

Wind Sentry Anemometer and Vane



Model 03002

General Description

The Model 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 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.

Specifications

Range

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

Signal Output

Wind speed:	Magnetically induced AC sine wave voltage. 1 pulse per revolution, 1800rpm (30Hz) =22.8m/s (51.0 mph)
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Dynamic Response

Cup wheel distance constant:	2.3m (7.5ft)
Vane delay distance:	0.5m(1.6ft)
Damping ratio:	0.2

Accuracy

Wind speed:	±0.5m/s
Wind direction:	±5 °

Threshold*

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

Power Requirement:

Potentiometer excitation:	15VDC maximum
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MODEL 03002V 0 -1 VDC outputs

Power requirement: 8 to 24 VDC (5mA @ 12VDC)

MODEL 03002L 4 – 20 mA outputs

Power requirement: 8 to 30 VDC (40mA max)

Dimensions

Overall height:	32cm (12.6 in)
Crossarm length:	28cm (11 in) between instrument centers
Vane length:	22cm (8.7 in)
Cup wheel:	12cm (4.7 in) dia.
Mounting:	34mm (1.34 in) dia. (standard 1" pipe)
Weight	
Shipping:	1.3kg (3 lbs)

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



Model 03102



Model 03302

Ordering Information

03002 WIND SENTRY ANEM & VANE W/J-BOX

03102 WIND SENTRY ANEMOMETER W/J-BOX

03102L WIND SENTRY ANEMOMETER W/J-BOX W/4-20mA OUTPUT

03302 WIND SENTRY VANE W/J-BOX

03302L WIND SENTRY VANE W/J-BOX W/4-20mA OUTPUT

03102V WIND SENTRY ANEMOMETER W/J-BOX W/0-1VDC OUTPUT

03302V WIND SENTRY VANE W/J-BOX W/0-1VDC OUTPUT