SolShare battery guide

For SolShare system designers and installers

This document provides technical guidance on how to design shared solar systems with SolShare and batteries/energy storage. Guidance in this document is not to be considered engineering advice.

> ⓘ NOTICE
>
> This document does not override electrical safety standards and wiring rules. It is the responsibility of the licensed installer or project engineer to ensure the shared solar installation meets the relevant electrical safety standards and wiring rules in the installation locality, and any rules and requirements set by the relevant DNSP and/or energy retailers.

> ⓘ TIP
>
> You can always access the most up-to-date versions of any documents (including this document) in the Resource Library on Allume's website at https://allumeenergy.com/au/resource-library/.

1. Recommended battery configuration with SolShare

> ⓘ NOTICE
>
> Any installation of batteries with SolShare must always observe the requirements of SolShare, such as those outlined in the relevant SolShare product datasheet, SolShare installation manual and SolShare system design guide. These documents are available in the Resource Library on Allume's website at https://allumeenergy.com/au/resource-library/.
> The maximum total AC input current to each SolShare must be observed including any connected batteries.

> ⓘ NOTICE
>
> As per AS/NZS 4777.1:2024, inverter power sharing devices (IPSDs), such as SolShare, shall only provide a supplementary supply.

1.1. DC-coupled battery with hybrid three-phase inverter

ⓘ TIP
Refer to example SLDs at the end of this document for important information regarding isolation points and CT placement.

ⓘ TIP
Due to the sharing nature of SolShare, batteries installed in this configuration with SolShare (and intended for shared use between tenancies) should be charged from onsite generation (i.e. solar) or the common light and power NMI connection. Where possible, limit grid charge to the minimum.

ⓘ TIP
Where practical, the system should be designed to connect a three-phase common light and power to the L1-1, L2-1 and L3-1 tenancy connections of SolShare to most suitably enable grid charge of the battery via those connections if required.

ⓘ TIP
There may be other configurations of SolShare with battery suitable for particular installations. Support may be limited for configurations deviating from the recommended configuration.

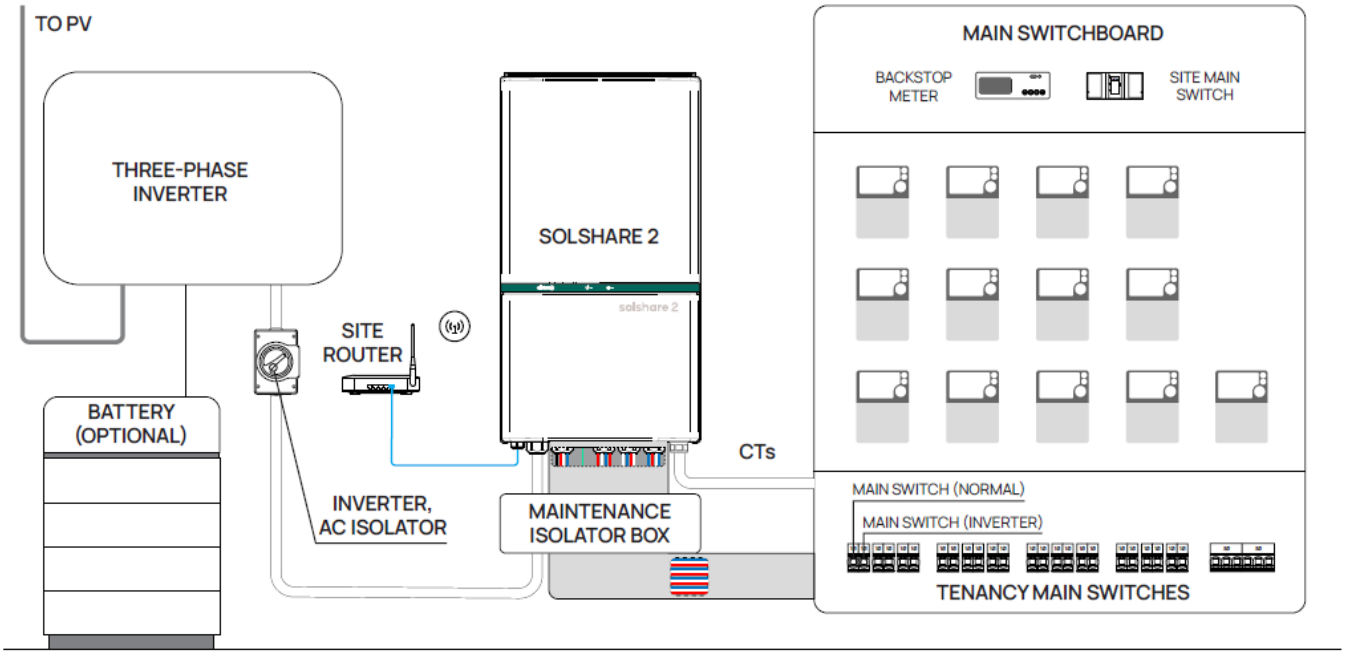


Figure 1: Example SolShare installation including a DC-coupled battery with a hybrid three-phase inverter

Examples of hybrid three-phase inverters include Sigen Hybrid 30.0TP, Sungrow SH25T, GoodWe GW29.9K-ET.

1.1.1. Communication between SolShare and inverters/batteries

SolShare does not currently support communications with battery systems and/or inverters. As such, the signals to charge/discharge a battery, as well as the information needed to decide this (e.g. current load power draw) must be provided by components other than SolShare.
Most batteries are supplied with a meter including one, or a set, of current transformers (CTs) that measure load or grid import/export in real time. This meter is used as an input to a battery's charging algorithms, informing the battery management system (BMS) charge/discharge control of the battery.

1.1.2. Location of battery CTs

ⓘ TIP
It is important for optimal battery operation (i.e. when to charge and discharge) that the battery's CTs are measuring at a point that includes all tenancies (and only those tenancies) that are connected to that battery (via SolShare).

Where there is only one SolShare for an incomer and all loads (tenancies + common light and power) are connected to that SolShare, the battery's CT should be located at the main incomer of the building (as shown in the example SLDs at the end of this document).

For other installation scenarios, it may be more challenging in practice to measure only the connected tenancies, so it is the responsibility of the installer to decide how best to balance optimal battery operation and practical battery CT placement considerations.

Where practical, all cables for all tenancies connected to a battery on one phase may be grouped together and the battery CT for that phase placed over this group to measure total current. This would be repeated for all phases and all batteries. This may require utilising a suitable separate switchboard or distribution board.

1.1.3. Battery operation and SolShare connections

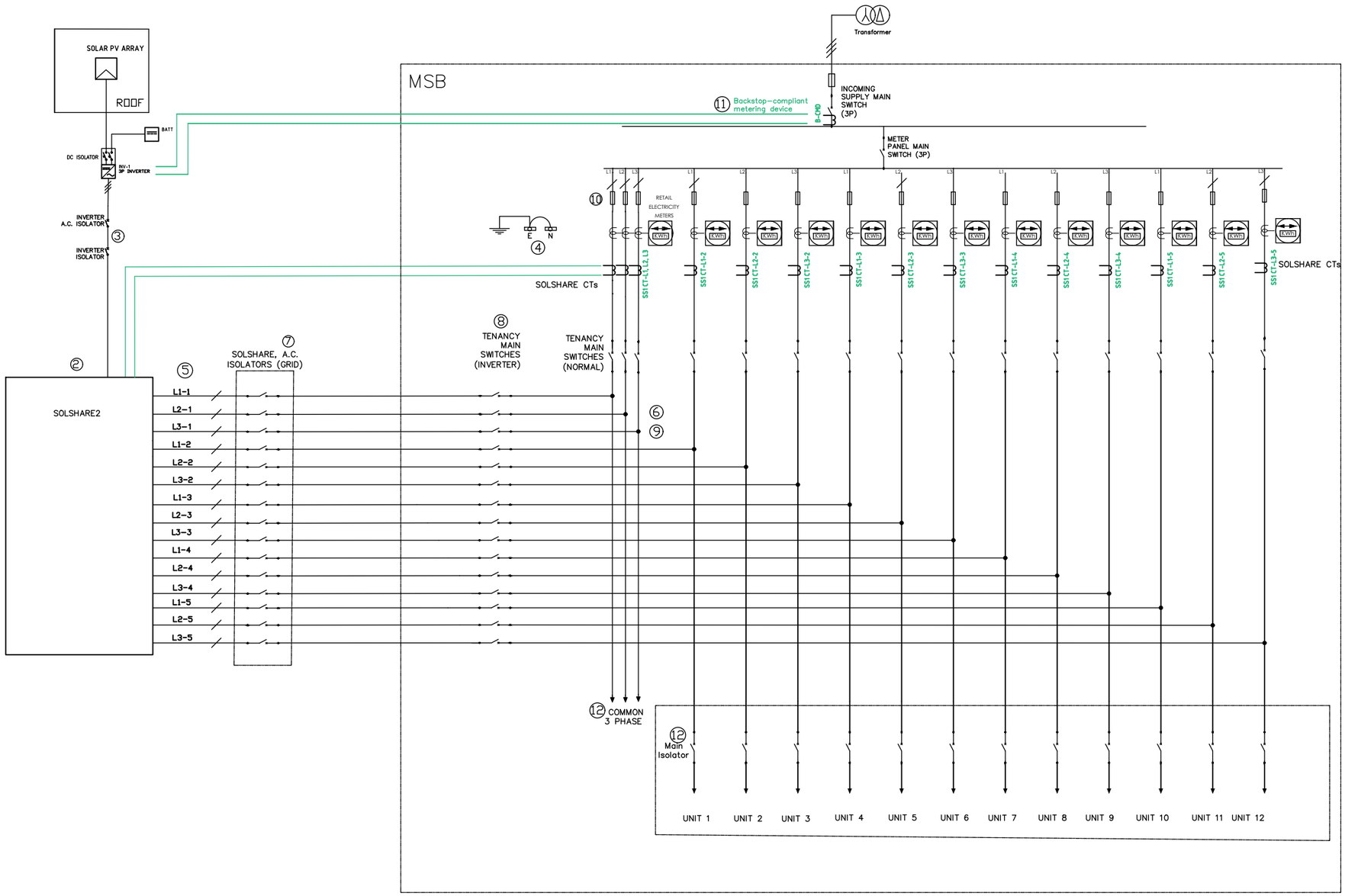
Since there is no communication between SolShare and any connected battery, the BMS will signal the battery to charge or discharge based on its algorithm (including input from its battery CTs), assuming that all connected tenancies can receive solar/battery power all the time.

However, since SolShare dynamically shares power from solar and batteries, at any point in time, it may be enabling solar/battery power to flow through to only one, only some or all tenancies connected to it per phase. As such, there may be scenarios where a BMS decides to discharge a battery, in part because the battery's CT detected tenancy loads that require additional power to what is being provided by solar. At that point in time, SolShare may or may not be enabling solar/battery power to flow through to those particular tenancies requiring additional power. Therefore, the battery may be discharging power required by a particular tenancy that is then allocated by SolShare to different tenancy/ies that may not necessarily require that additional battery discharge power.

2. SolShare and VPPs

Operating virtual power plants (VPPs) with battery installations connected to SolShare should consider:

- VPP operation should utilise only the discharge functionality of batteries connected to SolShare.
- Allume is not currently aware of VPPs offerings in Australia suitable for shared solar, such as solar installations with SolShare. We are working to support offerings for shared solar in the future.



NOTES

1. Cables shall be sized correctly to meet all relevant standards, including AS/NZS 4777.1.2024, AS/NZS 3000.2018 and AS/NZS 3008.1.2: 2017 requirements.
2. Each SolShare requires its own dedicated inverter/inverters.
3. The Inverter A.C. Isolator or Inverter Isolator shall provide overcurrent protection rated to the inverter's maximum output current. The isolator at the input to SolShare's inverter port shall be labelled as Inverter Isolator.
4. Each SolShare requires a single connection to neutral and a single connection to earth.
5. All output cables of a SolShare shall be sized to carry the maximum output current per phase of the inverter, as at points in time the SolShare may direct all current to one tenancy on each phase.
6. Solar phase connections shall match the grid phases for each tenancy connection on SolShare.
7. SolShare, A.C. Isolators (Grid) shall provide a means of isolation adjacent to SolShare.
8. Tenancy Main Switch (Inverter) shall be grouped with the Tenancy Main Switch (Normal) for each tenancy.
9. The solar point of connection is on the load side of the Tenancy Main Switch (Normal) for each tenancy. Tenancy Main Switch (Normal) will isolate both grid and solar supply to the tenancy.
10. In South Australia, Service Side fuses will be replaced by meter isolators. If this is the case the system shall be configured for SYSTEM LEVEL ANTI-ISLANDING.
11. Site consumption monitoring for emergency backstop is required for in some jurisdictions in Australia. For further information, see https://www.energy.vic.gov.au/households/victorias-emergency-backstop-mechanism-for-solar https://www.energy.nsw.gov.au/households/action/initiatives/emergency-backstop
12. Compulsory connection of Common Power to SolShare outputs L1-1, L2-1, L3-1.
13. The tenancy main switch shall be appropriately rated to protect the tenancy consumer mains from the combined current of both grid and solar supply, see https://www.energysafe.vic.gov.au/sites/default/files/2025-03/Guidance-%E2%80%93-Solar-for-Apartments-v1.0.pdf

LEGEND

	Circuit Breaker
	Meter
	Backstop-compliant metering device
	Solshare CT
	CT Cable
	MEN Link
	Fuse

For installation design

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123 Main Street, Melbourne, VIC 3000.

TITLE: Sample SLD – Single SolShare2 with DC-coupled battery with hybrid 3 phase inverter

DATE: 18/05/2026

SHEET SIZE	DRAWING NUMBER	REV
A3	ALL-SOL-018	A2
SCALE: NTS		