Model 09101
Wind Monitor-SE

Serial Output Wind Sensor
The Wind Monitor-SE combines the performance and durability of our standard Wind Monitor with a unique optical encoder wind direction transducer and serial output signal.

The Wind Monitor-SE offers maximum versatility in a conventional wind sensor. An optical encoder is utilized for vane angle measurement, thereby eliminating the characteristic deadband and wear of potentiometer transducers. The serial output signal is ideal for interfacing with modern data acquisition systems.

The wind speed sensor is a four blade helicoid propeller that turns a multi-pole magnet. Propeller rotation induces a variable frequency signal in a stationary coil, eliminating the need for slip rings and brushes.

The wind direction sensor is a durable molded vane. Vane angle is detected by a custom optical encoder. The encoder is an absolute type so direction output remains accurate even if power is interrupted.

Wind speed and wind direction signals are converted to a serial output by the on-board microprocessor circuit. The serial signal is fully addressable for up to 16 separate sensors. Conventional voltage outputs may also be selected simply by moving an internal jumper.

The Wind Monitor-SE is designed for superior environmental resistance. Housing parts are UV stabilized thermoplastic. Fittings are stainless steel and anodized aluminum. Precision grade stainless steel ball bearings are used throughout.

The instrument mounts on standard 1 inch pipe.

### Specifications

**Range:**
- Wind speed: 0-60 m/s (134 mph)
- Gust survival: 100 m/s (220 mph)
- Wind direction: 0-360 degrees

**Resolution:**
- Wind speed: 0.1 unit (m/s, kts, mph, km/h)
- Wind direction: 1 degree

**Accuracy:**
- Wind speed: ±0.3 m/s (0.6 mph)
- Wind direction: ±2 degrees

**Dynamic Response:**
- Damping ratio: 0.3
- Damped natural wavelength: 7.4 m (24.3 ft)
- Undamped natural wavelength: 7.2 m (23.6 ft)

**Threshold:**
- Propeller: 1.0 m/s (2.2 mph)
- Vane: 1.1 m/s (2.5 mph)@10° displacement

**Available Outputs:**
- Voltage Output:
  - WS: 0-5 VDC for 0-100 m/s
  - WD: 0-5 VDC for 0-540°
- Serial RS-485:
  - RMY, NQAR, or NMEA protocols
  - Polled or continuous output

**Power Requirement:**
- 11-24 VDC, 20 mA

**Dimensions:**
- Overall height: 37 cm (14.6 in)
- Overall length: 55 cm (21.6 in)
- Propeller: 18 cm (7.0 in) diameter
- Mounting: 34 mm (1.34 in) diameter (standard 1 inch pipe)

**Weight:**
- Sensor weight: 1.0 kg (2.2 lbs)
- Shipping weight: 2.3 kg (5 lbs)

**Operating Temperature:**
- -50 to 50° C

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

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**Ordering Information**

**MODEL**

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