MERLIN XT
Transformer Rectifier Monitor

Quick Start Guide

&

Safety Information

www.abriox.com

ABOUT THIS DOCUMENT

This document has been issued as a guide only; in all instances please refer to the full MERLIN XT Transformer Rectifier Monitor Installation Instructions for further information.

HOW TO OBTAIN FULL INSTALLATION INSTRUCTIONS

1) Go to www.abriox.com and click the Customer Portal link under the Support menu located at the top of the page.
2) Enter the Username and Password as shown on your Licence Certificate.
3) Click the link for the MERLIN XT Transformer Rectifier Monitor and download the required files for viewing online or for printing at your own convenience.

Note

To download the full installation documentation you will need your Abriox-issued Username and Password; these can be found on the licence certificate issued.

If you do not have a copy of the licence certificate, please contact our technical support team by emailing support@abriox.com.

DISCLAIMER

If this equipment is used in a manner not specified by Abriox, the protection provided by the equipment may be impaired. Please ensure you follow all guidance for safe and correct use of your equipment.

SAFETY INFORMATION

Please ensure you are familiar with the safety regulations of your company and observe them at all times.

General Safety Summary

This document contains information and warnings that must be observed to keep the unit in a safe condition and ensure safe operation.

To use the unit correctly and safely, read and follow all precautions given.

Please ensure you fully understand all instructions throughout this document that relate to specific measurement functions.

In addition, please follow all generally accepted safety practices and procedures required when working with and around electricity.

Safety Symbols

The table below lists safety symbols that appear on the MERLIN XT Transformer Rectifier Monitor and within this document.

Symbol	Description
CAT III	Installation Category (Overvoltage Category) III
CAT IV	Installation Category (Overvoltage Category) IV
	Risk of danger. Important information. See Installation Instructions.
	Hazardous voltage. Voltage > 30V AC (42.4V peak) or 60V DC may be present

Maximum Input Voltage for ON/OFF Potential Channel ⚠

The ON/OFF Potential channel of the MERLIN XT Transformer Rectifier Monitor is intended to measure ±4V. It can handle a maximum input voltage of 70V AC (RMS) and 70V DC without damage.

Maximum Input Voltage for TR Volts Channel ⚠

The TR Volts channel of the MERLIN XT Transformer Rectifier Monitor has a maximum input voltage of 150V AC and 150V DC. The unit has protection against high voltage transients built in, but there is a limit to the amount of energy it can dissipate.

Maximum Input Voltage for TR Shunt Channel

The TR Shunt channel of the MERLIN XT Transformer Rectifier Monitor provides readings up to 100mV AC and ±100mV DC. The channel itself should not be exposed to voltages greater than ±4V peak. Voltages greater than this will cause the channel input protection to activate which can only protect the unit for a limited period of time.

Danger of Electric Shock ⚠

When using the MERLIN XT Transformer Rectifier Monitor on rectifiers with an output greater than 60V DC, care should be taken as there is a danger of electric shock.

Channel Input Protection ⚠

Channels 1 and 3 have CAT IV surge protection at their rate input voltage ranges. Channel 2 has CAT III surge protection at its rated input voltage range.

Battery Replacement

The MERLIN XT Transformer Rectifier Monitor uses batteries specific to the product. Battery packs can be replaced. Please contact Abriox to order replacements.

WEEE Directive

This symbol indicates that this product is not to be disposed of with your household waste, according to the WEEE Directive (2002/96/EC) and your national law. This product should be handed over to a designated collection point, e.g., on an authorised one-for-one basis when you buy a new similar product or to an authorised collection site for recycling waste electrical and electronic equipment (EEE).

Improper handling of this type of waste could have a possible negative impact on the environment and human health due to potentially hazardous substances that are generally associated with EEE. At the same time, your cooperation in the correct disposal of this product will contribute to the effective usage of natural resources. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, waste authority, approved WEEE scheme or your household waste disposal service.

Batteries Directive—Information for Users

In the European Union (EU) this symbol indicates that the batteries in this product should be collected separately and not be disposed of with household waste. Substances in batteries can have a potential negative impact on health and environment and you have a role in recycling waste batteries thus contributing to the protection, preservation and improvement of the quality of the environment.

COMPLIANCE

Declaration of Conformity CE

This product is CE marked which means that Abriox declares that the product or equipment complies with all applicable European Directives. A copy of the Certificate of Conformity can be obtained from Abriox.

FCC Rules FC

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

i) Reorient or relocate the receiving antenna

ii) Increase the separation between the equipment and receiver

Do not make any changes or modifications to the equipment unless otherwise specified in the manual. If such changes or modifications should be made, you could be required to stop operation of the equipment.

INSTALLATION INSTRUCTIONS

This document has been issued as a guide only; in all instances please refer to the full MERLIN XT Transformer Rectifier Monitor Installation Instructions for further information.

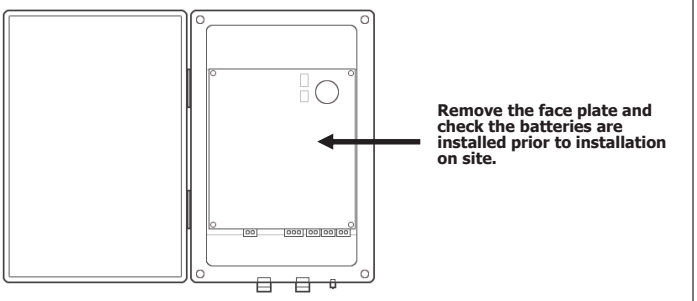
PLEASE ENSURE YOU ARE FAMILIAR WITH THE SAFETY REGULATIONS OF YOUR COMPANY AND OF THIS EQUIPMENT AND OBSERVE THEM AT ALL TIMES.

Step 1 - Software Check

For standalone **CPSM** users, the CPSM software must be installed and running in order to receive messages from the MERLIN XT Transformer Rectifier Monitor.

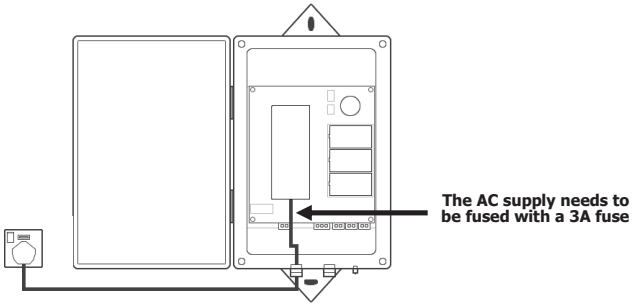
iCPSM users, please ensure you have received your Licence Certificate which details your username and password.

Step 2 - Check the MERLIN XT Monitor



Check the MERLIN XT Transformer Rectifier Monitor has batteries fitted prior to installation on site. Remove the face plate by unscrewing the 4 screws as indicated and check the batteries are installed. Leave the yellow "battery pull tag" in place until ready for installation.

Step 3 - On Site Check



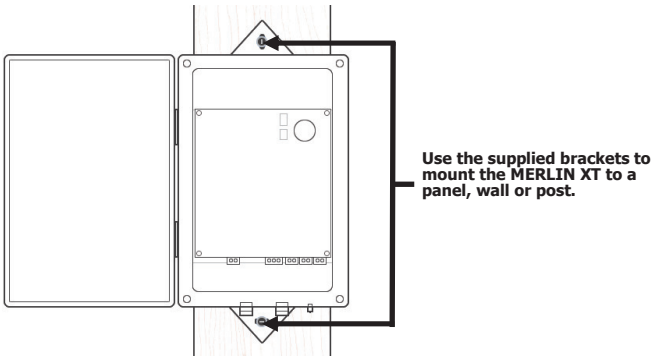
The Power Supply Unit (PSU) that comes with the MERLIN XT Transformer Rectifier Monitor should be powered from the AC supply to the rectifier (this enables the unit to report an AC outage). Make sure beforehand that there is a suitable power point available so that you can plug or wire the PSU in easily on site.

Step 4 - Gather Equipment for Installation

To install the MERLIN XT Transformer Rectifier Monitor at the rectifier you will need:

- Shunt - of correct value
- Consumables - for making the connections
- Multimeter - for confirming the voltage and current readings
- Installation Instructions
- Any accessories - mounting brackets, external antennas, lightning arrestor, relay, surge filter

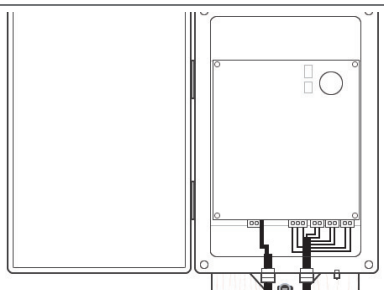
Step 5 - Physical Installation



Locate a suitable position for the MERLIN XT Transformer Rectifier Monitor and any accessories to be installed (such as lightning arrestors, MERLIN Interrupter/mercury relay and/or a choke). Each unit is supplied with brackets that allow it to be mounted to a panel, wall or post.

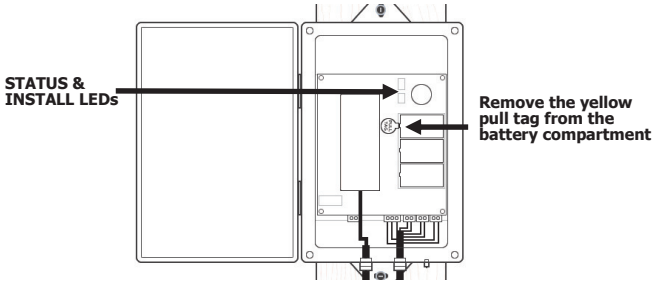
The MERLIN XT Transformer Rectifier Monitor requires a clear view of the sky and requires being mounted outside any metal enclosures. Ideally the unit should be mounted as high up as possible in order to gain the best GPS and satellite communication signals.

Step 6 - Make the Connections



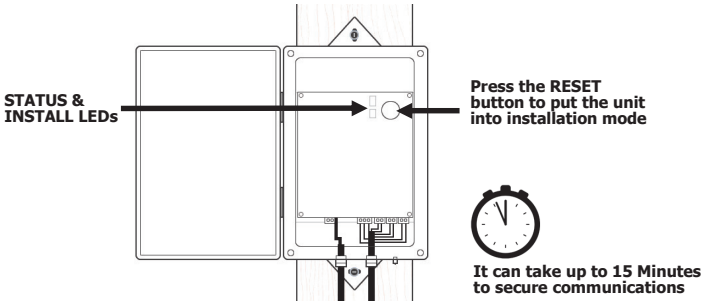
Make the connections to the MERLIN XT Transformer Rectifier Monitor. The unit has 9 connections and are briefly described on the face plate. Fit any accessories (lightning arrestor, relay, surge filter) as required, please refer to the full MERLIN XT Transformer Rectifier Monitor Installation Instructions for further information.

Step 7 - Apply Power



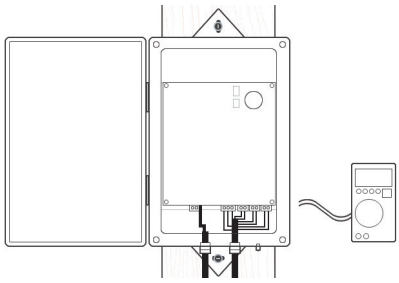
Remove the face plate and double check all power and terminal connections have been made, now turn the external supply on. The green Active LED on the STATUS Panel will give a long double flash to show the unit is waking up. Next the red (Error/Low Battery) LED on the STATUS Panel will double flash every few seconds to indicate a low battery until you remove the yellow pull tag from the batteries. Once the yellow pull tag has been removed, the red (Error/Low Battery) LED will go off and the green (Active) LED will flash. This indicates the backup batteries are in good condition. Replace the face plate and screw in place.

Step 8 - Activation



With the face plate screwed firmly back in place press the RESET button, this will put the unit into installation mode. For the first 20 minutes after power up (or after the RESET button is pressed) the MERLIN XT Transformer Rectifier Monitor runs in installation mode. Whilst in installation mode, the unit is constantly checking its inputs and communication channels. It then feeds back the status of these inputs via the INSTALL LEDs. During this period, it is normal to hear the relays operate every few seconds as the unit takes its readings.

Step 9 - Take a Reading (Optional)



Once all connections have been made and the power is reapplied to the rectifier, record the input levels to the MERLIN XT Transformer Rectifier Monitor, we recommend taking the measurements at the terminal screws on the unit. This is useful for two reasons:

1) So that the values can be crossed checked against the received data in CPSM/iCPSM
2) So that any warnings described during installation can be understood and resolved or ignored

Step 10 - Post Site Configuration and Installation

Once deployed you will need to enter the shunt value in the CPSM/iCPSM software. You will also need to specify the alert thresholds, measurement time and time zone. Further configuration and operational features can be carried out directly via the software. Please refer to the full Installation Instructions for further information.