



CATCH Control

SMA Sunny Boy Installation & Commissioning Guide

Valid for South Australia, Queensland - CSIP

1. Hardware & Software Requirements

Before going to the site, ensure the hardware are prepared as the required:

Hardware Required	Description
 <p>1x CATCH Control + 1x CT</p>	<p>CT comes with the relay in the box</p>
 <p>Power Cable</p>	<p>The maximum cable cross section for CATCH Solar Relay is 2mm²</p>
 <p>1x Smart Device</p>	<p>Download the required software before going to site</p>
 <p>1x Precision Flat Head Screwdriver</p>	<p>For the wiring on the CATCH Control</p>
 <p>1x 10A RCD Circuit Breaker</p>	<p>As the protection switch for the relay</p>

Software Required (downloaded in the Smart Device)	Description
 <p>CATCH Power Configurator</p>	<p>Installer needs to have account under the CATCH Power Configurator App</p>
 <p>The Monocle</p>	<p>Owner/Customer needs to have account under The Monocle App</p>
 <p>IP Finders/ IP Scanner</p>	<p>This tool is useful for finding the unused IP Address for setting static IP (Windows only, for IOS may be different).</p>

2. Before Getting to Site

It's recommended to have installer account ready before going to the site to ensure smoother installation process.

Step 1: [Open] the CATCH Power Configurator App and [Click] the three dashes icon on the top-left side.

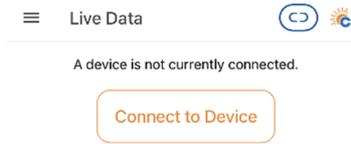


Figure 1 – Connect to the relay

Step 2: [Click] "Your Account".



Figure 2 – Installer account

Step 3: [Enter] installer login details if it exists or create account.

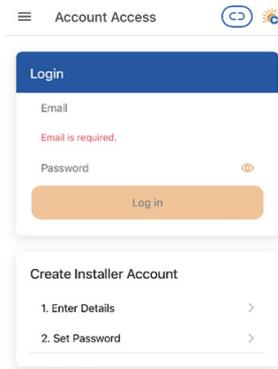


Figure 3 – Installer account

3. Installation Procedure

This section outlines the procedure for installing the CATCH Solar Relay. Procedure on how to install the SMA Sunny Boy inverter, please see here.

Below is the SLD of the relay. Since CATCH Control communicates with SMA inverter via Modbus TCP/IP Sunspec, only 1x CT needs to be connected in W1 to measure the Main and no RS485 is needed.

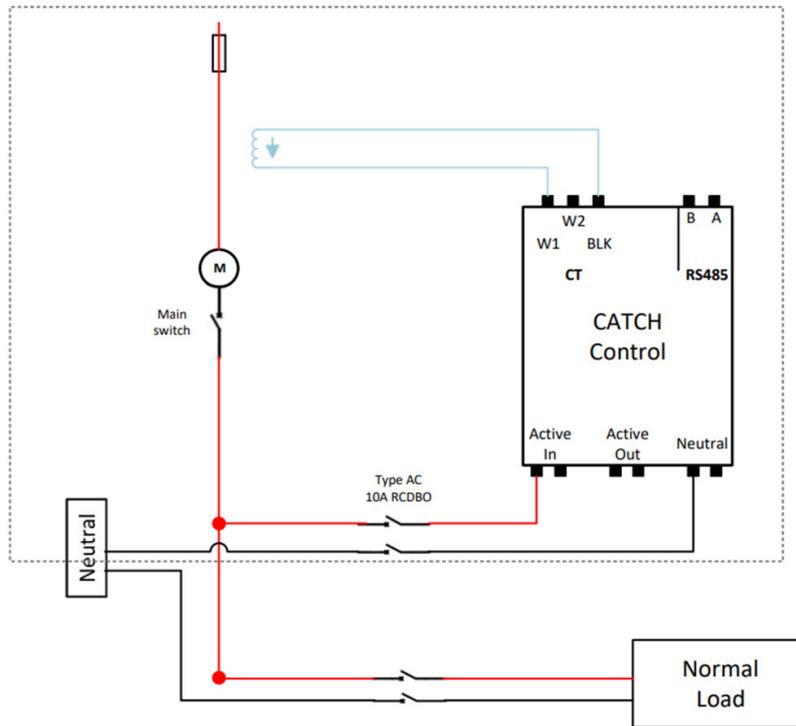


Figure 4 – SLD of CATCH Control

Step 1: Before installing the CATCH Control, please ensure that the system has been isolated.

Step 2: Hook the relay on the DIN rail inside the Distribution Board (DB).

Step 3: Place the CT on the top of the relay, in W1. White cable is connected to the W1 port and black cable is connected to the BLK port.

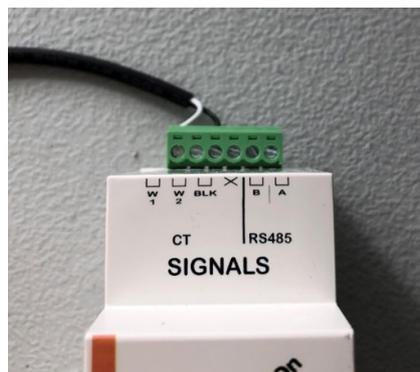


Figure 5 – CT placement on CATCH Control

Step 4: Clamp the CT on the incoming mains and ensure to follow the directions on the label (CT direction is Grid -> Load). NOTE: No CT is required on the W2.

Step 5: Wire active cable from the Active In port under the relay.

Step 6: Install the Circuit Breaker as the protection for the relay.

Step 7: Wire the Neutral cable from the Neutral port under the relay to the Neutral Bar.

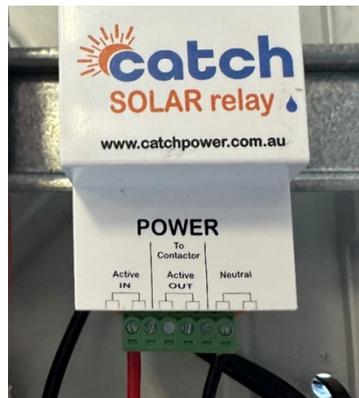


Figure 6 – Active and Neutral placement

4. Settings on the Sunny Boy

There are several settings to be done on the Sunny Boy inverter. The settings can be found during commissioning or after commissioning procedure.

Step 1: [Configure] Modbus as the type of communication. Note: If this step is not done during the commissioning procedure, this setting can be found at **Device Configuration > Type of communication > Modbus**. The modbus details are configured as the screenshot below.

Type of communication

Ethernet WLAN **Modbus**

Modbus Active

Yes No

Port

502

Unit ID

3

Modbus SunSpec profile version

Standard (recommended)

Save

Figure 7 – Modbus Configuration

Step 2: [Check] the Modbus TCP Server. As this setting is not in the commissioning procedure, the setting can be found at **Device parameters > Edit Parameter > External Communication > Modbus > TCP Server: On, Port: 502 > Save**.

Modbus

Modbus Unit ID 3 (1 ... 120)

Modbus P-settings at input 2 On

TCP server

Modbus TCP server on Yes

Modbus TCP server port 502 (1 ... 65535)

UDP server

Modbus UDP server on No

Modbus UDP server port 502 (1 ... 65535)

SunSpec

Modbus SunSpec profile version Standard (recommended)

Figure 8 – Modbus Configuration

5. Setting Static IP on Sunny Boy

To set the static IP, it's recommended to have IP Scanners tool in the smart device.

Step 1: Find the unused IP address using the IP Finders tool. If nothing is associated with the IP Address, use it as the IP of Inverter.

Step 2: [Type] the IP in Sunny Boy. If this setting is not done during commissioning procedure, the settings can be found at **Device configuration > Type of communication > Ethernet > No automatic configuration.**

Step 3: [Enter] in the Gateway IP and DNS server IP according to the network and Save.

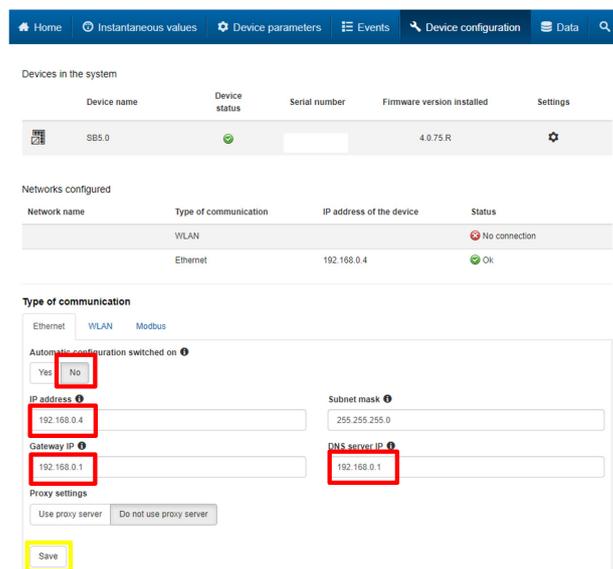


Figure 9 – Modbus Configuration

Step 4: Confirm the edited IP is shown on the bottom left of the UI.

Serial number: 3010547148
Firmware version: 4.0.75.R
Ethernet IP address: 192.168.0.4

Figure 10 – Static IP on Web UI

6. Commissioning CATCH Control

After completing Section 3, 4 and 5, power the AC and relay ON with PV Inverter remains OFF.

NOTE: Do not factory reset the CATCH Control. If factory reset is needed, contact CATCH Power.

Step 1: [Open] the Configurator App and [Click] Connect to Device. This will take few seconds until your relay shows up, then [select] the device.

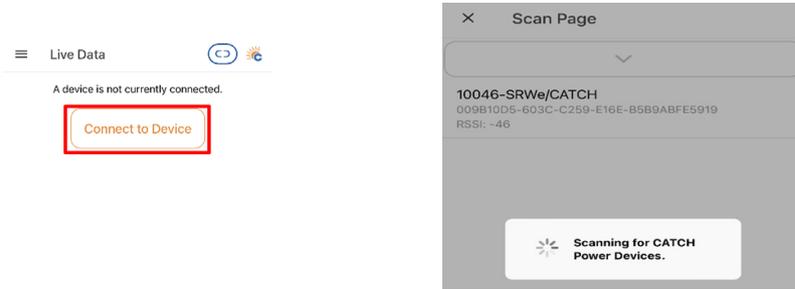
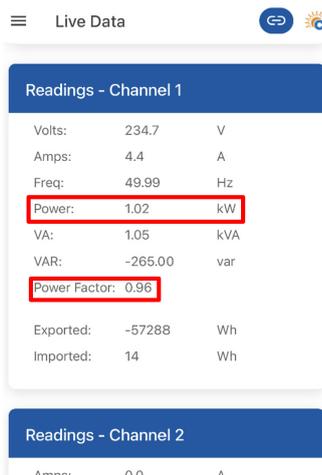


Figure 11 – Connect to Device

Step 2: Isolate the DC connection. [Check] the Readings on Channel 1 to ensure the CATCH Solar Relay is wired correctly.



- The value of the power is positive and equivalent with the Load when DC is OFF.
- The power factor should be closed to 1.

Figure 12 – Readings on Channel 1

Step 3: [Check] the firmware of the relay and compare to the latest available firmware. Update firmware if needed.

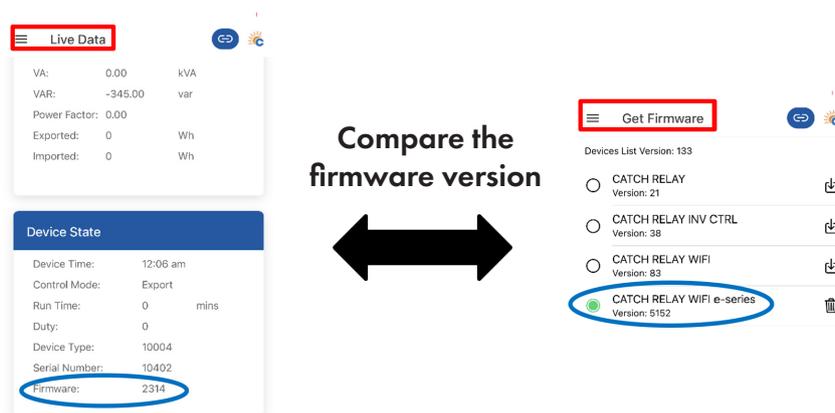


Figure 13 – Firmware Check

If firmware update is needed, [Select] **Firmware Updater** and [Click] **Update Firmware**. Ensure the device is near the relay while doing firmware update. The pop-up message will show up once the update is completed.

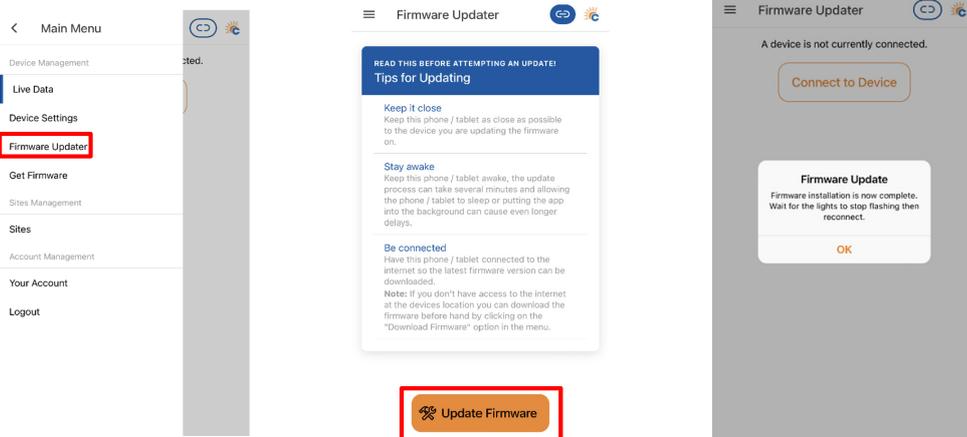


Figure 14 – Firmware Update

Step 4: Connect to site WiFi. This setting can be found at **Device Setting > Other Settings > WiFi settings**.

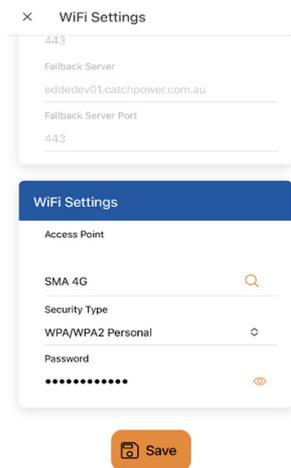


Figure 15 – WiFi Settings

Step 5: Edit the Modbus Configuration. This setting is found at **Device > Modbus Configuration**. Follow the configuration as in screenshot below and Save.

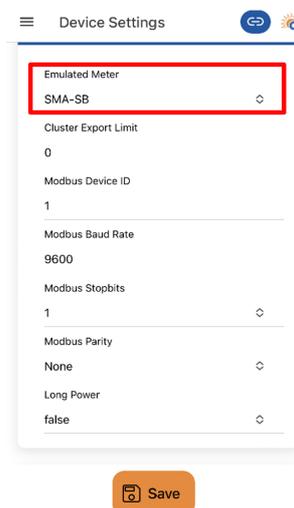


Figure 16 – Modbus Configuration

Step 6: [Click] **Manual Add** to add the inverter to relay via Sunspec. This setting can be found at **Device > Sunspec > Manual Add > [Enter] the Inverter Static IP, Port 502 and Slave ID 126.**

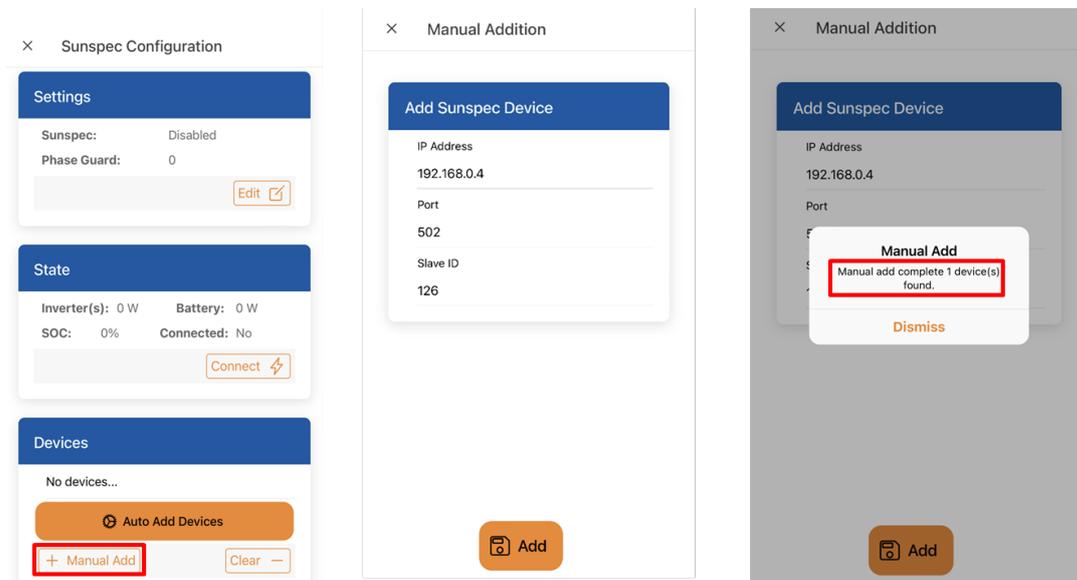


Figure 17 – Sunspec Configuration

Note 1: If this process is taking too long to load, please ensure the following has been completed.

1. Firmware has been updated to the latest version.
2. Static IP is set correctly. Check the Static IP shown in the bottom left of the Inverter Interface.

Note 2: By following the process in Section 4, the Modbus ID on inverter is set as 3. To follow the Sunspec, Modbus ID on the relay is set a 126 (Unit ID 3 + 123).

Step 7: After Sunny Boy is identified, [Click] **Edit** under the setting list and [Choose] **True**. Check if the Sunspec has changed to **Enabled**.

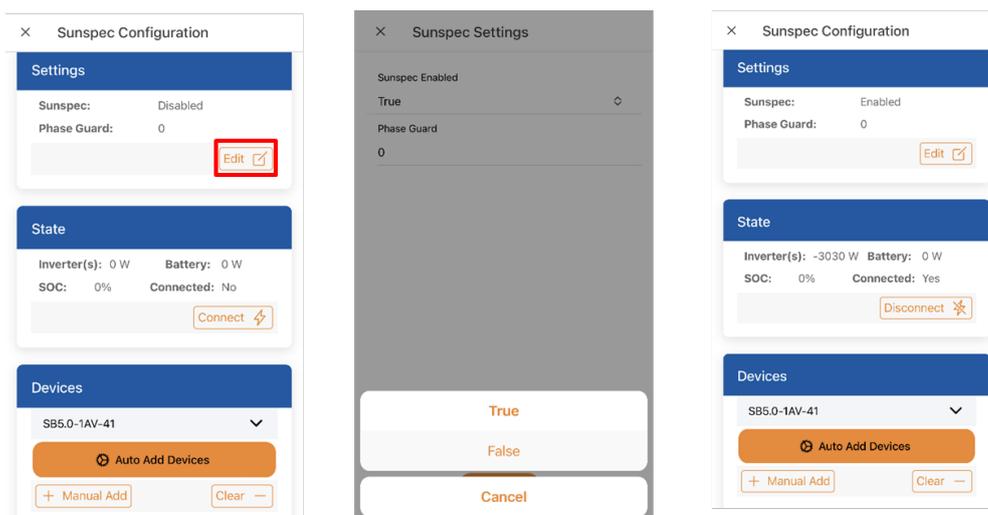


Figure 18 – Enabling Sunspec Configuration

7. Creating Site

Step 1: [Select] Sites on the main menu selection.

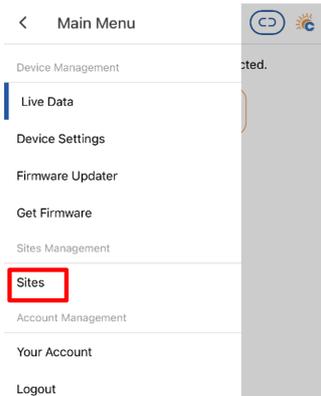


Figure 19 – Create Site

Step 2: [Click] the three dots button on bottom right and [click] Create New Site.

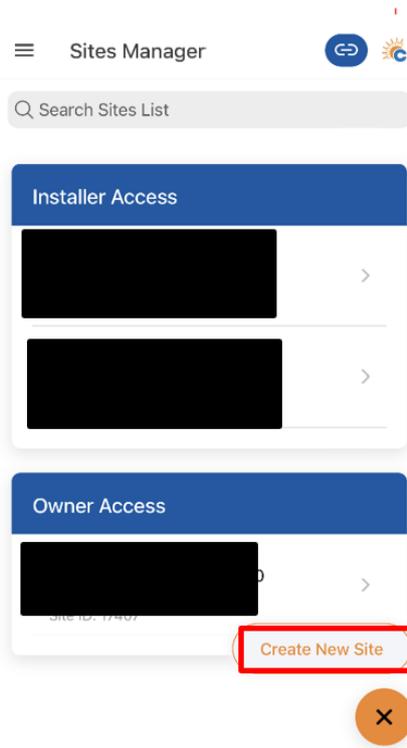


Figure 20 – Create Site

Step 3: [Fill] owner details and [Submit] the site and is now shown under the Installer Access.

< Create Site

Site Owner

Site Owners Email *
Email Address

First Name *
First Name

Last Name *
Last Name

Phone
Phone number

Site Address

Prefix
Lot 23, Flat 2, etc

Address Line 1 *

Submit Site

Figure 21 – Create Site

Step 4: [Go] to the Site that has been created under the Installer Access. [Click] the three dots on the bottom right side and [select] Add Device.

Site Overview

Address
MILLER ST
NSW 2060

Devices

Users

Owners Edit Site
[Redacted Name] Add Device

Installers Add Installer
[Redacted Name] Dynamic Export

X

Figure 22– Adding Devices

Step 5: Follow below screenshots of the parameters for adding the relay and Submit Device.

- Device Identity: [Choose] the correct Serial Number of the relay.
- Channel One: [Choose] Mains as the Type, the CT is to measure the Mains.
- Channel Two: [Choose] Other as the Type, no CT is associated with W2.
- Controlling Load & Controlling Inverter: [Choose] FALSE, load contactor and W2 are not installed.

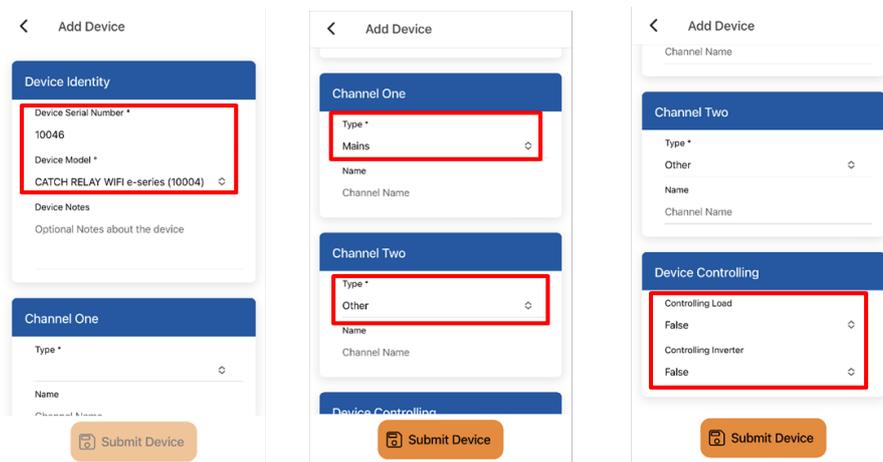


Figure 23 – Submit CATCH Control

Note: The static export and dynamic export can be set at the CATCH relay.

- The static export can be set through the **Device Setting > Static Export > True** and enter export value. If no export is needed, ensure that Static Export has been set as **False**.

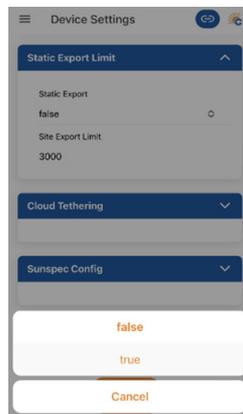


Figure 24 – Static Export

- The dynamic export can be set through the **Sites > [Select] the site > [Select] three dots > Dynamic Export**. Follow the rest of the instruction given or follow instructions provided by CATCHpower here (Page 40 – 42).

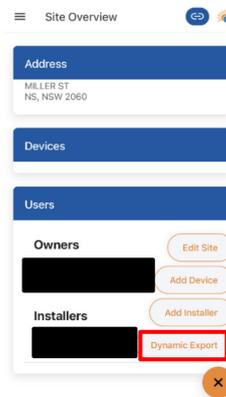


Figure 25 – Dynamic Export

