

WMS301

Combined Wind Sensor

- **COMBINED WIND SPEED & DIRECTION MEASUREMENT**
- **SUITABLE FOR LOW POWER APPLICATIONS**
- **COMPACT SIZE**
- **FAST RESPONSE**
- **EXCELLENT LINEARITY**



The WMS301 is a compact sized wind sensor with the wind speed and direction sensors integrated into one unit. The rotating cup anemometer at the top of the unit provides linear response to wind speed. The vane attached to the body of the unit provides fast response to wind direction.

The cup shape, dimensions and material contribute to the high quality measurement. The cups are carefully tested to give linear response between the wind speed and angular velocity of the cup wheel. The PA plastic reinforced with carbon fiber guarantees a rigid structure even at the highest wind speeds.

A relay contact output is provided for wind speed. The wind speed can be recorded either by counting the number of pulses within a fixed time period or measuring the time between successive pulses.

The wind vane is integrated into the housing of the unit, underneath the cup assembly. The vane

is of durable, light weight material ensuring fast response and low inertia.

The vane's position is detected using a potentiometer. The potentiometer features low starting and running torque, linear resistance, and long operation life. It is of a single-wiper type with an open gap of less than 5 degrees. With constant voltage applied to the potentiometer the output voltage is directly proportional to the azimuth angle.

The electronics design makes the sensor suitable for applications where low power consumption is essential. The electronics is located inside an anodized aluminium core forming not only a firm body but a watertight enclosure for the electronics, providing full protection against water, dust, pollutants and electromagnetic interference.

A mast adapter for a 30 mm tube is supplied with the sensor.

TECHNICAL DATA

ANEMOMETER

Sensor/Transducer type	Dual Reed switch
Measuring range	0.5 ... 60 m/s
Starting threshold	< 0.4 m/s
Distance constant	2 m
Transducer output	1 Hz ~ 0.7 m/s
Accuracy	(≤ 10 m/s) ± 0.3 m/s (> 10 m/s) error < 2 %

VANE

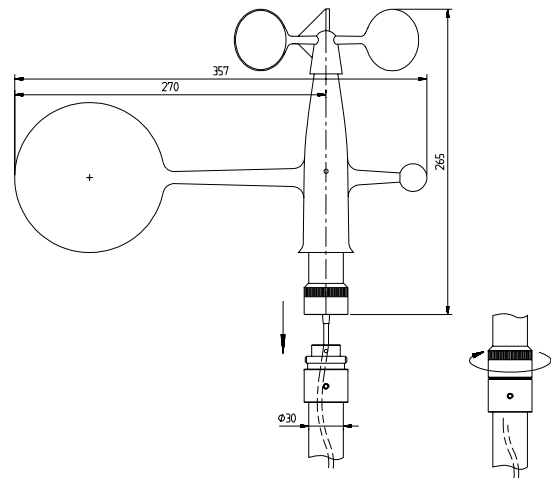
Sensor/Transducer type	Potentiometer
Measuring range	0 ... 355°
Starting threshold	< 1.0 m/s
Damping ratio	0.3
Overshoot ratio	0.4
Delay distance	0.6 m
Transducer output	Vref/360 = 1°
Accuracy	better than ± 3°

COMMON

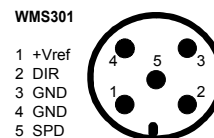
Supply voltage	3 ... 15 VDC
Electrical connections	5-pin male w. 12mm threads
Operating temperature	-40 ... +55 °C
Storage temperature	-60 ... +65 °C

MATERIAL

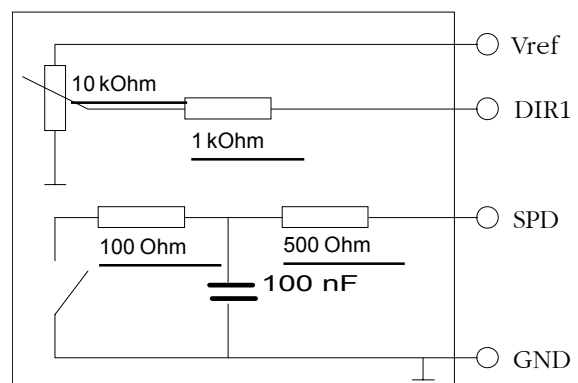
Body	AlMgSi, gray anodized
Cups	PA, reinforced with carbon fibre; black
Vane	PA, reinforced with glassfibre; white
Dimensions	265 (h) × 360 (w) mm
Weight	360 g



Mounting of WMS301 sensor to the mast



Connector of WMS301



Principal Circuit Diagram



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