

T9013Z

Online Automatic Monitoring Instrument for Orthophosphate Water Quality

Product Description:

Phosphorus Hazards to Marine Life Most marine organisms are highly sensitive to organophosphorus pesticides. Concentrations that cause no reaction in pesticide-resistant insects can rapidly prove lethal to marine life. The human body contains an essential neurotransmitter enzyme called acetylcholinesterase.

Organophosphorus compounds inhibit this enzyme, preventing it from breaking down acetylcholine. This leads to the accumulation of acetylcholine in the nervous system, causing poisoning and potentially fatal outcomes in severe cases. Long-term exposure to low doses of organophosphate pesticides can cause chronic poisoning and may pose carcinogenic and teratogenic risks to humans.

Product Principle:

The water sample, catalyst solution, and strong oxidizing agent digestion solution are mixed. Under high-temperature, high-pressure



acidic conditions, polyphosphates and other phosphorus-containing compounds in the water sample are oxidized by the strong oxidizing agent to form phosphate ions. In the presence of the catalyst, these phosphate ions react with the molybdate-containing strong acid solution to form a colored complex. The analyzer detects this color change and converts it into an orthophosphate value output. The amount of colored complex formed corresponds to the orthophosphate content.

Technical Specifications:

SN	Specification Name	Technical Specifications
1	Test Method	Phosphomolybdenum Blue Spectrophotometric Method
2	Measurement Range	0–50 mg/L (segmented measurement, expandable)
3	Accuracy	20% of full scale standard solution, not exceeding $\pm 5\%$
		50% of full scale standard solution, not exceeding $\pm 5\%$
		80% of full scale standard solution, not exceeding $\pm 5\%$
4	Limit of Quantification	$\leq 0.02\text{mg/L}$
5	Repeatability	$\leq 2\%$
6	24h Low-Concentration Drift	$\leq 0.01\text{mg/L}$
7	24h High-Concentration Bleaching	$\leq 1\%$
8	Measurement Cycle	Minimum test cycle: 20 minutes, configurable
9	Sampling Cycle	Time interval (adjustable), hourly, or trigger measurement mode, configurable
10	Calibration Cycle	Auto-calibration (adjustable from 1 to 99 days), manual calibration can be set based on actual water samples.
11	Maintenance Cycle	Maintenance intervals exceed one month, with each session lasting approximately 5 minutes.
12	Human-Machine Operation	Touchscreen Display and Command Input
13	Self-Diagnostic Protection	The instrument performs self-diagnostics during operation and retains data after abnormalities or power loss. Following abnormal resets or power restoration, it automatically purges residual reagents and resumes normal operation.
14	Data Storage	5-Year Data Storage

15	One-Button Maintenance	Automatically drains old reagents and cleans tubing; replaces new reagents, performs automatic calibration and verification; optional automatic cleaning of digestion cells and metering tubes with cleaning solution.
16	Quick Debugging	Achieve unattended, uninterrupted operation with automatic generation of debugging reports, greatly enhancing user convenience and reducing labor costs.
17	Input Interface	switching value
18	Output Interface	1 channel RS232 output, 1 channel RS485 output, 1 channel 4–20 mA output
19	Operating Environment	Indoor operation, recommended temperature range: 5 – 28°C, humidity $\leq 90\%$ (non-condensing)
20	Power Supply	AC220 $\pm 10\%$ V
21	Frequency	50 ± 0.5 Hz
22	Power	≤ 150 W (excluding sampling pump)
23	Dimensions	520 mm (H) $\times$ 370 mm (W) $\times$ 265 mm (D)