

SwitchDin Products

Where to buy:

Supply Partners:

Phone: (07) 3122 7584

Email: sales@supplypartners.com.au

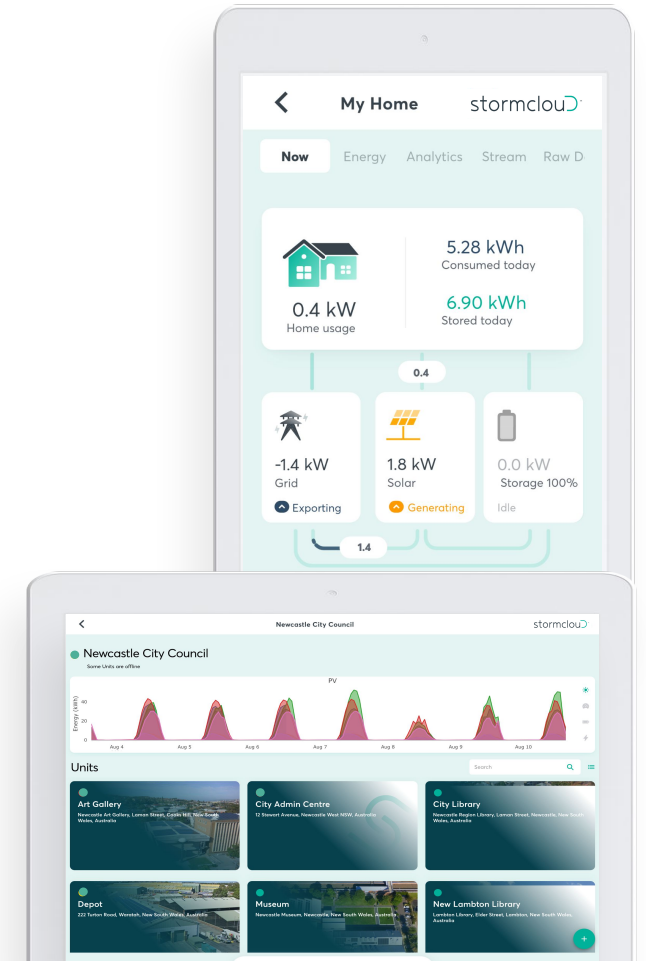
Web: supplypartners.com.au

Droplet™



stormcloud™

Free monitoring, alerts & more



Training & support resources

SwitchDin Academy

Self-paced, online training:

switchdin.com/academy



Note: You must be accredited to install Droplets!

Support

Support availability:

9:00am - 5:00pm AEDT

After hours support:

Email support@switchdin.com to request after hours support at least 72 hours prior

www.switchdin.com/support

support@switchdin.com

(Additional resources available for trained installers)

Droplet installation & Commissioning Guide (AusNet Flexible Exports)

2021

www.switchdin.com.au



Droplet basics: Connecting to Power & Internet

2021

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Droplet Specifications

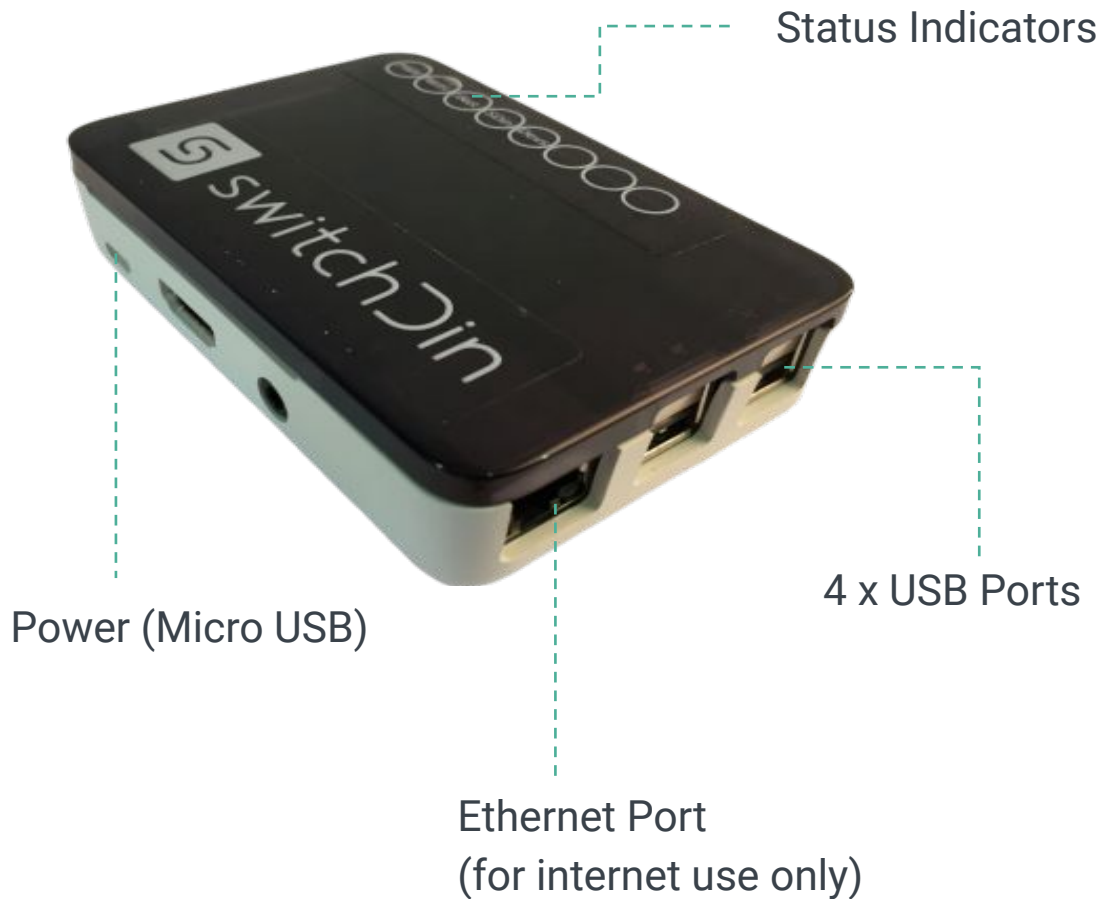


Residential Droplet

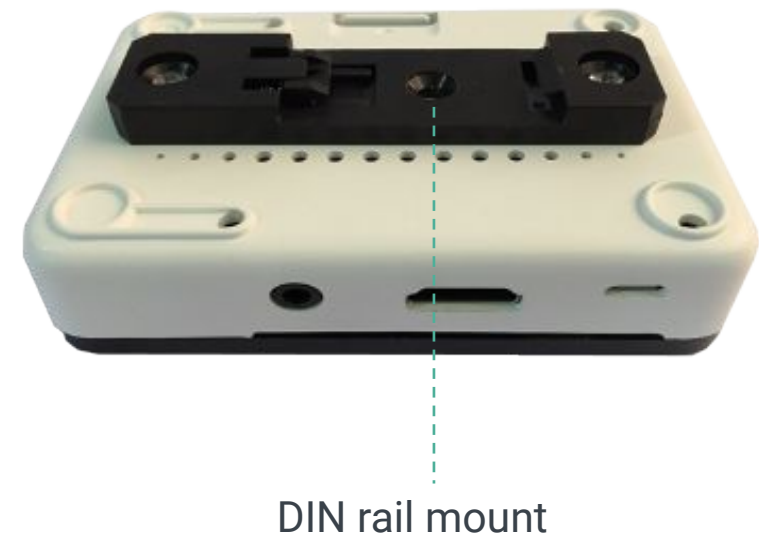
- Wifi
- Ethernet
- USB
- Many protocols via converters

Droplet Overview

Droplet top view



Droplet underside



Residential Droplet Installation



Packing List	Inspection	Mounting
<ul style="list-style-type: none">• 1 x SwitchDin Droplet• 1 x Power Supply• 1 x USB adaptor (optional depending on inverter)	<ul style="list-style-type: none">• Check that all parts are as per packing list.• Check for signs of physical damage.• If any parts are missing or visibly damaged, please contact SwitchDin prior to installation.	<ul style="list-style-type: none">• The Droplet can be mounted on a standard DIN rail.• Indoor installation.• Below 40 degrees ambient

Droplet internet connection

Residential Droplet



Connect to Ethernet

WiFi



Download the SwitchDin app from the Google Play or iOS App store and follow the instructions.

Notes for internet/network connection

- The best place to install the Droplet is close to the router/modem with an ethernet connection. This simplifies installation and provides the highest reliability.
- If a wifi or ethernet over powerline extender is being used, it is compulsory to connect the device directly to the USB port of the Droplet using an Ethernet - USB converter (see below)

Required LED indicators
for successful internet
connection (G,R,B,G,G)



Ethernet



Power the Droplet

Residential Droplet



Plug power supply into GPO

Internet prerequisites

1. Mobile/tablet being used for commissioning is required to have an internet connection (wifi/4G) to configure the Droplet.
2. Internet connection required on site for Droplet/Stormcloud operation.

Connecting Droplet to Fronius SnapInverter (AusNet Flexible Exports)

2021

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Hardware Checklist

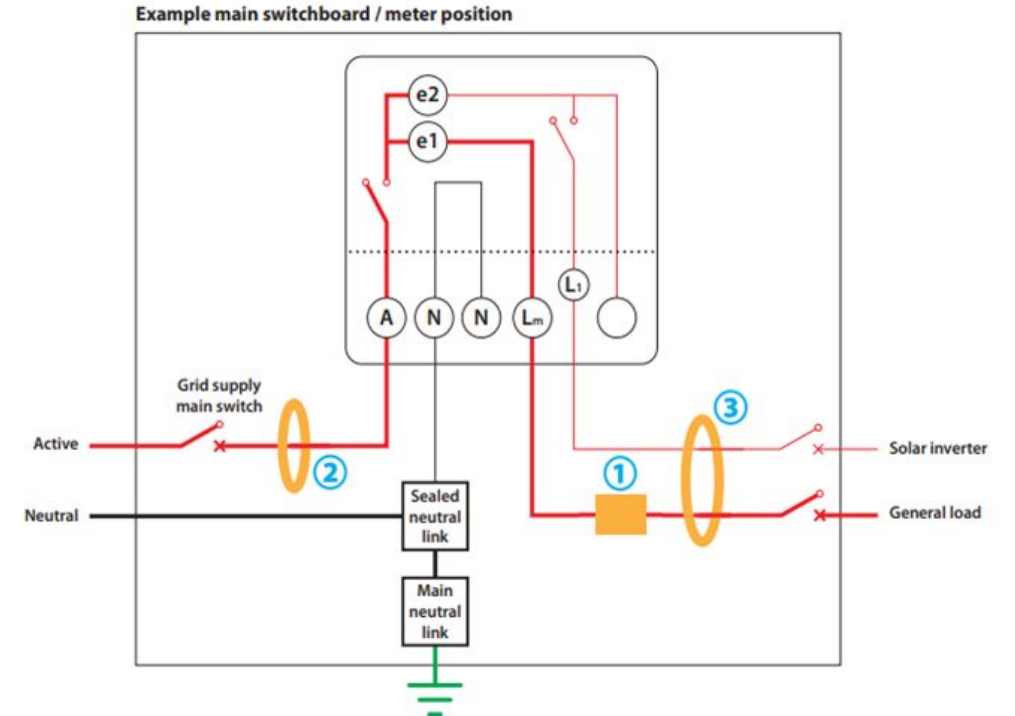
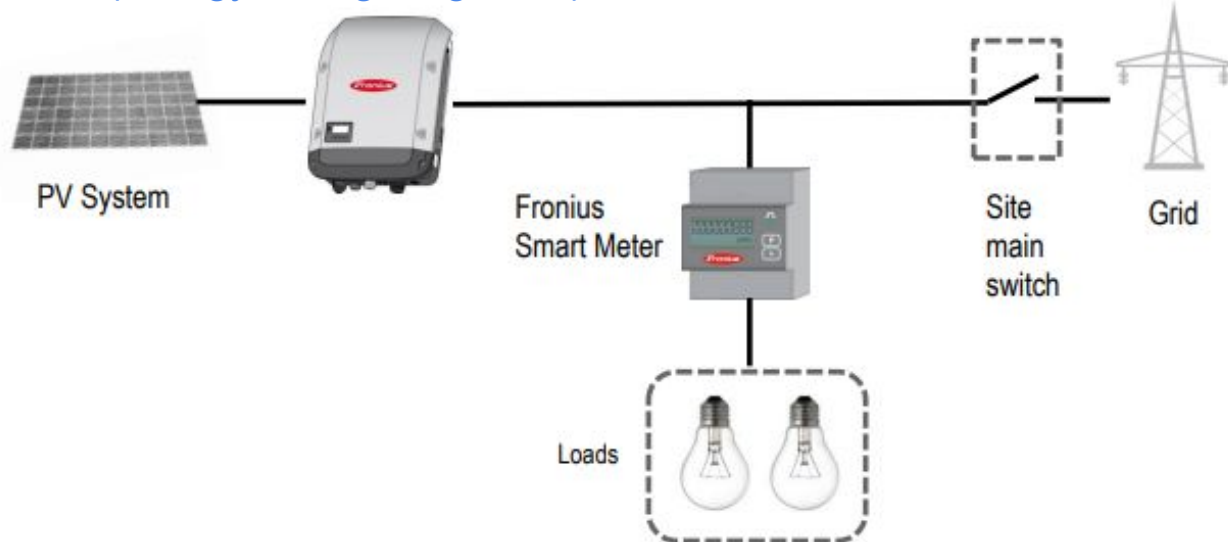
- Fronius SnapINverter Primo 3-8.2kW
- Any Fronius Smart Meter
- SwitchDin Residential Droplet
- GPO for SwitchDin Droplet
- Sets of cables (ethernet & ethernet to USB adaptor)



Fronius Smart Meter

- Connect Fronius Smart Meter on grid or load side
- Refer to OTR Wiring Information and Diagram:

[Smart Meter Minimum Technical Standard and associated Deemed to Comply Wiring Arrangements \(energymining.sa.gov.au\)](http://energymining.sa.gov.au)



Enable Modbus TCP and Port 502

Settings

- GENERAL
- PASSWORDS
- NETWORK
- FRONIUS SOLAR.WEB
- IO MAPPING
- LOAD MANAGEMENT
- PUSH SERVICE
- MODBUS** ←
- INVERTERS
- FRONIUS SENSOR CARDS
- METER
- DNO EDITOR

Modbus

Data export via Modbus off tcp rtu

Modbus port

String control address offset

Sunspec Model Type float int + SF

Demo mode

Inverter control via Modbus

Restrict the control

Confirmation:

Controlling priorities

1. Controlling via Modbus
2. IO control
3. Dynamic power reduction

Legend:
1 ... highest priority
2 ... medium priority
3 ... lowest priority

Note: a change of control priorities is possible only in the DNO editor with the service password.

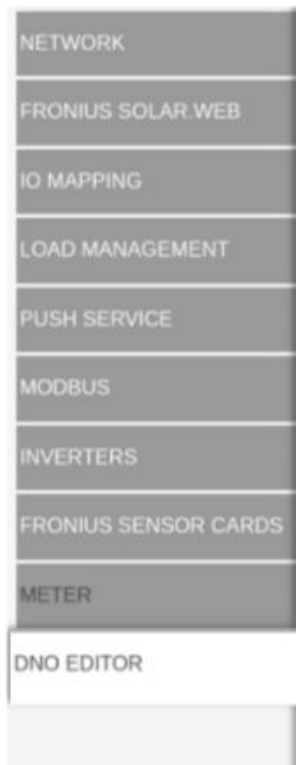


Enable Failsafe

Recommendation is to use Dynamic Power Reduction available in DNO editor

Set **Dynamic power reduction** to "**Limit Entire System**"

Set **Maximum Grid Feed-in Power** to the desired fallback value. e.g. 1500W



Dynamic power reduction

Export Limitation: No Limit Limit Entire System Limit per Phase (not for single-phase devices)

total DC power of the system: Wp

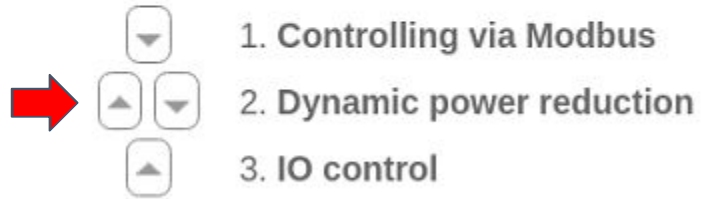
Maximum Grid Feed-In Power W

Reduce inverter power to 0% if meter connection has been lost.

Control Priorities

- NETWORK
- FRONIUS SOLAR.WEB
- IO MAPPING
- LOAD MANAGEMENT
- PUSH SERVICE
- MODBUS
- INVERTERS
- FRONIUS SENSOR CARDS
- METER
- DNO EDITOR

Controlling priorities

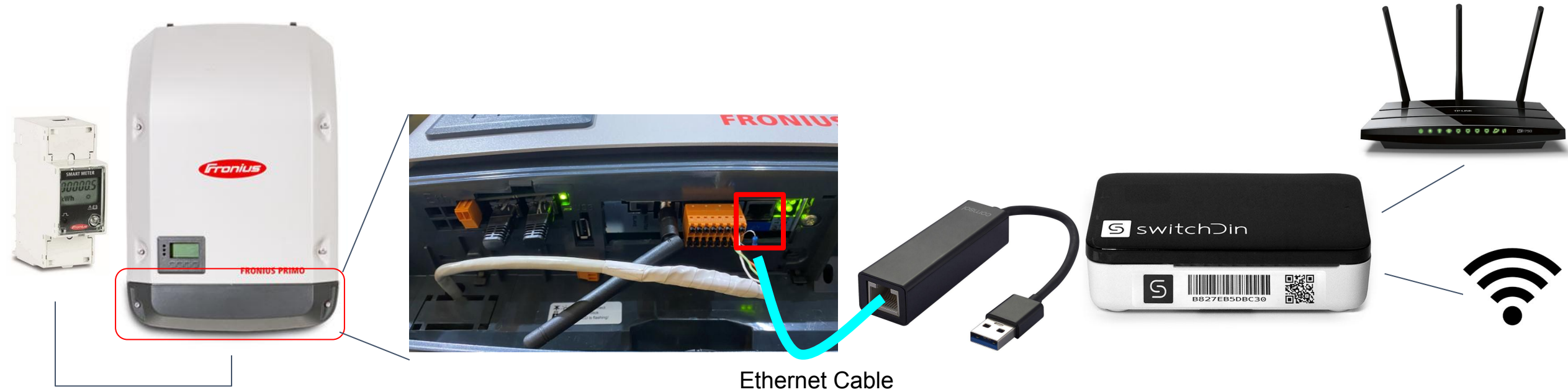


Legend:

- 1 ... highest priority
- 2 ... medium priority
- 3 ... lowest priority



Connecting Droplet to inverter (Inverter → Droplet → Router)



Using a screwdriver, open the inverter cover

Plug ethernet cable into the inverter port

Plug the other end of the ethernet cable into an adaptor

Connect the adaptor to any USB port on the Droplet

Connect the Droplet to the internet to router via ethernet cable or WiFi

Connecting Droplet to inverter (Inverter → Router → Droplet)



Using a screwdriver, open the inverter cover

Plug ethernet cable into the inverter port

Plug the other end of the ethernet cable into the router

Connect the router to the SwitchDin Droplet

Wiring while using a wifi/powerline extender

1. Connect inverter to energy meter as per normal installation.
2. Connect inverter Ethernet directly to Droplet via Ethernet to USB converter provided.
3. The Droplet will provide internet connection to the inverter.
4. Connect the Droplet to the extender.
5. Commission the inverter.

Connecting Droplet to Growatt MIN TL-X inverter (AusNet Flexible Exports)

2021

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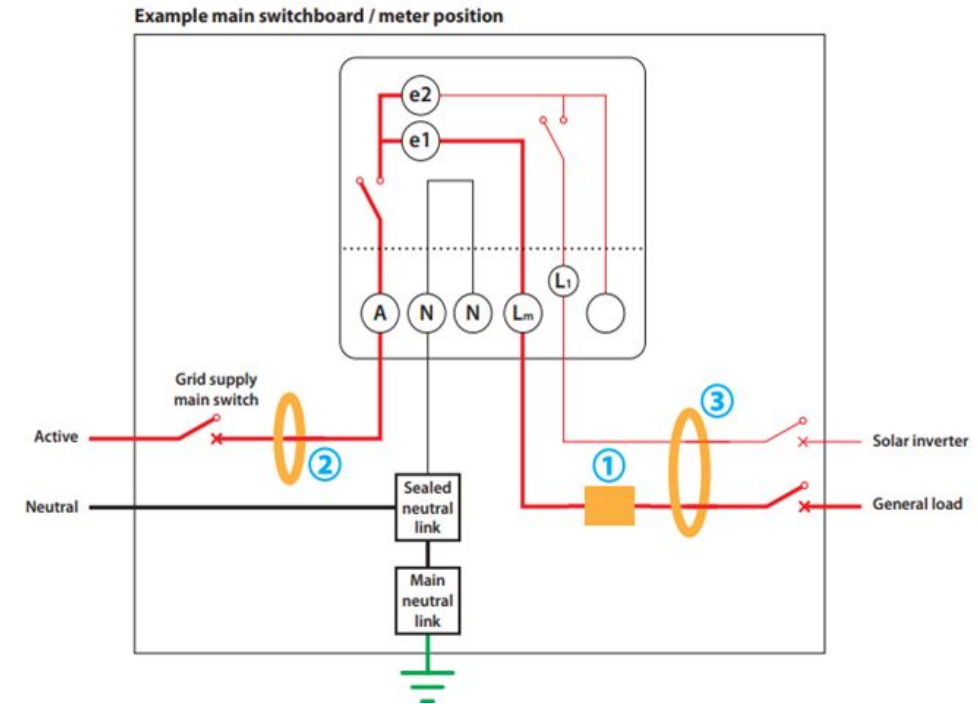
Hardware Checklist

- Growatt MIN TL-X 2.5-6.0
- Any Eastron Meter with Modbus
- SwitchDin Residential Droplet
- GPO for SwitchDin Droplet
- Sets of cables -
 - Option 1
 - ethernet, RS485 to USB converter
 - Option 2
 - ethernet, DB9 cable (male) and DB9 (female) to USB adaptor



Eastron Smart Meter

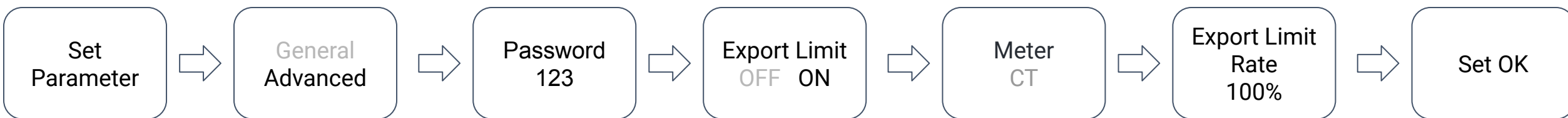
- Connect Eastron Energy Meter on grid or load side
- Refer to OTR Wiring Information and Diagram:
[Smart Meter Minimum Technical Standard and associated Deemed to Comply Wiring Arrangements \(energymining.sa.gov.au\)](http://energymining.sa.gov.au)



Growatt inverter settings

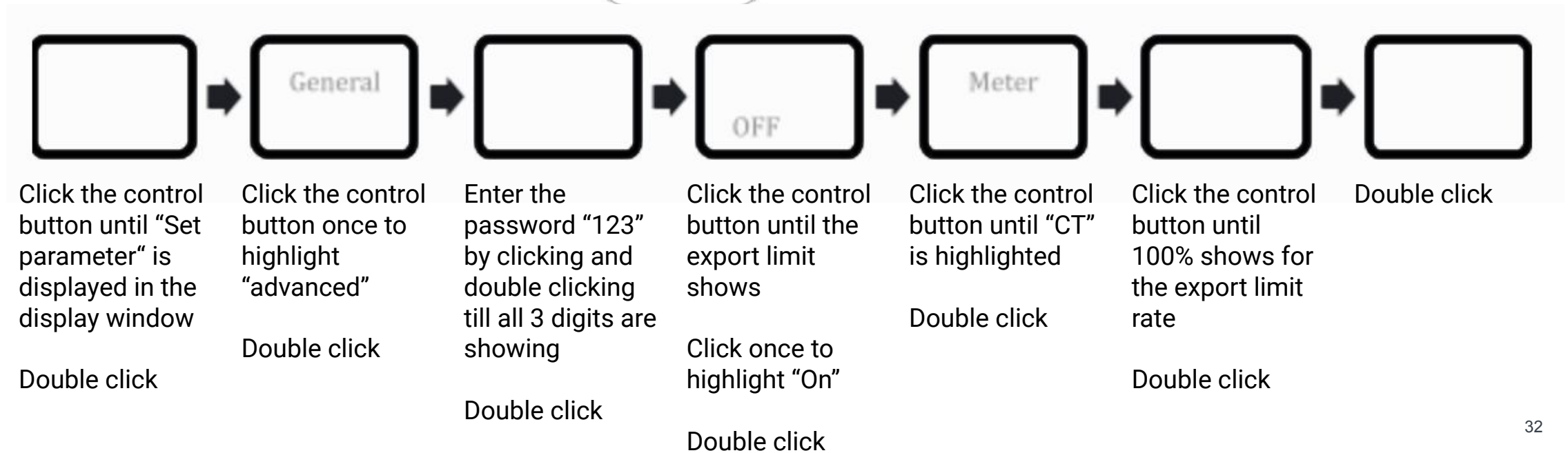
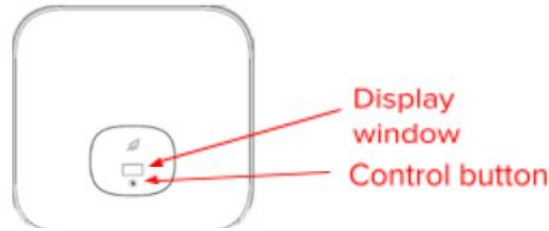


Touch	Description
Single	Switch Display or Number +1
Double	Enter
Triple	Previous menu



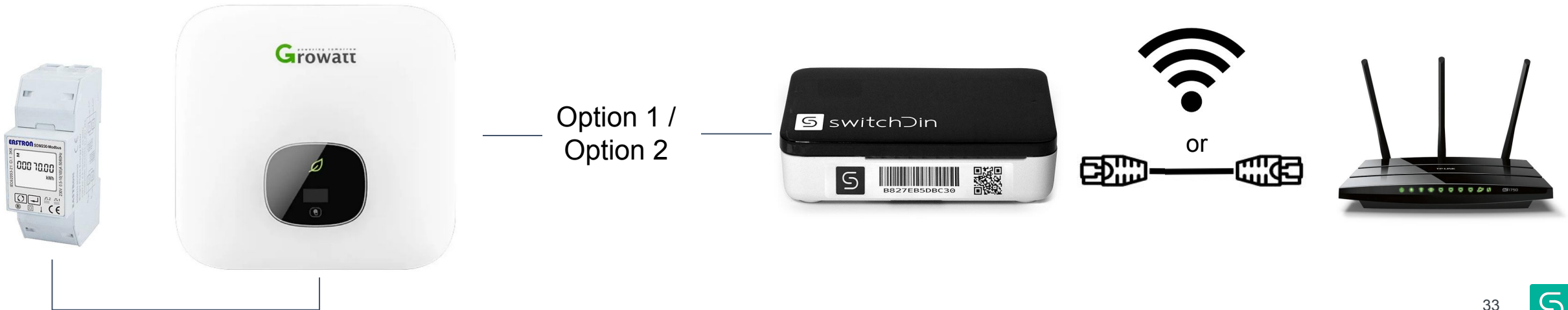
Growatt inverter settings

Use the control button on the front screen of the inverter to set the export limit settings as shown below:



Wiring the Droplet to the Growatt inverter

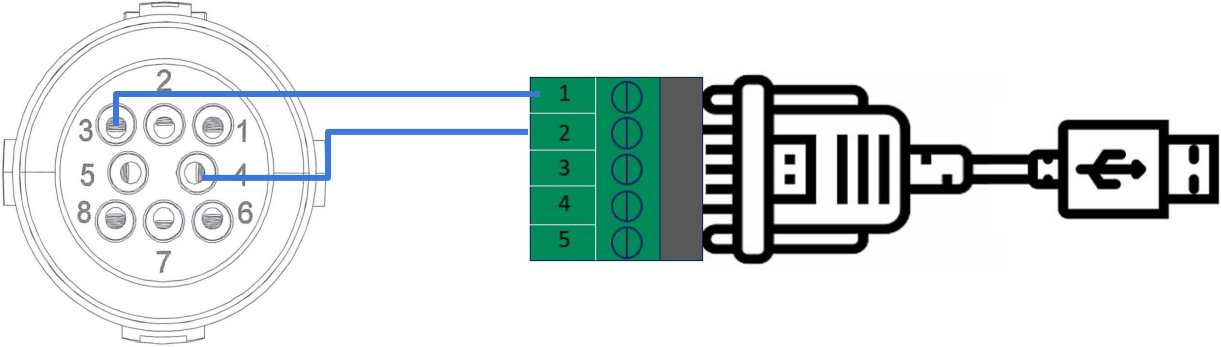
1. Connect inverter to energy meter as per normal installation.
2. Connect inverter to Droplet via
 - Option 1 - Eastron RJ45 cable + RS485 to USB converter
 - Option 2 - RS485 (male) + RS 485 (female) to USB converter
3. Connect the Droplet to the router / extender.



Option 1: Eastron RJ45 Cable + RS485 to USB converter

1. Use the cable provided by Eastron meter
2. Connect as below

8- pin Signal Connector (Inverter)	RS485 to USB converter
3	1
4	2



RS485 to USB converter equivalent pin

DB9	Output Signal	Full Duplex connection	Half-Duplex connection
1	T/R+	TXD(A+)	RS485(A+)
2	T/R-	TXD(B-)	RS485(B-)

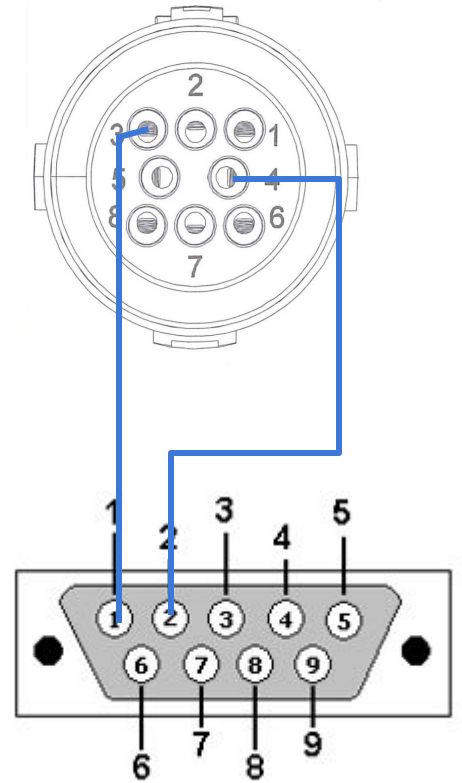


RS485 to USB converters



Option 2: RS485 (male) + RS485 (female) to USB

1. Cut the DB9 (male) cable into half, strip the cable and identify pin 1 and 2 on the DB9 cable
2. Safely terminate all the unused cables
3. Connect pin 1 on the DB9 cable to pin 3 on the 8-pin signal connector
4. Connect pin 2 on the DB9 cable to pin 4 on the 8-pin signal connector
5. Connect the male side of DB9 cable to the DB9 (female) USB adaptor
6. Connect the USB adaptor to any of the USB ports on the droplet
7. Connect the Droplet to the internet via ethernet cable (preferred) or WiFi



8- pin Signal Connector (Inverter)	DB 9 Cable
3	1
4	2

Configuring & Commissioning Droplets and Connected Devices (AusNet Flexible Exports)

2021

www.switchdin.com.au



Status and Installer App

Status Indicators

	Indication	Red	Green	Blue
PWR	Power	N/A	Power	N/A
WiFi	WiFi	No WiFi	WiFi connected	Weak WiFi signal
iNet	Internet	No internet	Internet connected	Configure via SwitchDin app
SDin	SwitchDin comms	Cannot see SwitchDin	Connected to SwitchDin	N/A
Devs	Devices attached	No devices	Devices detected	N/A



Download and open the Installer app

The app is available by searching for “SwitchDin” in the Apple iOS App Store or the Google Play store.
Create an account!

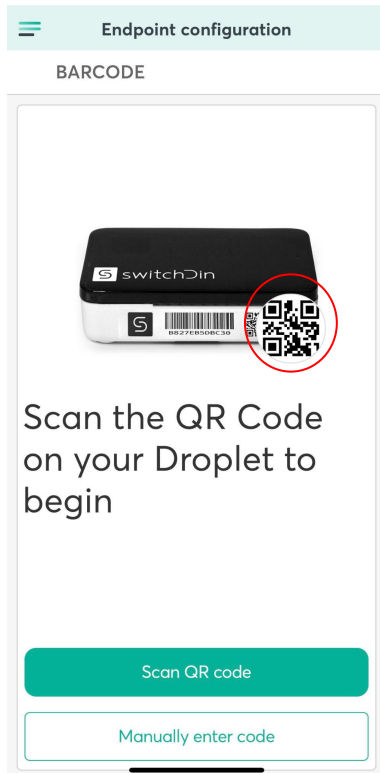


V0.2.28+

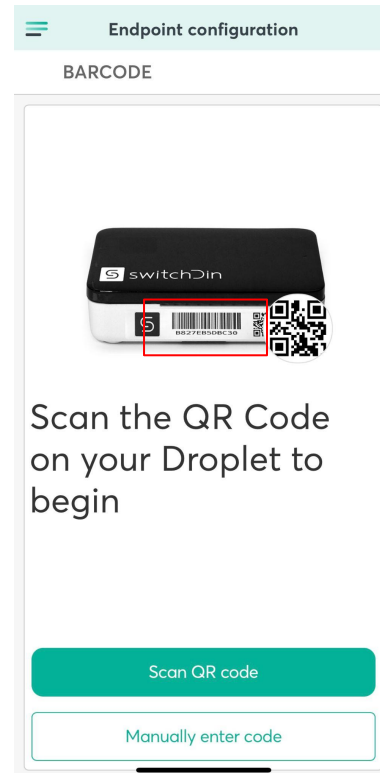


Commissioning

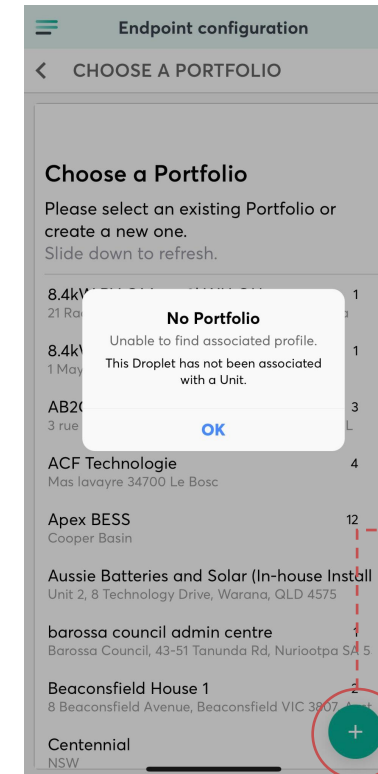
Scan QR Code



Or manually enter serial number



Create portfolio or add to existing



Only create a portfolio if it is your first installation!

Use a single portfolio for systems which require an agent!

Commissioning - setting up a site

Create a UNIT or choose an existing UNIT

Endpoint configuration

< CHOOSE A UNIT

Choose a Unit

Please select an existing Unit or create a new one.
Slide down to refresh.

Example Portfolio

Example Unit
91 Parry St, Hamilton East NSW 2303, Australia

+

Enter UNIT details

Create New Unit

QOSPOS

Name

Address

Street Address

CREATE NEW UNIT

Add Droplet to UNIT

Endpoint configuration

< CLAIM ENDPOINT

+

Add Droplet to a unit

Please confirm that you wish to add this Droplet to this Unit

Droplet serial number: b827ebf3e2ee

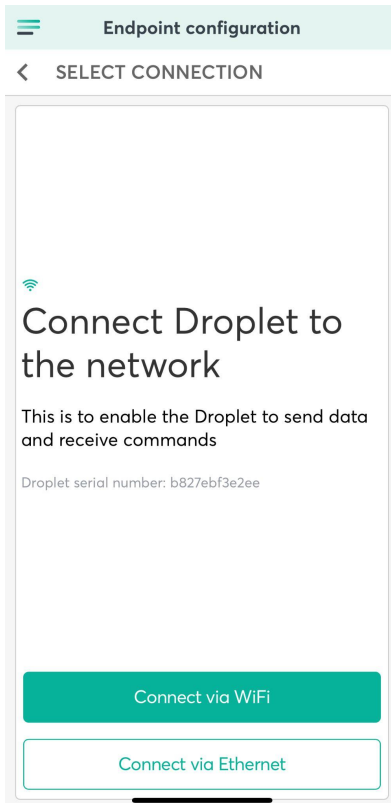
EXAMPLE PORTFOLIO

Example Unit
91 Parry St, Hamilton East NSW 2303, Australia

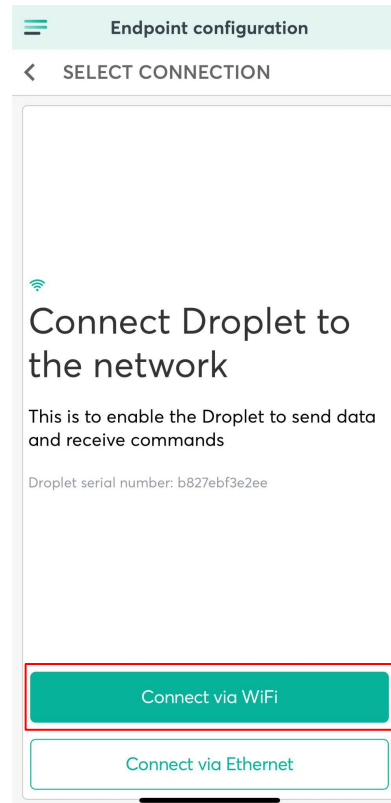
Add Droplet

Commissioning – Ethernet preferred

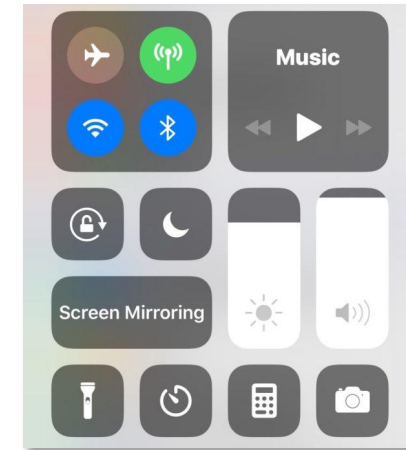
Connect via Ethernet Connection should be automatic



If Ethernet is not available. Connect via WiFi

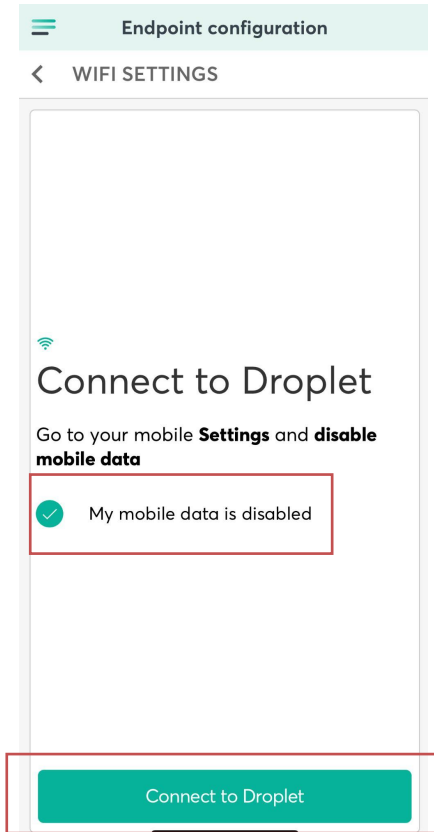


Turn off mobile data to ensure personal hotspot is off

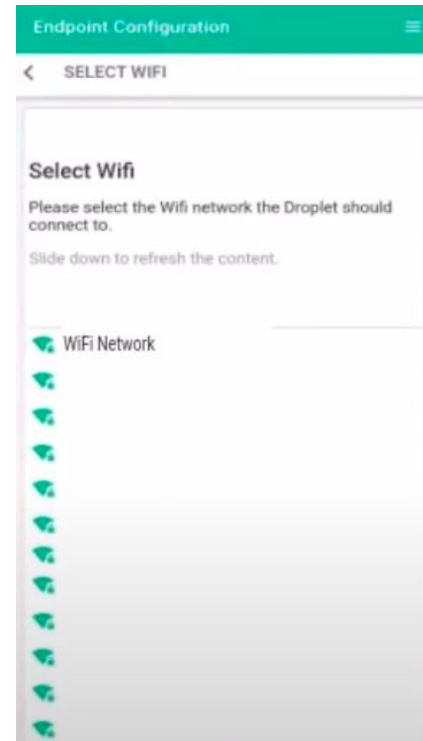


Commissioning Wifi - skip if Ethernet is used

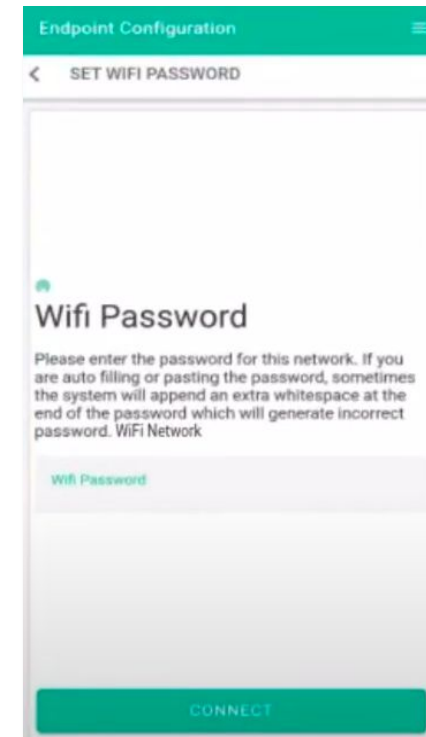
Connect to Droplet



Select WiFi network

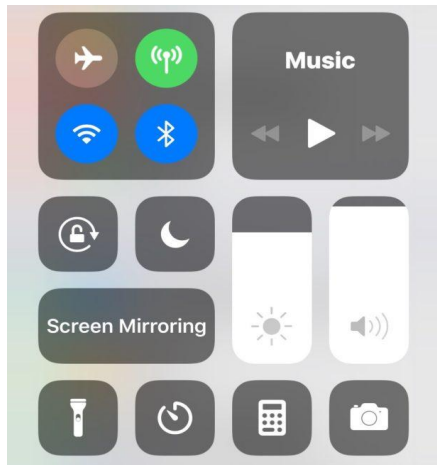


Enter WiFi password

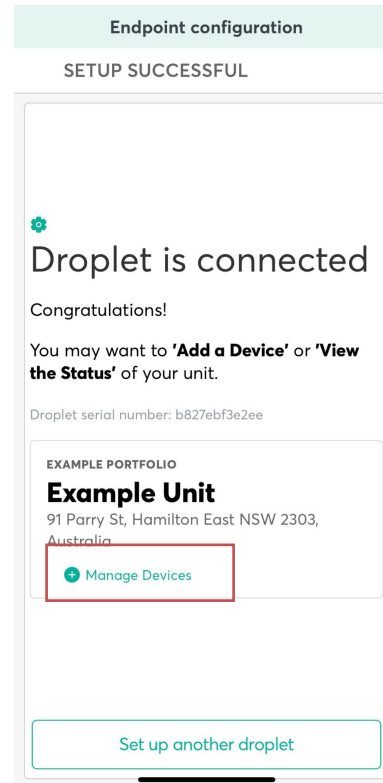


Commissioning

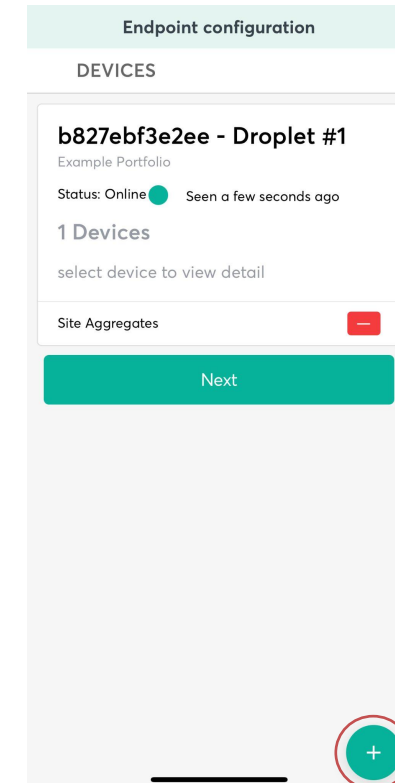
Turn on your mobile data



Select MANAGE DEVICES

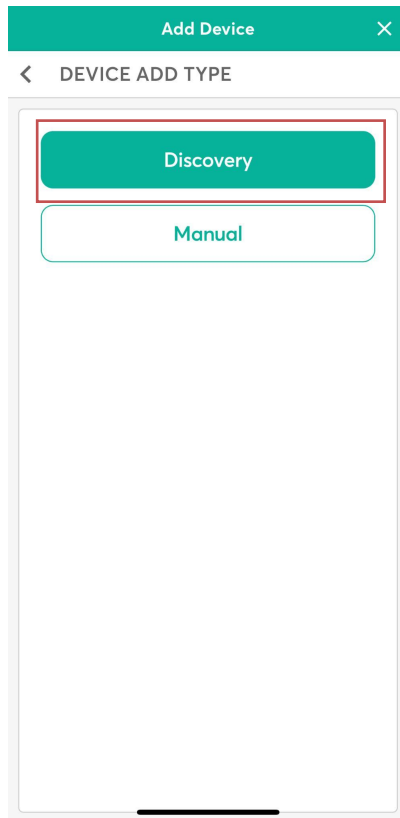


Add a device

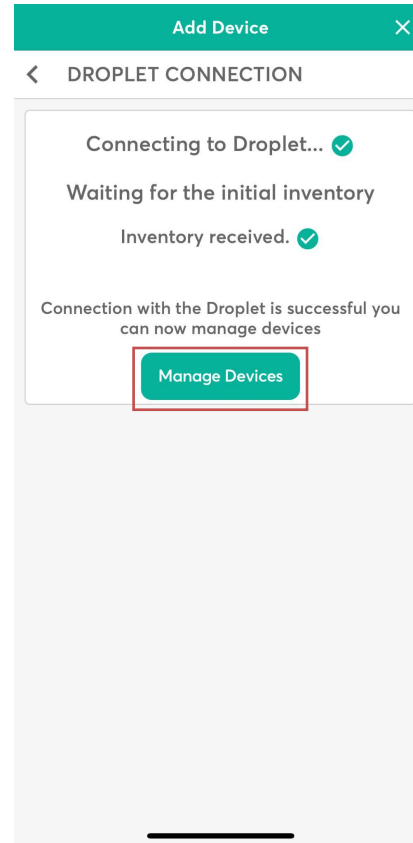


Commissioning

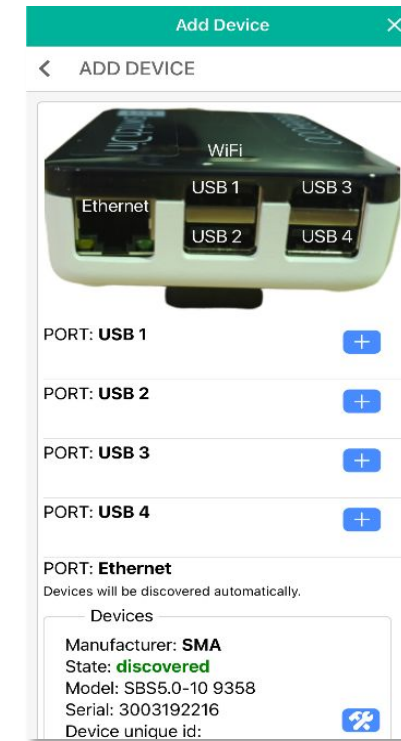
Choose DISCOVERY option



Select MANAGE DEVICES

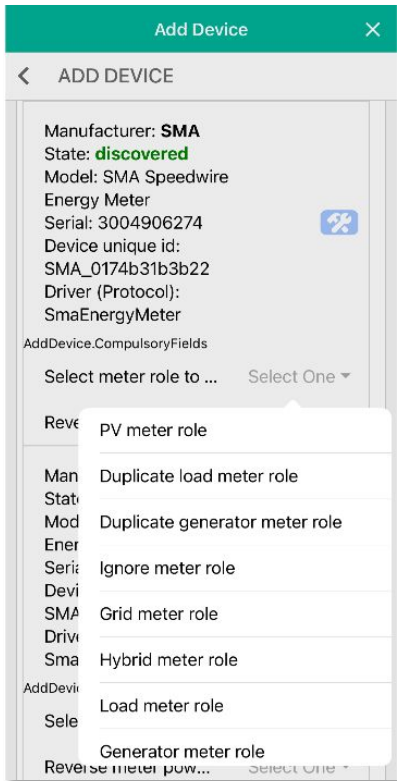


The Droplet will automatically discover the devices

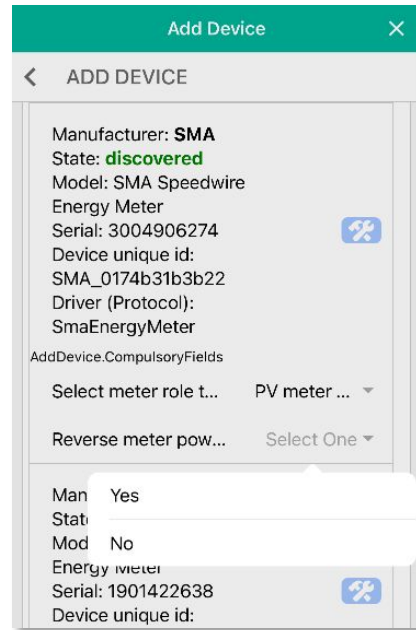


Configuring meter connection point

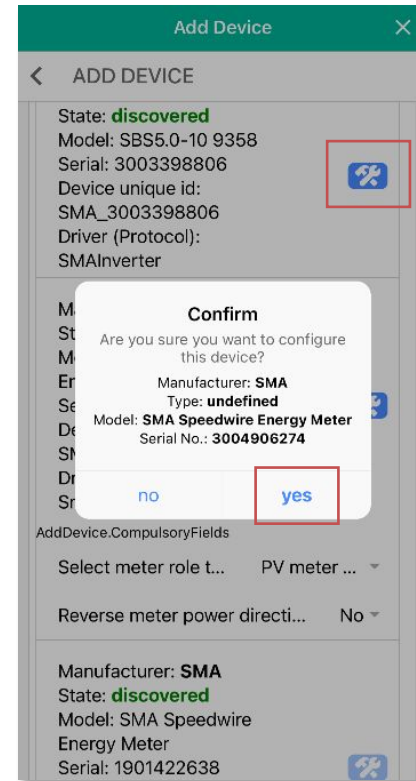
Choose PV or GRID meter role from drop down menu



Reverse meter power (if meter is installed in reverse)

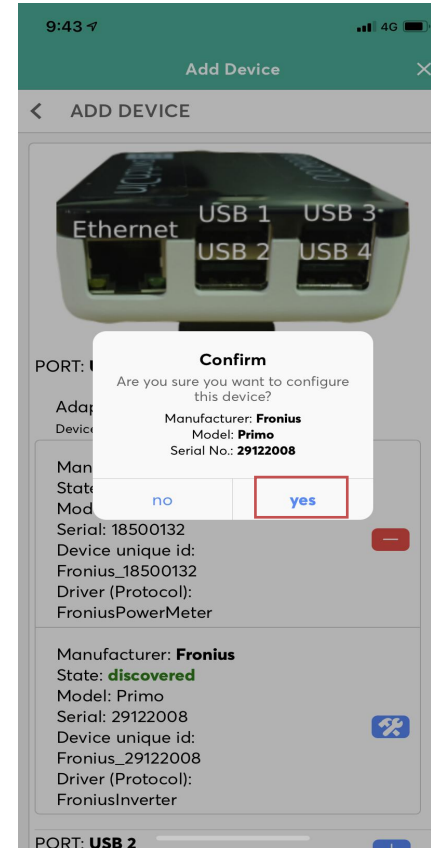


Configure meter



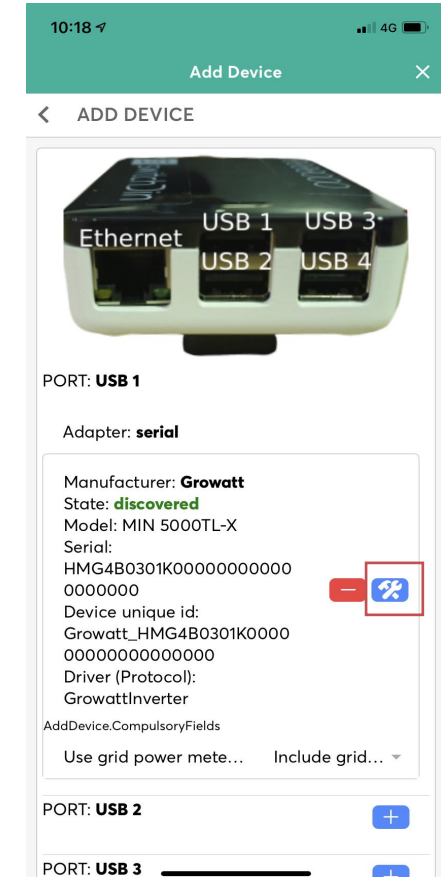
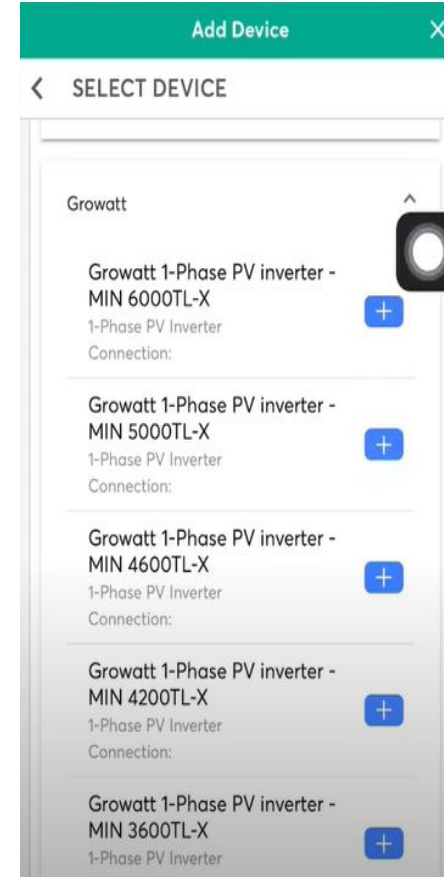
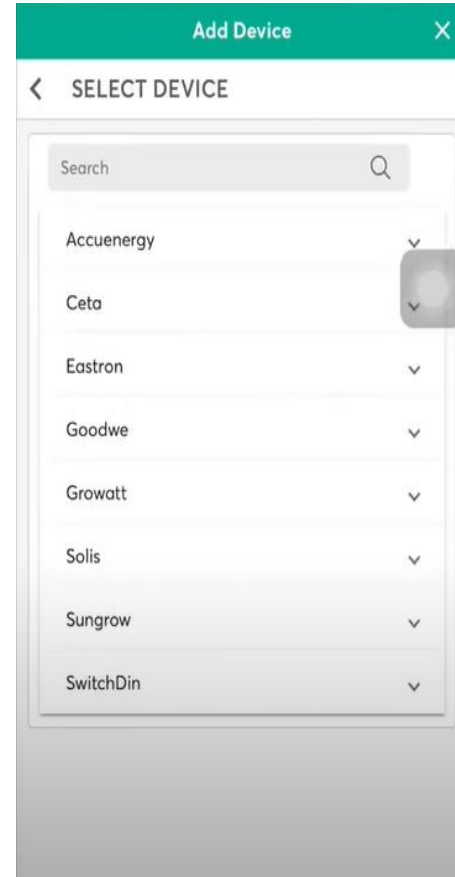
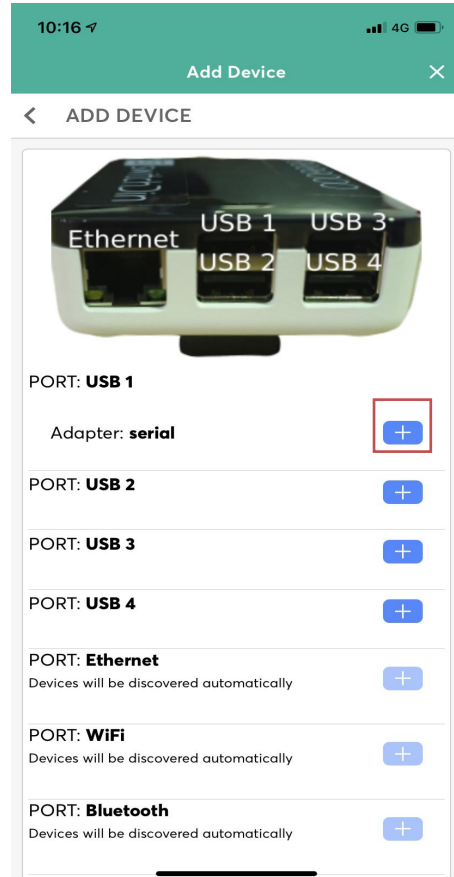
Commissioning

Configure Fronius

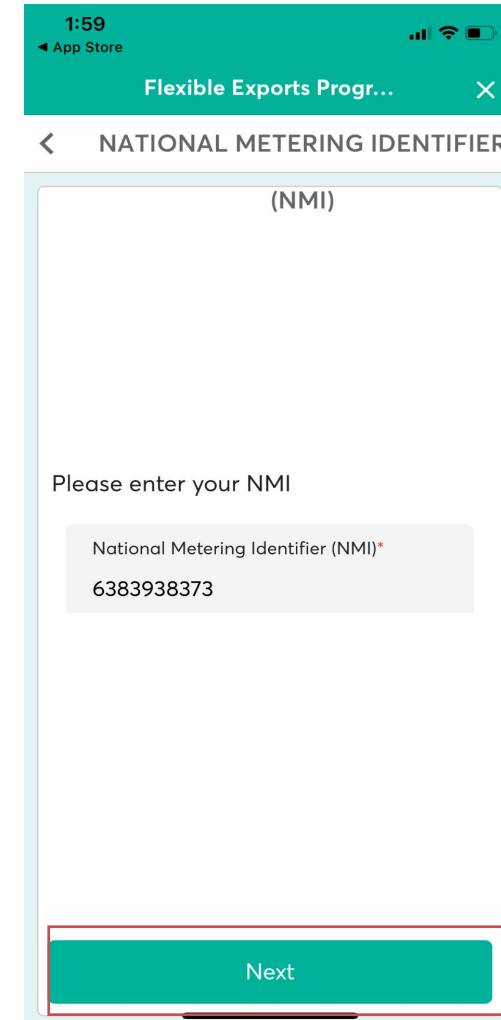
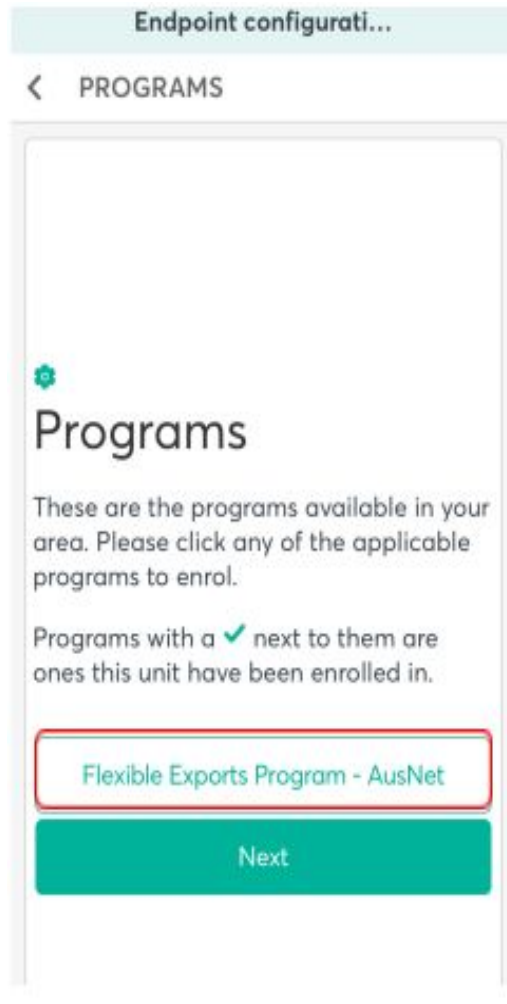


Commissioning

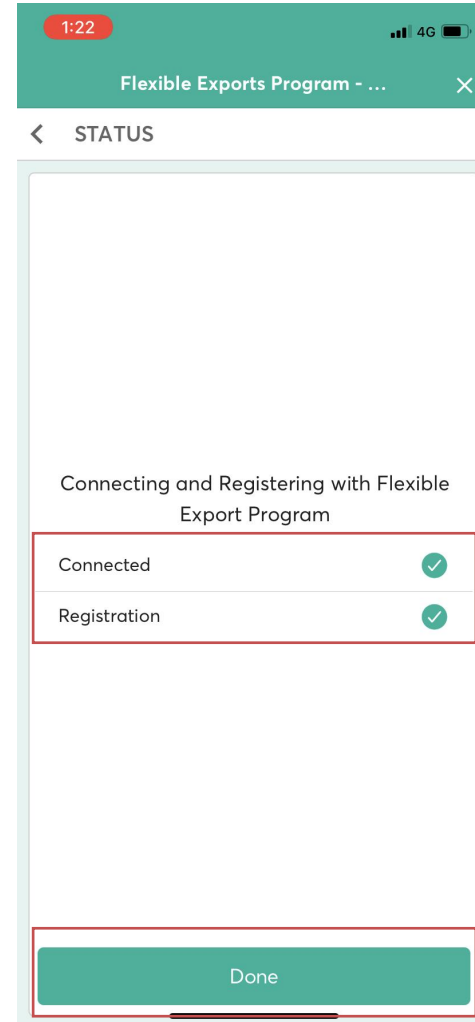
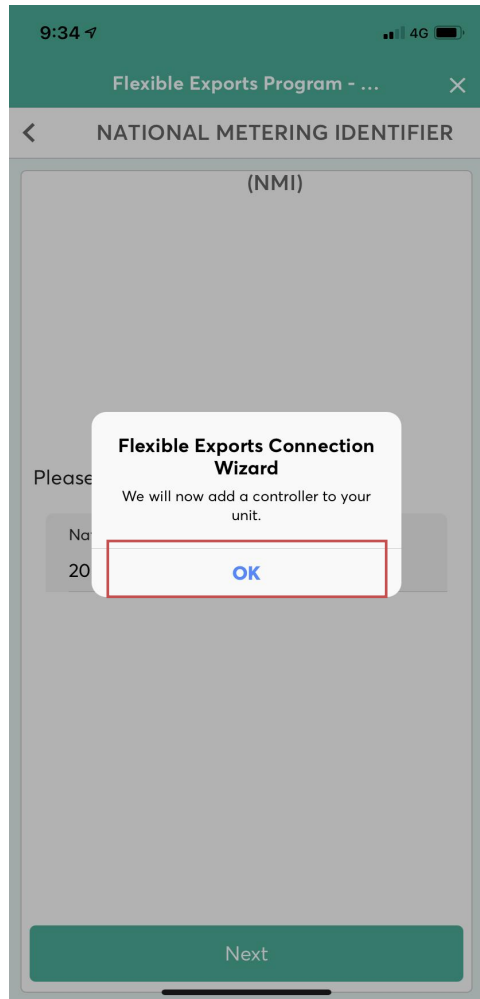
Configure Growatt



Running Flexible Exports Program

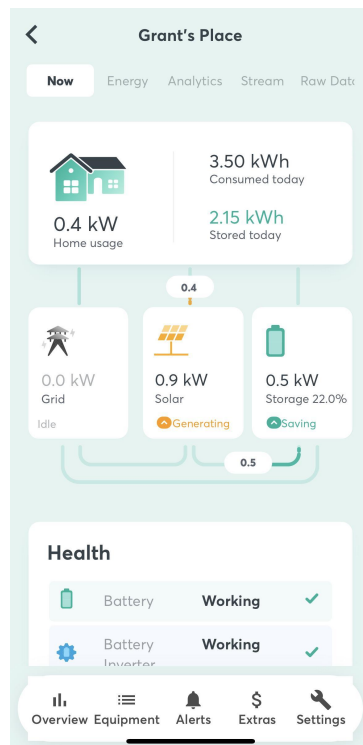


Running Flexible Exports Program

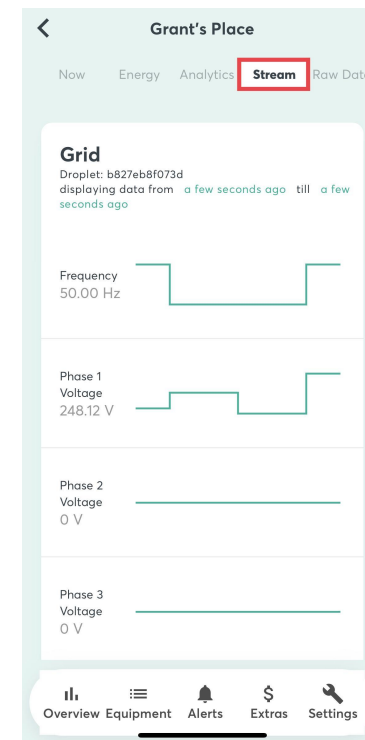


Checking if the device is communicating

Check to see
if device data is available

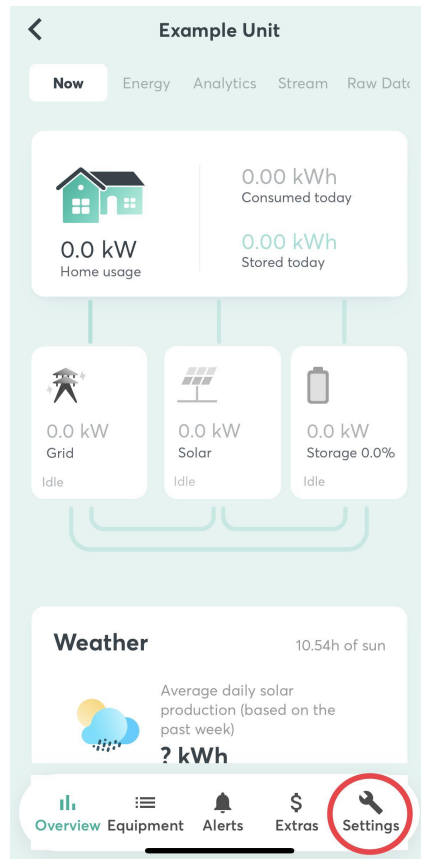


You can also check
a 10 second stream of parameters

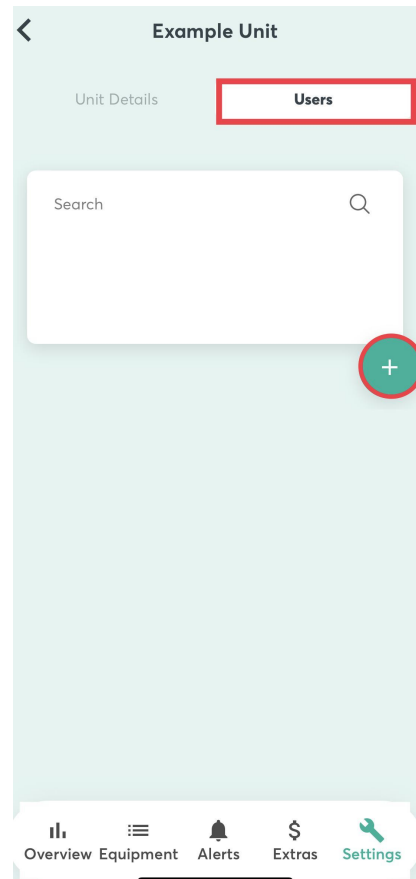


Add end customer to the unit

Go to SETTINGS



Invite users

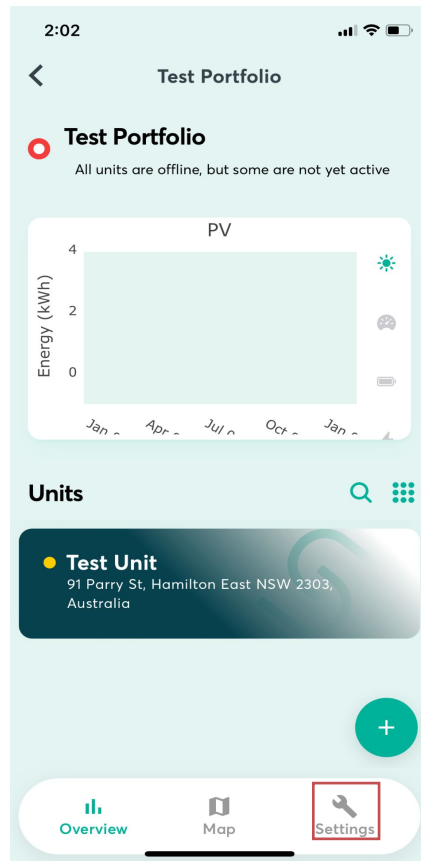


Enter details and UNIT OWNER BASIC access level

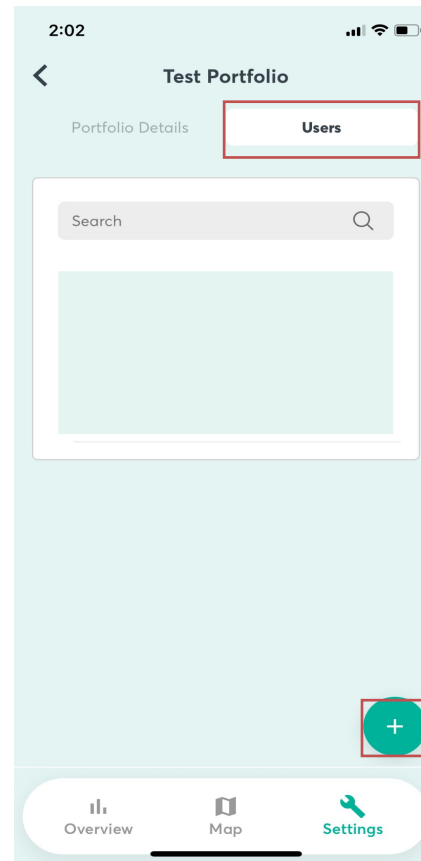
A screenshot of the 'Invite user' form. The form has a title bar 'Invite user' with a close button (X). Below the title is a section titled 'User details' with a warning message: 'The person will be granted access to this Unit. Access will be granted immediately if the User already has an account, otherwise they will be prompted to create one.' The form contains four input fields: 'Name*', 'Email*', 'Access level*' (a dropdown menu), and 'Profile theme*' (a dropdown menu with 'SwitchDin' selected). At the bottom of the form is a large teal button labeled 'Invite user'.

Add AusNet to the portfolio (first time)

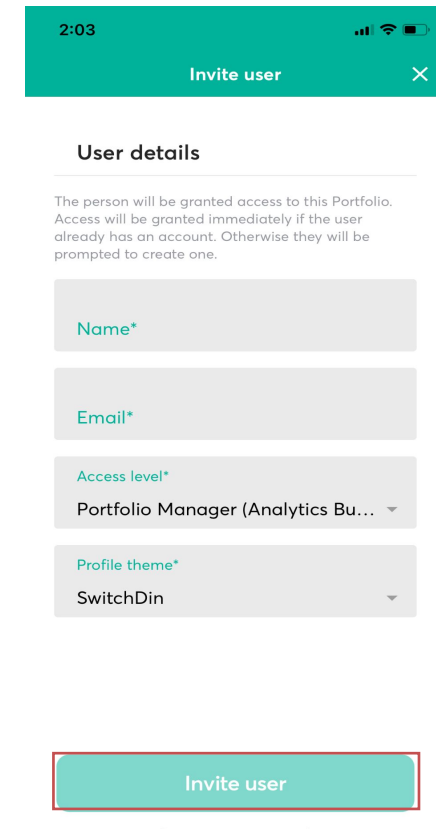
Go to Portfolio SETTINGS



Invite users



Enter AusNet details and PORTFOLIO MANAGER ANALYTICS access level



Troubleshooting

Troubleshooting

The LED Header indicates that there is no power. What should I do?

1. Check the GPO is switched on and has voltage.
2. Check whether the micro USB connector has become dislodged from the Droplet.
3. Test another power supply which uses micro USB. A mobile phone charger may be suitable.
4. [Link to video troubleshooting guide](#)

The LED header indicates the inverter is not connected. What should I do?

1. Is the inverter on the same network/subnet as the Droplet?
2. Is the inverter powered up?
3. Is the Modbus TCP port open/activated?
4. Is the Droplet connected to the network?
5. Have the cables connecting Droplets to inverters been tested for continuity?
6. Power cycle inverter and Droplet.

Troubleshooting

The Droplet will not connect to the network. What should I do?

1. Reboot router/modem/switch.
2. Check number of devices connected to the network. Home networks may have a limit of 10-20 devices.
3. If possible, try ethernet instead of wifi as the wifi may be weak.
4. Ensure password entered is correct.
5. Check internet connectivity of the Ethernet cable by plugging into a laptop.
6. IF using Ethernet, are the two lights on the ethernet port blinking. If there are no blinking lights the link is broken. Check the continuity of the Ethernet cable.
7. [Link to video troubleshooting guide](#)



Troubleshooting

The WiFi network has changed. What should I do?

1. Reboot router/modem/switch.
2. Check number of devices connected to the network. Home networks may have a limit of 10-20 devices.
3. If possible, try ethernet instead of wifi as the wifi may be weak.
4. Ensure password entered is correct.
5. Check internet connectivity of the Ethernet cable by plugging into a laptop.
6. IF using Ethernet, are the two lights on the ethernet port blinking. If there are no blinking lights the link is broken. Check the continuity of the Ethernet cable.
7. In case of network change (or change of password), ensure the droplet iNet LED has gone Blue, and reconfigure the new WiFi using the app.
8. [Link to video troubleshooting guide](#)

Troubleshooting

Fronius Inverter ramping down after commissioning?

1. Check if NMI added is correct.
2. Remove device, and re-run the process.

Process for support

Troubleshooting

Follow the troubleshooting guide in this document and videos on support page.

Send information

If the Troubleshooting does not fix the issue, send the following info to support@switchdin.com

1. Droplet ID
2. How is the droplet Connected to devices/inverters?
3. Brand/model of inverters/meters?
4. Description of issue and relevant troubleshooting results.

If the Droplet is connected to the internet, we will be able to remotely perform diagnostics.

If needed, call

If the Droplet is not connected to the internet and there is an urgent need of support,

please call our helpdesk on +61 02 4786 0426

End of training