

EIC-03002 Wind Sentry

The **Model EIC-03002 Wind Sentry Anemometer and Vane** are professional quality wind sensors which are suitable for a wide range of wind measurement applications. These moderately priced sensors are principally of thermoplastic construction providing excellent corrosion resistance, low sensor weight, and minimal parts count. In addition to being available as a set complete with crossarm, the sensors are also available separately with mounting brackets.

The anemometer has three hemispherical molded plastic cups. Cup wheel rotation produces an AC sine wave voltage signal with frequency directly proportional to wind speed. This AC voltage signal is induced in a coil by a two pole circular magnet mounted on the cup wheel shaft. One complete sine wave cycle is produced for each cup wheel revolution.

Wind 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 azimuth angle. The plastic vane is molded directly on the anodized aluminum vane shaft.

Strain reliefs with seals are provided for cable entry to the sensors and termination junction box.



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Specifications

Range

Wind speed: 0-50 m/s (112 mph)
Gust survival: 60 m/s (134 mph)
Azimuth: 360° mechanical, 355° electrical (5° open)

Accuracy

Wind speed: ± 1.1 mph
Wind direction: $\pm 5^\circ$

Threshold*

Cup Anemometer: 1.1 m/s (2.5 mph)
Vane: 1.3 m/s (2.9 mph) at 10° displacement
1.9 m/s (4.2 mph) at 5° displacement

Dynamic Response

Cup wheel distance constant: 2.3 m (7.5 ft)
Vane delay distance: 0.5 m (1.6 ft)
Damping ratio: 0.20

Signal Output

Wind speed: Magnetically induced AC sine wave voltage, 1 pulse per revolution, 1800 rpm (30 Hz) = 22.8 m/s (51.0 mph)
Azimuth: Analog DC voltage from conductive plastic potentiometer - resistance 10K ohms, linearity 0.5%, life expectancy 20 million revolutions.

Power Required

Potentiometer excitation: Regulated voltage recommended, 5-15 Vdc
Sensor interface: 5-15 Vdc unregulated
Line driver: 12-30 Vdc unregulated (depending upon line and load resistance)

Dimensions

Overall height: 32 cm (12.6")
Crossarm length: 28 cm (11") between instrument centers
Vane length: 22 cm (8.7")
Cup wheel: 12 cm (4.7") dia
Mounting: 34 mm (1.34") dia (standard 1" pipe)

Weight

Sensors: 0.7 kg (1.5 lbs)
Shipping: 1.3 kg (3 lbs)

*Nominal values determined in accordance with ASTM standard procedures.

Ordering Information

EIC-03002	Wind Sentry Anemometer and Vane with Crossarm, less cable
EIC-03002L	Wind Sentry with 4-20 mA Output
03101	Wind Sentry Anemometer with Mounting Bracket, less cable
EIC-03301	Wind Sentry Vane with Mounting Bracket, less cable
EIC-03603*	Wind Sensor Interface (specify 0-1 Vdc or 0-5 Vdc)
EIC-03631*	Wind Line Driver (4-20 mA current loop)
EIC-0524	Sensor Cable, per foot

*Specify wind speed scaling

0-50 m/s	Add suffix "M"
0-100 knots	Add suffix "N"
0-200 km/hr	Add suffix "K"