



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°C	0-20mg/L 0-30mg/L	0-60°C	0-20mg/L 0-30mg/L	0-60°C
Accuracy	0.3mg/L	±0.5°C	0.2mg/L	±0.5°C	0.2mg/L	±0.5°C
Sensor	DO	Temperature	DO	Temperature	DO	Temperature
Resolution	0.01mg/L	0.1°C	0.01mg/L	0.1°C	0.01mg/L	0.1°C



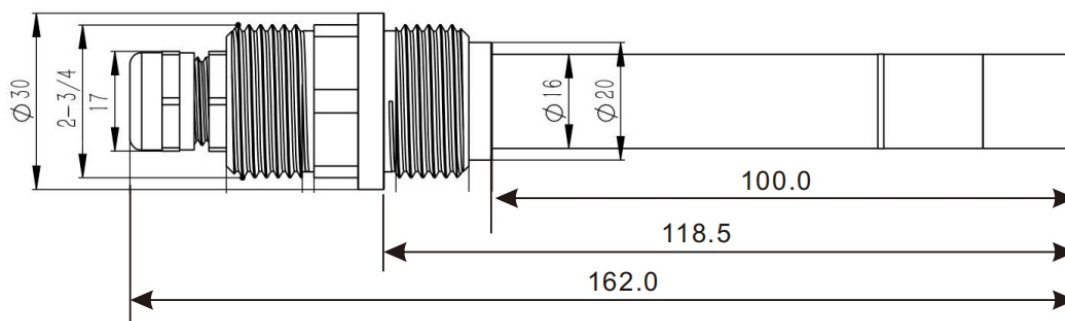
RK500-04 Dissolved Oxygen Sensor

Technical Parameter

Type	A	B	C
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	Fluorescen		
Temperature compensation	Thermal resistance		
Thread	Lower: NPT3/4, Upper:NPT3/4		
Installation method	Pipe or dip (IP68)		
Operating temperature	-5 - +60°C		
Working pressure	0.8Mpa		
Supply	7-30VDC		
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°C		

Dimension

Unit:mm

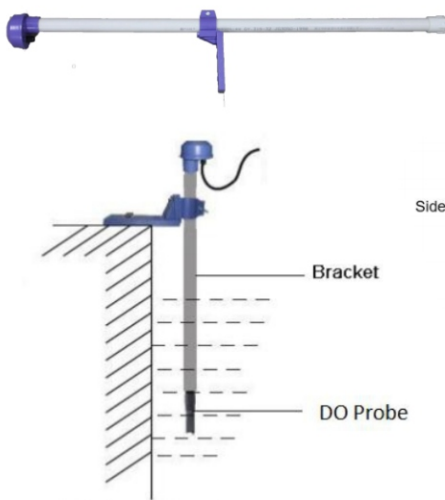


Thread:Lower:NPT3/4,Upper:NPT3/4

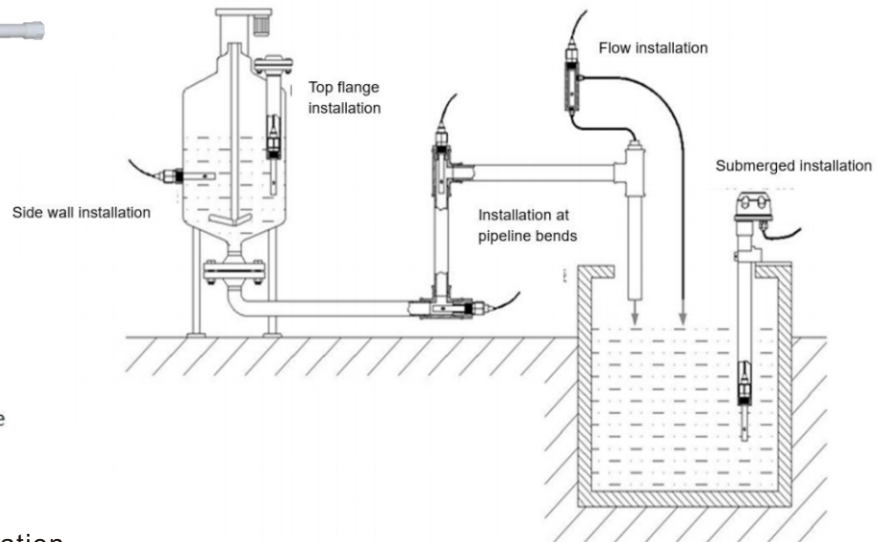
Installation & Usage

- Put directly into the liquid
- Adopt submersible mounting bracket (shown in 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			7-30VDC
			X			Other
				A		With mounting bracket
				N		Without mounting bracket
					5000	Unit(mm)
					...	Unit(mm)

Example: RK500-04BAN Type B, Supply: 7-30VDC, Without mounting bracket, Cable length: 5m.

Revision time	Reviser	Current Version	Remarks
20260915	Echo	V5. 1	