RK120-09 Ultrasonic Wind Speed & Direction Sensor

Overview

RK120-09 wind speed and direction meter is a measuring instrument which uses the time difference of ultrasonic wave in the air to measure the wind speed and direction. It uses a low-power chip with power consumption of only 0.12W, which is especially suitable for solar or battery powered environment with high power consumption requirements. Due to the adoption of advanced technology and new process, the structure is more compact.

Features

- Adapt to complex weather conditions
- No moving parts, long service life
- The surface preservative treatment
- Strong anti-interference
- High accuracy

Applications

- Environmental monitoring
- Bridge & tunnel
- Drilling platform
- Wind resource assessment
- Automatic weather station
- Agriculture

Technical Parameter

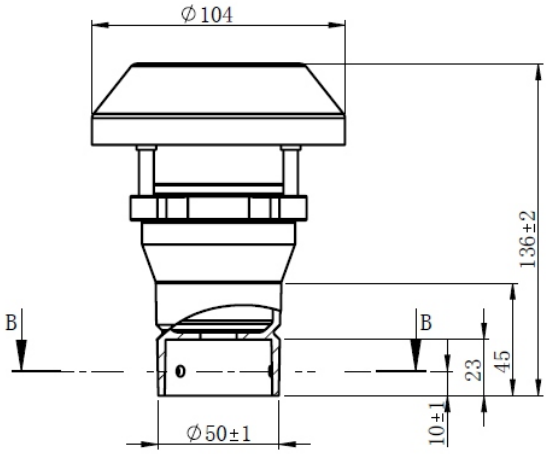
Item		Technical Specification	
		Wind speed	Wind direction
Range		0-70m/s	0-359°
Resolution		0.1m/s	1°
Accuracy		±3%	±3°
Starting threshold		0.5m/s	
Power supply		5V,12-24VDC	
Power consumption		0.12W	
Output signal		RS485(Modbus-RTU/NMEA-0183)/RS232/SDI-12 4-20mA/0-5V(only for wind speed & direction optional)	
Extreme wind speed		80m/s	
Baud rate		4800-19200	
Data update cycle		1s	
Operating temperature		-20℃-+50℃	
Storage temperature		-50℃-+80℃	
Working humidity		0 - 100%	
Ingress protection		IP65	
Atmospheric pressure (optional)	Range	300-1100hPa	
	Resolution	0.1hPa	
	Accuracy	±1 hPa	

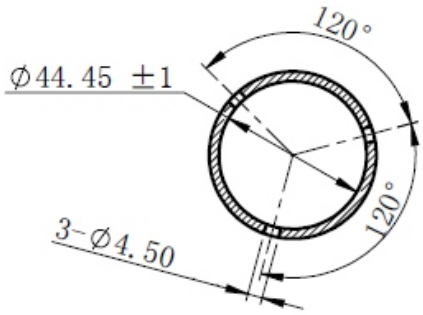
Technical Parameter

Item	Technical Specification	
	Wind speed	Wind direction
Electronic compass	optional	
GPS	optional	
Dimension	Φ104×136mm	
Weight(unpacked)	0.28kg	
Main material	ASA	

Mounting & Dimensions

Step1:
Positioning: The RK120-09 is generally installed in a vertical installation pipe. Ensure the measurement on the same level.
For indoor use, the sensor can be used at anywhere. Directional installation to measure wind speed on different planes.
Step2:
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.
Step3:
Installation: the installation pipe needs 3 equally spaced holes, tapping M5 screws, position7.5mm from the top of the pipe.





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 RK120-09 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.
- RK120-09 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	Parameter	Supply	Output	Cable Length	
RK							
	120						
		09					
			A				With atmospheric pressure
			B				With electronic compass
			C				With GPS
			D				With electronic compass & GPS
			E				With electronic compass, GPS & atmospheric pressure
			X				Other
				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: RK120-09AAG4000 With atmospheric pressure, Supply:12-24V, Output: SDI-12 Cable length:4m.

Revision time	Reviser	Current Version	Remarks
20250910	Echo	V5. 0	