AQBot™ NO$_2$

OIZOM
REDEFINING RESOURCES

Industrial Grade Single Parameter Air Quality Monitor

AQBot™ is an industrial air quality monitor with automation capabilities. AQBot™ Series offers a wide range of air quality parameters to choose from. The range of available parameters consists of all the important Gases, Particulates, and Noise related monitoring for Industrial scenarios. AQBot™ product range consists of critical ambient parameters and toxic gases like Total Volatile Organic Compounds (TVOC), Ammonia (NH$_3$), Hydrogen sulfide (H$_2$S), Methane (CH$_4$), Carbon Monoxide (CO), Formaldehyde (CH$_2$O), Particulate Matter (PM$_1$, PM$_{2.5}$, PM$_{10}$, PM$_{100}$), Ambient Noise, etc. The AQBot series is designed for easy and inexpensive maintenance.

Product Features

On Device Display	Ultimate Durability	Weatherproof Enclosure
Compact and Lightweight	Internal Data Storage	SMS and Email Alerts
Real-Time Data	Built-in Relay	Wired Communications
Wireless Communications	Over-The-Air Updates	Data Analytics Software

Why Monitor Nitrogen Dioxide?

NO$_2$ is a reddish-brown acidic gas having a pungent irritating odour comprising of one nitrogen atom and two oxygen atoms. It is corrosive, strongly oxidizing and can combust with compounds such as hydrocarbons. When inhaled, NOx causes damage to lung tissue and a reduction in the functioning of the respiratory system, making children, people with lung diseases such as asthma, and people who work or exercise outside more susceptible to adverse health impacts. Emissions from vehicles are the largest source of nitrogen oxides, followed by emissions from power plants, diesel-powered heavy equipment, and other movable engines, industrial boilers, etc. Other sources of NOx include petrol and metal refining, food processing, and manufacturing industries. Real-time NO$_2$ concentrations data can help safety officials to check for sources and take mitigating measures.

Product Applications

Cement Industry
Rotary Kiln & Vertical Shaft Kiln, Clinker

Mining Industry
From extraction (blasting and crushing)

AQBot™ NO$_2$

The best in class Nitrogen Dioxide Monitor

AQBot™ consists of the NEMA 4X approved enclosure to last long in a harsh industrial environment. It offers all industry-standard output signals like MODBUS, CANbus, RS-485, RS-232, etc. In addition, the fixed air quality monitor can also offer other communication modes like GSM, GPRS, 3G, WiFi, LoRa, Ethernet, etc. The monitor can easily integrate with existing building monitoring or plant control systems infrastructure. Using such a wide range of communication capabilities, AQBot™ enables the Industrial Internet Of Things (IIoT) which is the backbone of Industrial Revolution 4.0. Using such a wide range of communication capabilities, AQBot™ enables the Industrial Internet Of Things (IIoT) which is the backbone of Industrial Revolution 4.0.

Key Benefits

- Quick sensing for threshold based alerts
- Highly accurate data to detect low ppb concentrations
- Robust built to sustain harsh industrial conditions
- Easy data integrations to match industry standards
- In-built relay operation for automation

- Data transmissions through multiple channels
- Real time data display for keeping a check
- Siren and strobe for audio and visual alerts
- Effortless installations with versatile mounting arrangement

AQBot Specifications

ID	PARAMETER	RANGE	RESOLUTION
OZNO2_1	Nitrogen Dioxide (NO$_2$)	0-20 ppm	0.001 ppm
OZNO2_2		0-100 ppm	0.2 ppm
OZNO2_3		0-500 ppm	0.5 ppm

Electrochemical Sensing

TECHNICAL

Processor	Quad-Core ARM Cortex A-72
Memory	2GB RAM, 8GB eMMC ROM
Internal Data Storage	Up to 12 months
Device Interface	On-device software, API, Display
Display Specification	6 digit 7 Segment Display

COMMUNICATION

Wireless Communications	Global 2G/3G/4G, LoRa, LTE, NB-IoT, Sigfox, Wifi (Any one)
Wired Communications	Ethernet, MODBUS TCP, MODBUS RTU, RS-485, CANbus (Any one)
Analog Output	1 x 4~20mA Current Loop with 12-bit Resolution
Relay Outputs	2 programmable relays, volt free relay contacts (1NO, 1 NC)
Beacon/sounder	Built-in, RED flashing light with alarm sounder 95db @ 1m

ELECTRICAL

Power Supply	AC: 90VAC- 265VAC 50/60Hz
Power consumption	3.5 W
Wiring connections	Pre-wired supplied with 2m cable

GENERAL PERFORMANCE

Operation temperature	-20 to +60°C
Operation humidity	0 - 90%RH, non-condensing
Storage conditions	10 - 40°C
Net Weight	2.8 kg
Dimensions	210mm (W) × 258mm (H) × 105mm (D)
Installation method	Wall mount / Pole mount
Housing	NEMA-4X Fire-retardant FRP enclosure
Weather Protection	Weather Resistant IP66 Enclosure

SENSING

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
Accuracy	<±5%FS (at 20±5°C/ 50±20%RH)
Sensor life	2 years

Accurate Air Quality Monitoring And Advanced Data Analytics