ALPHA ENGINEERING AND SYSTEMS

Model No.:
EE-IAQD-01

User Manual
Indoor Air Quality Monitor (IAQ)

01 Product Overview

Indoor Air Quality Monitoring or Testing (IAQ) is an essential process to determine the level of contaminants present in indoor air which can affect productivity & well-being of occupants. Good and healthy Air Quality at the workplace can increase worker's comfort, productivity and well-being. Regular indoor air quality testing can help to identify issues with air quality. Thousands of man-days are lost every year because of sickness due to poor Indoor air quality (IAQ).

02 Parameter to be measured

Indoor Air Quality Monitor measures multi-parameters include:

- PM10
- PM2.5
- CO_2
- VOC

NOTE- We can provide parameters according to Client's requirement.

03 Features

- Good consistency
- Real time response With AQI
- Low power consumption
- Battery/power operated with adapter
- Data-Logging: Internal-SD card& External-USB drive (optional)
- Identify potential IAQ issues before they become problems and respond immediately to complaints with the highly accurate and most intuitive portable IAQ meters, monitors and testing devices available today

Wi-Fi Connectivity

Touchscreen Monitor

Detects Toxic Gases

Micro SD Card Storage

04 Technical Specifications as per instrument performance

TYPE	DETAILS
Model	EE-IAQB-01
Output	UART OUTPUT (3VTTL) DAC (0-2V is corresponding to 0-1000) PWM output
Working voltage	4.5V-5.5V
Working Current	70-140(mA)
Domestic current	70 mA
Response time	≤ 90 Seconds
Working Humidity	15% RH to 80% RH
Working Temperature	-20 deg C to 40 deg C
Storage temperature	-40 deg C to 60 deg C
Life Span	3 years (in air)

05 Technical Specifications as per parameters

PARAMETERS	RANGE	LOW DETECTION	RESOLUTION (PPM)
PM10	0-1000 ug/m3	1 ug/m3	1 ug/m3
PM 2.5	0-1000 ug/m3	1 ug/m3	1 ug/m3
CO2	0-5000 PPM	377 PPM	1 PPM
VOC	1000 PPB	0 ppb	1 PPB

06 Serial port configurations

Start Bit	1 bit
Data Bits	8 bit
Parity	NONE
Stop Bits	1 bit
Baud Rate	9600 Baud

Communication mode: RS 485

Default mode: RS 485

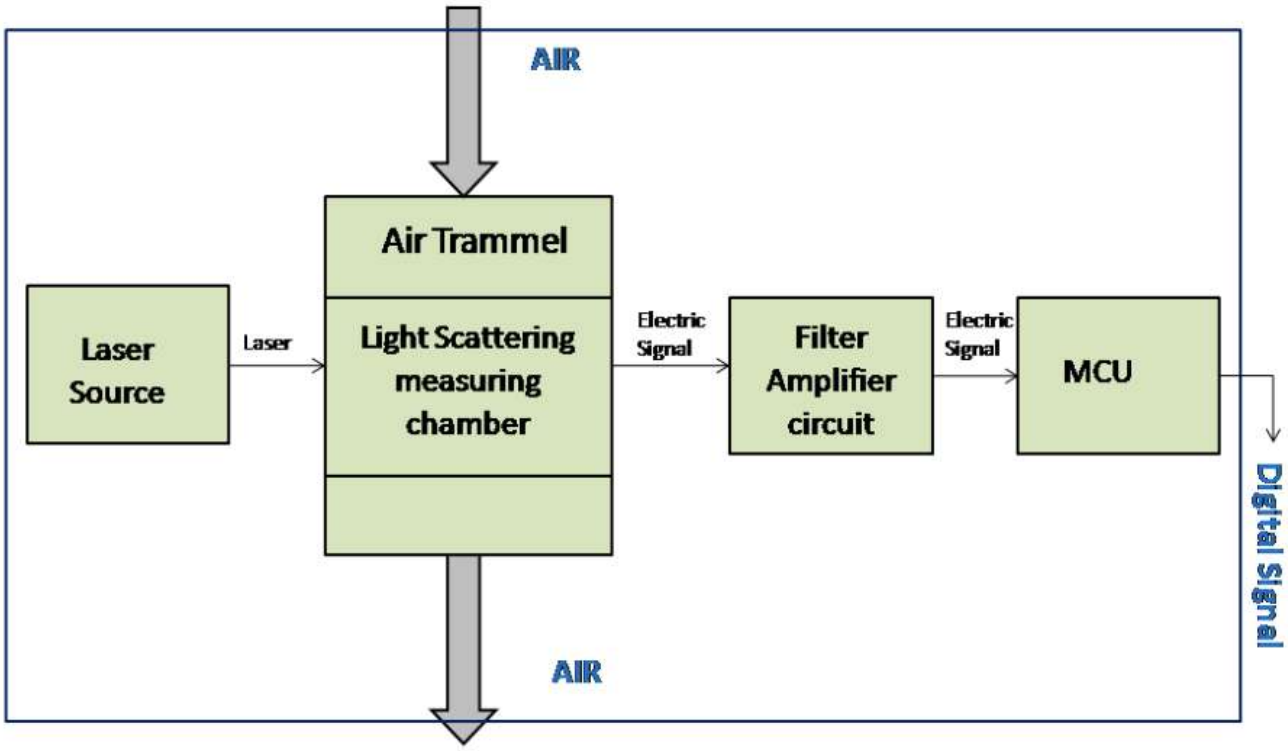
Communication protocol: MODBUS Protocol- RTU Mode

07 Internal Registers Description

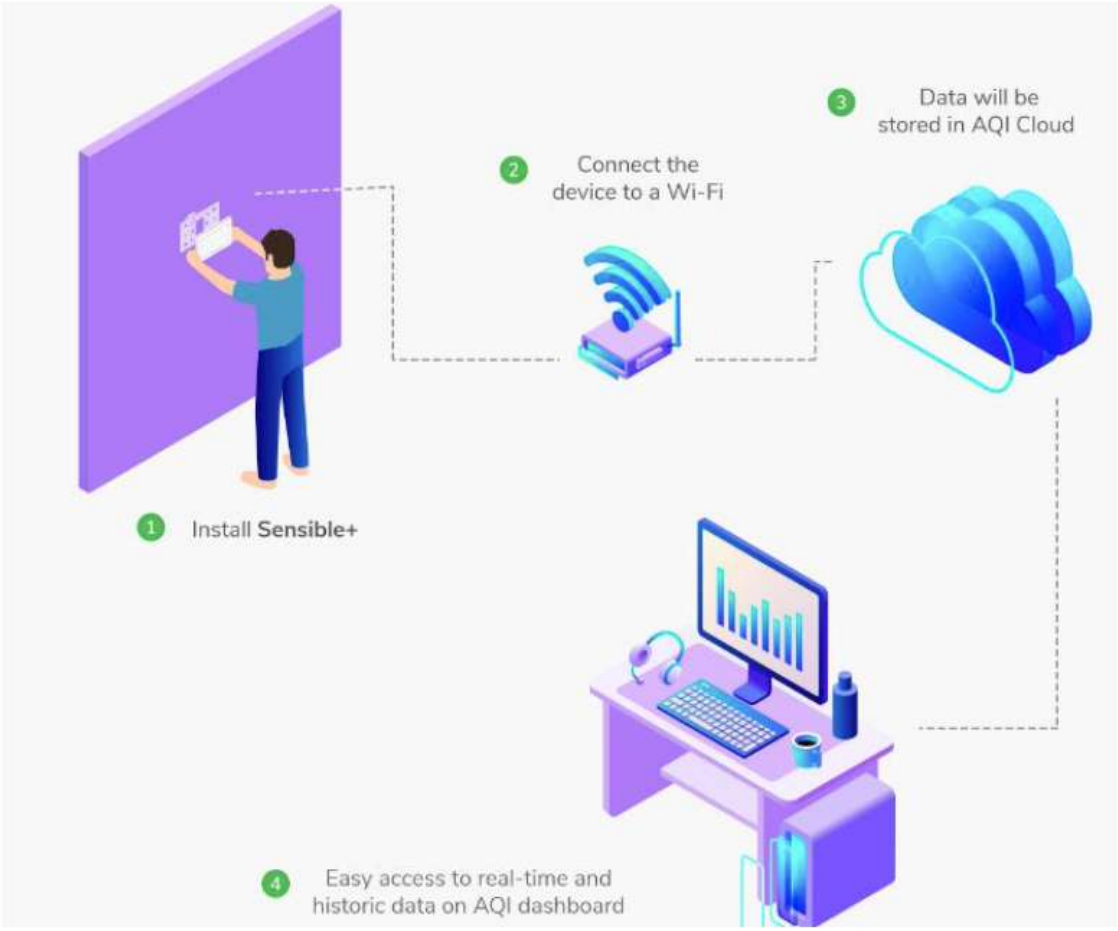
REGISTER	LENGTH	DATA TYPE	DEFINITION	RANGE
Register 1	16 bit	16 bit int	Device State	OxA000-OxA03F
Register 2	16 bit	16 bit int	Wind Direction	0-359°
Register 3	16 bit	32 bit float	Wind Speed	0- +60 m/s
Register 4	16 bit			
Register 5	16 bit	32 bit float	Temperature	-40- +120 °C
Register 6	16 bit			
Register 7	16 bit	32 bit float	Humidity	0-100%
Register 8	16 bit			
Register 9	16 bit	32 bit float	Air Pressure	150-1100 hpa
Register 10	16 bit			
Register 11	16 bit	16 bit int	Compass Heading	0-359°
Register 12	16 bit	16 bit int	Precipitation Type	0x0000~0x000F
Register 13	16 bit	32 bit float	Precipitation Intensity	Single-precision
Register 14	16 bit			
Register 15	16 bit	32 bit float	Accumulated Precipitation	Single-precision
Register 16	16 bit			
Register 17	16 bit	16 bit int	Intensity unit	Refer to appendix

REGISTER	LENGTH	DATA TYPE	DEFINITION	RANGE
Register 18	16 bit	16 bit int	GPS Status	0:Positioned 1:No Positioned
Register 19	16 bit	32 bit float	GPS speed	Km/h
Register 20	16 bit			
Register 21	16 bit	16 bit int	GPS Heading	0-359°
Register 22	16 bit	32 bit float	Longitude	East: positive West: negative
Register 23	16 bit			
Register 24	16 bit	32 bit float	Latitude	North: positive South: negative
Register 25	16 bit			
Register 26	16 bit	32 bit float	Dust Concentration	ug/m3
Register 27	16 bit			
Register 28	16 bit	32 bit float	Visibility	M
Register 29	16 bit			
Register 30	16 bit	32 bit float	Radiation Illuminance	Lux
Register 31	16 bit			
Register 32	16 bit	32 bit float	Preserved for internal testing	
Register 33	16 bit			
Register 34	16 bit	32 bit float	Radiation Power	W/m^2
Register 35	16 bit			
Register 36	16 bit	16 bit int	Compass Corrected Wind Direction	0~359 °
Register 37	16 bit	32 bit float	Altitude	m
Register 38	16 bit			

08 Process Diagram



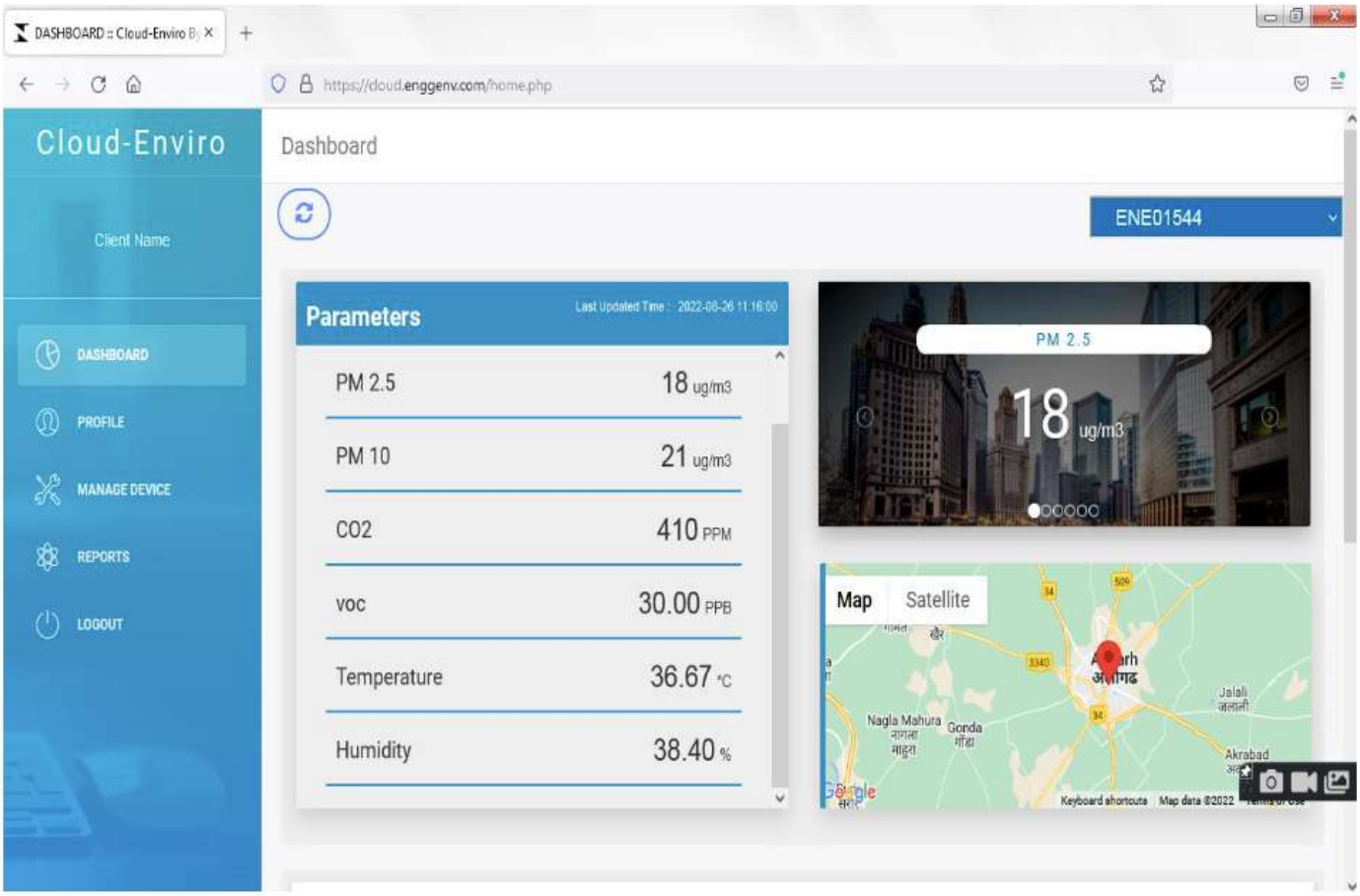
09 Simple and Convenient Installation



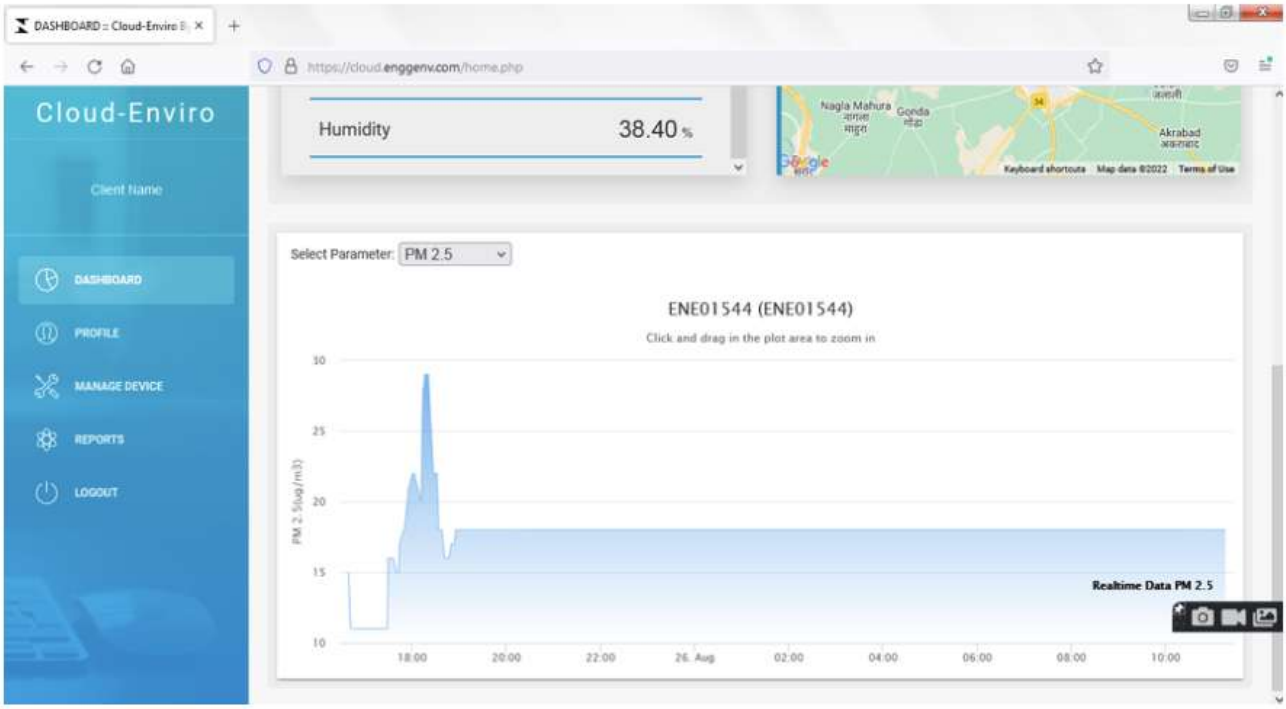
10 Steps to reach Dashboard

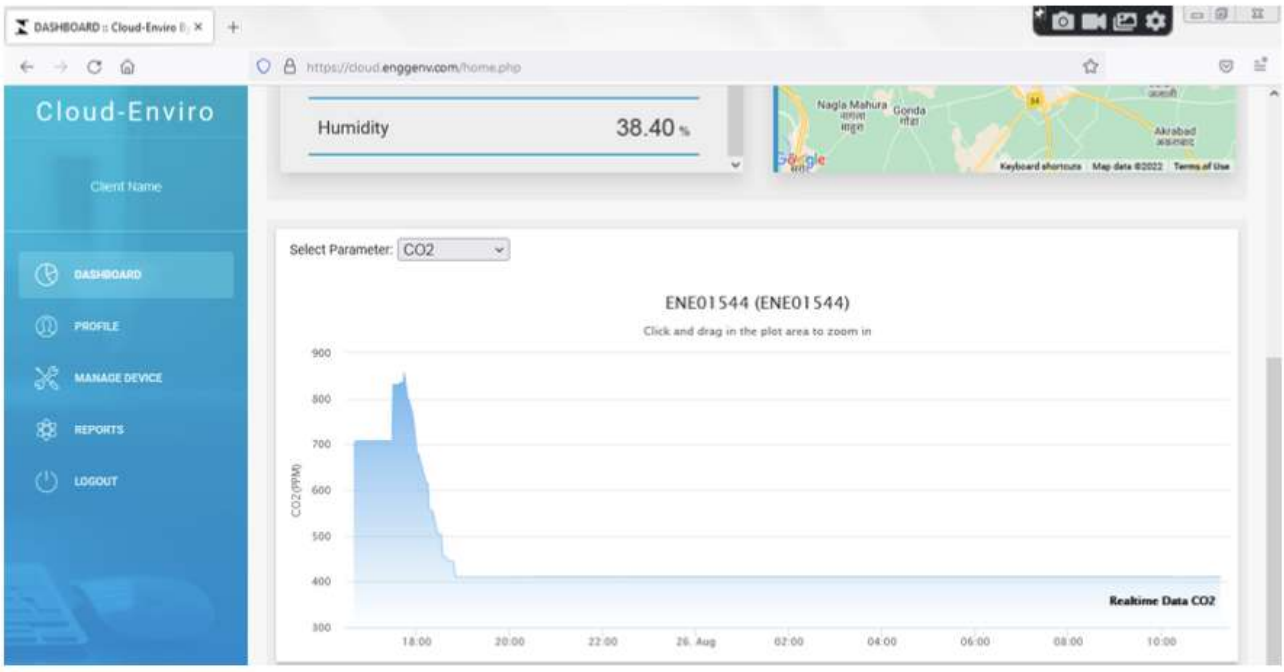
Step 1: Open internet browser in your system and go to https://cloud. alphaengg.in and enter login details

Step 2: After login and select the instrument dashboard of IAQ will open



Step 3: Scroll down and select parameters of IAQ one by one and see graphical representation





10 Applications

- Indoor air monitoring
- Ventilation systems efficacy testing
- Validation of efficiency of indoor air purifier
- Indoor air quality monitoring in Industries, Corporate offices and household.

Certified by: