



Grid-Connected PV Systems Design and Installation

Revisions to the Grid-Connected PV Systems: Design and
Installation Australian Edition Version 8.8 Publication

Following is the summary of changes to the information within Grid-Connected PV Systems Design and Installation Australian Edition Version 8.8, December 2020. Please note that the changes in this document are subject to alterations in newer editions. While all care has been taken to ensure this document is free from omission and error, no responsibility can be taken for the use of this information in the design or installation of any grid-connected PV system.

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Keywords

Addition: Adding an additional paragraph.

Replacement: To entirely replace something.

Extension: To add an additional sentence/s onto the end of a sentence or paragraph.

Amendment: To modify sections of a paragraph or sentence either by quote or by reviewing the referenced text.

Removal: To remove something altogether.

Chapter 13

1. Section 13.2.2 - Sub-array Overcurrent Protection

Amendment to Requirements of Sub-array Overcurrent Protection:

Sub-array overcurrent protection protects a sub-array made up of a group of strings. It is required if **more than two sub-arrays are present within the array.**

Addition:

AUSTRALIAN STANDARDS

According to **AS/NZS 5033:2014** Clause 3.3.5.2.2, when $1.25 \times I_{SC_ARRAY}$ is less than the CCC of every sub-array cable, switching and connection device, sub-array overcurrent protection is not required for small arrays.

Chapter 14

2. Section 14.1.2 - Voltage Drop and CSA

Removal for V_c equation:

L = Route length (in m). **For PV cables, the I_{SC} current (at STC) should be used.**

3. Section 14.1.3 - Cable Routes and Length

Replacement of Figure 14.2:

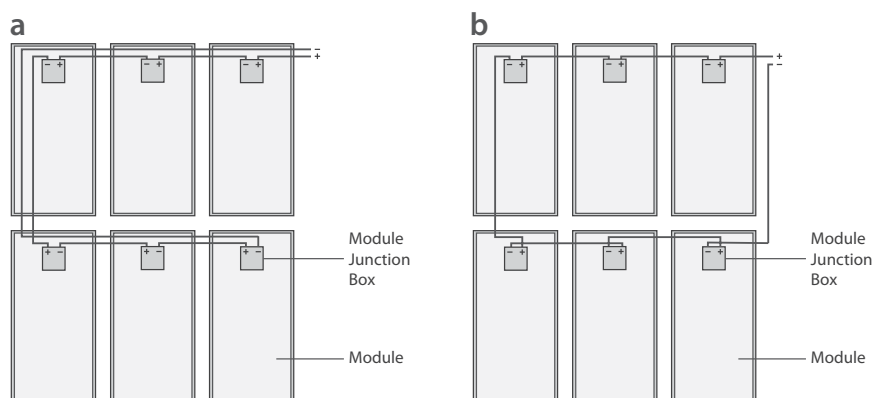


Figure 14.2: a) PV string cable with minimised inductive loop area. b) PV string cable that has an inductive loop. This should be avoided.

4. Section 14.2.1 - String Cables

Amendment to Calculating the Required CCC:

If string overcurrent protection will not be installed:

If there is only one string in the whole array, the string cable should be rated to carry the short circuit current of the string, with a safety margin:

$$CCC = 1.25 \times I_{SC\ MOD}$$

If there is more than one string in the array, the string cable should be able to carry the combined short-circuit currents from the other strings (with safety margin) as well as any current able to pass through downstream overcurrent protection.

5. Section 15.2.4 - Sizing the PV array for a Certain Yield

Amendment to Example:

$$\begin{aligned} \text{Size of array (kWp)} &= \frac{120 \text{ kWh}}{(4.018 \text{ kWh/m}^2 \times 0.737) \text{ per kW/m}^2} \\ &= \frac{120 \text{ kWh}}{2.96 \text{ kWh/kW}} \\ &= 40.5 \text{ kWp} \end{aligned}$$