

MIRO Power Quality Logger & Analyser

Quick Start Guide



Miro Power Quality Analyser - Quick Start Guide, rev 1.00

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1. Scope

This document is applicable to the Miro PQXX series.

2. General

The **MIRO** Class A range of portable power quality recorders are precision instruments that offer comprehensive and reliable compliance monitoring of low voltage circuits. Built for high performance, toughness and focus on ease of use, the MIRO range are the workhorse instruments of choice for a variety of power monitoring applications including power quality analysis, supply compliance checks and voltage investigations, power flow studies, energy audits, solar and railway systems and transformer monitoring.

The two models of the Class A Miro Power Quality Analysers that we provide are the PQ35 (3 Voltage & 4 Current channels) and the PQ45 (4 Voltage & 4 Current channels). These are sold as part of kits which include the following:

- 1 x Miro Power Quality Analyser
- 1 x Three-phase voltage leads with either croc clips and banana plugs, tinned ends (PQ35 only) or large black clamps
- 1 x Single-phase cable
- 1 x DC power adaptor
- 2 x Temperature sensors (1 x ambient & 1 x magnetic mount)
- 1 x Carry bag
- 1 x GPS antenna
- 1 x USB communications cable
- 1 x Protective rubber holster
- 1 x Backplate, strap & magnetic feet
- 1 x Citrus software



Figure 1

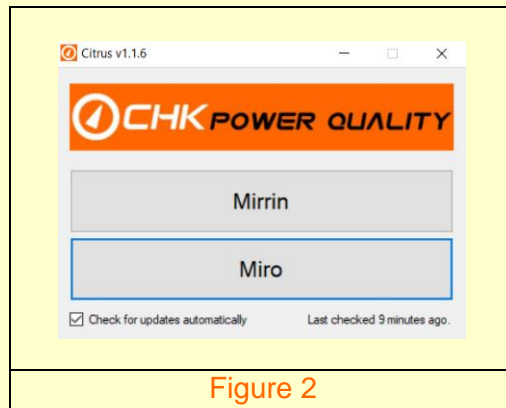
3. Citrus Software Installation

The Citrus software is compatible with any PC or Laptop with Microsoft Windows, version XP or later. The Citrus software provides a platform which allows users to quickly and easily configure the Miro, download the data, upgrade firmware and analyse the logged data. The latest version of the Citrus software is free to download from the downloads section of our website. Please click on the link below and follow the instructions: <http://www.chkpowerquality.com.au/downloads/>

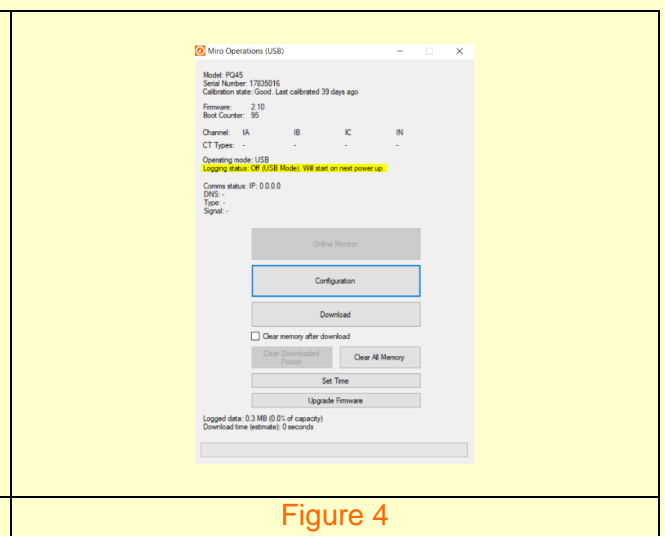
4. Configuration

To ensure that the desired measurements are logged, it is imperative that the Miro is configured before installing the unit onsite. The user should have the Miro connected to a PC via the USB cable provided in the kit. See the steps below:

1. Open the Citrus software which will display a window as shown in **Figure 2**. Select the 'Miro' option.



2. Select 'Connect using USB', as shown in **Figure 3**. This will open the 'Miro Operations' window as shown in **Figure 4**. This displays the general information of the Miro including the Serial number; Firmware version; Calibration date; and other relevant information.



3. Select the 'Configuration' option, the user will be prompted with a window as shown in Figure 5.

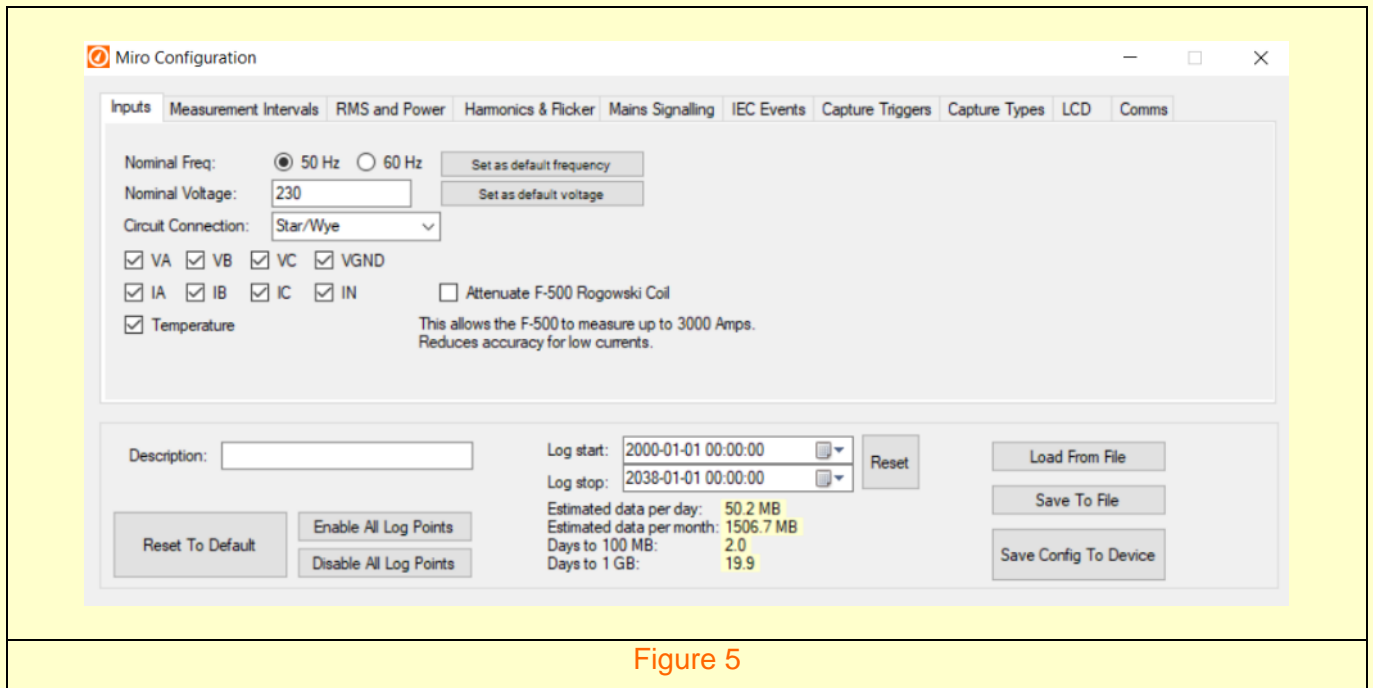


Figure 5

4. The Miro's default configuration is sufficient for the majority of applications. However, the user should go through each tab within the configuration window to ensure that the required logged parameters are selected.
Please refer to the user manual for further details on specific parameters and communications options. Please note: The 'Estimated data per day', at the bottom of the configuration window. This indicates the data usage as per the selected parameters and measurement intervals.
5. The Miro automatically starts logging upon power up. There is an option to define a start and stop date however, it is highly recommended to use the default automatic logging upon power up.
6. Once the configuration is complete, press the 'Save Config to Device' button at the bottom right-hand corner of the configuration window.
The Miro is now ready to be installed on-site.

5. Installation

1. The Miro should be installed by a qualified electrician to ensure safe procedures are followed.
2. The temperature sensors, GPS antenna and cellular antenna can be connected if required.
3. Connecting the **current sensors and voltage leads** to the load. Ensure the arrows on the current sensors are all pointing towards the load. See Figure 6 below for a typical Wye circuit connection.

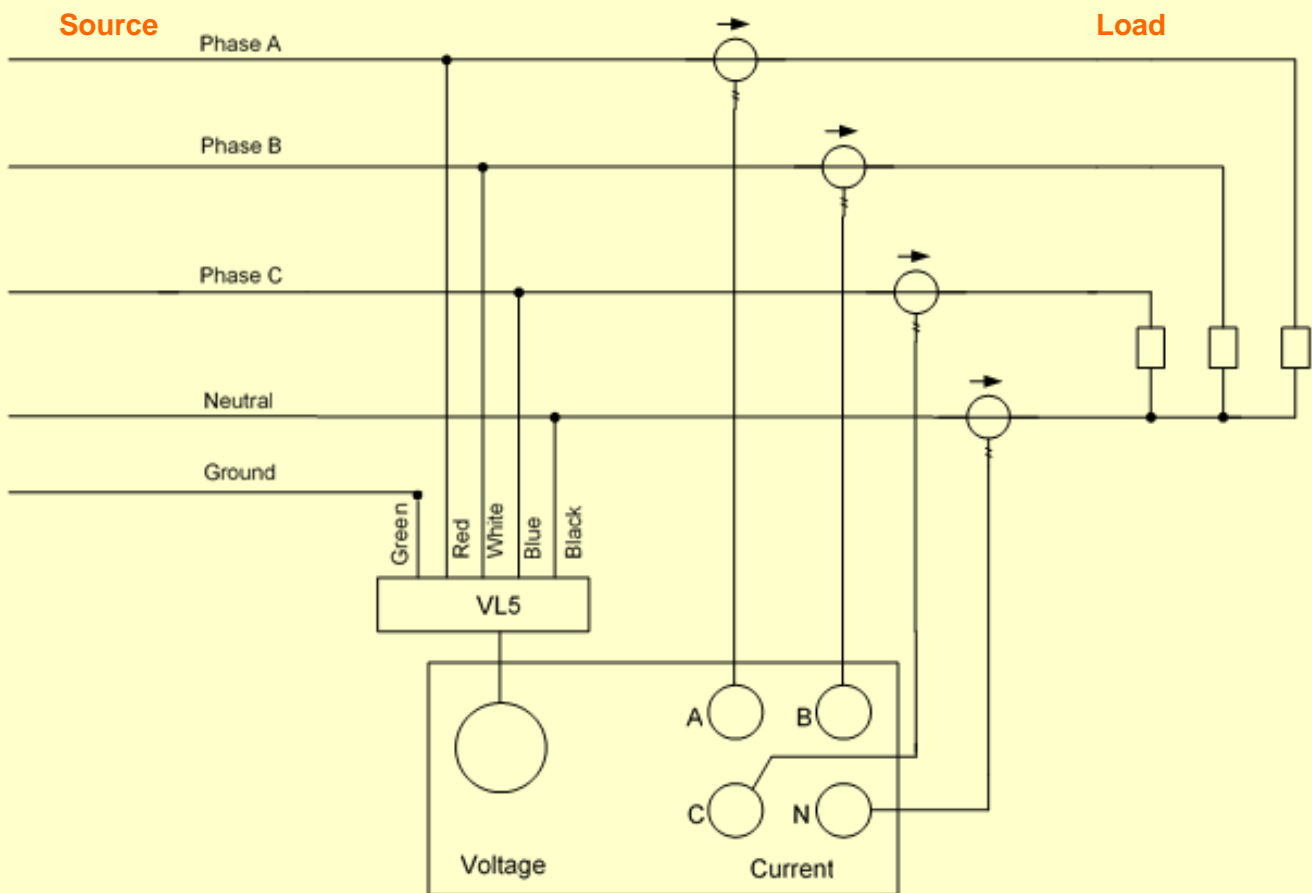
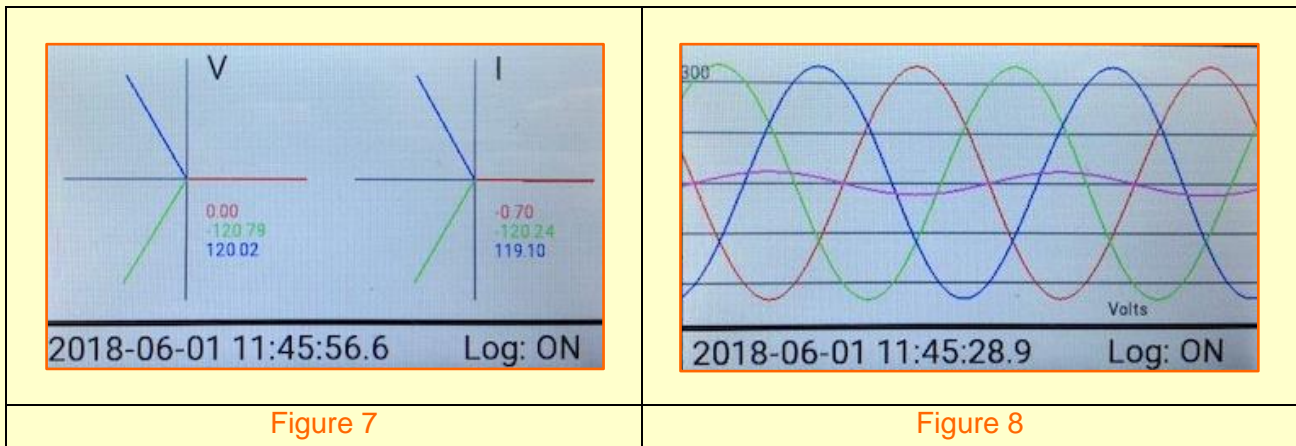


Figure 6 – Wye Circuit Connection

4. For single-phase application the single-phase power cable supplied can be used or by using the three-phase voltage lead as illustrated above.
5. Data logging is confirmed by the Miro's LCD screen displaying **Log: On** in the bottom right-hand corner.
6. **Please note:** If the LCD displays a warning that reads 'High V unbalance', the user should ensure that the voltage leads are connected to the correct terminals and also that the correct circuit connection is selected within the 'inputs' tab when configuring the Miro.



The sequencing of the colours shown on the phasor diagrams and voltage waveforms should be identical to those shown above in [Figure 7](#) and [Figure 8](#).

6. Data Download

The Miro has a feature called 'Gapless Logging' which allows the user to perform configuration changes and also download data without interrupting logging. Connect the USB cable and select the 'Download' button from within the Miro's operation window, as shown in [Figure 4](#). The user will be prompted with a window specifying the location within their PC or server where they wish to save the data file.

Double clicking on the saved file will open the data file within Citrus for viewing and analysis.