RK500-06LC (Liquid cooling) ORP Sensor

Overview

With the rapid development of data centers,new energy vehicles,high-end manufacturing and other fields,liquid cooling technology has gradually become the mainstream heat dissipation solution for high-density equipment due to its efficient heat dissipation capability.However,the stable operation of liquid cooling systems is highly dependent on the cleanliness of the coolant.If particulate matter,corrosion products,microbial impurities,etc.are mixed into the coolant,it will not only reduce the heat dissipation efficiency,but may also block pipelines,corrode equipment components,and cause system failures or even shutdown accidents.
ORP (oxidation-reduction potential) reflects the oxidation-reduction characteristics of the coolant,and once its value deviates from the normal range,it will cause a series of chain problems.Excessive oxidation can accelerate the corrosion of metal components such as pipelines and server components, causing equipment damage and leakage risks.The 500-06LC ORP sensor adopts advanced glass platinum electrode technology,combined with high-precision signal processing chips,to achieve accurate measurement of ORP values.Can keenly capture subtle changes in coolant ORP values.Both oxidizing and reducing environments can provide accurate and stable monitoring data,providing reliable basis for the evaluation of the operating status of liquid cooling systems.

Features

- On-line & real-time monitoring
- Platinum ring electrode
- High accuracy
- Simple operation and high reliability
- Internal signal isolation, strong anti-interference
- Widely power supply(7-30VDC)
- Wetted material matching liquid cooling industry

Applications

- Liquid cooling industry
- Environmental protection agriculture
- Aquaculture
- Water conservancy construction

Technical Parameter

Item	Technical Specification		
Main material	316L+ Titanium alloy		
Applicable medium①	Deionized water, PG25,EG25		
O-ring material	EPDM		
Process connection	Upper:G3/4	Upper and lower NPT3/4 threads	50.5 Chuck
Sealing method	End face seal	Thread seal	Gasket
Cable	M16 connector , Direct line		
Accuracy	±1mV		
Resolution	0.1mV		
Power consumption	＜0.2W		
Operating temperature	0-+60℃		

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Technical Parameter

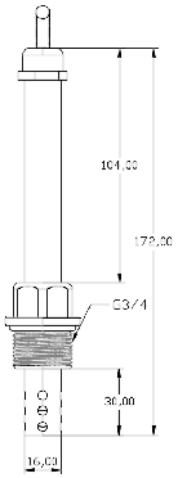
Item	Technical Specification
Range	-1500~+1500mV
Supply	7-30VDC
Output	4-20mA&RS485 at the same time
Response time	14 seconds (98% flowing liquid)
Pressure resistance	1MPa(10Bar)
Ingress protection(probe)	IP68
Storage	10-60℃@20%-90%RH
Cable length	5m default, other cable lengths can be customized

①Please verify the medium to be used before placing your order.

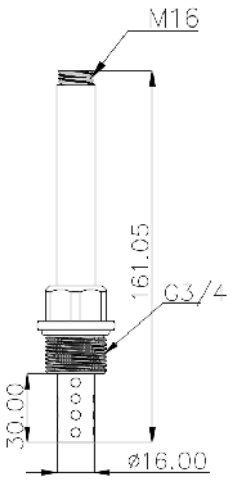
Dimension

Unit:mm

G3/4, Direct line



G3/4, M16 connector



Electrode Maintenance

When the probe is not in use, it needs to be soaked in 3mol/l KCL solution or saturated KCL solution. It is strictly prohibited to immerse the electrode in distilled water, deionized water, or tap water with very low ion content. If the ORP electrode is contaminated with inorganic substances, it can be cleaned with 0.1mol/l HCl or sodium hydroxide solution for a few minutes, and then rinsed with distilled water. If the ORP electrode is contaminated with organic matter, it can be cleaned with alcohol or acetone, and then rinsed with distilled water. (Note: When using, remove the protective cap in front of the electrode)
According to the work environment, clean the electrodes with tap water every 6 months.

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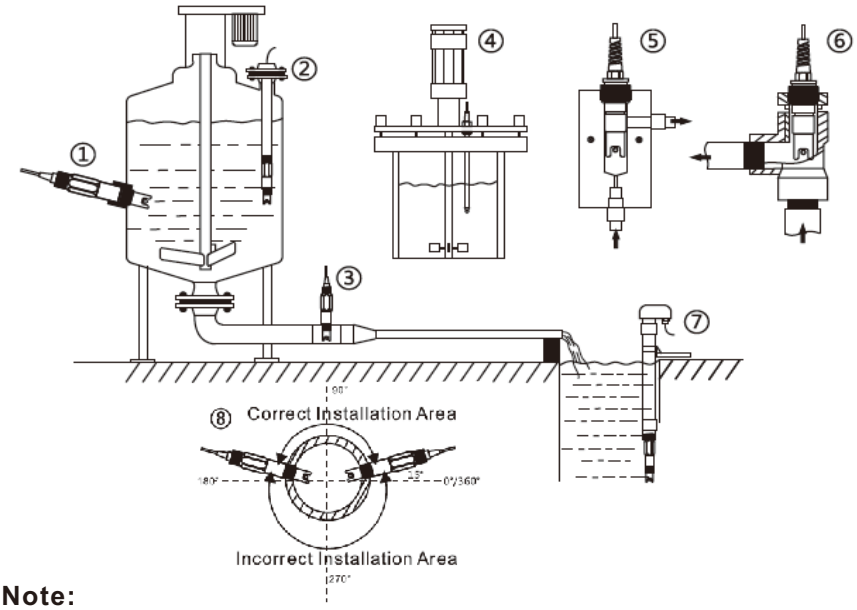
Installation & Fixed



①Sidewall Mounting
②Top Mounting
③Pipe Installation
④Top-Plug Installation
⑤Flow Channel Installation
⑥Pipe Installation
⑦Immersion installation
⑧Pipe Installation Angle

Note:
Regardless of the installation method used, please avoid generating bubbles near the measuring electrode.
When selecting the M16 connector, the length of the reserved straight section at the outlet end should not be less than 70 mm to avoid cable breakage or core wire breakage caused by a too small bending radius.

Parameter Selection Table

Remark	Series	Type	Supply	Range	Process Connection	Cable	Cable Length	
RK								
	500							
		06LC						
			A					7-30VDC
			X					Other
				A				-1500~+1500mV
				X				Other
					A			G3/4
					B			NPT3/4
					C			50.5 Chuck
					X			Other
						A		M16 connector
						B		Direct line
							5000	Unit(mm)
							…	Unit(mm)

Example: RK500-06LC AAAA5000 Supply:7-30VDC, Range: -1500~+1500mV, Process connection: G3/4, Cable : M16 connector ,Cable length:5m.

Revision time	Reviser	Current Version	Remarks
20260420	Echo	V5. 1. 1	