

AQBotTM

Industrial Grade Single Parameter Air Quality Monitor



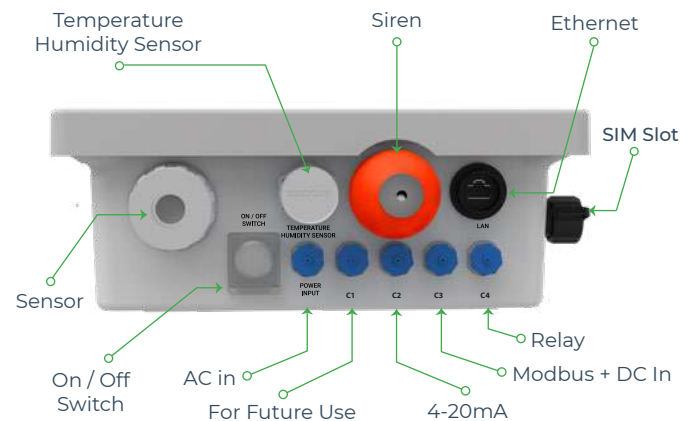
About AQBot™



AQBot™ is an industrial grade single parameter air quality monitor with automation capabilities. AQBot™ Series offers a wide range of air quality parameters to choose from. AQBot™ product range consists of critical parameters and toxic gases like Total Volatile Organic Compounds (TVOC), Ammonia (NH₃), Hydrogen Sulfide (H₂S), Methane (CH₄), Carbon Monoxide (CO), Formaldehyde (CH₂O), Particulate Matter (PM₁, PM_{2.5}, PM₁₀, PM₁₀₀), Ambient Noise. The AQBot™ series is designed for easy operation.

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

Visualise and analyse 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, odour and other environmental conditions on a real-time basis.



Wastewater

Monitoring odour intensity at waste water treatment plants can help regulate odour 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	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)	5000 Hours
 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	5000 Hours
 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

*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

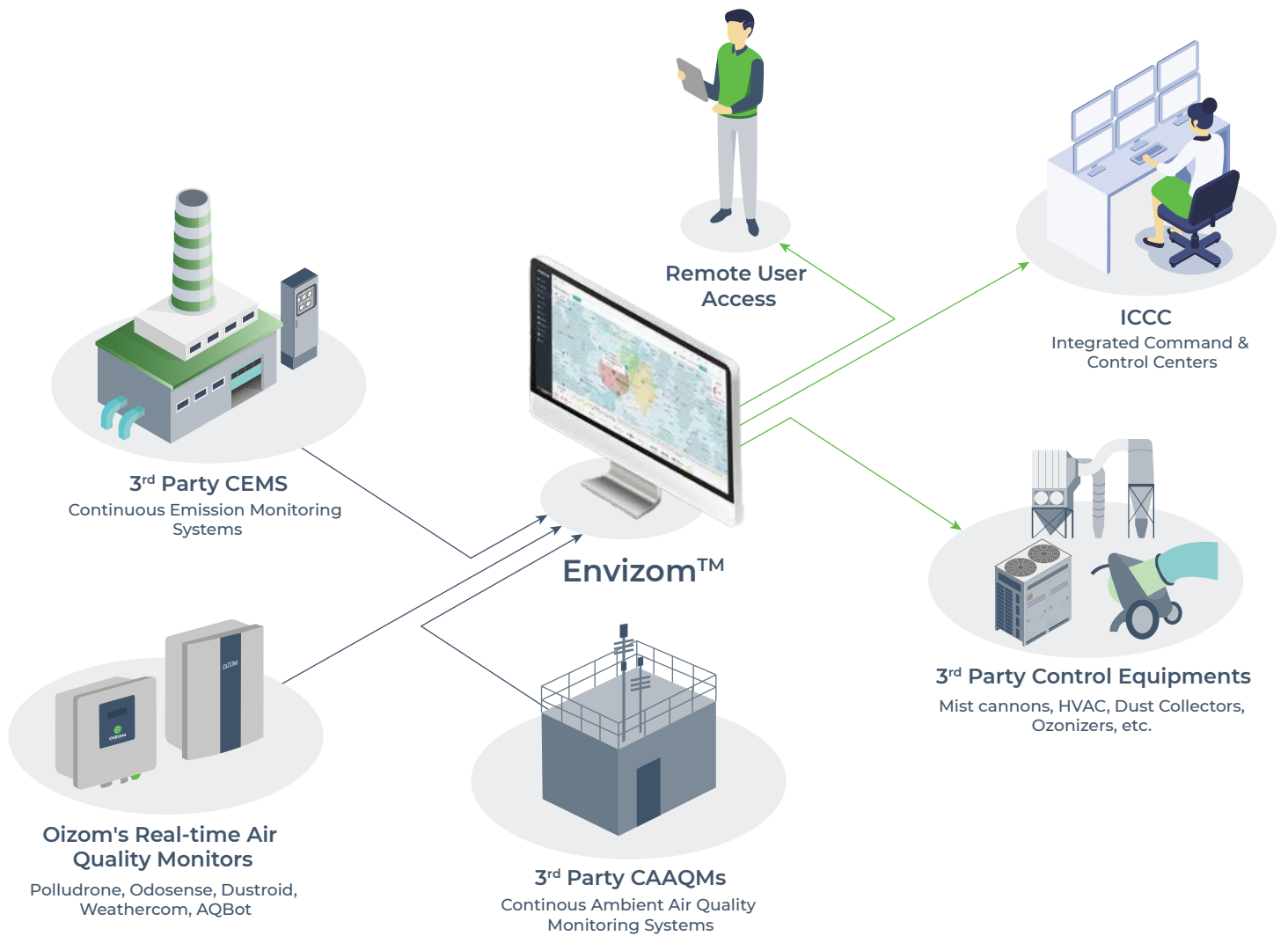
Sensing

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

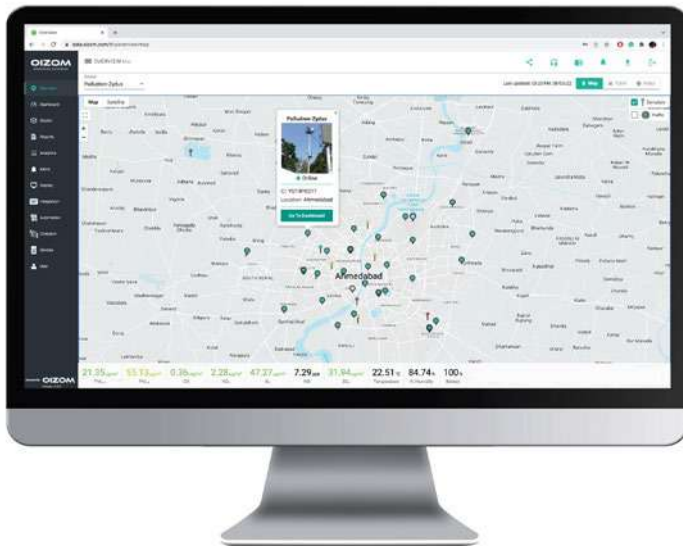
Connectivity Options		Specification
Wireless	 GSM	Global 2G / 3G / 4G
	 LTE	CAT-M1
	 Wi-Fi	AP Mode and Station Mode
Wired	 Ethernet	Static / DHCP Configuration
	 Modbus	RS485 RTU / TCP
	 RELAY	2 Channel Relay

Note: LoRa, NBIoT, Sigfox available as an option

Solution Architecture



Envizom™ Air Quality Software



An on-device data software enables users to access the data, configure networks and sensors without any dependency on the internet. Users can also connect their smart devices to AQBOT and view real-time data, perform on-site calibration, change network configuration, and change sensor configuration.

Envizom™ Features



Real-time data



Smart alerts



User friendly interface



Easy to Set Up



One click share



Data accessibility

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



Dust Monitoring in Coimbatore, India

Oizom installed AQBot™ for monitoring PM in an iron casting company named VR Foundries located in Coimbatore, India.



India



August 2022



Automation

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

H_2S - Lime kiln and evaporator

TVOC - Chemical pulping, bleaching and evaporator

CO_2 - Fuel combustion, lime kiln

CH_3SH - Digester, black liquor storage, recovery boiler



Leather Industry

H_2S & NH_3 - Beamhouse, unhairing and liming process

TVOC - Finishing operations - drying

PM - Storage and handling of powdered chemicals

Cl_2 - Pickling process



Cement Industry

CO - Kilns in clinker process

NO_2 - Rotary kiln and vertical shaft kiln, clinker

CO_2 - Limestone decarbonization and fuel combustion

PM - Packaging and ash handling system



Food And Beverages Industry

Cl_2 - In various disinfecting activities

NH_3 - Refrigeration and cooling systems

CO_2 - Carbonation and fermentation processes



Wastewater Treatment Plants

CH_4 & CH_3SH - Sludge storage and anaerobic digestion

Cl_2 - Chlorination before outlet discharge



Dairy Industry

NH_3 - Manure storage and application

CH_4 - Manure in housing and enteric fermentation



Textile Industry

NO - Sizing process

TVOC - High temperature ovens - drying and coating

Cl_2 - Bleaching process

PM - Cotton handling process and boiler



Fisheries Industry

H_2S - Bacteriological and enzymatic decay

NO - Cooking and drying - fishmeal industry

TVOC - Direct and indirect fried dryers

NH_3 - Fish rotting



Thermal Power Plants

CO - Fuel combustion in boiler

NO - Natural gas/oil/coal based fuel combustion

CO_2 - Boiler fuel combustion

PM - Ash extraction plant



Mining Industry

SO_2 & NO_2 - Extraction including blasting & crushing

CH_4 - Material destruction and natural disintegration

PM - Drilling, blasting and transportation



Meat Processing Plants

H_2S - Storage and ETP

CH_4 & CH_3SH - 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®

Odour Monitoring System

Odosense® monitors various odourful and toxic gases in the environment and provides insight into odour 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

60+ Countries



Solutions Installed in

65+ Cities



Total Devices Installed

1000+



Total Population Covered

200 million+

Global Presence



OIZOM
REDEFINING RESOURCES



Accurate Air Quality Monitoring And Advanced Data Analytics

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RAJA GROUP