TROLEX

ONE LIFE.
PROTECT IT.

AIR XXD

DATA SHEET

GENERAL PURPOSE

MAIN FEATURES

- Real-time, continuous measurement of atmospheric dust concentration
- High-reliability, low-maintenance for high dust environments
- High capacity OPC
- Industry standard sizing PM1.0, PM2.5, PM.4.25 and PM10
- Low-end resolution measuring down to 0.35 µm with 99.9% capture
- Ability to display TSP measurement reading
- Quantification of particle size categories to customer requirements (custom sizing)
- Operational stability in varying environment and atmospheric conditions
- On-device display readout
- Choice of display modes: ‘Live’ readout or configurable ‘Averages’
- 2 x configurable relay output contacts for remote alarms and control functions
- 2 x 4 mA to 20 mA analogue output signals of measured averages
- Remote RS485 MODBUS RTU Serial I/O interface
- Ethernet MODBUS TCP/IP output
- High visibility warning indicators
- ‘Plug and play’ installation

PRODUCT OVERVIEW

The TX8005 **AIR XD Dust Monitor** is designed to provide detailed, accurate, real-time data on airborne particulates so that users can take appropriate actions to stay safe and ensure personnel are fully protected from particulate-related health hazards.

The **AIR XD** allows users to simultaneously monitor multiple particulate matter (PM) sizes (PM1.0, PM2.5, PM4.25, PM10, as well as custom sizes) and can report on Total Suspended Particulates (TSP).

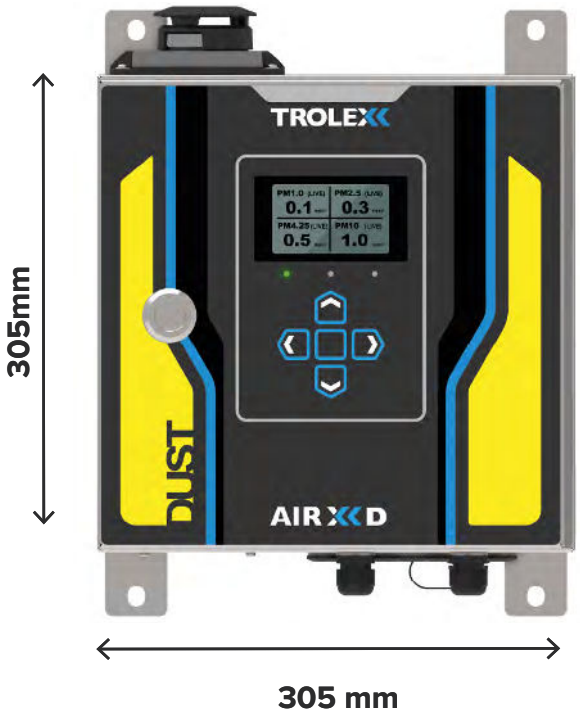
Precise data is collected for measurable particulates, enabling detailed size profiling and analysis using the application software.

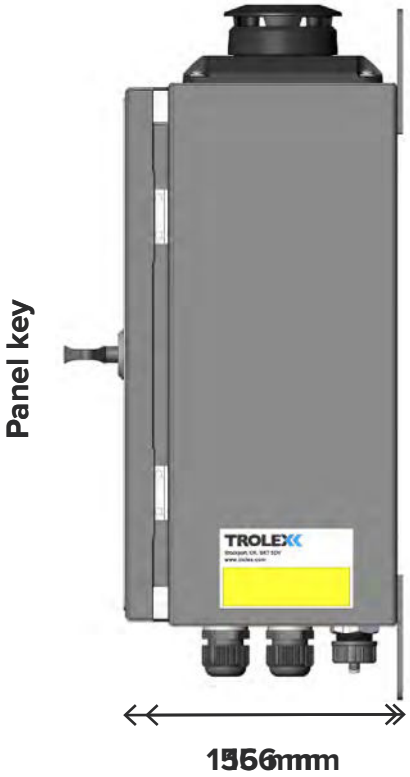
The **AIR XD** uses an innovative Optical Particle Counter (OPC) that combines adaptive particle flowrate with advanced sensing technology to ensure a high level of measurement accuracy. The size of each particle is instantaneously measured and classified at up to 10,000 samples per second to allow detailed real-time reporting in high dust environments.

As the **AIR XD** records data on all particulates between 0.35 µm and +40 µm, users can easily access and view detailed information about a wide range of PM sizes.

Measurement information can be viewed via the instrument display or as live or historical readings using the **Breathe** application software or Environet software.

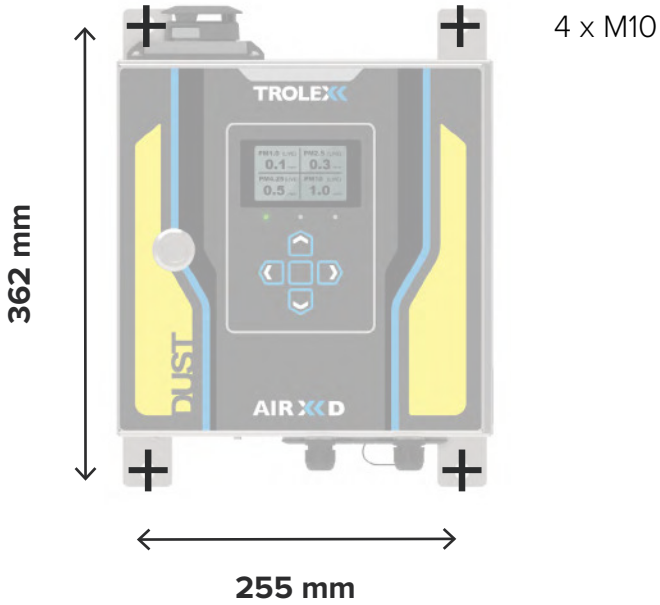
PRODUCT DIMENSIONS





PRODUCT MOUNTING

Ensure the **AIR XD** is mounted vertically during installation.



PARTICULATE SENSING PARAMETERS

PM size range	PM1.0, PM2.5, PM4.25, PM10 + TSP
TSP range	Up to +40 µm displayed in mg/m^3 or $µg/m^3$
Extended range	TSP indicative up to 150 µg displayed in mg/m^3 or $µg/m^3$ 150 mg/m^3
PM measurement range	0.35 µm to +40 µm over 24 bins
PM measurement capability*	Up to 1500 mg/m^3
PM continuous operating range**	Up to 25 mg/m^3
PM density	0.8 g/ml to +8.0 g/ml (default: 1.65 g/ml)
PM measurement units	mg/m^3 or $µg/m^3$
Averaging period	1 second to 24 hours
Averaging channels	~1.5 l/m (nominal)
Sampling interval	± 25%
Particle count	Up to 10,000 (particles/second)
Flow rate	Dynamic (1.2 l.min nominal)
Total flow rate	5.5 l/min (typical)
Accuracy	± 5%

*The instrument can define particulate measurement peak trends up to the quantity specified.

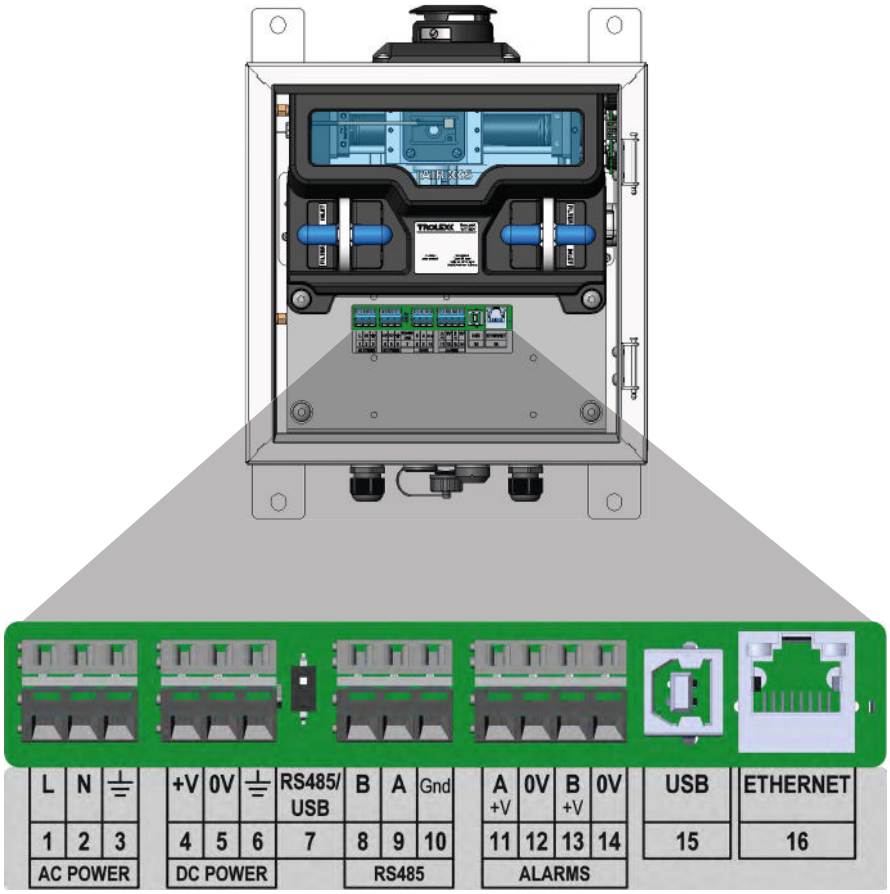
**During sustained high dust loading periods, the instrument will report on PM data up to the quantity specified.

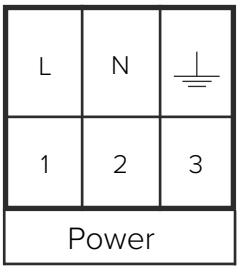
Note: Sustained exposure to PM quantities above 25 mg/m^3 will be logged; however, this may affect the operating life of the OPC.

TECHNICAL SPECIFICATION

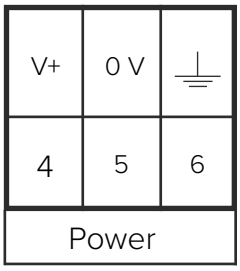
Ambient temperature limits	-10 °C to +45 °C
Humidity	0 to 95% RH (non-condensing)
Protection classification	Main enclosure, dust and waterproof: IP66 Particulate flow path (cap open): IP22 Particulate flow path (cap closed): IPX6
Housing material	Polymer coated stainless steel
Weight	8.2 kg
Cable entries	5 x M20 with removable blanks 1 x M20 USB connector
Power	+100 V to +240 V ac 50/60 Hz +9 V to +36 V dc
Supply current	100 mA nominal ac 660 mA nominal dc
Power consumption	6 W
Inrush current	350 mA peak
Relay outputs	2 x configurable (alarm outputs) Dry contact Maximum rating 36 V ac/dc 300 mA (internal overcurrent and overvoltage protection fitted
4 mA to 20 mA outputs	2 x configurable (real time or average readings) R1 and R2 with adjustable setpoints Maximum attached load: 280 Ω
Communications	RS485 data output with MODBUS RTU protocol Ethernet (MODBUS TCP/IP)
Data download	External USB interface
Instrument data storage	8 GB > 10 years (log rate dependent) Stored device data can be cleared as required
User interface	128 x 64 dot matrix display with RGB backlight
Visual alarms	Display RGB backlight
Indicators	1 x green high brightness LED – sensor heartbeat 1 x blue high brightness LED – communications

ELECTRICAL CONNECTIONS





ac power



dc power

ac power in		dc power in		Outputs			
1	Live	4	Supply voltage	7	RS485/USB switch	11	Supply voltage
2	Neutral	5	0 V	8	RS485 B	12	0 V
3	Earth	6	Earth	9	RS485 A	13	Supply voltage
				10	RS485 0 V	14	0 V
						15	USB
						16	Ethernet

CERTIFICATION AND CONFORMITY

Compliance

The **AIR XD** complies with the following European Union directives:

Electromagnetic Compatibility (EMC) Directive 2014/30/EU

Low Voltage Directive (LVD) 2014/35/EU

EN 61326-1:2013
EN 61000-6:2:2019
EN 61000-6-3:2007+A1:2011

Low Voltage Directive (LVD) 2014/35/EU

EN 61010-1:2010

RoHS COMPLIANT

RoHS 2 Directive 2011/65/EU

ORDER REFERENCE

Option	Description
TX8005.00.03.01.01.00	GP AC/DC
TX8005.00.03.01.01.01	GP Wireless Ready AC/DC
TX8005.00.03.01.01.02	GP Wireless Ready AC/DC + 1 year data and software
TX8005.05.02.01.01	MASC Grp I
TX8005.06.02.01.01	ATEX Grp I
TX8005.19.02.01.01	ATEX + IECEx Grp I
EXTWARRANTY2	2-year Extended warranty (3 years total)
P5628.5000	Transportable Pack (Tripod, Mounting Plate + Battery Pack)
P5628.5001	Tripod Kit (Tripod + Mounting Plate)

Option	Description
P5628.4000	Compliance Pack+ (4 x Samples, 4 x Applicators, 1 x Hood)
P5644.4004	Sample Replacement Kit (12 x Samples + 12 x Applicators)
P5628.800.001	Breathe Software License Online (Annual license per device)
P5642.5000	Spare Battery for Transportable Pack
P5675.100	X Series Connection Hub
P5675.101	X Series Connection Hub + Data Platfrom (Annual subscription)
P5675.201	Data Platform (Annual subscription)
P5675.200	X Series Connection Hub (2-year warranty)
P5625.19.01	Replacement display
P5628.156	GP Duct with Sensor
P5628.100.02	Grp I Duct with Sensor

DISPOSAL

Waste of Electrical and Electronic Equipment (WEEE) Directive (2012/19/EU)

The **AIR XD** operates a protective thermal cut-out sequence when the temperature inside the instrument exceeds the maximum operating temperature specification, detailed in **section 7**. This protective measure is in place to maintain the lifespan and operating functionality of the optical sensor assembly when the **AIR XD** is installed in environments with high ambient temperatures.

This symbol, if marked on the product or its packaging, indicates that this product must not be disposed of with general household waste.

In the European Union and many other countries, separate collection systems have been set up to handle the recycling of electrical and electronic waste.

At the end of the product's life, do not dispose of any electronic sensor, component or instrument in the domestic waste. Contact Trolex or the distributor for disposal instructions.

DISCLAIMER

The information provided in this document contains general descriptions and technical characteristics of the performance of the product. It is not intended as a substitute for and is not to be used for determining suitability or reliability of this product for specific user applications. It is the duty of any user or installer to perform the appropriate and complete risk assessment, evaluation and testing of the products with respect to the specific application or use. Trolex shall not be responsible or liable for misuse of the information contained herein. When instruments are used for applications with technical safety requirements, the relevant instructions must be followed.
All pertinent state, regional, and local safety regulations must be observed when installing and using this instrument. For reasons of safety and to help ensure compliance with documented system data, only Trolex or its affiliates should perform repairs to components.

Trolex Ltd. reserves the right to revise and update this documentation from time to time without obligation to provide notification of such revision or change. Revised documentation may be obtainable from Trolex.

Trolex Ltd. reserves the right, without notice, to make changes in equipment design or performance as progress in engineering, manufacturing or technology may warrant.

TRADEMARK

At Trolex, we save lives.

We believe that no person should risk their life to earn a living.

Our aim is to become the world's leading name in health and safety technology, through pioneering products that provide real-world benefits to our customers, whenever workers operate in hazardous environments.

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