RK120-08 Ultrasonic Wind Speed & Direction Sensor

Overview

RK120-08 Ultrasonic Wind Speed & Direction Sensor operates on the work principle of ultrasonic transitime to measure the wind speed. The Anemometer features a light weight, no moving parts, and high durability. It requires no maintenance and on-site calibration, and simultaneously outputs both wind speed and direction data. If necessary, customers may select wind speed unit, the output frequency and output format, may also select the heating device (recommended for cold environment) or analog output. It can connect with computers, data acquisition, or other RS485 or analog output consistent with the collection of equipment. If necessary, you can also form a network of multiple to use. Ultrasonic Anemometer is an advanced instrument of wind speed detection. Because it can overcome the inherent defects of mechanical anemometer, it can work in whole day, long time. It gets more and more widely used and is a powerful replacement of mechanical anemometer.

Features

No limit to start wind speed, 360 ° operation, and measure wind speed, wind direction

Work whole day, free from rain, snow, frost, weather

High accuracy; stable

Strong, resistant corrosion, installation and use without fear of damage

Design is flexible, lightweight, portability, easily installation or undo

Easily signal access, while provide analog and digital signals

Applications

City environmental monitoring

Bridges, tunnels

Sailing ship

Wind power generation

Weather monitoring

Airport

Technical Parameter

Item	Technical Specification	
	Wind speed	Wind direction
Range	0-60m/s	0-359°
Resolution	0.01m/s	1°
Accuracy	±2%	±3°
Starting threshold	0.01m/s	
Power supply	12-24VDC(Heating must be 24VDC)	
Power consumption	<0.2W (Heating not activated); <20W (Heating activated)	
Output signal	RS485(MODBUS-RTU/NMEA-0183)/RS232/SDI-12 4-20mA/0-5V	
Wind speed unit	m/s, knots, mph, kph, ft/min	

Technical Parameter

Item	Technical Specification	
	Wind speed	Wind direction
Ultrasonic output frequency	1Hz (default); 10Hz (optional)	
Extreme Wind Speed	80m/s	
Baud rate	4800-19200	
Operating temperature	-50℃-+70℃	
Storage temperature	-50℃-+80℃	
Working humidity	0 - 100%	
Ingress protection	IP66	
Dimension	Φ228*285mm	
Weight(unpacked)	1.13kg	
Main material	Stainless steel + aluminum alloy	

Mounting & Dimensions

There are rotary adjustable mounting holes at the bottom of the sensor, when mounting the sensor, to ensure the indicator on the sensor comply with the geographic north.

Unit:mm
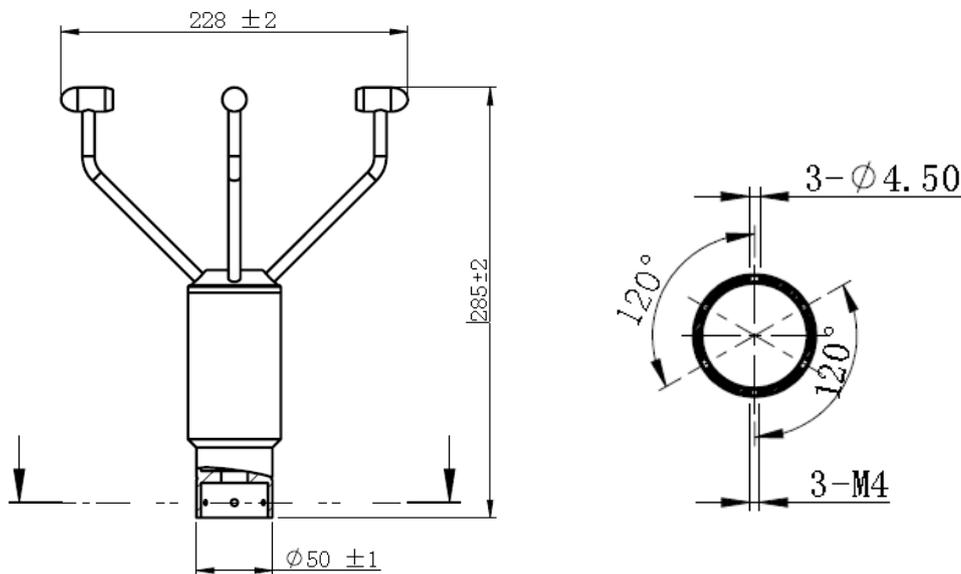
Equipment Maintenance & Attention

Equipment maintenance:

If there is dust on the instrument, it can be lightly scrubbed with a cloth stained with (biodegradable) soft detergent.

Do not use dissolvable reagents. Scrub carefully to avoid scratching the surface of the instrument. If there is snow or ice on the surface of the instrument, wait for it to dissolve naturally slowly, and do not use tools to remove it.

Equipment Maintenance & Attention

Attention:

● Do not install it on the same plane with any radar scanning device, and keep a distance of at least 2m.

● If the cable is not properly connected after cutting, or the cable shield is not well maintained, EMC(electromagnetic compatibility) may be reduced.

● Ensure the continuous power supply of RK120-08 in operation.

● Avoid turbulence caused by surrounding buildings, such as trees, power poles, tall buildings, etc., which can affect. The accuracy of acoustic wind speed and direction detector is affected. The detector is best installed on the side of prevailing wind.

● If it is installed on the building, theoretically, the installation height of anemometer should be 1.5 of the building heights.

● RK120-08 can meet or even exceed the specifications listed in it, and can be used in environments around the world without calibration.

Parameter Selection Table

Remark	Series	Type	Supply	Output	Cable Length	
RK						
	120					
		08				
			A			12-24V
			X			Other
				A		4-20mA
				B		RS485(Modbus)
				C		RS485(NMEA-183)
				D		RS232(Modbus)
				E		RS232(NMEA-183)
				F		SDI-12
				G		0-5V
				X		Other
					4000	4m, default
					10000	10m
					…	

Example: RK120-08AB4000, Supply:12-24V, Output: RS485(Modbus), Cable length:4m.

Revision time	Reviser	Current Version	Remarks
20250915	Echo	V5. 0	