



WIND ENERGY SONIC ANEMOMETER

FEATURES

- **No Moving Parts**
- **No Periodic Maintenance**
- **RS-232C or RS-485 Digital Outputs**
- **Ice-Free Operation w/ Proportional Heater Control**
- **Two Year Warranty**
- **Field Configurable**

Climatronics' sonic anemometer (P/N 102751) is specifically designed for ambient wind sensing in the EXTREMELY harsh 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 periodic maintenance or calibration.

The Wind Energy Sonic Anemometer (WESA) 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 WESA sensor measures only 5 inches in diameter and about 7 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 can be RS-232C or 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 102759, is ordered separately.

The WESA 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, NO maintenance, ruggedness and/or ice-free operation.



SPECIFICATIONS

PERFORMANCE

P/N 102751

Wind Speed

Range 0 to 65 m/s (0 to 145 mph)
Accuracy * ± 0.5 m/s (1.1 mph) or 5%
Resolution 0.1 m/s (0.22 mph)
Repeatability ± 0.2 m/s (0.45 mph) or 5%

Wind Direction

Range 0 to 360°
Accuracy * $\pm 2^\circ$
Resolution $\pm 1.0^\circ$

ELECTRICAL

Measurement Format Two orthogonal axes,
North/South and East/West
Measurement Rate 2 Hz each axis
Operating Frequency 40 KHz
Signal Output: RS-232C, 100 ft @ 9600 BPS
& 50 ft @ 19.2 KBPS RS-485,
4000 ft @ 9600 BPS

**This accuracy is maintained when the sensor is within ± 10 degrees of vertical*

*** The sensor will remain ice-free at -20°C, with a LWC of 1.15g/m³ and 15 m/s wind speed.*

Power Requirements

Sensor: 9 - 36 VDC @ 35 mA nominal, option dependent
Heater** 115/220 VAC/60 Hz, 350 W

Mean Time Between Failures (MTBF)

80,000 hours

ENVIRONMENTAL

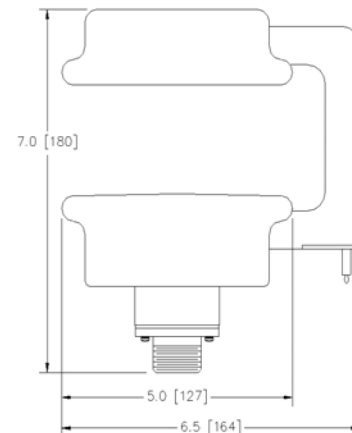
Temperature** -40° to 60°C (-40° to 140°F)
Humidity 0 to 100%

PHYSICAL

Weight 1.4 kg (3 lbs)
Size 180 mm (7. in) high by 127 mm (5.0 in) dia
Mounting P/N 102730 mount
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 m³ (0.44 ft³)



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Rev.15 Sep 2008