Ultrasonic Sensor Portfolio

YOUNG

2D vs. 3D vs. All-In-One: Which is right for you?

2D Ultrasonic:
Measures two components of wind: speed and direction along the horizontal plane. This is ideal for most operational and meteorological applications and provide fast, reliable data in real time.

3D Ultrasonic:
Captures a third dimension: vertical wind motion. These advanced instruments detect updrafts, downdrafts, and turbulent airflow—making them invaluable for researchers studying atmospheric boundary layers, turbulence, or wind shear.

All-In-One:
Provides comprehensive atmospheric data—wind speed, wind direction, temperature, humidity, and barometric pressure—from a single, compact device. They are ideal for space-limited installations, offering a simplified, cost-effective alternative to full-scale weather stations.

How They Work

An ultrasonic wind sensor measures the wind by sending out ultrasonic sound waves and measuring the time it takes to go from a sender to a receiver. When the wind blows, the ultrasonic sound waves travel faster or slower depending on the speed and the direction of the wind.

Benefits of Ultrasonic

- **High Accuracy and Precision:** Detects even subtle changes.
- **No Moving Parts:** Minimizes wear for long-term reliability.
- **Rapid Response Time:** Delivers real-time data with minimal delay.
- **All-Weather Operation:** Performs in extreme conditions; optional heaters ensure cold-weather reliability.

2D Ultrasonic Anemometers

Standard:
The 86000 2D Ultrasonic Anemometer offers high performance and low power consumption in a compact size with serial or analog outputs.

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Heated:
The 86004 features thermostatically controlled heaters in the transducer and housing surfaces for extended cold weather use.

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Marine:
The 86106 offers the same high performance and low power use as our standard model, with NMEA output preconfigured for easy marine integration.

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3D Ultrasonic Anemometers

Standard:
The original 3D ultrasonic anemometer, 81000, offers both serial and voltage outputs.

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Voltage Input:
The 81000V offers voltage input and serial output to allow you to output all data in a single cable.

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Extended Mast:
The 81000RE and 81000VRE feature an extended mast for enhanced performance in ultra-low wind speeds—ideal for specialized research applications.

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ResponseONE™ Weather Stations

ResponseONE Anemometer:
The 91000 is a lower cost ultrasonic anemometer that only offers serial outputs.

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ResponseONE All-in-One:
The 92000 measures wind speed and direction, temperature, pressure, and humidity in a single, compact footprint.

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ResponseONE-PRO All-in-One:
The 93000 measures wind, temperature, pressure, and humidity while allowing you to easily change the sensor and filter in the field.

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