

Environmental Monitor

EM SERIES DATASHEET



OVERVIEW

The EM21 and EM22 are wireless, waterproof, data logging environmental monitors with temperature and humidity sensors.

With precise sensors and an easy-to-install wireless design, Samsara EM-series monitors are ideal for ensuring food safety during transportation, monitoring warehouse conditions, and other applications that rely on environmental data to ensure quality or maintain compliance.

HIGHLIGHTS

- Wirelessly monitors temperature and humidity
- Waterproof, ruggedized design with LCD display
- Class-leading electronics, runs for 3+ years on a single AA battery
- Easy to install and operate at any scale

Technical Specifications

Included Sensors

Temperature – Built-In (EM21)	Range: -40° to 60° C (limited by operating range) Accuracy: -10° to 60° C, Typical: $\pm 0.3^\circ$, C Max: $\pm 0.4^\circ$ C -40° to -10° C, Typical: $\pm 0.7^\circ$, C Max: $\pm 0.9^\circ$ C
Temperature – External Probe (EM22)	Range: -55° to 100° C Accuracy: -55° to 100° C Typical: $\pm 1.0^\circ$ C Time constant: 5.0s (oil bath)
Humidity	Range: 0-95% RH Accuracy: 0 to 80% RH Typical: $\pm 2.0\%$ Max: $\pm 3.0\%$ 80 to 90% RH Typical: $\pm 2.5\%$ Max: $\pm 3.8\%$ 90 to 95% RH Typical: $\pm 3.0\%$ Max: $\pm 4.5\%$ Time constant: 18s (1 m/s airflow)

Wireless Connectivity

Real-time	Samples every 4 seconds, transmits new data to the cloud in real time
Auto-discovery	Automatically detects and connects to any sensor associated with the same account
Range	100 ft / 30 m (line of site). Actual range depends on RF interference, building materials, and physical obstacles
Radio Frequency	2.4 Ghz, proprietary low-power sensor data protocol

Data Logging

Capacity	Vehicle on: 1W typical power draw. 3 months
Data upload	Automatic (zero-touch) wireless data upload via Samsara gateways

Enclosure

Dimensions	6.3 x 6.3 x 2.25 cm (2.48 x 2.48 x .89 in)
Weight	75.6g
Operating temperature	-40° to 60°C
Battery	3+ year battery life. User-replaceable AA battery
Probe (EM22)	Stainless steel (5.0 x .33 cm), 28AWG hermetically-sealed PFA Jacket (sterilizable). Total probe and wire length 120 cm.
Ingress protection	IP67 rated waterproof and dustproof per IEC standard 60529. Designed for splash, spray, and dust. (Body not intended for prolonged submersion. To monitor fluid temperature, use EM22 with probe).

Software Features

Visibility and management	Real-time visibility, SMS and email alerts, and historical reports via Samsara Cloud dashboard for web and mobile devices
All-inclusive license	Requires EM license, which includes maintenance and support, dashboard access, sensor data storage, and feature updates

Ordering Information

Environmental Monitor

HW-EM21	Samsara Wireless Environmental Monitor for Temperature and Humidity
HW-EM22	Samsara Wireless Environmental Monitor for Temperature with External Temperature Probe

License

LIC-EM-1YR	1-year license for EM-series monitors
LIC-EM-3YR	3-year license for EM-series monitors
LIC-EM-5YR	5-year license for EM-series monitors