4-in-1 Temperature & Relative Humidity Sensor

metergroup.com/environment/products/atmos-14/

Microclimate measurement made simple

ATMOS 14

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If you're doing a microclimate or evapotranspiration study, you may need up to four extra sensors to get important measurements that will benchmark your data. Not to mention you have to face the hassle of getting all those sensors integrated into your system. What you need is something simpler. With this in mind, we engineered the ATMOS 14 to be four sensors in one—air temperature, relative humidity, barometric pressure, and vapor pressure. And best of all, it's plug and play with our EM60G data logger.

With the ATMOS 14, all your bases are covered

Thousands of engineers and ecologists already depend on the ATMOS 14 for straightforward measurements. Whether you're using the EM60G to look at plant emergence, leaf area index, or fractional interception, there isn't an easier way to benchmark your data. The ATMOS 14 is a versatile, low-maintenance, and fast sensor designed to make taking temp/RH measurements simpler and therefore less work.

Plug it in, and walk away

Despite its minimalist design, the ATMOS 14 provides maximum value. While other sensors require wiring and programming, the ATMOS 14 simply plugs into the EM60G (It's also compatible with third-party data loggers). There's no having to figure out complicated instructions. Just mount the sensor on your data logger mast, plug it in, and walk away.

Measures a lot. Requires very little effort.

The ATMOS 14 is low-maintenance. It gives accurate vapor pressure and RH without a lot of cleaning. Plus it’s weatherproof, meaning it will last a long time in the field. Another helpful feature is the compact shape that fits into tight spaces, leaving room on a mast for other sensors.

Readings don’t get any more rapid

Because the ATMOS 14 is plug and play, setup is quick. And responses are equally fast. Thanks to a Teflon protection screen that keeps liquid water out, but vapor moving freely through, it responds rapidly while keeping dust and liquid water off the sensor. Both features add up to time saved on your part.

For everything it measures, there’s not much to it

With ATMOS 14, all your basic microclimate measurements are covered using a small, simple integrated sensor. This versatile, low-maintenance sensor will rapidly and reliably measure air temperature, relative humidity, barometric pressure, and vapor pressure, making benchmarking quick and hassle-free.

Get pricing
Features Specifications Accessories Support

Features

- Four measurements in one sensor
- Plug and play capability
- Collect data remotely when used with the EM60G data logger
- Compact
- Teflon screen protects the sensor from weather
- Fast response
- Integrated temperature for accuracy

Specifications

RELATIVE HUMIDITY

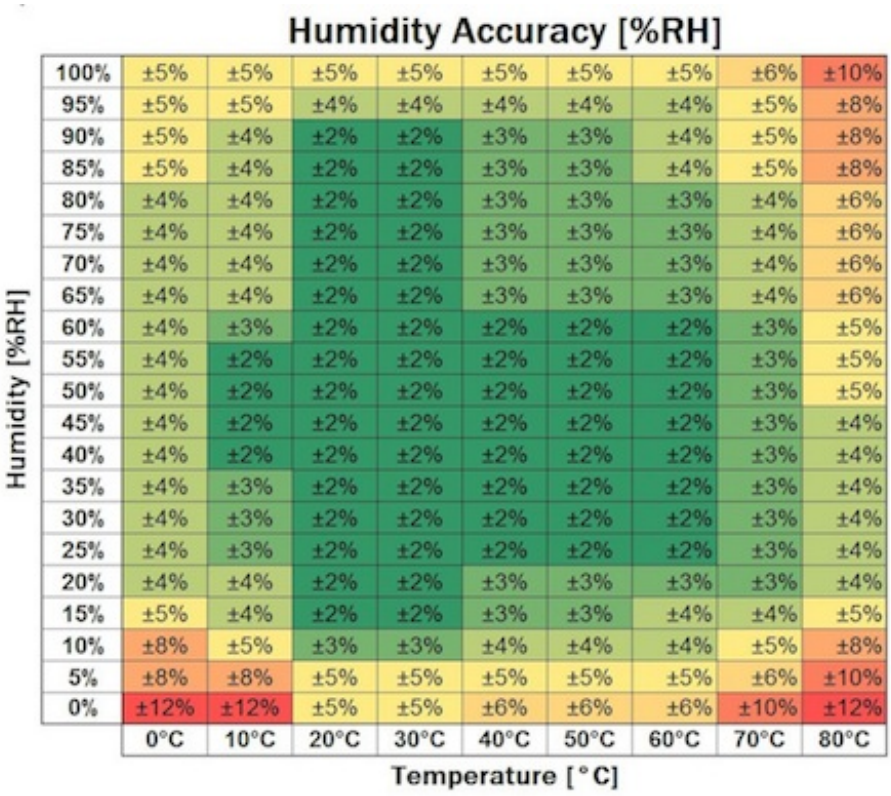


Figure 1. ATMOS 14 relative humidity accuracy

Range	0 to 100% RH
Accuracy	Sensor measurement accuracy is variable across a range of temperatures. Refer to the chart in Figure 1 to determine the accuracy specification for the ATMOS 14 sensor.
Equilibration time (τ, 63%)	(τ, 63%): < 40 s (response time in 1 m/s air stream)
Hysteresis	< 1% RH typical

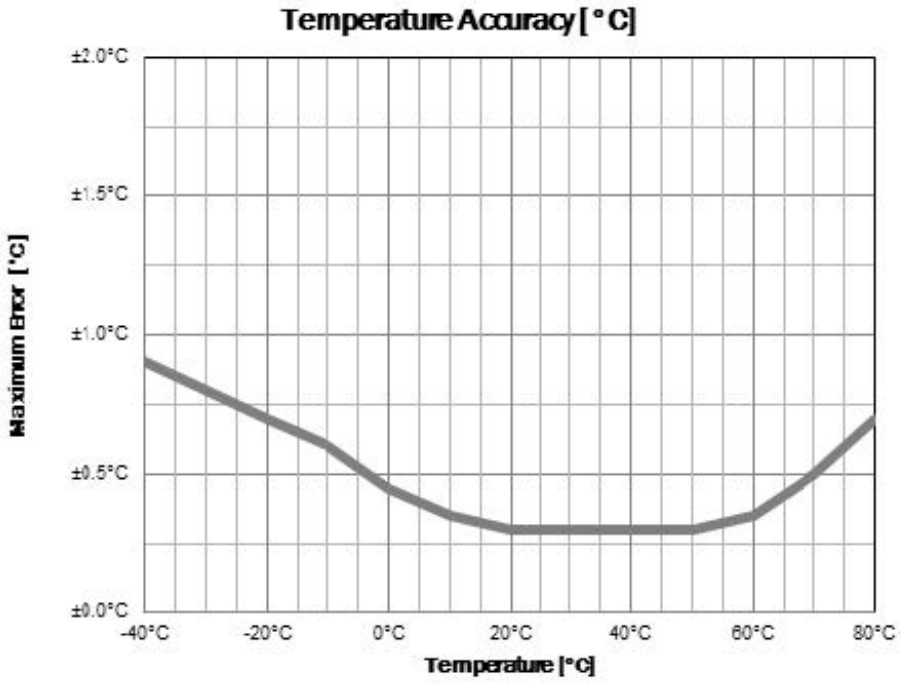
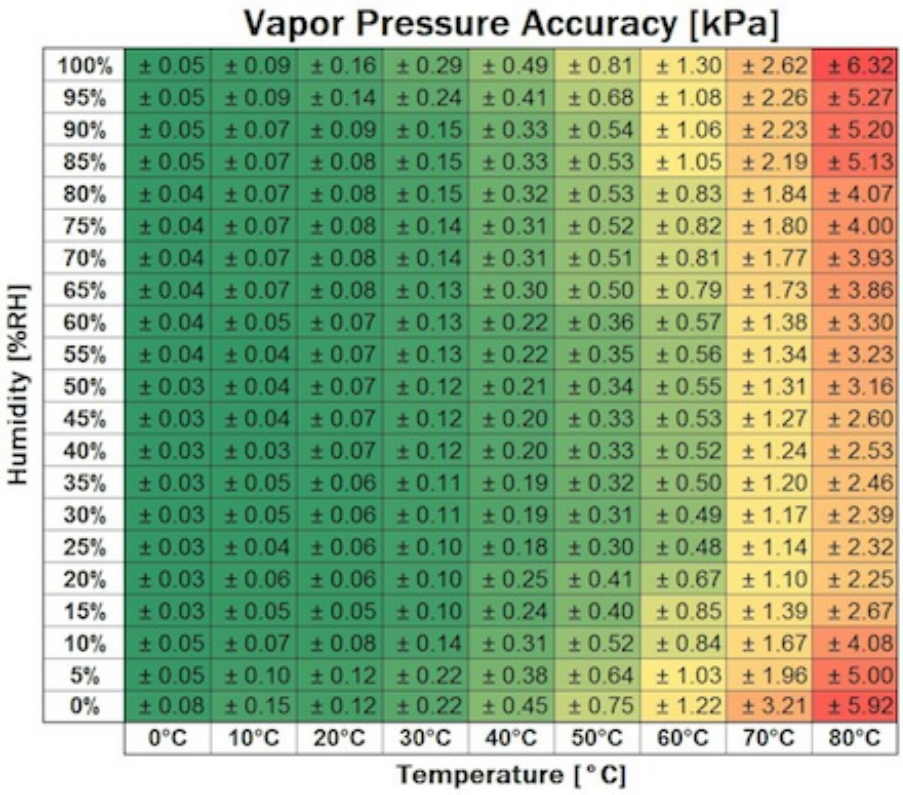
Long term drift	< 0.5% RH/year typical
TEMPERATURE	

Figure 2. ATMOS 14 temperature accuracy

Range	-40 to 80 °C
Resolution	0.1 °C
Accuracy	Sensor measurement accuracy is variable across a range of temperatures. Refer to the chart in Figure 2 to determine the accuracy specification for the ATMOS 14 sensor
Equilibration time (τ, 63%)	< 400 s (response time in 1 m/s air stream)
Long term drift	< 0.04 °C / year typical

VAPOR PRESSURE	

Humidity [%RH]	0°C	10°C	20°C	30°C	40°C	50°C	60°C	70°C	80°C
100%	± 0.05	± 0.09	± 0.16	± 0.29	± 0.49	± 0.81	± 1.30	± 2.62	± 6.32
95%	± 0.05	± 0.09	± 0.14	± 0.24	± 0.41	± 0.68	± 1.08	± 2.26	± 5.27
90%	± 0.05	± 0.07	± 0.09	± 0.15	± 0.33	± 0.54	± 1.06	± 2.23	± 5.20
85%	± 0.05	± 0.07	± 0.08	± 0.15	± 0.33	± 0.53	± 1.05	± 2.19	± 5.13
80%	± 0.04	± 0.07	± 0.08	± 0.15	± 0.32	± 0.53	± 0.83	± 1.84	± 4.07
75%	± 0.04	± 0.07	± 0.08	± 0.14	± 0.31	± 0.52	± 0.82	± 1.80	± 4.00
70%	± 0.04	± 0.07	± 0.08	± 0.14	± 0.31	± 0.51	± 0.81	± 1.77	± 3.93
65%	± 0.04	± 0.07	± 0.08	± 0.13	± 0.30	± 0.50	± 0.79	± 1.73	± 3.86
60%	± 0.04	± 0.05	± 0.07	± 0.13	± 0.22	± 0.36	± 0.57	± 1.38	± 3.30
55%	± 0.04	± 0.04	± 0.07	± 0.13	± 0.22	± 0.35	± 0.56	± 1.34	± 3.23
50%	± 0.03	± 0.04	± 0.07	± 0.12	± 0.21	± 0.34	± 0.55	± 1.31	± 3.16
45%	± 0.03	± 0.04	± 0.07	± 0.12	± 0.20	± 0.33	± 0.53	± 1.27	± 2.60
40%	± 0.03	± 0.03	± 0.07	± 0.12	± 0.20	± 0.33	± 0.52	± 1.24	± 2.53
35%	± 0.03	± 0.05	± 0.06	± 0.11	± 0.19	± 0.32	± 0.50	± 1.20	± 2.46
30%	± 0.03	± 0.05	± 0.06	± 0.11	± 0.19	± 0.31	± 0.49	± 1.17	± 2.39
25%	± 0.03	± 0.04	± 0.06	± 0.10	± 0.18	± 0.30	± 0.48	± 1.14	± 2.32
20%	± 0.03	± 0.06	± 0.06	± 0.10	± 0.25	± 0.41	± 0.67	± 1.10	± 2.25
15%	± 0.03	± 0.05	± 0.05	± 0.10	± 0.24	± 0.40	± 0.85	± 1.39	± 2.67
10%	± 0.05	± 0.07	± 0.08	± 0.14	± 0.31	± 0.52	± 0.84	± 1.67	± 4.08
5%	± 0.05	± 0.10	± 0.12	± 0.22	± 0.38	± 0.64	± 1.03	± 1.96	± 5.00
0%	± 0.08	± 0.15	± 0.12	± 0.22	± 0.45	± 0.75	± 1.22	± 3.21	± 5.92

Figure 3. ATMOS 14 vapor pressure accuracy

Range	0 to 47 kPa
Resolution	0.001 kPa
Accuracy	Sensor measurement accuracy is variable across a range of temperatures and RH. Refer to the chart in Figure 3 to determine the accuracy specification for the ATMOS 14 sensor.
BAROMETRIC PRESSURE	
Range	49 to 109 kPa
Resolution	0.01 kPa
Accuracy	0.4 kPa
GENERAL	
Dimensions	1.96 cm (dia) x 5.4 cm (h)
Power requirements	3.6 to 15 VDC 0.03 mA quiescent, 4 mA during 300 ms measurement
Response (measurement) time	300 ms
Output	METER digital or SDI-12

Operating temperature	-40 to 80 °C
Connector types	3.5 mm (stereo) plug or stripped and tinned lead wires (pigtail)
Cable length	5 m standard; custom cable length available upon request
Data logger compatibility (not exclusive)	METER Em50/50G (Firmware 2.19+), EM60/60G, ProCheck (rev 1.74), Campbell Scientific
Software compatibility	ECH$_2$O Utility (rev. 1.74), DataTrac (rev 3.11+)

Accessories

Splice Kit

Radiation Shield

Probe Adaptor Pigtail for CSI Data Loggers

Pigtail-to-Stereo Adaptor

50 Foot Extension Cable

10 Foot Extension Cable

Support

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 12 66 52 24 0

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

ATMOS 31

The ATMOS 31 measures precipitation rate one raindrop at a time using a drip counter for far more precise results. There are no moving parts to clog or come apart, so it will never malfunction, requiring a lot less maintenance work on your part.

Learn more
Get pricing