



Instructions | for authorised electricians  
sonnenBatterie pro 2.0

**IMPORTANT**

- ▶ Read this documentation carefully before installation / operation.
- ▶ Retain this document for reference purposes.

**Publisher**

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# Table of contents

<b>1 Information about this document</b> .....	4
1.1 Using this document.....	4
1.2 Target group of this document .....	4
1.3 Designations in this document .....	4
1.4 Designation of the pro 2.0 .....	4
1.5 Explanation of symbols.....	4
<b>2 Product description</b> .....	6
2.1 Technical data .....	6
2.2 Overview of function and installation .....	8
<b>3 Mounting</b> .....	9
3.1 Selecting the installation location.....	9
3.2 Observing minimum distances.....	9
3.3 Installing the storage systems.....	9
<b>4 Electrical installation</b> .....	10
4.1 General information about installation .....	10
4.2 Selecting the measurement concept.....	10
4.3 Wiring the components.....	11
4.4 Electrical connection .....	12
4.4.1 Connecting the mains line.....	12
4.4.2 Connecting the Ethernet lines .....	12
4.4.3 Connecting the Modbus line.....	12
4.4.4 Connecting the signal line.....	12
<b>5 Commissioning</b> .....	13
5.1 Commissioning new systems.....	13
5.2 Commissioning existing systems.....	13
<b>6 Display on the internet portal</b> .....	14

# 1 Information about this document

This document describes the installation of the sonnenBatterie pro 2.0.

- ▶ Read this document in its entirety.
- ▶ Keep this document in the vicinity of the sonnenBatterie.

## 1.1 Using this document

These instructions describe the installation of the sonnenBatterie pro 2.0, which is composed of three sonnenBatterie eco 8.0 storage systems.

- ▶ The complete description of the installation process can be found in the sonnenBatterie eco 8.0 installation instructions.
- ▶ Always observe the product documentation for the sonnenBatterie eco 8.0.

## 1.2 Target group of this document

This document is intended for **authorised electricians**. The action described here must only be performed by authorised electricians.

The section Display on the internet portal [P. 14] contains important information for the target groups **operator** and authorised electrician.

## 1.3 Designations in this document

The following designations are used in this document:

Complete designation	Designation in this document
sonnenBatterie eco 8.0	Storage system eco 8.0
sonnenBatterie pro 2.0	Storage system pro 2.0

## 1.4 Designation of the pro 2.0

The full designation is composed of the term 'pro 2.0' and the total capacity. This total capacity is the sum of the individual capacities of the three storage systems.

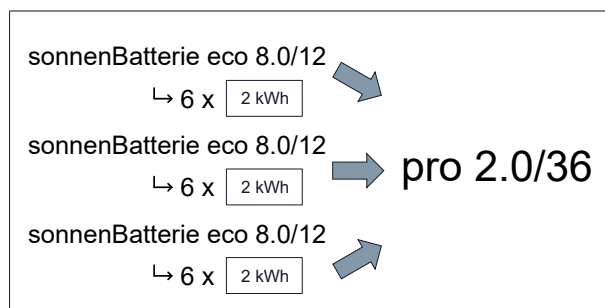


Illustration 1: Example - Meaning of the designation pro 2.0/36

## 1.5 Explanation of symbols



**Extremely dangerous situation leading to certain death or serious injury if the safety information is not observed.**

**⚠ WARNING**

Dangerous situation leading to potential death or serious injury if the safety information is not observed.

**⚠ CAUTION**

Dangerous situation leading to potential injury if the safety information is not observed.

**NOTICE**

Indicates actions that may cause material damage.



Important information not associated with any risks to people or property.

Symbol	Meaning
▶	Work step
1. 2. 3. ...	Work steps in a defined order
✓	Condition
•	List

Table 1: Additional symbols

## 2 Product description

### 2.1 Technical data

<b>System data (AC)</b>					
Nominal voltage	400 V				
Nominal frequency	50 Hz				
Nominal power	9,900 W				
Nominal current	14.3 A				
Power factor range	0.9 cap. ... 0.9 ind.				
Current (Max. continuous)	14.4 A				
Max. output fault current	120 mA				
Inrush current	0 A				
Mains connection	three-phase, L1 / L2 / L3 / N / PE				
Mains topology	TN / TT				
Mains connections fuse	Miniature circuit breaker   Type B   13 - 16 A				
<b>sonnenBatterie pro</b>	<b>2.0/24</b>	<b>2.0/30</b>	<b>2.0/36</b>	<b>2.0/42</b>	<b>2.0/48</b>
<b>consisting of 3 x eco</b>	<b>8.0/8</b>	<b>8.0/10</b>	<b>8.0/12</b>	<b>8.0/14</b>	<b>8.0/16</b>
<b>Battery data (DC)</b>					
Cell technology	lithium iron phosphate (LiFePO <sub>4</sub> )				
Usable capacity	24 kWh	30 kWh	36 kWh	42 kWh	48 kWh
Nominal voltage	51.2 V				
Current (Max. continuous)	75 A				
Short-circuit current ( $I_{sc}$ )	80 A				
Min. number of battery modules	12				
Max. number of battery modules	24				
<b>Dimensions / Weight</b>					
Storage system, individual	187/67/23				
Dimensions pro 2.0	187/271/23 cm <sup>1</sup>				
Weight pro 2.0	510 kg	591 kg	672 kg	753 kg	834 kg

<sup>1</sup> Specification without the outer minimum distances to be observed.

sonnenBatterie pro	2.0/22,5	2.0/30	2.0/37,5	2.0/45
consisting of 3 x eco	8.0/7,5	8.0/10	8.0/12,5	8.0/15
<b>Battery data (DC)</b>				
Cell technology	lithium iron phosphate (LiFePO <sub>4</sub> )			
Usable capacity	20.25 kWh	27 kWh	33.75 kWh	40.5 kWh
Nominal voltage	48 V			
Current (Max. continuous)	75 A			
Short-circuit current (I <sub>sc</sub> )	90 A			
Min. number of battery modules	9			
Max. number of battery modules	18			
<b>Dimensions / Weight</b>				
Storage system, individual	186/67/23			
Dimensions pro 2.0	186/271/23 cm <sup>2</sup>			
Weight pro 2.0	393 kg	462 kg	531 kg	600 kg

<sup>2</sup> Specification without the outer minimum distances to be observed.

## 2.2 Overview of function and installation



These sonnenBatterie pro 2.0 instructions are a supplement to the applicable product documentation for the sonnenBatterie eco 8.0. The product documentation, above all the installation instructions, must always be observed.

- The sonnenBatterie pro 2.0 consists of three individual eco 8.0 storage systems.
- During installation one storage system is designated as the master and the other two as slave 1 and slave 2. The master storage system controls the other storage systems after installation is complete.
- Connections such as the Modbus line or signal line are made on the master storage system.
- The storage systems are connected to each other by Ethernet cable. An external switch is installed for this purpose, to which all three storage systems are connected. The switch is connected to the home network router.
- If a router with a sufficient number of free slots is available, the external switch can be omitted.

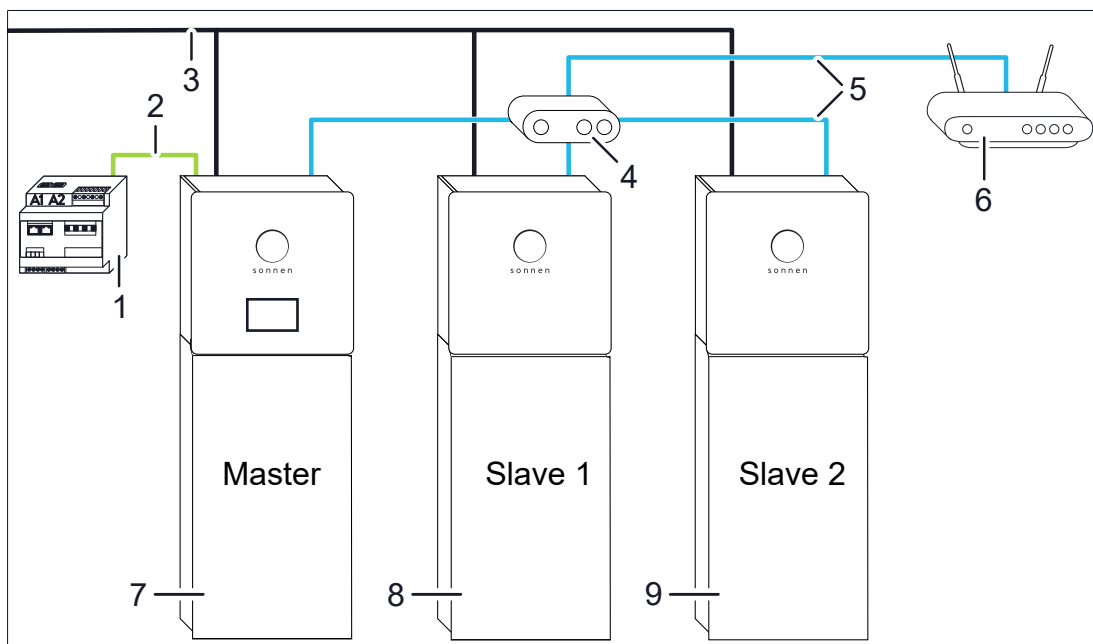


Illustration 2: System components

- 1 Power meter WM271
- 2 Modbus line (not included in scope of delivery)
- 3 Mains line
- 4 Switch (not included in scope of delivery)
- 5 Ethernet line (not included in scope of delivery)
- 6 Home network router (not included in scope of delivery)
- 7 Master storage system (with Display)
- 8 Slave 1 storage system
- 9 Slave 2 storage system



## 3 Mounting

### 3.1 Selecting the installation location



The heavy floor load applied by the storage system must be taken into account when selecting the installation location. The specified weight for the entire system can be found in the section Technical data [P. 6]. Applicable building codes must be observed in each case!

### 3.2 Observing minimum distances

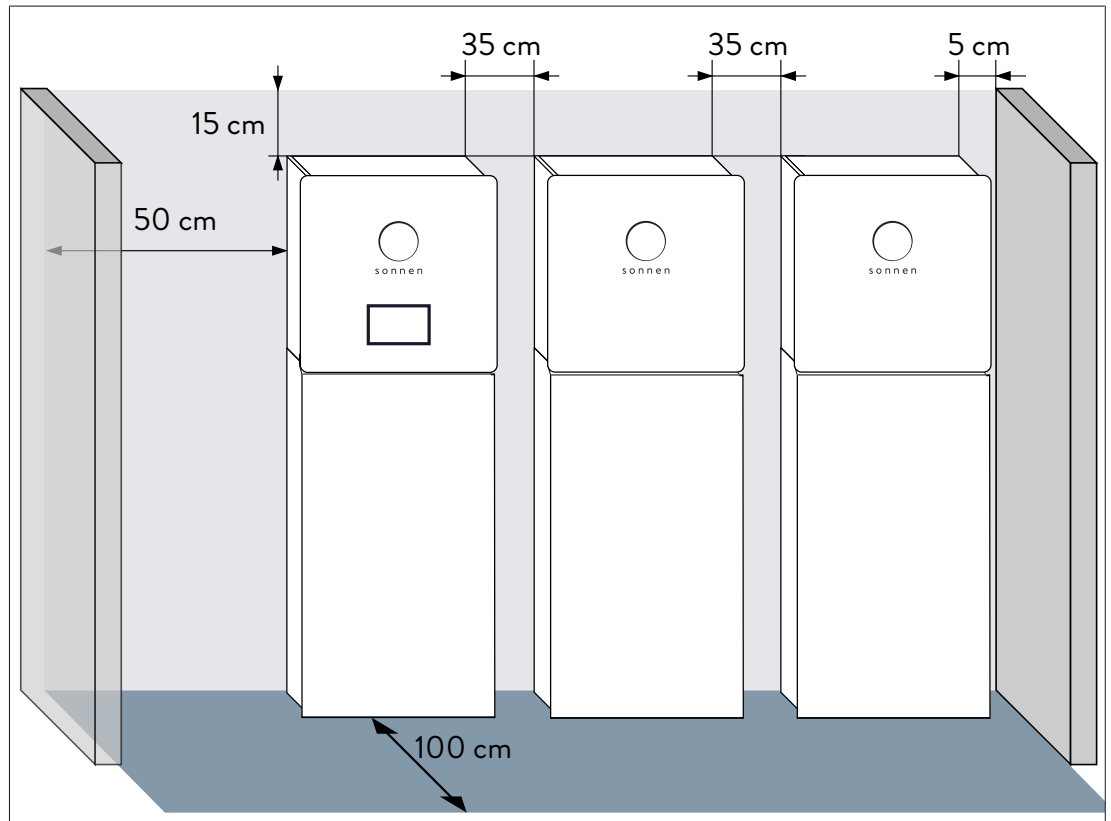


Illustration 3: Minimum distances to neighbouring objects

- Observe the specified minimum distances to neighbouring system parts or objects.

The minimum distances ensure that:

- there is sufficient heat dissipation,
- the storage system doors can be opened easily and
- there is sufficient space for installation and maintenance work.

### 3.3 Installing the storage systems

- Install the storage systems in a suitable location as described in the relevant installation instructions.

## 4 Electrical installation

### DANGER

#### Electrical work on the storage system and electrical distributor

Danger to life due to electrocution!

- ▶ Switch off the storage system to electrically isolate it.
- ▶ Disconnect the relevant electrical circuits.
- ▶ Secure against anyone switching on the device again.
- ▶ Wait five minutes so the capacitors can discharge.
- ▶ Check that the device is disconnected from the power supply.
- ▶ Only authorised electricians are permitted to carry out electrical work.

### NOTICE

#### Observe maximum line lengths

- ▶ None of the lines connected to the storage system (mains line, ethernet line, other data lines) are allowed to exceed a maximum length of 30 m.

### 4.1 General information about installation

- ▶ Always observe the specifications in the installation instructions for the eco 8.0 storage system.

#### Important note:

- The conditions described in the installation instructions for the relevant storage system apply to the installation of the **residual current device** (RCD) marked in figure 'Circuit diagram overview - electrical connection of the pro 2.0 [P. 11]'. If an RCD of the required type is already installed, it is not necessary to install an additional RCD.
- In the case of an **existing** installation of three eco 8.0 storage systems connected in **parallel**, the installation of the power meters must be changed.

### 4.2 Selecting the measurement concept

- The standard measurement concept (also referred to as the CP measurement concept or setup 1) is recommended for power measurement of a sonnenBatterie pro 2.0. This corresponds to the structure of the installation described in the following section Wiring the components [P. 11].
- The GP measurement concept (also referred to as setup 4) should only be used if the standard measurement concept can't be implemented or if the individual components for the power measurement are already installed as the GP concept and elaborate conversion is to be avoided. Please note that the GP measurement concept can lead to a lower efficiency of the storage system.
- Measurement concept GP (setup 4) must not be used if several pro 2.0 storage systems which are connected to the same production unit (e. g. pv system), are connected in parallel.

### 4.3 Wiring the components

► Install the individual components according to the following scheme:

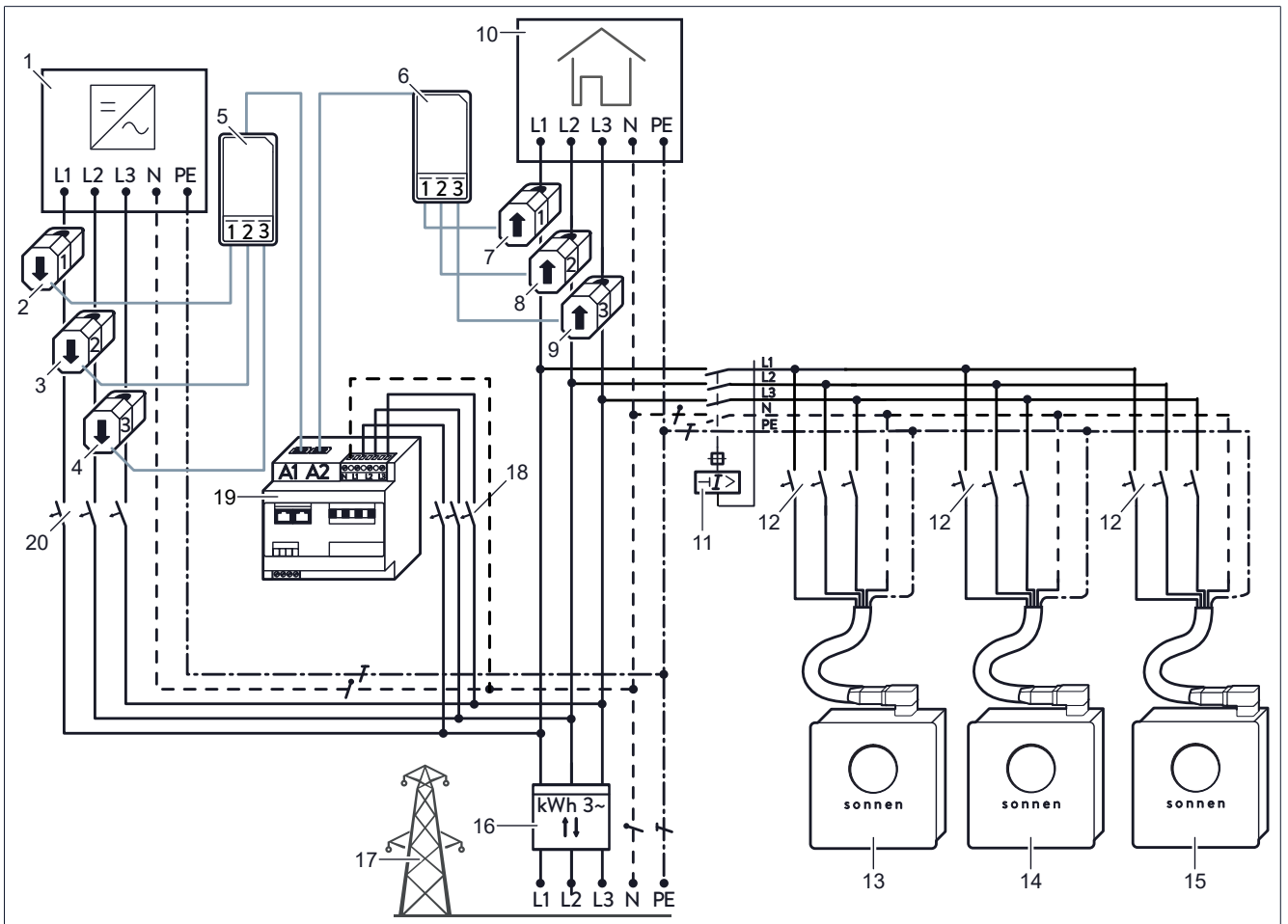


Illustration 4: Circuit diagram overview - electrical connection of the pro 2.0

1	PV inverter	11	RCD <sup>3</sup>
2	Current transformer for generation – L1	12	Miniature circuit breaker B13 or B16
3	Current transformer for generation – L2	13	Master storage system
4	Current transformer for generation – L3	14	Slave 1 storage system
5	Transformer interface for generation (A1)	15	Slave 2 storage system
6	Transformer interface for consumption (A2)	16	Bidirectional counter
7	Current transformer for consumption – L1	17	Public electrical mains
8	Current transformer for consumption – L2	18	Miniature circuit breaker <sup>4</sup>
9	Current transformer for consumption – L3	19	Power meter WM271
10	Consumer in building	20	PV inverter miniature circuit breaker

<sup>3</sup> According to the requirement in the installation instructions of the respective storage system.

<sup>4</sup> Protection of the line must be ensured.

## 4.4 Electrical connection

### 4.4.1 Connecting the mains line

**Observe the following points:**

- The mains connection must be protected with a type B miniature circuit breaker, rated current 13 A or 16 A.
- The cable cross-section from the miniature circuit breaker to the electrical consumer must be adapted to suit the larger loads if necessary.
  - ▶ Connect the mains line as described in the installation instructions for the eco 8.0 storage system (section 'Connecting the mains line').

### 4.4.2 Connecting the Ethernet lines

The connection to the customer router is established via a switch. If the customer router has a sufficient number of free slots, the three storage systems can be connected directly to the router. A switch is not necessary in this case.

- ▶ Connect the Ethernet lines as shown in figure System components [P. 8]. The Ethernet cables, the switch and the router are not included in the scope of delivery.
- ▶ The required output type can be found in section 'Connecting the Ethernet cable' in the storage system installation instructions.

### 4.4.3 Connecting the Modbus line

- ▶ Connect the Modbus cable as shown in figure System components [P. 8].

### 4.4.4 Connecting the signal line

- ▶ Connect the signal cable to the master as described in the storage system installation instructions.

# 5 Commissioning

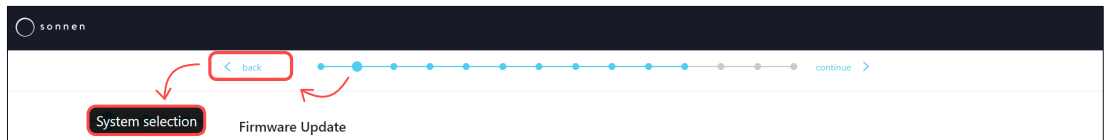
## 5.1 Commissioning new systems

- ▶ Proceed as follows to configure and commission a sonnenBatterie pro 2.0.

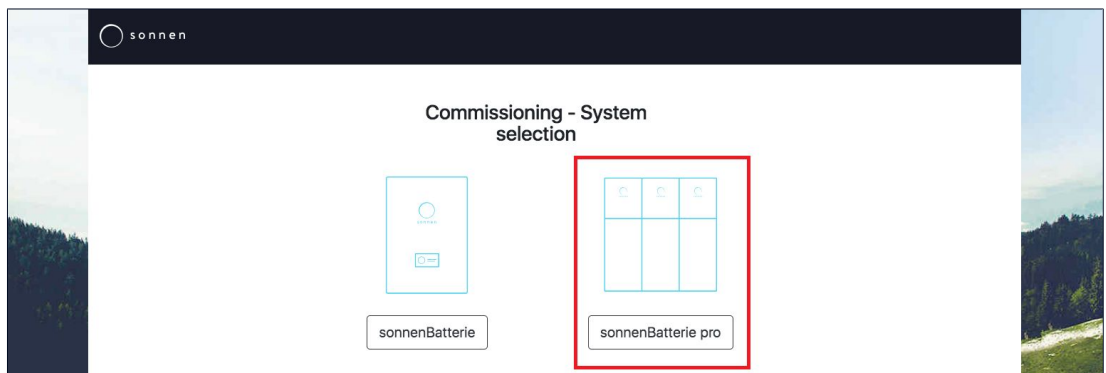
Conditions:

- ✓ Ordered sonnenBatterie pro 2.0 kit
- ✓ Received pairing code
- ▶ *If you have not received a pairing code, please contact your sales representative at sonnen.*

1. Establish a connection between the laptop/pc and the storage system master, as described in the respective installation instructions.
2. Navigate to the 'System selection' page of the commissioning assistant 2.0<sup>5</sup>, as described in the respective installation instructions. If this page does not appear: ▶ Make sure that the first page of the commissioning assistant is displayed.



3. Select the 'sonnenBatterie pro' button on the 'System selection' page.



4. Enter the activation code of the pro 2.0 and start the commissioning assistant.
5. Run the commissioning assistant until it is fully complete.

## 5.2 Commissioning existing systems

In the case of systems that were previously three storage systems connected in parallel, proceed as follows:

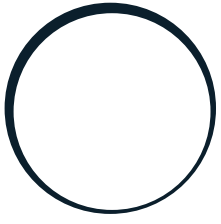
1. Disconnect the power supply to the storage systems (see section 'Decommissioning' in the installation instructions for the relevant storage system).
2. Define which storage system will act as the master, and which as slave 1 and slave 2.
3. Carry out all necessary installation changes (see Electrical installation [P. 10]).
4. Uninstall all surplus power meters for the two slave storage systems.
5. Recommission the storage system.
6. Commission the storage system as described in section Commissioning new systems [P. 13].

<sup>5</sup> Function only available in commissioning assistant 2.0!

## 6 Display on the internet portal

- The internet portal presents current information and data for the storage system.
  - ▶ The description of the individual operating steps, the displays and diagrams and the registration process can be found in the operating instructions for the relevant storage system.
- To view the data for the sonnenBatterie pro 2.0, the system must be registered with the **serial number of the master storage system**. The data for the entire pro 2.0 system, such as the PV production, consumption and discharge, is displayed on the internet portal for the master.
- In theory it is also possible to log in using the serial number of one of the slaves, but please note that in this case not all data will be displayed after the pro 2.0 is configured, not even for the individual eco 8.0 storage system.





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