METER

# ATMOS 22 ULTRASONIC ANEMOMETER

## SENSOR DESCRIPTION

The ATMOS 22 Ultrasonic Anemometer is designed for continuous monitoring of wind speed and direction (see Measurement Specifications). Ultra-low power consumption and a robust, no moving parts design that prevents errors because of wear or fouling, make the ATMOS 22 ideal for long-term, remote installations.

**NOTE: The ATMOS 22 replaces the DS-2 (discontinued) and the outputs and order are not the same as the DS-2. Any DS-2 replaced by the ATMOS 22 will require data acquisition system reprogramming based on information located in the tech note Integrators replacing DS-2 with ATMOS 22.**

## APPLICATIONS

- Weather monitoring
- Microenvironment monitoring
- In-canopy wind measurement
- Spatially distributed environmental monitoring
- Wind profiling
- Crop weather monitoring
- Fire danger monitoring/mapping
- Weather networks

## ADVANTAGES

- Robust, no moving parts design
- Small form factor
- Low-input voltage requirements
- Low-power design supports battery-operated data loggers
- Supports the SDI-12 three-wire interface
- Tilt sensor informs user of out-of-level conditions
- No configuration necessary

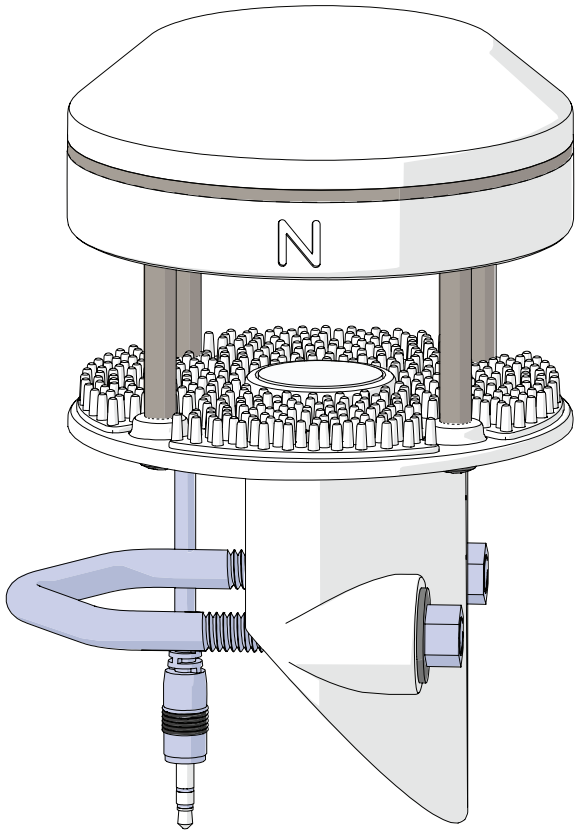


**Figure 1 ATMOS 22 Ultrasonic Anemometer**

## PURPOSE OF THIS GUIDE

METER provides the information in this integrator guide to help ATMOS 22 Ultrasonic Anemometer customers establish communication between these sensors and their data acquisition equipment or field data loggers. Customers using data loggers that support SDI-12 sensor communications should consult the data logger user manual. METER sensors are fully integrated into the METER system of plug-and-play sensors, cellular-enabled data loggers, and data analysis software.

## COMPATIBLE FIRMWARE VERSIONS

This guide is compatible with firmware versions 1.03 or newer.

# SPECIFICATIONS

## MEASUREMENT SPECIFICATIONS

| Horizontal Wind Speed | |
|---|---|
| Range: | 0–30 m/s |
| Resolution: | 0.01 m/s |
| Accuracy: | The greater of 0.3 m/s or 3% of measurement |

| Wind Gust | |
|---|---|
| Range: | 0–30 m/s |
| Resolution: | 0.01 m/s |
| Accuracy: | The greater of 0.3 m/s or 3% of measurement |

| Wind Direction | |
|---|---|
| Range: | 0°–359° |
| Resolution: | 1° |
| Accuracy: | ±5° |

| Tilt | |
|---|---|
| Range: | 0°–180° |
| Resolution: | 0.1° |
| Accuracy: | ±1° |

| Dimensions |
|---|
| 10 cm diameter x 16 cm height |

| Cable Length |
|---|
| 5 m<br>(custom cable lengths are available for an additional cost) |

## ELECTRICAL AND TIMING CHARACTERISTICS

| Supply Voltage (VCC) to GND | |
|---|---|
| Minimum | 3.6 VDC continuous |
| Typical | |
| Maximum | 15.0 VDC continuous |

| Digital Input Voltage (logic high) | |
|---|---|
| Minimum | 2.8 V |
| Typical | 3.0 V |
| Maximum | 15.0 V |

| Digital Input Voltage (logic low) | |
|---|---|
| Minimum | –0.3 V |
| Typical | 0.0 V |
| Maximum | 0.8 V |

| Power Line Slew Rate | |
|---|---|
| Minimum | 1.0 V/ms |
| Typical | |
| Maximum | |

| Current Drain (during measurement) | |
|---|---|
| Minimum | 0.05 mA |
| Typical | 0.125 mA |
| Maximum | 0.5 mA |

| Current Drain (while asleep) | |
|---|---|
| Minimum | 0.05 mA |
| Typical | 0.125 mA |
| Maximum | 0.15 mA |

| Operating Temperature Range | |
|---|---|
| Minimum | –40 °C |
| Typical | |
| Maximum | 50 °C |

| Power Up Time (SDI ready)—`aRx!` Commands | |
|---|---|
| Minimum | |
| Typical | 10 s |
| Maximum | |

| Power Up Time (SDI ready)—Other Commands | |
|---|---|
| Minimum | |
| Typical | 800 ms |
| Maximum | |

| Measurement Duration | |
|---|---|
| Minimum | |
| Typical | 110 ms |
| Maximum | 3,000 ms |

## COMPLIANCE

Manufactured under ISO 9001:2015

EM ISO/IEC 17050:2010 (CE Mark)