Datasheet

Fluorescence Dissolved Oxygen Electrode

SUP-DO-7018

TOTAL PRESSURE SOLUTIONS

Datasheet

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Optical dissolved oxygen sensor measures dissolved oxygen using the principle of oxygen dynamic luminescence quenching technique. When blue light excites sensor film, the sensing film emits red light. The phase difference between the blue excitation and returned red emission is measured, and the result is used to calculate DO concentration.

Applications

- Aquaculture
- River and lake monitoring
- Marine environmental monitoring
- Wastewater treatment process control
- Food and beverage industry
- Chemical industry

Fluorescence Dissolved Oxygen Electrode

Features

- Membraneless, no electrodes design No oxygen consumption
- Flow Independent
- Automatic temperature compensation No H2S Interference
- Low Drift, fast response, and more accurate Low Maintenance, low operating cost
- Easy sensor cap replacement
- RS-485; MODBUS protocol compatible

Principle

The fluorescence - based dissolved oxygen electrode operates on the principle of fluorescence quenching. The electrode contains a fluorescent dye. When the electrode is immersed in a sample solution, a light source (usually a blue - green light) illuminates the dye. The dye emits fluorescence in the absence of oxygen. However, the presence of dissolved oxygen in the solution causes the fluorescence to be quenched or reduced. The degree of quenching is directly related to the concentration of dissolved oxygen. A detector measures the change in fluorescence intensity, and through a calibration curve and associated electronics, this change is translated into a measurement of the dissolved oxygen concentration in the solution. This allows for a reliable and accurate determination of the amount of dissolved oxygen present.

Parameters	
Range	0-20mg/L or 0-200% Saturation
Response Time	10 sec
Housing IP Rating	IP68
Accuracy	±1%
Drift	<1% per year
Working Temperature Range	0 ~ 50℃
Temperature Accuracy	±0.2℃
Interface	Support RS-485， MODBUS protocols
Construction	3/4 inch NPT
Power Requirements	DC：6~24V+/-5%， current<50mA
Temperature Sensor Type	NTC
Sensor OD	26mm
Sensor Length	177.5mm
Cable Length	10m standard; 5m, 15m, and 30m optional
Calibrations	Support one point and two-points calibrations
Sensor Cap Lifetime	1 Year（at normal use）
Body materials	Ti 2

Wiring

1 、 Power Supply Requirements

Power Supply DC 8-26V ±10% ， Current <50mA

2 、 Sensor Cable

4 wire AWG-24 or AWG-26 shielding wire. OD=5mm

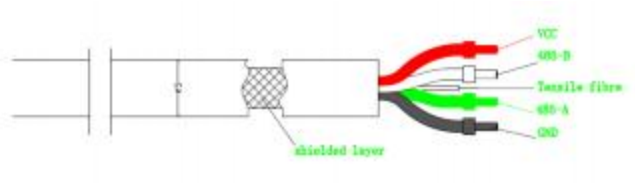
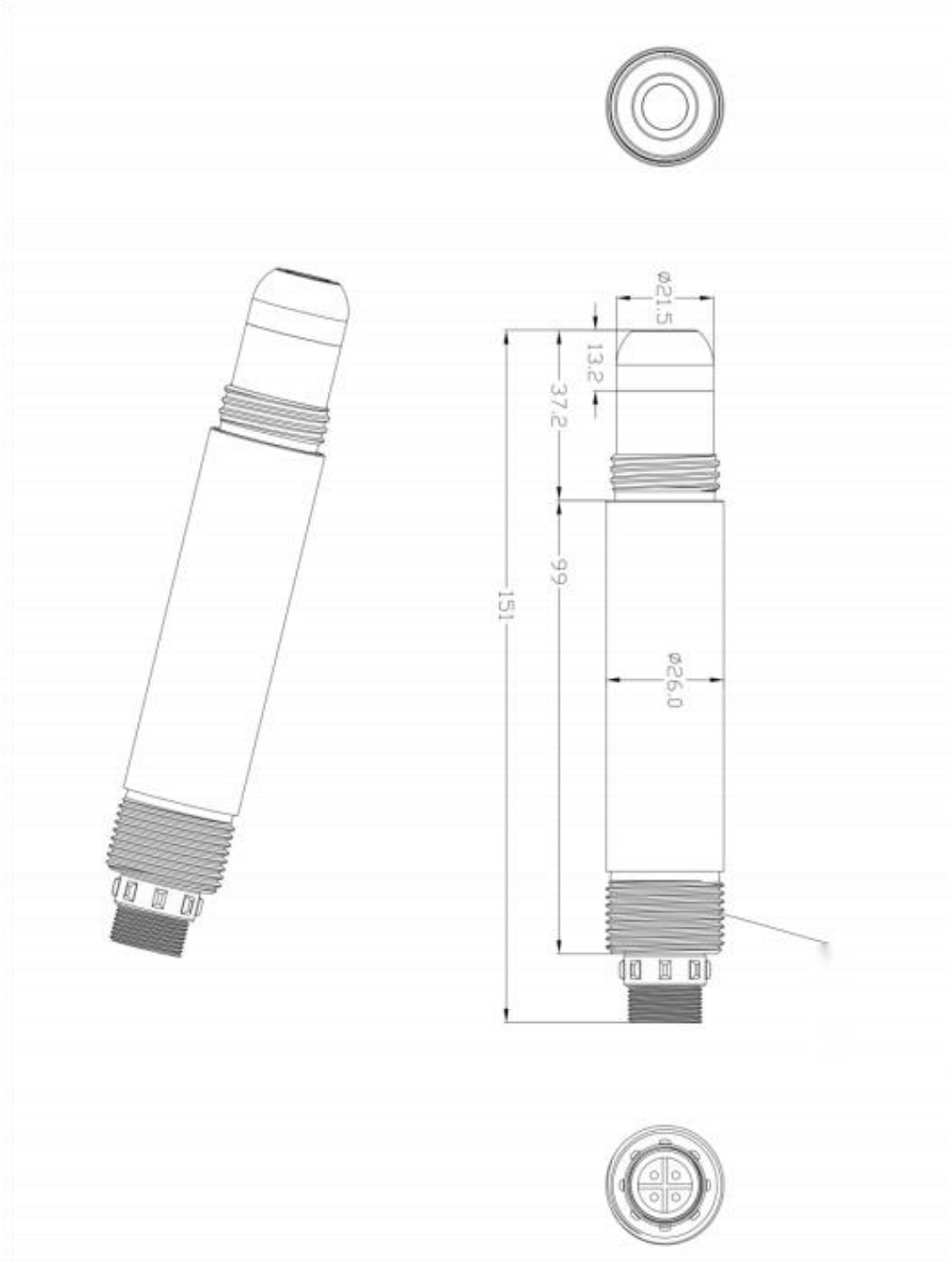


Fig. 2

Table 1

1, Red—Power (VCC)
2, White—485 Date_B (485_B)
3, Green ---485 Date_A (485_A)
4, Black --- Ground (GND)
5, Bare wire ---- shield

Dimension



Installation

Installation

Part List

Item	Number	Note
ODO Sensor	1	
Cable	1	10m
Protective Cover	1	
Rubber Protective Cap	1	

Before Use

1) Take off the protect cap: Please take off the protect cap of Optical dissolved oxygen sensor , before installation and keep them properly for future use.Meanwhile, tighten the protective cover.

Sensor Installation

1) Wiring and power supply:

- The female and male connector of sensor cable should be screwed tightly to avoid moisture incursion
- Do not use the sensor cable to pull the sensor! It is required to install sensor in a secure and stable mounting bracket.
- Make sure power supply voltage is correct before power on.

2) Sensor installation:

- It is recommended to install the sensor vertically with electrodes facing down.
- 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.

The sensor must be securely installed to avoid damage caused by water flow and other things.

Ordering code

SUP-DO-7018 -A-B-10-GE					Description
SUP-DO-7018	-	-	-	-	
Output	A				RS485
Power Supply		B			12VDC
Cable Length			10		10m
			20		20m
			30		30m
			XX		Others
Housing Material and Thread Type				GE	Titanium，G3/4 Thread