

Hand-Held Monitor/Data Logger

Thermo Scientific personalDataRAM™ pDR-1000AN & pDR-1200

The personalDataRAM™ pDR-1000AN passively measures mass concentrations of dust, smoke, mists, and fumes in real time, and sounds an audible alarm whenever the user-defined level is exceeded. The personalDataRAM™ pDR-1200 performs active sampling applications and aerosol sizing. The pDR-1200 requires a vacuum pump module to perform particle size selective measurements under field conditions.

FEATURES

pDR-1000AN

- Highest performance of any real-time personal particulate monitor with a measurement range from 0.001 to 400 mg/m³ (auto-ranging).
- Rugged and extremely compact, the palm sized pDR-1000AN weighs only 18 oz. (0.5 kilogram) and can be attached to a belt or shoulder strap, hand held, operated on a table top, or mounted on a tripod.
- Simple zeroing and calibration – The pDR-1000AN comes gravimetrically calibrated (NIST traceable) in mg/m³ using standard SAE Fine (ISO Fine) test dust. Zeroing with particle-free air is accomplished quickly and effectively under field conditions using the zeroing kit including with the instrument.
- Safety approvals and certifications – The pDR-1000AN complies with US FCC rules (Part 15) and has received CE certification. It also has intrinsic safety approval from the US Mine Safety and Health Administration (MSHA) for use in coal mining environments containing methane gas. The MSHA Type 2G approval closely resembles the standard intrinsic safety rating as defined by Class 1, Division 1, Group D. In addition, it meets US FCC and European CE rules.



pDR-1000AN

pDR-1200

- Designed for active particulate monitoring applications – With optional inlet accessories, the pDR-1200 is excellent for ambient air measurements under variable wind and high humidity conditions.
- Aerodynamic particle sizing – The pDR-1200 incorporates an optimally designed metal cyclone (BGI Model GK 2.05) or the optional low flow cyclone (BGI Model Triplex SCC1.062-CUST) especially selected for PM_{2.5} collection at 1.5 LPM. By operating the pump at specific sampling flow rates, the pDR-1200 cyclone preseparator provides precisely defined particle size cuts.
- Primary calibration and particle samples by filter collection – An integral filter holder directly downstream of the photometric sensing stage accepts 37 mm filters. The calibration constant of the pDR-1200 is simply adjusted to coincide with the filter-determined concentration. Primary gravimetric calibration of the instrument concentration readout is easily accomplished under actual field conditions by means of this integral filter. Use membrane filters for chemical analysis or concurrent gravimetric measurements.
- pDR-PU Attachable Pump Module – This optional accessory is designed for use with the personalDataRAM Model pDR-1200. It incorporates a dual-chamber diaphragm pump, a volumetric flow sensing, and control unit. The pump module operates from either an optional, rechargeable NiMH battery pack or from AC line current using the power supply/charger supplied with the personal DataRAM. The pDR-PU is designed as a modular unit that can be used in various combinations. This separate pump (not included) is required for active sampling and aerosol sizing. With optional inlet accessories, the pDR-1200 is excellent for ambient air measurements under variable wind and high humidity conditions.



pDR-1200
with optional
rechargeable battery module

CALL GEOTECH TODAY (800) 833-7958

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Hand-Held Monitor/Data Logger

Thermo Scientific personalDataRAM™ pDR-1000AN & pDR-1200

ACCESSORIES & OPTIONS

Standard Accessories

- Universal voltage power supply
- PC communications software
- Zeroing kit
- Belt clip kit
- Instruction manual
- Carrying case
- Signal output cables

Optional Accessories

- Rechargeable battery pack (NiMH)
- Active sampling kit (converts pDR-1000AN to pDR-1200)
- Portable pump unit
- Shoulder strap
- Remote alarm interface
- Wall mounting bracket



Hard sided carrying case for your personalDataRAM and accessories comes standard

SPECIFICATIONS

Concentration Measurement Range (auto-ranging):

Referred to to gravimetric calibration with SAE Fine test dust (mmd = 2 to 3 mm, sg = 2.5, as aerosolized) 0.001 to 400 mg/m³

Scattering Coefficient Range:

1.1 x 10⁻⁶ to 0.6 m⁻¹ (approximately) @ wave length = 880 nm

Precision/Repeatability (2-sigma at constant temperature):

±5 µg/m³ for 1 second averaging
±1.5 µg/m³ for 10 second averaging

Accuracy:

Referred to gravimetric calibration with SAE Fine test dust (mmd = 2 to 2 mm, sg = 2.5, as aerosolized) ±5% of reading ± precision

Resolution:

0.1% of reading or 0.001 mg/m³, whichever is larger

Particle Size Range of Maximum Response:

0.1 to 10 µm

Concentration Display Updating Interval:

1 second

Alarm Level Adjustment Range (user selectable):

Selectable over entire measurement range

Datalogging Averaging Periods (user selectable):

1 second to 4 hours

Total Number of Data Points/Tags in Memory:

13,000 points/99 tags

Concentration Display Averaging Time:

1 to 60 seconds

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 20 mA, with selectable full scale ranges between 0.1 and 400mg/m³

Computer Requirements:

IBM compatible PC, 286 pr higher; Windows™ 3.1, 3.11, or '95; 2 MB memory or more; hard drive; 3.5" floppy drive; VGA or higher resolution monitor

Power:

Internal battery: 9V alkaline, 20 hour run time (typical)
9V lithium, 40 hour run time (typical)
AC source: Universal voltage adapter (included)
100-250 Volts, 50-60 Hz (CE marked)
Optional battery pack: Rechargeable NiMH, 70 hour run time (typical)

Operating Environment:

14° to 122°F (-10° to 50°C), 10 to 95% RH, non-condensing

Storage Environment:

-4° to 158°F (-20° to 70°C)

Dimensions and Weight:

6" H x 3.6" W x 2.5" D; 18 oz. (0.5 kg)
6.3" H x 8.1" W x 2.4" D; 24 oz. (pDR-1200 including cyclone and filter holder)

Aerodynamic Particle Sizing Range:

1.0 to 10 µm (pDR-1200 only)

Alarm Averaging Time (user selectable):

Real-time (1 to 60 seconds) or STEL 15 (minutes)

Approvals:

- Intrinsic safety approval by US Mine Safety & Health Administration (MSHA)
- Coal-mining environments containing methane gas (the pDR-PU pump is not approved by MSHA)
- US FCC Rules (Part 15)
- CE Certified

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