

AN002 – Australian & New Zealand Installation Location Guide

The sonnen product range as per the classification of Australian Standards is referred to as a BESS (Battery Energy Storage System) and as such rules and guidance exist regarding the systems installation location and signage.

This application note sets out the requirements for the careful design and specification of the sonnen product and associated equipment to achieve the highest practicable standard of “safety in design”. Elements of this application note directly relate to AS/NZS Standards, however confusion may occur due to variations of terminologies used. Standards Australia is developing a new standard (AS/NZS 5139) for battery installations but its release date and exact content is as yet not yet clear

Although some batteries and battery chemistries can be a serious safety risk for occupants and installers if incorrectly installed and operated, potentially leading to electric shock, fire, flash burns, explosion or exposure to hazardous chemicals and released gases, the battery modules made by Sony within the sonnen systems have undergone rigorous testing to ensure that within an installation in accordance with the installation manual no such risk is posed. Furthermore, the Lithium iron phosphate batteries used within the Sony modules combined with the integrated BMS, fusing and external isolation per module do not pose risks associated with thermal runaway, outgassing, spark or flame hazards.

Electric Shock

The installation process when compliant with the sonnen installation manual will not allow for electric shock as all AC and DC components are isolated and worked in isolated open circuit.

Arc Flash

It is not possible to create an arc flash during the installation process when compliant with the sonnen installation manual as all AC and DC components are isolated and worked in isolated open circuit.

Fire & Explosion

As the LiFEPO4 batteries used within the sonnen system, do not outgas in normal operation it is not possible to experience the risk associated from fire and explosion. Furthermore, if the situation was to occur that created an overcharge or over voltage situation the BMS would activate a fault signal effectively turning the system off and isolating both AC and DC connections. Each battery module contains its own 80A fuse which also blow in the event of high current transfer. In the event of a localised fire causing combustion of the modules the extinguishing protocol is to simply use H2O, standard water.

Hazardous Chemicals

In the event of a heavy impacts causing rupture of the sonnen Sony battery module no volume of hazardous chemical will be released as each module contains 224 US26650FT individual cells. As previously explained they battery modules will not rupture as a result of excessive temperatures and excessive pressure generated from a change in chemical reaction from over-charging or following a short circuit. There is no electrolyte (fluid or gel) that can leak from a ruptured casing of the sonnen / Sony modules.

Labelling

Please refer to sonnen technical note: ‘TN001 - sonnen - Australian Labelling Requirements’ regarding the labelling requirements for the sonnen BESS installations.

Location

Always follow the installation manual and subsequent guidelines when selecting the appropriate location for a sonnen installation.

The sonnen BESS may be mounted on a suitable outside wall within the sonnen exterior enclosure. The sonnen system and associated enclosure will prevent access by untrained people, children, pets or vermin. With more general installations, the following should be considered when selecting a suitable location:



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- Building codes applicable to batteries (national and local) and changes to floor loadings.
- The National Construction Code (NCC)
- Seismic ratings for NZ (Please see sonnen tech note: TN002 - sonnen - New Zealand Seismic Installation Guide)
- If located in an electrical switch room, the room complies with Wiring Rules requirements

Installation

The sonnen BESS installation within each state and territory must comply with applicable regulatory requirements, including:

- Electricity Act 1945
- AS/NZS 3000:2007
- The Australian Building Code
- The network operator's technical rules as applicable
- The network operator's consumer connection agreement as applicable
- AS 4777 - Grid connection of energy systems via inverters
- The CEC installation guidelines for BESS as applicable

If you have any further questions about the appropriate fixing or securing of the sonnen systems within earthquake prone region, please contact us at any time for further support or assistance.

Yours faithfully,

A handwritten signature in blue ink, appearing to read "J Sturch".

James Sturch
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