

User manual | for operators
sonnenCharger

EN

IMPORTANT

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

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1 Information about this document

This document describes the operation of the sonnenCharger.

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

1.1 Target group of this document

This document is intended for the operator of the sonnenCharger.

1.2 Designations in this document

The following designations are used in this document:

Complete designation	Designation in this document
sonnenCharger	Charging station

1.3 Explanation of symbols



DANGER

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 Safety

2.1 Intended use

The sonnenCharger is an intelligent charging station for electric vehicles. Members of the sonnenCommunity with their own photovoltaic system and sonnenBatterie can use it to charge their electric vehicles using completely clean electricity.

Improper use poses a risk of death or injury to the user or third parties as well as damage to the product and other items of value. The following points must therefore be observed in order to comply with the intended use of the product:

- The charging station must be fully installed in accordance with the installation instructions.
- The charging station must be installed by an authorised electrician.
- The charging station must never be commissioned if the connection cable or plug is visibly damaged.
- The charging station must only be used at a suitable installation location.
- The transport and storage conditions must be observed.

Especially the following uses are not permissible:

- Operation in flammable environments or areas at risk of explosion.
- Operation in locations at risk of flooding.



Failure to comply with the conditions of the warranty and the information specified in this document invalidates any warranty claims.

2.2 Requirements for the electrician

Improper installation can result in personal injury and/or damage to components. For this reason, the charging station must only be installed and commissioned by authorised electricians. Authorised electricians must meet the following criteria:

- The electrician must be a person with a technical knowledge or sufficient experience to enable him/her to avoid dangers which electricity may create.
- The company for which the electrician works must be certified by sonnen GmbH.
- The electrician must have successfully complete sonnen GmbH certification training for the product.

2.3 Operating the charging station

Incorrect operation can lead to injury to yourself or others and cause damage to property.

- The charging station must only be operated as described in the product documentation.
- This device can be used by children from the age of eight (8) years old and individuals with impaired physical, sensory or mental capabilities or individuals with limited knowledge and/or experience of working with the device, as long as they are supervised or have been trained to safely use the device and understand the resulting risks of doing so. Children must not play with the device.

2.4 Product modifications or changes to the product environment

- The charging station must only be used in its original state without any user modifications and only when in perfect working order.
- Safety devices must never be overridden, blocked or tampered with.

- The interfaces of the charging station must be wired in accordance with the product documentation.
- All repairs on the charging station must be performed by authorised service technicians only.

2.5 Internal voltage

The charging station contains live electrical parts, which poses a risk of electrical shock. Therefore:

- ▶ the operator is only permitted to open the side service cover.

2.6 Selecting the installation location

- The charging station should be mounted at an appropriate height so that the touch display can be operated with ease (recommended installation height: 100 cm from the ground to the bottom edge of the mounting panel).
- During mounting the customer's parking direction and the position of the plug connection on the electric vehicle should be taken into account.
- The charging station has a degree of protection of at least IP56. The charging station can be used indoors and outdoors, if the ambient conditions meet the following criteria:
 - Altitude < 2,000 m above sea level.
 - Temperature range -25°C to +65°C.
 - Air humidity max. 95%, non-condensing.
- The installation location of the charging station should be protected from direct sunlight and extreme weather.

3 Product description

3.1 Technical data

sonnenCharger	
System data	
Maximum charging output	22.0 / 7.4 (three/one-phase connection)
Nominal voltage in V	400 / 230 (three/one-phase connection)
Electrical connection ¹	5 x 6 mm ² or 5 x 10 mm ²
Required fault current monitoring	Type B or type A EV residual current device with DC residual current detection
Connectivity	Ethernet
Mechanical data	
Charging plug	Type 2
Length of charging cable	4.5 m or 7 m
Cable holder	magnetic
Degree of Protection	IP56
Colour	Grey or White
Dimensions/weight	
Dimensions (H/W/D) in cm	45/27/13.5
Weight (with 4.5 m cable length)	11.6 kg
Weight (with 7 m cable length)	12.8 kg
Ambient conditions	
Operating temperature range (operation)	-25 °C ... +65 °C
Max. rel. humidity	95%, non-condensing
<ul style="list-style-type: none"> • The sonnenCharger is limited to 11 kW/3.7 kW (three/one-phase connection) by default. If all technical requirements (Preconditions for a maximum charging output of 22 kW, among other requirements) are fulfilled, a charging output of 22 kW/7.4 kW (three/one-phase connection) can be activated. • Important information: <ul style="list-style-type: none"> – No separate meters can be installed for the sonnenCharger. – No separate mains connection is set up for the sonnenCharger, as otherwise no PV self-consumption is possible. 	

¹ Depending on connection conditions.

3.2 System components

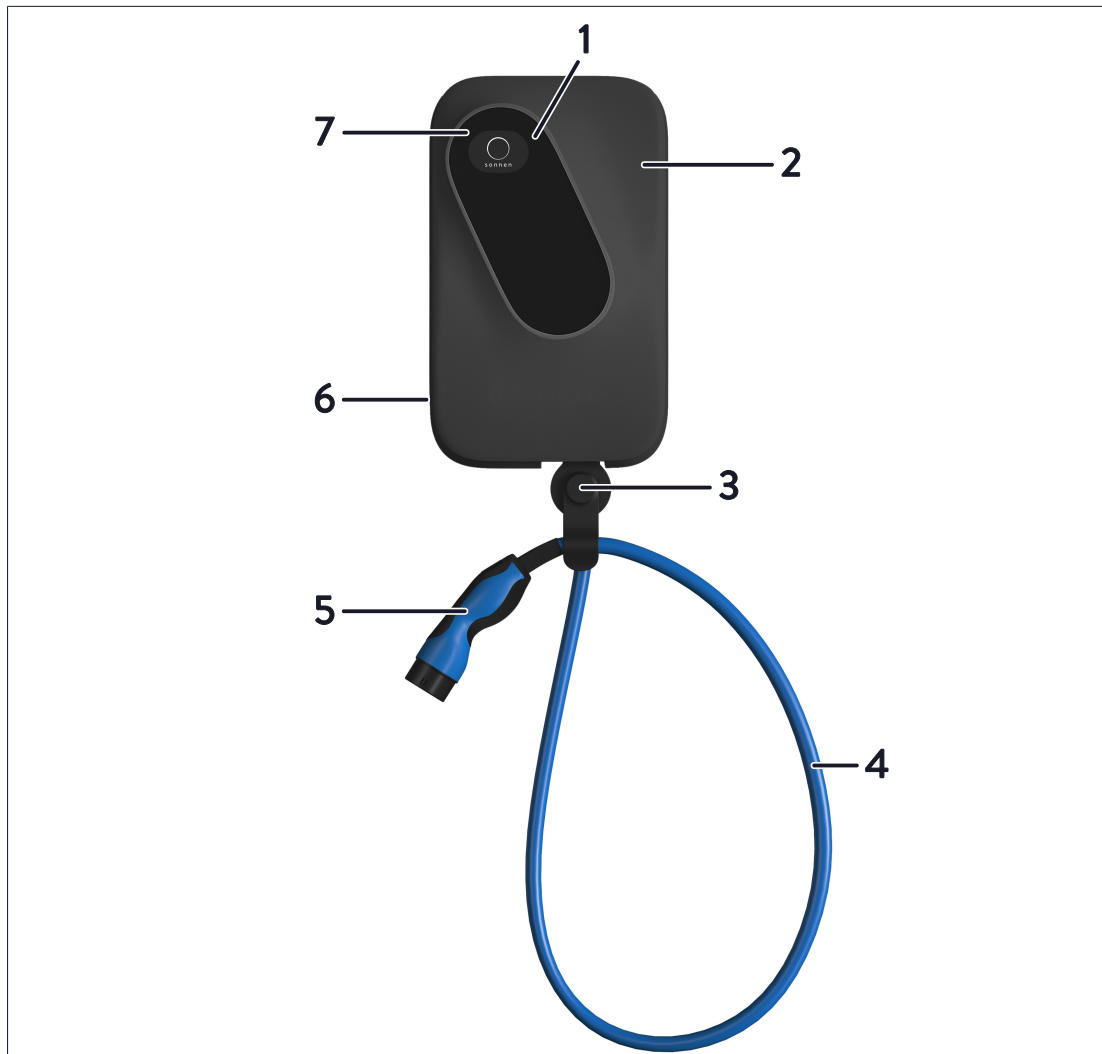

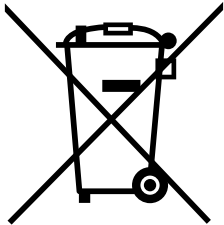




Illustration 1: sonnenCharger components

- 1 Polycarbonate panel with touch display and LEDs
- 2 Housing
- 3 Cable holder, magnetic
- 4 Charging cable
- 5 Charging plug, type 2
- 6 Side service cover (with type plate on inside)
- 7 LEDs

3.3 Symbols on the outside of the charging station

Symbol	Meaning
	CE mark. The product meets the requirements of the applicable EU Directives.

Symbol	Meaning
 	<p>WEEE mark. The product must not be disposed of in household waste, dispose of it through environmentally friendly collection centres.</p>
	<p>Observe the documentation. The documentation contains safety information.</p>

4 Commissioning

4.1 Electrical commissioning

Before commissioning:

- ▶ Check whether the protective element integrated in the charging station is set to 'ON'. This element is located under the side service cover.

Establish a connection to the electrical mains:

- ▶ Switch on the corresponding miniature circuit breaker in the electrical distribution board.
- ▶ Switch on the corresponding residual current device in the electrical distribution board.

The charging station may perform a firmware update during the initial start up. This can take up to 10 minutes, depending on the ethernet connection. **Important:** The power supply and ethernet connection must not be interrupted during the update!

- ▶ Check whether the status light above the touch display is green. This indicates that the charging station is ready for use.

4.2 Changing the language

The sonnenCharger has two language variants: German and English. German is set as the default language. If you want to change the language:

Prerequisite:

- ✓ The charging cable is not connected to the electric vehicle at the time of changing the language.
- ▶ Tap the touch display to wake up the charging station.
- ▶ Tap on the three dots at the top right corner of the screen.
- ▶ Select your desired language.

4.3 Configuring the app



To make use of the full function of the sonnenCharger (especially the 'smart' charging mode), the sonnenCharger and app must be connected and the app must be configured successfully. Only then can the commissioning report, which is essential to meet the warranty conditions, be completed in full and submitted to sonnen.

Conditions:

- ✓ The Ethernet cable has been connected to the sonnenCharger and the home network router.
- ✓ The network supports DHCP.
- ✓ The sonnenCharger has a stable internet connection.
- ▶ Open the sonnenCharger app. If the app is not installed on your smartphone or tablet yet, you can download it free of charge from the Apple App Store or Google Play Store.
- ▶ Log in with your sonnenID (email address and password).

If you do not have a sonnenID:

- ▶ Register at my.sonnen.de or in the app to get a sonnenID.

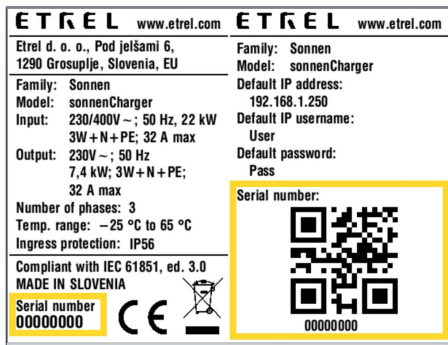


Illustration 2: sonnenCharger type plate

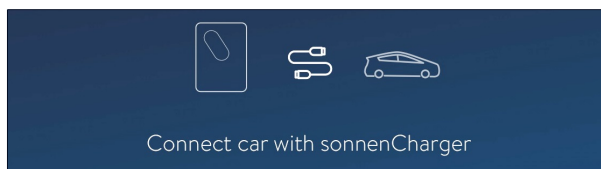
- A QR code must be scanned when the app is set up. This code is located at multiple points (e.g. on the packaging, type plate). As soon as the QR code has been scanned, the app and sonnenCharger begin communicating with each other.
- If scanning the QR code does not work, the serial number of the sonnenCharger can be entered in the app. This number can be found on the type plate of the sonnenCharger, among other places.



The sonnenCharger’s type plate is affixed to the inside of the maintenance cover.

If configuring the sonnenCharger app does not work:

1. Check the internet connection of the sonnenCharger.
2. Contact the sonnen service team on the following telephone number: +49 8304 9999 037



If this display appears, a connection has been established between the app and the sonnenCharger.

- ▶ The charging cable can be connected to the electric vehicle to start the charging process.

4.4 Description of the LEDs

LED behaviour	Meaning
Green LED is flashing quickly.	The sonnenCharger is starting up.
Green LED is flashing slowly.	The sonnenCharger is ready for use.
Green LED is flashing quickly while the electric vehicle is connected and the sonnenCharger is ready for use.	The sonnenCharger is waiting for feedback from the electric vehicle in order to start the charging process.
Blue LED is flashing.	The electric vehicle is charging.
Red LED is on.	An error has occurred.

5 Function

5.1 Charging the electric vehicle



To avoid damage, it is a good idea to never leave the charging cable lying around freely in the room. The charging cable, which has a fixed connected, can be secure in the magnetic holder on the charging station.

DANGER

Improper use of the charging plug

Danger to life due to electrocution!

- ▶ Do not reach inside the charging plug unit.
- ▶ Do not operate the charging station with wet hands.

Charging process:

1. Position the electric vehicle so that the plug connection can be easily reached with the charging cable.
2. Open the plug connection of the electric vehicle.
3. Remove the charging cable from the magnetic holder and connect the type 2 plug on the cable to the connection on the electric vehicle.
4. The charging station and electric vehicle then start communicating. The charging process begins as soon as all information has been exchanged (this may take several seconds).
5. Intelligent charging: open the sonnenCharger app and select the 'smart' charging mode. Alternatively, you can also set the charging mode on the sonnenCharger touch display. A more precise description of the charging modes can be found in the following section.

5.2 'Power' and 'smart' charging modes

The sonnenCharger has two charging modes: 'power' and 'smart'. The 'power' charging mode is used to charge the electric vehicle as quickly as possible. The 'smart' charging mode optimises the charging process so that as much self-generated electricity as possible is used for charging, costs are saved and electric grid stability is supported.

5.2.1 'Power' charging mode



This charging mode is activated by default each time the charging process begins, and is used until you switch to the 'smart' charging mode.

This charging mode essentially aims to fully charge the battery of the electric vehicle as quickly as possible. This objective is achieved by continuously charging at the maximum available charging output. The maximum charging output does not just depend on the sonnenCharger itself, but also on the electric vehicle being charged and its technical components.



The sonnenCharger supports charging outputs up to 22 kW. But this does not mean that the battery of the electric vehicle is continuously charged at this charging output. If your electric vehicle has a maximum charging output of just 6.6 kW, for example, then this is taken as the maximum charging output for the process. The actual charging output at a specific time during charging is also affected by other aspects, such as the current temperature of the battery, its charging status or the size of the on-site connection.

5.2.2 'Smart' charging mode



The 'smart' charging mode controls and optimises the charging process in an intelligent way. There are two ways to switch from the 'power' charging mode to the 'smart' charging mode: using the sonnenCharger display or the sonnenCharger app.

The next departure time must be specified to activate the mode. Enter a time at which you want to use the electric vehicle again. Provided the available time between the start of the charging process and the selected departure time is sufficient to fully charge the battery, this charging mode ensures that the electric vehicle is fully charged and ready for use at the selected time. If there is sufficient time between the start of charging and your departure time, intelligent charging begins. If there is not enough time, your vehicle is automatically charged at maximum speed ('power' charging mode).

The sonnenCharger uses different information for the 'smart' charging mode, such as the weather forecast, the current household consumption or the current status of the electricity grids. Together with the sonnenBatterie and the sonnen control centre, the sonnenCharger calculates the optimal charging output for your vehicle. On sunny days, for example, as much self-generated electricity as possible is used to charge the vehicle. If self-generation cannot cover all the energy requirement, any additionally required electricity is drawn from the sonnenCommunity.

5.2.3 Activating the 'smart' charging mode

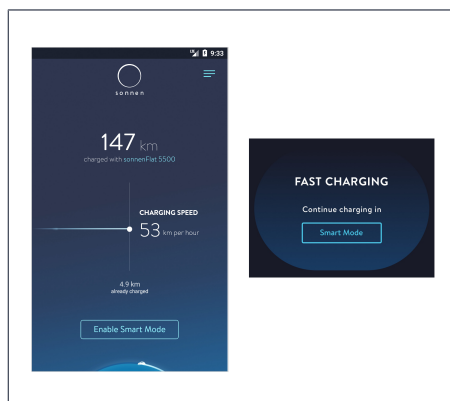


Illustration 3: App display (left) and sonnenCharger display (right)

After the charging process starts, the message that the electric vehicle is now charging appears. There is also the option to activate the 'smart' charging mode.

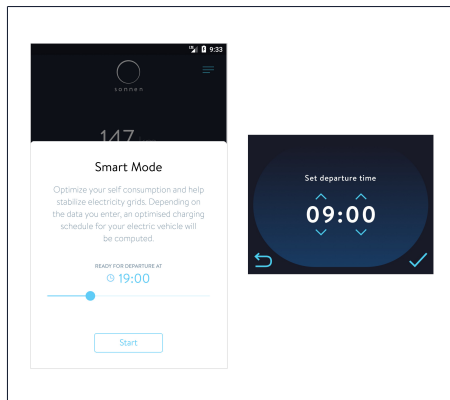


Illustration 4: Entering the departure time in the app (left) and on the display (right)

After selecting the 'smart' charging mode, you must enter the desired departure time. The sonnenCharger then knows the time period available for charging the electric vehicle.

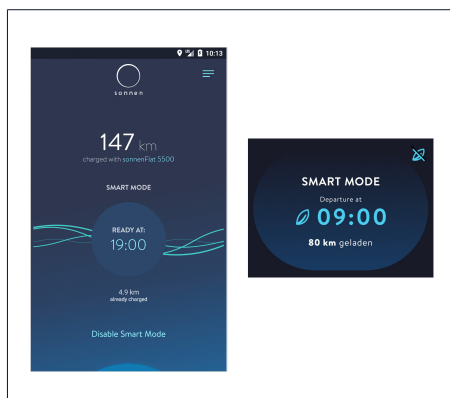


Illustration 5: 'Smart' mode display in the app (left) and on the display (right)

While the vehicle is charging in 'smart' mode, you can see your desired departure time on the sonnenCharger display and in the app, as well as the kilometres already charged. This means the number of kilometres that the vehicle can travel now based on the charging already completed. You can also switch back to the 'power' charging mode at any time (e.g. with the crossed out leaf on the sonnenCharger display).

6 Restart and decommissioning

- ▶ To decommission the sonnenCharger, switch off the corresponding residual current device (RCD) and miniature circuit breaker in the electrical distribution board.
- ▶ To restart the sonnenCharger, switch the RCD and circuit breaker back on.

7 Troubleshooting

7.1 General

Fault	Possible cause(s)	Solution
The range shown on the electric vehicle does not match the sonnenCharger display or the app.	The actual range that the electric vehicle can cover in the current conditions (weather, temperature, etc.) is displayed on the vehicle. The sonnenCharger or app show the charged range based on standard data for the electric vehicle in question.	-
The QR code cannot be scanned.	-	<ul style="list-style-type: none"> ▶ Enter the serial number of the sonnenCharger instead.
The app is reporting that the sonnenCharger is offline.	The internet connection to the sonnenCharger has been interrupted.	<ul style="list-style-type: none"> ▶ Check the internet connection. ▶ Reset the router if necessary. ▶ Restart the sonnenCharger.
'Smart' charging mode has been selected on the sonnenCharger display but is not displayed in the app.	The internet connection to the sonnenCharger has been interrupted. If the sonnenCharger does not have a stable internet connection, it switched to 'power' charging mode in order to ensure that the electric vehicle is charged in any case.	<ul style="list-style-type: none"> ▶ Check the internet connection. ▶ Reset the router if necessary.
A problem has occurred when logging in or registering in the sonnenCharger app.	-	<ul style="list-style-type: none"> ▶ Contact customer support.
<ul style="list-style-type: none"> ▶ If in doubt, contact your installer or customer support (sonnen service team: +49 8304 9999 037). 		

7.2 Charging the electric vehicle

Fault	Possible cause(s)	Solution
The charging cable cannot be disconnected from the electric vehicle.	The electric vehicle prevents the removal of the charging cable during the charging process.	<ul style="list-style-type: none"> ▶ Unlock the electric vehicle to interrupt the charging process. The charging cable can then be disconnected from the vehicle.
The charging process does not start or was interrupted during charging (when not in 'smart' charging mode).	The residual current device or miniature circuit breaker has tripped.	<ul style="list-style-type: none"> ▶ Check the circuit breakers and correct any errors that may have led to the devices tripping.

Fault	Possible cause(s)	Solution
The charging process does not start or was interrupted during charging (when not in 'smart' charging mode).	<p>Timer-based charging was set on the electric vehicle.</p> <hr/> <p>The electric vehicle is reporting an error.</p>	<p>▶ Disable timer-based charging on the electric vehicle.</p> <hr/> <p>▶ Check and resolve any error messages output by the electric vehicle.</p>
The charging process does not start or was interrupted during charging (in 'smart' charging mode).	<p>The 'smart' charging mode controls the charging process in an intelligent way. This means that the charging process may begin later or may be interrupted and then restarted as the situation demands.</p>	-
	<p>Timer-based charging was set on the electric vehicle.</p>	<p>▶ Disable timer-based charging on the electric vehicle.</p>
	<p>The residual current device or miniature circuit breaker has tripped.</p>	<p>▶ Check the circuit breakers and correct any errors that may have led to the devices tripping.</p>
	<p>The electric vehicle is reporting an error.</p>	<p>▶ Check and resolve any error messages output by the electric vehicle.</p>
The electric vehicle has not been fully charged.	<p>'Power' charging mode: The electric vehicle was disconnected from the sonnenCharger before the minimum time that the vehicle needed for the battery to be 100% charged was reached.</p>	-
	<p>'Smart' charging mode: The charging process was ended before the specified departure time.</p>	-
	<p>'Smart' charging mode: In expert mode the sonnenCharger has been set to only charge for a certain range.</p>	-
	<p>Timer-based charging was set on the electric vehicle.</p>	<p>▶ Disable timer-based charging on the electric vehicle.</p>
The electric vehicle is not being charged at 11 kW or 22 kW.	<p>The maximum charging output at which an electric vehicle can be charged is determined by the vehicle's own on-board charger. The sonnenCharger adapts itself to the electric vehicle.</p>	<p>▶ Check the maximum charging output of the electric vehicle's on-board charger. This output varies from vehicle to vehicle.</p>
	<p>▶ If in doubt, contact your installer or customer support (sonnen service team: +49 8304 9999 037).</p>	

8 Uninstallation and disposal

DANGER

Improper uninstallation of the charging station

Danger to life due to electrocution!

- ▶ The charging station must only be uninstalled by authorised electricians.

The charging station must not be disposed of as domestic waste!

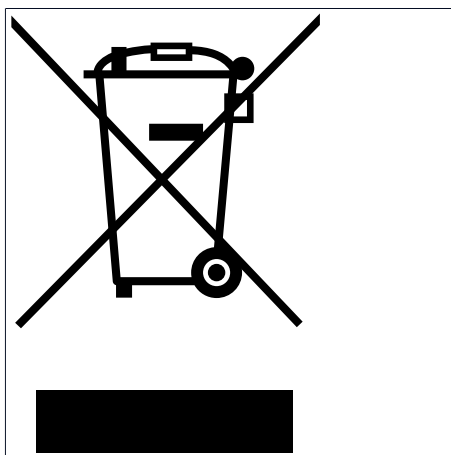


Illustration 6: WEEE symbol

- ▶ Dispose of the charging station in an environmentally friendly way through suitable collection systems.

The following terms and conditions govern and rule the Manufacturer's guarantee granted by sonnen GmbH (hereinafter "sonnen ") for its sonnenBatterie, the warranty for the Products of sonnen and the Update Services which are offered by sonnen for the sonnenBatterie and the sonnenProducts. sonnen has its seat at Am Riedbach 1, 87499 Wildpoldsried, Germany, Telefax:

+49 8304 92933.401, Phone: +49 8304 92933.400.

Last amended September 2019

1. Definitions

1.1 *Systems* means the sonnenBatterie, sonnenProducts and – if available – the PV-Systems connected with it being operated by the customer.

1.2 *Guarantee* means the warranty contract entered into by and between sonnen and the customer according to which sonnen offers the customer advanced rights with regard to the sonnenBatterie in case a defect occurs.

1.3 *Warranty* means the claims of the customer according to the provisions of law against its contractual partner in case of occurrence of a defect at a Product. Warranty claims exist beside the claims arising out of the guarantee. Please note the provisions in Sect. 6 and Sect. 12.

1.4 *Machine Data* means the data generated and stored in as well as readout of the Systems. These are generative as well as consumption data, such as data of the electric power consumption, the filling level of the storage system, storage and rollout of the amount of electricity and log-data of the error memory of the sonnenBatterie and the sonnenProducts.

1.5 *Products* include sonnenBatterie as well as sonnenProducts.

1.6 *sonnenBatterie* means the battery storage systems manufactured by sonnen.

1.7 *sonnenProducts* means the Products manufactured and distributed by sonnen which are not a sonnenBatterie.

2. Subject Matter of the Guarantee

2.1 These guarantee terms and conditions apply for all sonnenBatteries of the version eco 7.0 or higher as well as the version hybrid 8.1 or higher commissioned as of July 2018 if they have been verifiably bought as new devices from sonnen or one of sonnen's authorised and certified wholesale or specialist traders or an authorised and certified specialist installation company and have been commissioned by this professional installer. The guarantee refers solely to the sonnenBatterie registered by sonnen in the course of its initial start-up (the "guarantee eligible product"). The data registered in the course of the initial start-up will be communicated to the customer via mail and can be seen in the electronic portal for customers.

2.2 If the customer chooses to order an expansion of the battery modules afterwards the serial number of the extension modules will be registered within the course of commissioning. The guarantees of these modules as well as the duration of the guarantee are according to the then applying guarantee terms and conditions.

2.3 If the registration of the sonnenBatterie or the extension modules is not done electronically the proof according to Sect. 2.1 is regarded as brought forward if the commissioning certificate is transferred to sonnen, containing the guarantee eligible product (indication of battery serial number of the sonnenBatterie or the modules), the installation site, the certified company taking the sonnenBatterie into operation as well as the guarantee eligible operator. The commissioning certificate is to be authorised by the parties.

2.4 The guarantee and its conditions are applicable, limited to the guarantee duration for the first delivered guarantee eligible product or a replacement device for a guarantee eligible product which is initially installed by sonnen or by an authorised and certified partner or has been exchanged due to a guarantee case in fulfilment of the guarantee claims according to Sect. 9.

3. Monitoring of the Products, Update Services

3.1 Insofar as the customer allows sonnen to have a remote access to the Products sonnen reads out their Machine Data.

3.1.1 The running surveillance of the Products allows sonnen to early notice processes of the Products deviating from the standard, technical malfunctions or deadlock of the Systems. If disorders are detected which require an intervention of sonnen to avoid a defect sonnen will inform the customer. By this and as the case may be further technical problems and damages can be avoided and with approval of the customer first corrective actions commenced. Notwithstanding the foregoing it remains the duty of the customer in case of occurrence of a warning notice to proceed according to the manual of instruction and to inform its contractual partner or sonnen.

3.1.2 Based on the read out Machine Data sonnen presents proposals for a further optimization of the Systems itself and running them with regard to an increase of efficiency as well as improvement of the profitability of the Products.

3.1.3 The data protection is regulated in Sect. 13.

3.2 sonnen continuously improves the software used in the sonnenBatterie and the sonnenProducts. Updates of the software include safety-related adaptations and serve for the adjustment of interfaces to other products and systems, as far as required for the operation of the respective sonnenProduct, improvements of the system integration, the removal of occurring bugs and installation of updates with new, additional features. Systems in the context of this term includes components of the Products (e.g. the inverter) and components which are used in the course of running them (e.g. meter). The uploading of new functions does not lead to a limitation of promised characteristics. sonnen will inform the customer upfront about content and extent of additional functions which will be available while using the Products.

3.3 To the extent customer agrees updates will be uploaded online. Alternatively, updates can be uploaded on site at the customer's home. Customer has to bear any additional costs arising hereby. Customer has to bear the costs for labour time for on-site uploaded updates in the amount of the then actual rates of remuneration. The applicable hourly rate when entering into this Agreement is defined in Sect. 9.1. Labour time according to these terms and conditions includes as well the costs of the journey to and from the customer. The uploading of an update generally takes one hour.

3.4 If the customer does not agree that sonnen has a remote access to his sonnenBatterie the customer is obliged to periodically check the publications of sonnen on its portal for customers with regard to offered updates, but no less than every four weeks. In case that safety related updates, necessary to preserve the rights of the guarantee are offered the customer has to get into contact with the customer service

of sonnen and set up an appointment to upload the update. This can be done online if the customer allows sonnen to have access to his Systems for the time the update is uploaded, or onsite as defined above. Please note Sect. 10.7.

3.5 The technical requirements needed for the online access to sonnenProducts are to be provided by the customer at their own expense and are to be maintained during the contractual term. The required broadband internet connection must have a download speed of at least 1 Mbit/s and an upload speed of 512 kB/s. If deviating requirements exist, they are defined in the offer and order confirmation.

3.6 Published updates shall be delivered by sonnen and installed on sonnenProducts. If updates are not installed the consequence of which can be that contractual services cannot be delivered at all or just limited, the guarantee eligible product gets defects or safety problems occur.

4. Guarantee Eligible Operator, Premium Guarantee

4.1 sonnen provides a **Premium Guarantee** only to those operators that operate guarantee eligible products for their own purposes ("guarantee eligible operator"). Traders, regardless of what type and trade level, do not acquire any rights and claims against sonnen resulting from the manufacturer's guarantee.

4.2 If a sonnenBatterie has been provided to a user within the scope of a rental agreement, the guarantee eligible operator is the lessor of the sonnenBatterie. Claims resulting from the guarantee can be exerted exclusively by the lessor as the guarantee eligible operator. Reference is made to Sect. 9.2 explicitly.

5. Conclusion of Guarantee

5.1 The Premium Guarantee is an offer of sonnen directly towards the guarantee eligible operator at the conclusion of a guarantee agreement subject to the respectively applying regulations.

5.2 With the consent of both parties, the guarantee agreement is directly concluded between sonnen and the guarantee eligible operator. If the initial start-up of the guarantee eligible product is made online the guarantee agreement is entered into with successful registration of the sonnenBatterie and acceptance of the terms and conditions of the guarantee agreement by the guarantee eligible operator. If the registration of the guarantee eligible product is not made online the conclusion of the guarantee agreement will be acknowledged by sonnen towards the customer after the commissioning certificate authorised by installer and customer has been transferred to sonnen.

6. Relation of Guarantee to Other Claims

6.1 The guarantee grants the guarantee eligible operator to the extent and according to the stipulations of these regulations, claims complimentary to the legal warranty claims.

6.2 Claims for the removal of defects against the respective seller as well as legal product liability claims remain unaffected by the guarantee.

7. Duration and Exertion of Guarantee

7.1 The **Premium Guarantee** applies for all guarantee cases (according to following Sect. 9) which happen verifiably until the end of the 10th year after commissioning of a guarantee eligible product according to Sect. 2.1, 2.2 ("guarantee duration") or during the use of up to 10,000 full loading cycles. A full loading cycle is equal to the complete loading and unloading of the battery's net capacity – partial cycles are therefore only considered proportional to the battery's net capacity. As soon as one of the two conditions is exceeded, the Premium Guarantee ends.

7.2 Regarding properly repaired or replaced guarantee eligible products or their system components; the guarantee applies until the end of the guarantee duration granted for the initially delivered guarantee eligible product or system component.

7.3 Legal and/or contractual warranty claims occurring during a legal or contractual warranty period cannot be derived from the guarantee. Please note Sect. 6.

7.4 Any claims resulting from the guarantee are to be exerted in writing by the guarantee eligible operator within the guarantee period against sonnen. Guarantee claims can also be submitted via an authorised and certified partner.

8. Guarantee Cases Covered by Guarantee

8.1 Premium Guarantee

sonnen grants the guarantee eligible operator a guarantee for the guarantee eligible product during the guarantee duration. The guarantee case occurs if the capacity of the battery cells falls below 70 % (seventy percent) of the nominal capacity or a deviation of more than 10 % (10 percent) of the agreed or assured performance features is determined for all other system components of the sonnenBatterie. Further system components and their performance characteristics are defined in the technical data sheet of the respected sonnenBatterie which is included in the delivery.

8.2 In case of an occurring defect in terms of Sect. 8.1, the warranty eligible operator is entitled to the claims resulting from Sect. 9.

9. Rights within Premium Guarantee (Guarantee Claims)

9.1 sonnen's Premium Guarantee does not only match the fair value replacement warranty presupposed by the reconstruction loan corporation for the participation in its funding programmes, but also offers further services to the guarantee eligible operator. Upon occurrence of a guarantee case, sonnen shall replace the defect system component. The required working time for the replacement of the defect system component is to be paid by the guarantee eligible operator at sonnen's compensation rates applicable at the occurrence of the guarantee case. The current hourly rate when entering into this agreement is EUR 52 gross. The hourly rate can be adjusted from time to time and may vary for different countries about which sonnen will inform its customers when entering into a guarantee agreement. The current hourly rate can be requested under our service number (+49 8304 929 33 444). sonnen will issue an offer to the customer before starting to deliver performances. Working time in terms of this regulation also includes the journey and departure time from sonnen to the location of the warranty eligible product's installation. If sonnen has remote access to the eligible guarantee product sonnen will conduct a

remote diagnosis and send the customer a first evaluation about the cause of the problem as well as of scope and content of possible activities. Further on the customer will get a quotation upfront.

9.2 Any replacement, repair or collection of the guarantee eligible product shall exclusively be done at the location to which the guarantee eligible product was originally delivered and installed. Additional costs resulting from a non-coordinated transport to another location are to be paid by the guarantee eligible operator.

9.3 Any claims exceeding the replacement of the system component, especially claims for lost profits or replacement of damages caused by defective products are exempt.

9.4 If no guarantee case causing defect has been determined for the guarantee eligible product within the scope of the examination, or no Premium Guarantee claim is resulting from the listed circumstances in Sect. 10. and the guarantee eligible operator has not determined such due to gross negligence, sonnen can demand the payment of the costs accrued within the scope of the examination. Used working time as well as costs for journey and departure time shall be charged at sonnen's current rates. Please note the provisions of Sect. 9.1.

9.5 It is at sonnen's sole discretion to take out a respective insurance for securing the guarantee eligible operator's claims resulting from this guarantee.

9.6 Any claims from the guarantee (including guarantee claims) lapse six months after acknowledgement of the defect by the guarantee eligible operator, or the point in time in which they should have acknowledged it without gross negligence, at the latest, however, three months after termination of the guarantee period.

10. Technical Requirements, Fact of Exclusion

The guarantee claims are – if the asserted defect has been also caused hereby – excluded in the following cases:

10.1 Not intended use according to the respectively current manual or instructions by the guarantee eligible operator or commissioned third parties.

10.2 Non-appropriate and non-professional or non-standard installation, or installation not according to installation instructions or tips (including the installation and operating manual for the guarantee eligible product) undertaken by the guarantee eligible operator or commissioned third parties.

10.3 Unprofessional, incorrect handling or operation or handling or operation against the operation instructions and tips of the guarantee eligible product; environmental moisture and temperature must be within the required limit values.

10.4 A defect of the Product, e.g. the deep discharge of battery cells occurs, which could have been determined and prevented within the scope of a regular appropriate supervision of the sonnenBatterie's operation by the customer or upon presence of an online connection (see Sect. 3.1).

10.5 Unauthorised changes or repairs of any kind; Utilisation of spare parts and complements that do not correspond to sonnen's predefined original specifications.

10.6 Non-implementation of the function controls and the on-going maintenance in accordance with the maintenance instructions of sonnen.

10.7 Non-Installation of updates which are needed to avoid system errors and defects.

10.8 Non-implementation of the regular examination of the proper mains connection.

10.9 Removal, damage or destruction of the label by the warranty eligible operator if a defect resulted from this.

10.10 Outside influence and force majeure.

10.11 Transport damages sonnen is not responsible for.

10.12 Occurring excess voltages in the power voltage supply to which the warranty eligible product is connected.

11. Transferability of the Guarantee

The guarantee, including the guarantee claims resulting from it, can only be transferred from a guarantee eligible operator to a third party with sonnen's prior written consent.

12. Claim for Defects, Liability

12.1 If the customer purchased the Products of sonnen via a third party, e.g. via a distribution partner of sonnen, the terms and conditions of the purchase contract entered into by and between the customer and the third party are applicable. If nonetheless the customer has warranty claims against sonnen or sonnen is liable the following provisions are applicable:

12.2 It is regarded as material defect if the goods do not display the condition agreed upon or are not suited for the utilisation agreed upon in the agreement.

12.3 Changes in the execution of the services as well as other changes benefiting the technical advancement are not regarded as defects.

12.4 If nothing to the contrary has been agreed upon and ordered, the suggestions as well as quantity and measurement records shall be made by sonnen in a generally non-binding manner.

12.5 sonnen is liable according to the legal regulations if the customer exerts claims for damages that are based on intent or gross negligence, including the intent or gross negligence of sonnen's representatives or fulfilment agents.

12.6 sonnen is liable according to the legal regulations if sonnen has culpably violated an essential obligation of the agreement. A liability is excluded for a simple negligent violation of non-essential obligations of the agreement.

12.7 If the customer is entitled to a claim for replacement of the damages instead of the service, sonnen's liability is generally limited to the replacement of the foreseeable, typically occurring damages. The same applies if the customer is entitled to claims for damages instead of the service.

12.8 The liability due to injuries to life, body or health shall remain unaffected. This also applies for the obligatory liability according to the product liability act as well as liability due to malicious concealment of a defect or due to the taking over of a guarantee.

12.9 A warranty for the condition of the object or that the object shall retain a specific condition for a specific duration exceeding the legal rights to the removal of defects is exclusively taken over by sonnen if this has been explicitly agreed upon in writing.

12.10 Performance and product guarantees of the manufacturers of used components (e.g. photovoltaic modules and inverters) shall exclusively be granted by the respective manufacturer if no deviating written agreements have been made. After the expiration of the warranty deadline, claims resulting from these guarantees shall be directly addressed to the respective manufacturer.

12.11 A further liability is excluded, irrespective of the legal nature of the claim exerted. sonnen is specifically not liable for damages that have not been caused to the goods itself, e.g. lost profit and other financial losses.

12.12 In so far as the liability is excluded or limited, this also applies for the personal liability of sonnen's employees, workers, staff, representatives and fulfilment agents.

12.13 Should the examination of the notice of defects reveal that the case is not covered by warranty or guarantee, the costs caused within the scope of the examination and rendering of services are to be paid by the customer.

12.14 The legal limitation period applies for claims for defects.

12.15 The limitation period for the sonnenProduct "sonnenCharger" shall be three years.

12.16 If a liability for damages due to slight negligence and not based on injury to life, body or health of the customer is not excluded, such claims shall lapse within one year, starting from the emergence of the claim.

13. Data Protection / Approval

13.1 Insofar as allowed by the customer sonnen shall, within the scope of rendering the contractual services and the update services, have access to those sonnenProducts online which are approved by the customer for surveillance and control. Legal basis is Art. 6 Abs. 1 lit. a GDPR. The data generated in the sonnenProduct shall be read, evaluated, processed and saved for the purpose of rendering of services which means also for monitoring the systems and for analysing and rectifying problems, increase of efficiency, for terms of the ongoing optimization and enhancements of the sonnenProducts. Legal basis is Art. 6 Abs. 1 lit. b GDPR.

13.2 The updates for the used software shall generally be installed online. Please note the provisions of Sect. 3.3 and 13.9.

13.3 The customer's data may be forwarded to sonnen's fulfilment agents or sonnen's fulfilment agents shall access the sonnenProducts online to render the agreed services. These data are the contact details such as name, address and phone number, the data of the Products (serial number, date of initial start-up) and such machine data, which are needed for delivering performances within the scope of the guarantee or warranty at the Products. Legal basis is Art. 6 Abs. 1 lit. b GDPR.

13.4 As far as data has to be transferred to third parties in fulfilment of the contractual performances and if these data cannot be transferred anonymised sonnen has entered into agreements with these companies which are in compliance with the requirements of the applicable law.

13.5 For the purpose of benchmarking or research, the Machine Data may be forwarded to third parties in anonymised form.

13.6 With entering into the guarantee agreement, the customer agrees to the collection, processing, utilisation and forwarding of their data. Please note the provisions of Sect. 13.9.

13.7 The data received from the customer shall be treated confidentially and according to the regulations of Germany's Federal Data Protection Act, the General Data Protection Regulation as well as the German Telemedia Act.

13.8 The customer is entitled to disagree with sonnen's utilisation, processing, saving and forwarding of their data or withdraw their given approval at any time.

13.9 Reference is made to sonnen's data protection and data utilisation conditions which has been accepted by customer approved.

14. Intellectual Property Rights, Software Utilisation

14.1 sonnen shall remain owner of all copyright and exploitation rights for all plans, construction drawings, presentations as well as all illustrations, drawings, records, construction and circuit diagrams and other documents entrusted to the customer within the scope of the order fulfilment, regardless if in written or electronic form, that have been created by sonnen. Without the consent of sonnen they must not be made accessible to third parties or utilised by the customer. Upon sonnen's request, they are to be handed back with the assurance that no copies have been made. The customer is liable for any utilisation of the information in their possession that is contrary to these conditions.

14.2 Regarding the software contained in the delivery as well as updates, upgrades and extensions delivered for this purpose, the customer shall be granted a non-exclusive, non-transferable right to utilise the delivered software, including its documentation to the extent which is required for the appropriate operation of the sonnenProduct in accordance with the regulations of the supplied manual and instructions.

14.3 The utilisation right shall exclusively apply to the delivery object with which the software has been delivered. The customer's isolated utilisation of the software or utilisation in connection with other devices and products is not allowed.

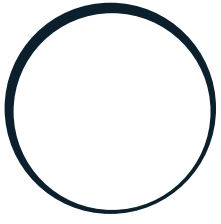
14.4 The customer's further utilisation, especially the change, processing, reproduction, translation of the software as well as conversion from object code to source code is not allowed.

14.5 The utilisation limitation also includes the customer's accesses at system level for the purpose of changing ex works configured parameters, functions and utilisation limitations unless assured properties of the sonnenProduct are affected by these limitations due to the made agreements.

15. Final Provisions

15.1 This agreement is exclusively subject to the law of the Federal Republic of Germany under exclusion of the regulations of the international private law (conflict of laws) and the UN Convention on Contract for the International Sale of Goods.

15.2 The exclusive place of jurisdiction for all disputes resulting from or in connection with this agreement is Ulm if the guarantee eligible operator (i) is a trader, (ii) an entrepreneur in terms of § 14 of the BGB [German Civil Code] or (iii) a private person without a place of general jurisdiction within the Federal Republic of Germany. Otherwise, the places of jurisdiction are those stipulated in the ZPO [German Code of Civil Procedure].



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