

Owner's Guide and Installation Instructions



Battery Systems

*Solahart PV and battery systems must be installed and serviced by a suitably qualified person.
Please leave this guide with the system owner.*



Warning: For continued safety of this Battery system it must be installed, operated and maintained in accordance with these instructions and the installation guides supplied with the Battery, Inverter and Battery Interface.



Warning: Only suitably qualified and accredited personnel should perform work on PV and/or Battery systems, such as design, installation, commissioning, maintenance and repairs. Be sure to follow the safety instructions for all system components. It is also important to observe relevant local codes and regulations for health and safety and accident prevention.

Only Solahart parts and Solahart approved parts may be used. No substitute parts may be used without prior approval from Solahart Industries Pty Ltd. Only parts supplied by Solahart Industries Pty Ltd are covered by the Solahart warranty.

The warranty can become void if safety devices are tampered with or if the installation is not in accordance with these instructions.

PATENTS

This battery system may be protected by one or more patents or registered designs in the name of Solahart Industries Pty Ltd.

TRADE MARKS

® Registered trademark of Solahart Industries Pty Ltd.
™ Trademark of Solahart Industries Pty Ltd.

Note: Every care has been taken to ensure accuracy in preparation of this publication. No liability can be accepted for any consequences, which may arise as a result of its application.

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SYSTEM OWNER – We recommend you read pages 4 to 7.
The other pages are intended for the installer but may be of interest.

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IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE IMPORTANT SAFETY INSTRUCTIONS

During installation, testing and inspection, adherence to all the safety instructions is mandatory.

SAFETY SYMBOLS

The following symbols are used in this document to highlight important information:



Warning: **Warning** indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



Caution: **Caution** indicates potentially hazardous situation which, if not avoided, could result in minor or moderate injury and damage to or destruction of the product.

Note: **Note** indicates additional information intended to assist in the understanding of the text or an important step that leads to optimal results but is not safety or damage related.

GENERAL SAFETY INFORMATION



Warning: Read this entire document in addition to each system component installation guide before installing the Solahart Battery system. Failure to do so or follow any instructions or warnings in the supplied documentation can result in electric shock, serious injury, or death.



Warning: Only qualified personnel should perform work on photovoltaic and Battery systems.



Warning: A Battery can present a risk of electrical shock, fire, or explosion from vented gases. Observe proper precautions.



Warning: Ensure electrical connection / disconnection is performed only when the relevant circuit is isolated. Do not connect / disconnect wiring under load conditions.



Warning: Do not attempt to disassemble, repair, tamper with, or modify any system component unless explicitly instructed by the component installation guide.



Warning: Do not expose any component to direct flame or heat sources.



Warning: Do not install any component that is defective, appears cracked, broken, or otherwise damaged.



Warning: Do not install the system in potentially hazardous locations.



Warning: Do not immerse any component in water or other liquids.



Caution: Only Solahart supplied / approved components may be used.

ACTIONS TO UNDERTAKE IN THE EVENT OF AN EARTH FAULT ALARM

1. Limit access to all parts of the PV and Battery system.
2. Contact Solahart Service on 1800 638 011 or your nearest Solahart dealer.

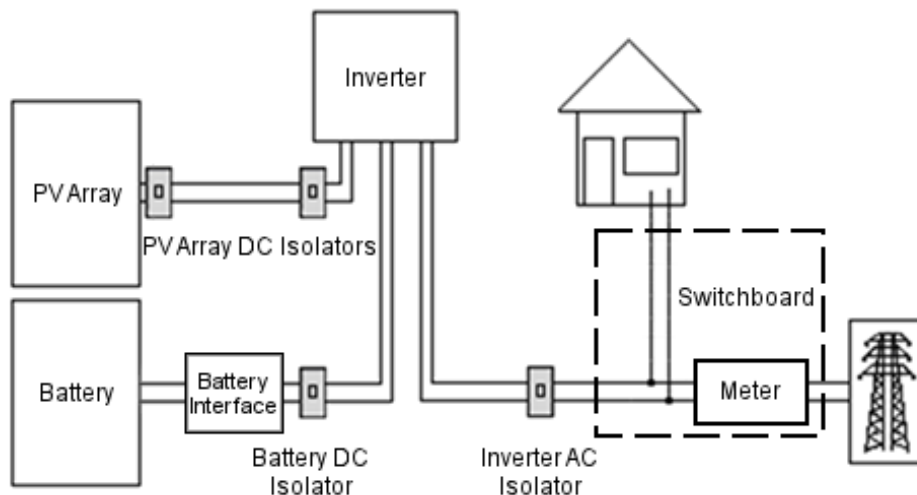
ABOUT YOUR BATTERY SYSTEM

MODEL TYPE

Your Solahart PV and Battery system is designed with an inverter installed in a readily accessible location and connected to the electrical distribution grid (often referred to as 'the grid') as per AS 4777.1. These instructions together with the installation instructions supplied with the system components provide limitations on positioning of the Battery system.

This Owner's Guide and Installation Instructions applies to the Tesla Energy Powerwall Battery (Daily Model).

SYSTEM OVERVIEW



The Solahart PV and Battery system is comprised of the following components:

- PV array – generates direct current (DC) power through the conversion of light energy from the sun.
- Inverter – inverts the DC power generated from the PV array or supplied from the Battery into alternating current (AC) power so it can be used in the home or exported to the grid.
- Battery – stores DC power generated by the PV array so the power can be used when the sun is not shining.
- Battery Interface – manages communication and power between the inverter and battery.
- PV Array DC Isolators – provide means for isolating the PV array.
- Battery DC Isolator – provides a means of isolating the Battery.
- Inverter AC Isolator – provides overcurrent protection of the inverter and a method of isolating the PV System from the electrical distribution grid.
- Meter – measures nett electrical power to and from the grid.

For more information regarding the specific operation of a PV system, refer to the Solahart Owner's Guide and Installation Instructions for PV systems.

Note: For safety reasons, the Inverter will only operate when the mains electrical supply is available from the grid. Your Solahart PV and Battery system cannot provide a backup electricity supply to your home appliances if the mains supply is interrupted.

If the power delivered by the PV array and Battery is insufficient to meet domestic demands, the power necessary to ensure the normal operation of the connected devices is drawn from the grid.

If the energy generated exceeds that required by property demands and the storage capacity of the Battery, your electrical network operator may allow the difference to be directly injected into the grid and become available to other users. Energy injected into the grid can be measured by electricity network operators as either gross (everything generated) or nett (excess generated). Injected energy may or may not be purchased by the local electrical network operator according to national and local standards, and regulations.

OPERATING PROCEDURES

TO TURN PV AND BATTERY SYSTEM ON

1. Turn ON the PV Array DC Isolator(s) and Battery DC Isolator at the Inverter.
2. Then turn ON the Inverter AC Isolator at the Inverter (if installed) and the Solar Supply Main Switch at the AC switchboard.

Note: Ensure the enable switches on the Inverter and Battery Interface are in the ON position.

TO TURN PV AND BATTERY SYSTEM OFF

1. Turn OFF the Solar Supply Main Switch at the AC switchboard and the Inverter AC Isolator at the Inverter (if installed).
2. Then turn OFF the PV Array DC Isolator(s) and Battery DC Isolator at the Inverter.



Warning: Depending upon the system there may be more than one PV Array DC Isolator.



Warning: To effectively isolate the wiring between the AC Isolator and switchboard, the Solar Supply Main Switch located in the switchboard must also be in the OFF position.



Warning: PV Array DC Isolators do not de-energise the PV array and array cabling.



Caution: If the Solahart Battery system is expected to be OFF for longer than one month, refer to the instructions supplied with the Battery.

ELECTRICAL SAFETY

SAFETY REQUIREMENTS

The voltages and currents produced by the Battery system can be dangerous.

UNIQUE HAZARDS OF DC ELECTRICITY

Batteries typically operate using DC electricity. Once the current is flowing, breaking or opening a connection (e.g. disconnecting a DC cable from the Inverter) can cause a DC electrical arc. Unlike arcs occurring in conventional low voltage AC wiring, DC arcs are not self-extinguishing. They are a potentially lethal burn and fire hazard, capable of creating high temperatures that can destroy contacts and connectors.

EARTH FAULTS

An earth fault is a system fault where a short circuit is formed between the DC circuitry of the PV and Battery system and earth. As the PV system owner, please be aware of the method of communication of earth faults on your system. Refer to Earth Fault Alarms in the Solahart Owner's Guide and Installation Instructions for PV systems.

MAINTENANCE

GENERAL

The Solahart Battery system has been designed for minimal and easy maintenance.

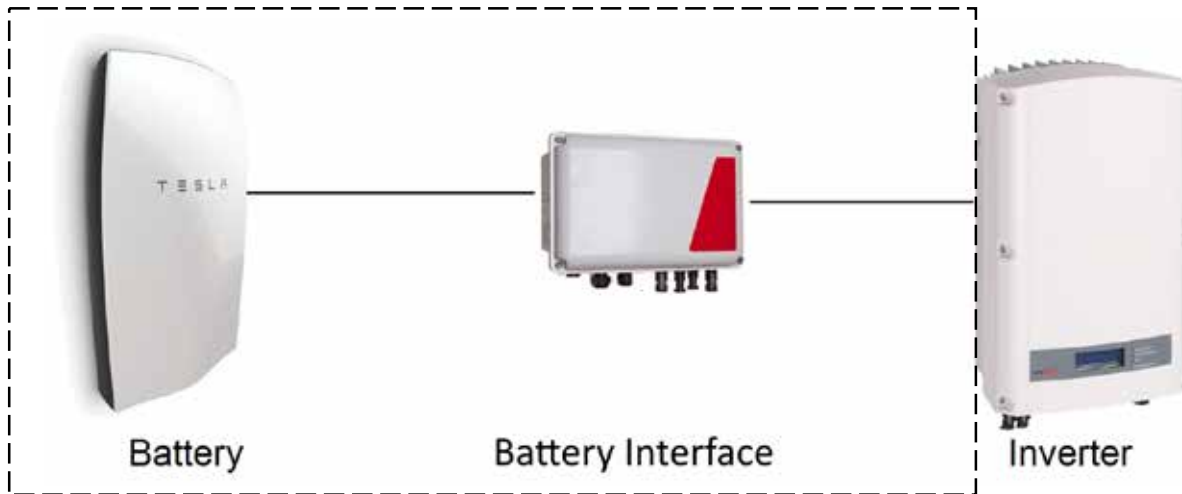
For recommended maintenance of the PV system, refer to the Solahart Owner's Guide and Installation Instructions for PV systems.

RECOMMENDED MAINTENANCE SCHEDULE

Maintenance Action	Frequency	Remarks
If you have an internet connected system, log in to your Inverter manufacturer's web portal and check that your system is operating, data has been logged and communication has been maintained. Ensure that the contact details of the PV system owner or responsible officer are up to date to ensure that Inverter fault notifications are delivered.	Monthly	If you are unable to log in or your system is not operating correctly, contact your Solahart dealer.
Clear leaves and other debris from the top edge of the Battery if installed outside	Quarterly	This is to maintain optimal airflow through the Battery.
Clean the exterior of the Battery with a soft, lint-free cloth. The cloth can be dampened with only water if needed. It should not be dripping.	When required	Do NOT use cleaning solvents to clean the Battery.

INSTALLATION – OVERVIEW

The following installation instructions detail requirements for installation of the Battery, Battery Interface and balance of system (BOS) components. For detailed PV system installation instructions and warranty exclusions refer to the Solahart Owner's Guide and Installation Instructions and documents supplied with the PV system.



INSTALLER RESPONSIBILITIES

The installer is solely responsible for:

- Observing and conforming to all relevant Australian Standards, all relevant Clean Energy Council Accreditation guidelines and all applicable laws, ordinances, regulations, codes of practice and local or national building codes, including any that may have superseded this Owner's Guide & Installation Instructions.
- Ensuring that the installation complies with AS/NZS 3000, AS/NZS 5033, AS 4777.1, AS/NZS 1768, and any relevant electrical service and installation rules for the state or territory where the system is installed.
- Ensuring that the Battery system and associated components are appropriate for the particular installation and the installation environment.
- Ensuring only parts supplied by Solahart Industries and installer supplied parts as specified by Solahart Industries are utilised (substitution of parts may void the warranty and invalidate certification).
- Ensuring that mounting fasteners have adequate pull-out strength and shear capacities to suit the installation.
- Ensuring safe installation of all electrical aspects of the Battery system.

FIRE SAFETY GUIDELINES

Observe the following fire safety guidelines when installing batteries supplied by Solahart:

- Check with local authorities for guidelines and requirements concerning fire safety for any building or structure on to which the Battery will be installed.
- Ensure that fire fighting personnel can access the system in the event of a building fire. Check with local authorities for any applicable regulations concerning setbacks or other placement restrictions that may apply for grid connected Battery storage.

DISCLAIMER OF LIABILITY AND WARRANTY

Solahart assumes no responsibility for loss, damage or expense resulting from improper installation, handling or misuse of batteries. Refer to 'Solahart PV System and/or Battery Warranty - Australia Only' on page 28 for full warranty terms and conditions.

INSTALLATION – PROCEDURE



Warning: For detailed PV system installation instructions and warranty exclusions refer to the Solahart Owner's Guide and Installation Instructions and documents supplied with the PV system.

1. Planning – Design the system and layout. Refer to 'Installation – Planning' on page 10.
2. Installing the PV system – Installation of modules, power optimizers, meter and Inverter(s). For an overview refer to 'Installation – PV System' on page 13.
3. Installing the Battery DC Isolator – Mounting and wiring of the Battery DC Isolator. Refer to 'Installation – Battery DC Isolator' on page 14.
4. Installing the Battery – Mounting and wiring of the Battery. Refer to 'Installation – Battery' on page 16.
5. Installing the Battery Interface – Mounting and wiring of the Battery Interface. Refer to 'Installation – Battery Interface' on page 21.
6. Installing the System labels – Installation location and label descriptions. Refer to 'Installation – Labelling' on page 23.
7. Commissioning the PV and Battery System. Refer to 'Installation – Commissioning' on page 24.

INSTALLATION – PLANNING

INSTALLATION TOOLS

- Drill and drill bit suitable for drilling pilot holes in the desired mounting surface/structure
- Wall mount bracket fasteners (Refer to component installation guides for specific requirements)
- Torque adjustable drill
- 5 mm hex key
- T20 Torx key
- T20 Torx bit to suit torque adjustable drill
- T30 Torx key
- 10 mm socket
- 17 mm spanner
- Electricians hand tools (screw drivers, pliers, side cutters etc.)

Note: See each component installation guide for additional tools required for installation.

CABLING AND GLANDS

The following cables are required to complete the wiring of the Battery system:

Cable description	Cable type	Conductor Size
Low Voltage (LV) Battery to Battery Interface	A pair of solar DC cables with MC4 connectors on one end	4 mm ²
LV Battery Interface to Battery DC Isolator	A pair of solar DC cables with MC4 connectors on one end	4 mm ²
LV Battery DC Isolator to Inverter	A pair of solar DC cables with MC4 connectors on one end	4 mm ²
12 V thermal power *	2-wire figure-8 cable	Min 1.5 mm ²
Control and monitoring *	5-wire shielded cable OR CAT5/6 600V shielded	Min 0.5 mm ²
Battery earthing *	Earthing cable complying with requirements from AS/NZS 3000	Min 4 mm ²

Note: The solar DC cables supplied by Solahart have been specifically selected for their mechanical and electrical properties, particularly their flexibility, double insulation and UV resistance.

* These cables are not supplied by Solahart

A minimum 25 mm² plain to screwed conduit terminator is required at the Battery connection point.

Note: Additional conduit terminators / glands will be required depending on the installation location and system orientation.

STRUCTURAL ASSESSMENT

The installer is responsible for ensuring that the building and building structures are capable of withstanding the additional loads and forces generated as a result of installing the Battery system. If uncertain of mounting structure strength, it is recommended that a structural engineering assessment is completed.

BATTERY INSTALLATION LOCATION



Warning: Installation location of the Battery must satisfy requirements in the Powerwall Installation and User's Manual in addition to Solahart instructions below.



Warning: The Battery must be installed on an upright wall that can support 115 kg.



Caution: Avoid installation in direct sunlight. The increased temperature within the Battery will affect its performance.



Caution: Ensure that no water sources are above or near the Battery.



Caution: Mounting clearances and requirements described in the Battery documentation must be maintained. Ignoring recommended mounting instructions can cause permanent damage to the Battery and may have reduced performance due to inadequate heat dissipation.

Batteries must not be installed:

- § in potentially hazardous locations
- § close to fire or combustible materials.
- § where there is potential for extreme sand and dust damage.
- § in direct contact with salt water/spray. Avoid installing in areas subject to high salt mist content e.g. coastal areas.
- § where snow or other debris e.g. leaves can accumulate on top of or around the Battery.
- § where they may be exposed to harmful chemicals.

Note: Avoid installation in living areas or near any openable window, door or any other opening into a living area. During operation, the Battery cooling system will produce noise which may be undesirable in living areas.

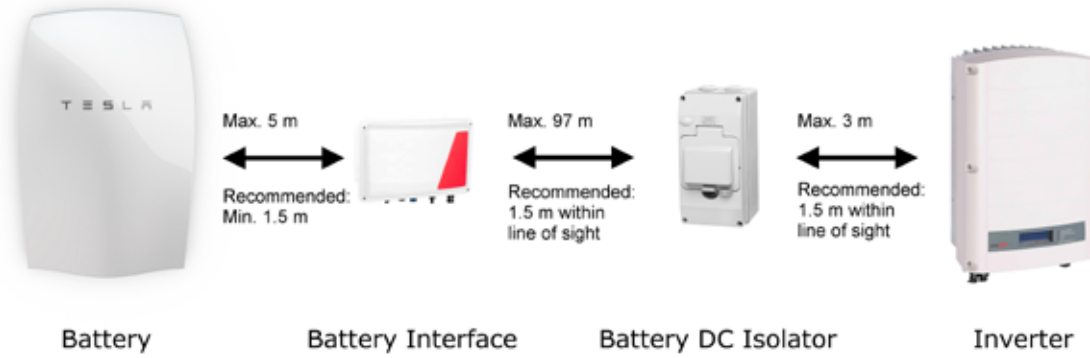
Note: Avoid installation in an environment with sustained elevated temperatures, such as a boiler room. The average ambient temperature over the system's life should be 30°C or less.

SYSTEM LAYOUT

Warning: The Battery DC Isolator must be installed adjacent to the Inverter, where adjacent is defined as: within 3 metres, where each item is visible from both locations.

Caution: Maintain the minimum clearance requirements for each system component in addition to the recommended layout instructions below.

The recommended battery system layout is displayed below:



When determining the optimal system layout, consider the following:

- § Select a Battery installation location that complies with ‘Battery Installation Location’ on page 11.

Note: To simplify cable management, a minimum distance of 1.5 metres between the Battery and Battery Interface is recommended.

- § The Battery DC Isolator must be installed adjacent to the Inverter and, if applicable, the PV DC Isolator(s).

Note: If Battery Interface and Battery DC Isolator are not adjacent, it is recommended that a second battery DC Isolator be installed adjacent to the Battery Interface.

Note: The Battery Interface will connect to the DC side of the Inverter. The DC connections are on the left hand side of the Inverter, hence it is recommended to position the Battery and Battery Interface to the left of the Inverter to simplify wiring.

Note: To simplify cable management and isolation requirements, it is recommended that the Inverter be installed adjacent to the main switchboard.

INSTALLATION – PV SYSTEM



Warning: For detailed PV system installation instructions and warranty exclusions refer to the Solahart Owner's Guide and Installation Instructions and documents supplied with the PV system.



Warning: Only suitably qualified personnel should perform work on photovoltaic systems.



Warning: Ensure electrical connection/ disconnection is performed only when the relevant circuit is isolated. Do not connect / disconnect wiring under load conditions.

OVERVIEW

For detailed PV system installation instructions refer to the Solahart Owner's Guide and Installation Instructions and documents supplied with the PV system.


The PV installation procedure includes the following:


1. Installing racking (rail and rail supports)
2. Installing rooftop isolator(s)
3. Installing power optimizers
4. Installing PV modules
5. Installing inverter
6. Installing meter
7. Installing and connecting system cabling
8. Commissioning the PV system

Note: Complete PV and Battery System commissioning should be completed as outlined in 'Installation – Commissioning' on page 24.

INSTALLATION – BATTERY DC ISOLATOR

MOUNTING

 **Caution:** Avoid installation in direct sunlight. The increased temperature within the enclosure will affect isolator ratings.

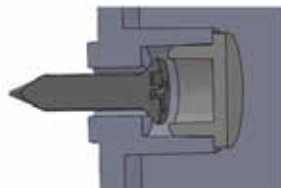
 **Caution:** Ensure fasteners are appropriate for the mounting structure.

1. Determine the exact mounting location of the enclosure.
2. Drill the pilot holes in the mounting structure corresponding to the enclosure mounting points. Pilot hole spacing is displayed in the figure below.



Enclosure internal mounting point spacing

3. Install a minimum of two (2) fasteners diagonally opposite, to fix the enclosure to the mounting structure.
4. Verify that the enclosure is firmly attached the mounting structure.
5. Install the silicone rubber plugs supplied with the enclosure on the internal mounting points. Refer to figure below.



Silicone rubber plugs installed on enclosure internal mounting points

INSTALLING CABLE ENTRIES

To ensure the IP rating of the enclosure is maintained, follow the subsequent instructions:

- The conduit entry points must be on the lower end of the enclosure (i.e.: facing downwards) so that any water will run away from and not towards enclosure entry points.
- Screw cover caps must be installed and all other unused cable entries should be sealed with silicone to help prevent water ingress.
- Cable glands and conduit adapters must be chosen to suit the type of cable or conduit used. E.g. cable glands designed for figure-8 cables must be chosen where figure-8 type solar DC cables are utilised.
- If water and/or condensation can form in the isolator enclosure, provision must be made for its harmless escape through suitably located drainage points in accordance with AS/NZS 3000:2007 Clause 3.3.2.3.

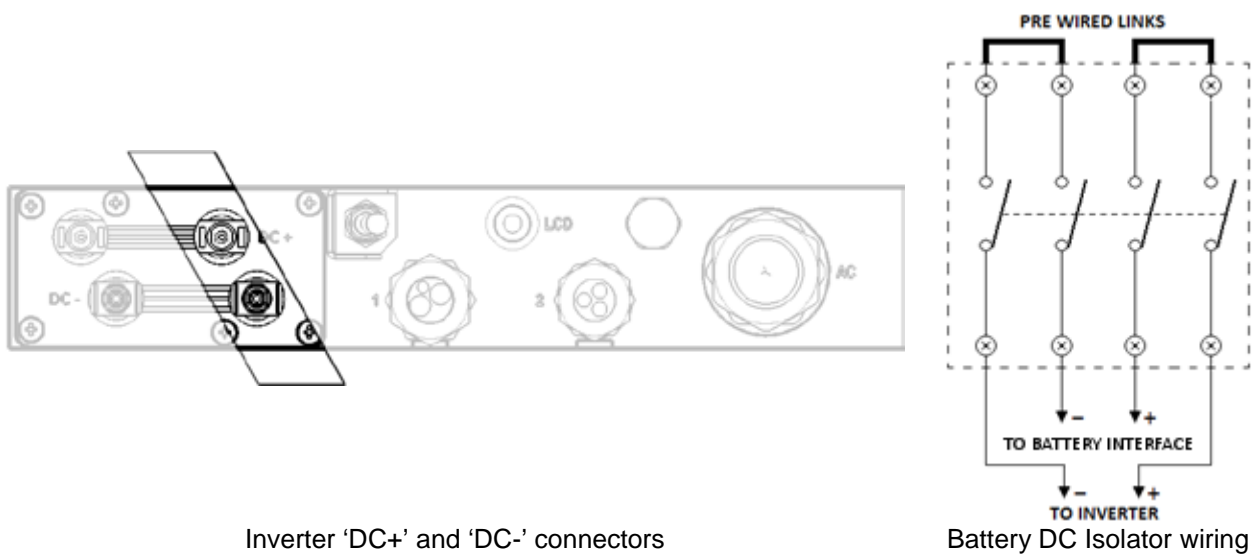
WIRING BATTERY DC ISOLATOR

The DC Isolators utilised in Solahart PV and Battery Systems are not polarity sensitive however for uniformity they should be wired as shown in the Battery DC Isolator wiring diagram below.

CONNECTING THE BATTERY DC ISOLATOR TO INVERTER

1. Prepare two DC cables;
 - i. MC4 Plug on one end and stripped on the other end (strip length 12 mm).
 - ii. MC4 Socket on one end and stripped on the other end (strip length 12 mm).
2. Ensure that the PV system is OFF. Refer to ‘To Turn PV System OFF’ in the Solahart Owner’s Guide and Installation Instructions for the PV System.
3. Connect the cabling MC4 connectors to the Inverter ‘DC’ connectors. Refer to figure below.
4. Install the stripped ends of the cabling at the Battery DC Isolator. Refer to figure below.

Caution: DC Isolator terminal screws must be tightened by hand only. Do not use power tools.



Once wired, the Battery DC Isolator should be left in the OFF position until system commissioning.

SEALING THE ENCLOSURE

1. Ensure the silicone rubber gasket is correctly positioned between the cover and the base.
2. Ensure all six (6) cover screws are appropriately tightened.
3. Ensure all entries into the enclosure are sealed. If necessary use a suitable sealant.
4. Install plastic plugs supplied with the enclosure on the four (4) external cover screw openings.

INSTALLATION – BATTERY



Warning: Read the Powerwall Installation and User's Manual before installing or using the Battery. Failure to do so or follow any of the instructions or warnings can result in electrical shock, serious injury, or death, or can damage the Battery, potentially rendering it inoperable.



Warning: The Battery is approximately 115 kg and challenging to lift. Ensure the appropriate PPE is utilised. The use of a mechanical lifting aid is recommended.



Warning: Do not install the Battery if it is defective, appears cracked, broken or otherwise damaged.

Note: Avoid damaging the Battery packaging as it is a critical installation tool and provides structural stability and handholds prior to mounting.

Note: Any reference to high voltage (HV) in the Powerwall Installation and User's Manual should be treated as low voltage (LV) as defined in AS/NZS 3000.

OVERVIEW

For detailed Battery installation instructions refer to the documents supplied with the Battery.

The Battery installation procedure includes the following:

1. Accessing the Battery circuit board.
2. Setting communications and address switches on the Battery circuit board.

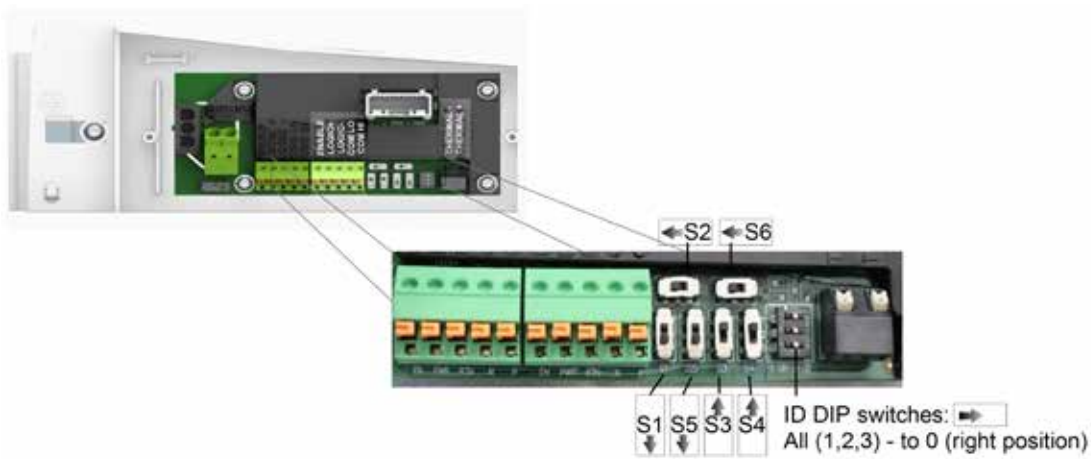
Note: Follow the instructions 'Setting communications and address switches' on page 17

3. Installing the cabling at the Battery circuit board.
4. Mounting the Battery.
5. Installing the Battery covers.

Note: For ease of access, steps 1, 2 and 3 are best carried out before the Battery is mounted to the mounting structure.

SETTING COMMUNICATIONS AND ADDRESS SWITCHES



1. Set the communications and address switches as described below:

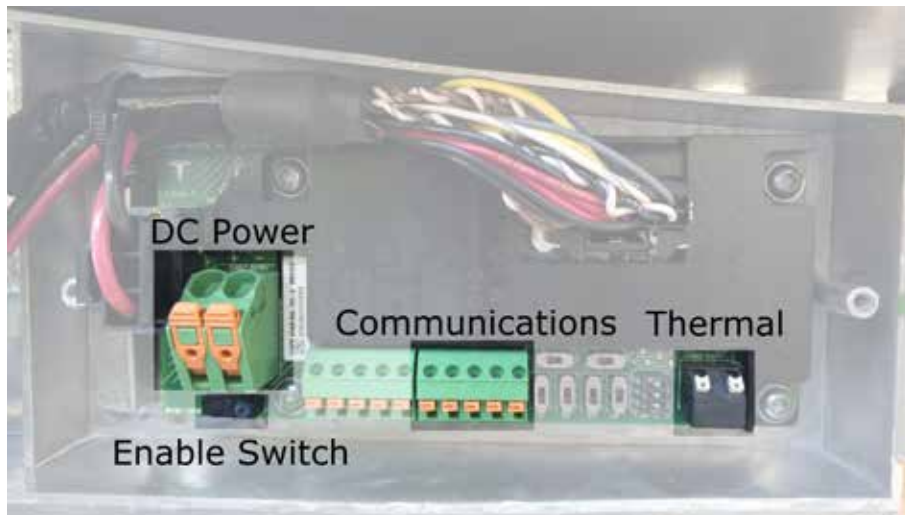


Address (ID DIP) Switches	
Switch Number	Position
1	Right
2	Right
3	Right

Communication Switches	
Switch Number	Position
S2	Left
S6	Left
S1	Down
S5	Down
S3	Up
S4	Up

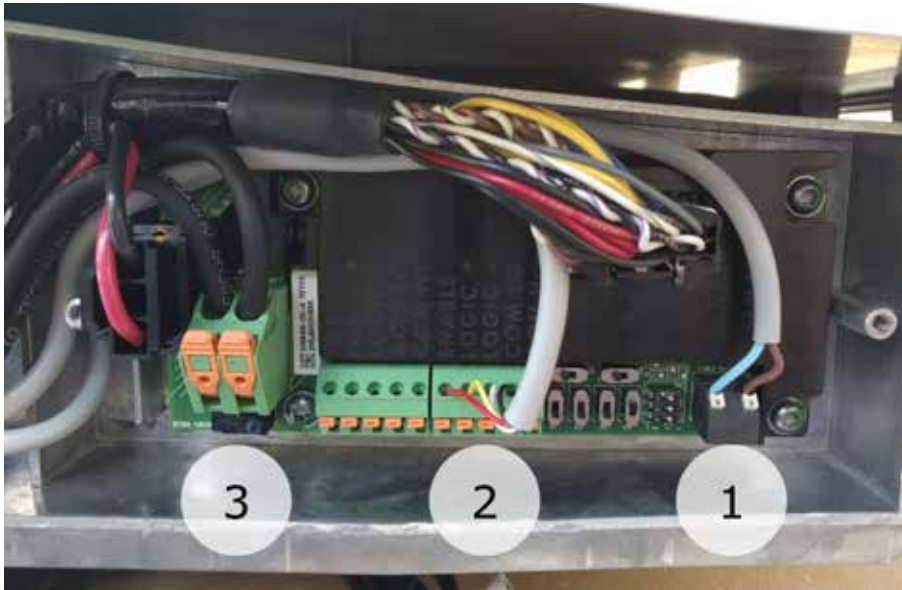
INTERNAL BATTERY CABLING

-  **Warning:** Incorrectly routed wiring that engages the Enable Switch when the splash cover is off can create a risk of electric shock. Ensure the Enable Switch is not engaged by any wiring.
-  **Warning:** Connect the cabling to the Battery terminals as described in the Powerwall Installation and User’s Manual.



Powerwall Connection Terminals

To ensure correct operation, the wire routing must be as follows:



Internal Wire Routing

1. Route the thermal power wire behind the red and black factory DC power wires and the internal wire harness and then into the thermal terminals.
2. Route the communications wire behind the red and black factory DC power wires and into the communications terminals. Use shielded communication wire and earth the shielding at one end.

Note: Shielded cable reduces the possibility of noise on the communication cable.

Note: Do not earth the shield at both ends – this would create an earth loop.

3. Route the solar DC power wires behind the red and black factory DC power wires and into DC Power terminals.

Warning: Verify that both tabs on the Battery DC Power terminals are locked completely shut over the wires. The tabs have an intermediate position that shuts halfway, which is NOT electrically safe.

Note: The solar DC cables supplied by Solahart have been specifically selected for their mechanical and electrical properties, particularly their flexibility, double insulation and UV resistance. The use of third party solar DC cables can hinder the proper installation of the splash cover and prevent the enable switch engaging.




4. Route all the installed cables down the side channel of the circuit board area. Refer to figure below.



5. Install the splash cover.
6. Use the provided fir tree cable tie to secure the installed cabling to the battery frame.
7. Use another cable tie to secure the factory cabling to the installed cabling.

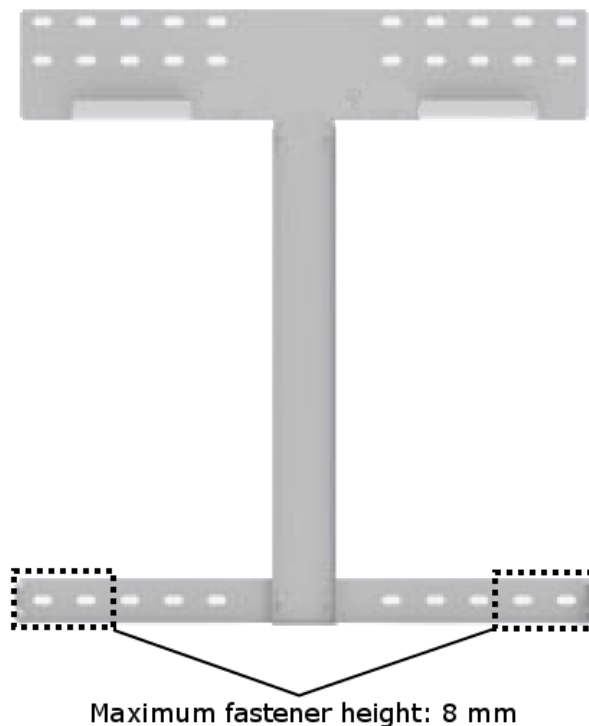
Note: Failing to secure the cabling with cable ties will prevent the installation of the bottom cover.

MOUNTING

-  **Warning:** The installer is responsible for ensuring that the building and building structures are capable of withstanding the additional loads and forces generated as a result of installing the Battery system. If uncertain of mounting structure strength, it is recommended that a structural engineering assessment is completed.
-  **Warning:** The Battery is approximately 115 kg and challenging to lift. Ensure the appropriate PPE is utilised. The use of a mechanical lifting aid is recommended.
-  **Caution:** Ensure wall fasteners utilised are of the appropriate size and type. They must withstand the forces generated by the mass of the Battery when installed on the selected mounting structure.


Note: For restrictions on Battery location refer to ‘Battery Installation Location’ on page 11.

Note: Maximum fastener height for all positions but the two bottom outer holes: 18 mm
 Maximum fastener height for the two bottom outer holes on each side: 8 mm



1. Mount the Battery as described in the Powerwall Installation and User’s Manual.
2. Remove packaging as described in the Powerwall Installation and User’s Manual.

CABLING FROM BATTERY TO THE BATTERY INTERFACE

-  **Caution:** DC cabling within a ceiling space, in wall cavities or under a floor shall be installed in metal or heavy duty insulating wiring enclosure. DC cabling in all other locations shall be installed in medium duty conduit as a minimum in accordance with AS/NZS 3000.

1. Install the conduit terminator specified in ‘Cabling and Glands’ on page 10 on the Battery conduit plate as described in the Powerwall Installation and User’s Manual.

2. Route all the cables through the conduit terminator.

Caution: Cables of low voltage circuits and extra-low voltage circuits may be enclosed in the same wiring system when the LV circuits are double insulated. Refer to AS/NZS 3000:2007 Clause 3.9.8.3 (a).

Note: The solar DC cable supplied by Solahart is double insulated, permitting the low voltage and extra-low voltage circuits to be enclosed in the same wiring system.

3. Route all the cables through the conduit to the intended location of the Battery Interface.

Note: It is recommended that all cabling be installed in conduit to protect cables from abrasion, tension, compression and cutting forces that may arise from thermal cycles, wind and other forces during installation and throughout the life of the system.

Caution: All cabling, conduit and ducting exposed to sunlight shall be of a UV resistant type.

Caution: A maximum of 300 mm of unprotected DC cable is permitted between connectors and conduit, provided the location is not subject to mechanical damage.

Caution: There shall be no open ends of conduit. If a cable is required to exit from conduit, a cable gland shall be installed on the end of the conduit to ensure the IP rating is maintained.

BATTERY COVERS

1. Install side covers as described in the Powerwall Installation and User's Manual. A figure from the Powerwall Installation and User's Manual is reproduced below for reference. The recommended order of spring clip installation is top, bottom and then middle. Refer to figure below.

Note: Care should be taken when installing side covers. Ensure spring clips are installed in the recommended order or they can be damaged.



2. Install the bottom cover as described in the Powerwall Installation and User's Manual.

INSTALLATION – BATTERY INTERFACE



Warning: Read the StorEdge Installation Guide before installing. Failure to do so or follow any of the instructions or warnings can result in electrical shock, serious injury, or death.



Caution: Sealing plugs provided with the Battery Interface must be inserted into any unused inputs to maintain the Battery Interface's IP rating.



Caution: All cabling, conduit and ducting exposed to sunlight shall be of a UV resistant type.

Note: It is recommended that all cabling be installed in conduit to protect cables from abrasion, tension, compression and cutting forces that may arise from thermal cycles, wind and other forces during installation and throughout the life of the system.

OVERVIEW

For Battery Interface installation instructions refer to the StorEdge Installation Guide supplied with the Battery Interface.

The Battery Interface installation procedure includes the following:

1. Mounting the Battery Interface.
2. Connecting the Battery Interface to the Battery DC Isolator.
3. Connecting the Battery Interface communications cable to the Inverter.
4. Connecting the Battery Interface to 240V AC power.
5. Connecting the Battery Interface to the Battery.

MOUNTING THE BATTERY INTERFACE

Mount the Battery Interface as described in the StorEdge Installation Guide.



Caution: Mounting clearances and requirements described in the Battery Interface documentation must be maintained.



Caution: Avoid installation in direct sunlight. The increased temperature within the Battery Interface will affect its performance.

CONNECTING THE BATTERY INTERFACE TO THE BATTERY DC ISOLATOR

1. Prepare two DC cables;
 - i. MC4 Plug on one end and stripped on the other end (strip length 12 mm).
 - ii. MC4 Socket on one end and stripped on the other end (strip length 12 mm).
2. Connect the cabling MC4 connectors to the Battery Interface 'INV OUT' connectors. Refer to figure below.
3. Install the stripped ends of the cabling at the Battery DC Isolator. Refer to figure below.

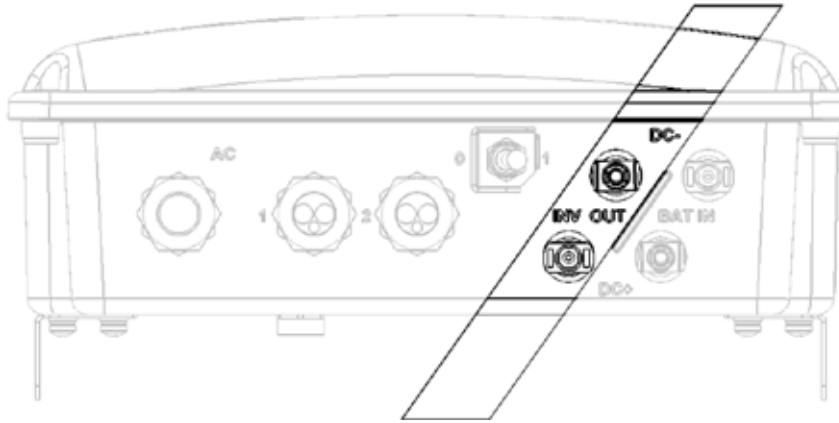


Caution: DC Isolator terminal screws must be tightened by hand only. Do not use power tools.

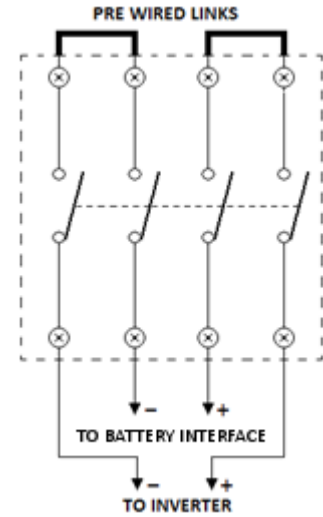


Caution: Follow the polarity markings on the Battery Interface, NOT the polarity of the connectors.

Once wired, the Battery DC Isolator should be left in the OFF position until system commissioning.



Battery Interface 'INV OUT' connectors



Battery DC Isolator wiring

CONNECTING THE BATTERY INTERFACE COMMUNICATIONS CABLE TO THE INVERTER

Connect the Battery Interface communications cables as described in the StorEdge Installation Guide.

CONNECTING THE BATTERY INTERFACE TO 240V AC POWER

Connect the Battery Interface to 240V AC power as described in the StorEdge Installation Guide.

Note: Ensure that the inverter and battery interface are both isolated by the Solar Supply Main Switch and Inverter AC Isolator (if installed).





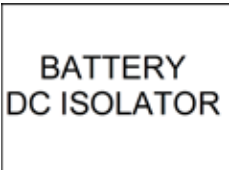
CONNECTING THE BATTERY INTERFACE TO THE BATTERY

Connect the Battery Interface to the Battery as described in the StorEdge Installation Guide.

INSTALLATION – LABELLING

This information is supplied here as a guide only. Additional labels may be required depending upon the installation and local requirements. Labels must be constructed to AS 1319 and installed according to AS/NZS 3000, AS 4777.1 and any local regulations. Refer to aforementioned standards for more information.

The purpose of labelling is to clearly indicate that the electrical installation has multiple supplies and which circuits are affected by these supplies. Labelling also identifies the components that isolate the various supplies. The following table details labels that are supplied for Solahart Battery Systems.

Label	Colour	Location
 <p>SOLAR PV AND BATTERY OPERATING PROCEDURE</p> <p>TO SHUT DOWN:</p> <ul style="list-style-type: none"> • Turn OFF Solar Supply Main Switch at AC Switchboard and Inverter AC Isolator at Inverter (where installed). • Turn OFF PV Array DC Isolator and Battery DC Isolator. <p>TO START UP:</p> <ul style="list-style-type: none"> • Follow start up procedure in Solahart's Owner's Guide and Installation Instructions. <p>NOTE: There may be multiple DC Isolators.</p> <p>FOR SERVICE PHONE: 1800 638 011</p>	<p>Black and white</p>	<p>Prominent position adjacent to the inverter</p> <p>Note: This label replaces the Solahart PV Operating Procedure label.</p>
	<p>White text on red background</p>	<p>Prominent position on main switchboard</p> <p>Note: This label replaces the DUAL SUPPLY label for PV systems.</p>
	<p>White text on red background</p>	<p>Prominent position on main switchboard adjacent to inverter location label</p>
	<p>Black text on white background</p>	<p>Energy meter</p>
	<p>Black text on white background</p>	<p>Battery DC Isolator</p>

INSTALLATION – COMMISSIONING

For detailed commissioning instructions refer to the documents supplied with the Inverter, Battery Interface and Battery. Observe the subsequent warning and instructions when commissioning the system.

SYSTEM CONFIGURATION



Warning: Electrical shock hazard. Do not touch uninsulated wires when any component cover is removed.

Note: The PV system should be activated and configured as described in the Inverter Installation Guide prior to Battery system configuration.

Configure the Battery system as described in the SolarEdge StorEdge Installation Guide. The primary steps are summarised below:

1. Upgrading firmware.
2. Configuring the RS485 bus.
3. Configuring system energy management.
4. Verifying that the system is operational.

UPGRADING FIRMWARE

Note: Ensure the inverter and battery firmware is upgraded with the latest version. Check the Solahart website for latest version number.

The minimum firmware version for each system component is:

- Inverter communication board firmware (CPU) version must be 3.xxxx or later
- Battery firmware version must be 2.14.x or later

To upgrade firmware:

1. Follow the procedure to upgrade inverter firmware described in the StorEdge Installation Guide.
2. Using the inverter menu, verify that the Inverter firmware and Battery firmware are correct.

Note: If the firmware versions do not agree with the minimum versions noted above, repeat steps 1 and 2 or contact Solahart.

CONFIGURING COMMUNICATIONS

Follow the procedure to configure the RS485 bus described in the StorEdge Installation Guide.

CONFIGURING ENERGY MANAGEMENT

Follow the procedure to configure the system for maximum self-consumption described in the StorEdge Installation Guide.

Note: Contact your Solahart representative regarding Time of Use profile programming.

VERIFYING SYSTEM OPERATION

1. Follow the procedure to start up the system described in the StorEdge Installation Guide.
2. Cycle through the inverter display by repeatedly pressing the LCD light button and verify the following:

Inverter Display	Description
P_OK: XXX/XXX	XXX is the total number of power optimizers installed. Refer to Figure 1.
<S_OK>	S_OK indicates communication with the monitoring portal. Refer to Figure 1 and Figure 3.
ON	ON indicates that the Inverter Enable Switch is ON and the system should be operating. Refer to Figure 1.
CPU: 0003.xxxx	Where the Inverter firmware version is 3.xxxx or later. Refer to Figure 2.
Country: AUS	Where 'AUS' indicates the inverter is configured for Australian grid settings. Refer to Figure 2.
Server: (Communication)	Where (Communication) is the method used to connect the Inverter to the internet and monitoring portal e.g. 'LAN', 'Wi-Fi', etc. Refer to Figure 3.
Status: 11111111	Where each 1 indicates a successful communications check. Refer to Figure 3.
RS485-1<MLT><02><02>	'<MLT>' indicates multi device RS485 configuration. '<02><02>' indicates that two devices have been identified. Refer to Figure 4.
Export Meter <OK>	'<OK>' Indicates Meter has been configured correctly. Refer to Figure 5.
Import Meter <OK>	'<OK>' Indicates Meter has been configured correctly. Refer to Figure 6.
BSN:##X#####	Where ##X##### indicates the Battery serial number. Refer to Figure 7.
SOE:##%	Where ## indicates the state of energy (SOE) of the Battery. Refer to Figure 7. Record Battery SOE at start-up.
State:	Should be 'Charging' or 'Discharging' at start-up. Refer to Figure 7.

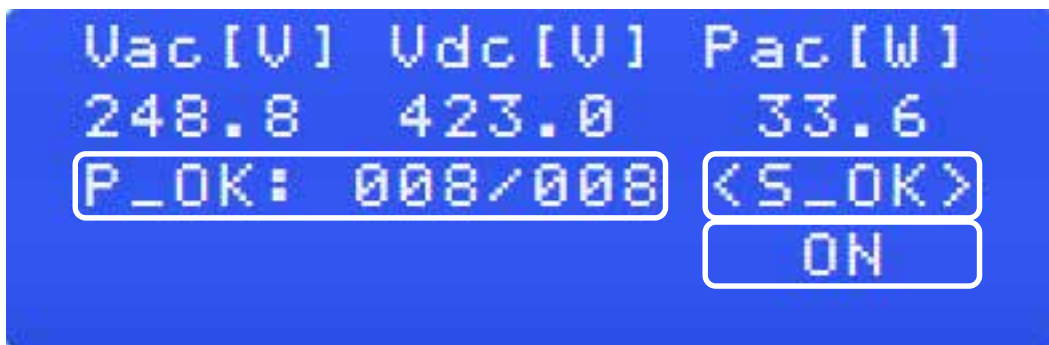


Figure 1

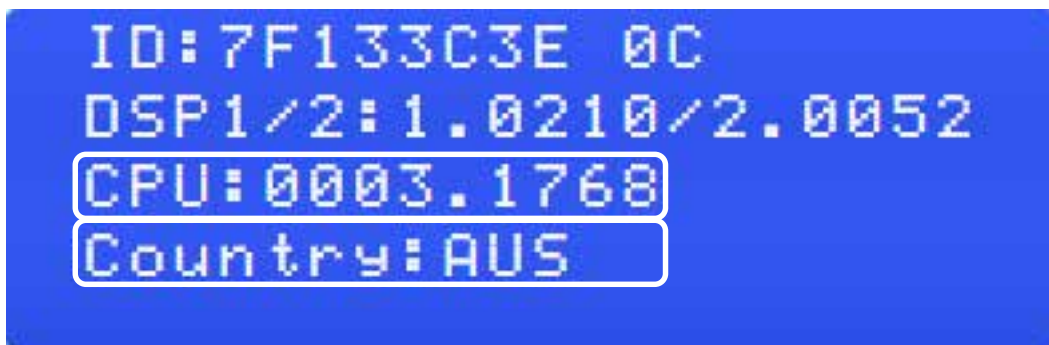


Figure 2

```
Server:Wi-Fi <S_OK>  
Status:11111111 <OK>
```

Figure 3

```
Dev Prot ##  
RS485-1<MLT><02><02>
```

Figure 4

```
Export Meter  
Status: <OK>  
Total[KWh]: 350.7
```

Figure 5

```
Import Meter  
Status: <OK>  
Total[KWh]: 263.3
```

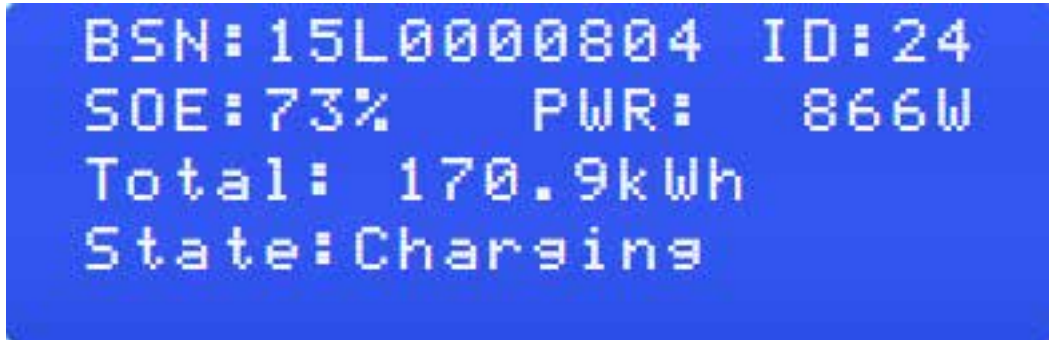
Figure 6

```
BSN:15L0000804 ID:24  
SOE:73% PWR: 866W  
Total: 170.9kWh  
State:Charging
```

Figure 7

To confirm system operation the following operational checks should be conducted when conditions permit (i.e. when there is sufficient solar input to the PV array):

1. Ensure that the PV system is generating power.
2. Repeatedly press the LCD light button on Inverter until the following screen is displayed:



3. Observe the Battery 'State'. This should be either 'Discharging' or 'Charging' depending on the load and PV output.

Note: Ensure the battery 'State' corresponds to the site load and PV output.

Note: The battery 'State' should not be 'Standby', 'OFF', 'Idle' or any error state. If any of these states is displayed refer to the troubleshooting sections of the StorEdge Installation Guide and Powerwall Installation and User's Manual.

SOLAHART PV SYSTEM AND/OR BATTERY WARRANTY - AUSTRALIA ONLY

IMPORTANT NOTE: This Limited Warranty covers a range of systems, products and components. This Warranty only applies in respect of the specific items you have purchased and which are delivered to you in conjunction with this hard copy Warranty document.

Your new PV System comprises a PV Module, an Inverter, a racking system and balance of system components (together the **PV System**). Alternatively, you may add components sourced from Solahart to your existing PV System, including a Battery and associated products.

The PV System, the Battery, and any other components supplied by Solahart (collectively, the 'Products') are covered by a warranty given by Solahart Industries Pty Ltd ABN 45 064 945 848 of 1 Alan Street, Rydalmere NSW 2116 (**Solahart**). The terms of your warranty are set out below. This warranty consists of a number of parts (not all of which will apply, depending on the Products you have purchased):

- A. The specific warranty terms for Modules supplied by Solahart;
- B. The specific warranty terms for the Battery;
- C. The specific warranty terms for Inverters – SMA and ABB;
- D. The specific warranty terms for SolarEdge Inverters and associated SolarEdge products;
- E. The specific warranty terms for the racking system;
- F. The specific warranty terms for the balance of the system;
- G. The specific warranty terms for the labour; and
- H. General terms which apply to all of the above.

This Limited Warranty is valid in Australia for all Products sold after 17 March 2016. If a subsequent version of this warranty is published, the terms of that warranty will apply to Products manufactured after the date specified in the subsequent version.

Solahart issues the following voluntary warranty to:

1. The end-user who purchased the System in Australia and put the System into use for the first time (the 'Original End-User'); and
2. In the case of Batteries and SolarEdge Products only, any owner of the Product subsequent to the Original End-User who provides proof of title transfer, provided that the Product has never been relocated from its original installation location without the express written consent of Solahart.

This warranty is in addition to any rights and remedies that you may have under the Australian Consumer Law.

Solahart offers national service through its Dealer network. Solahart will repair or replace parts subject to the terms of this Limited Warranty. Solahart, in addition can provide preventative maintenance and advice on the operation of the PV System. You can contact Solahart on 1800 638 011 to arrange a service call or to find out details about this warranty.

Notification of a claim under this Limited Warranty must be given without undue delay after detection of the defect and prior to the expiration of the applicable Warranty Period and in accordance with the procedure set out below.

PART A - MODULES

Warranty coverage for the Module

Subject to the terms and conditions of this Limited Warranty, Solahart warrants that the Modules:

1. Are free from defects in material and workmanship for a period of (10) years after the date of installation of the Module (the 'Module Warranty Period') if installed and used in accordance with the installation instructions set out in the Solahart Owner's Guide and Installation Instructions – PV Systems which

accompanies the Module, and with all relevant statutory and local requirements in the State or Territory in which the Module is installed.

2. Will remain safe and operational if cable and connector plugs are installed professionally and are not permanently positioned in water; provided however, that damage to the cable caused by abrasion on a rough surface due to insufficient fixing or to unprotected running of the cable over sharp edges is excluded. Damage caused by animals is also excluded.
3. Will not experience freezing up of the aluminium frames if installed correctly.

The outer appearance of the Module, including scratches, stains, rust, mould, discoloration and other signs of normal wear and tear, which occurred after delivery or installation, do not constitute defects, provided the functionality of the Module is not affected. Glass breakage constitutes a defect only if not caused by any external influence.

If a defect (as described above) occurs during the Module Warranty Period materially affecting the functionality of the Module, Solahart will, at its sole option:

1. Repair the defective Module;
2. Replace the Module with an equivalent product; or
3. Refund the original purchase price for the Module as determined by Solahart.

Warranty Terms, Limitations and Exclusions

This Limited Warranty applies to the original Module and to any approved replacement parts and is not transferable by the Original End-User, except to the subsequent owner of the property at which the original PV System was installed and remains installed, provided that this PV System has not been altered in any way or moved from the structure or property at which it was originally installed.

There are many factors that affect the output of your Module. Solahart does not warrant a specific power output for your Modules. All modules degrade over time and power output is subject to many variables including the age of the Module.

PART B – BATTERIES

Warranty coverage for the Battery

Subject to the terms and conditions of this Limited Warranty, Solahart warrants that the Battery will, during the Battery Warranty Period, under normal use and conditions:

1. Conform to the specifications identified in the Product Data-Sheet available at www.teslamotors.com/support/powerwall; and
2. Be free from defects in workmanship and materials.

The Battery Warranty Period is the period from the date title to the Battery transferred from the manufacturer of the Battery to Solahart ('Original Sale Date') until the date falling 120 calendar months from the Battery Warranty Start Date. The Battery Warranty Start Date is the earlier of:

1. The date falling 6 calendar months after the Original Sale Date; and
2. The date the Battery is installed on behalf of the Original End-User ('Original Installation Date').

Warranty coverage for capacity retention

Subject to the terms and conditions of this Limited Warranty, Solahart warrants that the Battery will retain the capacity levels specified in Exhibit A during the applicable periods identified in the Exhibit (each, a 'Capacity Retention Warranty Period').

Remedies

If Solahart determines that a reported defect in relation to a Battery is eligible for coverage under this Limited Warranty (including retention capacity), Solahart will, at its sole option:

1. Repair the defective Battery.
2. Replace the Battery with an equivalent product (or, if the manufacturer has discontinued manufacture of the Battery, a mutually acceptable alternative product); or

3. Refund the current market price of an equivalent product at the time of the warranty claim as determined by Solahart.

Adjustments to the Warranty Periods relating to the Battery

Notwithstanding the Battery Warranty Period and the Capacity Retention Warranty Periods described above, if the Battery is not registered with the manufacturer at www.teslamotors.com/support/powerwall-channel, and connected to the internet, within 3 calendar months following its installation on behalf of the Original End-User, this warranty shall be automatically voided on the date falling 48 calendar months following the Battery Warranty Start Date.

Similarly, if the Battery's internet connection is interrupted and is not restored within 45 days of the manufacturer's delivery of a written request to the end-user's registered email address, then, unless otherwise agreed by Solahart, this Warranty shall be automatically voided on the date falling 48 calendar months following the Battery Warranty Start Date, or (if 48 calendar months following the Battery Warranty Start Date have already expired) the end of such 45 day period.

You should notify Solahart if you expect your internet connection to be disabled for more than 45 consecutive days.

IMPORTANT NOTE: The manufacturer of your Battery needs to be able to monitor the Battery and provide remote firmware upgrades in order to offer full Battery Warranty Period and Capacity Retention Warranty Period. Do not forget to register your Battery at the website identified above and connect it to the internet within 3 calendar months following its installation, so that you qualify for the full Battery Warranty Period and Capacity Retention Warranty Period. Also, you must maintain your internet connection throughout the Battery Warranty Period and Capacity Retention Warranty Period. Notify the manufacturer or Solahart if you expect your internet connection will be disabled for more than 45 consecutive days.

Warranty Terms, Limitations and Exclusions

This Limited Warranty applies to the original Battery and to any approved replacement parts and is not transferable by the Original End-User, except to the subsequent owner of the property at which the original Battery was installed and remains installed, provided that the Battery has not been altered in any way or moved from the structure or property at which it was originally installed.

PART C – INVERTERS – SMA AND ABB

Warranty coverage for SMA and ABB Inverters

Solahart warrants that the Inverter, when located at its original installation, will operate in accordance with its specifications in the Solahart's Owner's Guide and Installation Instructions for a period of five (5) years from the date of installation of the inverter. If the Inverter fails to operate in accordance with its specifications and this materially affects the usability of the Inverter, Solahart will, at its sole option:

1. Repair the Inverter;
2. Provide a replacement Inverter swapped; or
3. Refund the original purchase price for the Inverter as determined by Solahart.

PART D – INVERTERS AND ASSOCIATED COMPONENTS – SOLAREEDGE

(In this Part D, a reference to "Products" is to the SolarEdge Products as described below).

Warranty coverage for SolarEdge Inverter

Subject to the terms and conditions of this Limited Warranty, Solahart provides a warranty against defects in workmanship and materials in relation to the SolarEdge Inverter, when located at its original installation, for a period of ten (10) years commencing on the earlier of:

1. 4 months from the date the Inverter is shipped from the manufacturer; and
2. The date of installation of the Inverter.

Warranty coverage for StorEdge Interface

Subject to the terms and conditions of this Limited Warranty, Solahart provides a warranty against defects in workmanship and materials in relation to the StorEdge Interface for a period of ten (10) years commencing on the earlier of:

1. 4 months from the date the Interface is shipped from the manufacturer; and
2. The date of installation of the Interface.

Warranty coverage for Power Optimizers

Subject to the terms and conditions of this Limited Warranty, Solahart provides a warranty against defects in workmanship and materials in relation to the Power Optimizers for a period of ten (10) years commencing on the earlier of:

1. 4 months from the date the Power Optimizers are shipped from the manufacturer; and
2. The date of installation of the Power Optimizers.

For all Power Optimizers with a part number ending in C, this warranty does not apply to the input connector.

Warranty coverage for Power Meter

Subject to the terms and conditions of this Limited Warranty, Solahart provides a warranty against defects in workmanship and materials in relation to the Power Meter for a period of five (5) years commencing on the earlier of:

1. 4 months from the date the Power Meter is shipped from the manufacturer; and
2. The date of installation of the Power Meter.

Remedies

If Solahart determines that a reported defect in relation to a Product is eligible for coverage under this Limited Warranty (including retention capacity), Solahart will, at its sole option:

1. Repair the defective Product;
2. Issue a credit note for the defective Product in an amount up to its actual value at the time buyer notifies Solahart of the defect, as determined by Solahart, for use toward the purchase of a new Product; or
3. Provide the buyer with replacement units for the Product.

Exclusions

The Limited Warranty does not apply to components which are separate from the Products, ancillary equipment and consumables, such as, for example, cables, fuses, wires and connectors.

Beneficiary of Limited Warranty

The Limited Warranty only applies to the buyer who purchased the Products from Solahart, for use in accordance with their intended purpose ('Original Buyer'). The Limited Warranty may be transferred from the Original Buyer to any assignee, and will remain in effect for the time period remaining under the above Warranty Periods, provided that the Products are not moved outside their original country of installation and any reinstallation is done in accordance with the installation directions and use guidelines accompanying the Products.

PART E – THE RACKING SYSTEM

Warranty coverage for the Racking System

Solahart warrants that the racking system supplied with the PV System shall be free from defects in material and workmanship for a period of five (5) years from the date of installation.

This Warranty shall be void if installation of the racking system is not performed in accordance with the Owner's Guide and Installation Instructions, or if the racking system has been modified, repaired, or reworked in a manner not previously authorized by Solahart in writing. If within the specified Warranty period the racking system shall be reasonably proven to be defective, then Solahart shall repair or replace the defective component(s) at Solahart's sole discretion. Such repair or replacement shall completely satisfy and discharge all of Solahart's liability with respect to this Limited Warranty.

PART F - BALANCE OF THE SYSTEM

Warranty coverage for the balance of the system

The balance of the PV System (**BOS**) consists of PV module cabling, circuit breakers, isolators, enclosures and labels. Solahart warrants that the BOS supplied by it will operate in accordance with its specifications in the Owner's Guide and Installation Instructions for a period of one (1) year from the date of installation of the BOS. If the BOS fails to operate in accordance with its specifications and this materially affects the usability of the BOS, Solahart will, at its sole option, repair or replace the defective component.

PART G - LABOUR WARRANTY

Warranty coverage for labour – PV System

In addition to the above coverage, Solahart provides you with 12 months of coverage, from the date of installation, for all labour costs involved with inspection by Solahart, removal or installation of warranted parts or components by Solahart of your PV System. Other than this 12 months coverage, this Warranty does not cover, nor will Solahart reimburse, any on-site labor or other costs incurred in connection with the inspection, de-installation or removal of defective parts or components, or the re-installation of replaced or repaired parts or components for your PV System.

Warranty coverage for labour – Battery

If Solahart determines that a reported defect in relation to a Battery is eligible for coverage under this Limited Warranty, Solahart will be responsible for the costs of teardown, disassembly, transportation, re-assembly and re-installation of the Battery or any of its components (or their respective replacements), subject to the manufacturer's Return Material Authorization policy available at www.teslamotors.com/support/powerwall-channel. All other costs will be borne by you.

Warranty coverage for labour - SolarEdge Products

If Solahart determines that a reported defect in relation to a SolarEdge Product is eligible for coverage under this Limited Warranty and Solahart decides to repair the Product or part(s), warranty coverage includes labour and material costs necessarily incurred to correct the Product defect; and where Solahart decides to replace the Product or part(s) to which the Limited Warranty applies, warranty coverage includes the cost of the replacement of the Product or part(s). All other costs will be borne by you.

PART H - GENERAL TERMS

Back-up if sole or dominant power supply

If the PV System is to be the sole or dominant power supply for your business or application, you should ensure that you have back up redundancy if the PV System were to become inoperable for any reason. We suggest that you seek advice from your electrician or qualified professional about your needs and build backup redundancy into your electricity supply system.

Application of this warranty

This warranty requires the Products to be installed according to the latest safety, installation and operation instructions provided by Solahart and with all relevant statutory and local requirements in the State or Territory in which the Products are installed, and does not apply to defects, damage, malfunction, power output or service failures which have been caused by:

1. Storage, installation, commissioning, repair, modifications, alterations, attachments or movement to or of the Product, or (in the case of the Battery) opening of the external casing of the Battery, performed by someone other than a Solahart Dealer or a Solahart Accredited Service Agent or otherwise without the prior written consent of Solahart;
2. Abuse, misuse or abnormal use, accident, negligent acts, power failures or surges, force majeure events including but not limited to lightning, fire, flood, hail, extreme cold weather, or any other natural disaster, any other force majeure event, pest damage, accidental breakage, actions of third parties, and any other events or accidents outside Solahart's control and/or not arising under normal operating conditions;
3. Operating the Product in an unintended environment or under incorrect safety or protection conditions;
4. Failure to install, operate and/or maintain the Product in accordance with the applicable Solahart Owner's Guide and Installation Instructions;
5. Transport damage;
6. Wear and tear from adverse conditions including corrosive atmospheric conditions e.g. salt, ocean spray, dust storm or other weather damage;
7. Cosmetic defects;
8. Any improper attachment, installation or application of the Product, and in respect of the PV System, any insufficient framing if the PV System is a frameless module;
9. Any attempt to extend or reduce the life of the Product, whether by physical means, programming or otherwise, without the prior written consent of Solahart;

10. Removal and reinstallation at a location other than the original installation location, without the prior written consent of Solahart;
11. Insufficient ventilation of the Product;
12. Failure to observe the applicable safety regulations; or any factor identified in the applicable Solahart Owner's Guide and Installation Instructions; or
13. Ignoring safety warnings and instructions contained in all documents relevant to the applicable Product.

If your claim relates to a failure to operate in accordance with the Solahart Owner's Guide and Installation Instructions as a result of one of the factors listed above, Solahart may charge you at its standard rates for its time and materials related to your claim.

Without limiting the above exclusions:

1. In relation to Batteries, the Warranty does not cover: (a) normal wear and tear or deterioration, or superficial defects, dents or marks that do not impact the performance of the Battery; (b) noise or vibration that is not excessive or uncharacteristic and does not impact the Battery's performance; (3) damage that occurs during shipping or transportation after the Original Sale Date; (4) damage or deterioration that occurs after the expiration or voiding of the applicable Warranty Period or that is reported more than ten (10) days after the expiration or voiding of such period; or (5) theft or vandalism of the Battery or any of its components.
2. In relation to SolarEdge Products, the Warranty does not cover: (a) Products which are installed or operated not in strict accordance with the accompanying instruction documentation, including without limitation, not ensuring sufficient ventilation for the Product as described in the applicable installation guide; (b) Products which are opened, modified or disassembled in any way without Solahart's prior written consent; (c) Products which are used in combination with equipment, items or materials not permitted in the instruction documentation or in violation of local codes and standards; or (d) cosmetic or superficial defects, dents, marks or scratches which do not influence the proper functioning of the Products.

Location and positioning

Where the Product is installed outside the boundaries of a metropolitan area (as defined by Solahart) or further than 25 km from a regional Solahart Dealer, the cost of transport, insurance and travelling costs to the nearest Solahart Dealer shall be the owner's responsibility. Where the Product is installed in a position that does not allow safe, ready access, the cost of accessing the site safely, including the cost of additional materials handling and/or safety equipment, shall be the owner's responsibility.

Replacements

Solahart may use new, used, remanufactured or refurbished parts or products when repairing or replacing any Product under this Limited Warranty. Any exchanged or replaced parts or Products will become the property of Solahart. Goods presented for repair may be replaced by refurbished goods of the same type rather than being repaired.

If the Product is repaired or replaced under this Warranty, the remainder of the applicable Warranty Period will apply to the repaired or replaced Product and the repaired or replaced Product or parts will not carry a new Solahart Warranty. The Warranty Periods set out above will not be extended in any way in the event of a replacement or repair of a Product, but this does not affect any rights you may have under the Australian Consumer Law in relation to the replaced or repaired Product (see the section below entitled "The Australian Consumer Law" for further details).

Limitation of this warranty

This Limited Warranty is provided voluntarily and free of charge and does not constitute an independent guarantee promise. Therefore, if any defect materially affects the functionality of any Product, the remedies under this Warranty are limited exclusively to the remedies set out above in the warranty cases specified herein.

Subject to any statutory provisions to the contrary, Solahart assumes no warranties, express or implied, written or oral, other than the warranties made herein and specifically disclaims all other warranties, merchantability or fitness for a particular purpose and Solahart excludes all liabilities for any special, incidental, indirect, consequential or punitive damages arising from or in connection with the use or loss of use of the Product to perform as warranted, regardless of the form of action and regardless of whether a party has been informed of or otherwise might have anticipated the possibility of such damages; including but not limited to damages for loss of power, lost profits or savings nor expenses arising from third-party claims. This does not apply to the extent Solahart is liable under applicable mandatory laws.

In relation to the Battery, to the fullest extent permitted by law, Solahart's liability arising out of or related to a claim under this Warranty with respect to an individual product will not exceed 105% of the purchase price paid to Solahart for such individual Product. Some states do not allow, or restrict, the exclusion or limitation of damages, so the above limitation or exclusion may not apply, or may only apply to a limited extent. This does not apply to the extent Solahart is liable under applicable mandatory laws.

If you require a call out and we find that the fault is not covered by Solahart's warranty, you are responsible for our standard call out charge. If you wish to have the relevant component repaired or replaced by Solahart that service will be at your cost.

Entitlement to claim under this warranty

To be entitled to make a claim under this warranty you need to:

1. Provide proof of purchase documentation and be the owner of the Product or have the consent of the owner to act on their behalf.
2. Contact your Solahart dealer without undue delay after detection of the defect and, in any event, within the applicable Warranty Period.

You are not entitled to make a claim under this warranty if the relevant Product:

1. Does not have its original serial numbers and type plate or numbers are illegible; or
2. Is not installed in Australia.

Warranty claim procedure

If you wish to make a claim under this warranty, you need to:

1. Contact your Solahart dealer, provide proof of purchase (and in the case of a Battery or a SolarEdge Product, any subsequent transfers of ownership of the Product) and owner's details, address of the Product, a contact number and date of installation of the Product, the serial number of the Product, and a description of the alleged defect(s).
2. Solahart will arrange for the Product to be tested and assessed. Solahart will inform you whether this will occur on-site or whether the Product must be sent elsewhere for testing and assessment.
3. If Solahart determines in its sole discretion that you have a valid warranty claim, Solahart will organise for the repair or replacement of the Product or any component in accordance with this warranty.

Any expenses incurred in the making of a claim under this Warranty will be borne by you.

Before any Battery or SolarEdge Product is returned to Solahart, an RMA (Return Merchandise Authorization) number is required and will be provided to you by Solahart along with any additional instructions.

The Australian Consumer Law

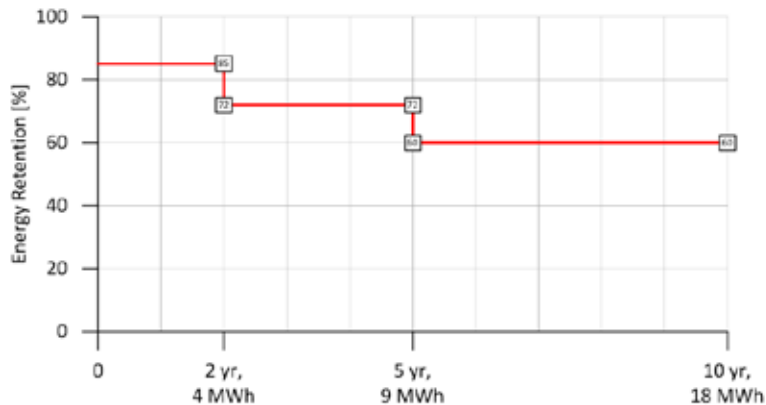
Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Exhibit A**CAPACITY RETENTION LEVELS**

References in this Exhibit to the “Product” are to a Battery.

Daily Cycle Powerwall

1. The Product shall maintain **>85%** of its initial rated capacity until the earliest to occur of:
 - (a) The lithium-ion battery cells in the Product have reached **4 MWh** of aggregate discharge throughput (at the battery DC output); or
 - (b) **2 years** have expired from the Original Installation Date.
2. The Product shall maintain **>72%** of its initial rated capacity until the earliest to occur of:
 - (a) The lithium-ion battery cells in the Product have reached **9 MWh** of aggregate discharge throughput (at the battery DC output); or
 - (b) **5 years** have expired from the Original Installation Date.
3. The Product shall maintain **>60%** of its initial rated capacity until the earliest to occur of:
 - (a) The lithium-ion battery cells in the Product have reached **18 MWh** of aggregate discharge throughput (at the battery DC output); or
 - (b) **10 years** have expired from the Original Installation Date.



During measurement of the Product's capacity, (i) the ambient temperature of the Product shall be $25^{\circ}\text{C} \pm 2^{\circ}\text{C}$, (ii) the initial temperature of the battery pods shall be $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$ and (iii) power shall be discharged by the Product at 2kW, as measured at the 400V DC link, from 100% state of energy.

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