Datasheet

Fluorescence Dissolved Oxygen Electrode

SUP-DO-7019

Supmea®

Committed to process automation solutions

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DO monitoring is the most critical water quality parameter in aquaculture. Our ODO series aquaculture optical dissolved oxygen sensor is specially designed for aquaculture applications. With embedded temperature sensor and robust RS485 digital signal output, the sensor can be seamlessly connected to our online controller. The sensor can be easily integrated into wireless sensor network and automation controls.

Applications

- River, lake and ocean monitoring
- Wetland ecosystem monitoring
- Shrimp and shellfish farming
- Food and beverage industry
- Oceanographic and limnological studies
- Research in aquatic biology

Fluorescence Dissolved Oxygen Electrode

Features

- Digital output, support RS485 / MODBUS.
- No membrane, No electrolyte, No chemical interference, No frequent calibration required. No oxygen consumption, No flow dependent.
- Specially designed for aquaculture application.

Principle

Fluorescence is a phenomenon in which a substance absorbs light at a certain wavelength (usually ultraviolet or visible light) and then emits light at a longer wavelength. When a molecule in the substance is excited by the absorbed photons, its electrons jump to a higher energy level. Subsequently, these excited electrons return to a lower energy level, releasing the excess energy in the form of light. This emitted light is what we observe as fluorescence. It has numerous applications, such as in biological imaging where fluorescent dyes are used to label cells and molecules for better visualization, in environmental monitoring to detect pollutants, and in analytical chemistry for identifying and quantifying substances.

Parameters	
Principle	Fluorescence
Range	0-20mg/ L or 0-200 % saturation
Measurement Accuracy	±3%
Response Time	60s
Maximum Depth	30m
Temperature Range	0 ~ 50℃(non-freezing)
Temperature Accuracy	±0.5℃
Sensor Interfaces	RS-485, MODBUS protocol
Power Requirements	DC 9~24V， current <50mA
Construction	M22*1.5(optionally convertible to NPT3/4 thread), submersible installation
Sensor Size	Φ22mm*152.7mm
Probe Cable Length	10m (default), customizable
Calibration	One-point or two-points calibration
Fluorescent Cap Life	1 Year（at normal use）
Body Materials	316L / Ti

Wiring

Wire AWG-24 or AWG-26 shielding wire. OD=5.5mm

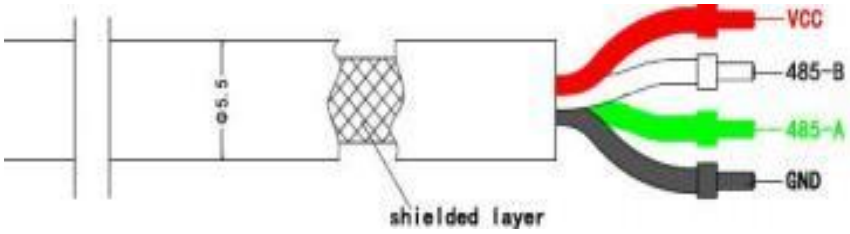
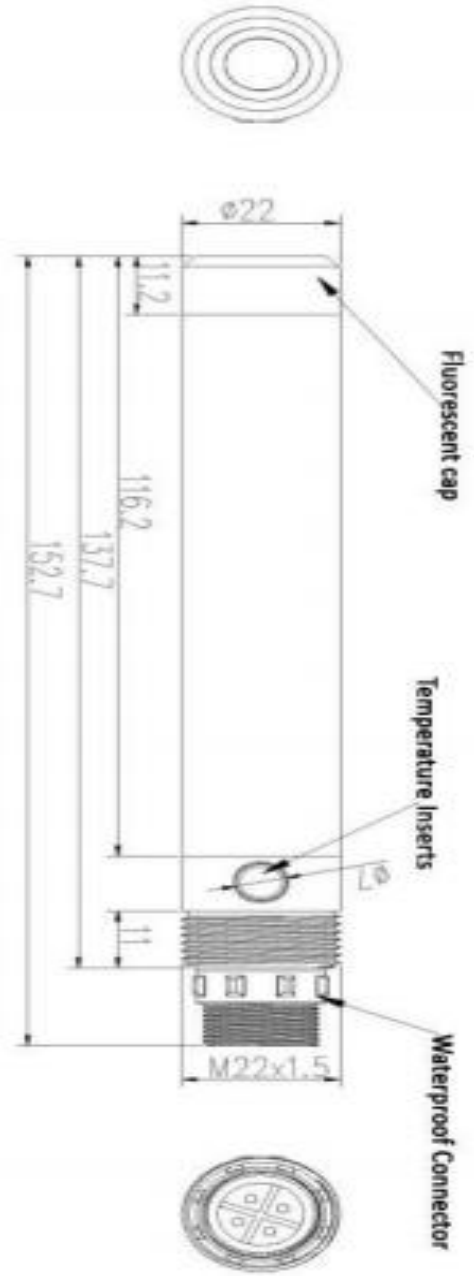


Table 1

1. Red—Power (VCC)
2. White—485 Date_B (485_B)
3. Green—485 Date_A (485_A)
4. Black—Ground (GND)

Dimension


ø22
11.2
116.2
137.7
152.7
11
M22x1.5
Fluorescent cap
Temperature Inserts
Waterproof Connector

Installation

Installation

(1) Wiring and Power Supply
① The female and male connector of sensor cable should be screwed tightly to avoid moisture incursio.
② Do not use the sensor cable to suspend the sensor! It is recommended to install a cable protection sleeve to ensure that the cable is powered and watertight.
③ Make sure power supply voltage is correct before power on.
(2) Sensor Installation
① It is recommended to install the sensor vertically with electrodes facing down.
② Considering water level change, the sensor should be installed 30cm below water level. The sensor should not be installed no more than 2m below water surface for maintenance purpose.
③ The sensor must be securely installed to avoid damage caused by water flow and other things.

Ordering code

SUP-DO-7019-A-B-10-RC					Description
SUP-DO-7019	-	-	-	-	
Output	A				RS485
Power Supply		B			12VDC
Cable Length			10		10m
			20		20m
			30		30m
			XX		Others
Housing Material and Thread Type				RC	316LSS，M22×1.5
				RD	Titanium，M22×1.5