Dustroid® Smart

OIZOM® REDEFINING RESOURCES

Ambient Dust Monitor

Dustroid® Smart is an ambient dust monitor designed to measure the concentration of dust particles in the surrounding air. It can monitor particulate sizes ranging from 1 micron to 100 microns. The device operates on the Laser Scattering principle to provide high-accuracy data in real-time. Its compact design and easy installation make it suitable for large-scale deployments.

Dustroid® Smart is ideal for construction sites, mining zones, and quarrying operations where conditions are not humid. The data gathered from Dustroid can assist in dust suppression automation, for instance, to activate suppressants at the location once the threshold is breached.

Product Features

- Ultimate Durability
- Weather Resistant
- Compact and Lightweight
- Retrofit Design
- Real-Time Data
- Network Agnostic
- Over-The-Air Updates
- Tamper Proof

Our Technology

Dustroid® Smart is technologically equipped and works on the Active Sampling method to count particulate matters using a highly accurate laser beam. Its Anti-static inlet avoids loss of particulate during sampling. It offers remote calibration capabilities along with auto device firmware updates. The intelligent optical particle counter can measure data with high accuracy and transmit the same through various data communication modules like GSM, WiFi, LoRa, Satellite, etc. The data is transmitted to the Oizom® cloud in near real-time.

Product Usecases

Mining and Quarrying

Dust monitoring at mining sites helps to ensure a safe workplace, protect the environment, and prevent health hazards.

Construction

Dustroid® monitors dust at construction sites and alerts authorities when dust concentrations breach the threshold limit.

Sensing Parameters

Parameter	ID	Range	Resolution	Min. Det.	Working Principle	Expected Sensor Life
Particulate Matter (PM_1, $PM_{2.5}$, PM_{10}, PM_{100})	OZPM_1*	Upto 5000 µg/m³ for PM_1, $PM_{2.5}$, PM_{10} ; Upto 30,000 µg/m³ for PM_{100}	0.1 µg/m³	1 µg/m³	Laser Scattering	18 Months
Temperature	OZTEMP_1*	-40 to 125°C	0.01°C	-40 °C	Resistive /Photoacoustic	2 Years
Humidity	OZHUM_1*	100% Rh	0.10%	0.10%		
Pressure	OZPRES_1*	300-1100 hPa	0.18 Pa	300 hPa		
Pyranometer Solar Radiation 300 - 1100 nm	OZUV_1	Up to 1,00,000 Lux (Light Intensity)	1 Lux	1 Lux	Photoconductivity	2 Years
		0.1-100,000 uW/cm² (UV Radiation)	0.1 uW/cm²	0.1 uW/cm²		
		Upto 5000 Lux (Visible Light)	0.1 Lux	0.1 Lux		
		0-12 (UV Index)	-	-		

Note: 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.

External Modules (optional)

Anemometer
OZWSD_1*, OZWSD_2
Wind Speed: 0-40 m/s; 0-80 m/s
Wind Gust: 0-40 m/s
Wind Direction: 0-359°
Working Principle: Ultrasonic

Rain Gauge
OZRAIN_1, OZRAIN_2*
Resolution: 0.25 mm; 0.10mm
Working Principle: Tipping Bucket

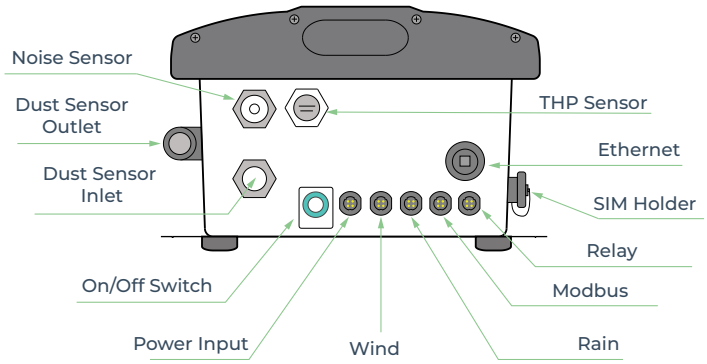
Noise Sensor
OZN_2*
Working Principle: Capacitive
Range: Upto 140 dB

Vibration Sensors
PPV: +/- 2G
Range frequency: 0.5 - 250 Hz
Range velocity: ±50 mm/s (±2 in/s)
Working Principle: MEMS

**Indicates standard delivery timeline.*

NOTE: Vibration & Class I Noise sensors are available as optional features upon specific customer request.

Specifications



Size	360mm (H) x 328mm (W) x 200mm (D)
Weight	8 Kg (instrument weight)
Material	Aluminum Magnesium Alloy, Mild-steel (With Powder Coating), FRP
Certifications	CE, NEMA 4X, IP66, RoHS, MCERTs

Changing the way Industries monitor air quality

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