LDO01
Fluorescence dissolved oxygen transmitter
Analog type user manual

SIBO.X INDUSTRIAL CO.,LTD.
Add: No. Building 1, No. 1, Jingshi Road, Cicheng Town Industrial Park, Jiangbei District, Ningbo City, Zhejiang, China
https://www.sbxsun.com
Email: info@sbxsun.com
Tel: +86-15958288207

Table of Contents

1. Product Introduction

This product is a device designed to measure the dissolved oxygen concentration in solutions, utilizing the fluorescence measurement principle. It does not consume oxygen and does not require an electrolyte. Equipped with a built-in temperature transmitter, it features automatic temperature compensation. The calibration function offers a more convenient and straightforward method for calibration. It uses imported-grade fluorescent diaphragms. This device is suitable for a wide range of applications, including water treatment, aquaculture, and environmental monitoring. It provides analog outputs, including 4~20mA, 0~5V, and 0~10V options.

1.1 Functional features

- Dissolved oxygen measurement range 0~20mg/L (0~200% saturation).
- Analog output, 4~20mA; 0~5V; 0~10V optional.
- The equipment uses wide voltage supply, DC 10~30V can be used (0~10V power supply DC 24V).
- Use fluorescent diaphragm with imported quality.
- The principle of fluorescence measurement is used, which does not consume oxygen and does not require electrolyte.

1.2 Equipment technical parameters

supply electricity	DC 10~30V (0~10V power supply DC 24V)
power dissipation	≤0.8W
Analog output	4~20mA; 0~5V; 0~10V optional
measuring principle	fluorimetric method
measuring range	0~20mg/L (0~200% saturation)
measurement error	±3%FS
resolution ratio	0.01mg/L
response time	≤60s
Working conditions of the equipment	Probe: 0~40℃ Wang's shell: -40℃~60℃,0%RH~95%RH (non-condensation)
Fluorescent membrane life	It can be used normally for one year
classification of waterproof	Probe: IP68 Wangzi shell: IP65
Probes are pressure resistant	0.6MPa
The electrode wires are long	The default is 5m
Shell material	Corrosion resistant plastic, stainless steel

1.3 Product selection

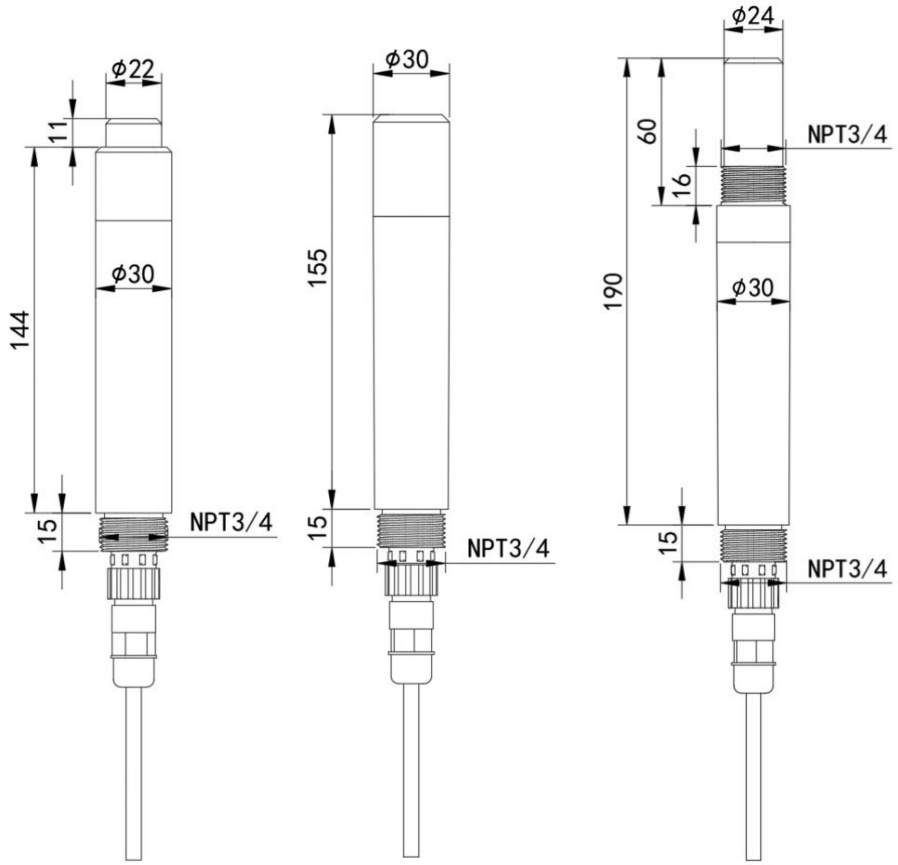
LDO01-				Fluorescence dissolved oxygen transmitter
	I20-			4~20mA
	V05-			0~5V
	V10-			0~10V
		2-		conventional type
		3-		economical
		4-		The circulation type
			20	0~ 20.00mg/L (0~ 200% saturation, 25℃)

1.4 Product List

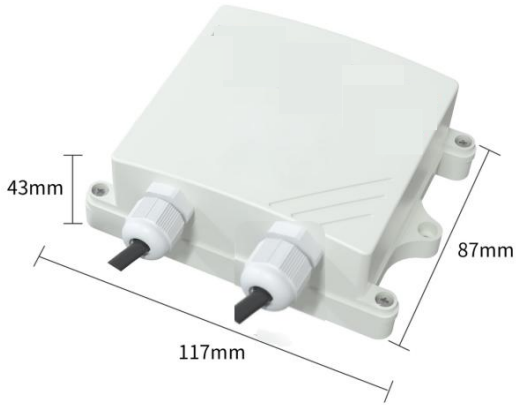
- One fluorescence dissolved oxygen transmitter
- One shell conversion module for the king character
- 5m cable
- Certificate of conformity, warranty card, etc

1.5 Equipment size

-2： -3： -4： Unit：mm



Overall size: 117x87x43mm (Max)



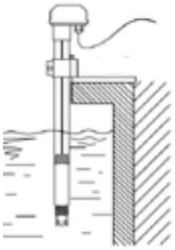
1.6 Equipment installation

The probe should be fixed and installed below the water surface, and avoid collision or scraping the surface of the fluorescent film head during installation and use. The fluorescent film head part should avoid being attached to the sediment at the bottom of the water. Remove the rubber protective cover when using.

Submerged installation:

It has NPT3/4 thread, which can be used with our waterproof pipe. The cable is inserted out of the pipe and the equipment is screwed into the thread of the waterproof pipe.

Submersible installation



2. Equipment usage instructions

2.1 Wiring instructions

	explain	explain
electricity source	brown	Power supply positive (10~30V DC)
	black	The power supply is negative
letter No	blue	The analog quantity is positive
	Yellow (green)	The analog quantity is negative

2.2 Calculation method

2.2.1 Calculation of current type output signal conversion

For example, with a range of 0 to 20mg/L and 4 to 20mA, when the output signal is 12mA, the current dissolved oxygen concentration is calculated. The range for dissolved oxygen concentration spans 20, and this is represented by a current signal of 20-4=16mA.

20mg/L/16mA=1.25mg/L/mA, which means that a 1mA change in current corresponds to a 1.25mg/L change in dissolved oxygen concentration. The measurement value 12mA-4mA=8mA,8mA*1.25mg/L/mA=10mg/L is 10+0=10mg/L, indicating that the current dissolved oxygen concentration is 10mg/L.

2.2.2 Voltage type output signal conversion calculation

For example, with a range of 0 to 20mg/L and an output of 0-10V, when the output signal is 5V, the current dissolved oxygen concentration is calculated. The dissolved oxygen concentration spans 20 units, which can be represented by a 10V voltage signal. The ratio is 20mg/L/10V=2mg/L/V, meaning a 1V change in voltage corresponds to a 2mg/L change in dissolved oxygen concentration. The measurement value is 5V-0V=5V, and 5V*2mg/L/V=10mg/L. Adding 10 to 0 gives 10mg/L, indicating that the current dissolved oxygen concentration is 10mg/L.

3. Precautions and maintenance

- If the equipment has obvious faults, please do not open it for self-repair, contact us as soon as possible!
- The front end of the device should avoid collision or scratch, any damage will lead to the decrease of measurement accuracy or even unusable.
- Avoid using in organic solvents and avoid using organic solvents to clean the fluorescence cap.
- When installing the equipment, try to avoid cable tension or force.
- Equipment cleaning:

  For the outer surface of the equipment; can be cleaned with tap water, wipe with a soft cloth, for some stubborn dirt, can be added to tap water with some household detergent to clean;

For the outer surface of the fluorescence cap, rinse the dirt on the sensor window with clean water; if you need to wipe it, gently wipe it with a soft cloth, do not scratch it hard, so as not to damage the fluorescence film and cause inaccurate measurement and unable to measure.

If dust or moisture enters the fluorescence cap: Remove the cap and rinse the inner surface of the cap and the optical glass window of the device with tap water. If there is grease or other contaminants, use tap water mixed with household detergent to clean it. Rinse off the detergent, dry all cleaned surfaces with a soft, lint-free cloth, and store the cap in a dry place to allow the water to evaporate completely.

It is recommended to clean it every 30 days.

- Before measurement, remove the black rubber protective cover.
- When storing for a long time, add water to the sponge inside the protective cover and squeeze out any excess moisture to keep the fluorescent film moist. Ensure the temperature is above 0℃

to prevent the fluorescent film from freezing and being damaged. For dry storage, the temperature can be as low as-10℃. Before use, soak the equipment in water for 48 hours to restore the fluorescent film's responsiveness.

- It is recommended to replace the fluorescent film once a year.
- The equipment should be calibrated before each measurement. It is recommended to calibrate the equipment every 3 months for long-term use. The calibration frequency should be adjusted appropriately according to different application conditions (such as dirt degree of the application site, deposition of chemical substances, etc.).
- Do not put the plug part into water before locking the cable plug and device plug.