

# PRODUCT SUBMITTAL

# AtmosAware SE



## APPLICATION

The AtmosAware™ SE is an advanced air quality monitor that optimizes indoor air quality by providing accurate and reliable air monitoring solutions, powered by highly accurate optical sensors. Each monitor is individually calibrated with adjustable and customizable modules to measure particles in the air such as PM2.5, TVOCs, CO2 concentrations, as well as temperature and relative humidity. The SE allows for monitoring and managing multiple devices, view real time data and trends, identify sources of pollution, compare readings across devices, receive notifications, and export data.

RESET Certified, the SE has individually calibrated monitors that sample the air every second with data points uploaded into its cloud dashboard in real time to enable analysis and automation through open API, BACnet, Modbus, Cloud, and Local MQTT. The SE provides maximum security for data transfer by end-to-end encryption, an industry standard SSL/TLS. Sensors are easily replaceable with a featured indicator when a replacement is needed.

### Optional/Available

- PoE Connector
- Static IP and DHCP Connection

Expected Device Lifespan: 5 to 7 years

Sensor (PM2.5 & TVOC) Required Maintenance Replacement: 2 years

## SPECIFICATIONS

### General Product Information

Parameters Measured	PM2.5, TVOCs, CO2, Temperature, RH
Connection	Wi-Fi, Ethernet, BACnet/IP, Modbus (*External adapter required for Modbus)
Included Accessories	Drywall Anchors & Screws, USB-C Cable, Power Adapter
Available Storage	Cloud, Local
Power Supply	Battery, USB-C Plug, PoE
Battery	5200 mAh @ 4.2V (8 hours)
Dimensions	184mm x 146mm x 48mm (7.2" x 5.7" x 1.9"); 178mm (7") Display
Weight	800g (1.76 lbs)

### Technical Information

Sensor Types	PM2.5 – Laser Particle Sensor TVOCs – Metal Oxide Semiconductor CO2 – Non-Dispersive Infrared Detector Temperature – Digital Sensor Relative Humidity – Digital Sensor
Connectivity & Integration	Wi-Fi Connection (2.4 GHz), Ethernet, BACnet/IP, Modbus (*external adapter)
Data Storage & Logging	Log Interval: 1 minute, 1 hour, 1 day Data Push Interval: 1 minute Onboard Memory: 8 GB of data points
Power Usage	100 to 240 VAC, Input DC - 5V 1.8A
Max Operating Temp.	0 to 50°C
Max Operating Humidity	5 to 95% RH, Non-condensing

### Certifications

ROHS, REACH, WEEE, FCC, CE, SRR, RESET



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## SENSOR TYPE DETAILS

Particulate Matter Sensor Specification	
Mass Concentration Range	0 to 1,000 $\mu\text{g}/\text{m}^3$
Mass Concentration Size Range	PM2.5 is 0.3 to 2.5 $\mu\text{g}/\text{m}^3$ PM10 is 0.3 to 10.0 $\mu\text{g}$
Mass Concentration Accuracy for PM2.5	0 to 30 $\mu\text{g}/\text{m}^3$ ; $\pm 3\mu\text{g}/\text{m}^3$ 30 to 1,000 $\mu\text{g}/\text{m}^3$ ; $\pm 10\%$ m.v.
Sensor Output Resolution	1 $\mu\text{g}/\text{m}^3$
Sensor Technology	Laser Particle Sensor (Light Scattering)
Typical Response Time	$\leq 10$ seconds
Recommended Lifetime	High Pollution ( $> 200 \mu\text{g}/\text{m}^3$ ); 1.3 years Low Pollution ( $< 100 \mu\text{g}/\text{m}^3$ ); 2 years
Calibration	Calibrated against standardized aerosol mix

CO2 Sensor Specification	
Target Gas Profile	CO2
Measurement Range	400 to 2,000ppm Up to 10,000ppm extended range
Accuracy for CO2	$\pm 3\%$ m.v. $\pm 50$ ppm
Sensor Output Resolution	1ppm
Sensor Technology	Non-dispersive infrared (NDIR)
Typical Response Time	2 minutes by 90%
Recommended Lifetime	15+ years



TVOC Sensor Specification	
Target Gas Profile	Complex mixture of 22 VOCs* as defined by Molhav et al
Measurement Range	0 to 60,000ppb
Accuracy for TVOC	$\pm 15\%$ ; $\pm 8$ ppb
Sampling Process	Diffusion
Sensor Output Resolution	1ppb
Sensor Technology	Multi-pixel metal oxide sensor (MOx)
Typical Start-Up Time	0.4 ms
Calibration	Calibrated against ethanol

Temperature Sensor Specification	
Long Term Drift	$< 0.03^\circ\text{C}/\text{y}$
Measurement Range	$-20$ to $100^\circ\text{C}$
Accuracy for $^\circ\text{C}$	$\pm 1^\circ\text{C}$
Sensor Output Resolution	$0.01^\circ\text{C}$
Sensor Technology	Digital Sensor
Typical Response Time	$> 2$ seconds
Recommended Lifetime	10 years

Humidity Sensor Specification	
Long Term Drift	$< 0.25\%$ RH/y
Measurement Range	0 to 99% RH
Accuracy for RH	$\pm 5\%$ RH
Sensor Output Resolution	1% RH
Sensor Technology	Digital Sensor
Typical Response Time	$> 8$ seconds
Recommended Lifetime	10 years