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DATA SHEET

# EMS Door LoRa

Produal

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Datasheet
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# EMS Door

LoRaWAN Wireless Sensor

## Description

With a size slightly larger than an AA-battery, EMS Door is one of our most subtle sensor yet. EMS Door can be used as a opening activity sensor or for movement detection. The small size makes it ideal for mounting on door frames, windowpanes or other small surface areas.

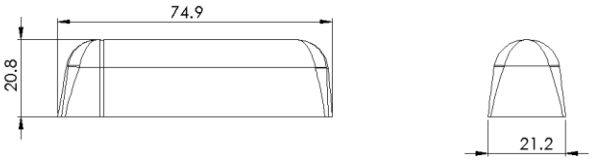


## Applications

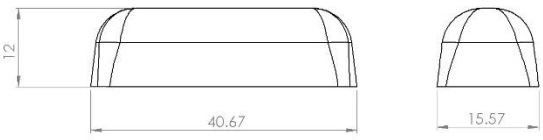
- Smart buildings
- Workplace management
- Door activity detection
- Movement detection

## Product features

- LoRaWAN® Certification in progress
- Accelerometer
- Door switch
- NFC for configuration
- Configuration over the air




*Dimensions of the EMS Door sensor*




*Dimensions of the magnet (mm)*

## Device Specifications

| Mechanical specifications | |
|---|---|
| Weight | 10 g excluding batteries / 30 g including batteries |
| Dimensions EMS Door | 21.2 x 74.9 x 20.8 mm |
| Dimensions magnet | 15.57 x 40.67 x 12 mm |
| Enclosure | Plastic, PC/ABS |

| Operating conditions | |
|---|---|
| Temperature | 0 to 50 °C |
| Humidity | 0 to 85 % RH (non-condensing) |

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# EMS Door

LoRaWAN Wireless Sensor

| Radio / Wireless | |
|---|---|
| Wireless Technology | LoRaWAN® 1.0.3 |
| 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, RU864, IN865 |
| Link Budget | 137 dB (SF7) to 151 dB (SF12) |
| RF Transmit Power | 14 dB / 20 dB (Region specific) |

| Device Power Supply | |
|---|---|
| Battery Type | 1 x 3.6V AA Lithium battery (Li-$SOCl_2$) |
| Expected Battery Life | Up to 10 years (Depending on configuration and environment) |

| Device Logging Function | |
|---|---|
| Sampling Interval | Configurable via NFC and downlink configuration |
| Data Upload Interval | Configurable via NFC and downlink configuration |

Data types

| Type value | Type | Data size | Comment |
|---|---|---|---|
| 0x03 | Acceleration/Level | 3 | X, Y, Z -127 → +127 (Value of:63=1G) |
| 0x07 | VDD (Battery voltage) | 2 | 0-65535mV |
| 0x0A | Pulse count | 2 | 0-65535 (Between two send intervals) |
| 0x0B | Pulse count ABS | 4 | Absolute value 0-4294967295 |
| 0x0D | Digital | 1 | 1 / 0 (On / Off) |

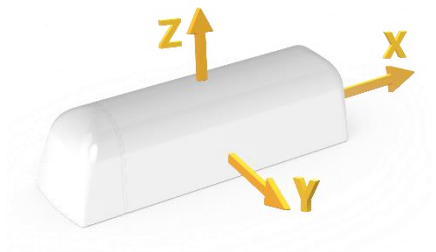
## Sensors

### Accelerometer

Range: ± 2.0 g

Sensitivity: 16 mg/digit

Data rate: 10 Hz




### Door switch

The door switch consists of a reed switch on one side of the sensor. The maximum detection distance is 10 mm but may be affected by the material of the door (metal will reduce the range).



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