



SOLAR RELAY

INVERTER CONTROL with GOODWE

SDT-G2 & DT-G2 Series 3-phase inverters 4-25kW



CATCH Power
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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:

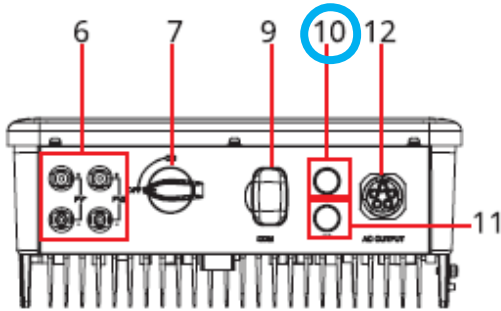
The manual outlines how to setup the CATCH Control to control loads. It also outlines circuit breaker requirements, how to use the CATCH Configurator App, etc.

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

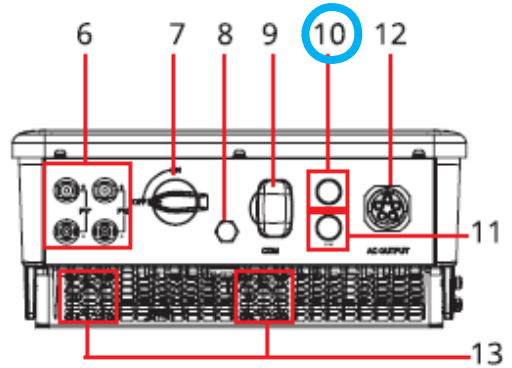
Wiring Instructions

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.

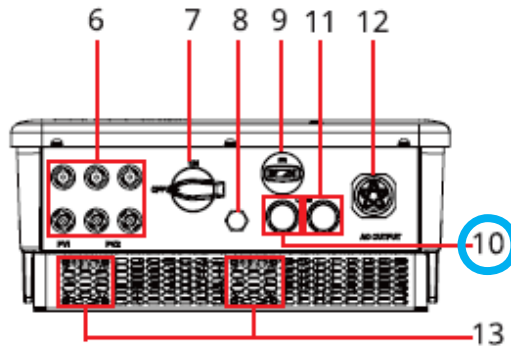
SDT/DT Inverter Appearance



GW4K-DT, GW4000-SDT-20, GW5K-DT,
GW5000-SDT-20, GW6K-DT, GW6000-SDT-20



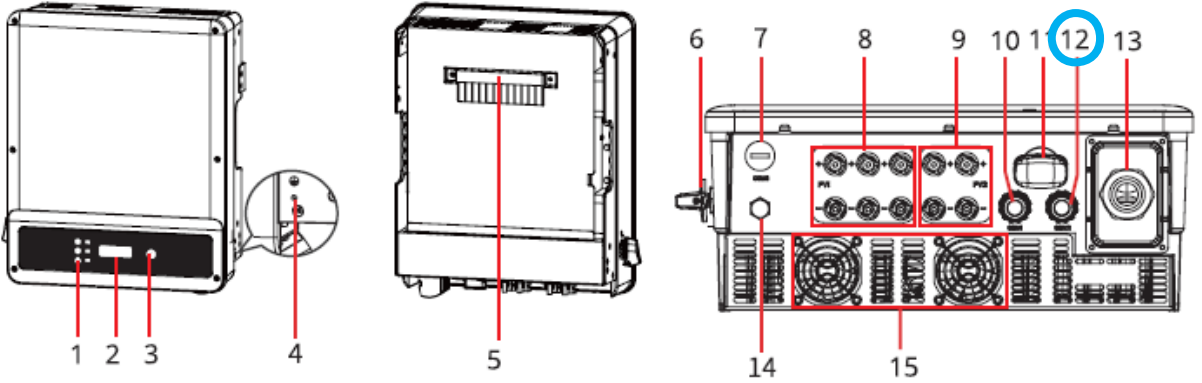
GW8K-DT, GW10KT-DT



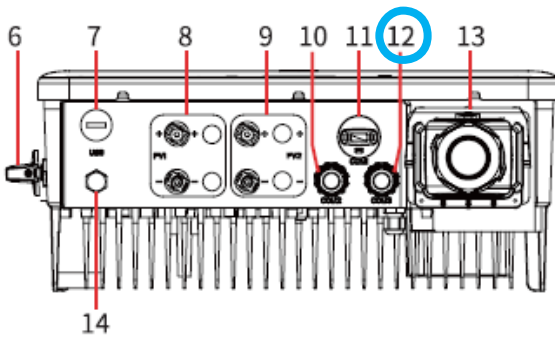
GW12KT-DT, GW15KT-DT

- | | | |
|-----------------------------------|--------------------------------------|--|
| 1. LED Indicator | 2. LCD (optional) | 3. Button (optional) |
| 4. PE Terminal | 5. Mounting Plate | 6. PV Input Terminal |
| 7. DC Switch | 8. Ventilation valve | 9. Bluetooth or Wi-Fi/LAN Kit or WiFi or 4G or GPRS Port |
| 10. RS485 or Smart Meter COM Port | 11. DRED or Remote Shutdown COM Port | 12. AC Output Port |
| 13. Fan | | |

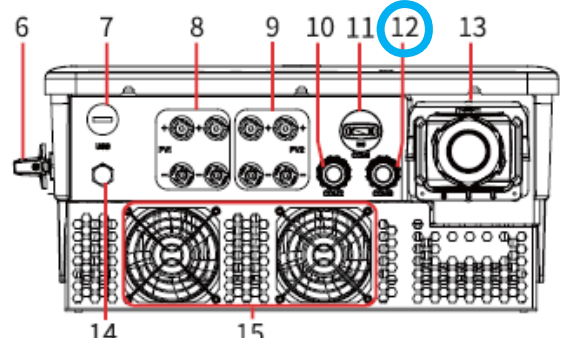
STD/DT Inverter Appearance continued ...



GW8KAU-DT, GW9.9KAU-DT, GW10KAU-DT, GW15KAU-DT, GW20KAU-DT, GW17KT-DT, GW20KT-DT, GW25KT-DT



GW8000-SDT-20, GW10K-SDT-20



GW12K-SDT-20, GW12KLV-SDT-20, GW15K-SDT-20, GW17K-SDT-20, GW20K-SDT-20

- | | | |
|--------------------------------------|--|-----------------------------------|
| 1. LED Indicator | 2. LCD (optional) | 3. Button (optional) |
| 4. PE Terminal | 5. Mounting Plate | 6. DC Switch |
| 7. USB Port (For Brazil only) | 8. PV Input Terminal (PV1) ^[1] | 9. PV Input Terminal (PV2) |
| 10. DRED or Remote Shutdown COM Port | 11. Bluetooth or Wi-Fi/ LAN Kit or WiFi or 4G or GPRS Port | 12. RS485 or Smart Meter COM Port |
| 13. AC Output Port | 14. Ventilation Valve | 15. Fan ^[2] |

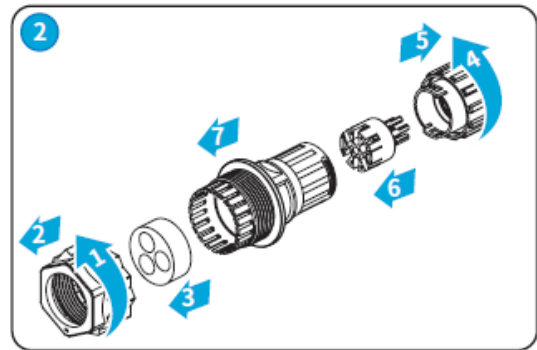
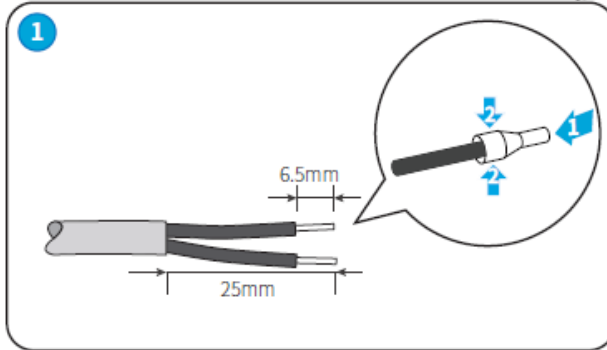
[1]: GW25KT-DT: 3 x PV+/PV-; other models: 2 x PV+/PV-

[2]: Without Fan: GW8KAU-DT, GW10KAU-DT

STD/DT Series RS485 meter connection

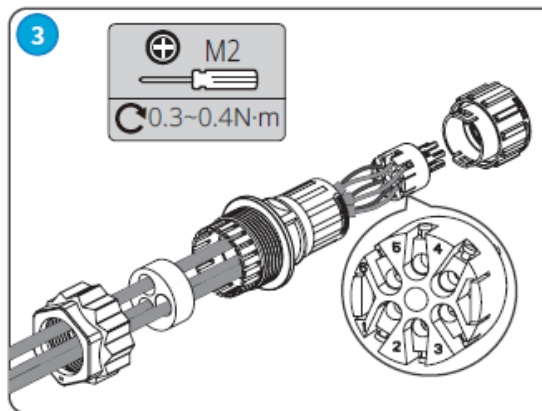
The images above show the appearance of the various SDT and DT inverter models. There are 6 unique appearances for the SDT/DT series. Identify the inverter model type to locate the RS485 meter port. The first three appearance types gives part 10 as the meter port. The last 3 appearance types identifies part 12 as the meter port. The inverter must be identified correctly because the meter port can be on the left or the right depending on the model. See the blue circles which indicate meter port part identification). The various models all use the same 6-pin plug and socket part for connection to the meter.

Connect the RS485 cable to the supplied 6-pin plug for the smart meter (pins 5 and 6). The Catch Control RS485 'A' and 'B' will connect to SDT/DT 6-pin meter plug pins 5 and 6 respectively (see image below which shows the 6-pin plug details and meter pins).

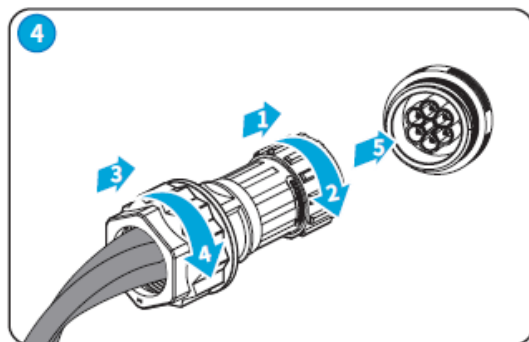


3

⊕ M2
0.3-0.4N·m



No.	RS485 / Meter
1	RS485 B
2	RS485 B
3	RS485 A
4	RS485 A
5	Meter +
6	Meter -



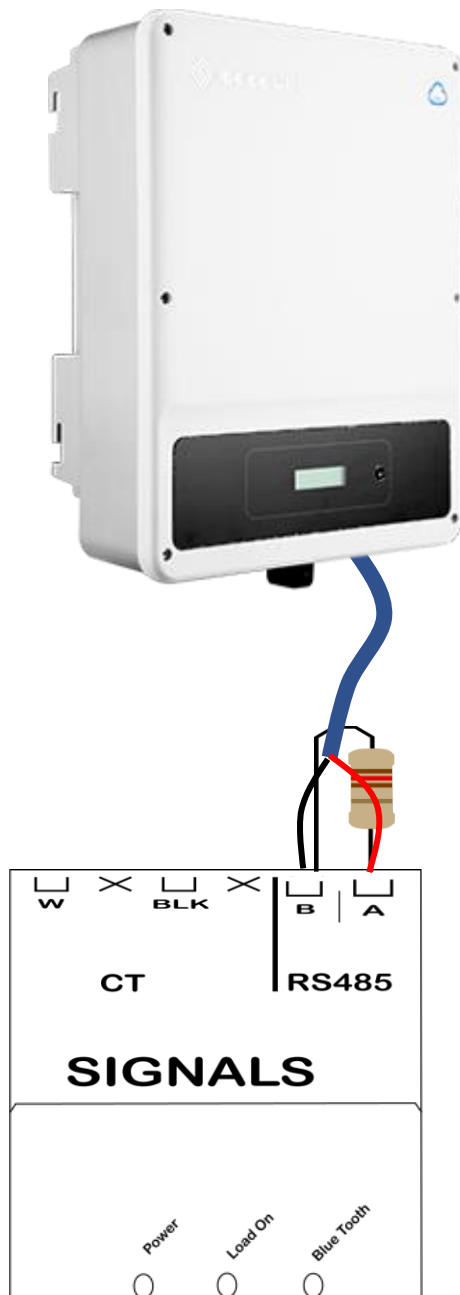
Pin 5 => Catch Solar Relay RS485 A
Pin 6 => Catch Solar Relay RS485 B

SDT/DT Series.. Continued

Add RS485 termination resistor

For the SDT/DT series, a 120 Ohm termination resistor needs to be installed at the CATCH Control across RS 485 terminals A & B This is supplied with Catch Control. On occasions you also need to manually add a second 120 Ohm resistor inside the inverter rs485 connection point. In short cable runs you may get away with not having it, but it may be needed for longer cable runs. A second resistor is not supplied with the inverter.

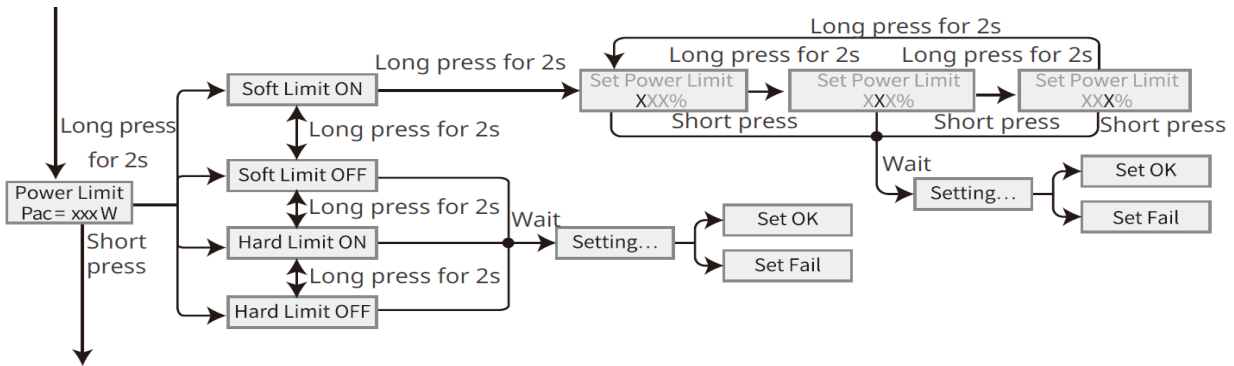
Connecting the RS485 Wires to CATCH Control



Ensure the data cable is rated for the voltages it will be in close proximity to. A 120 Ohm terminating resistor may be required at the CATCH Relay terminals as shown in the diagram below if the cable run is longer than 10m.

Inverter Setup via LCD

The DT user guide (from Goodwe) gives the following menu structure for configuring the power limit. This was found to be different to what our tested unit menu structure was. A long press on the 'soft limit on' menu option did not enter the 'Set Power Limit' menu. The 'set power limit' menu was accessed in the main menu directly following the option 'Power Limit'.



The CATCH power instructions below are based on the menu structure of the unit tested.

Turn 'Soft' Power Limit On/Off ('Hard' Limit can also be set On/Off as required).

1. Navigate to the `Power Limit` menu option using short presses (18 short presses).
2. Long press on the button to enter the 'Power Limit' sub-menu.
3. Navigate to the `Soft Limit` menu using short presses and set the soft limit on. (The Hard Limit may also be set on if the functionality is required)
4. Don't press anything for 10sec. Eventually it will go back to the main menu screen.

Soft Power limiting is now turned on. The next step is to set the actual export limit.

Set the Power Limit

1. Navigate to the `Set Power Limit` menu option (the menu option directly after the 'Power Limit' option) using short presses.
2. Long press on the button until the password screen appears. The default password is 1111.
3. Use longer 2sec presses to get to the last digit of the password then don't press anything for 10sec. Eventually you will move onto the Power Limit menu option.
4. Use short presses to change the Power Limit digits and 2sec presses to move to the next digit.
5. Don't press anything for 10sec. Eventually it will go back to the main screen.

You have now set the power limit.

Inverter Setup..Continued

The power limit is expressed as a percentage. For example:
If you are configuring a 5kW inverter, and the export limit is 3kW, the export limit should be set to $100 * 3\text{kW} / 5\text{kW} = 60\%$

IMPORTANT!!

RESTART THE INVERTER NOW!!!

- Shutdown the A/C
- Shutdown the DC
- Wait for the screen to go blank.

Power the inverter back up...

The inverter will not connect to the relay unless it has been restarted..

Important GOODWE SDT characteristics to note

- Consumption data does not get sent to the GOODWE monitoring portal. Regardless of whether you are using the CATCH Solar Relay or the GOODWE CT, no consumption data is displayed on the portal. The Goodwe HomeKit is required for this.
- If 'Soft limit' is set to On state and the 'Hard Limit' is set to Off state, and if communications is lost between CATCH Solar Relay and the inverter, the inverter will output power up to the its internally set 'Set Power Limit' value.
- If 'Soft limit' is set to On and the 'Hard Limit' is also set to On, and if communications is lost between CATCH Solar Relay and the inverter, will disconnect from the grid.
- If there are multiple inverters on site. The Goodwe SDT inverter will generate the difference between the meter reading and the power limit setting threshold configured in the inverter to maintain the site export limit.

As an example, if the site is export limited to 4kW, there is an existing 1.5kW system on site and you are installing a 5 kW system. Typically you will set the Goodwe export limit to 4kW. If the existing 1.5kW system is outputting 1.5kW, the Goodwe SDT will try output the difference between 4kW and 1.5kW = 2.5kW.

CATCH CONTROL Setup

The screen below is from the CATCH Power Configuration App. The App can be downloaded from Google Play Store or the Apple iStore.

IMPORTANT



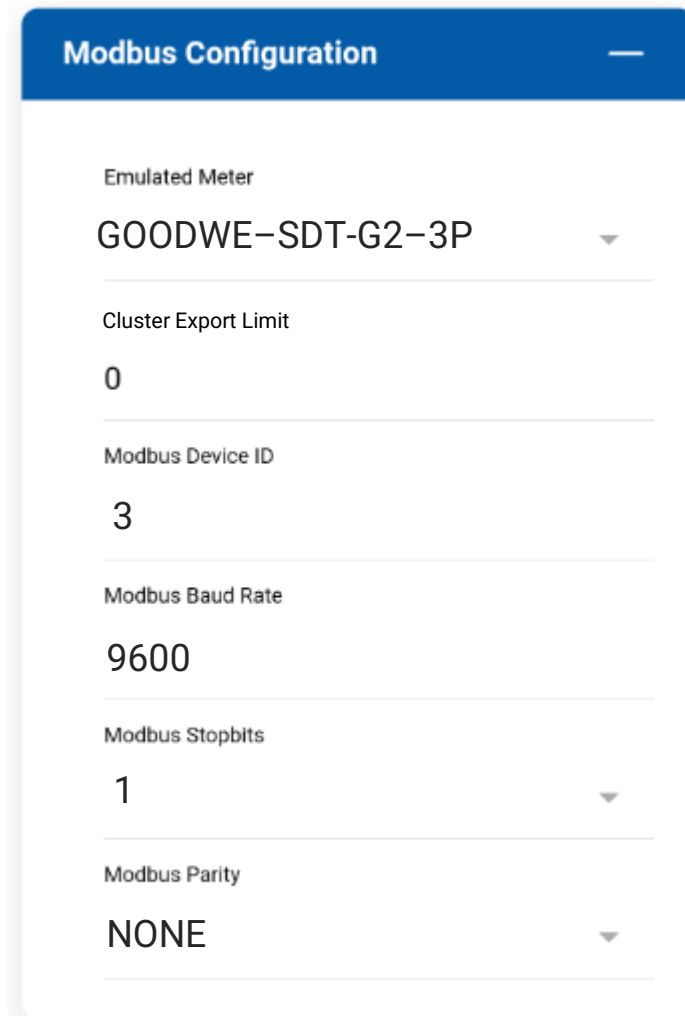
DO A FIRMWARE UPGRADE BEFORE YOU BEGIN

We are adding new inverters, and new control features all the time. Your relay firmware is most likely out of date already. Follow the onscreen instructions and perform a firmware update before you continue on

CONTROL Setup

Navigate to the Configuration screen and expand the Modbus Configuration section. Fill it out using the details below.

Save your changes.

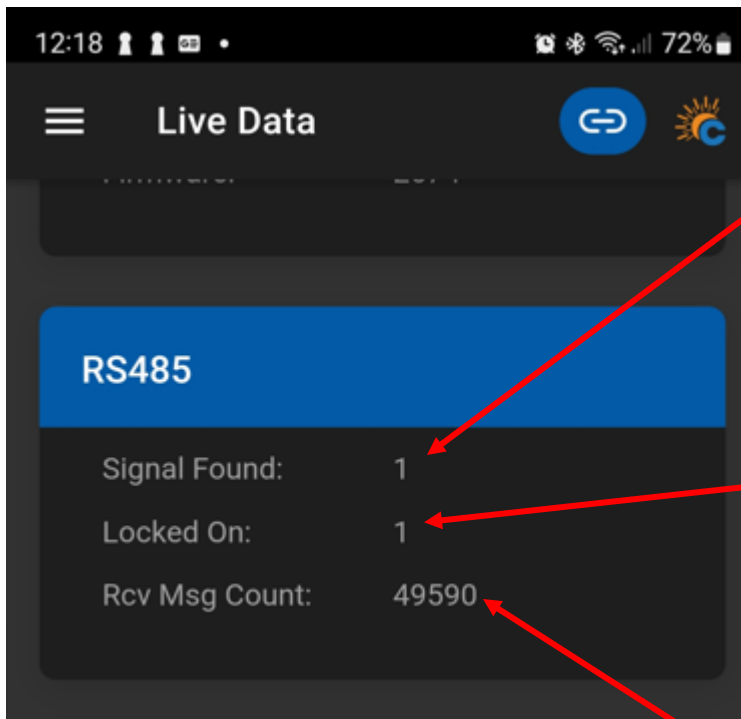
A screenshot of a mobile application configuration screen titled "Modbus Configuration". The screen has a blue header with the title and a white body with several input fields. Each field has a label, a value, and a dropdown arrow. The fields are: Emulated Meter (GOODWE-SDT-G2-3P), Cluster Export Limit (0), Modbus Device ID (3), Modbus Baud Rate (9600), Modbus Stopbits (1), and Modbus Parity (NONE).

Field Name	Value
Emulated Meter	GOODWE-SDT-G2-3P
Cluster Export Limit	0
Modbus Device ID	3
Modbus Baud Rate	9600
Modbus Stopbits	1
Modbus Parity	NONE

Checking the status of the RS485 interface

Within the CATCH Power app if you navigate to the bottom of the Live Data screen you will see something similar to the screen below.

The RS485 Status Can be used to confirm correct operation



Indicates the inverter is transmitting data on the RS485 cable.

If this is zero it means the inverter is not communicating or there is a break in the cable.

This indicates the inverter and the CATCH Relay are talking the same language.

If this is zero it is likely you have not chosen the correct meter when configuring the relay or the +ve and -ve wires are crossed over.

This number continually counts the number of successful messages. This number will continue to rise if communications the link is good.

THE FOLLOWING ONLY NEEDS
TO BE FOLLOWED IF YOU ARE ENABLING
DYNAMIC / FLEXIBLE EXPORTS



NO NATIVE MONITORING

If you choose to use RTU Control for this inverter, the inverter monitoring platform will not work



NO BATTERIES

RTU Control cannot be used on Hybrid inverters that have a battery connected.

1. Log into the inverter using the SolarGo commissioning app



SolarGo
GoodWe Technologies Co., Ltd.

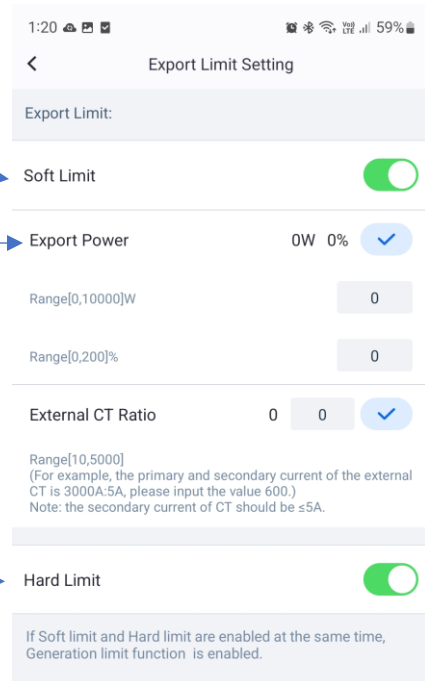
2. Navigate to Advanced Settings ->Export/Power Limit Settings

3. Setup the inverter as Shown

Soft limit ON

Export limit to ZERO

Hard Limit ON



SUNSPEC Configuration

GOODWE Does not support
SUNSPEC over modbusTCP



REGISTER SITE

DYNAMIC / FLEXIBLE Export Control

Follow the Configuration steps in the Electricians Guide to register the site for the MONOCLE, and for Dynamic / Flexible Exports

DYNAMIC / FLEXIBLE EXPORT CONTROL

DYNAMIC / FLEXIBLE EXPORT CONTROL