

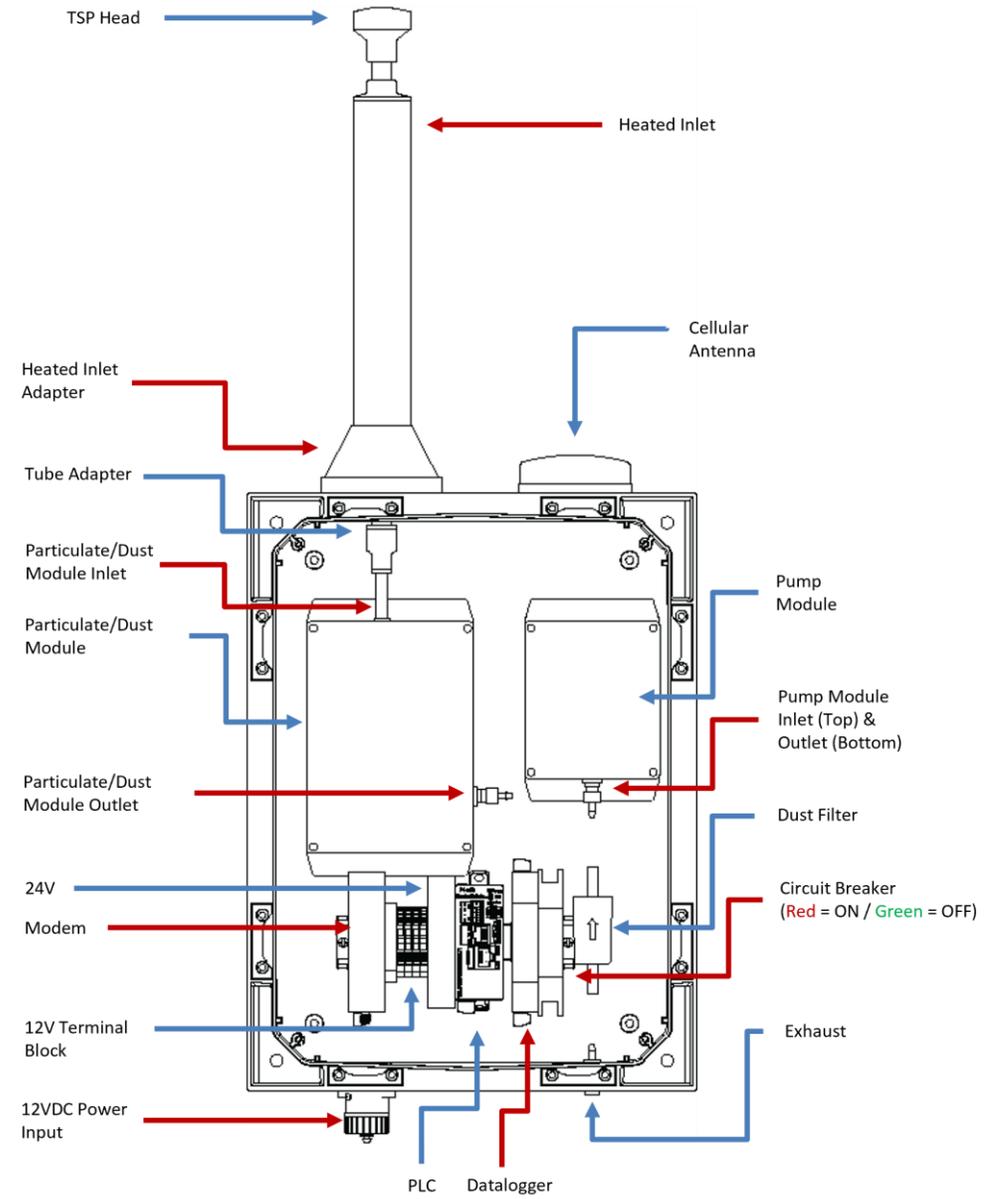
AirMetER-DX

INSTALLATION GUIDE

Revision | July 2023



LAYOUT OVERVIEW



HEATED INLET INSTALLATION

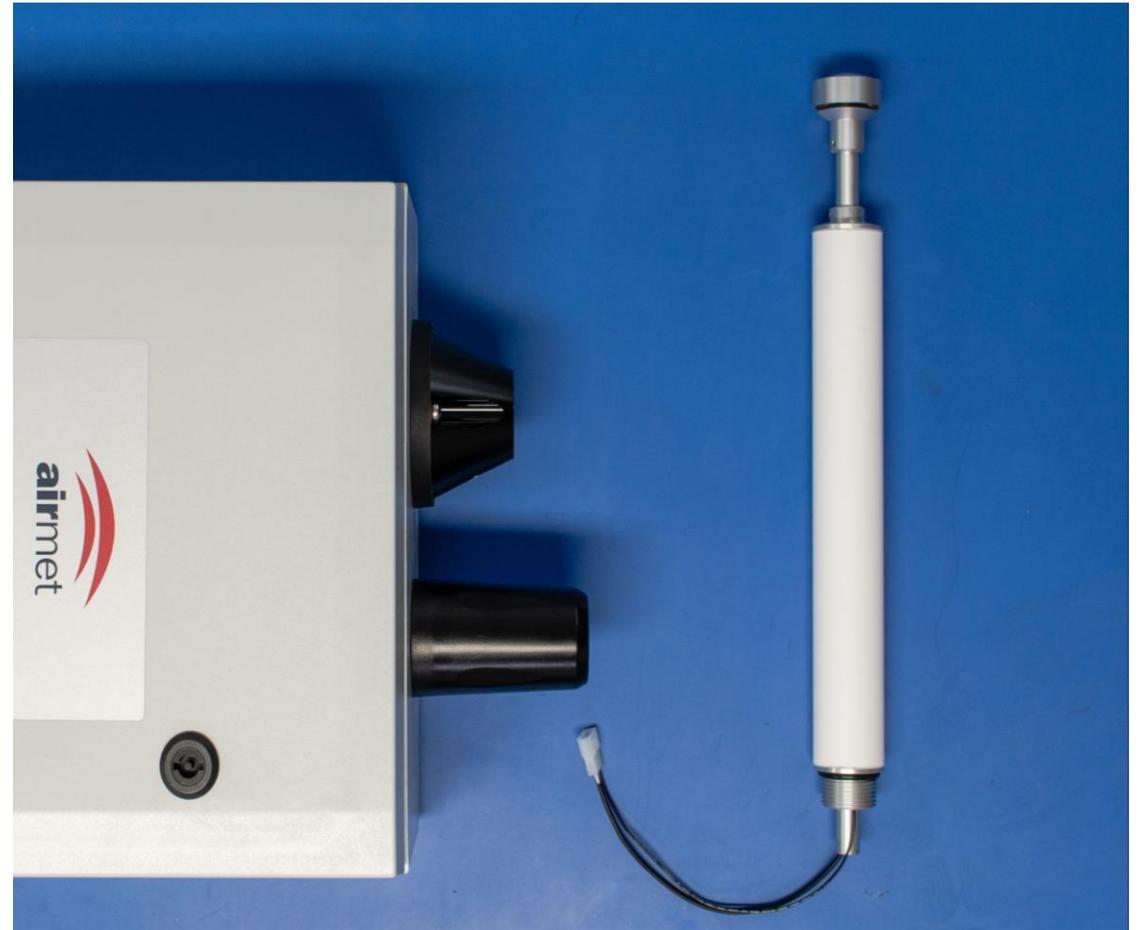
EQUIPMENT REQUIRED –

- Verified Rotameter capable of displaying 2L/m
- $\frac{3}{8}$ " flexible tubing capable of connecting the heated inlet to the rotameter (shown in step 6)
- 2mm allen key
- Cabinet key



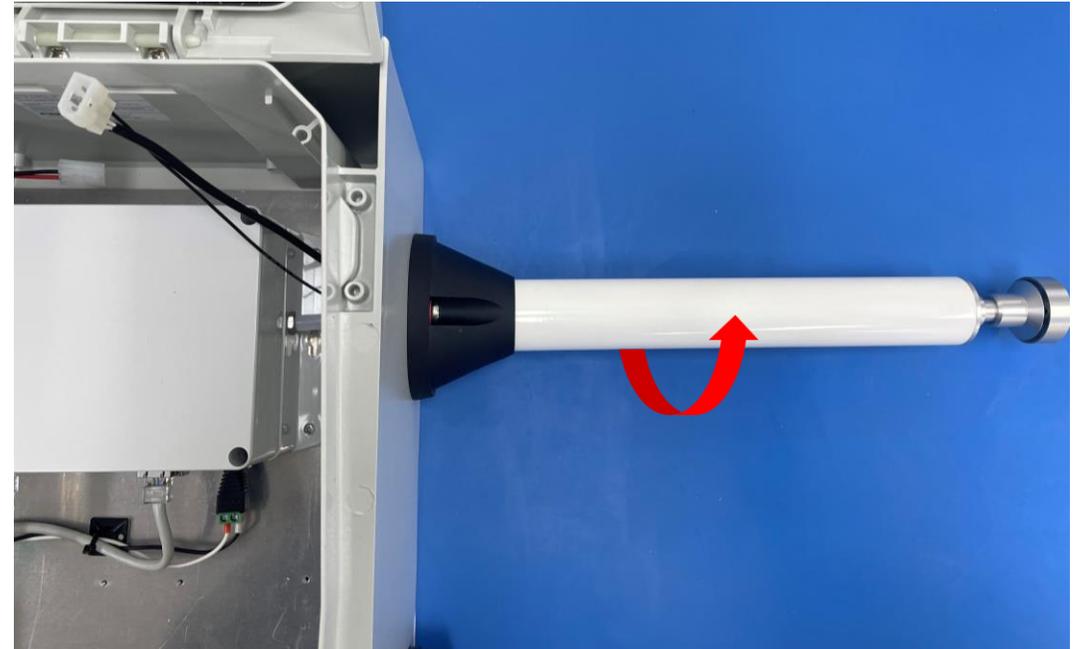
HEATED INLET INSTALLATION

1. Ensure the O-ring is installed on the heated inlet.
2. Feed the heated inlet cable through the adapter.



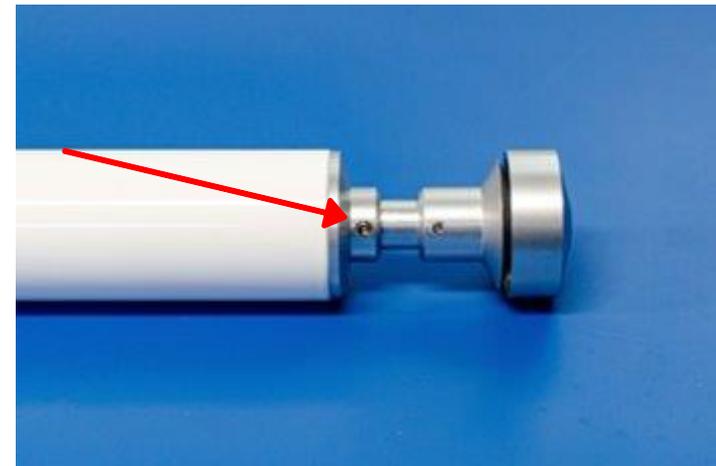
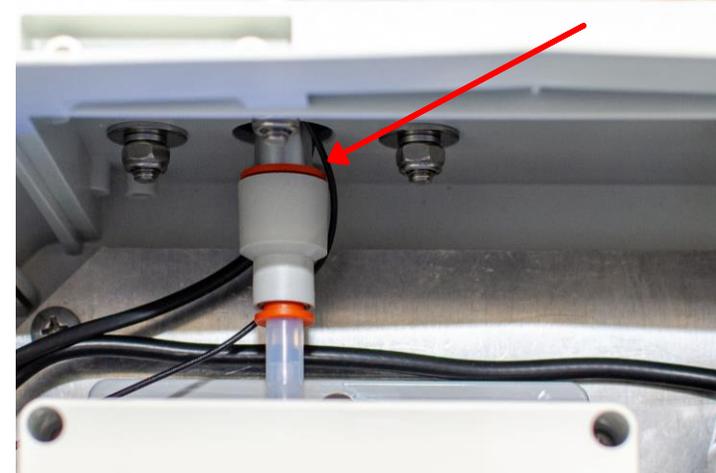
HEATED INLET INSTALLATION

3. Push the heated inlet into the heated inlet adapter and pull the heated inlet cable all the way through the adapter to prevent it getting caught.
4. Begin screwing the heated inlet clockwise while using the other hand to assist the heated inlet cable to twist around the tube adapter. This will be anti-clockwise if the heated inlet is facing away from yourself. Take care while screwing the heated inlet to not tangle the heated inlet cable as this may cause damage to the cable. Ensure that the heated inlet is tightly secured within the adapter to prevent any moisture from entering any gaps.



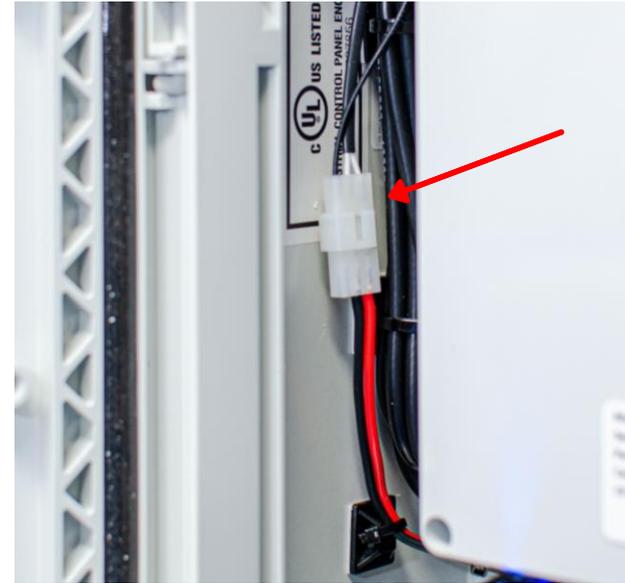
HEATED INLET INSTALLATION

5. Install the TSP head onto the top of the heated inlet, ensure the heated inlet's grub screw is loose, and carefully push the TSP head towards the instrument whilst holding the tube adapter still to secure the heated inlet shaft to the tube adapter. Take care not to bend the tubing already secured to the tube adapter.
6. Using a 2mm allen key, tighten the grub screws to ensure the heated inlet does not slide out of place and the TSP head stays secured to the heated inlet.



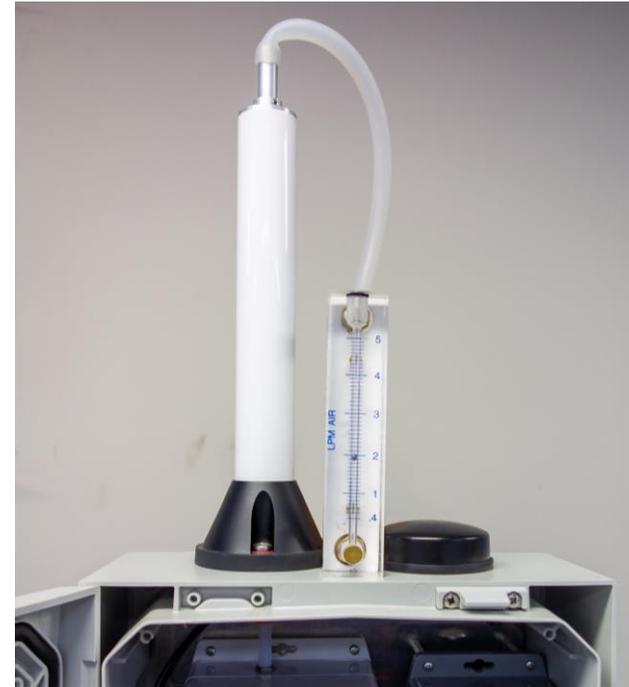
HEATED INLET INSTALLATION

7. On the left side of the enclosure plug the heated inlet cable into the plug secured to the side of the enclosure.
8. Verify the flow rate is $2\text{L/m} \pm 5\%$ with a 0.4-5L/m rotameter. Should the flow rate not be within this range, navigate to the flow rate calibration section of this guide.

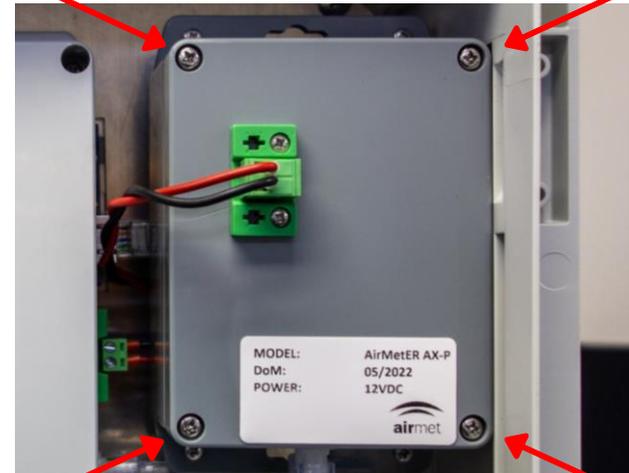


FLOW RATE CALIBRATION

1. Attach a 0.2-5L/m rotameter to the inlet of the AirMetER-DX, the flowmeter should indicate 2L/m \pm 5%. Should this be out of tolerance, the pump flowmeter can be manually adjusted to achieve this.



2. Unscrew 4x PH screws from the AirMetER AX-P top case (NOTE: these screws are retaining).

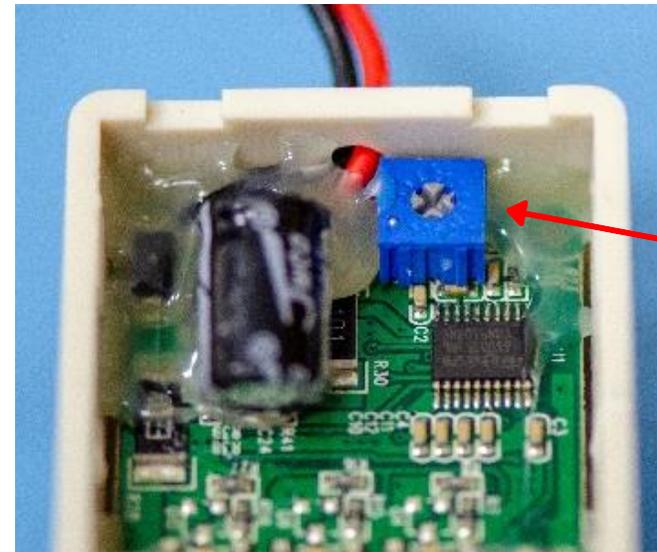
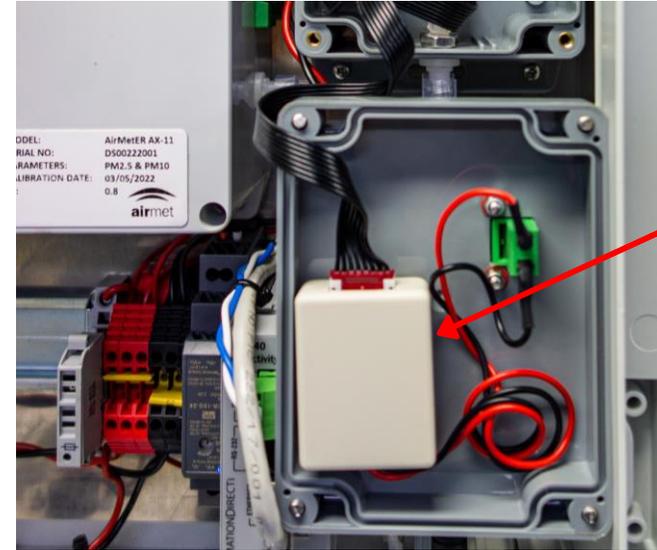


FLOW RATE CALIBRATION

3. Using a small flat-blade driver, remove the lid from the control box within the pump module.

4. Adjust the potentiometer clockwise to increase the flow rate and anti-clockwise to decrease the flowrate in order to achieve $2\text{L/m} \pm 5\%$.

In the event the flow rate cannot maintain $2\text{L/m} \pm 5\%$ at the inlet, losses can be diagnosed throughout the flow path: Heated inlet > particulate sensor module > pump filter > pump > external exhaust.



MOUNTING ON TRIPOD

EQUIPMENT REQUIRED –

- Tripod
- Power Drill
- $\frac{5}{16}$ " hex bit for drill (*if you do not have this size piece for tightening the mounting straps, a large slotted flat blade screwdriver will work for manually tightening*)
- Weights/sandbags



MOUNTING ON TRIPOD

1. Open the tripod up into position, ready for the instrument to be mounted.
2. Ensure that the mounting straps are on the rail facing the back of the instrument, and that both are on the same side of the instrument.



MOUNTING ON TRIPOD

3. Hold the instrument with the mounting rails against the mounting pole of the tripod.
4. Using the drill and $\frac{5}{16}$ " hex bit, tighten the mounting straps to a point that holds the instrument against the pole while still allowing for the straps to slide on the rail.



MOUNTING ON TRIPOD

5. Adjust the position of the rails in relation to the mounting pole so that the pole is located at the center of both rails, using a spirit level to ensure the instrument is correctly leveled.
6. Once the Instrument is level on the mounting pole, tighten the straps completely so that the instrument is secure and can no longer be adjusted.



SOLAR KIT INSTALLATION

EQUIPMENT SUPPLIED –

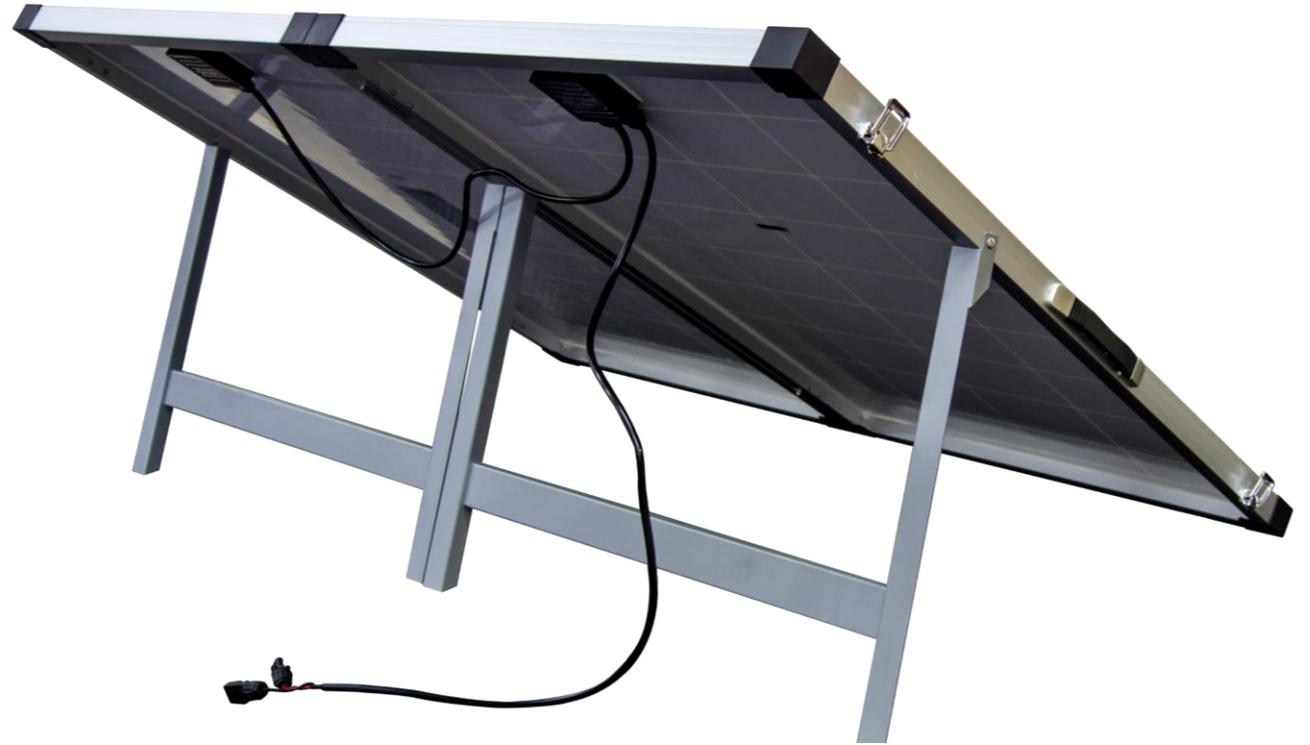
- 250W Solar Panel
- 170Ah Battery housed with a weatherproof enclosure
- 3m cable to connect solar panel and battery enclosure
- 2m cable to connect battery enclosure and AirMetER-DX

WARNING: Care should be taken when handling the battery enclosure due to its weight (60kg)



SOLAR KIT INSTALLATION

1. Remove the solar panel from the carry case and fold out the panel. The standard A-frame bracket will provide an optimal angle for most conditions.
2. Install the solar panels facing a clear, sunlit area free from over hanging branches, buildings or other such obstructions. This should preferably face north.



SOLAR KIT INSTALLATION

- The battery enclosure will include two circuit breakers for the battery and instrument.
Make sure the circuit breakers are in the off position. The battery enclosure will be provided with the circuit breaker in the off position.

Circuit Breaker OFF

- With the switch pushed down, the indicator next to the amperage rating will be green.
- *Green indicates open circuit – No power will be supplied through the circuit breaker*

Circuit Breaker ON

- With the switch pushed up, the indicator next to the amperage rating will be red.
- *Red indicates closed circuit – Power will be supplied through the circuit breaker*



SOLAR KIT INSTALLATION

4. Connect the 3m cable from the solar plug on the outside of the battery enclosure to the solar panel. When connecting the solar panel to the 3m cable, ensure you hear a distinct 'click' when connecting to ensure that the plug is secure.

5. Connect the 2m cable from the load plug on the outside of the battery enclosure to the AirMetER-DX

NOTE: The configuration of the plugs on the battery enclosure and cables makes it impossible to connect the 2m load cable to the solar box connector and vice versa.



SOLAR KIT INSTALLATION

- Using a multimeter or the VictronConnect app, check the voltage of the battery. Should the battery be below 11.1V, run the solar kit with the load unplugged until the battery has charged to greater than 13.1V.
- The supplied system utilises a Victron solar regulator. Each regulator may be accessed via Bluetooth for an overview of multiple parameters e.g. battery / solar voltages, current and history for reviewing. To access this, download the 'VictronConnect' application. Find the device and login via the password: 247638.

NOTE: Some devices have a very fine tolerance, it is important to understand this – If unsure contact your local Air-Met office on 1800 000 744 and do not connect power.



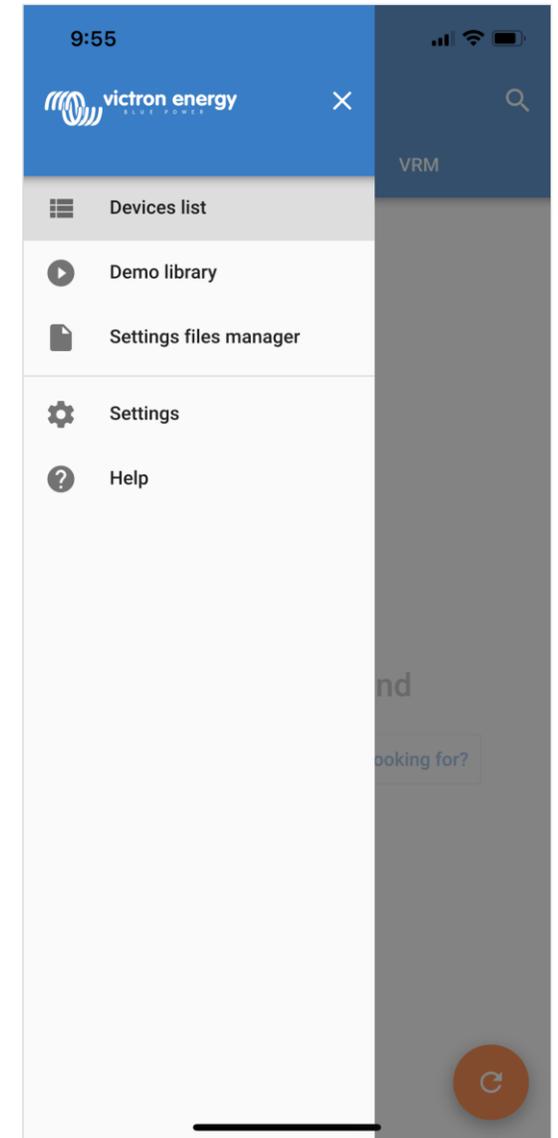
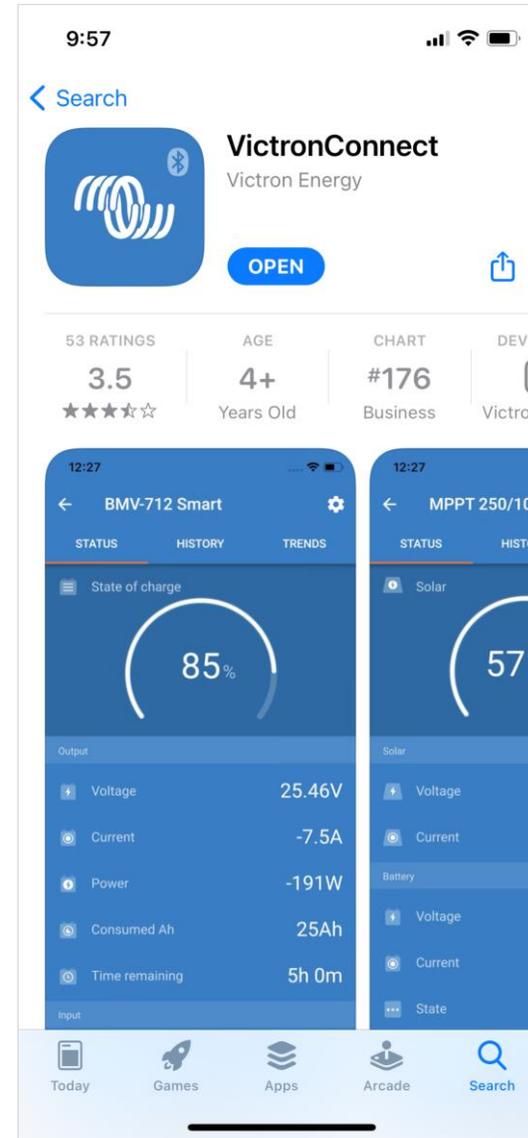
SOLAR KIT INSTALLATION

The solar regulator has been pre-configured to protect the battery from continuous discharging and charging cycling. Should the battery voltage drop to below 11.1V, the regulator will shut off supply to the DC/DC converter and subsequently to the load until the voltage recovers to above 13.1V.

Should your system be entering recovery mode frequently, login to the Victron App, navigate to the history tab, and download the data using the share symbol.



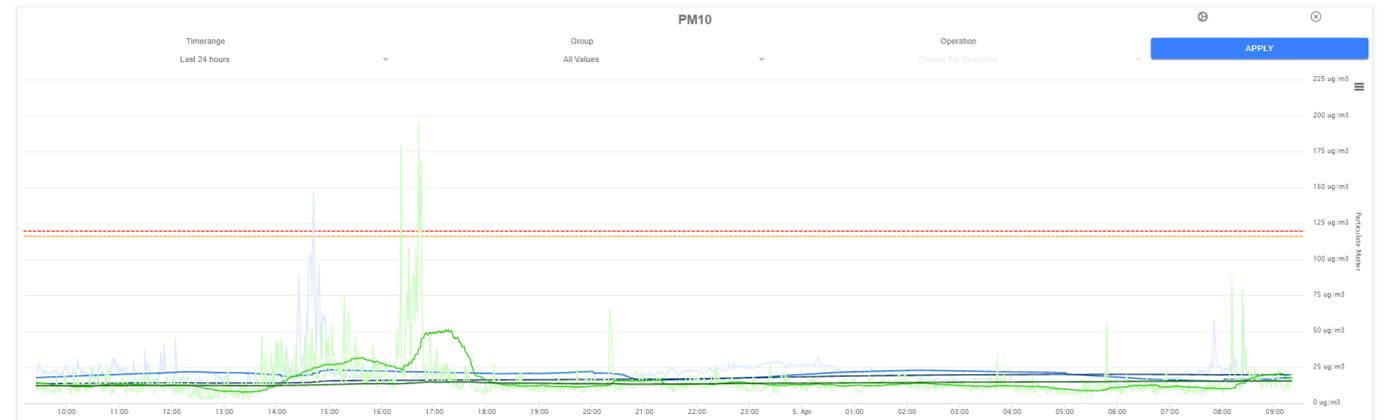
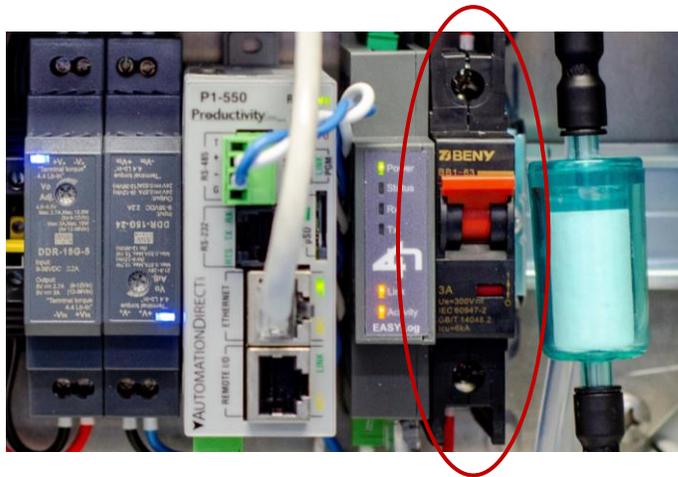
Data may be stored locally on the phone or sent via SMS/email to another contact.



OPERATIONAL CHECK

1. With the AirMetER-DX set up and ready for sampling, open the door and switch the circuit breaker to the on position (RED)
2. Access LiveSense via an internet browser or via the LiveSense phone app to check and see if your device is online and uploading data

<https://airmetapp.livesense.com.au/login>



CONTACT US

NEED HELP?

If you have any questions or require troubleshooting while using this guide, our team are here to assist you. Please feel free to contact us at any of the following means:

 1800 000 744

 engineeredolutions@airmet.com.au

 www.airmet.com.au

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

