Air Quality Monitor

For measurement of particulate matter PM 2.5 / PM 10.0, total volatile organic compound (TVOC), carbon dioxide, temperature and relative humidity in indoor, building environment

Wall mount, RS485 Modbus output for BMS / DDC connection, with color-changing display, Wi-Fi enabled

AIR QUALITY MONITOR
MODEL: AQM5

Particulate matter (PM) is a particle based pollution, produced due to many mechanical, chemical, thermal process. These particulate matter are prsent in many size and so technically classified into two segments:

- PM10: particules size between 2.5 and 10 microns diameter
- PM2.5: particle size small than 2.5 microns

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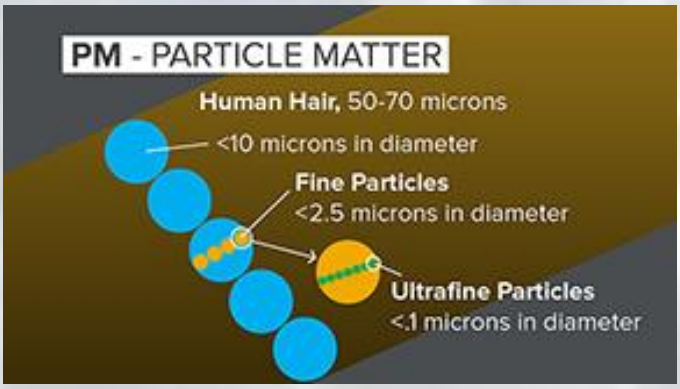

Smaller the particle the longer it can remain suspended in the air before settling, and more hazardous to health, causing lung problems, cancer, asthma, breathing problems, irritation etc. Smaller the particles, more difficult to remove.

Particulate matter can cause : premature mortality, aggravation of respiratory and cardiovascular disease, aggravated asthma, acute respiratory symptoms, chronic bronchitis, decreased lung function and increased myocardial infection.

Similiarly, TVOC (total volatile organic compounds) are gasous form pollutants, which mixes with inhaling air and can cause headache, respiratory and cardiovascular diseases etc, even carcinogenic.

With ever increasing industrialization, confined space & air-conditioned environment, living & working spaces and buildings are becoming highly sick. It is highly recommended to monitor and control particulate matter, TVOC, CO_2, along with temperature and relative humidity for comfort living and better health.

Fig: Air Quality Monitor with OLED Display

Salient Features:

- Total air quality monitoring with real-time data
- Economic design
- Monitoring particulate matter PM2.5 / PM 10.0, CO_2, Total volatile organic compound (TVOC), temperature and relative humidity
- Background correction algorithm to cancel environment effects on measurement

- Digital communication ModBus RTU over serial interface RS485 or RJ45 or Wi-Fi
- Suitable for new and retro-fit projects
- Color indication LEDs for air quality
- Optional: OLED display for measured parameters
- Wall mountable enclosure
- Low voltage operation
- High accuracy temperature & RH measurement
- Temperature, humidity compensated measurement for accurate monitoring

Product Specifications:

Parameter	Specifications				
Measuring parameters	PM 2.5 / PM 10.0	CO_2	Total Volatile Organic Compound	Temperature (Air)	Relative humidity (Air)
Sensor technology	Optical sensing laser particle sensor based on photo-scattering method	Non dispersive (NDIR) Infra-red sensor cell	Semiconductor sensor cell	high precision digital integrated temperature humidity sensor	
Measuring range	PM 2.5: 0-600 µg/m^3 PM 10.0: 0-600 µg/m^3	400~2000 ppm	0.0 ~ 3.5 mg/m^3	-20~+60°C	0~99% Rh
Measurement Resolution	1 µg / m^3	1 ppm	0.001 mg/ m^3	0.01°C	0.01% Rh
Accuracy	±15µg + 10% of reading @ 25°C , 10%~50%RH	± 75 ppm or 10% of reading value (@25°C , 10%~50% RH)	≤± 0.02 mg/ m^3 + 10% of reading (@25°C , 10%~50%RH)	<± 0.5°C (at 25°C)	<± 3% Rh (20%~80% Rh)
Zero Point Stability	± 5 µg / m^3			<0.04°C / year	<0.5%Rh / year
Installation	Wall mounting				

Operating conditions	0°C ~ 50°C, 0-99% Rh
Storage conditions	-10°C ~ 50°C, 0-70% Rh
Housing	ABS / PC fire proof material
IP protection	IP30
Dimension	94 (L) x 117 (W) x 37 (H) mm
Output	RS485 Modbus RTU protocol RJ45 (Ethernet) Wi-Fi
Baud Rate	38400 b ps
Power supply	24VDC or 24V AC
Certification	CE

Ordering Code

AQM5-XXXXXX

1XXXXX – PM 2.5 sensor
2XXXXX – PM 10.0 sensor
X1XXXX – CO_2 sensor
XX1XXX – TVOC sensor
XXX1XX – Temperature + RH sensor cell
XXXX1X – Output : RS485 ModBus RTU
XXXX2X – Output : RJ45 Ethernet
XXXX3X – Output : WiFi
XXXXXL – OLED Display