



PRODUCT BULLETIN TEOM - FDMS Upgrade Kits

The Series 8500 Filter Dynamics Measurement System is composed of a TEOM Series 1400a Ambient Particulate monitor combined with special operating software and the FDMS hardware. To allow current users of TEOM Series 1400a (Revision B) monitors, to upgrade the FDMS kit can be added to an existing installation. Please refer to the product brochure and features sheet for additional information about the FDMS systems capabilities. With the popularity of the Series 8500 Filter Dynamics Measurement System, Thermo Electron Corporation has invested additional engineering resources to integrate the system's hardware components

System Integration

The procedure for adding the FDMS kit to a TEOM Series 1400a (Revision B) monitor depends upon the type of flow controllers currently in the instrument:

- **First-Generation Mass Flow Controllers:** Adding the FDMS kit to the TEOM monitor involves the installation of a second-generation flow controller assembly in place of the first-generation flow controller assembly, and the use of other kit components to integrate the system. The time required for this installation generally averages about two to three hours work which we prefer to do at our service workshop however it can also be done successfully in the field. Second-generation mass flow controllers provided by Air Monitors on an exchange basis require the return of the original first-generation flow controller assembly. For early Series 1400a (Revision B) instruments, the upgrade to a second-generation mass flow controller assembly may require an updated interface board
- **Second-Generation Mass Flow Controllers:** Combining the FDMS kit with the TEOM monitor only requires the basic kit components. It requires separate exit ports (from the TEOM control unit) for the main and bypass flows. The photos below show the flow paths for the main and bypass flows within and outside of

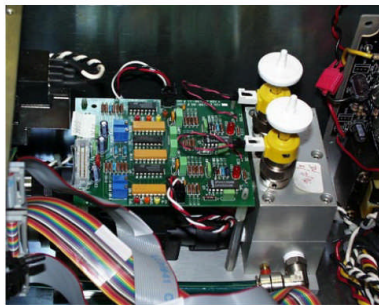
Copyright Air Monitors Limited 2006

- U.S. and international patents granted and pending.
- TEOM and FDMS are registered trademarks of Thermo Electron Corporation.

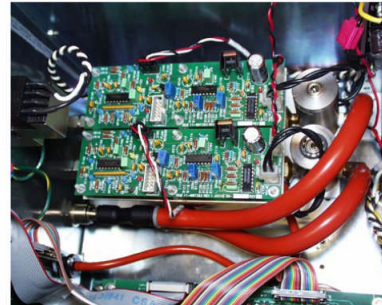
the control unit. The installation time in this case averages about two hours, and can be carried out on site.

How to Identify Flow Controller Types

First-generation mass flow controllers are typified by two white filters (see photo), and were included in TEOM Series 1400a (Revision B) monitors shipped prior to February 2001. This corresponds to instrument serial numbers 140AB234170011 or below, unless a monitor has already been upgraded to include second-generation mass flow controllers. Second-generation mass flow controllers contain separate exit hoses for the main and bypass flows (see photo).



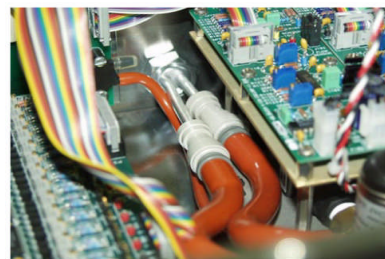
1st Generation Flow Controller



2nd Generation Flow Controller



Back Panel of Control Unit, Showing Flow Inputs on Left (Unchanged), and Revised Flow Exhaust on Right Using Parts from FDMS Kit.



Main and Bypass Flows Pass Separately through Back Panel Adapter in the Control Unit.

- If you are interested in an upgrade please find your TEOM's serial number which can be found on the rear of the control box and begins 140AB-xxxxxxxx.
- If it is not possible to upgrade contact us for details of trade in deals for your existing PM monitors.
- Upgrade advice is available via our helpline on 01452 849111 or by email at enquire@airmonitors.co.uk. You can also access many resources regarding FDMS and PM monitoring in general at www.airmonitors.co.uk

Copyright Air Monitors Limited 2006

- U.S. and international patents granted and pending.
- TEOM and FDMS are registered trademarks of Thermo Electron Corporation.