PMA5000 Outdoor Compact Automatic Water Quality Monitoring System



1. Product Introduction

The PMA5000 outdoor compact automatic water quality monitoring system consists of a water sampling unit, a pretreatment and water distribution unit, a control unit, an analysis unit, a data acquisition and transmission unit, and an auxiliary unit.

Compared with conventional automatic water quality monitoring systems, this new system boasts distinct advantages. It adopts a customized movable monitoring cabinet, featuring an elegant appearance, easy relocation, low construction cost, high equipment integration, complete functions, and reliable operation. With a small footprint, it eliminates the need for land acquisition, offers a short construction cycle and low investment, making it suitable for extensive deployment. It supports river chief assessment, pollution traceability, water quality evaluation and water quality early warning.

Key Features

- Integrated cabinet occupying less than 1 ㎡, equipped with a heating and cooling air conditioner
- Scientific pretreatment system adaptable to monitoring requirements of different water bodies
- Adopts a modular, intelligent and highly integrated design, delivering the same functional configuration as conventional water stations at a low cost
- Supports water sample measurement, standard sample verification, zero point

verification, span verification, and spiked recovery

- Platform connectivity: Communicates with superior platforms via wired and wireless transmission
- Wired and wireless transmission available to meet multi-scenario outdoor site needs
- Short construction cycle, simple on-site works, easy relocation and rapid off-site reconstruction
- Equipped with power lightning protection to ensure stable system operation
- Optional quality control functions
- Optional UPS (Uninterruptible Power Supply) to provide stable power for all instruments during power outages

Typical Applications

Online water quality monitoring for urban inland rivers, surface water assessment sections, drinking water sources, and river discharge outlets.

Technical Specifications

Module	Parameters
Integrated Cabinet	- Environmental monitoring: Real-time monitoring of cabinet temperature, humidity, smoke and water leakage - Temperature regulation: Built-in air conditioner for cabinet temperature control - Operating ambient temperature: -10℃ to 55℃ - Protection class: IP55 (outdoor rain and dust proof) - Input power: AC 220V±10%, 50Hz - Power consumption: ≤1000W (excluding water pumps and heat tracing cables) - Installation: Floor-mounted - Weight: Approx. 400kg - Dimensions (L×W×H): 1076mm × 864mm × 1995mm
Analysis Unit	- Optional combination of 2 analyzers: Total Phosphorus (TP), Total Nitrogen (TN), Ammonia Nitrogen (NH_3-N), Permanganate Index (CODmn), Chemical Oxygen Demand (CODcr), etc. - Optional combination of 6 probes: pH, conductivity, dissolved oxygen (DO), turbidity, COD, ammonia nitrogen, chlorophyll, cyanobacteria, etc.
Water Distribution & Pretreatment	- Customized water quality pretreatment to meet the requirements of different analysis modules - Backwashing: Equipped with tap water interface and air compressor for

	pipeline flushing
Other Auxiliary Units	- Lightning protection: Power and network lightning protection measures - UPS: Provides uninterruptible power for analysis, data acquisition and transmission units, with a backup duration of 2–4 hours - Temperature regulation: Built-in heating and cooling air conditioner for cabinet temperature control
Basic Water Quality Parameters	- pH: Range 0–14 pH; Accuracy ±0.1 pH - Conductivity: Range 10–5000 μS/cm; Accuracy ±3% or ±3 μS/cm (whichever is larger) - Dissolved Oxygen (DO): Range 0–20 mg/L / 0–200% saturation; Accuracy ±3% of reading or ±0.3 mg/L (whichever is larger) - Turbidity: Range 0–4000 NTU; Accuracy ±2% of reading or ±0.1 NTU (whichever is larger) - Water Temperature: Range 0–45℃; Accuracy ±0.5℃ - Suspended Solids (SS): Ranges 0.01–1000 mg/L / 100–50000 mg/L; Accuracy ±10% of reading (subject to sludge homogeneity) or ±10 mg/L (whichever is larger)
Ammonia Nitrogen (NH_3-N)	- Range: 0–500 mg/L (customizable) - 24h low concentration drift: ≤0.02 mg/L - 24h high concentration drift: ≤1.0% - Repeatability: ≤2.0%
Permanganate Index (CODmn)	- Range: 0–50 mg/L (customizable) - Zero drift: ±5% - Span drift: ±5% - Repeatability: ≤2%
Chemical Oxygen Demand (CODcr)	- Range: 0–50000 mg/L (customizable) - 24h low concentration drift: ±5 mg/L - 24h high concentration drift: ≤2% - Repeatability: ≤2%
Total Nitrogen (TN)	- Range: 0–500 mg/L (customizable) - Zero drift: ≤±2% - Span drift: ≤±2% - Repeatability: ≤2%
Total Phosphorus (TP)	- Range: 0–100 mg/L (customizable) - Zero drift: ≤±2% - Span drift: ≤±2% - Repeatability: ≤2%