# switchDin

# Quick Reference Guide

## Droplet + Growatt for Flexible Exports (SA)

For SA Power Networks
Flexible Exports

**Prepared by:**

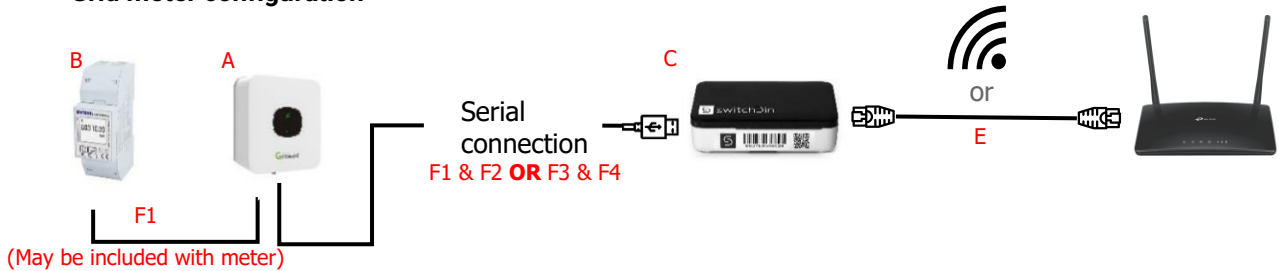SwitchDin Pty Ltd
91 Parry Street
Newcastle West 2302

1. **Required Hardware & Software Checklist**

   A. GroWatt MIN TL-X 2.5-6.0
   B. Any compatible meter
   C. SwitchDin Residential Droplet
   D. General Purpose Outlet (GPO) for SwitchDin Droplet
   E. Ethernet cable
   F. Equipment for serial connection -
      *Option 1 −*
      F1. Any serial/twisted pair (including RJ45) cable
      F2. RS485 to USB converter
      *Option 2 −*
      F3. DB9 cable (male-male or male-female)
      F4. DB9 (female) to USB adaptor
   G. SwitchDin App
      www.switchdin.com/app
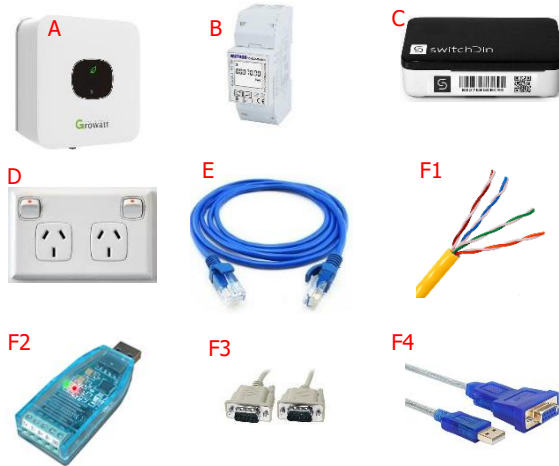
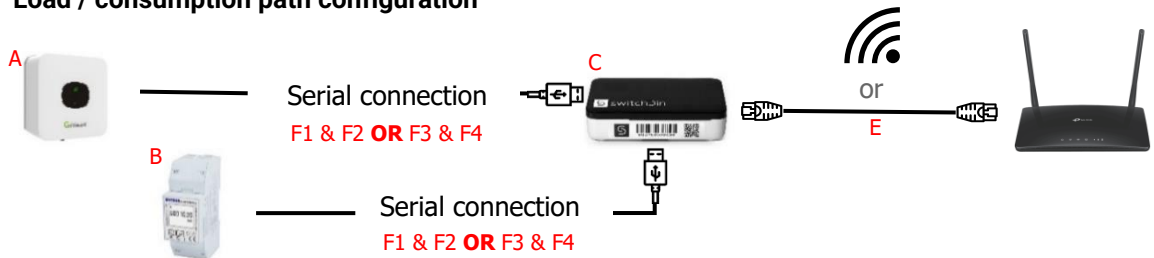2. **Onsite, wire up the Eastron Meter (or selected meter) either using the grid or load configuration. Refer** OTR Wiring Information and Diagram **or Appendix A: Load and Grid Meter Arrangements**

   **Grid meter configuration**

   Serial connection
   F1 & F2 **OR** F3 & F4

   or

   F1
   (May be included with meter)

   **Load / consumption path configuration**

   Serial connection
   F1 & F2 **OR** F3 & F4

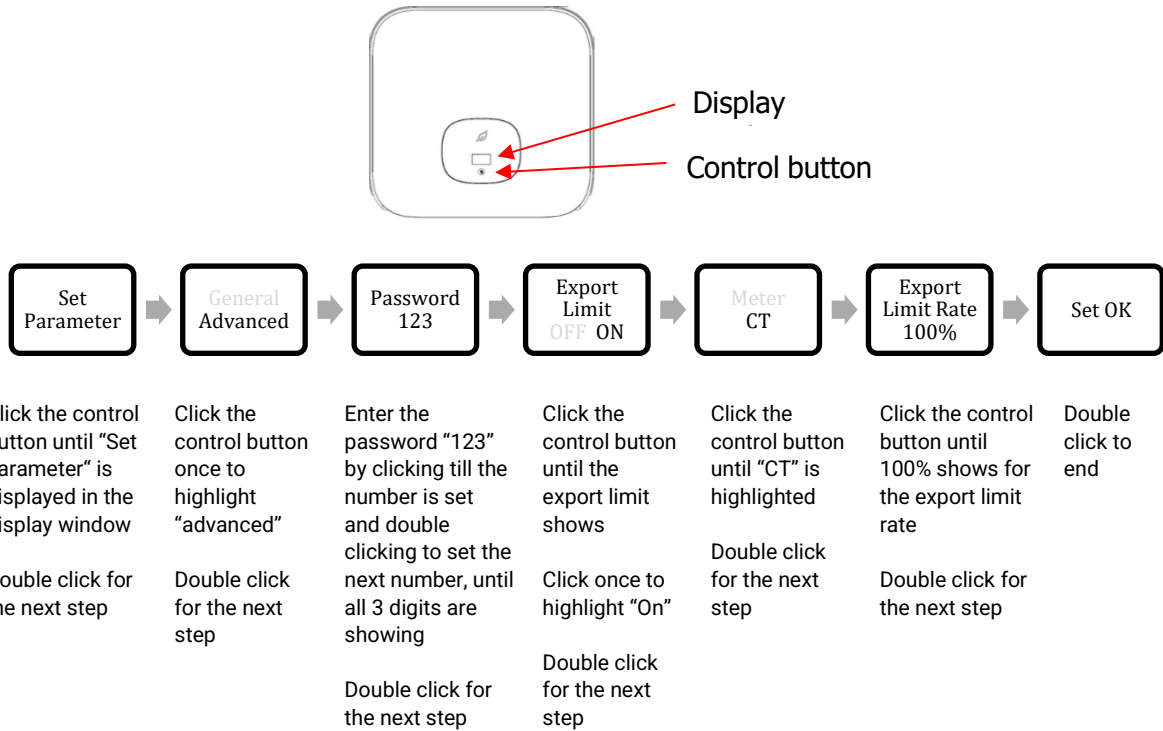   Serial connection
   F1 & F2 **OR** F3 & F4

   or

**NOTE**: For the load/consumption path configuration, the meter serial connection **must** be terminated into the Droplet. If the meter serial is connected to the inverter, incorrect readings will be returned to the droplet.

- Refer to the relevant Eastron manual for Modbus serial connection (eg SDM230 series)
- Refer section 4 for more information on Droplet compatible serial to USB converters

**3. Load/consumption path metering configuration GroWatt Inverter Settings**

If you have selected grid meter configuration, skip this step, proceed to step 4.

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

Display

Control button

| Set Parameter | General Advanced | Password 123 | Export Limit OFF ON | Meter CT | Export Limit Rate 100% | Set OK |
|---|---|---|---|---|---|---|
| Click the control button until "Set parameter" is displayed in the display window | Click the control button once to highlight "advanced" | Enter the password "123" by clicking till the number is set and double clicking to set the next number, until all 3 digits are showing | Click the control button until the export limit shows | Click the control button until "CT" is highlighted | Click the control button until 100% shows for the export limit rate | Double click to end |
| Double click for the next step | Double click for the next step | Double click for the next step | Click once to highlight "On" | Double click for the next step | Double click for the next step | |
| | | | Double click for the next step | | | |

**4. Wiring the droplet to the inverter**

**Option 1: Eastron RJ45 cable + RS485 to USB converter**
1. Use the cable provided by Eastron meter or other RJ45 cable
2. Pick a set of wires, connect pin 3 of the 8-pin signal converter (from the inverter) to pin 1 on the RS485 to USB converter
3. Connect pin 4 of the 8-pin signal converter (from the inverter) to pin 2 on RS485 to USB converter

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

4. Connect the USB adaptor to any of the USB ports on the droplet
5. Connect the droplet to the internet via ethernet cable (preferred) or WiFi

Option 1

<span style="color:red">8-pin signal connector
(step 2-3)</span>



<span style="color:red">RS485 to USB converter</span>
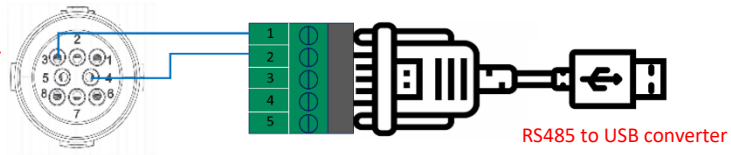
**Examples of RS485 to USB converter**



DTECH 0.5m USB to RS422
RS485 Serial Port Converter

USB Port to RS-485/422
Converter

Industrial USB to RS485
Converter

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

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

Option 2

<span style="color:red">DB9 Male (steps 1- 5)</span>
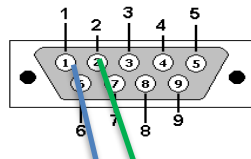
<span style="color:red">8-pin signal connector
(steps 3- 4)</span>

switchDin
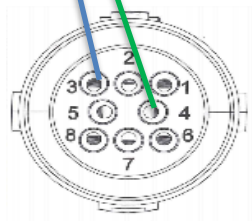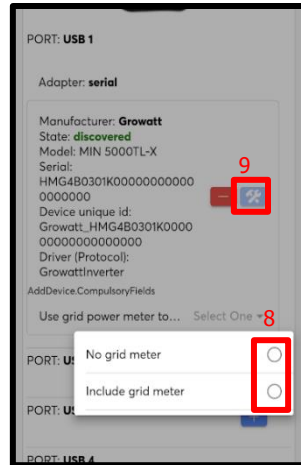
## 5. Commissioning

### 5.1 Commission the inverter:

**A**
1. In the Installer app, select installer from the side menu, the scanner will start
2. Scan the QR code on the side of the droplet, follow the prompts and select to connect via ethernet or Wi-Fi



**B**
3. Add a device by clicking the "+" icon on the bottom right of the screen
4. Select the discovery option to allow the droplet to detect connected devices
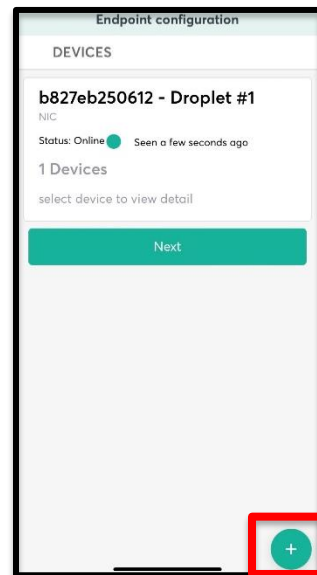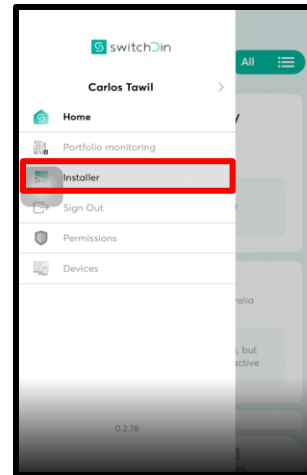
C   5.  Click "+" on the USB port number where the GroWatt serial cable is connected.
    6.  Then select the correct Growatt inverter model from the device list.
    7.  Click back on the top left corner



D   8.  Click the "Use grid power meter to…" drop down list and select:
        a.  "No grid meter" for load meter configuration
        b.  "Include Grid Meter" for grid meter configuration
    9.  Click the configure button (blue hammer and spanner)



E   10. Device state will change to "configured" once this is complete
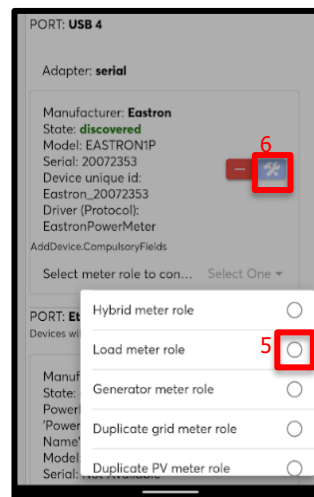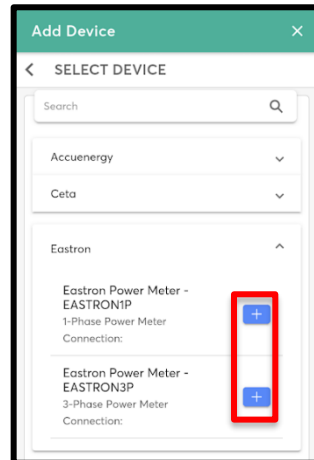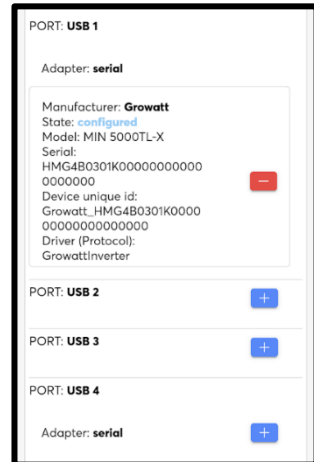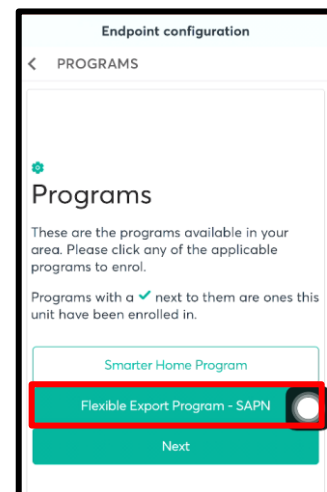


| D | 7. | Click back on the top left corner and select "Manual" discovery |
| | 8. | Search "Site Aggregates", and click '+' |
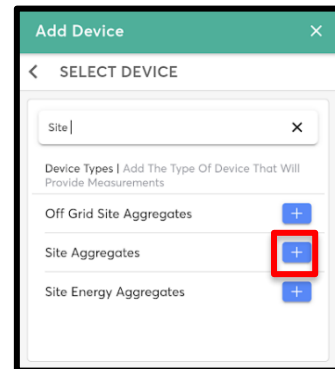
## 5.3 Register device for flexible exports:

| A | 1. | Close the "Add device" window, click next. |
| | 2. | Select the option "Flexible Exports Program – SAPN" |

| B | 3. | Enter NMI, click next |
| | 4. | The screen indicates if the connection and registration is successful. Click done |

**Troubleshooting**

Droplet status indicator meanings

| | Indication | Red | Green | Blue |
|---|---|---|---|---|
| PWR | Power | N/A | Power | N/A |
| WIFI | WiFi | No Wi-Fi | Wi-Fi connected | Weak Wi-Fi 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 |

SwitchDin Installation video: SwitchDin Growatt Install & Commissioning

**Warranty claims & support: support@switchdin.com**

**General enquiries: info@switchdin.com,**

**Support: +61 (0) 2 4786 0426**

**Appendix A: Load and Grid Meter Arrangements**
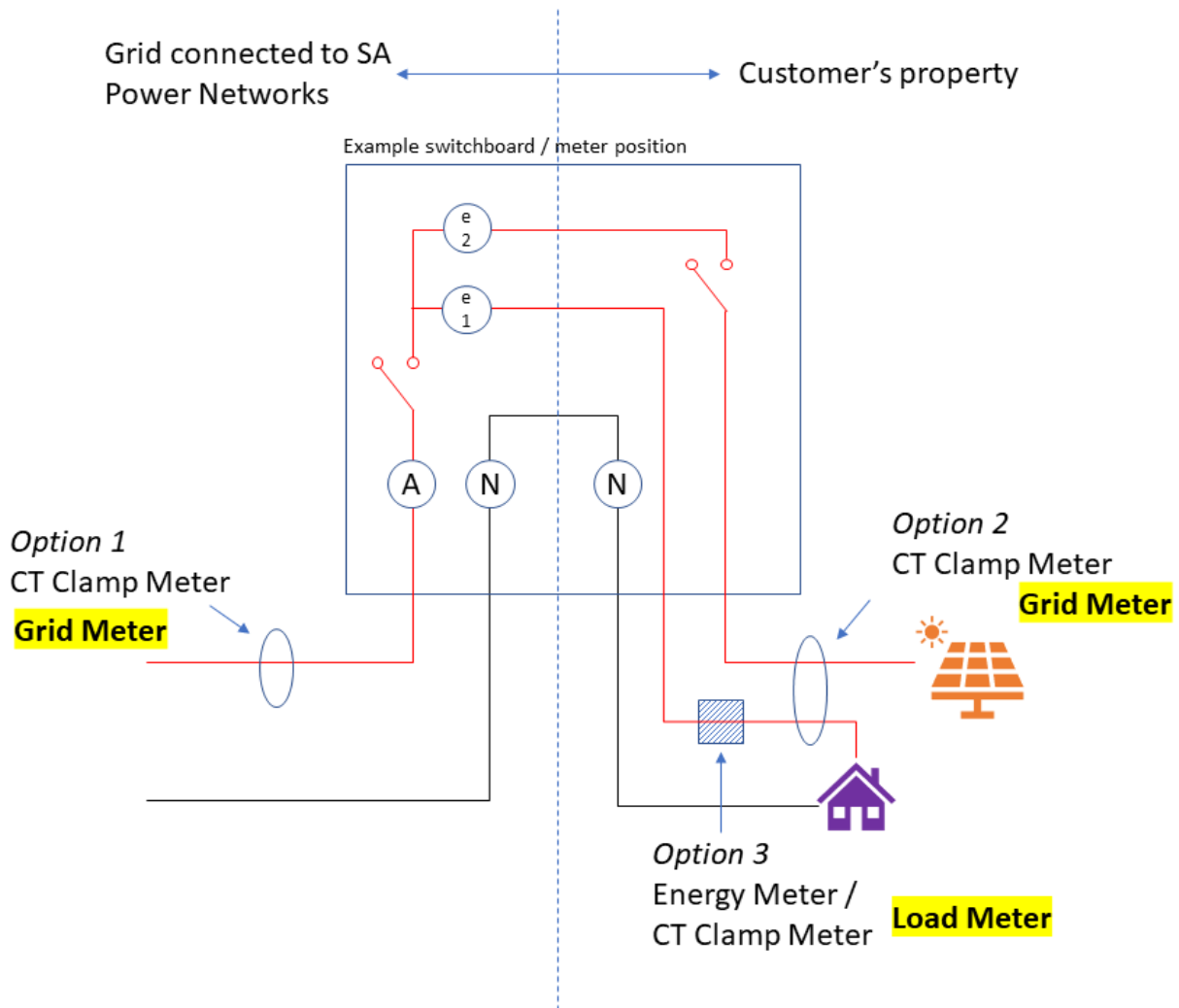


The aim for each site is to have visibility of grid imports/exports to enable export control via the SwitchDin Droplet. There are three methods of determining total site imports/exports.

| Option 1 Grid Meter | Meter is monitoring the grid import/export directly on the SA Power Networks side of the retail meter. |
|---|---|
| Option 2 Grid Meter | Meter is monitoring the grid import/export directly by clamping around both the load active and inverter active on the customer side of the retail meter. |
| Option 3 Load Meter | Meter is monitoring load. Total grid import/export is calculated using the load meter and the inverter metering: Grid = Load − PV. |