Sensedge Mini for Outdoors Technical Specifications

(SE-201 & SE-201P)

Product Overview

The Sensedge Mini for Outdoors is a durable air quality monitor designed for outdoor air quality monitoring. Built to withstand various weather conditions, it provides accurate, real-time data on key air quality parameters, helping real estate leaders and building managers better understand their surrounding environment.

Product Features

Default sensors
Particulate Matter ($PM_{2.5}$, PM_{10}), CO_2, Relative Humidity, Temperature

Replaceable sensor modules
Modules can be swapped in seconds providing a cost-effective way to maintain long-term accuracy and avoid the traditional calibration process.

Designed for outdoor use
Engineered for durable, uninterrupted performance in a range of outdoor conditions whether it's rain, wind, sleet, or snow.

Deeper insights
No more fragmented insights—leverage real-time indoor and outdoor air quality data side by side, unlocking a comprehensive understanding of your complete environment.

Sensor Specification

Particulate Matter Sensor

Sensor technology
Laser particle sensor (Light scattering)
Mass concentration size range
PM_1: 0.3 to 1.0 µm
$PM_{2.5}$: 0.3 to 2.5 µm
PM_{10}: 0.3 to 10.0 µm
Mass concentration range
0 to 1,000 µg/m³
Mass concentration accuracy for $PM_{2.5}$
0 to 30 µg/m³: ±3 µg/m³
30 to 1000 µg/m³: ±10 % m.v.
Mass concentration accuracy for PM_{10}
0 to 30 µg/m³: ±3 µg/m³
30 to 1000 µg/m³: ±15 % m.v.
Sensor output resolution
1 µg/m³
Calibration
Calibrated against standardized aerosol mix
WELL specification requirements
Adjustable particle density (K-factor) to accommodate project/region specific particulate profile.
Complies with WELL Performance Verification Guidebook **to be used in WELL certification.**

CO₂ Sensor

Sensor technology
Non-dispersive infrared (NDIR)
Measurement range
400 to 2,000 ppm[1]
Up to 10,000 ppm extended range [2]
Accuracy
± 40 ppm ± 3%[3] (Comply with ANSI/ASHRAE Standard 62.1-2022)
Sensor output resolution
1 ppm
Target gas
CO_2

Temperature Sensor

Sensor technology
Digital sensor
Measurement range
-40°C - 125 °C
Accuracy
±1 °C
Comply with WELL[4]
Sensor output resolution
0.01 °C

Relative Humidity Sensor

Sensor technology
Digital sensor
Measurement range
0 - 100 %RH
Accuracy
±5 % RH
Sensor output resolution
0.01 % RH

Device Specification

Power
Direct Wiring: 12 - 30 V DC
Power supply:
Input 90-305V AC
Output 24V DC, Frequency 47Hz to 63 Hz
PoE:
(Available for model SE-201P)
IEEE 802.3af (PoE), Class3
IEEE 802.3at (PoE+), Class3
PD maximum power ≤ 10 W
PSEs: Midspan & endspan supported
Cable: Cat5 (Cat5e, Cat6, and Cat6a)

Connectivity
Wi-Fi:
2.4 GHz 802.11 b/g/n
Security supported: 64/128 WEP, WPA-PSK, WPA2-PSK, WPA, WPA2 Personal
Ethernet:
IEEE 802.3
Data rate: Up to 100 Mbps

Integration
BACnet/IP
RS-485 Modbus/RTU
Cloud MQTT
On premise MQTT
Open API

Installation
Methods:
Surface mount
Electrical box mount

Data Logging & Storage
Frequency of readings (Log interval):
1 minute, 1 hour, 1 day
Data push interval: 1 minute[5]
Onboard memory: 1 hour of data

Modules & Calibration
Compatible modules:
KM-200: Particulate Matter ($PM_{2.5}$&PM_{10})
Calibration: Swappable sensor modules

Security
Kaiterra's platform architecture meets the most stringent security standards and is regularly subjected to 3rd party penetration tests. Read more about our security here.

Size & Weight
190 mm x 170 mm x 80 mm (7.5" x 6.7" x 3.2")
Sensedge Mini: 370 g (0.82 lbs)
Outdoor housing: 426 g (0.94 lbs)

Operating conditions
Operating temperature: -20 - 50 °C
Operating humidity: 5 to 95 %RH, non-condensing

---

1. Extended exposure to concentrations below 400 ppm may result in incorrect operation of ABC algorithm and should be avoided.
2. Sensor provides readings in the extended range but the accuracy may be lower than that specified in the table.
3. The accuracy specification covers environments ranging from 0-50°C and 0-80% RH, and complies with indoor air quality standards ANSI/ASHRAE Standard 62.1-2022 at 25°C.
4. As a RESET Certified Grade B air quality monitor, this device automatically meets technical requirements for this parameter.
5. Customizable upon request

Get in touch with us! | www.kaiterra.com   info@kaiterra.com