
Detection Limit	0.05 mg/L
Resolution	0.001 mg/L
Accuracy	±10%
Repeatability	≤5%
Zero Drift	±5%
Range Drift	±10%
Measurement Time	50 min

Linearity	$R^2 \geq 0.995$
Stability	≤ ±10% within 24 hours
Display	7-inch LCD Screen
Ambient Temperature	5 ~ 40 ℃
Max. Power Consumption	100 W (Average 25 W)
Power Supply	(85-264) V AC / (47-63) Hz, expandable to 24V DC input
Dimensions (W×D×H)	≈ 400 × 300 × 640 mm (excluding protrusions)
Serial Communication	RS485 MODBUS Protocol
Analog Output	(4-20) mA
Ambient Humidity	≤ 85% RH (non-condensing)

HQ11-TA5030 Total Alkalinity Analyzer

The ZEMING HQ11-TA5030 Total Alkalinity Analyzer primarily employs chemical methods such as spectrophotometry, potentiometric titration, and colorimetric titration. The instrument utilizes advanced fluid drive technology where the liquid does not contact the peristaltic pump tube, effectively enhancing the tube's durability. Precise titration technology ensures droplet accuracy up to 20 μL. Coupled with a high-performance controller, it guarantees reliability and accuracy throughout the analysis process and in the results.

Product Features

01 Smart Photometric Metering: Utilizes advanced photoelectric detection technology to ensure stable and reliable measurement.

02 Cost-Effective Design: Compact structure combined with low reagent consumption significantly reduces operating costs.

03 Fully Automatic Intelligent Operation: Features automatic calibration, dilution, data storage, and power-off recovery functions.

04 Precise Analysis System: 20 μL/high-precision titration, supports multi-point calibration, ensuring accurate and reliable data.

05 Convenient Remote Management: Standard Rs485/ RS232 interfaces enable remote monitoring and data transmission.

Technical Parameters

Model	HQ11-TA5030
Measurement Parameter	Total Alkalinity
Sampling Method	Via external overflow container
Measurement Method	Hydrochloric acid acid-base titration method
Measurement Range	1000 - 50000 mg/L (as $CaCO_3$)
Accuracy	Better than 2% of full scale when testing standard substances
Detection Limit	≤ 100 mg/L
Sample Requirements	Temp: 10 - 30°C; Max particle size: 100 μm; < 0.1 g/L; Turbidity < 50 NTU
Measurement Cycle	15 - 30 min
Verification Method	Automatic verification

Cleaning Method	Automatic cleaning
Verification Cycle	Freely programmable frequency
Display	LCD screen
Analog Output	4-20 mA, max 500 Ω load; 1 channel standard, up to 8 channels (optional)
Digital Output	Optional: RS232, Modbus (TCP/IP, RS485)
Alarm Output	1 x Fault, 4 x User-configurable; Max 24 VDC /0.5 A, volt-free relay contacts
Protection Rating	IP55 / PANEL PC: IP65
Power Supply	110 - 240 VAC, 4A, 50/60 Hz max, 150 VA
Operating Environment (Measurement Unit)	5 - 35°C ±5°C (avoid direct sunlight and rain); Relative Humidity: 5 - 95% (non-condensing)

Microfluidic Online Water Quality Monitoring Equipment
HQ-6000

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-8000 Series In-Situ Auto-Analyzer

The HQ-8000 Series In-Situ Auto-Analyzer features a compact and small-size design, packaged in a portable carrying case for convenient transportation and use. It can be applied for in-situ and portable monitoring of different water bodies such as surface water, drinking water, wastewater, groundwater, and seawater, and can be integrated into systems like buoys, floating platforms, aquatic platforms, and pontoon boats.

Product Features

01 Equipped with a handheld display for easier debugging and operation.

02 Features depth detection capability, capable of measuring depths up to 100 meters.

03 Features turbidity detection capability, enabling real-time monitoring of water turbidity changes.

04 Features adaptive turbidity testing, allowing real-time adjustment of measurement modes based on water quality changes.

05 Features leak detection capability.

06 Features temperature and humidity detection capability.

07 Low quantification limit, capable of reaching ppb level.

08 Fast heating digestion function, resulting in shorter measurement times.

Technical Parameters

Measurement Parameter	测量方法	测量范围	精度
Ammonia Nitrogen	Salicylate Spectrophotometry	(0~1/10) mg/L (Adjustable per customer requirements)	±5% of reading
	OPA Fluorescence Method	(0~0.5) mg/L (Adjustable per customer requirements)	±5%
Total Phosphorus	Potassium Persulfate Digestion - Ammonium Molybdate Spectrophotometry	(0~1/10) mg/L (Adjustable per customer requirements)	±10%
Total Nitrogen	Potassium Persulfate Digestion - Spectrophotometry	(0~2/10) mg/L (Adjustable per customer requirements)	±10%
Phosphate	Ammonium Molybdate Spectrophotometry	(0~1) mg/L (Adjustable per customer requirements)	±10%
Nitrate Nitrogen	N-(1-naphthyl)ethylenediamine Dihydrochloride Spectrophotometry	(0~0.5) mg/L (Adjustable per customer requirements)	±10%
Nitrite Nitrogen	N-(1-naphthyl)ethylenediamine Dihydrochloride Spectrophotometry	(0~0.2) mg/L (Adjustable per customer requirements)	±10%

Spike Recovery Rate	80% ~ 120%
Measurement Time	20 ~ 50 min
Power Consumption	15 W
Linearity	$R^2 \geq 0.995$
Stability	≤ ±10% within 24 hours
Power Supply	12 V DC
Dimensions	1007 mm (L) x 150 mm (Diameter)
Depth	≤ 50 m
Serial Communication	RS232 or MODBUS
Ambient Temperature	0 ~ 50 °C
Protection Rating	Ip67

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
Residual/ Total Chlorine	DPD Method	(0-2), (0-5) 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 (range optional)	±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 measured parameters and customizable threshold settings.
Digital Output	RS485 (MODBUS RTU protocol)
Optional Analog Output	Multiple 4-20mA analog output channels (optional)
Calibration	Interfaces for turbidity, residual chlorine, pH, conductivity, and analog output channels
Connection Ports	Inlet: 1/4" PE quick-connect fitting; Outlet: 14mm*18mm soft tubing
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)

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

01 Utilizes national standard methods and relevant specificationsfor 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.

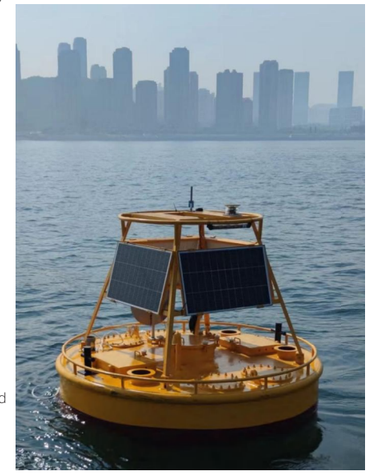
01 Pre-installed anti-biofouling + circulating sampling technology for superior environmental adaptability.

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

01 Low-power design (average power 12W), with stronger endurance in cloudy/rainy weather!

Application Areas

- 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

Meteorological Parameters:

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

Hydrodynamic Parameters:

Flow Velocity, Flow Direction, Non-directional Waves

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

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-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 (NH_3-N), Permanganate Index (COD_{Mn}), Chlorophyll, and Blue-Green Algae, etc.

Application Areas

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

Equipment Configuration:TP, TN, NH_3-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.

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.

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) ℃	±0.1℃	≤±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	±0.3mg/L	±0.3mg/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)

Micro Shore-Based Water Quality Auto-Monitoring Station

Also known as the "Water Quality Sentinel," the Micro Shore-Based Water Quality Auto-Monitoring Station is an integrated system. It utilizes multi-parameter water quality monitors and optical sensors as its core components, powered by green energy sources such as solar and wind power. Employing modern sensor technology, it combines automatic control technology, dedicated data analysis software, and communication networks. This system is suitable for online automatic water quality monitoring of surface water.

Product Features

01 Provides a complete solution with a small footprint (approx. 0.5-2 m²), easy mobility, powerful functionality, and low investment, saving costs associated with land acquisition, station construction, and personnel.

02 Monitoring points can be relocated according to monitoring needs, suitable for long-term continuous online monitoring of different water bodies and temporary emergency monitoring of abnormal water quality.

03 Offers long-term stability with minimal maintenance, resulting in a low total cost of ownership.

04 Continuously, timely, and accurately monitors water quality changes in major urban rivers and discharge outlets; triggers alarms when parameters exceed limits or upon system status signals.

05 Transmits data remotely via GPRS and other communication methods, allowing access to real monitoring data anytime, anywhere.

06 Operates automatically with power-off protection and automatic recovery upon power restoration.

07 Utilizes green power supply systems like solar and wind energy.

System Composition

Water Sampling & Distribution Unit: Water pump, water supply and drainage pipelines, and flow-through cell.

Monitoring Unit: Temperature, pH, Conductivity, Turbidity, DO, Ammonia Nitrogen, Total Nitrogen, Total Phosphorus, COD, BOD, Color, BTX (Benzene, Toluene, Xylene), Turbidity, TOC, H_2S, Spectral Fingerprint, and Spectral Alarm.

Data Processing & Transmission Unit: Data acquisition platform, data processing software, and multiple data transmission methods.

Integrated Cabinet Unit: Cold-rolled steel plate material + electrostatic spray painting process.

Power Supply Unit: Mains electricity or solar power.

Security Unit: Video surveillance security unit (optional).

System Composition

Multi-Parameter Water Quality Monitor

The Multi-Parameter Water Quality Monitor measures parameters including Dissolved Oxygen, Turbidity, pH, Conductivity, and Water Temperature. All sensors feature automatic cleaning. It can store and output measurement data, has a built-in power supply, requires very little operation and maintenance, and is specifically designed for long-term field monitoring.

Simplified Water Quality Auto-Monitoring Station

The Simplified Water Quality Auto-Monitoring Station is a comprehensive water quality automatic monitoring system. It centers on online automatic analyzers, utilizing modern sensor technology, automatic measurement technology, automatic control technology, computer application technology, along with relevant specialized analysis software and communication networks.

Conventional Parameters: Water Temperature, pH/ORP, Conductivity, Dissolved Oxygen, Turbidity, Permanganate Index, Ammonia Nitrogen, Total Phosphorus, Total Nitrogen

Specific Parameters: Fluoride, Heavy Metals, Chlorophyll, Cyanobacteria

Application Scenarios: Automatic water quality and hydrology monitoring at control cross-sections, ecological compensation cross-sections, etc.

Hydrological Parameters: Flow Velocity, Flow Rate, Water Level

System Composition

Water Intake Unit: Includes intake structure, water intake pump, anti-clogging device, water intake pipeline, thermal insulation accessories, cleaning accessories, intake piping, and flushing device. Employs the most suitable water intake method according to local conditions.

Water Distribution & Pretreatment Unit: Ensures water sample representativeness while eliminating factors interfering with monitoring instruments through measures like sedimentation, filtration, and homogenization. Optional cleaning modes: water, air, ultrasonic.

Analysis Unit: Monitoring instruments all employ national standard methods, ensuring accurate and reliable data. The quality control module enables automatic verification of instrument performance indicators like repeatability and accuracy.

System Control Unit: Includes water station control software, industrial control computer, PLC controller, and communication network.

Data Acquisition & Transmission: Automatically executes according to the analysis cycle and implements remote control and backup based on national standard unified communication protocols.

Auxiliary Units: UPS uninterruptible power supply, AC regulated power supply, video surveillance equipment, waste liquid collection device, automatic sampler, security device.

Product Features

01 Comprehensive monitoring parameters, with specific parameters being selectable.

02 Detection using national standard methods, ensuring accurate and reliable data.

03 Freely configurable measurement intervals, enabling frequent data collection within short timeframes.

04 No need for on-site operation; capable of automatic, stable, and long-term operation.

05 Automatic sample retention upon exceeding standards, facilitating laboratory comparison.

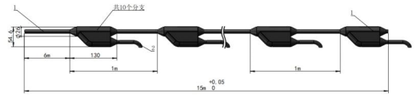
06 Remote monitoring with intelligent SMS alerts.

07 Informatized system enabling intelligent management.

TSC-10 temperature chain profile measurement system

The TSC-10 temperature chain profile measurement system, developed by ZEMING Technology, utilizes DS18B20 sensors to provide multi-point temperature profile measurements. It can be applied in various harsh field environments and scenarios, such as monitoring in boreholes, soil, freshwater, seawater, frost, and permafrost conditions.

The TSC-10 model is equipped with 10 temperature sensors embedded in a robust cable. The cable is made of special reinforced materials, making it sturdy and durable, suitable for long-term operation in the field. ZEMING Technology can provide cables in lengths of 10, 20, or 50 meters, and users can also specify the number of temperature sensors and their spacing. With a fully sealed structure, the temperature chain can be deeply buried, submerged, or directly embedded in building structures.



Product Features

01 Customization: Users can customize temperature measurement spacing for flexible application in various scenarios.

02 Universal Interface: RS485 communication, with one RS485 interface connecting all temperature sensors.

03 Extremely Low Power Consumption: Unaffected by complex field conditions.

04 Easy Operation: Ready to use without calibration.

05 Intelligent Data Management: Temperature probes automatically record information such as serial numbers and installation depth in real-time.

06 Data Reliability: Ensures reliable and stable long-term measurement data.

07 Wide Measurement Range: Broad measuring range and user-friendly.

08 Robust and Durable: Externally reinforced cable enhances safety and durability.

09 Protection System: Provides 5kV surge protection.

Application Case: Qiandao Lake T emperature Chain Monitoring Buoy

Technical Parameters

监测系统技术参数	
Operating Temperature	-55℃ to +80℃
Accuracy	Typical: ±0.2℃ (-40℃ to +85℃) Worst Case: ±0.4℃ (-40℃ to +85℃) ±0.5℃ (-55℃ to +60℃)
Maximum Pressure	150 PSI
Communication Method	RS485 (MODBUS-RTU Protocol)
Temperature Measurement Point Diameter	5 cm
Maximum Temperature Chain Length	155 m
Maximum Number of Temperature Probes	150
Minimum Spacing	12 cm
Power Supply Voltage	3.3 V to 24 V
Operating Current Consumption	Per temperature sensor: 1 mA (max)
Startup Warm-up Time	10 s
Sampling Interval	10 s (minimum)
Length Options	10m, 20m, 50m
Compatible Sensors	Optional: Dissolved Oxygen, Conductivity

Application Fields

- Scientific Research Projects
- Agricultural Monitoring
- Oceanographic Measurement
- Soil Measurement
- Lake Water Quality Profiling
- Hydraulic Facility Monitoring

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

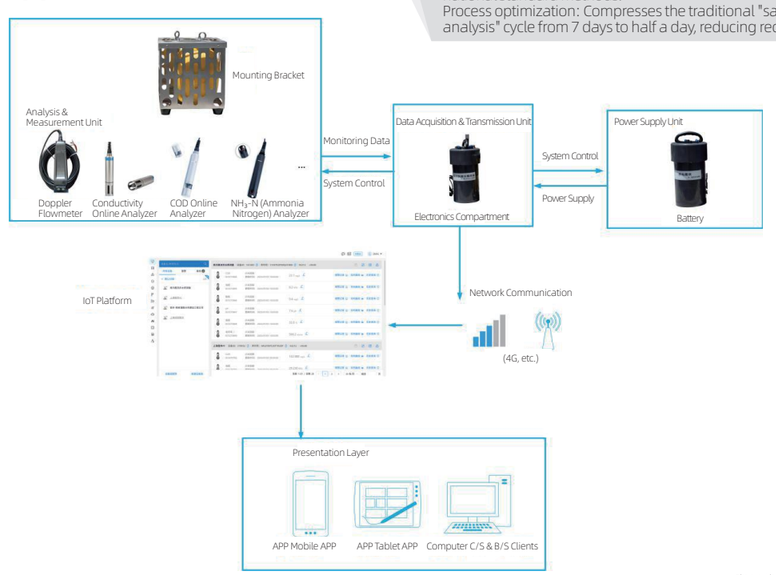
01 Simplified Installation: No entry required, deployed in 1 hour
Innovative floating ball bracket design: 50% smaller size, adaptable for monitoring in shallow water as low as 0.05 meters, with improved data stability in complex environments.No-entry installation technology: Entire process operable 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

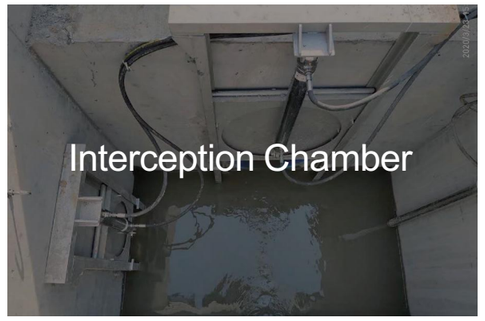
Parameter	Radar Velocity	Radar Level	Ultrasonic Velocity	Pressure Level
Principle	Acoustic Doppler	FMCW	Acoustic Doppler	Hydrostatic
Range	0.03~20 m/s	0.1 ~ 10 m	0.02~6 m/s	0 ~ 10 m
Resolution	0.01 m/s	1 mm	0.01 m/s	1 mm
Accuracy	±1% F.S.	0.5% F.S.	±1% F.S.	0.5% F.S.
Output Power	20 dBm	13 dBm	-	
Beam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

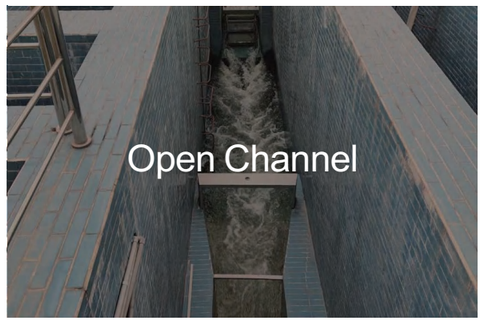
Smart Manhole Monitoring Parameters:

Item	Smart Manhole Monitoring System - 3.0
Power Supply	12V
Lithium Battery	76Ah (Customizable/Expandable)
Communication Protocol	Standard Modbus-RTU Master-Slave Protocol, supports Environmental Protection 212 Protocol, Water Resources 651 Protocol, etc.
Upload Interval	15min (Default)

Auxiliary Functions	Voltage Detection, Sensor Status, Internal Temperature & Humidity Monitoring
Ultra-Long Standby	Continuous operation for over 3 years
Mounting Method	Bracket Mounting
Dimensions	ϕ14*25CM (Control/Power Unit)
Material	UPVC
Parameter Options	pH, Conductivity, Dissolved Oxygen, Turbidity, Temperature, COD, Ammonia Nitrogen, Level, Flow, etc.

Application Scenarios





Stationary Source Waste Gas Non-Methane Total Hydrocarbons Online Monitoring System

ZEMING Technology's Volatile Organic Compounds (VOCs) Online Monitoring System is an end-point monitoring device for industrial VOCs waste gas emissions, serving as a crucial technical means for assessing whether enterprise production meets compliance discharge standards. The system employs a fully heated extraction method to draw gas samples and utilizes Gas Chromatography - Hydrogen Flame Ionization Detector (GC-FID) technology for online monitoring of VOCs emissions from stationary pollution sources. It can simultaneously monitor parameters such as exhaust port temperature, pressure, flow rate, oxygen content, and humidity. The product design fully complies with the requirements of the "Technical Requirements and Test Methods for Continuous Monitoring Systems of Non-Methane Total Hydrocarbons in Stationary Source Waste Gas (HJ1013-2018)."

System Composition

01 Utilizes EPC (Electronic Pressure Control) technology for excellent qualitative and quantitative repeatability and accuracy.

02 Employs differential GC-FID analysis technology, eliminating backflush residue issues and improving system stability.

03 Can integrate specialized jet sampling devices; the system has no rotating parts, ensuring good stability.

04 Supports dynamic management and control technology to meet stringent equipment supervision requirements in regions like Jiangsu and Shandong.

05 The system adopts modular technology, with internal cabinet components designed and installed based on standard 19-inch rack modules, resulting in a small footprint and facilitating daily maintenance operations.

06 The system fully meets all performance and functional requirements of the HJ1013-2018 standard.

Technical Parameters

Measurement Target: Methane and Non-Methane Total Hydrocarbons in stationary source flue gas.
Analysis Method: Online Gas Chromatography - Hydrogen Flame Ionization Detection (GC-FID).
Measurement Range: 0~200 / 2000 mg/m³ (range selectable).
Minimum Detection Limit: 0.05 ppm (for Non-Methane Total Hydrocarbons).
Analyzer Cycle Time: 24-hour fully automatic sampling; Non-Methane Hydrocarbons analysis cycle is 1 minute.
Repeatability: 2% FS.

Gas Supply Requirements:
Air: Dry, clean, 0.4 MPa, 300 ml/min.
Hydrogen: Purity 99.999%, 0.4 MPa, 300 ml/min.
Backflush/Purge Air: Dry, clean, 0.4 ~ 0.7 MPa, 20 L/min.

Calibration Function: Features both full-process calibration (introducing standard gas through the sampling probe) and local calibration capabilities.

Fully Heated Sampling Line: Features a fully heated line from the sampling probe up to the inlet of the gas analyzer.

Chromatographic Column: Placed in a high-temperature oven to ensure column reliability and eliminate interference from other substances.
Built-in Sampling Device: For precise, quantitative sampling.
Sampling Line: Equipped with automatic backflushing function to ensure no sample residue remains in the sampling line.

Application Fields

Suitable for monitoring volatile organic compounds emissions from large industrial pollution sources in industries such as: Petrochemicals, Printing, Spray Painting, Pesticide Production, Electronics Manufacturing, Automotive Manufacturing, Furniture Manufacturing, Footwear Manufacturing, Building Materials, Chemical Industry, Chemical Storage and Transportation, Dyeing and Finishing.

Water-based Online Ecological Automatic Monitoring Fixed Platform

The Water-based Online Ecological Automatic Monitoring Fixed Platform is an offshore online ecological automatic monitoring system suitable for large water bodies. It relies on a large fixed platform built on the water, with core instruments such as online multi-parameter water quality analyzers, nutrient analyzers, and meteorological sensors. It utilizes advanced technological means like modern sensor technology, automatic control, and the Internet of Things, combined with dedicated data management and analysis software.

System Composition

The Water-based Online Ecological Automatic Monitoring Fixed Platform consists of a water-based fixed platform, a power supply system, a data acquisition and wireless communication system, a backend data management and display software system, and core monitoring instruments.

Monitoring Parameters

Conventional Water Quality Parameters:
Water temperature, conductivity, salinity, pH/ORP, turbidity, dissolved oxygen, chlorophyll-a, blue-green algae, fDOM (fluorescent dissolved organic matter), etc.
Nutrient Parameters:
Ammonia nitrogen, nitrate nitrogen, nitrite nitrogen, nitrate, total phosphorus, total nitrogen
Pollutant Parameters:
COD, TOC, DOC, UV254, TSS, chroma, spectral fingerprinting, and spectral alarms, etc.
Hydrological Parameters:
Water level, flow velocity, flow direction, waves, etc.
Meteorological Parameters:
Wind speed, wind direction, air temperature, relative humidity, rainfall, visibility, radiation, etc.

Platform Features

01 Water-based Fixed Platform: A permanent structure with ample space, capable of monitoring numerous parameters and offering high scalability. It provides greater convenience and superior field conditions for conducting various water-based in-situ experiments.

02 Long-term Stability & Low Maintenance: Operates stably over the long term with minimal maintenance requirements, resulting in low overall operational costs.

03 Continuous, Timely & Accurate Monitoring: Continuously, promptly, and accurately monitors changes in the ecological environment, including hydrology, water quality, and meteorology, in the target water body. Alerts and alarms are triggered for parameter exceedances or system status abnormalities.

04 Multiple Wireless Communication Options: Data is transmitted remotely via various optional wireless communication methods, allowing real-time monitoring data to be accessed anytime, anywhere.

05 Automatic Operation & Power Failure Recovery: Runs automatically, includes power-off protection, and automatically resumes operation when power is restored.

06 Green Power Supply: Utilizes green power systems such as solar and wind energy.

07 Optional HD Video Monitoring: Can be equipped with a high-definition video surveillance system to monitor the platform and nearby waters in real time.

08 True Unmanned Operation: Fully automated, requiring no personnel on site for routine operation.

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