

Model 03002 / 03102

Wind Sentry

Document 1879C



The Model 03002 Wind Sentry anemometer and vane are professional quality wind sensors which are suitable for a wide range of wind measurement applications. The Model 03102 is the speed sensor only. 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 cross arm, 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.

Windvane 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. Cables 3 m (10 ft) long are supplied preconnected to each sensor.

ISO 9001 Registered

Comptus Inc®

342 Lyndeboro Rd., New Boston, NH USA
Phone: 603 487-5512 Fax: 603 487-5513 E-mail: sales@comptus.com

Model 03002

SPECIFICATIONS: MODEL 03002 / 03102 WIND SENTRY

RANGE:

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

ACCURACY:

Wind Speed ± 1.1 M.P.H
Azimuth $\pm 4^\circ$

THRESHOLD:

Cup Anemometer 1.1 m/s (2.5 M.P.H)
Windvane 1.3 m/s (2.9 M.P.H) at 10° displacement
1.9 m/s (4.2 M.P.H) at 5° displacement

DYNAMIC RESPONSE:

Cup wheel distance constant (63% recovery) - 2.3 m (7.5 ft)
Vane delay distance (50% recovery) - 0.5 m (1.6 ft)
Damping ratio - 0.2

SIGNAL OUTPUT:

Wind speed - magnetically induced AC voltage
1 pulse per revolution. 1800 rpm (30 Hz) = 22.8 m/s (51.0 M.P.H)
Azimuth - analog DC voltage from conductive plastic potentiometer
resistance 10K, linearity 0.5%

POWER REQUIRED:

Potentiometer excitation 5 to 15 VDC regulated

DIMENSIONS:

Overall height - 32 cm (12.6 in)
Cross arm length - 28 cm (11.0 in) between instrument centers Vane length - 22 cm (8.7 in)
3 cups conical cross-section - 40 mm (1.5 in) dia.
Cupwheel - 12 cm (4.7 in) diameter
Mounting* - 34 mm (1.34 in) diameter (standard 1 inch pipe)
*(mounting brackets fit 3/4 inch pipe thread)

WEIGHT:

Sensor weight - Anemometer 0.2 kg (0.5 lb.)
Vane 0.4 kg (0.8 lb.)
Anemometer and vane 0.7 kg (1.6 lb.)
Shipping weight - 1.3 kg (3 lb.) approx.

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