

AQD5000

Ambient Air Quality Monitoring System



Product overview

AQD5000 air quality monitoring system is widely used in urban air quality monitoring and industrial air emission pollution monitoring. It can simultaneously measure various environmental pollution gases, particulate matter and meteorological parameters in the air. The system supports RS485 signal transmission, with data storage and export functions. Through the wireless acquisition terminal, the measurement data can be transmitted to the cloud platform in real time, and can be remotely controlled through the cloud platform.

AQD5000 is a new type of low-cost intelligent monitoring equipment, and it is an ideal equipment for environmental monitoring departments to monitor air quality.

Product Advantage

With powerful functions, support convenient and flexible customization

- 1-9 kinds of gas parameters can be monitored at the same time, and measurement modules such as particle parameters and meteorological parameters can be selected according to user needs
- Imported high-sensitivity gas sensor is adopted, with fast response, high resolution, good linearity, and the detection limit can reach ppb level
- 7-inch color touch screen display, easy to view datas
- Equipped with a professional outdoor shield, it can be perfectly dust-proof and rain-proof, and can continuously monitor and work stably in high or low temperature environments
- Double flowmeter design is adopted to control the flow of positive and negative pressure gases to ensure the consistency and accuracy of monitoring data
- It can be flexibly matched with high-temperature sampling probes, oil removal, dust removal, drying, water filtration and other filtration devices to ensure the detection accuracy and service life of the device
- It can work 7x24 hours without interruption, with functions such as real-time data upload, fault self-diagnosis and automatic restart.
- Standard equipped with storage function, which can store at least two years monitoring data
- Optional solar power supply panel to support normal work when without mains power
- Optional outdoor LED display large screen, easy to view real-time data at any time

Diverse signal output

- Standard output RS485 signal, a set of relay signal.
- Optional adapter card and PC software, real-time viewing of concentration and historical data on the computer.
- Optional 4G DTU wireless module, real-time upload gas concentration value to the ecological environmental protection bureau, departmental server.
- Optional camera to realize real-time, remote and automatic monitoring of dust concentration and on-site video and image collection
- Optional LORA wireless module to achieve 3.5 km wireless communication.

Simple operation and low maintenance cost

- The entire online monitoring system can be used after being fixed and powered on. The operation is simple. It is recommended to replace the filter element regularly, and the maintenance cost is low.
- Activated carbon tube can be selected to make the detection more stable, and it has obtained CCEP China environmental certification



Technical parameters

Product name	Ambient Air Quality Monitoring System
Model name	AQD5000
Gas parameters (can be combined freely)	Measurement parameters: ozone, sulfur dioxide, nitrogen dioxide, formaldehyde, carbon monoxide, TVOC, etc.; Measuring range: 0-1000ppb, 0-1000ppb, 0-1000ppb, 0-5ppm, 0-20ppm, 0-5ppm; Resolution: 1 ppb, 1 ppb, 1 ppb, 0.01ppm, 0.001ppm, 0.001ppm; Measuring principle: electrochemical, infrared, PID photoion and other principles Detection accuracy: $\pm 3\%.S$ Response time: $\leq 30S$
Particle parameters (optional)	Measurement parameters: PM2.5, PM10, PM0.3, PM1.0, PM10.0, TSP, etc. Measuring range: 0-1000ug/m3, 0-5000ug/m3; Resolution: 1ug/m3, 1ug/m3; Measuring principle: laser principle Response time: $\leq 30S$
Meteorological parameters (optional)	Measurement parameters: temperature, humidity, wind speed, wind direction, air pressure, light intensity, noise, etc.; Measuring range: $-40^{\circ}C \sim +120^{\circ}C$, 0-99%RH, 0-20m/s, 8 directions, 0-120Kpa, 0-200,000 Lux, 30dB-130dB; Resolution: 0.1 $^{\circ}C$, 1%RH, 0.1 m/s, 1 piece, 1 Kpa, 1Lux, 1dB; Measuring principle: thermocouple, mechanical and other principles
Sampling method	Pump suction
Pump flow rate	0.5L/min (gas); 1.8L/min (particles/dust)
Monitoring way	Continuous automatic real-time monitoring
Working time	24 hours continuous work
Display screen	7 inch color touch screen
Display mode	Adaptive display channel number, automatic page turning
Signal output	RS485、relay、4G DTU (optional) 、LORA (optional) ,etc
Power supply	220VAC (AC) , 0.1A
Working current	<100Ma (Max)
Working voltage	Internal: 24VDC; External: 220V/50HZ AC
Working temperature	-10 $^{\circ}C$ ~ 55 $^{\circ}C$
Working humidity	0-95%RH, Relative humidity
Alarm type	Sound and light alarm (optional)
Product shell	Anti-corrosion, sun protection, anti-collision
Installation way	Ceiling, wall-mounted
Product size	480 × 580 × 163mm(Excluding external sensors, rainproof beams, and mounting brackets)
Product weight	18kg
Product composition	This equipment is composed of a pre-processing system and a monitoring factor analysis system
Oil water dust filter	Glass fiber material, PE material, different monitoring factors correspond to different materials

List of routine optional monitoring types

Monitoring factor	Measure range	Optional range	Resolution	Principle
Carbon monoxide (CO)	0-10ppm	0-10/20/50ppm	0.001 ppm	electrochemical
Sulfur dioxide (SO ₂)	0-1000 ppb	0-0.5/1/5 ppb	1 ppb	electrochemical
Nitrogen dioxide (NO ₂)	0-1000 ppb	0-0.5/1/5 ppb	1 ppb	electrochemical
Ozone (O ₃)	0-1000 ppb	0-0.5/1/5 ppb	1 ppb	electrochemical
TVOC	0-5 ppm	0-1/3/10 ppm	0.001 ppm	PID
Formaldehyde (CH ₂ O)	0-5 ppm	0-10/20/50 ppm	0.01 ppm	electrochemical
Oxygen (O ₂)	0-30%VOL	0-25%VOL	0.01%VOL	electrochemical
Carbon dioxide (CO ₂)	0-2000 ppm	0-5000/10000 ppm	1 ppm	IR
Hydrogen sulfide (H ₂ S)	0-5 ppm	0-10/20/50/100 ppm	0.001/0.01 ppm	electrochemical
Ammonia (NH ₃)	0-10 ppm	0-20/50/100 ppm	0.001 ppm	electrochemical
Odor	0-999(ou)	0-100 (ou)	0.01/0.1(ou)	Semi-conduct
ParticulatesPM _{2.5}	0-1000 μ g/m ³	0-5000 μ g/m ³	1 μ g/m ³	Laser
ParticulatesPM ₁₀	0-1000 μ g/m ³	0-5000 μ g/m ³	1 μ g/m ³	Laser
Temperature	-40℃~+120℃	--	0.1℃	Thermocouple
Humidity	0~99%RH	--	1%RH	Thermocouple
Wind speed	0~20m/s	--	0.1 m/s	Mechanical
Wind direction	8 directions	--	1 direction	Mechanical
Air pressure	0~120Kpa	--	1 Kpa	--
Light intensity	0~200,000 Lux	--	1Lux	--
Noise	30dB~130dB	--	1dB	--

Application areas

- (1) Urban air quality monitoring, short-term and long-term air quality trend analysis and evaluation;
- (2) Grid monitoring of air quality by relevant management departments of provinces, cities, counties (districts), towns (villages or sub-district offices);
- (3) Air quality monitoring in densely populated areas such as communities, schools, and hospitals;
- (4) Atmospheric monitoring of industrial areas, petroleum and petrochemical plants, power plants, landfill incineration stations, sewage treatment plants, storage facilities, and underground facilities;
- (5) Air quality monitoring of urban roads, airports, ports, railways, tunnels, and construction sites;
- (6) Air quality monitoring in open places such as parks, woodlands, and crop research;
- (7) Emission monitoring of particulate matter and pollution sources;
- (8) Environmental quality assessment.

