my-PV AC-THOR 9s - Commissioning, 9kW version

This brief installation instruction provides a quick overview of all the necessary steps. Additional information, safety instructions, references, and sources can be found in our HelpCenter. The Installation instructions are only valid for the integration of the energy management system and the configuration of relevant assets. Make sure to carefully read the **safety instructions** and adhere to the **infrastructural requirements for a gridBox gateway installation**.

Required:

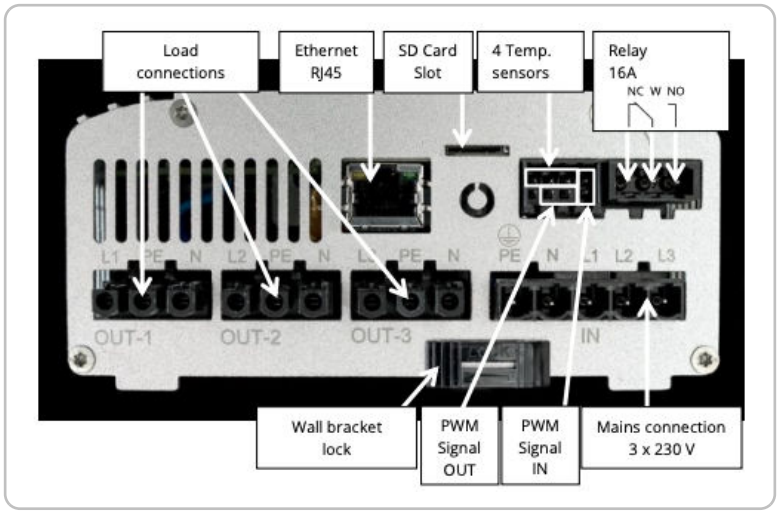
- Latest firmware, at least
  - E/Ethernet firmware version a0020806
  - P/Power stage version 110

Connection

NOTE

- Only a setup including **1** connected temperature sensor is possible.
- Only **Mode 1 - Hot water** can be used in conjunction with a gridBox.
- A maximum of 1 MyPV heating device can be used per system and gridBox. The connection of several devices and the master-slave function are not supported and can lead to incorrect control of the energy flows.

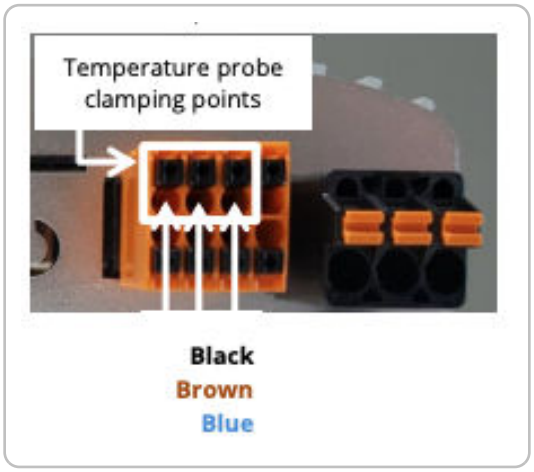
The following figure shows the downside view of the AC-THOR 9s with all the connection options.[1]



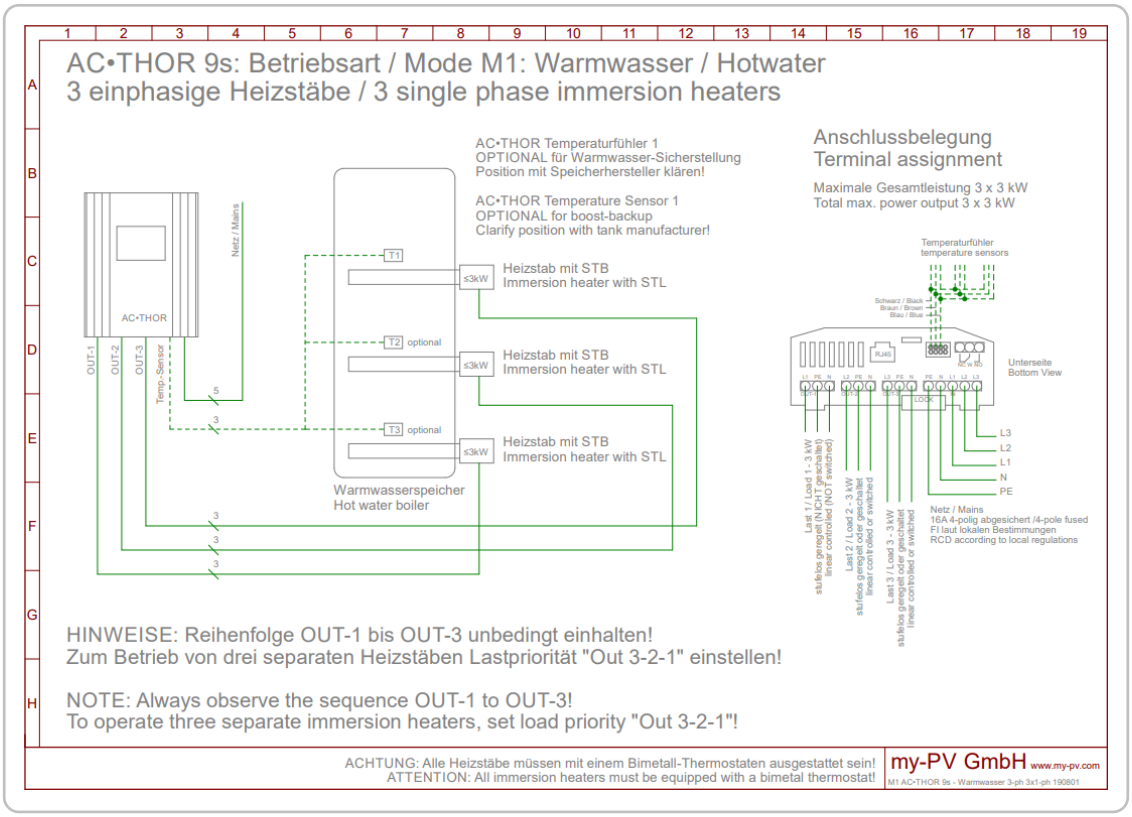
[1]Montageanleitung_AC-THOR-9s_DE-EN-ES-FR-NL_221206.pdf, p.15

Plug the device to the power socket and the temperature sensor. Have a look at the terminal positions for the three cores in the following illustration.

Temperature probe clamping points [2]

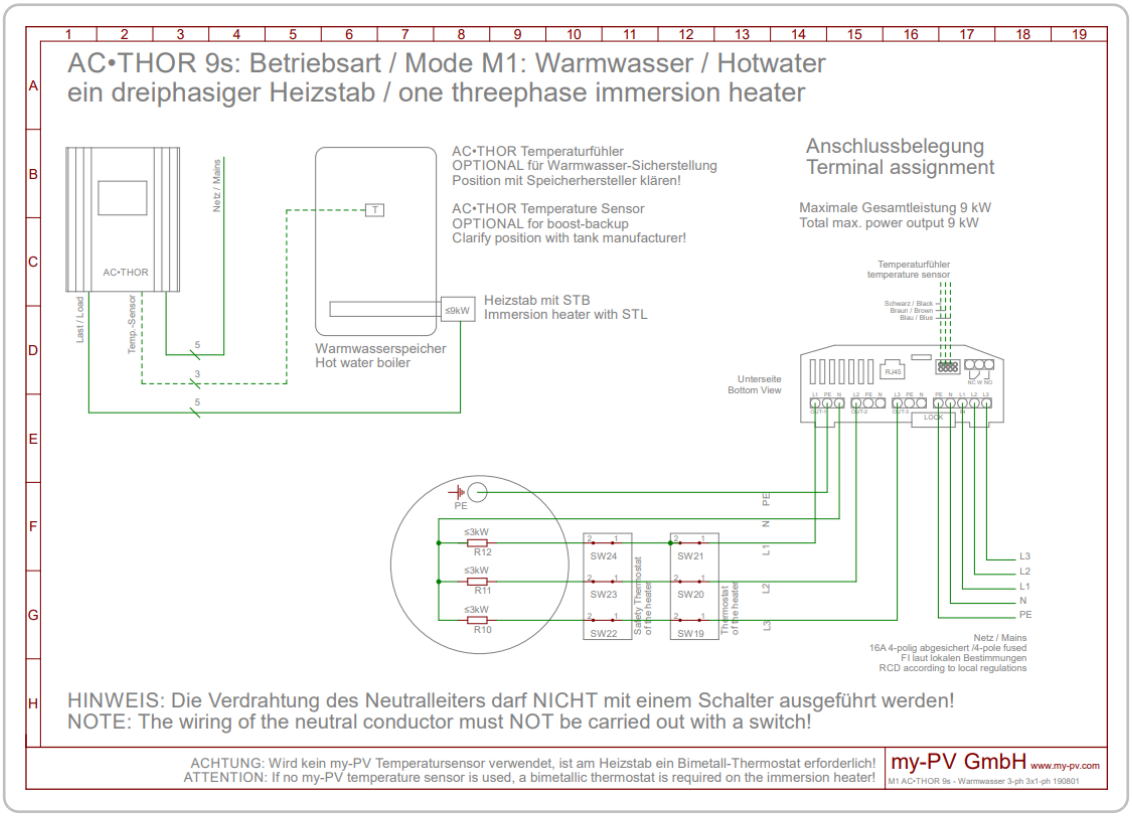


When using a heating device with 3 single phase immersion heaters, respect the following instructions:[3]



When using a heating device with 1 three-phase immersion heater, respect the following instructions:[4]

[2]Montageanleitung_AC-THOR-9s_DE-EN-ES-FR-NL_221206.pdf, p.18
[3]M1 ACâ•ç¢THOR 9s - Warmwasser 3-ph 3x1-ph 190801.sch
[4]M1 ACâ•ç¢THOR 9s - Warmwasser 3-ph 3x1-ph 190801.sch



For more information, refer to the manufacturer's assembly Instructions.

NOTE

It is mandatory to keep the maximum values of the heating element and the energy management app synchronized at all times.

Check heating rod and temperature sensor connections

After the hardware commissioning process, check the status of the physical connections of the system.

To do so, proceed as follows:

1. Log in to the user interface of the device.
2. To access the status page, click on the button highlighted in green

3. Make sure that the system is functional by reviewing the state information values:

State

State:	3, Heating finished	
ACTHOR9s:	0	W
Solarpart:	0	W
Gridpart:	0	W
Output 1 Solarpart:	0	W
Output 1 Gridpart:	0	W
Output 2 Solarpart:	0	W
Output 2 Gridpart:	0	W
Output 3 Solarpart:	0	W
Output 3 Gridpart:	0	W
Load:	1:1 2:1 3:1	
Load nominal power:	8721	W
Relays state:	0000	
Pump PWM:	0	%
Temperature 1:	37.2	°C
Temperature 2:	0	°C
Temperature 3:	0	°C
Temperature 4:	0	°C
HW Boost state:	0	
Next legionella boost:	-	days
Date:	08.12.22	
Time:	15:45:05	
Control state:	Modbus Read received	
Block State:	0	

Load

- Make sure that the state of the load of each phase is **1**. A value of **1** is equivalent to **OK**.
- If the state is **0**, this means that the circuit is not closed due a heating-rod. If **none** or **0** is displayed even though a load is connected, the cause might be a thermostat that is switched off or a safety temperature limiter that is triggered. Check the wiring and the thermoswitch if installed.[5]

Load nominal power

The load nominal power displays the detected maximum power of the connected heating rod. The displayed value must match the built-in device hardware-specs.

Temperature

If the temperature value is not displayed at **Temperature sensor 1**, the sensor is connected correctly. In this case check the physical connections.

Related errors are displayed as:

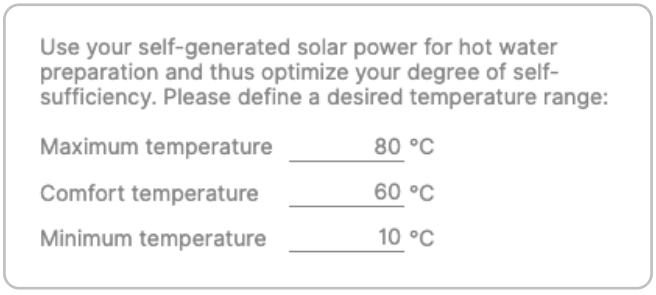
- 0°C = Broken probe
- 85°C = Data disruption temperature sensor [6]

Additional hardware

1. If a hot water storage system is installed, set the thermostat of the connected heating rod ideally to 80°C. Make sure to respect the technical maximum of the system. If the system is not able to sustain a temperature of 80°C (because of pipes, seals, or a hot water tank), set the thermostat as close to 80°C as possible.
2. After the successful commissioning, set the maximum temperature directly via the energy management application.

Energy Manager - temperature range settings

[5]Acthor_doc_en_a0020806.pdf, p.10
[6]Acthor_doc_en_a0020806.pdf, p.47



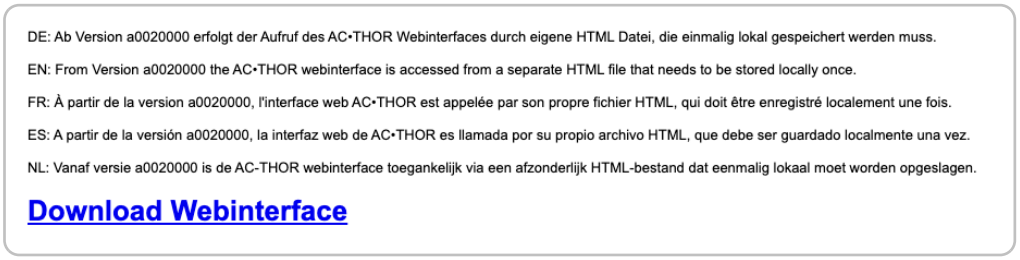
Configuration

Connect the device to the same network as the gridBox and switch it on. If you use a standard DHCP server on your network, it must assign a local IP address to the asset. It can be found directly via the info section on the display of the unit or in your router/DHCP Server itself.

Download and open the user interface

To access the user interface, proceed as follows:

1. Connect an internet browser-enabled device to the same network.
2. Open the IP address of the AC-THOR 9s by entering it in the URL/search bar of the browser to get to its configuration page.
3. Start the commissioning by clicking on **Download webinterface**.

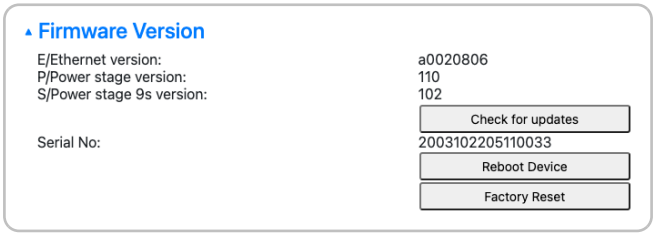


4. Open the downloaded file.
5. The configuration menu of the unit is displayed and the IP appears in the upper right selection field.
6. Ensure that the **Device state** is set to **On**:

Firmware update

To check the systems for any available software updates, click the **Check for updates** button and install them via **Install updates**.[7]

[7] Acthor_doc_en_a0020806.pdf, p.47-48



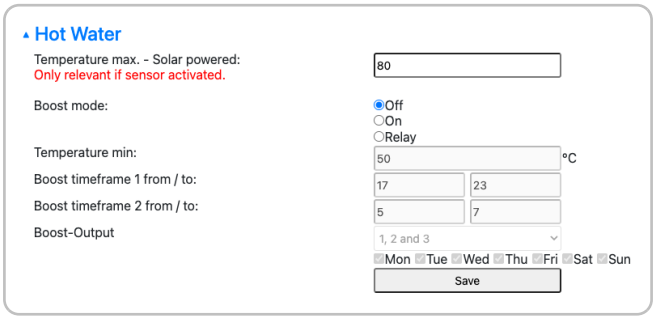
Mode settings

When using the AC-THOR 9s in conjunction with a gridBox, you can only use **Mode 1** with one temperature sensor.

1. Within the user interface of the AC-THOR 9s, go to **Mode settings**.
2. Select the desired priority from the drop down menu. When using a single 9 kW (3-phase) heating element, this setting can be kept at default. The load priority determines the order of use when utilizing several single-phase heating elements.
3. Click on **Save**.

Hot water

Configure the hot water settings via the user interface as follows:



Temperature max. - Solar powered

Enter the maximum technical temperature for the installed hot water system as value for **Temperature max. - Solar powered**.

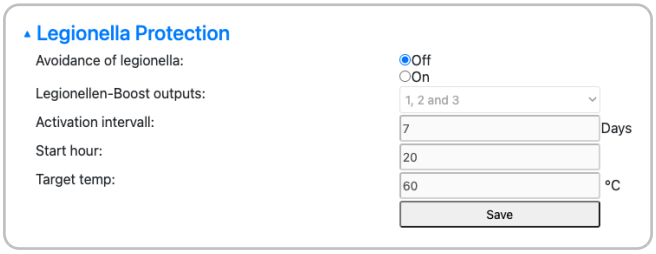
Boost mode

Deactivate the boost mode to ensure correct control of the energy management. You can set the minimum temperature within the energy management application which then is valid at all times, even without surplus power / through grid supply. The customer can also adjust the value at any time.

Legionella protection (optional)

If the heating element is installed in a domestic hot water tank, we recommend heating the water to at least 60 degrees at regular intervals. [8]

For this purpose, you can activate the legionella protection in the interface:



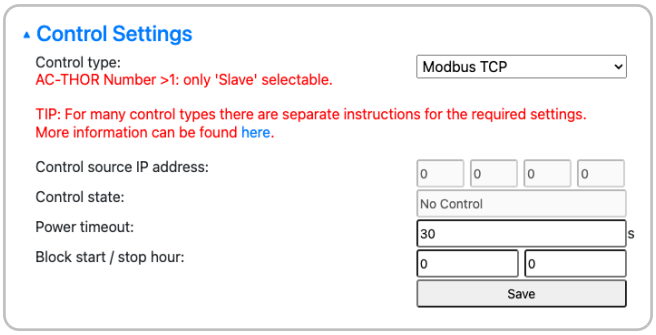
NOTE

Note that during the heating behavior due to the legionella protection, the device is not controlled by the gridBox and thus the energy demand is independent of the current status of PV production, consumers and storage systems.

Control settings

Configure the control settings via the user interface as follows:

1. Select **Modbus TCP** as **Control type**.
2. Set the **Power timeout** value to "30".
3. Click on **Save**.



[8] https://www.infektionsschutz.de/erregersteckbriefe/legionellen/