edaphic scientific
environmental research & monitoring equipment

the “all-in” weather station

ATMOS 41 compact weather station

overview

Edaphic Scientific provides customised weather monitoring solutions via the ATMOS 41 “All-In” Weather Station.

The ATMOS 41 packages 12 weather sensors into a single, compact device. There are no moving parts to fail. So, installation and maintenance have been simplified to the maximum.

With a basic installation, the ATMOS 41 connects to the ZL6 series of data loggers. Simply plug in, and power off AA batteries. No programming and no wiring is involved!

Alternatively, a larger installation may include the ATMOS 41 Weather Station alongside other sensors that measure parameters including evapotranspiration, soil moisture, sap flow, plant growth and carbon allocation, canopy temperature, and more.

who is using the ATMOS 41?

Since its introduction in 2017, the ATMOS 41 has been rapidly adopted by many user around the world including 20,000 units across the continent of Africa!

In Australia, there are many users from scientific researchers, growers, urban managers, landfill operators, mine sites, and more.

the ATMOS 41 measures….

Air temperature, relative humidity, vapor pressure, barometric pressure, wind speed, gust and direction, solar radiation, precipitation, lightning strike counter and distance.

how accurate is the ATMOS 41?

A scientific study from ETH Zurich, Switzerland, that the sensor accuracy from the ATMOS-41 is as good, or better, than traditional sensors.

In this blog article, there is a comparison between sensor output from the ATMOS 41 and traditional weather sensors.

specifications

Solar radiation	Range: 0 to 1750 W/m^2 Resolution: 1 W/m^2 Accuracy: ± 5%
Precipitation	Range: 0 to 125 mm/hr Resolution: 0.017 mm Accuracy: ± 5% of measurement from 0 to 50 mm/hr
Air temperature	Range: -40 to 50° C Resolution: 0.1° C Accuracy: ± 0.6° C
Humidity sensor temperature	Range: -40 to 50° C Resolution: 0.1° C Accuracy: ± 1.0° C
Relative humidity	Range: 0 to 100% Resolution: 0.1% Accuracy: 3% typical, varies with temperature and humidity

Vapor pressure	Range: 0 to 47 kPa Resolution: 0.01 kPa Accuracy: ± 0.2 kPa typical below 40° C, varies with temperature and humidity
Barometric pressure	Range: 50 to 110 kPa Resolution: 0.0015 kPa Accuracy: ± 0.1 kPa
Wind speed	Range: 0 to 60 m/s Resolution: 0.01 m/s Accuracy: the greater of 0.3 m/s or 3% of measurement
Wind gust	Range: 0 to 60 m/s Resolution: 0.01 m/s Accuracy: the greater of 0.3 m/s or 3% of measurement
Wind direction	Range: 0 to 359° Resolution: 1° Accuracy: ± 5°
Compass heading	Range: 0 to 359° Resolution: 1° Accuracy: ± 5°
Sensor tilt	Range: 0 to 180° Resolution: 0.1° Accuracy: ± 1°
Lightning strike counter	Range: 0 to 65535 Resolution: 1 strike Accuracy: varies with distance, > 25% detection at <10 km typical
Lightning distance	Range: 0 to 40 km Resolution: 3 km Accuracy: unspecified

manual & docs

- ATMOS 41 Manual
- ATMOS 41 Brochure
- ATMOS 41 Integrators Guide

related products

- ZL6 Data Logger for the ATMOS 41
- LoRaWAN, modems and wireless monitoring systems
- Weather sensors and stations
- Soil moisture sensors, probes and meters
- Soil CO2 concentration
- Dendrometers for tree and fruit growth
- Sap flow sensors
- Canopy infrared temperature sensor