# Vaisala Air Quality Transmitter AQT400 Series for Measuring Pollution Gases and Particles

## New Value in Air Quality Measurements

Vaisala Air Quality Transmitter AQT400 Series revolutionizes air quality measurements. It offers totally new value for money by providing a near reference measurement performance. AQT410 measures the most common gaseous pollutants nitrogen dioxide ($NO_2$), sulphur dioxide ($SO_2$), carbon monoxide (CO) and ozone ($O_3$) with default configuration. AQT420 measures all this plus Particulate Matter ($PM_{2.5}$ and $PM_{10}$) in the ambient air. The AQT400 Series measurement performance is based on proprietary advanced algorithms that enable ppb measurements at an affordable price using electrochemical sensors. The algorithms compensate the impact of ambient conditions and aging on the sensor elements and remove the need for costly gas sampling and conditioning equipment.

## Easy to Deploy in Networks

AQT400 Series has been specifically designed for air quality monitoring networks in urban areas, road networks or around industrial sites and transportation hubs. Thanks to its small weight and compact size. It is ideally suited for deployment even in large air quality networks. The measurement data is sent wirelessly to a web-based database with GSM Gateway or is available locally via a serial interface. Depending on local conditions the AQT400 Series device has a maintenance and calibration interval of 12-24 months.

# Technical Data

## General

| | |
|---|---|
| Data protocols | Modbus, ASCII |
| Serial data interface | RS-485 |
| Console interface | RS-232 |
| Power and data connector | Standard 8-pin M12 male |
| Operating voltage | 8 – 30 VDC |
| Power consumption | Typ. 0.5 W, max. 2 W |
| Protection class | IP65 |
| Enclosure materials | Anodized aluminium, stainless steel |
| Dimensions | AQT410 125(w) x 125(h) x 128(d) mm |
| | AQT420 128(w) x 185(h) x 128(d) mm |
| Weight | AQT410 690 g |
| | AQT420 1250 g |

## Conformity

| | |
|---|---|
| EMC | IEC/EN 61326-1, |
| | IEC/EN61000-4-2/3/4/5/6, CISPR 22 |

## Ordering Information

| | |
|---|---|
| Base Unit | AQT410 / AQT420 |
| Accessories | Calibration certificate |
| included | and user manual |
| Options | $SO_2$ sensor |
| | $NO_2$ sensor |
| | CO sensor |
| | $O_3$ sensor |
| | Mounting kit |
| | Installation cable (3.5 m) |
| | Installation cable (5 m) |
| | Installation cable (10 m) |
| | PC connection cable |

## Operation Specifications

| | |
|---|---|
| Temperature range | -40 – 85 °C |
| Temperature resolution | 0.1 °C |
| Temperature accuracy (for sensor element) | |
| at +20 °C (+68 °F) | ±0.3 °C (0.17 °F) |
| Humidity range | 0-100 %RH (non-condensing) |
| Humidity resolution | 0.1 %RH |
| Humidity accuracy (for sensor element) | ±3 %RH at 0 ... 90 %RH |
| | ±5 %RH at 90 ... 100 %RH |

## Air Quality Measurement Specifications

| | |
|---|---|
| Temperature range | -30 – 50 °C |
| Humidity range | 15-95 %RH (non-condensing) |
| Factory calibration | 12-24 months dependent of local conditions |

## Gas Measurement Specifications

| GAS | RANGE | MIN. DETECTION | RESO-LUTION | PRECI-SION | LINEA-RITY | UNIT |
|---|---|---|---|---|---|---|
| $SO_2$ | 0 – 2 | 0.005 | ±0.001 | <±1 % FS | <±1 % FS | ppm |
| $NO_2$ | 0 – 2 | 0.005 | ±0.001 | <±1 % FS | <±1 % FS | ppm |
| CO | 0 – 10 | 0.01 | ±0.01 | <±2 % FS | <±2 % FS | ppm |
| $O_3$ | 0 – 2 | 0.005 | ±0.01 | <±3 % FS | <±2 % FS | ppm |

## Particle Measurement Specifications

| | |
|---|---|
| Particle counter channels | PM2.5 and PM10 |
| Particle range | 0.3 – 20 µm (spherical equivalent) |
| Response time | <60 s |
| Sampling interval | 1 – 1440 minutes |
| Sample flow rate | 0.5 SLM (integrated vacuum pump) |
| Units | µg/m$^3$ |
| Measurement range for $PM_{2.5}$ | 0 – 2000 µg/m$^3$ |
| Measurement range for $PM_{10}$ | 0 – 5000 µg/m$^3$ |
| Measurement resolution | 0.1 µg/m$^3$ |

# VAISALA

Please contact us at
www.vaisala.com/requestinfo

www.vaisala.com

CE