

DUST MASTER PRO

FIVE CHANNEL PARTICLE COUNTER

*DMP7000
SERIES*



TES DUST MASTER PRO 7000 SERIES

The Dust Master Pro 7000 is a reliable and user friendly Real Time Five Channel Particle Counter manufactured in Australia to the highest standards. The DMP7000 simultaneously measures Total PM, PM10, PM7, PM2.5 and PM1 using laser technology and has a 5LPM flow rate that ensures even heavier particles remain entrained and are read and captured onto the 37mm filter.

The DMP7000 has been designed around ease of operation with key features including remote data download and the new Visual Master Pro software which allows users to control the instrument and its functions remotely. Two programmable alarm relays allow the user to activate a process or set dust and/or wind thresholds (add Lufft weather sensor) and be alerted by SMS, visual or audio alarms when breached.

The DMP7000 has increased durability with features including surge and reverse polarity protection and a 500mm heated inlet and moisture trap to eliminate moisture interference and damage. These features guarantee prolonged instrument life and the most accurate dust readings

VISUAL MASTER PRO

VMP is TES's new Microsoft based software designed to enhance ease of remote operation for our customers. VMP brings the front screen and keypad of your DMP7000 to your desktop, allowing you to control your instrument with the click of a mouse from your own office. VMP allows you to view data, check and change settings or start and stop the instrument without having to visit site. VMP is compatible with Windows 7, 32bit and 64 bit PC's.

ADDING METEOROLOGICAL SENSORS

Eliminate the need for costly data loggers by connecting a weather sensor to your Dust Master Pro. Choose from a wide range of meteorological sensors from Lufft. Any number of parameters can be logged by the DMP7000 including Wind Speed and Direction, Precipitation and Solar Radiation.

APPLICATIONS

AS/NZ 3580.99 Standard Compliance, Background studies, Mining Operations, Roadworks and Construction.

ANNUAL CALIBRATION

TES offer the unique facility of returning only the optical engine for calibration in lieu of the entire monitor. Once calibrated, the optical engine, two new pumps and a replacement internal filter are returned to the customer who then performs a temperature, pressure and flow calibration to complete the annual calibration. Alternatively, TES can perform the entire annual calibration.

SITE CORRELATION

To allow for site correlation TES supply three pre-conditioned and weighed filters to be used for one week of sampling to correlate optical TWA to actual mass. Once returned to TES each filter is again conditioned and weighed and TES can then provide you with your specific site K-Factor. Unique to the DMP7000 is the ability to correlate each channel individually.

INLET JETS

TES DMP7000 Standard Configuration: Total PM, PM10, PM4, PM2.5 & PM1. Other channels available upon request.

- Accurate Real-Time Dust Readings
- Full Gravimetric Sample on 37mm Filter (Compliant with AS/NZ 3580.9.9)
- Remote Control via 3G Modem (Optional)
- Meteorological Sensor Compatibility and Logging (Optional)

- 500mm RH Controlled Heated Inlet (Removes Fog & Moisture from Sample)
- Total PM, PM10, PM4, PM2.5 & PM1 Fractions
- 12 Month Standard Warranty
- All TES products are available for long and short term rental



Model 7100
Battery Powered Unit
(Standard or Portable
options available)



Model 7150
Mains Powered Unit
(Waterproof)



Model 7200
Solar Powered Unit
(inc. battery, solar panel
and regulator)

DUST MASTER PRO

FIVE CHANNEL

PARTICLE COUNTER

DMP7000 SPECS

DUST MASTER PRO 7000 SPECIFICATIONS

Particle Size Sensitivity

0.1um to 500um

Dust Measurement Range

0.001 to 150mg/m³

Simultaneous PM Fraction Measurements

Simultaneously measures all popular PM fractions; PM1, PM2.5, PM4, PM10 and Total PM electronically with no need for individual inlets. Other PM fractions available upon request

Individual K-Factors for each fraction

TES provide inlets for each size fraction offered. This combined with our unique ability to assign a K-Factor to each size fraction allows size specific correlation.

Lower Detection Limit

0.2um (200nm)

Measurement Resolution

0.000001mg/m³ (0.001ug/m³)

Flow Rate

5.0 litre per minute (default), user adjustable from 1.5 to 8 lpm

Dual Pump System

Features dual pumps, one for zero calibration each 30 minutes, the other for aerosol sampling

Flow Accuracy

Precision automatic flow control to within +/- 1%

Temperature Coefficient

+0.001 mg/m³ per deg C

Temperature Compensation

2 precision sensors (internal & external) for flow compensation and sample humidity control

Barometric Pressure

Built-in barometer for ambient static pressure measurements for precise flow control

Sensing Technology

Precision optical particle counter utilizing 660nm light source with long life laser diode technology. Auto laser light level sensing and adjustments.

Display Type

128 x 64 bit low energy graphical LCD display

Keypad / User Interface

12 button function with keys

Security

Fully lockable keypad with password security

Gravimetric Filter Sampling

Integrated filter holder, 37mm filter cartridge

Internal Data Logging

4MB internal data logging with full flash memory backup. (Once a minute logging for 6 months (dust only). Time and date stamped and capable of logging data from the various analogue and digital inputs

Data Logging Interval

Fully user adjustable from 5 to 999 seconds

Extended Data Logging

TES are happy to cooperate with other data logger suppliers to allow integration of our system into existing networks.

Optics Protection

Laminar gap

NIOSH 5040 Capable Sampling

Yes, using 37mm filter cassette

Data Download

Data can be polled or automatically and continually pushed to your server.

Power Requirements

Instrument draws only 290mA without the heated inlet operating and 1.1 amps with the heated inlet & back-light on. Allow for additional 1.3 amps if modem, met and relays are active.

Power Options

Mains Power, Battery Power or Solar Power (all waterproof)

Mains Power - Operates from 80 to 260 VAC and is fully weatherproof.

Battery Power - Standard or Portable. Includes rechargeable battery, regulator and battery box.

'Standard Battery System' provides approx. 210 hours of operation with the inlet heater OFF or 70 hours with the inlet heater ON.

'Portable Battery System' provides approx. 48 hours of operation with the inlet heater OFF or 12 hours with inlet heater ON.

Solar Power System provides continuous operation based on average of >4.5 hours of sunlight per day, and will continue for up to 3 days no sun. System includes Solar Panel & Stand, Battery & Battery box, Regulator

Meteorological Inputs

Multiple channels including wind speed, wind direction, humidity, temperature, precipitation, barometric pressure, solar radiation, evaporation, sigma theta, lightning & more.

Digital Inputs

3 optically isolated inputs, voltage free

Relay Contacts

3 relay contacts (NC/COM/NO)
Alarm 1 set point
Alarm 2 set point
Instrument fault alert

Communications

2 x RS232 digital ports, RS485/ RS422, CAN bus and analogue

Inputs

2 x RS232, RS485, 2 x Analogue Inputs (0 to 5 volt or 4-20mA [jumper selectable]), 2 x Counter Channels, 2 x PT100 & SHT75X Inputs Included.

Outputs

3 x Analogue Outputs (0 to 5 volt or 4-20mA [jumper selectable]), RS232 Output/Ethernet/USB/SD Flash. 3 x Solid State Relays for Audio and Visual Alarms

Alarm Capabilities

3G / NEXTG SMS messaging to mobile phone, external siren, visual beacon and text to email

Enclosure Type

NEMA4 / IP66 rated, excluding heated inlet and exhaust

Tripod or Post Mounting

May be easily mounted on a 50mm diameter post or on TES transportable heavy duty tripod

Heated Inlet Option

Precision heated inlet option controls inlet temperature to ensure sampling at 45% Relative Humidity.

Calibration Method

Fully calibrated to ISO12103-1 international standards by TES

Web Based Data Collection

Optional

Weight

System	7Kg
Heated inlet	1.0Kg

Dimensions - System

Width	300mm
Depth	200mm
Height	350mm

Dimensions - Heated Inlet

Length	500mm
Width	48mm

Operating Conditions

-10 to 50 deg C temperature range
0 to 95% humidity range

DUST MASTER PRO 7000



Portable or Fixed Monitors

DMP7000 ACCESSORIES

- TES Heavy Duty Tripod
- 3G Modem
- SMS, Visual, Audio Alarms
- 37mm Filters
- Lufft (German Brand of the Century, 2013) Meteorological Sensors
- Mesa BIOS & BGI Flow Calibrators
- Additional Inlets

TES PRODUCT RANGE

MET MASTER PRO 1000

Meteorological Data Logger

FILTER MASTER PRO 5000

Low Volume Air Sampler

DUST MASTER PRO 6000

Real Time Single Channel Photometer

DUST MASTER PRO 7000

Real Time Five Channel Particle Counter

DIESEL MASTER PRO 8000

Real Time Single Channel Photometer, Sub Micron Diesel Particulate

DIESEL MASTER PRO 9000

Real Time Three Channel Particle Counter, Sub Micron Diesel Particulate

HIGH VOLUME MASTER PRO

High Volume Air Sampler



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