www.sensorbee.com

Sensorbee
Catalog 2024

sensorbee

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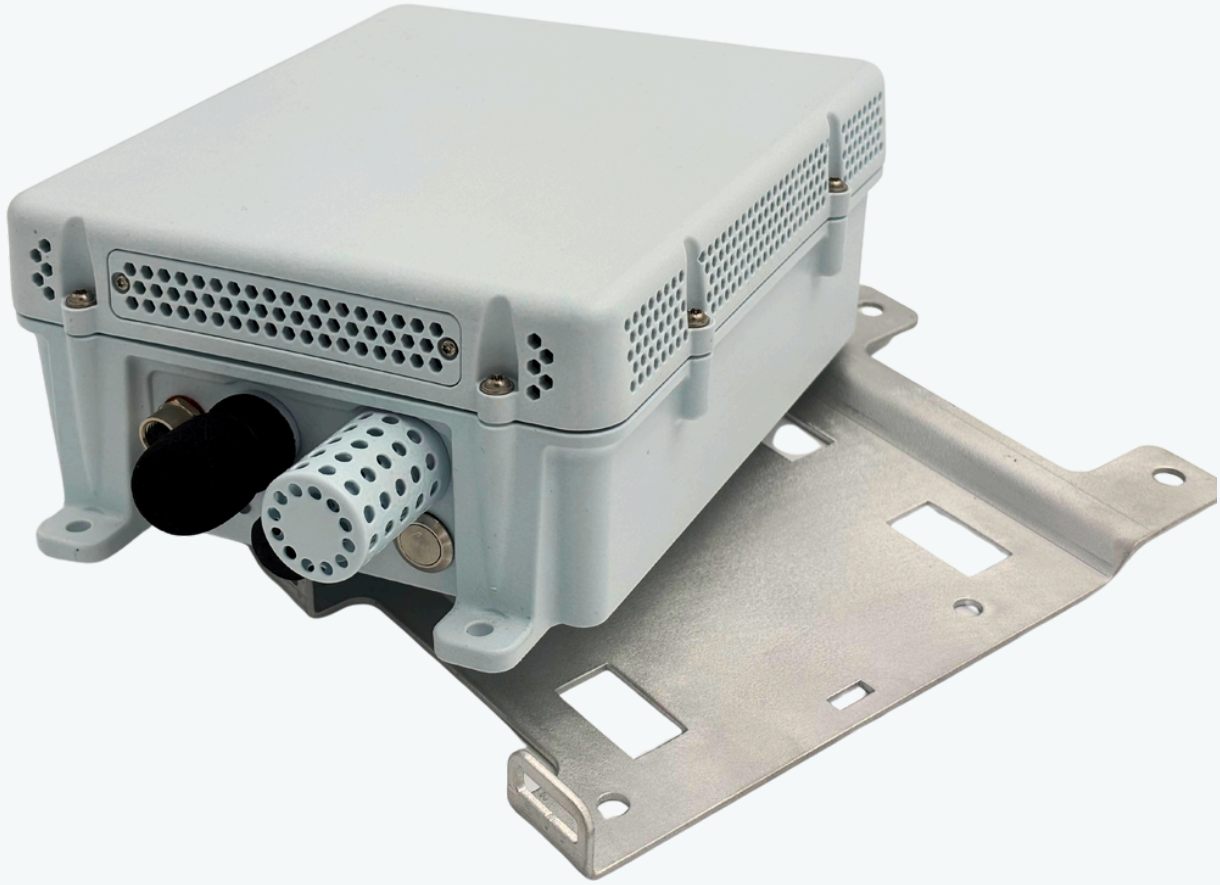
Sensorbee is a fast-growing provider of comprehensive environmental monitoring solutions based in Linköping, Sweden. We deliver advanced hardware for monitoring air quality, noise, dust, and vibration (NDV), paired with intuitive software and actionable data insights. Our solutions support construction companies, governments, and businesses in meeting compliance standards and improving environmental quality.

Our mission is to create a safer, more sustainable future by making air quality and environmental monitoring simpler, more affordable, and highly effective for industries and communities worldwide.

Sensorbee On Request

Where your perspective Shapes our technology

- At Sensorbee On Request, we tailor our environmental monitoring solutions to fit exactly what you need.
- Our expert team listens closely to understand the specific requirements of your project, whether that's tracking air quality, observing weather patterns, ensuring construction site safety, or conducting specialized environmental research.
- We're dedicated to providing you with accurate and relevant data to enhance your decision- making and environmental management.
- Our approach combines custom-designed sensor setups with our cutting-edge technology, ensuring you receive precise information for thorough analysis and proactive environmental care.



Reliable Data in a Compact Design

Sensorbee's air quality system comes with high-accuracy sensors that offer dependable data. The device has a built-in buffer to store data during network or power outages. Weighing just 1.9 kg, it's easy to fit into various urban environments.

Easy to Connect & Solar-Powered

Designed for effortless setup and powered by solar panels, ensuring continuous operation with minimal energy use, even in remote locations.

Versatile Connectivity

Our low-energy design and rechargeable bateries make it simple to power the device with a solar panel or street light. We use energy-eficient GSM technologies like NB-IoT and LTE-M to ensure reliable long-distance coverage.

Easy to Use

Sensorbee's user-friendly web interface allows you to easily manage your air quality system. Set up remote data collection, view real-time information, and receive crucial alerts, all from your web browser. Adding a new Sensorbee unit is simple—just scan its QR code using an Android/iOS device or computer.

Flexible External Options

The Sensorbee Air Pro 2 comes with an expansion port that makes adding external sensors straightforward. This port supports Modbus RS-485, so you can plug in any type of sensors to get more kinds of environmental data. It's a simple way to make your air quality system even more powerful and give you a wider view of what's happening in the environment, all without making things too complicated.

Ambient Noise

Sensorbee's Ambient Noise Module is an additional hardware component available that enables your Air Quality Sensors to measure real-time noise levels in dBA. With this module, you can simultaneously monitor air quality and noise levels, enhancing the scope of your environmental monitoring with your Sensorbee devices.

How Does It Work?

1

THE SENSORS

Our sensors runs on solar power or external power.

2

THE DATA

Real-time pollutant data transmitted over cellular network.

3

CLOUD SERVICES

Sensors and data can be managed and stored either in Sensorbee's cloud services or on customer-specific cloud servers..

4

ACCESS YOUR DATA

You can access and utilize your data through the Sensorbee Web Interface or via the API for third-party integration.

Sensorbee
Cloud

- **Turnkey Environmental Monitoring:** A comprehensive solution for noise, dust, and vibration, ensuring continuous operation and reliable data.
- **Quick Setup & Real-Time Insights:** Rapid deployment with AI-powered analytics for instant decision-making and compliance.
- **Integrated Project Management:** Streamlined project tracking and automated reporting for efficient regulatory adherence.

Access to System
Web

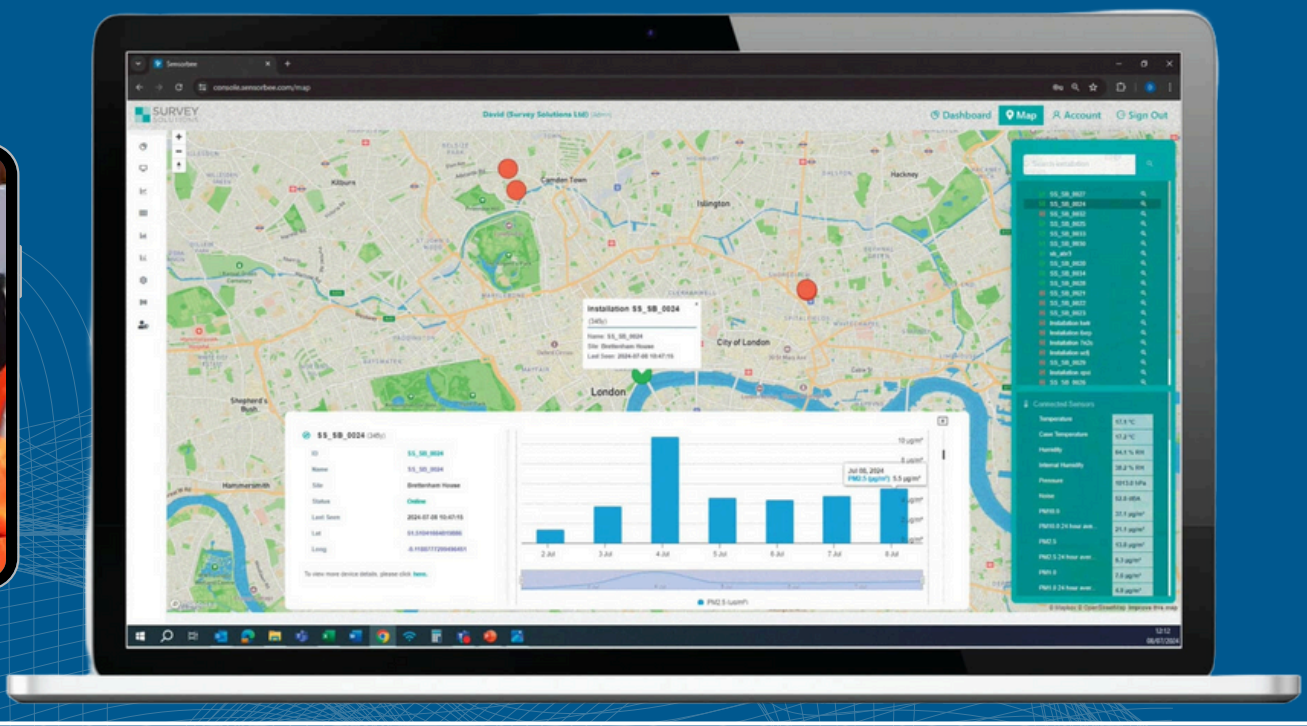
Device/Back-end protocol
LWM2M

Sensor Data Download
CSV file

API Sensorbee cloud
PUSH API, REST API

Notifications
Email, SMS

Project Management
Smart project management



Sensorbee Air
Pro 2 Cellular

The Sensorbee Air Pro 2 Cellular is a professional air environmental monitoring device. It uses solar power to measure dust, temperature, humidity, and gases. It can connect to extra sensors and shares data via mobile networks. This tool is designed for efficient and eco-friendly monitoring, useful for advanced environmental research and urban management.

SB8202 - Air Pro 2 Cellular

Communication & Remote Management:
LTE-M or NB-IoT (Nano SIM)
Sensorbee Cloud (LwM2M ≥1.1)

External Sensor Connectors:
- M8 conn. for Sensorbee Provided sensors
- M12 8pin conn. for Modbus RTU sensors
  (5V / 12V support)

Dimensions, Weight & Material:
145 x 200 x 80 mm, 1.9 kg,
Polyamide

Power Input: 5 to 24 VDC
Internal Battery: 20 Ah

Regulatory Compliance:
CE

Modules Supported:
6 Sensorbee gas modules (not included)
Sound Level Meter (not included)

Operating Temperature & Humidity:
(Recommended) -20 to +60 °C,
0 to 99 %RH

Mounting:
Pole/Wall mounting bracket

INCLUDED MODULES :

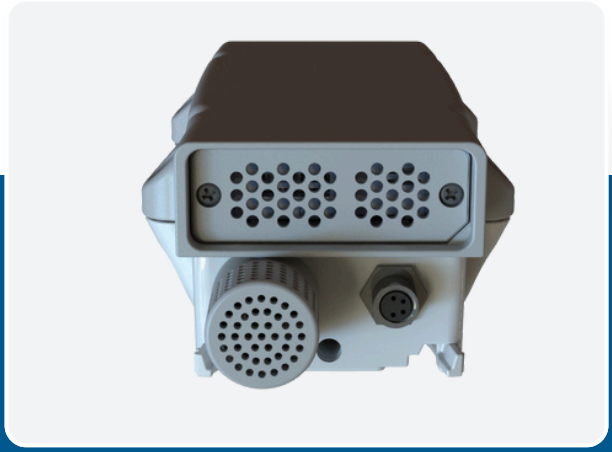
Particle Sensor Module: (SB4102):
Type : Optical particle counter
Mass size Range: PM1, PM2.5, PM10
Number size Range: PM1, PM2.5, PM10

Temperature Sensor Module (SB4602):
–20 to 50 °C: ±0.1 °C

EnviroSense Sensor Module (SB4502):
Humidity: 0 to 100 %RH, 15 to 55 °C: ±1.0 %RH
VOC: 0 to 1000 ppm (VOC Index 0 to 500)
NOX: 0 to 10000 ppb (NOX Index 0 to 500)
Pressure: 300 to 1250 hPa ±0.5 hPa

Sensorbee Air
Lite Cellular

Sensorbee Air Lite, a cost-effective air quality monitoring solution for mass deployment. Ideal for monitor- ing particulate matter, temperature, humidity, and noise via a software add-on license.With real-time data transmission over mobile networks, NB-IoT, and LTE-M, our solution is easy to install and cost-effective to own. Its compatibility with solar panels also makes it an eco-friendly monitoring option.



SB3331 - Air Lite

Communication & Remote Management:
LTE-M or NB-IoT (Nano SIM)
Sensorbee Cloud (LwM2M ⩾1.1)

Operating Temperature & Humidity:
-20 to +60 °C, 0 to 99 %RH

Power Input: 5 to 15 VDC
Internal Battery: 3400 mAh

Regulatory Compliance:
CE

Humidity Sensor:
0 - 100 %RH ±5 %RH

Dimensions, weight & material:
150 x 80 x 55 mm, 0.3 kg
Polycarbonate & Polyamide

Noise Meter:
20 Hz to 10 kHz
40 to 100 dBA ±4 dBA

Mounting:
Pole/Wall mounting bracket

Temperature Sensor:
-40 to +60 °C ±1 °C

Sensors Operational Life:
2 Years

PARTICLE SENSOR:

Type : Optical particle counter
Mass size Range: PM1, PM2.5, PM10
Number size Range: PM1, PM2.5, PM10

Sensorbee Particle Matter Module

The Particle Matter Module, are a rugged high accuracy sensor built for outdoor use.
It have a high air flow rate for robust PM10 readings, as well as heating element that make help improve accuracy in high humidity situations.

SB4102 - Particle Matter Module

PARTICLE SENSOR:

Type:
Optical particle counter

Heating element:
Heating element active when >80% humidity.

Airflow: 2.5 lpm
Resolution: 1 µg/m3

Concentration Ranges:
0 to 1000 µg/m3 Mass Concentration
0 to 2600 #/cm3 Number Concentration

Mass Concentration Range & Precision:
PM1.0: 0.3-1.0µm part.size - ±5% precision(µg/m3)
PM2.5: 0.3-2.5µm part.size - ±5% precision(µg/m3)
PM10: 0.3-10.0µm part.size - ±10% precision(µg/m3)

Number Concentration (PC) Range & precision:
PM1.0: 0.3-1.0µm part.size - ±5% precision(#/cm3)
PM2.5: 0.3-2.5µm part.size - ±5% precision(#/cm3)
PM10: 0.3-10.0µm part.size - ±10% precision(#/cm3)

MODULE:

Dimensions: 70 x 60 x 26 mm
Weight: 65 gram

Enclosure:
Polyamide

Operational Life:
>2 Years

Operating Temperature:
-20 to +60°C

Recommended Humidity range:
0 to 95 %RH

Operating Humidity range:
0 to 99 %RH

Sensorbee EnviroSense Module

SB4502 EnviroSense Module

Sensor type:
Photoacoustic

Humidity Accuracy:
0 to 95 %RH: ±1.5 %RH
95 to 100 %RH: ±1.75 %RH
(20 to 75 %RH (15 to 55 °C): ±1.0 %RH)

Pressure:
300 to 1250 hPa ±0.5 hPa

VOC and NOX Index:
VOC: 0 to 1000 ppm (VOC Index 0 to 500)
NOX: 0 to 10000 ppb (NOX Index 0 to 500)

Regulatory Compliance:
CE

Dimensions:
∅20 mm x 24 mm

Weight:
5 gram

Enclosure:
Polyamide

Operating Temperature:
-20 to +60 °C

Operating Humidity:
0 to 100 %RH

Module Operational Life:
> 2 years

Sensorbee Carbon Dioxide
Gas Sensor (CO2)

SB4212 - Carbon Dioxide Sensor (CO2)

Sensor type:
Photoacoustic

Measurement Range:
Maximum 0 to 40,000 ppm
Specified Range 400 to 5,000 ppm

Measurement Accuracy:
400 to 1,000 ppm: ± (50 ppm + 2.5 %)
1,001 to 2,000 ppm: ± (50 ppm + 3 %)
2,001 to 5,000 ppm: ± (40 ppm + 5 %)

Resolution:
1 ppm

Response Time:
< 60 sec

Dimensions:
∅20 mm x 24 mm

Weight:
8 gram

Enclosure:
Polyamide

Operating Temperature:
-10 to +60 °C

Operating Humidity:
0 to 95 %RH

Module Operational Life:
> 3 Year

Sensorbee Nitrogen Dioxide (NO2) Gas Sensor

SB4202 - Nitrogen Dioxide Sensor (NO2)

Measurement Range:
0 - 10,000 ppb

Resolution:
1 ppb

Limit of detection:
3 ppb (Spec:CEN/TS 17660-1:2022)

Repeatability:
4 ppb (Spec:CEN/TS 17660-1:2022)

Response Time:
< 80 sec

Guarantee range:
20 ppm

Typical Accuracy:
±7 ppb

Sensor type:
Electrochemical

Dimensions & Weight:
55 x 40 x 30 mm, 25 gram

Enclosure:
Polyamide

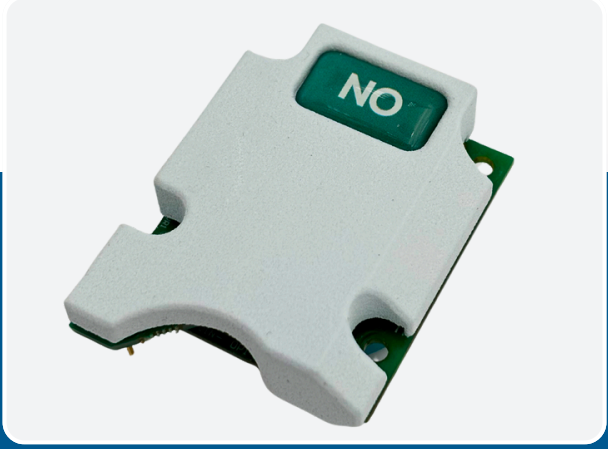
Operating Temperature:
-30 to +40 °C

Operating Pressure:
800 to 1200 hPa

Operating Humidity:
15 to 85 %RH

Module Operational Life:
> 1 Year

Sensorbee Nitric Oxide (NO) Gas Sensor



SB4242 - Nitric Oxide Sensor (NO)

Measurement Range:
0 - 5,000 ppb

Resolution:
1 ppb

Limit of detection:
3 ppb (Spec:CEN/TS 17660-1:2022)

Repeatability:
4 ppb (Spec:CEN/TS 17660-1:2022)

Response Time:
< 45 sec

Guarantee range:
20 ppm

Typical Accuracy:
±7 ppb

Sensor type:
Electrochemical

Dimensions & Weight:
55 x 40 x 30 mm, 25 gram

Enclosure:
Polyamide

Operating Temperature:
-30 to +50 °C

Operating Pressure:
800 to 1200 hPa

Operating Humidity:
15 to 85 %RH

Module Operational Life:
> 1 Year

Sensorbee Carbon Monoxide (CO) Gas Sensor

SB4262 - Carbon Monoxide sensor (CO)

Measurement Range:
0 - 7,000 ppb

Resolution:
10 ppb

Limit of detection:
10 ppb (Spec:CEN/TS 17660-1:2022)

Repeatability:
20 ppb (Spec:CEN/TS 17660-1:2022)

Response Time:
< 30 sec

Guarantee range:
1000 ppm

Typical Accuracy:
±80 ppb

Sensor type:
Electrochemical

Dimensions & Weight:
55 x 40 x 30 mm, 25 gram

Enclosure:
Polyamide

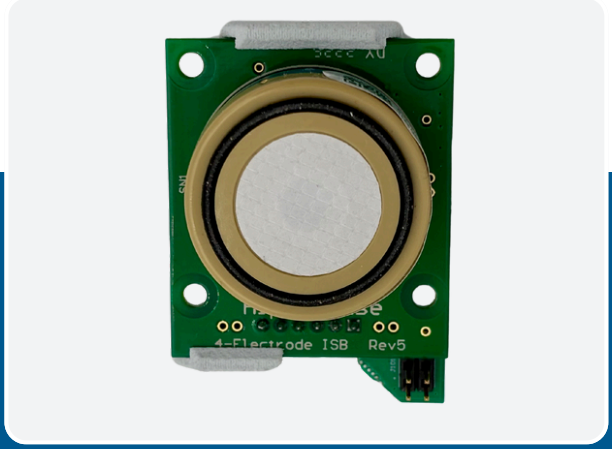
Operating Temperature:
-30 to +50 °C

Operating Pressure:
800 to 1200 hPa

Operating Humidity:
15 to 90 %RH

Module Operational Life:
> 1 Year

Sensorbee Ozone (O3)
Gas Sensor



SB4272 - Ozone Sensor (O3) (+ NO2)

Measurement Range:
0 - 10,000 ppb

Resolution:
1 ppb

Limit of detection:
3 ppb (Spec:CEN/TS 17660-1:2022)

Repeatability:
4 ppb (Spec:CEN/TS 17660-1:2022)

Response Time:
< 80 sec

Guarantee range:
20 ppm

Typical Accuracy:
±8 ppb

Sensor type:
Electrochemical

Dimensions & Weight:
55 x 40 x 30 mm, 25 gram

Enclosure:
Polyamide

Operating Temperature:
-30 to +40 °C

Operating Pressure:
800 to 1200 hPa

Operating Humidity:
15 to 85 %RH

Module Operational Life:
> 1 Year

Sensorbee Ozone (SO2)
Gas Sensor

SB4252 - Sulphur Dioxide Sensor (SO2)

Measurement Range:
0 - 10,000 ppb

Resolution:
1 ppb

Limit of detection:
3 ppb (Spec:CEN/TS 17660-1:2022)

Repeatability:
5 ppb (Spec:CEN/TS 17660-1:2022)

Response Time:
< 80 sec

Guarantee range:
20 ppm

Typical Accuracy:
±15 ppb

Sensor type:
Electrochemical

Dimensions & Weight:
55 x 40 x 30 mm, 25 gram

Enclosure:
Polyamide

Operating Temperature:
-30 to +40 °C

Operating Pressure:
800 to 1200 hPa

Operating Humidity:
15 to 85 %RH

Module Operational Life:
> 1 Year

Sensorbee Hydrogen Sulfide (H2S) Gas Sensor

SB4282 - Hydrogen Sulfide Sensor (H2S)

Measurement Range:
0 - 2,000 ppb

Resolution:
1 ppb

Limit of detection:
2 ppb (Spec:CEN/TS 17660-1:2022)

Repeatability:
4 ppb (Spec:CEN/TS 17660-1:2022)

Response Time:
< 55 sec

Guarantee range:
100 ppm

Typical Accuracy:
±10 ppb

Sensor type:
Electrochemical

Dimensions & Weight:
55 x 40 x 30 mm, 25 gram

Enclosure:
Polyamide

Operating Temperature:
-30 to +50 °C

Operating Pressure:
800 to 1200 hPa

Operating Humidity:
15 to 90 %RH

Module Operational Life:
> 1 Year

Sensorbee Sound Level Meter

The Sensorbee Sound Level Meter is an Add-on product that can be added to the Pro2 unit. It captures real-time noise data with an integrated microphone, analyzes it in A-weighted decibels for human hearing. Configurable alerts and data reporting comply with EU noise regulation directives.

SB4652 - Sound Level Meter

Measurement Range:
20 Hz to 10 kHz
40 to 100 dBA ±2 dBA

Meassurement units:
LAeq (A-weighted Equivalent Continuous)
LAFmax, LAFmin
L05, L10, L50, L90, L95

Dimensions:
∅12.8 x 45 mm

Tycpical accuracy:
±1 dB(A)

Module Operational Life:
2+ Years

Mounting:
Onto Pro2 base unit

Weight:
10 gram

Enclosure:
Polyamide

Operating Temperature:
-20 to +60°C

Operating Humidity:
0 to 99 %RH

Sensorbee Wind Speed & Direction Sensor

The ultrasonic wind sensor delivers precise measurement of both wind speed and direction using advanced ultrasonic technology. With no moving parts, this sensor offers long-lasting performance and minimal maintenance. The wind sensor seamlessly integrates with the Sensorbee Pro series,

SB3611 - Wind Speed & Direction Sensor

Range:
0.12 to 40 m/s

Sensitivity:
0.25 m/s

Wind resolution:
0.05 m/s

Wind accuracy:
0.12 m/s

Direction resolution:
1 °

Direction accuracy:
± 1.5 °

Dimensions:
330 x 65 x 230 mm

Weight:
450 gram

Operating Temperature:
-15 °C to +55 °C

Operating Humidity:
0 to 100 %RH

Module Operational Life:
> 2 Year

Mounting bracket
universal wall / pole bracket
2x metal hose clamp included

Sensorbee Vibration Sensor

The SB3641 is a durable triaxial vibration sensor for monitoring construction, blasting, and traffic vibrations. It connects seamlessly with the Sensorbee Pro2 base via Modbus RTU and is built for long-term use in harsh environments with its IP67 weatherproof housing. The SB3641 provides real-time data on Peak Particle Velocity (PPV), Peak Component Particle Velocity (PCPV), and frequency spectrum, offering precise insights for infrastructure and environmental monitoring.

SB3641 - Sensorbee Vibration sensor

Velocity range:
± 50 mm/s

RMS noise:
0.05 mm/s

Interface:
Sensorbee extension port (M8)

Waterproof Rating:
IP67

Bandwidth:
1 to 100 Hz. Signals are sampled at 4096 Hz.

Operating Temperature:
-30 to +60 °C

Temperature Sensor:
-20 to 50 °C: ±0.1 °C

Operating Humidity:
0 to 99 %RH

Regulatory Compliance:
CE

Housing:
Aluminium with 5 mm plate.
Dimensions: 100 x 100 x 30 mm.

Power:
5 to 24VDC

Dimensions:
100 x 100 x 30 mm

Weight:
350 gram

Power:
10 mW

Cable length:
2.5m

Connectivity:
Compatible with Sensorbee Air quality units, using the M8 extension port (Modbus RTU)

Output Data:
PPV,
PCPV (X, Y, Z),
Peak Frequency (X, Y, Z),
PPV FFT spectrum peak amplitude,
Temperature

Data Visualization:
The Sensorbee Cloud Platform displays sensor data in real-time and historical views, offering detailed visualizations such as PPV graphs, PCPV/requency plots, and FFT analysis.

Sensorbee
Solar Panel

The 14W solar panel offers flexible mounting options for installations on poles or walls. With adjustable angle to maximize sun exposure, this panel provides a sustainable and efficient power solution. It can easily be connected to the Air Cellular products.

SB6103 - 14W Solar Panel

Dimensions:
290 x 280 x 110 mm

Weight:
1.3 kg

Operating Temperature:
-30 to +60 °C

Operating Humidity:
0 to 99 %RH

Cable Length:
0.5 m cable with M8F-4 connector

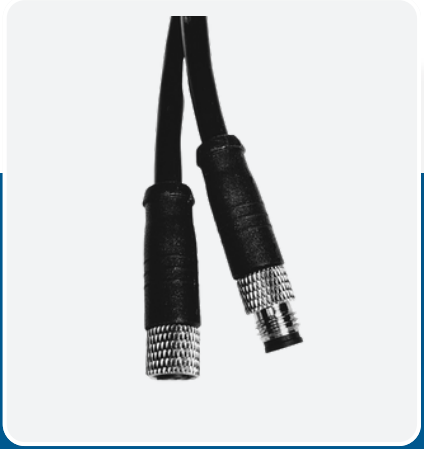
Mounting:
Pole/Wall mounting
2x Steel Hose Included

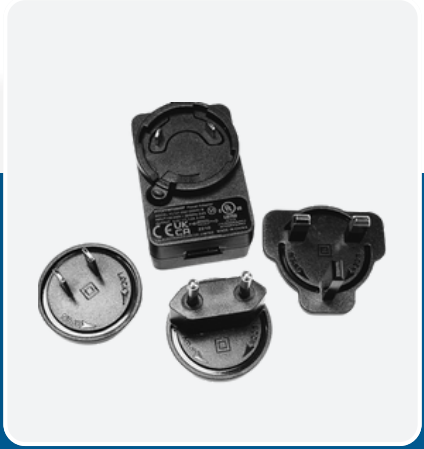
Regulatory Compliance:
CE

Sensorbee
Power Cable

The Sensorbee Pro Cellular and Lite Cellular systems offer multiple power options, compatible with fixed sources or solar panels.

A M8 to USB power cable is available, and can be easily adapted for a 12V source.
If the distance between the solar panel and the system is too short, a 2M-long M8-M8 extension cable is available for added reach.
An indoor 5V 1A USB adapter with interchangeable blades is also offered.





- **SB9013 - 5m USB Power Cable**
- **SB9022 - 2m Power Cable Extender**
- **SB9031 - 5V 1A USB Power Adaptor**

SB9013 Power Cable:
5M Length, M8 to USB-A connector

SB9022 Power Cable Extender:
2M Length, Male M8 to female M8 connector

SB9031 Power Adaptor:
5V 1A USB Power Adapter
Input: 100 to 240VAC
Output: 5 VDC, 1 A, USB-A Connector
Included blades: EU, UK, US
Operating Temperature: 0 to +40 °C
Operating Environment: Indoor

Sensorbee
External Sensor Cable

Extension cables for external sensors are available to ensure flexible placement options. These cables come in lengths of 1m (SB9112), 2m (SB9114), and 5m (SB9116). Each cable features two 6 pins M8 connectors, one male and one female.

For setups requiring multiple connections, a Y-splitter (SB9131) is provided, allowing for the simultaneous connection of two or more devices.

- **SB9112 - 1 m Sensor Cable**
- **SB9114 - 2 m Sensor Cable**
- **SB9116 - 5 m Sensor Cable**
- **SB9131 - Sensor Cable Splitter**

SB9112:
1 m Sensor Cable Extender

SB9114:
2 m Sensor Cable Extender

SB9116:
5 m Sensor Cable Extender

SB9131:
Sensor Y-Type Cable Splitter
2 to 1 Y Splitter
Female ; Female ; Male

Measurement Range:
The concentration range over which the sensor can measure gas levels.

Resolution:
The smallest measurement unit that the sensor can read gas level.

Limit of Detection:
For all our electrochemical gas sensors, the Limit of Detection is defined as the minimum gas concentration that can be reliably distinguished from zero concentration under laboratory conditions (20 °C and 50% relative humidity). This measurement is determined according to the methodology specified in Technical Specification CEN/TS 17660-1:2022.

Repeatability:
For all our electrochemical gas sensors, repeatability refers to the closeness of agreement between successive measurements of the same gas concentration conducted under identical laboratory conditions (20 °C and 50% relative humidity). This parameter is determined according to the methodology specified in Technical Specification CEN/TS 17660-1:2022.

Typical Accuracy:
For our electrochemical gas sensors, the Typical Accuracy denotes the expected level of agreement between the sensor's readings and the actual gas concentration under normal operating conditions. This metric is based on statistical analyses of sensor performance across various environments and temperature ranges.

Guarantee Range:
The concentration range within which Sensorbee guarantees the sensor's performance meets specified standards.

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