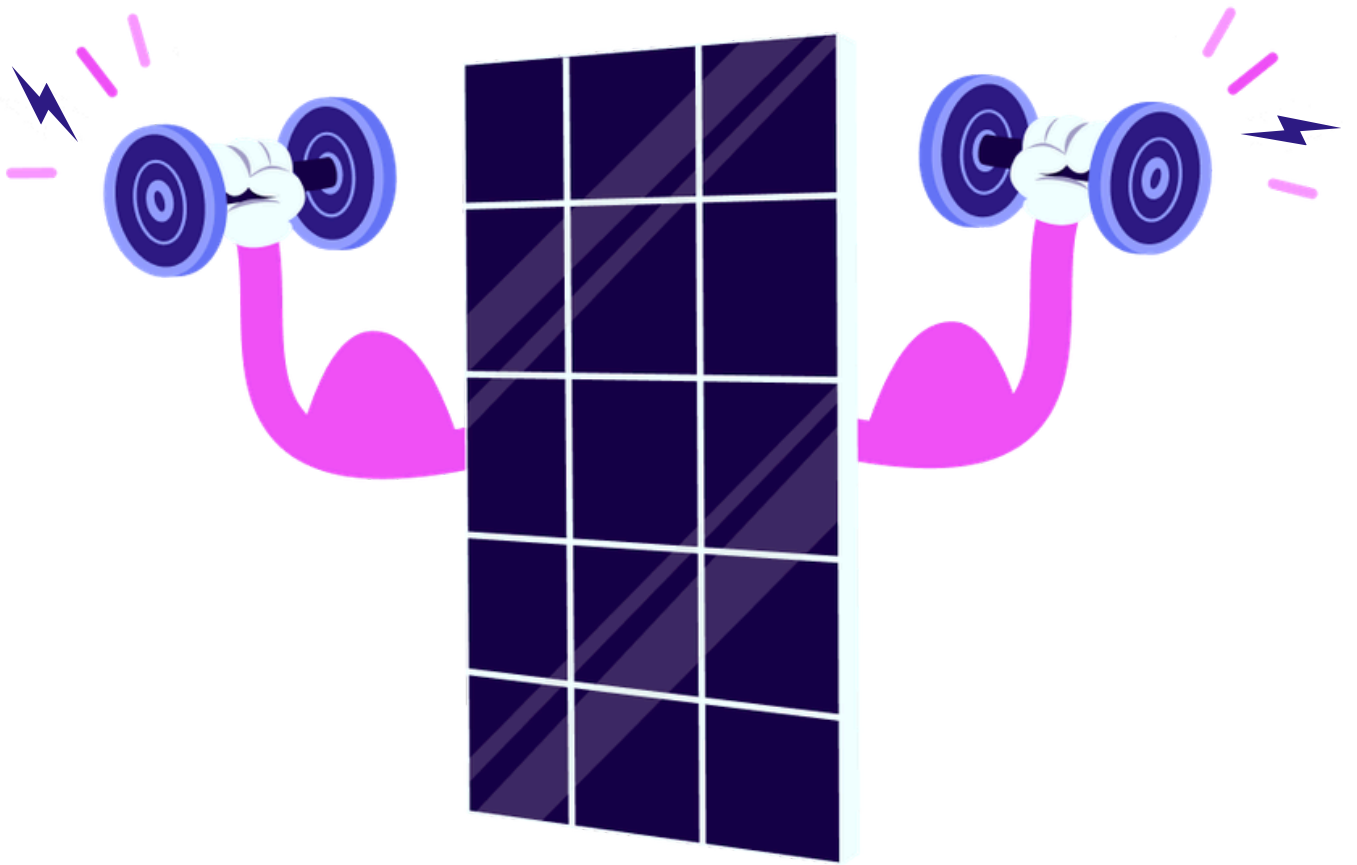


Everything you need to know about your Plug-in Solar bundle (Wall mount)

Ready, set, solar!



octopusenergy

Contents

1. Product overview.....	3
2. Checks before use.....	3
3. Safety & Legal requirements.....	4
4. Electrical requirements.....	5
5. What's in the box & tools needed.....	6
6. Choosing a location.....	8
7. Mounting guide.....	10
8. Maintenance.....	22
9. Safe disconnection.....	22
10. Storage and transport.....	22
11. Equipment inspection.....	22
12. Troubleshooting & fault codes.....	23
13. Disposal	25
14. Microinverter specification.....	26
15. Panel specification.....	28

Welcome to Plug-in Solar

Congratulations on your new Octopus Energy Plug-In Solar kit! This guide will walk you through everything you need to get up and running from unboxing to producing your first cheap, green electricity at home.

The good news? No complex tools, no specialist knowledge, and no electrician required. If you can assemble flat-pack furniture, you can install this. Let's go!

Contact us

The easiest way to reach us is by filling in this [quick form](#) with your order number and question.

1. Product Overview

About this guide

- This plug-in solar kit is a lightweight and durable solar system designed for non professional installation.
- The system enables PV modules to be securely installed on the ground, or on a (ground-level) wall.
- The system is designed for quick installation, reliable fixing, and compatibility with our mainstream PV module.
- This system is designed as a (single phase) plug-in solar photovoltaic generation product to be installed within UK domestic residential installations only.

2. Checks before use

- Users are responsible for obtaining any necessary permissions from the property owner, landlord, freeholder, managing agent or relevant authority prior to installation, including agreeing how any costs associated with installation will be apportioned.
- Users are responsible for obtaining any necessary planning permission and Listed Building Consents. Permitted development rights may not apply in all cases — check with your local planning authority if you live in a listed building, conservation area, or a flat. Solar panels must not project more than 200 mm from the mounting surface to retain permitted development rights in England.
- Recent changes to the planning rules mean plug-in solar can't be installed under permitted development on wooden fences, gates, walls, balconies or enclosures (Note: the rules around timber sheds aren't completely clear, so we recommend checking with your local planning authority before installing on a wooden structure or avoid mounting on this material all together).
- Please check with your home insurance provider on your current policy to ensure that installation does not void your warranty, installations are always advised to be installed on an outside 3 pin socket.
- If you are installing in a marine (coastal), industrial, or agricultural environment where corrosive gases or salt mist are present, additional checks will need to be undertaken by a qualified person.
- If the building has an existing lightning protection system, observe the required separation distances from the system's conductors in accordance with BS EN IEC 62305-3:2024 before fixing any components. If you are unsure whether your building has a lightning protection system, ask a qualified electrician.

3. Safety & legal requirements



Note: Please read this section carefully before installation. Incorrect installation may result in PV module damage, personal injury, or property damage.

- **Do not install on restricted cladding systems.** Mounting is prohibited on Aluminium Composite Material (ACM), Metal Composite Material (MCM), High-Pressure Laminate (HPL), or timber cladding systems.
- **Do not install on remediated buildings.** Devices must not be installed on buildings subject to external wall or building safety remediation works.
- **Do not attach to property boundaries.** PV modules must not be fixed to walls or structures that form a property boundary between separate dwellings.
- **Do not obstruct safety routes.** Systems must not block or endanger emergency escape and rescue paths.
- **Do not install on any of the following wall types.** Hollow bricks, Plasterboard, External thermal insulation walls, Hollow tiled walls, Lightweight partition panels.

Prohibited mounting & hardware practices

- **Do not use Y-connectors on the DC side of the system.** We don't supply these, but are required to inform you that they should not be used.
- **Do not modify the device.** Unauthorised modifications or installing components in ways not specified by the manufacturer are prohibited.
- **Do not use any mounting kits that are not sold or approved by Octopus.**
- This product must be installed to the precise configuration set out in this manual. Adding additional microinverters or solar PV panels, daisy chained or otherwise, is prohibited and can cause a safety risk.

System & technical limitations

- **Do not combine with batteries.** The plug-in solar device is not intended to be operated with or connected to a battery energy storage system.
- **Do not exceed voltage/string limits.** DC open-circuit voltage at inverter inputs must not exceed 120 V DC (provided you only plug one of our PV panels to each of the two inputs on the microinverter, this issue is addressed).

- This system includes anti-islanding protection as required by G98 and BS EN 62116. This means the system will automatically shut down and stop generating whenever mains power is lost (e.g. during a power cut or grid fault). It will not provide backup power and cannot be used with a battery storage system. Generation will resume automatically once the mains supply is restored and the grid reconnection delay has elapsed.

4. Electrical requirements

- **Do not plug in more than one device per household ring circuit or household.**
- **Do not use adaptors or extensions.** The use of extension cables, multi-way adaptors, travel adaptors, RCD adaptors, and plug converters is strictly prohibited.
- **Do not connect to non-socket circuits.** Plug-in solar must only be plugged into dedicated socket circuits—never into lighting circuits or spur circuits supplying fixed equipment (e.g., cookers or boilers).



Note: A circuit typically supplies multiple sockets protected by a single circuit breaker in your consumer unit. To check which sockets share a circuit: switch off a circuit breaker and observe which sockets lose power — those sockets are on the same circuit. If you are unsure how to identify a circuit breaker or if your consumer unit is unclear, seek advice from a qualified electrician before installing.

- **Check your consumer unit.** Verify that the intended socket circuit is protected by a suitable RCD or RCBO in your consumer unit. The protective device must be a Type A bidirectional RCD or RCBO. If you are unsure, or if your consumer unit uses older Type AC RCDs or rewirable fuses, have a qualified electrician inspect and where necessary upgrade your installation before connecting this device.
- **Check the socket outlet.** Connecting to damaged, degraded, or non-compliant mains sockets is forbidden. You should be connecting to a suitable outdoor socket - this must have a minimum ingress protection rating of IP55 (BS EN 60529). Again, consult a qualified electrician if you are unsure.



Note: Do not disconnect DC connectors under load: The AC supply must always be turned off and disconnected from socket before disconnecting any DC connections to prevent arcing and damage to the connectors. This is important!. Such damage can be invisible, and can present a long-term hazard.

5. What's in the box & tools needed



Note: Your kit arrives safely packaged on a pallet.



Items & product descriptions of the kit

Item	What it does
Solar Panels	Capture sunlight and generate electricity.
Fox M1800E Micro Inverter	The "brains" — converts solar power into usable electricity for your home.
Mini Rails	The frame that holds your panels securely in place.
Solar Mounting Clips	Fasten the panels firmly to the mini rails.
Screws	Secure the mini rails to the mounting frame.
PV Extension Cables	Connect your solar panels to the micro inverter.
Connection Cable with 3-Pin Plug	Transfers electricity from the inverter into your home socket.
Solar Mounting supporting clips	To screw into the bottom mini rails to make installing the solar mounting clips easier

Wall mount: required tools



Note: The tools that you need are:

- 6 mm Allen key
- 10 mm socket
- Screwdriver
- Spirit level
- Tape measure
- Marker pen
- Drill / Impact driver
- Masonry drill bit

6. Choosing a location

- Picking the right spot is the most important decision you'll make. Before you start assembling, consider these four things:

Sunlight & shading

- Choose a spot that gets as much direct sunlight as possible throughout the day. Avoid areas shaded by trees, fences, or buildings. Even a small amount of shade on a small portion of a panel can make a significant impact on system performance - try to pick a location with no shade, or as little as possible, throughout the day.



Note: Choose an open, sunny spot. Not shaded like the below image.



Note: Make sure the socket is in reach with the 5m connection cable.



Wall type

- We recommend a solid brick wall in the sunshine. Do not install plug-in solar on wooden fences or temporary structures.

Access to an electrical socket

- You'll need a standard 3-pin outdoor or garden socket within reach of the cable. If there isn't one close by, consider having one installed first.

Clear the areas

- Make sure the area is free from obstructions — footballs, garden equipment, or anything else that could knock into the panels once installed.



Important Safety: Recommended installation locations only

This kit is designed for ground-level / ground floor installation on firm, hard surfaces in a sheltered or standard residential setting. Extra caution is required — and we recommend seeking professional advice before installing — in any of the following situations:

- High wind zones (coastal, hillside, or otherwise exposed locations)
- Elevated positions such as raised decking, balconies, or terracing
- Flat roof spaces or any installation above ground level

If you are unsure whether your chosen location is suitable, please contact us or consult a qualified installer before proceeding.

7. Mounting guide

Wall mounting guide



Important Safety: For a safe installation, please follow all instructions and guidance:

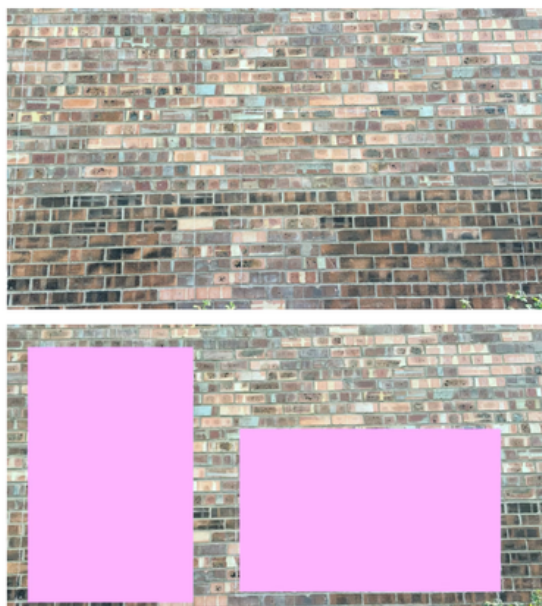
- **Two people:** The equipment needs two people to safely move and install it
- **Wear safety glasses**
- **Wear ear defenders** when using power tools
- **Keep children and animals away from the installation area**
- **Don't walk, stand or sit on any equipment** supplied with your kit
- **Watch out for hot equipment:** The panels and inverter can become hot when operating — don't touch them while they're hot

Step 1: Mark out your panel position(s)

- Once you've chosen your wall and checked it's suitable (see Section 6), mark out where each panel will go before you drill anything.
- Decide whether each panel will be mounted in portrait or landscape orientation.
- Use your tape measure to plan the layout, then use chalk to draw an outline of each panel directly onto the wall.
- Double-check your outlines with a spirit level before moving on — this will save you time later.

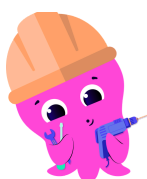


Note: Chalk lines to indicate panels layout.



Step 2: Attach the mini rails to the wall

- Each panel is held by six mini rails, which fix directly to the wall and hold your solar mounting clips. Regardless of orientation, you'll always use six mini rails per panel: in portrait, two at the top, two at the bottom and two at the sides; in landscape, three at the top and three at the bottom.
1. Using your chalk outline as a guide, line up each mini rail so the fixing hole a third of the way in from the outside edge sits on the chalk line.
 2. Mark the position of the top and bottom fixing hole on each rail, then use your drill and a masonry drill bit to drill the fixing holes into the wall.
 3. Insert the wall fixings into the drilled holes — the fixings supplied with this kit are suitable for solid brick walls only (see Section 6).
 4. Attach the mini rails to the wall with your screwdriver, checking each one is level and secure as you go.



Note: Attach the mini rails to the wall.



Tip: Check every rail with a spirit level before fully tightening the fixings — a small error here is much harder to correct once the panel is on the wall.

Step 3: Attach the solar mounting clips to the mini rails

- The solar mounting clips hold the panel firmly to the mini rails. Before fitting them, add a second solar mounting clip to each of the bottom rails like this. This will help hold the main solar mounting clip in place when fitting the panels. When the panel is secured, the second can be removed and used to install the rest of your equipment once the bottom clips are safely installed.



1. Install solar mounting clip to the bottom rails: Slide a clip into the bottom mini rail with its lip facing down. Tighten it securely - this acts as a temporary ledge to stop the solar panel from sliding down.
2. Slide a second clip into the rail above the first one, facing up.
3. Hand-tighten both clips with a 6 mm Allen key, leaving enough gap to insert the edge of the panel.
4. Once the panel is safely positioned, remove the bottom inverted clip and reuse it for the remaining rails.

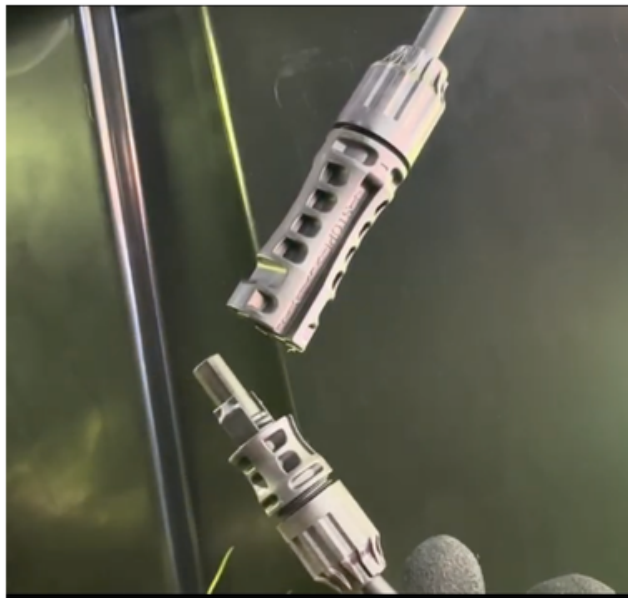


Step 4: Connect the extension cables to the solar panels

- It's easiest to connect your panels to their extension cables before lifting them onto the bracket.
1. Find the PV extension cable for each panel and select the most appropriate end for the panel connection.
 2. Insert the connector into the solar PV cable — it will click into place. Make sure you have a nice, firm connection.
 3. Give it a gentle tug to double-check it's properly seated.
 4. Repeat for both connections on each panel.



Note: Push the connector in until you feel a firm, secure click.



Step 5: Lift and fit the panels to the wall bracket

- It's recommended to have at least two people to help lift each panel onto the bracket.
1. With a second person supporting the panel, lift it onto the bracket, slide it down onto the bottom mounting clips and lock it into place.
 2. While your helper continues to support the panel, tighten each of the bottom solar mounting clips.
 3. Repeat this process on the top of the panel, again sliding the clips down and tightening them until you have a firm connection.
 4. If you're installing in a portrait orientation, now fit and tighten the side mounting clips too.
 5. Once all six mounting clips per panel have been installed, check the panel is securely and evenly attached to the wall.



Important Safety: Take the weight of the panel until every clip is tightened — this stops the panel moving unexpectedly while you work.

Step 6: Mount and connect the micro inverter to the wall

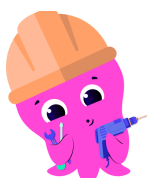
- .The Fox M1800E micro inverter is the system's brain. It converts the energy from your solar panels into electricity your home can use. Choose a sheltered position within easy reach of your panel cables.

Mounting the inverter

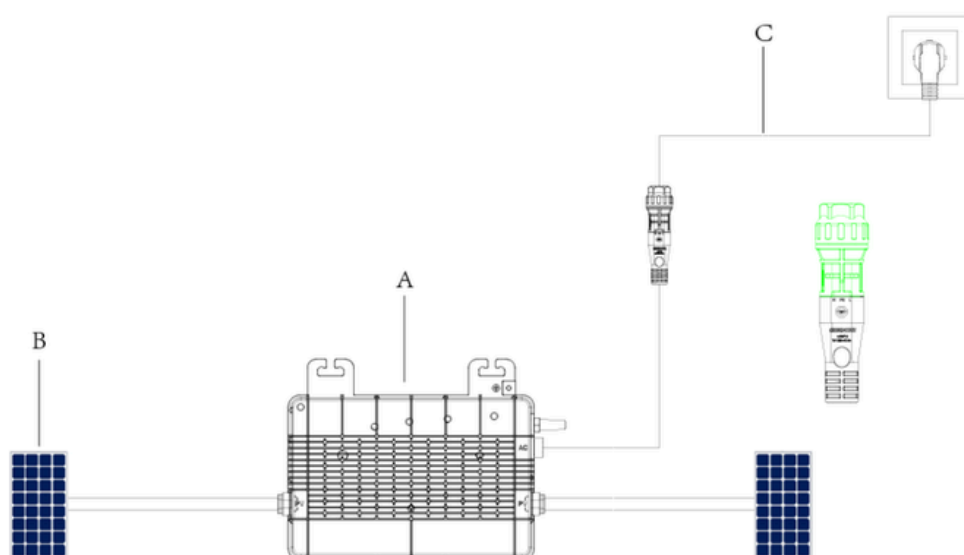
- 1.Mark the two fixing holes for the inverter's mounting bracket on the wall.
- 2.Drill into the wall and place in your wall fixing.
- 3.Attach the bracket to the wall with both screws, fitting a washer to each on the outside of the bracket.

Step 7: Connect the panels to the micro inverter

- Now connect your panels' extension cables to the micro inverter. Always make the DC (panel) connections first, before the inverter is plugged into the mains — this avoids connecting live cables under load.
1. Locate the connection points on the inverter: one on the left-hand side for panel one, and one on the right-hand side for panel two.
 2. Take the extension cable from panel one, select the most appropriate fitting, and insert it into the left-hand side of the inverter.
 3. Repeat with the cable from panel two on the right-hand side, again selecting the most appropriate connection.
 4. Never force a connection or mix connector types — each one is shaped so it can only go in one way.
 5. Do not connect the three-pin output cable yet — this comes later, once your system is registered and ready to switch on.



Note: Panel connections (A: micro inverter, B & C: panel and output connections).



Important Safety: Always make and break DC connections with the AC supply switched off and unplugged, to prevent arcing and damage to the connectors.

Step 8: Commissioning & setting up the Fox and Octopus App

- Registering your system with the Fox and Octopus app allows you to monitor your energy production in real time.

Fox app



Note: Download the Fox ESS app and register your account.



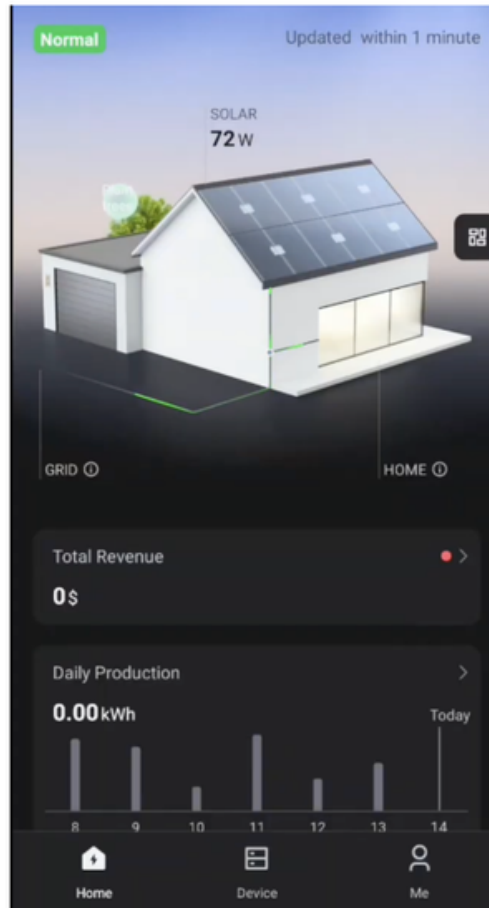
- Download the Fox ESS app on your smartphone.
- Open the app and create a new account, following the on-screen steps.
- Select Owner Registration to set up your dedicated account.
- Once signed in, tap Add Device. The app will automatically search for your inverter.
- If the auto-search doesn't find it, tap the QR code option and scan the QR code found on the back of your micro inverter.
- Follow the prompts to connect your inverter to your home Wi-Fi — this lets you see real-time data from anywhere.



Note: Don't worry! After registering, the app may show "Faulty". This is completely normal — it just means the system isn't yet producing electricity to your home. Once you plug in and switch on, the status will change.



Note: App showing "Normal" — you're live and generating!

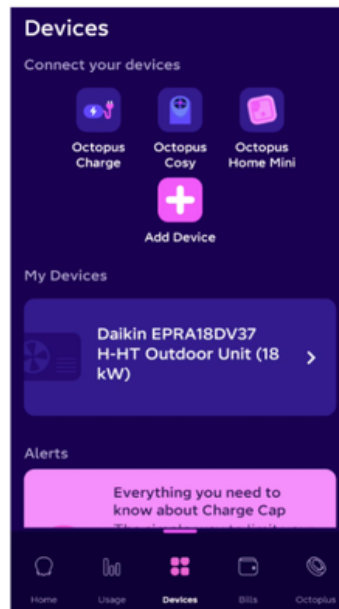


Octopus app



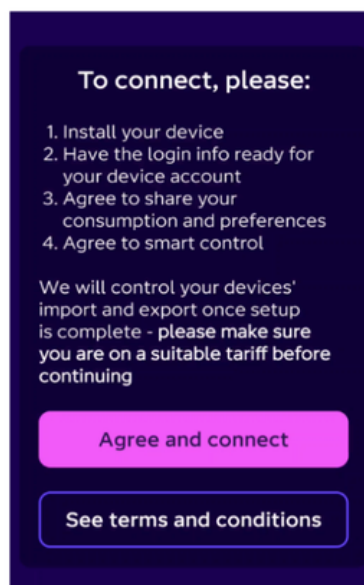
Note:

- Next, open the Octopus app on your smartphone.
- Head to the Devices Tab > Add Device.
- Choose Battery and solar > FoxESS.



Note:

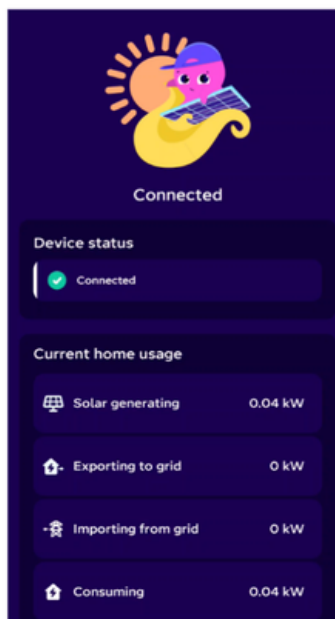
- Press 'Accept and connect'.
- The Fox app will open, authorise the connection.





Note:

- That's it — you're live!



Step 9: Notify your District Network Operator (DNO)

- Notify your Distribution Network Operator (DNO). By UK law, you must submit a G98 notification form to your local DNO within 28 days of connecting the device.
- **Please use this link to register your device:** <https://myplugin.solar/>
- **Your octopus device reference is:** OCTOQ/21124/V1/A5

8. Maintenance

- Periodically inspect the visible enclosure, approved cables, connectors and mounting for damage, looseness, corrosion, overheating or water ingress.
- **Do not use solvents, corrosive cleaners, pressure washers or abrasive materials.**
- **Do not replace the AC lead or attempt an internal repair.** Stop using damaged equipment and contact support.

9. Safe disconnection

1. Switch off the wall socket where applicable and remove the AC plug. Hold the plug body; never pull the cable.
2. Wait for the microinverter to shut down.
3. Prevent the PV modules from generating, then release DC connector locks using the correct method. Never disconnect DC connectors under load.
4. Protect disconnected connectors from dirt, moisture and damage.

10. Storage & transport

- Use the original packaging where possible. Protect the equipment from moisture, impact and vibration. Store indoors in a clean, ventilated location between -40 °C and +85 °C.

11. Equipment inspection



Important Safety: This should be a visual inspection only, never disconnect or open hardware.

- Check the PV array for any damage such as cracks or breaks.
- The microinverter is secure and correctly placed.
- No damage is viable to the plug, cables and/or socket.
- Vegetation is cut back so as not to affect the operation of the equipment.

Extreme Weather (Storm, Heavy Snow, Strong Wind)

- The equipment is designed to be dismantled and moved, during storm warnings consider safely disconnecting and moving your equipment to an appropriate location.

Periodic RCBO test

- Periodically test your RCBO by pressing the test button on the unit while this device is actively producing power (i.e. during daylight hours). The RCBO should trip immediately. If it does not trip immediately, contact a qualified electrician to discuss replacing the RCBO with a more modern unit. Older types of RCBO can be desensitised by the small DC residual currents produced by this inverter.

12. Troubleshooting & fault codes

- Periodically inspect the visible enclosure, approved cables, connectors and mounting for damage, looseness, corrosion, overheating or water ingress.
- **Do not use solvents, corrosive cleaners, pressure washers or abrasive materials.**
- **Do not replace the AC lead or attempt an internal repair.** Stop using damaged equipment and contact support.

Stage	Expected indication
Power available	The LED starts and the microinverter performs its self-test.
Self-test passed	Green LED flashes during the grid reconnection delay.
Generating	Green LED remain on continuously.
Fault	Green and red flashes form a repeating diagnostic sequence.

Common mechanical issues

- Minor bracket wobble: Insufficient bolt torque -> Loosen all nuts and retighten.
- Left-right tilt of bracket: Uneven tightening force -> Re-calibrate with spirit level and fasten evenly.

Microinverter not generating

- Allow time for automatic recovery after low light, a temporary grid disturbance or an internet interruption.
- Confirm that the factory fitted plug is inserted directly into the wall socket and that the socket is switched on where applicable.
- Check FoxCloud 2.0 for a fault message and note the ID number.
- Visually inspect the approved cables and connectors without unplugging DC connectors under load.



Important Safety: If equipment is damaged, unusually hot, smells abnormal or shows signs of burning, switch off and unplug the AC connection if safe to do so. Keep clear and contact support.

PV input fault

ID	Meaning	User action
ID4029	PV1 internal short-circuit	Disconnect AC and contact support.
ID4030	PV1 low input voltage	Usually low light or an input connection issue. Allow recovery; if repeated in good light, contact support.
ID4031	PV1 overvoltage	Disconnect AC and contact support. Do not change the PV configuration.
ID4032	PV1 overcurrent	Disconnect AC and contact support. Do not change the PV configuration.
ID4061	PV2 internal short-circuit	Disconnect AC and contact support.
ID4062	PV2 low input voltage	Usually low light or an input connection issue. Allow recovery; if repeated in good light, contact support.
ID4063	PV2 overvoltage	Disconnect AC and contact support. Do not change the PV configuration.
ID4064	PV2 overcurrent	Disconnect AC and contact support. Do not change the PV configuration.

AC and grid faults

ID	Meaning	User action
ID4147 / ID4148	Internal bridge or relay check	Allow one restart. If repeated, disconnect AC and contact support.
ID4149	Grid ride-through event	Wait for the electricity network to return to normal.
ID4150	Remote switch	Check whether remote shutdown is active in Fox ESS Cloud.
ID4151	AC supply lost	Check the plug, socket switch and household supply. Do not use an adaptor or extension lead.
ID4152	Internal bus overvoltage	Allow one restart. If repeated, disconnect AC and contact support.
ID4153	Residual-current / earth fault	Disconnect AC and contact support. Do not reconnect until advised.
ID4154 / ID4155	Temperature outside operating range	Allow the unit to return to its operating temperature; check ventilation and shading.
ID4156 / ID4157	Grid frequency outside range	Wait for automatic recovery. If repeated, contact support.
ID4158 / ID4159	Grid voltage outside range	Wait for automatic recovery. If repeated, contact support.
ID4160	AC overcurrent	Disconnect AC and contact support.

13. Disposal

- The microinverter, solar panels, and associated electrical components are Waste Electrical and Electronic Equipment (WEEE) and must NOT be placed in general household waste.
- To dispose of this equipment, use your nearest WEEE collection point (often available at local recycling centres or major electrical retailers).
- Visit **www.recyclenow.com** to find your nearest WEEE collection point. Before decommissioning, notify your Distribution Network Operator (DNO) that you are disconnecting the device. Follow the safe disconnection procedure above.

14. Microinverter specification

<https://in.fox-ess.com/wp-content/uploads/2025/03/EN-M-E-datasheet-V2.1-20250307.pdf>

Parameter	M1-800-E
Model	M1-800-E
Applicable PV module power	355–670 Wp per input, subject to approved configuration
MPPT voltage range	31–45 V DC
Maximum input voltage	60 V DC
Start-up voltage	24 V DC
Maximum input current	2 × 20 A
Maximum input short-circuit current	2 × 24 A
MPPTs / strings per MPPT	2/1
Nominal AC output power	800 W
Maximum apparent output	800 VA
Maximum current for plug-in device	3.5 A
Nominal output voltage	230 V AC
Nominal output frequency	50 Hz
Power factor	>0.99; adjustable 0.95 leading to 0.95 lagging
Maximum current for plug-in device	3.5 A
Nominal output voltage	230 V AC
Nominal output frequency	50 Hz
Power factor	>0.99; adjustable 0.95 leading to 0.95 lagging

Parameter	M1-800-E
Maximum total harmonic distortion	<3%
Maximum efficiency	96.60%
Nominal MPPT efficiency	99.90%
Dimensions (W × H × D)	270 × 182 × 34.5 mm
Weight	3.9 kg
Cooling	Natural convection – no fan
Ingress protection	IP67
Maximum operating altitude	2,000 m
Operating temperature	-25 °C to +65 °C
Relative humidity	1–100%
Night-time consumption	<50 mW
Communication	Wi-Fi
Isolation	Reinforced isolation
Safety standards	IEC 62109-1 / IEC 62109-2
EMC standards	IEC 61000-6-1 / -6-2 / -6-3 / -6-4; IEC 61000-3-2 / -3-3

15. Panel specification

Parameter	Value
Module Model	JAM54D41-460/LB
Rated Maximum Power (Pmax)	460 W
Open Circuit Voltage (Voc)	39.35 V
Maximum Power Voltage (Vmp)	33.10 V
Short Circuit Current (Isc)	14.61 A
Maximum Power Current (Imp)	13.90 A
Module Efficiency	23.00%
Rated Maximum Power (Pmax)	348 W
Open Circuit Voltage (Voc)	37.38 V
Maximum Power Voltage (Vmp)	31.45 V
Short Circuit Current (Isc)	11.75 A
Maximum Power Current (Imp)	11.07 A
Cell Type	Mono-16BB
No. of Cells	108 (6 × 18)
Dimensions	1762 ± 2 mm × 1134 ± 2 mm × 30 ± 1 mm
Weight	21.5 kg
Front / Back Glass	1.6 mm / 1.6 mm
Junction Box	IP68, 3 diodes
Connector Type	QC 4.10-351 / MC4-EVO2A
Cable Cross-Section	4 mm ² (IEC), 12 AWG (UL)
Cable Length (Incl. Connector)	Portrait: 300 mm (+) / 400 mm (-); Landscape: 1100 mm (+) / 1100 mm (-)
Packaging Configuration	36 pcs/pallet, 936 pcs/40HQ container

Parameter	Value
Maximum System Voltage	1500V DC
Operating Temperature	-40°C to +85°C
Maximum Series Fuse Rating	30 A
Max Static Load (Front)	5400 Pa
Max Static Load (Back)	2400 Pa
NOCT Rating	45 ± 2°C
Bifaciality	80% ± 10%
Fire Class	Class C
Temperature Coefficient of Isc (α_{Isc})	+0.046%/°C
Temperature Coefficient of Voc (β_{Voc})	-0.260%/°C
Temperature Coefficient of Pmax (γ_{Pmp})	-0.290%/°C