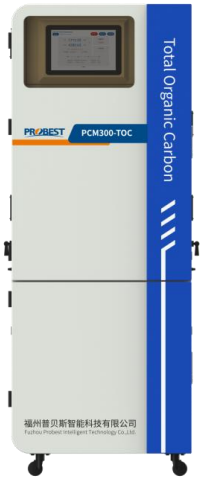
PCM300-TOC Total Organic Carbon Online Water Quality Automatic Analyzer

Measurement Principle



Combustion Oxidation-Nondispersive Infrared Absorption Method. Inorganic carbon-containing substances in the sample are subjected to acidification and aeration treatment, then enter a carbon dioxide-free airflow for high-temperature combustion. An infrared detector is used to measure the carbon dioxide content. Finally, the total organic carbon is calculated based on the carbon content correspondence between carbon dioxide and total organic carbon.

Features

- Adopts a multi-port valve with a ceramic spool, featuring a high wear resistance coefficient, resistance to strong acids and organic solvents, long service life and high stability.
- The condenser uses a spiral glass tube, delivering better cooling effect and higher energy utilization efficiency for incoming high-temperature airflow.
- Constructed with high-efficiency thermal insulation material with a low thermal conductivity coefficient, effectively isolating the temperature difference inside and outside the condenser, reducing energy transfer and enhancing condensation performance.
- Features a well-designed combination of a high-precision thermistor and a low-power condensation chip. Combined with an optimized PID algorithm, it enables highly precise temperature control of the condenser.
- Equipped with a dynamic dilution function, automatically adjusting the dilution ratio based on the on-site set measuring range.
- Supports automatic fault diagnosis, abnormal information uploading and recording, including component failures, over-range alarms, exceedance alarms and gas shortage alarms.
- Automatically discharges residual reactants inside the instrument and restores to the initial working state upon abnormal reset or power recovery after a power outage.
- Has a power-on alarm function, generating alarm information when the instrument is re-powered after a power outage.
- Stores analytical process logs, measurement data and alarm information, with data calculated and recorded hourly for over 3 years. Data can be quickly exported via USB flash drive.
- A 40L nitrogen cylinder lasts approximately 15 days in continuous measurement mode, or about 60 days in gas-saving mode (1-hour measurement interval).
- Lower measurement cost compared with COD (only dilute hydrochloric acid and carrier gas are used), no waste liquid discharge, completely eliminating secondary pollution from waste liquid.
- Features three-level management authority.

Application

- Online monitoring of total organic carbon in surface water, domestic sewage and industrial wastewater.

Technical Specification

Range	0-50 mg/L (customizable)
Measuring Range	0-10000 mg/L
Indication Error	5-100 mg/L: ≤±10% at 20% of full scale; ≤±8% at 50% of full scale; ≤±5% at 80% of full scale; >100 mg/L: ≤±5%
Quantification Limit	≤5 mg/L (Indication error: ±30%)
Repeatability	≤5%
Low-concentration Drift	≤±1 mg/L (5-100 mg/L range)
High-concentration Drift	≤5%
Resolution	0.01 mg/L
Display	10-inch touch screen
Measurement Mode	Continuous, periodic, fixed-point, controlled, manual
Measurement Cycle	<15 minutes
Calibration Mode	Manual calibration, automatic calibration
Maintenance Cycle	Once per month (general)
Power Supply	220V±10%, 50Hz±1Hz
Power Consumption	Average: 300W; Peak: 500W
Output	Two 4-20mA outputs, four relay outputs, one controlled power supply (≤500W)
Input	Two switch inputs (triggerable for instrument measurement)
Communication	RS485, RS232, RJ45 (one each)
Ambient Conditions	Temperature-controlled indoor space, recommended +5～40℃; Humidity ≤85% (non-condensing)
Dimensions & Weight	600mm×442mm×1575mm; 100kg