

# AirMetER-AX

## MULTIPARAMETER AIR QUALITY MONITORING STATION

MONITORING SOLUTION FOR PARTICULATE, GAS,  
NOISE, ENVIRONMENTAL CONDITIONS, VIBRATION &  
BLACK CARBON

The AirMetER-AX is a compact, and easy to install air quality monitoring station. The modular design allows the unit to support 1-6 gas sensors, PM<sub>2.5</sub>, PM<sub>10</sub>, PM<sub>100</sub>, general weather conditions, noise, and either vibration detection or black carbon measurements.

Housed in a weatherproof IP66 rated polycarbonate enclosure, the AirMetER-AX is ideal for continuous round the clock outdoor monitoring and has data logging capacity at a minimum of 365 days at one-minute intervals. It also has a built-in log and forward capability to capture 1 week of operation in the event of a network disruption.

Integrating seamlessly with Air-Met Scientific's web-based portal for remote data access, this secure data portal enables users to access monitoring logs, set customisable alerts, manage monitoring reports and more. The web-service application is accessible on both desktop PC and mobile smart devices.



AirMetER-AX | Proudly Australian Made



### FEATURES

- Heated inlet with TSP head
- Humidity correction
- Over the air (OTA) K-factor correction (requires gravimetric sample data)
- Low maintenance
- Dedicated alarm relay (24VDC) for installed sensors plus common alarm relay
- ModBus RTU via RJ12 port for integration
- Onboard datalogging (optional)

### PARAMETER CAPABILITIES

- Simultaneous PM<sub>2.5</sub> and PM<sub>10</sub> measurement
- PM<sub>100</sub> can be added with the purchase of the Air-MetER AX-12 module
- Simultaneously monitor 1-6 different gases  
Available gases – CO, CO<sub>2</sub>, VOC, SO<sub>2</sub>, H<sub>2</sub>S, O<sub>2</sub>, O<sub>3</sub>, NO and NO<sub>2</sub>
- Weather monitoring
- Noise measurements
- Vibration measurements
- Black carbon measurements

### DATA

Cellular telemetry through Air-Met Scientific's secure data portal. Requires minimum 12-month subscription to Air-Met's data portal.

- 5 minute datalogging interval with FTP transfer to Air-Met Scientific's secure web service
- 1-hour and 24-hour rolling averages as standard
- Data downloads, user management, threshold alert management (SMS and/or email) and auto-report generation all managed via Air-Met Scientific's data portal.



## TECHNICAL SPECIFICATIONS

### GENERAL

Power Requirement	12VDC
Rated Power	43W maximum.
Operating Temperature	0°C to 50°C
Operating Humidity	0 to 95% non-condensing
Operating Pressure	860 to 1100 hPa
Laser Module Operating Life	2 years (when operated below 40°C)
Datalogging (optional)	3 years of logs onboard with unique file name creation every 24 hours
Alarm Indicator (optional)	Onboard dedicated alarm relay for all installed sensors

### ENCLOSURE

Material	Polycarbonate
Dimensions (mm)	500 (H) x 400 (W) x 210 (D)
Instrument Weight	15kg
Mounting Options	Pole-mount kit supplied (recommended installation method) Wall-mount – ~70 mm offset required for dust inlet clearance

### COMMUNICATION

PLC or SCADA Integration	Serial RS232
FTP Upload	Cellular, Ethernet or WiFi

## PARAMETER SPECIFICATIONS

### PARTICULATES MEASUREMENTS (specifications are based on 20°C and 860 - 1100 hPa conditions)

	PM <sub>2.5</sub> & PM <sub>10</sub>	PM <sub>100</sub>
Range	0.0-999.9 µg/m <sup>3</sup>	0.0 – 20.0mg/m <sup>3</sup>
Resolution	0.1 µg/m <sup>3</sup>	1.0 µg/m <sup>3</sup>
Relative Error	Max of ±15% and ±10µg/m <sup>3</sup>	Max of ±20% and ±30µg/m <sup>3</sup>

### GAS MEASUREMENTS (specifications are based on 20°C and 800-1200 hPa conditions)

Type	Range	Resolution	T90 Response (s)	Min. Repeatable Detectable Level
CO (low range)	0-30ppm	1ppb	<30	20ppb
CO (high range)	0-300ppm	1ppm	<25	N/A
CO <sub>2</sub>	0-2000ppm	1ppm	<40	15ppm
VOC (low range)	0-40ppm	1ppb	<10	15ppb
VOC (high range)	0-200ppm	1ppm	<3	N/A
SO <sub>2</sub>	0-10ppm	1ppb	<60	20ppb
H <sub>2</sub> S	0-20ppm	1ppb	<60	20ppb
NO <sub>2</sub> (low range)	0-1000ppb	1ppb	<80	20ppb
NO <sub>2</sub> (high range)	0-20ppm	0.1ppm	<50	N/A
O <sub>3</sub>	0-1000ppb	1ppb	<80	20ppb
O <sub>2</sub>	0-25%VOL	0.1%VOL	<15	N/A
NO	0-5000ppb	1ppb	<45	20ppb

### WEATHER SENSOR

Integrated climate sensor for weather monitoring

- Wind speed
- Wind direction
- Air temperature
- Relative humidity
- Barometric air pressure
- Precipitation

### NOISE

Integrated noise monitor using Sound Examiner

- Range: 30 to 140 dBA
- IEC61672-1 Standard and ANSI S1.4-1983
- Class 2 microphone

## TECHNICAL SPECIFICATIONS

### VIBRATION SENSOR

<b>Sensor Type</b>	Triaxle piezoelectric
<b>Typical Sensitivity</b>	500mV/g
<b>Transverse Sensitivity</b>	<5%
<b>Frequency Response</b>	0.4-1600Hz ±10%
<b>Typical Resonant Frequency</b>	16kHz
<b>Residual Noise</b>	35µg RMS

<b>Spectral Noise</b>	◦ $\frac{3\mu\text{g}}{\sqrt{\text{Hz}}}$ @ 10Hz
	◦ $\frac{0.7\mu\text{g}}{\sqrt{\text{Hz}}}$ @ 100Hz
	◦ $\frac{0.5\mu\text{g}}{\sqrt{\text{Hz}}}$ @ 1000Hz

<b>Standardised Events Detection</b> On values or couple of values exceeding the tolerance curves	◦ $PPV_{jk}/FD_{jk}$ (DIN 4150-3 & "Circular")
	◦ $PCPV_j/FD_j$ (BS5228-4 & BS 7385-2)
	◦ $VpMax_{jk}$ (stopped)
	◦ $VDV_{jk}$
	◦ $Lp_{jk}$ i : value for a logging period $\tau_i$ j : value for a logging period $\tau_j$ k : value for an axis k

<b>Available Standards</b>	◦ DIN 4150-3 ◦ BS 5228-2 (BS 7385-2)
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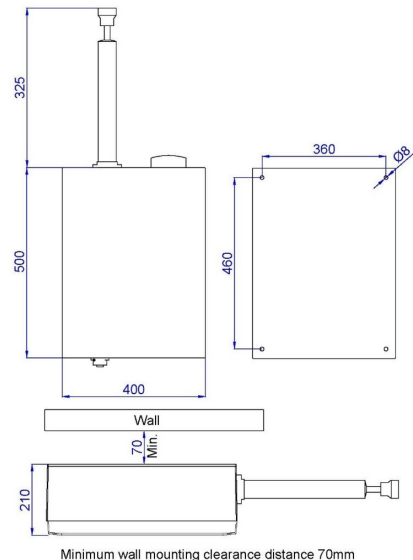
### BLACK CARBON SENSOR (FIVE WAVELENGTH)

<b>Measurement Wavelengths</b>	880nm, 625nm, 528nm, 470nm & 375nm
<b>Measurement Range</b>	◦ Average 5µg BC/m <sup>3</sup> for 24hrs @ 100ml/min (IR only mode) ◦ Average 100µg BC/m <sup>3</sup> for 3hrs @ 50ml/min (IR only mode) ◦ Average 1mg BC/m <sup>3</sup> for 15mins @ 50ml/min (IR only mode)
<b>Measurement Resolution</b>	0.001µg BC/m <sup>3</sup>
<b>Operating Environment</b>	5 ~ 40 °C operating, non-condensing

### SPARE PARTS & ACCESSORIES

PART NO.	DESCRIPTION
TF-TRI-AL	Tripod Mounting
AMS/200S/170B/15M/9C	Remote Power System
LPF-60-12-AUP	Power Supply (240V)
121-5866	Pneumatic Silencer
903-0886	Pump Filter
002-3022-001	Water Stop Filter
KAM-SF9	NOx Filter (for Air-MetER AX-3)

For all additional sensors, please contact Air-Met Scientific.



### WANT TO LEARN MORE? CONTACT US TODAY!

For more information about the AirMetER-AX or additional sensors, contact your local Air-Met Scientific office on 1800 000 744 or contact our team via email at [engineeredolutions@airmet.com.au](mailto:engineeredolutions@airmet.com.au).

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

