

Introduction

This procedure provides additional instruction for the installation and setup of a Thyro-S...3 to replace an existing Thyro-S...1





Thyro-S...1

Thyro-S...3

The Thyro-S...1 series exist as 1S...H1 or 1S...HRL1. The manual and brochures for this series can be found here:

http://www.advanced-energy.com/en/THYRO_S_H1.html

The Thyro-S...3 series exist as ...S...H3 or

...S...HRLP3. The manual and brochures for this series can be found here:

http://www.advanced-energy.com/en/THYRO_S_H3.html

This Tech-Note does not replace the manual of the units and does not contain the safety information. In any case the original manuals are required for the operation and handling of our devices.

Setup and Installation

The units are configured by using the dip-switches behind the front cover. If the Thyro-S 1S...1 was operated in factory setting, the Thyro-S 1S...3 can be operated in factory settings, too.

If the Thyro-S 1S...1 settings of the dip switches differs from the factory settings or the load fault potentiometer is not in the factory setting position (fixed by glue), additional parts are required to read the existing settings.



Load fault potentiometer in factory setting (Sealed)

The product manual can explain the switch settings. The switch and potentiometer settings can be read out by using our optional PC-software Thyro-Tool and our PC-Interface-RS232 or a USB cable.

Dip Switch settings



0 No TTool-mode

AO not available

0 resistive load

3

4



Thyro-S...3





I/O Connections





Power Connections

For single phase heaters operated phase to phase or phase to neutral.

Left page: Thyro-S 1S ... H(F) RL1 Right page: Thyro-S 1S ... 3





Required connections:

<u>Thyro-S...1 (Thyro-S 1S...3)</u> Mains phase 1 to Thyro terminal U1 (L1). Thyro terminal U2 (T1) to heater A. Heater B to neutral or mains phase 2 and Heater B via fuse to X1.1 as reference.

If the unit is supplied with a fan, the fan has to be supplied via X7 as specified.

24V auxiliary voltage can be supplied to X11.



Power Connections

For three phase heaters connected in delta or star without neutral.

Left page: 2x Thyro-S 1S ... H(F) RL1 Right page: 1x Thyro-S 2S ... 3





Required connections:

2x Thyro-S 1S...1 (1x Thyro-S 2S...3) Mains phase 1 to Thyro terminal U1 (L1). Mains phase 3 to Thyro terminal U1 of 2nd unit (L3).

Mains phase 2 to heater L2.

Heater L2 via fuse to X1.1 of 1st unit as reference.

Thyro terminal U2 (T1) to heater L1. Thyro terminal U2 of 2nd unit (T3) to heater L3.

If the unit is supplied with a fan, the fan has to be supplied via X7 as specified.

24V auxiliary voltage can be supplied to X11.



Power Connections

For three phase heaters with 3 controlled legs. Mainly used for open delta or star with neutral.

Below: 1x Thyro-S 3S ... 3



Required connections: Thyro-S 3S...3 Mains phase 1 to Thyro terminal L1. Mains phase 2 to Thyro terminal L2. Mains phase 3 to Thyro terminal L3.

Thyro terminal T1 to heater L1. Thyro terminal T2 to heater L2. Thyro terminal T3 to heater L3.

If the unit is supplied with a fan, the fan has to be supplied via X7 as specified.

24V auxiliary voltage can be supplied to X11.

Fieldbus Communication

<u>Thyro-S ... 1</u> requires one communication port for each controlled phase (module). If a 3 phase heater is controlled with 2x Thyro-S, two cables and ports on the bus module are required. To setup the PLC for the connected Thyro-S units, the correct type Thyro-S...H1 or HRL1 needs to be chosen.

<u>Thyro-S ... 3</u> requires one communication port for each Thyro-S. If a 3 phase heater is controlled with a 2S, only one cable and port on the bus module is required. To setup the PLC for the connected of the Thyro-S...3 unit, the equivalent type of Thyro-A...H1, HRL1 or HRLP1 needs to be chosen.

Installed	PLC Configuration
1SH3	1AH1
2SH3	2AH1
3SH3	3A…H1
1S…HRLP3	1A…HRLP1
2S…HRLP3	2A…HRLP1
3SHRLP3	3A…HRLP1

Fieldbus Communication (Anybus)

Please contact technical.support@aei.com