

*The YOUNG Model 81000 Ultrasonic Anemometer is a 3-axis, no moving parts wind sensor. It is perfectly suited 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.

**Model 81000** features four voltage output channels. Serial RS-232 and RS-485 outputs are available as well. For applications requiring synchronized analog measurements, **Model 81000V** includes four voltage input channels instead of voltage outputs. Wind, sonic temperature and voltage input data are transmitted serially. For each model, a variety of preset or custom output format options may be selected by the user.

Both models install 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:  $\pm 1\%$  rms  $\pm 0.05$  m/s (0 to 30 m/s)  
 $\pm 3\%$  rms (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:  $\pm 0.1\%$  rms  $\pm 0.05$  m/s (0 to 30 m/s)

**Sonic Temperature:** -50 to +50 °C  
 Resolution: 0.01 °C  
 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)

### Preset outputs:

NMEA- Marine Standard  
 RMYT- Young Wind Tracker  
**Units:** m/s, cm/s, MPH, Knots, Km/hr

### Analog Voltage Outputs (81000):

4 voltage outputs, 0 to 5000 mV  
 (select from U, V, W, Sonic temperature or Speed, Azimuth, Elevation, Sonic temperature)

### Voltage Input (81000V):

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:

56cm high x 17cm radius (3 support arms)  
 Weight: 1.7 kg (3.8 lb)  
 Shipping Weight: 4.5 kg (10 lb)

## Ordering Information

## MODEL

ULTRASONIC ANEMOMETER- VOLTAGE & SERIAL OUTPUTS..... **81000**

ULTRASONIC ANEMOMETER- VOLTAGE INPUTS, SERIAL OUTPUTS ONLY..... **81000V**



Complies with applicable CE Directives