



Wireless Motion Sensor

Product Datasheet

Description

The Wireless Motion Sensor uses Passive Infrared Sensor (PIR) technology to detect the presence of people by measuring changes in infrared light intensity coming from people moving into the sensor's field-of-view. Detection events are wirelessly transmitted to nearby Cloud Connectors (gateways) via SecureDataShot™ protocol. Cloud Connectors relay sensor data to the DT cloud infrastructure. From here, data can be integrated into other services using our REST APIs, or viewed directly in DT Studio (web application).

Features

- 360° field of view - up to 14 m (46 ft) detection zone
- Up to 10-year battery life with 2xAA batteries
- Long wireless range - up to 100 meters (328 ft) indoors

Applications

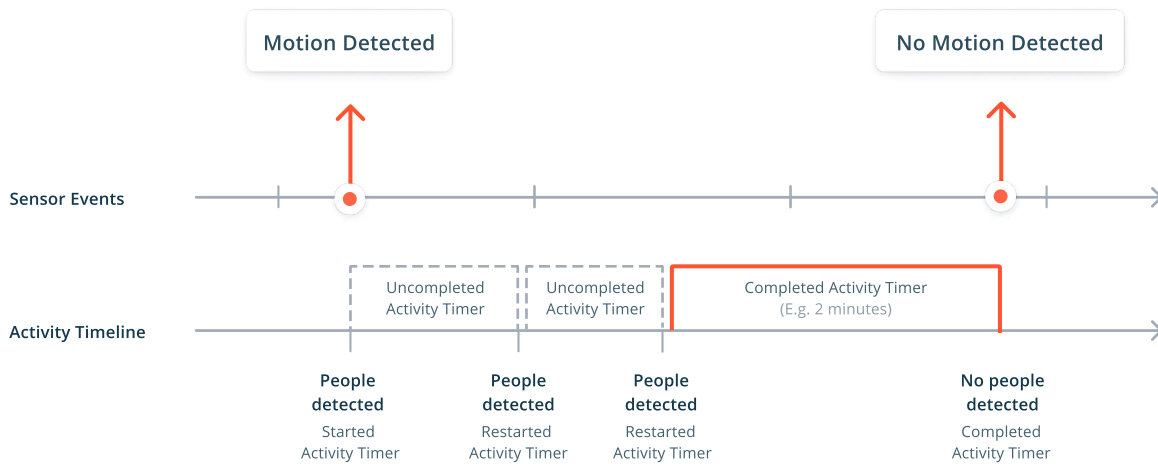
- Room occupancy detection

How it works

Default Operation

The Wireless Motion Sensor uses Passive Infrared Sensor (PIR) technology to detect the presence of people in a room by measuring changes in infrared light intensity coming from people moving into the sensor's field-of-view. When the sensor detects presence it will send a **MOTION DETECTED** event to the cloud and start a pre-set Activity Timer. If the sensor continues to detect the presence of people before the Activity Timer expires, the timer will restart. When the Activity Timer expires, the sensor will send a **NO MOTION DETECTED** event to the cloud.

Independent of occupancy events, the sensor will periodically transmit Network Status Events to the cloud containing connectivity information, so that the system can know that the sensor is online and functional.



User Configurable Settings

Sensitivity

Determines how close a person have to be to the sensor, as well as the how long the person has to stay within a zone before a detection event is triggered. In the highest sensitivity mode, the sensor will trigger if people quickly grace the edge of the detection zone.

Activity Timer

How long (in minutes) a zone is considered occupied after the most recent "People detected" event. The longer the Activity Timer is, the longer the battery will last.

Counting Mode

Instead of sending an **MOTION DETECTED** or **NO MOTION DETECTED** event, the sensor can be set to count the number of detection events. The updated count is sent with each Network Status Event (every 30 minutes).

Important: The sensor is not capable of accurately counting the number of people in a room. It is only capable of counting the number of detection events.

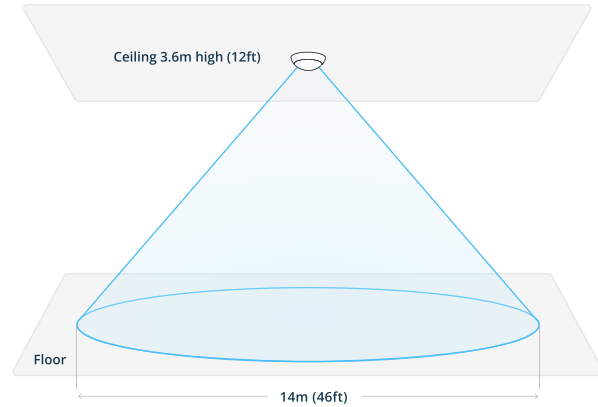
Technical Specification

Pattern / Lens **Detection Pattern:** 360° **Lens:** Fresnel

Network Status Event Interval 30 minutes

Installation Height	Detection Diameter
2.4 meters (8ft)	9.5 meters (31ft)
3 meters (10ft)	12 meters (40ft)
3.6 meters (12ft)	14 meters (45.9ft)

Maximum installation height is 3.6 meters (12 ft)



Operating & Storage Conditions

Operating Conditions **Temperature:** 0 to 50°C (32 - 122°F) **Humidity:** 0 to 90% RH (non condensing)

Recommended Storage Conditions Cool and dry, near normal room temperature

Battery Specification

Battery / Lifetime **Type:** 2x AA **Lifetime:** Up to 10 years

Wireless Communication

Radio Protocol SecureDataShot™

Radio Frequency **EU:** 868 MHz ISM band **US:** 915 MHz ISM band

Radio Range¹ **Indoor:** 100 m (328 ft) **Free Space:** 2 km (6500 ft)

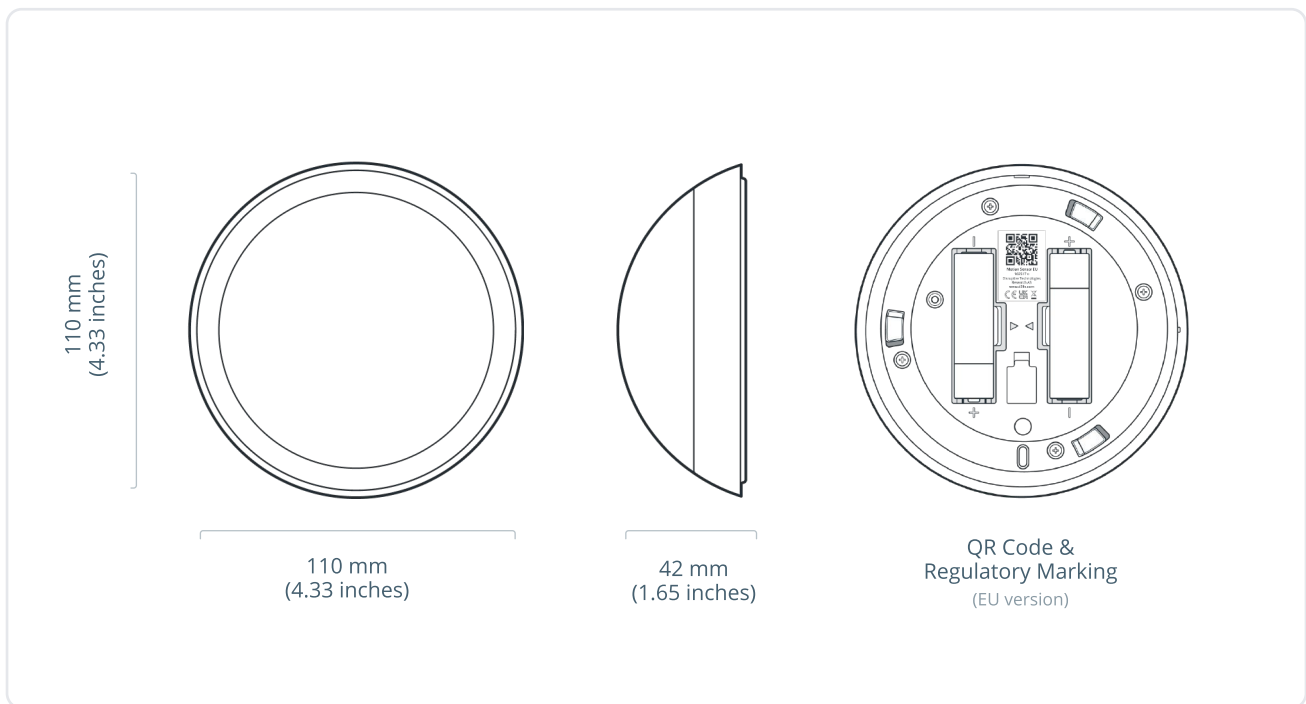
Certification & Compliance

Certification **EU:** CE, UKCA **US/Canada:** FCC, ISED
 IC: 25087-102518 **FCC ID:** 2ATFX-102518

(1): Based on standard ITU-R P.1238 (indoor) and ITU-R P.525 (free-space).

Mechanical Properties

Size	110 x 42 mm
Weight	123 grams
Material	Polycarbonate (PC)
Mounting method	Screws



Product Variants

EU Version	Product number: 102517	Region : Europe
US Version	Product number: 102518	Region: North America

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Installation Guidelines

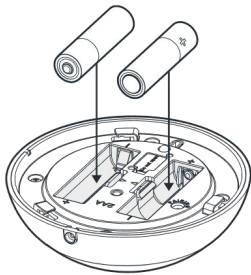
Placement

Designed to be mounted in the ceiling. For maximum range, place in the middle of the room, or at least 10m from the nearest walls.

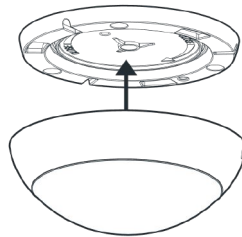
Installation Height

See “Technical Specification” to understand how height affects the diameter of the detection zone.

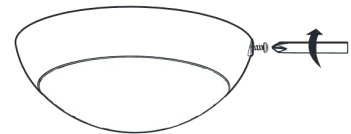
Installation Process



Insert batteries in the sensor to activate it. Pay close attention to the polarity.

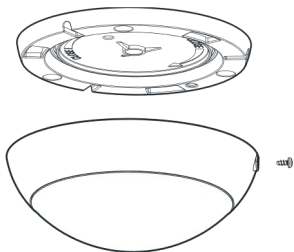


Mount the bracket to the ceiling using screws. Lock the sensor in place by turning it clockwise.

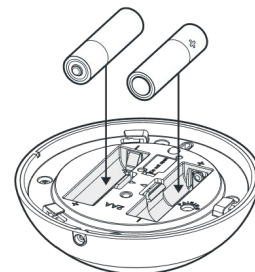


Fasten the safety screw using a philips screw driver.

Battery Replacement

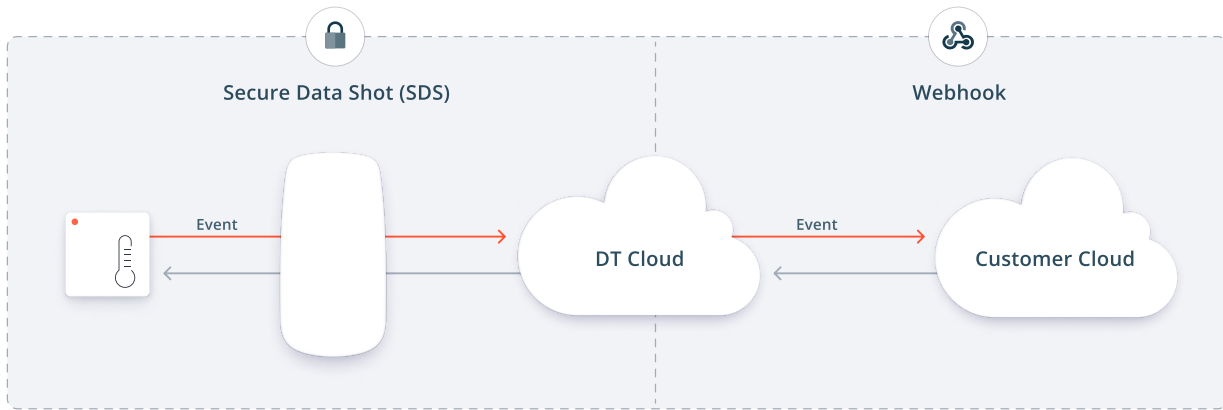


Remove the safety screw and turn the sensor counter-clockwise to remove it from the mounting bracket.



Replace the batteries with two new AA type batteries. Pay attention to the polarity.

System Overview



Wireless Sensors

Wireless sensors instantly connects to the cloud via SecureDataShot™

Cloud Connectors

Cloud Connectors automatically connect to the cloud service when powered

Cloud Service

No servers, databases, or on-prem clients to manage - simply install and consume data

Why use a cloud based sensor solution?

Zero-touch Connectivity

No pairing needed, sensors automatically communicate through all Cloud Connectors which results in a quick and easy installation process.

24/7 Monitoring

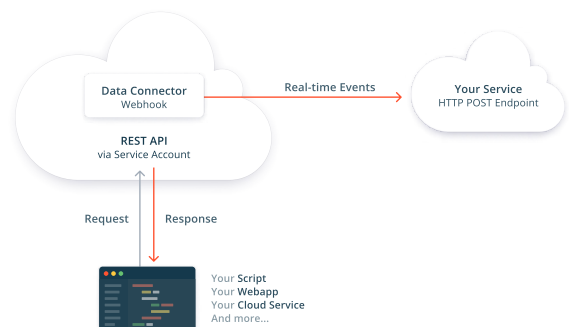
All Disruptive system components are instrumented and monitored 24 hours per day, 7 days per week. Anomalies trigger alarms and notifies our response team.

Easy to Scale

Cloud Connectors support thousands of sensors and the cloud service automatically scales for users with increasing number of sensors.

Centralized Management

No servers, databases, or on-prem clients to manage. A modern cloud platform enables secure access on any device from anywhere in the world.



REST API & Webhooks

Easily integrate the sensor data into your own, or a third-party service, using our REST API or webhooks.

Fleet Management with Studio



Device Overview

Sort devices into projects for easy access and get an overview over data, health status and radio coverage

Flexible Dashboards

Get a quick overview of sensors and compare data with easy-to-use drag-and-drop dashboard cards

Access Control

Create role-based user accounts for people and services that need access to sensor data

Notifications

Set up simple rules for sensors and receive automatic sensor triggered notifications

Secure by default with SecureDataShot™

SecureDataShot™ creates a secure communication channel between the sensor and the cloud instead of between the sensor and the gateway. This reduces the potential for a manipulator-in-the-middle attack by exploiting vulnerabilities in the security architecture of gateways.

- Cloud Connectors can forward data to and from sensors but cannot decrypt the sensor data.
- During manufacturing, each sensor is assigned a unique **256 bit asymmetric encryption key**, generated by a tamper-proof 140-2 Level 3 certified hardware security module.
- The public part of the asymmetric key is exchanged with Disruptive's cloud via encrypted channels.
- Private keys are used to encrypt data on the sensor before transmitting it over the radio.
- The unique public part of the key is used to decrypt the data on the cloud side.
- Disruptive Cloud Connectors are provisioned with Transport Layer Security (TLS) certificates to establish a secure connection between the Cloud Connector and the cloud.



Revision History

Revision 1.0

Change: Initial release.

Date: March 8th, 2022
