

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
e Law ROMAN COCCCCC SOCAR relay Browner Power Power	1x CATCH Control + 1x CT	CT comes with the relay in the box
	Power Cable	The maximum cable cross section for CATCH Solar Relay is 2mm2
	1 x Smart Device	Download the required software before going to site
	1x Precision Flat Head Screwdriver	For the wiring on the CATCH Control
A summary of the second	1x 10A RCD Circuit Breaker	As the protection switch for the relay

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

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.

=	Live Data	(7) 🔏
	A device is not currently conne	ected.
	Connect to Device	

Figure 1 – Connect to the relay

Step 2: [Click] "Your Account".

Sites Management	
Sites	
Account Management	
Your Account	
Logout	•

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 comm	unicatio	n		
Ethernet	WLAN	Modbus		
Modbus Active	e			
Yes No				
Port				
502				
Unit ID				
3				
Modbus SunS	pec profil	e version		
Standard (re	ecommend	led)	~	
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	(3 123)	
Modbus P-settings at input 2	On	~	
✓ TCP server			
Modbus TCP server on	Yes	~	
Modbus TCP server port	502	(1 85536)	
V UDP server			
Modbus UDP server on	No	v	
Modbus UDP server port	502	(1 65535)	
✓ SunSpec			
Modus SunSper profile version	Quantiant (nerversentiant)		

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 Gateaway IP and DNS server IP according to the network and Save.

ritionic	Instantaneou	is values 🔅 Device p	arameters 📘	Events	 Device configuration 	🛢 Data	۹ ۵
Devices in t	the system						
	Device name	Device status	Serial number	Firmware	e version installed	Settings	
	SB5.0	۲			4.0.75.R	٥	
letworks c	onfigured						
Network na	ime	Type of communication	IP addre	ss of the device	Status		
		WLAN			🚱 No connecti	on	
		Ethernet	192.168.	0.4	🕝 Ok		
Ethernet Automatic Yes	WLAN Modb configuration switche	us id on					
Ethernet Automatic Yes	WLAN Modb configuration switche	us ed on Ø	Subnet	mask ()			
Ethernet Automatic Yes IP address 192.168.	WLAN Modb configuration switche No 0.4	us Ad on	Subnet	mask ()			
Ethernet Automatic Yes IP address 192.168. Gateway IF	WLAN Modb configuration switche No 0.4	us kd on	Subnet 255.1 DNS set	mask 🛈 155.255.0 rver IP 🗿			
Ethernet Automatic Yes 192.168. Gateway IF 192.168.	WLAN Modb configuration switche NO 0.4	us	Subnet 255.1 DNS sc 192.1	mask ① 155.255.0 rver IP ①			
Ethernet Automatic Yes 192.168. Gateway IF 192.168. Proxy setti	WLAN Modbl configuration switche No 0.4 0.1 0.1	us ed on 0	Subnet 255.1 DNS sr 192.1	mask ① 155.255.0 rver IP ① 68.0.1			

Figure 9 – Modbus Configuration

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



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.

	× Scan Page
≡ Live Data 💿 🔏	
A device is not currently connected.	10046-SRWe/CATCH 00981005-603C-C259-E16E-B589ABFE5919 RSSI: -46

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.



Figure 12 – Readings on Channel 1

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

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

VA:	0.00	kVA					
VAR:	-345.00	var					
Power Factor: Exported: mported:	0.00	Wh Wh	Comp	are the	Devi	Get Firmware	Θ
			firmware	e version	0	CATCH RELAY Version: 21	
evice State					0	CATCH RELAY INV CTRL Version: 38	
Device State	12:0	6 am			0	CATCH RELAY INV CTRL Version: 38 CATCH RELAY WIFI	
evice State Device Time: Control Mode:	12:0 Expo	6 am ort			0	CATCH RELAY INV CTRL Version: 38 CATCH RELAY WIFI Version: 83	
Device State Device Time: Control Mode: Run Time:	12:0 Expo 0	6 am ort mins			0 0 ()	CATCH RELAY INV CTRL Version: 38 CATCH RELAY WIFI Version: 83 CATCH RELAY WIFI e-series Version: 5152	
Device State Device Time: Control Mode: Run Time: Duty:	12:0 Expo 0 0	6 am ort mins			0 0 ()	CATCH RELAY INV CTRL Version: 38 CATCH RELAY WIFI Version: 83 CATCH RELAY WIFI e-series Version: 5152	
Device State Device Time: Control Mode: Run Time: Duty: Device Type:	12:0 Expc 0 0 1000	6 am ort mins	-		0 0 ()	CATCH RELAY INV CTRL Version: 38 CATCH RELAY WIFI Version: 83 CATCH RELAY WIFI e-series Version: 5152	
Device State Device Time: Control Mode: Run Time: Duty: Device Type: Serial Number	12:0 Expc 0 0 1000 : 1040	6 am ort mins 04	-		0 0 ()	CATCH RELAY INV CTRL Version: 38 CATCH RELAY WIFI Version: 83 CATCH RELAY WIFI e-series Version: 5152	

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.

< Main Menu	(5) 🔏	≡ Firmware Updater 💿 🐞	≡	Firmware Updater 💿 🐞
Device Management	sted.	read this before attempting an update! Tips for Updating		A device is not currently connected.
Device Settings	J	Keep it close Keep this phone / tablet as close as possible to the device you are updating the firmware on.		
Get Firmware Sites Management		Stay swake Keep this phone / tablet awake, the update process can take several minutes and allowing the phone (tablet to sleep outting the app		Firmware Update
Sites Account Management		into the background can cause even longer delays. Be connected		reconnect.
Your Account		Have this prone / tablet connected to the interrets to the latest firmware version can be downloaded. Note: If you don't have access to the internet at the devices location you can download the		
Logout		firmware before hand by clicking on the "Download Firmware" option in the menu.		
		😵 Update Firmware		

Figure 14 – Firmware Update

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

Fallback Server	
443	
/iFi Settings	
Access Point	
SMA 4G	Q
Security Type	
WPA/WPA2 Personal	\$
Password	
•••••	0

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.

=	Device Settings	6) 👯
_		
	Emulated Meter	
L	SMA-SB	\$
	Cluster Export Limit	
	0	
	Modbus Device ID	
	1	
	Modbus Baud Rate	
	9600	
	Modbus Stopbits	
	1	٥
	Modbus Parity	
	None	٥
	Long Power	
	false	0
	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.

× Sunspec Configuration	× Manual Addition	× Manual Addition
Settings	Add Sunspec Device	Add Sunspec Device
Sunspec: Disabled Phase Guard: 0 Edit	IP Address 192.168.0.4 Port	IP Address 192.168.0.4 Port
State Inverter(s): 0 W Battery: 0 W SOC: 0% Connected: No Connect 4/2	Slave ID 126	Manual Add Manual add complete 1 device(s) found. Dismiss
Devices No devices Auto Add Devices + Manual Add Clear –	To Add	C Add

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 Sunpsec, 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.**

× Sunspec Configuration	× Sunspec Settings	× Sunspec Configuration
Settings	Sunspec Enabled	Settings
Sunspec: Disabled	True	Sunspec: Enabled
Phase Guard: 0	Phase Guard	Phase Guard: 0
Edit 🗹	0	Edit 🗹
State		State
Inverter(s): 0 W Battery: 0 W		Inverter(s): -3030 W Battery: 0 W
SOC: 0% Connected: No		SOC: 0% Connected: Yes
Connect 🞸		Disconnect 🔆
Devices		Devices
SB5.0-1AV-41 🗸	True	SB5.0-1AV-41 🗸
Auto Add Devices	False	Auto Add Devices
+ Manual Add Clear -	Cancel	Clear –

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.

≡	Sites Manager	e> 🔏
Q Se	earch Sites List	
Ins	staller Access	
		>
		>
Ov	wner Access	
	DIG 15. 17907	
	(Create New Site
		×

Figure 20 – Create Site

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



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	(C) 🕺
Address MILLER ST NS, NSW 2060	
Devices	
Owners	Edit Site
Installers	Add Device
	Dynamic Export

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.

Add Device	Add Device	Add Device Channel Name
evice Identity Device Serial Number *	Channel One	Channel Two
10046	Mains ¢	Туре *
Device Model *	Name	Other ≎
CATCH RELAY WIFI e-series (10004) 🗘	Channel Name	Name
Device Notes		Channel Name
	Channel Two	Device Controlling
nannel One	Other Other	Controlling Load
Type *	Name	Controlling Inverter
0	Gramer Name	False >
Name		
Shannal klama	Device Controlling	
	E Submit Device	Submit Device

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**.

■ Device Settings	() ()
Static Export Limit	^
Static Export	
false	0
Site Export Limit	
3000	
Cloud Tethering	~
Sunspec Config	~
false	
true	
Cancel	

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



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