



Roadside NO_x/PM₁₀ System for Ambient Air Quality Monitoring

- NO_x analysis with PM₁₀ option
- Compact package suitable for kerbside location
- Accurate measurements using proven analyser technology
- On board data logging, diagnostics and communications
- GSM modem link for remote data gathering and display
- Full remote control from an office based PC
- Links to Ambidesk Reporter for analysis of long term trends
- Wide range of ancillary items such as Public Displays

The **AMBIRAK-R** Air Quality Monitoring Station has been designed for kerbside use close to a road or street. The compact package, with a footprint of only 600 x 500 mm, means that the monitor can be located near to the main sources of urban pollution without the requirement for a separate air conditioned analyser house.

The NO_x analyser module uses the same proven technology found in the **AMBIRAK** range of AQM systems, which are already installed in demanding monitoring applications throughout the world.

The optional PM₁₀ dust module uses laser based nephelometry to measure dust concentrations from fractions of a µg/cc to tens of mg/cc. As such it easily meets the sensitivity requirements of the European Directives and DETR guidelines, and an internal reference filter which collects the particles allows independent gravimetric calibration of the sensor. Measurements of PM₁₀, PM_{2.5} and PM_{1.0} particles can be made simultaneously.

Both modules are microprocessor controlled, and connect to an on board data logger which can store data for over a year. As well as logging data in both raw and processed form, the system records diagnostic and calibration data. All of the data can be collected over a GSM modem.

Full remote control of the system is achieved using a proprietary software package, which even allows calibrations to be carried out from the convenience of the administration office. Signal's service personnel can remotely diagnose any maintenance or repair requirements, and can use the remote control package to provide on-line help and support to operators at site. Data transfer from the **AMBIRAK-R** is by a fast, robust proprietary protocol with full error checking and correction. The **AMBIRAK-R** can also emulate the serial communications protocol of Odessa data loggers, allowing the system to interface without modification to nearly all existing data collection networks. All communications take place without affecting any other software functions, so that no data is lost during file retrieval.

For a full description of the Ambirak software functionality, please refer to data sheet DS05.

General Specifications

Size	600mm (w) x 500 mm (d) x 2000mm (h)
Temperature range	- 5 to + 35 ° C
Power consumption	NOx only : 600VA NOx and PM10: 700VA
Surface Finish	Anti-vandal paint finish Range of colours available

Specifications for NO_x module

Measurement technique	Chemiluminescence
Measuring range	0-1000 ppb
Repeatability	± 1 ppb
Noise	± 0.3 ppb
Linearity	± 1% FSD
Zero drift	± 0.5ppb in 24 hrs (before autocal)
Span drift	± 1% FSD in 24 hrs (before autocal)
Response Time	6 sec (95%)
Power consumption	600VA

Specifications for PM₁₀ module

Measurement technique	Optical absorption
Heated inlet	up to 60°C
Parameters measured	TSP, PM ₁₀ , PM _{2.5} , PM _{1.0}
Measuring range	Up to 60mgs/m ³ (without particle sizing)
Particle size range	0.5 to 20µ diameter
Detection limit	0.01 µg/m ³
Flow rate	600cc/min
Reference filter	25mm diameter GFA circle
Averaging period	1 second to 4 hours