

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 with frequency linearly dependent on the wind speed.

A potentiometer senses the position of the vane and provides a resistance signal linearly dependent on the wind direction.

Technical Data

Sensor

Wind Speed

Sensing element.....	Propeller
Outside diameter	ø180 mm
Transducer.....	Magnet + pulse wire (coil)
Output signal	0..60 m/s = 0..612 Hz
Signal levels.....	AC sine wave, max. ± 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
Life expectancy of the potentiometer	50 million revolutions
Dead band	5°
Output signal	0..360° = 0..10 kΩ
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

Pulse wire.....	No power supply required
Potentiometer	15 VDC max.
Max. load of potentiometer.....	1 W at 40 °C 0 W at 125 °C
Warmup time	10 ms

Heating

Type	The sensor is not heated.
------------	---------------------------

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 weatherproof junction box
Cable.....	4 x 0.25 mm ²

Colours of the Wires

white.....	(+) power supply for potentiometer
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



Hirschgraben 24
D-22089 Hamburg • Germany
phone: +49(0)40-75 66 08 98
fax: +49(0)40-75 66 08 99
eMail: info@wilmers.com
www.wilmers.com