

MARSHALL



2025

MARSHALL

Device Config (SMA)

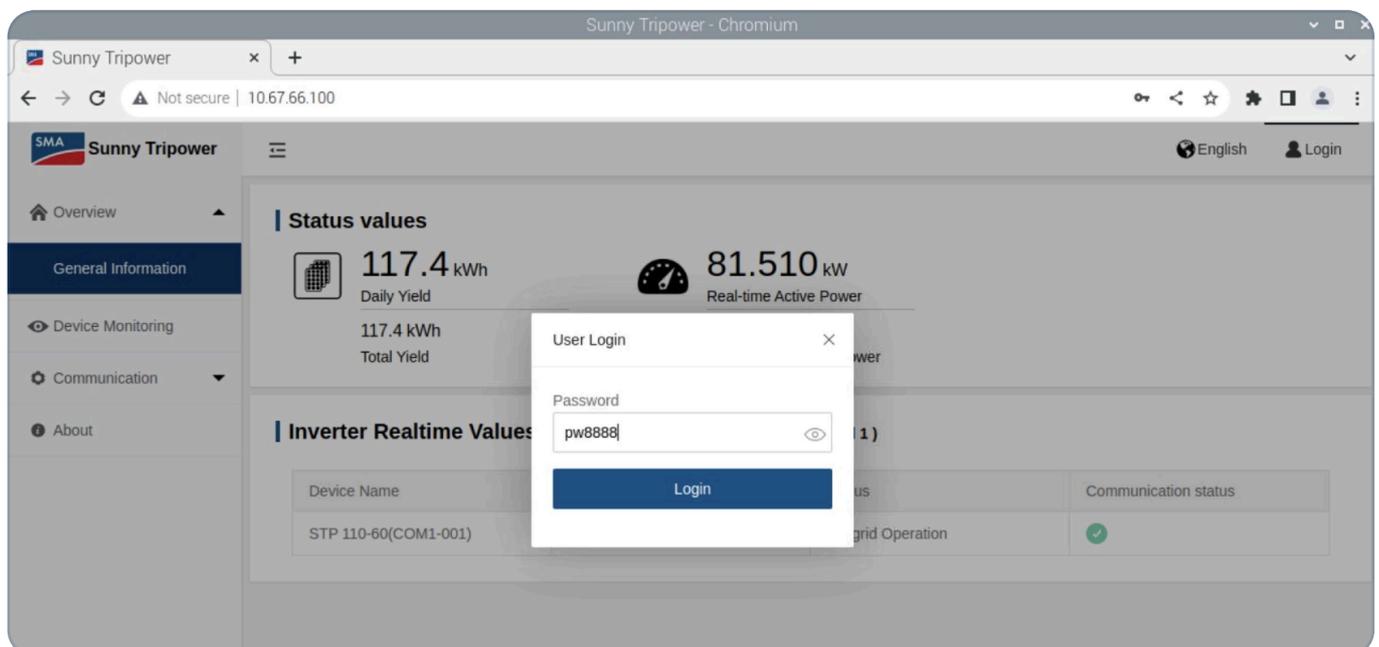
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1.0 Device Configuration

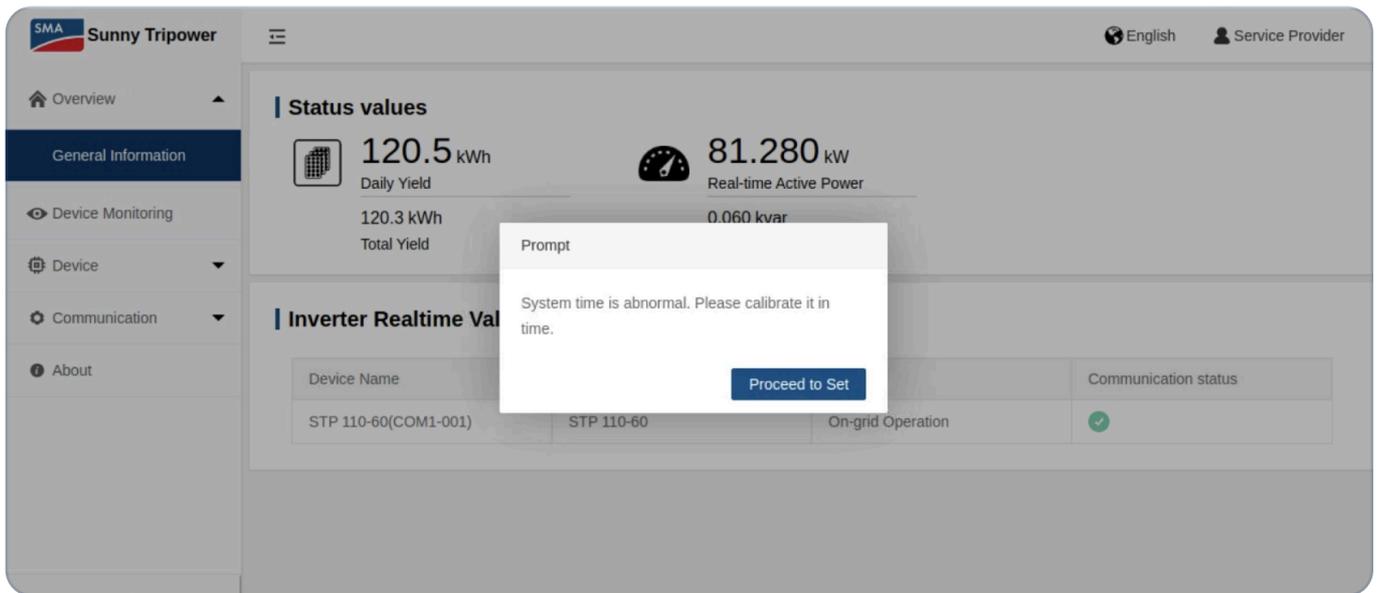
Part A

SMA CORE2 Inverters

1. SMA CORE2 inverters do not have a built-in Wi-Fi access point. To enable network connectivity, connect the inverter to a router, Wi-Fi repeater, or network switch using a LAN cable.
2. Connect your phone or laptop to the same network, then use an IP scanner to detect and identify the inverter's IP address.
3. Open a web browser on your phone or laptop, enter the IP address obtained in Step 2, and access the SMA inverter's web interface.
4. Click the "Login" button in the top right corner of the inverter's web interface. Use the default password 'pw8888' to log in.



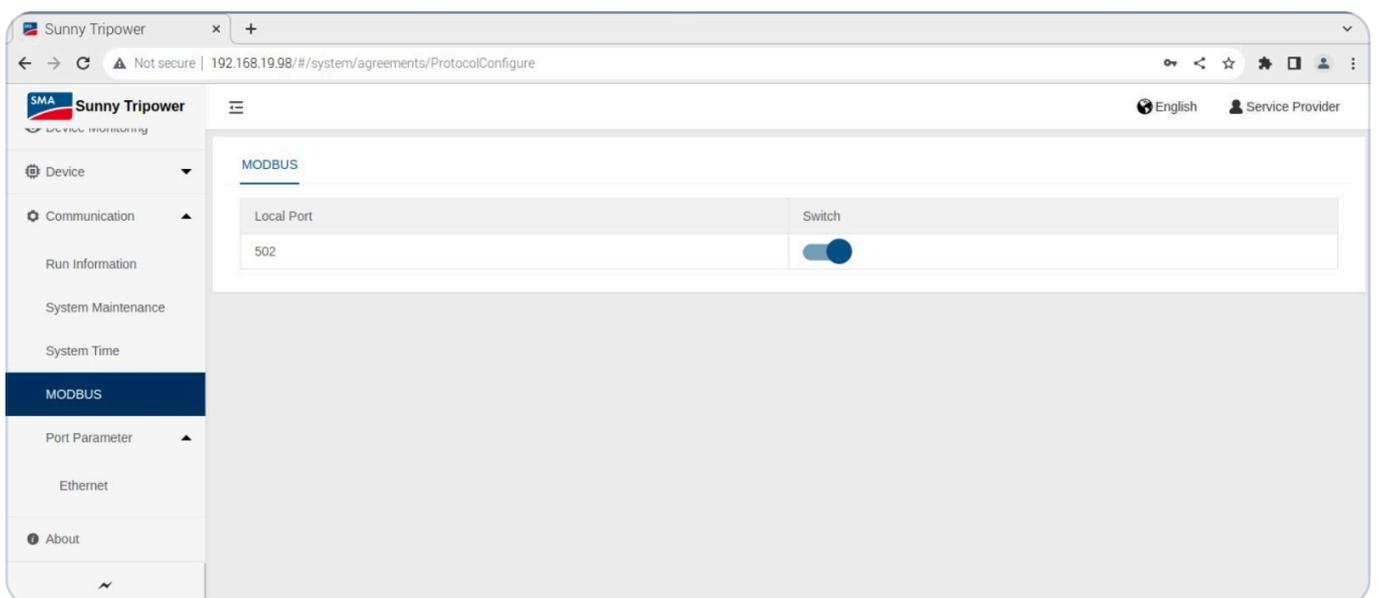
5. Ignore the "System time abnormal" prompt, as the inverter does not support daylight saving time. This does not affect functionality.



Before interfacing the inverter with the Marshall gateway device, change the inverter configuration to the following. Failure to change the inverter configuration may result in loss of communication between the Marshall device and the inverter.

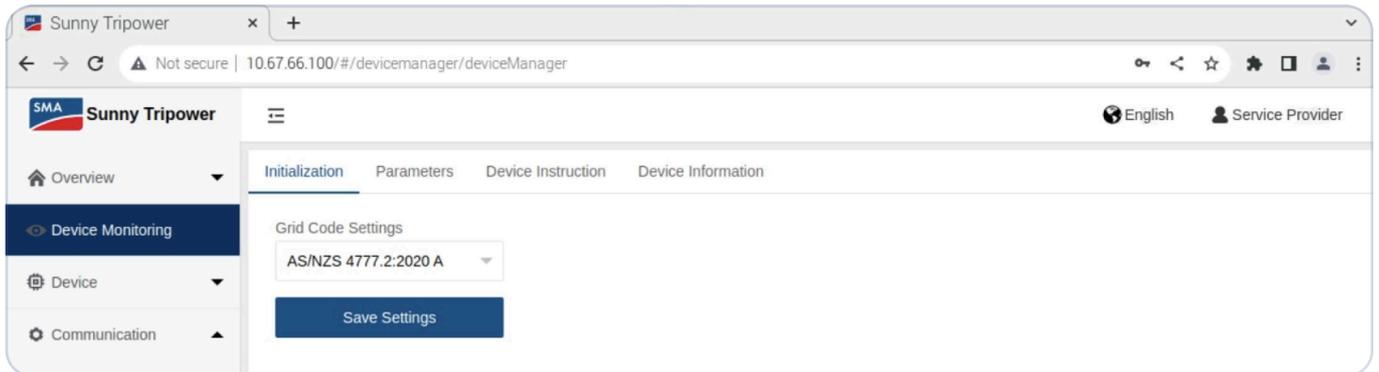
a. Inverter MODBUS Control

1. Switch Enable/Disable of Local Ports.



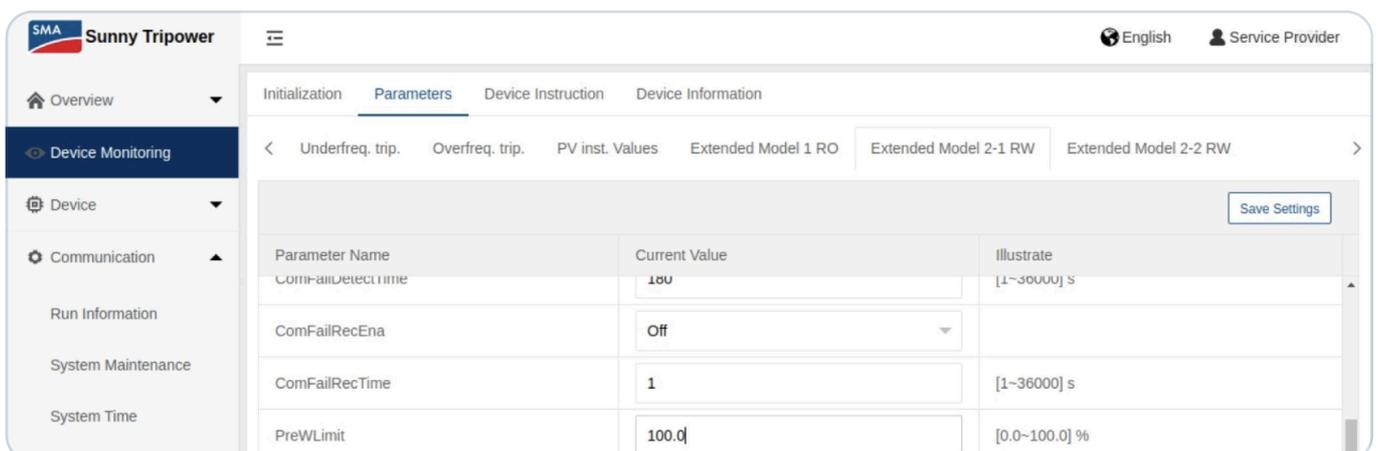
b. Grid Code Settings

1. Open the Device Manager tab from the navigation bar.
2. Under the Initialization tab, select the appropriate Grid Code setting. This is the default view when you access the Device Monitoring tab. Click "Save Settings"



c. PreWLimit

1. In the Device Monitoring tab, navigate to the Parameters section. Use the arrow keys to browse through the available settings.
2. Use the arrow keys to navigate to "Extended Model 2-1 RW."
3. Scroll vertically to locate "PreWLimit", then set the parameter based on the grid requirements. This defines the fallback percentage for active power. Click "Save Settings"



d. Timeout for active commands

1. In the Device Monitoring tab, navigate to the Parameters section. Use the arrow keys to browse through the available settings.
2. Use the arrow keys to navigate to "Ext. Control"
3. Scroll vertically to find "Timeout for Active Commands", then adjust the parameter according to the grid requirements. This setting determines the time, in seconds, before the fallback behavior for active power is triggered.
4. Click "Save Settings"

The screenshot shows the Sunny Tripower web interface. The left sidebar contains navigation options: Overview, Device Monitoring (selected), Device, Firmware Update, Inverter Log, Fault Recorder, Communication, and About. The main content area is titled 'Parameters' and includes sub-tabs: Initialization, Parameters (selected), Device Instruction, and Device Information. Below these are further sub-tabs: Nameplate, Instant. values, Electr. Ratings, Power settings, Feed-in status, Ext. controls (selected), React. power Q(V), and Active power P(f). A 'Save Settings' button is visible in the top right of the parameter table.

Parameter Name	Current Value	Illustrate
Activate fixed power factor control	0	[0-1]
Normalized reactive power limitation	0.0	[-100.0-100.0] VARMax
Activation of normalized reactive power limitation	0	[0-1]
Timeout for active commands	120	[0-36000]
Timeout for cos(phi) commands	0	[0-36000]
Timeout for reactive power commands	0	[0-36000]

e. Active Power Gradient

1. In the Device Monitoring tab, navigate to the Parameters section. Use the arrow keys to browse through the available settings.
2. Use the arrow keys to navigate to "Power Settings"
3. Scroll vertically to find "Active Power Gradient", then adjust the parameter according to the grid requirements.
4. Click "Save Settings"

SMA Sunny Tripower English Service Provider

Overview **Device Monitoring** Device Firmware Update Inverter Log Fault Recorder Communication About

Initialization **Parameters** Device Instruction Device Information

Nameplate Instant. values Electr. Ratings **Power settings** Feed-in status Ext. controls React. power Q(V) Active power P(f)

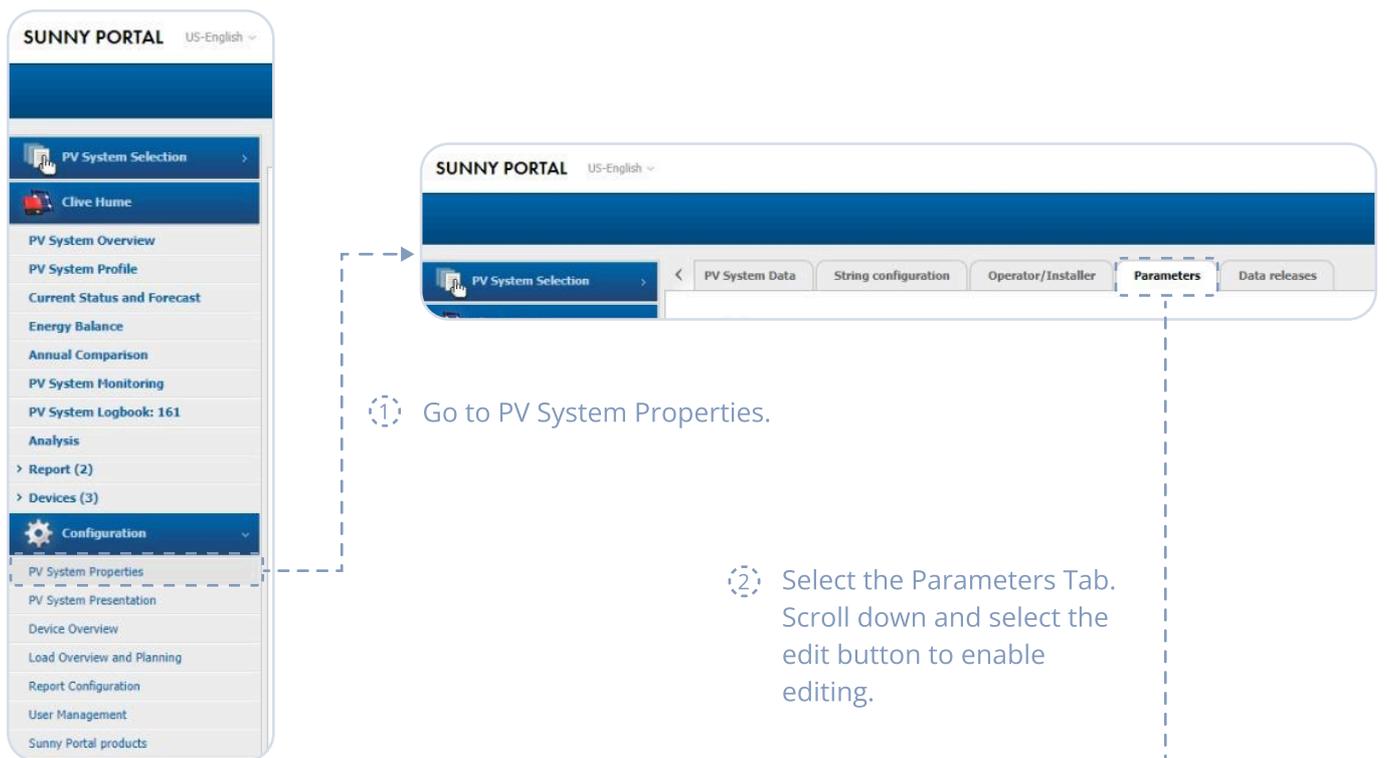
Save Settings

Parameter Name	Current Value	Illustrate
Reference voltage, PV system control	400	[0~1000] V
Reference correction voltage, PV system control	0	[-50~50] V
Currently set apparent power limit	110000	[55000~110000] VA
Active power gradient	20	[0.0~100.0] %WMax/sec
Active power gradient in feeding operation	10000	[1~10000] WGra
Nominal frequency	50	[1~65] Hz

Sunny Portal Login

2. Follow the process as below to set up limiting of the active power feed-in.

(Sunny Portal Login is only needed if they have a SMA Data Manager on the site.)



① Go to PV System Properties.

② Select the Parameters Tab. Scroll down and select the edit button to enable editing.

Limiting of the active power feed-in

According to requirements of your grid operator, the Sunny Home Manager can ensure that surplus PV energy is fed into the utility grid only up to a defined limit. ⓘ

Limiting to:

- A fixed value of the nominal system power in kW ⓘ
- A percentage of the nominal system power ⓘ
- External setpoints ⓘ
- Zero Export ⓘ

Information:

- The system operator is responsible for the accuracy of the information on limiting the active power feed-in and the nominal system power.
- Ensure that your feed-in meter complies with the requirements. ⓘ

Limiting of the active power feed-in
no limiting of the active power feed-in

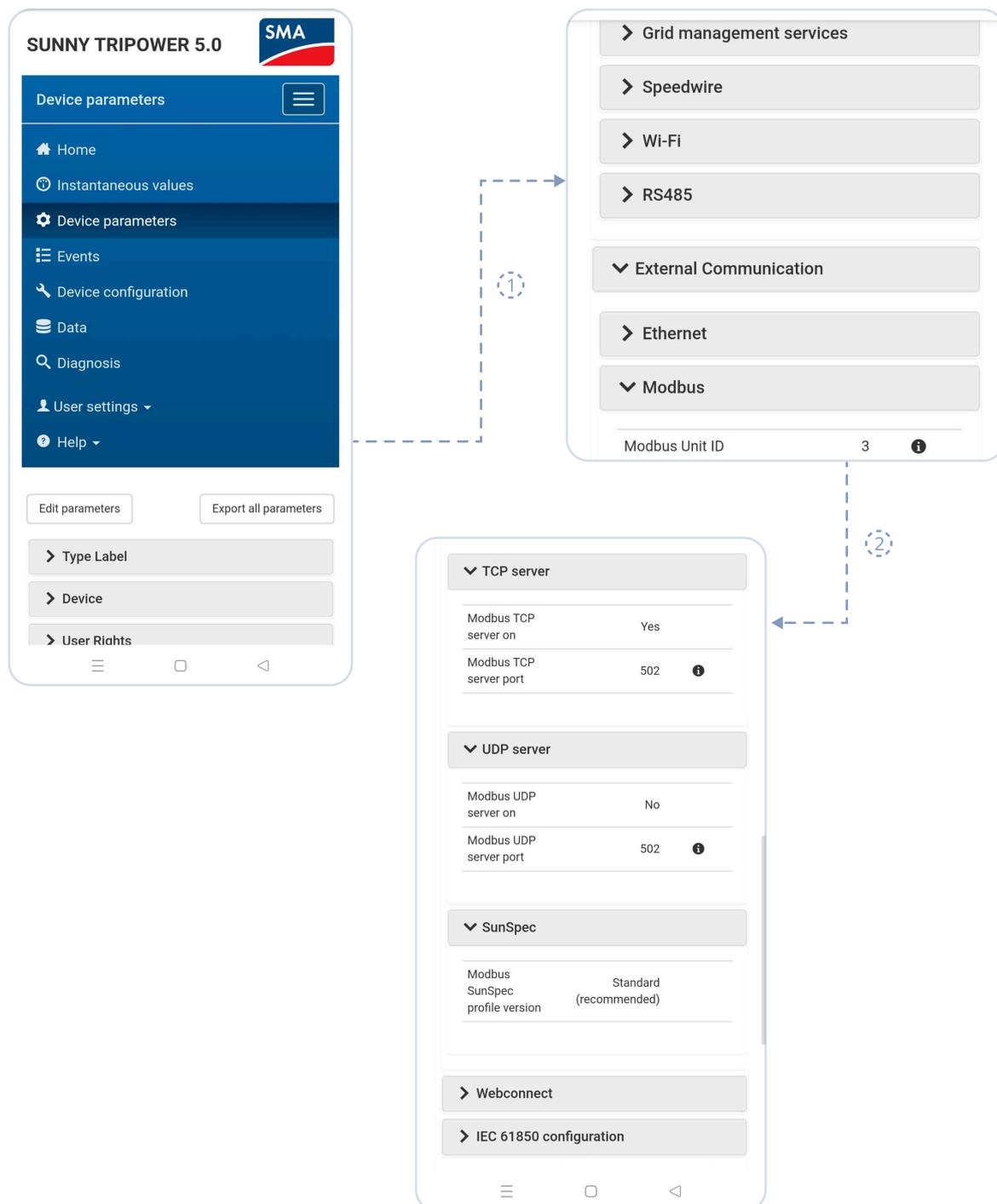
③ Set the limiting of the active power feed-in to "no limiting of the active power feed-in".

2.0 Device Configuration

Part B

SB STP STP50-41

1. Follow the process as below to set up SB STP STP50-41.



Sunny Portal Login

2. Follow the process as below to set up limiting of the active power feed-in.

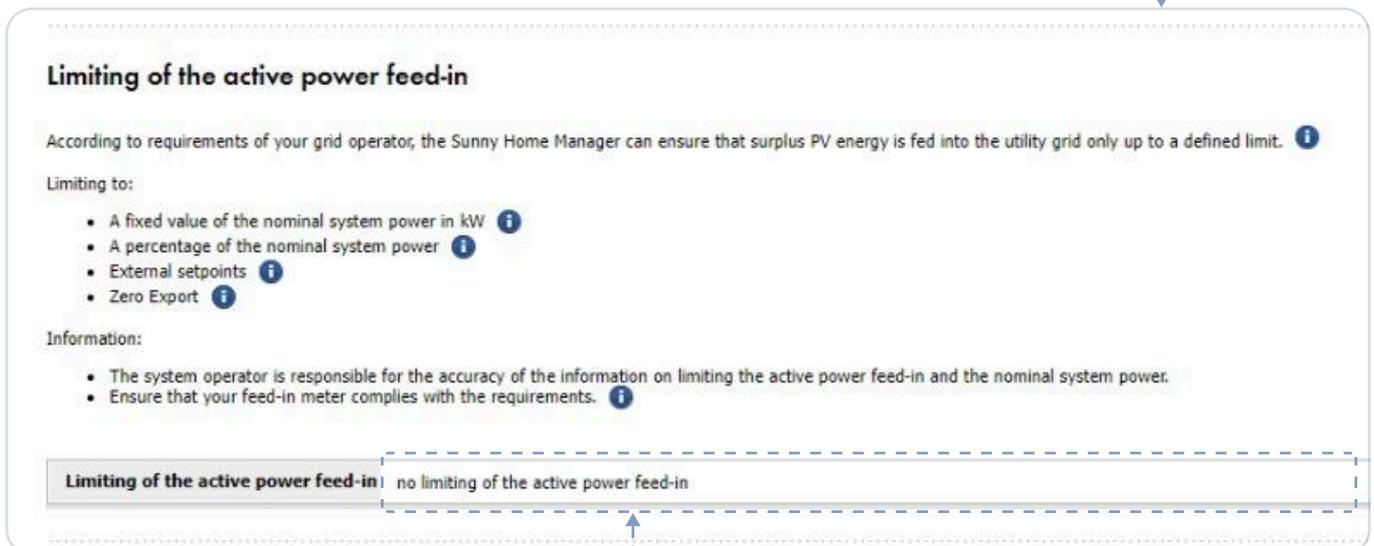
(Sunny Portal Login is only needed if they have a SMA Home Manager on the site.)



① Go to PV System Properties.



② Select the Parameters Tab. Scroll down and select the edit button to enable editing.



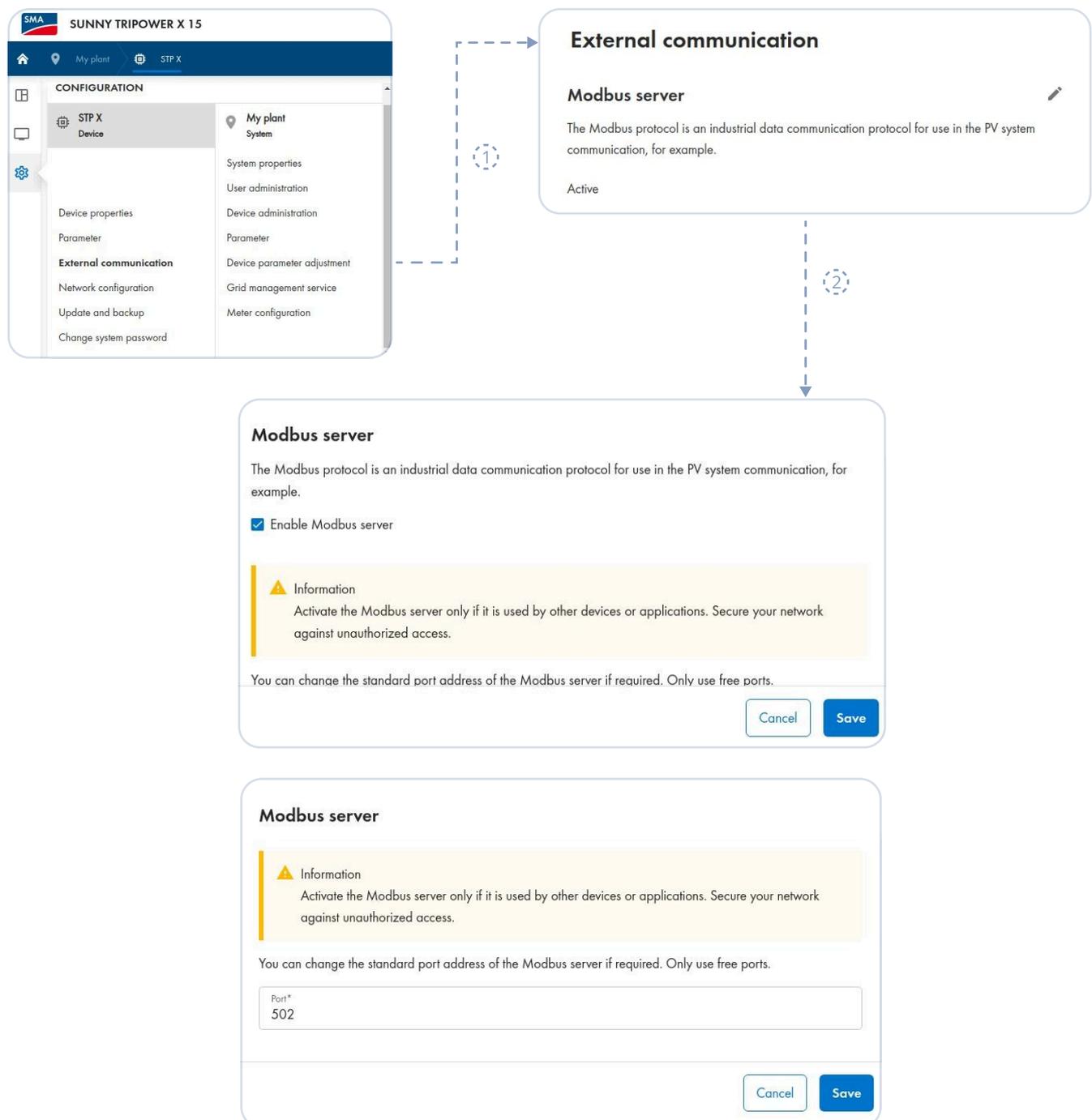
③ Set the limiting of the active power feed-in to "no limiting of the active power feed-in".

3.0 Device Configuration

Part C

Sunny Tri Power x 12 15 20 25

1. Follow the process as below to set up Sunny Tri Power x 12 15 20 25.



Grid Management Service

2. Follow the process as below to set up Grid Management Service.

1. Navigate to Grid Management Service
2. Select Active and Reactive Power
3. Click on Configuration & Activation

Grid management service

Active and reactive power	Configuration & activation
Recording of setpoints	Configuration & activation
Country data set	Configuration & activation

4. Properly configure the grid settings to ensure optimal performance and alignment with system requirements.

Active and reactive power setpoints

Start with the information about the state of your utility grid and the power of your system. Then you can configure the active power and reactive power setpoint your applicable connection conditions.

Grid settings

Overview Summary



Grid settings

Nominal grid voltage	230 V
Phase reference	Phase voltage
Nominal system power	Manual specification total AC power 15 kW
Nominal values	Nominal reactive power: Automatic Nominal active power: Automatic Nominal apparent power: Automatic Nominal cos phi: Disabled

Grid settings

Start with the information about the state of your utility grid and the power of your system. Then you can configure the active power and reactive power setpoints according to your applicable connection conditions.

Nominal grid voltage

The nominal grid voltage is the target voltage at the point of interconnection. This voltage varies depending on the region and type of utility grid (high, medium or low voltage).

What nominal voltage is the utility grid designed for?

Nominal grid voltage*
 V

Which phase reference should the nominal grid voltage have?

- Outer conductor voltage
- Phase voltage

Nominal system power

The nominal power of your system is the maximum total power your system can generate. Both the sum of all AC powers and the sum of all PV modules (DC) can be used for this purpose.

- Total AC power

Sum of all AC power in the system*
 kW

- Total DC power

i Information

Please note that in some utility grids and, depending on the specification by the grid operator, the total DC power must be specified (e.g., with an active power specification of 70%).

Nominal values

Indicate the nominal values of your system for active, reactive and apparent power or have them automatically calculated from the nominal system power. Additional limits can limit the reactive power modes.

Nominal reactive power	Automatic
Nominal active power	Automatic
Nominal apparent power	Automatic
Nominal cos phi	Disabled

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5. Navigate to Operating Mode, select Open Loop Control, and click Continue.

Active power
Active
Disable

Overview
Summary

✔
Operating mode
→

Operating mode
Open-loop control

Operating mode for active power

You can specify how the device implements the active power setpoints into the system.

- Open-loop control (Open-loop control circuit)**
The implementation of the specifications from the System Manager at the point of interconnection will not be checked.
- Closed-loop control (Closed-loop control circuit)**
The implementation of the setpoints from the System Manager at the point of interconnection will be checked. If necessary, the System Manager corrects non-default values. This requires using the measuring device at the point of interconnection.

- Optimized closed-loop control/open-loop control**
Inverters receive individual setpoints
🔗 Linked settings: also applies to **Reactive power**

Limitation

Disable the optimized closed-loop control/open-loop control if the following devices are in your system:

- Inverters connected via Data 1 (also applies to subordinate devices)
- Sunny Tripower CORE2 inverter

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6. In the Grid Operator Specifications, enable the Source for External Setpoint and check the Modbus option.

Grid operator specifications

The setpoint for the active power setpoint can be specified manually or externally by a communication device. If several options are active simultaneously, setpoint is used from all specifications.

 Note that external generators in the plant do not receive control values from the System Manager and are therefore not reduced in their active power.

Manual setpoint for active power limitation

In case of a manual setpoint, you must enter the active power limitation specified by the grid operator in percent.

Source for external setpoint

With the external setpoints, you must configure the sources for the calculation of active power setpoints.

- Modbus
- Analogue inputs
- Digital inputs

Fallback behavior for missing setpoints

What should I do if the setpoint specification is missing, e.g., in the event of a communication failure?

- Keep values
Automatic acceptance of the setpoints last received

- Apply fallback values
Manual entry of setpoints which are to be applied in case of a missing setpoint

Fallback value
0 %

How long should I wait for the setpoint to take effect before the fallback value should be adopted?

Time without setpoints
60 s

Behavior in case of setpoint change

A corresponding behavior can be defined in order to prolong jumps in the setpoints. This is helpful to avoid large load changes within a short period of time.

 If no dynamic behavior is configured, jumps can occur.

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7. When prompted to access Direct Seller Settings, ensure that the Source for External Setpoint is disabled.

Direct seller settings

You can configure the setpoint for the active power setpoints of the direct seller.

 Note that external generators in the plant do not receive control values from the System Manager and are therefore not reduced in their active power.

Source for external setpoint

Here you can activate receipt of setpoints of your direct seller and select a communication channel.

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8. Click Save

Active power Active

Overview Summary



Operating mode

Operating mode

Open-loop control



Grid operator specifications

Manual setpoint

-

Source external setpoint

Modbus

Fallback behavior for missing setpoints

Fallback value 0% | Time without communication 60s

Behavior in case of setpoint change

-



Direct seller settings

Source external setpoint

-

Reactive power

Overview Summary



Operating mode

Operating mode

Open-loop control



When active power is fed in

Calculation via

-



In case of zero active power

Calculation via

-



When active power is supplied by grid

Calculation via

-



Reference value

Nominal power

Nominal active power

Unsaved changes

MARSHALL

datamarshall.au

03 4422 4455

support@datamarshall.au

ZECO Energy

6C/148 Chesterville Road,
Moorabbin
VIC Australia 3189

A.B.N 16 111 222 456