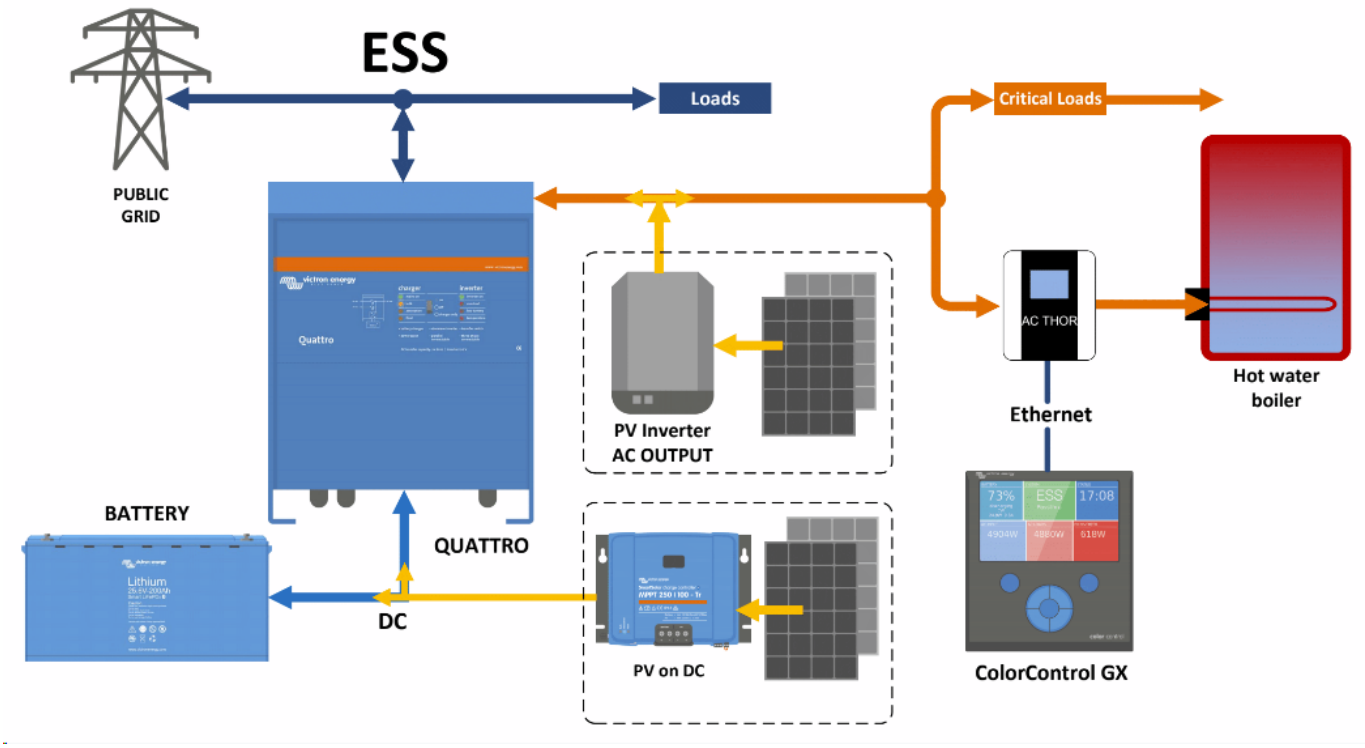
my-PV AC-Thor and Victron Energy ESS

When the batteries are full, we still have PV power available, but our grid operator doesn't allow feeding, that power is lost. We could use that power and send it to a boiler or something similar. For this we are using a device from my-PV called AC-Thor.

The schematic for the ESS system looks like this (the meter from my-PV is not needed in this setup):



First setup:

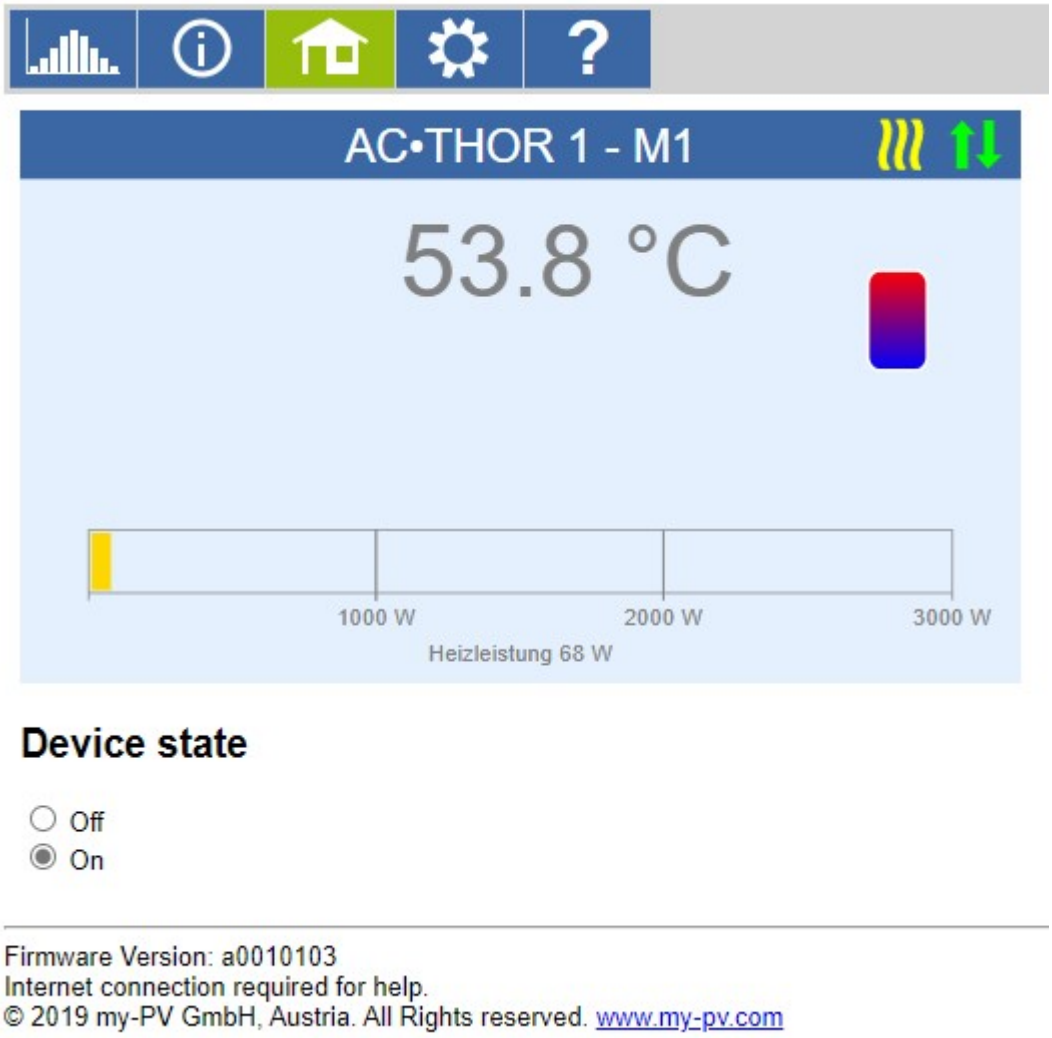
AC-Thor device must be connected on the AC output of the Multi/Quattro.

Must be in the same LAN network as Color GX or Venus GX, with DHCP enable (default).

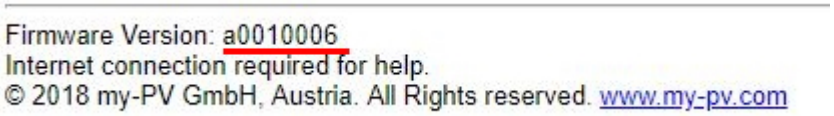
Using the device touch screen, select Information menu and go to the third screen to find the current IP address.

Open a browser, put that IP address into the address field and press enter

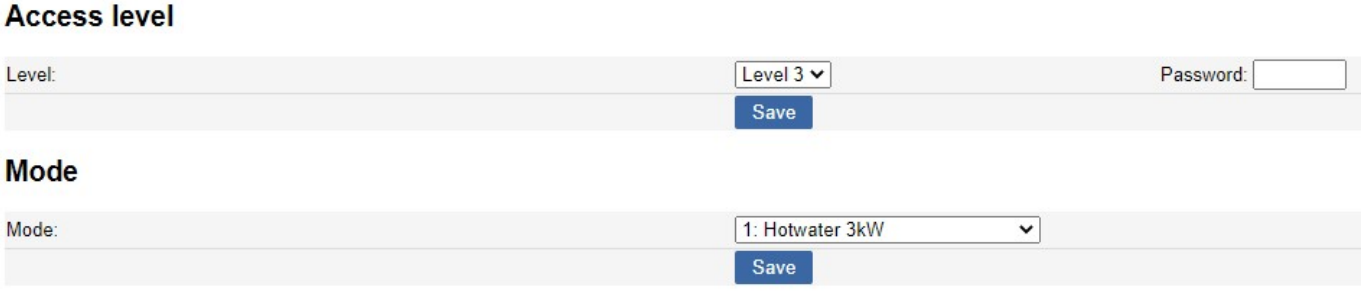
The webpage should look like this:



Please check the firmware version on AC-Thor device, must be at least a0010006.



Go to setting and select the “Mode”. For ESS select ”Hot water 3KW”, .



In order to have communication between the GX device (like ColorControl GX or Cerbo GX) and Ac-Thor, some parameters must be configured:

First you select which type of energy meter you are going to read from. Select 'Victron 1ph Manual' if you are using a single phase meter like the ET112 or select 'Victron 3ph Manual' if you are using a three phase meter like the EM24 or ET340.

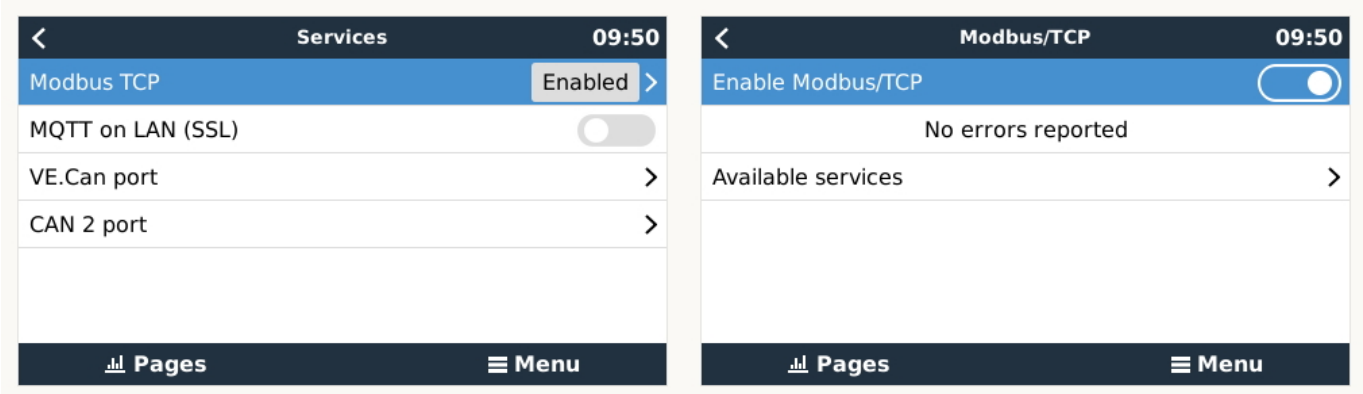
On the background by choosing one of these setups communication will be done through ModbusTCP Port 502, the Device ID will be set to 0 and the ModbusTCP registers will be set to 820 for single phase or 820, 821 & 822 for three phase and values are in Int16 format & a minus value (-feed) will detect feedin energy.

On the IP address field, you have to put the GX device (like ColorControl GX or Cerbo GX) IP address. If you don’t know how to obtain it, please check here: https://www.victronenergy.com/panel-systems-remote-monitoring/venus-gx#manuals

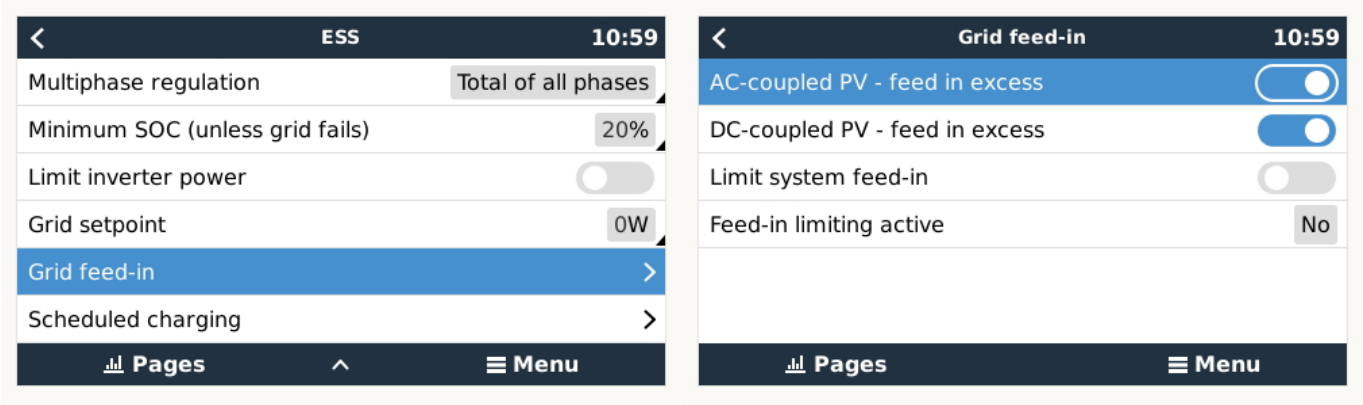
On the Control target, recommended value is -50W.

Press Save to store the parameters.

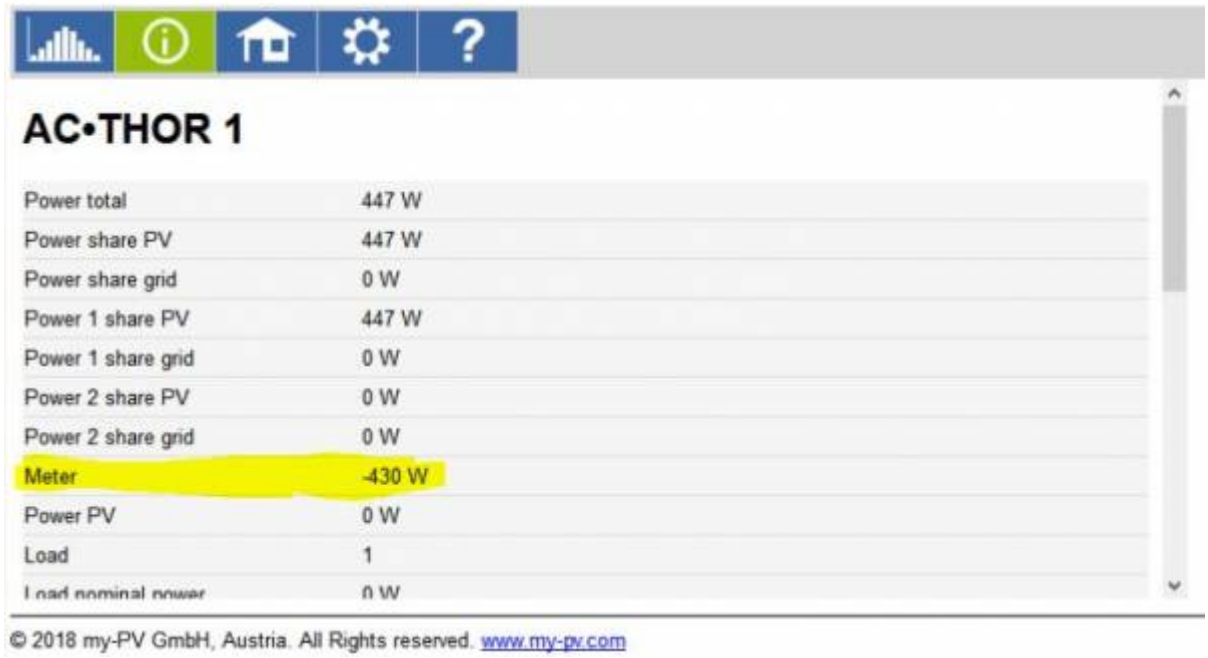
On the GX device please be sure that Modbus TCP is enabled (Settings → Services → Modbus TCP)



Feed in excess solar power must be enabled for the system with PV panels connected using MPPT’s and Fronius Zero Feed-in must be disabled for systems with PV panels connected using Fronius PV Inverters.



If everything is correctly configured, you should see in the information screen of the AC-Thor, the grid consumption/feed displayed as Meter measured value, positive for consumption and negative for feed in:



AC-Thor will control the energy sent to the boiler so that the energy sent to the grid is approximately

50W.

To prevent boiler to over heat, please be sure the temperature sensor is connected to AC-Thor and installed inside the boiler. The temperature parameters can be configured in the settings menu:

Hotwater

Temperature:	max °C	Min °C
	60	50
Boost-Mode:	Off	On
Timeframe:	start hour	stop hour
	17	23
Weekday	Mon	Tue
	Save	

AC-THOR Technical specifications:

- mains voltage 230 V, 50 Hz
- outputs 0-3000 W infinitely variable + switching output 16 A
- mains connection Single-phase, earthing contact plug
- consumer connection Protective contact socket for resistive loads
- display Color Graphics, Touch Screen 2.83 “
- connection cable 2,8 m
- dimensions (W x H x D) 135 x 210 x 65 mm