



Installation and commissioning

General

These check lists are to be filled out for each installation.

WARNING: Where short circuit currents are required, follow AS/NZS 5033 Appendix D for the steps that shall be undertaken to measure the short circuit current safely.

NOTE: Some projects require that short circuit currents are recorded as part of the contractual commissioning; otherwise a record of the actual operating current of each string is sufficient. This could be done by using the meter on the inverter or by using a clamp meter when the system is operational.

Insulation resistance measurement

WARNING: PV array dc circuits are live during daylight and, unlike a conventional ac circuit, cannot be isolated before performing this test. Follow AS/NZS 5033 Appendix D4 for the steps that shall be undertaken to measure the insulation resistance safely.

Installation and commissioning sample

See

Appendix 1 **Checks and Certification**

Appendix 2 **Signage**

Appendix 3 **Insulation**

Appendix 1 Checks and Certification

INSTALLATION DETAILS			
Address of installation:			
PV module manufacturer and model number:			
Number of modules in series in a string:		Number of strings in parallel in PV array:	
Inverter manufacturer and model number:			
Number of inverters:		Number of MPPTs:	
PV ARRAY			
PV array tilt °	PV array orientation °
Array frame is certified to AS1170.2 for installation location	Yes / No	Array frame is installed to manufacturer's instructions	Yes / No
No galvanically dissimilar metals are in contact with the array frames or supports	Yes / No	Roof penetrations are suitably sealed and weatherproofed	Yes / No
PV wiring losses are less than 3% at the maximum current output of the array	Yes / No	Where PV array comprises multiple strings, string protection has been provided	Yes / No
Wiring is protected from mechanical damage and is appropriately supported	Yes / No	Weatherproof PV array isolator mounted adjacent to the array	Yes / No
LV DC and AC INSTALLATION			
All low voltage wiring has been installed by a licensed electrical tradesperson	Yes / No	All wiring has been tested and approved by qualified electrical tradesperson	Yes / No
INVERTER			
PV array isolator mounted adjacent to the inverter	Yes / No (Rating.....VAdc)	Isolator is mounted on output of the inverter (where required)	Yes / No
Lockable AC circuit breaker mounted within the switchboard to act as the inverter main switch for the PV/inverter system	Yes / No (Rating A)	Inverter is installed as per manufacturer's specification	Yes / No
Inverter ceases supplying power within two seconds of a loss of AC mains	Yes / No	Inverter does not resume supplying power until mains have been present for more than 60 seconds.	Yes / No

CONTINUITY CHECK

Circuit checked (record a description of the circuit checked in this column)	_____ Yes / No
Continuity of all string, sub-array and array cables	Yes / No
Continuity of all earth connections (including module frame)	Yes / No

SYSTEM CHECK

WARNING:

- IF A STRING IS REVERSED AND CONNECTED TO OTHERS, FIRE MAY RESULT.
- IF POLARITY IS REVERSED AT THE INVERTER DAMAGE MAY OCCUR TO THE INVERTER.

	Polarity	Voltage	Short Circuit Current	Operating Current
String 1		V	A	A
String 2		V	A	A
String 3		V	A	A
String 4		V	A	A
Sub-arrays where required		V	A	A
PV array at PV array switch-disconnector		V	A	A
Irradiance at time of recording the current			W/m ²	W/m ²

INSULATION RESISTANCE MEASUREMENTS**(see table 12.3.1 for minimum values of insulation resistance)**

Array positive to earth	_____ MΩ
Array negative to earth	_____ MΩ



INSTALLER INFORMATION


CEC Accredited installer's name:	_____
CEC Accreditation number:	_____

I verify that the above system has been installed to all relevant standards

Signed:	_____	Date:	_____
CEC Accredited Designer's name:	_____		
Licensed electrician's name: (where applicable, e.g. LV work)	_____		
Electrician's licence number:	_____		
Signed:	_____	Date:	_____

Appendix 2 Signage

SIGNAGE (AS4777)			
<p style="text-align: center;">WARNING</p> <p style="text-align: center;">DUAL SUPPLY</p> <p style="text-align: center;">ISOLATE BOTH NORMAL AND SOLAR SUPPLIES BEFORE WORKING ON THIS SWITCHBOARD</p>		On switchboard to which inverter is directly connected	Yes / No
<p style="text-align: center;">NORMAL SUPPLY MAIN SWITCH</p>		is permanently fixed at the main switch	Yes / No
<p style="text-align: center;">SOLAR SUPPLY MAIN SWITCH</p>		is permanently fixed at the solar main switch	Yes / No
<p style="text-align: center;">WARNING</p> <p style="text-align: center;">DUAL SUPPLY</p> <p style="text-align: center;">ISOLATE SOLAR SUPPLY AT DISTRIBUTION BOARD DB01</p>		If the solar system is connected to a distribution board then the following sign is located on main switchboard and all intermediate distribution boards	Yes / No
<p style="text-align: center;">INVERTER LOCATION</p> <p style="text-align: center;">_____</p>		Where the inverter is not adjacent to the main switchboard, location information is provided	Yes / No
SIGNAGE (AS/NZS 5033)			
 <p style="text-align: center;">WARNING HAZARDOUS D.C. VOLTAGE</p>		Is permanently fixed on array junction boxes (black on yellow)	Yes / No
<p style="text-align: center;">SOLAR ARRAY ON ROOF</p> <p style="text-align: center;">Open Circuit Voltage _____V</p> <p style="text-align: center;">Short Circuit Current _____A</p>		Fire emergency information is permanently fixed on the main switchboard and/or meter box (if not installed together)	Yes / No
<p style="text-align: center;">PV ARRAY D.C. ISOLATOR</p>		PV DC isolation is clearly identified	Yes / No

 <p>WARNING MULTIPLE D.C. SOURCES TURN OFF ALL D.C. ISOLATORS TO ISOLATE EQUIPMENT</p>		Is placed adjacent to the inverter when multiple isolation/ disconnection devices are used that are not ganged together	Yes / No
SOLAR		Exterior surface of wiring enclosures labelled 'SOLAR'	Yes / No
Shutdown procedure is permanently fixed at inverter and/or on main switchboard		Any other signage as required by the local electricity distributor	Yes / No

Appendix 3 Insulation

Minimum insulation resistance

System voltage (Vdc x1.25)	Test Voltage	Minimum insulation resistance MΩ
<120	250	0.5
120-500	500	1
>500	1000	1