

AQM 60

Air Quality Station



Low-cost and Compact Air Quality Monitoring

Air quality concerns everybody and directly impacts on our environment and personal well-being. Monitoring air quality in the micro-environment is critical for understanding epidemiological effects, for environmental assessments, for transportation planning, and for making decisions about air pollution mitigation strategies.

Aeroqual's AQM 60 Air Quality Station is compact and designed for low-cost and easy deployment in an air quality monitoring network. The AQM 60 station offers long term quantitative, time integrated atmosphere measurement with excellent correlation to reference methods. Conventional air quality stations by comparison are expensive, bulky, power-hungry, and require a rigorous calibration and maintenance program. Such limitations often make them unsustainable for micro-scale and high-density monitoring.

The AQM 60 station boasts a highly flexible instrument platform configurable to measure common air pollutants including ozone (O₃), nitrogen dioxide (NO₂), nitrogen oxides (NO_x), carbon monoxide (CO), sulphur dioxide (SO₂), volatile organic compounds (VOC), hydrogen sulphide (H₂S), non-methane hydrocarbons (NMHC), carbon dioxide (CO₂), particulate matter (PM₁₀, PM_{2.5}, PM₁), noise and meteorological parameters such as temperature, humidity, wind speed and direction.

Key Features

- Continuous high quality measurement of gases and particles
- Compact instrument and small footprint for network deployment
- Lower capital cost for affordable profiling and assessments
- Calibrated against EPA and EU Reference Methods (2008/50/EC)
- Built-in zero air scrubber and optional automatic calibration system
- User calibration to available and traceable primary standards
- Climate-controlled compact enclosure for pole or wall installation
- Active sampling via brushless pumps and PTFE filter
- Single-board computer and Secure Digital card data storage
- PC configuration and data logging software in units ppm or mg/m³
- Remote communication and diagnostics solutions
- Flexible instrument platform for meteorological and noise sensors

Applications

- Urban air quality monitoring
- Local area air quality networks
- Community exposure: epidemiological studies, microenvironment, residential, schools, hospitals
- Near road: motorways, street canyons, traffic information systems
- Perimeter: petrochemical, power plants, waste sites, industrial point sources
- Airport, ports, railways, construction sites
- Open space: parks, forests, crop research
- Environmental impact assessments



AQM 60 Specifications

Standard configuration can be combination of 1 to 6 gas modules, particle monitor and various meteorological sensors.

Gas Modules	Calibrated Range	Minimum Detection Limit	Accuracy of Factory Calibration	Precision	Resolution ⁽²⁾
Ozone O ₃ (GSS)	0-0.15 ppm	0.001 ppm	<±0.005 ppm	0.002 ppm	0.001 ppm
Ozone O ₃ (GSS)	0-0.5 ppm	0.001 ppm	<±0.008 0-0.1 ppm; <±10% 0.1-0.5 ppm	0.005 ppm	0.001 ppm
Nitrogen Dioxide NO ₂ (GSS)	0-0.2 ppm	0.001 ppm	<±0.010 0-0.1 ppm; <±10% 0.1-0.2 ppm	0.005 ppm	0.001 ppm
Nitrogen Oxides NO _x (GSS)	0-0.5 ppm	0.001 ppm	<±0.010 0-0.1 ppm; <±10% 0.1-0.5 ppm	0.005 ppm	0.001 ppm
Carbon Monoxide CO (GSS)	0-25 ppm	0.1 ppm	<±1 0-10 ppm; <±10% 10-25 ppm	0.2 ppm	0.1 ppm
Carbon Dioxide CO ₂ (NDIR)	0-2000 ppm	6 ppm	<40 ppm + 3% of reading	10 ppm	1 ppm
Hydrogen Sulphide H ₂ S (GSE)	0-10 ppm	0.01 ppm	<±0.05 0-0.5 ppm; <±10% 0.5-10 ppm	0.03 ppm	0.01 ppm
Sulphur Dioxide SO ₂ (GSE)	0-10 ppm	0.01 ppm	<±0.05 0-0.5 ppm; <±10% 0.5-10 ppm	0.03 ppm	0.01 ppm
Volatile Organic Compounds (PID) ⁽¹⁾	0-20 ppm	0.01 ppm	<±10%	0.02 ppm	0.01 ppm
Non-methane Hydrocarbon (GSS) ⁽¹⁾	0-25 ppm	0.1 ppm	≤±10%	0.2 ppm	0.1 ppm
Volatile Organic Compounds (GSS) ⁽¹⁾	0-25 ppm	0.1 ppm	≤±10%	0.2 ppm	0.1 ppm

(1) Calibrated to isobutylene (non-specific sensor)

(2) Gas concentration is displayed in units of ppm on the AQM 60 instrument and available in units of ppm or mg/m³ in the supplied PC software

Particle Monitor	Range	Sensitivity	Accuracy	Precision	Resolution
Inlet options : PM ₁ PM _{2.5} PM ₁₀ TSP	0-2000 µg/m ³	1 µg/m ³	8% of NIOSH 0600	3 µg/m ³	1 µg/m ³

Particulate Profiler	Range	Particle Sizes	Accuracy	Flow rate	Resolution
8-channels : 0.3 to 10 µm	0-100000 PPL	0.3-10 µm (8)	±10% to calibration aerosol	1.0 LPM	1 PPL

Controller Module	Communication	Data Storage	Data Sampling Rate	Display	Diagnostics
	RS 232	2 GB SD card	2 to 255 minutes (programmable)	VFD 4 x 20	Remote

Gas Treatment Module	Sampling Pump	Zero Scrubber	Replaceable Zero Scrubber Media Cartridges
	BLDC	Built-in	Chemisorbant, activated carbon & Hopcalite

Thermal Management System	AC compressor cooler & active heating Solar radiation shields & TMS module
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Environmental Operating Range	-20 °C to +55 °C; 10 to 90% RH (NC) (contact Aeroqual for extreme environments)
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Automatic Calibration Options	NIST traceable Mass Flow Controller Certified gas cylinder
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Communication Solutions	RF Modem; GSM/GPRS Modem Ethernet Device; Cellular IP Gateway
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Integrated Sensor Options (For complete list contact Aeroqual)	Gill WindSonic (ultrasonic wind sensor) NovaLynx 200-WS (anemometer/vane) Vaisala WTX520 (weather transmitter) Gill MetPak II (weather station) NovaLynx 240-200 (SR pyranometer) ACO Pacific SA6000 (noise monitor) (see AQM 60 datasheets for specifications)
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Power Requirements	100-240V AC; 12V DC; 80-160W (depends on instrument configuration)
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Standard Enclosure	Fibre reinforced PC (weatherproof) Anodized / powder coated aluminium
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Dimensions (H x W x D) mm	Enclosure with TMS : 850 x 460 x 310 Incl. brackets/cowlings : 900 x 555 x 400 Height with PM inlet installed : 1300 mm
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Weight	10-50 Kg (depends on instrument configuration)
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Conformity	Power Supply : EN55015, EN55022 Class B, EN61000-3-2,3, EN61000-4-2,3,4,5,6,8,11, ENV50204, EN61547, EN61347-1, EN61347-2-13; UL1012, UL60950-1; TUV EN60950-1 Gas Modules : Part 15 FCC Rules, 2004/108/EC; EN 61000-6-1: 2001, EN 61000-6-3: 2001 Particle Monitor & Profiler : Class 1 laser; IEC 60825-1:1998; 72/23/EEC; EN 61010-1; EN 60825-1:1996; US 21 CFR 1040.10
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