TECHNICAL DATASHEET · AQUACULTURE WATER QUALITY MONITORING

T9300Q Online Water Quality Monitoring System for Aquaculture Water

Ammonia nitrogen, nitrite; can integrate DO, pH, ORP, conductivity/salinity, turbidity, etc.

Product Overview

Ammonia nitrogen and nitrite nitrogen are two critical parameters affecting water quality. Changes in their concentrations not only affect the growth of fish and shrimp, but may also threaten their survival.

As a key parameter of shrimp-pond water quality, maintaining the ammonia concentration within a safe range is vital to the healthy growth and stable high yield of fish and shrimp. As an important component in water, ammonia exists in the forms of free ammonia (NH_3) and ammonium ion (NH_4^+). It is an essential nutrient for the water body, but it is also a major cause of eutrophication, becoming a major oxygen-consumption source in culture water and toxic to aquatic organisms such as fish and shrimp.



T9300Q Online Water Quality Monitoring System

Nitrite nitrogen is an important intermediate product of the decomposition of organic matter in culture water. In the dynamic nitrogen cycle of the culture water body, it plays a connecting role and is unstable in nature. Under oxygen-deficient conditions, it is reduced into toxic substances that affect the oxygen-carrying capacity of blood and, in severe cases, can even cause the death of fish and shrimp.

The T9300Q online water-quality monitoring system can continuously and automatically monitor the ammonia-nitrogen and nitrite-nitrogen content in culture water online, and can remotely upload the data to the cloud, allowing customers to view the water-quality data at any time and prevent disasters caused by the deterioration of culture water quality in advance.

Measurement Parameters & Performance

Parameter	Measuring Principle	Range	Resolution / LDL / Error	Repeatability / Zero / Span Drift	Measuring Cycle
Ammonia-N	Salicylic acid spectrophotometry	0–5 mg/L	0.001 / 0.01 / ±10%	±5% / ±5% / ±5%	15 min

Parameter	Measuring Principle	Range	Resolution / LDL / Error	Repeatability / Zero / Span Drift	Measuring Cycle
Nitrite-N	N-1-naphthylethylenediamine spectrophotometry	0–2 mg/L	0.001 / 0.005 / ±10%	±5% / ±5% / ±5%	15 min
pH	Potentiometric method	0–14	0.01 / 0.01 / ±0.1 pH	— / — / —	Real-time
ORP	Potentiometric method	±1000 mV	1 / −1000 / ±10 mV	— / — / —	Real-time
Dissolved Oxygen	Fluorescence method	0–20 mg/L	0.01 / 0.01 / ±0.2 mg/L	— / — / —	Real-time
Conductivity	Electrode method	0–30 mS/cm; 0–500 mS/cm	0.01 / 0.01 / ±1 F.S.	— / — / —	Real-time
Salinity	Electrode method	0–18 ppt; 0–700 ppt	0.1 / 0.1 / ±1 F.S.	— / — / —	Real-time
Turbidity	90° infrared scattering method	0–4000 NTU	0.01 / 5.00 / ±10%	— / — / —	Real-time

Note: LDL = Lower detection limit; Error = Measurement error.

System & Hardware Specifications

Item	Specification	Item	Specification
Measuring Time	Single measuring cycle <30 min	**Data Storage**	5-year data storage
HMI	Touch-screen display and command input	**Input Interface**	Switch input
Signal Output	1-channel RS485 output; 4G wireless transmission	**Calibration Mode**	Manual calibration with standard-solution concentration input
Measuring Mode	Configurable: adjustable time interval, fixed hour, or trigger measurement mode		
Self-Diagnosis & Protection	Self-diagnosis of working status; no data loss on abnormality or power failure; after reset or power recovery, the instrument automatically flushes residual reagents and resumes operation		
Working Environment	Indoor use; recommended ambient temperature 5–28 °C, humidity ≤90% (non-condensing)		
Power Supply	AC 220 V ±10%	**Frequency**	50 ± 0.5 Hz
Power Consumption	<75 W, excluding sampling pump	**Dimensions**	H 700 × W 450 × D 285 mm