RK500-04 Dissolved Oxygen Sensor

Overview

RK500-04 Dissolved Oxygen (DO) Sensor is based on the principle of quenching excited fluorescence by specific substances in physics. When the excited light is irradiated on the fluorescent substance on the surface of the fluorescent film head, the fluorescent substance is excited and emits fluorescence. The fluorescence extinction time is affected by the concentration of oxygen molecules on the surface of the fluorescent film head. So the oxygen molecule concentration can be calculated by detecting the fluorescence extinction time. By using green light and unique phase technology, the membrane lifespan attenuation is reduced, and it can be used for more than 2 years without the need for calibration. DO sensor can be widely used in chemical fertilizer, metallurgy, environmental protection water treatment engineering, pharmaceutical, biochemical, food, aquaculture and water such as continuous monitoring of dissolved oxygen in the solution.

Features

- Simple operation and high reliability
- No external module, a whole design
- Long service life, maintenance-free
- Dissolved oxygen and temperature measurement at the same time (RS485)
- No requirement for liquid velocity
- Not affected by ions

Applications

- Environmental protection
- Water quality monitoring
- Aquaculture
- Clean in place (CIP)
- Sewage treatment
- Industrial wastewater treatment

Technical Parameter

Type	A		B		C	
	Economy		Performance Edition		Strong anti-corrosion	
Application	Farming, freshwater aquaculture，river channels etc		Industrial control, general sewage, environmental		Mariculture, strongly corrosive sewage, complex scenes	
Sensor	DO	Temperature	DO	Temperature	DO	Temperature
Range	0-20mg/L	0-60℃	0-20mg/L 0-50mg/L	0-60℃	0-20mg/L 0-50mg/L	0-60℃
Accuracy	0.3 mg/L	±0.5℃	0.2mg/L	±0.5℃	0.2mg/L	±0.5℃

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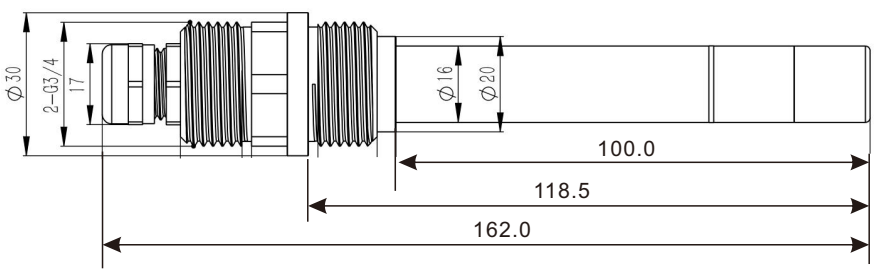
Technical Parameter

Type	A		B		C	
Sensor	DO	Temperature	DO	Temperature	DO	Temperature
Resolution	0.01mg/L	0.1℃	0.01mg/L	0.1℃	0.01mg/L	0.1℃
Repeatability	0.1mg/L		0.05mg/L		0.05mg/L	
Response time	T90<100S		T90<40S		T90<40S	
Stability	Drift <0.3mg/L/year		Drift <0.2mg/L/year		Drift <0.2mg/L/year	
Material	Fluorescent cap: 316L, other : ABS		All stainless steel 316L		Fluorescent cap: titanium alloy, other : gray nylon plus fiber	
Principle	Fluorescent					
Temperature compensation	Thermal resistance					
Thread	Lower: NPT3/4, Upper:NPT3/4					
Installation method	Pipe or dip (IP68)					
Operating temperature	-5 - +60℃					
Working pressure	0.8Mpa					
Supply	7-28VDC					
Power consumption	<0.2W					
Output	RS485 & 4-20mA at the same time					
Ingress protection	IP68					
Cable length	5m default, other length customizable					
Weight(probe)	0.7kg					
Storage	-20 - +80℃					

Dimensions

Unit:mm

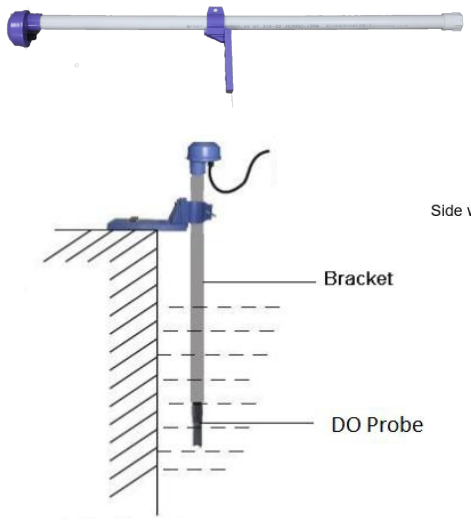


Thread:Lower:NPT3/4,Upper:NPT3/4

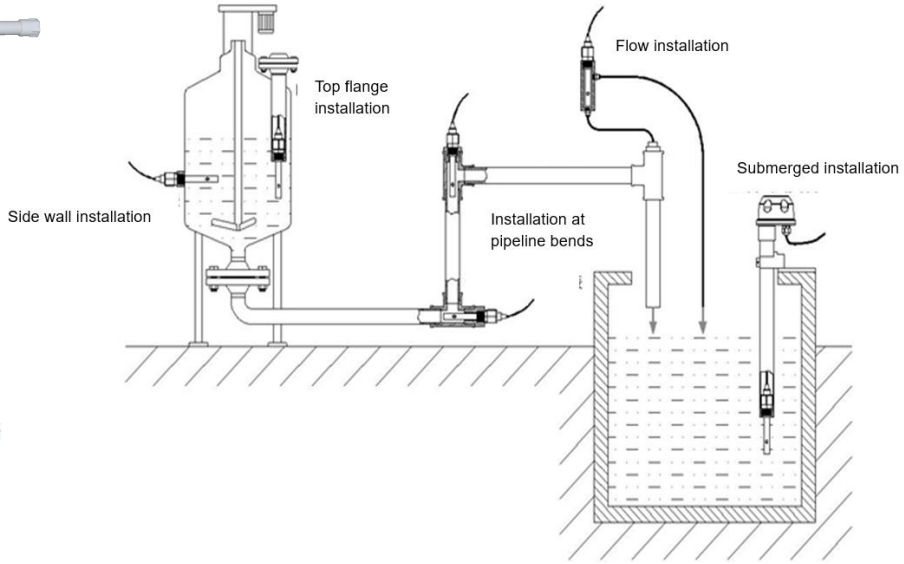
Installation & Usage

- Put directly into the liquid
- Adopt submersible mounting bracket（showin the below figure)

Mounting bracket（length=1m):



Probe immersion installation



Attention: Regardless of the installation method used, please avoid bubbles in the conductivity cell.

Parameter Selection Table

Remark	Series	Type	Supply	Accessory	Cable Length	
RK						
	500-04					
		A				Economy
		B				Performance Edition
		C				Strong anti-corrosion
			A			7-28VDC
			X			Other
				A		With mounting bracket
				N		Without mounting bracket
					5000	Unit(mm)
					...	Unit(mm)

Example: RK500-04BAN Type B, Supply:7-28VDC, Without mounting bracket,Cable length:5m.

Revision time	Reviser	Current Version	Remarks
20250425	Lee	V5. 0	