



Recorder



Flow



Pressure



Temp



Analyzer



Level

Datasheet

Membrane Dissolved Oxygen

Digital Electrode

SUP-DO-7013

Supmea[®]

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Datasheet**Membrane Dissolved Oxygen Digital Electrode
SUP-DO-7013**

DO digital sensor is designed for aquaculture 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
- Water quality testing
- IoT water quality testing

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
- Communication rate: 4800/9600 (default)/14400/19200
- Support automatic temperature, manual atmospheric pressure, seawater salinity compensation
- RS485 communication

**Membrane Dissolved Oxygen Digital Electrode**

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	0~20.00mg/l
Resolution	0.01mg/l
Temperature range	-20~60° C
Type of sensor	Galvanic Cell sensor
Measuring accuracy	<0.5mg/l
Output mode	RS485 port*1
Communication protocol	Compatible with standard MODBUS-RTU protocol
Communication mode	RS485 9600,8,1,N (by default)
ID	1~255 Default ID 01 (0x01)
Fixing method	RS485 remote setting calibration and parameters
Power supply mode	12VDC
Power consumption	30mA @12VDC

Wiring

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

Wiring definition for DO digital sensor

Color	Red	Black	Green	White
Notes	12V+	GND	485A	485B

Wiring definition

Ordering code

SUP-DO-7013 -2-A-B-05-GA						Description
SUP-DO-7013		-	-	-	-	-
Temperature Compensation Type	2					NTC 22K
Output		A				RS485
Power Supply			B			12VDC
Cable Length				05		5m
				10		10m
				15		15m
				20		20m
				30		30m
				XX		Others
Housing Material and Thread Type				GA		Engineering Plastic, G3/4 Thread
				GF		Engineering Plastic, G1/2 Thread
				RE		Engineering Plastic, No