MDS-EC90B Electrode EC Salinity Digital Sensor

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Product Introduction

The MDS-EC9OB four-electrode conductivity-salinity digital sensor employs a four-electrode measurement principle, separating the excitation electrode from the sampling electrode to effectively avoid measurement deviations caused by electrode polarization effects, ensuring accurate and reliable data. The product is suitable for aquaculture, water quality testing, process control, equipment integration, scientific research, and IoT-based water quality monitoring. The sensor features wide-range adaptive capability, enabling continuous monitoring of solutions of varying concentrations without manual range switching.

The built-in isolated power supply design significantly improves on-site anti-interference performance and ensures stable data transmission. The electrodes are made of corrosion-resistant materials, and the planar structure design prevents contaminant adhesion, simplifying daily cleaning and maintenance. The digital electrode architecture integrates a standard RS485 interface and MODBUS-RTU communication protocol, allowing users to remotely read data, calibrate, and adjust parameters via a host computer, greatly simplifying system integration and maintenance. It is a reliable tool for water quality testing and process control.

Features

1. The four-electrode separation design effectively eliminates polarization effects. Combined with an isolated power supply, it ensures stable and reliable long-term monitoring data and strong resistance to on-site interference.
2. Supports continuous monitoring of different water qualities, including freshwater and seawater. The electrode material is corrosion-resistant, the planar structure is easy to clean, and it offers excellent environmental adaptability and ease of maintenance.
3. Adopts the standard MODBUS-RTU communication protocol and RS485 interface, facilitating remote parameter setting, calibration, and rapid integration with various industrial control systems.
4. No manual range switching is required across the entire measurement range. It automatically adapts to changes in solution concentration, simplifying on-site operation and lowering the barrier to entry.
5. Built-in temperature compensation function automatically corrects measurement data based on actual water temperature, improving the accuracy of conductivity and salinity readings under different temperature conditions.
6. Wide voltage power supply design with low power consumption. The digital electrode structure simplifies the signal processing of traditional analog sensors, enabling plug-and-play operation and more efficient system integration.

Technical parameters

Item	Specifications
Measurement Parameters	Water Temperature / Salinity / Conductivity / TDS
Measuring Principle	4-electrode Conductivity Sensor
Electrode Material	Hastelloy, Graphite
Measuring Range	Conductivity: 0.1~500 mS/cm Salinity: 0~500 ppt
Resolution	Conductivity: 1 µS/cm, 0.01 mS/cm; Salinity: 0.01 ppt
Temperature Range & Resolution	-20~60°C / 0.1°C
Cell Constant	0.22±0.05
Measuring Accuracy	Conductivity: 1.5%FS; Temperature: ±0.5°C
Data Compensation	Default compensation temperature 25.0°C, 2%/°C (adjustable)
Communication Interface & Protocol	RS485 Interface, MODBUS-RTU Protocol
Calibration & Parameter Setting Method	Remote parameter setting via RS485
Housing Material	PC+PVC (POM)
Power Supply	6-30 VDC
Power Consumption	0.3 W