

AQBot[™]

Industrial Grade Single Parameter Air Quality Monitor



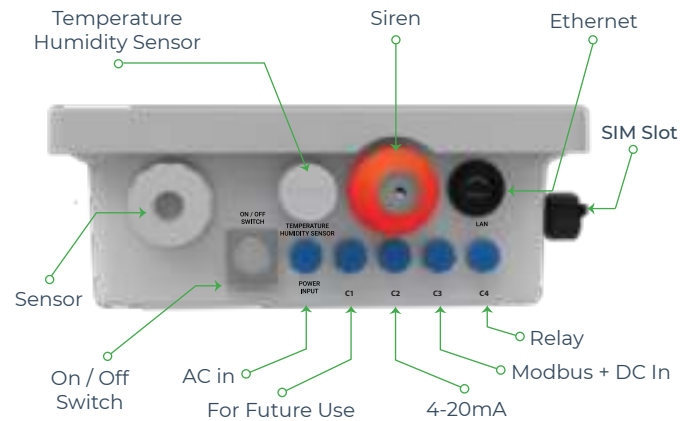
About AQBot™



AQBot is an Industrial-grade Single-parameter air quality monitor with automation capabilities. It is compatible with monitoring various critical environmental parameters like toxic gases, particulate matter, and noise. Its real-time data display allows industries to monitor what's crucial for them. It also has a siren and strobe light system for immediate attention to critical situations. This system activates in real-time upon exceeding user-defined thresholds, providing a multi-sensory alert alongside software notifications.

The AQBot™ enclosure houses robust electronics to last long in extreme industrial conditions. It offers industry-standard connectivity options in addition to multiple modes of wired and wireless communications. Using a wide range of communication capabilities, AQBot™ enables the Industrial Internet Of Things (IIoT) which is the backbone of Industrial Revolution 4.0. AQBot™ can easily integrate with existing building monitoring or plant control systems.

CE FC PTCRB



Product Features



Wide range of parameters



On-device display



Real-time data



Data analytics software



Built-in relay



Alerts and notifications



Compact



Durable



Wired communication



Wireless communication



Internal data storage



Dedicated support

Key Benefits



Accurate Data

Gives accurate readings in real-time to detect concentrations in ambient air.



Robust And Rugged

Durable enclosure to sustain harsh industrial conditions.



Relay-Based Automation

In-built relay operation for automation



Cloud Platform

Visualize and analyze data in the cloud. Easy data integration via APIs.



Easy to install

Effortless installation with versatile mounting arrangements.



Seamless Connectivity

A wide range of options of wired and wireless connectivity.

AQBot™ Usecases



Industrial Fenceline

Comprehensively assess the environmental impact of industrial activities and monitor the fugitive emissions, and gas leaks on a real-time basis.



Environmental Automation

Improve your environmental process control by monitoring air pollution, odor and other environmental conditions on a real-time basis.



Wastewater

Monitoring odor intensity at waste water treatment plants can help regulate odor emission by appropriate maintenance on time.



Industrial EHS

Conduct environmental audits and improve your ESG scores by optimizing the environmental, health, and safety of the citizens.

AQBot Variants

Parameter	ID	Range	Resolution	Min. Det.	Working Principle	Expected Sensor Life
 Ammonia (NH ₃)	OZNH3_1* OZNH3_2* OZNH3_3	0-20 ppm 0-100 ppm 0-1000 ppm	0.3 ppm 0.3 ppm 2 ppm	0.3 ppm 0.3 ppm 2 ppm	Electrochemical	2 Years
 Methane (CH ₄)	OZCH4_1 OZCH4_2	500-1500 ppm 50-10,00,000 ppm	1 ppm 1 ppm	500 ppm 500 ppm	Molecular Property Spectrometer (MPS)	2 Years
 Hydrogen Sulfide (H ₂ S)	OZH2S_1* OZH2S_2 OZH2S_3 OZH2S_4	0-1.5 ppm 0-50 ppm 0-200 ppm 0-2000 ppm	0.001 ppm 0.05 ppm 0.2 ppm 2 ppm	0.01 ppm 0.05 ppm 0.2 ppm 2 ppm	Electrochemical	2 Years
 Total Volatile Organic Compounds (VOC)	OZTVOC_1* OZTVOC_2	0-40 ppm 0-200 ppm	0.001 ppm 0.05 ppm	0.005 ppm 0.05 ppm	Photo Ionization Detection (PID)	24 Months #
 Particulate Matter (PM _{2.5} , PM ₁₀ , PM ₁ , PM ₁₀₀)	OZPM_1*	Upto 5000 µg/m ³ for PM ₁ , PM _{2.5} , PM ₁₀ Upto 30 mg/m ³ for PM ₁₀₀	0.1 µg/m ³	1 µg/m ³	Optical Particle Counter	18 Months
 Noise	OZN_1*	Up to 140 dB	1 dB	0.5 dB	Capacitive	2 Years
 Chlorine (Cl ₂)	OZCl2_1* OZCl2_2	0-20 ppm 0-50 ppm	0.05 ppm 0.1 ppm	0.05 ppm 0.1 ppm	Electrochemical	2 Years
 Hydrogen Chloride (HCl)	OZHCl_1 OZHCl_2	0-50 ppm 0-100 ppm	0.5 ppm 1 ppm	0.5 ppm 1 ppm	Electrochemical	2 Years
 Formaldehyde (CH ₂ O)	OZCH2O_1* OZCH2O_2	0-10 ppm 0-50 ppm	0.05 ppm 0.1 ppm	0.05 ppm 0.1 ppm	Electrochemical	2 Years
 Methyl Mercaptan (CH ₃ SH)	OZCH3SH_1*	0-10 ppm	0.1 ppm	0.1 ppm	Electrochemical	2 Years
 Sulfur Dioxide (SO ₂)	OZSO2_1* OZSO2_2 OZSO2_3	0-10 ppm 0-100 ppm 0-2000 ppm	0.001 ppm 0.2 ppm 5 ppm	0.01 ppm 0.2 ppm 5 ppm	Electrochemical	2 Years
 Nitrogen Dioxide (NO ₂)	OZNO2_1* OZNO2_2 OZNO2_3	0-10 ppm 0-100 ppm 0-500 ppm	0.001 ppm 0.2 ppm 0.5 ppm	0.01 ppm 0.2 ppm 0.5 ppm	Electrochemical	2 Years
 Carbon Monoxide (CO)	OZCO_1* OZCO_4 OZCO_2 OZCO_3	0-5 ppm 0-50 ppm 0-100 ppm 0-1000 ppm	0.01 ppm 0.05 ppm 0.1 ppm 0.75 ppm	0.01 ppm 0.05 ppm 0.1 ppm 0.75 ppm	Electrochemical	2 Years
 Nitric Oxide (NO)	OZNO_1* OZNO_2	0-5 ppm 0-100 ppm	0.001 ppm 0.5 ppm	0.01 ppm 0.5 ppm	Electrochemical	2 Years
 Carbon Dioxide (CO ₂)	OZCO2_1*	0-5000 ppm	1 ppm	400 ppm	Non-Dispersive Infrared	2 Years

TVOC Sensor Housing: 24 Months, TVOC Lamp is user replaceable: 5,000 hours

Expected Sensor Life can vary, subject to actual concentration on-site. In the interest of continued product improvement, we reserve the right to change design features and specifications without prior notification. The data contained in this document is for guidance only, Oizom™ accepts no liability for any consequential losses, injury or damage resulting from the use of this document or the information contained within.

*Indicates standard delivery timeline

Specifications

Mechanical

Size	210MM(W) x 258mm(H) X 105mm(D)
Weight	2.8 Kg (instrument weight)
Material	NEMA 4X Fire Retardant FRP Enclosure
Certifications	CE, IP66, RoHS
Installation Method	Pole Mount / Wall Mount

Electrical

Avg. Power Consumption	3.5 Watt (Actual consumption depends upon the number of parameters)
Power Input Options	AC : External 90-265V AC, 50-60Hz DC : Uninterrupted 12V DC or 24V DC, 2 Ampere
Certifications	CE, RoHS, cURus UL, IEC/EN61000-4 and CISPR32/EN55032 & IEC/UL/EN62368 standard.

Technical

Processor	Quad Core ARM Cortex
Memory	2GB RAM / 8GB eMMC ROM
Device Interface	Display / On-device Software / API / Cloud Platform
Internal Data Storage	Upto 8 GB or 90 days

Environmental







Operating Temperature	-20 °C to 60 °C
Operating Humidity	0-93% RH
Recommended Humidity	15-90% RH
Storage Conditions	10 - 40°C

Communication

Data Interval	2-30 (configurable) minutes
Data-push Protocol	HTTP post request to host server
Data-pull	HTTP request on device IP
Firmware Updates	Over-The-Air Firmware Update
Standby Connectivity	GSM (2G/3G/4G) for remote diagnosis, FOTA updates, and cloud calibration
Certification	PTCRB, CE, FCC, RoHS, ICASA, GCF

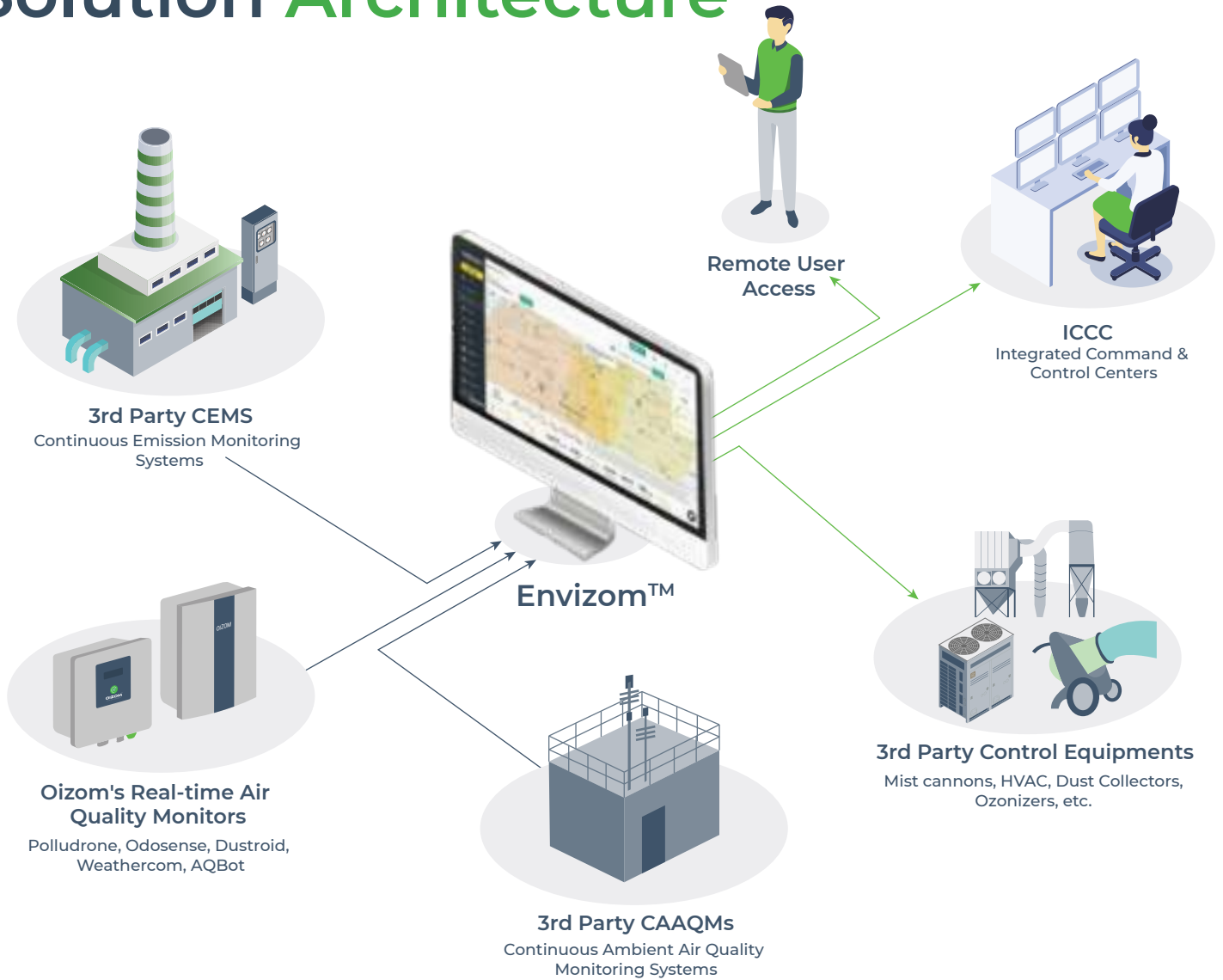
Sensing

Target Parameter	Refer Parameter Table
Gas Sample Mode	Natural Diffusion
Warm up time	1 hour(cold start) for Gas Monitoring
Response Time (t90)	< 60 seconds
Signal Refresh Rate	5 seconds
Measuring Range	Refer Parameter Table
Accuracy	<±5% FS (at 20±5°C/50±20%RH)
Sensor Life	Refer Parameter Table

	Connectivity Options	Specification
Wireless	 GSM	Global 2G / 3G / 4G
	 LTE	CAT-M1
	 WiFi	AP Mode and Station Mode
Wired	 ETHERNET	Static / DHCP Configuration
	 Modbus	RS485 RTU / TCP
	 RELAY	2 Channel Relay

Note: LoRa, NBIoT, Sigfox available as an option

Solution Architecture



Envizom™ Data Visualization and Analytics Platform



Envizom™ is an Environmental monitoring software for real-time air quality data acquisition, visualization, and analytics. The Oizom® environmental data interpretation engine fetches the data from the Oizom® Environmental monitoring stations. On receiving the data, the engine runs necessary corrections and compensation algorithms. Envizom™ uses secured HTTPS servers for data storage. Alternatively, this data can also be stored on-premise local servers.

Envizom™ Capabilities



Real-time Data



Easy to Integrate



Smart alerts



Analytics



User friendly interface



Process Automation

Privacy First Platform



Data Privacy

The data shared with the client uses an encryption server through HTTPS Secure Socket layers. Envizom™ also uses AES encryption for connection that adds to data safety.



Data Ownership

Envizom™ creates a secured and encrypted password combination for the user login. Oizom® ensures 100% privacy of the data and doesn't share without relevant permissions.



Data Transparency

Data collected from Oizom® equipment runs through the Environment Data Interpretation Engine. It processes various algorithms and eliminates environmental impact interferences on the sensors.

Case Studies



Monitoring chlorine gas at a common effluent treatment plant

AQBot™ Cl₂ is used for monitoring chlorine gas at a CETP in Jetpur, India.



India



July 2020



Wastewater

Detecting and Monitoring CH₂O at Australia

Oizom installed AQBot™ with our partners - Ektimo in Australia to detect and monitor CH₂O (Formaldehyde) in workplaces.



Australia



May 2022



EHS



Dust Monitoring at Ambuja Cement Factory in India

A cement factory in Raipur district of India opted for Oizom's AQBot™ to monitor dust particles in their factory and take preventive actions.



India



December 2022



Industrial Fenceline



Case Studies



Oizom's AQBot enhancing Environmental Safety in Construction for Raymond realty.

Raymond Realty chose Oizom's AQBot for real-time PM monitoring, which successfully addresses dust emissions and ensures environmental compliance with the safety of its surroundings.



India



December 2023



Construction

Dust Monitoring at Manufacturing Company in Hyderabad, India

Oizom installed AQBot™ for PM monitoring in a manufacturing company named Grip Strapping Technologies Pvt Ltd located in Hyderabad.



India



July 2022



Automation



Monitoring Formaldehyde in a Laminates Facility, India

Samarpan Laminates installed Oizom®'s AQBot™ for monitoring formaldehyde in their manufacturing facility situated in Morbi district of India.



India



May 2022



Industrial
EHS



Industrial Applications



Paper And Pulp Industry

H₂S - Lime kiln and evaporator
TVOC - Chemical pulping, bleaching and evaporator
CO₂ - Fuel combustion, lime kiln
CH₃SH - Digester, black liquor storage, recovery boiler



Leather Industry

H₂S & NH₃ - Beamhouse, unhairing and liming process
TVOC - Finishing operations - drying
PM - Storage and handling of powdered chemicals
Cl₂ - Pickling process



Cement Industry

CO - Kilns in clinker process
NO₂ - Rotary kiln and vertical shaft kiln, clinker
CO₂ - Limestone decarbonization and fuel combustion
PM - Packaging and ash handling system



Food And Beverages Industry

Cl₂ - In various disinfecting activities
NH₃ - Refrigeration and cooling systems
CO₂ - Carbonation and fermentation processes



Wastewater Treatment Plants

CH₄ & CH₃SH - Sludge storage and anaerobic digestion
Cl₂ - Chlorination before outlet discharge



Dairy Industry

NH₃ - Manure storage and application
CH₄ - Manure in housing and enteric fermentation



Textile Industry

NO - Sizing process
TVOC - High temperature ovens - drying and coating
Cl₂ - Bleaching process
PM - Cotton handling process and boiler



Fisheries Industry

H₂S - Bacteriological and enzymatic decay
NO - Cooking and drying - fishmeal industry
TVOC - Direct and indirect fried dryers
NH₃ - Fish rotting



Thermal Power Plants

CO - Fuel combustion in boiler
NO - Natural gas/oil/coal based fuel combustion
CO₂ - Boiler fuel combustion
PM - Ash extraction plant



Mining Industry

SO₂ & NO₂ - Extraction including blasting & crushing
CH₄ - Material destruction and natural disintegration
PM - Drilling, blasting and transportation



Meat Processing Plants

H₂S - Storage and ETP
CH₄ & CH₃SH - By product, storage & ETP



All Industries

Noise - In every operation including rotary mechanical components

**This is an indicative list.
Speak to our representative for your exact requirement.*

Data and Calibration



1 Laboratory Calibration

All air quality monitoring systems are calibrated at the ISO/IEC 17025:2017 certified calibration laboratory using standard NIST traceable calibration gas standards as per the international guidelines by USEPA.

2 Collocation Calibration

The monitors are operated adjacent to a custom built reference station housing U.S. EPA designated Federal Equivalent Method (FEM) for collocation calibration to ensure optimum data quality.

3 On-site Calibration

On-site calibration of Oizom devices can be performed using standard calibration gas cylinders of known concentration or by co-locating with a reference standard.

Other Oizom® Products



Polludrone®

Ambient Air Quality Monitoring

Polludrone® is ideal for real-time ambient air quality monitoring for urban and industrial applications.



Odosense®

Odor Monitoring System

Odosense® monitors various odourful and toxic gases in the environment and provides insight into odor dispersion.



Dustroid®

Real-time Dust Monitor

Dustroid® is an online particulate monitoring system to measure a wide spectrum of particulate matter sizes.



Weathercom®

Automatic Weather Station

Weathercom® is an automatic weather station designed to measure various meteorological parameters.





Trusted by

70+ Countries



Solutions Installed in

65+ Cities



Total Devices Installed

3000+



Total Population Covered

200 million+

Global Presence



Changing the way Industries monitor air quality



Get in touch



House No.2, Garden View Corporate House,
Opp. Bodakdev Auda Garden, Ahmedabad, India

✉ contact@oizom.com / connect@oizom.com

☎ +91 88666 60025 / 39