# XPi Multi-parameter Monitor

## Quick Start Guide

Version 2.0 10102023

| Power Supply | 12 VDC |
| --- | --- |
| Rated Power | 8 Watts |
| Operating Temperature | 0°C to 50°C |
| Operating Humidity | 0-95% non-condensing |

| 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 - 30000 ug/m3 |
| Sampling frequency | 1 seconds |
| Particle density value | 1.65 g/ml |

| Gas | Range | Resolution | T90 (s) |
| --- | --- | --- | --- |
| CO | 0-1000 ppm | 1 | <25 |
| NO2 | 0 20 ppm | 0.1 | <60 |
| 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 |

# Warranty

Your DusTech XPi Particulate Monitor is covered by a 12-month return to base warranty for all operational issues.

This warranty covers all components that in our assessment require replacement due to failure. The warranty does not cover items where the product has been misused, intentionally damaged, or poorly installed or secured.

We require that you carefully pack and return your Monitor to DusTech at our office. Please ensure that you include the power supply and any accessories and additional sensors that you have for the unit. This enables us to correctly ensure that your Monitor is calibrated and ready for the field once repaired.

# Service Schedule

Should your Monitor require Servicing, the following options are available:

Visit [www.dustech.com.au](http://www.dustech.com.au) for the nearest distributor.

The DusTech XPi Particulate Monitor will require annual calibration and service as per the schedule. This is to replace filters, and sensors with fixed lifespans and are included in the annual service fee if serviced on schedule.

# Introduction

Congratulations on your purchase of the DusTech XPi, you are now on your way to getting better informed about the hazards around you. The XPi is our LTE connected particulate monitor that detects PM1.0, PM2.5, PM4.25, PM10 and TSP. The unit will report in real-time on the central display and write all those data points out to the onboard SD Card in a CSV format for easy access later. Additionally, the XPi utilizes mobile data to provide near real time feedback via our cloud dashboards (dustech.live).



The monitor is sensitive to minor variations of particulate matter in the atmosphere, with analysis using the principle of Optical Particle Counter (OPC), which enables the high precision laser to get the particle concentration between 0.3um to 40um (standard) in the air and Particle Count per Liter.

⚠️ Monitor aerodynamic size selective but non-material selective.

# Getting Started

This page explains the preparatory steps before you start operating the XPi Monitor.

In your delivery, you should have received everything you need to do a standard installation. It's important to double-check when redeploying the unit that everything is available to avoid any unnecessary wasted travel and energy.

Check what is in your kit with the Item Check List below.
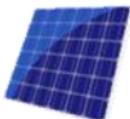


XPi Main Unit          Power Supply          Quick Start Guide

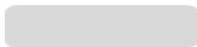# Optional Accessories

Item Check - Battery + Solar

LiFePo4 Battery 100Ah

Solar Panel

Interconnect Cable

Pole Mounting Brackets

Tripod

To power the XPi connect the Amphenol male connector of the power supply to the female connector located at the bottom of the XPi
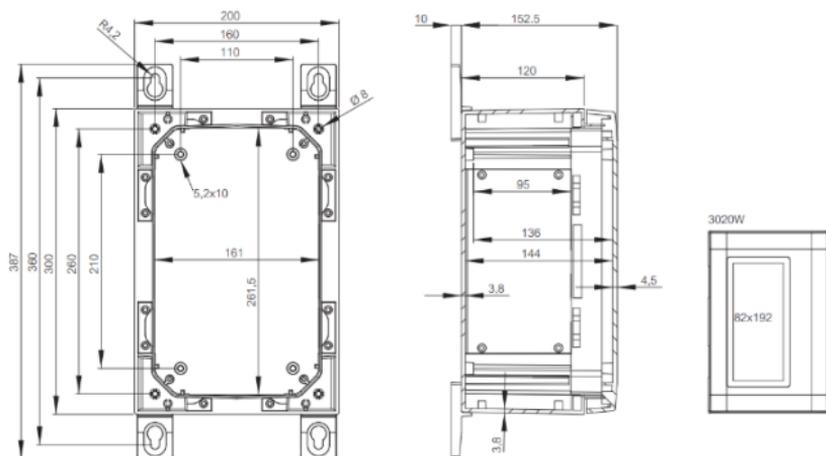
## XPi – Solar + Battery Setup

# Quick Setup

Your XPi monitor is designed with speed in mind, follow these few steps to get monitoring immediately.

**1** Unbox the DusTech XPi Monitor

**2** Attach the bracket for the pole mount to the back of the chassis. Using the included bolts. For wall mounting see figure 1.

**3** Remove and set up the tripod, ensure it is on level ground and sturdy.
If there is a high wind in the installation location, install the added pegs to fix the tripod to the ground.

**4** Mount the XPi chassis on the pole and tighten the bracket on the tripod.
Ensure that the logger cannot turn on the tripod

**5** Unbox and install the power connection and plug into the available mains power at your location.

**6** There is ON/OFF button, you will see the XPi will start to boot, the DusTech logo will display. After 1 minute, you will start to see your first readings on the display of the sensors that are installed in the unit.

**7** Login to the DusTech Cloud dashboard to check your data is uploading.
https://dustech.live
Allow 3-5 minutes to get first set of data.

Figure 1.

Note: To avoid dirt accumulation at the top of the enclosure, it is recommended that the enclosure have at least 20 mm from the wall.

# XPi with Solar and Battery Kit



DusTech XPi Dust Monitor
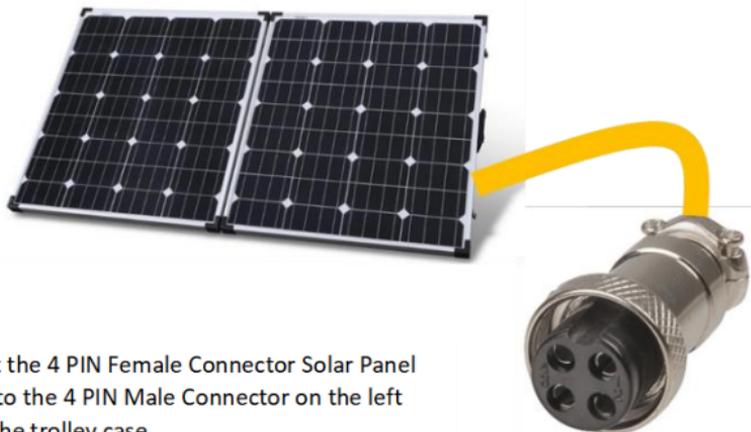
Power cable for XPi

Foldable Solar Panel

Battery and charging kit



## IMPORTANT!

Turn the circuit breaker ON before connecting the solar panel or the instrument.

The MPPT controller will turn ON when the circuit breaker is in ON position.

Connect the 4 PIN Female Connector Solar Panel Output to the 4 PIN Male Connector on the left side of the trolley case.



4 PIN Male Connector MPPT charger Input



5 PIN Male Connector Battery System Output

Connect the 5 PIN Female Connector to the 5 PIN Male connector located at the right side of the trolley case.

Connect the 4 PIN Male Amphenol connector to the 4 PIN Female connector located at the bottom of the XPi Dust Monitor.



## Turning the system off.

1) Disconnect the cable from the instrument (XPi) and the 5 PIN Female connector.
2) Disconnect the 4 PIN Female connector from the Battery System.
3) Flip the Circuit breaker to OFF position.

Dustech Pty Ltd warrants that all products are free from defects in materials and workmanship under normal use for a period of 12 months from the date of purchase. During this period, Dustech will, at its option, repair or replace any defective product at no charge for labour or materials. This warranty does not cover damage caused by improper installation, misuse, or unauthorized modifications.

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