RK500-07 LC(Liquid cooling) Turbidity Sensor

Overview

As liquid cooling becomes essential in data centers, EVs, and high-end manufacturing, system reliability depends on coolant cleanliness. Contaminants like particles, corrosion products, or microbes can reduce heat transfer, block pipelines, corrode components, and cause failures.
The RK500-07LC turbidity sensor, based on optical nephelometry, measures coolant turbidity—a key cleanliness indicator. It emits specific-wavelength light and detects attenuation caused by scattering and absorption from suspended impurities. This enables precise, real-time turbidity monitoring, ensuring safe system operation and making it an indispensable guardian in the liquid cooling industry.

Features

- Online real-time monitoring
- High accuracy
- Simple operation, high reliability
- Sapphire measurement window
- Overall 316L stainless steel construction
- Compact design, no external modules required, integrated design
- Compatible with deionized water, PG25, EG25 and other coolants

Applications

- Liquid cooling industry
- Environmental protection
- Water quality monitoring
- Aquaculture
- Clean in place (CIP)

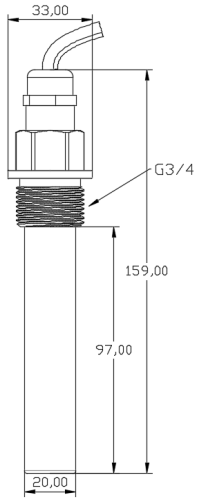
Technical Parameter

Item	Technical Specification		
Measuring principle	90 ° Nephelometric Method		
Main material	316L		
Applicable medium	Deionized water, PG25,EG25		
O-ring material	EPDM		
Process connection	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		
Resolution	0.1NTU		
Power consumption	<0.2W		
Operating temperature	0-+60℃		
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℃@20%-90%RH		
Cable length	5m default, other cable lengths can be customized		

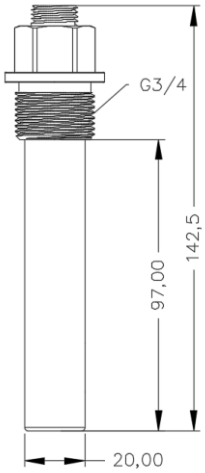
Dimension

Unit:mm

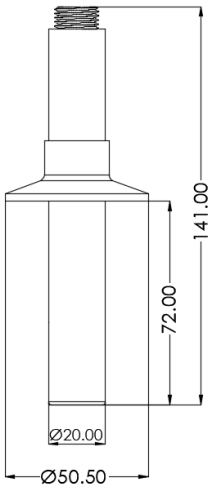
G3/4,Direct line



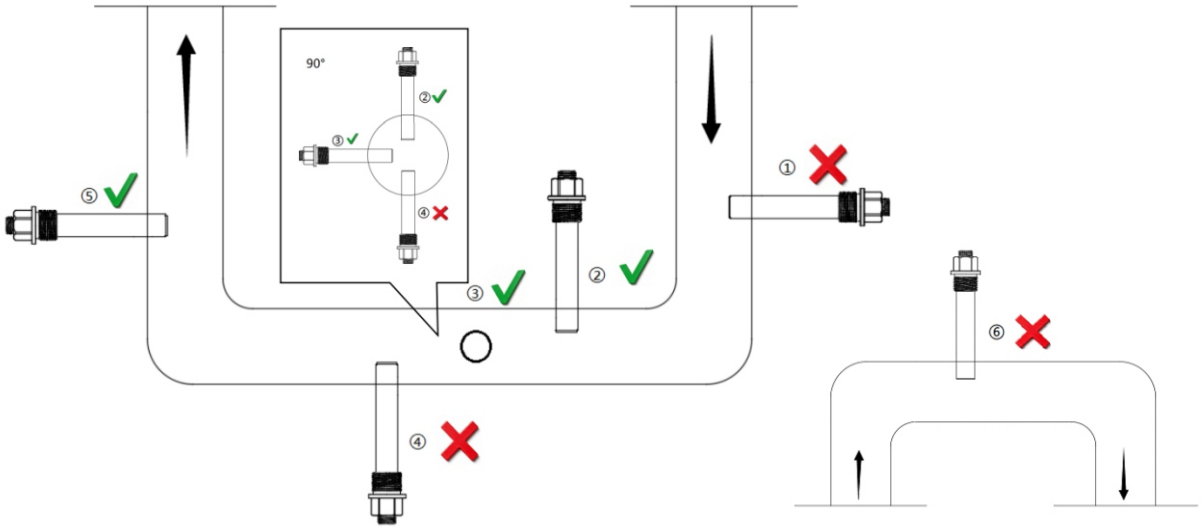
G3/4, M16 connector



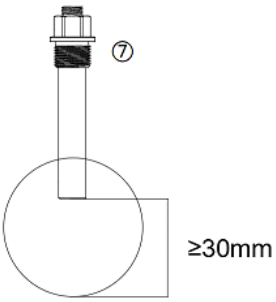
50.5 Chuck, M16 connector



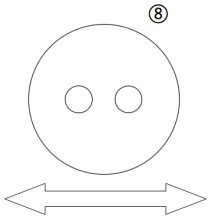
Installation & Fixed



- Install sensor on bypass pipe section for ease of maintenance.
- Choose a location with stable fluid flow and no obvious turbulence to ensure measurement accuracy and stability.
- Optimal position: vertical upward flow (Pos. ⑤). If site conditions are limited, horizontal piping (Pos. ② or ③) is also acceptable.
- Do NOT install in high-point gas traps (Pos. ⑥) or low-point sediment zones (Pos. ④), as bubbles or deposits may affect accuracy or damage the sensor.
- Do not install on vertical downward flow (Pos. ①) to prevent degassing and measurement drift.
- Do not install downstream of pressure-reducing sections to avoid degassing from sudden pressure drop.



Installation & Fixed



- Avoid bubble generation near the measurement window in all installations.
- With M16 connector, keep ≥70 mm outlet clearance to prevent cable damage from over-bending.
- For stainless steel pipes, keep probe-to-wall distance ≥30 mm (Fig. ⑦) to prevent backscattering distortion.
- For stainless steel pipes, prefer chuck installation with measuring holes aligned parallel to flow to minimize backscattering (Fig. ⑧) and ensure optimal accuracy.

Parameter Selection Table

Remark	Series	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
20260910	Echo	V5. 2. 0	