



AirMetER-AX

MULTIPARAMETER AIR QUALITY MONITORING STATION

User Manual



Before operating the unit, please read this user manual thoroughly and retain for future reference.

Revision | July 2026

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WARNINGS, CAUTIONARY STATEMENTS & IMPORTANT INFORMATION

Throughout this manual any warnings, cautionary statements or notes of importance are identified using the following symbols:

	IMPORTANT INFORMATION
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WARRANTY & SERVICE

Air-Met Scientific maintains instrument service facilities nationwide. Should your instrument require service, you may contact us on **1800 000 744** or at service@airmet.com.au. Alternatively, instrument service may be booked by completing our online service request form at the following URL:

<https://www.airmet.com.au/services/book-a-service>

For non-warranty repairs, a purchase order number will be required. All instruments submitted for repair will undergo evaluation by a service technician and a quote for works required will be issued, for approval, before any service proceeds.

Please note that, if a service quote is declined, a charge for instrument assessment may apply.

Air-Met Scientific's policy is to perform all repairs required to restore the instrument to full operating condition, including replacement of sensors and batteries (as applicable) that have exceeded the recommended service life, and the completion of any manufacturer issued service dispositions.

The unit for repair may be sent to your local Air-Met Scientific branch office. Pack the instrument and all its accessories (preferably in its original packing). Include any special instructions, your contact and company details and a description of the fault. Repairs are warranted for 90 days from the date of shipment. Sensors and other consumables have individual warranties.

	Air-Met Scientific assumes no liability for work performed by unauthorised service facilities.
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The product specified in this manual is warranted against faulty workmanship for a period of 12 months, from the date of dispatch.

Our obligation assumed under this warranty is limited to the replacement of parts which, by our assessment, are proved to be defective and have not been misused, carelessly handled, defaced or damaged due to incorrect installation or operation. This warranty is VOID where the unit has been tampered with or if repairs have been made or attempted by anyone except an authorised representative of the manufacturing company.

Products for attention under the terms of this warranty (unless otherwise agreed) must be returned to the manufacturer, freight paid and, if accepted for free repair, will be returned to the customers address in Australia free of charge.

When returning the product for service or repair a full description of the fault and the conditions of operation when the product failed must be given. In any event the manufacturer has no other obligation or liability beyond replacement or repair of this product. Modifications may be made, by the manufacturer, to any existing or future models of the unit as it may deem necessary without incurring any obligation to incorporate such modifications in units previously sold or to which this warranty may relate.

1. OVERVIEW

The AirMetER-AX is a powerful, all in one air quality monitoring station designed to give you complete environmental visibility in a single, streamlined system. Compact, scalable, and built for continuous operation, it delivers accurate multi parameter data that supports confident compliance, smarter site management, and faster decision making in real world conditions.

The AirMetER-AX supports between one and eight gas sensors, multi fraction particulate matter monitoring, general weather measurement, and noise monitoring. This scalable configuration allows customers to tailor the system to their specific monitoring requirements while maintaining a streamlined and efficient installation.

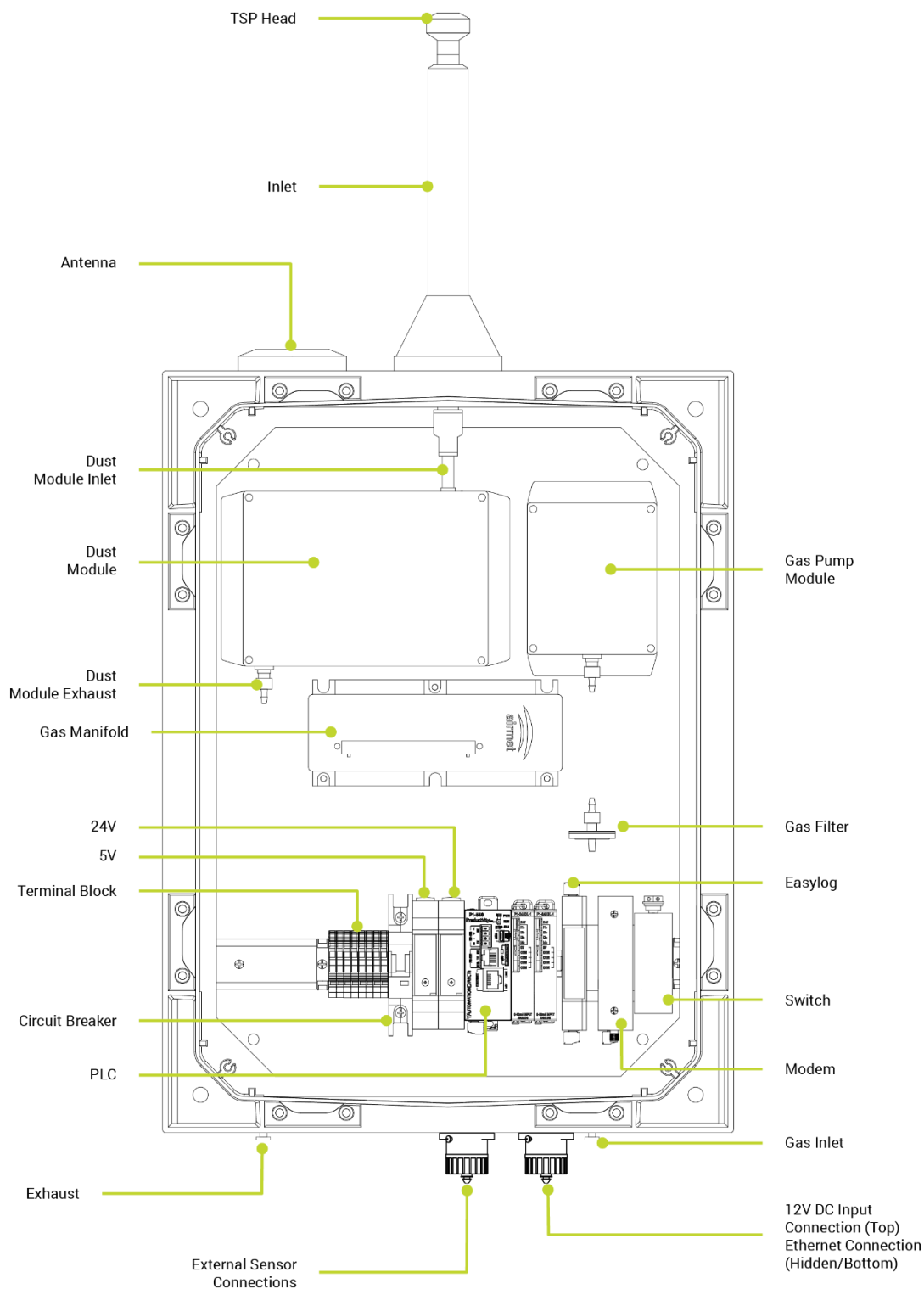
Engineered for durability, the AirMetER-AX is housed in a robust, weather resistant enclosure, making it ideally suited for 24/7 outdoor deployment in demanding environments. High resolution datalogging at one-minute intervals is supported, with both local and cloud based storage ensuring data integrity and long term availability for more than seven years, while seamless integration with Air-Met Scientific's LiveSense portal provides remote access to live and historical data, enabling users to configure custom alerts, access logs, generate reports, and manage sites from desktop and mobile smart devices for complete visibility wherever they are.



AirMetER-AX | Proudly Australian Made

2. MONITOR ASSEMBLY

AIRMETER-AX LAYOUT



Parts may vary according to configuration

4. INSTALLATION



Use of the AirMetER-AX monitor in applications contrary to the conditions of use criteria may present a safety risk and/or void any instrument warranty.

CONDITIONS OF USE

The AirMetER-AX is NOT certified for use in hazardous area classified zones.

The AirMetER-AX is supplied with brackets pre-fitted to support standard pipe-clamp pole mount inserts suitable for installation on standard masts or poles ranging from 40-105mm in diameter. An adjustable spanner or flat-blade screwdriver may be utilised to either tighten or release the pipe clamp to suit the intended structure diameter. Care should be taken during installation to ensure the AirMetER-AX is level and firmly secured.



Figure 4-1 - Mounting Brackets



Figure 4-2 - Pre-Fitted Brackets

LOCATION AND MOUNTING OF MONITOR

Air-Met Scientific recommends the monitor is pole or tripod mounted in an open area free from buildings and other obstructions that may have an influence on measurements.

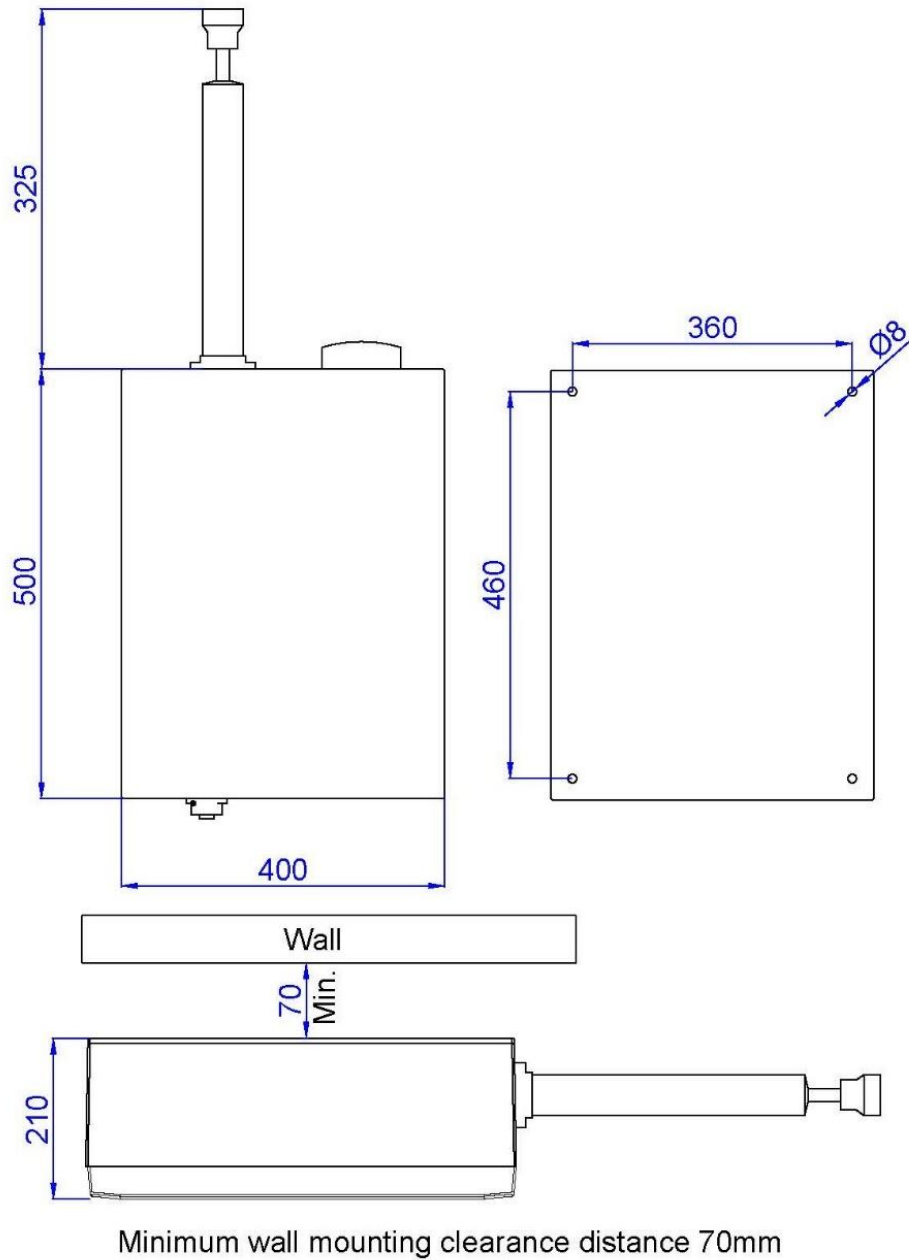


Figure 4-3 - External and Mounting-Point Dimensions (mm)

5. LIVESENSE CLOUD PORTAL

To access the LiveSense cloud platform, enter <https://airmeter.livesense.com.au> into your browser and sign in using the credentials provided to you by your administrator.

The username is generally your e-mail address, unless specified otherwise. If you cannot remember your password, you may utilise the ‘forgot password’ function to reset this. Please note the login username is case sensitive.

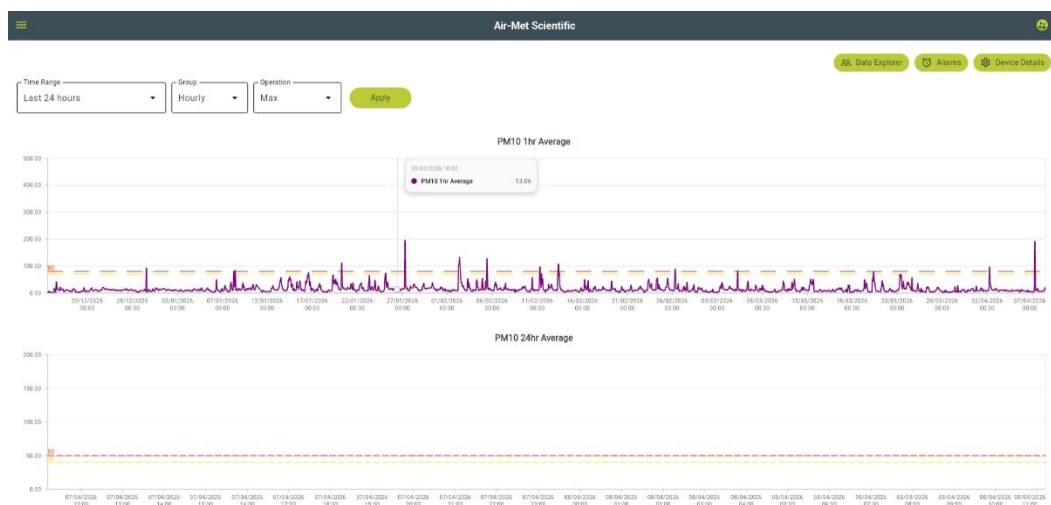


The login page features the AIRMETER logo at the top. Below it are two input fields: 'Email' and 'Password'. The 'Password' field has a toggle icon (an eye) to the right. A green 'Login' button is positioned below the password field. At the bottom, there is a green link that says 'Forgot password?'.

Figure 5-1 – LiveSense Login Page

By default, the instrument will be setup with diagnostic alerts and basic dashboards. Should you wish to modify your platform, please contact Air-Met Scientific's Engineered Solutions team.

For further assistance or troubleshooting, contact engineeredolutions@airmet.com.au



6. MAINTENANCE

MAINTENANCE FREQUENCY

Air-Met Scientific recommends a maximum maintenance interval of 6 months. Service should include full zero and span calibration, assessment of filters for serviceability and functional test of all applicable alarms and outputs.

	Specified maintenance and calibration intervals are recommendations only. A maintenance plan suitable for the application should be discussed internally. Alternatively, Air-Met Scientific can assist with this through a service agreement.
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	Only trained technicians should attempt any disassembly or repairs on the AirMetER-AX.
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ISSUE	SOLUTIONS
I. No air flow at the exhaust	1. Is the dust module plugged in at the top as displayed in Figure 6-16? 2. Is the dust filter blocked and needs replacement? 3. Are there any visible blockages in any of the internal tubing? 4. Check the TSP head and inlet for any signs of a blockage. 5. Ensure the tubing and tube adapters are secured at every join.
II. Air flow at the inlet not within the below tolerance. DXIV 1L/m $\pm 5\%$	1. Is the dust module plugged in at the top as displayed in Figure 6-16? 2. Is the dust filter blocked and needs replacement? 3. Are there any visible blockages in any of the internal tubing? 4. Check the TSP head and inlet for any signs of a blockage. 5. Ensure the tubing and tube adapters are secured at every join.
III. Air flow at the outlet of the last gas sensor is not within the 0.85L/m $\pm 5\%$	1. Are the filters blocked and need replacement? 2. Is the bottom pump module plugged in at the top as displayed in Figure 6-8? 3. Trace the tubing from the gas inlet > water stop filter > bottom gas pump module > all of the installed sensor modules > exhaust t-piece > external exhaust for any signs of leaks or blockages. 1. Follow Flow Rate Calibration section to adjust the flow rate.
IV. Readings are low	2. Is the instrument due for calibration or service? 3. Is the dust module plugged in at the top as displayed in Figure 6-16? 4. Is the dust filter blocked and needs replacement? 5. Are there any visible blockages in any of the internal tubing? 6. Check the TSP head and inlet for any signs of a blockage. 7. Ensure the tubing and tube adapters are secured at every join.
V. Pump not running	1. Is the dust module plugged in at the top as displayed in Figure 6-16? 2. Is the instrument currently powered 3. Check the circuit breaker and power supply.
VI. Data not uploading to LiveSense	1. Is the modem plugged in? 2. Check the circuit breaker and power supply. 3. Is the uSD card installed in the Easylog? 4. Does the instrument have connection to the internet through your specific connection method? (Cellular, Wi-Fi or ethernet) 5. Is the cellular or Wi-Fi antenna correctly installed? 6. Are there any outages in the Telstra 4G coverages?
VII. Instrument not turning on	1. Check the circuit breaker and power supply. 2. Using a multimeter, check that the instrument is receiving 12VDC from the power supply.

FILTER EXCHANGE

The AirMetER-AX can contain up to two filters:

- 9933-05-CQ - Dust filter
- 1756-K-EACH - Gas filter

It is recommended that these filters be exchanged no less than annually. The filters should be monitored and inspected at regular intervals in new applications to gain an insight into how long the filters last before discolouration.

	It should be noted that the frequency of filter exchanges may be affected by the application and location of the device.
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The dust filter (Figure 6-3) is located inside the dust module. After completing the filter exchange it is important to again validate the inlet flow rate to ensure no leaks have been created during this process. The heated inlet flow rate is set to 1L/m $\pm$ 5%, as detailed in the [flow rate calibration](#) section below.

Note: Instruments built after February 2024 do not require the NOx filter.

The gas filter (Figure 6-2) is located in the gas flow path, the gas filter is connected in line at the gas inlet. Once the filter has been exchanged the flow rate of the gas path must be verified. The gas path flow rate should be 0.85L/m $\pm$ 5%, this process is described in the [flow rate calibration](#) section.

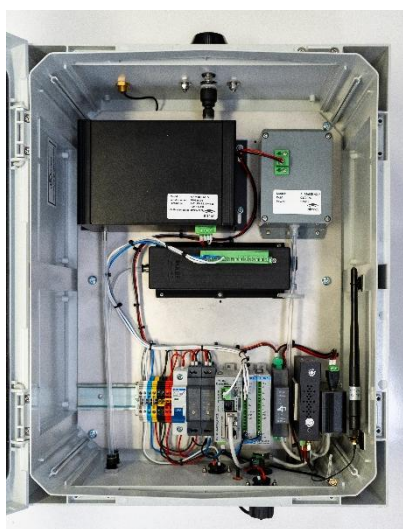


Figure 6-1 - Complete assembly
(parts may vary)



Figure 6-2 - Gas Filter



Figure 6-3 - Dust Filter

TSP HEAD CLEANING

A TSP head should be installed on all inlets at factory and while installed in the field, these need to be periodically cleaned. The time interval between cleaning varies depending on the application and location of the device. It is recommended to clean and check for any blockages within the TSP head and heated inlet assembly during annual routine maintenance.

Some instruments will have a sharp cut cyclone (AE10-2) installed instead of the standard TSP head. These are used in applications where high levels of particulates are found and need to be filtered out as to not damage the sensor.

When the sharp cut cyclone is being used, it needs to be monitored and cleaned at a much higher frequency. This process may be completed using a brush and compressed air if available.



Figure 6-4 - TSP

FLOW RATE CALIBRATION

AXIV FLOW RATE CALIBRATION

The flow rate is actively monitored and reported by the instrument in real-time. Should the flow rate deviate from the performance specification of $1\text{L/m} \pm 5\%$, the device should be reviewed.

Clean the TSP inlet adaptor and heated inlet to clear any potential debris. Should this fail to rectify the flow rate readings, contact your local Air-Met Service department to organise further technical support.

AXIV PARTICULATE SENSOR MODULE REMOVAL & REPLACEMENT

Equipment Required:

- PH screwdriver
- 2mm allen key
- Verified Rotameter capable of displaying 1L/m
- 3/8" flexible tubing
- 2.5mm slotted screwdriver

WARNING:

Do not use a power drill on the particulate sensor module screws as this may cause damage to the instrument. Ensure that the AirMetER-AX is switched off and disconnected from any power source while removing and replacing the particulate sensor module.

1. Remove the outlet tubing from the particulate sensor module by twisting the luer fitting anticlockwise.
2. Using a 2mm allen key, loosen the grub screw to ensure that the heated inlet can slide to assist with step 3.
3. Unplug the tube adaptor from the heated inlet by compressing the orange section inwards. This will release the tube adapter. Slide the heated inlet upward until there is a gap between the heated inlet and tube adaptor.
4. Remove the four screws from the top and bottom of the particulate sensor module.
5. Unplug the green molex connector from the base of the dust module.



Figure 6-5 – Luer Fitting



Figure 6-6 – TSP head



Figure 6-7 – Tube Adaptor



Figure 6-8 – Particulate Sensor Module Screws

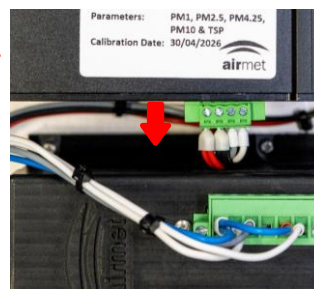


Figure 6-9 – Green Molex Connector

When replacing the particulate sensor module, complete these steps in reverse.

To confirm that the instrument is not leaking after the particulate sensor module replacement, check that the flow rate is still within the required range before covering the inlet with a finger. If there is a build-up of pressure from blocking the end, the leak check has passed.

GAS MODULE CHECK

The gas readings of the AirMetER-AX should be checked on site by bump testing the instrument and verifying the readings on the LiveSense software.

The table below are recommendations only. Should you not have the recommended gas bottles, a suitable alternative should be sourced.

CALIBRATION GAS RECOMMENDATION TABLE

DESCRIPTION	CALIBRATION GAS	DILUTION
Carbon Monoxide Sensor Module Low Range	100ppm CO	100
Carbon Monoxide Sensor Module High Range	100ppm CO from any 4-part gas bottle	N/A
Hydrogen Sulphide Sensor Module	25ppm H ₂ S balance air	100
Ozone Sensor Module	Ozone generator (500ppb)	N/A
Nitric Oxide Sensor Module	10ppm NO	N/A
Oxygen Sensor Module	Fresh air (20.9% & 18%)	N/A
Nitrogen Dioxide Sensor Module Low Range	10ppm NO ₂	100
Nitrogen Dioxide Sensor Module High Range	10ppm NO ₂	N/A
Sulphur Dioxide Sensor Module	10ppm SO ₂	100
Carbon Dioxide Sensor Module	2.5% CO ₂ (zero calibration must be completed using Nitrogen)	100
Photo Ionisation Sensor Module (VOC gases) Low Range	100ppm Isobutylene	100
Photo Ionisation Sensor Module (VOC gases) High Range	100ppm Isobutylene	N/A

FREQUENCY TABLES

CALIBRATION FREQUENCY TABLE

SENSOR TYPE	CALIBRATION FREQUENCY
Particulate Sensor	Yearly
Sound/Noise Monitor	Yearly
Gas Sensor	6 months

FILTER REPLACEMENT TABLE

FILTER DESCRIPTION	PART NUMBER	REPLACEMENT FREQUENCY
Dust Filter (AXIV)	9933-05-CQ	Yearly*
Gas Filter	17576-K-EACH	Yearly*

* Dependent upon the application of the instrument.

MODULE REPLACEMENT TABLE

MODULE DESCRIPTION	PART NUMBER	RECOMMENDED REPLACEMENT CYCLE
Particulate Sensor Module	AMS-AX-IV	2 years
Carbon Monoxide Sensor Module	AMS-AX-1 & AMS-AX-1H	2 years
Hydrogen Sulphide Sensor Module	AMS-AX-2 & AMS-AX-2H	2 years
Ozone Sensor Module	AMS-AX-3 & AMS-AX-3H	2 years
Oxygen Sensor Module	AMS-AX-0	2 years
Nitrogen Dioxide Sensor Module	AMS-AX-4 & AMS-AX-4H	2 years
Sulphur Dioxide Sensor Module	AMS-AX-5	2 years
Nitric Oxide Sensor Module	AMS-AX-6 & AMS-AX-6H	2 years
Carbon Dioxide Sensor Module	AMS-AX-Q	5 years
Photo Ionisation Sensor Module (VOC gases)	AMS-AX-R & AMS-AX-RH	5 years
Noise Monitor Module	AMS-AX-N	N/A
Pump	OPM-6303M-PUMP	2 years

ANNUAL CALIBRATION

In order for the AMS-AX-IV module to be calibrated, it should be returned to the Air-Met Scientific Head Office in Melbourne. For a guide on how to remove the AMS-AX-IV module, please refer to our Particulate Sensor Module Removal and Replacement Quick Guide.

Air-Met Service Facilities perform repair and part services, as well as calibrations and adjustments. Air-Met Scientific offers calibration reminder programs and maintenance contracts for the AirMetER-AX.

For further details, please feel free to contact us:

1800 000 744



engineeredolutions@airmet.com.au



www.airmet.com.au

Alternatively, scan the QR code to locate your nearest Air-Met Scientific office.



7. FIELD PARTICULATE MATTER K FACTOR ADJUSTMENT

Field calibration (K Factor Adjustment) of the AirMetER-AX is an important process to ensure data accuracy with respect to the location of the instrument. Field calibration should not be considered a substitute for factory calibration.

In order to perform a K Factor adjustment a gravimetric sample must be collected relative to the newly installed instrument.

NOTE: Ensure correct methods for conducting a gravimetric sample are followed to ensure an accurate K Factor adjustment – If unsure regarding this process, please contact Air-Met Scientific.

Provide collected data to Air-Met Scientific and a K Factor adjustment may be completed remotely.

8. SPARE PARTS & ACCESSORIES

PART NUMBER	ITEM
AMS-300B-KIT	300Ah LiFePO4 Solar Battery Kit
TF-TM-AML57	5.7m Telescopic Mast
TP-P2	Solar Panel Post Mount Bracket
IPF250	Replacement Solar Panel
TF-TRI-AL	Tripod Mounting
AMS-120B-KIT	120 Ah Lithium Solar Battery Kit
10085	TSP Head
10390-2	Heated Inlet
AMS-LPF-60-12	Power Supply (240V)
AMS-AX-IV	Particulate Sensor Module (PM ₁ , PM _{2.5} , PM _{4.25} , PM ₁₀ and TSP)
AMS-AX-11	Particulate Sensor Module (PM _{2.5} and PM ₁₀)
AMS-AX-1	Carbon Monoxide Sensor Module Low Range
AMS-AX-1H	Carbon Monoxide Sensor Module High Range
AMS-AX-2	Hydrogen Sulphide Sensor Module Low Range
AMS-AX-2H	Hydrogen Sulphide Sensor Module High Range
AMS-AX-3	Ozone Sensor Module
AMS-AX-3H	Oxygen Sensor Module
AMS-AX-4	Nitrogen Dioxide Sensor Module Low Range
AMS-AX-4H	Nitrogen Dioxide Sensor Module High Range
AMS-AX-5	Sulphur Dioxide Sensor Module
AMS-AX-6	Nitric Oxide Sensor Module Low Range
AMS-AX-6H	Nitric Oxide Sensor Module High Range
AMS-AX-Q	Carbon Dioxide Sensor Module
AMS-AX-R	Photo Ionisation Sensor Module (VOC gases) Low Range
AMS-AX-RH	Photo Ionisation Sensor Module (VOC gases) High Range
AMS-AX-N	Noise Monitor Module
9933-05-CQ	Dust Filter
17576-K-EACH	Gas Filter

9. SPECIFICATIONS

GENERAL	
Power Requirement	12VDC
Operating Power	15.6 W (1.3 A @ 12 VDC)
Warm-Up Peak Power	54 W (4.5 A @ 12 VDC) — 2–5 minutes on power-on
Recommended Power Supply	12 VDC @ 5 A (60 W) minimum
Solar System Recommendation	120–150 W panel, 100 Ah LiFePO4 battery, 10 A MPPT controller
Internal Voltage Rails	12 VDC (direct), 24 VDC (via DDR-15G-24), 5 VDC (via DDR-15G-5)
Operating Temperature	0°C to 60°C
Storage Temperature	–40°C to +80°C
Operating Humidity	0 to 80% non-condensing

PARTICULATE MEASUREMENTS (SPECIFICATIONS ARE BASED ON 20°C AND 860 - 1100HPA CONDITIONS)

	AirMetER-AXII (PM _{2.5} & PM ₁₀)	AirMetER-AXIV (PM ₁ , PM _{2.5} , PM _{4.25} , PM ₁₀ & TSP)
Range	0-999.9µg/m ³	0-30,000µg/m ³
Resolution	0.1µg/m ³	1µg/m ³
Relative Error	Max of ±15% and ±10µg/m ³	PM ₁ /PM _{2.5} /PM _{4.25} ±10% of reading PM ₁₀ ±15% of reading TSP ±20% of reading

Up to 1000µg/m³

GAS MEASUREMENTS (SPECIFICATIONS ARE BASED ON 20°C AND 860 - 1200HPA CONDITIONS)

Type	Range	Resolution	Min. Repeatable Detectable Level
CO (low range)	0-10ppm	1ppb	20ppb
CO (high range)	0-300ppm	1ppm	N/A
CO ₂	0-5000ppm	1ppm	15ppm
VOC (low range)	0-20ppm	1ppb	15ppb
VOC (high range)	0-200ppm	0.1ppm	N/A
SO ₂	0-10ppm	1ppb	20ppb
H ₂ S (low range)	0-2ppm	1ppb	20ppb
H ₂ S (high range)	0-100ppm	0.1ppm	N/A
NO ₂ (low range)	0-1ppm	1ppb	20ppb
NO ₂ (high range)	0-20ppm	0.1ppm	N/A
O ₃	0-1ppm	1ppb	20ppb
O ₂	0-25%VOL	0.1%VOL	N/A
NO	0-200ppm	1ppm	N/A

Additional gases are available on request. Contact your local Air-Met Scientific office for more information.

WEATHER SENSOR - Integrated climate sensor for weather monitoring

Wind Speed	0 to 60.0 m/s
Wind Direction	0° to 360.0°
Air Temperature	-40.0 to +60.0°C
Relative Humidity	0 to 100.0%
Barometric Air Pressure	800.0 to 1060.0 hPa
Precipitation	0.00 to 100.00 mm/h

NOISE - Integrated noise monitor using TA150

Range	35.0 to 120.0 dB
Resolution	0° to 360.0°
Accuracy	According to IEC 61672-1 Class 1

COMMUNICATION

PLC or SCADA Integration	Serial RS485
FTP Upload	Cellular, Ethernet or WiFi

ENCLOSURE

Material	Polycarbonate
Dimensions	500mm (H) x 400mm (W) x 210mm (D)
Instrument Weight	15.0kg
Mounting Options	Pole-mount kit supplied (recommended installation method) Wall-mount ~70mm offset required for dust inlet clearance

CONTACT INFORMATION

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