AQM 60 is an integrated multi-gas monitor capable of delivering high quality data for up to six gases in ambient air environments. The modular design lends itself to customised configuration and allows simplified maintenance. Other components including communications, anemometers, solar power units, particulate monitors and weather sensors can be integrated with the AQM 60. Sensors are specifically calibrated for outdoor environmental or indoor air quality applications. Low power and spatial requirements allow the unit to be portable or deployed unobtrusively in urban areas or in remote sites.

**Features**

- Analytic GSS Technology ®
- Multi-gas monitoring (up to six gases)
- High quality data in real-time
- Active sampling system
- RS 232 / 485 data polling or pushing
- PC data logging software
- Automatic baseline calibration
- Low power and spatial requirements
- Modular engineered design
- Low maintenance system
- PLC and data logger options
- Outdoor enclosure options
- Temperature and humidity option
- Wind speed and direction option
- GSM or RF modem options

**Applications**

- Urban air quality monitoring
- Industrial air quality monitoring
- Tunnel and roadside monitoring
- Indoor air quality monitoring
- Trend analysis and hotspot screening
- Perimeter and point source monitoring
- Landfills, wastewater and petrochemical plants
- Weather stations
## General Specifications

### Gas sensors
Contact Aeroqual for other calibrations

<table>
<thead>
<tr>
<th>Gas sensors</th>
<th>Range</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ozone (Ultra-low)</td>
<td>0 - 150 ppb</td>
<td>1 ppb</td>
</tr>
<tr>
<td>Ozone (Low)</td>
<td>0 - 500 ppb</td>
<td>1 ppb</td>
</tr>
<tr>
<td>Nitrogen dioxide</td>
<td>0 - 200 ppb</td>
<td>1 ppb</td>
</tr>
<tr>
<td>Carbon monoxide</td>
<td>0 - 100 ppm</td>
<td>0.1 ppm</td>
</tr>
<tr>
<td>Sulphur dioxide</td>
<td>0 - 10 ppm</td>
<td>0.01 ppm</td>
</tr>
<tr>
<td>VOC (Non-Methane Hydrocarbon)</td>
<td>0 - 25 ppm</td>
<td>0.1 ppm</td>
</tr>
<tr>
<td>VOC (Toluene)</td>
<td>0 - 500 ppm</td>
<td>1 ppm</td>
</tr>
<tr>
<td>Hydrogen sulphide</td>
<td>0 - 10 ppm</td>
<td>0.01 ppm</td>
</tr>
<tr>
<td>Ammonia</td>
<td>0 - 100 ppm</td>
<td>1 ppm</td>
</tr>
<tr>
<td>Halogenated hydrocarbons</td>
<td>0 - 500 ppm</td>
<td>1 ppm</td>
</tr>
<tr>
<td>Carbon dioxide (NDIR)</td>
<td>0 - 2000 ppm</td>
<td>10 ppm</td>
</tr>
</tbody>
</table>

### Zero air scrubber
- Triple media: Hopcalite, activated carbon and alumina

### Zero calibration
Programmable or external activation

### Pump
Brushless rotary vane

### Sample gas line materials
PFA Teflon, PTFE, Kynar

### Connections
- Air inlet / exhaust: PFA Teflon, PTFE, Kynar
- Power: 24VDC / 1A

### Communications
- RS232 or RS485 (analog 0-5 V outputs optional)
- Data polling or pushing

### Data sampling rate
2 minutes

### Power requirements
24VDC / 1A

### Enclosure (internal)
- Fibre Reinforced Polycarbonate (FRP): 361 x 254 x 165 mm
- AQM 60 Sensor Enclosure: < 10 Kg

### Approvals
- Part 15 of FCC Rules
- EN 61000-6-3: 2001
- EN 61000-6-1: 2001
  - Temperature sensor: -20° C - 100° C
  - Relative humidity sensor: 0 - 100% RH, 0.01° C

### Data logger module option
- Removable flashcard
- Flashcard reader: 1.0 GB USB

### Display module option
- Vacuum Florescent Display (VFD): 4-line / 20-column

### Power module option
- Switch mode power input: 100 - 260 VAC

### Sonic anemometer option
- Wind speed: 0 - 60 m/s
- Wind direction: 0 - 359°
- 0.01 m/s
- 1°

### Outdoor enclosure option
- Fibre Reinforced Polycarbonate (FRP): 515 x 415 x 230 mm + mountings
- IP66 (NEMA type 4)

### Communication module options
- GSM modem: Dualband 900/1800 MHz (excludes SIM)
- RF modem: 433, 900, 1800, 2400 MHz
- Wireless LAN: 802.11

### Other options
- Enclosure heating / cooling modules
- Programmable Logic Controller
- Particulate monitor integration
- Solar power system
- Contact Aeroqual for specifications

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**Lenntech**
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www.lenntech.com  Fax. +31-152-616-289
Accurate real-time air quality information, made affordable

Now you can measure outdoor air pollutants in real-time with high data quality, at a price you can afford. The AQM 65 enables Near Reference performance for 3-5 times less cost than traditional reference stations built on analyzers. Compared to cheap alternatives the AQM 65 offers much higher levels of data quality and can be calibrated in the field against certified reference standards for maximum traceability.

The AQM 65 is customized to measure the parameters your application demands. Choose from: criteria pollutants ozone (O₃), nitrogen dioxide (NO₂), nitrogen oxides (NOx), carbon monoxide (CO), sulfur dioxide (SO₂), particulate matter (TSP, PM₁₀, PM₂.₅, PM₁); other special interest pollutants: volatile organic compounds (VOC), hydrogen sulfide (H₂S), carbon dioxide (CO₂); plus sensors for noise and meteorological parameters such as temperature, humidity, wind speed and direction, barometric pressure, precipitation and solar radiation.

**Key Features**

- Real-time measurement of common pollutants to WHO air quality standards
- Can be installed by one person in less than 30 min.
- Compact size creates new possible monitoring locations
- Remote data acquisition system with fail safe on board storage
- Network mode for urban and national air monitoring
- Modularity allows addition of sensors as needs change
- Temperature control permits long-term operation in extreme climates
- Can be calibrated onsite to traceable reference standards
- Optional integrated and automatic calibration
- Optional plug and play environmental sensors

**Applications**

- Urban and national air monitoring networks
- Industrial perimeter monitoring: petrochemical, power plants, waste sites, mining, heavy industry, airports, ports, railways, construction sites
- Near road: motorways, street canyons, traffic information systems
- Mobile vehicle-mounted monitoring
- Short term monitoring of ‘hot spots’
- Community exposure: epidemiological studies, microenvironment, residential, schools, hospitals
- Environmental Impact Assessments

Now with FREE web-based data & diagnostics software
### AQM 65 Specifications

#### Gas Modules

<table>
<thead>
<tr>
<th>Gas Modules</th>
<th>Range (ppm)</th>
<th>Resolution</th>
<th>Noise Zero / ppm; Span % of reading</th>
<th>Lower detectable limit / ppm</th>
<th>Precision</th>
<th>Linearity (% of FS)</th>
<th>Drift 24 hour Zero / ppm; Span % of FS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ozone $O_3$</td>
<td>0-0.5</td>
<td>0.001</td>
<td>&lt;0.001; 1%</td>
<td>0.001</td>
<td>&lt;2% of reading or 0.002 ppm</td>
<td>&lt;1%</td>
<td>0.001; 0.2%</td>
</tr>
<tr>
<td>Nitrogen Dioxide NO$_2$</td>
<td>0-0.2</td>
<td>0.001</td>
<td>&lt;0.001; 1%; 1%</td>
<td>0.001</td>
<td>&lt;3% of reading or 0.003 ppm</td>
<td>1%</td>
<td>0.001; 0.2%</td>
</tr>
<tr>
<td>Carbon Monoxide CO</td>
<td>0-25</td>
<td>0.001</td>
<td>0.020; 1%</td>
<td>0.040</td>
<td>&lt;3% of reading or 0.050 ppm</td>
<td>&lt;1%</td>
<td>0.02; 0.2%</td>
</tr>
<tr>
<td>Sulfur Dioxide SO$_2$</td>
<td>0-10</td>
<td>0.001</td>
<td>0.004; 2%</td>
<td>0.009</td>
<td>&lt;3% of reading or 0.009 ppm</td>
<td>1%</td>
<td>0.001; 0.2%</td>
</tr>
<tr>
<td>Nitrogen Oxides NO$_x$</td>
<td>0-0.5</td>
<td>0.001</td>
<td>&lt;0.001; 1%; 1%</td>
<td>0.001</td>
<td>&lt;3% of reading or 0.003 ppm</td>
<td>1%</td>
<td>0.001; 0.2%</td>
</tr>
<tr>
<td>Hydrogen Sulfide H$_2$S</td>
<td>0-10</td>
<td>0.001</td>
<td>0.006; 2%</td>
<td>0.012</td>
<td>&lt;3% of reading or 0.012 ppm</td>
<td>1%</td>
<td>0.001; 0.6%</td>
</tr>
<tr>
<td>Carbon Dioxide CO$_2$</td>
<td>0-2000</td>
<td>1</td>
<td>&lt;5; 1%</td>
<td>10</td>
<td>&lt;3% of reading or 10 ppm</td>
<td>2%</td>
<td>1; 0.6%</td>
</tr>
<tr>
<td>Volatile Organic Compounds VOC</td>
<td>0-20</td>
<td>0.001</td>
<td>0.005; 1%</td>
<td>0.010</td>
<td>&lt;2% of reading or 0.010 ppm</td>
<td>&lt;1%</td>
<td>0.005; 0.2%</td>
</tr>
</tbody>
</table>

#### Particle Modules

<table>
<thead>
<tr>
<th>Sizes</th>
<th>Range</th>
<th>Accuracy</th>
<th>Flow Rate</th>
<th>Lower Detectable Limit (2σ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Particle Monitor (nephelometer)</td>
<td>PM$<em>1$, PM$</em>{2.5}$, PM$_{10}$ or TSP</td>
<td>0 to 2000 μg/m$^3$</td>
<td>&lt;(2 μg/m$^3$ + 5% of reading)</td>
<td>2.0 LPM</td>
</tr>
<tr>
<td>Particle Profiler (OPC)</td>
<td>PM$<em>1$, PM$</em>{2.5}$, PM$_{10}$ and TSP</td>
<td>200 μg/m$^3$ to 5000 μg/m$^3$</td>
<td>&lt;(5 μg/m$^3$ + 15% of reading)</td>
<td>1.0 LPM</td>
</tr>
</tbody>
</table>

#### System Specifications

- **Control System**: Embedded fanless PC, Intel Atom N2600, 1.6GHz, 2GB RAM, 32GB SSD, Ubuntu Linux
- **Communications**: Standard: WIFI, Ethernet (LAN) Optional: Cellular IP GPRS modem
- **Gas Sampling System**: Inlet: Teflon, glass-coated stainless steel Pump: 12V brushless DC diaphragm
- **Thermal Management System**: Direct current compressor, R134a refrigerant, 12-24V 60W resistance heater
- **Software**: Connect: runs on embedded PC, accessed via web browser (IE, Firefox, Chrome, Safari) Cloud: runs on secure ‘cloud’ servers, accessed via web browser Connect / Cloud Features: configuration, diagnostics, journal, calibration and data acquisition, plus SMS and email alerts (optional), and auto data export via FTP and email (optional)
- **Power Requirements**: 90*-264VAC, 47-63Hz Typical draw: 100W** (depends on configuration and ambient temperature)
- **Enclosure**: Outer: IP65 rated aluminium skin with solar reflective coating Inner: 40-50 mm layer of cross-linked PE foam insulation
- **Dimensions**: Standard: 1310Hx510Wx280D mm (includes inlet) With AirCal 8000: 1310Hx655Wx280D mm Weight (installed): 30 Kg**
- **Environmental Operating Range**: Temperature: -35°C to +50°C
- **Gas Calibration (optional)**: Portable: AIRCAL 1000 with gas dilution module and zero air source Integrated: AIRCAL 8000 Integrated system with gas dilution module, zero air source, 2 x regulators and span gas storage (excl. gas cylinders)
- **Factory Integrated & Tested Sensors (optional)**: Gill WindSonic (ultrasonic wind sensor) Vaisala WX520 (weather transmitter) Met One MSO (weather transmitter) Cirrus MK427 Class 1 (noise monitor) Novatynx Pyranometer (solar radiation)

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*Power supply efficiency derates at high ambient T (≥50°C). Need 110VAC minimum at above 50°C.
**Configuration used for power consumption and weight: Embedded PC, Sample Pump, System Manager, NOx, NO2, O3, CO, PM10 + inlet heater, SO2, H2S (43W internal load); Internal temperature set point = 30°C, Ambient temperature used is 30°C.