iotspot product sheet

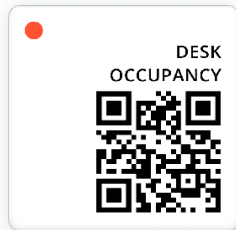**Functional description: Desk Occupancy sensor**

The desk occupancy sensor is an innovative and advanced solution designed to revolutionize workspace management. It utilizes cutting-edge temperature measurement technology to accurately detect and monitor desk occupancy in real-time.

Fig. 1 Cloud connector

Technical specifications

Mechanics & design
Housing material: Impact modified acrylic film
Color: White front with black/red print
Expected accuracy: > 98%
Data representation frequency: standard mode once per 10 min.
Operating temperature range: 0°C to 50°C
Desired temperature between 15°C and 30°C

Operating humidity range: 0% to 95%
Mounting method: Adhesive tape
IP rating: IP68

Data security
Sensor data is encrypted using symmetric AES-128 encryption/decryption.

Size & weight
19 x 19 x 3,5 mm.
3 ± 0,5 gr.

Band and mode / Output power
Radio Protocol: SecureDataShot
EU Radio Frequency: 868 MHz SRD band
US Radio Frequency: 915 MHz ISM band
Transmission power: < 100 mW

Power
Battery powered
Battery: Lithium (Poly-Carbon-Monofluoride)
Battery life at standard mode operation approx. 96 months

and at high performance mode approx. 84 months. The expected battery life depends on the service's configuration (sampling frequency, payload transmissions to Gateway etc.) and building's characteristics (determining transmission mode). With a 1/60 sec. sampling and 1/10 min. transmission frequency and an 'average building', the expected battery life is 96 months.

Scalability
Communication range of sensor to gateway: Av. 25m. (indoors)
Communication range of sensor + range-extender to gateway: Av. 75m. (indoors)
1 gateway can provision for 10.000 sensors

Package content
Sensor, packaged with 25 or 100 units in a carton box;
Package size: 90 x 137 x 5 mm.
Package weight: 0,151 kg or 0,335 kg

Certification
EU: CE, UKCA, WEEE | IC: 25087-100541
US/Canada: FCC, ISED | FCC ID: 2ATFX-100541

Customs
HS-code: 8517620800
HST: 8517620800
ECCN: 5A992.c

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Installation

1. Preparations

Before using the Desk occupancy sensor, read the safety, installation and operation instructions to ensure proper use. Please contact support@iotspot.co for any questions.

2. Intended use

The disruptive desk occupancy sensor employs cutting-edge passive infrared sensor technology to detect the presence of individuals at desks. It continuously monitors occupancy status and transmits real-time data to the iotspot platform. This data is then analyzed to provide insights into workspace utilization, helping organizations optimize desk allocation and energy efficiency.

3. Desk Occupancy sensor

The product's function is three-fold:
Installation and Placement: Position the sensor under the desk or workspace to be monitored, ensuring placement and connectivity are set up correctly. (**Fig. 2**)

Occupancy Detection: The sensor automatically detects when the workspace is occupied and transmits real-time data to a central monitoring system.

Workspace Optimization: Utilize the occupancy data to make informed decisions about desk allocation, space utilization, and energy efficiency improvements in the office environment.

4. Mounting and commissioning
For larger setups, it's advisable to plan ahead before commencing installation. Only one sensor per desk is supported.

Proximity to the sensor can weaken the radio signal. We suggest either deploying the sensor with a range extender or factoring in an additional safety margin for wireless coverage.

The number of Cloud Connectors required for adequate coverage in a standard office space varies based on its size and wall materials. For example, concrete walls reduce coverage more than thinner drywall.

Installation of Cloud Connectors:
For comprehensive instructions on correctly setting up our Cloud Connectors, please consult our cloud connector product sheet.

To ensure adequate coverage, we recommend temporarily placing all sensors on top of the desks before permanent installation. In Studio, you can then verify the connectivity status of all sensors to check for High Power Boost Mode activation or data reporting issues.

Mounting Options:
Position the sensor under the desk, about 2 to 4 cm from the desk's edge, at the typical center of a person's seating area. Ensure the installation surface is free of any grease or dust, remove the sensor's protective film, affix it to the desk, and firmly press it for a few seconds for secure adhesion.
(**Fig 2.**)

Mounting on Metal Desks:
Installing the sensor on a metal desk significantly reduces its wireless range. **Utilizing the Range Extender accessory with PN: 101707 can enhance performance when used with metal desks.**

Calibration and Adaptation Period:
After installation, the sensor requires a full working day of data from its environment to accurately determine desk occupancy. Factors affecting measurement accuracy include irregular HVAC patterns and offline periods, during which the sensor relies on historical data to estimate desk occupancy likelihood.

Incorrect installations of product will void warranty

5. Activation

To activate the sensors in iotspot platform. Use the pair sensor tool in the iotspot setup app. Scan the sticker or device you want to pair the sensor with, followed by scanning the QR code on the sensor. Tap the sensor to test the signal and a green checkmark will show a successfully completed pair.

6. Maintenance & Care

The device housing can be wiped for dust or cleaned with a damp cloth if needed. Do not use cleaning agents.

7. Disposal

Electrical and electronic equipment, accessories and packaging must be recycled in an environmentally compatible manner. Do not dispose of electrical and electronic equipment as domestic waste.

Valued customer, iotspot has designed their hardware with an eye to recyclability and is willing to contribute to sustainability. Therefore, feel free to inform with iotspot, how we are willing to support you in disposing of our hardware.

EU countries only: under the current European Directive on Waste Electrical and Electronic Equipment and its implementation in national law, electrical and electronic equipment no longer suitable for use must be collected separately and recycled in an environmentally compatible manner.

Warranty

A warranty period of 12 months applies to the product, commencing on the day of purchase of the product. The warranty solely covers inadequacies caused by material defect or manufacturing defect. The warranty does not cover any unauthorized use or tampering with the product, such as product overloading, use of violence or force, damage as a result of any unauthorized interference or caused by foreign items. Failing to follow the safe conditions or safe installation condition instructions and common wear are also not included in the guarantee. Visit https://www.iotspot.co/terms-and-conditions to view more about the terms, conditions and guarantee of this product.

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Desk Occupancy Sensor
Installation

Without Range Extender

2 to 4 cm

Center line of desk

With Range Extender

NB! The orientation matters. Align the dot on the sensor and with the dot on the Range Extender.

Sensors are placed under the desk

Do not place the sensor directly on a metal surface as it will affect the wireless range of the sensor.

Fig. 2 installation

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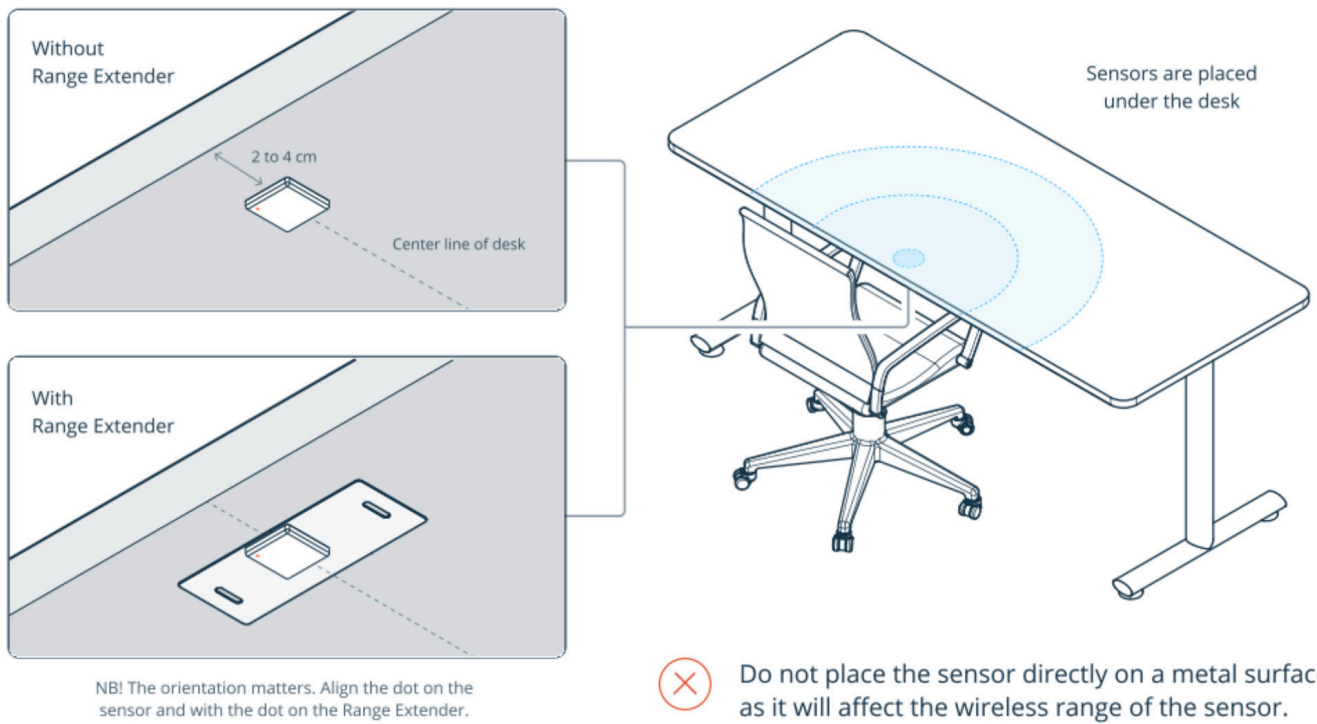
Additional

Functional description: Range Extender

The Range Extender functions as a passive external wireless antenna designed to significantly enhance the connectivity between a sensor and a Cloud Connector, extending the range by up to four times its original reach.
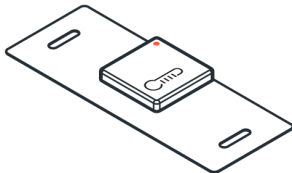
Fig. 3 Range extender

Technical specifications

Mechanics & design
Material: Impact modified acrylic film
Color: White front with black visuals
Operating temperature range: 0ºC to 35ºC
Operating humidity range: 0% to 95%
Mounting method: Adhesive tape
IP rating: IP68

Size & weight
24 x 64 x 0,4 mm
2 ± 0,5 gr.

Package content
Range extender, sold as single items.
Package weight: 0,001 kg.

Certification
EU: CE, UKCA, WEEE | IC: 25087-100541
US/Canada: FCC, ISED | FCC ID: 2ATFX-100541

Customs
HS-code: 885291090
HST: 85291090
ECCN: 5A992.c

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4/6

Installation

1. Preparations

Before using the Range Extender, read the safety, installation and operation instructions to ensure proper use. Please contact support@iotspot.co for any questions.

2. Intended use

The Range Extender functions as a passive external wireless antenna designed to significantly enhance the connectivity between a sensor and a Cloud Connector, extending the range by up to four times its original reach.

3. Range Extender

Enhanced Connectivity: The Range Extender serves as an external antenna that bolsters the wireless connection between a sensor and a Cloud Connector. It significantly improves the signal strength and quality.

Increased Range: By amplifying the signal, the Range Extender effectively extends the communication range between the sensor and the Cloud Connector. This extension can be up to four times the original range, depending on the specific model and environmental conditions.

Improved Reliability: With the Range Extender in place, data transmission becomes more robust and reliable. It helps overcome signal interference or attenuation, ensuring that sensor data is consistently and accurately communicated to the Cloud Connector, even over longer distances or through obstacles.

4. Mounting and commissioning

Before initiating the process, it's advisable to make sure that the intended installation surface is free of any grease or dust. (**Fig 4**.)

Remove Protective Film: Begin by peeling off the protective film from the rear side of the range extender, exposing the adhesive surface.

Attach Range Extender: Carefully affix the range extender to the surface where you plan to mount the sensor. Ensure a secure and firm attachment.

Mind the Orientation: Pay attention to the orientation of the range extender. Ensure that the dot on the sensor aligns perfectly with the dot on the range extender, guaranteeing correct placement.

Prepare the Sensor: Remove the protective film from the back of the sensor.

Connect Sensor to Extender: Place the sensor onto the range extender, ensuring the dots align as instructed earlier. Press them together firmly to conclude the installation.

Verification: Double-check that both the range extender and sensor are firmly affixed to the surface. The assembly process is now successfully completed.

Incorrect installations of product will void warranty

5. Activation

After correct installation of the range extender there are no further activation steps. Steps to activate the Desk Occupancy sensor that is attached to the range extender can be read on page 2.

6. Maintenance & Care

The device housing can be wiped for dust or cleaned with a damp cloth if needed. Do not use cleaning agents.

7. Disposal

Electrical and electronic equipment, accessories and packaging must be recycled in an environmentally compatible manner. Do not dispose of electrical and electronic equipment as domestic waste.

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A warranty period of 12 months applies to the product, commencing on the day of purchase of the product. The warranty solely covers inadequacies caused by material defect or manufacturing defect. The warranty does not cover any unauthorized use or tampering with the product, such as product overloading, use of violence or force, damage as a result of any unauthorized interference or caused by foreign items. Failing to follow the safe conditions or safe installation condition instructions and common wear are also not included in the guarantee. Visit https://www.iotspot.co/terms-and-conditions to view more about the terms, conditions and guarantee of this product.

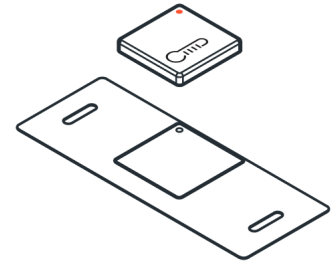# Range Extender
Installation

Installation Steps
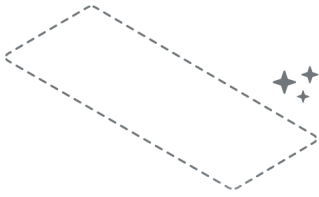
1

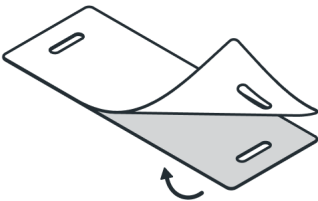It is recommended to **clean the surface** before installing the range extender.

2

Peel the protective film from the back of the sensor.
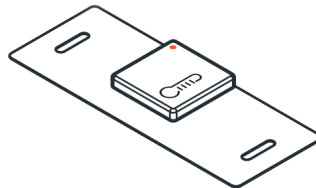

3

Orientation matters: Make sure the dot on the sensor is aligned with the dot on the range extender.
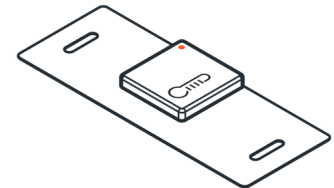

4

Peel the protective film from the back of the range extender.

5

Stick the range extender on the surface with the sensor attached.

6

The installation is now complete

Fig. 4 Range Extender Installation

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