



# sonic anemometer

## ATMOS-22 wind speed & direction

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### overview

- Ideal for spraying and complying with government regulations
- Easy -to-use, compact, digital sonic anemometer
- Portable, or continuous measurements with a data logger

The ATMOS-22, previously known as 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 ATMOS-22 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 ATMOS-22 is capable of recording fine-scale variations in wind speeds within and above plant canopies.

#### no maintenance or calibration required

The ATMOS-22 is designed for long-term, maintenance-free operation. No moving parts means no mechanical wear and no need for oiling or replacing bearings.

The ATMOS-22 uses ultrasonic sound waves to measure wind velocity and direction. Because this measurement comes from first principles, the ATMOS-22 doesn't ever

need to be calibrated once it leaves the factory.

#### **uses very little power**

The ATMOS-22 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 the ZL6 data logger without significantly affecting battery life.

Note: the ATMOS-22 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 ATMOS-22 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 ATMOS-22 was designed to put the accuracy and low maintenance benefits of sonic anemometers in a sensor built specifically for these applications.

The ATMOS-22 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.

#### **output**

The ATMOS-22 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 ATMOS-22 sonic anemometer to a ZL6 telemetry data logger. The ZL6 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 ATMOS-22 Sonic Anemometer is an SDI-12 digital sensor available with either a single 3.5 mm stereo connector or stripped and tinned wire leads.

When purchased with a stereo connector, the ATMOS-22 can be plugged directly into METER Group's ZL6 data logger. Wind speed, direction, and maximum gust data are all transmitted through a single stereo connector. No programming is needed.

The ATMOS-22 Sonic Anemometer is also compatible with Edaphic Scientific's range of ES-SYS data logging systems.

## **specifications**

<b>WIND SPEED RANGE</b>	0 to 30 m/s
<b>WIND SPEED RESOLUTION</b>	0.01 m/s
<b>WIND SPEED ACCURACY</b>	0.30 m/s or < 3%, whichever is larger
<b>WIND DIRECTION RANGE</b>	0 to 359 degrees
<b>WIND DIRECTION RESOLUTION</b>	1 degree
<b>WIND DIRECTION ACCURACY</b>	±3 degrees



<b>OPERATING TEMPERATURE RANGE</b>	-40 to 50 C
<b>EXCITATION VOLTAGE</b>	3.6 to 15 VDC
<b>CURRENT</b>	0.03 mA quiescent, 0.5 mA sampling, < 0.05 mA average
<b>DATA LOGGER COMPATIBILITY (NOT EXCLUSIVE)</b>	ZL6, ES-SYS
<b>DIAMETER</b>	100 mm
<b>HEIGHT (WIND SENSOR)</b>	75 mm
<b>HEIGHT (TOTAL W/ MOUNT)</b>	155 mm
<b>MAXIMUM SAMPLING SPEED*</b>	1 Hz
<b>OUTPUT*</b>	average speed, gust speed, direction, or vector
<b>CONNECTOR TYPES</b>	3.5 mm (stereo) plug or stripped & tinned lead wires (Pigtail)
<b>CABLE LENGTH</b>	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.

## manual & docs

- [ATMOS-22 Sonic Anemometer Brochure](#)
- [ATMOS-22 Sonic Anemometer Manual](#)

## related products

- [ZL6 data logger for sonic anemometer](#)
- [ES-SYS data logging systems](#)
- [Online and remote access to data](#)
- [Portable, handheld meter for sonic anemometer](#)
- [Weather sensors and stations](#)
- [Canopy infrared temperature sensor](#)



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environmental research & monitoring equipment