



RK500-07 LC(Liquid cooling) Turbidity Sensor



Overview

With the rapid development of fields such as data centers, new energy vehicles, and high-end manufacturing, liquid cooling technology, leveraging its efficient heat dissipation capabilities, has gradually become the mainstream cooling solution for high heat density equipment. However, the stable operation of liquid cooling systems heavily relies on the cleanliness of the cooling fluid. If particulate matter, corrosion products, microbial impurities, or other contaminants are mixed into the cooling fluid, it will not only reduce heat dissipation efficiency but may also block pipelines, corrode equipment components, and cause system failures or even downtime accidents.

Turbidity, as a key indicator for measuring the cleanliness of cooling fluid, directly reflects the content of suspended impurities in the cooling fluid through its numerical changes. The RK500-07LC liquid-cooled turbidity sensor operates based on the optical correlation principle. The emitter emits light of a specific wavelength, and the receiver receives the transmitted light after passing through the measured cooling fluid. When there are suspended impurities in the cooling fluid, the light is scattered and absorbed, resulting in a decrease in the light intensity received by the receiver. By measuring the attenuation of light intensity, the sensor can accurately calculate the turbidity value of the cooling fluid. With its unique measurement principle and technological advantages, it can accurately capture subtle changes in the turbidity of the cooling fluid without being affected by the reflection from stainless steel pipes, providing real-time and reliable data support for the safe operation of liquid cooling systems. It has become an indispensable "cleanliness guardian" in the liquid cooling industry.

Features

Applications

<ul style="list-style-type: none"> Online real-time monitoring High accuracy Simple operation, high reliability No external modules required, integrated design Sapphire measurement window Not affected by the reflection from stainless steel pipes 	<ul style="list-style-type: none"> Liquid cooling industry Environmental protection Water quality monitoring Aquaculture Clean in place (CIP) Sewage treatment Industrial wastewater treatment
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Technical Parameter

Item	Technical Specification		
Main material	316L		
Applicable medium	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	± 2% rdg. or ± 0.1NTU, whichever is greater		



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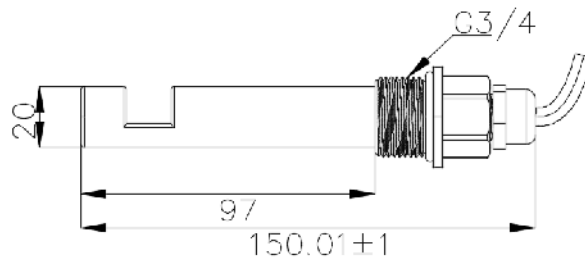
Technical Parameter

Item	Technical Specification
Resolution	0.1NTU
Power consumption	<0.2W
Operating temperature	0-+60°C
Range	0-10NTU ,0-100NTU
Supply	7-30VDC
Output	4-20mA&RS485 at the same time
Response time	1s
Pressure resistance	1MPa(10Bar)
Ingress protection (probe)	IP68
Storage	10-60°C@20%-90%RH
Cable length	5m default, other cable lengths can be customized

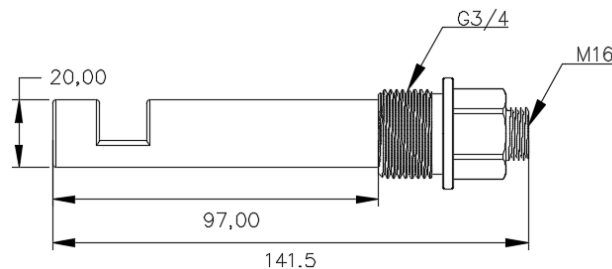
Dimension

Unit:mm

G3/4,Direct line



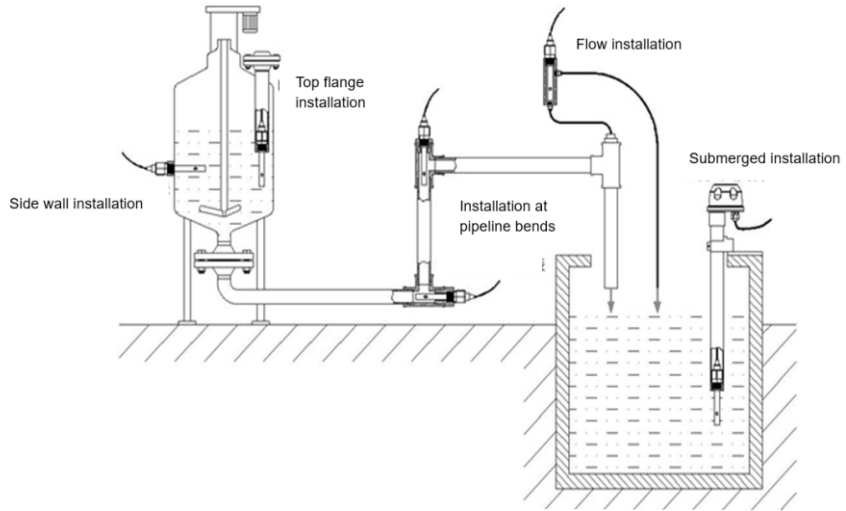
G3/4,M16 connector





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Dimension&Mounting



Note: Regardless of the installation method used, please avoid bubbles in the conductivity cell.
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						
		07LC					
			A				7-30VDC
			X				Other
				A			10NTU
				B			100NTU
				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: RK500-07LCABAA5000 Supply:7-30VDC, Range:100NTU, Process connection: G3/4, Cable : M16 connector,Cable length:5m.

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