

## Product Features

- Sends wireless messages to other devices when motion is detected and at regular intervals
- Harvests ambient solar energy to power the sensors and enable wireless communication
- Configuration via simple user interface or via NFC
- Mounts easily on any ceiling material
- Option for supplemental battery for low-light conditions

## Product Specifications (typ. values)

Power supply	Integrated solar cell Backup battery option (CR 2032)
Minimum light level	200 lux for 6 hours per day (*)
Motion sensing range	5 m (16.5 ft.) radius mounted on a with high sensitivity 2.5 m (8.5 ft.) high ceiling
RF communication range	10 m (34 ft.) indoor line of sight
Time to first transmission after empty energy store	5 minutes at 200 lux (*)
Operating time in darkness with full energy store (Without battery)	96 hours
Optional Battery Life:	Using CR2032 (3 V, 230 mAh)
• Infrequent Bright Light	20 yrs (200 lux for 2 hrs/day, 7 days/week)
• Consistent Low Light	15 yrs (65 lux for 5 hrs/day, 7 days/week)
• Total Darkness	7.5 yrs
Local User Interface	1 Button (LRN) 1 Switch (Sensitivity Selection) 1 Red LED (Underneath PIR lens)
RF Standard	2.4 GHz BLE
Communication format	EnOcean BLE Sensor Protocol
Default Transmission Interval	Approximately every 2 minutes (Configurable via NFC)
Light sensor	Integrated sensor
Dimensions	113,2mm L x 65,5mm W x 30,7mm H (4.46" L x 2.58" W x 1.21")
Weight	85 g (3 oz.)
Mounting height	2 m – 3 m (7 ft.-10 ft.) recommended
Environment	Indoor use only 0 °C to 60 °C (32 °F to 140 °F) 20 % to 85 % relative humidity (non-condensing)
Agency Compliance	CE, FCC, IC

\* For lux reference, OSHA standards require a minimum of 323 lux for office areas.

## Package Contents

- EMDC sensor
- 2 screws, 2 wall anchors

## Tools Required

- Screwdriver
- Backup battery (CR2032) for walk test

## Product Description

EMDC Easyfit motion detection with illumination sensor is a self-powered device that monitors the environment for person movement using a passive infrared (PIR) sensor and measures the light level via a dedicated illumination sensor.

Detected movement and the measured illumination level are communicated wirelessly using BLE advertising telegrams according to the EnOcean BLE sensor specification.

EMDC operates self-powered in most applications based on available light in the environment (electric or natural light). It therefore can be flexibly mounted on the ceiling without the need for any wiring.

Key parameters of EMDC can be configured using the integrated NFC interface. Additionally, a simple user interface consisting of one button and one LED allows for simple configuration without additional tools.

## Functional Description

EMDC reports periodically (by default with a transmission interval of 2 minutes) the status of the motion detector and the measured light level.

If motion is detected by the permanently active PIR sensor after a period without motion then a radio telegram indicating the occupied status will transmit immediately.

## 1. Planning

Remove the sensor from its packaging and place it under a bright light for 5 minutes to provide the required startup charge.

In the meantime, take a moment to plan for the sensor's successful operation and optimal communication with other system components.

EMDC is designed for ceiling operation at a recommended height between 2 m and 3 m (7 ft. – 10 ft.).

The installation location at the ceiling should be selected such that enough light is available to power the sensor, that movement can be detected reliably by the PIR sensor and that the wireless signal won't be blocked.

The following criteria should be used as guidance for the selection of the installation location:

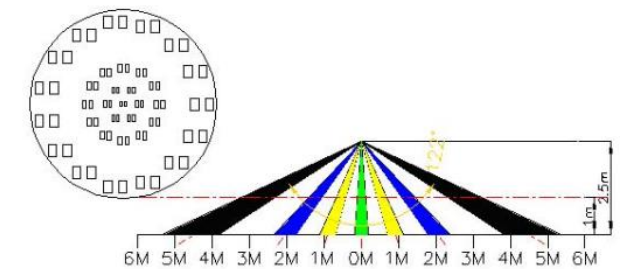
- Consistent and adequate light should be available for the supply of EMDC via its solar cell (200 lux for 6 hours per day for fully self-supplied operation).
- Consider the area's traffic patterns and principal use, for example, walking, working, lounging or sleeping to ensure that motion can be properly detected.
- There must be an unobstructed line of sight to moving persons that shall be detected. Refer also to the coverage diagram below.
- Motion detection uses the temperature difference between the moving person (body temperature 37°C / 98.5F) and its environment. For proper function it is essential to minimize external effects causing rapid temperature changes or permanently generating heat that masks such temperature changes.
- Provide a minimum clearance of 4 ft. (1.2 m) away from heat sources, light bulbs, forced air or ventilation systems and hot moving parts within the detection area that could lead to misdetections
- Avoid installation near ceiling fan or hanging light fixtures that create or distribute heat or might obstruct the line of sight to the detection area.
- Consider the construction materials (such as metal) in the space and obstacles that may interfere with RF signals

## 2. Sensor coverage

One EMDC occupancy sensor typically provides sufficient coverage for individual offices or conference rooms.

For larger area applications, multiple sensors may be required to provide complete coverage.

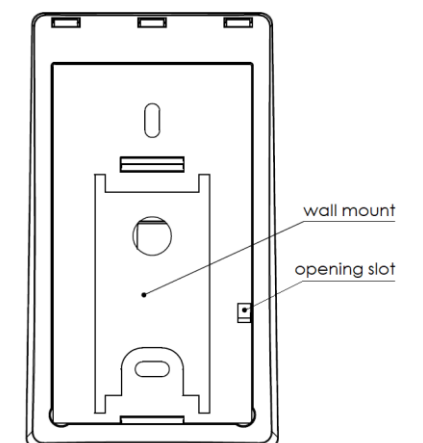
The diagram below shows the typical coverage diagram for EMDC when mounted at a ceiling of 2.5 m (8.5 ft.) high.



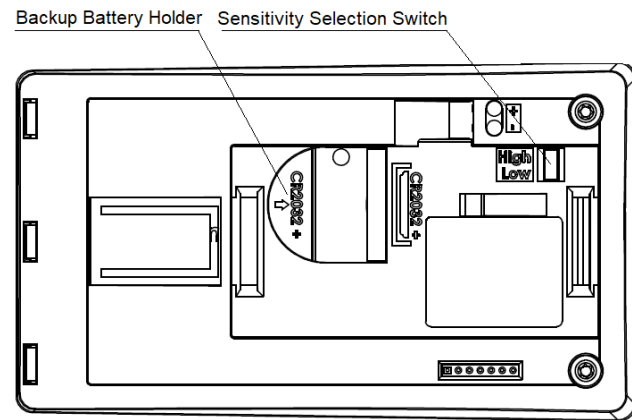
## 3. Installing

Read and understand instructions completely before starting.

1. Select a suitable installation location according to the planning guidelines
2. Remove the wall mount from EMDC using a screwdriver in the opening slot (shown below) to push the wall mount away from EMDC.



3. If coverage testing (walk test) is required then fit a CR2032 backup battery into the backup battery holder (shown below). This can be removed after test completion.



4. Press the LRN button once and check that the LED blinks once to confirm that EMDC is operational.
5. Learn in EMDC into the desired receiver(s) by using one of the following options:
  - a. Triggering a Learn telegram by pressing the LRN button once. The LED will blink once to confirm transmission of the Learn telegram.
  - b. Scanning the QR code of the device label and using this information to configure the receiver via a dedicated commissioning tool
  - c. Reading the device information from the NFC interface of EMDC

Refer to the EMDC User Manual for a detailed description of each option.

6. Attach the wall mount to the intended installation location at the ceiling and place EMDC back onto the wall mount by gently pushing it towards the ceiling. Consider using a temporary attachment between wall mount and ceiling until performance at the installation location has been verified.
7. If necessary, perform a walk test to determine the detection range of EMDC. To do so, press the LRN button twice quickly. EMDC will now flash the LED underneath the PIR lens for a period of 2 minutes whenever motion is detected. Use of a CR2032 backup battery is recommended for the duration of this test.
8. Adjust the installation location and repeat the walk test if necessary. If the detection range is too large (e.g. for open offices with corridors) then the sensitivity selection switch allows reducing the detection area.

## 4. Device Configuration

EMDC allows enabling and disabling the LED indication via the LRN button.

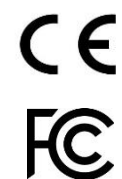
To do so, triple-click (three clicks in quick succession) the LRN button to toggle the LED indication between enabled and disabled state. If LED indication is enabled then the LED will blink twice after the triple click; if it is disabled then the LED won't blink after the triple click.

## 5. Trouble Shooting

Use below table for common problems. Otherwise, consult the EMDC user manual for detailed explanation about EMDC functionality.

Problem	Solution Checklist
Sensor does not generate a wireless message	<ul style="list-style-type: none"> <li>Press LRN button to transmit teach-in message</li> <li>Verify the LED blinks when motion is detected during a walk test</li> <li>Verify that the device is charged properly</li> </ul>
Sensor is activated when there is nothing to detect	<ul style="list-style-type: none"> <li>Verify there is 4 ft. (1.2 m) clearance from heat sources that may disturb sensing</li> <li>Reduce sensitivity setting by moving the PIR sensitivity switch from HI to LO)</li> </ul>
Linked device does not respond to wireless messages	<ul style="list-style-type: none"> <li>Verify that a wireless message is sent</li> <li>Check for environment or range issues</li> <li>Verify that the device is linked</li> </ul>

## 6. Agency certifications



RE-D and WEEE compliant

contains: FCC: SZV-TCM515B  
IC: 5713A-TCM515B



This device complies with part 15 of the FCC rules and Industry Canada ICES-003. 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.

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

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.