



# SolShare Installation Manual



## **USA - AE-PN-083-V2.2**

This manual is intended for installations in the United States of America. It is subject to change. Please check our website at [www.allumeenergy.com.au](http://www.allumeenergy.com.au) for the most up-to-date manual version.

AE-PN-083-V2.2

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This manual accompanies our equipment for use by the end users.

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All information and specifications are subject to change without notice.

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# Hello

Thank you for purchasing a SolShare system. You are supporting the growth of cutting edge Australian made solar technology. Due to the novelty of this product, this installation will likely be different from any other piece of solar technology you have installed in the past. As a result, please follow the guidelines in this manual carefully.

Your system is designed to meet all United States conditions, regulations and codes. This guide provides the general instruction of the installation procedure of the SolShare.

If you have questions or feedback on the product or this manual, feel free to reach out to Allume on +61 394 270 005 and ask for a technical representative. Otherwise, you can email [support@allumeenergy.com.au](mailto:support@allumeenergy.com.au) with any queries.

# Commissioning Document

## To be completed during installation

Installer name: ..... Company: .....

Serial Number:     -

Installation Address: .....

State: ..... Postcode: ..... Country: .....

### Unit Connection Identifier

SolShare Connection	Unit Connected <i>(eg: Apt 1, Unit B, Common light &amp; power, No connection)</i>
	Unit number
1-L1	.....
2-L2	.....
3-L1	.....
4-L2	.....
5-L1	.....
6-L2	.....
7-L1	.....
8-L2	.....
9-L1	.....
10-L2	.....

# Handling and Safety Instructions

This guide is provided to help the installer understand the standard SolShare installation procedure.

Installations may vary depending on the existing electrical infrastructure and local electrical safety standard. It is the responsibility of the electrician to ensure their installation meets the local electrical safety standard.

During installation, testing and inspection, adherence to all the handling and safety instructions is mandatory. **Failure to do so may result in injury or loss of life and damage to the equipment.**

## Safety Symbols Information

The following safety symbols are used in this document. Familiarise yourself with the symbols and their meaning before installing or operating the system:

 <b>Warning:</b> xxxxx xxxx xxxx xxx xxxx xx xxxx xxx xxxx	This symbol denotes a critical safety instruction that must be followed to ensure safety of installer and safe operation of the SolShare once commissioned. This box is sometimes denoted in green to provide further emphasis.
 <b>Warning:</b> xxxxx xxxx xxxx xxx xxxx xx xxxx xxx xxxx	
 <b>Important:</b> xxxxx xxxx xxxx xxx xxxx xx xxxx xxx xxxx	This symbol indicates an instruction which: will ensure proper operation of the SolShare once commissioned or will help with the installation efficiency. This same box is sometimes denoted in green to provide further emphasis.
 <b>Important:</b> xxxxx xxxx xxxx xxx xxxx xx xxxx xxx xxxx	

## Important Safety Instructions

**SAVE THESE INSTRUCTIONS.** This manual contains important instructions for the SolShare 2P-100A that shall be followed during installation and maintenance of the power division control system.

**Warning:** The SolShare cover must be opened only after the input and all output circuits are individually disconnected.

**Warning:** Ensure the SolShare is grounded prior to operation. This product must be connected to a grounded, metal, permanent wiring system or an equipment-grounding conductor must be run with the circuit conductors and connected to the equipment grounding terminal or lead on the product.

**Warning:** Opening of the SolShare must only be performed by certified electrician

**Caution:** The unit must be operated according to the technical specification datasheet provided with the unit

**Caution:** HEAVY OBJECT – This product has a weight of approximately 38kg. Its un-boxing and mounting requires 2 people.

**Note:** The SolShare is Type 4 rated per the UL50E standard. Where used, cable glands should be rated to minimum NEMA 4 (or IP XX), otherwise the supplied blanking seal to remain.

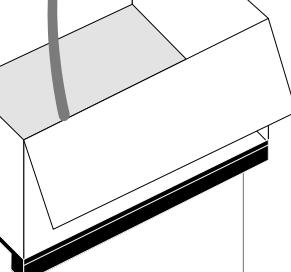
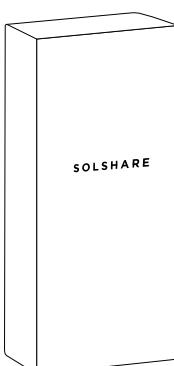
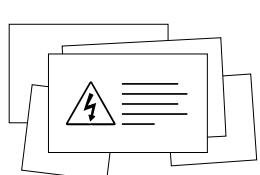
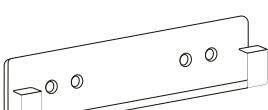
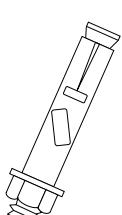
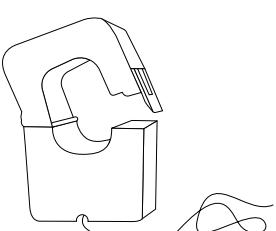
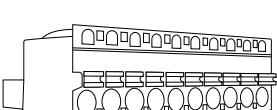
**Note:** Use only copper conductors rated for a minimum of 90 degrees Celsius, 194 Fahrenheit.

**Note:** The symbol  appears at grounding points within the SolShare equipment. This symbol is also used in the manual.

# I/ What's in the box

## **Check for Transport Damage**

Make sure the SolShare is intact following transportation. If there are any signs of visible damage, please contact your dealer immediately. Carefully check that all of the components have been supplied. If anything is missing, contact your dealer.

	SolShare unit   x 1	Switchboard labels   x 1	Antenna   x 1
Mounting bracket   x 2	Fastener   x 4	Split current transformer with 10m tails   x 15	CT connector block   x 3

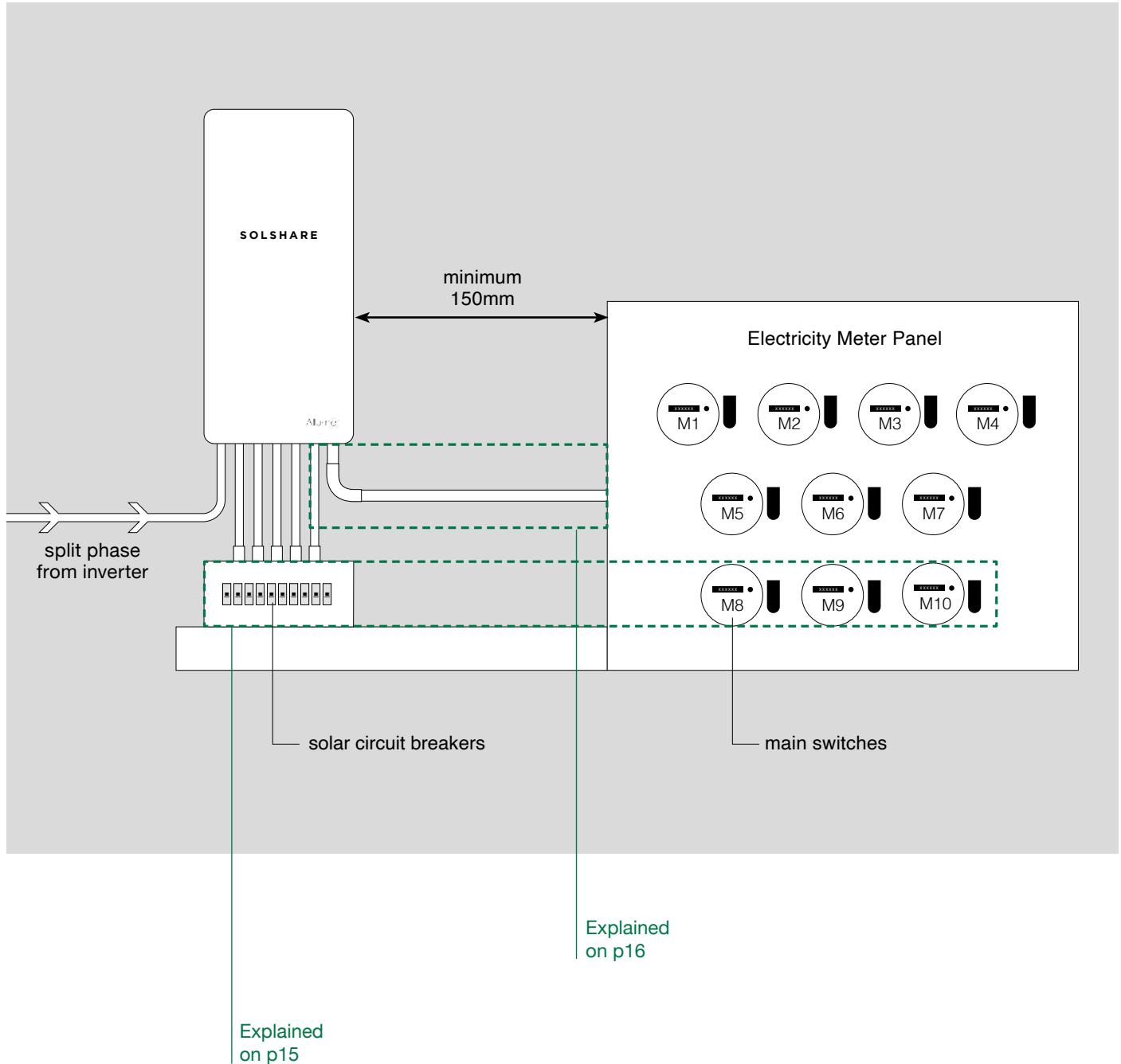
## Installation overview

A single SolShare unit can distribute the power generated from a single solar system to up to 10 multifamily units.

The SolShare takes a single split-phase input from a grid-connected solar inverter(s) and connects to each participating unit on a single line (L1 or L2) to the load side of their Unit Main Switch (a.k.a. unit circuit breaker) at their meter panel.

A single-pole Unit Solar Circuit Breaker is required on each output between the SolShare and each unit's main switch. This allows for the isolation of the SolShare and the solar supply of any of the connected units.

A typical installation configuration is displayed below.



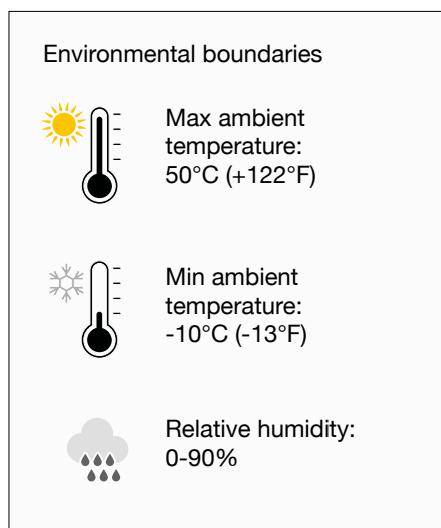
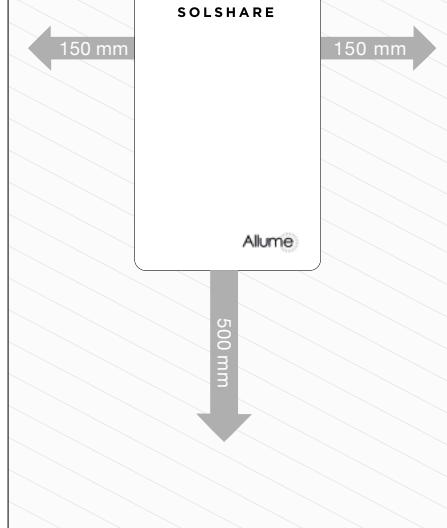
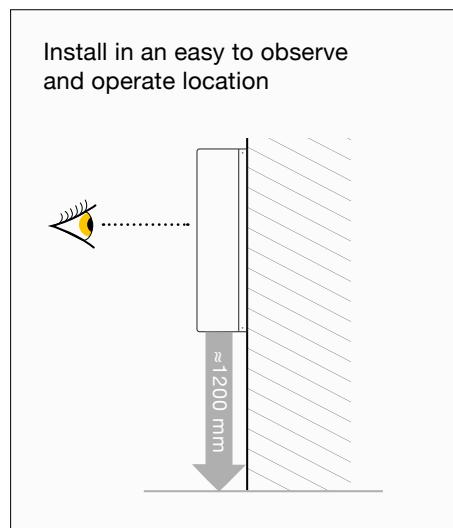
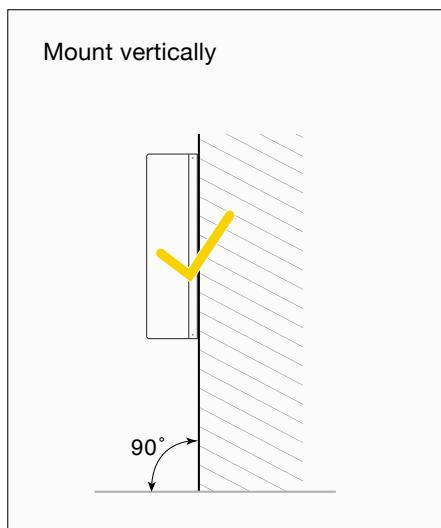
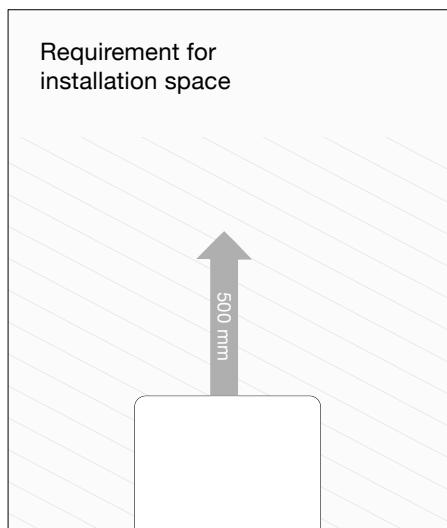
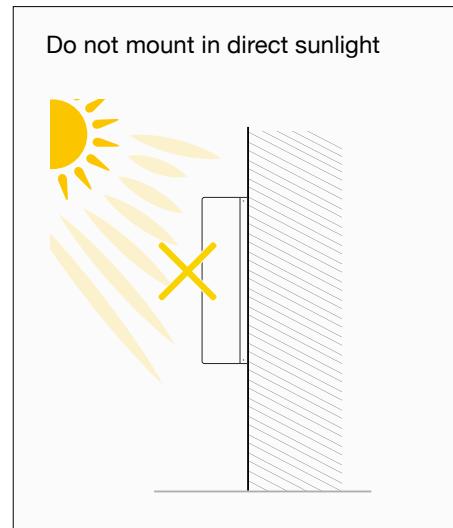
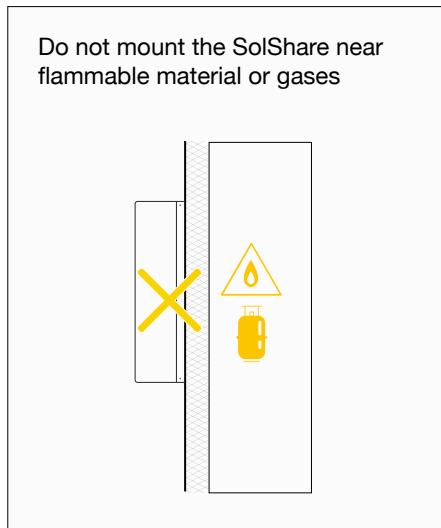
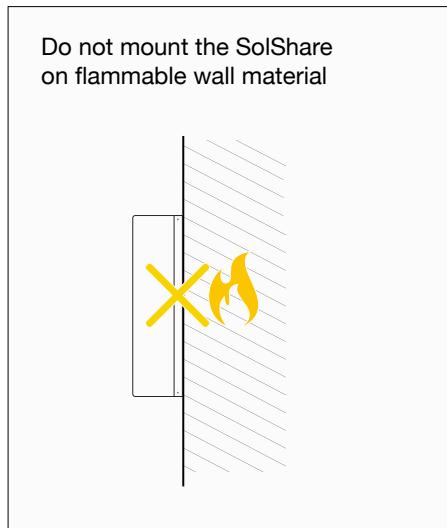
# II/ Mounting the SolShare

## A. Installation site selection

To minimise cabling required, the SolShare should be mounted as close to the main switchboard (tenancy isolator board) as possible.

To allow for easy installation and maintenance ensure that there is adequate space surrounding the SolShare and

that it is mounted at a convenient height. Please ensure the following mounting requirements are also met when selecting the location of the SolShare.



## B. Installation

Before mounting the SolShare, please screw in the antenna (see pre-installation diagram on page 8). Then follow the steps below to mount the brackets and enclosure:

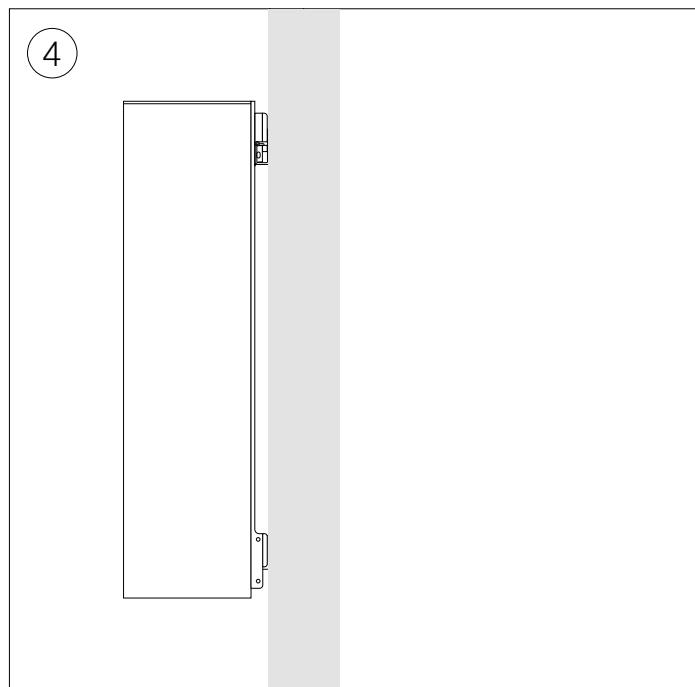
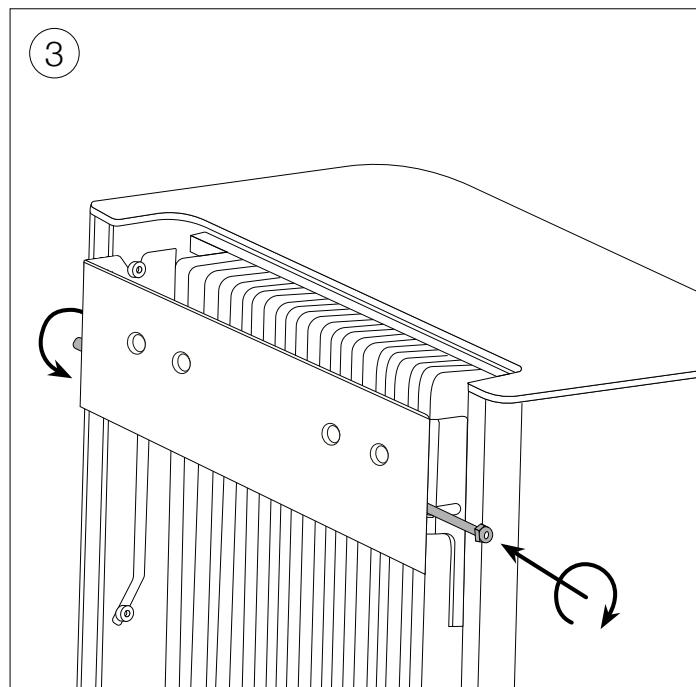
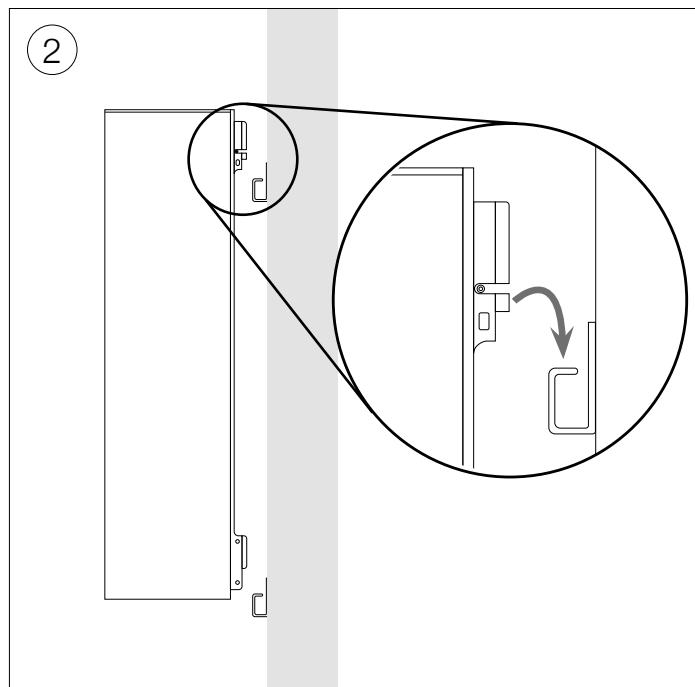
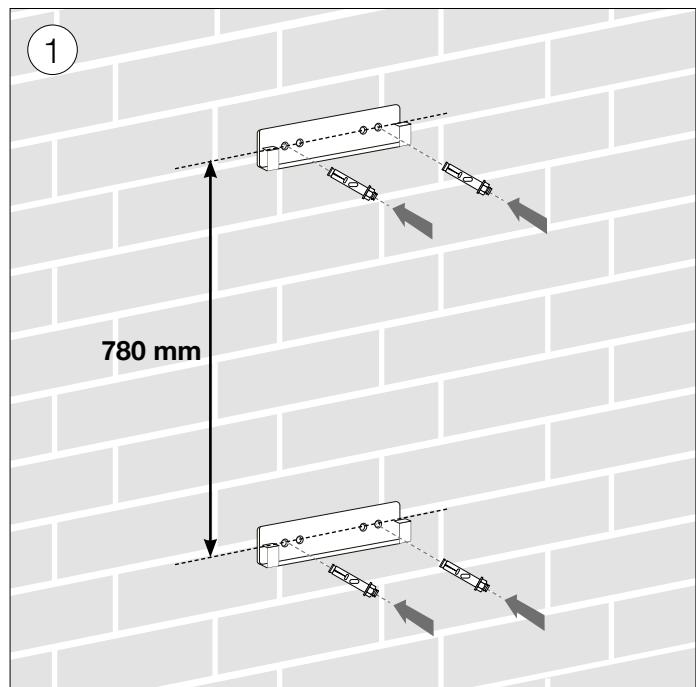
1. Firmly secure the mounting brackets to the chosen wall for installation. Allume Energy recommend using the provided fasteners to attach the brackets into a suitable stone or masonry wall. If another wall material has been chosen for installation, please use suitable fasteners with at least 30kg shear force per fastener.

2. Lift the SolShare onto the mounting brackets as directed in the diagram. Check both top and bottom brackets are secure.
3. Insert the locking bolt through the SolShare top mounting bracket and secure at both ends.
4. Ensure the SolShare is securely fastened to the wall and locked into place.



**Important:**

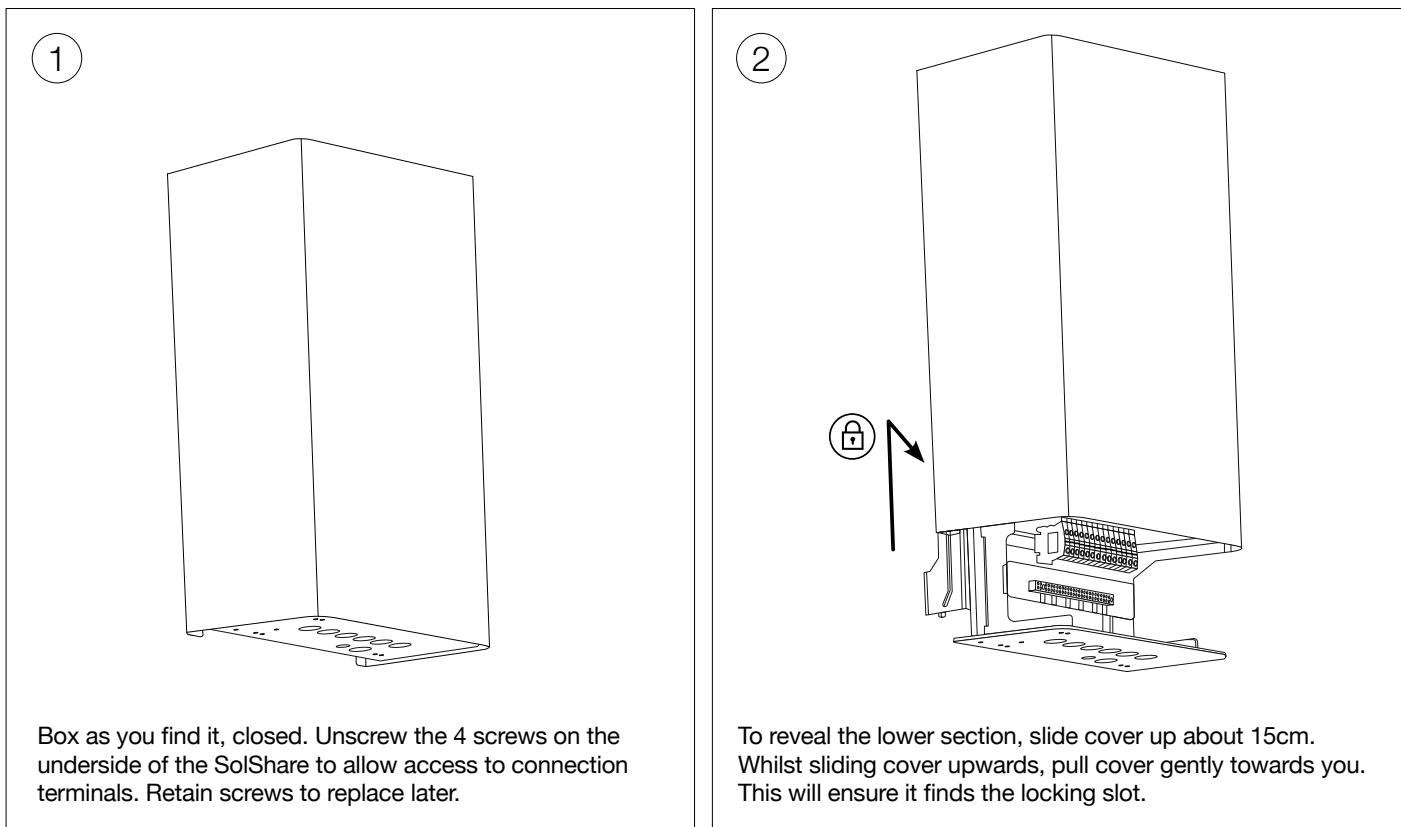
- The mounting wall and fastener selection is at the discretion of the installer. Allume Energy take no responsibility in the appropriate site selection of the SolShare or the appropriate bracket fastener choice.
- Weight rating fasteners should be rated to at least 30kg of shear force per fastener.



# III/ Electrical connection

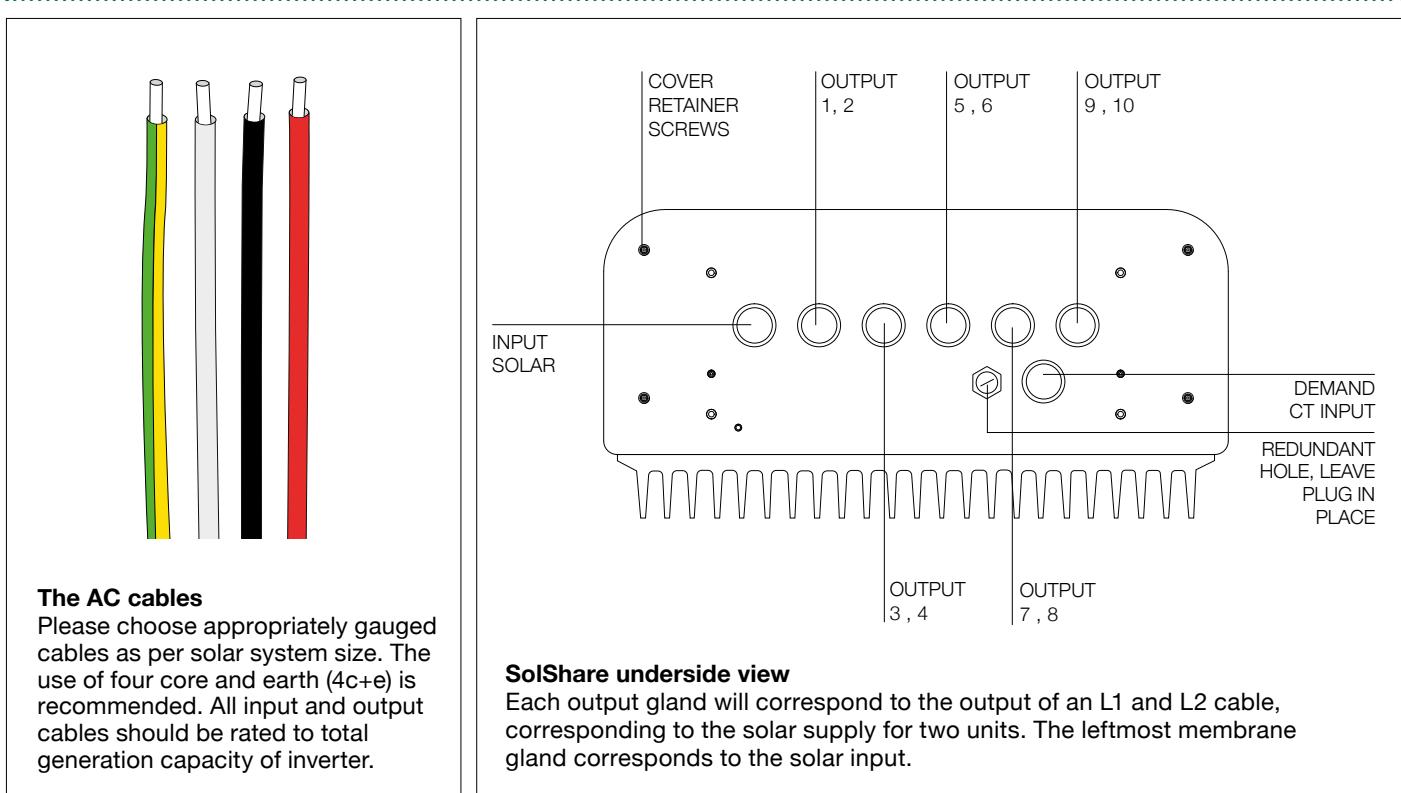
## A. Input / Output Connections

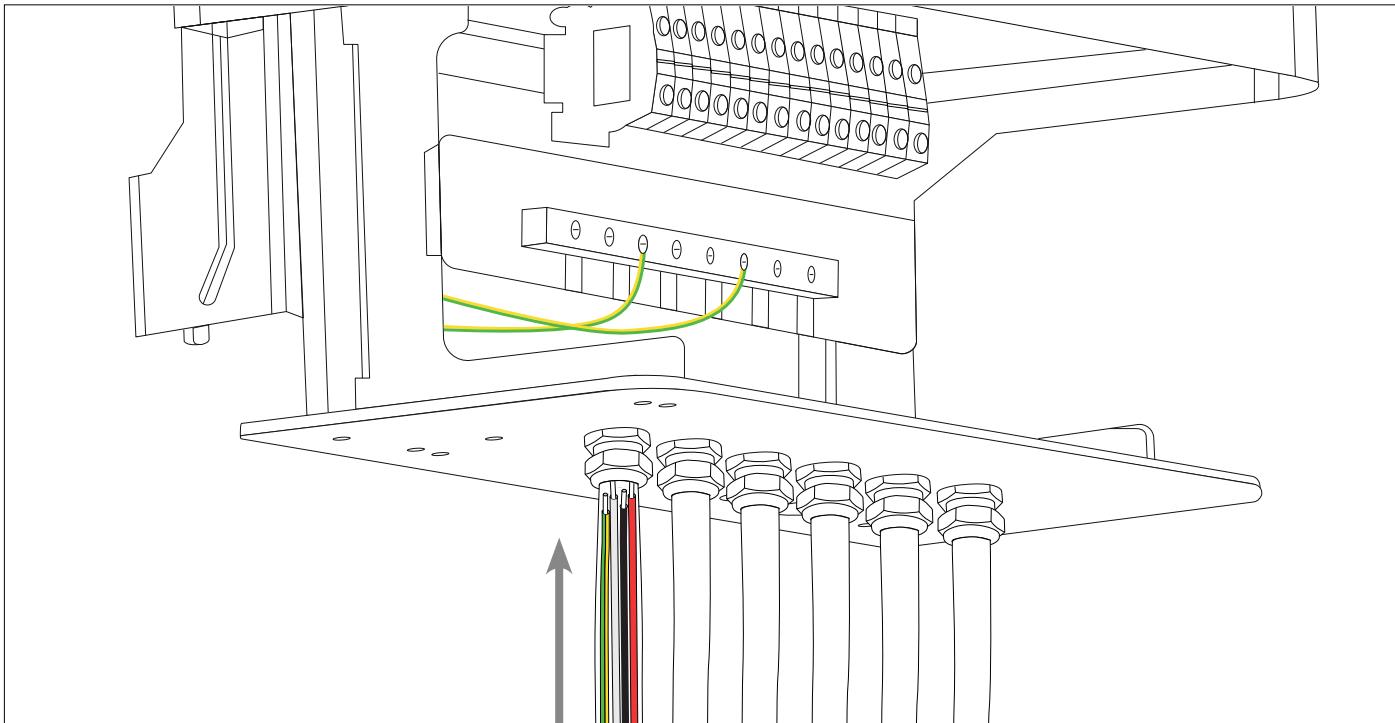
1. Lift up cover to reveal the lower section of the box, where the electrical connections are made.



### Important:

The cover should lock into place when it's pulled up properly. Before beginning wiring ensure cover is locked in place by pulling down firmly. To bring cover back to initial position, lift cover upwards and away from you, then allow to slide down back into place.





**Important:**

- No wiring loops or excess conductor length are allowed to be made. Field wiring of all circuits must maintain 1/4" separation from all other circuits
- All electrical connections including sensor circuits, made between the Allume Energy SolShare 100 and an electrical distribution panel shall be run through conduit or another type of NEC compliant raceway

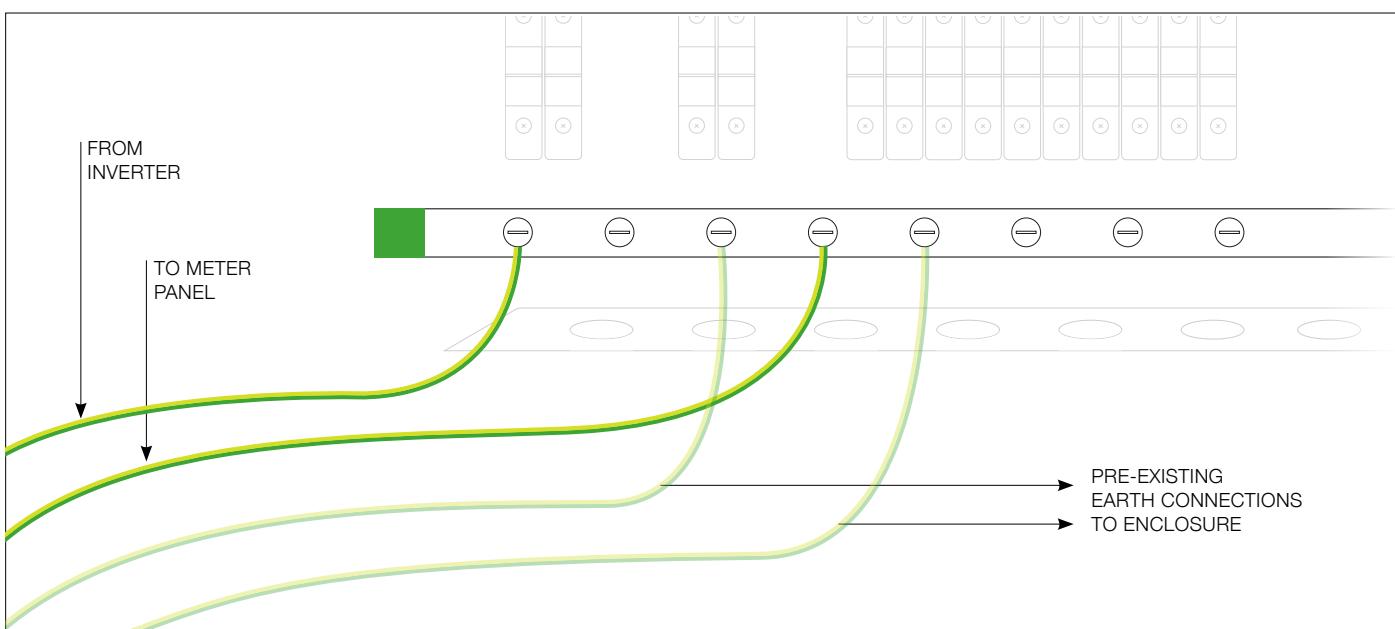
### Gland & Conduit Installation

1. Select appropriate glands to replace the plugs on the underside of the SolShare. (See Appendix for details)
2. Replace plugs with input gland and required number of output glands.
  - The number of output glands required will depend on the number of units connected to the SolShare.
  - One gland for every 2 units is recommended. However, fewer glands may be used if cable gauge permits.
3. Run input conduit from inverter to SolShare input (via Solar Main Switch)
4. Run output conduits from out glands to Unit Solar Circuit Breakers



**Important:**

The Unit Solar Circuit Breakers can be mounted on the meter panel or in a separate enclosure adjacent to meter panel (as pictured on page 8)



## Tightening Torque - IN-LBS (N.m)

Conductor size	Attachment method / Bare wire / Terminal / Lug / Ferrule
14 AWG - 10 AWG	35 [4.0]
8 AWG	40 [4.5]
6 AWG - 4 AWG	50 [5.6]

## Earth Connection

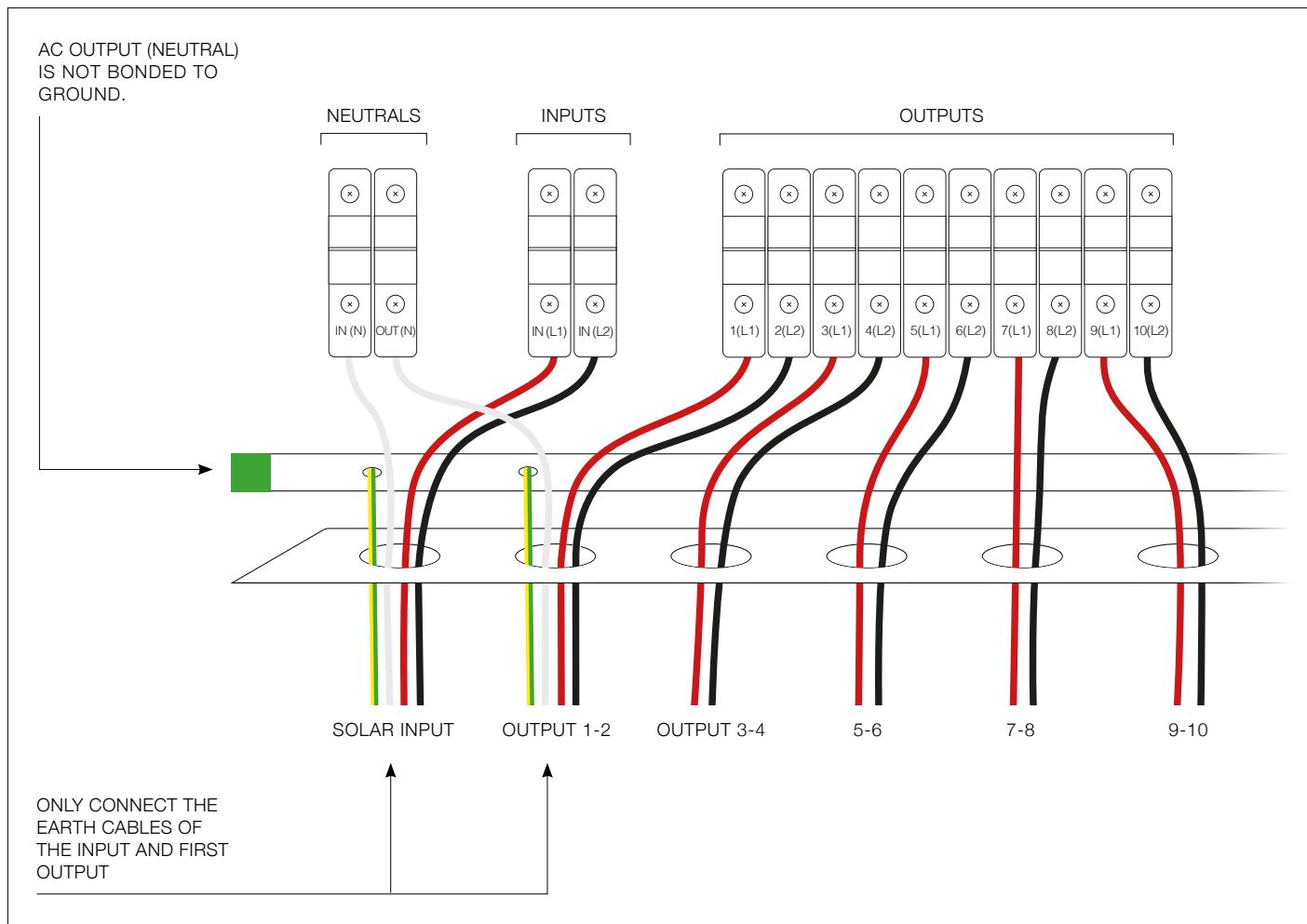
Please refer to Appendix (p19) for Conductor Specification options.

1. Run input earth from inverter and connect to the SolShare's earth bar (as shown above)
2. Run output earth cable from earth point in meter panel and connect to the SolShare's earth bar (as shown above).



### Warning:

Only one earth output should be wired from SolShare to meter panel.



## Terminal block - Neutral & Phase connections

Conductors	from 12 AWG (4mm <sup>2</sup> ) to 4 AWG (25mm <sup>2</sup> )
Stripping length	14mm
Tightening torque	18 lb-in (2Nm)

## Neutral Connection

Please refer to Appendix (p20) for Terminal Block Connection options.

1. Run input neutral from inverter and connect to the SolShare's neutral input connector (as shown above)
2. Run output neutral cable from neutral point in meter panel and connect to the SolShare's neutral output connector (as shown above).



### **Warning:**

Only one neutral output should be wired from SolShare to meter panel.



### **Warning:**

Neutral bonding to protective ground must take place only at the main distribution panel.

## Input Power Connection

1. Run input L1 and L2 from inverter and connect to the SolShare's L1 and L2 input connectors (as shown above)

## Output Power Connection

1. Complete column 2 of the Commissioning Document on page 5, allocating each SolShare output to a unit/apmt number.
2. Cut output power cables to appropriate length to reach from SolShare output to *Unit Solar Circuit Breakers*. Label both ends of these cables with the unit/apmt number.
3. Run cables between SolShare and Unit Solar Circuit Breakers. Terminate cables to appropriate SolShare output connectors as per the configuration in step 1.



### **Important:**

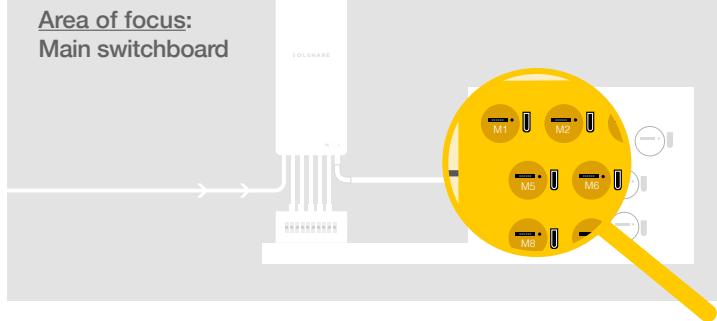
The *Unit Solar Circuit Breakers* can be mounted on the meter panel or in a separate enclosure adjacent to meter panel (as pictured on page 8)



### **Warning:**

No wiring loops of excess conductor length are allowed to be made. Field wiring of all circuits must maintain 1/4" separation from all other circuits.

## B. Output Connection to Main Switchboard



A solar circuit breaker must be installed between the SolShare output and unit main switch for each participating unit.

For single-phase meters this should be a single pole main circuit breaker (MCB), for three-phase customers this should be a three pole MCB.

Ideally these solar circuit breakers should be mounted within the existing main switchboard. If there is not adequate space to do this, Allume recommends they be installed in a location that is easily accessible from the main switchboard.

If positioned separately, ensure clear labeling in the main switchboard of the location of solar circuit breakers.

The outputs from the solar must be wired to the solar circuit breakers. The outputs of the solar circuit breakers must be wired on the load side of the unit's main switch.

Ensure each output is labelled as per the figure below. This will help later on in the installation when wiring the current transformers to each unit.



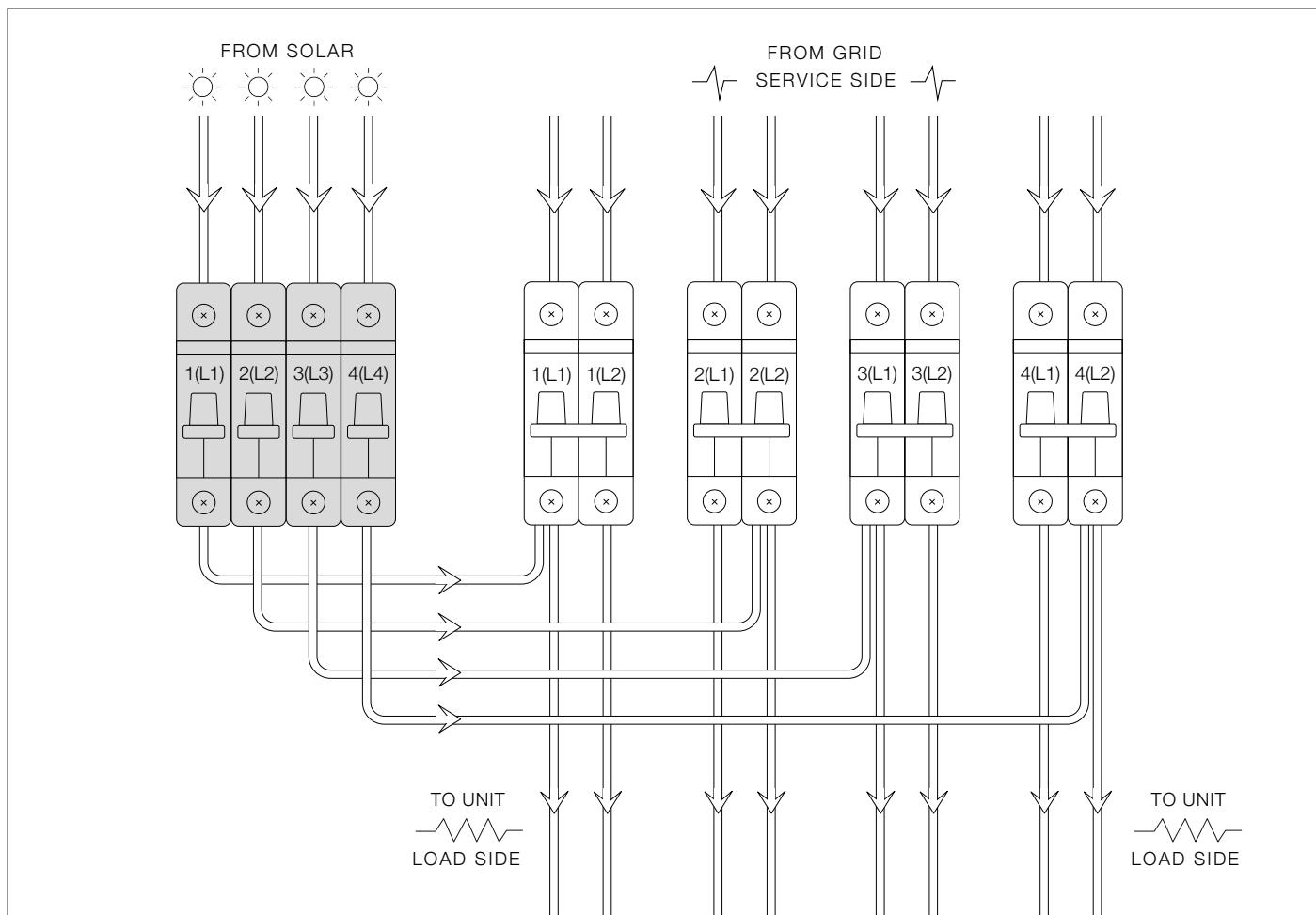
### Important:

Connect only one line of solar to each unit. Make sure the solar supplier line alternates between each unit as shown below.



### Warning:

OCPD (Over Current Protective Devices) provided between the AC line and an inverter operating in parallel with the grid are required to be rated for bi-directional use.



### Important:

Make sure to label both ends of each solar cable.



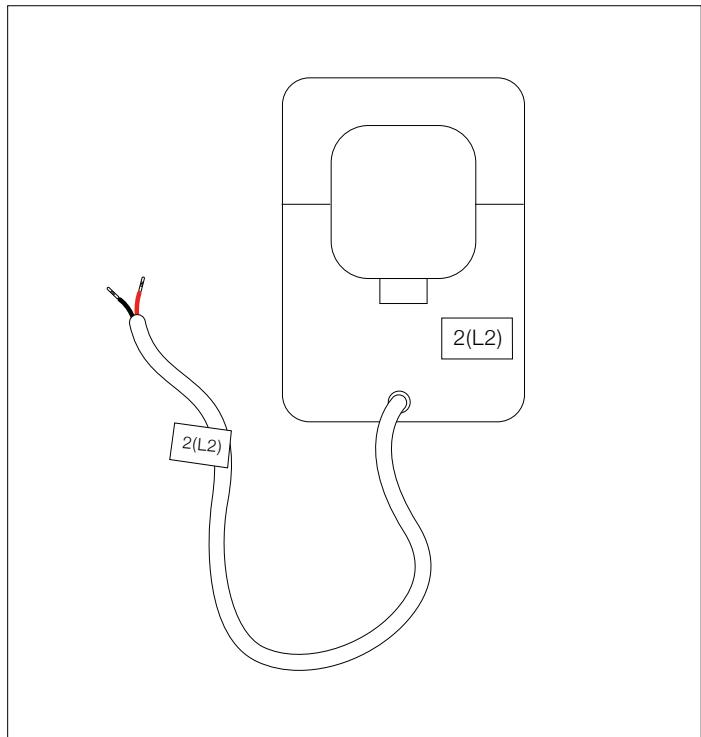
## C. Running current transformer tails

1. Run CT conduit from Solshare to main switchboard. (CT conduit gland is the largest gland on underside of SolShare)
2. Follow labels on current transformers and current transformer tails. Ensure these match the corresponding unit.
3. Run tails of CTs from main switchboard to SolShare through conduit.



**Important:**

Ensure labeling of head and tails of CT cables as follows.



## D. Current transformers to SolShare connections

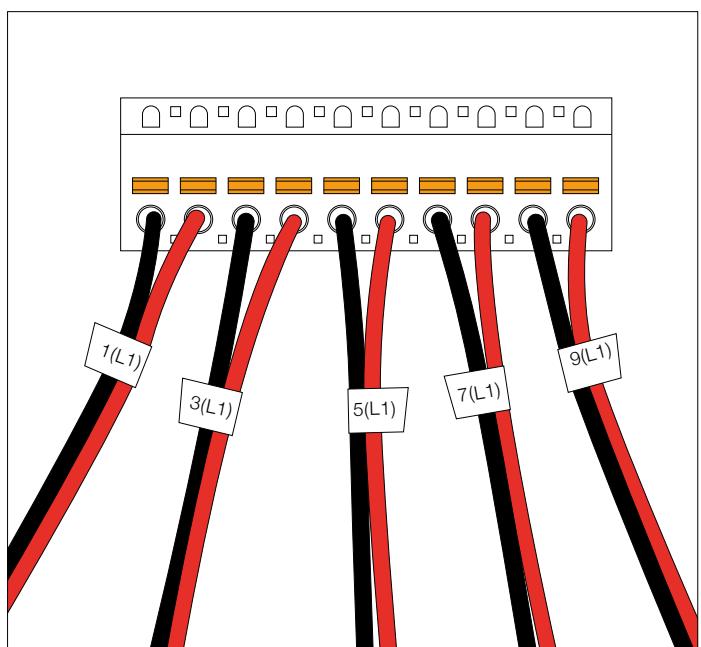
Wiring tails to Solshare:

1. Connect the CT cabling to the CT connector block, as per the diagram to the right. To do this:
  - Push the orange tab in and hold.
  - Feed the CT cable into the hole.
  - Once inserted, release the orange tab.
  - Confirm cable is secure by giving it a gentle tug.
2. Repeat for all CT cables of the red phase.
3. Repeat steps 1 & 2 for white and blue phase connector blocks.
4. Plug each CT connector block into the corresponding socket of the SolShare.



**Important:**

Make sure colours and orientation of connectors are identical to the image above. To ensure you are positioning them correctly, check that the orange tabs are above your plugged in cables, and labels read as above.



## E. Current transformer clipping

Clipping the current transformers onto the service side cable:

1. Match the labelled CTs with their corresponding labelled service supply cable.
2. Confirm correct polarity of the CT by ensuring the arrow on the CT head matches the current flow direction on service supply cable.
3. Clip CT over service supply cable.



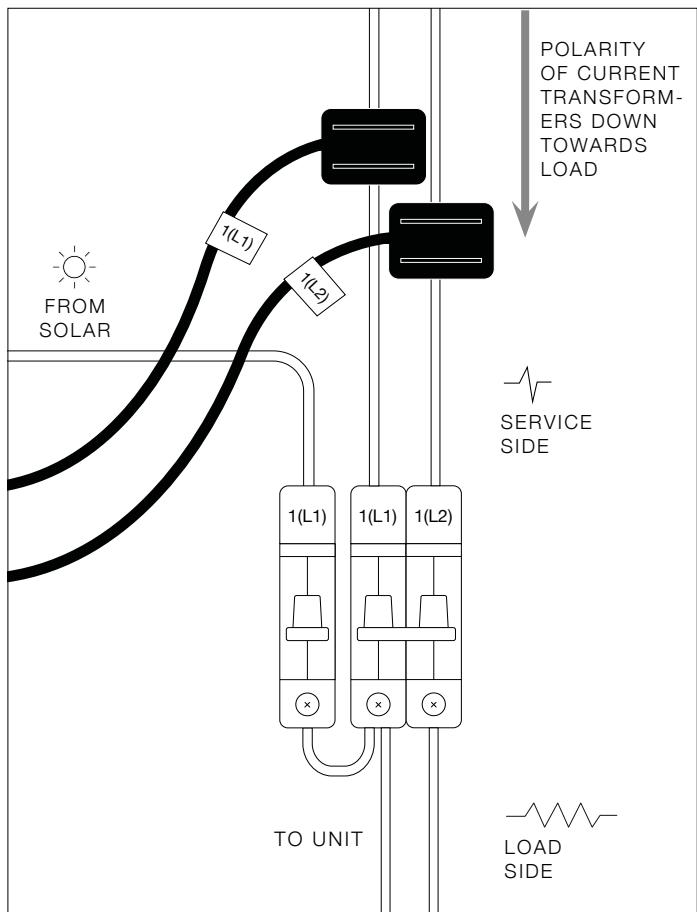
**Important:**

Solar is connected only on one line, however connect CTs on both incoming supply lines as per diagram.



**Important:**

The CT must be connected on the service side of the unit main switch, as per diagram.



## F. Launching the SolShare

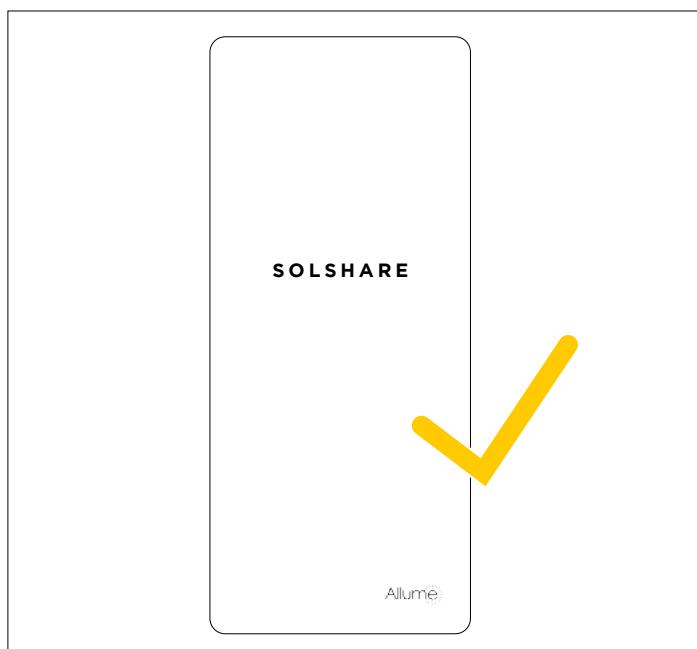


**Important:**

Before commissioning re-check all CTs and output cables are connected as per their labels.

To commission the SolShare:

1. Pull down cover of SolShare. Fasten shut by replacing the 4 screws on the underside of the SolShare, that were removed in section III/A.1.
2. Switch on all solar circuit breakers and unit main switches.
3. Switch on inverter main switch.
4. Contact Allume to run the SolShare commissioning script
5. Monitor inverter's grid connect process until solar begins outputting. If inverter cannot establish grid connection call +61 394 270 005 or contact [support@allumeenergy.com.au](mailto:support@allumeenergy.com.au).
6. Once solar begins outputting, please send an email to [support@allumeenergy.com.au](mailto:support@allumeenergy.com.au) to notify Allume of SolShare commissioning. The email must include a photo of the completed '*Product Registration document*' (see page 5)

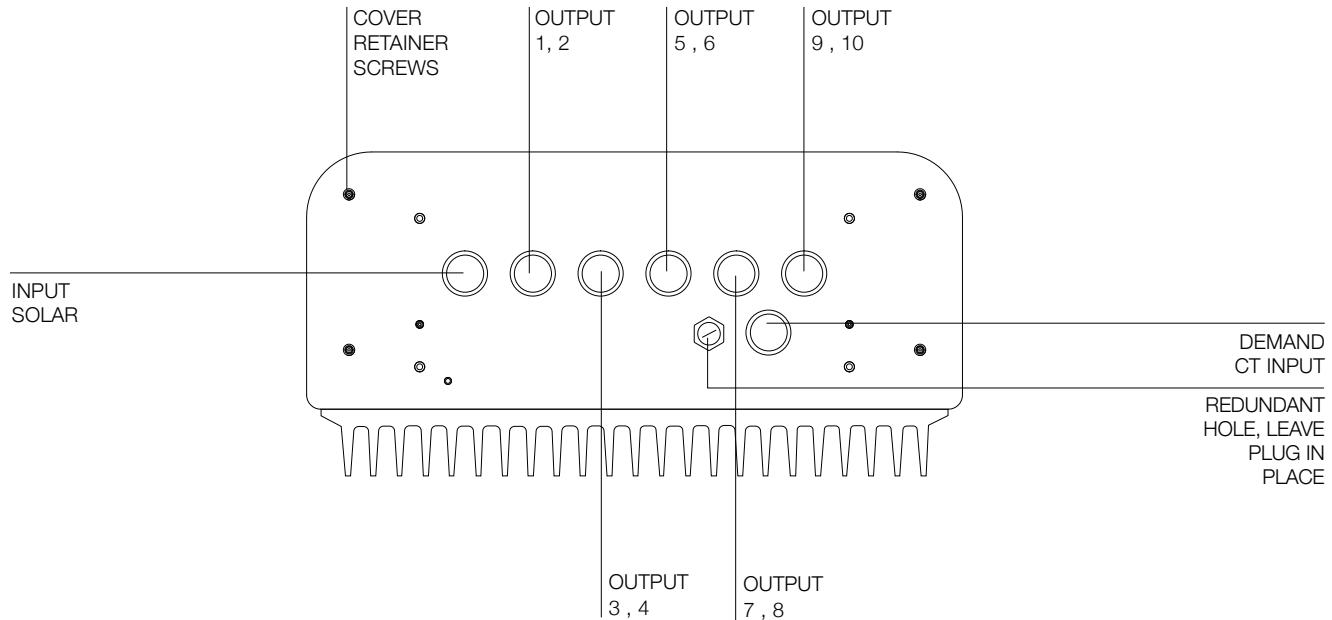


# Appendix

## Appendix A – Cable Gland Selection Criteria

### SolShare underside view

Each output gland will correspond to the output of an L1 and L2 cable, corresponding to the solar supply for two units. The leftmost membrane gland corresponds to the solar input.



Parameter	Specification
Panel thickness	4-4.5mm
CT Hole Diameter	33mm
Solar Input/Output hole diameter	32mm
Flammability rating (minimum)	UL94 HB
Temperature rating (minimum)	90°C (194°F)
Enclosure rating (minimum)	IP 66 NEMA 4
Approvals	UL 514

## Appendix B – Ground Bar Connection

Diagram 1.

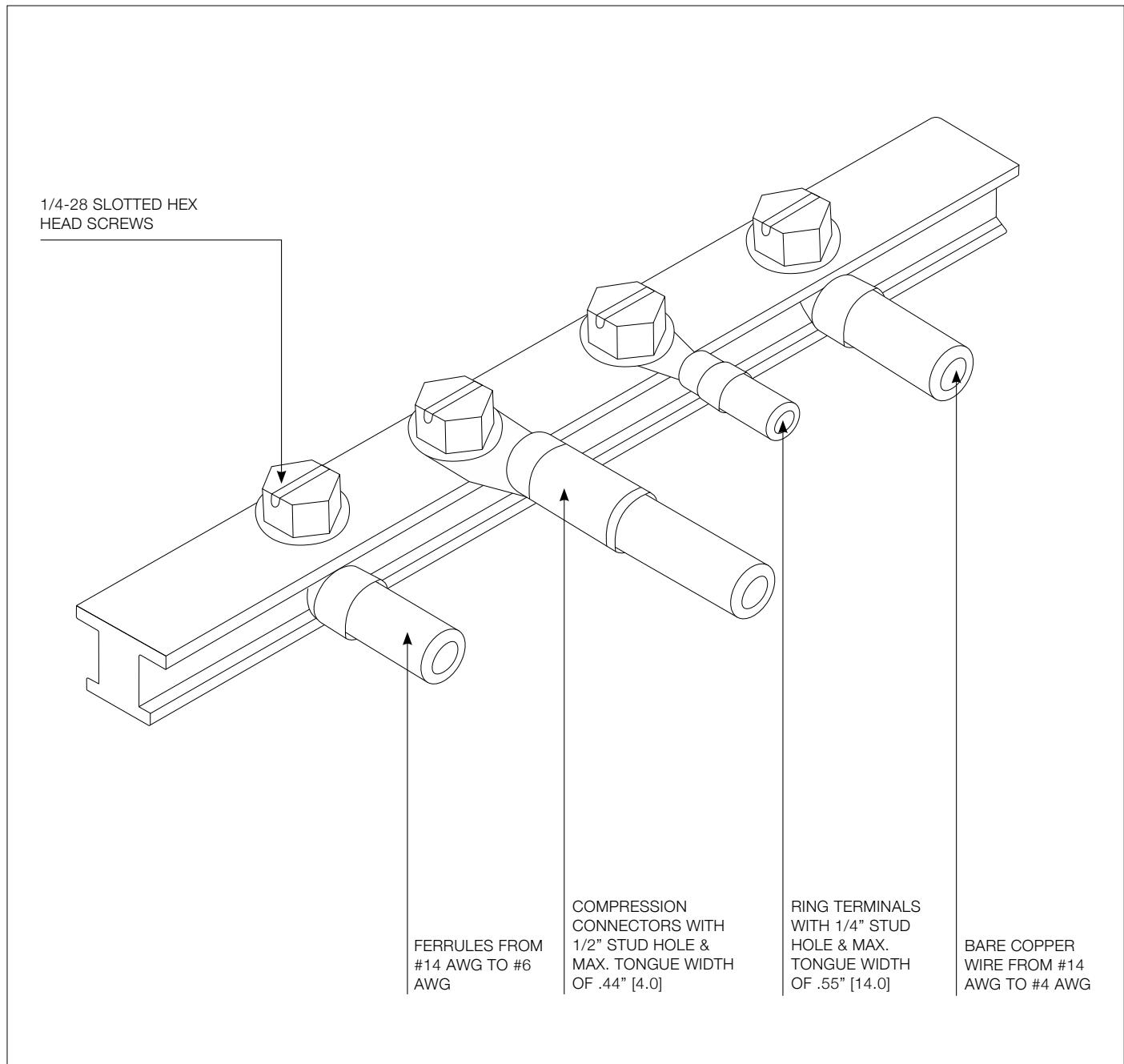


Diagram 2.

Tightening Torque - IN-LBS (N.m)	
Conductor size	Attachment method / Bare wire / Termial / Lug / Ferrule
14 AWG - 10 AWG	35 [4.0]
8 AWG	40 [4.5]
6 AWG - 4 AWG	50 [5.6]

Diagram 3.

**Connector options for both Code and Flex wire**

2 hole copper compression connectors\*\*, 1/4" stud hole with 5/8" spacing:  
 Panduit part series: LCD, LCC, LCC-W, LCD-W, LCDX, LCCF, LCCX

1 hole copper compression connectors\*\*, 1/4 stud hole:  
 Panduit part series: LCAS, LCA, LCB, LCB-W, LCAX, LCAF, LCBX

Panduit anti-rotational copper mechanical connector:  
 Part #CLMAR/0-14-Q (#14AWG-2/0AWG)

Ferrules type:  
 FSD, F(12mm pin length recommended)

*\*\*2 hole and 1 hole copper compression connectors available with short, standard, and long barrel lengths.  
 Bent tongue and narrow tongue options are available.*

## Appendix C – Terminal Block Connection

Connection data	Metric	US
Tightening Torque	2 Nm	18 lb-in
Conductor Cross Section Stranded min.	4 mm <sup>2</sup>	12 AWG
Conductor Cross Section Stranded max.	25 mm <sup>2</sup>	4 AWG
Conductor Cross Section Stranded with Ferrule/Lug min.	4 mm <sup>2</sup>	
Conductor Cross Section Stranded with Ferrule/Lug max.	25 mm <sup>2</sup>	
2 Conductors with same Cross Section Stranded min	4 mm <sup>2</sup>	
2 Conductors with same Cross Section Stranded max	16 mm <sup>2</sup>	
2 Conductors with same Cross Section Stranded with TWIN Ferrule/Lug min.	4 mm <sup>2</sup>	
2 Conductors with same Cross Section Stranded with TWIN Ferrule/Lug max.	10 mm <sup>2</sup>	
Stripping Length	14 mm	
Internal Cylindrical Gauge	A8	



# SolShare 100 Product Datasheet

Allume's SolShare technology enables the solar power generated from a single system to be distributed across multiple grid connected units, like those in multifamily buildings.

The SolShare 2P-100 has a 100A per line capacity. It can share a single output from a single solar system with up to 24kVA peak output among up to 10 multi-family units.

This product is installed between the inverter and the building's meter panel. It requires no change to their existing smart meter infrastructure, or the utility's billing system, and is designed to make installation as simple as possible for licensed electricians.

The SolShare responds to energy usage of each unit dynamically ensuring that solar delivery does not exceed their total energy usage. This maximises the financial benefit of the shared system.

Complete solar & usage monitoring

Integrated billing for Power Purchase Agreements

Over the air firmware updates

Optimized solar sharing to maximise savings for participants

# Technical Data

## General Specifications

Parameter	Value
Dimensions	920 x 485 x 270 mm (H x W x D)
Max number of connections per unit	10 apartments (solar connected on single line)
Operating temperature range	-10 – 50°C
Metering accuracy	± 0.5%

## Electrical Specifications

Parameter	Value (at 25°C)
Max nominal current (per phase)	100 A
Voltage Range (phase to neutral)	100 – 260 VAC
Voltage Drop (I is nominal current)	0.9 + .002* I
Mains frequency range	50 – 60 Hz
Overcurrent rating	30 kA
Max input at 240V (split phase)	24 kW

## Test Certification

Test	Test House
UL1741	UL
Revenue grade metering as per accuracy standards in ANSI C12.20.2015-0.5	UL

## Installation Requirements

1. Input must come from a split-phase, grid connected inverter
2. Each unit must have an amperage capacity greater than the per line max solar system output
3. Output Connections:
  - 4 or more split phase units
4. Ganged smart meters and main switches
5. Cable access between SolShare unit and central main switchboard
6. Installation must be carried out by a licensed electrician

### Contact details

1/1 Bromham Place,  
Richmond, VIC 3121  
+61 394 270 005  
[info@allumeenergy.com.au](mailto:info@allumeenergy.com.au)





This manual is intended for installations in the **USA**.  
Specifications are subject to changes without advanced notification.

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