



Environmental Monitor

EM21 Datasheet



OVERVIEW

The EM21 is a wireless, waterproof, data logging environmental monitor with temperature and humidity sensors.

With precise sensors and an easy-to-install wireless design, Samsara environmental 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.

CONNECTIVITY

- | | |
|------------------------|--|
| Wireless | Wirelessly monitors temperature and humidity |
| Waterproof | Waterproof, ruggedized design with LCD display |
| Battery Powered | Runs for 3+ years on a single AA battery |

Technical Specifications

INCLUDED SENSORS

Temperature	Range -40° to 60° C (limited by operating range)
	Accuracy -10° to 60° C, Typical: ±0.3°, C Max: ±0.4° C -40° to -10° C, Typical: ±0.7°, C Max: ±0.9° C
Humidity	Range 0-95% RH
	Accuracy 0 to 80% RH Typical: ±2.0% Max: ±3.0% 80 to 90% RH Typical: ±2.5% Max: ±3.8% 90 to 95% RH Typical: ±3.0% Max: ±4.5%
	Time Constant 18s (1 m/s airflow)

WIRELESS CONNECTIVITY

Real-time	Samples every 4 seconds, transmits new data to the cloud in near 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

Technical Specifications (cont'd)

ENCLOSURE

Dimensions	6.3 × 6.3 × 2.25 cm (2.48 × 2.48 x .89 in)
Weight	75.6g
Operating temperature	-40° to 60°C
Battery	3+ year battery life. User-replaceable AA battery
Ingress protection	IP67 rated waterproof and dustproof per IEC standard 60529. Designed for splash, spray, and dust. (Body not intended for prolonged submersion). Not designed for use as a primary fire protection and/or life safety system

SAMSARA CLOUD

Visibility and management	Real-time visibility, SMS and email alerts, and historical reports via Samsara 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

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

Regulations

IC REGULATIONS

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

- (1) This device may not cause interference; and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes:

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This equipment complies with Innovation, Science and Economic Development Canada RF exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated to ensure a minimum of 20 cm spacing to any person at all times.

CAN ICES-3(B)/NMB-3(B)

IC Radiation Exposure Statement:

This equipment complies with Canada radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

IC Déclaration d'exposition aux radiations:

Cet équipement est conforme Canada limites d'exposition aux radiations dans un environnement non contrôlé. Cet équipement doit être installé et utilisé à distance minimum de 20cm entre le radiateur et votre corps.

Regulations (cont'd)

FEDERAL COMMUNICATION COMMISSION INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.