Current Transformer (CT) Extension & Remote Energy Meter (REM) Guide for Dura-i G3

DURACELL®
ENERGY

V0.7

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Contents

1. Introduction 3
2. CT Extension 4
3. Installing the Meters 5
   - 3.1. Installing the REM CHINT 6
   - 3.2. Installing the REM Eastron 9
4. Setup Process 12
   - 4.1. Commissioning Process 12
   - 4.2. Log into the Service Account 13
   - 4.3. Access Account Management 13
   - 4.4. Start New Commissioning 14
   - 4.5. Create Plant & Add the Inverter 14
   - 4.6. Enable Bluetooth & Select the Inverter 15
     - Step 1. Configure the internet connection 16
     - Step 2. Grid Standard and Date & Time parameters 17
     - Step 3. Power control parameters 18
     - Step 4. Battery type parameters 19
     - Step 5. Turn on inverter 20
5. Full Installation Layout - CHINT 21
6. Full Installation Layout - Eastron 22

1. Introduction

When installing a Dura-i inverter ensure you use the CT that comes in the box. This is 10m in length. If the distance is too far between the grid supply and the inverter, there are a few options.

1. Extend the Current Transformer (CT)
2. Use an Remote Energy Meter (REM) with the CT provided with the meter. This CT cannot be extended.

Dura-i G3 is currently compatible with two meters, the CHINT DDSU666 and the Eastron SDM120 .

This Guide deals with the installation of these.

Please follow the Quick Setup Installation Steps as shown in the following pages.

2. CT Extension

The 10m cable supplied with our CT clamp may be extended by a maximum additional 15m (25m in total).
Any longer than this risks data corruption due to EM interference.
Thus an REM (Remote Energy Meter) should always be used in the event that the main incoming supply is further than 25m from the location of the Dura-i inverter.

The CT must be clamped around the live AC cable of the supply meter tails with the indication arrow in the direction of energy flow - pointing towards the inverter and away from the grid.
See **Section 5 on page 21.**

An AC power source will be required wherever the REM is placed, (2A required) to power the meter (whether from the DB or a 240v wall socket).

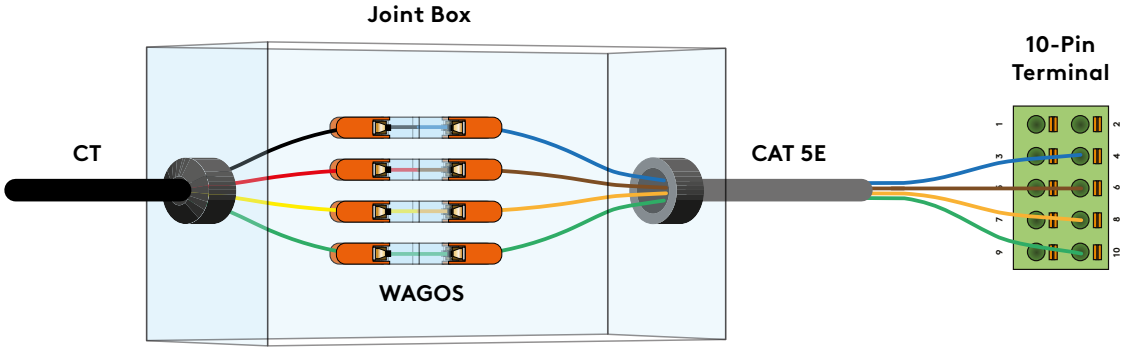


Figure 1. CT extension diagram

NOTE

- WAGO connection only.
- Extendable to a maximum of 15m (25m total).
- Always run data cables min 200mm away from AC cables to minimise interference.

3. Installing the Meters

The meter will come out of the box as per **Figure 2** or **Figure 3.**

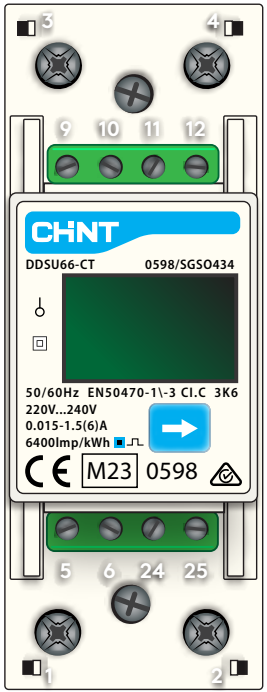


Figure 2. CHINT

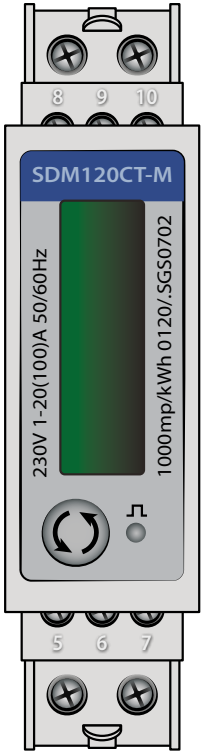


Figure 3. Eastron

3.1. Installing the REM CHINT

Connect the AC power to the meter using the terminal pports 1 & 2 as seen in **Figure 4.**

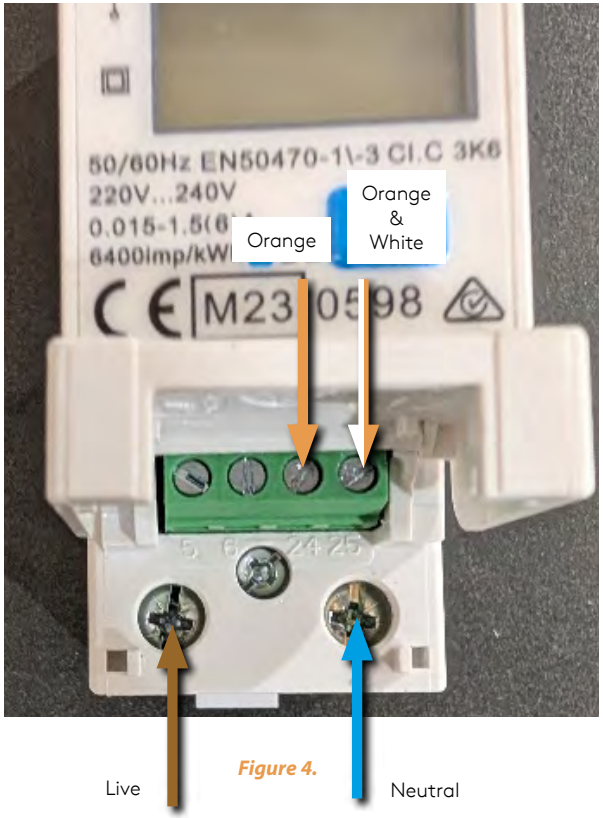


Figure 4.

For communication between the meter and inverter you will need to use CAT-5E. (Screened is preferred)
If not screened then do not run this alongside AC Power cables.

Connect the CAT-5E cable using only 2 cores - Orange in PORT 24 and White & Orange in PORT 25.

Connect the CT around the main live incoming supply to the house. The CT then connects into ports 9 & 10 on the Energy Meter as in **Figure 5.**

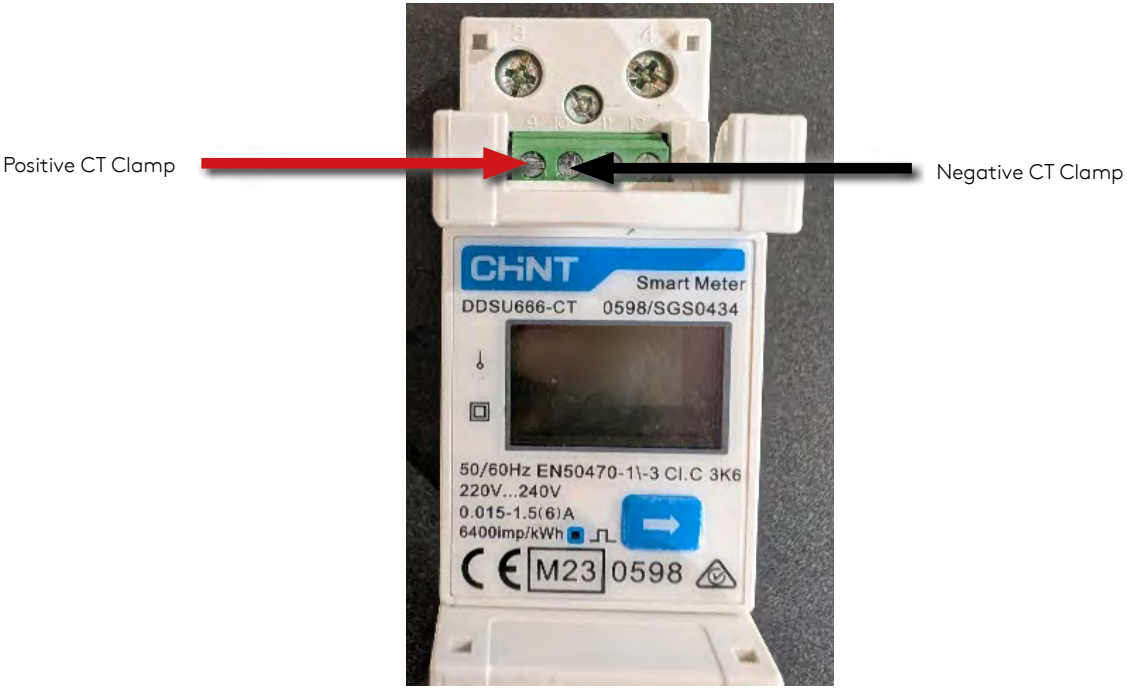
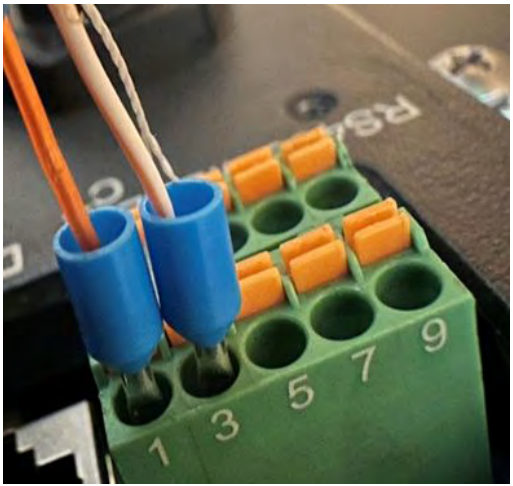


Figure 5.

CHINT: Using a CAT-5E cable, connect port 24 on the meter to port 1 on the RS485 port at the base of the Dura-i and connect port 25 on the meter to port 3 on the RS485 port on the Dura-i.



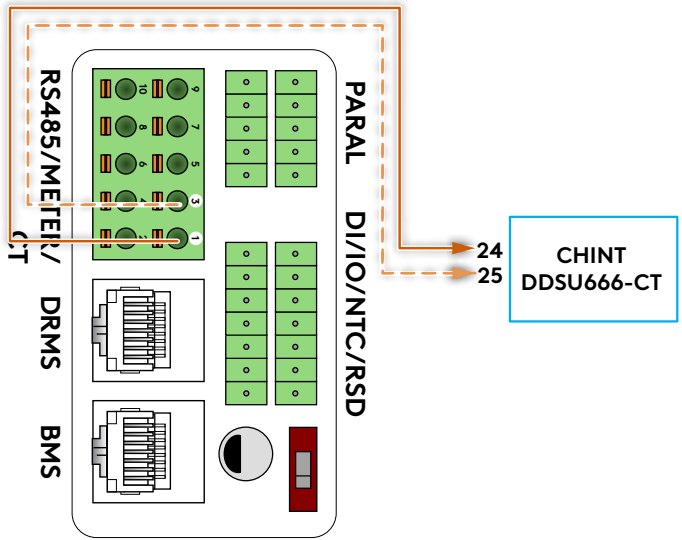


Figure 6.

See **page 21** for full installation layout.

3.2. Installing the REM Eastron

Connect the AC power to the meter in ports 3 & 4 as seen in **Figure 7.**

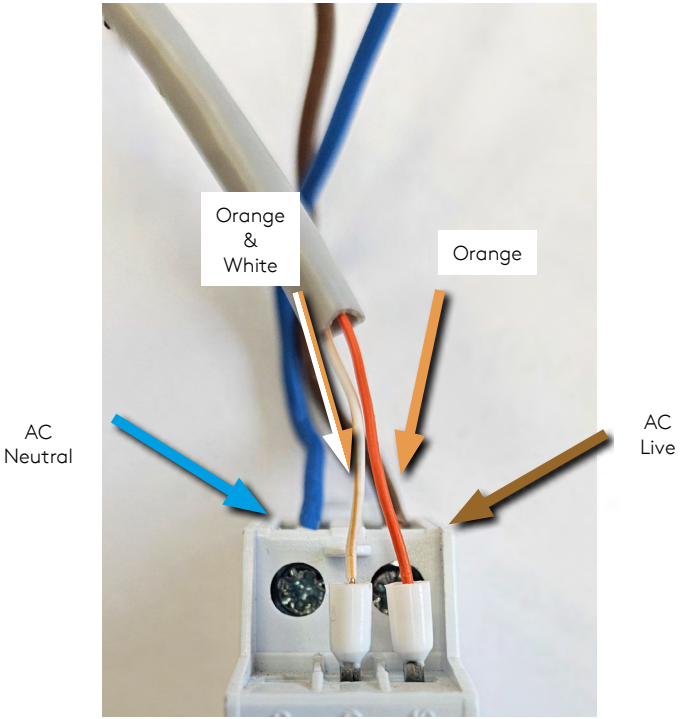


Figure 7.

For communication between the meter and inverter you will need to use a CAT-5E cable. (Screened is preferred)

If the cable is not screened then do not run this alongside AC Power cables.

Connect the CAT-5E cable using only 2 cores - White & Orange in PORT 9 and Orange in PORT 10.

Connect the CT around the main live incoming supply to the house. The CT then connects into ports 1 & 2 on the Energy Meter as in **Figure 8.**
This CT cable is only 1 metre in length and CANNOT be extended.
The CAT-5E linking the energy meter to the inverter can be extended up to 100 metres if done correctly.

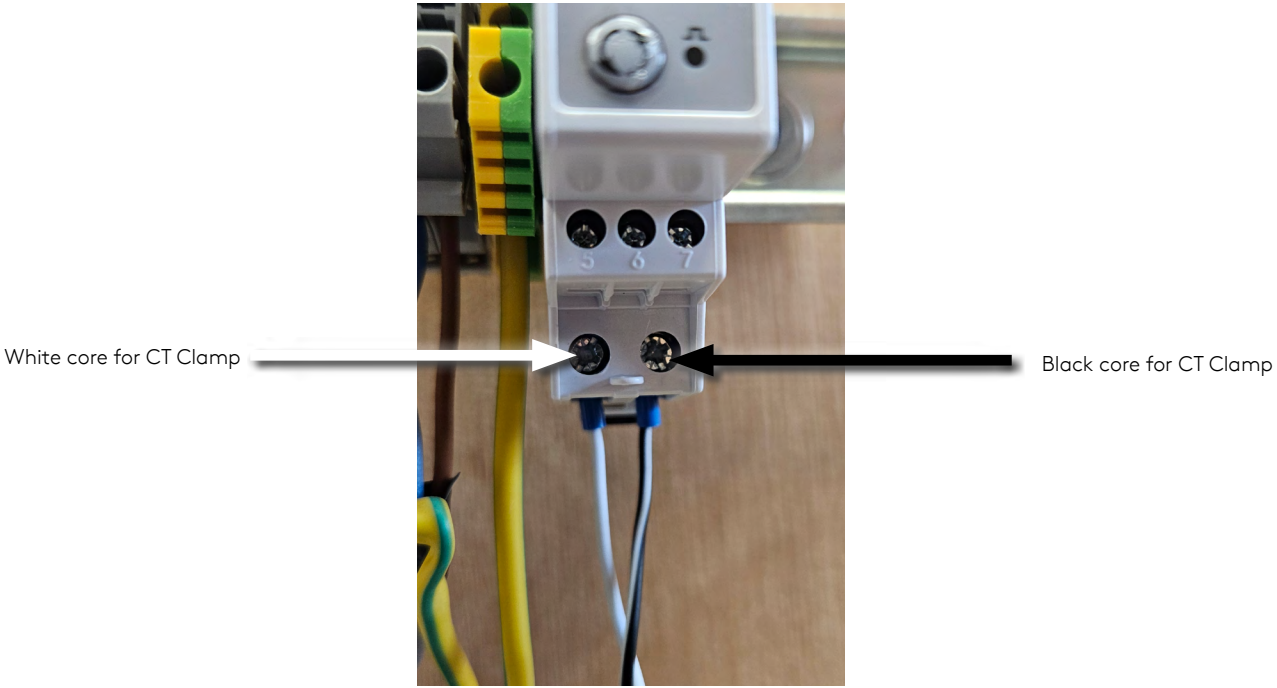


Figure 8.

Eastron: Using a CAT-5E cable, connect port 10 on the meter to port 1 on the RS485 port at the base of the Dura-i and connect port 9 on the meter to port 3 on the RS485 port on the Dura-i.

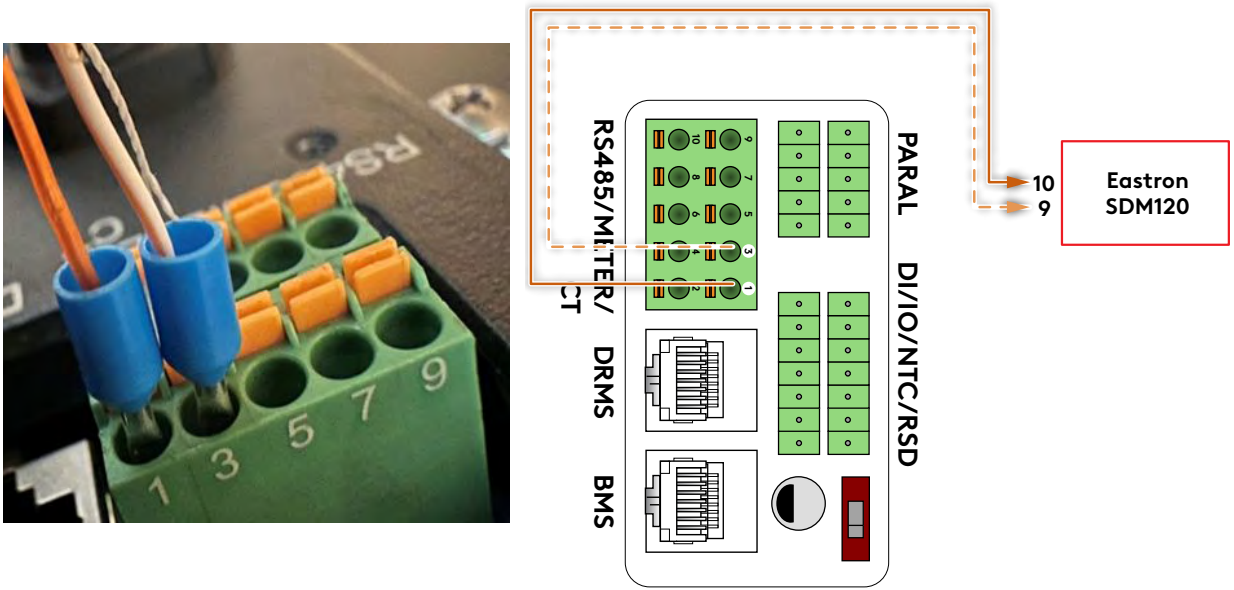


Figure 9.

See **page 22** for full installation layout.

4. Setup Process

Power inverter on

Using the correct startup procedure, power on both the inverters and their connected batteries.

This procedure is: **PV > Battery > AC**

4.1. Commissioning Process

Create User Account

Scan the following QR code to download the **Dura-i** (installer's) app.

DURACELL® ENERGY Dura-i

4.2. Log into the Service Account

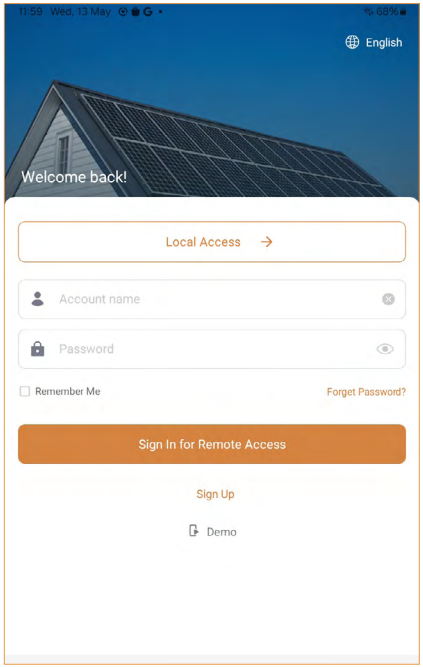


Figure 10.

If you do not have login credentials, contact **sales.uk@duracellenergy.co.uk** or call **01386 577845**.

4.3. Access Account Management

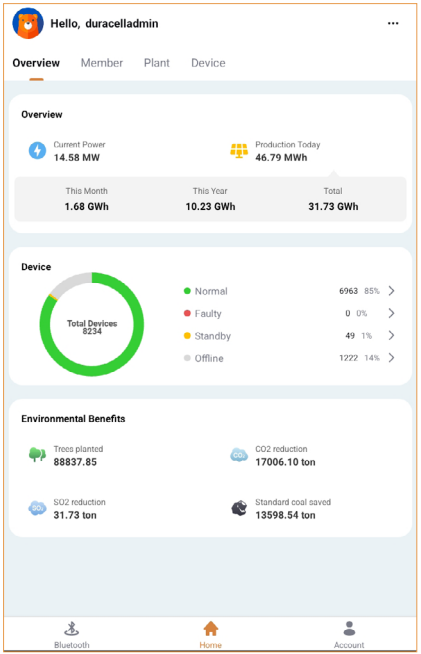


Figure 11.

This section shows all your previous plants and installations

4.4. Start New Commissioning

1. Click on the ••• 'meatballs' in the top right.

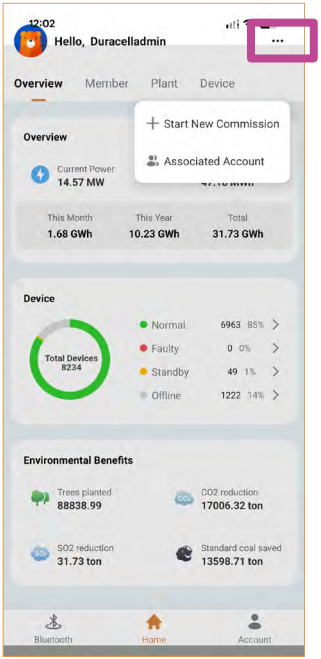


Figure 12.

4.5. Create Plant & Add the Inverter

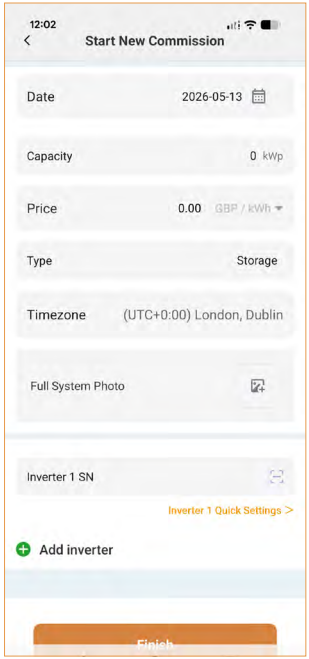


Figure 13.

1. Fill in the plant-specific details. Include a system photo. For parallel installations, select the correct number of inverters and scan/input all of their serial numbers.
   The first inverter serial number entered will act as the primary.

2. Scan or input the inverter serial number.

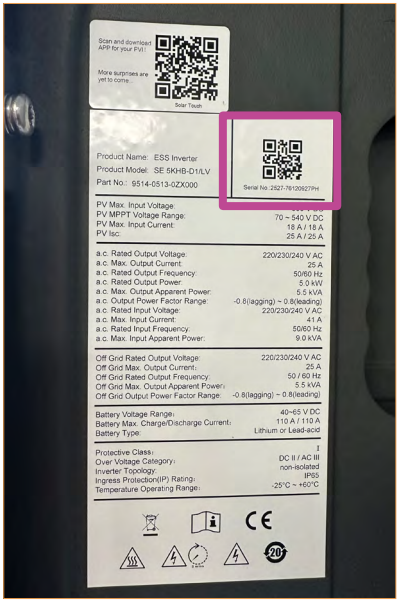


Figure 14.

4.6. Enable Bluetooth & Select the Inverter

3. Turn on Bluetooth on your mobile device and select the inverter serial number you will be commissioning.

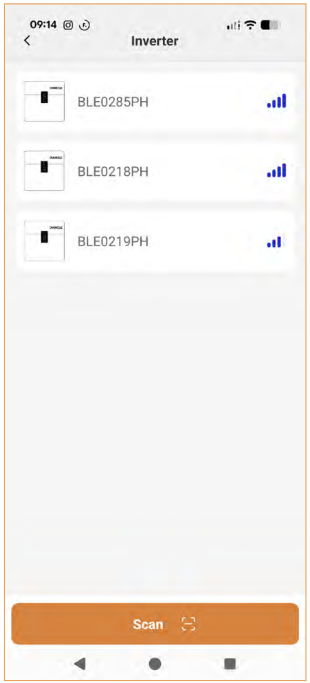


Figure 15.

Step 1. Configure the internet connection

First please read the tips on the screen carefully. Then choose the Wi-fi SSID and enter the Wi-fi password.
Click the **Ok** button and wait for "Wi-fi router loading successfully".
If the configuration was successful, the indicator light on the Wi-fi / LAN module will change colour from Orange to Flashing Blue and then to Green.

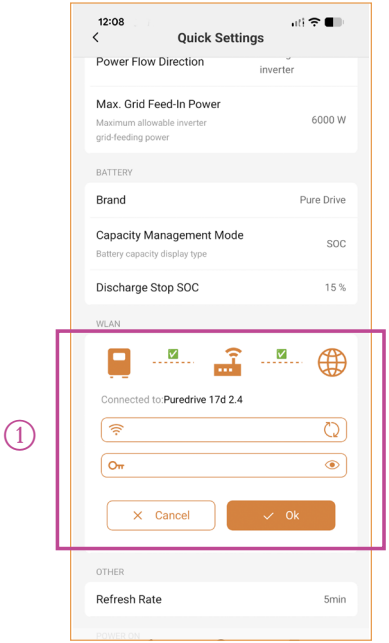


Figure 16.

Step 2. Grid Standard and Date & Time parameters

To configure Date & Time, click on the displayed date and time and then “Calibrate with phone”.
The grid standard will be pre-set for the inverter export limitation.

NOTE You must seek approval from the local DNO before changing export limits.

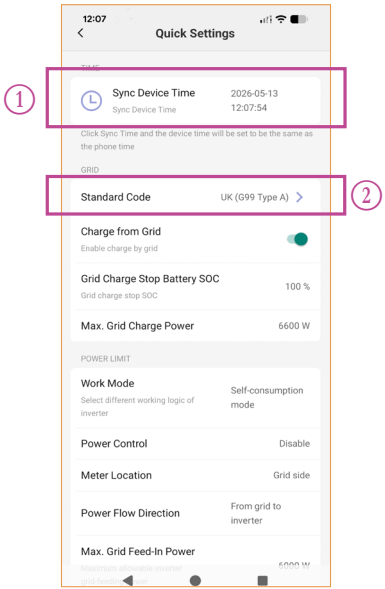


Figure 17.

Step 3. Power control parameters

In this step you will set how the inverter reads grid and house load.

1. For “Power control” select Digital Power Meter.
2. For “Meter location” select the location you have chosen in **Standard Install with REM on page 18 of the Dura-i G3 Standard Install Guide.** For standard installation it is recommended to install the meter CT on the incoming grid live cable before the main house distribution board as shown in **CT + Meter Connection on page 46 of the Dura-i G3 Standard Install Guide.**
3. For “meter type” select the CHINT or Eastron as shown in **Figure 18**, below.
4. For “Power flow direction” select the direction in which the arrow on the CT sensor is pointing. For standard installation it is recommended to install the CT pointing from the grid to inverter as show in **CT + Meter Connection on page 46 of the Dura-i G3 Standard Install Guide.**
5. For “Maximum feed in grid power”, this should be set to the size limitation of the inverter OR the maximum allowed by the DNO as grid standard, whichever is lower.

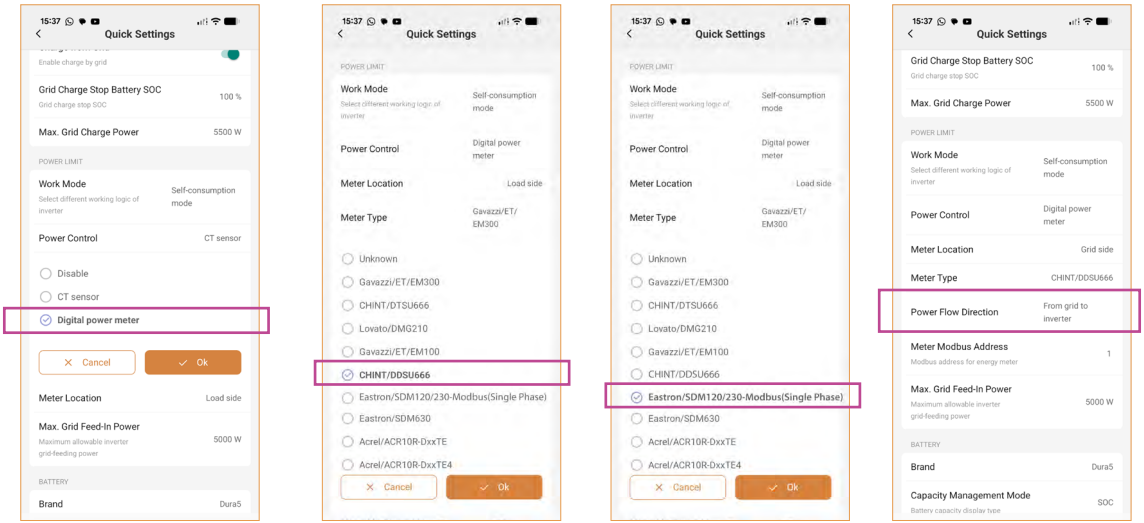


Figure 18.

Step 4. Battery type parameters

In this step you will set the Work Mode and Battery Type.

1. For “Hybrid work mode” choose the work mode best suited to the customers’ needs.
   See **Inverter Working Mode on page 56 of the Dura-i G3 Standard Install Guide.** The most commonly used setting is “Self-consumption mode”. This allows the inverter to prioritise the house load before charging the batteries or exporting generated PV energy to the grid.
2. For “Battery brand selection”, choose the type of battery that is connected to the inverter. If Dura5 and Duracell5+ batteries are not available for selection, please contact customer services.
3. For “Backup output”, check whether the customer has a critical loads sub-board which they require power to in case of a power outage.
   See **Standard Install with REM on page 18 of the Dura-i G3 Standard Install Guide** for how to wire in backup circuits. If the customer does have backup circuits, turn this on. Turn this off if customer does not wish to use the backup feature.

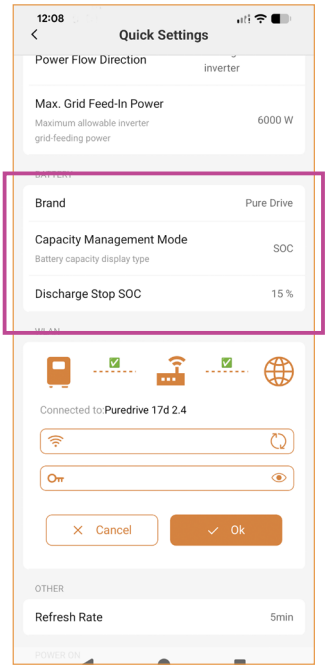


Figure 19.

Step 5. Turn on inverter

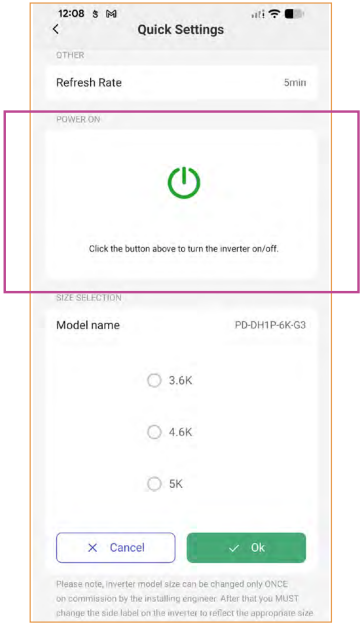


Figure 20.

In this step, please click the power button to turn on the inverter. Green turns to red once enabled.

	NOTE	**DO NOT COMPLETE THIS STEP IF YOU ARE INSTALLING PARALLEL INVERTERS. Now switch to the Parallel Setup Guide.**

If you need to change the size of the inverter, select the relevant size and press Ok. Then tap on 'Finish' to complete commissioning.

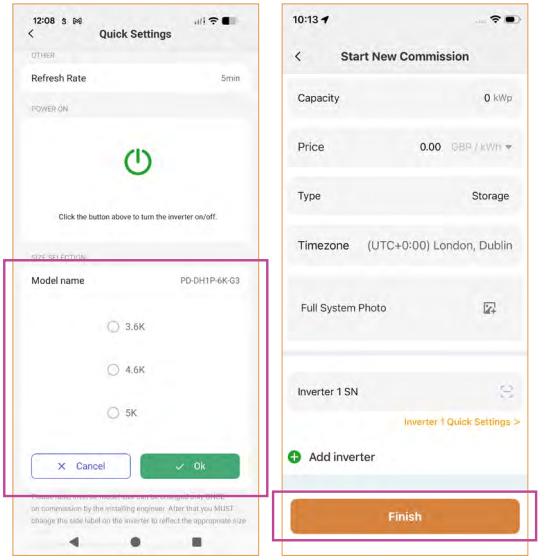


Figure 21.

	NOTE	Inverter model size can be changed only ONCE on commission by the installing engineer. After that you MUST change the side label on the inverter to reflect the appropriate size of KW.
	NOTE	You must seek approval from the local DNO before changing export limits.

5. Full Installation Layout - CHINT

Dura-i REM CHINT

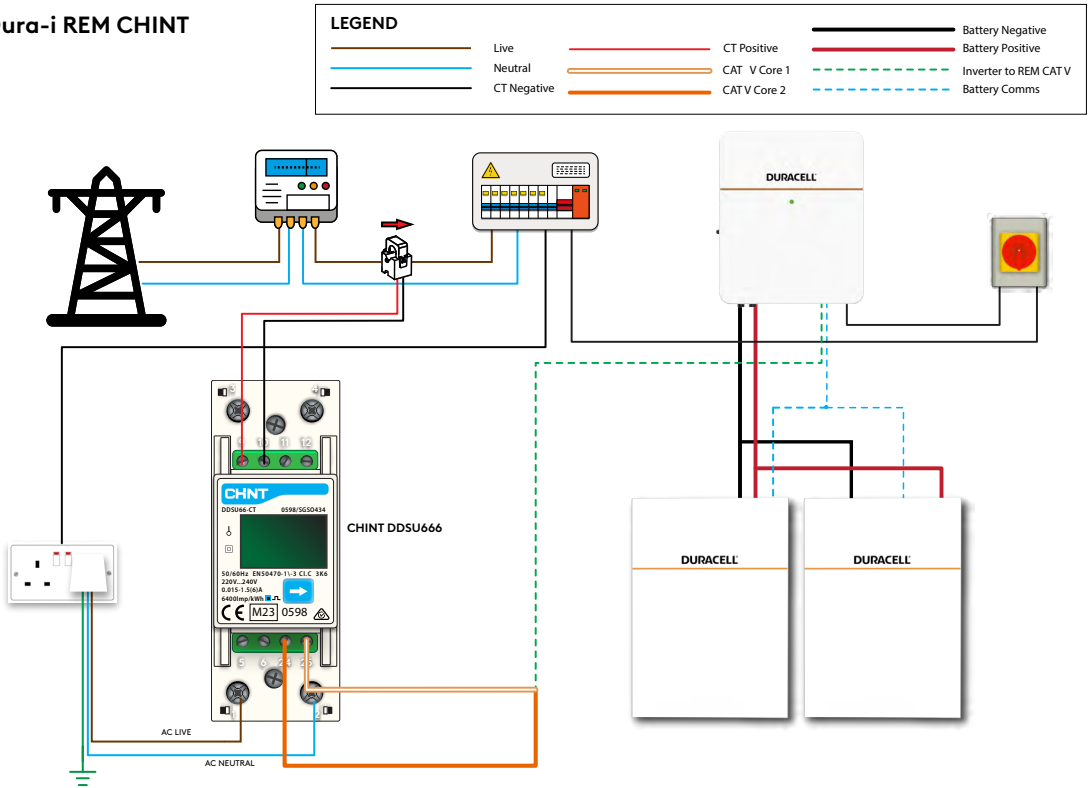


Figure 22.

6. Full Installation Layout - Eastron

Dura-i REM Eastron

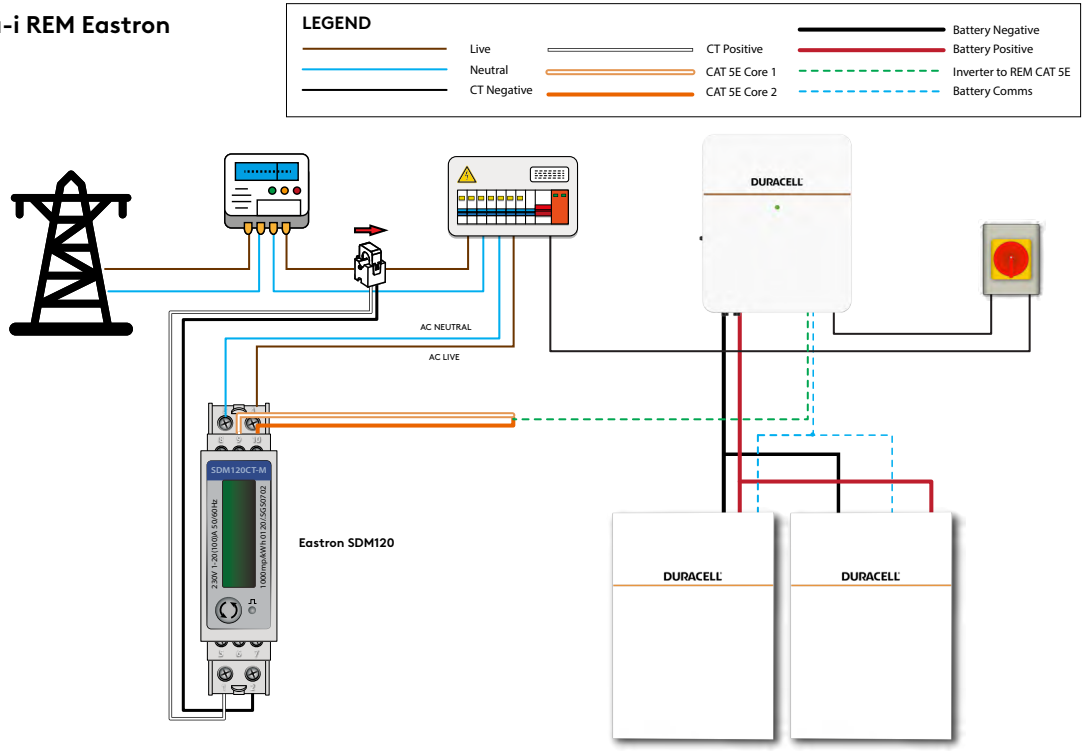


Figure 23.

Notes

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