

EMS Series LoRa

LoRaWAN Wireless Sensor

The **EMS Series LoRa** consists of subtle indoor sensors with different features and LoRaWAN® wireless connectivity. The sensor measures, depending on model, temperature, humidity, acceleration, door activity, occupancy and can also be used as a water leak detector.

The EMS series LoRa sensors are designed to be mounted on door frames, under desks, under dishwashers or in any other limited surface area. The sensors are equipped with NFC (Near Field Communication).



Product features

- LoRaWAN Certified CM
- Temperature sensor
- Humidity sensor
- Motion sensor (PIR)
- Detects water leak
- Detects opening activity (reed switch)
- Monitors desk occupancy
- NFC for configuration
- Configuration over the air
- Discrete and minimalistic design

Applications



Indoor environment measuring



Smart buildings



Workplace management



Room occupancy

Device specifications

Mechanical specifications

Weight	10 g excluding battery /
	32 g including battery
Dimensions	21.2 x 74.9 x 20.8 mm
Enclosure	ABS UL94-V0 (White)
Protection class	IP20

Operating conditions

Temperature	0 to 50 °C
Humidity	0 to 85 % RH (non-condensing)
Operating Altitude	0 – 2000 m
Pollution Degree	Degree 2
Usage Enviroment	Indoor
Storage Temperature	-40 – 85 °C

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Device Power Supply

Battery Type	1 x 3.6V AA Lithium Battery
Expected Battery Life	<10 years (Depending on configurations and environment)

Radio / Wireless

Wireless Technology	LoRaWAN® 1.0.4, Regional Parameters RP002 – RP1.0.3
Wireless Security	LoRaWAN® End-to-End encryption (AES-CTR), Data Integrity Protection (AES-CMAC)
LoRaWAN Device Type	Class A/C (configurable) End-device
Supported LoRaWAN® features	OTAA, ABP, ADR, Adaptive Channel Setup
Supported LoRaWAN® regions	US902 – 928, EU863 – 870, AS923, AU915 – 928, KR920 – 923, IN865
Link Budget	137 dBm (SF7) to 151 dBm (SF12)
RF Transmit Power	14 dBm / 20 dBm (Region specific)

Device Logging Function

Sampling Interval	Configurable via NFC and downlink configuration
Data Upload Interval	Configurable via NFC and downlink configuration

Sensor Characteristics

Temperature Range	0 to 50 °C
Temperature Resolution	0.1 °C
Temperature Accuracy	Accuracy: ± 0.2 °C
Humidity Range	0 – 85 % RH
Humidity Resolution	1 % RH
Humidity Accuracy	± 2 % RH at 25 °C
Accelerometer Range	± 2 g
Accelerometer Sensitivity	16 mg/count
Accelerometer Data rate	10 Hz
Occupancy Detection Range	50 cm
Occupancy Field of view	60°
Reed Switch Magnet Detection Range	2 cm max (edge of sensor casing to edge of magnet casing)

Device Power Supply

Battery Type	1 x 3.6V AA Lithium Batteries
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