

# WindSonic1, WindSonic4

## 2-D Ultrasonic Anemometers



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, Incorporated.

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 datalogger.

### 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.

### Ordering Information

#### 2-D Ultrasonic Anemometers

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

**WINDSONIC4-L** Gill 2-D Sonic Wind Sensor with SDI-12 Output. Enter cable length, in feet, after the -L (see Maximum Cable Length and Recommended Cable Length sections). 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.



The WindSonic's minimum detectable wind speed is  $0.01 \text{ m s}^{-1}$ . The above WindSonic is mounted to a crossarm via the 17387 mounting kit.

### Maximum Cable Length

- 50 ft (RS-232 output)
- 300 ft (SDI-12 output with one sensor connected to a single port)
- 200 ft (SDI-12 output with two to ten sensors connected to a single port)

Contact Campbell Scientific if longer cable lengths are required.

### Recommended Cable Lengths

CM6	CM106	CM10	CM110	CM115	CM120	UT10	UT20	UT30
10 ft	13 ft	13 ft	13 ft	19 ft	24 ft	13 ft	24 ft	34 ft

*These cable lengths assume the sensor is mounted atop the tripod/tower via a CM202 crossarm.*

## Specifications

<b>Operating Humidity:</b>	0% to 100% RH
<b>Temperature Range</b>	
<b>Operating:</b>	-35° to +70°C
<b>Storage:</b>	-40° to +90°C
<b>Input Voltage:</b>	9 to 30 Vdc
<b>Typical Current Drain</b>	
<b>WindSonic1:</b>	~15 mA continuous
<b>WindSonic4:</b>	~23 mA continuous
<b>Measurement Frequency:</b>	40 Hz block averaged to a 1 Hz output frequency
<b>Output Parameters:</b>	Polar (direction and speed) or orthogonal ( $U_x$ and $U_y$ wind)
<b>Output Signal</b>	
<b>WindSonic1:</b>	RS-232 <sup>1</sup>
<b>WindSonic4:</b>	SDI-12 version 1.3 <sup>2</sup>

<b>Dimensions</b>	
<b>Diameter:</b>	5.6 in (14.2 cm)
<b>Length:</b>	6.3" in (16.0 cm)
<b>Weight:</b>	1.1 lbs (0.5 kg)

### *Wind Direction*

<b>Range:</b>	0° to 360°
<b>Accuracy:</b>	±3°
<b>Resolution:</b>	1°

### *Wind Speed*

<b>Range:</b>	0 to 60 m s <sup>-1</sup>
<b>Accuracy:</b>	±2% of reading
<b>Resolution:</b>	0.01 m s <sup>-1</sup>

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<sup>1</sup>For the WindSonic1, the maximum cable capacitance is 2500 pF (50 ft @ 50 pF ft<sup>-1</sup> or 15.24 m @ 164 pF m<sup>-1</sup>). For configurations requiring longer cable lengths, contact an applications engineer at Campbell Scientific.

<sup>2</sup>For the WindSonic4, the maximum cable length is 300 ft if one sensor is connected to a single port; the maximum cable length is 200 ft if two to ten sensors are connected to a single port. Contact Campbell Scientific if longer cable lengths are required.

