


## AC•THOR®

Photovoltaic-Power-Manager for hot water and space heating

# Assembly Instructions






 The Operation Manual of the device is available at [www.my-pv.com](http://www.my-pv.com).

The following device key is required for online registration of the unit. Keep it safe! Please see the Operating instructions for further information.

Device Key

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## Intended use

The electronic AC•THOR Photovoltaic-Power-Manager (in the following, AC•THOR for short) is designed for operating resistive loads such as electric immersion heater elements, electric boilers, electric convectors, electric heating mats or infrared panels.

The unit controls the output voltage according to external signals (temperatures, Ethernet- and other control signals) linearly and thus the power output of the connected load.

The AC•THOR is controlled by the my-PV Power Meter or can be combined with products of different manufacturers (the current list of manufacturers can be seen under [www.my-pv.com](http://www.my-pv.com)).

The AC•THOR is designed for fixed installations indoors.



In sanitary facilities, the relevant regulations must be observed!

Any application other than those described above may cause damage.

Furthermore, this may lead to hazards such as a short circuit, fire, electric shock, etc. The safety instructions and the information on handling in this manual and in the operation instructions shall be followed!

The product complies with the statutory, national and European requirements. The names of the company and products are trademarks of my-PV GmbH. All rights reserved.



You will find a comprehensive description of the unit's functions and potential settings using the display or via web interface in the online Operating instructions.

## Scope of supply

- AC•THOR Electronic Photovoltaic Power Manager
- Wall bracket (on the rear of the unit)
- Assembly set (3 screws 4.2 x 32 mm, 3 wall-plugs 6 mm)
- my-PV digital temperature sensor (cable length 5 m) with 8-pin plug
- Plug, 3-pin for 16 A switch output (attached to the unit)
- Operator stylus for the display with holder
- Assembly Instructions
- Key-fob AC•THOR



## Safety instructions

The AC•THOR is designed for fixed installations indoors.

**The connected units may only be pure resistive electric loads such as immersion heater elements, boilers, convectors, heating mats or infrared panels! The units connected must be suitable for variable supply voltages between 0-230 V AC (in no circumstances units with electronic power supply) as this otherwise may cause damage to the AC•THOR or to the other loads connected to it.**

Only connect loads fitted with suitable mains plugs to the load socket!

In cases where the load to be connected has no mains plug, a 16 A earthed EURO mains plug must be fitted (not supplied).

Operation of heating systems incorporating electronic thermostats is not possible!

For heating water, only heaters with an integral safety temperature limiter may be connected.

Installation must be carried out by an accredited specialist.

Comply with the relevant standards when mounting and connecting the device.

The unit housing may heat up during operation. Only mount the unit on non-combustible surfaces.

The unit is only intended for use in dry rooms indoors. Otherwise there is a risk of fatal electric shock!



In sanitary facilities, the relevant regulations must be observed!

Do not install the device in an environment contaminated with ammonia.

Do not install the device in a dusty environment.

The ventilation holes of the housing must not be covered.

Avoid exposure to high temperatures (> 40°C), low temperatures (< 5°C) or direct sunlight during storage and operation.

The AC•THOR must be connected to a nominal voltage of 230 V AC, 50 Hz.

Protection of the mains connection for the AC•THOR may not exceed 16 A (tripping characteristic B or C).

The accident prevention regulations established by the German Employer's Liability Insurance Association for electrical equipment and facilities must be adhered to in commercial facilities.

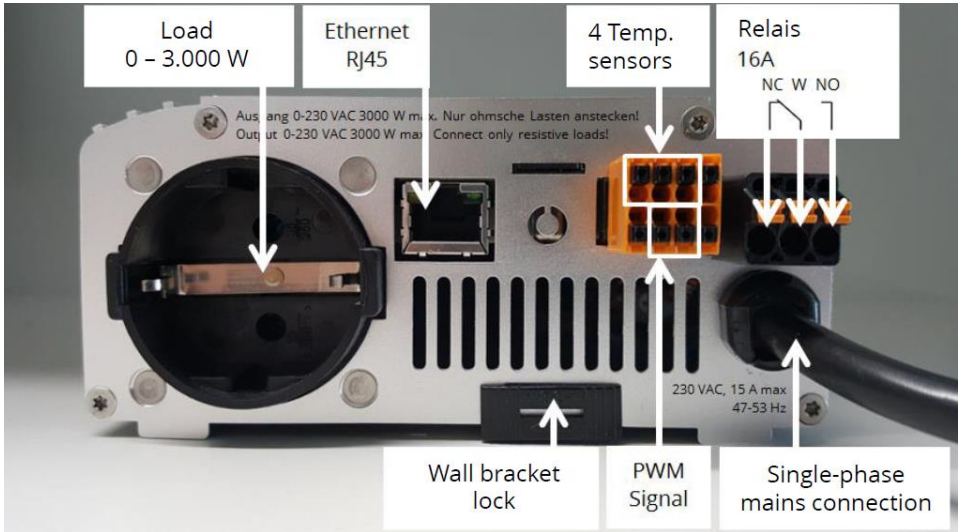
This unit can be used by children ages 8 and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning the safe use of the equipment and understand the resulting risks. Children should not play with the appliance. Cleaning and user maintenance shall not be undertaken by children without supervision.

## **Limitation of warranty and liability**

A limitation of warranty and liability applies for:

- any damage or injury caused by improper handling or failure to observe the assembly and operating instructions
- Consequential damage, in particular to the connected loads
- Altering, disassembling or otherwise intervening in the device or making changes to the device without authorisation

## Connections



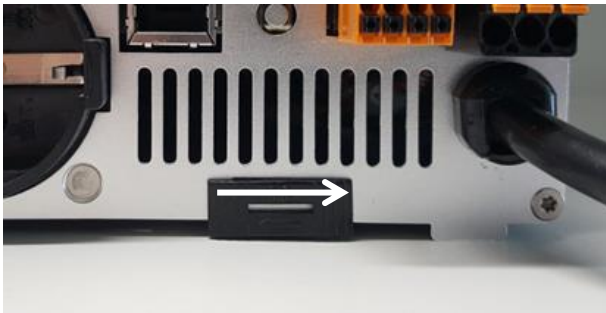
## Assembly



A brief video (German) to explain assembly will also be found online:  
<https://www.youtube.com/watch?v=WFHbayf5VDQ>




Remove the wall bracket from the rear of the AC•THOR unit. To do this, slide the lock underneath to the right.




Then fix the wall bracket to the wall with three screws. Three screws and three wall-plugs are supplied. If the screws supplied are not suitable for the substrate, suitable screw must be obtained.



To fix it to the wall bracket, the AC•THOR is suspended in the wall bracket by the two long slots on top and then fixed in place by locking it underneath (slide to the left).

 Check the AC•THOR is securely fixed!

Then the electrical connections can be made.

 Do not immerse my-PV temperature sensor(s) directly in water. Use a thermowell!



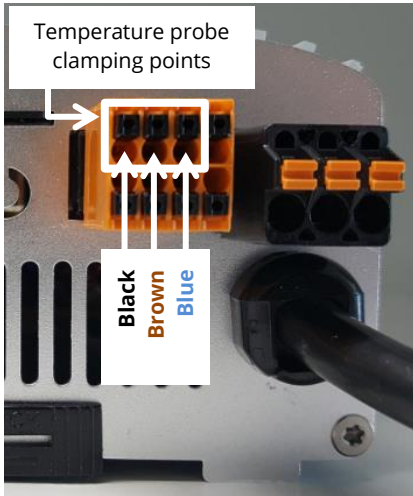
TIP: For mains leads, use a cable duct with a depth of 60 mm.  
The necessary cut-out measures 130 x 60 mm.

## Connecting several temperature probes

Up to four digital temperature probes (three-core, bus system) can be connected to the AC•THOR. The terminal positions for the three cores are shown in the following illustration.



TIP: If more than one probe is used, the cores can also be connected externally in parallel!



## Electrical connection

Protection of the mains connection for the AC•THOR may not exceed 16 A (tripping characteristic B or C).



The PE conductor of the socket must be connected!

Pay attention to other loads on the line circuit, this may trip the circuit breaker!

The AC•THOR is controlled by external signal sources by way of IP protocol using a standard Ethernet RJ45 cable.

## Electrical connection for multiple units

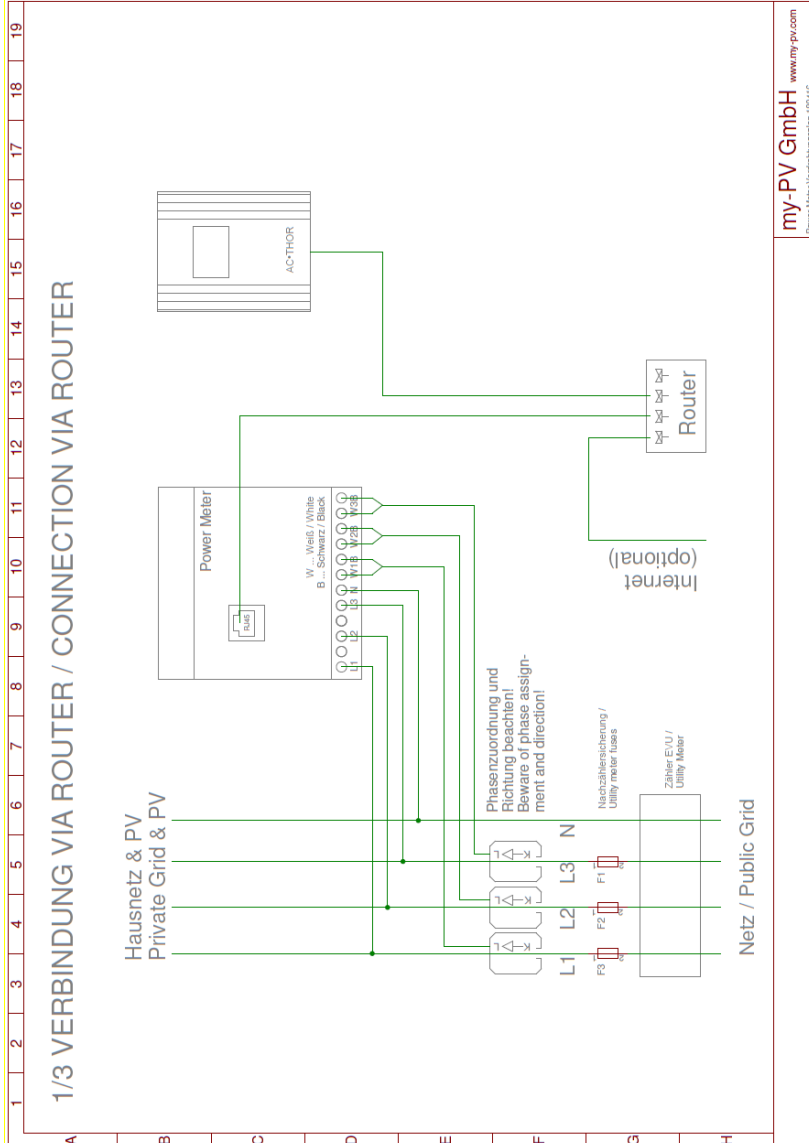
All devices should be connected to appropriate AC circuits. Note that each AC•THOR takes up to 3 kW power (with relay output up to 6 kW). It makes sense to divide this between the phases on the grid.

# Wiring diagrams

The current versions are available on [www.my-pv.com](http://www.my-pv.com).

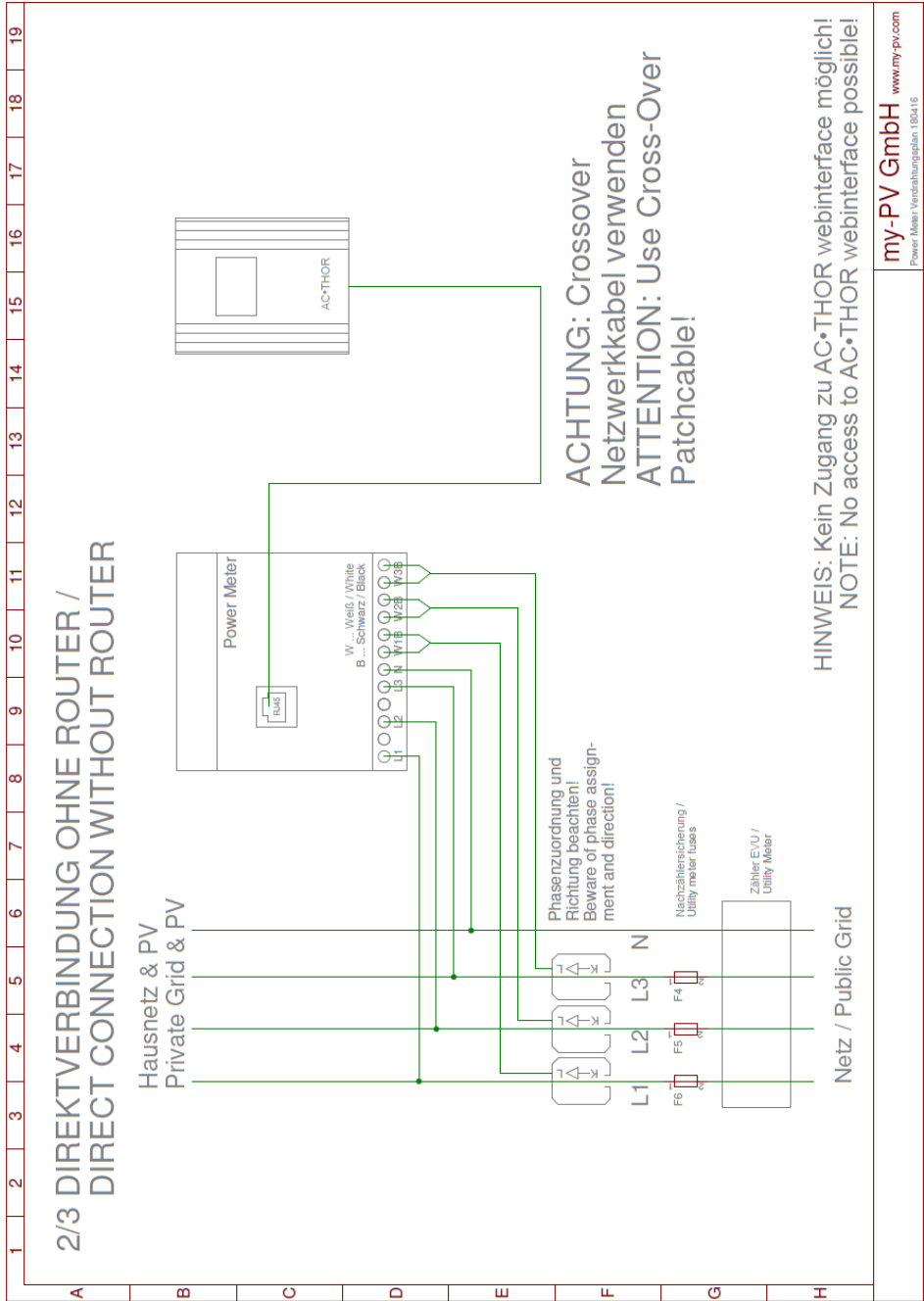
## Wiring the AC•THOR control side

### Power meter – connection via router

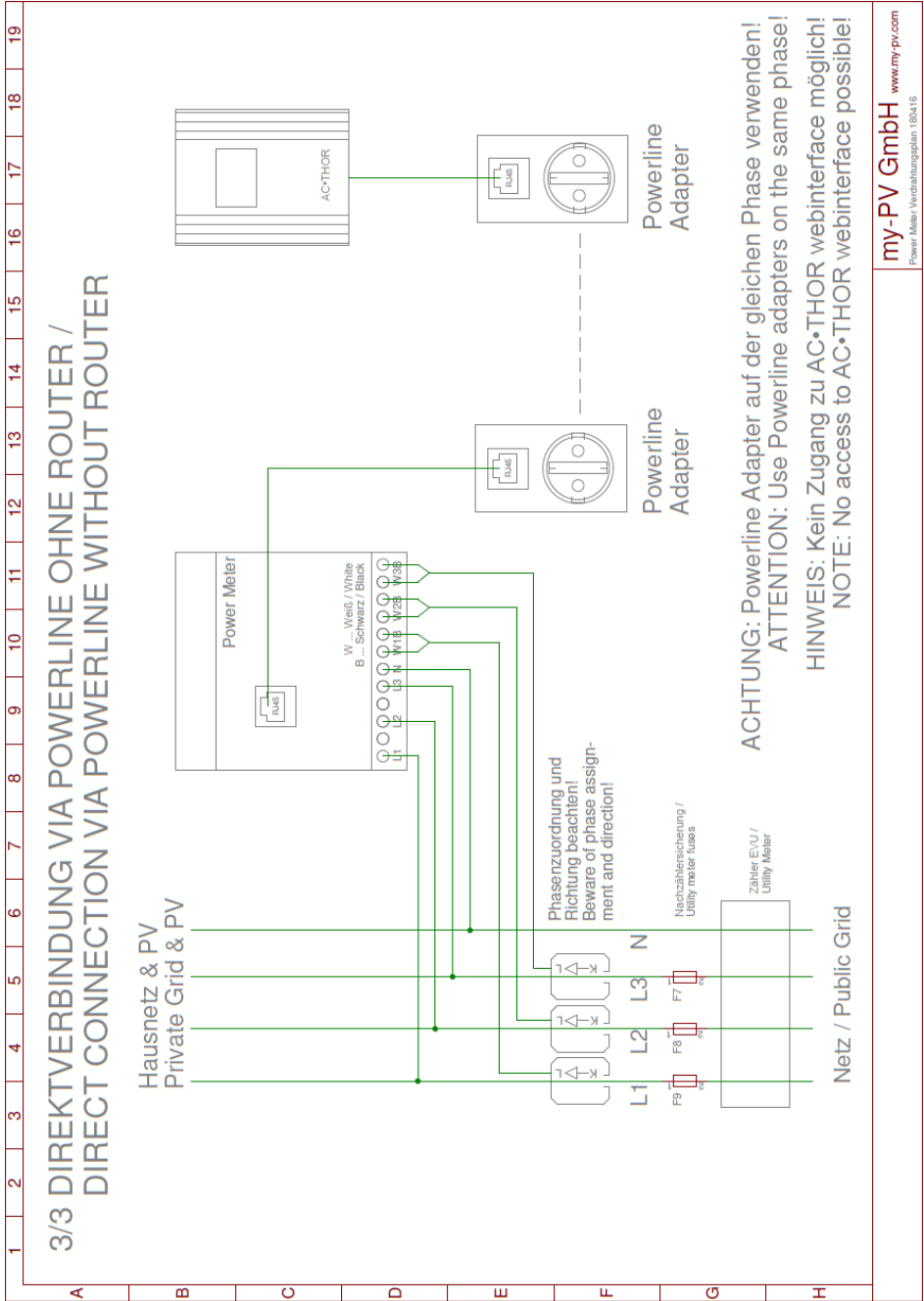


Establishing the automatic connection via router may take as much as a minute!

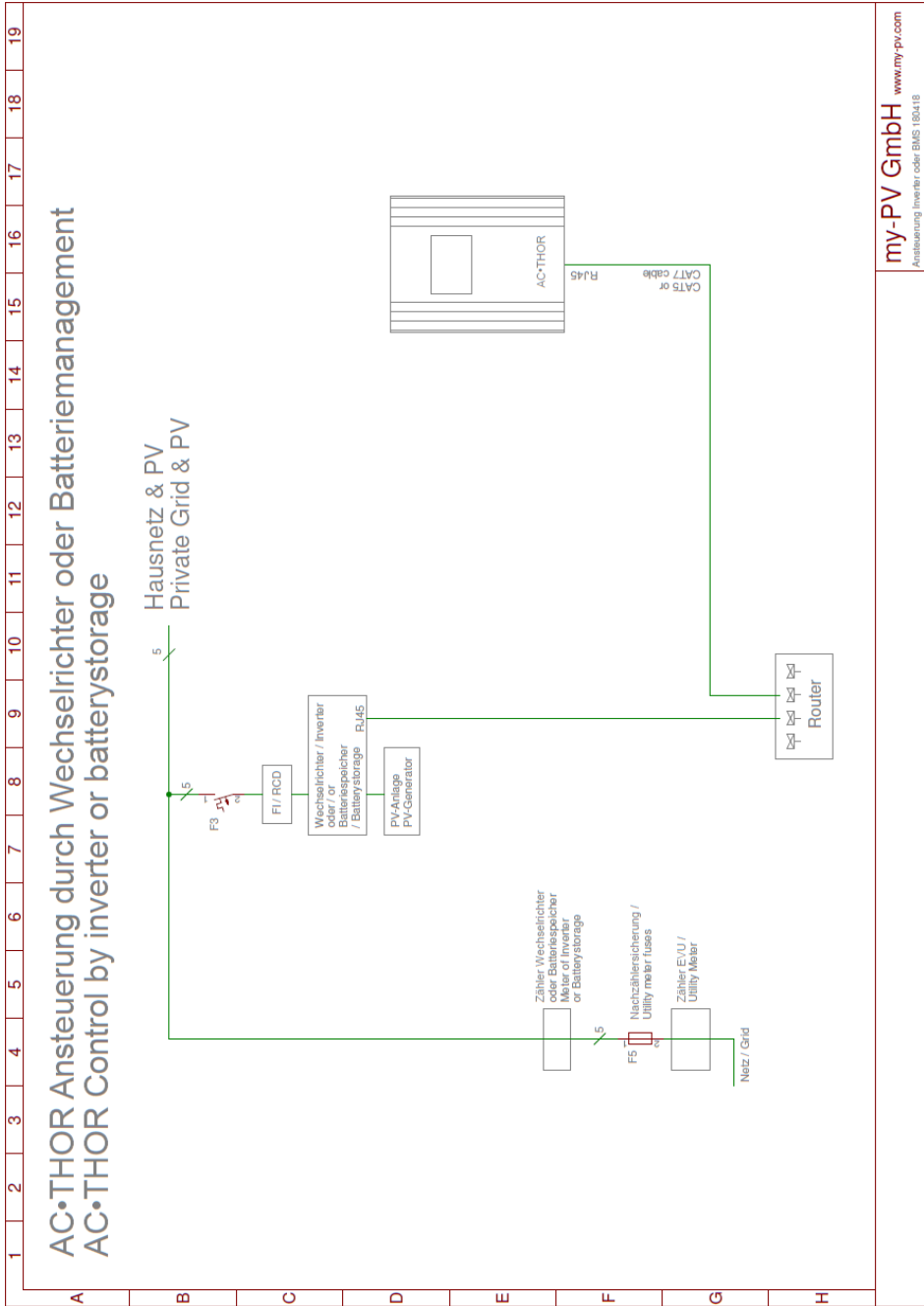


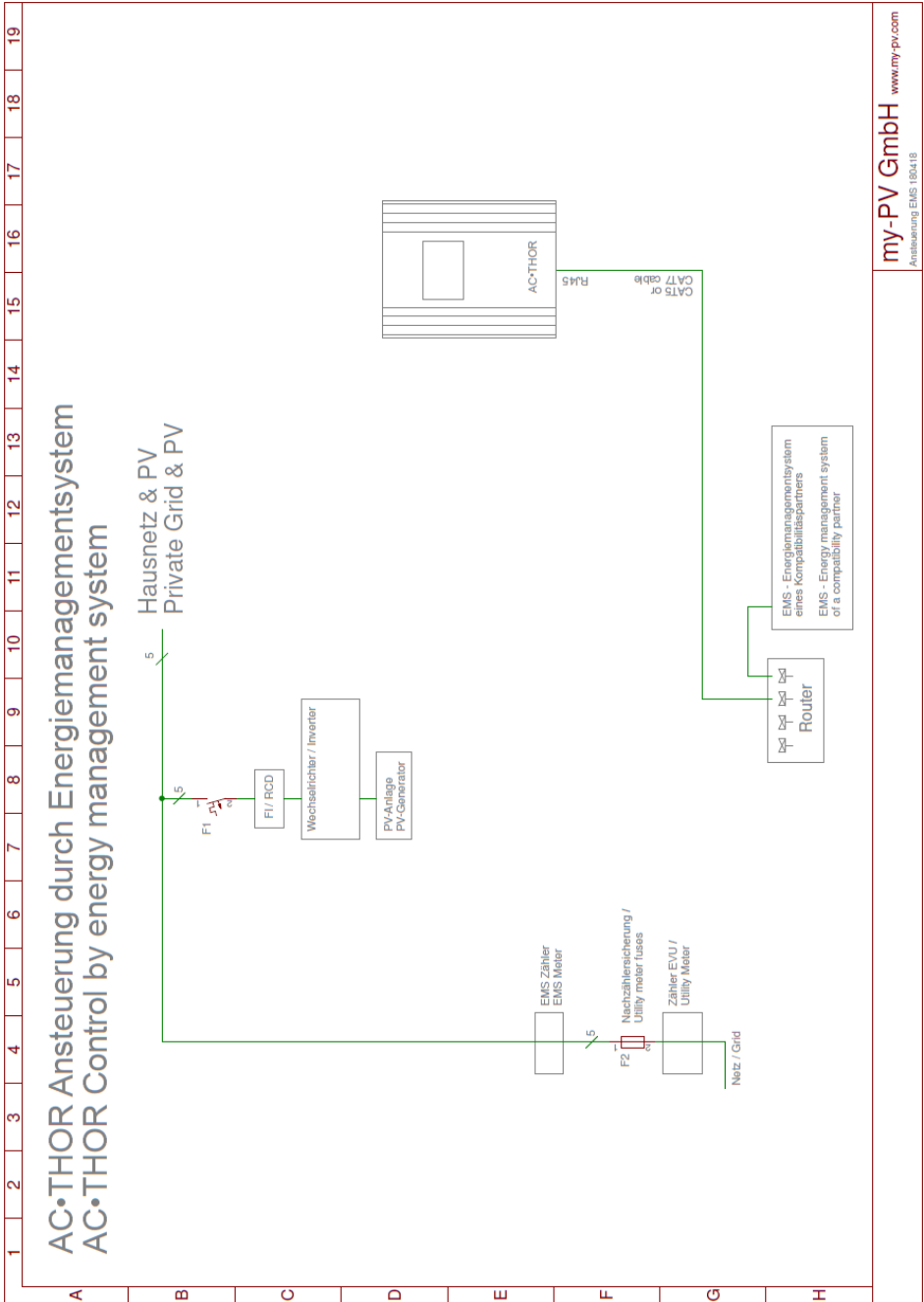


**Power meter – connection via Powerline without router**



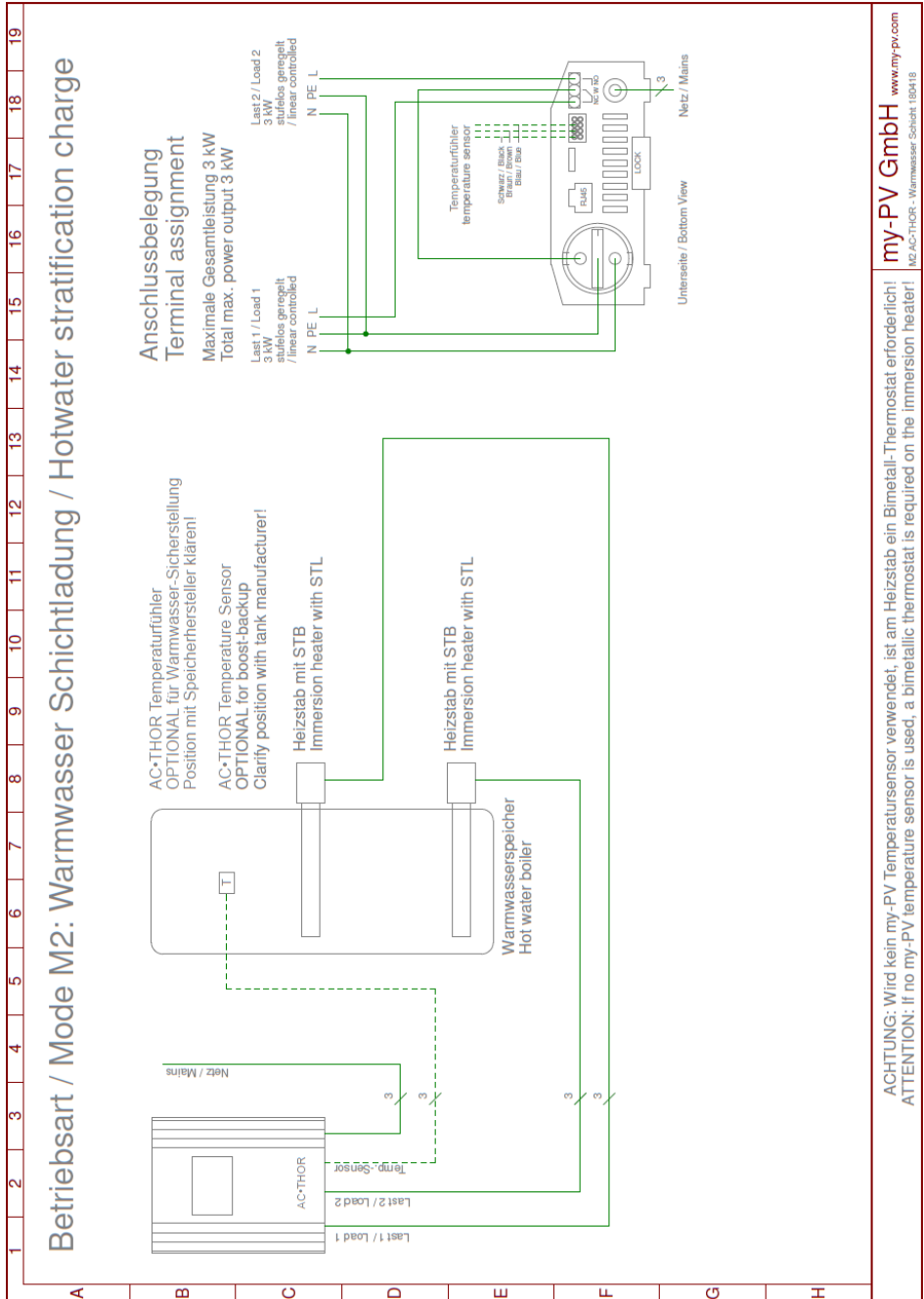
# Control by inverter or battery management



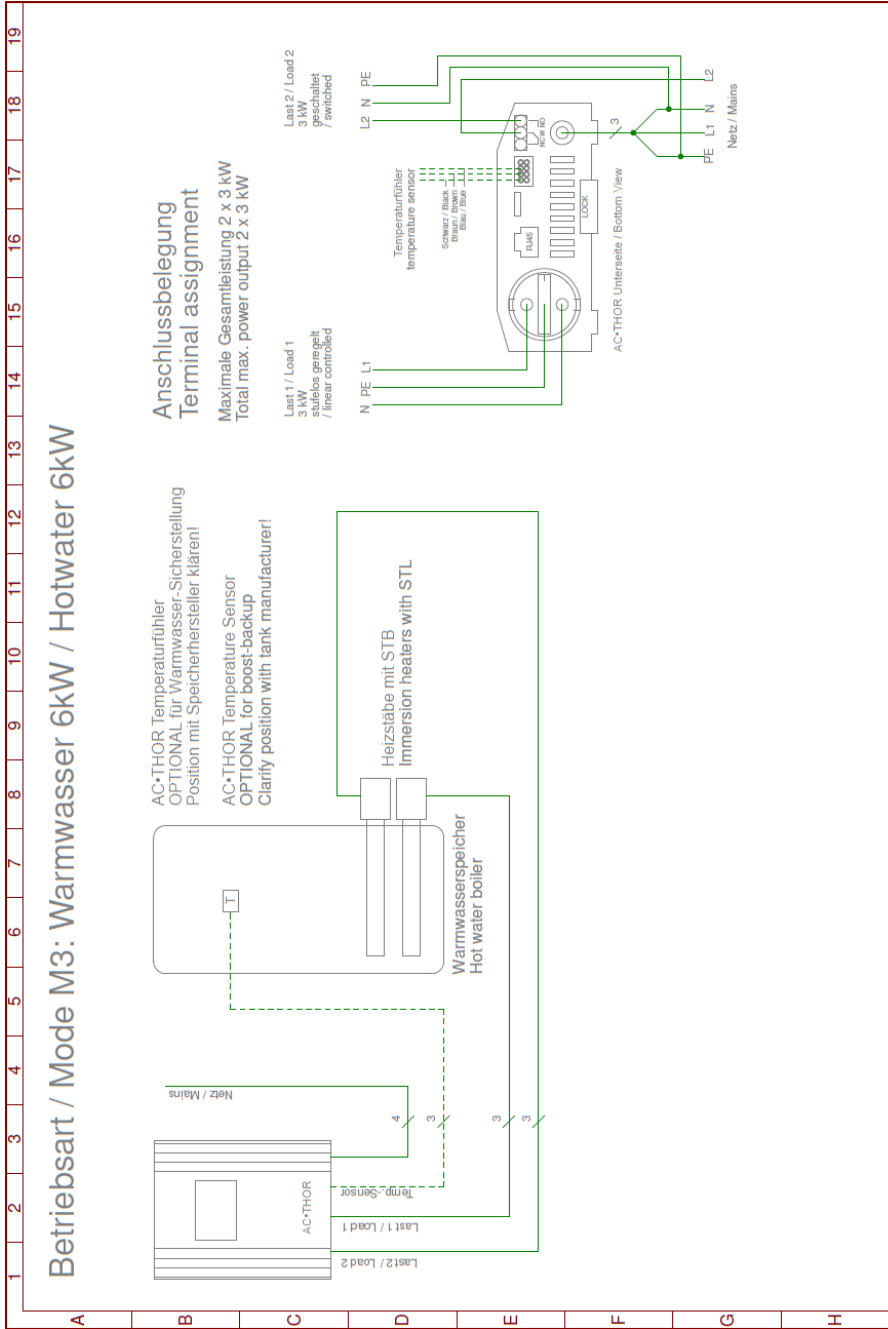




## Operating mode M2: Hot water stratification charge



# Operating mode M3: Hot water 6 kW



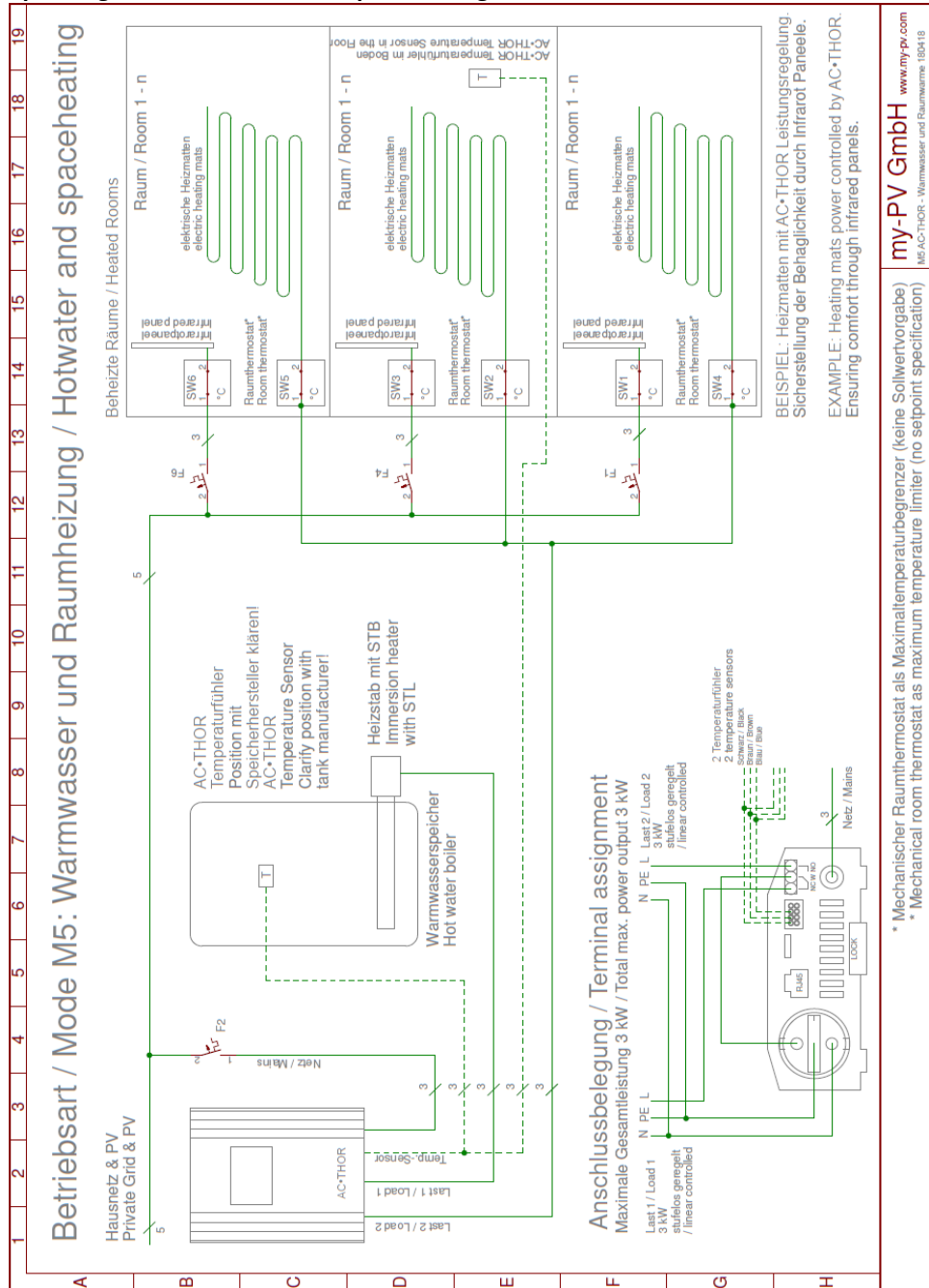
ACHTUNG: Wird kein my-PV Temperatursensor verwendet, ist am Heizstab ein Bimetall-Thermostat erforderlich!  
ATTENTION: If no my-PV temperature sensor is used, a bimetallic thermostat is required on the immersion heater!

**my-PV GmbH** [www.my-pv.com](http://www.my-pv.com)  
M3 AC-THOR - Warmwasser 6kW 19d418



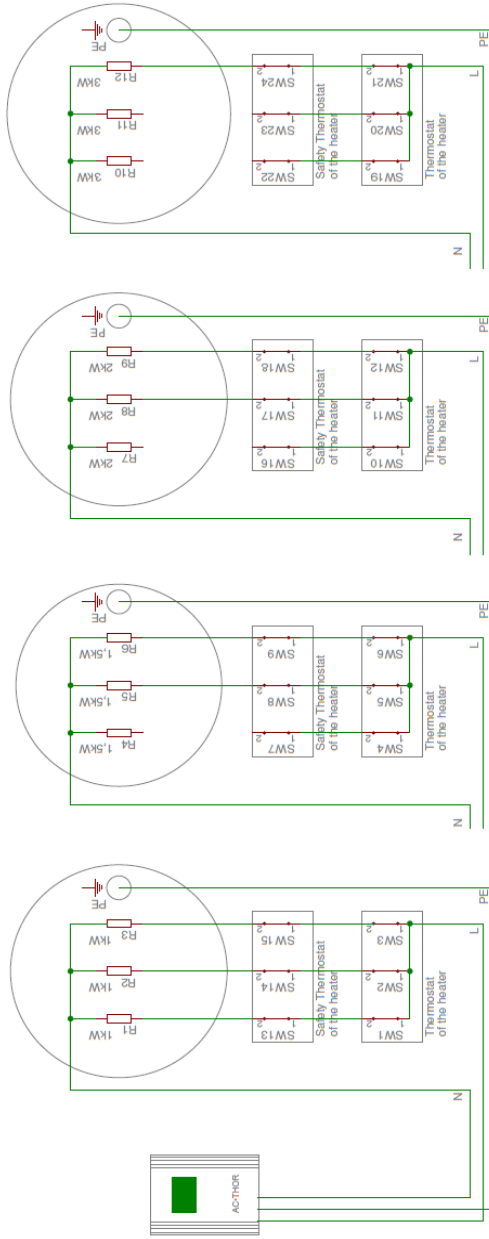


# Operating mode M5: Hot water + space heating



# Connecting three-phase heating elements

## Anschluss 3-phasiger Heizstäbe / Connection of 3-phase immersion heaters




≤ 3 kW  
230 VAC


4,5 kW  
max. 3 kW  
nutzbar / useable

6 kW  
max. 3 kW  
nutzbar / useable

9 kW  
max. 3 kW  
nutzbar / useable


## Maintenance

 Do not attempt to open the unit. The device does not contain any parts that may be repaired by the user.

 Never splash water on or in the unit!

When it is unplugged, the surface of the unit can be cleaned either with a damp cloth, using mild glass cleaner or cleaning tissue for glasses.

In a polluted environment, the air inlets and outlets should be checked regularly for cleanliness. If necessary, the unit can be cleaned through the air slots with a vacuum cleaner.

 The unit cannot work at maximum efficiency if the air supply is inadequate!

If the mains cable of the unit is damaged, it has to be replaced by the manufacturer or its service agents or a similarly qualified person.

## Operation displays

The unit has a touch screen to show operating conditions and for ease of operation.

 Never touch the screen with pointed objects or those having sharp edges!



For best use the supplied operator stylus. The holder for the stylus can be stuck on to a surface on or close to the unit with the adhesive patch.



A detailed description of the graphic user interface, the operating modes, the menu guide and the possibilities for setting will be found in the Operating instructions for the unit. The current version is available on [www.my-pv.com](http://www.my-pv.com).

## Troubleshooting

The device does not contain any parts that may be repaired by the user. In the event of a fault, please contact your specialist dealer.

## Disposal



Packaging material must be either stored or disposed of as appropriate. Dispose of the product at the end of its service life according to the statutory regulations.

## EU declaration of conformity

my-PV GmbH, Teichstraße 43, 4523 Neuzeug, Germany

hereby declares that the products of the product AC•THOR®

comply with the following Directives and standards:

EN 55014-1, EN 55014-2, EN 60730-1, EN 62233, EN 61000-3-2, EN 61000-3-3

The company named above holds available for inspection documentation as proof of fulfilment of the safety objectives and the principal safety requirements.



A handwritten signature in blue ink.

Neuzeug, 09.05.2018

Dr. Gerhard Rimpler, Managing Director

## Technical specifications

### AC•THOR

Mains voltage	230 V, 47-53 Hz
Regulated output	0 to 230 V pure sine 0 to 3,000 W max.
Relay output	1 x UM 20 V AC 100 mA min. 230 V AC 16 A max.
Mains connection	Single phase, grounded plug
Safeguarding	16 A tripping characteristic B, C
Load connection	Insulated socket for resistive loads
Connecting wire	2.8 m
Standby-consumption	< 1.5 W
Efficiency	> 98 % at rated power
Operating temperature range	5°C to 40 °C
Permissible RH	0-99 % (non-condensing)
Storage temperature	-20°C to 70 °C
Protection	IP20
Protection class	I
Temperature sensor	my-PV digital temperature sensor (5 m)
Display	Colour graphic, touch screen 2.83"
Warranty	2 Years
Compatible systems	see <a href="http://www.my-pv.com">www.my-pv.com</a>
Interfaces	Ethernet RJ45, RS485
Weight	1.5 kg including lead (without wall bracket)
Dimension (W x H x D)	135 x 195 x 65 mm without mains cable

Subject to change without notice.

The logo for my-PV GmbH, featuring the letters 'MYPV' in a bold, blue, sans-serif font.

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