Haltian Environment Rugged Wireless IoT Sensor Installation Guide

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Contents

Welcome to using Thingsee

Congratulations on choosing Haltian Thingsee as your IoT solution. We at Haltian want to make IoT easy and accessible for everyone, so we have created a solution platform that is easy to use, scalable and secure. I hope our solution will help you achieve your business goals!
Pasi Leipälä
CEO, Haltian Oy

Thingsee ENVIRONMENT RUGGED

Thingsee ENVIRONMENT RUGGED is a wireless IoT sensor for harsh environments. Being IP67 approved product it can be used to measure temperature, orientation and magnetic fields, or monitor machine usage in extreme conditions, such as factories, industries, even outdoors.

Thingsee ENVIRONMENT RUGGED is a part of Haltian Thingsee IoT solution and product family.

Sales package content

- Thingsee ENVIRONMENT RUGGED sensors
- 1 x Opening Key

Using Thingsee ENVIRONMENT RUGGED sensor

Environment monitoring can make any building, parking area, yard or any indoor or outdoor space smart.

Real-time information over temperature can be used to create better end-user experiences, efficient energy consumption and better facilit management planning with factual data over the environmental factors.

Thingsee ENVIRONMENT RUGGED sensor measures temperature, and it has an accelerometer and a magnetic

switch.

Thingsee ENVIRONMENT RUGGED's magnetic switch recognition can be used to monitor the open/closed position of doors and windows.

The accelerometer can identify the sensor's position, but also recognise even the smallest G-forces, which can be used to measure machine usage rates. This is very handy when tracking the usage for various machines and predicting their maintenance needs.

The usage temperature range is -20 ºC to +50 ºC, non-condensing environments only.
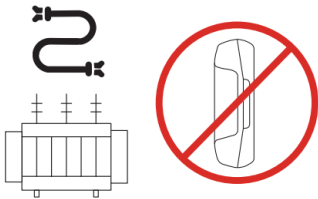
Things to avoid in installation

Avoid installing the Thingsee products near the following:

- Thick concrete structures or thick fire doors
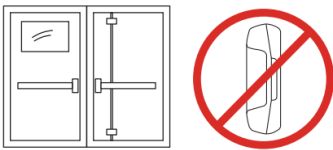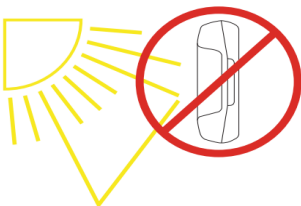
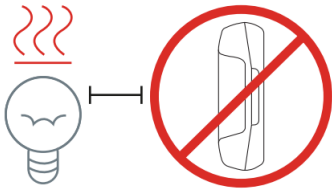- Electrical transformers or thick electrical wires

- Direct sun light

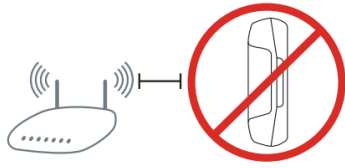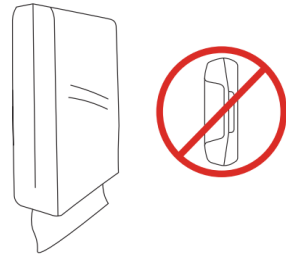- Nearby heating or cooling devices and/or vents

- Escalators

- Nearby halogen lamps, fluorescent lamps or similar lamps with hot surface
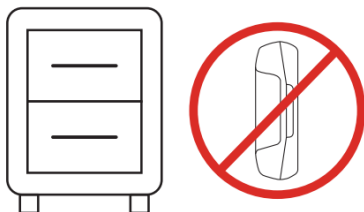
- Nearby radio equipment like WiFi routers or any other similar high power RF transmitters

- Inside metal box or covered with a metal plate

- Inside or underneath a metal cabinet or box

- Near elevator motors or similar targets causing a strong magnetic field
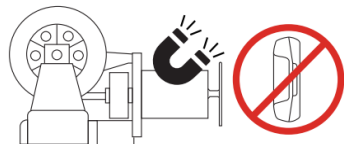
Installation

Please make sure the Thingsee gateway device is installed before you install the sensors.

To identify the sensor, read the QR code on the front of the device with a QR code reader or Thingsee installation application on your mobile device.

Identifying the device is not necessary, but it will help you keep track of your IoT installation and help Haltian support to solve possible issues.

QR code

Before installation, the sensor is in low power mode and the LED indicator on the sensor blinks dimly every second. Note that with white device casing, the LED blinking is difficult to see.
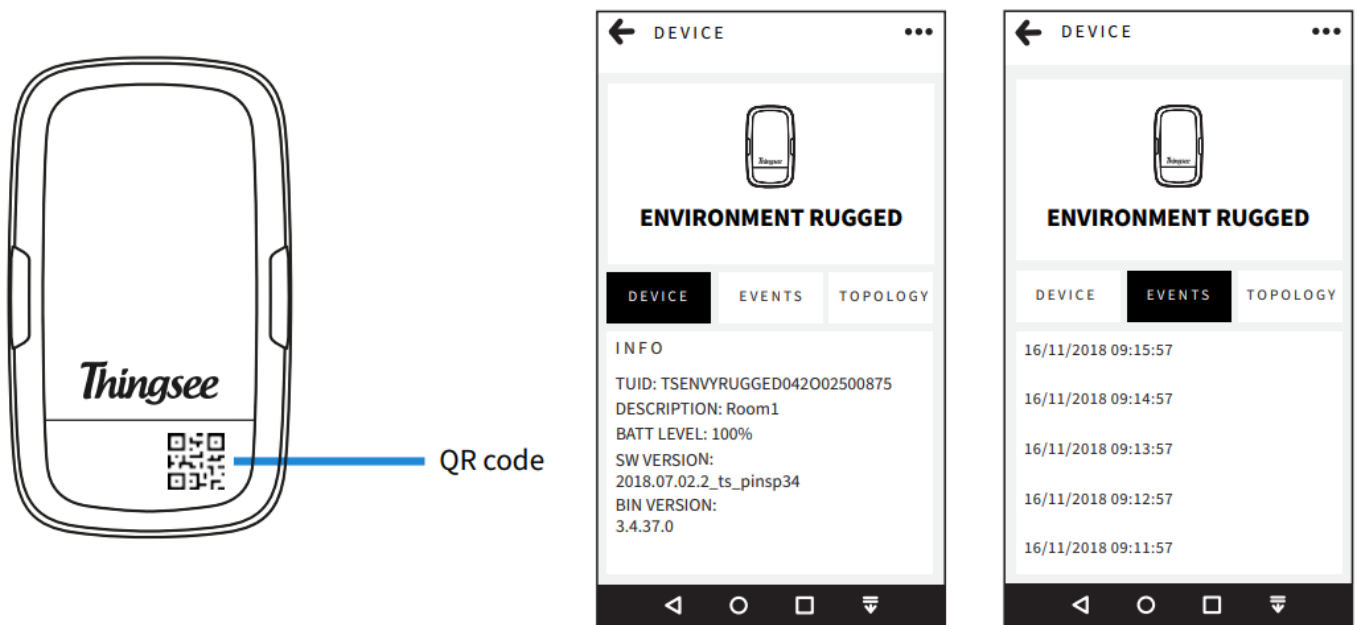
The sensor is switched on with the magnet switch tool by holding it against the sensor's magnetic switch.
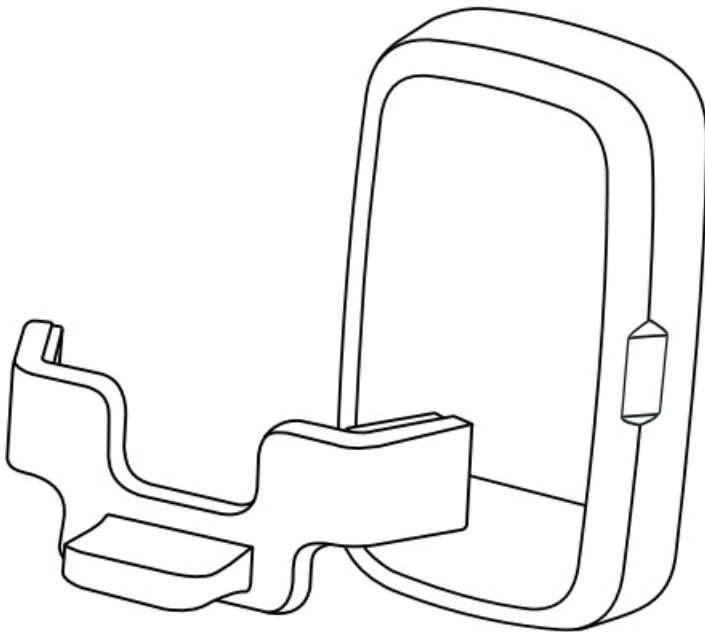
Hold the magnet switch tool against the sensor until the LED indicator starts to blink brightly for one minute. When the LED goes off, the sensor is switched on.
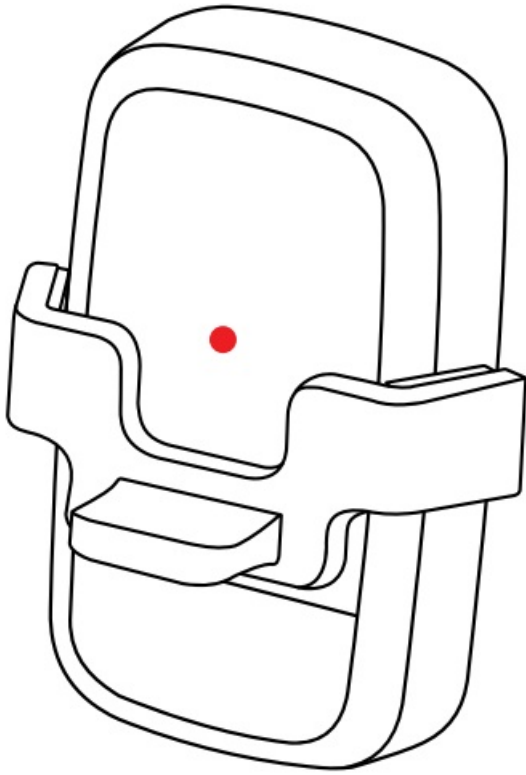
Detection capability

- Operational temperature range -20 ºC to + 50 ºC. Storage temperature range 0º C to +20 ºC.
  Usage prohibited in moisture condensing/freezing environments. Accuracy ±0,3 ºC.
- Accelerometer reports orientation or vibrations count in machine usage monitoring mode from 128mG – 8G
  (default values) and can be configured to high movement mode from 128mG -16G.
- Magneto-resistive sensor. Detects the presence of a magnetic field from a magnet or high DC current.

Default measurement and reporting

Event based reporting

- Measures every 5 minutes:
  - Temperature when absolute change 0,5
  - x, y, z-axis gravity
  - Count of changes in magnetic switch

Time based reporting

- Reports all measurement values every 1 hour

Machine usage mode

- Measurement frequency: 50Hz
- Reporting interval: 1 minute – Only reports measurement periods where activity was detected
- Detected vibration range: 128mG – 8G or 128mG – 16G

- Battery life up to 4 years

  Radio connectivity: Wirepas Mesh

Other default settings

- Battery reporting interval 6 hours
- Sensor is in routing mode

Changing the default settings

The following parameters are configurable remotely over Thingsee Operations Cloud

- Measurement interval
- Reporting interval
- Event based reporting thresholds
- Mesh network node role configuration
    - Routing
    - Non-routing measurement interval
- Enable/disable machine-usage-monitoring mode

Device info

- Operating temperature: -20 °C … +50 °C
- Operating humidity: 0 % … 100 % RH non-condensing
- Storage temperature: 0 °C … +20 °C
- Storage humidity: 20 % … 85 % RH non-condensing
- IP rating grade: IP67
- Certifications: CE, FCC, ISED, RoHS and RCM compliant
- Battery type: 2 x AAA, fixed
- Expected battery life:
    - Up to 5 years with 5 minute interval (default)
    - Up to 4 years with 1 minute interval
    - Up to 5 years with 15 minute interval
    - Up to 4 years with Machine Usage Mode
- Radio sensitivity: -95 dBm (BTLE)

More device info can be found at **support.haltian.com**

Device measurements

Weight:
35 g (including batteries)

18 mm

34 mm

58 mm
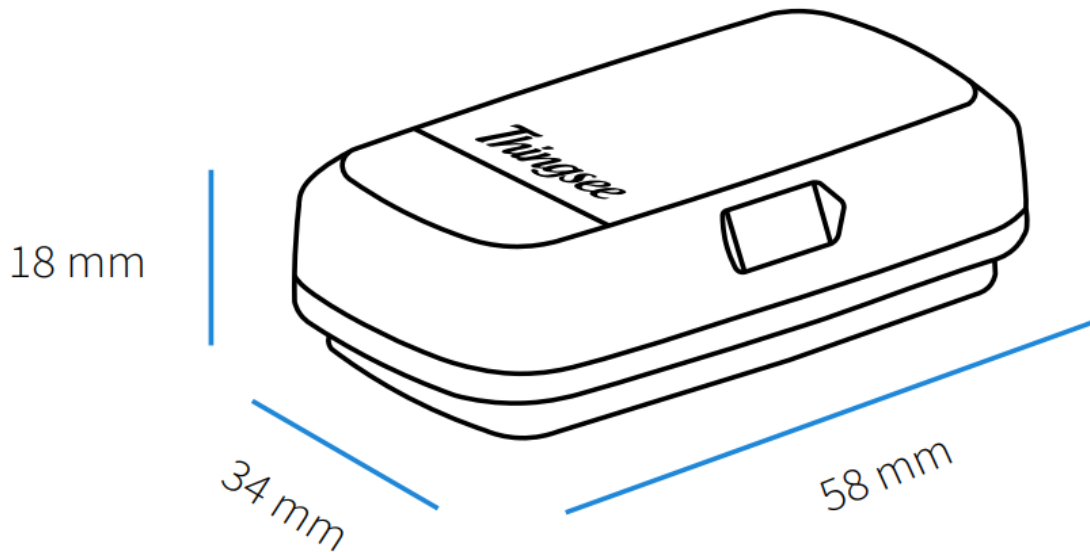
CERTIFICATION IN CERTIFICATION INFORMATION

EU DECLARATION OF CONFORMITY
Hereby, Haltian Oy declares that the radio equipment Thingsee AIR is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: **haltian.com**

Thingsee AIR operates at Bluetooth® 2.4 GHz frequency band. Maximum radio frequency power transmitted is +4.0 dBm.
Manufacturer name and address:
Haltian Oy
Yrttipellontie 1 D
90230 Oulu
Finland

FCC STATEMENT

FCC REQUIREMENTS FOR OPERATION IN THE UNITED STATES
FCC Information for the User
This product does not contain any user serviceable components and is to be used with approved, internal antennas only.
Any product changes of modifications will invalidate all applicable regulatory certifications and approvals.

FCC Guidelines for human Exposure
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

FCC Radio Frequency Interference Warnings & Instructions

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following methods:

- Increase the separation between the equipment and the receiver.
- Connect the equipment into an electrical outlet on a circuit different from that which the radio receiver is connected
- Consult the dealer or and experienced radio/TV technician for help
- Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

FCC compliance statement:
This device complies with Part 15 of the FCC Rules. 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.

Innovation, Science and Economic Development Canada (ISED) regulatory information

This device complies with RSS-247 of the Innovation, Science and Economic Development Canada (ISED) Rules. 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.

Radiation Exposure Statement :
This device complies with ISED radiation exposure limits set forth for an uncontrolled environment. This equipment must be installed and used with a minimum distance of 20 cm between the radiator and your body

SAFETY GUIDE

Read these simple guidelines. Not following them may be dangerous or against local laws and regulations. For further information, read the user guide and visit **www.haltian.com**

Usage
Do not cover the device as it prevents the device from operating properly.

- Do not modify the device. Unauthorized modifications may damage the device and violate regulations governing radio devices.
- Do not store the device in wet or humid conditions.
- Don't take the device inside an aeroplane
- Please take care that the used device is recycled by taking it to the appropriate collection point.

Care and maintenance
Handle your device with care. The following suggestions help you keep your device operational.

- Unauthorized modifications may damage the device and violate regulations governing radio devices.
- Do not drop, knock, or shake the device. Rough handling can break it.
- Only use a soft, clean, dry cloth to clean the surface of the device. Do not clean the device with solvents, toxic chemicals or strong detergents as they may damage your device and void the warranty.
- Do not paint the device. Paint can prevent proper operation.

Damage
If the device is damaged contact support@haltian.com. Only qualified personnel may repair this device.

Small children
Your device is not a toy. It may contain small parts. Keep them out of the reach of small children.

RECYCLING

Check the local regulations for proper disposal of electronic products. The Directive on Waste Electrical and Electronic Equipment (WEEE), which entered into force as European law on 13th February 2003, resulted in a major change in the treatment of electrical equipment at end-of-life. The purpose of this Directive is, as a first priority, the prevention of WEEE, and in addition, to promote the reuse, recycling and other forms of recovery of such wastes so as to reduce disposal.

The crossed-out wheelie-bin symbol on your product, battery, literature, or packaging reminds you that all electrical and electronic products and batteries must be taken to separate collection at the end of their working life. Do not dispose of these products as unsorted municipal waste: take them for recycling. For info on your nearest recycling point, check with your local waste authority.

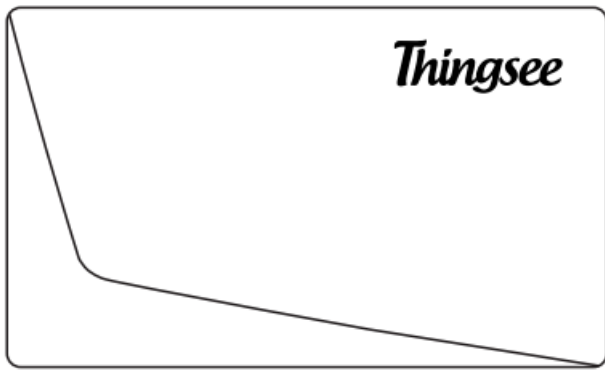## Get to know other Thingsee devices
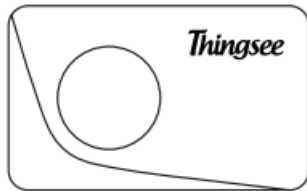
- Thingsee PRESENCE

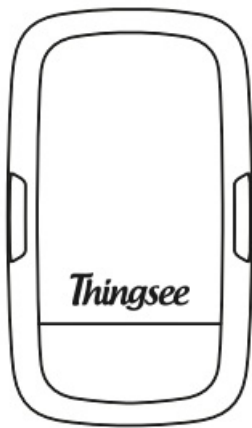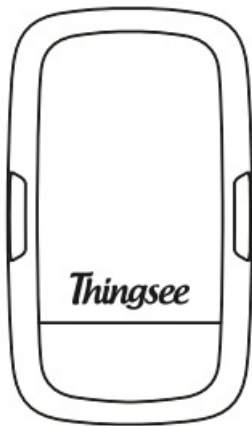
- Thingsee ENVIRONMENT

- Thingsee AIR

- Thingsee BEAM

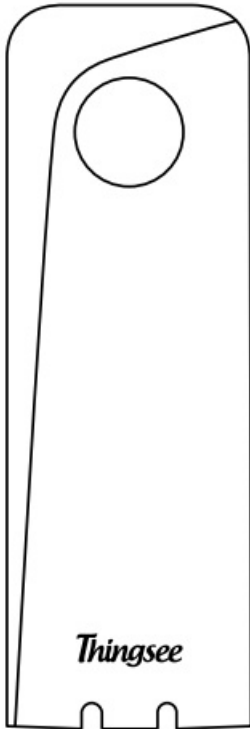

- Thingsee ENVIRONMENT RUGGED
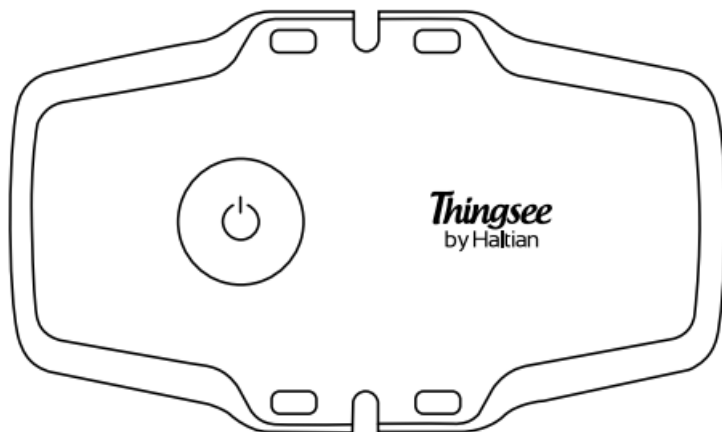

- Thingsee LEAKAGE RUGGED

- Thingsee ANGLE RUGGED

- Thingsee COUNT

- Thingsee GATEWAY GLOBAL

- Thingsee GATEWAY LAN

CUSTOMER SERVICE

For all devices and more information, visit our website
www.haltian.com or contact **sales@haltian.com**

Documents / Resources

	Haltian Environment Rugged Wireless IoT Sensor [pdf] Installation Guide Environment Rugged Wireless IoT Sensor, Environment Rugged, Wireless IoT Sensor, IoT Sensor, Sensor

References

- ⚠ **Connected solutions for successful businesses | Haltian**
- ⚠ **Technical information and FAQs | Haltian Support**
- ⚠ **Connected solutions for successful businesses | Haltian**

Manuals+,