CAMPBELL SCIENTIFIC
WHEN MEASUREMENTS MATTER

WindSonic1 and WindSonic4

2D Ultrasonic Anemometers

No moving parts

Minimizes routine maintenance costs

Overview

The WindSonic1[a] and WindSonic4[a] 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.

The WindSonic1 and WindSonic4 differ in their output signal. The WindSonic1 outputs an RS-232 signal that can be read by a CR800, CR850, CR1000, or CR3000 datalogger. The WindSonic4 outputs an SDI-12 signal that can be read by a CR200(X)-series, CR510, CR10X, CR800, CR850, CR1000, CR3000, or CR5000 logger.

Benefits and Features

- Low maintenance—no moving parts significantly reduces maintenance cost and time
- Provides a minimum detectable wind speed of 0.01 m s^{-1}
- Four WindSonic1 anemometers can be connected to a single CR1000 or CR3000 datalogger, while two can be connected to a single CR800 or CR850 datalogger
- The WindSonic1 is compatible with the SDM-SIO1, which increases the number of sensors one datalogger can measure

Technical Details

Orthogononally-Oriented Transducers

The WindSonic1 and WindSonic4 use two pairs of orthogonally oriented transducers to sense the horizontal wind. The transducers bounce the ultrasonic signal from a hood, thus minimizing the effects of transducer shadowing and flow distortion.

Mounting

The WindSonic1 and WindSonic4 are shipped with the 17387 mounting kit. This mounting kit is used to attach the sensor to a CM202, CM204, or CM206 crossarm. The crossarm is then mounted to a tripod or tower.

[a]*The WindSonic1 and WindSonic2 are manufactured by Gill Instruments, Incorporated.*

Recommended Cable Length

CM106	CM110	CM115	CM120	UT10	UT20	UT30
4 m (13 ft)	4 m (13 ft)	6 m (19 ft)	7 m (24 ft)	4 m (13 ft)	7 m (24 ft)	10 m (34 ft)
These cable lengths assume the sensor is mounted atop the tripod/tower via a CM202 crossarm.						

Ordering Information

2D Ultrasonic Anemometers

WINDSONIC1-L Gill 2D Sonic Wind Sensor with RS-232 Output. Enter cable length, in feet, after the -L. Must choose a cable termination option (see below).

WINDSONIC4-L Gill 2D Sonic Wind Sensor with SDI-12 Output. Enter cable length, in feet, after the -L. Must choose a cable termination option (see below).

Cable Termination Options (choose one)

-PT Cable terminates in stripped and tinned leads for direct connection to a datalogger's terminals.

-PW Cable terminates in connector for attachment to a prewired enclosure.

Specifications

- Diameter: 14.2 cm (5.6 in.)
- Length: 16.0 cm (6.3 in.)
- Weight: 0.5 kg (1.1 lb)
- Operating Humidity: < 5% to 100% RH
- Temperature Range
  Operating: -35° to +70°C
  Storage: -40° to +80°C
- Input Voltage: 9 to 30 Vdc
- Typical Current Drain
  WindSonic1: ~15 mA continuous
  WindSonic4: <10 mA @ 12 V
- Measurement Frequency: 40 Hz block averaged to a 1 Hz output frequency
- Output Parameters: Polar (direction and speed) or orthogonal (U_x and U_y wind)
- Output Signal
  WindSonic1: RS-232
  WindSonic4: SDI-12 version 1.3
- WindSonic1 Maximum Cable Capacitance: 2500 pF

Maximum Cable Length[b]

- WindSonic1: 15.24 m (50 ft)
- One WindSonic4 Connected to One Port: 91.44 m (300 ft)
- Two to Ten WindSonic4s Connected to One Port: 60.91 m (200 ft)

Wind Direction

- Range: 0º to 359° (no dead band)
- Accuracy: ±3°
- Resolution: 1°

Wind Speed

- Range: 0 to 60 m s^{-1}
- Accuracy: ±2% @ 12 m s^{-1}
- Resolution: 0.01 m s^{-1}

[b]*Contact Campbell Scientific if longer cable lengths are required.*

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