



AS/NZS 4777.2:2020 Technical Information

STP 110-60

Contents

1	Disclaimer.....	3
2	Scope	4
3	Firmware Update	5
3.1	Procedure.....	6
3.1.1	Required Equipment.....	6
3.1.1.1	Connecting via Ethernet.....	6
3.1.1.2	Updating Firmware	7
4	Commissioning Inverter	9
4.1	Via Web Browser	10
4.1.1	Selection of Country Standard.....	10
5	Checking of Country Settings and Firmware	11
5.1	Via WebUI.....	11
5.1.1	Checking the Country Standard:.....	11
5.1.2	Checking Firmware version:	12
6	Demand Response Modes (DRM).....	13
6.1	Commissioning STP 110-60 with DRM Support	13
6.2	Connecting to the STP 110-60 DRM Interface	14
6.3	DRM Modes	15
6.4	DRM Labelling	15
7	Earth Fault Alarm	16
7.1	Sunny Portal Remote Alarm Setup	16

1 Disclaimer

Every attempt has been made to make this document complete, accurate and up-to-date. However, readers are cautioned that changes to local regulations or product improvements may cause SMA Australia to make changes to this document without advance notice. SMA Australia shall not be responsible for any damages, including indirect, incidental, or consequential damages, caused by reliance on the material presented, including, but not limited to, omissions, typographical errors, arithmetical errors or listing errors in the content material.

It is therefore recommended that you always check for the latest version prior to following the instructions in this document.

2 Scope

This document is intended to cover the following SMA models:

Inverter model
STP 110-60

Table 1: In Scope Inverters

As of December 18th, 2021, all inverters installed in Australia must comply with one of the pre-set region setting sets described in AS/NZS 4777.2:2020.

1. Australia A
2. Australia B
3. Australia C

All three region sets contain the default Power Quality, Volt-Watt, Volt-Var, Frequency/Voltage Response and grid protection settings. Should you require advice or changes to protection settings, please reach out to SMA technical support for assistance.

The following inverters have not been tested to AS/NZS 4777.2:2020 for multiple phase combinations:
STP 110-60

3 Firmware Update

NOTE: For installations from December 18, 2021, connect the DC supply only when commissioning the inverter until the inverter has the minimum firmware required.

Please refer to **Table 2** for applicable devices and minimum firmware versions. We recommend using the latest firmware from the SMA Australia [website](#) if it is newer than the one listed below.

Inverter model	Minimum firmware
STP110-60	1.00.12.R

Table 2: Minimum Firmware Requirements

3.1 Procedure

3.1.1 Required Equipment

- a. Laptop with Ethernet port and a Web Browser (eg. Chrome, Firefox, Edge).
 - i. Internet access onsite is not required if Firmware is downloaded prior to site visit.

3.1.1.1 Connecting via Ethernet

- a. Connect your laptop to the inverter's Ethernet port.
- b. Open a Web Browser and enter in the IP address **169.254.12.3**.

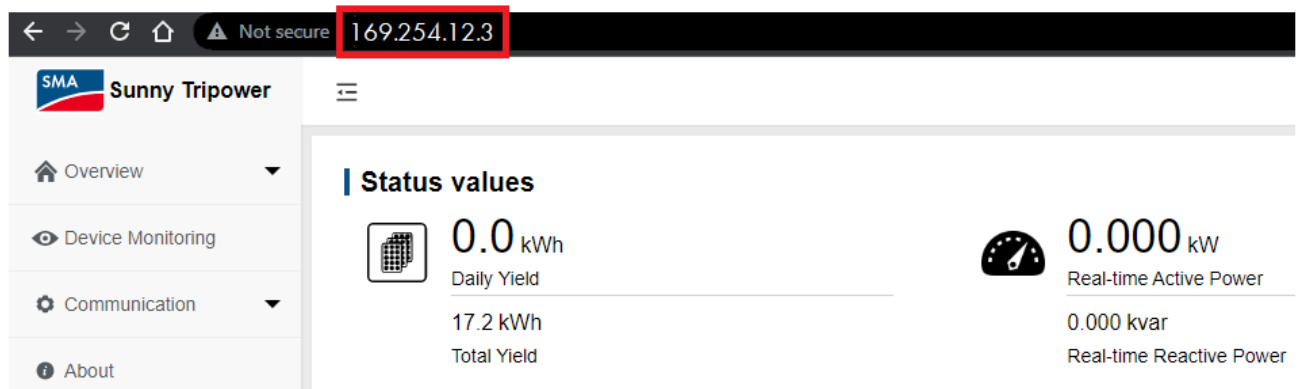


Image 1: Direct Ethernet Login Menu

- c. Refer to [3.1.1.2](#) to complete the update.

3.1.1.2 Updating Firmware

- a. Login as an installer.
 - i. If this is the first time logging in, please use PW1111, this can be changed after commissioning.

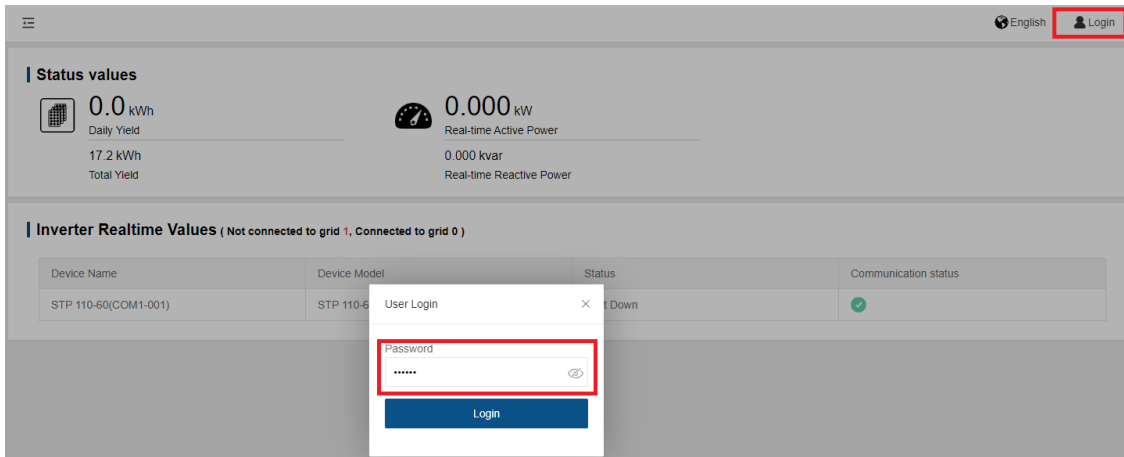


Image 2: Login Screen

- b. Once logged in as the installer, navigate to the **Device** via the side menu.
 - i. Under Device, click on **Firmware Update**.
 - ii. Click on **Select a Firmware File**.
 - iii. Select inverter to update via checkbox.
 - iv. Click on **Update** to start update process.

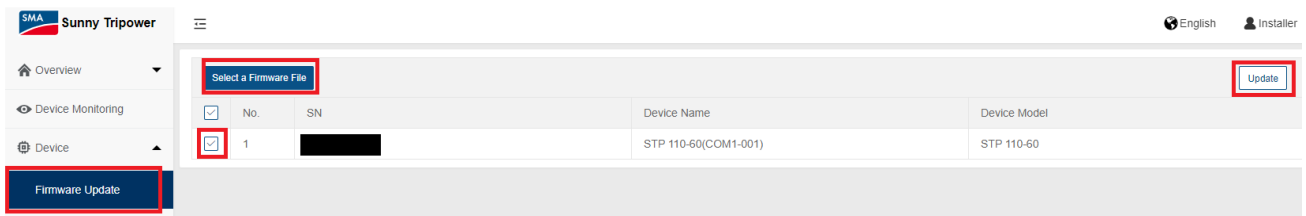


Image 3: Update the Firmware

Note:

Depending on the firmware, the update process will take some time to complete. During this time, the file will be uploaded from your laptop to the inverter. When the update is completed, the inverter will restart. If the computer does not automatically reconnect to the inverter, refresh the webpage or follow [Section 3.1.1.1](#) on how to reconnect to the inverter.

To verify the update was completed successfully, follow [Section 5.1.2](#) on how to check the installed firmware.

Select a Firmware File						
No.	Device Name	Module Name	Start Time	End Time	Update Progress	Updating Result
1	STP 110-60(COM1-001)	LCD	2022-07-04 13:38:09	2022-07-04 13:40:06	<div style="width: 100%;"><div style="width: 100%;"></div></div> 100%	Update Successful
2		SDSP	2022-07-04 13:40:10	2022-07-04 13:41:42	<div style="width: 100%;"><div style="width: 100%;"></div></div> 100%	Update Successful
3		MDSP	2022-07-04 13:41:46	2022-07-04 13:43:13	<div style="width: 100%;"><div style="width: 100%;"></div></div> 100%	Update Successful
4		PVD	2022-07-04 13:43:15	2022-07-04 13:43:58	<div style="width: 100%;"><div style="width: 100%;"></div></div> 100%	Update Successful
5		CPLD	2022-07-04 13:44:00	2022-07-04 13:44:42	<div style="width: 100%;"><div style="width: 100%;"></div></div> 100%	Update Successful

After system updating, please confirm the connection status of the network and refresh the page

02:52

Image 4: Update Completed Message

4 Commissioning Inverter

Commissioning the inverter can be done by:

- a. Web browser – for all Laptops with Ethernet port.

DNSP	Country Standard
Ausgrid Ausnet Citipower Endeavour Energy Energex Ergon Essential Energy Evoenergy Jemena SA Power Networks Ausgrid PowerCor United Energy	AS/NZS 4777.2:2020 A
Western Power	AS/NZS 4777.2:2020 B
Horizon Power TasNetworks	AS/NZS 4777.2:2020 C
New Zealand DNSPs	AS/NZS 4777.2:2020 NZS*

Table 3: Country Standard Based on DNSP

* Refer to connection agreement with DNSP for applicable settings.

4.1 Via Web Browser

Follow steps in **Section 3.1.1.1** on how to connect to the inverter via Ethernet.

4.1.1 Selection of Country Standard

1. Login to the inverter as an installer.
2. Navigate to the menu > **Device Monitoring** > **Grid Code Settings**
3. In the dropdown menu, select the country code from [Table 3](#) for correct country standard to be selected.
4. Make sure to click on **Save Settings** and for the inverter to confirm that the parameter has been set.

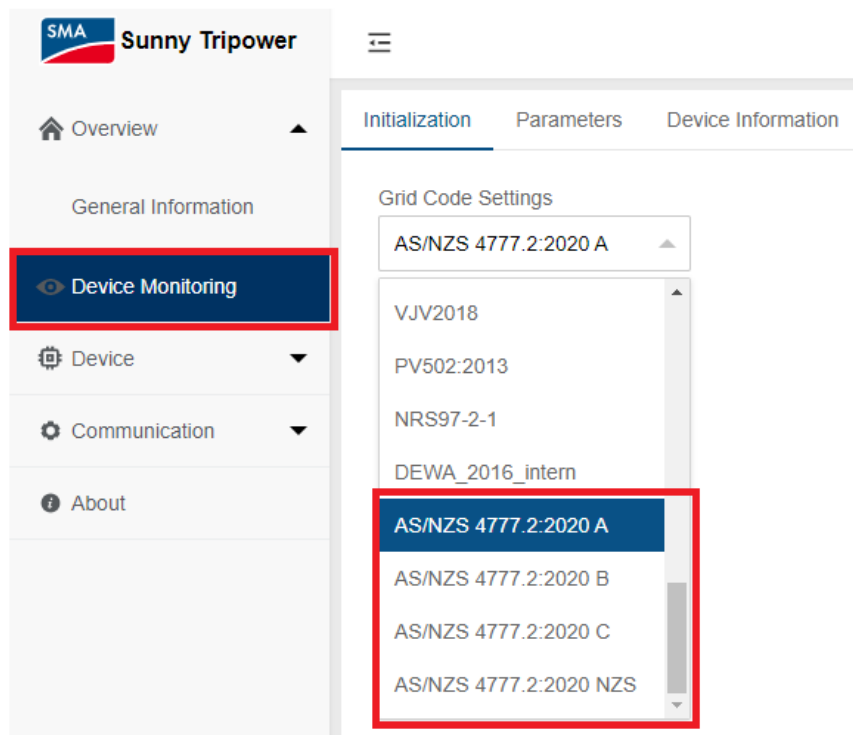


Image 5: Selection of Country Standard

5 Checking of Country Settings and Firmware

The following method can be used to verify that the Country Standard and Firmware are correct.

- a. WebUI of the inverter
 - i. Via Web Browser

5.1 Via WebUI

Connect to the inverter's WebUI:

Follow steps in [Section 3.1.1.1](#) on how to connect to the inverter via ethernet.

5.1.1 Checking the Country Standard:

Click on **Device Monitoring > Grid Code Settings**, currently set country standard will be shown.

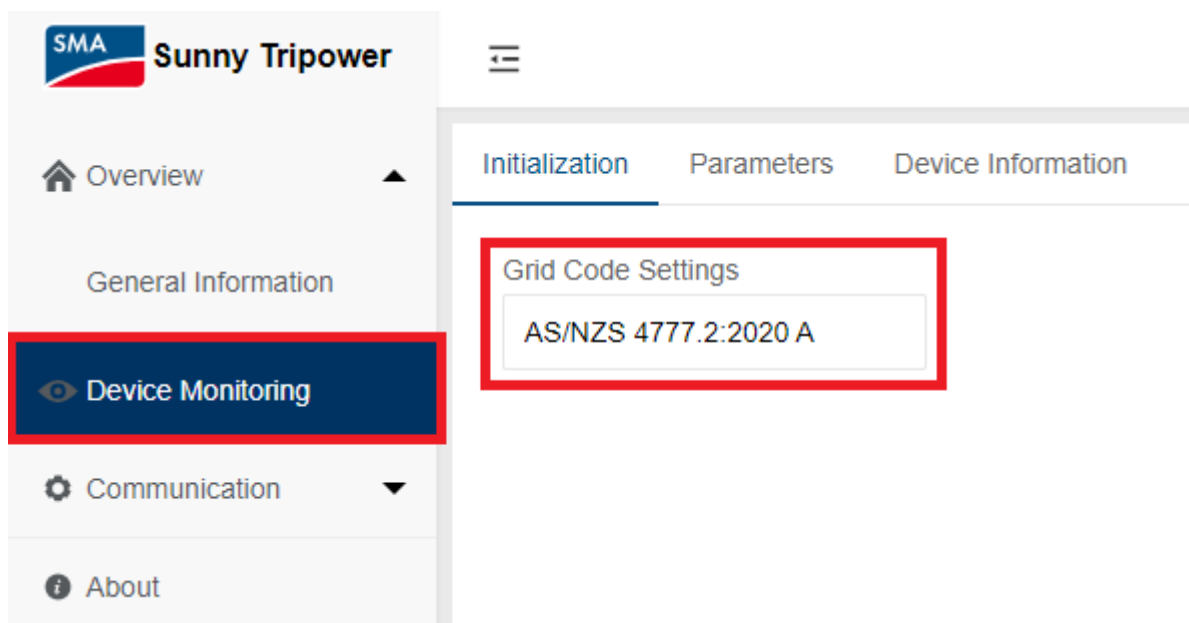


Image 6: Checking of Country Standard

5.1.2 Checking Firmware version:

Click on the **About** section. This will then display a page listing the installed firmware version.

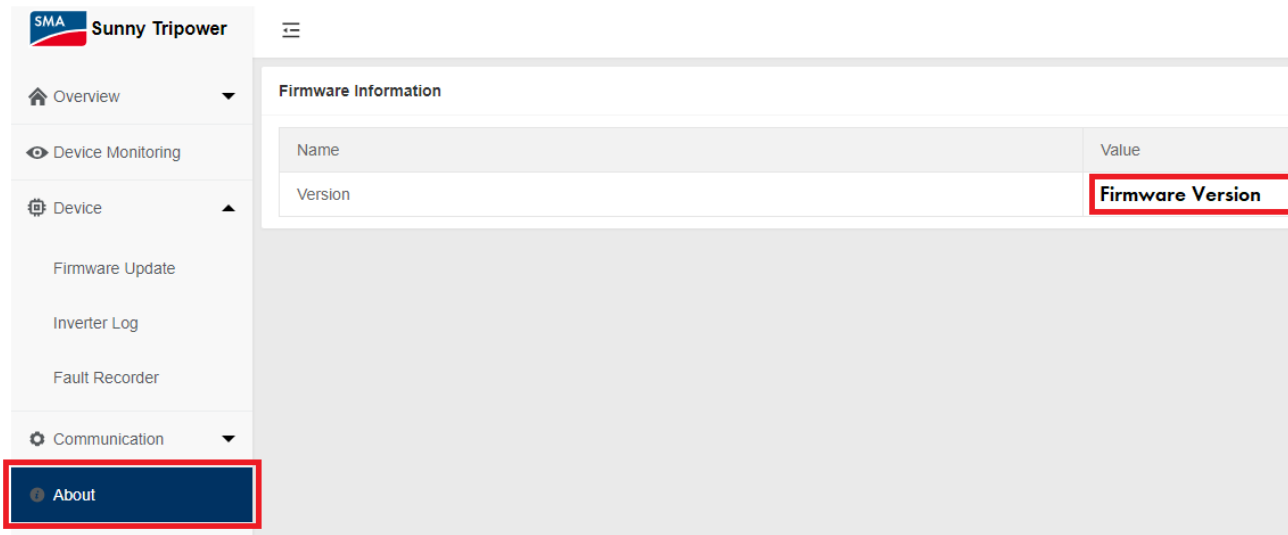


Image 7: Checking Firmware version

6 Demand Response Modes (DRM)

STP 110-60 supports DRM0 in accordance with AS/NZ 4777.2:2020.

DRM0 (Operate the disconnection device) is asserted by the inverter when:

- pin 5 and pin 6 of the DRM interface are shorted, or
- impedance measured between pin 5 and pin 6 exceeds 20k Ω .

6.1 Commissioning STP 110-60 with DRM Support

The DRM interface is only active when the function is enabled through the inverter's User Interface. To enable DRM functionality:

1. Establish connection to the inverter's User Interface via Ethernet connection. For more information, please see the Operating Manual.
2. Select **Login** and type the password "pw8888".
3. Select **Device Monitoring** from the left side menu.
4. Select the **Parameters** tab and then select the subcategory **Extended Model 2-1 RW**.

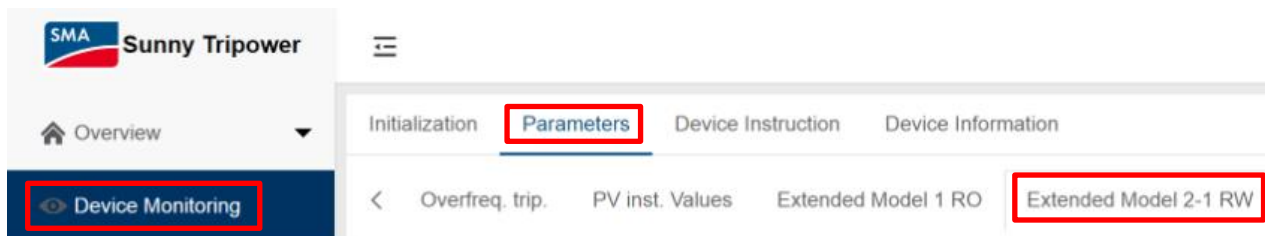


Image 8: Navigation to Enable DRM

5. Set parameter **DRMEna** to "On".

6.2 Connecting to the STP 110-60 DRM Interface

The DRM interface of the STP 110-60 is located on the main communications board, shown in **Image 11**.

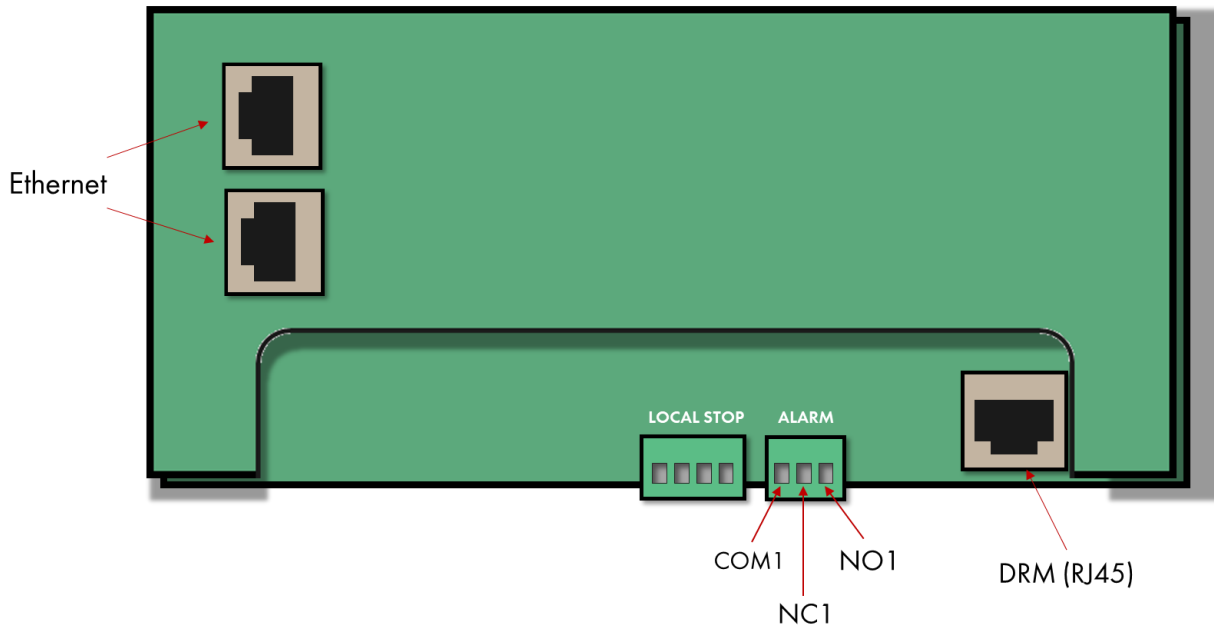


Image 9: STP110-60, Communication board

The interface is a standard RJ45 plug with the following pin assignment:

Pin #	Colour	Assigned DRM function
1	White & Orange	DRM 1/5
2	Orange	DRM 2/6
3	White & Green	DRM 3/7
4	Blue	DRM 4/8
5	White & Blue	RefGen
6	Green	COM/DRM 0
7	White & Brown	V+
8	Brown	V-

Table 4: Pin Assignment

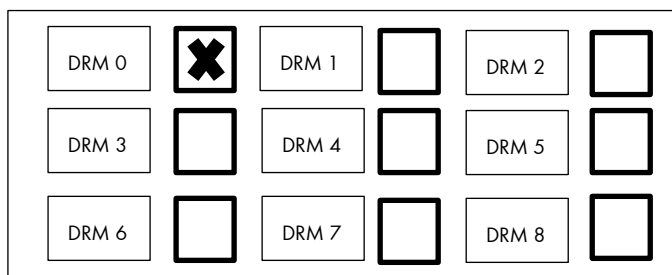
6.3 DRM Modes

Currently DRM0 is the only DRM mode available for the following inverter models:

STP 110-60

6.4 DRM Labelling

The following DRM mode label is required.



Example DRM Mode Label

7 Earth Fault Alarm

The inverter detects earth faults by the measurement of insulation resistance between the DC side and ground prior to operation, and residual current during operation. Earth faults (and other faults) trigger the inverter's earth fault alarm. **Table 8** is a summary of these alarms.

Inverter model	Visual LED on Inverter	Audible alarm	Remote Alarm
STP 110-60	Yes	No	Optional via Sunny Portal (requires Data Manager M)

Table 5: Earth Fault Alarm

7.1 Sunny Portal Remote Alarm Setup

The inverter's Earth Fault Alarm can be configured once the plant is registered in Sunny Portal. In the event of an earth fault, a report with the corresponding events will be emailed to nominated addresses. A report will then be sent every hour until the earth fault is acknowledged in Sunny Portal or cleared.

For instructions on how to register your plant in Sunny Portal, please refer to the respective Sunny Portal User Manual for your plant:

- Webconnect (no communication devices): [User Manual - Webconnect Systems in SUNNY PORTAL \(sma.de\)](#)

Once your plant is registered in Sunny Portal, continue to set up the Earth Fault Alarm using the following instructions:

1. Login to your Sunny Portal account.

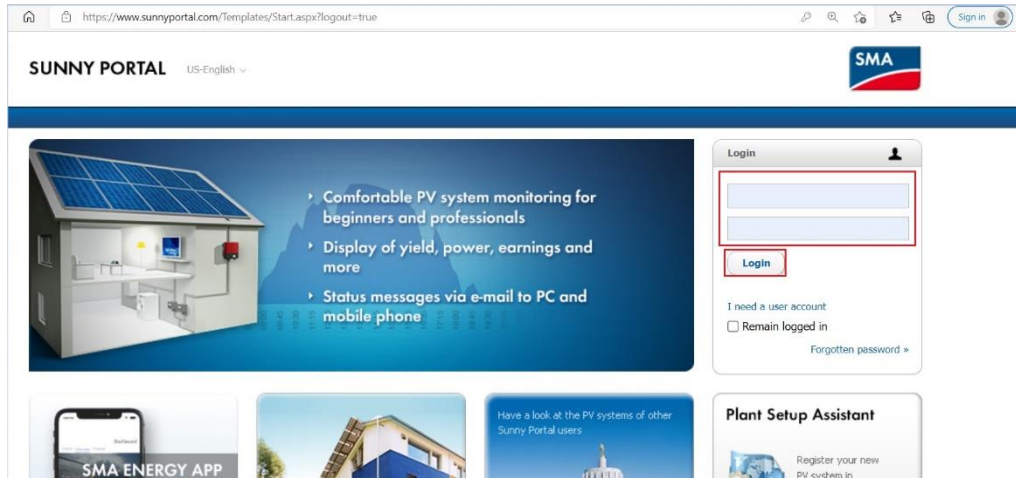


Image 10: Sunny Portal Login

2. Expand the **Configuration** tab and select **Report Configuration**.

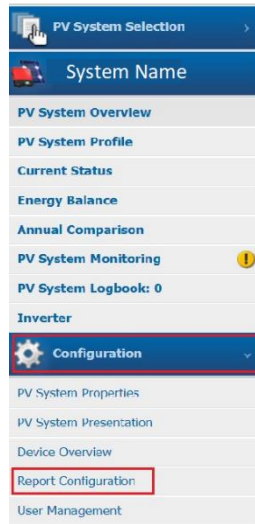


Image 11: Report Configuration

- Expand the drop-down menu at the top of the page and select the option **Event report for errors in accordance with the standard**.

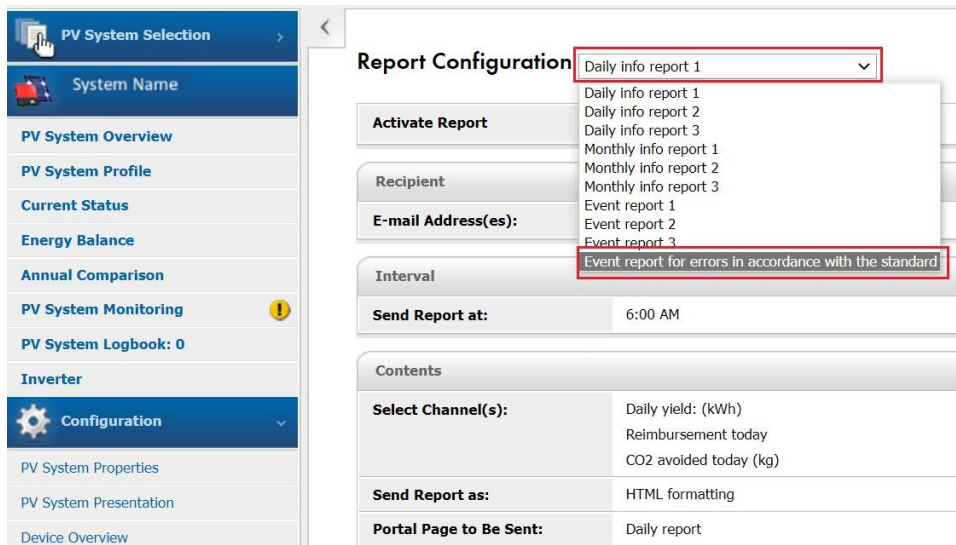


Image 12: Event Report Selection

- Ensure the drop-down menu at the top of the page now reads **Event report for errors in accordance with the standard**. Now click **Edit** at the bottom of the page.

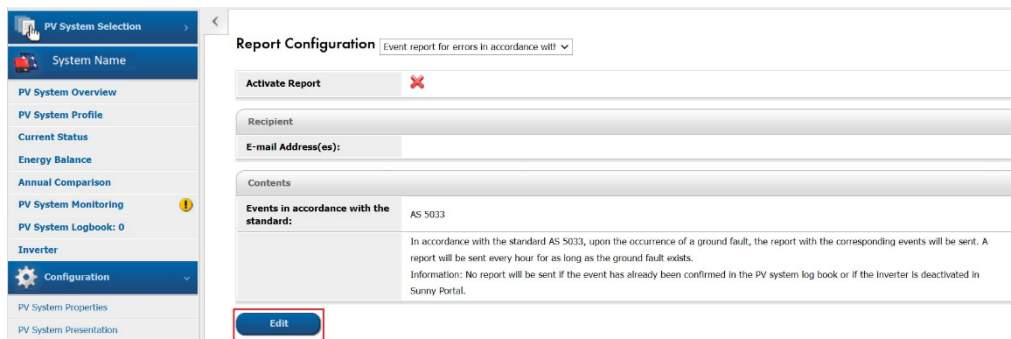


Image 13: Editing Report function

- Next to **Active**, tick the box to activate the report. Under the heading **Recipient**, enter in your email address. Under **Contents**, ensure that **AS 5033** is selected from the drop-down menu. At the bottom of the page, click **Save** once all parameters have been changed.

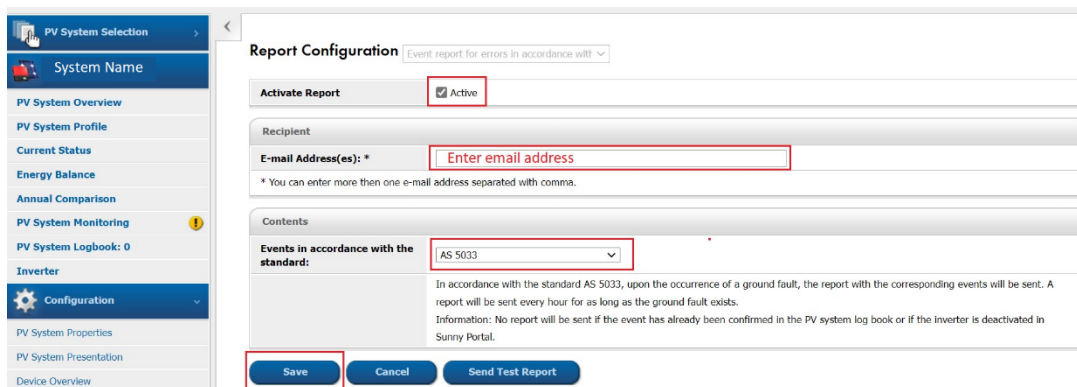


Image 14: Selecting Earth Fault Alarm

- You have now set up the Earth Fault Alarm for your inverter.

This concludes the document, if you have any questions you can reach out to Solaracademy@sma-australia.com.au for pre-sales/installation questions or service@sma-australia.com.au for after sales support.