Real-time, ambient dust monitor designed for continuous monitoring.

Thermo Scientific Area Dust Monitor, ADR-1500

Key Features

- Volumetric flow control

- Modular optics and long life primary HEPA filter for ease of servicing

- Multiple power and communications capabilities

- Durable weather-proof IP65 enclosure

- Designed for ease of transport and installation

The Thermo Scientific Area Dust Monitor, Model ADR-1500 utilizes the highly sensitive light-scattering photometer (nephelometer) technology, as used in the Thermo Scientific pDR Series. The intensity of the light scattered by airborne particles passing through the sensing chamber is linearly proportional to their concentration. This optical configuration produces optimal response to particles providing continuous measurements of the concentrations of airborne particles for total particulate and cut-points ranging from PM10 down to PM1.

The ADR-1500 incorporates a temperature and relative humidity (RH) sensor coupled with an internal heater to mitigate the positive bias with elevated ambient RH. Additionally, the flow control is truly volumetric and is maintained through digital feedback of the onboard barometric pressure sensor, temperature sensor, and calibrated differential pressure across a precision orifice. The principles of true volumetric flow, as incorporated by the ADR-1500, result in an accurate sample volume and precise particle cut-point.

The measured concentration of particulate matter is displayed in real-time on the two-line LCD readout display. Additional values can be displayed, such as run start time and date, time averaged concentrations, elapsed run time and many more.

The flexible power capabilities allow the ADR-1500 to operate on AC (100-240 VAC), external DC (12-24 Vdc) or an internal battery. Communications options are available for USB, RS-232, analog and wireless capability.

The ADR-1500 is housed in a weather-proof IP65 enclosure producing a compact and durable instrument that is ready for rapid deployment and unattended operation. A top mounted handle allows for ease of transport and installation with mounting options available for wall, post, or tripod locations.

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To maintain optimal product performance, you need immediate access to experts worldwide, as well as priority status when your air quality equipment needs repair or replacement. We offer comprehensive, flexible support solutions for all phases of the product life cycle. Through predictable, fixed-cost pricing, our services help protect the return on investment and total cost of ownership of your Thermo Scientific air quality products.

Thermo Scientific Ambient Dust Monitor, ADR-1500

Concentration measurement range	0.001 to 400 mg/m^3 (auto-ranging)
Scattering coefficient range	1.1 x 10^{-6} to 0.6m^{-1} (approximately) @ λ = 880nm
Precision / Repeatability	+/- 2% of reading or +/- 0.005 mg/m^3, whichever is larger, for 1-second averaging time
2-sigma^2 with heater off and	+/-0.5% of reading or +/- 0.0015 mg/m^3, whichever is larger, for 10-second averaging time
RH correction disabled (over 30 days)	+/-0.2% or reading or +/- 0.0005 mg/m^3, whichever is larger, for 60-second averaging time
Accuracy	+/- 5% of reading (+/- precision) traceable to SAE Fine test dust
Resolution	0.1 µg/m^3
Particle size range *of maximum response*	0.1 to 10 µm
Flow rate range	1.0 to 3.5 liters/min.
Aerodynamic particle cut-point range	1.0 to 10 µm, with optional cyclone accessories
Alarm averaging time	Real-time (1 - 60 seconds) or STEL (15 minutes)
Data logging averaging periods	1 second to 1hour
Logged data	Averaged concentrations, temperature, RH, barometric pressure, time/date, and data point number
Run Summary	Site number, average and max. concentrations, time/date of maximum, number of logged points, start time/date, elapsed time (run duration), averaging (logging) period, calibration factor and tag number
Serial interface	High speed, USB/RS-232 (reserved for wireless applications), 19,200 baud
Real-time digital signal	Concentration, flow, temperature, relative humidity, barometric pressure, time, date
Real-time analog signal	0 to 2 V and 4 to 20 mA, with selectable full scale ranges between 0.1 and 400 mg/m^3 0-0.1, 0-0.4, 0-1.0, 0-4.0, 0-10, 0-40, 0-100 and 0-400, mg/m^3
Alarm output	Load impedance > 100 kΩ , Alarm ON = short to ground, Alarm OFF = open
Internal battery run time	1.2 L/min. (heater and alarm constantly on) > 24-hour run time
AC Source	100-240 VAC, 50/60Hz, 12/24 Vdc for solar or auxiliary battery options
Operating environment	14 to 122°F (10 to 50°C) 10 to 95% RH, non-condensing
Physical dimensions	21" (533mm) H x 17" (431mm) W x 17" (215mm) D, 28.5 lbs. (12.9 kg)
Optional cyclones	GK 2.05 (Red) primarily for PM$_4$ through PM$_{10}$, SCC 1.062 (blue) primarily for PM$_1$ through PM$_4$

Ordering Information

Model ADR-1500
Choose from the following configurations/options to customize your own Model ADR-1500

1. Power cords:
A = 110v power cord
B = 220v power cord

2. Relay kit:
A = Relay kit
N = No relay kit

3. Pole mounting:
A = Pole mount kit, 2" DIA
B = Pole mount kit, 3" DIA
C = Pole mount kit, 4" DIA
N = None

4. External cables:
A = Analog external cable assembly
B = 12/24 Vdc external cable assembly
C = Both cables
N = None

5. 37mm Cassette filter holder assembly
A = 37mm Cassette filter holder assembly with filter support & holder
N = None

6. Cyclone and the cyclone adapter
A = Blue cyclone assembly (PM 1 - 2.5 Microgram CP) with cyclone adapter
B = Red cyclone assembly (PM 4 - 10 Microgram CP) with cyclone adapter
C = Both cyclones with cyclone adapter
N = None

Your Order Code: Model ADR1500 __ __ __ __ __ __

This product is manufactured in a plant whose quality management system is ISO 9001 certified.

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