Operating instructions | for operators

sonnenProtect 1300

for sonnenBatterie eco 8.2 or eco 9.43

EN

IMPORTANT

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

Publisher
sonnen GmbH
Am Riedbach 1
D-87499 Wildpoldsried
Service number
Email

Document	
Document number	346
Part number	22042
Version	X01
Valid for	UK
Publication date	19/02/2018

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1 Information about this document

This document describes the operation of the sonnenProtect 1300 in connection with a sonnenBatterie eco 8.2 or eco 9.43 storage system.

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

1.1 Target group of this document

This document is intended for the operator of the storage system and the sonnenProtect.

1.2 Designations in this document

The following designations are used in this document:

Complete designation	Designation in this document
sonnenBatterie eco 8.2	Storage system
sonnenBatterie eco 9.43	
sonnenProtect 1300	sonnenProtect

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

Symbol	Meaning
•	List

Table 1: Additional symbols

2 Safety

2.1 Intended use

The sonnenProtect 1300 is an emergency power unit designed to supplement the sonnenBatterie eco 8.2 or eco 9.43. The sonnenProtect provides power to the connected consumer even if a grid outage occurs. It can only be operated together with the right storage system from sonnen GmbH. Any other use is considered improper use.

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:

- Only operate the sonnenProtect together with the right storage system.
- The sonnenProtect must be installed by an authorised electrician.
- The sonnenProtect must only be connected to the storage system as described here. The output of the sonnenProtect must not be connected to the building mains.
- Only connect an electrical consumer that does not exceed the nominal power (in continuous operation) and maximum power (when switched on) of the sonnenProtect.
- The sonnenProtect must only be used at suitable installation location.
- The transport and storage conditions must be observed.

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 sonnenProtect 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 sonnenProtect

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

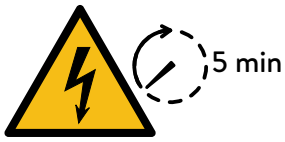
- The sonnenProtect must only be operated as described in the product documentation.

- This device can be used by children from the age of eight (8) years old and individuals 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. Cleaning and user maintenance must not be carried out by children without supervision.

2.4 Product modifications or changes to the product environment

- The sonnenProtect 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 sonnenProtect and the storage system must be wired in accordance with the product documentation.
- The number of plug outputs on the sonnenProtect must not be changed.
- All repairs on the sonnenProtect must be performed by authorised service technicians only.

2.5 Voltage inside the sonnenProtect



The sonnenProtect contains live electrical parts, which poses a risk of electrical shock. The storage system inverter also contains capacitors which carry voltage even after the storage system is switched off. As the sonnenProtect is connected to the inverter of the storage system, this means that the voltage from the inverter also flows into the sonnenProtect. Therefore:

- ▶ Do not open the sonnenProtect.
- ▶ Do not remove any plastic covers.

3 Product description

3.1 Technical data

	sonnenProtect 1300
System data	
Maximum power (2 sec.)	2,200 W
Nominal power	1,300 W
Output voltage (AC)	230 V +/- 10 %
Nominal frequency	50 Hz
Network configuration in emergency operation	IT
Operating concept	Single-phase power supply via plug outlet. The switch to emergency operation takes place automatically through the storage system.
Switchover time to emergency operation	approx. 5 seconds
Dimension/Weight	
Dimensions (H/W/D) in mm	235/150/124
Weight in kg	approx. 2 kg
Safety	
Protection class	I (PE conductor)
Degree of protection	IP21
Overvoltage category	III
Protective functions	Overcurrent protection, insulation monitor (as per IEC 61557-8)
Ambient conditions	
Environment	indoor (conditional)
Ambient temperature range	5 °C ... 30 °C
Storage temperature range	0 °C ... 40 °C
Transport temperature range	-15°C ... 30 °C
Max. rel. humidity	90 %, non-condensing
Permissible installation altitude	2,000 m above sea level
Pollution degree	2
Additional ambient conditions	The ambient conditions prescribed for the storage system apply.

Table 2: Technical data

3.2 System components

3.2.1 System components of the sonnenProtect

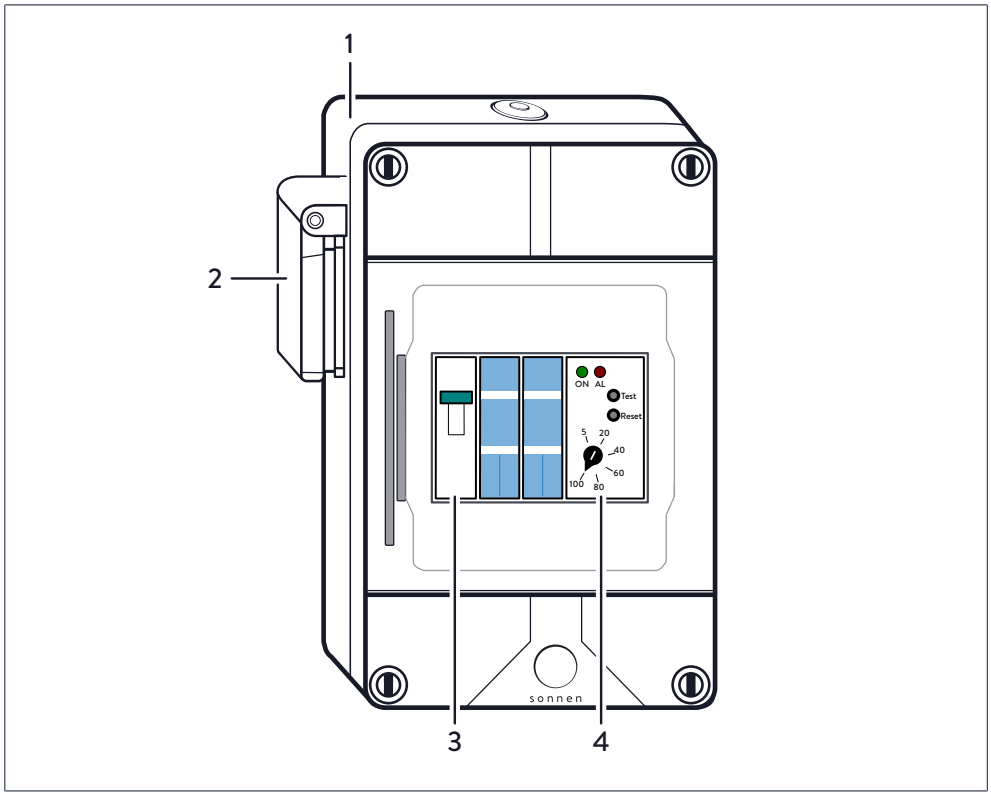


Illustration 1: System components sonnenProtect

1	sonnenProtect	2	Plug outlet
3	F1.P (Z6) miniature circuit breaker	4	K2.P insulation monitor

3.2.2 Control and display elements

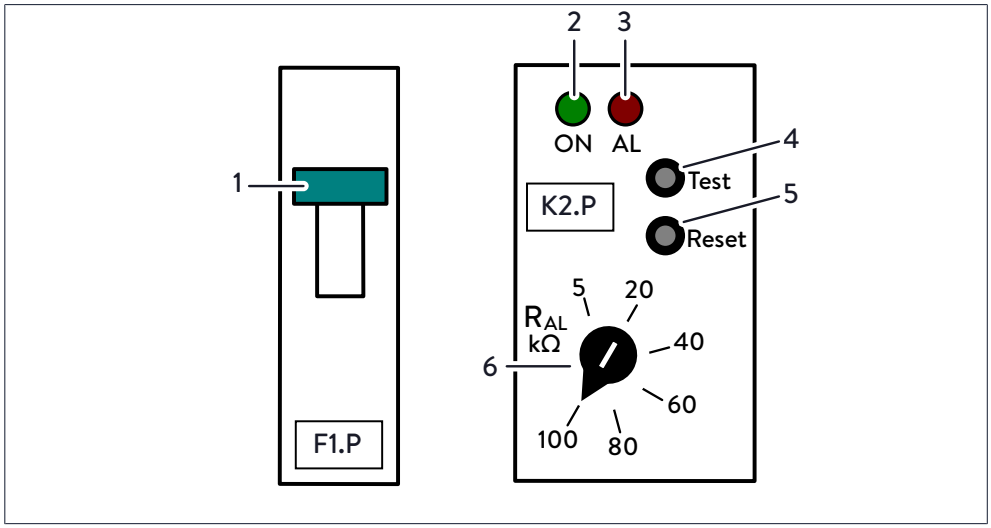


Illustration 2: Control and display elements

No.	Designation	Function
1	Miniature circuit breaker	Reversing the switch activates/deactivates the plug outlet of the sonnenProtect.

No.	Designation	Function
2	‘ON” LED	Lights up when power supply is on (indicates emergency operation).
3	‘AL’ LED	Lights up when an insulation fault occurs, i. e. when the insulation resistance drops below the set alarm value ($R_E < R_{AL}$) (in emergency operation).
4	Test key	Pressing the test key simulates an insulation fault, thereby testing the function of the device. The ‘AL’ LED lights up and the connection to the plug outlet of the sonnenProtect is interrupted for as long as the test key is held.
5	Reset key	No function.
6	R_{AL} setting	Turning sets the R_{AL} alarm value (recommended setting: 100 kΩ/V).

Table 3: Description of the control and display elements

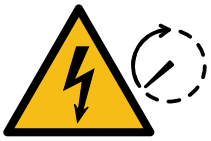
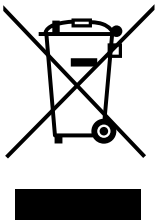
3.3 Type plate

The type plate is located on the outer surface of the sonnenProtect. The type plate can be used to uniquely identify the sonnenProtect. The information on the type plate is required for the safe use of the system and for service matters.

The following information is specified on the type plate:

- Item designation
- Item number
- Technical data

3.4 Symbols on the outside of the sonnenProtect

Symbol	Meaning
	Warning: electrical voltage.
	Warning: electrical voltage. Wait five minutes after switching off (capacitor de-energising time).
	CE mark. The product meets the requirements of the applicable EU Directives.
	WEEE mark. The product must not be disposed of in household waste, dispose of it through environmentally friendly collection centres.

Symbol	Meaning
	Observe the documentation. The documentation contains safety information.

4 Function

4.1 Basic principle

The plug outlet of the sonnenProtect supplies electrical power both in grid and emergency operation. The storage system with sonnenProtect automatically toggles between grid operation to emergency operation. The switchover time between grid and emergency operation is stated in the section Technical data [P. 8].

4.2 Grid operation - no grid outage

If the public electricity grid is not experiencing an outage, the consumer connected to the sonnenProtect will be continuously supplied with electrical power. This electrical power is drawn directly from the grid and the batteries of the storage system are not discharged by the usage of the sonnenProtect. The storage system controls the flows of energy in the building and reserves the set backup buffer.

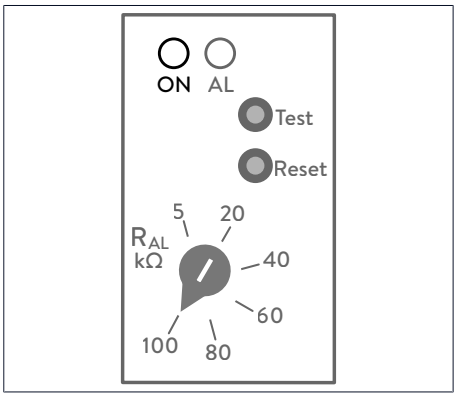


Illustration 3: Insulation monitor in grid operation

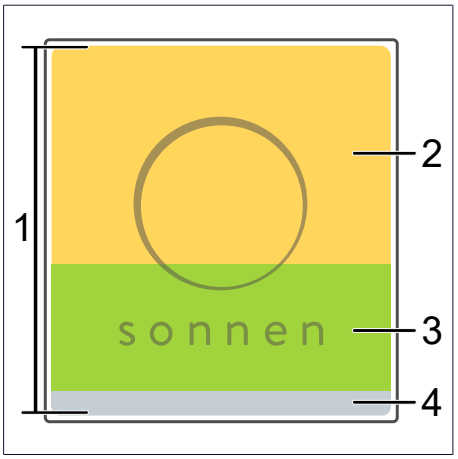
The insulation monitor is deactivated in grid operation: ‘ON’ LED is off.

4.3 Emergency operation - grid outage

The storage system automatically detects grid outages and disconnects from the public electricity grid. The plug outlet of the sonnenProtect is not supplied with electrical power for the approx. five seconds it takes to switch over to emergency operation.

After this point, the consumer connected to the plug outlet is supplied with electrical power until the backup buffer of the storage system batteries is depleted.

Once the backup buffer is used up and the battery’s minimum state of charge has been reached, the plug outlet of the sonnenProtect is no longer supplied with electrical power.



1 - Total capacity

2 - Available electrical power in grid operation

3 - Backup buffer

4 - Minimum state of charge

Illustration 4: Distribution of overall capacity

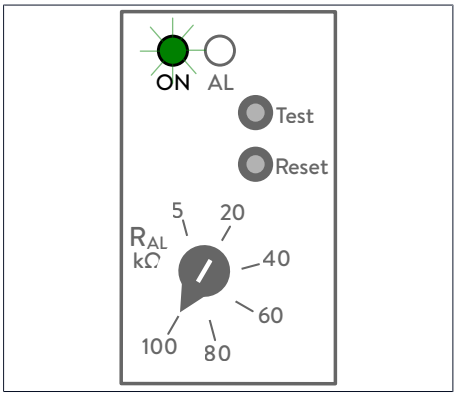


Illustration 5: Insulation monitor in emergency operation

The insulation monitor is activated in emergency operation: 'ON' LED lights up. The storage system switches back to grid operation with a delay after a grid outage. This can take a few minutes. During this time the plug outlet is supplied with power in emergency operation.

4.4 Protection provided by the insulation monitor

The insulation monitor checks the insulation status of the IT network, which the sonnenProtect forms in emergency operation. If an insulation fault occurs, the insulation monitor terminates the connection to the plug outlet of the sonnenProtect.

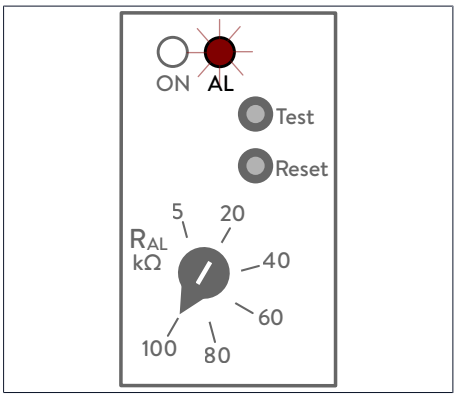


Illustration 6: Insulation monitor in the event of an insulation fault

The 'AL' LED lights up. When the insulation fault no longer exists, the connection to the plug outlet is automatically re-established. The 'AL' LED goes out.

5 Commissioning

5.1 Commissioning the storage system

It is essential to follow the instructions in the given order when switching on a storage system with sonnenProtect because the storage system cannot otherwise function properly.

5.1.1 Switching on the miniature circuit breaker

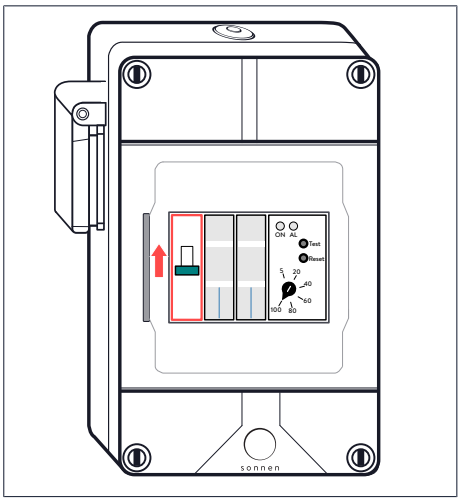


Illustration 7: Switching on F1.P

- ▶ Switch on the F1.P miniature circuit breaker for the sonnenProtect.

5.1.2 Switching on the storage system

- ▶ Switch on the storage system as described in the respective operating instructions.

5.1.3 Switching on the grid voltage

- ▶ Switch on the grid voltage using the AC miniature circuit breaker.

5.2 Setting up the sonnenProtect

5.2.1 Establishing connection to the storage system

✓ The storage system is connected to the router of the home network.

✓ Your laptop or PC also accesses the home network.

Proceed as follows to access the web interface of the storage system:

- ▶ Enter the address https://find-my.sonnen-batterie.comin the address line of your browser.

The following window appears:

Illustration 8: Website find-my.sonnen-batterie.com

- Click the button ***Configure***.

The login page appears.

- Log in as 'User' with the following password: Sonnen2016

The Dashboard page appears.

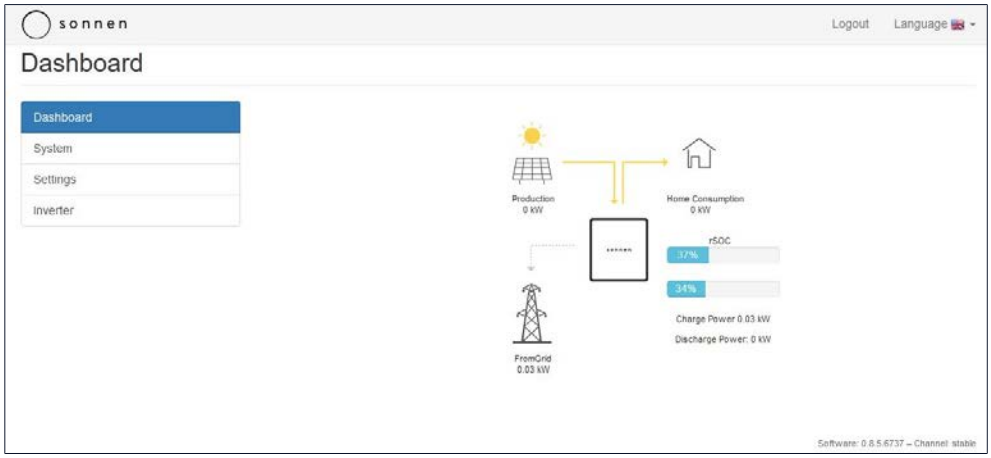


Illustration 9: Dashboard page

5.2.2 Setting the backup buffer

Proceed as follows to set what percentage of the capacity of the storage system should be available for the sonnenProtect in the event of a grid outage.

- Click on the button ***Settings***.
- Select ***Backup Buffer***.
- Change the percentage of the Backup Buffer to a desired value.

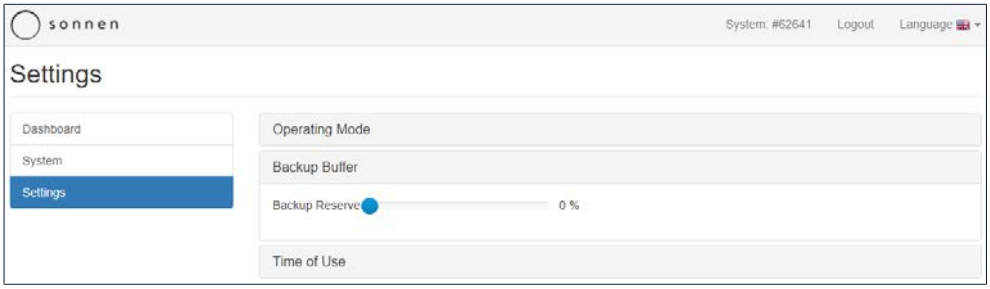


Illustration 10: Settings page

6 Maintenance

For fault-free, safe, reliable and long-lasting operation of the sonnenProtect, it is essential to carry out regular function checks and cleaning.

6.1 Checking function

Maintenance interval	Action to be taken
Every 6 months	▶ Check the function of the insulation monitor with help of the Test key (see Control and display elements [P. 9]).

Table 4: Checking function

6.2 Cleaning

NOTICE

Use of unsuitable cleaning agent and/or excessive water

Material damage because of scratched surfaces and/or damage caused by penetration of water!

- ▶ Do not use scouring cloths, sponges or cleaning agent.
- ▶ Use only moist cloths, not wet cloths, to clean the system.
- ▶ Do not use water jets.

- ▶ Carefully clean the outside of the sonnenProtect with a clean, moist cloth. For tougher dirt, use a small amount of household dishwashing detergent on a moist cloth.

7 Troubleshooting

Disturbance	Possible reason(s)	Correction
The plugt outlet of the sonnenProtect is not supplying any power. The 'AL' LED of the insulation monitor is on.	There is an insulation fault.	▶ Contact the electrician which installed the sonnenProtect. The insulation fault needs to be corrected.
The plug outlet of the sonnenProtect is not supplying any power. The 'ON' and 'AL' LED of the insulation monitor are off.	There is a grid outage. The battery is completely discharged.	▶ Wait until the public grid begins supplying power again.
	The F1.P miniature circuit breaker of the sonnenProtect is switched off.	▶ Switch on the F1.P miniature circuit breaker.
	The storage system is switched off.	▶ Switch on the storage system.
The F1.P miniature circuit breaker is switching off immediately, or after the sonnenProtect has been operating for a longer period.	An electrical consumer with a power consumption rating that is too high is connected to the plug outlet of the sonnenProtect.	▶ Only connect consumers with a power consumption that does not exceed the nominal power of the sonnenProtect.
		▶ Only connect consumers with a power consumption that does not exceed the maximum power of the sonnenProtect when switched on.
The consumer connected to the plug outlet of the sonnenProtect functions in grid operation but not in emergency operation.	Some consumers do not function in an IT network configuration. For example, a flame monitor, which is often integrated in gas condensing systems, requires a connection to the earth potential, which does not exist in an IT network configuration.	▶ Contact the electrician which installed the sonnenProtect. It needs to be checked whether the electrical consumer functions in an IT network configuration.

8 Uninstallation and disposal

8.1 Uninstallation

⚠ DANGER Improper uninstallation of the sonnenProtect

Danger to life due to electrocution!

- The sonnenProtect must only be uninstalled by authorised electricians.

8.2 Disposal

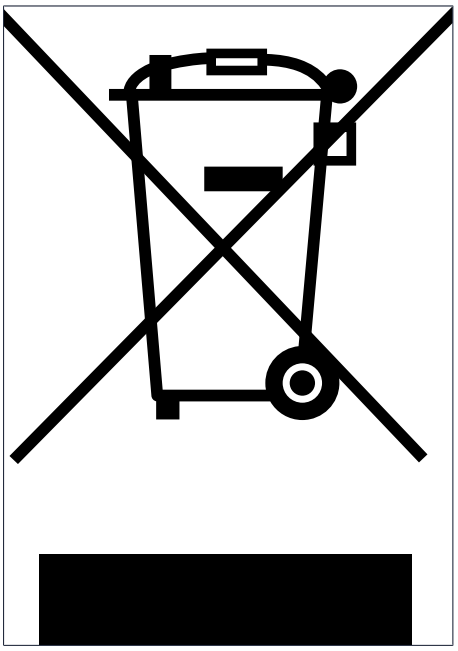


Illustration 11: WEEE symbol

The sonnenProtect must not be disposed of as domestic waste!

- Dispose of the sonnenProtect in an environmentally friendly way trough suitable collection systems.

sonnen

energy is yours

sonnen GmbH
Am Riedbach 1
D-87499 Wildpoldsried