

*The YOUNG Model 81000VRE Ultrasonic Anemometer is a 3-axis, no-moving-parts wind sensor. It is ideal for applications requiring fast response, high resolution and three-dimensional wind measurement.*

The sensor features durable corrosion-resistant construction with 3 opposing pairs of ultrasonic transducers supported by stainless steel members. The transducers are arranged so that measurements are made through a common volume. A fast, 160 Hz internal sampling rate ensures superior measurement resolution. Output rates from 4 to 32 Hz may be selected. Each 81000 is individually wind-tunnel tested and calibrated to compensate for wind shadow effects of the support structure.

Available outputs include serial RS-232 and RS-485. For applications requiring synchronized analog measurements, four voltage input channels are also provided. Wind, sonic temperature and voltage input data are transmitted serially. A variety of preset or custom output format options may be selected by the user.

The sensor installs on standard 1 inch pipe. Wiring connections are housed in a convenient weatherproof junction box.



## Specifications

**Wind Speed:** 0 to 40 m/s (0 to 90 mph)  
Resolution: 0.01 m/s  
Threshold: 0.01 m/s  
Accuracy:  $\pm 1\% \pm 0.05\text{m/s}$  (0 to 30 m/s)  
 $\pm 3\%$  (30 to 40 m/s)

**Wind Direction:** 0 to 360 degrees  
Elevation Range:  $\pm 60$  degrees  
Resolution: 0.1 degree  
Accuracy:  $\pm 2$  degrees (1 to 30 m/s)  
 $\pm 5$  degrees (30 to 40 m/s)

**Speed of Sound:** 300 to 360 m/s  
Resolution: 0.01 m/s  
Accuracy:  $\pm 0.1\% \pm 0.05$  m/s (0 to 30 m/s)

**Sonic Temperature:** -50 to +50  
Resolution: 0.01 m/s  
Accuracy:  $\pm 2$  °C (0 to 30 m/s)

**Serial Output:** RS-232 or RS-485  
1200 to 38400 baud  
4 to 32 Hz (user-selected)  
User Programmable ASCII output configuration (select from U, V, W, Speed of sound, Sonic temperature, 2D speed, 3D speed, Azimuth, Elevation)

**Units:** m/s, cm/s, mph, knots, km/h

**Voltage Inputs:**  
Range: 0 to 5000 mV, V1 & V2  
0 to 1000 mV, V3 & V4  
Resolution: 1 part in 4000  
Accuracy:  $\pm 0.1\%$  of full scale

**Power Requirement:**  
12 to 24 VDC, 110 mA

**Operating Temperature:**  
-50 to +50 °C

**Dimensions:**  
70cm high x 17cm radius (3 support arms)  
Weight: 1.4 kg (3.0 lb)  
Shipping Weight: 4.5 kg (10 lb)

## Ordering Information

MODEL

ULTRASONIC ANEMOMETER – VOLTAGE INPUTS, SERIAL OUTPUTS ONLY ..... 81000VRE

 Complies with applicable CE Directives

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