

Ambient Dust Monitor



Dustroid is an Online Particulate Monitoring system to measure the concentration of dust particles in the ambient air. It is capable of monitoring various particulate size ranging from 1 micron to 100 microns such as Ultrafine Suspended Particulate Matter (UFPM), Suspended Particulate Matter (SPM), Respiratory Suspended Particulate Matter (RSPM) and Total Suspended Particulates (TSP). It works on Active Sampling method to count particulate matters using a highly accurate laser beam. Dustroid can be used for dust surveys in areas with dust-laden activities like construction, mining, quarrying, ports, metallurgical processes, and many more. 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, etc. The data is transmitted to the Oizom cloud in near real-time.

Product Usecases



Construction Sites

Dustroid systems can be installed at construction sites to alert authorities when dust pollution breaches the threshold limit. The solution keeps the dust emission within permissible limits.

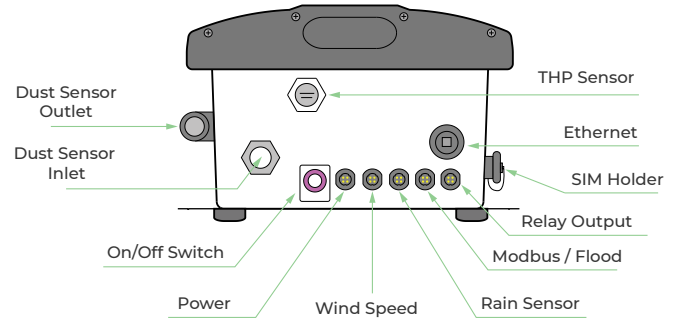


Quarries

Dustroid can measure the dust generation due to quarrying activities and automate water cannons for dust suppression. The solution can help identify the occurrence of acute dust events.

General Specifications

Size	360mm (H) x 328mm (W) x 200mm (D)
Weight	6.5 Kg (instrument weight)
Material	Aluminum Magnesium Alloy, Mild-steel (With Powder Coating), FRP
Certifications	CE & FCC Certified, PTCRB Certified Communication Module



Connectivity Options		Specification
Wireless	GSM	Global 2G / 3G / 4G
	LoRa	868 MHz / 915 MHz
	LTE	CAT-M1
	NB-IoT	CAT-NB1
	Sigfox	868 to 869 MHz, 902 to 928 MHz
Wifi	AP Mode and Station Mode	
Wired	Ethernet	Static / DHCP Configuration
	MODBUS	RS485 RTU / TCP
	Relay Output	2 Channel

Technical Specifications

Avg. Power Consumption	5 Watt (Actual consumption depends upon the number of parameters)
Power Input Options	External 110-230V AC 50-60Hz
Operating Temperature	-20 °C to 60 °C

Sensing Parameters

ID	Parameter	Range	Resolution	Min. Detection	Drift	Working Principle	Measurement Principle	Flow Rate	Expected Sensor Life
OZPM_1	Suspended Particulate Matters with size less than 2.5µ (PM _{2.5})	0-5000 µg/m ³	0.1 µg/m ³	1 µg/m ³	N.A.	Optical Particle Counter	Continuous Flow Active Monitoring	1 L/min	5000 hours
OZPM_2	Suspended Particulate Matters with size less than 10µ (PM ₁₀)								
OZPM_3	Ultra-fine Particulate Matters with size less than 1µ (PM ₁)								
OZPM_4	Total Suspended Particulates (PM ₁₀₀)	0-30 mg/m ³							
OZTEMP_1	Temperature	-40°C to 125°C	0.01°C	-40°C	N.A.	Solid State Semiconductor Sensing	Passive Monitoring	N.A.	2 years
OZHUM_1	Humidity	100% Rh	0.1%	0.1%	N.A.				
OZPRES_1	Barometric Pressure	300-1100 hPa	0.18 Pa	300 hPa	N.A.				

External Modules (optional)



ID	Parameter	Range	Resolution	Min. Detection	Working Principle	Expected Sensor Life
OZWSD_1	Wind Speed	0-40 m/s	0.1 m/s	0.1 m/s	Ultrasonic	3 years
	Wind Direction	0-359°	1°	1°		
OZRAIN_1	Rainfall Monitoring	N.A.	0.5 mm	0.5 mm	Tipping bucket	
OZN_1	Ambient Noise	Up to 140 dB	1 dB	0.5 dB	Capacitive	2 years

Accurate Air Quality Monitoring And Advanced Data Analytics



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