CATCH Control

INVERTER CONTROL
with
SUNGROW
SGXX-RT
(3 Phase)

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SGRT – 3phase

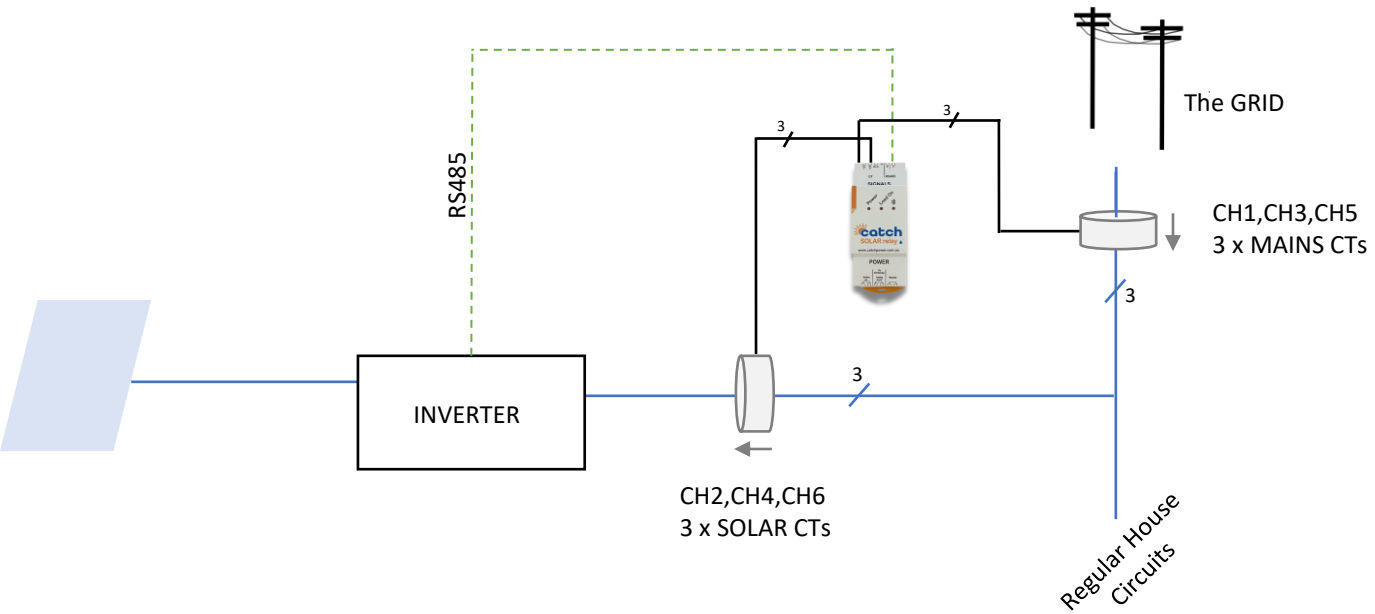
Installation Overview

1. Install the Inverter as per the Manufacturers Installation Guide.
2. Install the CATCH Control as per the CATCH 6 Channel Electricians Guide.
3. Adjust the CATCH CT wiring as show in this document.
4. Connect the RS485 bus between the CATCH Control and the inverter as shown in this document.
5. Complete the Inverter Commissioning as per Manufacturers install guide.
6. Modify the inverter Export limit has detailed in this document
7. Run the CATCH Commissioner wizard.

SGRT – 3phase

CATCH CT Arrangement

You will need to place CH1, CH3, CH5 onto the MAINS phases. Place CH2,CH4,CH6 onto the inverter A/C Port.



SGRT – 3phase

IMPORTANT..PLEASE READ

The CATCH Control works by emulating the energy meter the inverter would normally use.

This means two things are really important.

1. You need to read the inverter manual:

Make sure you understand how to setup the inverter for export control. When you read the manual it will talk about an energy meter or CT…Follow the instructions exactly as they are in the manual. If there are any changes required we will let you know further down in this document.

2. Read the CATCH Control installation manual:

The manual outlines how to setup the CATCH Control to control loads. It also outlines circuit breaker requirements, how to use the CATCH Configurator App, etc.

Once you have followed step one and two you are ready to proceed….

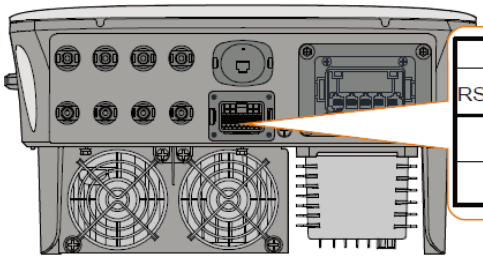
Wiring Instructions

CATCH Control and the inverter communicate using RS485. Connecting the two pieces of hardware requires a 2 core RS485 cable. When the RS485 cable run is greater than 20m it is recommended to use a 2 core cable designed specifically for RS485 communication, it will typically have a 120 Ohm characteristic impedance. However, for short cable runs any 2 core cable will typically do the job, as long as it is rated for the voltages it will be exposed to. The pink CBUS data cable is ideal for short cable runs.

SGRT – 3phase

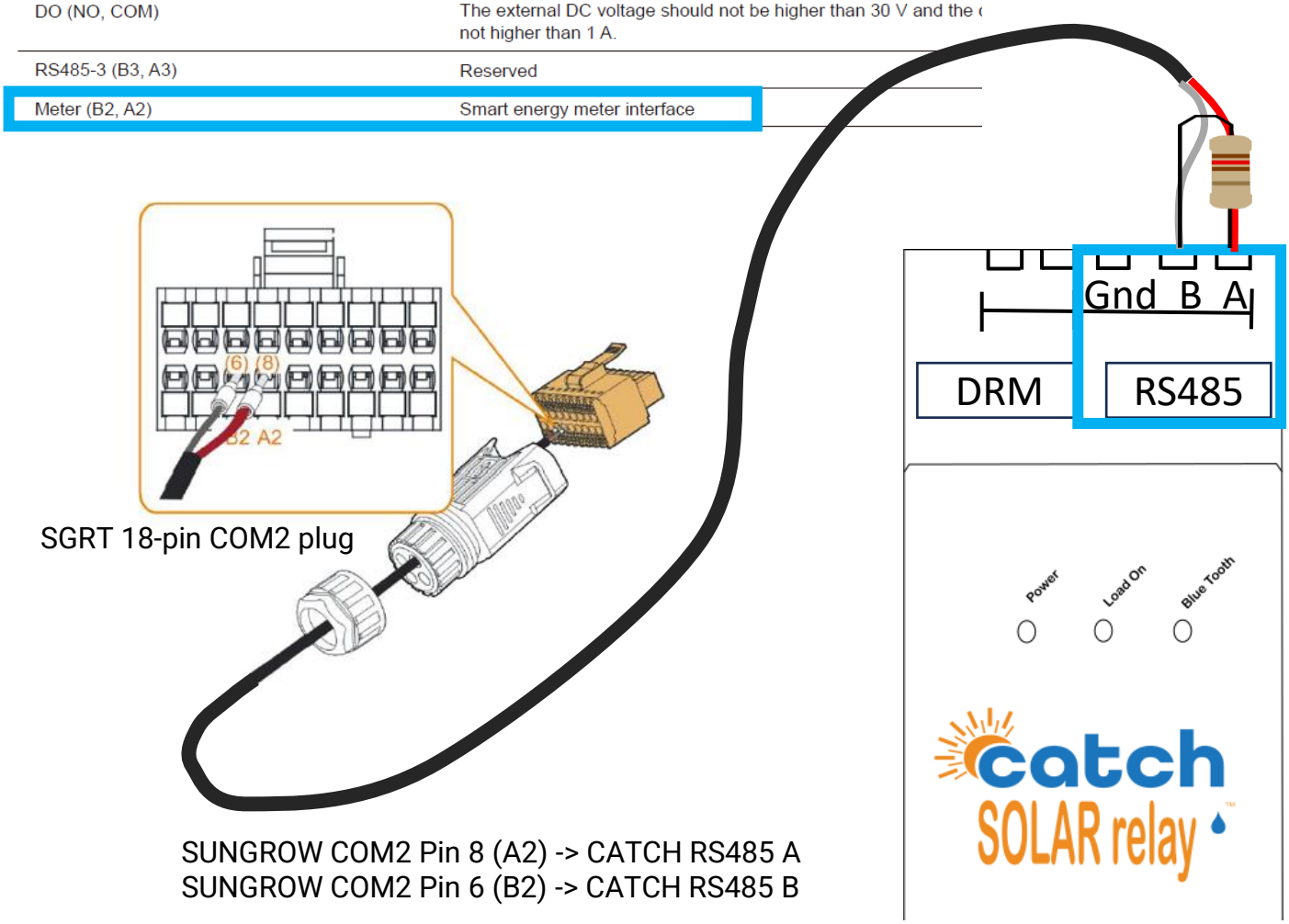
RS485 Wiring Instructions continued …

SGRT 18-pin COM2 pinout identification



RSD		NS		DRM			RS485-1	DO
RSD-1	RSD-2	NS-1	NS-2	D1/5	D3/7	R	A1	NO
B3	A3	B2	A2	D2/6	D4/8	C	B1	COM
RS485-3		Meter						

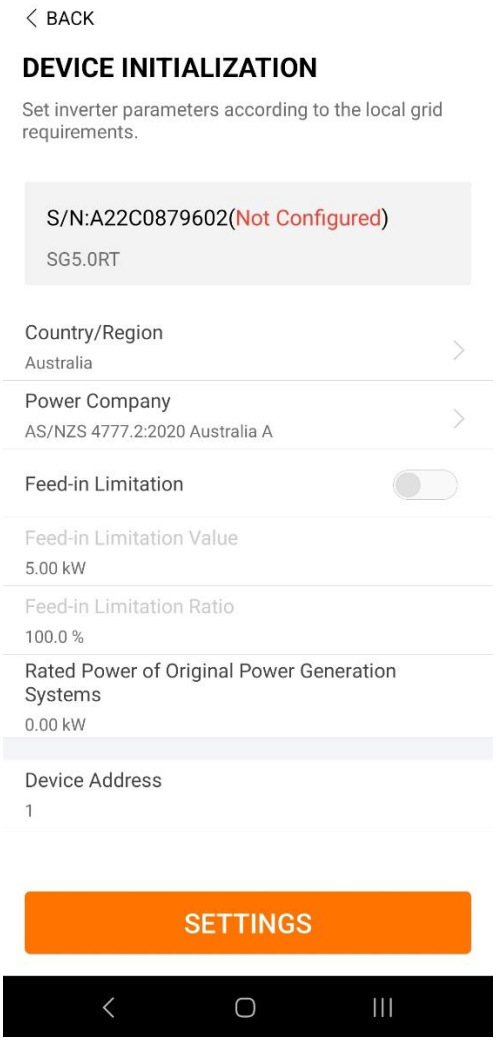
Label	Description
RSD (RSD-1, RSD-2)	For inverter emergency stop
NS (NS-1, NS-2)	For inverter emergency stop
DRM (D1/5, D2/6, D3/7, D4/8, R, C)	For external Demand Response Enabling Device ("AU"/"NZ") For Ripple Control
RS485-1 (A1, B1)	For inverter daisy chain (Cannot be used simultaneously with COM1 port for WiNet-S/WiN
DO (NO, COM)	External alarm interface, e.g. light indicator and/or buzzer The external DC voltage should not be higher than 30 V and the c not higher than 1 A.
RS485-3 (B3, A3)	Reserved
Meter (B2, A2)	Smart energy meter interface



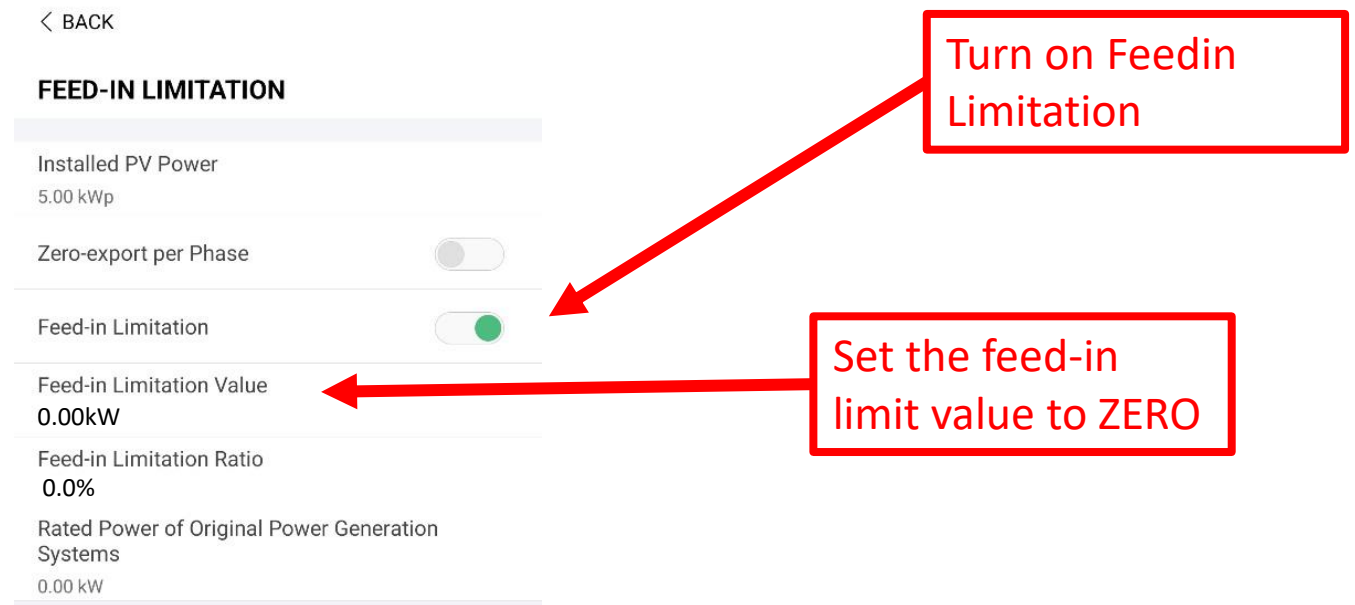
SGRT 18-pin COM2 plug

SUNGROW COM2 Pin 8 (A2) -> CATCH RS485 A
SUNGROW COM2 Pin 6 (B2) -> CATCH RS485 B

Modify Inverter Export Limit



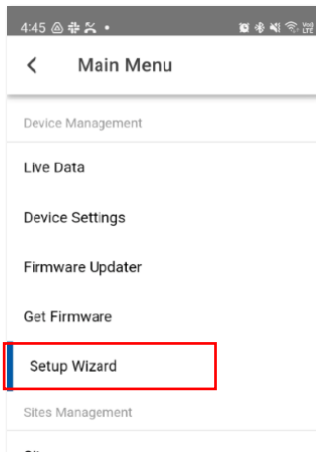
Log into the **iSolarCloud** App using local access and set the export limit to ZERO.



CATCH Control Setup

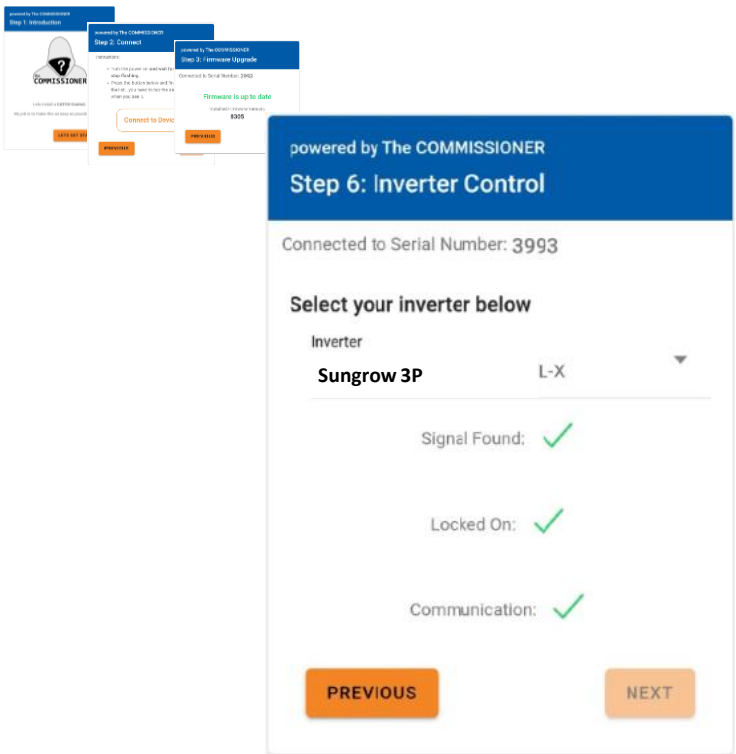
1. Log into the CATCH Configurator and run the Commissioner.

CATCH Power Configurator



2. Follow the Commissioner step by Step.

Step 6: Inverter Control
choose **Sungrow 3P** as the meter. And make sure you get all green ticks.



Choose: **Sungrow 3P**

You need **3** green ticks.

CATCH Control Setup

Step 7: Channel Setup
You will need to make sure the channels are assign the way you installed them. If you followed the CT Arrangement above then the assignment will be:

MAINS: CH1, CH3, CH4

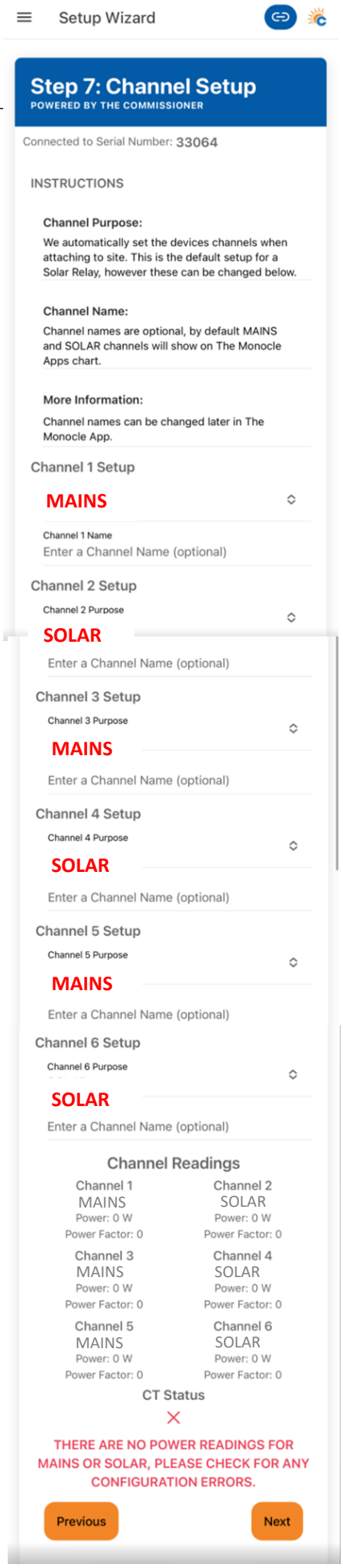
SOLAR: CH2, CH4, CH6

The CT Channel readings appear below. The wizard will attempt to check the CT's for any errors, but it is not perfect. You may get a red cross when things are correct. If you are sure you are right you can move on.

<u>Things to Check yourself:</u>

Bad Connection:
If there is a bad connection on one or both CT wires you will get either ZERO or VERY HIGH readings for Amps.

Lower power factor:
This typically means the CT is on the wrong phase and needs to be moved. This is only true if you have power above 500W. When there is little to no power, power factor will be low (almost zero), and this is normal. But if you have power above 500W and low power factor this is an indicator you have the CT on the wrong phase. You can either remap it in the configurator setup or physically move the CT.



CATCH Control Setup

Step 7: Channel Setup..continued

<u>Things to Check yourself:</u>

Incorrect Direction:
If the CT arrow is not pointing in the right direction your power numbers will be in the wrong direction.

With CATCH Control we show exporting power as a negative number and importing power as a positive number.

Pay special attention to the sign of the power numbers of each CT. The best way to check is to follow the procedure below:

1. Shut down all Solar and Battery systems.

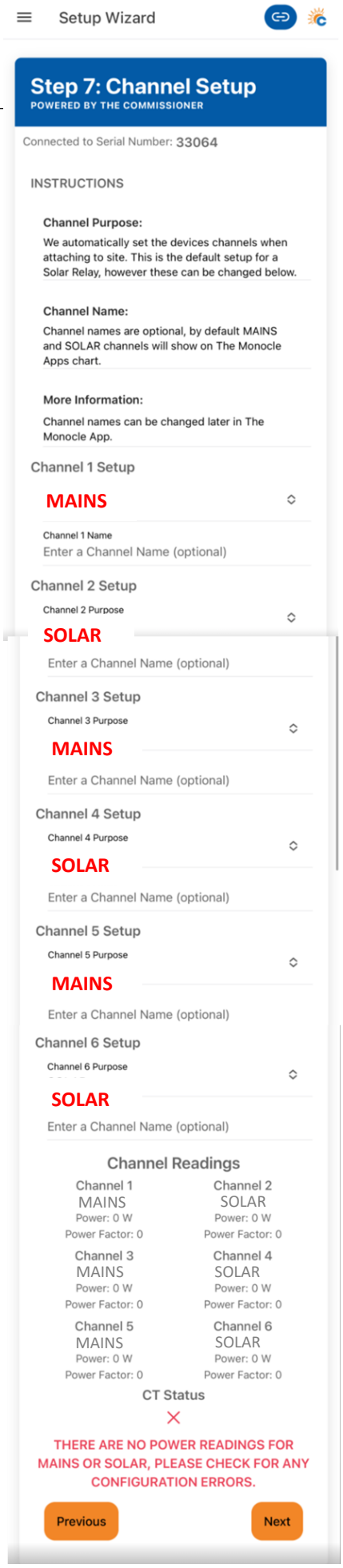
   All MAINS ct's should show a POSITIVE power number.

   All SOLAR ct's should read ZERO.

2. Start Up the Solar (LEAVE BATTERIES OFF)

   After the inverters have started up

   All SOLAR ct's should read a NEGATIVE power number.



CATCH Control Setup

CATCH Power Configurator

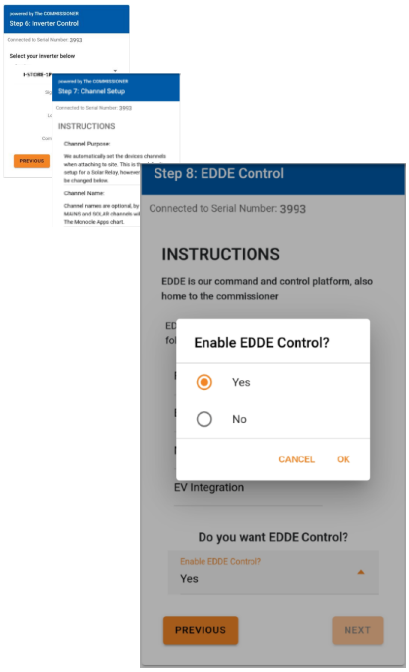
2. Follow the Commissioner step by Step.

Step 8: EDDE Control
choose if you want EDDE Control enabled. If you choose *Yes* you should have set the inverter export limit to zero in the inverter configuration earlier.

If you Choose NO here. You need to go back and set the inverter export limit to what ever is appropriate

You will need EDDE Control to be YES if you want any of the following features.

- Flexible Exports
- Inverter Control
- Market based pricing control such as AMBER curtailment
- EV Integration



CATCH Control Setup

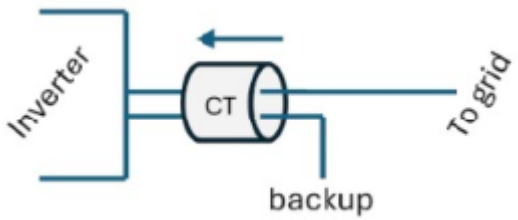
2. Follow the Commissioner step by Step.

Step 9: EDDE Export Control
If you choose YES for EDDE Control we will take care of the site export limit, not the inverter.

There are 2 important things for you to do.

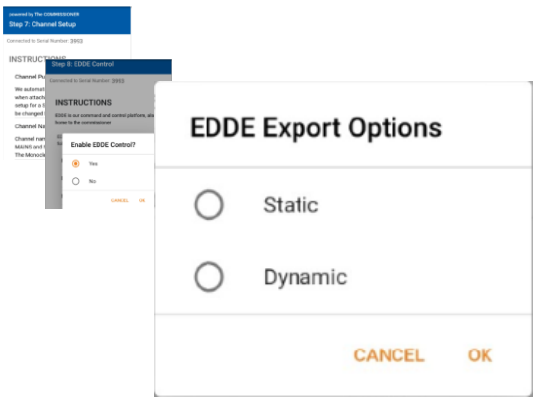
1. Make sure the solar CT is wrapped around the AC port of the inverter as shown Below.

   The SOLAR CT is **W2**.



2. Make sure you configure the inverter to be ZERO exported. (You should have done that in the previous inverter configuration section)

Tell us how the export limit is to be managed.



Static: Is when the DNSP tells you there is a fixed export limit. Example the connection application might say the site is limited to 5kW. This is a static export limit.

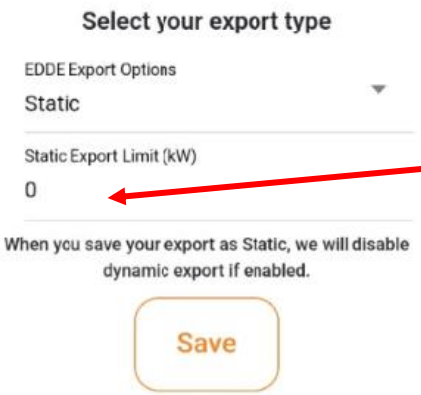
Dynamic: When you put the connection application in you would have nominated for the dynamic connection. The DNSP will adjust the export limit based on daily requirements.
You will need the NMI to complete the dynamic connection setup.

CATCH Control Setup

2. Follow the Commissioner step by Step.

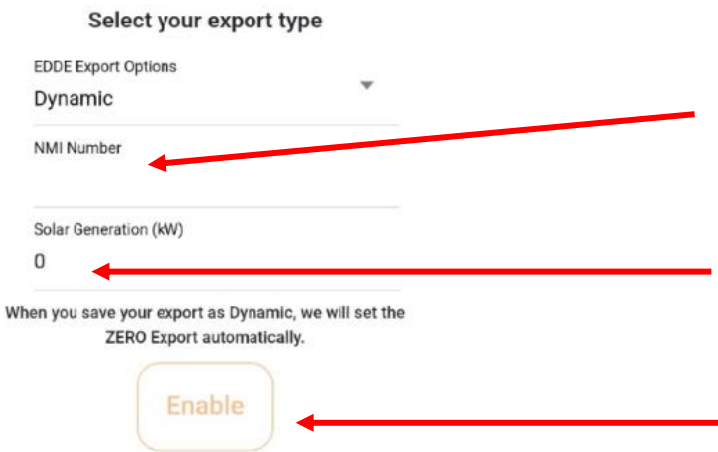
Step 9: EDDE Export Control..Continued

Static Export Configuration:



Fill out the export limit. For example if the site has a 5kw export limit type in 5 for the export limit and press **SAVE**

Dynamic Export Configuration:



Enter the customers NMI. This can be a 10 or 11 digit NMI.

Tells us the total amount of solar on site. Including any old systems.

Press Enable.

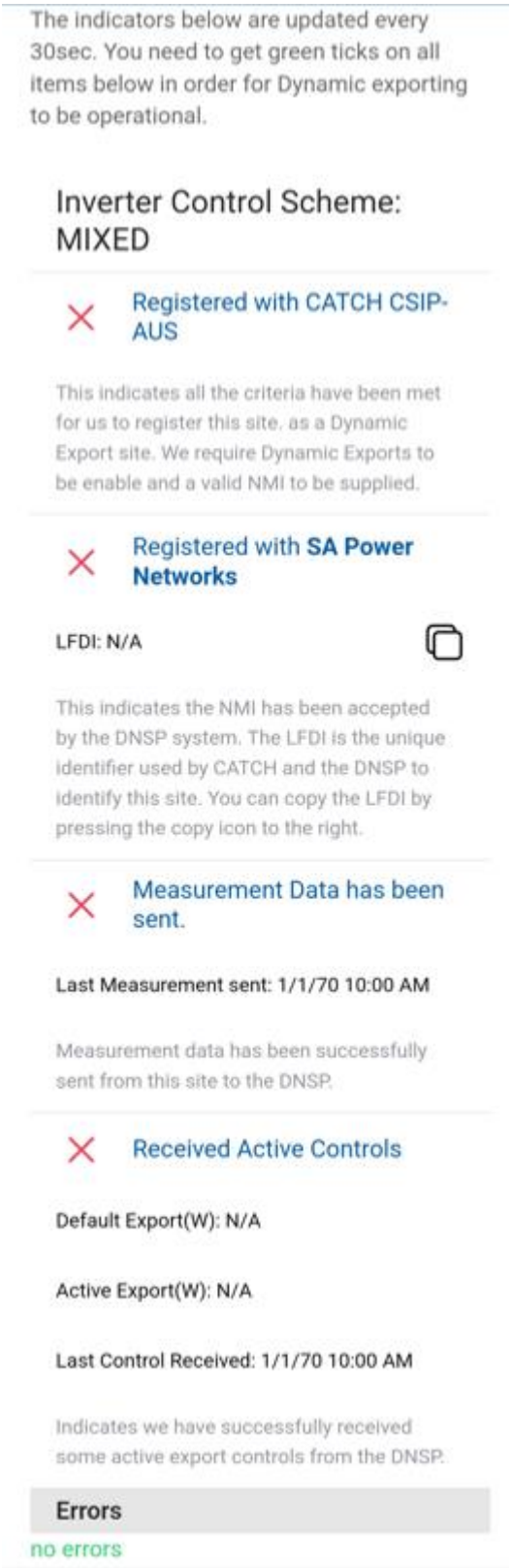
CATCH Control Setup

2. Follow the Commissioner step by Step.

Step 9: EDDE Export Control..Continued

Dynamic Export Configuration - Continued:

Once you have filled out the required information and pressed save the follow appears and shows you how the registration for dynamic exports is progressing… You want to see all green ticks for everything to be working.



CATCH Control Setup

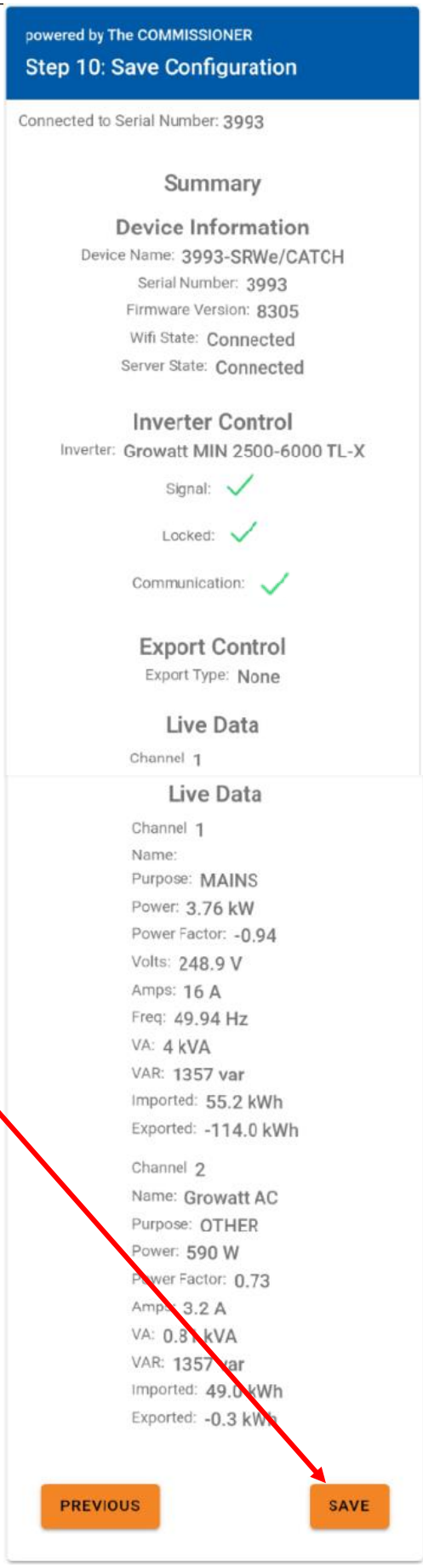
2. Follow the Commissioner step by Step.

Step 10: Save Configuration

The final step is to review the configuration, and Press **SAVE**.

CONGRATULATIONS…

INSTALLATION COMPLETE.



Modus Settings

This is for reference purposes, the modbus RTU details are shown below. These values can be found in the CATCH Configurator
Navigate to: **Device Settings** -> **Modbus Configuration**