



# WE-2100 WIND ENERGY SONIC ANEMOMETER FOR TURBINE CONTROL

## FEATURES:

- **No Moving Parts**
- **No Routine Maintenance**
- **RS-485 Digital Output**
- **Ice-Free Operation w/ Proportional Heater Control**
- **Field Configurable**

Climatronics' sonic anemometer (P/N 102822) is specifically designed for ambient wind sensing in the challenging industrial environment application of Wind Turbine Control. As a direct replacement for conventional mechanical propeller or cup anemometers and other types of wind sensors in terms of both performance and cost, it requires no routine maintenance or calibration.

The WE-2100 operates on the principle of the measurement of the speed of sound in air. All electronics utilize the latest solid state surface mount technology, conserving power, size, and weight, with a power consumption of less than 0.5W without the heaters turned on.

The WE-2100 sensor measures only 6.5 inches in diameter and about 8 inches high, and the body is slender and aerodynamic to assure that minimal turbulence is introduced into the measured air stream. Measurement interference is further reduced by the transducers being located out of the measurement air stream. This also serves to increase the reliability and longevity of the sensor as dust, debris, snow, rain, etc, will not impact directly on the transducers.

Standard digital output is RS-485 which is easily interfaced to any of Climatronics' or other commonly available data acquisition systems.

The small size and surface area of this anemometer allows it to be kept ice free under the most EXTREME icing conditions such as rime frost, ice fog and freezing rain. The heater is powerful enough to allow the sensor to shed ice, even after it has been cold-soaked for a lengthy period of time. The heater control and power supply enclosure, P/N 102824, is ordered separately.

The WE-2100 sensor is totally field configurable through a very user friendly software interface, which is accessed through the sensor serial data port.

**This sensor is ideal for applications requiring high reliability, minimal maintenance, ruggedness and/or ice-free operation.**



# SPECIFICATIONS:

## PERFORMANCE P/N 102822

### Wind Speed

Range 0-50 m/s  
 Accuracy \* 0-15 m/s ( $\pm 0.5$  m/s)  
 15-30 m/s ( $\pm 4\%$ )  
 30-50 m/s ( $\pm 10\%$ )  
 Resolution 0.1 m/s

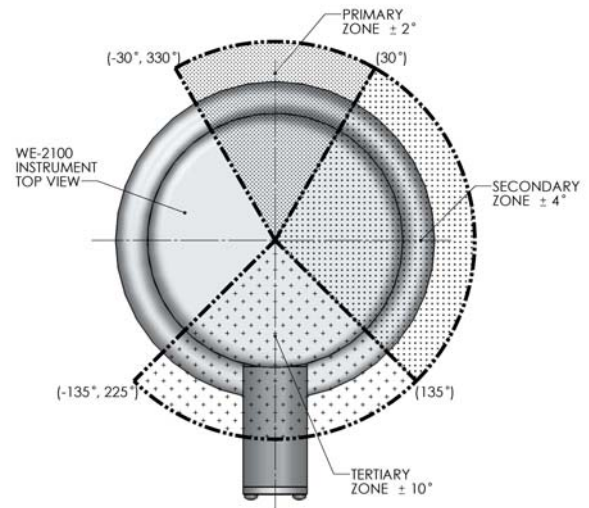
### Wind Direction

Range 0-360°  
 Accuracy \* Primary Measurement Zone ( $\pm 2^\circ$ )  
 Secondary Measurement Zone ( $\pm 4^\circ$ )  
 Tertiary Measurement Zone ( $\pm 10^\circ$ )  
 Resolution 1.0°

### ELECTRICAL

Measurement Format Two orthogonal axes,  
 North/South and East/West  
 Measurement Rate 2 Hz each axis  
 Operating Frequency 40 KHz  
 Signal Output: Isolated RS-485, Half/Full Duplex  
 4000 ft @ 9600 BPS  
 Power Requirements Sensor: 24 VDC @ 15A

\*This accuracy is maintained when the sensor is within  $\pm 10$  degrees of vertical  
 \*\* The sensor will remain ice-free at -20°C, with a LWC of 1.15g/m<sup>3</sup> and 15 m/s wind speed.

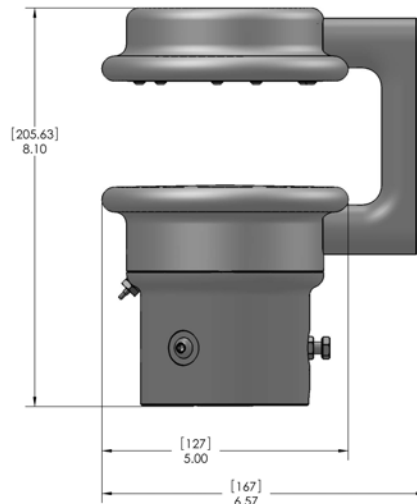


**Mean Time Between Failures (MTBF)** 80,000 hours

**ENVIRONMENTAL**  
 Temperature\*\* -40° to 60°C (-40° to 140°F)  
 Humidity 0 to 100%

**PHYSICAL**  
 Weight 1.4 kg (3 lbs)  
 Size 205.63 mm (8.1 in) high by 127 mm (5.0 in) dia  
 Mounting P/N 102823 mast adapter Fits 1-1/2 in IPS (1.90" or 48.3 mm OD) vertical pipe stub.

**SHIPPING**  
 Weight 2 kg (4.4 lbs)  
 Volume 0.012 m<sup>3</sup> (0.44 ft<sup>3</sup>)



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