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Government of South Australia
Department for Energy and Mining

Technical Regulator Guideline

Smart Meter Minimum Technical Standard and associated Deemed to Comply Wiring Arrangements

1. Document Approval and Control

Document Control

Version and Confidentiality	Version	1.1
	Status	Final
	Confidentiality	Public
File Name and Reference No.	File Name	Technical Regulator Guideline – Smart Meter Minimum Technical Standard and associated Deemed to Comply Wiring Arrangements
	HPRM Reference No.	

Approved by

Title	Name	Date Signed	Signature
Technical Regulator	Rob Faunt	27/08/21	

Revision History

Revision Version	Revision Date	Summary of Change	Author
0.1	28 August 2020	Draft	G Nesic, J Crossing
0.2	28 August 2020	Draft Revision	J Crossing
1.0	14 September 2020	Final Revision	G Nesic, J Crossing
1.1	27 August 2021	August Revision • New 'default' Deemed to Comply Wiring Arrangements • New labelling & eCoC requirements • New Class Exemptions • Appendix A – Additional information • Appendix B – Definitions	G Nesic, J Daughtry

Revision History (cont.)

1.2	23 June 2022	Minor revisions to section 6 (note 3) and Appendix A (d)	G Nesic, J Daughtry

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2. Objective

Smart meters are required to be installed within electrical installations in South Australia to allow for more flexible metering configurations that include:

- Having access to more accurate measurement and visibility on solar generation and controlled loads; and
- Access to independent control of solar generation and controlled loads, including for emergency management associated with network security.

The objective of this document is to detail the Smart Meter Minimum Technical Standard and Deemed to Comply Wiring Arrangements that are considered by the Technical Regulator to satisfy the requirements of the Electricity (General) Regulations 2012.

Definitions can be found in Appendix B.

3. Roles and Responsibilities of Metering Coordinators, Metering Providers, Electrical Contractors and Further Information

The roles and responsibilities of Metering Coordinators, Metering Providers and Electrical Contractors is to ensure compliance with this guideline, so owners or operators of electrical installations comply with the *Electricity (General) Regulations 2012.*

The requirement for remote disconnection and reconnection of solar inverters is not covered or required by this guideline, even though examples of this are shown in the Deemed to Comply Wiring Arrangements referred to in Section 5 below. These requirements are specified in the Technical Regulator Guideline - Deemed Methodologies for Remote Disconnection and Reconnection of Electricity Generating Plants

The metering arrangements described below shall also comply with the Service & Installation Rules of the operator of the distribution network, and all other relevant standards in accordance with the *Electricity (General) Regulations 2012*.

4. Smart Meter Minimum Technical Standard

A smart meter installed for a single-phase electrical installation in South Australia shall provide at minimum any one of the following with respect to elements and contactors:

a. Two elements with a contactor in each element (this could be provided by one or two meteringdevices); or
b. Two elements with a master contactor for both elements and an additional contactor in at least oneof the elements; or
c. Two elements with three contactors; or
d. Three elements with three contactors.

Metering devices are to be configured for net revenue metering.

The Deemed to Comply Wiring Arrangements referenced in Section 5 below, show diagrammatic examples of these metering devices. The diagrams are intended to just show a typical metering device layout. Additional features such as un-switched load terminals, auxiliary volt-free terminal block connections, externally controlled contactors, secondary metering devices etc. which may be available or utilised, are not shown and are not intended to be prohibited.

5. Deemed to Comply Wiring Arrangements

The smart meter wiring shall comply with any one of the Wiring Arrangements in Sections 7.1, 7.2 or 7.3 below; these are 'Deemed to Comply Wiring Arrangements' (DCWA).

The intent of the Wiring Arrangements is to allow for the following combined functionality:

a. Solar inverter can be separately controlled by a meter contactor; and

b. Solar inverter generation can be measured through a separate meter element; and

c. The ability to have a separately controlled load e.g. storage hot water system, pool pumps or underfloor heating etc.

NOTE: A solar inverter includes a multiple mode inverter with PV (photovoltaic) port.

Due to the complex nature of how inverter energy systems can be configured onsite in accordance with AS/NZS 4777.1:2016 and the customer's requirements, the functionality criteria above may not be met or may only be part met in certain electrical installations. To address these issues, exemptions to the above criteria are only permitted in accordance with the Class Exemptions in Section 6 below or the DCWAs in Section 7.1, 7.2 or 7.3.

The following Table 1 is intended to assist Meter Coordinators, Metering Providers and Electrical Contractors with selecting a suitable metering device and DCWA for a particular installation scenario. A process flowchart is also available in Appendix A. Multiple arrangement options exist for the same scenario, including some that provide future proofing for anticipated installation alternations, and alternate means of remote disconnection and reconnection of the solar inverter, where the metering device is used to achieve this function.

TABLE 1 – (Flowchart and FAQs Available here)

Installation Scenario	Installed equipment					Default Deemed to Comply Wiring Arrangements (See Note 1)	Other permissible Deemed to Comply Wiring Arrangements subject to approval by Metering Provider (See Note 2 & 3 as indicated)
1	General load [5]					1	8, 14
2	General load	Controlled load				1	8, 14
3	General load	Solar inverter				2 or 7	9, 15
4	General load	Controlled load	Solar inverter			3	9[3], 15
5	General load	Solar inverter	Battery inverter [4]			5	4, 6, 10, 11, 12, 13, 16, 17, 18, 19
6	General load	Solar inverter	Battery inverter [4]	Stand-alone mode		5	4, 12[3], 13, 16, 17, 19
7	General load	Controlled load	Solar inverter	Battery inverter [4]		5	10[3], 12[3], 13, 16, 17, 19
8	General load	Controlled load	Solar inverter	Battery inverter [4]	Stand-alone mode	5	12[3], 13, 16, 17, 19

Note 1: This column identifies the DCWAs that the Electrical Contractor is required to use to satisfy compliance with the criteria in points 5a., 5b., & 5c. above. All Metering Providers are currently offering two element meters and Wiring Arrangements 2, 3, 5 & 7 are the 'Default' arrangements for new solar installations. Wiring Arrangement 1 is applied as required by the Metering Provider.

Note 2: This column identifies other permissible DCWA subject to the Metering Provider supplying the correct metering device. Currently Metering Providers may not offer all the meter types/variants as specified in points 4c. and 4d. above. The Metering Provider shall be contacted for approval if one of these Wiring Arrangements is intended/required to be used.

Note 3: These DCWA may or may not be possible due to restrictions associated with network tariff structures and Metering Coordinators/Providers. The Metering provider will need to be contacted if one of these Wiring Arrangements is intended to be used.

Note 4: Where a battery inverter is shown in the DCWAs, it is required that a battery system is connected to the inverter.

Note 5: An installation scenario where only 'general load' and a 'battery inverter' exist, they may be both connected to the main metering element.

Note 6: Where the Metering Provider is the 'Relevant Agent' for the purpose of the remote disconnection and reconnection requirement, the Metering Provider may specify the required DCWA.

5.1 Electrical Contractor Requirements:

Electrical Contractors shall arrange new solar inverter installations to comply with the Default DCWAs in Section 7.1 below, for any single-phase metered electrical installation.

For solar inverter installation scenarios 3 to 8 in Table 1, the Electrical Contractor shall select one of the default DCWA, i.e. Wiring Arrangement 2, 3, 5 or 7. Other Wiring Arrangement options are available only where approved by the Metering Provider, see Table 1 for further information.

The selected DCWA number utilised for the solar inverter installation, shall be clearly identified as follows by the Electrical Contractor:

- A label or marking is recorded within the main switchboard/meter position. This shall be permanent, indelible, legible from normal viewing levels.; AND
- Within the electronic Certificate of Compliance (eCoC) for the solar electrical installation.

The label shall state the following:

OTR Deemed to Comply Wiring Arrangement 'XX'

Note: 'XX' being the relevant number.

The permanent label requirement within the main switchboard/meter position above, shall apply from 27/11/2021.

The Electrical Contractor should also supply their contact details in the above label. A suggested template for this label is provided in Appendix A - Additional Information for Metering Coordinators, Providers and Electrical Contractors.

Where an Electrical Contractor has written confirmation from a Metering Provider or Retailer, that an existing single element metering device (installed prior to 28 September 2020) capable of measuring solar generation will remain onsite, compliance with the Section 5 of this document is not required. In this case, the Electrical Contractor shall attach the confirmation document to their eCoC.

5.2 Metering Providers Requirements:

A Metering Provider shall not connect a DCWA prepared by the Electrical Contractor if the above label is not provided by the Electrical Contractor or if they believe the incorrect DCWA has been selected. If the label is missing, the Metering Provider may complete the meter installation through one of the following options:

- Contact the Electrical Contractor and clarify the intended DCWA arrangement onsite; OR
- Obtain written confirmation from the Electrical Contractor e.g. eCoC or email; OR
- Metering Provider is able to identify and apply the correct Default DCWA. In this scenario the Metering Provider should notify the Electrical Contractor of this.

The Metering Provider shall document the DCWA applied on-site in their eCoC.

Where a DCWA with a 2 element, 2 contactor metering device is selected by the Electrical Contractor (i.e. Default Wiring Arrangements 2, 3, 5 or 7), the Metering Provider is permitted to install a 2 element, 3 contactor; 3 element, 3 contactor; or any other combination of metering devices which achieves or exceeds the equivalent Wiring Arrangement outcome.

A Metering Provider may override the DCWA selected by the Electrical Contractor, in accordance with a Class Exemption in Section 6 below. Where a Metering Provider applies a Class Exemption, it shall be documented in their eCoC.

6. Class exemptions

Class Exemptions to this document **do not override** the requirements to comply with other aspects of the Regulatory Changes for Smarter Homes, such as voltage ride through standards, remote disconnection and reconnection requirements, export limit requirements etc.

The Smart Meter Minimum Technical Standard and/or Deemed to Comply Wiring Arrangements does not apply to:

6.1. Two phase and three phase metered electrical installations.

6.2. SWER (Single Wire Earth Return) supply 2 phase, 3 Wire (230/460 Volt) metered electrical installations.

6.3. Battery only inverters are not required to comply with points 5a. and 5b. above, but may inherentlybe captured due to the wiring configuration.

6.4. The Smart Meter Minimum Technical Standard as specified in Section 4 above, does not apply to a multi-tenanted building containing apartments, where:

a. The individual apartments do not have individually controlled electric hot water heaters; and

b. The individual apartments cannot have a separate solar inverter installation due to building restrictions.

6.5. The Smart Meter Minimum Technical Standard as specified in Section 4 above, does not applywhere an existing socket / plug-in metering device installed prior to this guideline is replaced.

6.6. Where a new smart metering device is installed in accordance with this guideline, any solar inverter installation installed prior to this guideline, is not required to be rewired or arranged to comply with the DCWAs below.

6.7. The Smart Meter Minimum Technical Standard as specified in Section 4 above, does not apply where:

a. An existing metering group meter panel has insufficient space to install a new two element metering device; and

b. The Metering Provider has suitably justified and documented the installation conditions in relation to point 6.7.a. above and can supply this at the request of the Technical Regulator; and

c. The general load and solar inverter are connected to a distribution board e.g. Strata / Community title group metering arrangements.

Note: This exemption does not apply to any new group meter panel installed after 28 September 2020.

6.8. A existing single element metering device installed prior to 28th September 2020 is permitted to be configured by the Metering Provider to measure solar generation for net metering.

Note 1: This exemption does not apply to a 2 element metering device onsite, where the Default DCWA requires the solar to be connected to the 2nd / auxiliary metering element i.e. DCWA 2.

Note 2: This exemption is intended to be authorised by either Metering Provider / Retailer. The Electrical Contractor should be notified where this exemption is intended to be applied, as compliance with a Default DCWA is then not required.

6.9. A Metering Provider:

a. Shall connect the solar inverter to the main element where the solar inverter nameplate output current capacity exceeds the current rating of both the 2nd / auxiliary switched and un-switched metering element load terminals.

b. Can connect the solar circuit to the 2nd / auxiliary un-switched metering terminal where the remote disconnection and reconnection requirement is satisfied by alternative means e.g. API, 4G controller, Wi-Fi, ethernet or web based solution, in accordance with the Relevant Agent requirements.

Note 1: The intent is to still capture the solar generation data through the 2nd / auxiliary metering element.

Note 2: An un-switched 2nd / auxiliary metering terminal may have a higher current rating and therefore accommodate the connection of a larger solar system.

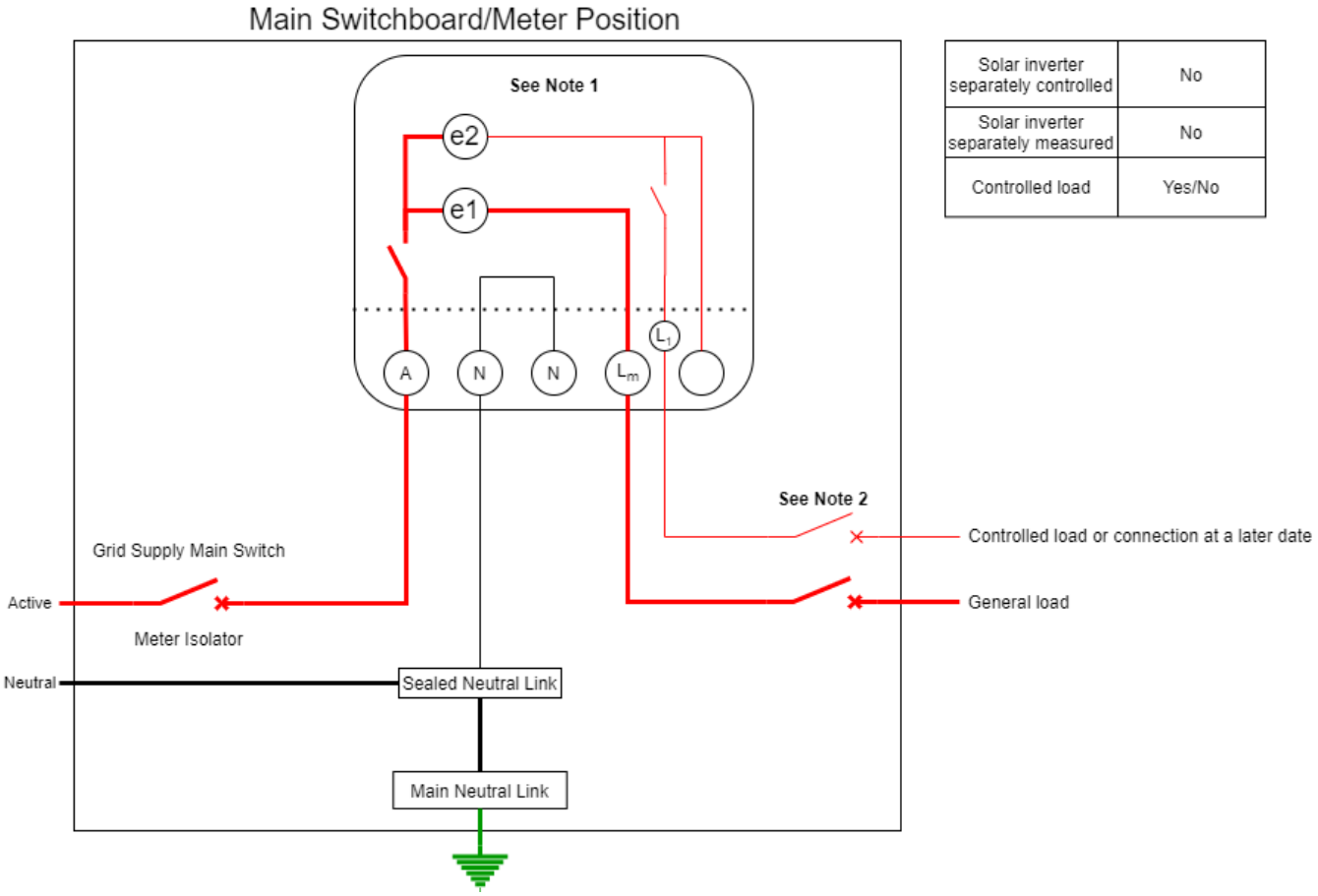
Note 3: SA Power Networks allows the connection of a solar inverter capacity of 10 kW in a single-phase electrical installation – see TS 129. Metering Providers should install metering devices where the 2nd / auxiliary metering terminal has a current carrying capacity of at least 50 amps to accommodate a 10kW inverter, capable of outputting approximately 44 amps (based on AS/NZS 4777.1:2016 calculations).

7. Deemed to Comply Wiring Arrangements

7.1. 2 element, 2 contactor (Wiring Arrangements 1-7)

7.1.1. Wiring Arrangement 1

Wiring Arrangement 1



Solar inverter separately controlled	No
Solar inverter separately measured	No
Controlled load	Yes/No

Note 1: The metering device may be either:

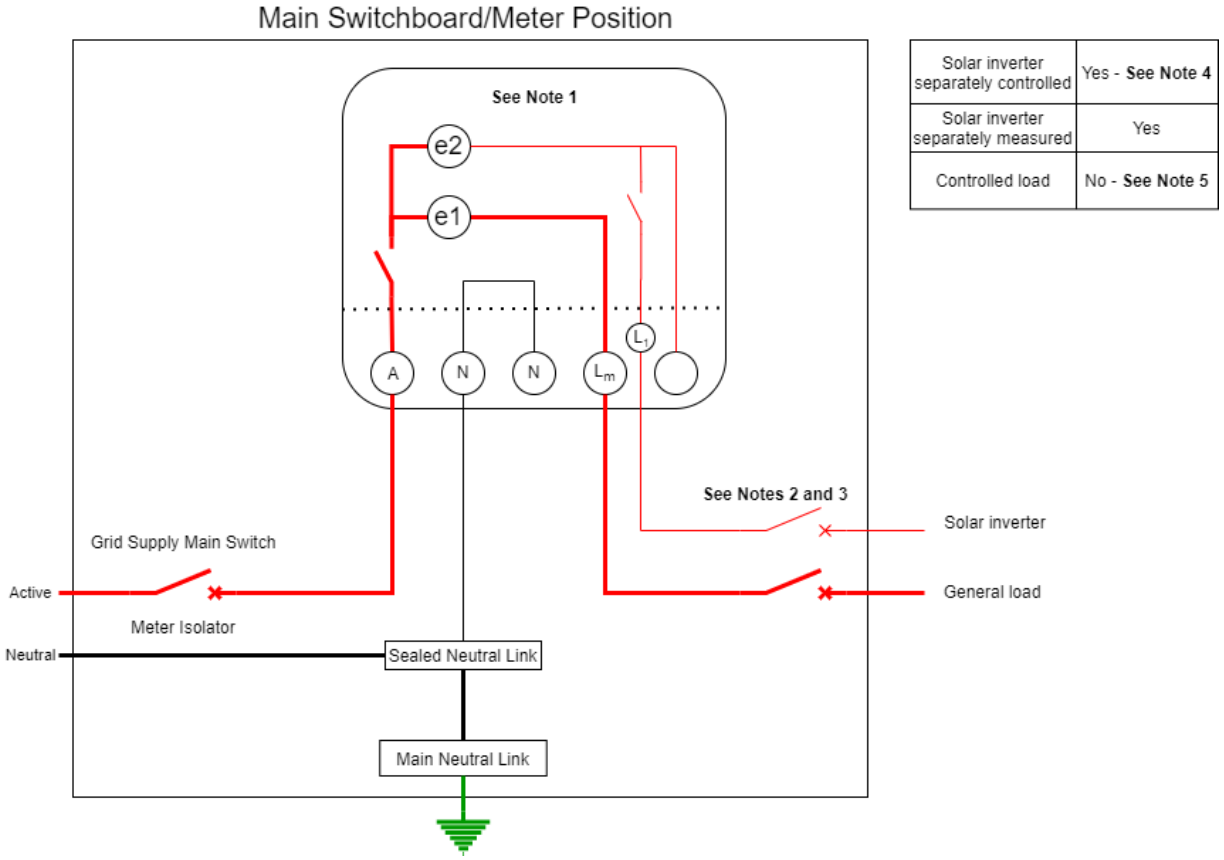
Two elements with a contactor in each element (this could be provided by one or two metering devices); or

Two elements with a master contactor for both elements and an additional contactor in at least one of the elements.

Note 2: If controlled load is not installed, the unused metering element load terminal may be pre-wired for example to a suitably identified/labelled circuit breaker, isolation switch or link, in accordance with the Metering Coordinators/Providers requirements.

7.1.2. Wiring Arrangement 2

Wiring Arrangement 2



Wiring Arrangement 2 is subject to the following condition:

Where provision to connect to the 2nd / auxiliary metering element terminal is not provided (e.g. a suitably identified/labelled circuit breaker, isolation switch or link) as approved by the Metering Provider, the Electrical Contractor shall contact the Retailer to organise for the solar circuit to be connected to the 2nd / auxiliary metering element terminal.

Note 1: The metering device may be either:

Two elements with a contactor in each element (this could be provided by one or two metering devices); or

Two elements with a master contactor for both elements and an additional contactor in at least one of the elements.

Note 2: Metering element load terminal shall be provided with independent 'overload' protection in accordance with the Metering Coordinators/Providers requirements and AS/NZS 3000, except where the meter isolator circuit breaker provides the protection.

Note 3: The solar inverter nameplate output current capacity must not exceed the current rating of the metering element loadterminal.

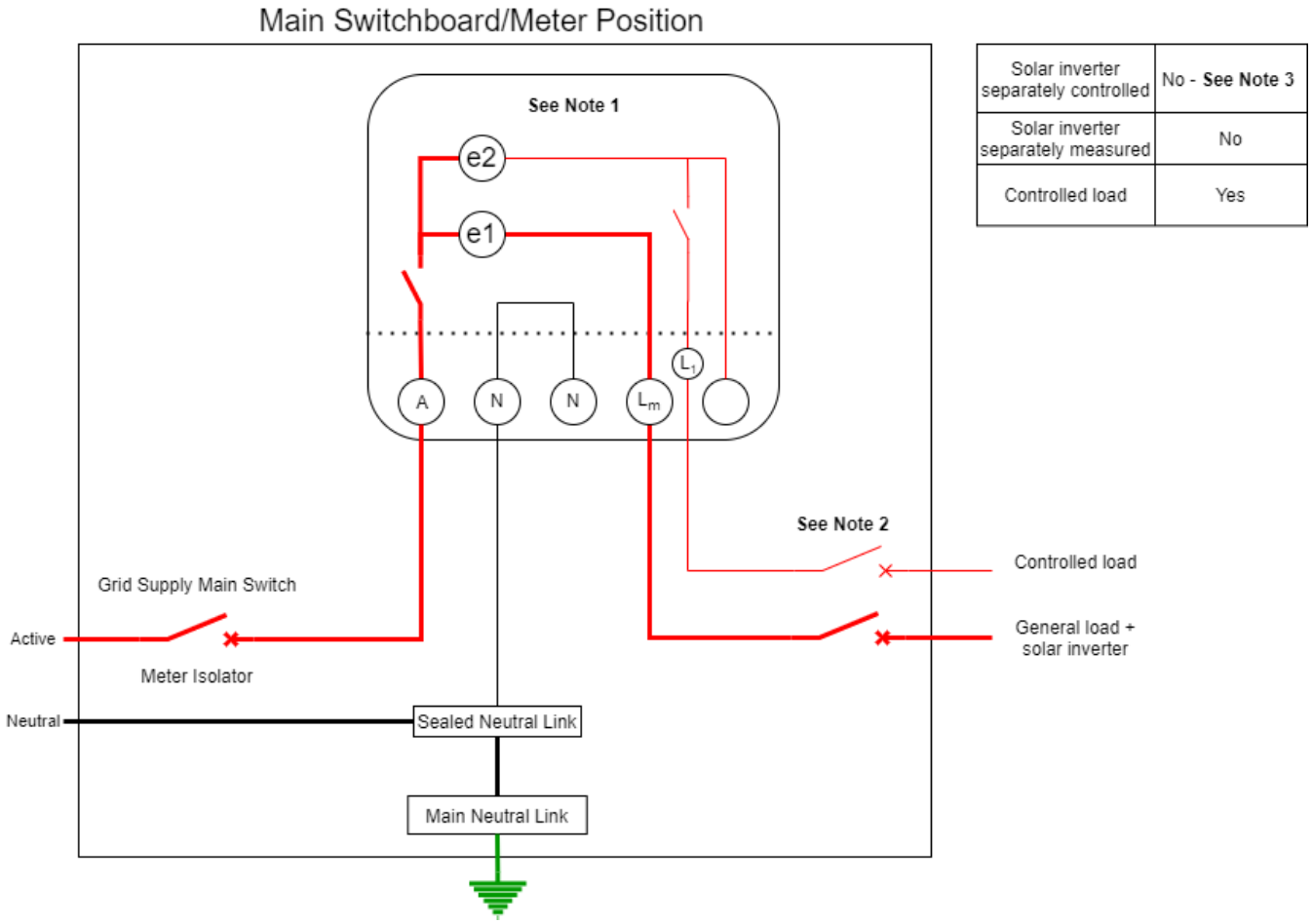
Note 4: The solar inverter may be able to be controlled by the metering device for the purpose of remote disconnection and reconnection, in accordance with the Technical Regulator Guideline - Deemed Methodologies for Remote Disconnection and Reconnection of Electricity Generating Plants.

Note 5: The owner or occupier of the installation is not able to add a controlled load in this arrangement.

Note 6: Where the metering device is not used for the purpose of the remote disconnection and reconnection requirement, the solar inverter may be connected to the un-switched load terminal on 'e2' in the figure above. This is at the discretion of the Metering Provider, and may be used e.g. where the un-switched load terminal provides a higher current rating to accommodate a larger solar inverter output current capacity (see class exemption 6.9).

7.1.3. Wiring Arrangement 3

Wiring Arrangement 3



Wiring Arrangement 3 is only permitted where a controlled load exists onsite and is connected to the 2nd / auxiliary metering element.

Note 1: The metering device may be either:

Two elements with a contactor in each element (this could be provided by one or two metering devices); or

Two elements with a master contactor for both elements and an additional contactor in at least one of the elements.

Note 2: Metering element load terminal shall be provided with independent 'overload' protection in accordance with the Metering Coordinators/Providers requirements and AS/NZS 3000, except where the meter isolator circuit breaker provides the protection.

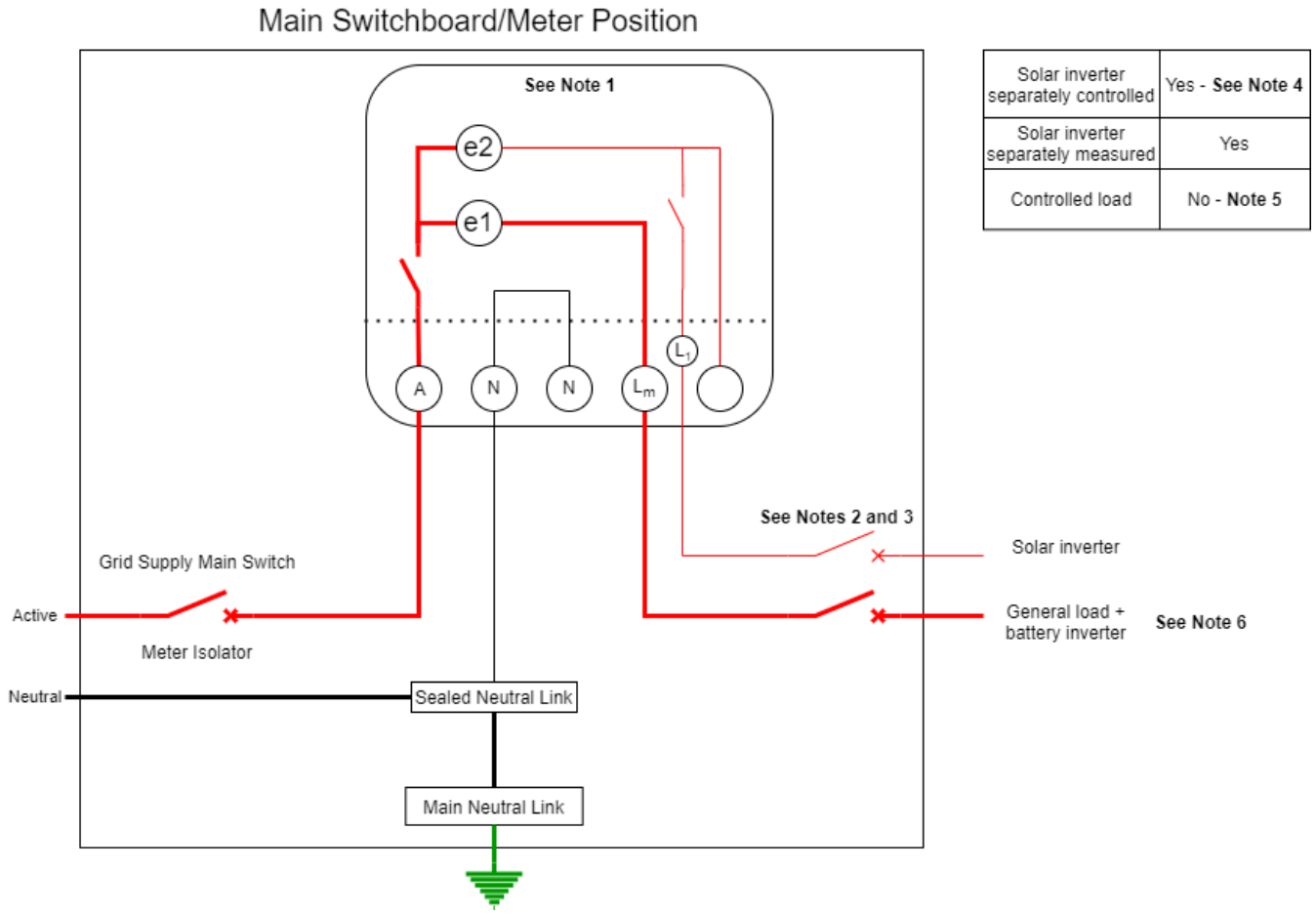
Note 3: The solar inverter may be able to be controlled by the metering device for the purpose of remote disconnection and reconnection, in accordance with the Technical Regulator Guideline - Deemed Methodologies for Remote Disconnection and Reconnection of Electricity Generating Plants.

Using the meter contactor for the disconnect / reconnection function in this arrangement, will result in disruption of electricitysupply to the general load and solar inverter.

An alternate metering wiring arrangement or other method as described in the above-mentioned guideline may need to be utilised, to satisfy the installation owner's requirements.

7.1.4. Wiring Arrangement 4

Wiring Arrangement 4



Note 1: The metering device may be either:

Two elements with a contactor in each element (this could be provided by one or two metering devices); or

Two elements with a master contactor for both elements and an additional contactor in at least one of the elements.

Note 2: Metering element load terminal shall be provided with independent 'overload' protection in accordance with the Metering Coordinators/Providers requirements and AS/NZS 3000, except where the meter isolator circuit breaker provides the protection.

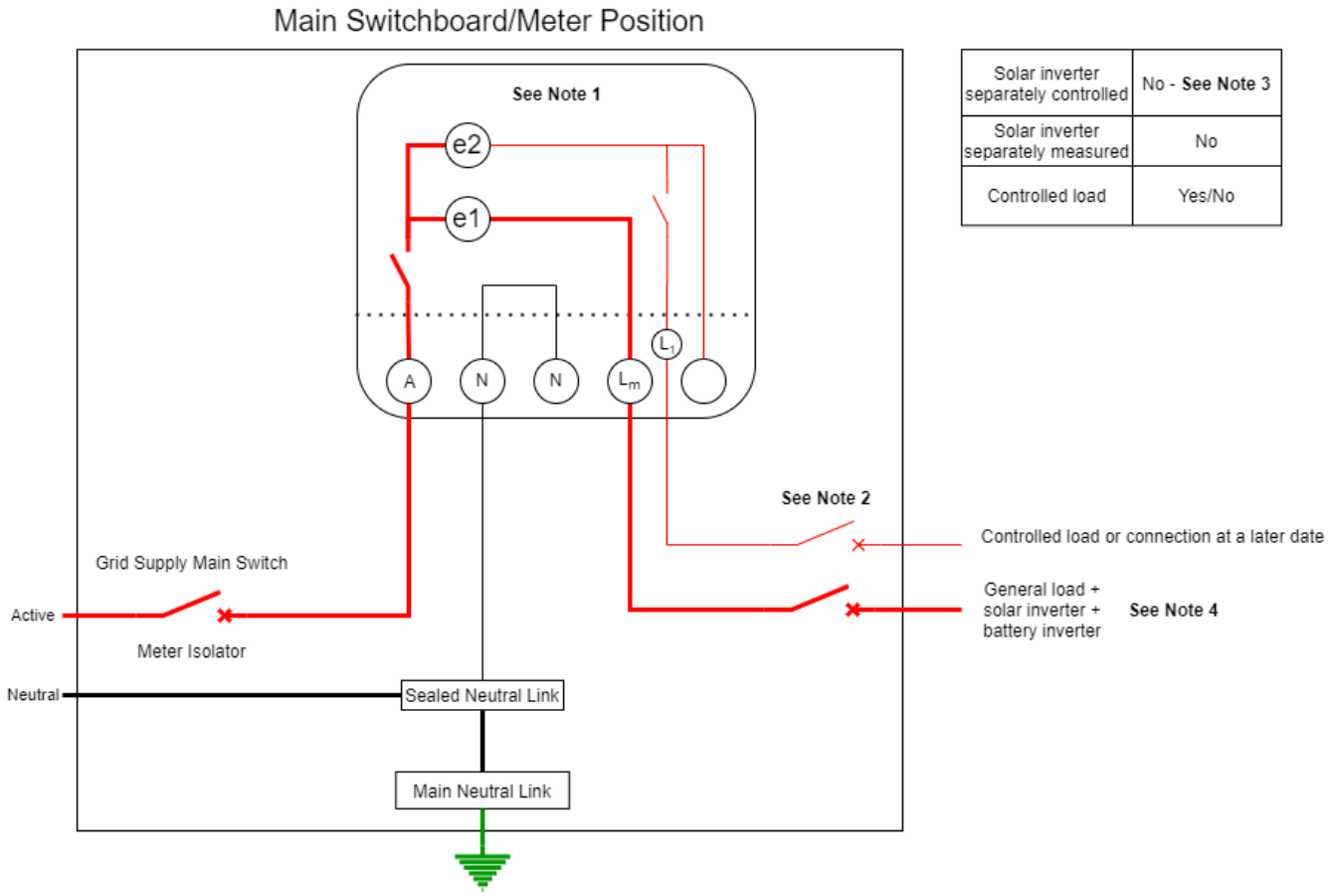
Note 3: The solar inverter nameplate output current capacity must not exceed the current rating of the metering element loadterminal.

Note 4: The solar inverter may be able to be controlled by the metering device for the purpose of remote disconnection and reconnection, in accordance with the Technical Regulator Guideline - Deemed Methodologies for Remote Disconnection and Reconnection of Electricity Generating Plants.

Note 5: The owner or occupier of the installation is not able to add a controlled load in this arrangement.Note 6: The battery inverter may or may not provide back-up or stand-alone supply functionality.

7.1.5. Wiring Arrangement 5

Wiring Arrangement 5



Wiring Arrangement 5 is only permitted where a battery system is connected to the inverter/s.

Note 1: The metering device may be either:

Two elements with a contactor in each element (this could be provided by one or two metering devices); or

Two elements with a master contactor for both elements and an additional contactor in at least one of the elements.

Note 2: If controlled load is not installed, the unused metering element load terminal may be pre-wired for example to a suitably identified/labelled circuit breaker, isolation switch or link, in accordance with the Metering Coordinators/Providers requirements.

Note 3: The solar inverter may be able to be controlled by the metering device for the purpose of remote disconnection and reconnection, in accordance with the Technical Regulator Guideline - Deemed Methodologies for Remote Disconnection and Reconnection of Electricity Generating Plants.

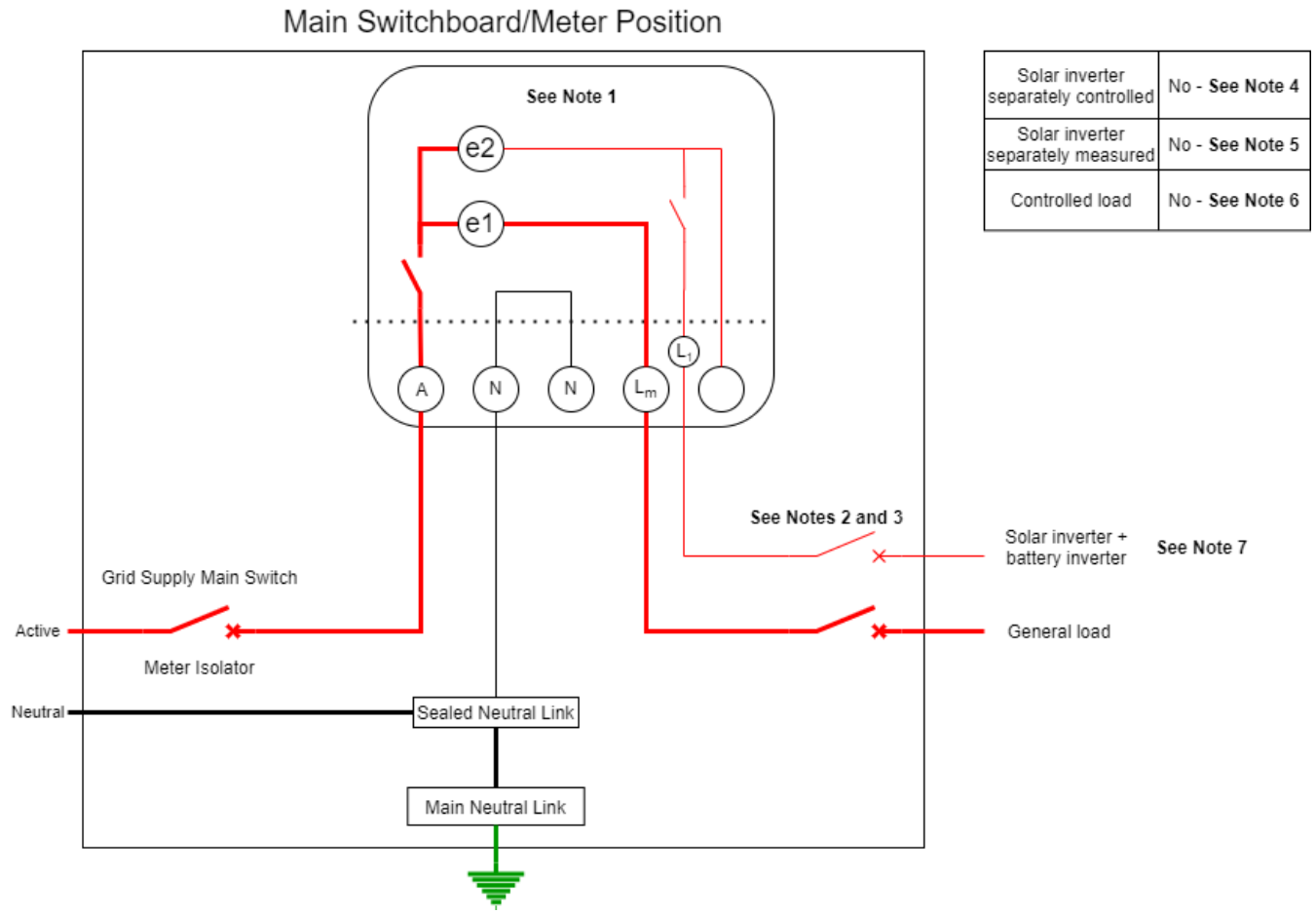
Using the meter contactor for the disconnection / reconnection function in this arrangement may result in disruption of electricitysupply to the general load and/or triggering a battery inverter into back-up mode.

An alternate metering wiring arrangement or other method as described in the above-mentioned guideline may need to be utilised, to satisfy the installation owner's requirements.

Note 4: The battery inverter may or may not provide back-up or stand-alone supply functionality.

7.1.6. Wiring Arrangement 6

Wiring Arrangement 6



Note 1: The metering device may be either:

Two elements with a contactor in each element (this could be provided by one or two metering devices); or

Two elements with a master contactor for both elements and an additional contactor in at least one of the elements.

Note 2: Metering element load terminal shall be provided with independent 'overload' protection in accordance with the Metering Coordinators/Providers requirements and AS/NZS 3000, except where the meter isolator circuit breaker provides the protection.

Note 3: The combined solar inverter and battery inverter nameplate output current capacity must not exceed the current rating of the metering element load terminal.

Note 4: The solar inverter may be able to be controlled by the metering device for the purpose of remote disconnection and reconnection, in accordance with the Technical Regulator Guideline - Deemed Methodologies for Remote Disconnection and Reconnection of Electricity Generating Plants.

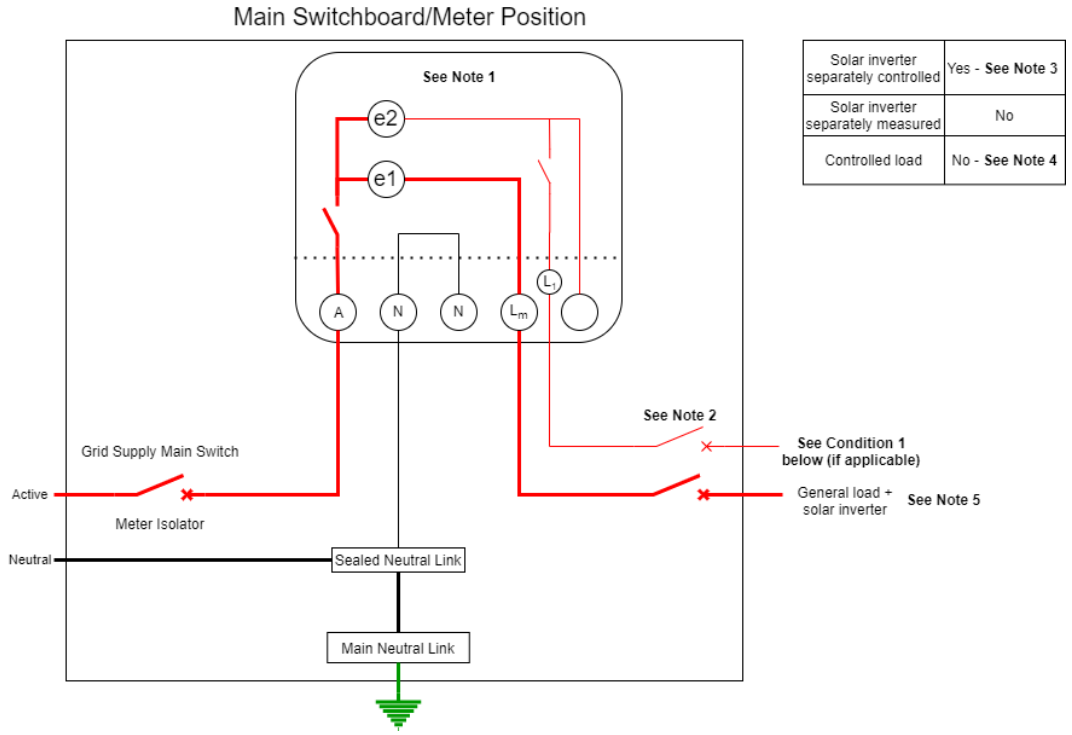
Note 5: In this arrangement, the combined solar and battery inverter generation will be measured.

Note 6: The owner or occupier of the installation is not able to add a controlled load in this arrangement.

Note 7: The battery inverter would not provide back-up or stand-alone supply functionality in this arrangement.

7.1.7. Wiring Arrangement 7

Wiring Arrangement 7



Wiring Arrangement 7 is only permitted to be used subject to any one of the following conditions being met:

1. Where the '2nd / auxiliary' metering element is used for the remote disconnection/reconnection of the solar inverter e.g. connected to an external contactor or relay, in accordance with the 'Relevant Agent'; or

   NOTE: Electrical Contractors should only select this arrangement where they know that the customer's metering device is going to be used for the purpose of the remote disconnection and reconnection requirement, i.e. the Metering Provider is the Relevant Agent.

2. The solar inverter is connected at a distribution board.

Where none of the above conditions are met, Wiring Arrangement 2 shall be applied.

Note 1: The metering device may be either:

Two elements with a contactor in each element (this could be provided by one or two metering devices); or

Two elements with a master contactor for both elements and an additional contactor in at least one of the elements.

Note 2: Metering element load terminal shall be provided with independent 'overload' protection in accordance with the Metering Coordinators/Providers requirements and AS/NZS 3000, except where the meter isolator circuit breaker provides the protection.

Note 3: In this arrangement, the second meter element would be used for the purpose of remote disconnection and reconnection ofthe solar inverter, in accordance with the Technical Regulator Guideline - Deemed Methodologies for Remote Disconnection and Reconnection of Electricity Generating Plants.

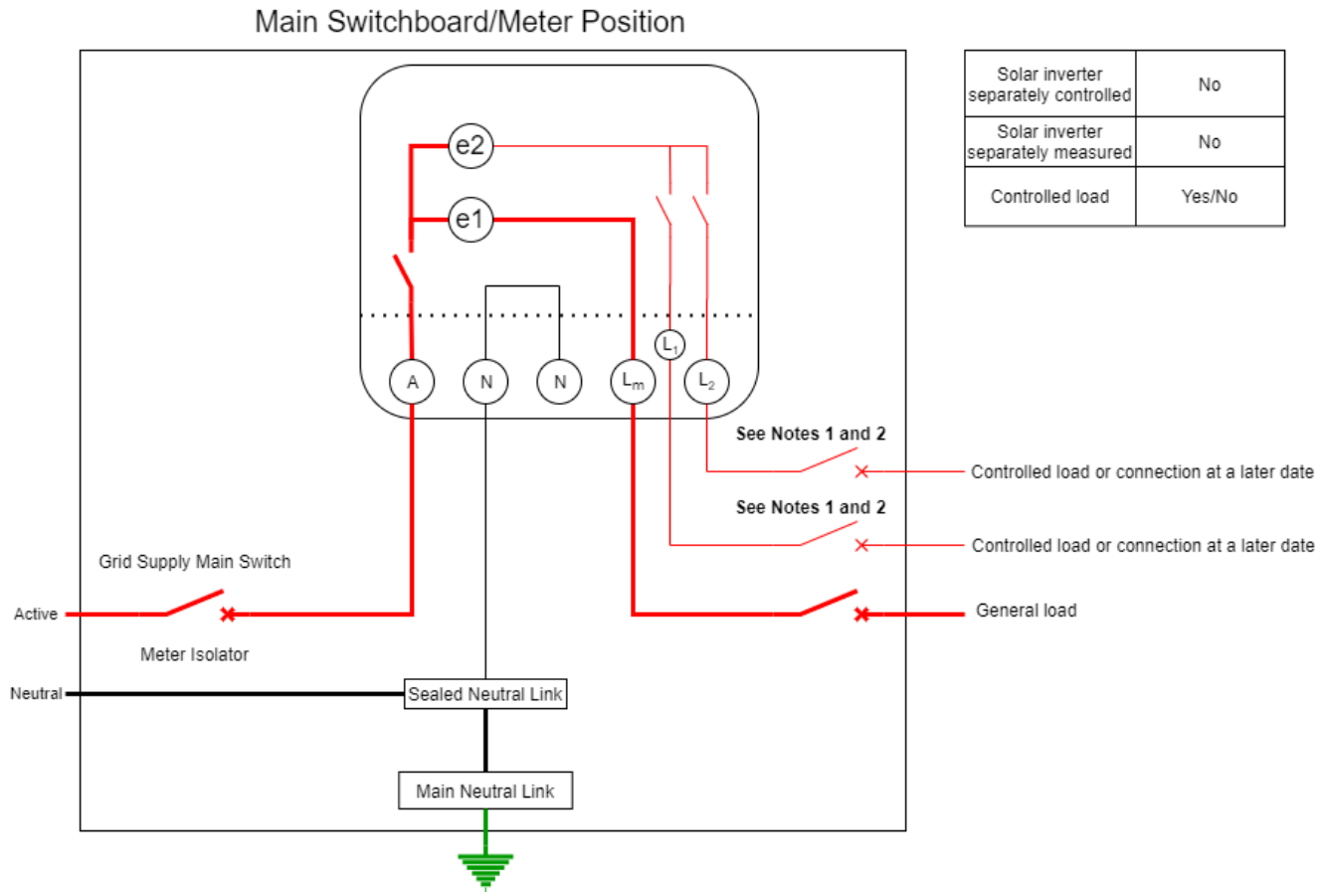
Note 4: The owner or occupier of the installation is not able to add a controlled load in this arrangement, where condition 1 above is utilised. This doesn't prohibit the Metering Provider from supplying an alternative metering device that has additional capability for a controlled load or adding a secondary metering device.

Note 5: This arrangement may or may not include a battery inverter.

7.2. 2 element, 3 contactor (Wiring Arrangements 8-13)

7.2.1. Wiring Arrangement 8

Wiring Arrangement 8



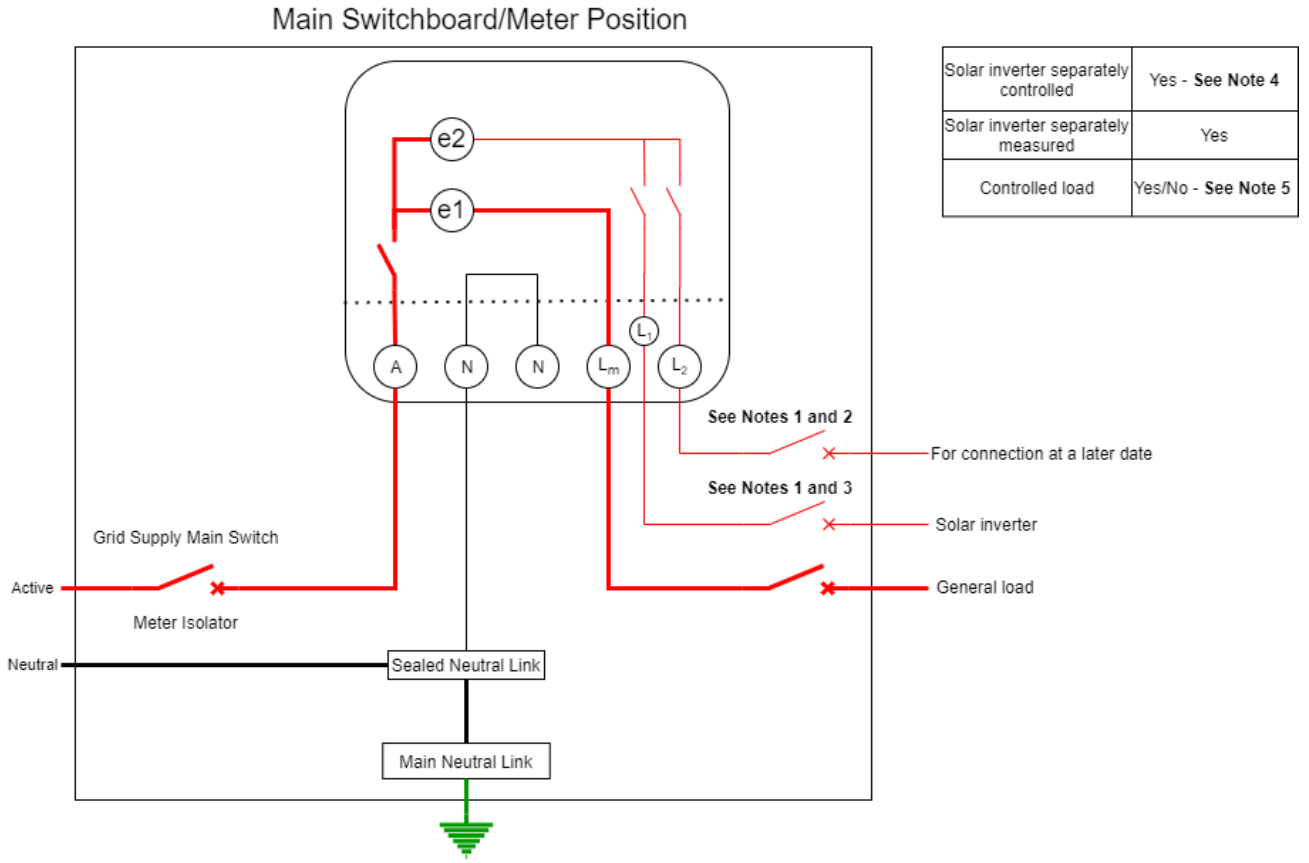
Solar inverter separately controlled	No
Solar inverter separately measured	No
Controlled load	Yes/No

Note 1: Metering element load terminal shall be provided with independent 'overload' protection in accordance with the Metering Coordinators/Providers requirements and AS/NZS 3000, except where the meter isolator circuit breaker provides the protection.

Note 2: If controlled load is not installed, the unused metering element load terminal may be pre-wired for example to a suitably identified/labelled circuit breaker, isolation switch or link, in accordance with the Metering Coordinators/Providers requirements.

7.2.2. Wiring Arrangement 9

Wiring Arrangement 9



Note 1: Metering element load terminal shall be provided with independent 'overload' protection in accordance with the Metering Coordinators/Providers requirements and AS/NZS 3000, except where the meter isolator circuit breaker provides the protection.

Note 2: An unused metering element load terminal may be pre-wired for example to a suitably identified/labelled circuit breaker, isolation switch or link, in accordance with the Metering Coordinators/Providers requirements.

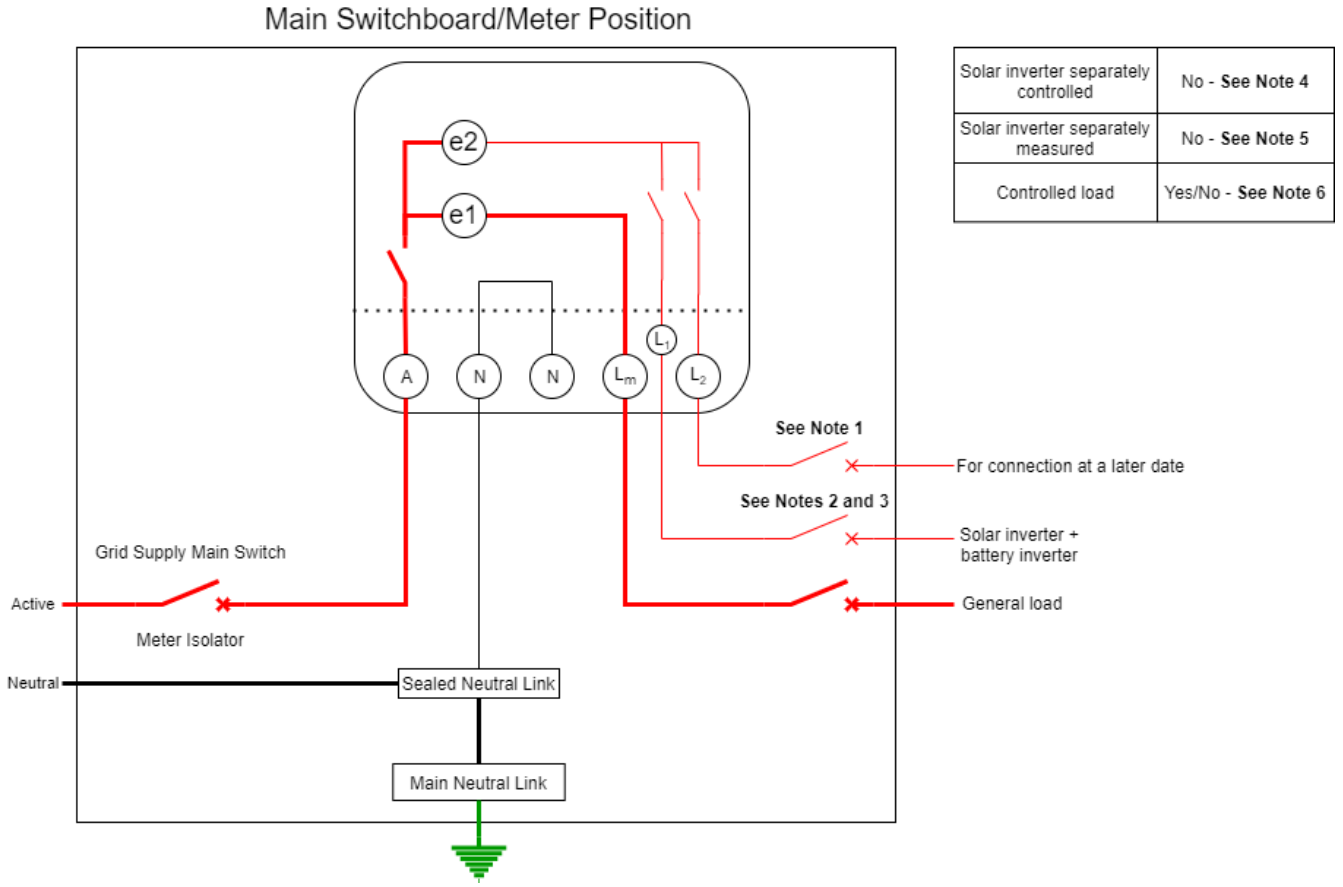
Note 3: The solar inverter nameplate output current capacity must not exceed the current rating of the metering element loadterminal.

Note 4: The solar inverter may be able to be controlled by the metering device for the purpose of remote disconnection and reconnection, in accordance with the Technical Regulator Guideline - Deemed Methodologies for Remote Disconnection and Reconnection of Electricity Generating Plants.

Note 5: A controlled load may or may not be able to be installed in this arrangement, depending on the network tariff structures and Metering Coordinators/Providers requirements.

7.2.3. Wiring Arrangement 10

Wiring Arrangement 10



Note 1: An unused metering element load terminal may be pre-wired for example to a suitably identified/labelled circuit breaker, isolation switch or link, in accordance with the Metering Coordinators/Providers requirements

Note 2: Metering element load terminal shall be provided with independent 'overload' protection in accordance with the Metering Coordinators/Providers requirements and AS/NZS 3000, except where the meter isolator circuit breaker provides the protection.

Note 3: The combined solar inverter and battery inverter nameplate output current capacity must not exceed the current rating of the metering element load terminal.

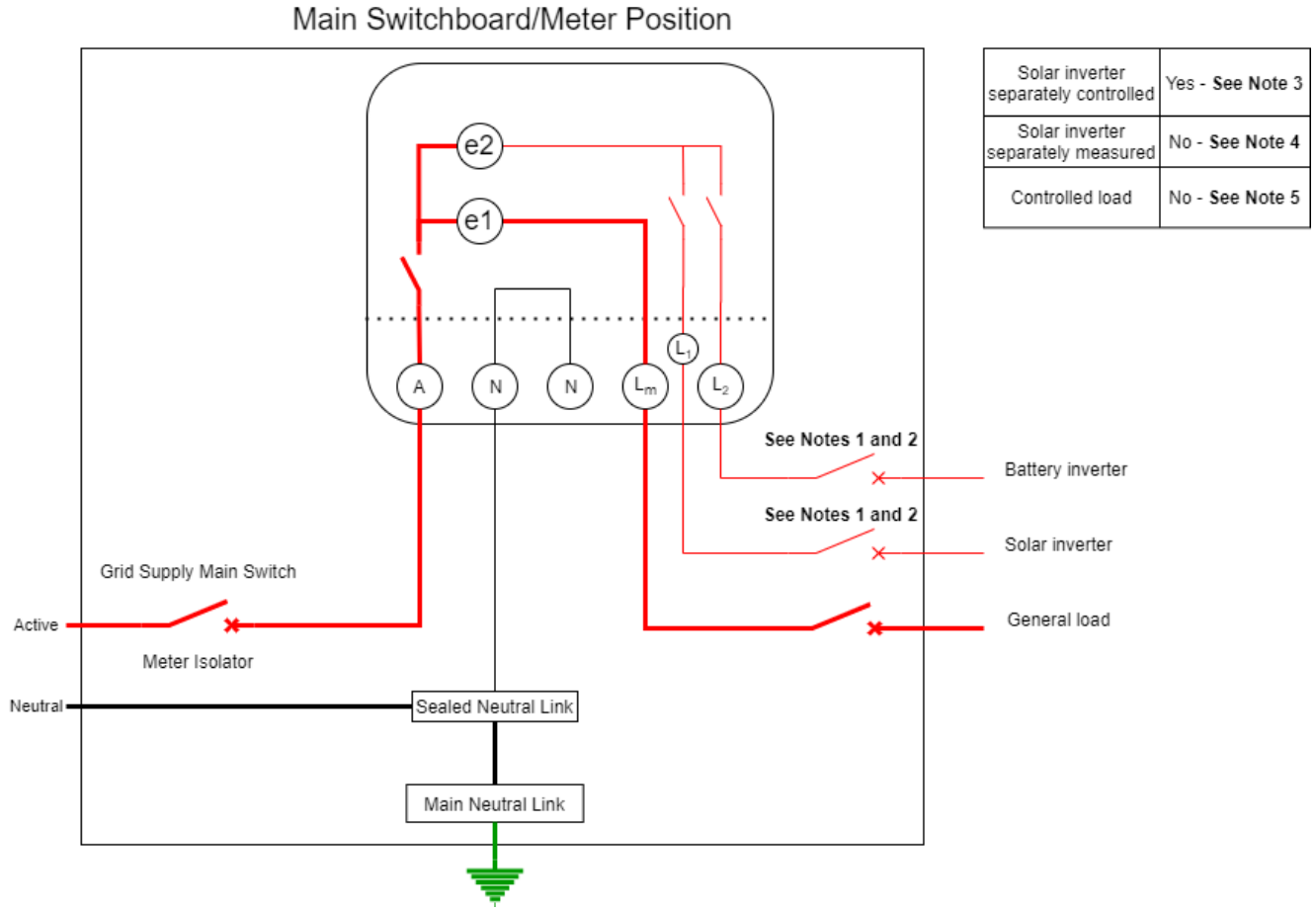
Note 4: The solar inverter may be able to be controlled by the metering device for the purpose of remote disconnection and reconnection, in accordance with the Technical Regulator Guideline - Deemed Methodologies for Remote Disconnection and Reconnection of Electricity Generating Plants.

Note 5: In this arrangement, the combined solar and battery inverter generation will be measured.

Note 6: A controlled load may or may not be able to be installed in this arrangement, depending on the network tariff structures and Metering Coordinators/Providers requirements.

7.2.4. Wiring Arrangement 11

Wiring Arrangement 11



Solar inverter separately controlled	Yes - **See Note 3**
Solar inverter separately measured	No - **See Note 4**
Controlled load	No - **See Note 5**

Note 1: Metering element load terminal shall be provided with independent 'overload' protection in accordance with the Metering Coordinators/Providers requirements and AS/NZS 3000, except where the meter isolator circuit breaker provides the protection.

Note 2: The inverter nameplate output current capacity must not exceed the current rating of the metering element load terminal.

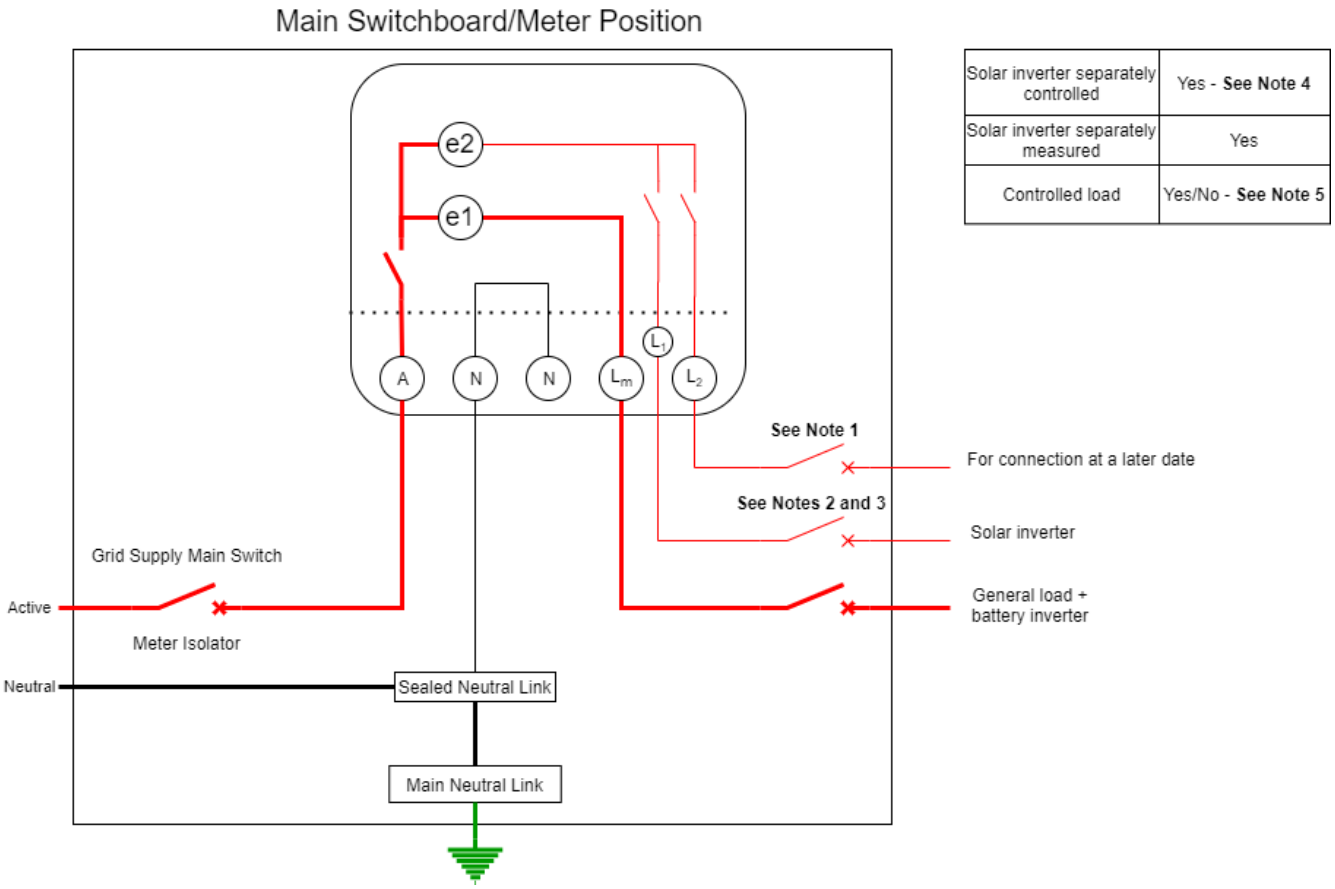
Note 3: The solar inverter may be able to be controlled by the metering device for the purpose of remote disconnection and reconnection, in accordance with the Technical Regulator Guideline - Deemed Methodologies for Remote Disconnection and Reconnection of Electricity Generating Plants.

Note 4: In this arrangement, the combined solar and battery inverter generation will be measured.

Note 5: The owner or occupier of the installation is not able to add a controlled load in this arrangement.

7.2.5. Wiring Arrangement 12

Wiring Arrangement 12



Solar inverter separately controlled	Yes - **See Note 4**
Solar inverter separately measured	Yes
Controlled load	Yes/No - **See Note 5**

Note 1: An unused metering element load terminal may be pre-wired for example to a suitably identified/labelled circuit breaker, isolation switch or link, in accordance with the Metering Coordinators/Providers requirements

Note 2: Metering element load terminal shall be provided with independent 'overload' protection in accordance with the Metering Coordinators/Providers requirements and AS/NZS 3000, except where the meter isolator circuit breaker provides the protection.

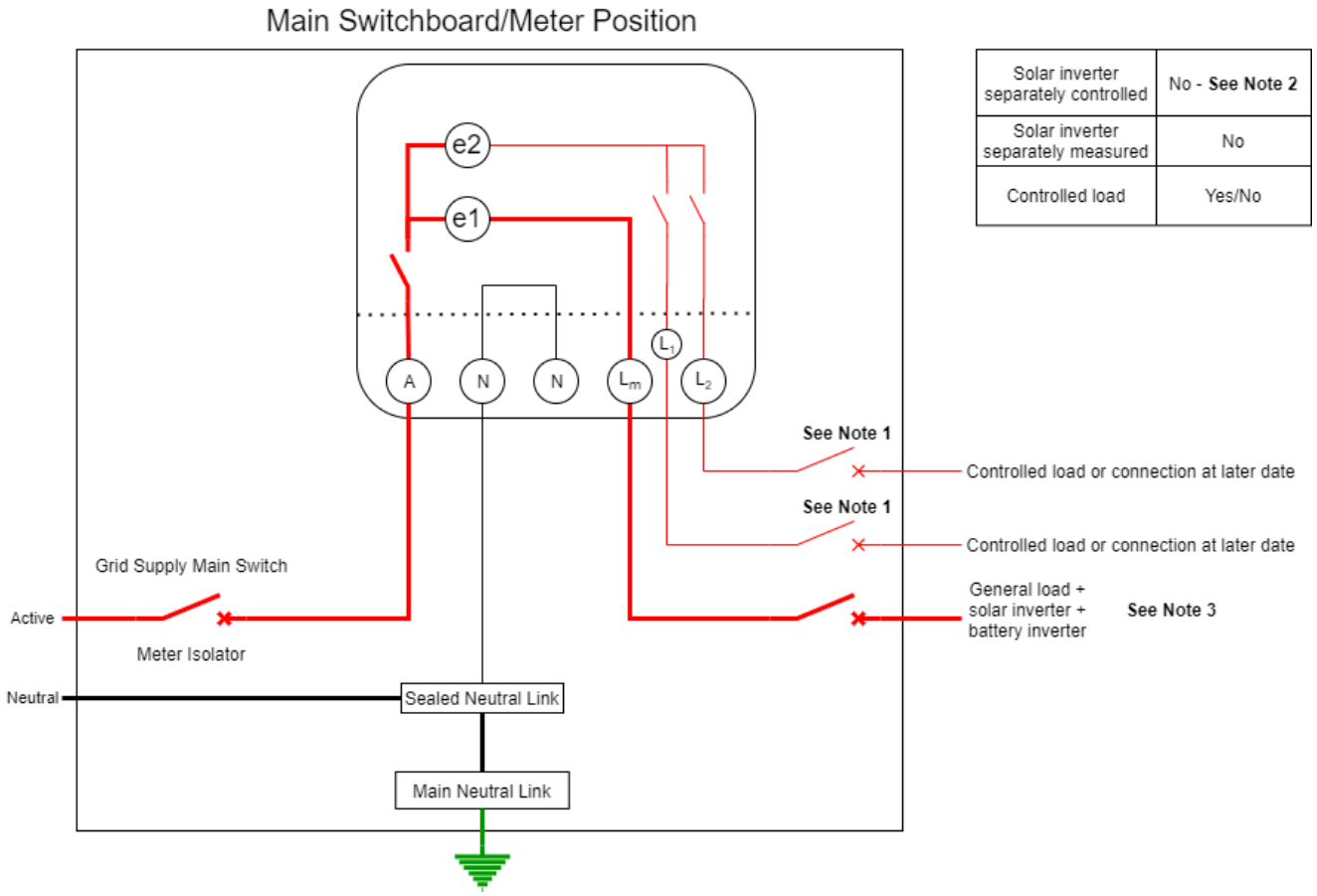
Note 3: The solar inverter nameplate output current capacity must not exceed the current rating of the metering element loadterminal.

Note 4: The solar inverter may be able to be controlled by the metering device for the purpose of remote disconnection and reconnection, in accordance with the Technical Regulator Guideline - Deemed Methodologies for Remote Disconnection and Reconnection of Electricity Generating Plants.

Note 5: A controlled load may or may not be able to be installed in this arrangement, depending on the network tariff structures and Metering Coordinators/Providers requirements.

7.2.6. Wiring Arrangement 13

Wiring Arrangement 13



Note 1: If controlled load is not installed, the unused metering element load terminal may be pre-wired for example to a suitably identified/labelled circuit breaker, isolation switch or link, in accordance with the Metering Coordinators/Providers requirements.

Note 2: The solar inverter may be able to be controlled by the metering device for the purpose of remote disconnection and reconnection, in accordance with the Technical Regulator Guideline - Deemed Methodologies for Remote Disconnection and Reconnection of Electricity Generating Plants.

Using the meter contactor for the disconnect / reconnection function in this arrangement, may result in disruption of electricity supply to the general load and/or triggering a battery inverter into back-up mode.

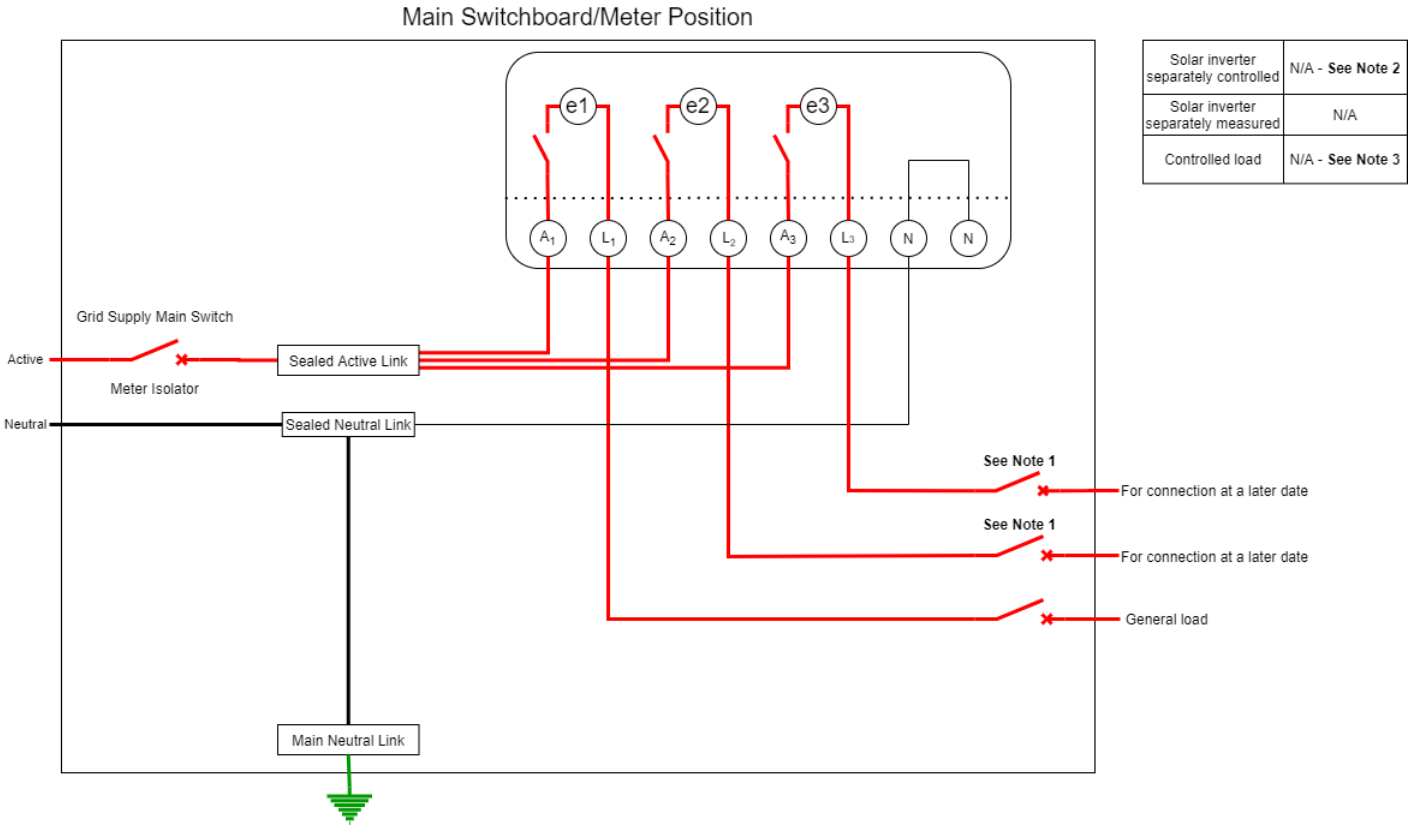
An alternate metering wiring arrangement or other method as described in the above-mentioned guideline may need to be utilised, to satisfy the installation owners requirements.

Note 3: The battery inverter may or may not provide back-up or stand-alone supply functionality.

7.3. 3 element, 3 contactor (Wiring Arrangements 14-19)

7.3.1. Wiring Arrangement 14

Wiring Arrangement 14

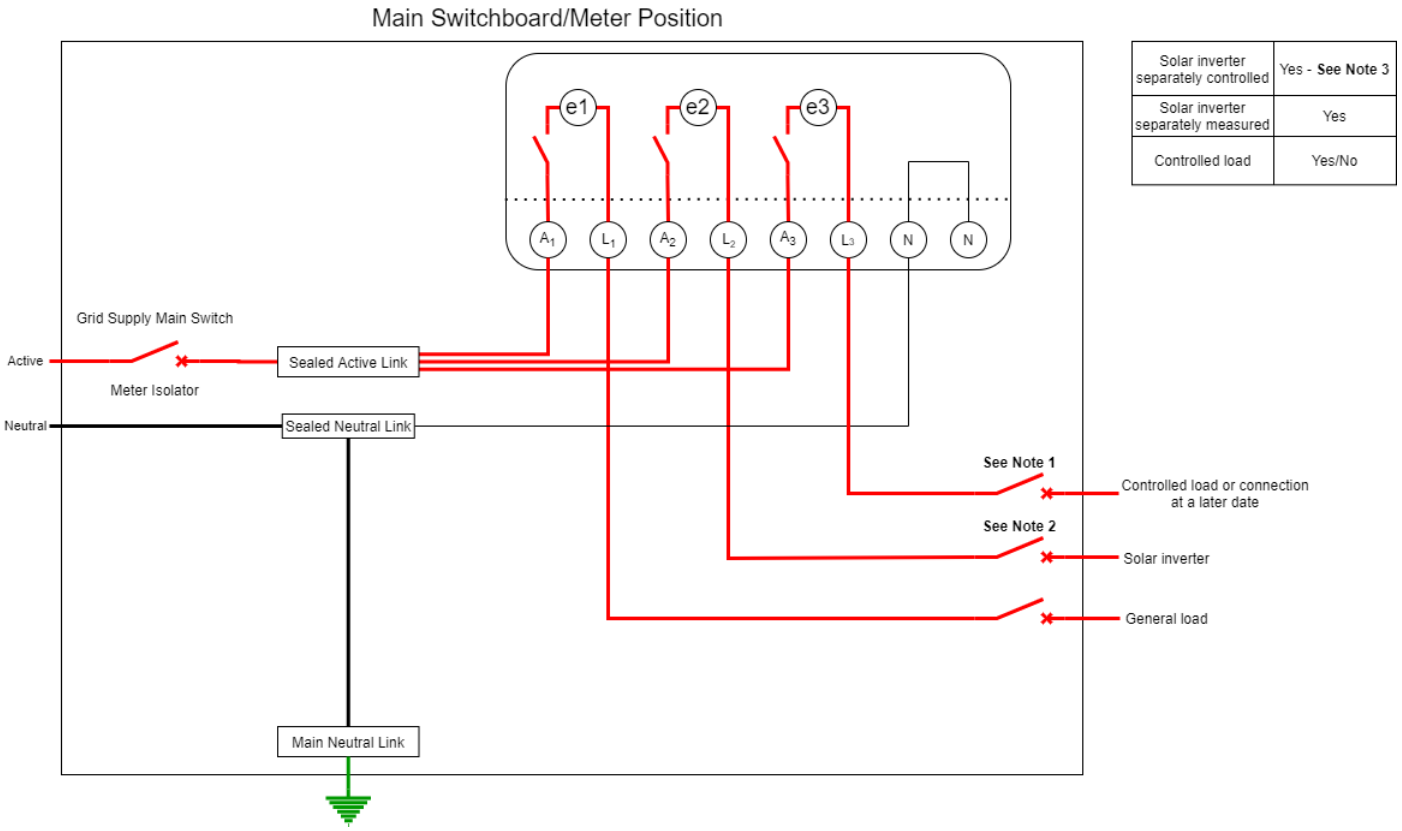


Note 1: An unused metering element load terminal may be pre-wired, for example, to a suitably identified/labelled circuit breaker, isolation switch or link, in accordance with the Metering Coordinators/Providers requirements

Note 2: A solar inverter can be later wired to a separate metering element. Note 3: Controlled load can be later wired to a separate metering element.

7.3.2. Wiring Arrangement 15

Wiring Arrangement 15



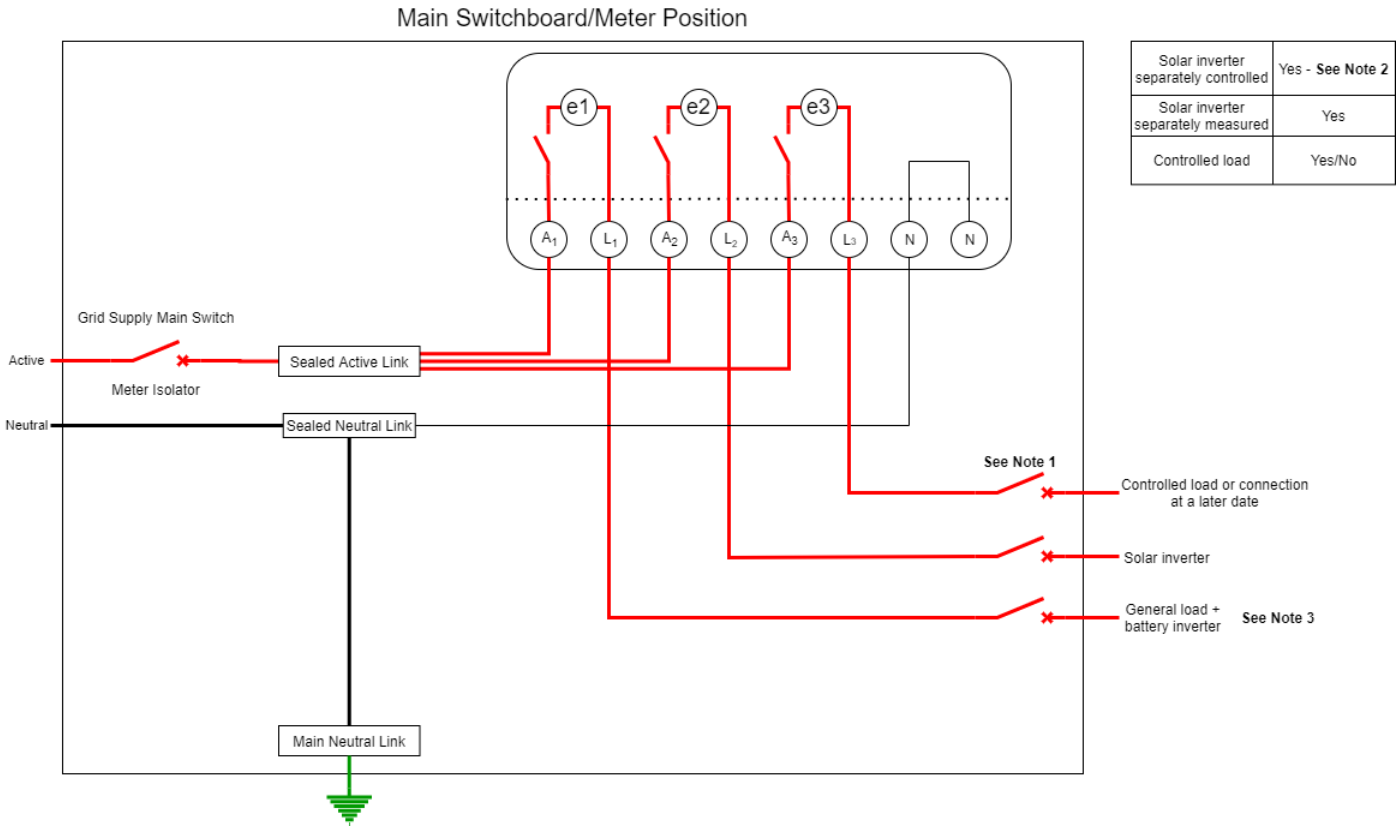
Note 1: If controlled load is not installed, the unused metering element load terminal may be pre-wired for example to a suitably identified/labelled circuit breaker, isolation switch or link, in accordance with the Metering Coordinators/Providers requirements.

Note 2: Metering element load terminal shall be provided with independent 'overload' protection in accordance with the Metering Coordinators/Providers requirements and AS/NZS 3000, except where the meter isolator circuit breaker provides the protection.

Note 3: The solar inverter may be able to be controlled by the metering device for the purpose of remote disconnection and reconnection, in accordance with the Technical Regulator Guideline - Deemed Methodologies for Remote Disconnection and Reconnection of Electricity Generating Plants.

7.3.3. Wiring Arrangement 16

Wiring Arrangement 16



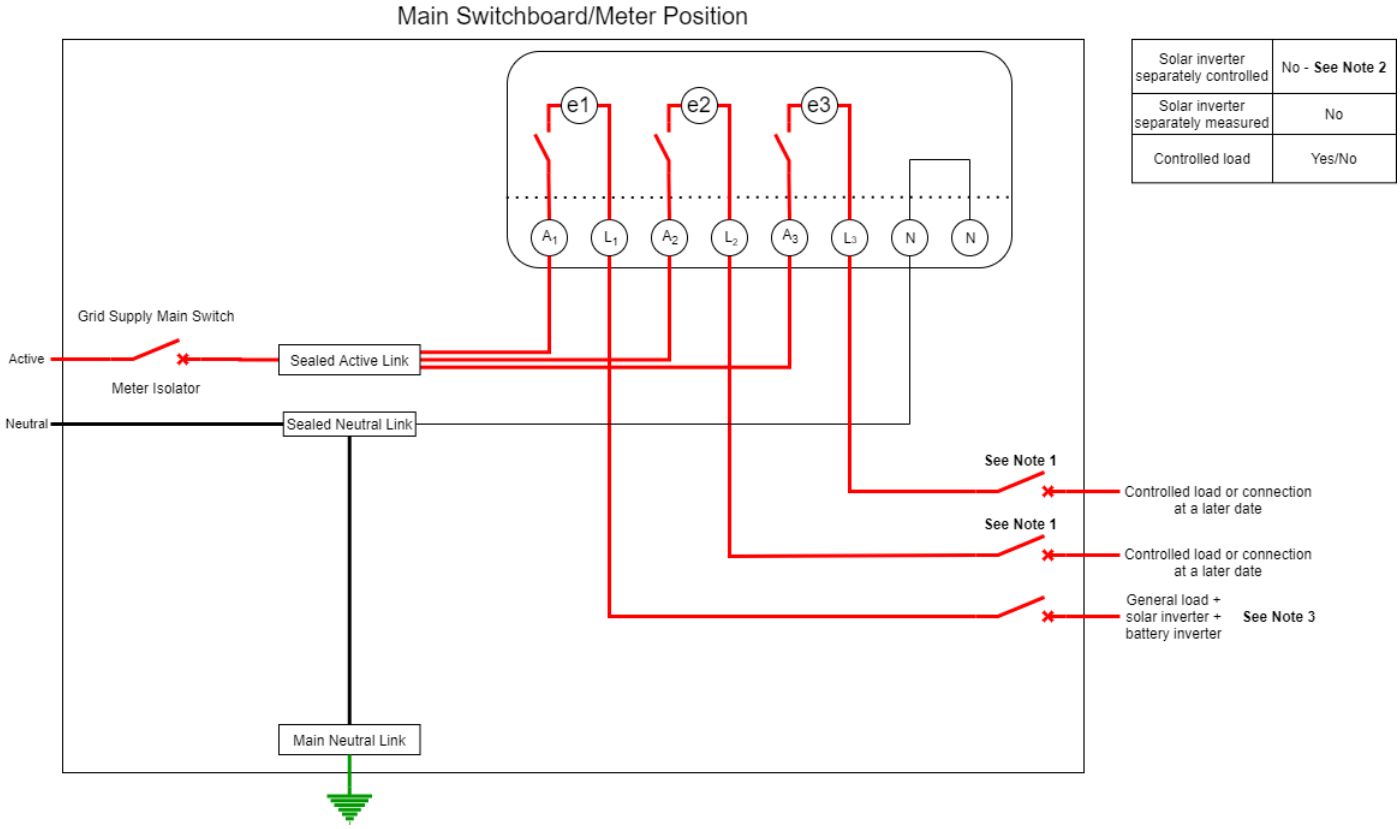
Note 1: If controlled load is not installed, the unused metering element load terminal may be pre-wired for example to a suitably identified/labelled circuit breaker, isolation switch or link, in accordance with the Metering Coordinators/Providers requirements.

Note 2: The solar inverter may be able to be controlled by the metering device for the purpose of remote disconnection and reconnection, in accordance with the Technical Regulator Guideline - Deemed Methodologies for Remote Disconnection and Reconnection of Electricity Generating Plants.

Note 3: The battery inverter may or may not provide back-up or stand-alone supply functionality.

7.3.4. Wiring Arrangement 17

Wiring Arrangement 17



Note 1: If controlled load is not installed, the unused metering element load terminal may be pre-wired for example to a suitably identified/labelled circuit breaker, isolation switch or link in accordance with the Metering Coordinators/Providers requirements.

Note 2: The solar inverter may be able to be controlled by the metering device for the purpose of remote disconnection and reconnection, in accordance with the Technical Regulator Guideline - Deemed Methodologies for Remote Disconnection and Reconnection of Electricity Generating Plants.

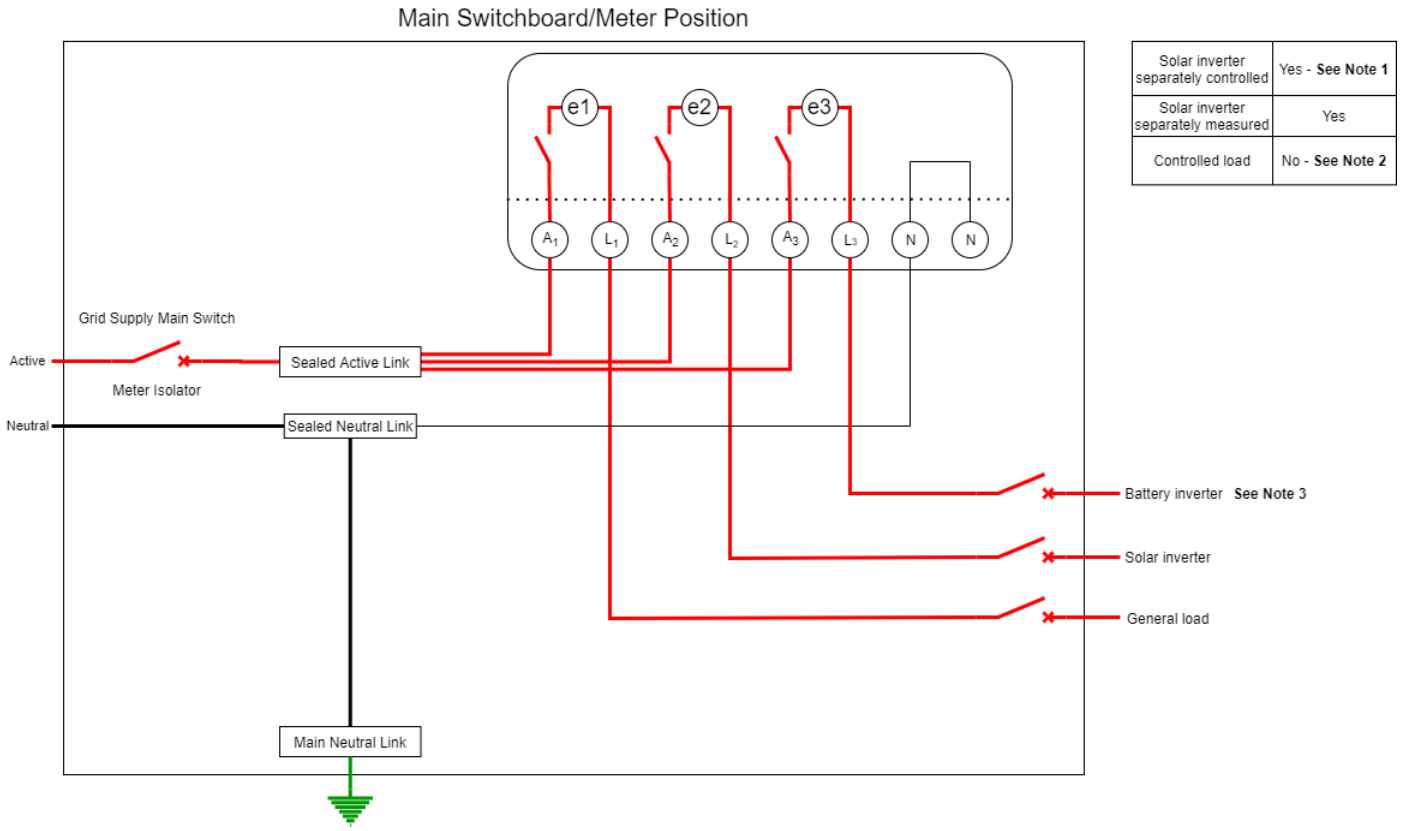
Using the meter contactor for the disconnect / reconnection function in this arrangement may result in disruption of electricity supply to the general load and/or triggering a battery inverter into back-up mode.

An alternate metering wiring arrangement or other method as described in the above-mentioned guideline may need to be utilised, to satisfy the installation owner's requirements.

Note 3: The battery inverter may or may not provide back-up or stand-alone supply functionality.

7.3.5. Wiring Arrangement 18

Wiring Arrangement 18

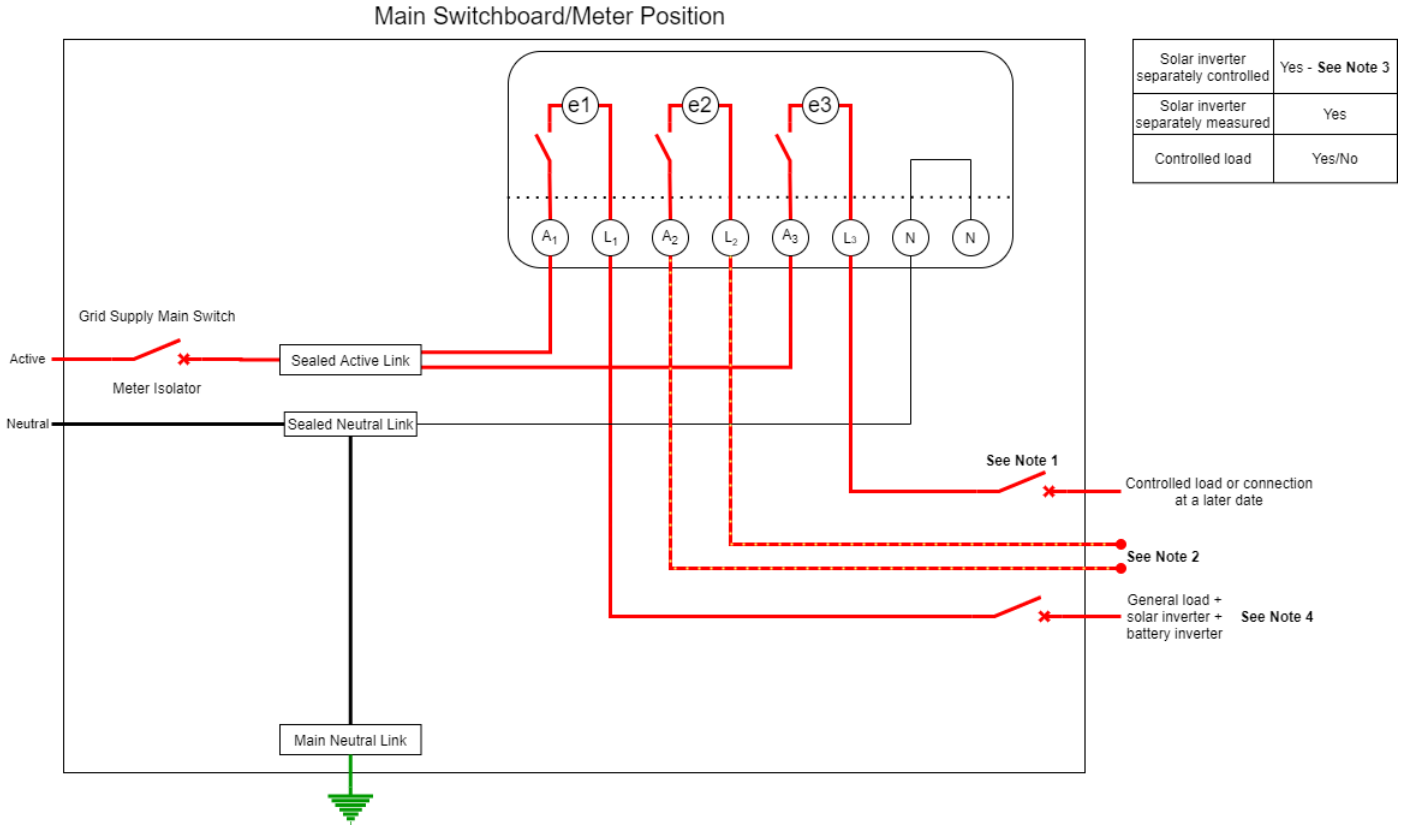


Note 1: The solar inverter may be able to be controlled by the metering device for the purpose of remote disconnection and reconnection, in accordance with the Technical Regulator Guideline - Deemed Methodologies for Remote Disconnection and Reconnection of Electricity Generating Plants.

Note 2: The owner or occupier of the installation is not able to add a controlled load in this arrangement.Note 3: Alternatively, the battery inverter could be connected with the 'general load'.

7.3.6. Wiring Arrangement 19

Wiring Arrangement 19



Note 1: If controlled load is not installed, the unused metering element load terminal may be pre-wired, for example, to a suitably identified/labelled circuit breaker, isolation switch or link in accordance with the Metering Coordinators/Providers requirements.

Note 2: This second element can be wired in series between the 'solar inverter main switch' and the 'solar inverter grid port', for the purpose of independent control and measurement of the solar inverter.

Note 3: The solar inverter may be able to be controlled by the metering device for the purpose of remote disconnection and reconnection, in accordance with the Technical Regulator Guideline - Deemed Methodologies for Remote Disconnection and Reconnection of Electricity Generating Plants.

Note 4: The battery inverter may or may not provide back-up or stand-alone supply functionality.

A. Appendix A - Additional Information for Metering Coordinators, Providers and Electrical Contractors

The following additional information is intended to supplement and clarify the intent and application of the requirements in the Technical Regulator Guideline - Smart Meter Minimum Technical Standard.

For further information regarding the regulatory changes for smarter homes please contact the Office of the Technical Regulator by calling (08) 8226 2108 (Monday to Friday, 9.00 am to 5.00 pm), or by emailing otr.smarterhomes@sa.gov.au

This appendix makes use of the following acronyms:

DCWA — Deemed to Comply Wiring Arrangement

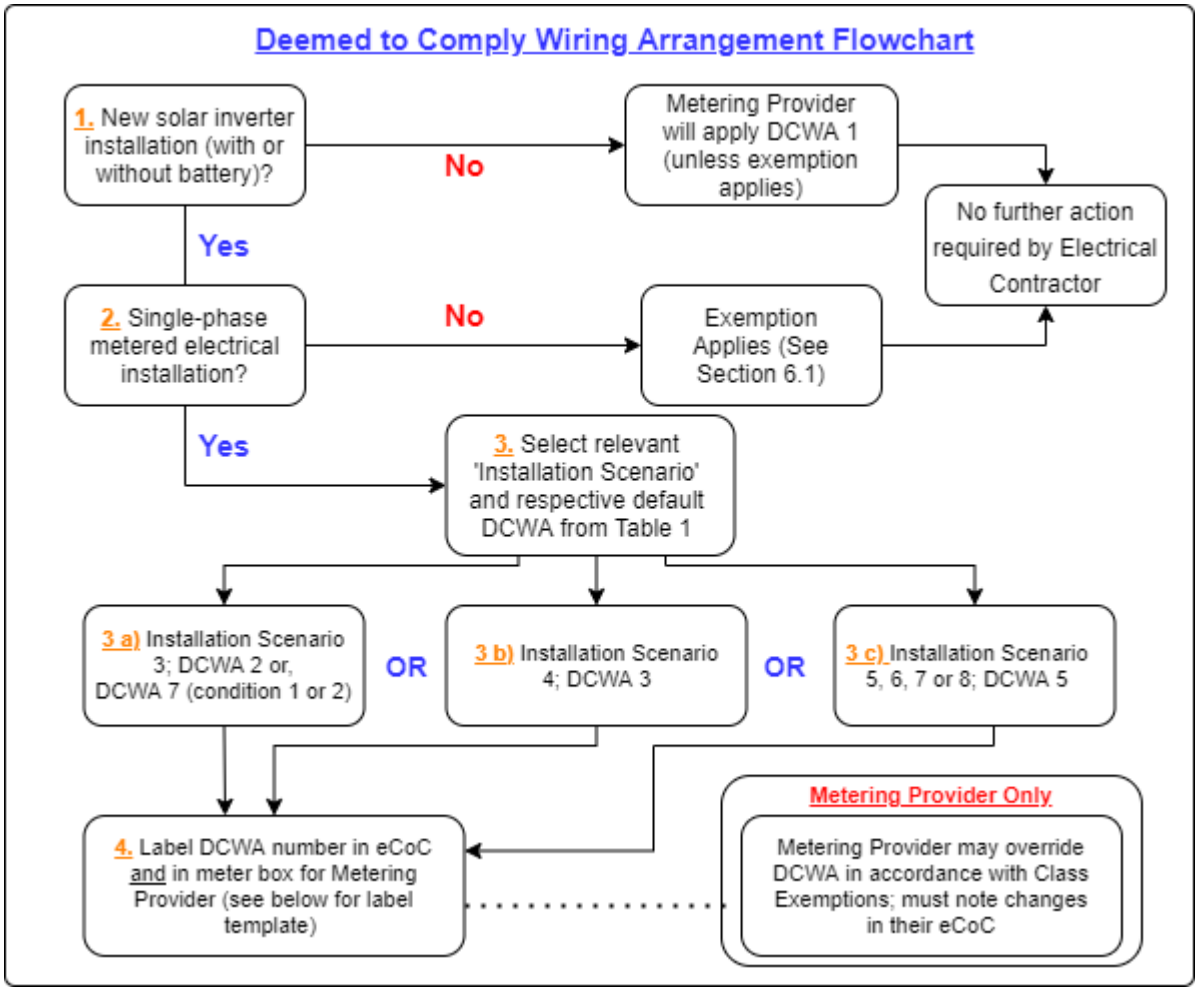
SMMT Standard — Technical Regulator Guideline – Smart Meter Minimum Technical Standard

This appendix provides additional information on the following:

- Deemed to Comply Wiring Arrangement quick reference flowchart
- Identifying the DCWA for the Metering Provider & Label Template
- Applicable DCWA where the Metering Provider is the relevant agent
- Meter upgrade or repair after 28 September 2020, where solar or battery was installed before 28 September 2020
- Installing a battery only inverter after 28 September 2020
- Where an inverter export limiting and / or monitoring device is installed by the Electrical Contractor
- New solar and battery inverter(s) installed after 28 September 2020
- Metering Providers / Coordinators — Smart meter contactor or relay requirements
- Solar inverter installed after 28 September 2020, where existing single element meter (installed prior to 28 September 2020) is ‘re-programmed’ by the Metering Provider
- Where a smart meter is not used for remote disconnect and reconnection requirement
- Solar inverter installed prior to 28 September 2020 is replaced due to failure / end of life
- Metering Providers technical support contact details
- SA Power Networks Meter Isolator requirement

a. Deemed to Comply Wiring Arrangement quick reference flowchart

The following flowchart is to summarize and provide quick reference to the overall general compliance requirements of the SMMT Standard for Electrical Contractors. Installation Scenarios can be found in Table 1



b. Identifying the DCWA for the Metering Provider & Label Template

Electrical Contractors must provide labelling within the meter board, to indicate which Default DCWA has been applied onsite as per Table 1, to ensure that the Metering Provider wires the meter correctly. Contractors should also provide their contact details for any potential meter installer queries. The following label template can be used:

OTR Deemed to Comply Wiring Arrangement ……	
Electrical Contractors name	
Phone number	
Email	

Metering Providers are offering two element meters by default, DCWAs 2, 3, 5 and 7 are available, depending on installation scenario (see Table 1, SMMT).

Some DCWAs may not be appropriate in certain installation scenarios, refer to all notes and conditions in the respective Wiring Arrangement.

If a 2 element 3 contactor or 3 element 3 contactor metering device is required, the Electrical Contractor will need to liaise with the customer's retailer or Metering Provider, to determine if such a device is available to ensure that the correct DCWA can be applied.

If the Metering Provider is not aware of which wiring arrangement has been utilized onsite, there is a risk that the meter wiring may be configured incorrectly and result in disruption or interference with any solar export monitoring / limiting function, battery charging, back-up supply arrangement etc.

c. Applicable DCWA where the Metering Provider is the relevant agent

When a new solar inverter is installed after 28 September 2020, and a Metering Provider is selected as the relevant agent for the purpose of the remote disconnect and reconnection requirement, it is important that the Electrical Contractor checks with the Metering Provider or retailer which DCWAs can be used. The Metering Provider may not offer all the meter types / variants as specified in Section 4 (DCWA), and may also stipulate the arrangements that must be used.

d. Meter upgrade or repair after 28 September 2020, where solar or battery was installed before 28 September 2020

These requirements apply when a new smart meter is installed at premises where an existing solar and / or battery inverter installation exists and that was installed prior to 28th September 2020.

Meter compliance requirement:

The new installed smart meter **is** required to comply with Section 4. SMMT Standard and associated DCWAs, i.e. minimum 2 elements and two contactors, except where a class exemption, in accordance with Section 6, applies.

Solar installation wiring requirement:

The existing solar and / or battery inverter installation **is not** required to comply with Section 5, the solar and / or battery inverter may remain connected to the main metering element, along with the general load. See Section 6.8 exemption.

Note to Metering Provider:

The Metering Provider **must not** alter or reconfigure the existing solar wiring. Reconfiguring the existing solar inverter circuit wiring to the 2nd / auxiliary metering element may disrupt or interfere with any solar export monitoring / limiting function, battery charging, back-up supply arrangement etc.

e. Installing a battery only inverter after 28 September 2020

Meter compliance requirement:

If a meter is 'installed / replaced', then compliance with the SMMT Standard and associated Default DCWAs **is** required, i.e. minimum 2 elements and two contactors, except where a class exemption, in accordance with Section 6, applies.

Battery installation wiring requirement:

Compliance with the SMMT Standard and associated DCWAs **is not** required.

f. Where an inverter export limiting and / or monitoring device is installed by the Electrical Contractor

Metering Providers need to be careful to avoid disrupting the sensing of any existing inverter export limiting and / or monitoring devices in circuit. This will create problems with the correct operation of the solar and / or battery system.

Metering Providers / installers:

Where the solar inverter circuit wiring is permitted to be connected to the 'main' metering element along with other general load (in accordance with the applicable Default DCWA), the metering installer **must not** shift or reconfigure the solar inverter circuit wiring to the 2nd / auxiliary metering element. In this scenario, relocating the solar inverter circuit to the 2nd / auxiliary metering element may disrupt or interfere with any solar export monitoring / limiting function, battery charging, back-up supply arrangement etc.

The Meter Provider can shift the solar circuit to the 2nd / auxiliary metering element where they can verify that it will not disrupt or interfere with the correct function of the solar and battery system.

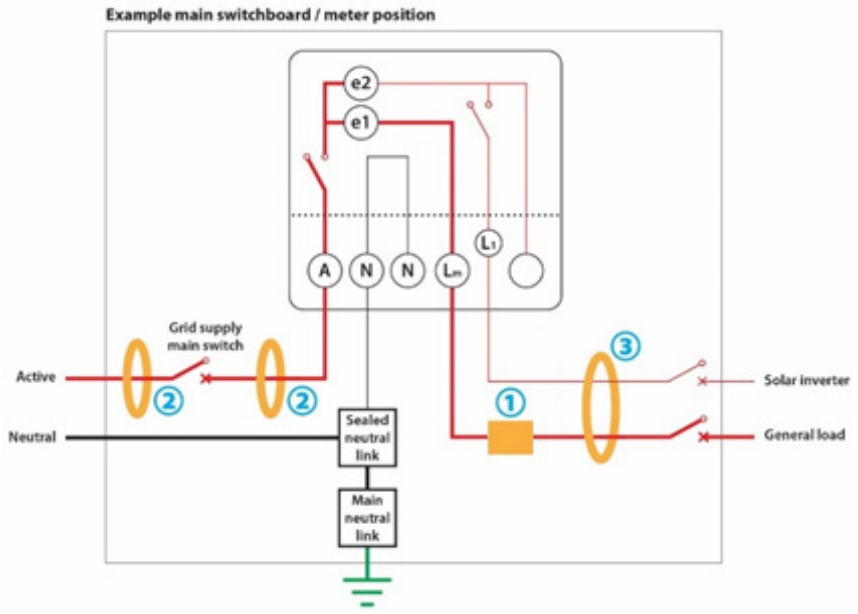
Electrical Contractors:

Where the solar inverter circuit wiring is intended, or required to be connected to the 2nd / auxiliary metering element in accordance with the applicable DCWA, any inverter export limiting and / or monitoring device must be configure appropriately for correct operation, this may include one of the following possible arrangements:

① Where export limiting / monitoring device is located in the general load path, and the device can be programmed to operate with the solar connected on the opposite side of the device; OR

② Export limiting / monitoring device 'CT' clamp may be located on the consumer mains active conductor prior to the revenue smart meter or meter isolator; OR

③ Export limiting / monitoring device 'CT' clamp is positioned over both active conductors connected to the 'main' and 2nd / auxiliary metering element load terminals



Note to Electrical Contractor: Export limiting / monitoring device arrangements vary upon different product manufacturer and model, and may be configured in numerous ways, some arrangements may or may not

work with a specific product. It is important to check with the manufacturer or product instructions on how to arrange the device correctly to accommodate the DCWA.

g. New solar and battery inverter(s) installed after 28 September 2020

Meter compliance requirement:

If a meter is 'installed / replaced', then compliance with the SMMT Standard and associated Default DCWAs is required, i.e. minimum 2 elements and two contactors, except where a class exemption, in accordance with Section 6, applies.

Solar and battery installation wiring requirement:

Compliance with the SMMT Standard and associated DCWAs **is** required.

Where a solar and battery inverter (single or multiple inverters) are installed onsite, the DCWAs permit the solar and battery inverter to be connected to the main metering element, along with the general load. This is to ensure that battery charging, and back-up supply arrangements are not impaired.

h. Metering Providers / Coordinators — Smart meter contactor or relay requirements

The smart meters depicted within the SMMT Standard and associated DCWAs are meant to represent an example of a compliant metering device, with integral contactors.

Alternate metering arrangements are permitted where the equivalent outcome is achieved, for example a metering device may have one integral contactor and a second external contactor, that is capable of being controlled by the metering device.

Where a metering device can control a second external contactor, there is no need to install or prewire the external contactor in the following circumstances:

- Where the remote disconnect and reconnection requirement is satisfied by alternate means e.g. API, 4G, Wi-Fi, ethernet or web-based control solution. In this case the solar may be connected to the 2nd / auxiliary element via an 'un-switched' metering terminal, in accordance with the Default DCWAs in Table 1. **NOTE: The intent is to still capture the solar generation data through the 2nd / auxiliary metering element where possible.**
- Where there is no controlled load, solar or battery inverter installed at the installation; the external contactor may be required to be installed and utilised at a later date.

i. Solar inverter installed after 28 September 2020, where existing single element meter (installed prior to 28 September 2020) is 're-programmed' by the Metering Provider

A new solar inverter is installed, and the existing single element meter is re-programmed (where permitted under relevant metering rules / legislation) to measure solar generation:

Meter compliance requirement:

Compliance with the SMMT Standard and associated DCWAs **is not** required as a metering device has not been 'installed'.

Solar installation wiring requirement:

The Electrical Contractor should always prepare the new solar inverter wiring as per the Default DCWAs in Table 1, particularly if they do not know whether the Metering Provider will reprogram the existing single element meter.

The solar inverter **must still** comply with the remote disconnect and reconnection and voltage ride through requirements.

j. Where a smart meter is not used for remote disconnect and reconnection requirement

These requirements apply when a new solar inverter installation occurs after 28 September 2020:

Meter compliance requirement:

If a meter is 'installed / replaced', then compliance with the SMMT Standard and associated DCWAs **is** required, i.e. minimum 2 elements and two contactors, except where a class exemption, in accordance with Section 6, applies.

Solar installation wiring requirement:

Where the remote disconnect and reconnection requirement is satisfied by alternate means e.g. API, 4G, Wi-Fi, ethernet or web based control solution in accordance with the relevant agent, the solar installation wiring **is** still required to be installed in accordance with the Default DCWAs in Table 1.

The intent is to still capture the solar generation data through the 2nd / auxiliary metering element where possible; There are exemptions in accordance with Section 6. or the selected DCWA.

k. Solar inverter installed prior to 28 September 2020 is replaced due to failure / end of life

Meter compliance requirement:

If a meter is 'installed / replaced', then compliance with the SMMT Standard and associated DCWAs **is** required, i.e. minimum 2 elements and two contactors, except where a class exemption, in accordance with Section 6, applies.

Solar installation wiring requirement:

Compliance with the SMMT Standard and associated DCWAs **is not** required, as this is considered a repair to an existing solar electrical installation.

The replacement inverter is a declared component, and is required to comply with the remote disconnect and reconnection and voltage ride through requirements.

NOTE: Inverters repaired or replaced under warranty are exempt.

l. Metering Providers technical support contact details

PLUS ES	**Ph.** 1300 760 626 **Email:** SASmarterHomes@pluses.com.au
Intellihub / Acumen metering	**Ph.** 1800 263 837 – Option 1 **Email:** customercare@intellihub.com.au
Vector metering	**Contact:** Grant McCallum **Ph.** 0436 030 722 **Email:** grant.mccallum@vectormetering.com
Spotless Advanced Metering	**Contact:** Justin Stute **Ph.** 0499 775 583 **Email:** justin.stute@spotless.com.au
Your Energy Saving Solutions	**Ph.** 1300 894 745 **Email:** smartmetering@yess.net.au

m. SA Power Networks Meter Isolator requirement

Meter isolators are required to be installed in new electrical installations and are typically required to be retrofitted in existing electrical installations when a solar system is installed, there may be exemptions in accordance with the SA Power Networks Service & Installation Rules.

For further information or enquiries regarding the installation of meter isolators, contact SA Power Networks.

B. Appendix B – Definitions

DCWA

Deemed to Comply Wiring Arrangement

eCoC

electronic Certificate of Compliance

Shall

Indicates a statement is mandatory

Should

Indicates a recommendation

SMMT Standard

Technical Regulator Guideline – Smart Meter Minimum Technical Standard