



RK120-03 Ultrasonic Wind Speed & Direction Sensor



Overview

RK120-03 is a measuring instrument that uses the time difference of ultrasonic propagation in air to measure wind speed, direction and acoustic temperature. The built-in signal processing unit can output corresponding signals according to user needs, with a lightweight and compact structure, no moving parts and a high-strength structural design that can accurately detect in harsh weather conditions, making the components precise and stable, easy to maintain and using open communication protocols. It can be widely applied in fields such as meteorology, oceanography, environment, airports, ports, laboratories, industry and agriculture, transportation and other fields.

Features

- No moving parts, zero wear and tear
- Maintenance free, long service life
- ASA shell, more lightweight
- Adopting ultrasonic probe reflection type, the structure is more compact
- Probe heating, strong anti freezing ability
- Adopting acoustic phase compensation technology and random error identification technology to make the output smoother and more accurate
- Digital filtering technology with stronger resistance to electromagnetic interference
- Optional electronic compass, electromagnetic shielding and other functions

Applications

- Environmental monitoring
- Sea-going vessel
- Bridge & tunnel
- Solar and wind power generation
- Wind resource assessment
- Drilling platform
- Automatic weather station
- Agriculture

Technical Parameter

Item	Wind speed	Wind direction	Atmospheric pressure
Range	0-45m/s,0-60m/s,0-80m/s (extended range, not standard)	0-360°	300-1100hPa
Resolution	0.01m/s	1°	0.1hPa
Accuracy	≤10m/s:±0.2m/s >10m/s:<±2% the current value	±3°	±1 hPa
Starting threshold	0.1m/s	0.1m/s	/
Power supply	12-24VDC		
Power consumption	0.12W(normal mode), 0.008W(sleep mode), 1.8W(heating mode)		
Output signal	RS485(Modbus-Rtu/NMEA-0183)/RS232/SDI-12 4-20mA/0-5V(only for wind speed & direction optional)		



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Technical Parameter

Item	Wind speed	Wind direction	Atmospheric pressure
Baud rate		4800-19200	
Data update cycle		1s(default),other optional	
Operating temperature		-40℃-+70℃	
Storage temperature		-40℃-+80℃	
Working humidity		0 - 100%	
Ingress protection		IP66	
Electronic compass		optional	
Atmospheric pressure		optional	
Dimension		Φ144*148mm	
Weight(unpacked)		0.8kg	
Main material		ASA	

Dimension&Mounting

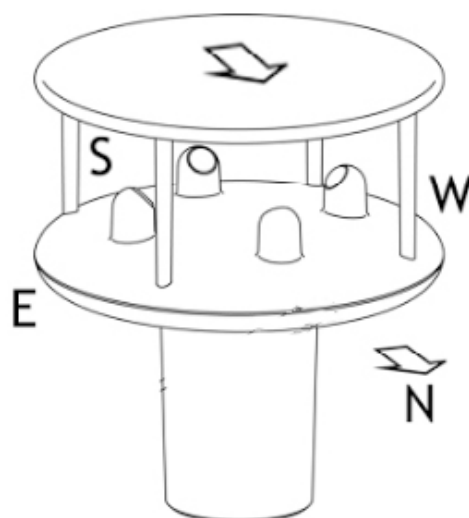
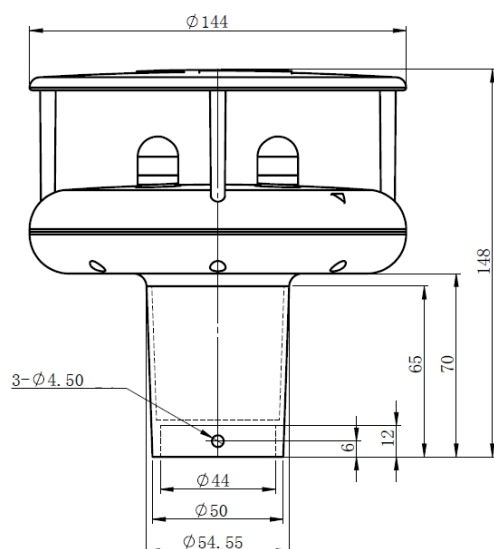
The sensor has a rotatable installation hole at the bottom,when installing the sensor, ensure that the indicator arrow on the sensor is facing towards the geographic north.

With electronic compass function:

Fixed installation method: The sensor can be installed in any orientation, it does not need to face north.

Mobile installation method (for vehicles, ships, etc.): When installed on moving objects like vehicles or ships, the sensor's north indicator must be aligned with the direction of travel.

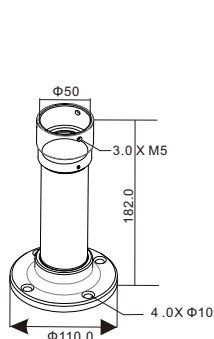
Unit:mm





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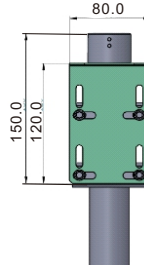
Dimension&Mounting



RK95-54



RK95-53



Parameter Selection Table

Remark	Series	Type	Parameter	Supply	Output	Cable length
RK						
	120					
		03				
			A			Without compass & atmospheric pressure
			B			With electronic compass
			C			With atmospheric pressure
			D			With electronic compass & atmospheric pressure
				A		12-24V
				X		Other
					A	4-20mA
					B	0-5V
					C	RS485(Modbus)
					D	RS485(NMEA-183)
					E	RS232(Modbus)
					F	RS232(NMEA-183)
					G	SDI-12
						4000 4m,default
						10000 10m
						...

Example: RK120-03AAC4000 Without compass & atmospheric pressure,Supply:12-24V, Output:RS485,Cable length:4m.

Revision time	Reviser	Current Version	Remarks
20250329	Lee	V5.0	