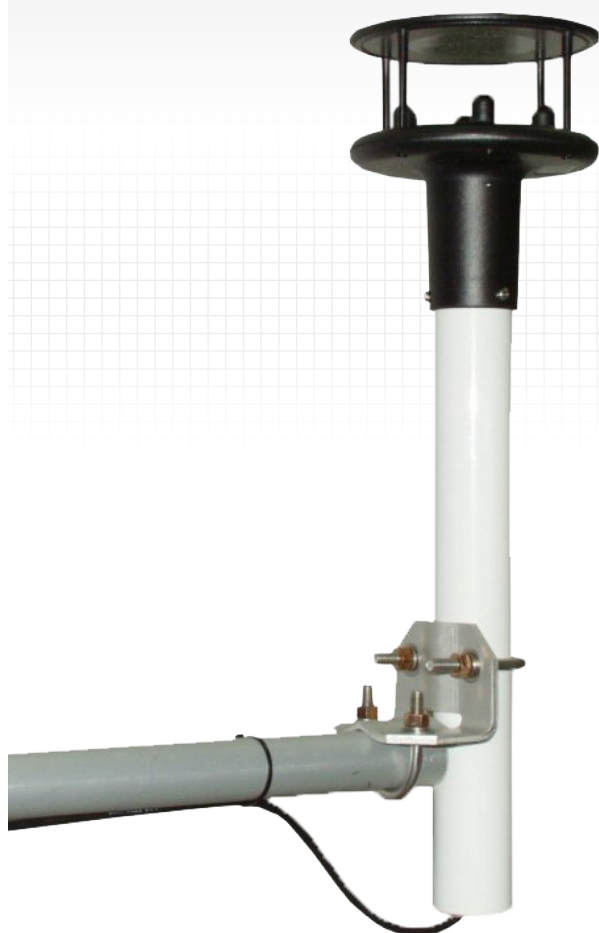




## WindSonic1 and WindSonic4

2D Ultrasonic Anemometers



# No moving parts

## Minimizes routine maintenance costs

### Overview

The WindSonic1<sup>a</sup> and WindSonic4<sup>a</sup> 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 our newer dataloggers can measure. The WindSonic4 outputs an SDI-12 signal that can be read by all contemporary dataloggers except the CR9000X.

The Windsonic1 and WindSonic4 are not heated and are not recommended for conditions where rime, ice, or horizontal snow will occur. Please contact Campbell Scientific for information on a heated 2D sonic anemometer that will work in these conditions.

### Benefits and Features

- › Low maintenance—no moving parts significantly reduces maintenance cost and time
- › Eight WindSonic1 anemometers can connect to a CR6 datalogger; four to a CR1000X, CR1000, or CR3000 datalogger; two to a CR800-series datalogger; and one to a CR300-series datalogger
- › Minimum detectable wind speed is 0.01 m s<sup>-1</sup>
- › WindSonic1 can interface with the SDM-SIO1A (not compatible with the CR300 series) or 31897 RJ45 terminal block adapter (compatible with the CR6 or CR1000X) to increase the number of sensors a datalogger can measure

### Technical Details

#### Orthogonally-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 crossarm such as the CM202, CM203, CM204, or CM206. The crossarm is then mounted to a tripod or tower.

<sup>a</sup>The WindSonic1 and WindSonic2 are manufactured by Gill Instruments, Incorporated.

questions & quotes: 435.227.9120

[www.campbellsci.com/windsonic1](http://www.campbellsci.com/windsonic1)



# 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.

**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.

## 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.
- C** Cable terminates in a connector for attachment to a CS110 Electric Field Meter or ET107 weather station. Available for the WindSonic4 only.
- RQ** Cable terminates in connector for attachment to a RAWS weather station. Available for the WindSonic4 only.

## Cable Length Recommendations<sup>1</sup>

CM106B <sup>2</sup>	CM110 <sup>2</sup>	CM115 <sup>2</sup>	CM120 <sup>2</sup>	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)

### Notes:

1. The lengths assume the sensor is mounted atop the tripod/tower at the end of a 2 ft crossarm.
2. The lengths assume the enclosure is mounted to the tripod mast. If it is mounted to the leg base, add 0.6 m (2 ft) to the cable length.

## 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<sup>b</sup>

- › 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: 0° to 359° (no dead band)
- › Accuracy:  $\pm 3^\circ$
- › Resolution: 1°

### Wind Speed

- › Range: 0 to 60 m s<sup>-1</sup>
- › Accuracy:  $\pm 2\%$  @ 12 m s<sup>-1</sup>
- › Resolution: 0.01 m s<sup>-1</sup>

<sup>b</sup>Contact Campbell Scientific if longer cable lengths are required.