

# DUSTTRAK™ Aerosol Monitor

Now With  
Analog and  
Alarm  
Outputs

Avoiding employee exposure to potentially harmful liquid or solid particles requires accurate and consistent ambient aerosol measurements. TSI's DUSTTRAK™ Aerosol Monitor provides reliable exposure assessment by measuring particle concentrations corresponding to PM10, PM2.5, PM1.0 or respirable size fractions.

The DUSTTRAK is a portable, battery-operated laser photometer which gives you a real-time digital readout with the added benefits of a built-in data logger. Suitable for clean office settings as well as harsh industrial workplaces, the DUSTTRAK detects potential problems with airborne contaminants such as dust, smokes, fumes and mists.

The DUSTTRAK is easy to use, too. You can perform quick spot checks or you can program the advanced logging modes for long-term sampling. You can program the start/stop times, recording intervals and other parameters. You can even set up the instrument for continuous unattended operation.

The DUSTTRAK's new continuous analog output and adjustable alarm output allow remote access to real-time particle concentration data. Applications include site perimeter monitoring, ambient monitoring, process area monitoring and other remote uses. The alarm output with user-defined setpoint alerts you when upset or changing conditions occur. This feature allows you to program a switch closure at a concentration value of your choosing.

The DUSTTRAK provides a real-time measurement based on 90° light scattering. A pump draws the sample aerosol through an optics chamber where it is measured. A sheath air system isolates the aerosol in the chamber to keep the optics clean for improved reliability and low maintenance.



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# Model 8520 DUSTTRAK Aerosol Monitor Specifications

<b>Sensor type:</b>	90° light scattering
<b>Range:</b>	0.001 to 100 mg/m <sup>3</sup> (Calibrated to ISO 12103-1, A1 test dust)
<b>Resolution:</b>	1% of reading or 0.001 mg/m <sup>3</sup> , whichever is greater
<b>Zero stability:</b>	0.001 mg/m <sup>3</sup> over 24 hours using 10 second time constant
<b>Particle size range:</b>	0.1 to approximately 10 micrometers
<b>Flow rate:</b>	Adjustable 1.4 to 2.4 l/min (1.7 nominally)
<b>Temperature coefficient:</b>	+0.001 mg/m <sup>3</sup> per °C (for variations from temperature at which the DUSTTRAK was zeroed)
<b>Operating temperature:</b>	32° F to 120° F (0°C to 50°C)
<b>Storage temperature:</b>	-4° F to 140° F (-20°C to 60°C)
<b>Operating humidity:</b>	0 to 95% rh (non-condensing)
<b>Time constant:</b>	Adjustable from 1 to 60 seconds
<b>Data logging:</b>	31,000 data points (21 days of logging once/minute)
<b>Logging interval:</b>	Adjustable from 1 second to 1 hour
<b>Physical:</b>	
<b>External dimensions</b>	8.7 in. × 5.9 in. × 3.4 in. (221 mm × 150 mm × 87 mm)
<b>Instrument weight</b>	3.3 pounds with batteries (1.5 kg)
<b>Serial Interface:</b>	RS-232 1200 baud
<b>Power:</b>	
<b>AC</b>	AC adapter (included)
<b>Battery</b>	Four C-size batteries (included)
<b>Battery run-time</b>	Alkaline 16 hours

## Analog Output Specifications

<b>Analog output voltage:</b>	0 to 5 VDC
<b>Analog output scaling<sup>1</sup>:</b>	0 to 100 mg/m <sup>3</sup> 0 to 10.0 mg/m <sup>3</sup> 0 to 1.00 mg/m <sup>3</sup> 0 to 0.100 mg/m <sup>3</sup>
<b>Output impedance:</b>	0.01 ohm
<b>Maximum output current:</b>	15 mA

## Alarm Output Specifications

<b>Type:</b>	Non-latching, MOSFET solid state (polarized) <sup>2</sup> analog switch
<b>Setpoint range<sup>1</sup>:</b>	0.010 to 100 mg/m <sup>3</sup>
<b>Maximum voltage:</b>	15 VDC
<b>Maximum current:</b>	1 Amp
<b>Deadband:</b>	-5% of alarm setpoint
<b>Connector:</b>	4-Pin, Mini-DIN connector

<sup>1</sup> User selectable through TRAKPRO™ Data Analysis Software.

<sup>2</sup> See TSI Application Note IT1 - 074 for important wiring information.

## How to Order

Model	Description
8520	The DUSTTRAK Aerosol Monitor and accessories includes: Auxiliary Analog and Alarm Outputs, Carrying Case, Alkaline Batteries, TRAKPRO™ Data Analysis Software, Filter, Computer Cable, 25-pin to 9-pin Adapter, Operation Service Manual, Calibration Certificate, 10 mm Nylon Dorr-Oliver Cyclone, Inlet Conditioning Kit 1.0 and 2.5 µm, Sampling Extension Tube, Miscellaneous Service Tools and Two-Year Warranty.

## Optional Accessories

Model	Description
8520-1	Environmental Enclosure



The DUSTTRAK comes complete with TSI's TRAKPRO™ Data Analysis Software to allow you to perform a more comprehensive analysis of your measurement results. This exclusive Windows®-based program helps you generate the detailed graphs and reports needed to effectively communicate your findings.



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