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Sensedge Technical Specifications

(SE-100)

Product Overview

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

Particulate Matter Sensor Specification

Mass concentration range		0 to 1,000 µg/m³
Mass concentration size range	PM$_{2.5}$	0.3 to 2.5 µg/m³
	PM$_{10}$	0.3 to 10.0 µm
Mass concentration accuracy for PM$_{2.5}$	0 to 30 µg/m³	±3 µg/m³
	30 to 1000 µg/m³	±10 % m.v.
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

Target gas profile	Complex mixture of 22 VOCs[1] as defined by Molhav 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)
Typical start-up time	0.4 ms

[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

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CO₂ Sensor Specification

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. ±50 ppm
Typical response time	2 minutes by 90 %
Sensor technology	Non-dispersive infrared (NDIR)
Sensor output resolution	1 ppm
Recommended lifetime	15+ years

Temperature Sensor Specification

Measurement range	-20 - 100 °C
Accuracy	±1 °C
Long term drift[4]	<0.03 °C/y
Typical response time[5]	>2 s
Sensor technology	Digital sensor
Sensor output resolution	0.01 °C
Recommended lifetime	10 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.

[4] 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.

[5] Temperature response times strongly depend on the type of heat exchange, the surrounding surface and the airflow in the final application environment.

Humidity Sensor Specification

Measurement range	0 - 99 % 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

General Device Specifications

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[2]
	Onboard memory: 8 GB (>50,000,000 data points)
Dimensions	Length: 184 mm (7.2 in)
	Width: 146 mm (5.7 in)
	Height: 48 mm (1.9 in)
Weight	800 g (1.76 lbs)
Battery	Capacity & voltage: 5200 mAh @ 4.2 V Usage time: 8 hours
Languages	English, German, Chinese
Display	7" full color touchscreen
Warranty & durability	Standard warranty: 1 year[3] Expected lifespan: 5 to 7 years

[1] Humidity response times strongly depend on the surrounding surface and the airflow in the final application environment.
[2] Customizable upon request
[3] Optional extended warranty with contract

Power and Connectivity Options

Installation	Surface mount
	Drywall 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)	Modbus/TCP
Integration	BACnet/IP
	Local and cloud MQTT
	Open API
Power	100 - 240 V AC via USB Type-C

Get in touch with us!

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