



Microcom Design, Inc.

## Wind Monitor Model 05103

P/N: W-103



The **Wind Monitor**, wind speed/wind direction sensor is both simple and lightweight. Corrosion resistant construction, and the elimination of slip rings and brushes combine to make a reliable wind sensor. The wind speed sensor is a helicoid shape propeller molded of polypropylene plastic. The four-blade propeller is 18 cm diameter x 30 cm pitch with a distance constant of 2.7 meters or 8.8 feet. Threshold of the propeller is 1 m/sec. Propeller rotation produces an AC sine wave voltage signal with frequency directly proportional to wind speed. The AC voltage signal is induced in a centrally mounted coil located on the non-rotating portion of the main mounting assembly, eliminating the need for slip rings and brushes. The vane assembly has a threshold below 1.3 m/s with a damping ratio of 0.25. Vane position is transmitted through a coupling to a precision conductive plastic potentiometer located in sealed chamber in the center of the main housing. The potentiometer requires a regulated excitation voltage, which outputs an analog voltage directly proportional to azimuth angle. All transducer leads terminate in a junction box on the mounting post, making sensor cable connections easy and convenient. Four conductors are required. The tail assembly is thermo-formed of rigid U.V. stabilized plastic, and the main housing assembly and other internal parts are injection-molded. Propeller shaft bearings and vertical shaft bearings are sealed stainless steel precision-grade ball bearings, which further contribute to the sensors' ruggedness.

### Specifications

#### Range

**Wind Speed:** 134 mph (0-60 m/sec)  
**Gust Survival:** 220 mph (100 m/sec)  
**Azimuth:** 360° mechanical (355° electrical 5° open)

#### Threshold

**Propeller Sensitivity:** 2.2 mph (1.0 m/sec)  
**Vane Sensitivity:** 0.9 m/sec at 10°, 0.7 m/sec at 5°

**Propeller Distance Constant:** 6.9 feet (2.1m) for 63% recovery

**Vane Delay Distance:** 3.9 feet (1.2m) for 50% recovery

**Damping Ratio:** 0.45

#### Accuracy

**Wind Speed:** ± 0.6 mph (± 0.3 m/sec)  
**Wind Direction:** ± 3°

#### Dimensions

**Height:** 15.0 in (38 cm)  
**Length:** 15.0 in (38 cm)  
**Propeller Diameter:** 7.9 in (20 cm)  
**Mounting:** 1.34 in (34 mm) dia

**Sensor Weight:** 1.5 lbs (0.7 kg)



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