



ATMOS-41W WIRELESS REMOTE WEATHER STATION

METER

Meet the world's simplest wireless weather station

The ATMOS-41W all-in-one remote weather station is one of the world's few truly wireless weather stations, and it is the most affordable research-grade station in its class. It is robust, reliable, and simple to use. All of the telemetry is enclosed with an integrated cell module. But that is not even the best part. There is nothing on the market that is easier to install. Put it in a backpack, take it to your site, secure it to a post pointing North, and walk away. It is that easy to start broadcasting real-time data directly to the cloud.



More accurate than ever

The ATMOS-41W remote weather station measures 10 environmental variables, including solar radiation, precipitation, air temperature (min, max, average), barometric pressure, vapor pressure, relative humidity, wind speed, wind direction, maximum wind gust, and tilt. It takes our ultra-reliable ATMOS technology to the next level with a dual rain measurement for higher accuracy and extended range, making it one of the most robust rain gauges on the market. It combines a drop counter and a tipping spoon to ensure accurate measurements, and it is the only rain gauge available that can measure electrical conductivity. Now you can tell if you are measuring rainwater, irrigation water, or if the funnel is plugged with bird droppings. Not only that, we have improved the solar radiation, water vapor, air temperature, and wind measurement capabilities to be more compliant with various meteorological organization observation standards.

Not Plug and Play. Just Play.

Forget complicated and costly. If you need a **truly wireless**, all-in-one, remote weather station that is incredibly simple to install, low maintenance, and can withstand harsh weather conditions, we have got you covered. ATMOS-4 W makes scientific-grade accuracy easy and affordable, so you can discover more and work less.



BILMAR BİLİMSEL ARAŞTIRMA VE MÜHENDİSLİK ANONİM ŞİRKETİ

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Ditch the setup

We engineered the ATMOS-41W to work right out of the box without having to worry about managing a cell provider or connection, and there is no programming involved. It is a true wireless IoT instrument. Put it on a mount, and it is literally sending data to the cloud. What if there is a data transmission interruption? No problem. It has an integrated logger that stores your data, so you have got backup. Get continuous, 15-minute transmission of high-quality measurements in near-real time. Use ZENTRA Cloud to see, share, and manage your data from anywhere in the world, on any device.

Low power, low cost, low maintenance

The ATMOS-41W remote weather station was specifically designed for remote areas with harsh weather conditions, so it is tough, durable, requires very little maintenance, and is completely solar powered, saving you countless trips to your site. An innovative tilt sensor signals out-of-level condition, and no configurations are necessary. It is perfect for microenvironment monitoring, spatially-distributed environmental measurements, crop weather monitoring, fire danger applications, weather networks, and more.

Features

- A true wireless weather station ideal for long-term, remote installations
- Incredible 10-minute installation
- All sensors and cellular communications integrated into a single, small form factor
- See, share, and manage data remotely with ZENTRA Cloud
- Robust design that prevents errors because of wear or fouling
- Integrated sensor leveling mechanism
- Improved wind speed accuracy
- Improved rain funnel filter reduces clogging
- Increased resolution of solar radiation measurement to 0.1 W/m² for standards compliance
- Decreased sampling interval of solar radiation, water vapor, air temperature, and wind measurements to 3 s for standards compliance
- Output highest and lowest instantaneous temperature measurement for each measurement interval (T_{max} , T_{min}) for standards compliance
- Extended air temperature range (-63 to +60°C) for standards compliance
- Calibrated thermistor to reliably achieve +/- 0.2°C @ 25°C for temperature sensor accuracy
- Tipping spoon added for dual rainfall measurement
- Addition of electrical conductivity measurement for rainfall



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Specifications

MEASUREMENT SPECIFICATIONS

Upload Frequency	Hourly upload (default) Contact Customer Support for more frequent reporting options. Additional charges may apply.
Measurement Interval	5 min to 12 h (average or accumulation of more frequent sensor readings)
Timekeeping	Synchronize automatically and on-demand; GPS, cellular, or ZENTRA Utility software.
Solar Radiation	Range: 0-1750 W/m ² Resolution: 1 W/m ² Accuracy: ±5% of measurement typical
Relative Humidity (RH)	Range: 0-100% RH (0.00-1.00) Resolution: 0.1% RH Accuracy: Sensor measurement accuracy is variable across a range of RH
Air Temperature	Range: -63 to 60°C Resolution: 0.1°C Sensor Accuracy: ±0.2°C at 25°C Measurement Accuracy: ±0.6°C from -20 to 50°C
Humidity Sensor Temperature	Range: -63 to 80°C Resolution: 0.1°C Accuracy: ±0.2°C
Vapor Pressure	Range: 0-47 kPa Resolution: 0.01 kPa Accuracy: Sensor measurement accuracy is variable across a range of temperature and RH.
Barometric Pressure	Range: 1-120 kPa Resolution: 0.01 kPa Accuracy: ±0.05 kPa at 25°C , ±0.1 kPa from -10 to 50°C , ±0.5 kPa below -10°C and above 60°C
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: 0-359.9° Resolution: 0.1° Accuracy: ±5°
Tilt	Range: 0° to 180° Resolution: 0.1° Accuracy: ±1°
Precipitation	Range: 0-2,000 mm/h Resolution: 0.017 mm Accuracy: ±5% of measurement from 0 to 1,000 mm/h
Electrical Conductivity	Range: 0-3 mS/cm Resolution: 0.001 mS/cm Accuracy: the greater of 0.005 mS/cm or 15% of measurement



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COMMUNICATION SPECIFICATIONS

Output	SDI-12 communication
Data logger compatibility	METER data loggers (ZL6,EM60) or any data acquisition systems capable of switched 3.6-15.0 VDC excitation and SDI-12 communication.

PHYSICAL SPECIFICATIONS

Dimensions	Diameter: 10 cm Height: 28 cm
Cable length	5 m (standard) 75 m (maximum custom cable length)
Connector types	3.5-mm stereo plug connector or stripped and tinned wires
Operating temperature range	Minimum: -50°C Maximum: 60°C Note: Barometric pressure and relative humidity sensors operate accurately at a minimum of -40°C

ELECTRICAL AND TIMING CHARACTERISTICS

Supply voltage (VCC to GND)	Minimum: 3.6 VDC continuous Maximum: 15 VDC continuous Note: ATMOS-41 weather station must be continuously powered in order to work properly. Note: For ATMOS-41 weather station to meet digital logic levels specified by SDI-12, it must be excited at 3.9 VDC or greater.
Measurement duration	Typical: 110 ms Maximum: 3000 ms
COMPLIANCE (CE Mark)	Manufactured under ISO 9001:2015 EM ISO/IEC 17050:2010



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