MERLIN AC Solid State Relay

Quick Start Guide

&

Safety Information

www.abriox.com

ABOUT THIS DOCUMENT

This document has been issued as a guide only.

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 Transformer Rectifier Monitor or MERLIN XT and download the required files for viewing online or for printing at your own convenience. These documents contain wiring diagrams for the most common installations.

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.

MERLIN COMPATIBILITY

The MERLIN AC SSR is only compatible with the MERLIN6 range of transformer rectifier monitors (including MERLIN XT 6).

SOFTWARE COMPATIBILITY

MERLIN6 models require iCPSM V4.00 or newer. Earlier versions of the software are not compatible and do not support the features offered by these models.

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 AC SSR and within this document.

Symbol	Description
⚠	Risk of danger. Important information. See Installation Instructions.
⚠	Hazardous voltage may be present. Danger of electric shock.

Switching Voltage Range ⚠

The MERLIN AC SSR can switch 24 - 280 V AC.

Maximum Switching Current ⚠

The MERLIN AC SSR can switch up to 125A.

Danger of Electric Shock ⚠

When using the MERLIN AC SSR to switch a supply that is greater than 30V AC, care should be taken as there is a danger of electric shock.

Installation in Confined Spaces ⚠

Care should be taken when installing the MERLIN AC SSR in a confined space due to overheating.

If the unit is to be installed inside a confined space, there must be adequate venting to prevent the unit exceeding it's maximum operating temperature.

ENVIRONMENT

Abriox believe that we should all tread as lightly on the planet as possible and are committed to continuous environmental improvement.

Consideration of the environment begins with the design of our products, and continues through their life cycle from manufacture to end of life.

We have made small, but highly considered decisions about the design, manufacture and distribution of our products in order to lessen their environmental impact and will continue to work with manufacturers and suppliers to achieve improvement wherever we can.

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. Abriox, as producer of this Electrical/Electronic Equipment, passes all obligations to the End User for subsequent disposal as Waste EEE.

In accordance with our Terms and Conditions of Sale, the End User must finance collection, treatment, recycling, recovery and environmentally sound disposal when discarded in the UK.

AGENCY APPROVALS

EN60950-1: Meets the requirements of sections1.5: 1,7: 2.9: 2.10.5.3: 4.2: 4.5: 4.7:

IEC 61000-4-2 Electrostatic Discharge Level 3

IEC 61000-4-4 Electrically Fast Transients Level 3

IEC 61000-4-5 Electrical Surges Level 3

c UL us E116950 CE RoHS

INSTALLATION INSTRUCTIONS

This document has been issued as a guide only.

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 interruption messages for testing and post installation.

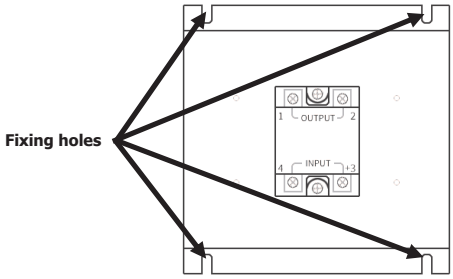
iCPSM users, please ensure you have received your Licence Certificate which details your username and password.

Step 2 - Gather Equipment for Installation

To install the MERLIN AC SSR at the rectifier you will need:

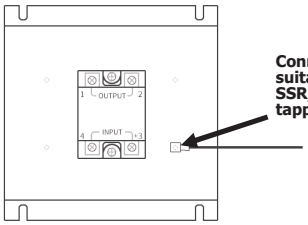
- MERLIN AC Solid State Relay (SSR)
- Tool kit - for installation on site
- Mounting Kit - for fixing the MERLIN AC SSR to a panel or wall
- Consumables - for making the connections between the MERLIN AC SSR and MERLIN6 monitor (wire of suitable length)
- Consumables - for making the connection from the rectifier supply through the MERLIN AC SSR (cable of suitable length)
- Multimeter - for confirming the voltage and current readings
- Installation Instructions for chosen MERLIN6 monitor, Quick Start Guide (this document)
- Cell/Mobile Phone - for testing interruption post installation

Step 3 - Housing the MERLIN AC SSR



The MERLIN AC SSR has four 0.19" (4.8mm) fixing holes that allow it to be screwed to a panel or wall. Care should be taken when installing the MERLIN AC SSR in a confined space due to overheating. If the unit is to be installed inside a confined space there must be adequate venting.

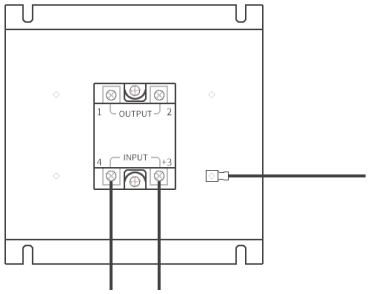
Step 4 - Connect to Earth



Connect the MERLIN AC SSR to a suitable earth point. To ground the SSR, connect a ground wire to a spare tapped hole (#8-32) on the heat sink.

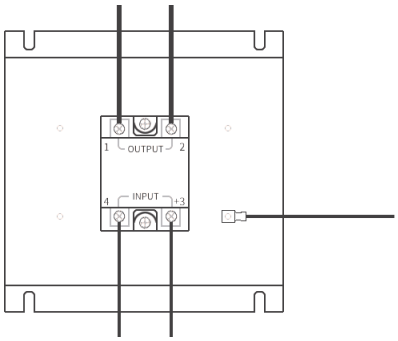
Connect the MERLIN AC SSR to a suitable earth point within the transformer rectifier housing or within the enclosure.

Step 5 - Connect to the MERLIN Monitor



Connect the MERLIN AC SSR to the MERLIN6 monitor using AWG16 (1.5mm^2) wire and the supplied connection blocks (unplugging the connector block on the MERLIN6 can make this part of the install much easier).

Step 6 - Connect to the Transformer Rectifier



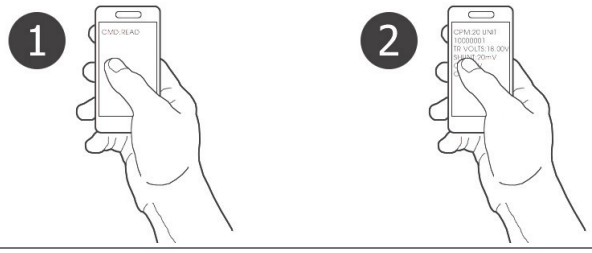
The MERLIN AC SSR can be used to switch either the live or neutral side of the transformer rectifier supply.

Please refer to the full MERLIN TR/XT Installation Instructions for further installation information.

Step 7 - Apply Power

With all connections made, re-apply power to the rectifier and the MERLIN6.

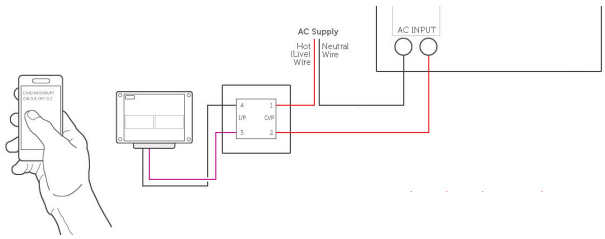
Step 8 - Take a Reading



Send the text command **CMD:READ** from your cell/mobile phone to the number on the MERLIN6 monitor.

The unit will take a reading on all channels and sent the results back to your phone. A reply will look similar to: **CPM:20 UNIT 10000001 TR VOLTS:18.00V SHUNT:20mV ON:0mV OFF:0mV**

Step 9 - Check Interruption



Send the following text command to the number on the front label of the MERLIN6 monitor: **CMD:INTERRUPT ON:0.8 OFF:0.2**

Once the MERLIN6 monitor has received a valid interruption command it will drive the MERLIN AC SSR using the requested timing pattern. The blue LED on the MERLIN6 monitor will flash; this shows the off period of the interruption pattern. The pattern should also be seen on the dials of the transformer rectifier, the current dropping each time the supply is interrupted.

To stop interruption send an interrupt end command to the MERLIN6 monitor: **CMD:INTERRUPT END**

Step 10 - Post Site Configuration

Once installed you will need to configure the shunt value (if used) in the CPSM/iCPSM software. Further configuration and operational features can be carried out directly via the software.