

Measure Wind Speed and Direction

The DS-2 is a rugged, research-grade two-dimensional sonic anemometer built specifically for agricultural, forestry, and environmental research applications.

Accurate at Low Wind Speeds

A lower wind speed threshold of 0 m/s makes the DS-2 especially well-suited for measuring wind within plant canopies, where wind speeds are often below the threshold of a cup anemometer. And with a resolution of 0.01 m/s, the DS-2 is capable of recording fine-scale variations in wind speeds within and above plant canopies.

No Maintenance Required

The DS-2 is designed for long-term, maintenance-free operation. No moving parts means no mechanical wear and no need for oiling or replacing bearings.

Never Needs Calibration

The DS-2 uses ultrasonic sound waves to measure wind velocity and direction. Because this measurement comes from first principles, the DS-2 doesn't ever need to be calibrated once it leaves the factory.

Uses Very Little Power

The DS-2 requires 100 to 1000 times less power than other ultrasonic anemometers. It's built to run six months or more on the five AA batteries in Em50 series data loggers without significantly affecting battery life. Note: the DS-2 is also compatible with other data loggers. See specifications for more information.

Low Cost

Most agricultural and environmental researchers use wind as just one variable among many. Occasionally the scientific objectives of a study require multiple simultaneous measurements of wind to capture vertical or horizontal heterogeneity in the environment. A primary design goal of the DS-2 is to provide high accuracy wind speed and direction at a price that opens up research options, including greater spatial coverage.

Customized for Environmental Research

Wind speed and direction are fundamental measurements necessary for a wide range of agricultural, forestry, and micrometeorological applications. The DS-2 was designed to put the accuracy and low maintenance benefits of sonic anemometers in a sensor built specifically for these applications.

The DS-2 is not intended as a replacement for the high-end three dimensional sonic anemometers used by micrometeorologists. It is designed to provide agricultural and environmental researchers a high accuracy, low maintenance solution for measuring horizontal wind speed and direction.



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DS-2 Sonic Anemometer

Product Overview

Output

The DS-2 reports wind speed and maximum gust speed in meters per second with a resolution of 0.01 m/s. It also reports wind direction with a resolution of 1 degree.

If the sampling rate is greater than 0.1 Hz, the anemometer reports the speed and direction at the time of sampling. If sampled less frequently, the anemometer samples every 10 seconds, averages the vector components of the wind, and records the maximum gust during the specified sampling period.

Collect Data and Monitor Remotely

Monitor wind speed and direction from your office, phone, or any internet-connected device by connecting the DS-2 sonic anemometer to an Em50G data logger. The Em50G setup allows you to get near-real time information, check sensor and system function, and download data from sites that are difficult to access.

Data Logging

The DS-2 Sonic Anemometer is an SDI-12 digital sensor available with either a single 3.5 mm stereo connector or stripped and finned wire leads.

When purchased with a stereo connector, the DS-2 can be plugged directly into Decagon's Em50 series data loggers. Wind speed, direction, and maximum gust data are all transmitted through a single stereo connector. No programming is needed.

The DS-2 Sonic Anemometer is also compatible with other SDI-12 capable data loggers. When used with certain data loggers, the DS-2 also reports air temperature from an onboard thermistor.



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DS-2 Sonic Anemometer Specifications

Wind Speed Range: 0 to 30 m/s

Wind Speed Resolution: 0.01 m/s

Wind Speed Accuracy: 0.30 m/s or < 3%, whichever is larger

Wind Direction Range: 0 to 359 degrees

Wind Direction Resolution: 1 degree

Wind Direction Accuracy: ± 3 degrees

Operating Temperature Range: -40 to 50 C

Excitation Voltage: 3.6 to 15 VDC

Current: 0.03 mA quiescent, 0.5 mA sampling, < 0.05 mA average

Communication: SDI-12

Diameter: 100 mm

Height (wind sensor): 75 mm

Height (total w/ mount): 155 mm

Maximum sampling speed1: 1 Hz

Output1: average speed, gust speed, direction, or vector

Connector types: 3.5 mm (stereo) plug or stripped & tinned lead wires (Pigtail)

Cable Length: Standard is 5 m, though we have custom cable lengths available upon request



If sampling rate is greater than 0.1 Hz, the anemometer reports the speed and direction at the time of sampling. If sampled less frequently, the anemometer samples every 10 seconds, averages the vector components of the wind, and keeps the maximum gust. When the logger samples, the anemometer reports the average wind speed, direction, and the maximum gust speed.



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