Environmental Monitoring Solutions Ltd

Airborne Particulate Monitors

Real time air quality monitoring

Simultaneous TSP, PM10 and PM2.5 and PM1

Multi monitor networks

Spot monitoring, portable or permanent installations

Metrological instruments

Osiris Monitor
Sira MC 090157/00

Topas Monitor
Sira MC 090158/00

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Airborne Particle Monitors

EMS supply a range of easy to use instruments which continuously measure and record the concentration of airborne particles. In their environmental mode these instruments can simultaneously monitor con-centrations of TSP, PM10, PM2.5 and PM1 particles. Alter-natively, in their workplace mode, the inhalable, thoracic and respirable fractions can be monitored.

An internal reference filter can be used to confirm the gravimetric calibration of the instruments.

All instruments feature internal data logging for the particle concentrations. Osiris and Topas also allow wind speed and direction, temperature, humidity, rainfall and two external gas or noise meter inputs to be recorded at the same time.

All instruments use our own proprietary nephelometer. A pump continuously draws an air sample through the nephelometer which analyses the individual particles as they pass through a laser beam. These same particles are then collected on the reference filter. The nepholometer's dedicated microprocessor can analyse individual particles even if there are millions of them per litre. This allows size fractions to be determined at concentrations up to several mg/m^3. Above this there is an indicator range which can be used without sizing up to 60 mg/m^3.

Topas

The Topas fixed station monitor is intended for long term installation. Several sites can be networked together to form a city wide monitoring system, which can be controlled by various communication means including GSM modem and radio modems.

Osiris

The Osiris is a small and compact instrument that can be used to study short to long term monitoring. Powered by various ower options to suit your application. The Osiris can be used effectively to determine exceedance areas.

DustMate

DustMate is a hand-held detector ideal for short term sampling. Highly effective for monitoring air quality within buildings and clean rooms.

AirQ for Windows

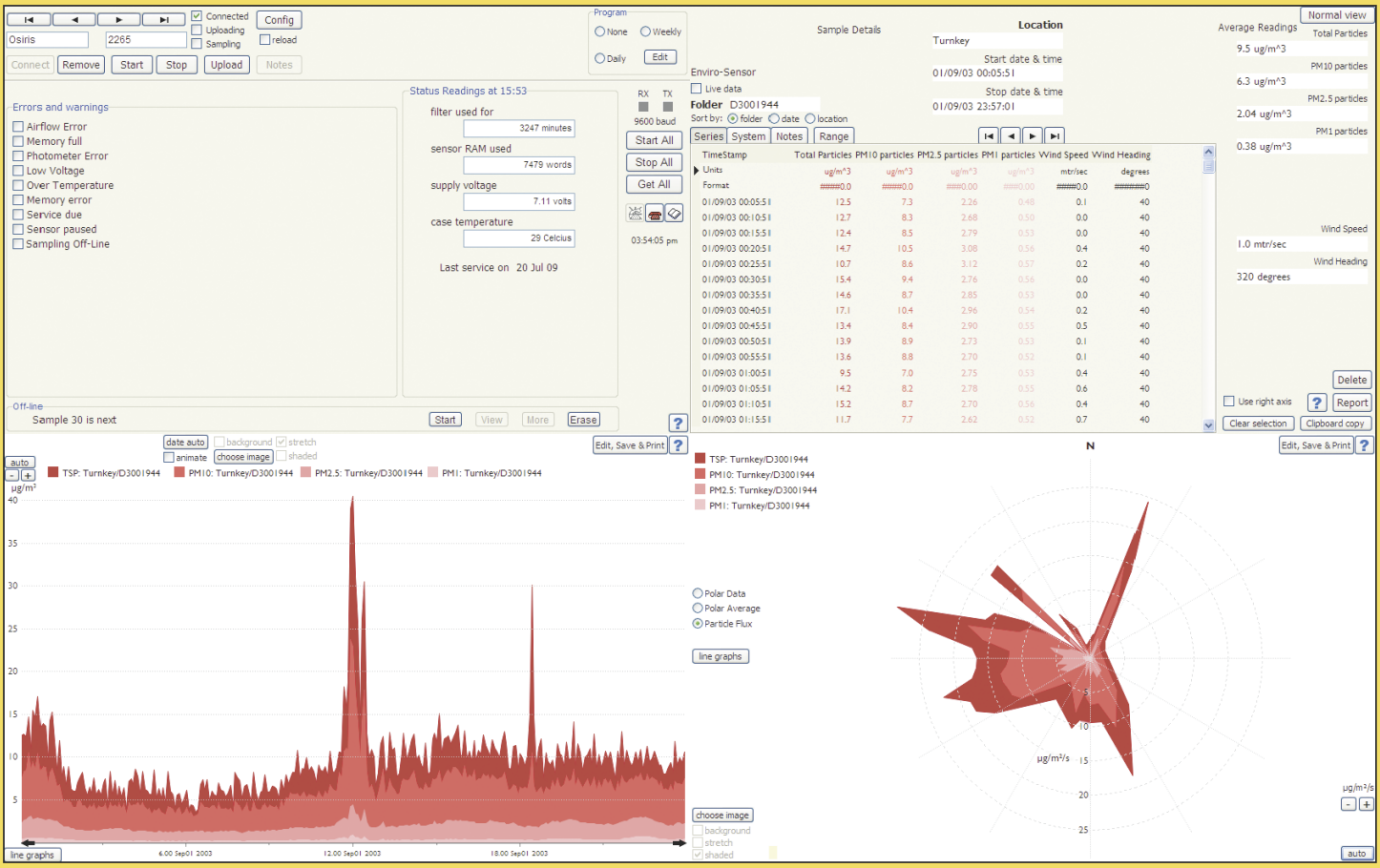
Environmental Monitoring Software

AirQ the user friendly and quick reporting PC software, designed in house will manage and display results from our range of environment sensors. These sensors can be used to measure air quality information including: PM10 and PM2.5 particles, airborne fibres and noise. Climatic conditions such as ambient temperature, wind speed and direction, relative humidity, etc. can also be recorded as an aid to tracking the source of the pollution. For example, with AirQ a live "on-screen" pollution rose can readily be created which plots measurements against wind heading on a polar chart.

AirQ can be used to control sensors and record measurements in real-time with "live" graphs and tables appearing on the PC screen (It can automatically start and stop sensors at chosen times of day, either on daily or weekly cycles). It can also upload results stored in a sensor's memory. AirQ keeps the results in folders which can be searched by it's powerful database engine. These folders can be printed, exported for archive purposes, or pasted via the Window's Clipboard to other applications.

Networked Environmental Monitoring

Creating a network of sensors has never been easier. Any number of sensors can be connected to an AirQ network created with any combination of fixed wiring (up to 10km), licence free radio telemetry (up to 20km), telephone and GSM cellular modems. A unique feature of the network is that as each new sensor is connected it automatically informs the PC of what it is designed to measure, what its engineering units are, what remote control features are available and so on. In this way future expansion of the system is assured. A network can also include alarm facilities such as beacons or sirens for early warning and response to high readings.



Feature	Description	TOPAS	OSIRIS	DUSTMATE
Standard inlet	TSP (1mm stainless mesh)	✓	✓	✓
Heated inlet	Heating to 60°C	✓	✓	•
Detector	Turnkey laser nephelometer	✓	✓	✓
Environmental mode	TSP, PM10, PM2.5, PM1.0	✓	✓	✓
Workplace mode	Inhalable, thoracic, respirable	✓	✓	✓
Measurement range	0 to 6000 micrograms per cubic metre	✓	✓	✓
Detection limit	0.01 micrograms per cubic metre	✓	✓	✓
Indicator range	0 to 60mg/m^3 without particle sizing	✓	✓	✓
Particle size range	0.5 to 20 micron diameter	✓	✓	✓
Particle counting mode	Three size channels in particle per cc	✓	✓	✓
Flow rate	600cc per minute	✓	✓	✓
Reference filter	25mm diameter GFA circle	✓	✓	✓
Operating temperature	-5°C to +50°C	✓	✓	✓
Security	Password protection	✓	✓	✓
Alarm	Siren, text to cellular phone, visual beacon and email	✓	✓	×
Display	Two line alphanumeric with backlight	✓	✓	✓
Data storage	Internal with separate battery backup	128k byte	128k byte	32k byte
Averaging period	1 second to 4 hours	✓	✓	✓
Battery	Sealed lead acid, rechargeable	n/a	Internal 6v 2.8 AH	Belt pack 6v 1.2 AH
Sampling current drain	Including heated inlet and backlight	1.2A	1.2A	200mA (without heated inlet)
External power pack	80 to 260v AC input, weatherpoof	•	•	×
Meteorological inputs	Wind speed and direction, rainfall, temperature and humidity	✓	✓	×
Other logging inputs	Two 0 to 5 volt analogue inputs	✓	✓	×
RS232 I/O	9600 baud via PC-link	✓	✓	✓
Telemetry I/O	1200 baud opto isolated	✓	✓	×
Analogue output	0 to 4 volt analogue of TSP or PM10 channel, 12 bit resolution	•	•	×
Wall or lamppost box	Lockable steel	✓	✓	×
Case protection	To IP66 (excluding inlet and exhaust)	✓	✓	Carry case
Dimensions	External dimensions in mm	400 x 300	260 x 160 x 150	160 x 100 x 100
Weight	Instrument and enclosure approximate weight in kg	12kg	11.8kg	1.2kg
Power options	Solar, wind, mains and battery	✓	✓	Mains and battery only

✓ Fitted as standard × Not available • Available as option

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