



Insight into air pollution from traffic

Datasheet

Sentinel Air Quality (SAQ) station Roads

The Sentinel station for roads and Intelligent Transportation Systems (ITS) is a monitoring solution specifically designed for transportation environments. It features high-precision sensors capable of measuring particulate matter (PM₁, PM_{2.5}, PM₄, PM₁₀), and key traffic-related gases such as NO_x, O₃, NH₃, TVOC, providing accurate real-time data to ITS.

Housed in a robust, weatherproof enclosure, it ensures reliable operation under all roadside conditions. The station's seamless integration into ITS networks and its user-friendly interface facilitate effective traffic management, pollution control, and enhanced environmental safety. By delivering critical air quality information, this station helps to improve urban planning, reduce emissions, and protect public health along busy roadways.

The Sentinel station comes as standard equipped with radar

for vehicle tracking and classification, noise sensor and can be optionally equipped with full meteorological solutions from the Observator Instruments portfolio.

Features

- Air sample conditioning
- Gas and PM sampling systems
- Climate controlled enclosure
- Controlled and measured air flow volume
- Particulate matter measurement: PM₁, PM_{2.5}, PM₄, PM₁₀, and TSP
- 4 gas measurements included as standard: NO_x, O₃, NH₃, TVOC
- Up to 7 gas measurements per station
- Optional gases to select: NO, NO₂, CH₄, CO, H₂S, HCl, CO₂, SO₂
- All integrated into 1 enclosure
- Incl. radar & noise measurement

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General

Observator Sentinel stations are equipped to measure PM₁, PM_{2,5}, PM₄, PM₁₀, and TSP, and gases such as NO, NO₂, NO_x, O₃, CH₄, CO, H₂S, NH₃, HCl, CO₂, SO₂, and TVOC, all integrated into a single enclosure. Each station can measure up to seven gases and features a stainless steel 304 enclosure with air sample conditioning, gas and PM sampling systems, and climate control. The controlled and measured air flow volume ensures accuracy, while the design allows easy access for maintenance and servicing. Installation is straightforward, with all necessary mounting elements included.

The Observator Sentinel stations come with comprehensive software support, including a Windows-based application for detailed data analysis and management. Additionally, mobile apps for both Android and Apple devices provide on-the-go access to real-time data and notifications. For those seeking enhanced accessibility and data security, optional cloud hosting and browser access are available, allowing users to monitor and manage air quality data from anywhere with an internet connection. This versatile software suite ensures that users can stay informed and maintain control over their air quality monitoring operations with ease.

Specifications

Particulate Matter:

- Principle – Optical Particle Counter
- Classification – PM₁, PM_{2,5}, PM₄, PM₁₀, TSP
- Measurement range (size) – 0,35 – 40 µm
- Measurement range (mass) – 0 – 2 mg/m³
- Size channels – 24

Gases:

- Principle – Electrochemical
- Gases included as standard – NO_x, O₃, NH₃, TVOC
- Optional gases: NO, NO₂, CH₄, CO, H₂S, HCl, CO₂, SO₂
- Max amount per station – 7 gases
- Typical lifetime – 24 months

Power requirements:

- Power supply – 110/220Vac
- Power consumption – max 200W

Communication and data collection:

- WiFi, Ethernet LAN, GSM 3G, GSM 4G LTE, LoRaWAN, GPS, USB, SD card, Bluetooth

Environmental:

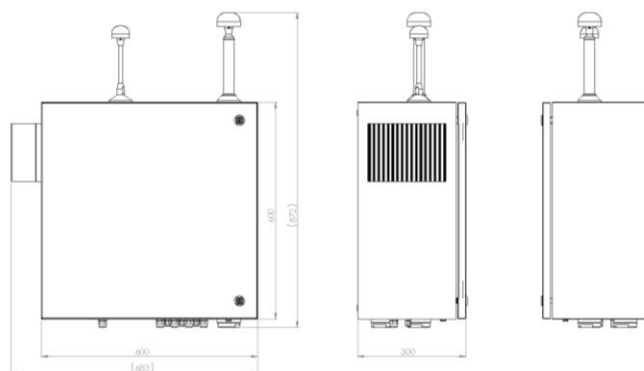
- Enclosure – Stainless Steel 304
- Operating temperature – -35°C to +60°C
- Dimensions - 600x600x300mm (without collectors)
- Weight – 40 kg
- Protection – IP65

Included as standard:

- Class 1 Urban Noise Monitoring Terminal
- Side-fire dual-beam ITS radar sensor

Optional equipment:

- Meteorological sensors



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