

Wind Sensor *wind monitor*



Description

Rugged combined sensor for the measurement of the horizontal components of wind speed and wind direction.

Driven by the air flow, the propeller is set into rotation. A rotating magnet and a pulse wire produce an AC sine wave signal. An internal transducer converts the raw signal into a voltage linearly dependent on the wind speed.

A potentiometer senses the position of the vane. An internal transducer converts the raw signal into a voltage linearly dependent on the wind direction.

Technical Data

Sensor

Wind Speed

Sensing element.....	Propeller
Outside diameter	ø180 mm
Transducer.....	Magnet + pulse wire (coil), electronical transducer with voltage output
Output signal	0..50 m/s = 0..1 V
Resolution	0.1 m wind run
Accuracy.....	± 0.3 m/s
Starting threshold	1.0 m/s
Distance constant.....	2.7 m (for 63% recovery)
Material.....	UV-stabilized plastic
Bearings	Stainless steel ball bearings

Wind Direction

Sensing element.....	Wind vane
Outside radius.....	380 mm
Transducer.....	Precision conductive plastic potentiometer, electronical transducer with voltage output
Life expectancy of the potentiometer	50 million revolutions
Dead band	5°
Output signal	0..360° = 0..1 V

Resolution	1°
Linearity	± 0.25%
Starting threshold	1.1 m/s bei 10° Anfangsauslenkung
Distance constant.....	1.3 m (for 50% recovery)
Damping ratio	0.3
Natural wave length.....	7.4 m
Bearings	Stainless steel ball bearings

Power Supply

Operating voltage	8..24 VDC
Current consumption	5 mA at 12 V
Warmup time	100 ms

Heating

Type	The sensor is not heated.
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Casing

Material.....	UV-stabilized plastic
Protection class	IP 55 in upright position
Dimensions	L x H = 550 x 370 mm
Weight	1 kg
Mounting	The sensor mounts on a standard one inch pipe with ø34 mm outside diameter

Electrical Connection

Type	Terminal strips in a weather resistant junction box
Cable	4 x 0.25 mm ²

Colours of the Wires

white.....	(+) power supply
brown	(-) power supply (ground)
green.....	Output signal wind speed
yellow.....	Output signal wind direction
green/yellow	Cable shield (optional)

Environmental Conditions

Operating temperature	-50..+50 °C
Relative humidity	0..100%
Maximum wind speed.....	100 m/s



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