

Specifications

Mechanical

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

Electrical

Avg. Power Consumption	up to 7 Watts; max 60 Watts (in case of heated inlet); [Actual consumption will vary upon the number of parameters]
Power Input Options	AC : External 110-240V AC, 50-60Hz DC : Uninterrupted 24V DC, 2 Ampere 100 Watt 24V Solar Panel
SMPS Specs	24V, 2Amps output UL-62368 & CAN/CSA C22.2 Certified
Battery Backup Time	Up to 24 Hours (Not available in Pro & Max variant)
Battery Specs	Lithium iron phosphate (LiFePO4) battery cell with rated voltage 12.8V Capacity

Technical

Processor	Quad Core ARM Cortex
Memory	2GB RAM / 16 GB eMMC ROM
Device Interface	On-device Software / API / Cloud Platform
Internal Data Storage	Upto 16 GB or 90 days

Environmental

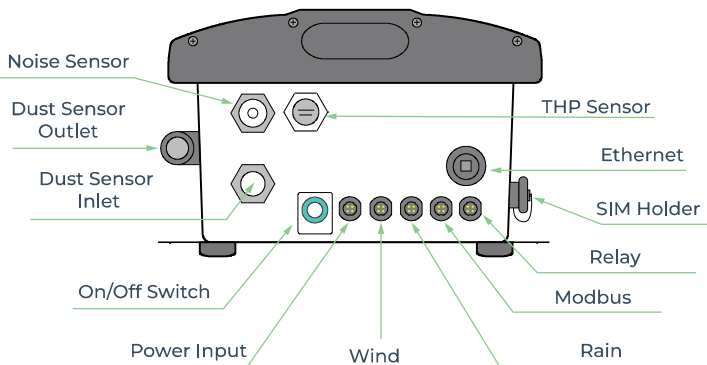
Operating Temperature	-20 °C to 60 °C
Operating Humidity	0-93% RH
Recommended Humidity	15-90% RH
Storage Conditions	10 - 40°C

Sensing

Dust Measurement Principle	Active Sampling with Sampling rate of 1 L / min
Warm up time	< 2 minutes for data stabilisation

Communication

Data Interval	2-30 minutes (configurable)
Data-push Protocol	HTTPS post request to host server
Data-pull	HTTPS 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

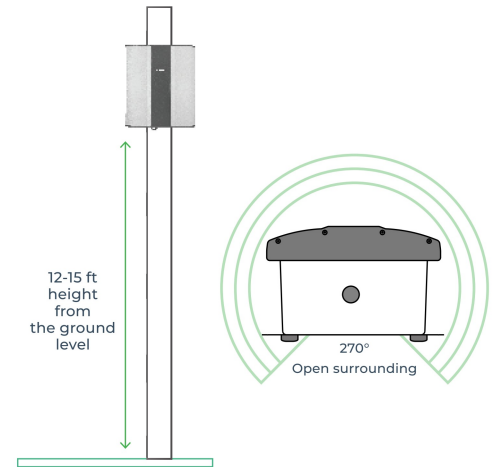


Connectivity Options		Specification
Wireless	 GSM	Global 2G / 3G / 4G
	 LoRa	868 MHz / 915 MHz
	 LTE	CAT-M1
	 NB-IoT	CAT-NB1
	 sigfox	868 to 869 MHz, 902 to 928 MHz
	 Wi-Fi	AP Mode and Station Mode
Wired		Satellite
	 Ethernet	Static / DHCP Configuration
	 Modbus	RS485 RTU / TCP
	 RELAY	2 Channel Relay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

Functional Specifications

Proper location selection is critical for optimised data collection. It varies as per the purpose of the project. According to U.S. EPA QA handbook (Vol II, Section 6.0 Rev.1), the selection of locations should be based on monitoring purposes.

Preferred Mounting	Pole / Wall (preferably 270° open surrounding)
Installation Height	12-15 feet (4-5 meters)
Direction	As per maximum direct sunlight exposure
Power Availability	Constant AC / DC supply within a 2-meter range from the unit or solar panel
Network Availability	Uninterrupted network connection



Solution Architecture

