



RK100-01 Wind Speed Sensor

Overview

The RK100-01 Wind Speed Sensor is specifically designed to accurately and reliably measure wind velocity under adverse environmental conditions. It has built-in digital circuits with strong RFI & EMI resistance and automatic temperature compensation. It outputs voltage and current signals through Photoelectric Sensing Principle, with a linear relationship between the value and horizontal wind speed. The housing is made of high-strength aluminum alloy, and the PCB board is coated with anti-corrosion paint, featuring waterproof and corrosion-resistant properties. Sealing rings are installed inside and at rotating positions, providing excellent sealing to prevent water, salt fog, and dust from entering. The RK100-01 Wind Speed Sensor delivers good performance in harsh environments.

Features

Low starting threshold
Full-metal construction
Strong corrosion resistant
Withstands wind loads up to 70m/s
Double bearing design
Surge protection design
Easy installation

Applications

Weather monitoring stations
Safety monitoring of high-altitude equipment
Ports
Solar and wind power generation
Mobile weather monitoring vehicles
Marine vessels
Remote airports & helipads
Road & rail tunnels

Technical Parameter

Output	Pulses(3.3V)	4-20mA	RS485	0-2V/0-5V/0-10V
Supply voltage	5-24VDC	12-24VDC	12-24VDC	12-24VDC
Load capacity	>2kΩ	<500Ω(typ 250Ω)	/	>2kΩ
Range	0-30m/s,0-50m/s,0-60m/s			
Accuracy	$\pm(0.3+0.03V)m/s$, V is current wind speed			
Response time	<1s			
Starting threshold	<0.3m/s			
Limit wind speed	70m/s			
Ingress protection	IP65			
Operating temperature	-30℃~+70℃			
Weight(unpacked)	420g			
Dimension	Cup rotor: $\varnothing 220mm$, Height:175mm			
Main material	Aluminum alloy			
Finish	Polyester powder electrostatic spraying(black)			
Storage condition	10℃-60℃@20%-90%RH			



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Wind Speed Sensor

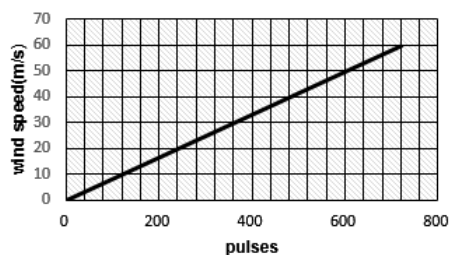
Output Characteristics

Pulses

Characteristic transfer function:

$$V=0.083 \cdot F$$

(where V = wind speed (m/s), F = output frequency (Hz))



Current

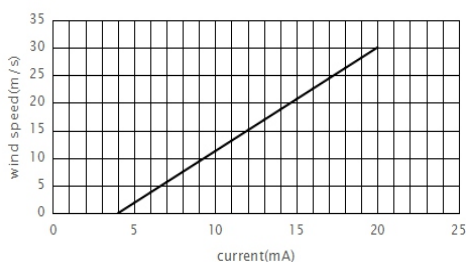
Characteristic transfer function:

$$V=(I-4)/(20-4) \cdot 30(\text{Range:0-30m/s}),$$

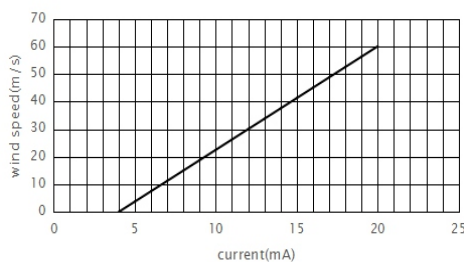
$$V=(I-4)/(20-4) \cdot 60(\text{Range:0-60m/s}).$$

(where V = wind speed (m/s), I = output current(mA))

Range:0-30m/s



Range:0-60m/s



Voltage

Characteristic transfer function:

$$V=U/(\text{full scale voltage-zero-point voltage}) \cdot 30(\text{Range:0-30m/s}),$$

$$V=U/(\text{full scale voltage-zero-point voltage}) \cdot 60(\text{Range:0-60m/s}).$$

(where V = wind speed (m/s), U = output voltage(V))

RS485

For transmission distances exceeding 100m, add a 120Ω terminal matching resistor at both ends of the bus interface. Refer to the Modbus communication protocol specification.

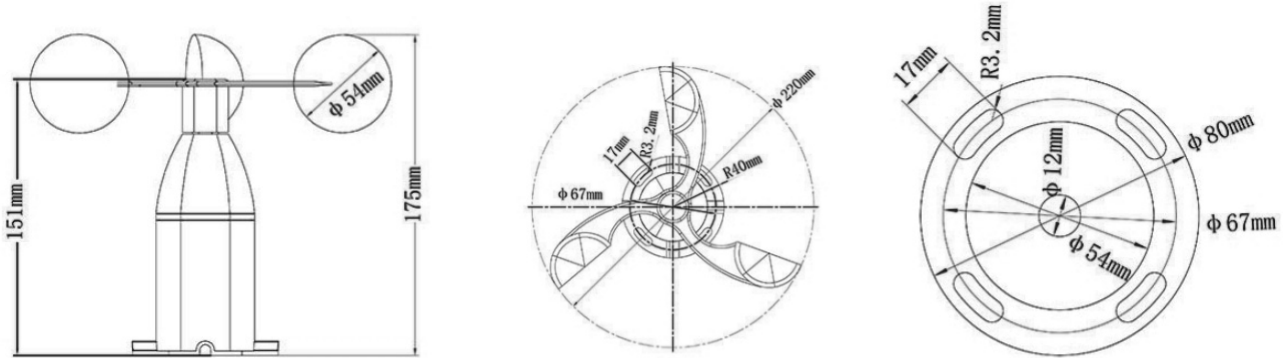


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Wind Speed Sensor

Dimension&Mounting

Flange-mounted. Secure with four screws on the bracket and ensure the product remains horizontal.



Parameter Selection Table

Remark	Series	Type	Output	Range①	Cable Length	
RK						
	100					
		01				
			A			4-20mA
			B			0-5V
			C			0-10V
			D			Pulses
			E			RS485
			X			Other
				A		0-30m/s(recommended)
				B		0-60m/s
					2000	Units:mm(typ)
					3000	Units:mm
					...	Units:mm

①The 0-30m/s range is recommended for better accuracy, as winds exceeding 30m/s are rare on the mainland.

Default power supply voltage: 12-24VDC. Contact us for other requirements when ordering.

Example: RK100-01AA2000 Output:4-20mA, Range:0-30m/s, Cable Length:2m.

Revision time	Reviser	Current Version	Remarks
20250329	Lee	V5.0	