sync energy®

Installation Guide

SOLAR POWER DIVERTER
3.7KW SINGLE PHASE

SEFSD (WI-FI, LAN, BLUETOOTH)

Contents

click to navigate directly to the page

Introduction

This guide is intended for use by qualified electrical installers to explain basic requirements and options to be considered when installing a Sync Energy Solar Power Diverter. The unit is suitable for indoor installations and features advanced safety technology built into the unit to ensure its safe usage. This guide specifically applies to the installation of Sync Energy Solar Power Diverter model and should not be used for other types of home energy management or diverter devices.

HEATING
CONTROL

IK08
RATING

16A
CURRENT

3 YEAR
WARRANTY
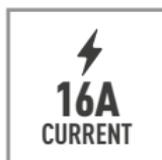
Box contents

- Solar Power Diverter
- Wall Bracket
- Installation Template
- Quick Start Guides
- Product ID Card
- Accessory Pack containing:
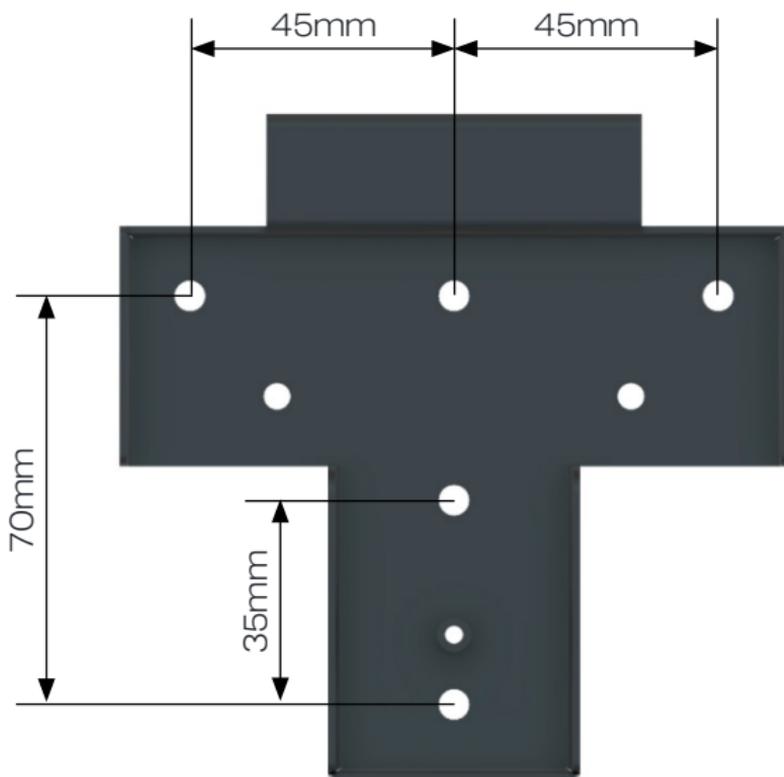
    » 3 x lid retaining screws
    » 1 x CT Clamp

Tools required
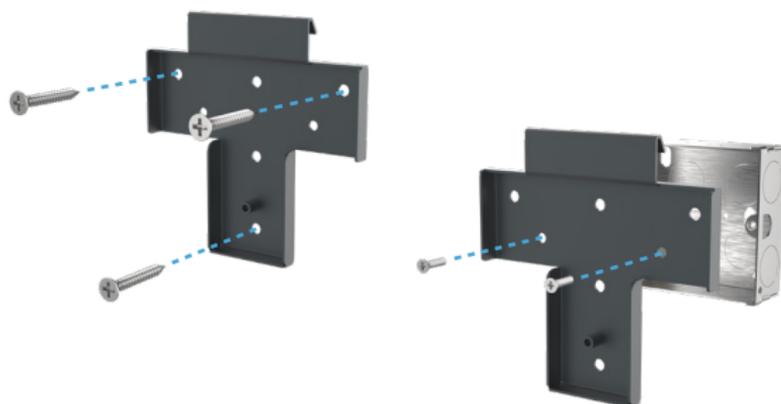
PZ2 screwdriver and fixings

Installation

1 Select a suitable location on the wall, mark out drill fixing holes.
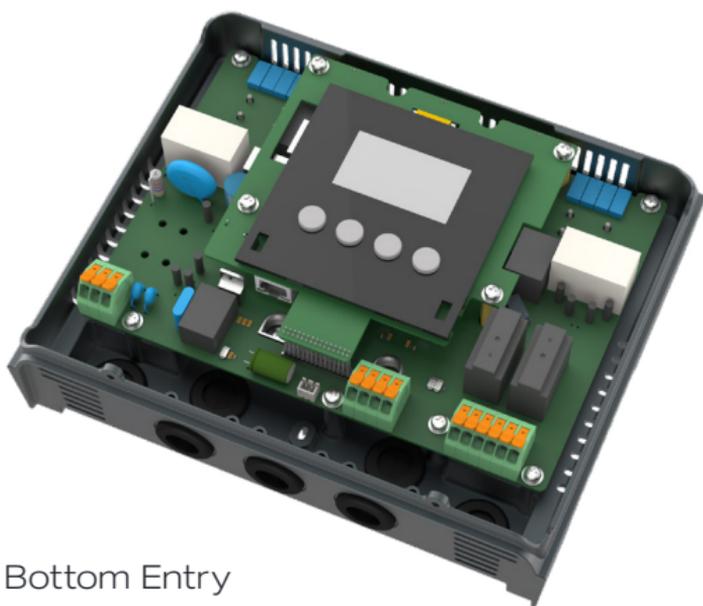

45mm 45mm

70mm

35mm

2 Mount the wall bracket to the fixing holes using suitable wall fixings, ensure bracket is level and secure . Alternatively, device can be installed to a single gang backbox by using the middle holes.

3 Choose from either bottom or rear cable entry point, then slice the required cable entry into the solar power diverter.

Bottom Entry

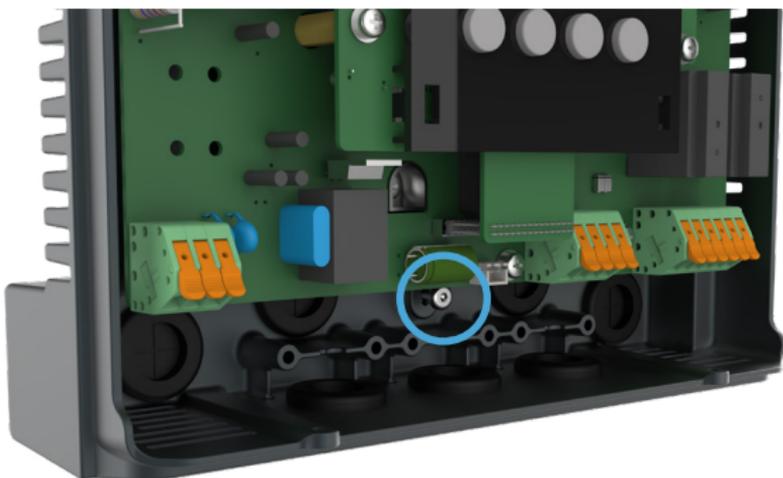**4** Slide the base onto the wall bracket, ensure product is fully inserted.

Rear Entry

5 Tighten base locking screw to bracket.

6 Insert the cable, if using bottom entry ensure the cord grip is fitted.
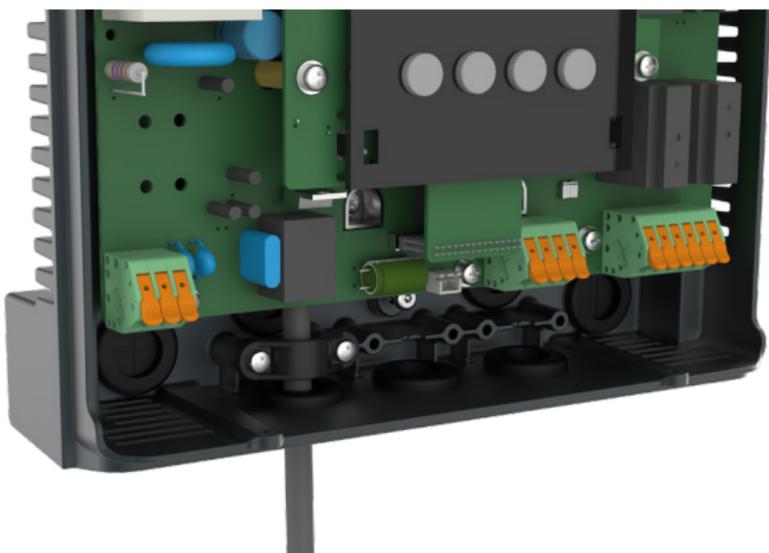
7 Secure cables into the terminals and ethernet plug if required.

L – Brown
N – Blue
E – Green / yellow
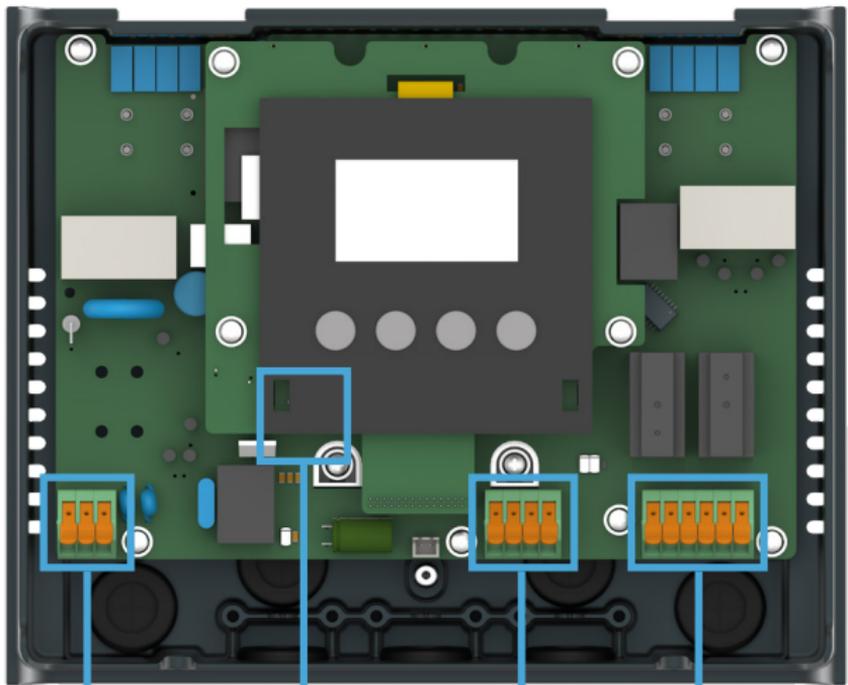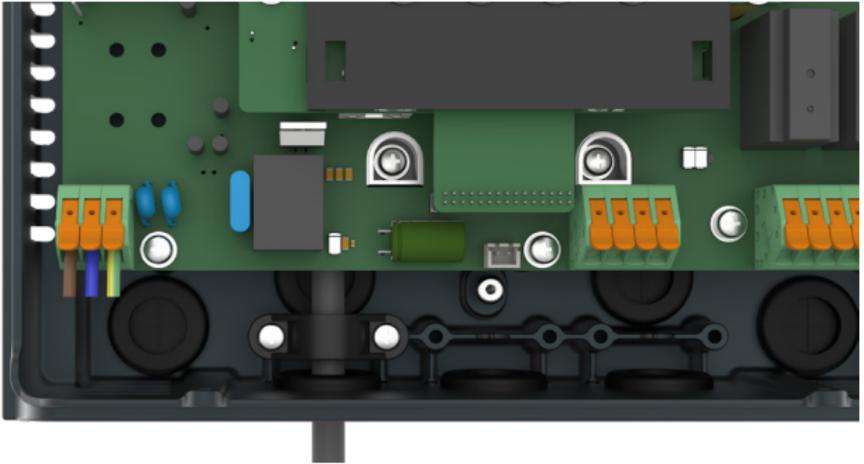
Ethernet

L1 L2 N1 N2
E1 E2

AC input
L N E

CT1 -
CT1 +
Temp Sensor

8 For dynamic load balancing, insert wires into middle PCB terminals.
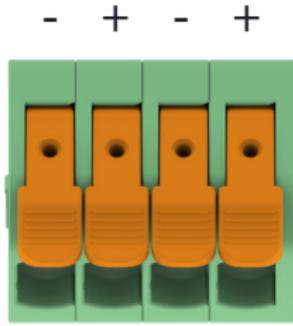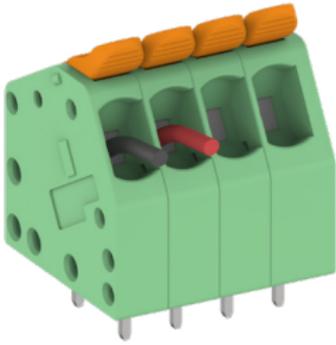
-	+	-	+
CT-	CT+	Temp sensor -	Temp sensor +

9 Fit lid to the base, the lid will hook from the top onto the base.

10 Secure lid by fitting 2x retaining screw on the bottom.

Load balancing / Auto Solar Charge Feature

If load balancing and/or Auto Solar Charge feature is required, a single CT clamp should be used for correct balancing. One Sync Energy CT Clamps – EVA120CT1, is supplied in the box with this charger. This should be fitted around the incoming power to the main fuse and the correct max load (A) to be entered during setup and installation steps.

**1** Locate the main incoming power cable into the property. The CT Clamp needs to be fitted before any of the tails are split for correct measurement.
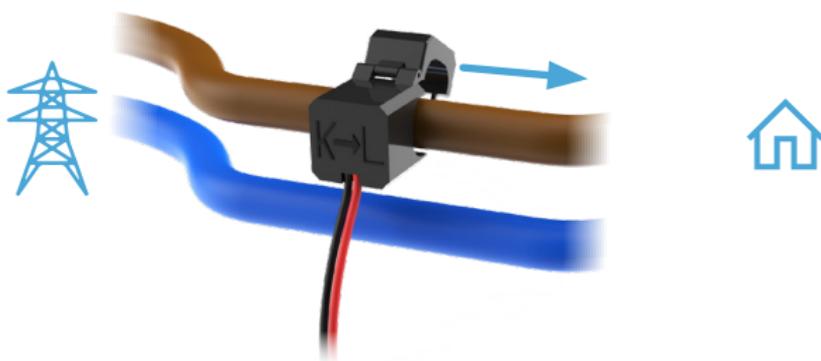
2 Open the CT Clamp and fit around the incoming Live power cable, this is typically marked brown for most installations.

Ensure the Arrow is pointing into the property from the incoming fuse.
K towards Source, L towards Load.

3 CT Clamp current and voltage readings can be checked via the Bluetooth EV installer App to ensure correct connection and orientation.

Powering on

All indicators will flash quickly, this indicates that the device is powering on.
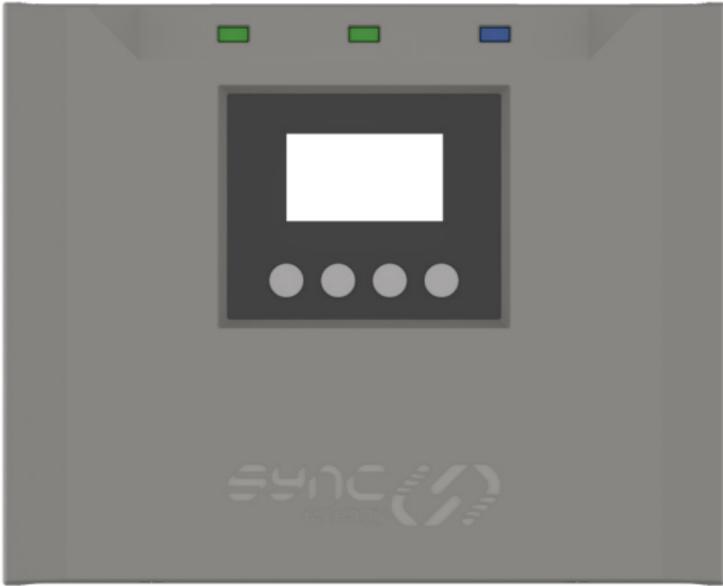
Network set up

The right indicator will flash blue quickly then slowly in a loop, and in the top left corner of the screen there will be an X. This indicates that the device is ready for network setup but is not yet connected to the internet.

Wi-Fi set up

The right indicator will be solid blue with no flashes and in the top left corner of the screen the X has been removed. This indicates the device is operating normally and Wi-Fi set up has been successful.
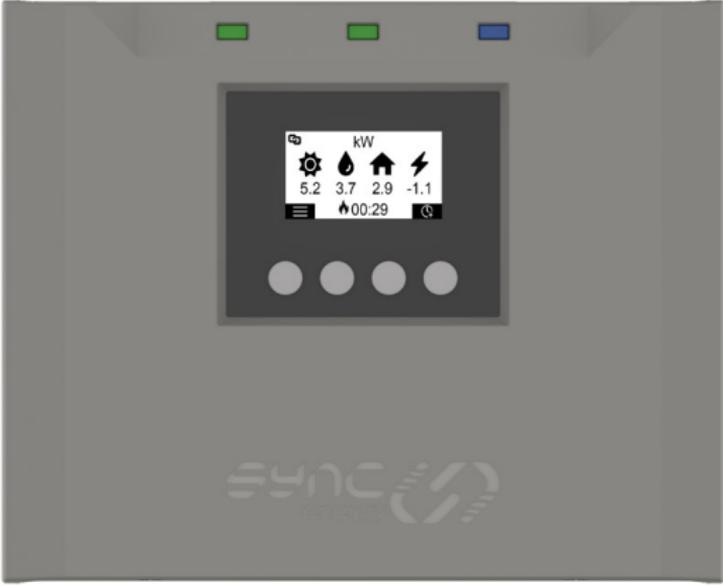
Alarm protection

The right indicator will flash blue quickly and the left and middle indicator will be off. This indicates that the device detects a fault and will stop heating, pressing any key will hide the alarm log but will reappear after 5 minutes if fault remains.

Downloading

All three LEDs remain on and preform a breathing effect. This indicates that the device is downloading, when completed the screen will return to the main interface.
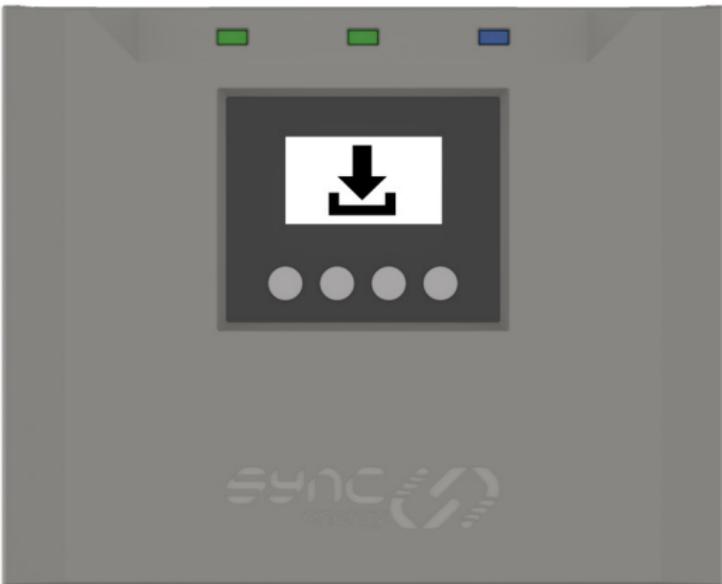
Domestic Commissioning

INSTALLER APP – Download the 'SyncEnergy' app by clicking this link

Also available from the Installer Portal on the sync.energy website, or using the QR code opposite.

Intuitive Interface: The revamped interface is designed with the installer in mind. Everything you need is available through a new side-menu

Effortless Setup: Seamlessly configure your EV Chargers and balancer devices with just a few taps. Get up and running in no time

Account Management: Create and manage your account effortlessly.

Upon powering on the charger all indicators will flash alternately, when the device has finished powering up then the right indicator will flash blue quickly then slowly in a loop. This indicates that the device is ready for network setup but is not yet connected to the internet.
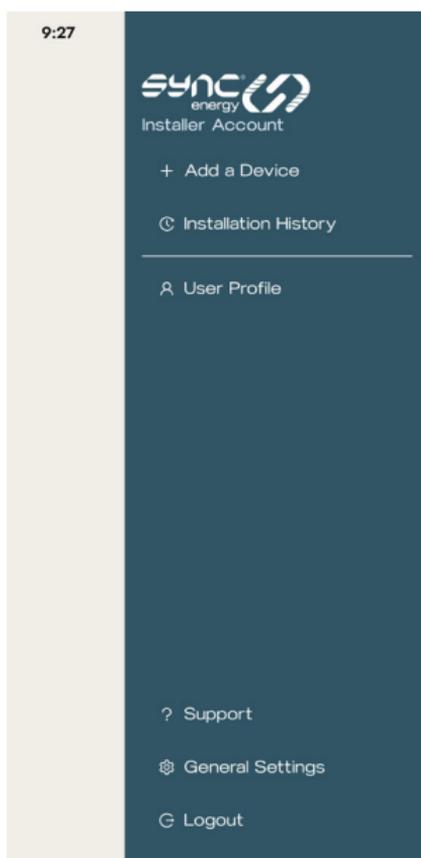
1   Browse to the main menu and press "Add a device".

Select the device you would like to set up

⊞ EV Charger

⊞ Balancer

⊞ Inverter / Battery

⊞ Power Diverter

Show All Bluetooth Devices

Cancel

2 Select "Power Diverter"

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← Inverter / Battery

Let's get the Solar Power Diverter Online

Scan for the device. The Device ID is written on the side of the device.

Scan using Bluetooth

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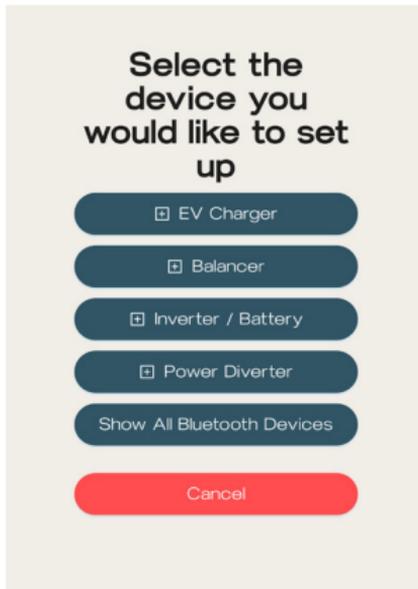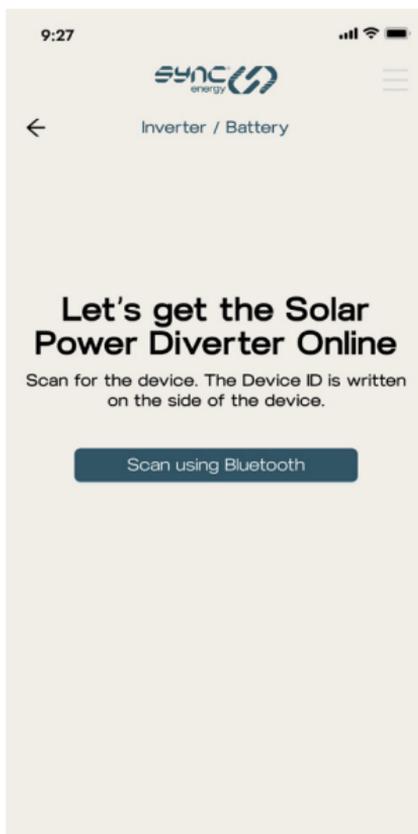
3 Ensure you are within 5 metres of the Solar Power Diverter and press "Scan using Bluetooth".

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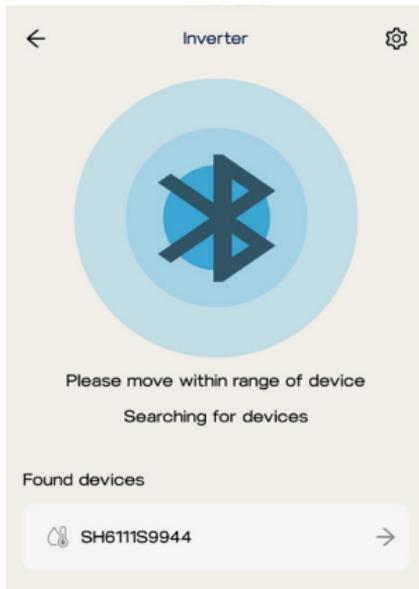
4 The device ID should display on screen. If it does not, go back and search again. Press on the device.
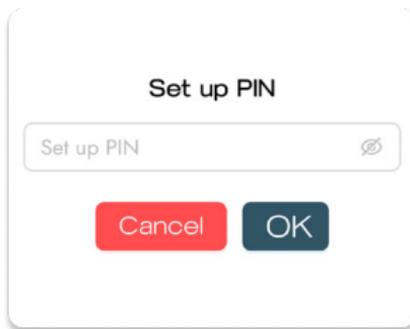
5 When asked for the set up PIN, enter it. This can be found on the side of the device, and also on the in-box paperwork.
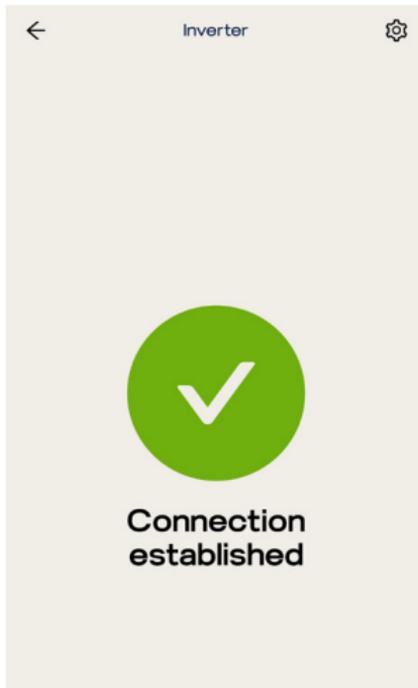
6 After completing the previous step in the setup process, a new screen will appear to show that your connection has been established.

7 Now it's time to connect the device to Wi-Fi. Press the down arrow to display the scanned Wi-Fi networks. Select your home Wi-Fi and then type the password. Press "Connect to Wi-Fi".
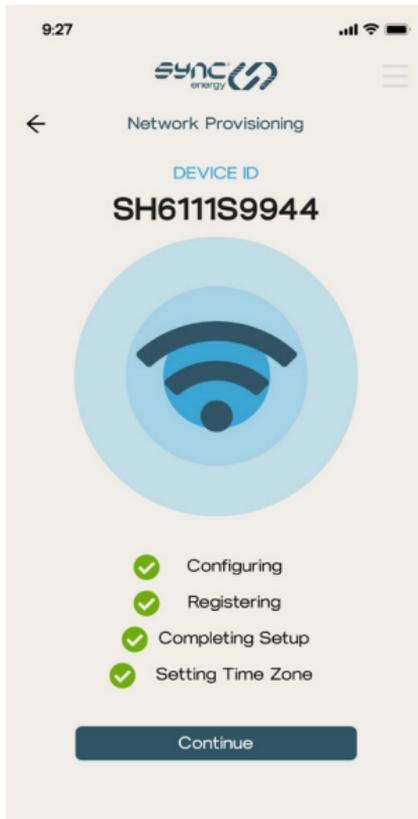
8. The device will connect. If there are any issues, they will be displayed here. Press "Continue".
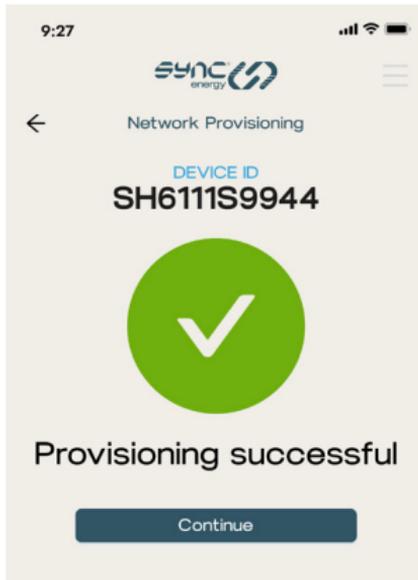
9. When the device has connected to Wi-Fi, the success page will show.
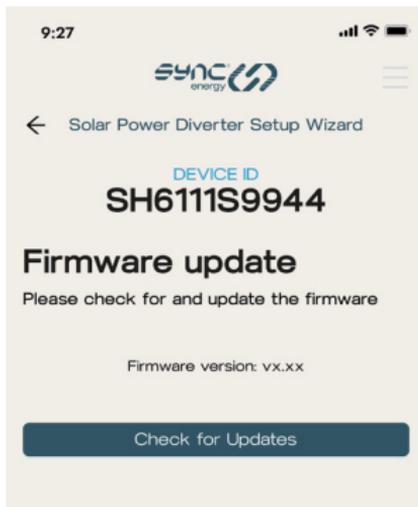
10 If there are firmware updates available, they will show on this page. You can apply firmware updates (if there are any). When this has completed, press "Save & Continue".
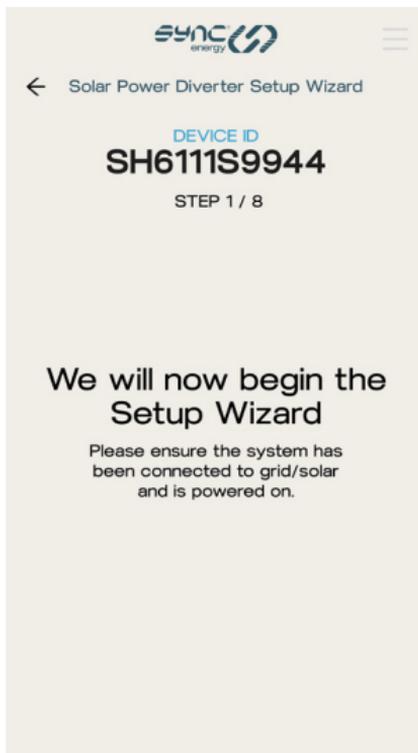
11 The device must now be configured using the Setup Wizard. Press Continue to start.

Output settings

Select the output channels in use

- ◉ 1
- ○ 2
- ○ 1 & 2 (in parallel)

If in doubt, consult the paperwork.

CT Settings

Select the output channels in use

- ◉ None
- ○ Internal (direct connection)
- ○ External - Flow Inverter
- ○ External - EV Charger

If in doubt, consult the paperwork.
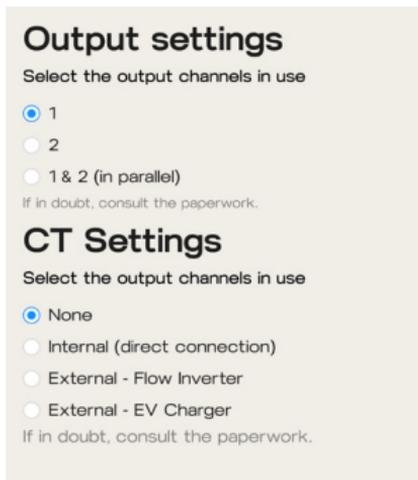
12 Select how many output channels there are, or both (in parallel).

Select whether the CT Clamp is in use, connected directly to the unit, or another Sync Energy device in the system.

Max Run Time

Maximum run-time (minutes) ⓘ

| 120 |

Temperature Sensor

Use temperature sensor? (Connect first)

- ◉ Yes
- ○ No

↻ Refresh temperature reading

Measured temperature (°C): 42.5

Set the maximum temperature:

60°C
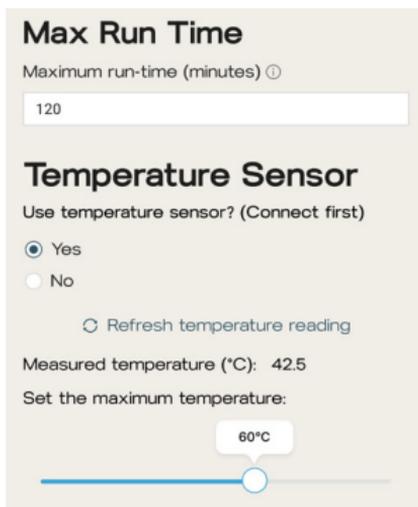
13 Select the max run time. This is the maximum time that the heating element outputs will remain on during a boost, and will override manual boosts or schedules.

Select whether a temperature sensor is in use or not, and set the maximum temperature limit.

Solar Power Diverter is connected and ready for sharing with the home user

Please prepare to transfer the device to the home user.

Next
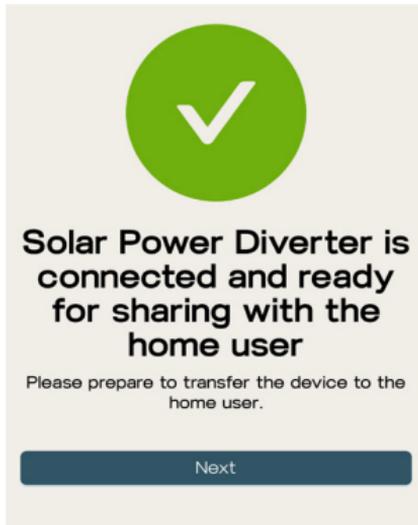
14 Once the settings are set, the Solar Power Diverter is connected and ready to be shared with the home user.

Share this device to the home user

If the home user is present, you can transfer this charger to them.
1. Ask the user to download and install the Sync Energy App
2. They should create an account, and select 'Home User' during the setup process.
3. They should select "Add device" from the main menu.
4. Follow the prompts.
5. When the home user has a QR code on screen, you may continue setup.

Transfer / Share with home user

Add Another Device

Finish

15 Follow the on-screen instructions, which includes the home-user downloading the Sync Energy app and creating a Home-User account.

Share your new device

Select a sharing option

▨ Scan the customer's Import
QR code

▨ Enter the customer's Sync Energy
email address
The email address should belong to
an existing account

16 The home user should provide you with
their email address, or you can scan their
import QR code, to transfer the device
to them.

17 Scan the QR code generated by the app on
the Home User's phone.

9:27

sync⟨⟩

← Inverter Setup Wizard

DEVICE ID
SH6111S9944

STEP 7 / 8

Please enter the end-user's email address.
The e-mail address should belong to an
existing Sync Energy account

Email address

john_doe1234@sample.com

18 Alternatively, enter the home user's
email address. Please note that they
must have already created an account
for this to work.

sync⟨⟩
energy

9:27

sync energy

← Inverter Setup Wizard

DEVICE ID
SH6111S9944

STEP 7 / 8

Sharing successful

Finish Setup
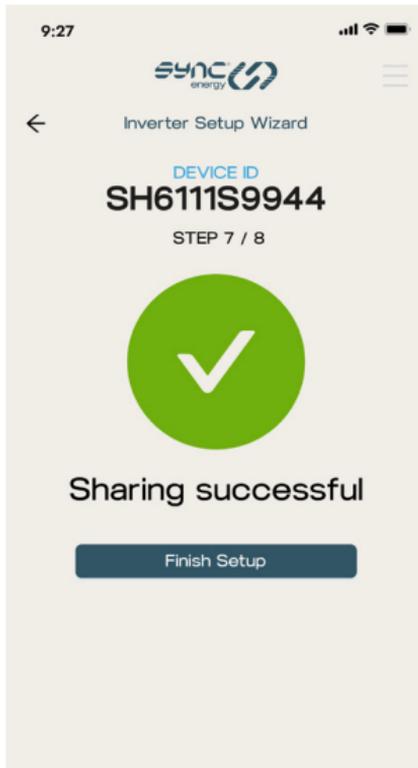
19 When the device has transferred successfully, you will see this screen.

9:27

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← Inverter Setup Wizard

DEVICE ID
SH6111S9944

STEP 8 / 8

Setup Complete!
You are now ready to use your device.

Finish Setup
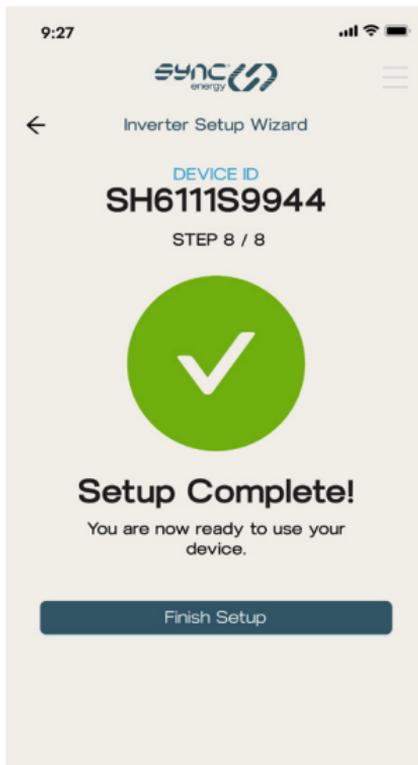
20 Setup is now complete!

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Troubleshooting

For further information, or to refer to our FAQs, please visit our website: **www.sync.energy**

LED Indicator	Function	Meaning
Left, Middle, Right Indicator	Power On - All indicator lights off	The product has no power
Left, Middle, Right Indicator	Powering On - All indicator lights flash alternately	Powering on process (device is booting up)
Right Indicator	Alarm Protection - Right indicator light: blue rapid flashing (every 0.5 sec, for 200 ms)	If any of the 15 alarms triggers, the device stops heating, the right light flashes rapidly, and the alarm log appears. Pressing any key hides the log, but it returns after 5 minutes if the issue isn't resolved. Wi-Fi also reports that operation has stopped.
Left, Middle, Right Indicator	Downloading - All three LEDs perform breathing effect simultaneously	LEDs flash and download log will be displayed until completed. Device stops all activities during this time.
Right Indicator	Network Disconnected - Right indicator light cycle: (0.5 sec ON, 2 sec OFF)	Interface shows network disconnected log consistently.
Right Indicator	Working - Right indicator light steady ON	After start of work, right light stays on. This corresponds to Output LED flashes below.

LED Indicator	Function	Meaning
Left Indicator - Output 1	Solar Mode - Left indicator light: green slow flash (every 2 sec, lasting 200 ms)	Output 1 - Solar mode, IGBT working
Left Indicator - Output 1	Boost Mode - Green fast flash (every 0.5 sec, lasting 200 ms)	Output 1 - Boost mode, relay working
Left Indicator - Output 1	Circuit Output - Off	Output 1 - Circuit output current off
Middle Indicator - Output 2	Solar Mode - Green slow flash (every 2 sec, lasting 200 ms)	Output 2 - Solar mode, IGBT working
Middle Indicator - Output 2	Boost Mode -Green fast flash (every 0.5 sec, lasting 200 ms)	Output 2 - Boost mode, relay working
Middle Indicator - Output 2	Circuit Output -Off	Output 2 - Circuit output current off

Safety information

Warning: The supplied Sync Energy Solar Diverter is manufactured to be safe without risk provide they are installed correctly, used, and maintained in accordance with the manufacturers recommendations and installed by a competent electrical installer in accordance with national and local regulations and legislation applicable at the time of installation, e.g. BS7671:2018 amendment 3.

The Solar Power Diverter is suitable for use with a single phase (up to 3.7kW) 220-240V Nominal AC supply.

Circuit Protection and Load Management

This product is supplied with a load management kit designed to help optimise power usage and prevent overloading of the electrical system.

This product requires circuit protection by either a 16–20 A MCB or Type A RCBO.

- The MCB protects the circuit from overcurrent caused by overloads or short circuits

- The Type A RCBO provides additional protection against earth leakage, including pulsating DC faults, helping to prevent electric shock

The Installation of these devices must be done by a qualified electrician.

Isolation and switching for safety and maintenance

Product requires upstream protection of suitable rating for the connected load, Either from a Fused spur outlet, or a suitable MCB feeding the heating circuit.

Installation requirements

The Solar Power Diverter is suitable for installation inside the building on a solid wall or structure. The installer should consult with the building owner to establish their preferred installation location.

Ensure suitable fixings are used depending on the mounting surface. To avoid unnecessary dust inside the enclosure. It is recommended to use the included bracket with fixing holes to mark out your installation destination before fitting the enclosure to your wall.

Ensure installation wall has been checked for electric cabling or pipework with a suitable detector.

Do not drill alternative cable entries into the Solar Power Diverter, except marked cable entry location for bottom entry.

Technical information

Environmental Protection

This symbol is known as the "Crossed-out Wheelie Bin Symbol". When this symbol is marked on a product or battery, it means that it should not be disposed of with your general household waste. Some chemicals contained within electrical/electronic products or batteries can be harmful to health and the environment. Only dispose of electrical/electronic/battery items in separate collection schemes, which cater for the recovery and recycling of materials contained within. Your co-operation is vital to ensure the success of these schemes and for the protection of the environment.

Guarantee

Sync Energy products are guaranteed against faulty materials and workmanship for a period of 3 years from date of delivery: products will be repaired or (at Sync Energy's discretion) replacements will be supplied or (at Sync Energy's discretion) a credit note will be issued. This guarantee is subject to Sync Energy's conditions of sale and in particular to the following conditions being met:

1. Notification of any defect is given to Sync Energy as soon as reasonably practicable after becoming apparent, and the products then returned to Sync Energy.
2. The products have only been operated under normal operating conditions and have only been subject to normal use.
3. No work (other than normal and proper maintenance) has been carried out to the products without Sync Energy's prior written consent.
4. The products have been assembled, or incorporated into other goods, by a qualified and recognised electrician and only in accordance with any instructions issued by Sync Energy.
5. The defect has not arisen from an item manufactured or supplied by a person other than Sync Energy.
6. 3 year warranty as standard, optional product registration can be completed on the Sync Energy website. Follow this link to visit our Warranty web-page.

Technical data

CODES:	**SEFSD** (WI-FI, LAN, BLUETOOTH)
DESCRIPTION:	SOLAR POWER DIVERTER
NO OF OUTPUTS:	2
MAX OUTPUT (A):	16A
POWER INPUT MAX. (KW):	3.7KW
MAXIMUM CHARGE CURRENT:	CONFIGURABLE, 0-16A
INPUT FREQUENCY:	50-60HZ
ELECTRICAL CLASS:	CLASS 1
POWER CONTROL:	0 TO 10A CONTROLLABLE OUTPUT. 16A BYPASS
LOAD BALANCING:	SUPPLIED WITH LOAD MANAGEMENT KIT
TERMINALS:	PUSH FIT LEVER TERMINALS
OPERATING:	-20°C TO +50°C
IP RATING:	IP20
IK RATING:	CONTROL BOX - IK08
HOUSING MATERIAL:	DIE CAST ALUMINIUM AND ABS
MOUNTING OPTIONS:	WALL MOUNTED BRACKET, COMPATIBLE TO STANDARD SINGLE GANG BACK BOX
COLOUR:	LIGHT GREY (RAL 7016)
DIMENSIONS:	194 (H) X 240 (W) X 75 (D)
CONNECTION PROTOCOL	POWERED BY SYNC ENERGY
APP	POWERED BY SYNC ENERGY
SOFTWARE & FIRMWARE UPDATE	OVER-THE-AIR

Technical support

Need help with the <u>app</u>?

Contact our UK technical support team at:
Phone: +44 1952 983 940
Email: support@sync.energy

Opening hours:
8:30 - 17:00 Monday - Thursday
8:30 - 16:00 Friday
Answer phone facilities for out-of-hours enquiries

Sync Energy is a trading name of Luceco PLC

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