

See what's in the air you breathe with...

 **AIRTHINGS** | FOR BUSINESS

Smart indoor air quality monitoring solutions



- ✓ **Breathe better**
- ✓ **Work better**
- ✓ **Live better**

CERTIFIED PARTNERS

 **evotech**  
air quality

# Foreword



**John Lumb**  
**Director**  
**Evotech Air Quality**

Air quality is now one of the most important issues of our time, affecting not only the wellbeing and productivity of building occupants, but also significantly contributing to the risk of virus transmission.

An increasing number of studies show the damaging effects of poor Indoor Air Quality (IAQ) in terms of performance, absenteeism, and illness rates. Research shows that spending just £30 per person on IAQ can increase an employee's productivity by as much as £5,000 annually.

And, according to the House of Commons Environmental Audit Committee, health problems caused by air pollution in the UK are estimated to cost individuals and society more than £20 billion each year.



The research is compelling, therefore monitoring and improving IAQ in indoor spaces makes perfect sense, especially as contamination levels inside have been found to be up to five times higher than outdoors, as pollution levels build quickly in poorly ventilated spaces.

Not only that, but for those responsible for the efficient running of the building itself, there are measurable benefits to be gained from the effective management of IAQ in terms of greater operational efficiencies, cost-savings and a reduction in carbon emissions.

Compelled by the worsening levels of air pollution in the UK, Evotech Air Quality was launched in 2020 to help our customers create safer working environments by transforming their indoor air quality.

As part of the Evotech Technical Services Group, a national HVAC engineering company founded in 2003, we are a growing team of engineers and technicians who are passionate about the air we breathe.

Today we work with and represent some of the world's leading manufacturers, to provide smart, cutting edge, indoor environmental monitoring and control solutions that are underpinned by the latest advancements in IOT technology.



Our teams work throughout the UK from our two offices located in Elland, West Yorkshire and Basingstoke, Hampshire.



Unit B3, Lowfields Close,  
Lowfields Business Park,  
Elland, HX5 9DX  
T: 0333 207 4245



Worting House, Church Lane  
Worting, Basingstoke,  
RG23 8PX  
T: 01256 869 880

## Our core services:



Indoor air  
quality sensors



Outdoor air  
quality sensors



Specialist  
testing and  
inspection



Building  
ventilation



Air cleaning  
technology



Air filtration  
solutions



**AIRTHINGS** | FOR BUSINESS

AWARD WINNING SENSORS

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# 1.0 Introduction to Airthings

Airthings was founded with an ambitious objective: to offer accurate, user-friendly radon detectors to the masses, making them as common as smoke detectors.

Established in 2008, Airthings is a global tech company led by a team of experienced scientists, engineers and developers, with a common goal: to educate on the prevalence of radon, as well as other indoor air contaminants, and develop accessible technology solutions to help people stay healthy.

## The Airthings Story

Every idea starts with a problem: radon testing for homeowners hasn't improved in almost 30 years.

Several scientists working together at CERN (European Organization for Nuclear Research) saw a gap in the radon market—or more like a deadlock.

Traditionally, consumers only had two options: call a professional to test their radon levels or purchase a single-use charcoal test which was then sent to a lab for the results.

Airthings wanted to break free from these traditions and put consumers and business owners back in control of their indoor air quality.

They saw that there were other dangers hiding in the air we breathe, not only radon but other contaminants and went to work researching these contaminants to find ways to help occupants and visitors of commercial and public buildings and support HVAC professionals in making safer air quality decisions for the masses.



Airthings also realised that energy efficiency could be a welcome additional benefit, making building owners and managers significant cost savings and reducing carbon emissions.



**140+ employees**



**Founded in 2008**



**Norwegian public quoted company (AIRX – OSE:MERK)**



**HQ in Oslo, Norway**



**400k+ sensors in use worldwide**

Airthings for Business was launched in 2019 recognising the increasing demand for indoor air quality monitoring solutions within commercial, public and educational settings.

Along with enhancements to the sensor range, they launched the Airthings business ecosystem, enabling business customers to access real time indoor environmental data via a cloud-based dashboard to provide insights, reports, alerts and integrations.

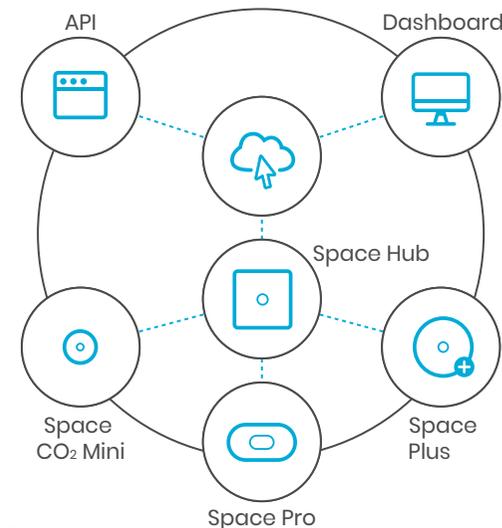
### Airthings API

Easily access device and sensor data through the REST API or subscribe with the Webhook. We never lock away data in proprietary protocols or closed systems, which allows use of sensor data in an existing BI solution or as an input to a BAS or BMS.

### Space Hub for Business

Connect up to 30 battery-operated devices through Airthings Smartlink, a long-range and low-power wireless data extraction technology. This allows devices to be distributed around a large building, meaning real-time IAQ data is available to users anytime, anywhere.

## Airthings for Business Ecosystem



### Space Pro

The latest edition to the Airthings sensor family, a wirelessly connected ultra-low power sensor giving the most comprehensive monitoring of indoor environmental conditions.

### Business Dashboard

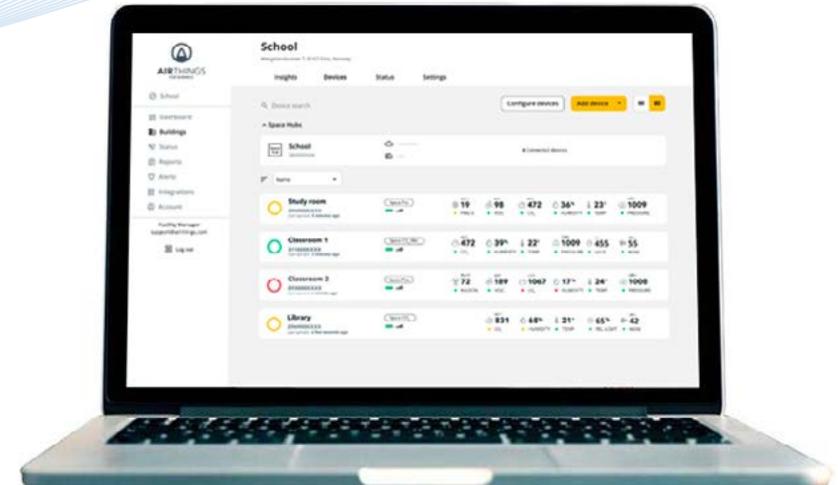
As an alternative to the API or Webhook, the Airthings Business Dashboard provides a quick and easy solution to view, compare and export data for your particular needs. Originally created for consumers, the Airthings Business Dashboard is effortless to navigate and includes additional features exclusive to business users.

### Space Plus

The first wirelessly connected and battery-operated IAQ monitor with radon, designed for all populated spaces. Simply wave in front of the device to receive a color-coded visual indication of the overall air quality.

# AIRTHINGS | FOR BUSINESS

The Airthings for Business solution offers customers a wireless standalone, battery powered, indoor environmental monitoring solution; allowing the flexibility to scale up the solution with ease, as and when required using any combination of sensors.



Wireless sensors



Real time data



Standalone connectivity



Cloud based dashboard



Secure & encrypted



Scalable solution



The Airthings for Business platform is provided by a network of certified partners providing customers with local, regional and global support.

For more information about the Airthings for Business platform, please visit [www.airthings.com/business](http://www.airthings.com/business)



# 2.0 Meet the Sensors

## 2.1 The Space Pro

# 2.1 Space Pro Sensor

The most comprehensive indoor air quality sensor in the Airthings for Business solution.

Includes PM, CO<sub>2</sub> and much more. Giving you even greater control over your space, enabling you to easily create healthy, productive and energy-efficient indoor environments.



Watch our product video to find out more: 

## At-a-glance product features



### Over the cloud updates

Constant improvements and over-the-cloud upgrades delivered to device



### Up to 4 years battery life

Adjust specific sensor sample intervals to maximise battery life or use USB-C connection



### Secure

Secure and encrypted end-to-end solution



### Long range

Long range connection to the cellular-powered Hub eliminating the need for stable WiFi



### Customisable display

Choose what you show on the display



### Scalable

Seamlessly integrates into current Airthings for Business solution, making it easy to scale up over time



### Plug and play

Simple and intuitive installation, requiring no tools



### Wave to check air quality

Set your own thresholds and wave for air quality information

## Ten sensors, greater insights



CO<sub>2</sub>



Humidity



Temp



PM<sub>1</sub>



PM<sub>2.5</sub>



VOC



Pressure



Light



Noise



Virus Risk

## Customisable display

A state-of-the-art ultra-low power display to maximise battery life. Choose which readings matter to you. Pick up to three real-time readings to show continuously on the display, for example constantly display the PM2.5 and CO<sub>2</sub> level in the room to let users take control of their air.

## Product dimensions



# Product specifications

## PACKAGE CONTENT

Airthings Space Pro  
6 x Lithium AA batteries  
Double-sided tape  
Optional theft protection lid (5 pack)  
Optional USB cable 6 ft. (1.8 m) (5 pack)

## MOUNTING

Supports wall mounting or placement on table. Optimum product placement is breathing height of 3 - 6 ft (110 - 170 cm) above floor. Only suitable for mounting at heights below 6.56 ft (200 cm). Double sided tape for wall mount included in package. Alternatively use 3 screws of type countersunk M4 (not included).

## PRODUCT FEATURES

Sensors: PM1, PM2.5, VOC, CO2, Noise, Relative Humidity, Air Pressure, Temperature, Relative Light Intensity (0 - 100 %)

Battery life: Up to 4 years on Lithium (depending on sensor interval settings)

## REQUIREMENTS

Weight: 360 g (12.7 oz) with batteries  
Dimensions: 6.69 x 3.54 x 1.30 in (170 x 90 x 33 mm)  
Airthings Space Hub needed to post sensor values to cloud

## PRODUCT SPECIFICATIONS

Operational Environment (Temperature, Relative Humidity): 39 °F to 104 °F (4 °C to 40 °C) / 10 - 80 % (non-condensing)  
Operation in temperatures < 32 °F (0 °C) or relative humidity > 90 % can cause permanent damage to the products  
Firmware updates are automatically downloaded and installed over the air (OTA) via the Airthings for Business Hub  
SmartLink frequencies: 865-868/902-928 MHz depending on region.

## PACKAGE

Dimensions: 7.9 x 4.5 x 2.4 in (200 x 115 x 60 mm)

Weight: 15.17 oz (430 g)

## PRODUCT CODES

Device serial number: 2969xxxxxx  
US / CANADA EAN:  
7090031109615 SKU: 961  
EUROPE EAN:  
7090031109622 SKU: 962  
SINGAPORE / HONG KONG EAN:  
7090031109639 SKU: 963  
AUSTRALIA EAN:  
7090031109646 SKU: 964  
INDIA EAN:  
7090031109653 SKU: 965

## SENSOR SPECIFICATIONS

Sensor sampling interval: 5 min.  
Space Pro offers in addition configurable sensor sampling intervals from 2.5 min to 60 min for selected sensors.  
Technology for Temperature, Humidity and Pressure Sensors:

## TEMPERATURE AND RELATIVE HUMIDITY SENSORS

Temperature Accuracy:  $\pm 0.9$  °F ( $\pm 0.5$  °C)  
Humidity Accuracy:  $\pm 3$  %RH

## PRESSURE SENSOR

Technology: Solid state sensor  
Pressure Accuracy:  $\pm 0.6$  mBar/hPA (0.02 inHg) range 500-1100 mBar/hPA

## VOC SENSOR

Technology: Metal-oxide based gas sensor  
Measurement range: 0-10 000 ppb  
Settling time: ~7 days

## CO2 SENSOR

NDIR Sensor (Non-Dispersive Infra-Red):  
Measurement range 400-5000 ppm  
Settling time: ~7 days  
Accuracy  $\pm 50$  ppm  $\pm 3$  % within 50 - 95 °F (10 - 35 °C) and 0 - 80 %RH, after initial settling time of 7 days

## LIGHT SENSOR

Measurement range: 0 - 100 %

## NOISE SENSOR

Dynamic range: 35 - 120 dBA SPL (optimization pending)

## VIRUS RISK

Virtual sensor

## PARTICULATE MATTER PM1 and PM2.5

Technology: laser scattering based optical particle counter  
Particle size detection range: 300 nm to 10  $\mu$ m  
Measurement Range: 0-500  $\mu$ g/m<sup>3</sup>  
Measurement Accuracy: below 150  $\mu$ g/m<sup>3</sup>:  $\pm$  (5  $\mu$ g/m<sup>3</sup> + 15 %), above 150  $\mu$ g/m<sup>3</sup>:  $\pm$  (5  $\mu$ g/m<sup>3</sup> + 20 %). Calibrated with a GRIMM reference instrument using cigarette smoke source.  
Classified as Class 1 Laser per IEC60825-1 Ed. 3. This device complies with 21 CFR 1040.10 and 1040.11, except for conformance with IEC 60825-1 Ed. 3., as described in Laser Notice No. 56, dated May 8, 2019. Caution: This device contains one or more lasers. Use other than as described in the user guide, repair, or disassembly may cause damage, which could result in hazardous exposure to infrared.



# 2.0 Meet the Sensors

## 2.2 The Space CO<sub>2</sub>

# 2.2 Space CO<sub>2</sub> Sensor

CO<sub>2</sub> monitoring made easy,  
for any building, anywhere.

Introducing the new Airthings Space CO<sub>2</sub> sensor, including CO<sub>2</sub>, humidity and temperature. Helping you to improve your indoor environments.



Watch our product video to find out more: 

## At-a-glance product features



### CO<sub>2</sub> Alert

Optional feature showing a red light and indication on the screen when CO<sub>2</sub> levels are too high



### Six sensors

Carbon dioxide (CO<sub>2</sub>), temperature, humidity, virus risk, noise, light



### Long battery life

Up to 10 years of battery life



### Plug and play

Simple and intuitive installation requiring no tools



### Over the cloud updates

Constant improvements and over-the-cloud upgrades delivered to the device



### Airthings dashboard

View, compare and export IAQ data



### Customisable display

Choose what you show on the display



### Long-range

Long-range connection to the cellular-powered Hub eliminating the need for stable WiFi



## Six sensors, comprehensive insights



CO<sub>2</sub>



Humidity



Temp



Light



Noise



Virus Risk



## CO<sub>2</sub> Alert

The CO<sub>2</sub> Alert feature lets anyone in the room take control of the air they are breathing by visually alerting them through an LED light on the sensor, when CO<sub>2</sub> levels get too high, using fully customisable thresholds.

Set up email alerts using the Airthings dashboard so nominated users receive automated notifications. Review live and historical data to analyse patterns and trends, helping you to make your indoor spaces healthier.

## Customisable display

A state-of-the-art ultra-low power display to maximise battery life. By default CO<sub>2</sub>, humidity and temperature are shown on the display.



## Product dimensions



# Product specifications

## PACKAGE CONTENT

6 x Lithium AA batteries  
Double-sided tape  
Optional theft protection lid (5 pack)  
Optional USB cable 6 ft. (1.8 m) (5 pack)

## MOUNTING

Supports wall mounting or placement on table. Optimum product placement is breathing height of 3 - 6 ft (110 - 170 cm) above floor. Only suitable for mounting at heights below 6.56 ft (200 cm).

Double sided tape for wall mount included in package. Alternatively use 3 screws of type countersunk M4 (not included).

## PRODUCT FEATURES

Sensors: CO2, Noise, Relative Humidity, Temperature, Relative Light Intensity (0 - 100 %)

Virtual sensors included:  
Virus Risk Indicator

Battery life: Up to 10 years on Lithium (depending on the sensor interval settings)

## REQUIREMENTS

Weight: 360 g (12.7 oz) with batteries

Dimensions: 6.69 x 3.54 x 1.30 in (170 x 90 x 33 mm)

Space Hub for Business needed to post sensor values to cloud

## PRODUCT SPECIFICATIONS

Operational Environment (Temperature, Relative Humidity): 39 °F to 104 °F (4 °C to 40 °C) / 10 - 80 % (non-condensing)

Operation in temperatures < 32 °F (0 °C) or relative humidity > 90 % can cause permanent damage to the products

Firmware updates are automatically downloaded and installed over the air (OTA) via the Airthings for Business Hub

SmartLink frequencies:  
865-868/902-928 MHz depending on region

## PACKAGE

Dimensions: 7.9 x 4.5 x 2.4 in (200 x 115 x 60 mm)  
Weight: 15.17 oz (430 g)

## PRODUCT CODES

Device serial number: 2969xxxxxx  
US / CANADA EAN:  
7090031109615 SKU: 961 Model: 2969

EUROPE EAN:  
7090031109622 SKU: 962

SINGAPORE / HONG KONG EAN:  
7090031109639 SKU: 963

AUSTRALIA EAN:  
7090031109646 SKU: 964

INDIA EAN:  
7090031109653 SKU: 965

## SENSOR SPECIFICATIONS

Sensor sampling interval: 5 min.

Space CO2 offers in addition configurable sensor sampling intervals from 2.5 min to 60 min for selected sensors.

## TEMPERATURE AND RELATIVE HUMIDITY SENSORS

Temperature Accuracy:  $\pm 0.9$  °F ( $\pm 0.5$  °C)

Humidity Accuracy:  $\pm 3$  %RH

## CO2 SENSOR

NDIR Sensor (Non-Dispersive Infra-Red):  
Measurement range 400-5000 ppm  
Settling time: ~7 days

Accuracy  $\pm 50$  ppm  $\pm 3$  % within 50 - 95 °F (10 - 35 °C) and 0 - 80 %RH, after initial settling time of 7 days

## LIGHT SENSOR

Measurement range: 0 - 100 %

## NOISE SENSOR

Dynamic range: 35 - 120 dBA SPL (optimization pending)

## VIRUS RISK

Virtual sensor

## RADIO SPECIFICATIONS

### BLUETOOTH LOW ENERGY

Output power: <5 mW  
Frequency Range (MHz): 2400.0 - 2483.5

### AIRTHINGS SMARTLINK

Output power: <25 mW  
Frequency range (MHz):  
Europe 868 - 870  
North America 902-928  
Singapore 920-923  
Hong Kong 920-923  
Australia 923-928  
India 865-870



# 2.0 Meet the Sensors

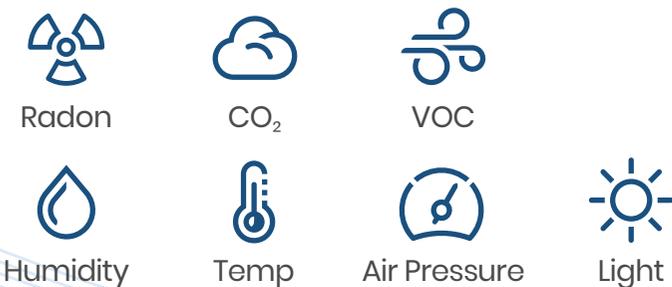
## 2.3 The Space Plus

# 2.3 Space Plus Sensor

The first smart indoor air quality sensor with radon detection, designed for all indoor spaces.

Space Plus gives full visibility into radon, carbon dioxide (CO<sub>2</sub>), airborne chemicals and odours (TVOCs), humidity, temperature, air pressure and light. It's the ideal solution for employers, facility managers and schools.

## Seven sensors, comprehensive insights



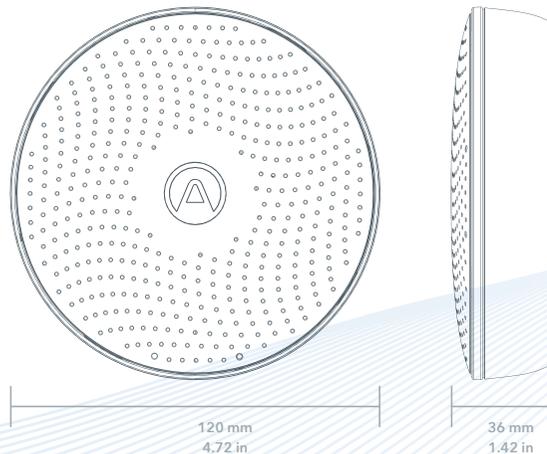
## At-a-glance product features

- Seven sensors**  
Radon, TVOC, CO<sub>2</sub>, humidity, temperature, air pressure and light
- Visual indicator**  
Red, yellow and green glow ring
- Long battery life**  
2 AA batteries with >2 year battery lifetime
- Adaptable positioning**  
Supports wall mount



- Airthings Business Dashboard**  
View, compare and export IAQ data
- Light sensor**  
Gives indication of presence and use of space
- Wireless connectivity**  
Airthings SmartLink with the Hub for Business

## Product dimensions



Watch our product video to find out more:

# Product specifications

## PACKAGE CONTENT

Airthings Space Plus  
2 Lithium AA batteries  
Double-sided tape  
Optional theft protection lid

## MOUNTING

Supports wall mounting or placement on table. Optimum product placement is breathing height of 3 - 6 ft (110 - 170 cm) above floor. Only suitable for mounting at heights below 6.56 ft (200 cm). Double sided tape for wall mount included in package. Alternatively use 1 screw of type countersunk M4 (not included)

## PRODUCT FEATURES

Sensors: Radon, CO<sub>2</sub>, VOCs, Temp, Relative Humidity, Air Pressure, Relative Light intensity (0 - 100 %)  
Battery life: 1.5 years on Alkaline (2 years on Lithium)

## PRODUCT SPECIFICATIONS

Operational Environment (Temperature, Relative Humidity): Wave Plus: 39 °F to 104 °F (4 °C to 40 °C) / 10 - 80 % (non-condensing)

Operation in temperatures < 32 °F (0 °C) or relative humidity > 90 % can cause permanent damage to the products

SmartLink frequencies: 865-868/902-928 MHz depending on region

Firmware updates are automatically downloaded and installed over the air (OTA) via the Airthings for Business Hub.

## REQUIREMENTS

Weight : 7.72 oz (219 g) with 2 x AA Lithium batteries  
Dimensions: 4.72 x 1.42 in (120 x 36 mm)  
Airthings Space Hub needed to post sensor values to cloud  
HUB, MODEL 2810

## PACKAGE

Dimensions: 6.02 x 6.02 x 1.81 in (153 x 153 x 46 mm)  
Weight: 12.2 oz (346 g)

## PRODUCT CODES

US / CANADA EAN:  
7090031109318 SKU: 931

Device serial number:  
2930xxxxxx

EUROPE EAN:  
7090031109325 SKU: 932

Device serial number:  
2930xxxxxx

## SENSOR SPECIFICATIONS

Sensor sampling interval: 5 min, except radon 60 min

## RADON SENSOR

Passive diffusion chamber  
Detection method: Alpha spectrometry  
Measurement range: 0 - 20,000 Bq/m<sup>3</sup> (0 - 5,405 pCi/L)

Long term measurement accuracy at 200 Bq/m<sup>3</sup> (5.4 pCi/L):  
After 7 days ± 10 %, after 2 months ± 5 %

## CO<sub>2</sub> SENSOR

NDIR Sensor (Non-Dispersive Infra-Red):  
Measurement range 400-5000 ppm  
Resolution: 1 ppm  
Accuracy: ±30 ppm ±3 % within 59 to 95 °F (15 - 35 °C) and 10 - 80 % RH can be reached after multiple settling cycles on locations with natural indoor CO<sub>2</sub> fluctuations  
Settling time: ~7 days

## VOC SENSOR

Measurement range: 0-10 000 ppb  
Resolution: 1 ppb  
Settling time: ~7 days

## RELATIVE HUMIDITY SENSOR

Technology: Solid state sensor  
Resolution: 0.5 %RH  
Accuracy: ±3 %RH at 77 °F (25 °C) within 20-80 %RH

## TEMPERATURE SENSOR

Technology: Solid state sensor  
Resolution: 0.1 °F (0.1 °C)  
Accuracy: ±0.9 °F at 77 °F / ±1.8 °F from 32-140°F (±0.5 °C at 25 °C / ±1 °C from 0-60 °C)

## PRESSURE SENSOR

Technology: Solid state sensor  
Resolution: 0.02 mBar/hPA  
Absolute accuracy: ± 0.6 mBar/hPA  
Relative accuracy: ± 0.12 mBar/hPA  
Measurement range: 500-1100 mBar/hPA

## LIGHT SENSOR

Measurement range: 0 - 100 %

## VIRUS RISK

Virtual sensor



# 2.0 Meet the Sensors

## 2.4 The Space CO<sub>2</sub> Mini

# 2.4 Space CO<sub>2</sub> Mini

Space CO<sub>2</sub> Mini is the discreet answer to increasing focus and regulations on CO<sub>2</sub> monitoring in schools, public buildings and offices.

Offered in a 4-pack, Space CO<sub>2</sub> Mini helps cover more spaces in your building, ensuring optimal ventilation and energy usage. Wireless, with up to 10 years or more battery lifetime.

## Six sensors, comprehensive insights



CO<sub>2</sub>



Temp



Light



Relative Humidity



Air Pressure



Noise

## At-a-glance product features



### Six sensors

CO<sub>2</sub>, temperature, relative humidity, pressure, noise and light



### Virtual sensors

Virus Risk and Occupancy



### Long battery life

2 x 1.5V Lithium AA batteries  
>5 years battery life



### Adaptable positioning

Supports wall mount



### Airthings Business Dashboard

View, compare and export IAQ data



### Light and noise sensors

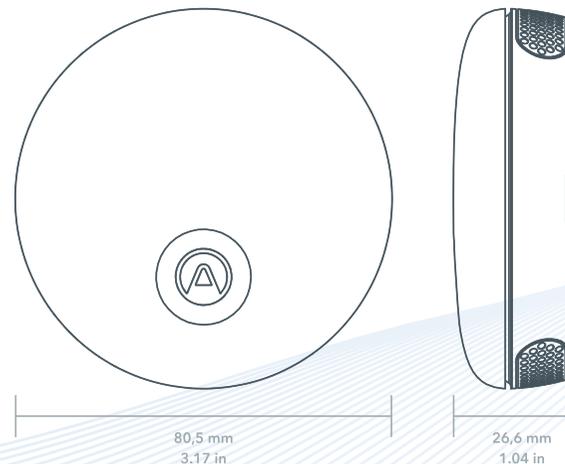
Gives indication of presence and use of space



### Wireless connectivity

Airthings SmartLink with the Hub for Business

## Product dimensions



Watch our product video to find out more:



# Product specifications

## PACKAGE CONTENT

Airthings Space CO2 Mini  
2 x 1.5V Lithium AA batteries  
Double-sided tape  
Battery lid with theft protection

## MOUNTING

Optimum product placement is on wall  
4 - 6 ft (1.2 m - 1.8 m) above floor.  
Double sided tape for mounting included.  
Alternatively use two fully threaded  
countersunk screws 3.5 x 25 mm or longer  
(not included).  
For masonry/concrete add expansion plug.  
For plaster walls, special plugs should be used.  
If needed, the product can also be placed  
> 6 ft (1.8 m) above floor, but in this case  
mounting with screws is mandatory.

## PRODUCT FEATURES

Sensors: CO2, Temperature, Relative Humidity,  
Pressure, Noise, Light (lux) Virtual sensors  
included: Virus Risk, Occupancy, please consult  
web dashboard for latest.  
Battery life depends on sensor on/off/ interval  
settings and building settings -office hours.  
More than 10 years with noise off or alternative  
office hours set (i.e 7AM-5PM Mon-Fri).  
Product has more than 5 years battery life  
regardless of settings.

## PRODUCT SPECIFICATIONS

Operational Environment (Temperature,  
Relative Humidity):  
32°F to 113°F (0 °C to 45 °C) /  
5% - 85% (non-condensing)  
Firmware updates are automatically  
downloaded and installed over the air  
(OTA) via the Space Hub  
SmartLink frequencies: 865-870 / 902-928 MHz  
depending on region

## REQUIREMENTS

Dimensions: 3.17 x 3.17 x 1.04 in  
(80.5 x 80.5 x 26.6 mm)  
Weight: ~2.9 oz (~84 g) with batteries  
Space Hub is needed to post sensor  
values to cloud.

## PACKAGE

4 devices included in package  
Dimension: 7.9 x 4.5 x 2.4 in  
(200 x 115 x 60 mm)  
Weight: 148 oz (419 g)

## PRODUCT CODES

EU, India and United Arab Emirates (UAE)  
311xxxxxx - serial number  
4-pack EU/UAE SKU 13110,  
EAN 709003110 0117 UPC NA \*  
North America and ROW  
312xxxxxx - serial number  
4-pack North America SKU 13120, EAN  
709003110 0124 UPC 854232008552 \*

\* Both SKU 13110 and 13120 will be replaced with new  
common SKUs that cover all countries / regions to  
be supported by the models 311 and 312 respectively

## SENSOR SPECIFICATIONS

Sensor sampling interval:  
5 min default and 2.5 min optional  
Office hours set on building level:  
Outside office hours +1 hour before and after,  
noise sensor is turned off and CO2 interval is  
set to hourly. In addition, humidity, pressure  
and light are reduced to 5 min interval  
regardless of sensor

## TEMPERATURE AND RELATIVE HUMIDITY SENSORS

Temperature Accuracy:  $\pm 0.2X / \pm 0.4^\circ\text{F}$   
Humidity Accuracy:  $\pm 2.0 \% \text{ RH}$

## CO<sub>2</sub> SENSOR

NDIR Sensor (Non-Dispersive Infra-Red):  
Measurement range 400 - 5000 ppm  
Accuracy:  $\pm 50 \text{ ppm} \pm 5\%$  within  
500 - 2000ppm, 10 - 35 °C / 50 - 95 °F  
and 0 - 80%RH.  
Self-calibrated using an automatic baseline  
algorithm that updates once a week.

## LIGHT SENSOR (LUX)

Light sensor is measured in received luminous  
flux per unit area, also known as Lux.  
Absolute Accuracy in most sensitive direction:  
 $\pm 5 \text{ lux} \pm 10\%$

## PRESSURE SENSOR

Absolute pressure accuracy:  $\pm 30 \text{ Pa}$   
Unit-to-unit pressure accuracy:  $\pm 10 \text{ Pa}$

## NOISE SENSOR

Ambient sound is sampled at 1% duty cycle  
and presented as sound pressure level in  
dB (adjusted to human ear hearing profile -  
A-weighted, dBA).  
Typical sensitivity: 33dBA SPL  
Dynamic range: 33dBA - 120dBA SPL  
Absolute Accuracy over dynamic range:  $\pm 3 \text{ dB}$

## VIRTUAL SENSORS

Virus Risk, Occupancy.  
Please consult web dashboard for latest



# 2.0 Meet the Sensors

## 2.5 The Space Hub

# 2.5 Airthings Space Hub

The Airthings Space Hub is an integral part of the Airthings for Business ecosystem which collects data from in-range sensors.

It provides real-time access to all the information you need, to monitor and optimise air quality in your building(s).

Each hub enables you to connect up to 30 battery-operated devices through Airthings SmartLink, a long-range and low-power wireless data extraction technology.

This allows devices to be distributed around a large building, meaning real-time IAQ data is available to users anytime, anywhere.

## At-a-glance product features

 Remote access to your View Plus, View CO<sub>2</sub> and Wave Plus for Business sensors

 Access to Airthings Business Dashboard and REST API

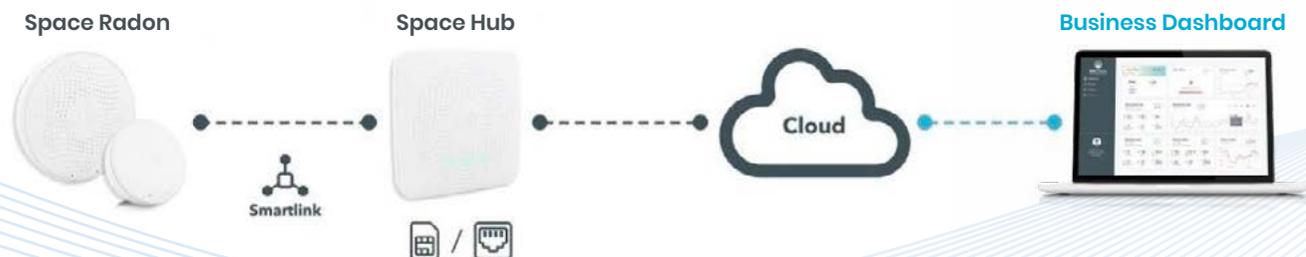
 Long-range wireless connection with Airthings SmartLink



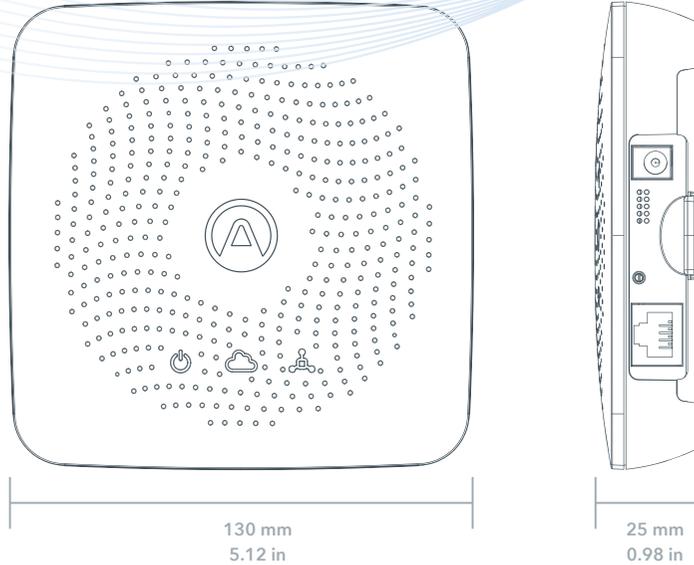
 Live data streaming to the cloud

 Mounting options: freestanding or mounted

 LED status indicators: power, cloud and device connection



## Product dimensions



## Product specifications

### AIRTHINGS SMARTLINK

SmartLink is the Airthings proprietary long range and low power IoT protocol between Hub and Airthings devices. SmartLink connectivity can typically penetrate 3 thick walls/floors or 10 drywalls (non-loadbearing walls). Airthings devices will always connect to the closest Hub and additional Hubs can be installed to increase coverage. The mounting bracket allows for placing the Airthings for Business Solution products on a flat surface or fixing it with double-sided tape or screws to the wall.

### PACKAGE CONTENT

- Airthings Space Hub
- Ethernet cable
- Mounting bracket
- Rubber bumper pads (for flat surface)
- Double-sided tape (for wall mount)
- Power supply adaptor
- US interchangeable supply blade
- EU interchangeable supply blade
- UK interchangeable supply blade
- AU interchangeable supply blade

### REQUIREMENTS

Dimensions: 5.12 x 5.12 x 0.98 in  
(130 x 130 x 25 mm)  
HUB CELLULAR, MODEL 2820  
Weight: 9.1 oz (258 g)  
Cellular connection with built-in Esim  
or Ethernet connection

### PACKAGE

Dimensions: 6.22 x 6.22 x 3.11 in  
(158 x 158 x 79 mm)  
HUB CELLULAR, MODEL 2820  
Weight: 20.2 oz (574 g)

### PRODUCT CODES

HUB CELLULAR, MODEL 2820  
EAN: 7090031108205  
SKU: 282  
Device serial number: 2820xxxxxx



# 2.0 Meet the Sensors

## 2.6 Sensor Calibration

# 2.6 Sensor Calibration

Airthings products are designed for long-term stability, and to minimise the need for on-site calibration.

They intentionally avoid using sensors known for high drift, such as electromechanical cells. Their sensors are built to minimise drift over time, with most making use of smart algorithms that continuously correct for the effects of aging and mechanical stress. In addition, Airthings runs proprietary self-check algorithms on the sensor data in their cloud servers to identify anomalies and faulty sensors.

## CO<sub>2</sub> Sensor

SENSOR SPECIFIC INFORMATION

### OPERATING PRINCIPLE AND CALIBRATION

The CO<sub>2</sub> sensor emits a beam of infrared light at a wavelength that is absorbed by CO<sub>2</sub> molecules. By measuring the amount of light that is absorbed, the sensor can accurately detect the levels of CO<sub>2</sub> in the air. The CO<sub>2</sub> sensors make use of Automatic Baseline Compensation (ABC) to correct for the effects of sensor aging and mechanical stress.

The algorithm keeps track of the lowest reading over time, and adjusts so that it matches the typical background concentration of 400 ppm. A user calibration can be performed by exposing the sensor to outdoor levels of CO<sub>2</sub>, which will typically happen in a sufficiently ventilated building when it is unoccupied, such as at night time.

### PART NUMBER(S) AND MANUFACTURER(S)

Senseair Sunrise by Senseair AB (Wave Plus)  
CM1106SL-NS by Cubic Sensor and Instrument Co (View Plus)

### TECHNOLOGY

Single-beam NDIR (Non-Dispersive InfraRed)

## Particle Sensor

SENSOR SPECIFIC INFORMATION

### OPERATING PRINCIPLE AND CALIBRATION

The particle sensor emits a laser beam into a flow of air that has a velocity which is precisely controlled by a variable-speed fan. When the laser hits a particle, its scattered light is detected by a sensor which estimates the size of the particle based on the magnitude of light. By knowing the rate of air flow and the size of the particles detected, the sensor can calculate the particle concentration.

As the sensor ages, the speed of the fan will usually drop. This will cause an error in the measurement that builds up over time. Our sensors measure the fan speed, and calibrate the sensor output accordingly. Another common issue is built-up of dust. Airthings sensors run the fan for only short periods of time during each measurement, minimizing the amount of dust sucked into the sensor.

In addition, the sensor is oriented in a way that any dust is unlikely to build up on the sensitive parts of the detector. Nevertheless, it is recommended that the product is cleaned periodically with a dry cloth, and that it is not used in particularly dusty environments.

### PART NUMBER(S) AND MANUFACTURER(S)

PM2105L by Cubic Sensor and Instrument Co

### TECHNOLOGY

Laser-based light scattering particle counter

## Radon Sensor

### SENSOR SPECIFIC INFORMATION

#### OPERATING PRINCIPLE AND CALIBRATION

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The Airthings radon detector works by sensing alpha particles. Alpha particles are emitted by the radioactive gas radon, and are detected by a photodiode that reads the energy of each particle. There are many different particles that could “trigger” the sensor, so it must be specially designed to only register relevant particles. To rule out irrelevant particle impressions, the Airthings team developed a proprietary algorithm that allows the device to be sensitive to radon but not other particle “noise.”

The sensor makes use of several different, but correlated, sources of alpha particles to measure radon levels. Smart, patented algorithms enable the sensor to correct for drift and aging by combining these different sources.

This makes the sensor more accurate over time, not less, as long as the sensor stays within its recommended operating conditions. High levels of humidity can damage the sensor. Airthings products periodically transmit diagnostic data for the radon sensor to the cloud backend, including humidity, enabling the detection of sensor anomalies and potentially damaging operating conditions.

#### MANUFACTURER(S)

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Airthings

#### TECHNOLOGY

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Solid-state alpha spectroscopy

## VOC Sensor

### SENSOR SPECIFIC INFORMATION

#### OPERATING PRINCIPLE AND CALIBRATION

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The sensor detects the concentration of Volatile Organic Compounds (VOCs) by measuring the change in resistance across a detector element that is exposed to the air. The target gases react with the surface oxygen on the detector element, reducing its concentration and causing a drop in the measurable resistance.

This enables the sensor to react to a wide range of gases from paints, lacquers, paint strippers, cleaning supplies, office equipment, glues, adhesives and more. Like the CO<sub>2</sub> sensor, the VOC sensor makes use of an Automatic Baseline Compensation (ABC) algorithm to compensate for the effects of aging and ambient non-target gases that can affect the sensor.

This ABC algorithm slowly adjusts the sensor output so that the lowest level corresponds to the cleanest air it has observed the last four to five days. A user calibration can be performed by exposing the sensor to clean air, which will typically happen in a well ventilated building during the course of a week.

#### PART NUMBER(S) AND MANUFACTURER(S)

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BME680 by Bosch Sensortec

#### TECHNOLOGY

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Metal-oxide gas sensor



# 3.0 Airthings Cloud Dashboard

# 3.0 Airthings Cloud Dashboard

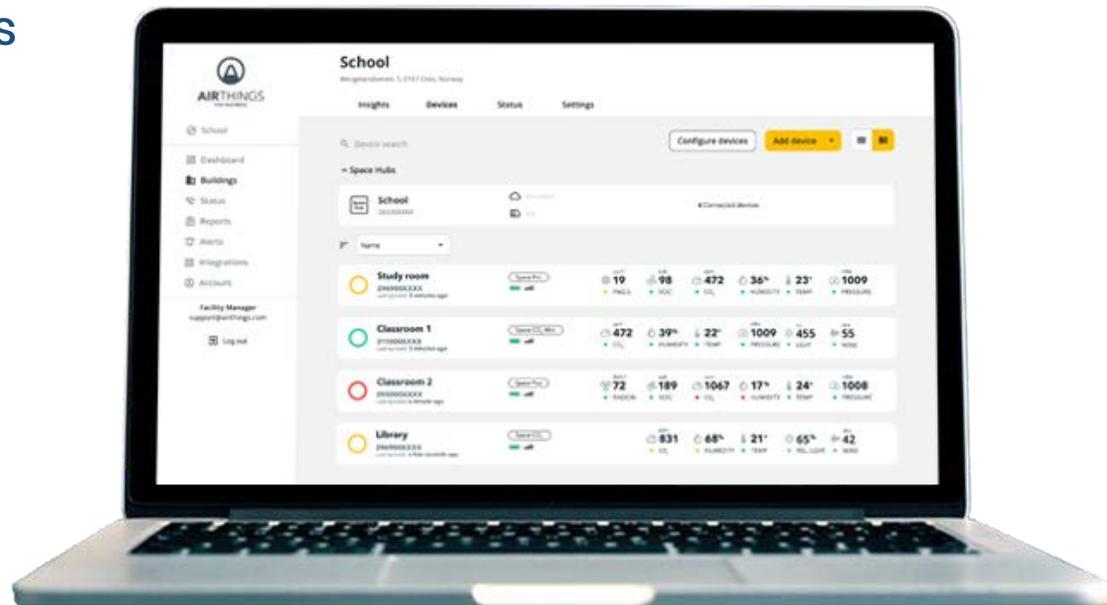
At the heart of the Airthings for Business ecosystem is the Cloud Dashboard, providing you with data analytics, insights, alerts and full account control.

## At-a-glance product features

Quickly view, customise and analyse the sensor data from all of your devices. The Airthings Dashboard gives you the air quality data you need to take action at the earliest opportunity.

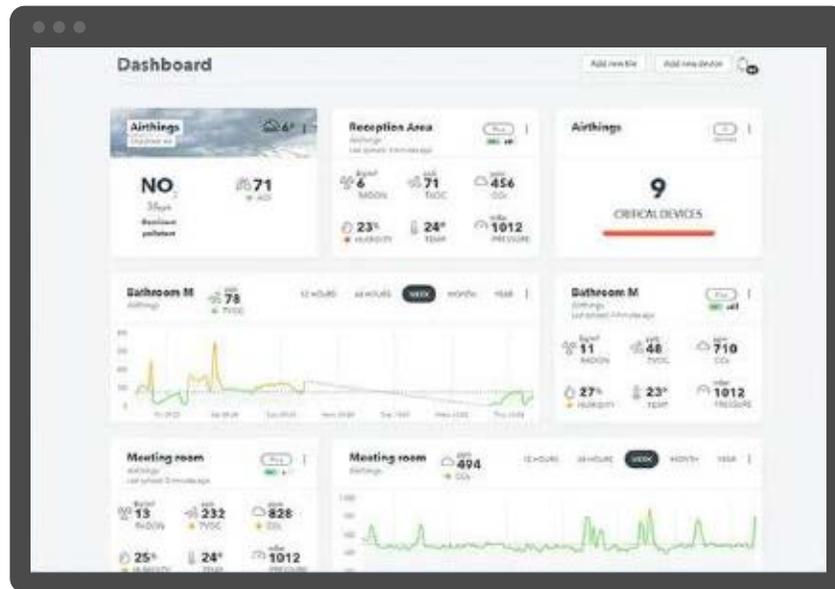
With on-demand access to current and historical data you can optimise ventilation and air quality within your buildings, ensuring you provide a healthy and productive environment for all its users.

Watch our product video to find out more: 

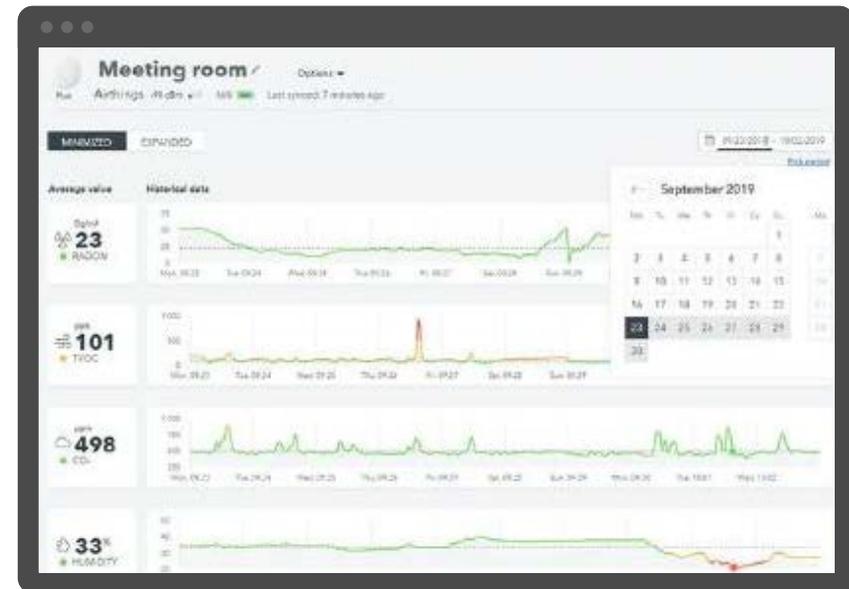


## Full visibility into air quality in all your spaces

Get an overview of all rooms, floors and locations. Receive automated alerts should conditions change, and air quality deteriorate.

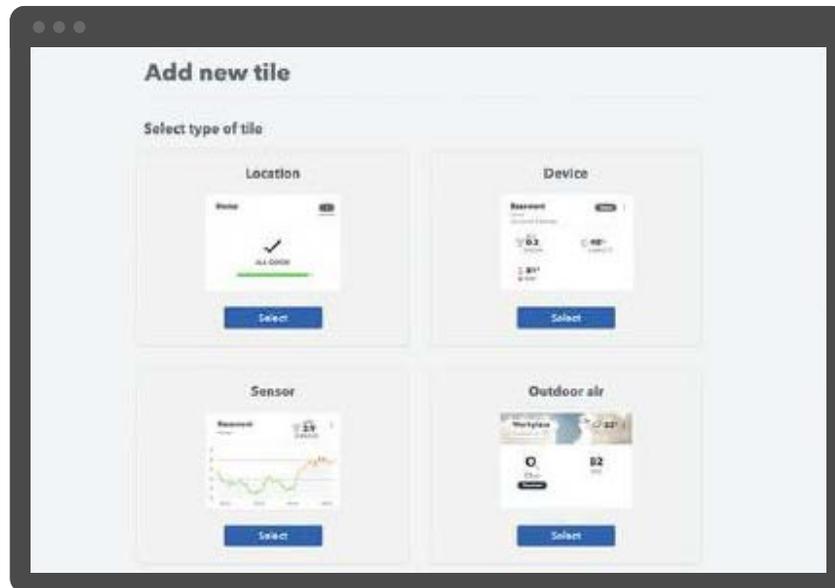


Dig deeper into your data to observe trends, compare current values with past measurements, and identify incidents that correspond with activities.



## View your data the way you like

Add and remove tiles to customize your dashboard to your preference. If the account is shared, tailored preferences can also be set per user.



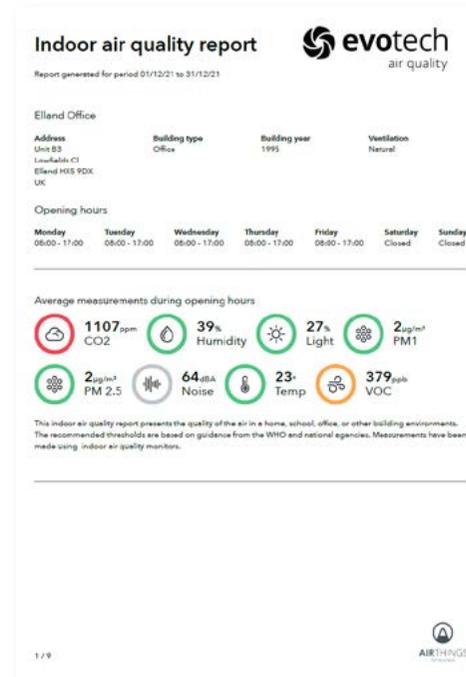
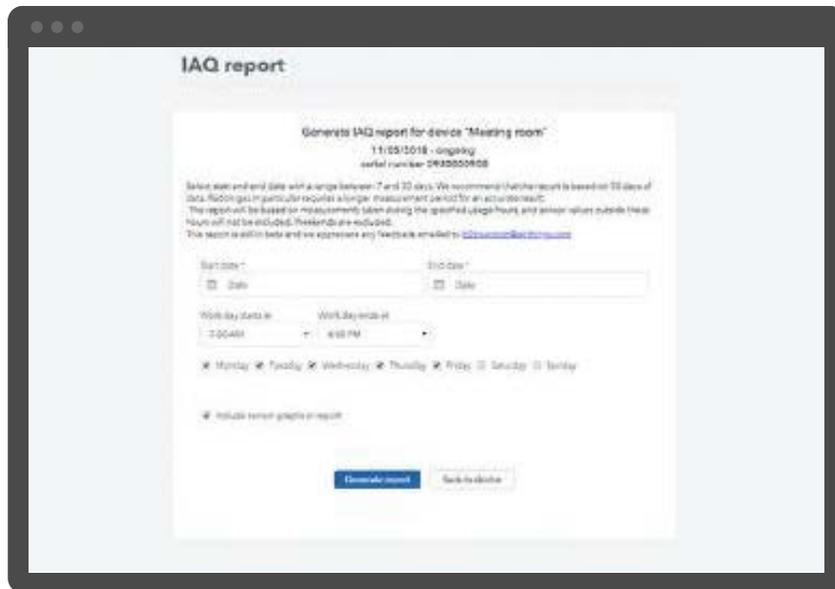
## Optimise air quality and performance

Use occupancy patterns to determine the optimal times for operating your building's ventilation system, appease indoor climate complaints with live data or confirm when action is needed.



## Easily distribute your IAQ data

Generate custom IAQ reports to share with your business / organisation, or export data as a CSV file for further analysis. Ideal if you need to demonstrate proof to enable action.



## Virus Risk Indicator

Airthings have introduced the Virus Risk Indicator to help schools, offices and other commercial buildings stay one step ahead of their virus transmission risk.

## How does it work?

The Virus Risk Indicator looks at four factors of airborne virus risk to rank your risk level out of 10.

These four factors use data based on three existing sensors in our View Plus and View CO<sub>2</sub> sensors for Business: CO<sub>2</sub>, temperature and humidity.



## What do my virus risk levels mean?



### 1-4 Normal level

You should aim to keep your risk at this level where the chance of airborne virus transmission is lowered.



### 4-7 Action level

The point at which you should take action and follow some of the suggested insights in the dashboard to lower your risk back to normal levels.



### 7-1 Warning level

Virus transmission risk is high. Action should be taken straight away using the tailored suggestions in the dashboard.

**The Virus Risk Indicator** can be enabled / disabled via the Dashboard at sensor level, giving you full control of its deployment.

**Email alerts** can be created to provide notification of when your chosen levels are reached.

**Virus risk** insight reports can be generated, either manually or automatically, enabling you to monitor the risk at sensor level or throughout the entire building.

## Public Dashboard

Reassure your pupils, tenants, customers or employees that they are breathing healthy air.

The Airthings for Business ecosystem now includes a Public Dashboard feature, where you can showcase your real-time air quality levels.



### Fully customisable

Configure your public display so it's optimised for your tenants/visitors



### Flexible display

Easy to understand air quality levels made to work for all display formats



### Shareable

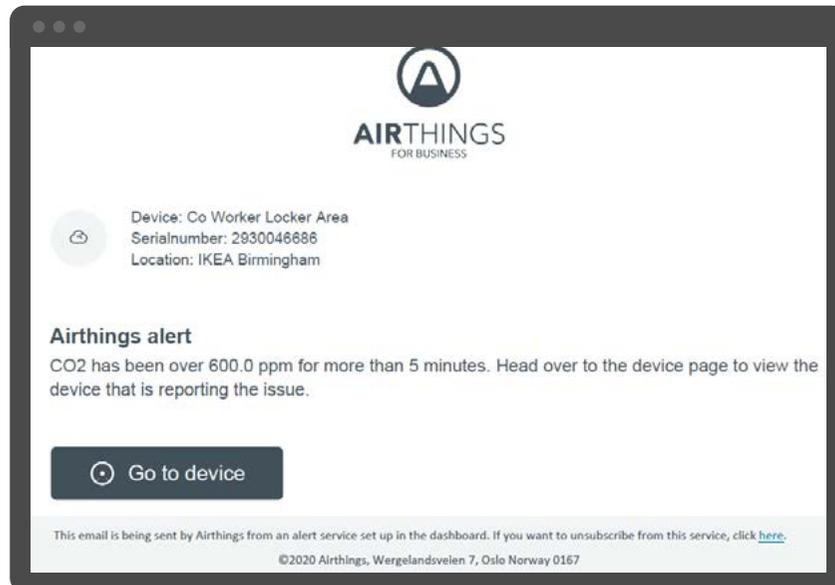
Share the link to allow tenants/visitors to see air quality levels before they arrive

## Alerts and Notifications

Set up automated alerts and notifications by sensor or by building. Schedule within opening hours, outside opening hours, or 24 hours per day.

Create rules to trigger alerts to be sent where sensor values exceed or fall below the chosen threshold for a set timespan.

Get notified if devices have been offline for more than 60 minutes and receive low battery warnings.



## QR Codes

Create QR codes for each sensor to allow occupants to see the current air quality within their space.

Please note: The QR code shown below is a live example. You can therefore scan this code with your smartphone camera to see in real time the air quality within the room / space shown (please ensure your smartphone camera setting is enabled for QR codes).

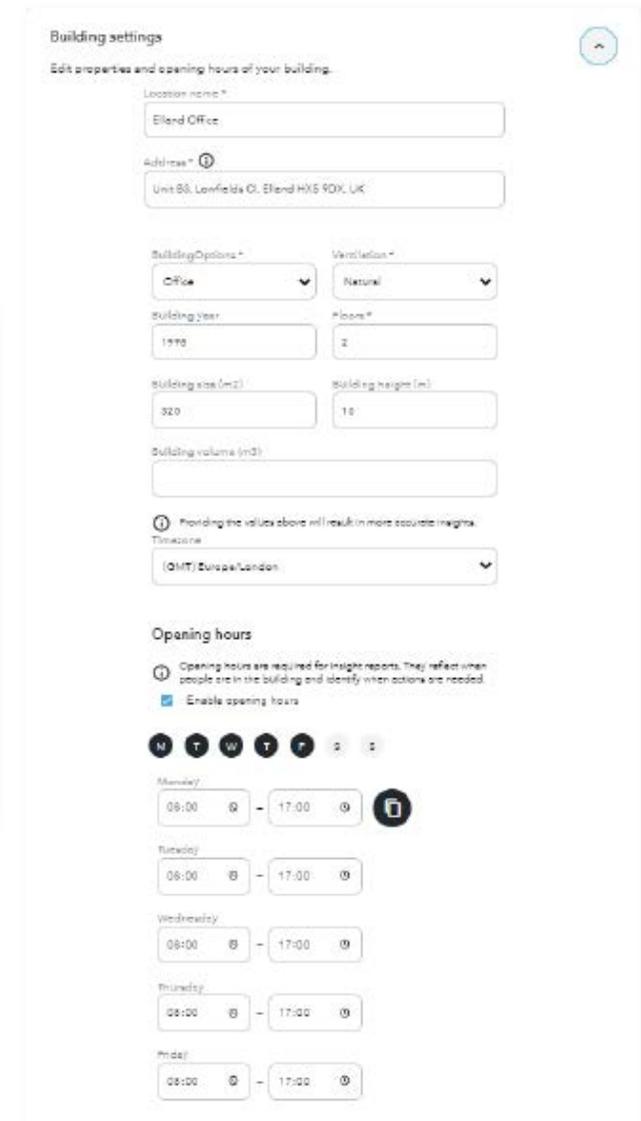
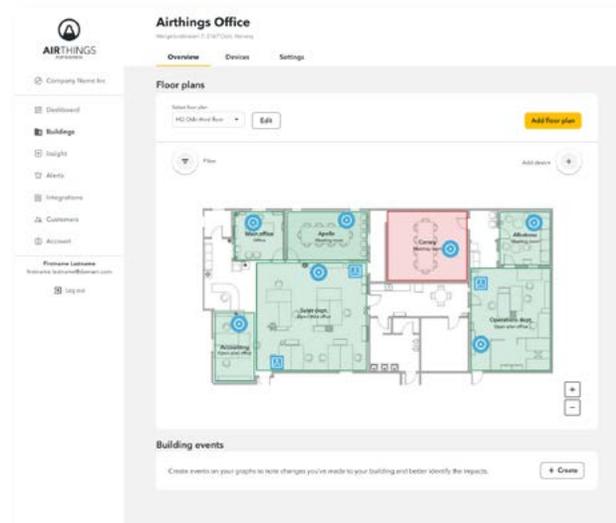


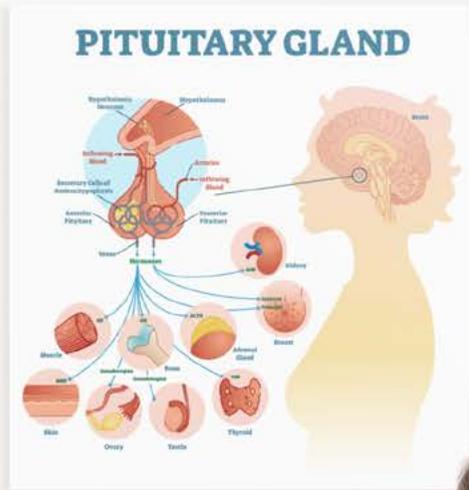


## Account / User Management

Easily manage your Airthings ecosystem using the Cloud Dashboard. Customise your account, create users and assign access rights.

Map building locations, operating hours and define building metrics (room sizes, heights and ventilation types). Upload building floor plans.





# 4.0 Sensor Installation and Warranties

# 4.0 Sensor Installation and Warranties

Installing Airthings sensors is simple and straight forward. Each device can be used straight out of the box, simply place the sensor where you would like to measure air quality.

The devices are recommended to cover (but not limited to) 50 square meters. Sensors should be positioned within range of the Airthings Space Hub. The SmartLink protocol can easily penetrate 3 thick concrete walls/floors or 10 drywalls. Older constructions or deep underground areas or areas with lead lined walls may be challenging and should be evaluated first.

Sensors should be placed at a height of 1.10 - 1.70m (the breathing zone). They can be fixed to walls using the included 3M command strips, screws for a more permanent fixing, or simply just place sensors on a desk or cupboard top. Optional security brackets are available to provide a more secure wall fixing.

Avoid placing sensors in proximity to large metal objects / cabinets, doors or windows, fresh air supplies, sources of heat (i.e. radiators) or humidity (i.e. showers), and on outer walls. All UK supplied devices are backed by a full 12 month, return to base warranty. 36 month warranty options are also available.





# 5.0 Packaging and Labelling

Airthings sensors and hubs are supplied in recyclable packaging, using sustainably sourced materials.

Each box contains a device, 3M command strips, user guide and USB power cable (additional option for Airthings For Business sensors).

Every device is labelled with a unique serial number, ID number and QR code, allowing sensors to be easily tracked and traced.



# Solutions to help you transform your indoor air quality



Indoor air quality sensors



Specialist testing and inspection



Outdoor air quality sensors



Air cleaning technology



Building ventilation



Air filtration solutions



## Northern Office:

Unit B3 Lowfields Close, Lowfields Business Park, Elland, HX5 9DX



## Southern Office:

Studio 9/10 Intec 2, Intec Business Park, Wade Road, Basingstoke, RG24 8NE



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