

Datasheet

Dissolved Oxygen Sensor

SUP-DO7000

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Datasheet

Membrane Dissolved Oxygen Digital Electrode
SUP-DO7000

DO digital sensor is designed for the water industry. Equipped with RS485 digital serial ports, it can be used for measuring the variation of DO value of water-dissolvent fluid system within the measuring range. It has standard RS485 Modbus RTU protocol function and allows remote communicate with upper computer.

Applications

- Aquaculture
- Wastewater
- Fish hatcheries
- Surface water
- IoT water quality testing



Membrane Dissolved Oxygen Digital Electrode

Features

- Isolated power supply design, data stability, strong anti-interference ability
- Mature sensor manufacturing process, high reliability, good long-term work stability
- Extended maintenance intervals with durable dissolved oxygen electrolyte formulations
- RS485 communication

Principle

The principle of the membrane-based digital dissolved oxygen electrode relies on electrochemical sensing technology combined with gas diffusion. It employs a thin membrane as the sensor, where the concentration of dissolved oxygen in the solution is measured by detecting changes in electrical conductivity or resistivity. The membrane facilitates the diffusion of oxygen gas from a gas chamber, typically filled with air, into the solution. The electrode utilizes the principle of electrochemical oxidation-reduction reactions at the membrane interface to generate a current that is proportional to the dissolved oxygen concentration, thus enabling accurate digital measurement of dissolved oxygen levels in the solution.

Parameters	
Measurement	DO value in water
Measure range	0...20mg/l
Resolution	0.01mg/l
Measuring accuracy	± 2%
Pressure range	0...2bar
Temperature range	0...60 ℃
Output signal	RS485, 4...20mA
Shell material	PC+316SS,ABS,POM
Pipe thread	M39*1.5, G3/4
Cable length	5m or customized
Respone time	10s
Power supply mode	12VDC
Protection grade	IP68

Wiring

Sensor power supply	12VDC
Working current	25 mA
Communication interface	RS485
Communication format	N 8 1
Baud rate	9600
Communication protocol	Modbus-RTU

Color	Brown	Blue	White	Black
Notes	12V+	GND	485A	485B

Wiring definition for DO digital sensor

Wiring definition