



05103 HIGH PERFORMANCE WIND SENSOR

The Wind Monitor is a high performance, rugged wind sensor. Its simplicity and corrosion-resistant construction make it ideal for a wide range of wind measuring applications.



The MUNRO Model 05103 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. A four-blade helicoid propeller, used to measure wind speed, generates an AC sine wave signal upon rotation. Wind direction is determined by a vane attached to a precision potentiometer inside an internal housing. UV stabilized plastic with stainless steel and anodized aluminum parts are used in the construction of the sensor. Precision grade stainless steel ball bearings with light contacting Teflon seals and a wide temperature grease are used to help exclude contamination. The sensor mounts on a standard 1-inch IPS pipe. A mounting orientation ring is included that engages with the base of the sensor to retain orientation when the sensor is removed for maintenance. Terminations are made in a junction box at the base of the sensor by small clamp-style connectors (no special connectors are required).

The Wind Monitor is also available with 0-5 VDC outputs, Model 05103V, or 4-20 mA outputs, Model 05103L (both models scaled for 0-100 m/s and 0-360°). The 05103L is recommended for use in high noise areas or for installations with long cables, typically 300 meters (1,000 feet) or more, up to several kilometers.

Options:

- 05106 - Marine Wind Monitor
- 05108 - Heavy Duty Wind Monitor
- 05108-45 - Heavy Duty Wind Monitor Alpine
- 05305 - AQ Wind Monitor
- 05501LM - Intrinsically Safe Wind Monitor.



Technical Specifications

Range	Wind speed: 0-100 m/s (224 mph) Azimuth: 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)
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)
Signal Output	Wind speed: magnetically induced AC voltage, 3 pulses per revolution. 1800 rpm (90 Hz) = 8.8 m/s (19.7 mph) Wind direction: DC voltage from conductive plastic potentiometer – resistance 10K Ω , linearity 0.25%, life expectancy – 50 million revolutions
Power Requirement	Potentiometer excitation: 15 VDC maximum
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: 34 mm (1.34 in) diameter (standard 1 inch pipe)
Weight	1.0 kg (2.2 lbs)
Shipping weight	2.3 kg (5 lbs)
Model 05103V	Signal outputs: 0-5.00 VDC full scale Power requirement: 8-24 VDC (5 mA @ 12 VDC)
Model 05103L	Signal outputs: 4-20 mA full scale Power requirement: 8-30 VDC (40 mA max.)

* Nominal values, determined in accordance with ASTM standard procedures.