

ULTRASONIC ANEMOMETER

Ultrasonic Anemometer measures the time taken for an ultrasonic pulse of sound to travel from the North transducer to the South transducer, and compares it with the time for a pulse to travel from S to N transducer. Likewise times are compared between West and East, and East and West transducers.

For example, a North wind is blowing, then the time taken for the pulse to travel from N to S will be less than from S to N, whereas the W to E, and E to W times will be the same. The wind speed and direction can then be calculated from the differences in the times of flight on each axis. This calculation is independent of factors such as temperature.



It is easy to install and maintain because of lightweight and compact, and has no moving parts. For operation in areas where frequent extreme icing



conditions will be encountered, built-in, thermostatically controlled heaters are available. Ultrasonic anemometers are provided with a built-in, flux-gate compass, which automatically references the wind direction

output to magnetic north, regardless of the sensors orientation. This compass feature, combined with our sensors small size, low weight and low power requirements makes it very easy to transport and deploy for short-term studies. These features also make it the ideal sensor for providing meteorological data input to a computer that performs real time dispersion calculations at an accidental spill or release of hazardous materials. Ultrasonic anemometer measures the wind using the principles described above without any moving mechanical devices, i.e. there are no physical constraints on the sensor response due to mechanical friction, aerodynamic drag, lift or transducer mass. Ultrasonic anemometer is an instrument that exhibits an instantaneous response, has zero threshold, no delay distance and is critically damped. The accuracy of the wind speed measurement is the same as the resolution (0.1 m/s) and is only limited by the electronics of the sensor.

SPECIFICATIONS:

Ultrasonic anemometer (no moving parts)
Range: 0 to 65 m/s (wind speed), 0 to 360 degree for direction
Starting threshold: 0.01m/s
Accuracy: 0.2m/s or $\pm 4\%$ (wind speed), ± 2 degrees (wind direction)
Resolution: 0.01 m/s (wind speed)
Resolution: 1 degree (wind direction)
Silicon photovoltaic or thermopile
Range: 0 to 1500 W/m ²
Accuracy: $\pm 5\%$
Resolution: 5 W/m ²
Complete tool kit for installation and routine maintenance giving full detail(number of pieces and type)