# Ecotech

ACOEM Group

# Protinus 1000

**REAL–TIME DUST MONITOR**



**The Protinus 1000 provides a particulate monitor ideally suited for use around mines, quarries, construction and other dust generating activities.**

The Protinus 1000 utilises two measurement methods to ensure accurate real-time dust measurements of TSP, $PM_{10}$ or $PM_{2.5}$.

When correlated against the monitor's gravimetric sample filter, forward light scatter method provides accurate and instantaneous measurement of dust concentrations.

Gravimetric Sampling Filter method samples dust onto an internal 47 mm filter for use in correlating the light scatter method. Filter can also be used for later chemical analysis such as XRF to determine heavy metal concentrations.

Measurement errors induced by changes in ambient relative humidity are eliminated by incorporating an inbuilt sample heater controlled by a relative humidity sensor.

Available on its own or as a full turn-key installation, the Protinus can be combined with a solar panel, wind speed and direction sensor, modem, and data collection software - a powerful tool for remotely quantifying dust emissions from around any site.

## STABLE & ACCURATE MONITORING

- Measures $PM_{10}$, $PM_{2.5}$ or TSP
- Automatic flow control
- Programmable auto zero/span
- Laser Diode precision optical engine.

## ROBUST ENCLOSURE

- Sheath-air protected optics
- Aluminium weatherproof enclosure
- Completely self-contained
- Inbuilt data logger.

## SPECIFICATIONS

**Concentration ranges**

| | |
|---|---|
| **Autoranging:** | 0 - 0.05, 0 - 1, 0 - 10, 0 - 65 mg/m$^3$ |
| **Sensitivity:** | 1 µg/m$^3$ |

**Particle size**

| | |
|---|---|
| **sensitivity range:** | 0.1 - 100 micron |
| **Accuracy:** | 8 % of NIOSH 0600 |
| **Precision:** | 3 µg/m$^3$ or 2 % reading |
| **Long-term stability:** | 5 % reading |
| **Sampling frequency:** | 1 sec |
| **Sample flow rate:** | 2 lpm |
| **Available cut points:** | TSP, PM$_{10}$, PM$_{2.5}$, PM$_1$ |
| **Temperature range:** | -10 to 50 °C |
| **Size:** | 267 x 235 x 145 mm |
| **Power consumption:** | 350 mA (no heater) |
| | 1.1 A (with heater) |

**Internal battery**

| | |
|---|---|
| **(Optional):** | 12 VDC 12 Amp-Hr |
| | > 30 hours (no heater) |
| | 10 hours (with heater) |

## DATA LOGGING

**Average period**
- 1 - 60 minutes selectable

**Display**
- 4 x 20 LCD

**Outputs analog**
- 0 - 1, 0 - 2.5, 0 - 5 VDC, RS232

**Data storage capacity**
- 12000 Records

## STANDARD EQUIPMENT

- Universal voltage power supply
- Inlet heater
- TSP inlet
- 47 mm filter holder
- Internal battery charger
- Comet software
- Digital output cable
- Instruction manual.

## OPTIONS

- PM$_{10}$, PM$_{2.5}$, PM$_1$ Sharp-Cut Cyclone
- Aluminium tripod
- Modem (radio or 3G)
- Wind speed / direction sensor
- Ambient RH
- Battery
- External battery cable.

bsi. | ISO 9001 Quality Management | AS/NZS 4801 Occupational Health and Safety Management

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