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PRODUCT SPECIFICATIONS

TEOM 1405-DF Ambient Particulate Monitor

Continuous dichotomous ambient air monitor

The Thermo Scientific™ TEOM™ 1405-DF Ambient Particulate Monitor simultaneously measures PM-10, PM-2.5 and PM-Coarse mass concentration as it exists in the ambient air.

Features

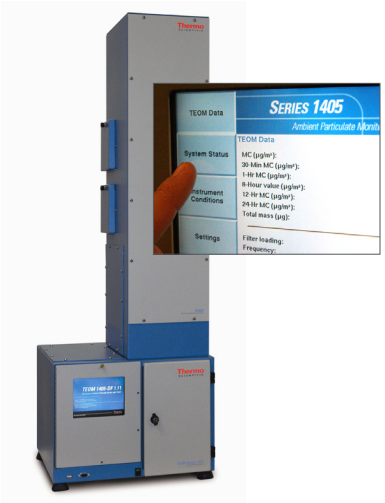
- U.S. EPA PM-2.5 , PM-10-2.5, PM-10 Equivalent Monitor (EQPM-0609-182, EQPM-0822-207, EQPM-0822-208)
- Accounts for volatile and non-volatile PM fractions
- Combines control unit, mass sensor and FDMS into a single integrated unit
- Embedded FTP server, Ethernet, USB, RS-232 and RS485 communications
- Activol flow control

Introduction

The 1405-DF monitor is composed of two Filter Dynamics Measurement Systems (FDMS) and two TEOM mass sensors housed in a single cabinet, network-ready configuration that includes the control system with touch screen user interface.

The TEOM 1405-DF system is designed to provide representative short and long term reading of the ambient PM concentration, even in the presence of volatile materials. Conventional PM monitoring approaches do not account for the rapid loss that can occur with collection on a filter while sampling ambient PM.

The 1405-DF monitor overcomes this challenge by automatically generating mass concentration measurements (µg/m3) that account for both non-volatile and volatile PM-10, PM-2.5 and PM-Coarse components. The system's default data output consists of a running 1-hour and 24-hour average mass concentration updated every 6 minutes and on the hour respectively. The monitor computes a 1 hour FDMS base and reference mass concentrations updated every 6 minutes. Users can select additional averaging times from 30 minutes to 23 hours.



Thermo Scientific™
TEOM™ 1405-DF Ambient
Particulate Monitor

The 1405-DF monitor provides a self-referencing, NIST-traceable true mass measurement using our own proven high reliability TEOM technology. The system differentiates itself from other PM measurement methods by utilizing a direct mass measurement that is not subject to measurement uncertainties found in surrogate techniques such as beta attenuation, light scattering and pressure drop.

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Thermo Scientific TEOM 1405-DF Ambient Particulate Monitor

Specifications	
Standard system configuration	Menu-driven software for user interaction via 1/4 VGA display with touch screen, connecting and Interface cables, and vacuum pump, consumables for average first year's operation (ambient), RPCOMM and ePort software for local or remote communication
Instrument performance	Measurement Range: 0 to 1,000,000 µg/m³ (1 g/m³), resolution: 0.1 µg/m³, precision: ±2.0 µg/m³ (1-hour avg),
(3 l/min, 1s, stable conditions)	±1.0 µg/m³ (24-hour avg), accuracy for mass measurement: ±0.75%
Data averaging and output	Real-time mass conc average: 1 hour rolling average updated every six minutes, long-term averaging: 1, 8, and 24 hour, data output rate: selectable from 10 sec to 24 hour
Operating range	The temperature of the sampled air may vary between -40° and 60 °C. The TEOM sensor and control units must be weather protected within the range of 8° to 25 °C. An optional complete outdoor enclosure provides complete weather protection.
Sample flow	Activol flow control system uses the mass flow sensors and the measured ambient temperature and pressure to maintain constant volumetric flow rates. Main flow rate: Fine PM filter: 3.0 l/min; Coarse PM filter:1.67 l/min, bypass flow rate: 12.0 l/min
Data storage	Internal data logging of user-specified variables; capacity of 500,000 records.
Filter media	Sample filter: Pallflex TX40, 13 mm effective diameter, sample conditioner filter: 47mm diameter housed in an FRM-style molded filter cassette, maintained at 4°C. Suitable for collecting and archiving time-integrated PM samples for subsequent laboratory analysis.
Data output and input	ePort software to view and change system operation from PC, touch screen user interface, Ethernet with embedded FTP server, USB, RS232, RS485, 8 user-defined analog outputs (0-1 or 0-5 Vdc), 2 user-fefined contact closure alarm circuits, 4 averaged analog inputs (0-5 Vdc) with user-defined conversion to engineering units
Power requirements	Instrument: 100-240 VAC, 440 VA, 47-63 Hz Pump: 120 VAC/60 Hz: 4.25 A; 240 VAC/50 Hz: 2.25 A
Physical dimensions	W: 17" (43.2 cm) × D: 19" (48.3 cm) × H: 29.5" (75 cm), Weight: 40 lbs (18 kg)
Safety/electrical designations	Designed to meet: CE: EN 61326:1997 + A1:1998 + A2:2001 + A3:2003, EN:61010-1 UL: 61010-1:2004, CSA: C22.2 No. 61010-1:2004, FCC: Part 15 Subpart B, Class B
Approvals and certifications	U.S. EPA PM-2.5 Equivalent Monitor EQPM-0609-182 U.S. EPA PM-10-2.5 Equivalent Monitor EQPM-0822-207 U.S. EPA PM-10 and Equivalent Monitor EQPM-0822-208 TÜV PM-2.5 and PM-10 Equivalent Monitor

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 products.

USA
27 Forge Parkway
Franklin, MA 02038
Ph: (508) 520-0430
Fax: (508) 520-2800
orders.aqi@thermofisher.com

India
C/327, TTC Industrial Area
MIDC Pawane
New Mumbai 400 705, India
Ph: +91 22 4157 8800
india@thermofisher.com

China
+Units 702-715, 7th Floor
Tower West, Yonghe
Beijing, China 100007
Ph: +86 10 84193588
info.eid.china@thermofisher.com

Europe
Ion Path, Road Three,
Winsford, Cheshire CW73GA UK
Ph: +44 1606 548700
Fax: +44 1606 548711
sales.epm.uk@thermofisher.com

Find out more at **thermofisher.com**

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