

Thermo Scientific Ambient Dust Monitor, Model ADR-1200S™

Weather-proof ambient particulate monitoring system



Key Features

- Continuous, unattended operation
- Light-scattering, photometry sensing technology
- Real-time data transmission
- Precise and driftless measurements
- Weather-proof enclosure

The Thermo Scientific Ambient Dust Monitor, Model ADR-1200S is a particulate monitoring system designed for outdoor operation. The weatherproof enclosure ensures safe and effective operation under a wide range of ambient environmental conditions.

The ADR-1200S is designed for continuous unattended monitoring providing, real-time data transmission to a central location and/or internal data logging. Data logging is incorporated in the system or real-time data transmission can be achieved via Thermo Scientific's pDR-COM software or a third party modem, or telemetry equipment. Real-time STEL values can be displayed on the ADR-1200S.

The ADR-1200S incorporates the proven and highly successful light scattering photometry sensing technology for which Thermo Scientific is known worldwide.

Long-term, precise and driftless measurements of airborne particulate matter concentrations down to 0.001 mg/m^3 are assured by a unique state-of-the-art combination of optical sensing and electronic signal processing techniques. This method has been refined over the last 25 years.

The ADR-1200S can be used for particle size-selective measurements using the metal cyclone (included). The cyclone is the preferred method for measuring respirable particulates or to obtain information on particle size distribution (by varying the sampling flow rate).

In addition to the real-time/continuous measurements by light scattering, the system enables the user to collect the sampled particles on a membrane filter for gravimetric and/or chemical analysis.

Product Specifications

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.

Ambient Dust Monitor, ADR-1200S

Concentration measurement range	(Referred to gravimetric calibration with SAE Fine test dust) (mmd = 2 to 3 μm , 8g = 2.5, as aerosolized) 0.001 to 400 mg/m^3
Scattered coefficient range	1.1×10^{-6} to 0.6m^{-1} (approximately) @ 880 nm
Precision/ repeatability	(2-sigma - at constant temperature): +/- 5 $\mu\text{g}/\text{m}^3$ for 1-sec. averaging +/- 1.5 $\mu\text{g}/\text{m}^3$ for 10-sec. averaging
Accuracy	Referred to gravimetric calibration with SAE Fine test dust (mmd = 2 to 3 μm , 8g = 2.5, as aerosolized) +/- 5% of reading +/- precision
Resolution	0.1% of reading or 0.001 mg/m^3 , whichever is larger
Particle size range of maximum response	0.1 to 10 μm
Concentration display updating interval	1 sec. to 60 seconds
Alarm level adjustment range	(user selectable)selectable over entire measurement range
Alarm averaging time	(user selectable) Instantaneous or STEL (15 min.)
Data logging averaging periods	(user selectable) 1 sec. to 4 hrs.
Total number of data points in memory	13,000
Readout display	LCD 16 characters (4 mm height) x 2 lines)
Serial interface	RS232, 4800 baud
Analog signal output	0 to 5V and 4 to 20mA, with selectable full scale ranges between 0.1 and 400 mg/m^3
Computer requirements	IBM-compatible, PC, 286 or higher; Windows TM "95 or greater; 2 MB memory or more; hard drive; CD/DVD; VGA or higher resolution monitor
Power	@ 115 VAC. 50 to 300 mA @ 9VDC, depending on flow rate, flow load, and analog output current (if used)
Operating environment	14°F to 122°F (-10°C to 50°C), 10 to 95% RH, non-condensing
Storage environment	-4°F to 158°F (-20°C to 70°C)
Dimensions	6.9 in. (175 mm) D x 12 in. (305 mm) w x 16 in. (405 mm) H
Weight	22 lbs. (10 kg) (without mounting brackets)
Enclosure rating	NEMA 4
Electromagnetic / static certification	CE
Alternate mounting & support	Tripod supported, Pole mounted or Bench-top
Output signals	Digital: RS-232 either continuous, real-time (every second), or downloading of internally logged data on manual command (software included) Analog: real-time, both current (4-20mA) and voltage (0-5V), updated every second, with selectable full-scale range Switched alarm output, up to A load.
Specifications for the pDR-PU attachable pump module	Flow rate (user adjustable): 1 to 5 liters/min. (4 nominal) Maximum pressure drop: 10 in H_2O (25 mbar) @ 2 liters/min. Precision of constant flow rate control: +/- 2%
Specifications for the pDR-BP	Rated capacity @ 68°F (20°C): 1.9 ampere-hrs. Full charging time:
Rechargeable battery pack	2 hrs. Operating time to power the pDR-1200 & pDR-PU@ 68°F (20°C) @ 1.5 Lpm: 36 hrs. (typical)

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

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