



# Operating instructions

sonnenProtect 2500-AU-IN2-ATS

for sonnenBatterie eco 8.2

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# 1 Information about this document

This document describes the operation of the sonnenProtect 2500-AU-IN2-ATS accessory in connection with a backup load sub-board supplied and connected by the installer in conjunction with the sonnenBatterie eco 8.2 storage system containing a minimum of 6kW (x3 battery modules) or greater storage capacity.

- ▶ Read this document in its entirety before beginning the installation work.
- ▶ 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
sonnenProtect 2500-AU-IN2-ATS	sonnenProtect

## 1.3 Explanation of symbols

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



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



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



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
- List

# 2 Safety

## 2.1 Intended use

The sonnenProtect 2500-AU-IN2-ATS is an emergency power unit designed to supplement the sonnenBatterie eco 8.2. 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 application 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 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 authorized 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 a 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 Qualified electricians

Improper installation can result in personal injury and/or damage to components. For this reason, the sonnenProtect must only be installed and commissioned by an accredited sonnen installer and qualified electrician.

- Qualified electricians must meet the following criteria:
- The electrician must be a person with technical knowledge or sufficient experience to enable him/her to avoid dangers which electricity may create.
- The electrician must be a fully accredited sonnen installer certified by sonnen Australia.

## 2.3 Operating the backup circuits supplied by 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.

## 2.4 Modifications or changes to the product environment

- The sonnenProtect circuitry 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 accessories

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

<u>System data</u>	<u>sonnenProtect 2500-AU-IN2-ATS</u>
Maximum power	2,500 W
Nominal power	2,500 W
Output voltage (AC)	240 V +/- 10 %
Nominal frequency	50 Hz
Network configuration in emergency operation	IT
Operating concept	Single-phase – RCD protection is required
Switchover time approx.	0.2 seconds
<u>Safety</u>	
Minimum Protection Standard	IEC 61009-1; AS/NZ 61009-1
Required Protective functions	Overcurrent & Earth Leakage required
Degree of protection	Specified by installer
<u>Ambient conditions</u>	
Ambient temperature range	5 °C ... 40 °C
Storage temperature range	0 °C ... 50 °C
Transport temperature rang	-15 °C ... 50 °C
Maximum relative humidity	90 %, non-condensing
Permissible installation altitude	2,000 m above sea level
Additional ambient conditions	As prescribed for the storage system

## 3.2 System components

The sonnenProtect 2500-AU-IN2-ATS comprises of an electrical switching arrangement that is installed and contained within the main (top) unit of the sonnenBatterie eco 8.2 system. The power supply from the accessory consists of a cable existing from the top of the main unit. This cable will be terminated into the protective device of a backup load supply which has to be supplied, installed, connected and tested by the installer. The arrangement will supply dedicated circuits / appliances which are to be backed up in the event of a power failure to a load required not exceeding 2500W.

## 4 Function

### 4.1 Basic principle

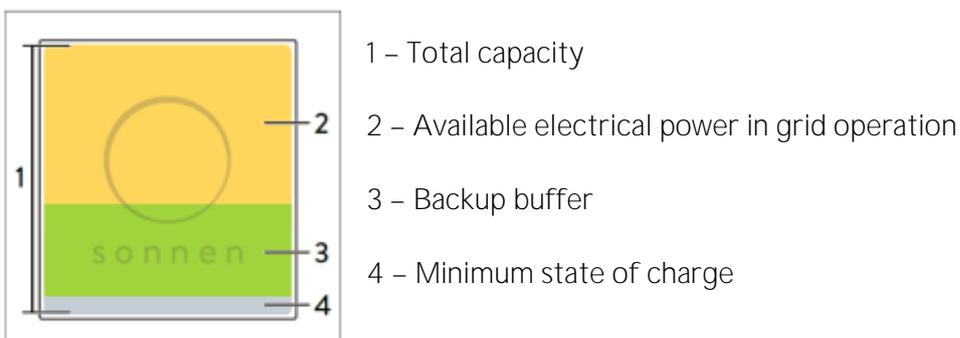
The power output of the sonnenProtect supplies electrical power both in grid and emergency operation. The storage system with sonnenProtect accessory automatically toggles between grid operation to emergency operation. The switchover time between grid and emergency operation is stated in the technical data.

### 4.2 Grid operation – no grid outage

If the public electricity grid is not experiencing an outage, the backup load circuits connected to the sonnenProtect backup supply 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 arrangement.

### 4.3 Emergency operation – grid outage

The sonnenBatterie storage system automatically detects grid outages and disconnects from the public electricity grid. The power output from the sonnenProtect arrangement is supplied with electrical power from the battery capacity 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 output of the sonnenProtect is no longer supplied with electrical power.



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 output of the sonnenProtect is supplied with power in emergency operation.

# 5 Commissioning

## 5.1 Commissioning the storage system

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

### 5.1.2 Switching on the storage system

**Notice**

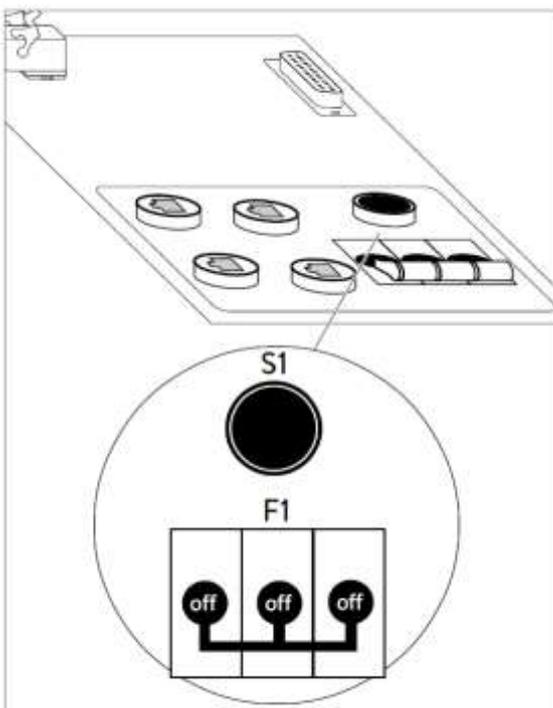
If the storage system cannot be switched on:

▶ Do not attempt to switch on the storage system more than three times.

▶ Contact the sonnen support Australia!

Further attempts can damage the battery modules.

Fuse switch F1 establishes the connection between the battery and the inverter. To be able to switch on fuse switch F1, switch S1 must also be pressed.



1 Press switch S1 and hold it down while the following steps are carried out.

2 Switch on fuse switch F1.

3 Keep switch S1 held down for at least another 5 seconds.

4 Release switch S1.

The storage system then starts up and performs a self-test. Once the self-test is successful, the storage system is ready to operate.

### 5.1.2 Switching on the grid voltage

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

## 5.2 Setting the backup buffer

The backup buffer energy volume will need to be set for you by the installer at point of installation of the sonnenProtect arrangement. Backup buffer setting can be modified at a later time by contacting the service division of sonnen Australia: please contact via the [www.sonnensupport.com.au](http://www.sonnensupport.com.au) website.

# 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 3.2)

## 6.2 Cleaning

### **Notice**

Risk of material damage due to use of unsuitable cleaning agent or excessive water

Unsuitable cleaning agents can scratch the surfaces. Furthermore, if cleaning is not carried out properly, water can get inside the sonnenProtect and cause damage. For this reason:

- Do not use scouring cloths, sponges or cleaning agent.
- Use only moist cloths, not wet cloths.
- 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	Correction
The output of the sonnenProtect is not supplying any power. The RCD has switched off.	There is an insulation fault.	▶ Correct the insulation fault.
The output of the sonnenProtect is not supplying any power. The RCD has switched on.	There is a grid outage. The battery is completely discharged.	▶ Wait until the public grid begins supplying power again.
	The miniature circuit breaker of the sub-circuits is switched off. The storage system is switched off.	▶ Switch on the miniature circuit breaker. ▶ Switch on the storage system.
The RCD and/or overall power from the sonnenBatterie 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 output of the sonnenProtect.	▶ Only connect loads with a power consumption that does not exceed the nominal power of the sonnenBatterie. ▶ Only connect loads with a power consumption that does not exceed the maximum power of the sonnenProtect when switched on.
The page 'sonnenProtect' is not available within the commissioning assistant.	The storage system has a non-current software version installed.	▶ Make sure that the storage system is connected to the internet. ▶ Go to the first page of the commissioning assistant and start an update by clicking on the button 'Install System Updates'.

# 8 Uninstallation and disposal

## 8.1 Uninstallation



Improper uninstallation of the sonnenProtect

Danger to life due to electrocution!

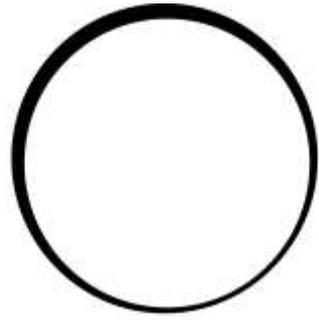
- ▶ The sonnenProtect must only be uninstalled by authorized electricians.

### 8.1.2 Disposal



The sonnenProtect must not be disposed of as domestic waste!

- ▶ Dispose of the sonnenProtect in an environmentally friendly way through a suitable waste recycling system.



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