

Part Number: 81506-RMY



Specifications

Range: Wind speed: 0-78 m/s (175 mph)

Wind direction: 360° mechanical, 355° electrical (5° open)

Accuracy: Wind speed: ± 0.3 m/s (0.6 mph) or 1% of reading

Wind direction: $\pm 3^\circ$

Threshold:

Propeller: 1.0 m/s (2.2 mph)

Vane: 1.1 m/s (2.4 mph)

Propeller distance constant (63% recovery): 2.7 m (8.9 ft)

Dynamic Response:

Propeller distance constant (63% recovery): 2.7 m (8.9 ft)

Vane delay distance (50% recovery): 1.3 m (4.3 ft)

Damping ratio: 0.3

Damped natural wavelength: 7.4 m (24.3 ft)

Undamped natural wavelength: 7.2 m (23.6 ft)

Operating Temperature: -50 to 50°C

Dimensions:

Overall height: 37 cm (14.6 in)

Overall length: 55 cm (21.7 in)

Propeller: 18 cm (7 in) diameter

Mounting: 29 mm (1.13 in) diameter

Weight: 1.0 kg (2.2 lbs)

Operation

The Wind Monitor measures horizontal wind speed and direction. Originally developed for ocean data buoy use, it is rugged and corrosion resistant yet accurate and light weight.

The main housing, nose cone, propeller, and other internal parts are injection molded U.V. stabilized plastic. Both the propeller and vertical shafts use stainless steel precision grade ball bearings.

Bearings have light contacting teflon seals and are filled with a wide temperature range grease to help exclude contamination and moisture.

Propeller rotation produces an AC sine wave signal with frequency proportional to wind speed. This AC signal is induced in a stationary coil by a six pole magnet mounted on the propeller shaft.

Three complete sine wave cycles are produced for each propeller revolution. The pulse squaring circuit provides a constant amplitude square wave output.

Vane position is transmitted by a 10K ohm precision conductive plastic potentiometer which requires a regulated excitation voltage.

With a constant voltage applied to the potentiometer, the output signal is an analog voltage directly proportional to wind direction angle.

The sensor is supplied with a mounting adapter for a maximum 1.13" outside diameter pole/mast that allows the sensor to be removed for maintenance and reinstalled without loss of wind direction reference.



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