2-D Ultrasonic Anemometers

Models WindSonic1, WindSonic4

The WindSonic1 and WindSonic4 are two-dimensional ultrasonic anemometers for measuring wind speed and wind direction. They provide an alternative to traditional mechanical cup and vane or propeller and vane anemometers. Unlike mechanical anemometers, there are no moving parts to be periodically replaced—minimizing routine maintenance costs. These two-dimensional anemometers are manufactured by Gill Instruments, Inc.

The WindSonic1 and WindSonic4 differ in their output signal. The WindSonic1 outputs an RS-232 signal, that can be read by a CR800-series, CR1000, or CR3000 datalogger. The WindSonic4 outputs an SDI-12 signal that can be read by our CR200-series, CR510, CR10X, CR800-series, CR1000, CR3000, and CR5000 dataloggers.

The WindSonic's minimum detectable wind speed is 0.01 m s^{-1}. This WindSonic is mounted to a crossarm via the CM220 Right Angle Bracket.

Mounting

The WindSonics are shipped with the 17387 sensor mount and CM220 Right Angle Bracket to attach them to a CM202, CM204, or CM206 crossarm. The crossarm is then mounted to a tripod or a tower. An 11 ft cable lead length is recommended for mounting the sensor on a tripod or 10 ft tower; a 24 ft cable is recommended for mounting atop a 20 ft tower and a 34 ft cable for mounting atop a 30 ft tower.

Specifications

Operating Humidity:	0% to 100% RH
Temperature Range:	-35º to +70ºC operating; -40º to +90ºC storage
Power Requirements:	9 to 30 Vdc; 40 mA continuous
Measurement Frequency:	40 Hz block averaged to a 1 Hz output frequency
Output Parameters:	Polar (direction and speed) or orthogonal (Ux and Uy wind)
Output Signal:	RS-232 (WindSonic1); SDI-12 version 1.3 (WindSonic4)
Dimensions:	5.6" (14.2 cm) diameter, 6.3" (16.0 cm) height
Weight:	1.1 lb (0.5 kg)

Wind Direction

Range:	0º to 360º
Accuracy:	±3º
Resolution:	1º

Wind Speed

Range:	0 to 60 m s^{-1}
Accuracy:	±2% of reading
Resolution:	0.01 m s^{-1}

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