



infsoft AI Occupancy Sensor

The infsoft AI Occupancy Sensor is a hardware component with an integrated optical sensor and PIR sensor for occupancy detection. The AI Occupancy Sensor enables intelligent person and object detection by using artificial intelligence to analyze and evaluate the images triggered by the sensor. Using intelligent recognition and specific indicators for passive occupancy, it is possible to determine the occupancy status of a workstation or a room resource. Configurable object identifiers can determine whether a workstation or a room resource is in passive occupied status when people are absent.

This hardware component can be applied in numerous applications requiring occupancy analysis.

Technical Features:

Dimensions:

- approx. 72 mm x 72 mm x 44 mm (LxWxH)

Weight:

- 178 g (including 4 replaceable AA batteries)

Power supply:

- battery-powered, up to 30.000 images

Sensors:

- Passive Infrared Sensor (PIR Sensor)
- Bluetooth Low Energy (BLE) 5, 2.4 GHz

Tx power level:

- -40 dBm to +4 dBm

Material:

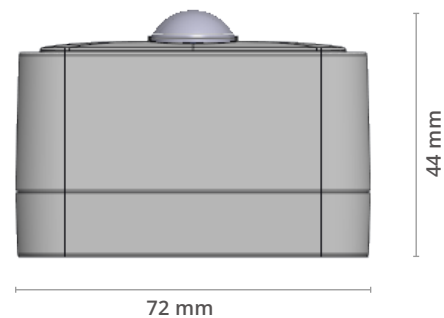
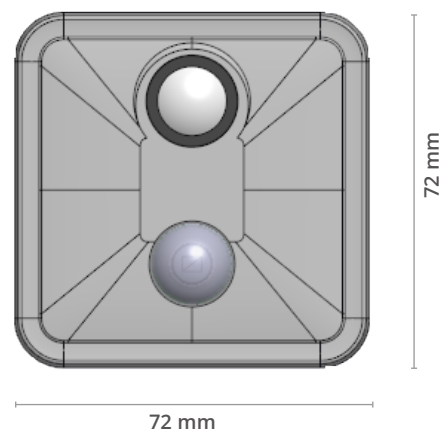
- ABS plastic
- Color: white

Mounting:

- Option A: by means of 3M adhesive dots
- Option B: by means of magnetic mount

Price:

- unit price €195



infsoft AI Occupancy Sensor with dimensions

Option A: Mounting by means of 3M adhesive dots

insoft AI Occupancy Sensors are attached to the specified installation points by bonding using 3M adhesive dots and can be removed without leaving any residue. The adhesive dots are based on the adhesive acrylate and reach their final adhesive strength after approximately 72 hours at 20 °C room temperature.

The customer shall ensure that the substrates are load-bearing and free from dust, solvents and similar substances that prevent adhesion of the adhesive solution. The customer will receive a corresponding sample for approval prior to installation. insoft does not assume any liability/warranty for the unintentional detachment of the bonding from substrates after approval.



3M adhesive dot



insoft recommends the use of the mounting unit even when using 3M adhesive dots to simplify access to the housing in the event of a battery change. If the AI Occupancy Sensor is glued directly, the hardware must be removed completely for maintenance and glued again after battery replacement.

Option B: Mounting by means of a magnetic mount

The AI Occupancy Sensor is mounted using the available mounting unit.

insoft AI Occupancy Sensor Mounting Unit

Dimensions:

- 78 mm x 78 mm x 10 mm

Weight:

- 52 g

Material:

- ABS plastic
- Neodymium disc magnet

Magnet:

- Ø 30.0 mm x 4.0 mm
- Magnetization: N35
- Holding force: approx. 11 kg
- Max. operating temperature: 80 °C

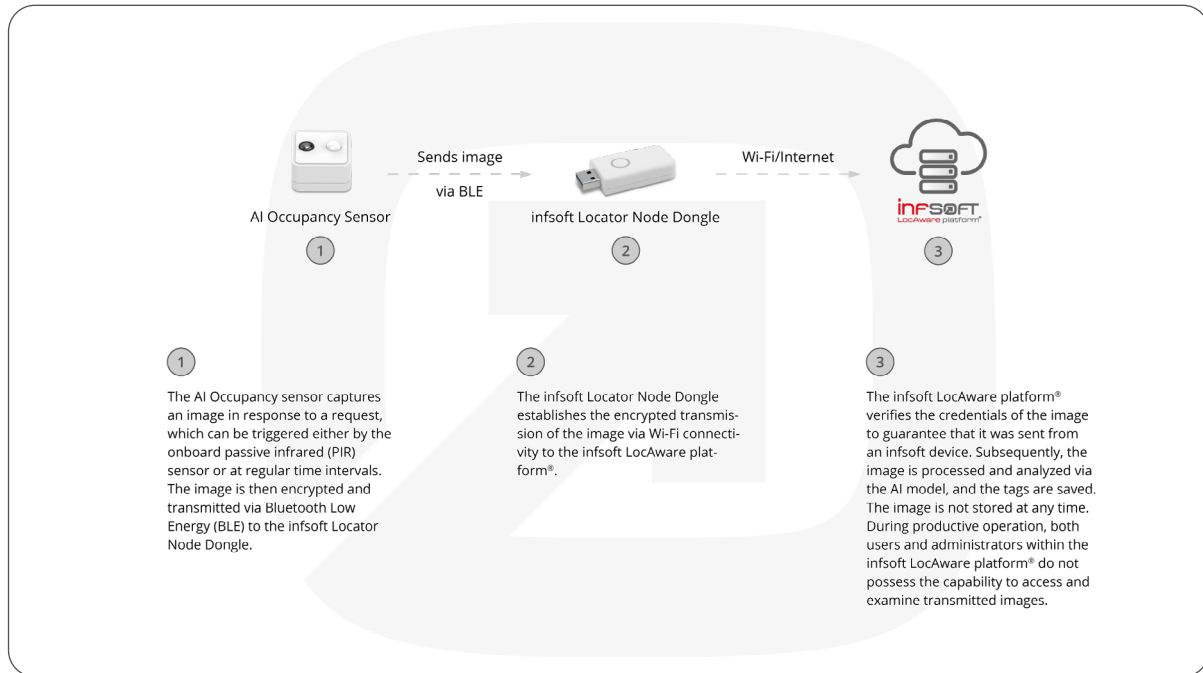
Mounting:

- Option A: by means of magnet
- Option B: by means of 3M adhesive dot

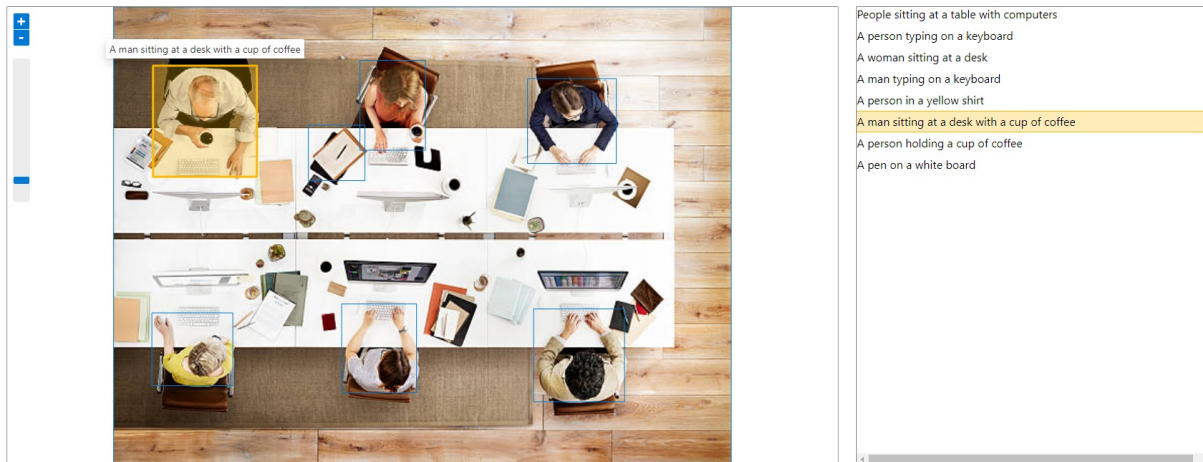


insoft AI Occupancy Sensor mount

insoft AI Occupancy Sensor Data Flow



Example of the AI-based image analysis



During productive operation, both users and administrators within the insoft LocAware platform® do not possess the capability to access and examine transmitted images.

Installation

insoft AI Occupancy Sensors can be mounted on the ceiling. The flexible mounting solution (sold separately) is magnetic and has 2 boreholes.

Option A: by means of magnet

The mounting units are attached to metal surfaces at the specified installation points using a magnet. The AI Occupancy Sensor is inserted into the mounting bracket and also held in place by a magnet.

Option B: by means of 3M adhesive dot

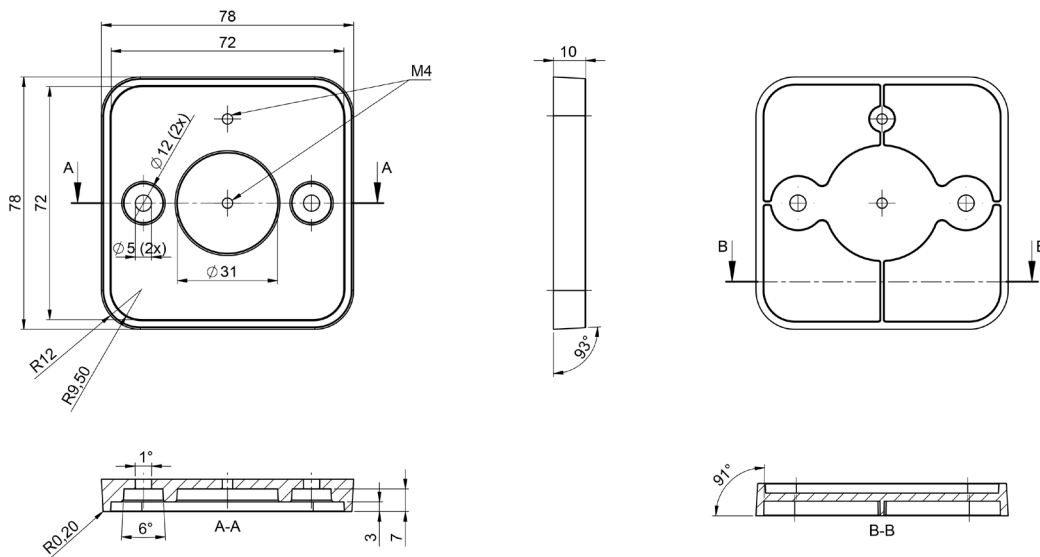
The mounting brackets are attached to the specified installation points by bonding them to the back of the bracket using 3M adhesive dots and can be removed without leaving any residue. The adhesive dots are based on the adhesive acrylate and reach their final adhesive strength after approximately 72 hours at 20 °C room temperature. The customer shall ensure that the substrates are load-bearing and free from dust, solvents and similar substances that prevent adhesion of the adhesive solution. The customer will receive a corresponding sample for approval prior to installation. insoft does not assume any liability/warranty for unintentional detachment of the adhesive from substrates after approval.



3M adhesive dot

Option C: by means of drill holes

The mounting units are attached to the substrate at the specified installation points by means of bolting. The customer is responsible for ensuring the appropriate installation.



technical drawing insoft AI Occupancy Sensor mount

Risk Assessment

The use of mounting rods for glued installation or attachment with magnets to metallic substrates eliminates the need for aerial work platforms as well as ladders and steps. Risks arising from the use of these aids are eliminated in the attachment process (see [Use of Work Equipment](#)).

The maximum total weight of the hardware installed in the overhead area (insoft AI Occupancy Sensor at 178 g and insoft AI Occupancy Sensor mount at 52 g) is 230 g.

For installation, the AI Occupancy Sensor is inserted into the mounting plate of the mounting pole and fixed there via magnet. During the mounting process, however, the possibility of the AI Occupancy Sensor falling out cannot be completely ruled out. For this reason, a working area of 9 square meters must be provided in which no persons other than the installer are present (see [Securing the Working Area](#)).

If 3M adhesive dots are used, they are attached to the ceiling by applying constant pressure (~10 Nm) vertically via the mounting rod for 5 seconds. If the mounting bracket is used on metallic surfaces, it is attached via a magnet.

After mounting, the hardware is not likely to separate if the surface is dry and free of dust and solvents. Further securing is not necessary.

Warnings:



Crushing

Magnets have a strong attractive force. If handled carelessly, fingers or skin can be pinched between two magnets. This can lead to bruising and hematoma in the affected areas. Protective gloves are recommended when handling larger magnets.



Cardiac pacemakers

Magnets can affect the function of pacemakers and implanted defibrillators. A pacemaker can be switched to test mode and cause discomfort. Wearers of such devices should keep a sufficient distance from magnets. Wearers of such devices should be warned against approaching magnets.



Heavy objects

Excessive or jarring loads, fatigue, and material defects can cause a magnet to detach from its adhesive base. Falling objects can cause injuries. The specified holding force is only achieved under ideal conditions. A high safety factor must be taken into account.



Metal splinters

Neodymium magnets are brittle. If two magnets collide, they can shatter. The collision of magnets must be avoided.

Caution:



Magnetic field

Magnets generate a far-reaching, strong magnetic field. Among other things, they can damage televisions and laptops, computer hard drives, credit cards and EC cards, data carriers, mechanical watches, hearing aids and loudspeakers.

Recommended safety distances of neodymium magnets:

Item	Magnetic field harmful from	S-45-30-N Adgesion 69 kg	S-20-10-N Adhesion 11 kg	S-15-08-N Adhesion 6,2 kg	S-10-03-N Adhesion 1,8 kg	S-06-02-N Adhesion 740 g
high-quality magnetic card (credit card, EC card, bank card)	40 mT (=400 G)	46 mm	19 mm	15 mm	9 mm	6 mm
cheap magnetic card (parking garage, fair entrance)	3 mT (=30 G)	134 mm	55 mm	42 mm	24 mm	15 mm
Cardiac pacemaker new	1 mT (=10 G)	201 mm	82 mm	62 mm	35 mm	22 mm
Cardiac pacemaker old	0,5 mT (=5 G)	257 mm	104 mm	80 mm	43 mm	28 mm
Mechanical watch, anti-magnetic according to ISO 764	6 mT (=60 G)	103 mm	42 mm	32 mm	18 mm	12 mm
Mechanical watch, not anti-magnetic	0,05 mT (= 0,5 G)	571 mm	230 mm	176 mm	98 mm	61 mm
Hearing aid	20 mT (= 200 G)	63 mm	26 mm	20 mm	12 mm	7 mm
Hard disk	unclear					



Nickel allergy

Most magnets contain nickel, even those without nickel plating. Some people have allergic reactions to contact with nickel. Nickel allergies can develop with continuous contact with objects that contain nickel. Permanent skin contact with magnets should be avoided. Handling magnets without protective equipment should be avoided if a nickel allergy is already present.

Notes:



Effect on humans

Magnetic fields from permanent magnets have no measurable positive or negative effect on humans according to current knowledge. A health hazard due to the magnetic field of a permanent magnet is unlikely but cannot be completely ruled out. For safety reasons, permanent contact with the magnets should be avoided. Large magnets should be kept at least one meter away from the body.



Temperature resistance

Neodymium magnets have a maximum operating temperature of 80 to 200 °C. Most neodymium magnets permanently lose some of their adhesive force at temperatures above 80 °C. Magnets must not be used in places where they are exposed to high heat. When using adhesives, these must not be cured by means of hot air.

Summary

Risk: Injury to persons during assembly due to falling hardware components in the work area when installing components on the ceiling.

Measure: Securing of the work area to prevent access by persons at risk.

Use of personal protective equipment by assembly personnel.

Use of Work Equipment

The installation is carried out on the ceiling at a maximum height of 6 m via mounting rods. The use of elevating work platforms is not intended.

The mounting rods are available in different sizes (standard size: 157.4 cm) and can be extended up to 403 cm via telescopic mechanism.



Mounting pole with telescopic mechanism

The mounting pole has a plate receptacle in which the AI Occupancy Sensor is inserted and held magnetically. The AI Occupancy Sensor can be mounted using 3M adhesive dot, magnetic mounting bracket or mounting bracket with 3M adhesive dot.

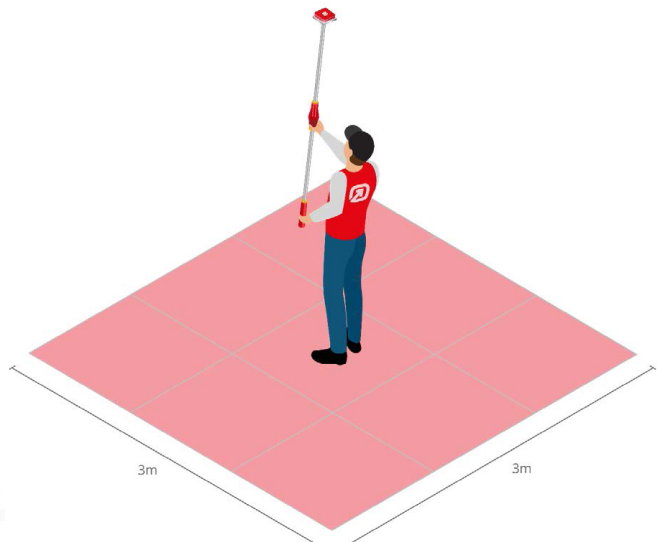


Mounting plate (left) with inserted AI Occupancy Sensor and 3M adhesive dot (2nd from left), AI Occupancy Sensor and magnetic bracket (2nd from right), AI Occupancy Sensor with magnetic bracket and 3M adhesive dot (right).

Securing the Working Area

The installation of the hardware shall be carried out by teams of two people.

A security guard monitors the work area in which the installation of the hardware is carried out by the installer. The work area covers an area of approx. 9sqm per installation point.



Working area for installation of AI Occupancy Sensor

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