All-in-one weather station

metergroup.com/environment/products/atmos-41-weather-station/

Weather data plus one, or two, or three...

ATMOS 41

The problem with weather stations

Most weather stations are cluttered, complicated and frustrating to install and maintain. Wiring and programming all the components can be a nightmare and finding room to mount everything can be a challenge.

All-in-one weather stations solve many of these problems, but the tradeoff is flexibility. Adding just one more sensor often requires an extra data logger, making the system more complicated and more expensive.

All-in-one plus one

Our solution is an all-in-one…plus one. The all new ATMOS 41 is the first affordable all-in-one weather station that fulfills all your weather monitoring needs, but doesn't restrain you when you want to do more.

Weather sensors empowered

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

Most all-in-one weather stations give you the option to measure solar radiation or precipitation, but not both. ATMOS 41 provides both measurements in one device, so you never have to compromise.

ATMOS 41 weather data e.g. humidity, temperature or atmospheric pressure are transmitted over a single wire. That means you don't have to use all of the ports on your data logger just for weather measurements. And, if you are using the ATMOS 41 with EM60G data loggers, you have the flexibility to add any of our other sensors, like soil moisture.

The ATMOS 41 works seamlessly with the EM60G for simple, plug-and-play atmospheric data logging and cloud-based data storage and management. You can set up an entire weather monitoring system without any complex wiring or programming.

Weather stations, reimagined

ATMOS 41 is a simple, compact, and connected device with the flexibility to do more than weather measurements. That is why we call it an all-in-one plus one, or two, or three…

Get pricing
Features Specifications Accessories Support / Downloads

Features

- Measures 12 weather variables including:

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

- Easy installation
- No moving parts
- All data transmitted over a single wire
- Digital SDI-12 communication
- Connect to EM60G for data capture and management

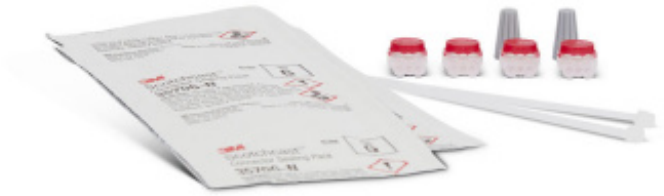
Specifications

Solar radiation	Range: 0 to 1750 W/m^2 Resolution: 1 W/m^2 Accuracy: ± 5% of measurement typical
Precipitation	Range: 0 to 400 mm/h Resolution: 0.017 mm Accuracy: ± 5% of measurement from 0 to 50 mm/h
Vapor pressure	Range: 0 to 47 kPa Resolution: 0.01 kPa Accuracy: varies with temperature and humidity, ±0.2 kPa typical below 40 °C

Relative humidity	Range: 0 to 100% Resolution: 0.1% Accuracy: varies with temperature and humidity, ±3% RH typical
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
Barometric pressure	Range: 50 to 110 kPa Resolution: 0.01 kPa Accuracy: ± 0.1 kPa
Horizontal wind speed	Range: 0 to 30 m/s Resolution: 0.01 m/s Accuracy: the greater of 0.3 m/s or 3% of measurement
Wind gust	Range: 0 to 30 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°
Tilt	Range: 0° to 180° Resolution: 0.1° Accuracy: ± 1°
Lightning strike count	Range: 0 to 65,535 strikes Resolution: 1 strike Accuracy: variable with distance, >25% detection at <10km typical
Lightning average distance	Range: 0 to 40 km Resolution: 3 km Accuracy: variable
Dimensions	10 cm diameter x 34 cm height (includes rain gauge filter)
Cable length	5 m (custom cable lengths are available for an additional cost)
Data logger compatibility (not exclusive)	EM60/60G, Campbell Scientific

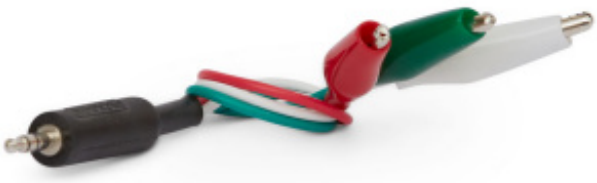
ELECTRICAL AND TIMING CHARACTERISTICS	
Supply voltage (VCC) to GND	Minimum: 3.6 VDC continuous Maximum: 15.0 VDC continuous
Digital input voltage (logic high)	Minimum: 2.8 V Typical: 3.0 V Maximum: 3.9 V
Digital input voltage (logic low)	Minimum: -0.3 V Typical: 0.0 V Maximum: 0.8 V
Power line slew rate	Minimum: 1.0 V/ms
Current drain (during measurement)	Minimum: 0.2 mA Typical: 8.0 mA Maximum: 16.0 mA
Current drain (while asleep)	Minimum: 0.2 mA Typical 0.3 mA Maximum: 0.4 mA
Operating temperature range	Minimum: -40 °C Maximum: 50 °C
Power up time (SDI ready)—aRx! commands	Typical: 10 s
Power up time (SDI ready)—other commands	Typical: 800 ms
Measurement duration	Typical: 110 ms Maximum: 3,000 ms
Compliance	Manufactured under ISO 9001:2015 EM ISO/IEC 17050:2010 (CE Mark)

Accessories

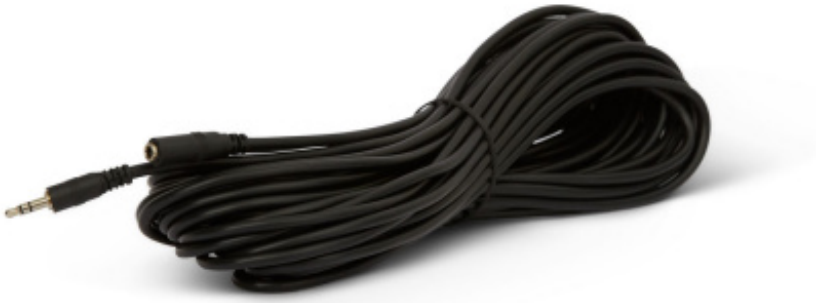


Splice Kit

Probe Adaptor Pigtail for CSI Data Loggers



Pigtail-to-Stereo Adaptor



50 Foot Extension Cable

10 Foot Extension Cable

Support

Have a question or problem? Our support team can help.

We manufacture, test, calibrate, and repair every instrument in-house. Our scientists and technicians use the instruments every day in our product testing lab. No matter what your question is, we have someone who can help you answer it.

Email: support.environment@metergroup.com

Phone US: +1 509-332-5600
Phone Europe: +49 89 12 66 52 0

Downloads

ATMOS 41 Firmware Updater
(Using this updater requires a re-zeroing of the wind speed. Contact customer support for more info)

EXE / 1.35 MB

ATMOS 41 Integration Guide PDF / 282.77 KB

ATMOS 41 MANUAL PDF / 1.30 MB

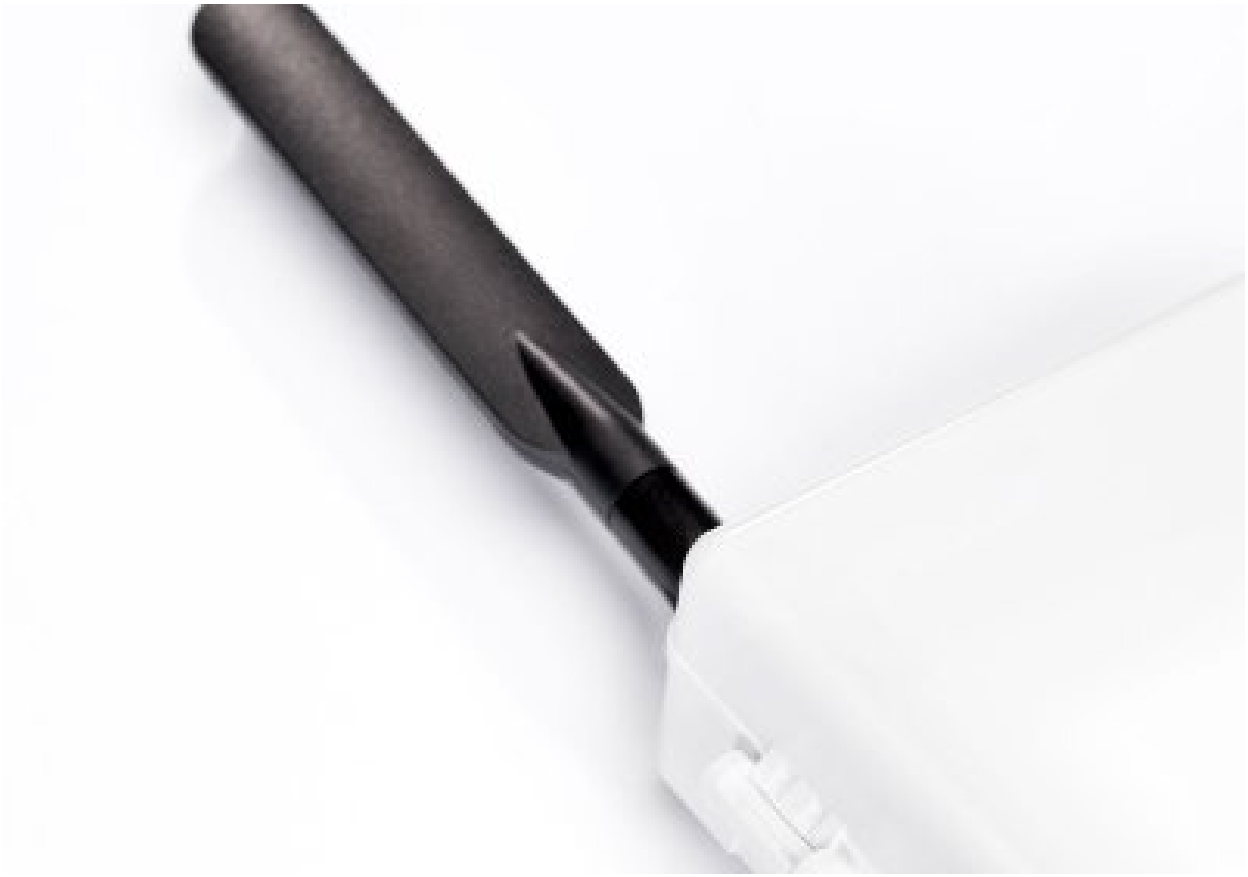
ATMOS 41 QUICK START PDF / 493.24 KB

Related Products

ATMOS 22

If you want accurate wind profiling, a sonic anemometer is the obvious choice. Designed with canopies in mind, the ATMOS 22 registers even the lowest thresholds of wind speed (0 m/s) with the added ability to detect fine-scale variations within 0.01 m/s resolution.

Learn more
Get pricing



EM60G

The EM60G is a plug-and-play data logger for environmental monitoring.

Learn more
Get pricing