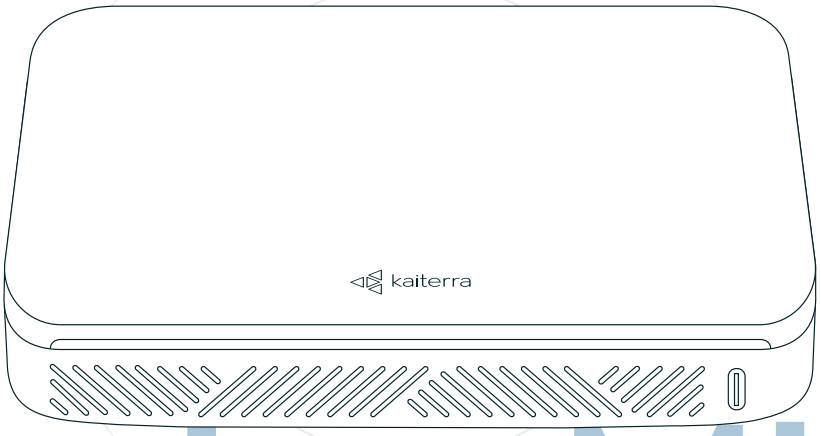
kaiterra



Sensedge Mini

Technical Specifications

(SE-200 & SE-200P)

Product Overview

The Sensedge Mini provides real-time, accurate measurements of $PM_{2.5}$, TVOC, CO_2, and O_3* concentrations, as well as temperature and relative humidity readings. With multiple power, connectivity, and installation options, the Sensedge Mini is made to the satisfaction of building owners, facility managers, tenants, and employees.

* Ozone measurement available with KM-207 module.

Particulate Matter Sensor Specification

01

Mass concentration accuracy for $PM_{2.5}$

0 to 100 µg/m3 : ±10 µg/m³

100 to 500 µg/m3 : ±10 % m.v.

Mass concentration size range

$PM_{2.5}$	0.3 to 2.5 µg/m³
PM_{10}	0.3 to 10.0 µm

Mass concentration range

0 to 1,000 µg/m³

Sensor output resolution

1 µg/m³

Sensor technology

Laser particle sensor (Light scattering)

Typical response time

≤10 s

Recommended lifetime

High pollution concentration (> 200 µg/m³)
1.3 years

Low pollution concentration (< 100 µg/m³)
2 years

Calibration

Calibrated against standardized aerosol mix

TVOC Sensor Specification

02

Target gas profile

Complex mixture of 22 VOCs[1] as defined by Molhave et al.

Measurement range

0 - 60000 ppb

Accuracy

±15 % ±8 ppb

Sampling process

Diffusion

Calibration

Calibrated against ethanol

Sensor output resolution

1 ppb

Sensor technology

Multi-pixel metal oxide sensor (MOx)

1 n-Hexane, n-Nonane, n-Decane, n-Undecane ,1-Octane, 1-Decene, Cyclohexane, m-Xylene, Ethylbenzene, 1,2,4-Trimethylbenzene, n-Propylbenzene, a-Pinene, n-Pentanal, n-Hexanal, Iso-propanol, n-Butanol, 2-Butanone, 3-Methyl-3-butanone, 4-Methyl-2-pentanone, n-Butylacetate, Ethoxyethylacetate, 1, 2-Dichloroethane

CO_2 Sensor Specification

03

Target gas

CO_2

Measurement range

400 to 2,000 ppm[1]
Up to 10,000 ppm extended range[2]

Accuracy[3]

±3 % m.v. ±40 ppm

Typical response time

2 minutes by 90 %

Sensor technology

Non-dispersive infrared (NDIR)

Sensor output resolution

1 ppm

Recommended lifetime

15+ years

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 Accuracy is specified over operating temperature range. Specification is referenced to certified calibration mixtures. Uncertainty of calibration gas mixtures (±2% currently) is to be added to the specified accuracy for absolute measurements.

Ozone Sensor Specification

(Available with KM-207 module)

04

Target gas

O_3

Measurement range

20 to 2,000 ppb

Accuracy

±10 %

Typical response time

< 90 s

Sensor technology

Electrochemical

Sensor output resolution

1 ppb

Recommended lifetime

2 years

Interference gas

NO_2, CL_2, H_2, CO

Temperature Sensor Specification

05

Measurement range

-40 - 125 °C

Accuracy

±1 °C

*Certified by WELL

Long term drift[1]

<0.03 °C/y

Typical response time[2]

>2 s

Sensor technology

Digital sensor

Sensor output resolution

0.01 °C

Recommended lifetime

10 years

1 Typical value for operation in normal RH/T operating range. Higher drift values may occur due to contaminant environments with vaporized solvents, out-gassing tapes, adhesives, packaging materials, etc.
2 Temperature response times strongly depend on the type of heat exchange, the surrounding surface and the airflow in the final application environment.
* As a RESET Certified Grade B air quality monitor, this device automatically meets technical requirements for this parameter.

Humidity Sensor Specification

06

Measurement range

0 - 100 % RH

Accuracy

±5 % RH

Long term drift

< 0.25 % RH/yr

Typical response time[1]

> 8 s

Sensor technology

Digital sensor

Sensor output resolution

0.01 % RH

Recommended lifetime

10 years

1 Humidity response times strongly depend on the surrounding surface and the airflow in the final application environment.

General Device Specifications

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Calibration

Calibration via hot-swappable sensor modules

Operating conditions

Operational temperature: 0 - 50 °C
Operational humidity: 5 to 95 %RH, non-condensing

Data storage & logging

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

Dimensions

Length: 155 mm (6.1 in)
Width: 129 mm (5.1 in)
Height: 34 mm (1.3 in)

Weight

370 g (0.82 lbs)

Warranty & durability

Standard warranty: 1 year[2]
Expected lifespan: 5 to 7 years

Recommended Monitor Density

One monitor per 3,500ft² (325m²)
Space types and layouts should be considered in accordance with project requirements.

Certifications

Environmental: ROHS, WEEE, TDRA, SRRC
Safety: FCC (US), CE (Europe), BIS (India)
Quality: RESET Grade B
Building automation: BTL
Healthy Building: Works with WELL

1 Customizable upon request
2 Optional extended warranty with contract

Power and Connectivity Options

08

Installation

Surface mount
Drywall mount
Electrical box mount

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

Modbus (RS-485)

RS-485 Modbus/RTU

Integration

BACnet/IP
Cloud MQTT
On premise MQTT
Open API

1 Total length of cabling up to 100 meters. However, we don't recommend using cables longer than 50m to guarantee the stability of power and data transmission.

Power

100 - 240 V AC	Via USB-C (5V 1.8A DC)
12 - 30 V DC	Via direct wiring

PoE (Available for model SE-200P)

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)[1]

Get in touch with us!

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