

## AC ELWA®-E

### Electrical Photovoltaic-Excess Hot-Water-Device



## Operation Manual

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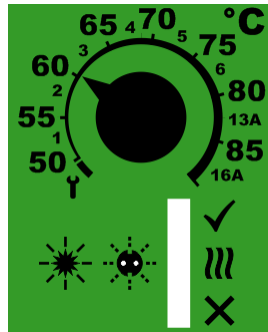
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## 1. Assembly

Before placing into operation it is essential to read the assembly instructions provided with the device.

## 2. Controls and displays



Temperature-adjusting knob

1-6 ... Number of device

13A / 16A ...fuse protection

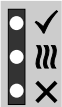
LED operating mode displays

green

yellow

red

## 3. Operation displays



Start-up



Standby



Heating with excess power



Heating for hot water securing (Boost-mode)



Heating finished, set-point temperature reached



Setup mode



No control signal



Error

### Explanation



LED on



LED blinking



LED off



The display can change between „No control signal“ and „Standby“, if the device is triggered via Web-Interface or in cycles of one minute when data of temperature and power are recorded.

#### 4. Putting into operation


During the first commissioning the AC ELWA-E is in the so-called "Auto Detect" mode. The device automatically searches for a signal source and adjusts itself accordingly. If the search is successful, **NO** further configuration via the Web-Interface of the AC ELWA-E is required for the use of excess power!

#### Configuration with router (recommended)



The start-up with router only works, if it is configured to DHCP.

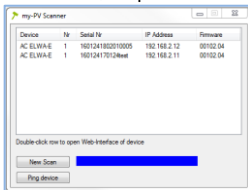


The device must not be in Setup-Mode (  symbol on adjusting knob)

1. Connect laptop with router (LAN or WLAN)
2. Connect AC ELWA-E and router via standard Rj45-cable („patch-cable“)
3. Plug in AC ELWA-E power plug
4. AC ELWA-E gets a dynamic IP-address from router.

Using the program „ my-PV Scanner 1.XX.exe“ (contained in „Software Package AC ELWA-E.zip“ at [www.my-pv.com](http://www.my-pv.com)) the AC ELWA-E can be found.

To do this, unpack the scanner program into a local directory.



5. Are there more AC ELWA-Es in the network, the desired device can be determined by the serial number (lateral on the case)!
6. A double click on the particular device opens the Web-Interface of the AC ELWA-E. From firmware version 00200.00 onwards, the required HTML file is downloaded from the Internet and stored in the same directory as the scanner program.



Scanning is performed via UDP port 16124. Firewalls (or specific router settings) may prevent the AC ELWA-E from being found.

In this case, it is advisable to look for the IP address of the AC ELWA-E in the DHCP list of the router and enter it manually into the address line of the web browser.

Alternatively, the second scan program "Scan AC ELWA-E ARP.exe" can be used, which sends an ARP query to the router and displays the connected my-PV devices. Since the router takes some time to update the ARP table it may be that the ARP scan takes some time to show AC ELWA-E results.

AC ELWA-E ARP Scanner			
Own IP Address: 10.0.0.12			
AC ELWA-E IP Addresses:			
10.0.0.100	98-6d-35-c0-00-01	dynamisch	
10.0.0.101	98-6d-35-c0-00-00	dynamisch	
10.0.0.102	98-6d-35-c0-00-02	dynamisch	



TIP: Alternatively, the IP address of the device can also be determined via the DHCP client list of the router or via various IP scan programs!

From firmware version 00200.00 onwards, the Web-Interface of AC ELWA-E is outsourced to an external HTML file. If the device is accessed directly via the IP address in the web browser, this view appears.

DE: Ab Version 00200.00 erfolgt der Aufruf des AC ELWA-E Webinterfaces durch eigene HTML Datei, die einmalig lokal gespeichert werden muss.  
 EN: From Version 00200.00 the AC ELWA-E webinterface is accessed from a separate HTML file that needs to be stored locally once.  
 FR: À partir de la version 00200.00, l'interface web AC ELWA-E est appelée par son propre fichier HTML, qui doit être enregistré localement une fois.  
 ES: A partir de la versión 00200.00, la interfaz web de AC ELWA-E es llamada por su propio archivo HTML, que debe ser guardado localmente una vez

### [Download Webinterface](#)

DE: Alternativ kann das AC ELWA-E Webinterface auch direkt im Browser geöffnet werden.  
 EN: Alternatively, the AC ELWA-E webinterface can also be opened directly in the browser.  
 FR: L'interface web de la AC ELWA-E peut également être ouverte directement dans le navigateur.  
 ES: Alternativamente, la interfaz web de AC ELWA-E también puede abrirse directamente en el navegador.

### [Open Webinterface in Browser](#)

Follow the download link and save the file locally, then open the file to access the Web-Interface.



my-PV does not recommend to connect the AC ELWA-E to the Internet via port forwarding access!

## Configuration without router




**From Ethernet firmware version 00200.00 this applies:**

To be able to access the Web-Interface of AC ELWA-E in systems without internet access, please download the required HTML file in advance via this link:

<http://www.my-pv.com/download/currentversionget.php>

## Procedure

1. Set adjusting knob to the symbol  (all three LEDs blinking)
2. Plug in AC ELWA-E power plug
3. All 3 LEDs of the AC ELWA-E are on for approx. 10 seconds (device boots), afterwards all 3 LEDs are blinking. The device is now in Setup-Mode
4. Disconnect existing Wi-Fi connections on the laptop to avoid possible network-conflicts

5. Connect Laptop to AC ELWA-E via standard Rj45-cable („patch-cable“). Depending on the laptop, a cross-over network cable may be required!
6. The Laptop gets a dynamic IP address
7. The operating system might request you to choose a place of the network. At this step it is not necessary to do so. You can close the window.
8. Insert address 192.168.0.1 in the web browser to select homepage of the AC-ELWA-E

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EN: From Version 00200.00 the AC ELWA-E webinterface is accessed from a separate HTML file that needs to be stored locally once.

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ES: A partir de la versión 00200.00, la interfaz web de AC ELWA-E es llamada por su propio archivo HTML, que debe ser guardado localmente una vez

[\*\*Download Webinterface\*\*](#)

DE: Alternativ kann das AC ELWA-E Webinterface auch direkt im Browser geöffnet werden.

EN: Alternatively, the AC ELWA-E webinterface can also be opened directly in the browser.

FR: L'interface web de la AC ELWA-E peut également être ouverte directement dans le navigateur.

ES: Alternativamente, la interfaz web de AC ELWA-E también puede abrirse directamente en el navegador.

[\*\*Open Webinterface in Browser\*\*](#)

9. Start the previously downloaded HTML file to get to the Web-Interface
10. Select Button „Settings“ and configure as described in chapter „Setup“
11. After all the settings have been made, disconnect the AC ELWA-E power plug
12. Turn the knob to the desired temperature
13. Disconnect the data connection between AC ELWA-E and Laptop/PC
14. Connect AC ELWA-E via standard Rj45-cable („patch-cable“) with router or via cross-over network cable directly with the my-PV Power Meter!



Do not connect the device directly to the inverter or the battery system!

15. Plug in the AC ELWA-E power plug again



If the signal source for the AC ELWA-E is searched with the „Auto Detect“ – function, the process can take a few minutes!

If the set-up is done without a router, a connection between PC/Laptop – Router – AC ELWA-E can though be implemented afterwards. See next chapter!

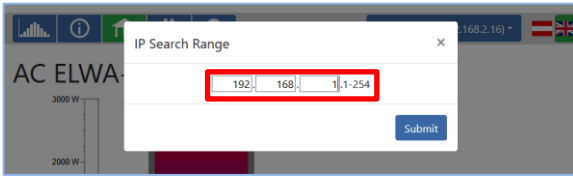
## 5. Web-Interface

By means of the HTML file (required for Ethernet firmware version 00200.00 or higher) data of the AC ELWA-E can be retrieved and adjustments can be made.

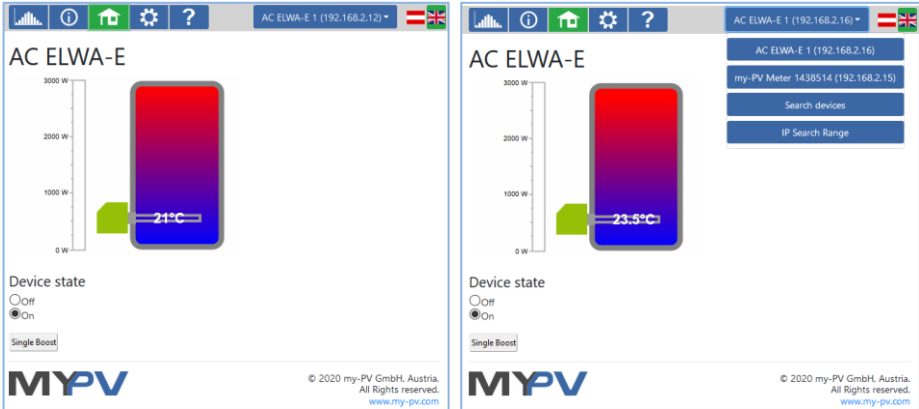
If the Web-Interface is started via the scanner program, the connection to the device is established automatically.

From firmware version 00201.01 onwards, the current Web-Interface allows the selection of French or Spanish in addition to German and English.

If the Web-Interface is started by calling the HTML file, the IP address range of the network in which the device is located must be set once. The entry is saved by the web browser, but the address range can be redefined at any time using the "IP Search Range" button.



From the homepage further pages can be selected via the menu buttons.



A quick selection in the upper right corner allows direct access to the Web-Interface from other my-PV devices in the network. The button "Search Devices" scans the network for my-PV devices.

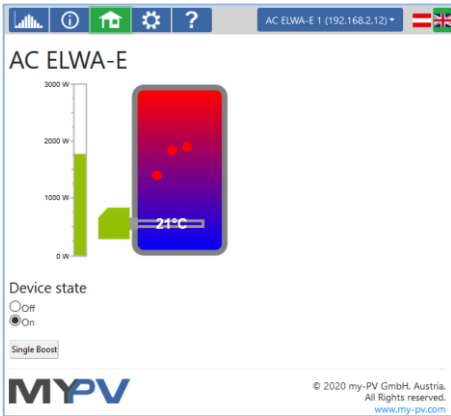


TIP: If the device search does not produce a result, the IP address can also be entered manually in the address line of the web browser.

URL: ... /my-PV Websetup 00XXX.XX.html?ip=*XXX.XXX.XXX.XXX*

Consider that the appearance and the scope of options can change with updated software versions.

## Home (homepage)



The graphic shows the current temperature in the boiler, the bar on the left visualises the power output of the device.

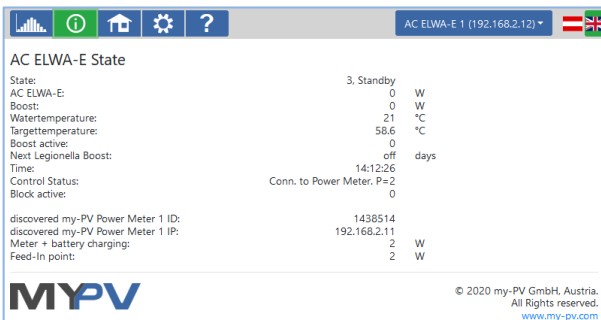
With device state "Off" the control of the AC ELWA-E can be switched off. The status page displays "Status 21, Device disabled".

With the button „Single Boost“ the hot water backup can be started immediately once.



The dynamic web pages „Home“ and „Status“ are displayed without animation by Microsoft Internet Explorer. Recommended browsers are Google Chrome or Mozilla Firefox in the latest versions!

## Status



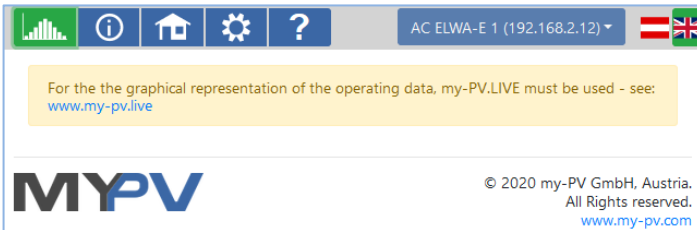
State	Number, operating condition
AC ELWA-E	power output / W
Boost	current power for hot water boost / W
Watertemperature	current water temperature / °C
Targettemperature	adjusted set-point temperature on the knob / °C

Boost active	0: Boost inactive 1: boosting via time control 2: manual boost
Next legionella boost	on/off, days
Time	system time of the device / hh:mm:ss
Control Status	describes the current control mode
Block active	Shows whether the device is blocked

Depending on which other measurements are queried in the system (see "Measurement Settings"), the status overview also provides information on these variables.

## Data logger

A graphical information of the operating data is provided in the data platform my-PV.LIVE (see "Cloud Mode").



## Setup

On this page all adjustments of the device can be made.

### Boost Settings

As an option, the AC ELWA-E can also ensure a minimum temperature in addition to the normal excess power operation. During backup operation the device is supplied with a power of 3kW.

▲ Hot Water Boost

Boost Mode:  Off  
 Offline Active

Single Boost

Boost Temp: 35 °C

Start Hour1: 17

Stop Hour1: 23

Start Hour2: 5

Stop Hour2: 7

Save

Boost Mode	Off This is the factory preset. Hot water securing is deactivated. Only PV-excess is used.
------------	---



Offline Active

Hot water securing works independent from the status of the network-connection (even at network-incidents).

With the button „Single Boost“ the hot water backup can be started immediately once

Boost Temp            Set-point temperature for hot water backup

Start Hour1:           Start of boost time window 1

Stop Hour1:           End of boost time window 1

Start Hour2:           Start of boost time window 2

Stop Hour2:           End of boost time window 2

Two boost timeframes can be defined per day. These frames may overlap.



Start hour and stop hour refer to the same calendar day. If a time window is defined over midnight, hot water backup will not start!



If the adjusted start-hour is after the stop-hour, hot water backup will not start!

## Legionella Protection

▲ Legionella Protection

Avoidance of Legionella:  Off  On

Activation Interval: 7 Days

Start Hour: 20

Target Temp: 60 °C

Save

To ensure drinking water hygiene, a period of time can be specified up to which an adjustable minimum temperature must be reached again after the last time this value has been reached. The number of days of this period is adjustable between 1 and 14. A time at which the legionella program is to be started can be specified. The factory preset values of the days is 7, the start time is 8 pm, the temperature is 60 °C, the legionella program is "Off".

The AC ELWA-E is then supplied with a power of 3kW.

## Time

▲ Time

Current AC ELWA Time: 14:41:07

AC ELWA Timezone: 2 (Press save to update)

PC Timezone: 1

NTP Server IP Address: 131 130 251 107

Save

Time: 13:41:17

Set to PC Time

In case of an available internet connection via a router, AC ELWA-E gets its time setting automatically from the web but it doesn't determine the particular time zone. That information can be transferred from the Laptop/PC by pressing the „**Save/Speichern**“ Button. The re-setting of the ELWA-time to the new time zone can last a few minutes.



Usually the time zone on the Laptop/PC shifts with the change from summer to wintertime. This shift can also be adopted with the „**Save/Speichern**“ Button. An automatic time shift from summer to winter is not scheduled.

**NTP-Timeserver-address:** can be changed if necessary. (NTP = Network Time Protocol).

When there is no connection to the internet, the current time zone setting can be transferred from the Laptop/PC by pressing „**Set to PC Time / Auf PC Zeit stellen**“.



If the device has no internet connection via router, the time setting is lost after a power outage.

## Control Settings

Control Settings

Control type: my-PV Meter Auto

ELWA Number >1: only 'Slave' selectable.

TIP: For many control types there are separate instructions for the required settings. More information can be found [here](#).

Control source IP address: 0 0 0 0

Control state:

Power timeout: 10 s

Control target: -50 W

Negative value means feed-in. Only change this value if you are familiar with the control strategy - read Help for more details.

Interval target value:  Off  On

Interval target value: If active, a different target value of the control is used in the set time window.

Block start / stop hour: 0 0

Save

In this section the choice of the signal source for the AC ELWA-E is made.



A control type can only be selected if the AC ELWA-E has the factory preset device number 1. See "Basic settings".

As a factory pre-set the control mode „**Auto Detect**“ is present. The device automatically searches for compatible sources. Some compatible manufacturers are not recognizable by the "**Auto Detect**" function!

The "**Auto Detect**" function can only be effective when just one signal source is present in the network. If there are more different sources (e.g. several inverters), a manual setting is essential for a correct functionality!

For certain compatible sources the choice between „**Auto**“ (automatic IP-search of the device) or „**Manual**“ (manual entry of the IP address of the source) is possible. „**Manual**“ is necessary when there are several compatible sources in the network and a special one of them should be chosen as the control system.

The control mode "**my-PV Power Meter direct**" has to be selected when a direct data connection between the my-PV Power Meter and the AC ELWA-E is made (without network). No direct

connection is possible with the my-PV WiFi Meter!



For this type of connection a crossover patch cable has to be used!



If the AC ELWA-E is also used for the optional hot water boost-backup, then the direct connection is not recommended since time and boost-backup settings are much easier to set via the network!



It can take up to a minute before the direct connection is established!

Signalsource	Comments
my-PV Meter Auto	Connection to my-PV Meter in the network is set up automatically. Setting up the connection may take up to a minute!
my-PV Meter Manual	Connection to my-PV Meter in the network is set up by entering the IP address manually.
my-PV Power Meter Direct	Connection to the my-PV Power Meter is established directly without a network. A crossover network cable must be used for this type of connection! <b>No direct connection is possible with the my-PV WiFi Meter!</b>
Adjustable Modbus TCP (Sunspec etc)	Explanation below.
Carlo Gavazzi Manual	Approved for meter type EM24 with Modbus TCP.
Fronius Auto / Manual Fronius Gen24 Manual Fronius Sunspec Manual	Smart Meter required. For Modbus control Sunspec must be activated.
GoodWe Manual	Works with GoodWe high-voltage hybrids that communicate via the GoodWe Wifi+LAN module via LAN using Modbus TCP.  For systems with battery storage, a value of 290W feed-in is preset as the target value of the control; without a battery, the value can also be reduced.
http	A description of this open protocol is available in a separate document, which will be provided on request.
Huawei (Modbus TCP) Manual	Works with Huawei devices that communicate via Modbus TCP, such as the Huawei Smart Dongle-WLAN-FE!  Note: From dongle firmware SPC124, TCP must be activated locally via the Huawei app!
Kostal PIKO IQ Plenticore plus Manual	Suitable electricity meters please refer to the Kostal descriptions. Modbus must be activated on the inverter.
Kostal Smart Energy Meter Manual	Device ID as set on the device. Modbus Settings – Modbus TCP – set “Enable TCP Slave” active
MEC electronics Manual	Approved for meter type MECmeter.
Modbus TCP	A description of this open protocol is available in a separate document, which will be provided on request.
RCT Power Manual	-
Slave	Cannot be selected manually. See chapter “ <b>Fehler! Verweisquelle konnte nicht gefunden werden.</b> ”
SMA Direct meter communication Auto / Manual	This control type is available for the SMA Energy Meter and SMA Sunny Home Manager devices.  If this control type is carried out by the Sunny Home Manager, the superordinate energy planning for the my-PV device is then not given. There is also no visualization in the Load Balance. However, the power control is then carried out significantly faster than with the control type "SMA Home Manager".

SMA Home Manager	The power signal which the SMA Sunny Home Manager gives the my-PV device depends not only on the feed-in, but also on the superordinate energy planning.
SolarEdge Manual Alternative: SolarEdge Synergy for 2-unit Manual SolarEdge Synergy for 3-unit Manual	Modbus TCP must be enabled on SolarEdge. The communication usually works either via port 502 or 1502.  According to the latest information from SolarEdge, this control only works when connected via LAN, not WLAN.
Steca Auto	-
Sungrow Manual	Works with Sungrow devices that communicate via Modbus TCP.
Varta Auto / Manual	-
Victron Energy 1ph / 3ph Manual	With Modbus control, the excess power control can be selected according to one or three phases.



TIP: For many of these **and other manufacturers** there are separate instructions for the required settings. More information about compatible manufacturers can be found [here](#).



Not every control type is approved for hybrid systems with battery storage. If required, please contact the technical support of my-PV.



For some control types the IP address must be set manually. This must not change during operation (e.g. by a DHCP router), otherwise the AC ELWA-E loses the control signal.



When controlled by an inverter, a feed-in meter is required in the system. The query of the inverter otherwise provides no data.



We ask for your understanding that we cannot do any binding support for third-party products. For questions about third-party products, please contact the technical support of the respective company.



Operation with battery may require additional control parameters. In this case, please contact the technical support of my-PV.

With the setting „**Power Timeout**“ the timeout of AC ELWA-E can be changed for the modes „http“, „Modbus TCP“ and „Adjustable Modbus TCP“.

The parameter "**Control Target**" specifies the set point of the power at the metering point. A negative value means feed-in. The factory pre-set of the set-point is -50 W. This parameter can be freely chosen in a range between -999 and +999 W.

The "**Interval target value**" function causes the AC ELWA-E to automatically change the target value of the control to another adjustable target value for a certain duration in an adjustable time interval. This can ensure that other applications with regulated surplus control are not deprived of surplus energy by the my-PV application.

Interval target value:  Off  
 On  
Interval target value: If active, a different target value of the control is used in the set time window.

Interval target value of the control:  W

Interval:  min

Duration of the interval target value:  s

This includes, for example, charging stations for electric cars that are neither directly nor indirectly connected to my-PV. Therefore, my-PV sets -1500W as the default for the interval target value. This corresponds to the minimum charging power of many electric cars. A further explanation can be found in the section "Compatibility with charging station without shared energy management" in the chapter "E-car function".

The function „**Block**“ allows to define a time window within AC ELWA-E must not run. Unlike the two time frames for hot water securing the transition to the following day is possible (Start Hour is higher than Stop Hour). For example, this function can be used to give an existing battery time for charging and to do the water heating subordinate.

The function blocks both the linear excess power control and the optional boost backup.



Changes of the time settings are effective within one minute.

With the "**Adjustable Modbus TCP**" control mode, the AC ELWA-E receives the power-value in the feed-in point from an inverter or Modbus counter. The required communication registers shall be set according to the manufacturer's description.

Device ID must be set to the Modbus ID of the external device.

▲ Control Settings

Control type: Adjustable Modbus TCP (Sun ▾)  
ELWA Number > 1: only 'Slave' selectable.

Control source IP address:

Device ID:

Device port:

Register range: Holding registers ▾

Sign: - feed in ▾

Meter register:

Separate meter register for feed-in (0 if not present):

Scale register:

L1/L2/L3 registers:

L1/L2/L3 type: Int16 ▾

L1/L2/L3 scale registers:

L1/L2/L3 scale registers type: none ▾

Battery charging power sign: + charging ▾

Battery charging power register:

Battery charging power scale register:

Control state: Conn. to Power Meter, P=0

Power timeout:

Control target:  W

Negative value means feed-in. Only change this value if you are familiar with the control strategy - read Help for more details.


Block start / stop hour:


Save


Description of the data types:


Int16	16-bit integer value, two's complement representation
Int16-nc	16-bit integer value, magnitude sign representation (1st bit = sign)
Int32	32-bit integer value, two's complement representation
Int32-sw	32-bit integer value, two's complement representation, swapped words
Int32-nc	32-bit integer value, magnitude sign representation (1st bit = sign)
Int32-sw-nc	32-bit integer value, magnitude sign representation (1st bit = sign), swapped words
Float	32-bit float value
Float-sw	32-bit float value, swapped words

 This type of control is currently not approved for hybrid systems with battery storage.

 With the settings "Adjustable Modbus TCP (Sunspec etc)", the IP address of the signal source must not change during operation (eg by a DHCP router), otherwise the AC ELWA-E loses the control signal.

 When controlled by an inverter, a feed-in meter is required in the system. The query of the inverter otherwise provides no data.

 We ask for your understanding that we cannot do any binding support for third-party products. For questions about third-party products, please contact the technical support of the respective company.

 Operation with battery may require additional control parameters. In this case, please contact the technical support of my-PV.


## Measurement Settings

As an option, other measurements can be queried in the system in addition to PV excess measurement and visualise them on the my-PV.LIVE data platform. Available variables are PV power, Battery power, EV Charging station power and Heat pump power.

If you are using the my-PV Meter to detect these values, you must enter the ID (serial number) of the device. You will find this number on the device.



If the measured values come from an inverter or Modbus meter, the required communication registers shall be set according to the manufacturer's description.

 We ask for your understanding that we cannot do any binding support for third-party products. For questions about third-party products, please contact the technical support of the respective company.

Measurement Settings

Excess power in the grid feed-in point is already detected by the device configured for control (see Control Settings). In addition, these measured variables can optionally be detected for display in the my-pv.LIVE cloud. They have no relevance for the operation of the my-PV device.

**Photovoltaic power**

Measure source: Adjustable Modbus TCP

Modbus IP address: 0 | 0 | 0 | 0 | 0 | 0

Device ID / Port: 2 | 502

Register range: Holding registers

Meter register: 40499 | Int32

Scale register: 0 | none

L1/L2/L3 registers: 0 | 0 | 0

L1/L2/L3 type: Int16

L1/L2/L3 scale registers: 0 | 0 | 0

L1/L2/L3 scale registers: none

Without PV power block device:  Off  On

**Battery power**

Measure source: none

**EV Charging station power**

Measure source: none

**Heat pump power**

Measure source: none

Save

### Photovoltaic power

At the measuring point "Photovoltaic power" it is possible to block the my-PV device if the inverter does not produce any power. The operation for optional boost-backup is not affected by this.

### EV Charging station power

If the "Interval target value" control function is used (see chapter "Control settings") and the "EV Charging station power" measuring point is also queried, it is possible to define an additional duration of the interval target value here. The interval target value is thus extended by this additional duration, provided the power at the charging station is at least above 500W at the end of the first interval.

**EV Charging station power**

Measure source: my-PV Meter

my-PV Meter ID:

For the my-PV Power Meter, the ID (serial number) has 7 digits.  
For the my-PV WiFi Meter, the ID (serial number) has 10 digits.

Additional duration of the interval target value when power is drawn (> 500W) from the charging station.  s

Only relevant in connection with the interval target value under "Control Settings".

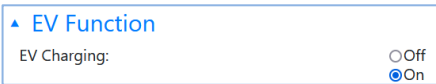
The positive effect of this is that the time of the higher target value of the control can be significantly shortened. It is regulated back to the original target value more quickly, which in turn ensures higher self-consumption.

## EV Function

Although my-PV does not produce charging stations, there are various options for compatibility.



The EV Function is to be used exclusively for direct compatibility!



### Direct compatibility with charging station

Direct compatibility exists if my-PV also performs the energy management of the charging station. However, it should be noted here that the power controllers from my-PV can only modulate the power on electric resistance heaters. This means that they never take over the power modulation of the charging station! However, the energy management system can tell the charging station how much photovoltaic surplus is available. As soon as the available charging current exceeds the limit of 6 amps, the charging station can adjust the power for vehicle charging accordingly. Although my-PV does not actually consider itself a Smarthome manufacturer, this type of energy management is possible with some types of the Keba brand. More information on compatible charging stations can be found [here](#).

### Indirect compatibility with charging station

Indirect compatibility already exists when a higher-level energy management system has control over all consumers. For example, if a smarthome is able to control a charging station in addition to providing power to my-PV. In some cases, such systems also allow prioritisation of the different applications. Examples of such indirect compatibility include the SMA Sunny Home Manager, E3DC or Solar-Log. In this case, the my-PV device has nothing to do with the charging station. From my-PV's point of view, the wallbox manufacturer openWB also falls into the category of higher-level energy management, because the entire control and regulation strategy of the consumers is the responsibility of openWB, while the my-PV devices are only given the power output.

With both indirect and direct compatibility, an intelligent system coordinates the heat applications of my-PV and the charging station. There is also a third possibility.

### Compatibility with charging station without common energy management.

This concerns the case where there are both applications, but they do not interact intelligently with each other through any energy management. This is the case when, for example, an inverter manufacturer can control its own charging station with solar power, but has not implemented the my-PV application as part of the energy management in its control system. In this case, my-PV exists as a separate controller quasi parallel to it and uses the PV surplus according to the power measurement from the house connection. It can happen that the my-PV application does not leave any surplus for the charging pole.

However, the interaction with the charging station is coordinated with the AC ELWA-E from firmware 00205.00 and with the AC-THOR from firmware a0020800. The explanation can be found in the section "Interval target value" in the chapter "Control settings", as well as in the section "EV Charging station power" in the chapter "Measured value settings".



## Multi Units

Several AC ELWA-E, AC•THOR or AC•THOR 9s can also be used in a network. Operation is based on the master/slave principle.



When using several devices the following things have to be considered:

- All devices must be connected to the router via a network cable.
- Only one master can be assigned to a signal source and vice versa.
- A maximum of 10 slaves are possible per master.
- All slaves in the network must have different device numbers, even if these are assigned to different masters.
- **All devices must be assigned by permanent IP addresses.** This can be done in two ways:
  - In the Web-Interface of the respective device (see IP Settings) or via Cloud
  - By the router (recommended)

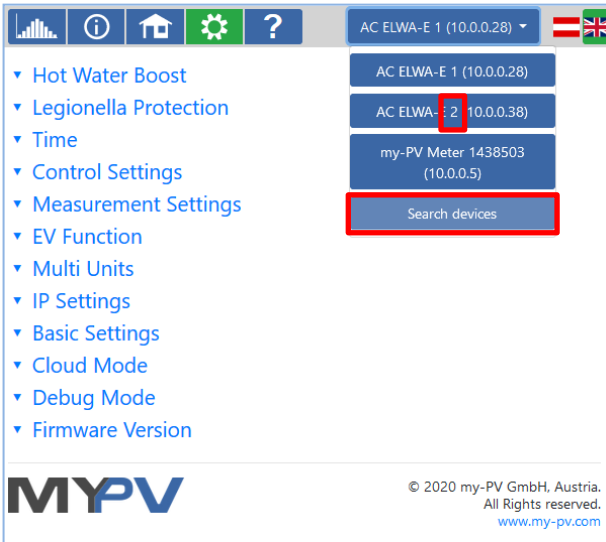
## Settings on Slaves

For the slaves only the device numbers have to be specified (see Basic Settings). All other settings are only required on the master.

The screenshot shows the web interface for an AC ELWA-E 1 device. The top navigation bar includes icons for signal strength, information, home, settings, and help, along with the device name 'AC ELWA-E 1 (192.168.2.12)' and a language selector (German/English). The main content area is divided into several sections: 'Hot Water Boost', 'Legionella Protection', 'Time', and 'Control Settings'. The 'Control Settings' section is expanded, showing a 'Control Type' dropdown menu set to 'Slave'. Below this, the 'Control Source IP' field is disabled. The 'Control Status' is 'No Control'. The 'Power Timeout' is set to '10'. The 'Control Target' is set to '-10'. The 'Block start / stop hour' is set to '8' to '12'. The 'Basic Settings' section is also expanded, showing a 'Number' dropdown menu set to '2' and a 'Fusetype' dropdown menu set to '16 A'. A 'Save' button is visible at the bottom of the 'Basic Settings' section.

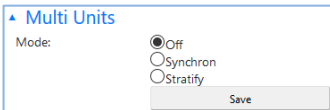
As soon as an assignment has been made, further control settings are no longer possible or required. The IP address field is disabled and “Slave” appears in the Control type field.

After a device search in the quick selection at the top right, the slave with the set number appears. Switching between the devices is possible here.



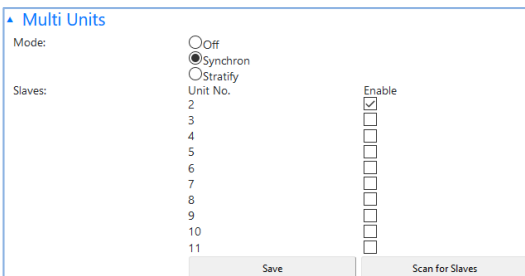
## Settings on Master

Only for devices with number 1 (= master) the following display appears in the setup:



To make the settings for several devices on the master, first choose between **Synchron** and **Stratify**. In the case of synchronous charging, the power is evenly distributed to the master and its slaves. In the case of stratified charge, the devices are controlled one after the other according to their numbers, in each case until the set target temperature is reached.

After selection, please start the "Search for slaves" and activate the desired devices. Then save the setting.



Scanning is performed via UDP port 16124. Firewalls (or specific router settings) may prevent the AC ELWA-E from being found.  
(see Placing into operation with router)

## IP Settings

MAC Address: 98-6D-35-C0-04-38  
Current IP Address: 192.168.2.12  
Current Subnet Mask: 255.255.0.0  
Current Gateway: 192.168.2.1  
Current DNS: 192.168.2.1  
DHCP-Mode:  DHCP  Static IP  
Use static IP only if you are familiar with network administration.  
Save

**DHCP:** Selection of DHCP is standard, which means the device requests an IP address from the router to which it is connected. This only works when the router is configured as a DHCP server.

**Static IP:** If there is no DHCP server active in the network or third-party control is desired, a static IP address is necessary.



The settings have to fit with the router, otherwise the device become invisible in the network!

## Basic Settings

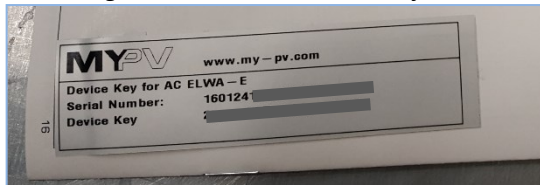
Number: 1  
Fusetype: 16 A  
Save

**Number:** Ex-factory each AC ELWA-E is assigned the number 1. If several devices are used, this setting must be adjusted for the "Slaves" (see Multiple devices).

**Fusetype:** If the device is connected to a 13 A plug socket, the 13 A setting restricts the maximum power to 2,500 W.

## Cloud Mode

If your device has a device key, a connection to the data platform **live.my-pv.com** possible. You will find it glued on the enclosed assembly instructions.



Activate the cloud mode and save the settings.

Cloud Mode:  enabled  disabled  
With the activation I agree to transmit device data to the online platform my-pv.LIVE. This data will be kept strictly confidential and will not be passed on to third parties. my-PV may use device data for internal purposes such as data analysis, research or product improvement. For more information on privacy policy, please refer to the following link: <https://www.my-pv.com/en/about-us/data-protection-declaration>  
Save

Open the website **live.my-pv.com** and log in or register as a new user.



TIP: If you register for a new account you will receive an email with a confirmation link. If it does not appear in your inbox, it might be in your spam folder.

## Privacy

Information on the privacy regulations can be found at [www.my-pv.com](http://www.my-pv.com).

## Debug-Mode

In order to simplify the analysis in the case of possible connection problems, a debug mode can be activated in coordination with our technical support.

## Firmware Version

In this section the current firmware versions can be retrieved (for service and Update purpose).

▲ Firmware Version

Power Stage:	107
Ethernet:	00200.00, Latest: AC ELWA-E V00200_00.bin
	<input type="button" value="Update Firmware"/>
Serial No:	1601241802010005
Export & import Settings:	only possible via my-PV.LIVE
	<input type="button" value="Reboot Device"/>
	<input type="button" value="Factory Reset"/>

Details about the button "Update Firmware" can be found in the chapter "Firmware Update Ethernet".

The button "Reboot Device" restarts the AC ELWA-E.

With the button „Factory Reset“ all settings of the device are set back to factory pre-set. After pressing the button a confirm message appears.

Consider that depending on the router settings the AC ELWA-E eventually is no longer visible in the network. To find it again restart the AC ELWA-E program „ my-PV Scanner 1.XX.exe“. For this reason, you cannot be automatically redirected to the AC ELWAE´s Web-Interface after reset.

## 6. Reset to factory settings

Pressing the "Factory Reset" button in the Web-interface is one way of resetting the AC ELWA-E to the factory settings.

As of Ethernet firmware 00202.XX, this can also be done by unplugging and plugging in the Ethernet connector three times within 10 seconds. Before unplugging, always wait until the yellow and green LEDs on the RJ45 plug light up!

## 7. Knob adjustments

The following sections describe the possible settings with the knob.



**The device parameterization is much more comfortable via the Web-Interface!**

The target temperature for the regular operation mode has to be adjusted with the knob.




Target temperature cannot be set via the Web-Interface, only queried.

## Adjust fuse type of the circuit (13A/ 16A)


With factory preset AC ELWA-E can perform up to 3.000 W (16 A). For circuits with 13 A fuses the power consumption can be limited to 2.500 W (setting on the AC ELWA-E or via Web-Interface possible).

Configure the device as follows:

1. Disconnect power plug
2. Set adjusting knob to the symbol 
3. Plug in the power plug
4. ► All 3 LEDs blinking (Setup mode active)
5. Turn the knob to the 13A marking
6. ► LEDs blinking from top to the bottom: green, yellow, red, green, etc.
7. Value is automatically saved when the position of the knob is not changed for 5 seconds
8. ► All 3 LEDs blinking fast for 2 seconds, setting saved.
9. Set the knob to the desired temperature value

The setting can be reversed. For this purpose repeat procedure.

## Adjust device number

1. Disconnect power plug
2. Set adjusting knob to the symbol 
3. Plug in the power plug ► All 3 LEDs blinking (Setup mode active)
4. Turn the knob to the desired device-number marking  
► LEDs blinking to signal the number (see table)

AC ELWA-E number:	LED green	LED yellow	LED red
1	blinking	off	off
2	off	blinking	off
3	blinking	blinking	off
4	off	off	blinking
5	blinking	off	blinking
6	off	blinking	blinking

5. Value is automatically saved when the position of the knob is not changed for 5 seconds  
► All 3 LEDs blinking fast for 2 seconds, setting saved.
6. Set the knob to the desired temperature value

The setting can be reversed. For this purpose repeat procedure.


## 8. Protocol description of http and Modbus TCP


These are described in a separate document which will be provided on request.

## 9. Firmware Update Ethernet




Before updating, please consider whether you really need an update! After the update, the view of the "day-chart" from Ethernet versions before 200.00 is no longer available locally. For the graphic display of the operating data, my-PV.LIVE must then be used. A connection to my-PV.LIVE is only possible for devices from 160124171114XXXX!

 From serial number 160124180131XXXX the update is no longer carried out with USB cable. The firmware is downloaded via the Internet instead.

 For serial number older than 160124180131XXXX a remote firmware-update via Internet is not possible. It is instead done with a USB cable.

## Update from Server (from SNr 160124180131XXXX)

 Internet access is required!

With the "Update Firmware" button, the AC ELWA-E loads the latest firmware from the Internet. After the update, the AC ELWA-E is automatically restarted.

▲ **Firmware Version**

Power Stage:	107
Ethernet:	00200.00, Latest: AC ELWA-E V00200_00.bin
	<input type="button" value="Update Firmware"/>
Serial No:	1601241802010005
Export & import Settings:	only possible via my-PV.LIVE
	<input type="button" value="Reboot Device"/>
	<input type="button" value="Factory Reset"/>

## Update with USB cable (for SNr below 160124180131XXXX)

The update of the firmware for the communication via Ethernet happens via the Micro USB interface and the provided USB cable at the bottom of the unit. A firmware update via the Ethernet interface is not possible because of security reasons.

Get the Firmware [here](#).

### 10. Fault indication

- |               |   |
|---------------|---|
| No display:   | Check power supply.<br>Check fuse of the circuit.<br>Check if there are other loads on the circuit of the AC ELWA-E.  |
| Red LED on:   | No controlling. Can be interrupted by green blinking LED in one minute cycle. (search function)   |
| 1x blinking ► | over-temperature safety protection activated. Device must be checked by customer service.   |
| 2x blinking ► | Water temperature above 90°C. Device shuts down and turns on again when the temperature has decreased.  |
| Annotation:   | In this case the temperature is near the over-temperature safety protection. If the water was heated so high by an external heat source, set the limit temperature of the heat source to 90 ° C |
| 3x blinking ► | Internal electronics over-temperature. Device shuts off and turns on again after cooling down.  |
| 4x blinking ► | Electronic damage. Device must be checked by customer service.  |
| 6x blinking ► | Temperature-sensor damage. Device must be checked by customer service.  |

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Subject to changes and printing errors.

