

XPS TITAN-DPM

Diesel Particulate Matter Monitor

- Faraday Cup Electrometer Unipolar Diffusion Charger
 - Diesel Particulate Matter and Elemental Carbon
 - 10 nanometre to 1 micrometre
- Optical Particle Counter – PM1.0, PM2.5, PM4.25, PM10 & TSP
- Monitor up to 8 gases – CO, CO2, SO2, H2S, VOC, LEL, NO, NO2 and O2.
- Heat Stress
- Ambient weather monitor
- Wind Speed and Wind Direction
- Sound Pressure Monitor (noise)
- On-board touch screen for gravimetric correction factor entry, maintenance and calibration.
- On-board Audio and Visual Alarm
- 2 years of local datalogging



APPLICATIONS

- Mining
- Construction
- Earth moving
- Tunnels & underground construction
- Road-side monitoring
- Vehicle maintenance facilities
- Ports, rail yards & transport facilities
- Large area monitoring projects

OVERVIEW

The XPS TITAN-DPM is a new-generation, real-time diesel particulate matter (DPM) and ultrafine particle monitor. It combines two different particle-measurement technologies in a single instrument, allowing it to monitor the main chemical components of Diesel Engine Emissions (DEE), including particulate matter down to 10 nanometres and toxic gases.

XPS TITAN- DPM – “Any pollutants. Every requirement. All in one.”

A comprehensive real-time diesel exhaust and particulate monitoring station — from ultrafine particles through to conventional dust fractions, with gases and environmental parameters available from the same platform.

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Power Supply	24 VDC
Rated Power	22 Watts
Operating Temperature	0°C to 50°C
Operating Humidity	0-95% non-condensing

Unipolar Diffusion Charger	10nm - 1um
mDPM (mass concentration)	0-80,000 ug/m3
PN (Particle Count)	0-100,000,000 #/cm3
LDSA (Lung Deposited Surface Area)	0-100,000 um2/cm3
Response time	0.2 s

Particle Size Range	PM1.0, PM2.5, PM4.25, PM10 & TSP
Size categorisation (Standard)	0.35 to 40 um (RI of 1.5 +io) at 24 software bins
Sample flow rate	1.2L/min nominal
Max particle count rate	10,000 count/sec
Detection Limit	1 ug/m3
Detection range	0 – 3,0000 ug/m3
Sampling frequency	1 second
Particle density value	1.65 g/ml

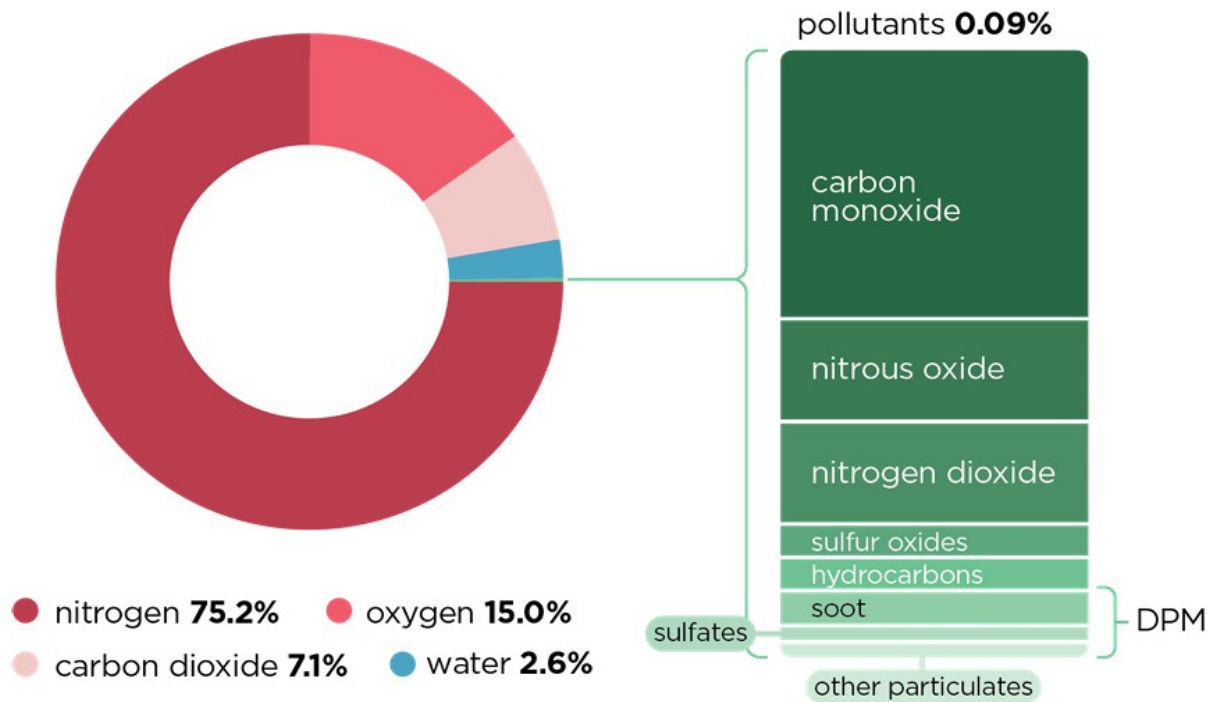
Gas	Range	Resolution	T90 (s)
CO	0-1000 ppm	1	<25
H2S	0-200 ppm	1	<55
O2	0-25% Vol	0.1	<13
CO2	0 - 5% Vol	10	<40
NO2	0 20 ppm	0.1	<60
NO	0-20 ppm	1	<25
SO2	0-100 ppm	1	<60
LEL	0-100% LEL	1	<12
VOC	0-1000 ppm	1	<30

Parameter	Range	Resolution	Accuracy
Wind Speed	0-60 m/s	0.01 m/s	±0.3m/s
Direction	0-360°	0.1 °	±2°
Temperature	-40 to 60 °C	0.01 °C	±0.3 °C
Humidity	0-100% RH	0.01%	±3% RH
Pressure	300 - 1100 hPa	0.1 hPa	±0.5 hPa
Globe Temperature	0 - 60 °C	0.1 °	±2°

Range	30-130 dB (A)
Resolution	0.1 dB
Sensitivity	12.6mV/Pa
Microphone	1/2 Inch
Directivity	Omnibearing

Connectivity	
SCADA Integration	MODBUS TCP/IP, MODBUS - RTU
Upload	Cellular, WiFi and Ethernet
Upload Protocol	FTP, MQTT, MQTTs

Main chemical components of Diesel Engine Emission (DEE)

Figure 1: Composition of diesel engine emissions¹

¹ Mollenhauer, K. and Tschöke, H. eds., 2010. *Handbook of diesel engines (Vol. 1)*. Springer, Berlin.

*** Image extracted from Safe Work Australia “managing the risks of exposure to diesel engine emissions in the workplace – June 2026”

DASHBOARD

Connectivity – Cellular, WiFi and Ethernet Data Transfer Protocol – FTP, MQTT, MQTTs

Upload interval – 1 minute to Dustech.Live Server or Customer Server

Hierarchical User Management, three (3) classifications of alerts via SMS and/or e-mails, data download and automatic report generation using Dustech Dashboard

*** Dustech Dashboard – Access via subscriptions.

