

# Installation Guide Guide d'installation

V1.3

#### **ECOFLOW SMART HOME PANEL 2**

**ECOFLOW PANNEAU SMART HOME 2** 







Tutorials

Арр

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SOMMAIRE

#### Safety

#### Instructions

#### Disclaimer

Read this document carefully before using the product to ensure that you completely understand the product and can correctly use it. After reading this document, keep it properly for future reference. Improper use of this product may cause serious injury to yourself or others, or cause product damage and property loss. Once you use this product, it is deemed that you understand, approve and accept all the terms and content in this document. EcoFlow is not liable for any loss caused by the user's failure to use this product in compliance with this document.

In compliance with laws and regulations, EcoFlow reserves the right to final interpretation of this document and all documents related to this product, This document is subject to changes (updates, revisions, or termination) without prior notice. Please visit EcoFlow's official website to obtain the latest product

#### Symbol Conventions

Symbol	Description
<b>⚠</b> WARNING	Indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
<b>A</b> CAUTION	Indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.
NOTICE	Indicates important or additional information.
<b></b>	The position for connecting the protection ground cable.
<u> </u>	CAUTION, RISK OF ELECTRIC SHOCK.
<u> </u>	Caution, risk of danger.
Ωi	Refer to the operation instructions.

#### **⚠** WARNING

- Only qualified electrical personnel should install or service the product. 1.
- Please read the Installation Guide carefully before installing, operating, or servicing
- Installation of this product must conform to local standards, national electrical safety standards, and the manufacturer's instructions.
- Specifications of self-provided cables should meet the requirements of the Installation  $\operatorname{\sf Guide}$  and local regulations.
- The AC cables are high voltage cables. Risk of death or serious injury due to electric shock,
- There is a high possibility of electric shock or serious burns due to the high voltage in the product.
- Use appropriate personal protective equipment (PPE) and follow safe electrical work practices.
- Do not touch exposed wires with your hands.
- Be cautious to prevent injury when moving heavy objects. Wear personal protective equipment such as protective gloves and shoes when manually moving the product.
- Do not install or operate the equipment in extreme weather events such as lightning, snow, heavy rain, strong wind, etc.
- Do not install or operate the product in an area where flammable or explosive materials are stored.
- Inspect the product and cables for damage before installing. Do not install the product or cables if damaged in any way.
- Turn off all power supplying this product before installation. Disconnect each circuit individually before servicing
- Always use a properly rated voltage sensing device to confirm that the power is off.
- 15. During the drilling process, cover the interior product to prevent debris from falling into the product, and clear the debris after drilling to prevent interference with the
- Do not damage, smear or cover any warning labels on the device. All labels must be visible after installation.
- Before operating the product, check the electrical connections to ensure that the product is reliably and permanently grounded.
- Do not place any kind of objects on top of the product during operation.
- To completely de-energize the product, you MUST open the upstream breakers as well as physically unplug all EcoFlow DELTA Pro series. Failure to do so may 19. present a shock hazard.
- Do not place or install flammable or potentially explosive objects near the product or in explosive atmospheres.
- Do not insert foreign objects into any part of the equipment.
- Do not connect life-support systems, medical equipment, or any other equipment use where product failure could lead to injury to persons or loss of life to circuits which can be remotely switched.
- Install the product in a location that prevents damage from flooding, Ensure that no water sources are above or near the product, including downspouts, sprinklers,
- If needed, replace all devices, doors, and covers before turning on the power.

#### CAUTION

- In the case of cable damage, it must be replaced by the manufacturer, customer 1. service or qualified personnel to prevent a safety hazard.
- 2. Do not use solvents to clean the product.
- 3. The product must be disposed of according to local codes and regulations.
- This product is not intended to be used as a service disconnect
- Do not use parts or accessories other than those specified for use with the product.
- When installing the product, the screws need to be tightened according to the specification torque using a special tool.
- Keep out of reach of children or animals.
- This product is designed for residential use only.

#### | FCC Warning

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This device has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the product off and on, the user is encouraged to try to correct the interference by one or more of the following measures:  $\frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \int$ 

- -Reorient or relocate the receiving antenna.
  -Increase the separation between the product and receiver.
- -Connect the product into an outlet on a circuit different from that to which the receiver is connected.
- -Consult the dealer or an experienced radio/TV technician for help.
  This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
- This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.

#### | IC Warning

This device complies with Industry Canada licence-exempt RSS standard(s).

Operation is subject to the following two conditions: (1) this device may not cause interference, and

(2) this device must accept any interference, including interference that may cause undesired operation of the device.

This Class B digital apparatus complies with Canadian ICES-003. IC RF Statement:

When using the product, maintain a distance of 20 cm from the body to ensure compliance with RF exposure requirements.

#### Technical

#### **Parameters**

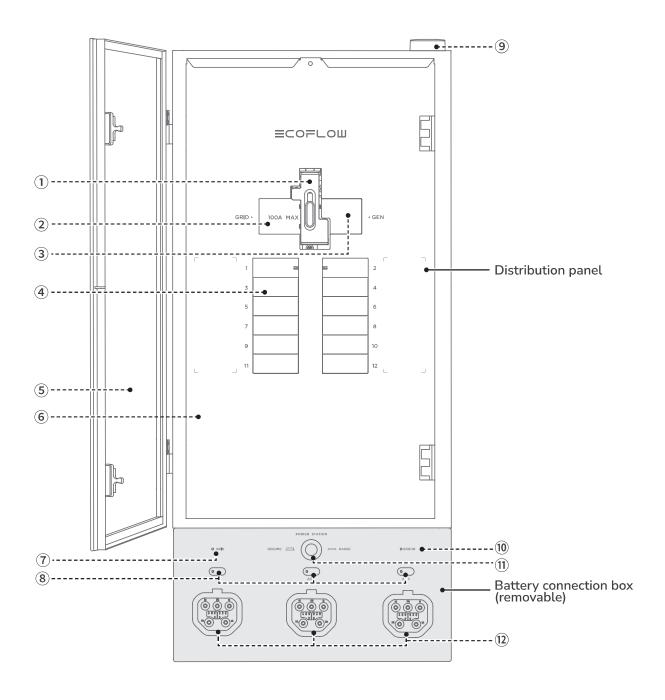
AC voltage (nominal)	120V/240V
Feed-in type	Split phase
Maximum current rating	100A panel / 90A storage
Busbar rating	120A
Maximum input short-circuit current	10kA
Operating temperature	-30°C to 50°C (-22°F to 122°F)
Operating humidity	Up to 100% RH, condensing
Altitude	≤ 2,000 m (6,562 ft)
Overvoltage category	IV
Enclosure type	NEMA TYPE 3R rainproof (distribution panel) NEMA TYPE 1 (battery connection box)
Number of load branches	12
Communication	Ethernet, Wi-Fi, and Bluetooth®
Wi-Fi	Frequency range: 20M: 2412 - 2472 MHz 40M: 2422- 2462 MHz Maximum output power: ≤ 16,5 dBm
Bluetooth <sup>®</sup>	Frequency range: 2402–2480MHz Maximum output power: ≤ 8.76 dBm
Weight	52.9 lb (24 kg)
Dimensions	32.4 × 14.9 × 6.7 in. (823.7 × 379 × 170 mm)
Compatible generator	120V single phase / 240V split phase (3-12kW)

#### Overview

NOTICE

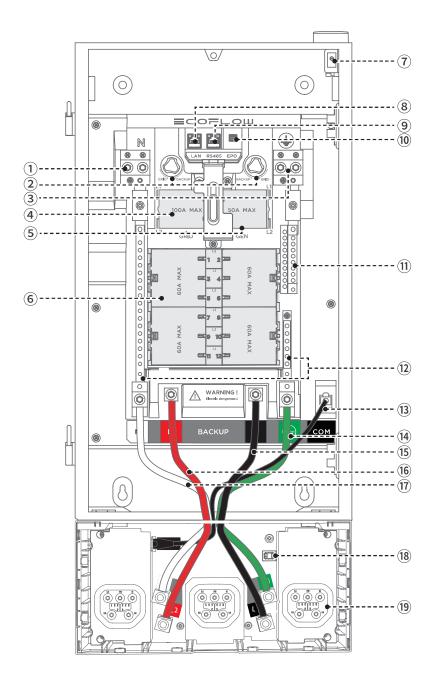
• The figures are for reference only, please refer to the actual product.

#### With Deadfront Cover Installed



- 1 Interlock (can be slid up/down to ensure that only one main circuit breaker to be in the ON position at any time)
- (2) Main circuit breaker (grid)
- 3 Main circuit breaker (generator)
- (4) Branch circuit breaker
- (5) Glass door

- 6 Deadfront cover
- Grid indicator
- 8 Power input/output button and storage indicator
- (9) Antenna (works with the EcoFlow app)
- (10) Error indicator
- (1) Emergency stop button
- (12) Power input/output port

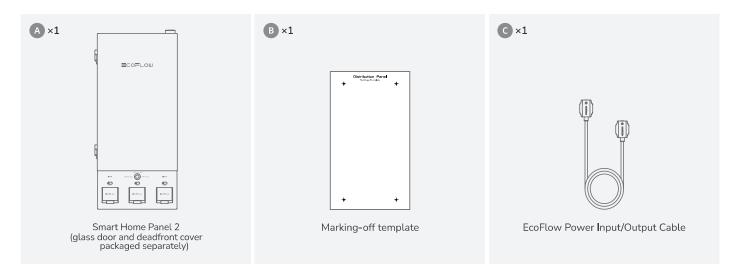


- 1 Grid & generator neutral lugs
- (2) Relay switching knob
- **3** Grid & generator ground lugs
- 4 Grid supply (L1, L2)
- (5) Generator supply (L1, L2)
- (6) 12 Loads (branch circuits) (L1, L2)
- Deadfront switch (Triggered to power off the "power input/output port" when removing deadfront cover)
- 8 Ethernet port
- **9** RS485 port

- (10) EPO port
- (11) Load ground bus bar
- (12) Load neutral bus bar
- (13) Internal communication (COM) cable
- (14) Backup ground power cable
- (15) Backup L1 power cable
- (16) Backup L2 power cable
- (17) Backup neutral power cable
- (18) Auxiliary power port
- 19 Power input/output port

NOTICE

 After unpacking, check that the deliverables are intact and complete. If any item is missing or damaged, contact the supplier.



What

#### You Need

**⚠** WARNING

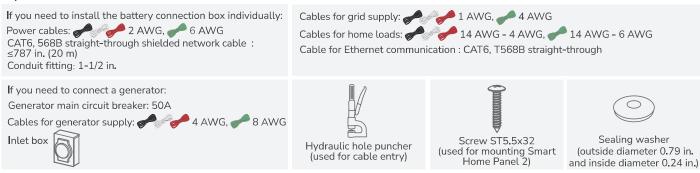
• Use appropriate personal protective equipment (PPE) and follow safe electrical work practices.

#### ·Essentials



Main circuit breaker: 100A for grid, 50A for generator
Branch circuit breaker: Max. 60A, 1 in., AFCI/GFCI supported, plug-on neutral unsupported
See "Circuit Breaker Compatibility" for details.

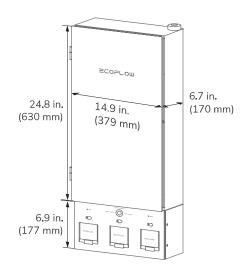
#### ·Optionals



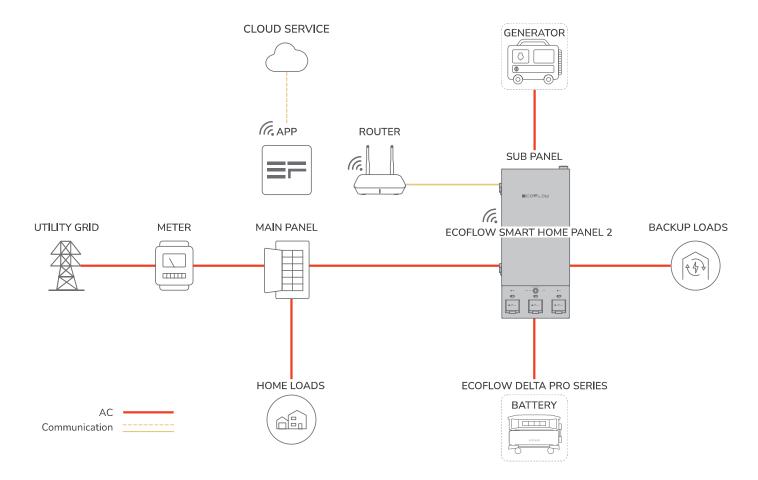
How to

#### Install

#### Dimension



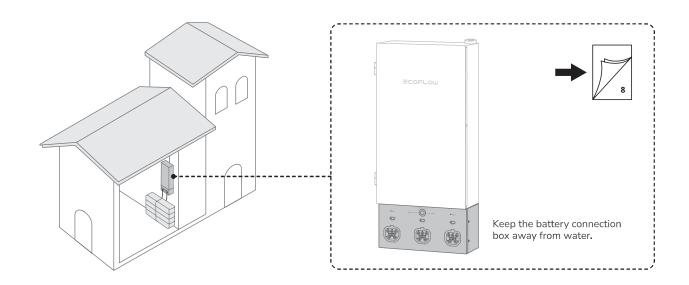
#### System Overview



#### Installation Scenarios

1. Install the entire SHP2 indoors NOTICE • Ensure that the glass door may swing open to 90°.

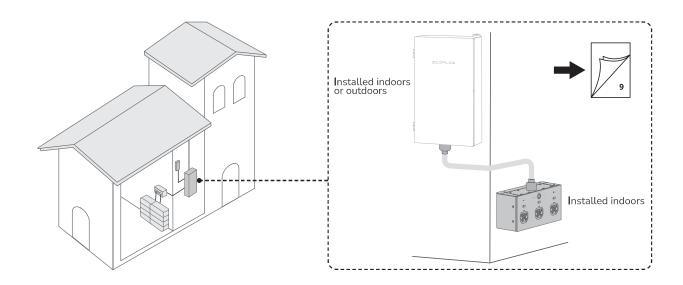
Minimum clearance: 3 in. above, 21.7 in. - 52 in. below, 1.5 in. for the left side, and 3 ft for front clearance.





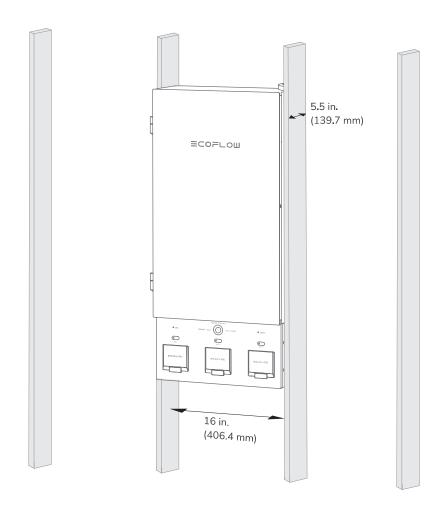
- The battery connection box is not waterproof. Therefore, it should be installed indoors to avoid water.
- Ensure that the glass door may swing open to 90°.

Minimum clearance for the distribution panel: 3 in. above and below, 3 ft for front clearance, 1.5 in, for the left side Minimum clearance for the battery connection box: 3 in. above, 21.7 in. - 52 in. below



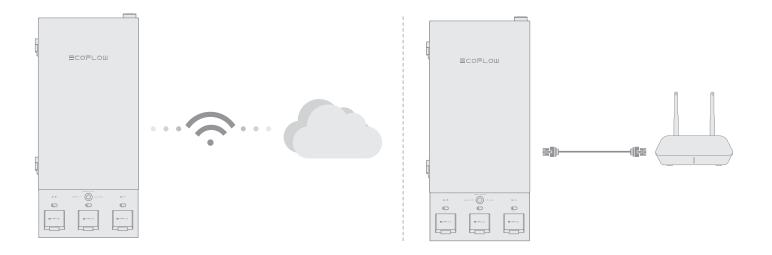
#### | Mounting | Options

Surface mounting and flush mounting are supported. Flush-mounting is shown below.



You can use Wi-Fi or wired connection to access Internet.

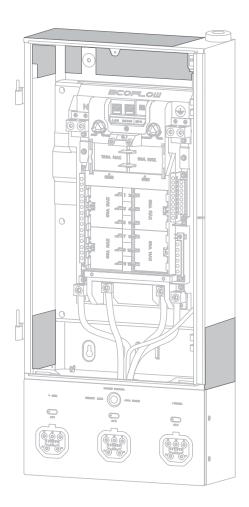
Identify the location of the router and decide whether to use a wireless or wired connection. For wired connection, prepare a CAT6, T568B straight-through cable, and set the corresponding cable entry.

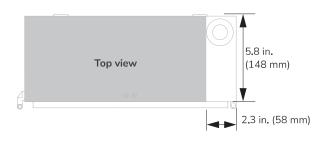


# Choosing Cable Entry



- During the drilling process, cover the interior equipment to prevent debris from falling into the equipment. A hydraulic hole puncher is recommended.
- Clear the debris after drilling to prevent interference with the equipment.

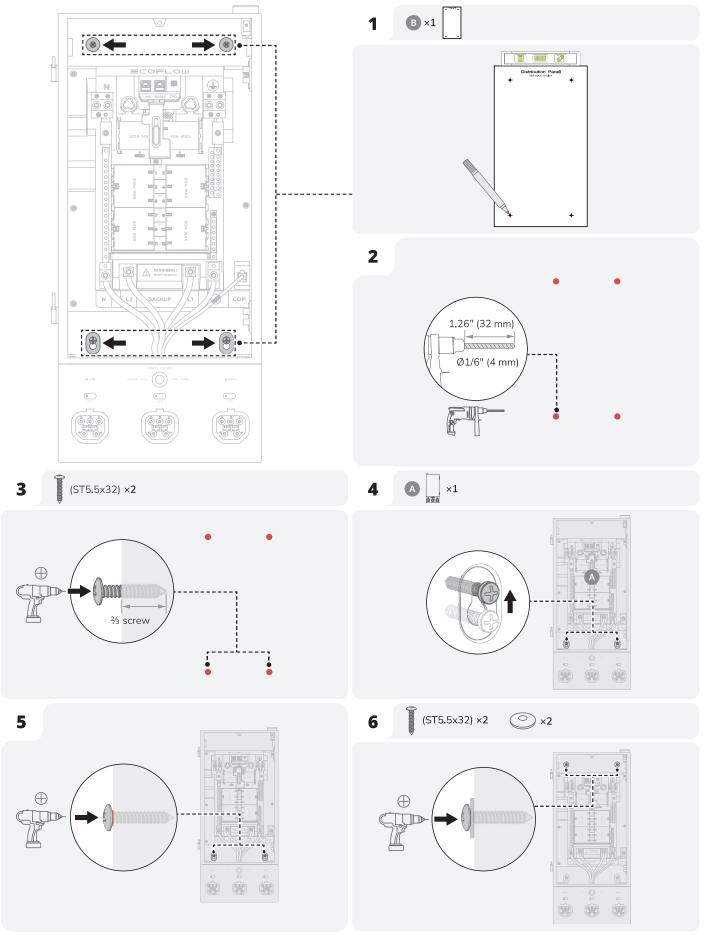




Allowable entry locations

• The battery connection box is not waterproof. Therefore, it should be installed indoors and avoid water.

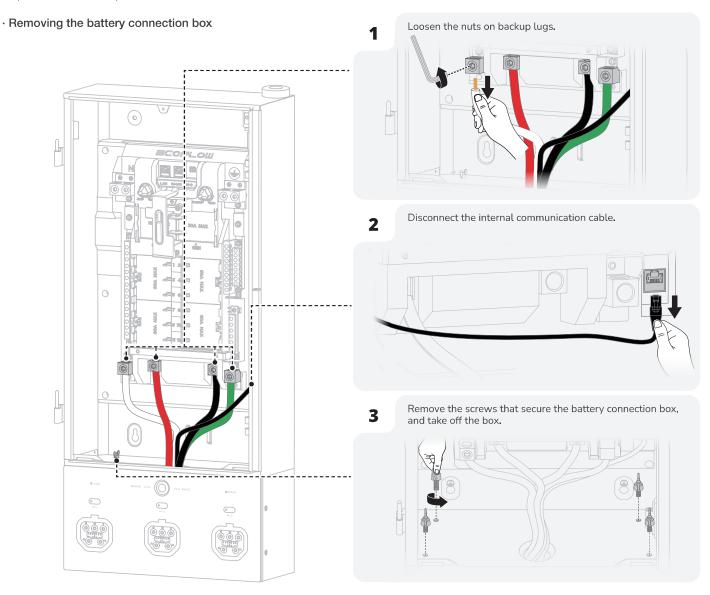




#### Scenario 2: Installing the Panel and Battery Connection Box Individually

Step 1: Remove the battery connection box from the panel. Step 2: Mount the panel on the wall. Step 3: Mount the battery connection box on the wall.





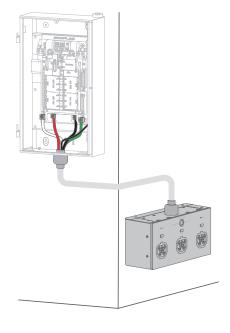
#### · Mounting the panel and the battery connection box

#### NOTICE

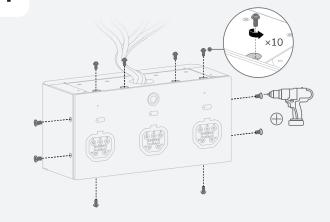
- Make new 2-AWG power cables (N, L1, L2), 6-AWG for the GND cable, and a new shielded network cable, CAT6, T568B, ≤787 in. (20 m), for connection.
- Mounting the battery connection box upside down is not recommended.
- Torque value: 50 in-lbs (5.6 N·m) for 2 AWG, 45 in-lbs (5.1 N·m) for 6 AWG.
- Conduit fitting: 1-1/2 in.

To mount the panel, see "Scenario 1: Installing the Entire SHP2 Indoors" on page 8 for detailed steps.

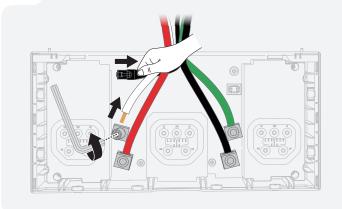
Follow the steps on the next page to mount the battery connection box.



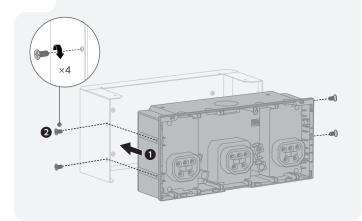
Unscrew the top, side, and bottom screws.



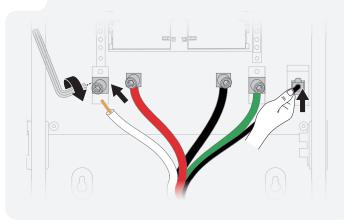
Loosen the screws on backup lugs, and unravel the internal COM cable.



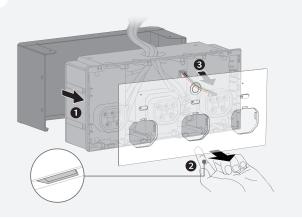
**5** Install the battery connection box back to its enclosure.



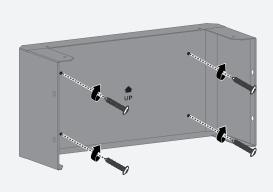
**7** Connect the other ends to the panel's matching lugs.



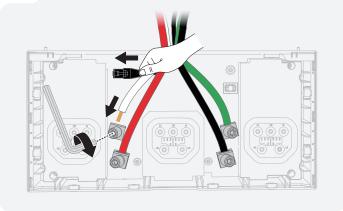
**2** Take out the cover and remove the auxiliary power cable.



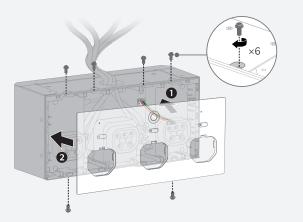
4 Mount the enclosure of battery connection box on the wall.



6 Make new power and COM cables. Connect their ends to the battery connection box's matching lugs.



8 Close the box.



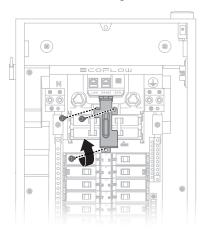
### Wiring



- Risk of electric shock. Before wiring, make sure the power is off. Ensure that main and branch circuit breakers are in the OFF position.
- Install cable glands when wiring.

#### Removing the Interlock

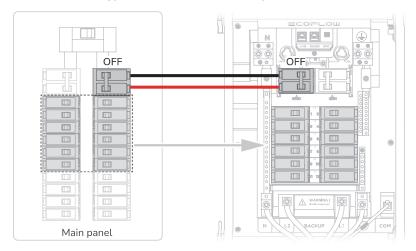
The interlock has been pre-installed when shipped, so remove it before installing main circuit breakers.



#### Installing Circuit Breakers

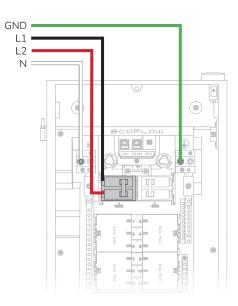
One 50A main circuit breaker for the generator (optional), two 100A for the grid (one installed in the branch breaker slot of the main panel, one installed in the main breaker slot of Smart Home Panel 2), to be purchased separately.

Branch circuit breaker: Max. 60A, 1 inch, AFCI/GFCI supported, relocated from the main panel

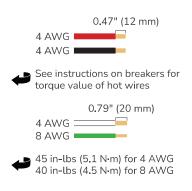


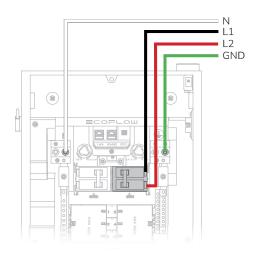
### Connecting the Grid Conductors





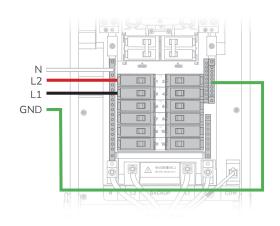
#### | Connecting the | Generator Conductors





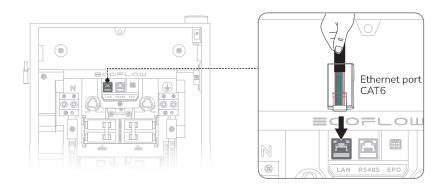
### Connecting the Home Load Conductors





### Connecting Communications Cables (If Needed)

For Ethernet connection, plug a CAT6, T568B straight-through cable to the Ethernet port.



#### | Checking | Connection

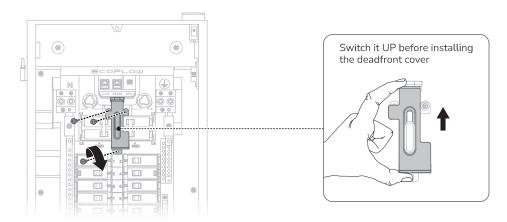
Before installing the defront cover and glass door, check the following connection items.

No.	Check Item
1	Confirm that all connections are correct, properly grounded, and secure.
2	Confirm that all screws are tightened.
3	Use a multimeter in continuity setting to make sure that the hot wire is not short circuited to neutral.
4	Use a multimeter in continuity setting to make sure that the hot wire is not short circuited to ground.

# Completing **Installation**

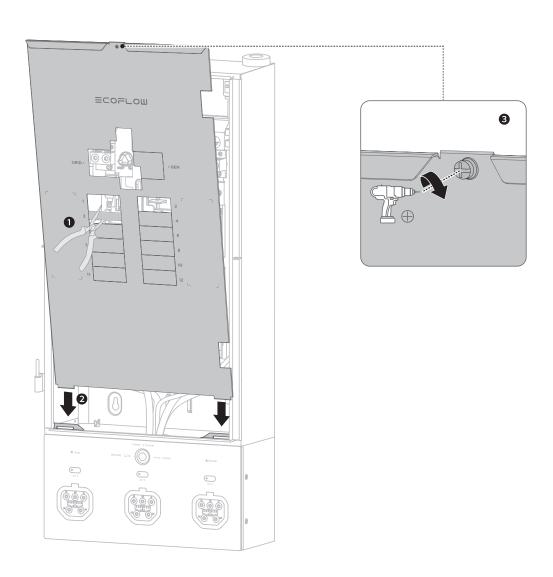
# Installing the Interlock

Install the interlock onto the panel before installing the deadfront cover.



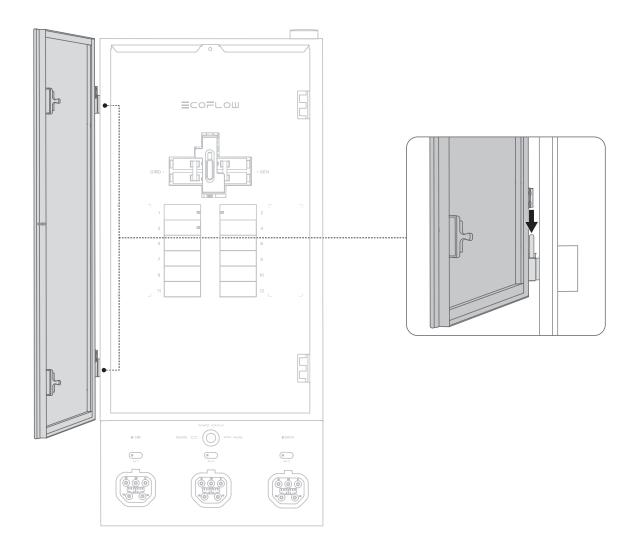
# Installing the Deadfront Cover

Remove twist-outs for home loads. If you connect with a generator, remove the twist-out for the generator main circuit breaker. Fill any unused open spaces on the cover.



#### | Installing the | Glass Door

Slide down the glass door onto the hinges.



#### | Energizing

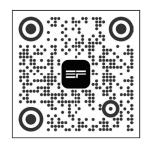
**⚠** WARNING

• Before energizing, ensure that main and branch circuit breakers are in the OFF position.

To energize, first turn ON the main breaker, and then turn ON each individual branch circuit breaker. SHP2 starts self-test. Check the LED indicator, the grid indicator should be white and always on, the error indicator is off. please view the error description and eliminate it in the EcoFlow app.

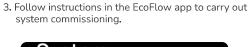
### Internet and Initialization Setup

1. Download the EcoFlow app.





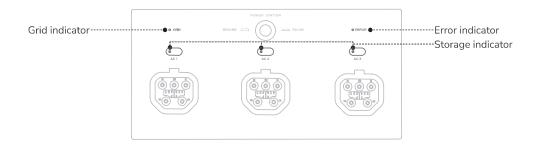






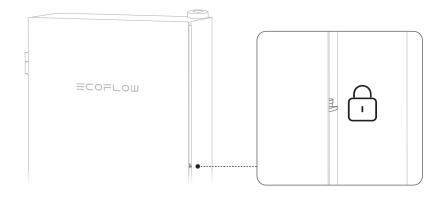


#### | LED Indication



Indicator	Status			Description
	0	White	Solid	Power grid is on
Grid indicator	₩-	Red and white	Alternate blinking	Power grid is faulty
	•	Red	Solid	Grid voltage is not detected
Storage indicator (AC1/AC2/AC3)	•	Green	Solid	Feeding electricity to loads
	*	Green	Breathing	Standby
	•	Yellow	Solid	Charging
	•	Red	Solid	Error
Error indicator	•	Dim	Off	No system error
	•	Red	Solid	System error

#### Locking the Panel



• If the generator has a bonded neutral, you should remove the ground-neutral bond from the generator. Otherwise, GFCI/AFCI will malfunction.

#### Connecting a Generator

Generator

Install an inlet box between the generator and the panel. To connect with a generator, see "Connecting the Generator Conductors". To install the interlock, see "Installing the Interlock". Remove the twin-out for generator main breaker.

#### Using Interlock

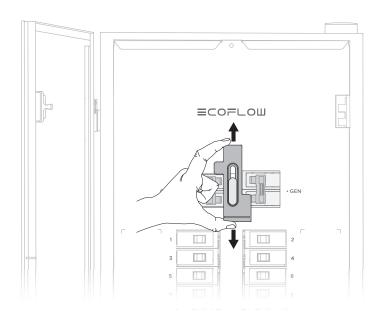
**NOTICE** 

After connecting the generator and turning on the power, it takes 25s for the house to get

Switch up for grid supply or switch down for generator supply.

When on grid supply, you can only turn on/off the main circuit breaker (grid).

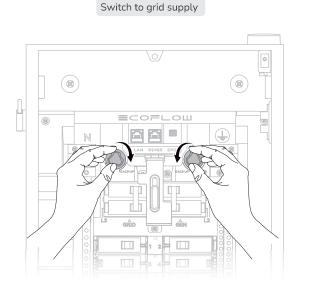
When on generator supply, you can only turn on/off the main circuit breaker (generator).

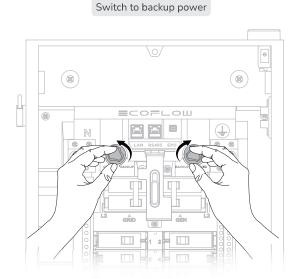


#### Manually Switching

### **Grid Supply And Backup**

If you fail to switch between grid supply and backup power using the EcoFlow app, you can manually turn the both relay switching knobs in the distribution panel. However, only qualified electrical personnel should perform this manual switch.





CAUTION • Two knobs must be turned for switching.

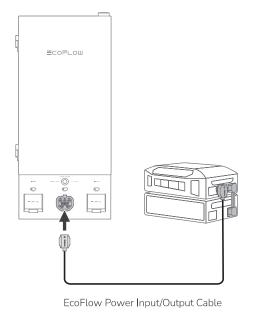
# Connecting With **Battery Storage**

NOTICE

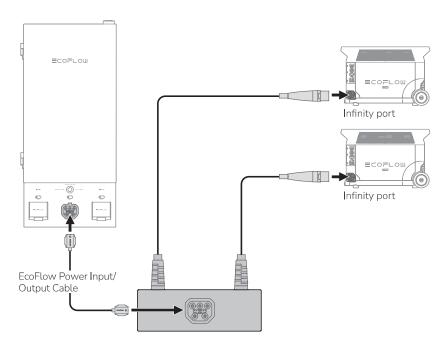
- If you only connect 1 EcoFlow DELTA Pro, DELTA Pro will undergo charging, but not discharging.
- If you connect both EcoFlow DELTA Pro Ultra and DELTA Pro, both of them will undergo both charging and discharging.

  Refer to EcoFlow Smart Home Panel 2 Owner's Manual for more details: https://
- manuals.ecoflow.com/product/smart-home-panel-2

#### For EcoFlow DELTA Pro Ultra (max. 3 units)



#### For EcoFlow DELTA Pro (max. 2)



EcoFlow Double Voltage Hub - Power Input/Output Port (EcoFlow DELTA Pro)

#### Circuit Breaker Compatibility

NOTICE

EcoFlow Smart Home Panel 2 has been evaluated for use with the branch circuit breaker types listed below in accordance with the UL Standard for Panelboards.

#### Eaton

Туре	Amp	Catalog number	Pole
General circuit breakers type BR	10-90	BR or BRH; followed by 110 to 290	1-pole and 2-pole
Duplex (tandem) circuit breakers type BD	10-50	BD followed by 1010 to 5050	1-pole
Quadplex (tandem) circuit breakers type BQ and BQC	15-50	BQ followed by 215215 to 2502120	1-pole and 2-pole
Combination arc fault circuit interrupter circuit breakers type BR	10-20	BRC, BRN or BRL followed by 110 to 120; followed by AF or CAF (pigtail only)	1-pole and 2-pole
Ground fault circuit interrupter circuit breakers type GFTCB and GFEP	10-60	BRN, GFTCB, BRHN, or GFTCBH followed by 110 to 260; may be followed by GF (pigtail only)	1-pole and 2-pole
Ground fault equipment protection circuit breakers type GFEP	15-50	BRN or GFEP followed by 115 to 250; may be followed by EP (pigtail only)	1-pole and 2-pole
Dual function combination ground fault and arc-fault protection circuit breakers type BR	10-20	BRN or BRAFGF followed by 110 to 120; may be followed by DF (pigtail only)	1-pole

### | Square D

Туре	Amp	Catalog number	Pole
General circuit breakers type HOM	10-90	HOM followed by 110 to 290	1-pole and 2-pole
Tandem circuit breakers type HOMT	10-30	HOMT followed by 1010 to 3020	1-pole
Quad tandem circuit breakers type HOMT	15-50	HOMT followed by 1515215 to 2020250	1-pole and 2-pole
Quad tandem circuit breakers type HOMT	15-50	followed by 110 to 220; may be followed by P; followed by CAFI	2-pole
Combination arc-fault circuit interrupter circuit breakers type HOM-CAFI	10-20	HOM followed by 110 to 220; may be followed by P; followed by CAFI (pigtail only)	1-pole and 2-pole
Ground fault circuit interrupter circuit breakers type HOM-GFI	10-50	HOM followed by 110 to 250; may be followed by P; followed by GFI (pigtail only)	1-pole and 2-pole
Ground fault equipment protection circuit breakers type HOM-EPD	15-50	HOM followed by 115 to 250; followed by EPD (pigtail only)	1-pole and 2-pole
Dual function combination ground fault and arc-fault protection circuit breakers type HOM-DF	10-20	HOM followed by 110 to 120; may be followed by P; followed by DF (pigtail only)	1-pole

### Siemens

Туре	Amp	Catalog number	Pole
General circuit breakers type QP		Q followed by 110 to 290; may be followed by H	1-pole and 2-pole
Duplex (tandem) circuit breakers type QT	10-30	Q followed by 1010 to 3030 may be followed by NC	1-pole
Triplex (tandem) circuit breakers type QT	10-30	Q followed by 21010 to 23030; followed by CT	1-pole and 2-pole
Quadplex (tandem) circuit breakers type QT	15-40	Q followed by 21515 to 24040; followed by CT2	2-pole
Branch-feeder arc-fault circuit interrupter circuit breakers type QAF2	15-20	QA followed by 115 to 120; followed by AF; may be followed by H (pigtail only)	1-pole and 2-pole
Combination arc-fault circuit interrupter circuit breakers type QAF and QAF2	10-20	Q or QA followed by 115 to 120; followed by AFC; may be followed by H (pigtail only)	1-pole and 2-pole
Tandem combination arc-fault circuit interrupter circuit breakers type CAFCI	10-20	Q followed by 1010 to 2020; followed by AFC (pigtail only)	1-pole
Ground fault circuit interrupter circuit breakers type QPF and QPF2	10-60	QF followed by 110 to 260; followed by A; may be followed by H (pigtail only)	1-pole and 2-pole
Ground fault equipment protection circuit breakers type QE	15-60	QE followed by 115 to 260; may be followed by H (pigtail only)	1-pole and 2-pole
Dual function combination ground fault and arc-fault protection circuit breakers type QFGA2	10-20	Q followed by 110 to 120; followed by DF; may be followed by H (pigtail only)	1-pole

### | GE

Туре	Amp	Catalog number	Pole
General circuit breakers type THQL	15-70	THQL followed by 115 to 170;	1-pole and 2-pole
Ground fault circuit interrupter circuit breakers type THQL	15-20	Followed by GF (pigtail only)	1-pole and 2-pole
Branch-feeder arc-fault circuit interrupter circuit breakers type THQL	15-30	Followed by AF (pigtail only)	1-pole and 2-pole