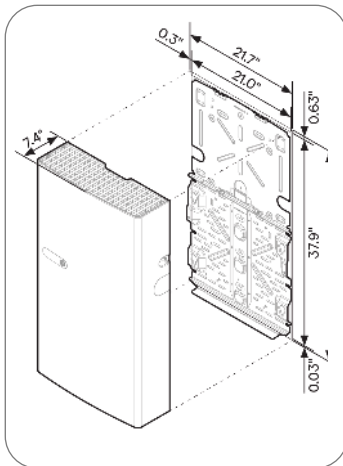




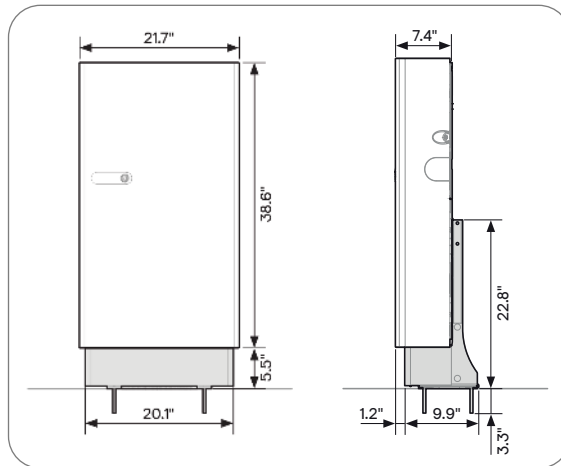
IQ Battery 5P

The IQ Battery 5P all-in-one AC-coupled system is powerful, reliable, simple, and safe. It has a total usable energy capacity of 5.0 kWh and includes six embedded grid-forming microinverters with a 3.84 kVA continuous power rating. It provides backup capability, and installers can quickly design the right system size to meet the customer needs.

Dimensions in inches



Wall mounted



Floor mounted with pedestal
(sold separately)



LISTED



UL 9540A
Certified

Powerful

- Provides 3.84 kVA continuous and 7.68 kVA peak power
- Doubles the available power per kWh of prior generations of IQ Battery
- Includes six embedded IQ8D-BAT Microinverters

Reliable

- 15 years limited warranty
- Cools passively with no moving parts or fans
- Uses wired communication for fast and consistent connection
- Updates software and firmware remotely

Simple

- Fully integrated AC battery system
- Installs and commissions easily
- Supports Backup, Self-Consumption, and time-of-use (TOU) modes
- Offers homeowners remote monitoring and control from the Enphase App
- Field replaceable components

Safe

- Evaluated to UL 9540A for large scale fire testing and reduced separation distance as required in 2021 IRC R328.3.1, 2021 IFC 1207.1.5, and 2023 NFPA 855 15.3.1 and 9.1.5.¹
- Uses lithium iron phosphate (LFP) chemistry for maximum safety and longevity

¹Follow all installation instructions and local codes and requirements of the Authority Having Jurisdiction (AHJ) when installing Enphase ESS.

IQ Battery 5P

MODEL NUMBER	
IQBATTERY-5P-1P-NA	The IQ Battery 5P system with integrated IQ Microinverters and battery management system (BMS) with battery controller
WHAT'S IN THE BOX	
IQ Battery 5P unit	IQ Battery 5P unit (B05-T02-US00-1-3)
ID cover and conduit cover	IQ Battery 5P cover with two conduit covers for the left and right sides of the unit
Bottom mounting bracket and top shield	Bottom mounting bracket for mounting the battery on the wall. One top shield is required for UL9540A
M5 seismic screws	Two M5 seismic screws for securing the battery unit on the bottom mounting bracket
M4 grounding screws	Two M4 grounding screws for securing the top shield on the bottom mounting bracket
M5 ID cover grounding screws	Two M5 ID cover grounding screws for the EMI/EMC requirement
Cable ties	Six cable ties for securing field cables to the unit
Control (CTRL) connector	Spare CTRL connector without resistor for CTRL wiring
Control (CTRL) connector with resistor	Spare CTRL connector with resistor for CTRL wiring
Quick Install Guide (QIG)	QIG for IQ Battery unit installation instructions
OPTIONAL ACCESSORIES AND REPLACEMENT PARTS	
IQ8D-BAT-RMA	IQ8D-BAT Microinverter for field replacement
B05-T02-US00-1-3-RMA	IQ Battery 5P Battery unit for field replacement
B05-CX-0550-O	IQ Battery 5P cover for field replacement
B05-PI-0550-O	IQ Battery 5P pedestal mount
B05-CP-096-O	IQ Battery 5P conduit plates for field replacement. Includes one left-side and one right-side conduit plate
B05-WB-0543-O	IQ Battery 5P wall bracket for field replacement. Includes one bottom mounting bracket and one top shield
IQBATTERY-HNDL-5	IQ Battery 5P lifting handles. Includes one left-side and one right-side lifting handle
B05-ACFB-080-O	IQ Battery 5P AC filter board for field replacement
B05-BMSNA-0490-O	IQ Battery 5P BMS board for field replacement
B05-CANB-063-O	IQ Battery 5P control communication board for field replacement
B05-NICS-0524-O, B05-NUCS-0524-O	IQ Battery 5P control switch is preinstalled on the wiring cover for field replacement
OUTPUT (AC)	
Rated (continuous) output power	3.84 kVA
Peak output power	7.68 kVA (3 seconds), 6.14 kVA (10 seconds)
Nominal voltage/range	240/211–264 VAC
Nominal frequency/range	60/57–63 Hz
Rated output current (@240 VAC)	16 A
Peak output current (@240 VAC)	32 A (3 seconds), 25.6 A (10 seconds)
Power Start capability	Up to 48 A LRA ³
Power factor (adjustable)	0.85 leading...0.85 lagging
Maximum units per 20 A branch circuit	One unit (single-phase)
Maximum conductor size supported	3 AWG
Overcurrent protection device (OCPD) for 3 AWG cable	80 A
Interconnection	Single-phase
AC round-trip efficiency ⁴	90%

²Supported in both grid-connected and backup/off-grid operation.

³Power Start capability may vary.

⁴AC to the battery to AC at 50% power rating.

IQ Battery 5P

BATTERY	
Total capacity	5.0 kWh
Usable capacity	5.0 kWh
DC round-trip efficiency	96%
Nominal DC voltage	76.8 V
Maximum DC voltage	86.4 V
Ambient operating temperature range (charging)	-20°C to 50°C (-4°F to 122°F) non-condensing
Ambient operating temperature range (discharging)	-20°C to 55°C (-4°F to 131°F) non-condensing
Optimum operating temperature range	0°C to 30°C (32°F to 86°F)
Chemistry	Lithium iron phosphate (LFP)
MECHANICAL DATA	
Dimensions (HxWxD)	980 mm x 550 mm x 188 mm (38.6 in x 21.7 in x 7.4 in)
Lifting weight	66.3 kg (146.1 lbs)
Total installed weight	78.9 kg (174 lbs)
Enclosure	Outdoor-NEMA 3R
IQ8D-BAT Microinverter enclosure	NEMA type 6
Cooling	Natural convection
Altitude	Up to 2,500 meters (8,202 feet)
Mounting	Wall-mount or pedestal-mount (sold separately)
FEATURES AND COMPLIANCE	
Compatibility	Compatible with IQ and M Series Microinverters, IQ System Controller 3/3G, IQ Combiner 5/5C, and IQ Gateway for grid-tied and backup operation
Communication	Wired control communication
Services	Backup, Self-Consumption, TOU, and NEM integrity
Monitoring	Enphase Installer Platform and Enphase App monitoring options; API integration
Compliance	CA Rule 21 (UL 1741-SA), IEEE 1547:2018 (UL 1741-SB, 3rd Ed.) CAN/CSA C22.2 No. 107.1-16 UL 9540 ⁵ , UL 9540A, UN 38.3, UL 1998, UL 991, NEMA Type 3R, AC156 EMI: 47 CFR, Part 15, Class B, ICES 003 Cell module: UL 1973, UN 38.3 Inverters: UL 62109-1, IEC 62109-2
LIMITED WARRANTY	
Limited warranty	>60% capacity, up to 15 years or 6,000 cycles ⁶

⁵ Following local standards, choose a well-ventilated, non-habitable, indoor location (like a 2-car garage) or in an outdoor location, which is out of direct sunlight and where the ambient temperature and humidity are within -4°F to 113° F (-20°C to 45°C) and 5% to 95% RH, non-condensing.

⁶ Whichever occurs first. Restrictions apply.

Revision history

REVISION	DATE	DESCRIPTION
DSH-00010-4.0	November 2023	Updated the “Output (AC)” table.
DSH-00010-3.0	September 2023	<ul style="list-style-type: none">• Updated product images.• Editorial updates.
DSH-00010-2.0	July 2023	<ul style="list-style-type: none">• Added battery isometric view on the first page.• Editorial updates.
DSH-00010-1.0	May 2023	Initial release.



IQ Battery 5P

Quick Install Guide



Scan the QR code for
the latest Install guide

MODEL
IQBATTERY-5P-1P-NA

VERSION 5.0
SEPTEMBER 2023



140-00279-05



To install the Enphase IQ Battery 5P and the wall-mount bracket, read and follow all warnings and instructions in this guide. Safety warnings are listed at the end of this guide. These instructions are not meant to be a complete explanation of how to design and install an energy storage system. All installations must comply with national and local codes and standards. Only Enphase-certified installers shall install, troubleshoot, or replace IQ Battery 5P.

The IQ Battery 5P system includes the battery cell pack with integrated IQ Microinverters and the battery management system (BMS). The system requires IQ Combiner 5/5C and IQ System Controller 3/3G for the backup operation. The IQ Gateway measures PV production, IQ Battery 5P charge/discharge power, and home energy consumption, and it senses when it is optimal to charge or discharge the battery so that energy is stored when it is abundant and used when it is scarce. The IQ Battery 5P system provides backup power with Enphase IQ System Controller 3/3G.



Table of contents

What is in the box

Tools/additional items required

Unboxing IQ Battery 5P

Section A Mounting the product

Plan a location for the
IQ Batteries

Step 1: Minimum clearance

Spacing requirements

Step 2: Mounting surface

Step 3: Install the bottom mounting bracket
and the top shield

Section B Installing IQ Battery 5P

Prepare to install IQ Battery 5P
on the bottom mounting bracket

Installation of Anchor Clip

Section C Wiring

Install conduit and field wiring

Control (CTRL) Wiring between system components

Cable routing and closing the wiring cover

Section D Close and energize the system

Disassembly of IQ Battery 5P cover

Disengaging Anchor Clip

Configure and activate

Operation

LED overview

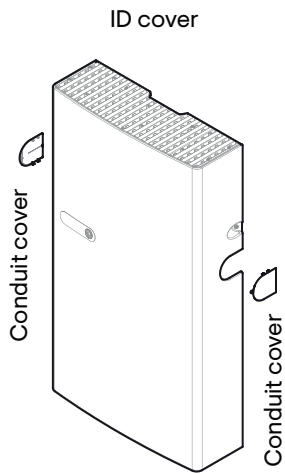
Operating mode and set points

Troubleshooting

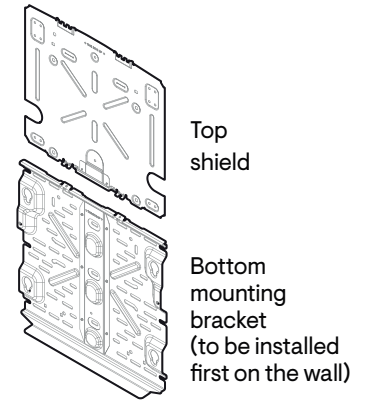
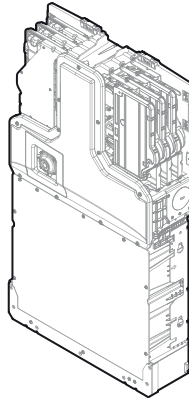
Safety

Revision history

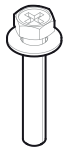
What is in the box



IQ Battery 5P



M5
Seismic screw



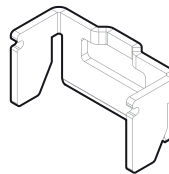
M4
Grounding screw



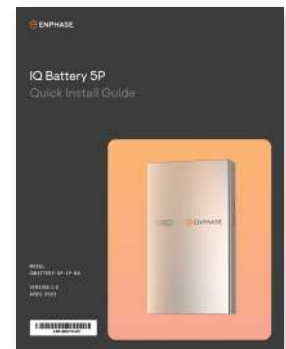
M5 ID Cover
Grounding screw



Anchor clip



Quick Install Guide



DESCRIPTION	MODEL NUMBER	QUANTITY
IQ Battery 5P	B05-T02-US00-1-3	1
ID cover, two conduit covers	B05-CX-0550-O	1
Bottom mounting bracket & top shield	B05-WB-0543-O	1
M5 Seismic screw		2
M4 Grounding screw		2
M5 ID Cover Grounding screw		2
Anchor clip		2
Quick Install Guide		1
PCS disclaimer label		1
Wall drill template		1
Cable tie		6
CTRL connector		1
CTRL connector with resistor		1

Tools/additional items required

S. NO	ITEM NAME	QUANTITY		SOURCE
1	Conduit (rigid, EMT, PVC or liquid-tight) up to 32 mm (1-1/4 in) for side entry and up to 19 mm (3/4 in) for rear entry	As required		Provided by the installer
2	Conduit fittings and tools, UL rated hubs are required for all installations and must be NEMA Type 3R certified when installing outdoors	As required		Provided by the installer
3	Drill	1		Provided by the installer
4	5/32" pilot bit (or metric equivalent)	1		Provided by the installer
5	Screwdriver	1		Provided by the installer
6	Wrench	1		Provided by the installer
7	Socket wrench	1		Provided by the installer
8	Torque wrench	1		Provided by the installer
9	Level	1		Provided by the installer
10	Conductor stripper	1		Provided by the installer
11	Stud finder (if required)	1		Provided by the installer
12	Copper conductors - No. 10 - 3 AWG (11 mm or 7/16 in strip length) (rated at 90°C) for terminals	As required		Provided by the installer
13	Control cable (CTRL-SC3-NA-01)	As required		Enphase store
14	Personal protective equipment for handling lithium batteries as required by local safety standards	As required		Provided by the installer
15	Protective gloves for protection against sharp edges	As required		Provided by the installer
16	#20 (5/16 in) lag bolts or screws to install the bottom mounting bracket. Slots are 9.2 mm (0.36 in) for the wall mount and 11.2 mm (inclined slots) for the pedestal. Check with a structural engineer and local standards for requirements	Single stud mounting (Min. 3)	Dual stud mounting (Min. 4)	Provided by the installer
17	1/4 in screws to fasten the top shield on the wall. Use standard screws only (head thickness <5mm)	Single stud mounting (Min. 6)	Dual stud mounting (Min. 6)	Provided by the installer
18	Washers	As required		Provided by the installer
19	IQ Battery 5P lifting handles. Includes one left-side and one right-side lifting handle (IQBATTERY-HNDL-5)	1		Enphase store/provided by the installer

Tools/additional items required

NOTE: The Enphase IQ Battery 5P system requires an internet connection through the IQ Gateway in the IQ Combiner. Failure to maintain an internet connection may have an impact on the warranty. See enphase.com/warranty for full terms.

The IQ Battery 5P and IQ System Controller are both connected to the IQ Gateway and communicate using communication control cables. The Enphase PV system communicates to the IQ Gateway using powerline communication.

Verify that the main service is 120/240 VAC, and not 208/120 VAC. IQ Batteries cannot be installed where L1 to L2 measures 208 VAC.


NOTE: The rated energy capacity of the battery is 5.0 kWh.

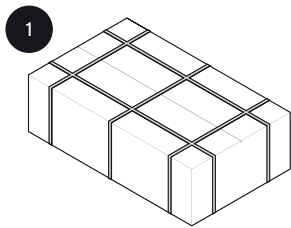
Install the PV system and the IQ Combiner as directed by the Enphase installation manuals.

Unboxing IQ Battery 5P

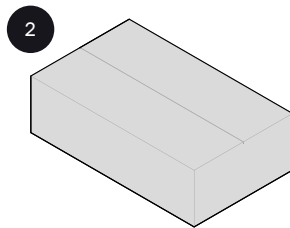
Before you unbox IQ Battery 5P, check the “Energize By” label on the shipping box to verify that the IQ Battery(ies) will be installed by the date shown. If the date has passed, contact your distributor for next steps.

Remove the upper packaging cover and follow the steps as shown in the following image:

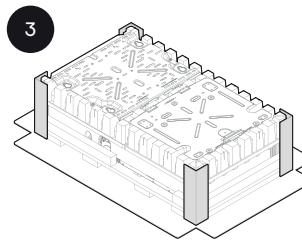
 Do not lift the IQ Battery 5P using microinverters or the plastic behind the microinverters. This may damage the unit permanently.
Always use handles to lift the IQ Battery 5P.



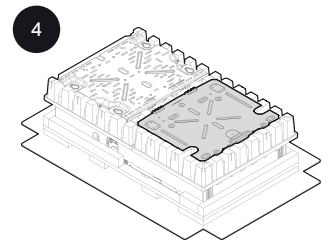
1
Remove the six plastic strips



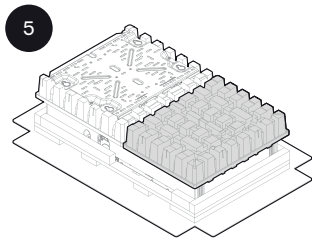
2
Remove the exterior cardboard box lid



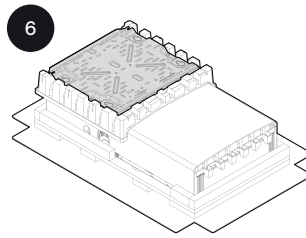
3
Remove the four corner guards



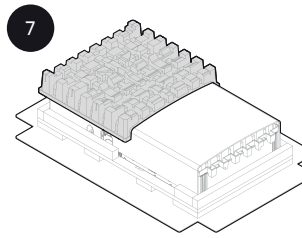
4
Remove the top shield



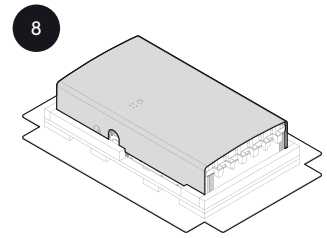
5
Remove the paper tray



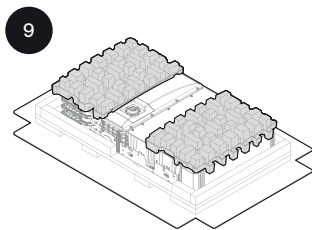
6
Remove the bottom mounting bracket



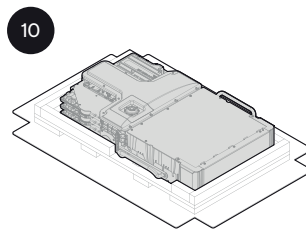
7
Remove the other paper tray to reveal the battery cover



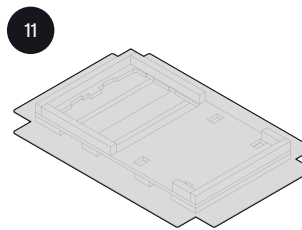
8
Remove the IQ Battery 5P cover



9
Remove the two paper trays





10
Remove the IQ Battery 5P using lifting handles



11
Recycle packaging according to local guidelines

Inspect the packaging and the IQ Battery(ies) for any signs of damage, such as cracks, dents, or electrolyte leaks. Do not install or use the IQ Battery(ies) if it has been dropped or damaged in any way. If it's damaged, contact your distributor for replacement.

 Risk of injury. Take care when lifting. The IQ Battery 5P unit is heavy (66.25 kg/146.05 lbs) and requires two people to lift it.

 Do not lift the packaging with the battery inside after the plastic strips are cut.

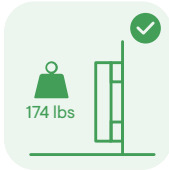
Section A

Mounting the product

Choose a location for the IQ Battery array



- The IQ Battery 5P housing is a NEMA type 3R enclosure. The terminal blocks on the wall-mount bracket accept a maximum conductor size of 12 AWG.
- Enphase IQ Batteries have been evaluated by UL solutions to UL9540A standards for outdoor and non-habitable indoor residential installations. Installations in finished, non-habitable indoor spaces (such as detached and attached garages, utility closets, basements, and storage or utility spaces) shall be permitted.



- Make sure the installed location can sustain the total weight of the IQ Batteries and mounting bracket. The total weight for IQ Battery 5P, including the IQ Battery 5P unit, cover, and wall-mount bracket, is 78.9 kg (174 lbs). The wall must contain blocked studs that can bear the battery weight or can be of masonry or other suitable structure.
- Make sure there are no pipes or electrical wires where you plan to drill.



- Following local standards, choose a well-ventilated, non-habitable, indoor location (like a 2-car garage) or in an outdoor location, which is out of direct sunlight and where the ambient temperature and humidity are within -4° F to 113° F (-20° C to 45° C) and 5% to 95% RH, non-condensing.



- Consider the dimensions of the IQ Batteries, easy access, height, and length of cable when selecting the location.
- Select a location where you can interconnect IQ Battery 5P to the IQ System Controller.



- This product must not be installed at altitudes above 8,200 ft (2,500 m).
- Follow all local standards and regulations set forth by the Authority Having Jurisdiction (AHJ).




- Up to four IQ Battery 5P units can be daisy-chained on a single branch circuit. IQ System Controller 3/3G supports up to a maximum of 80 A breakers for IQ Battery 5P connection circuit.
NOTE: Up to eight IQ Battery 5P units can be daisy-chained on a single branch circuit using battery oversubscription PCS. Ensure to add a PCS disclaimer label at all PCS-enabled IQ Battery 5P units, as shown in section D.
- The maximum conductor size for IQ Battery 5P is 3 AWG, and the maximum breaker rating with this conductor size is 80 A.

Section A - Mounting the product

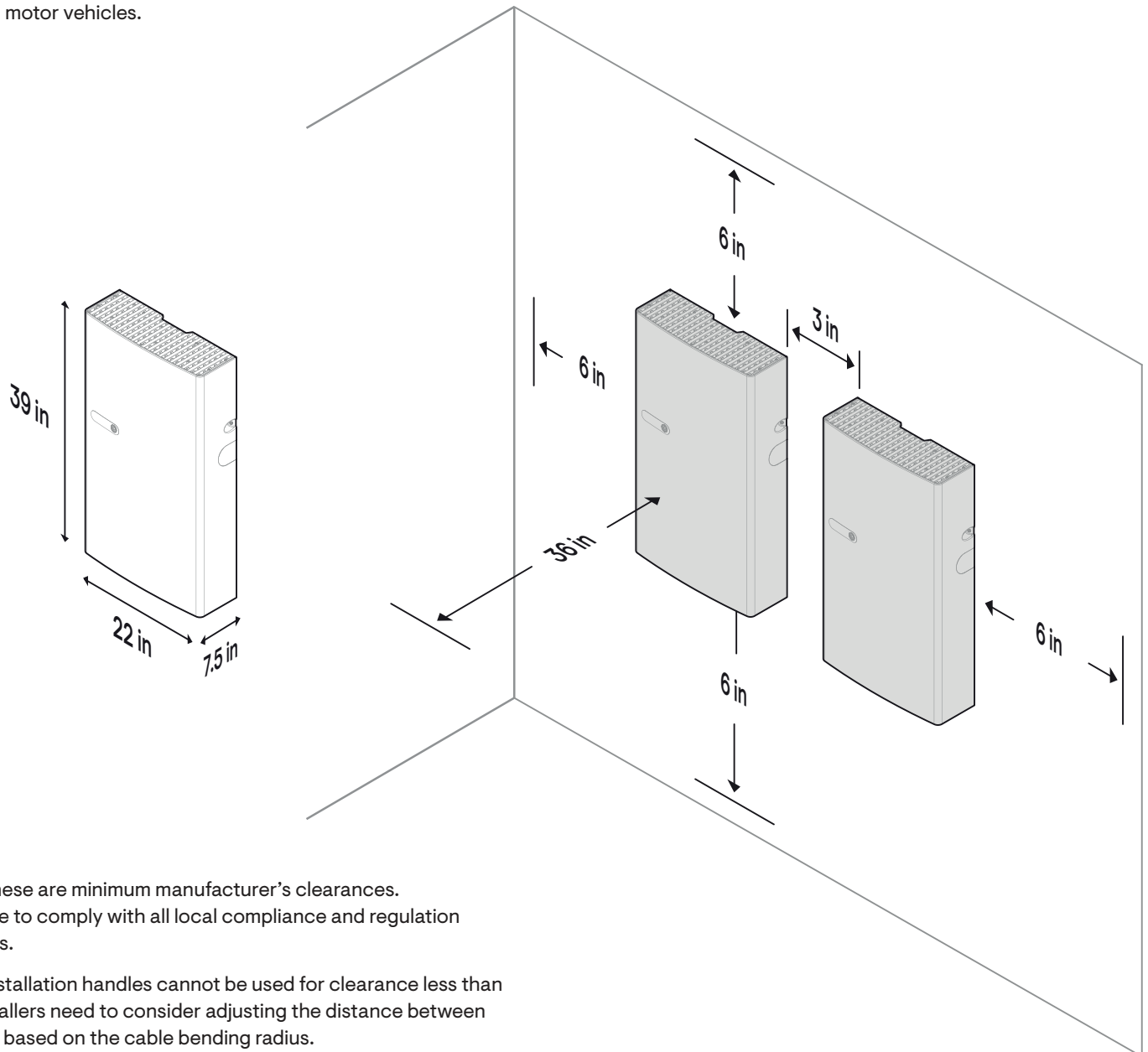
Step 1: Minimum clearance

The mounting instructions that follow are for the included wall-mount bracket only. If you wish to install IQ Battery 5P in a floor-mount configuration, order the pedestal accessory (B05-PI-0550-O) and refer to the floor-mount instructions that come with that product. This product must be installed with clearance at the left, right, top, bottom, and front of the product, as shown in the figure.

Keep IQ Battery 5P away from falling or moving objects, including motor vehicles.

 If mounted in the path of a motor vehicle, Enphase recommends a minimum mounting height of 91 cm (36 in) above the floor.

For IQ Batteries mounted at the same level, the minimum distance between the covers of two units shall be ≥ 3 in.



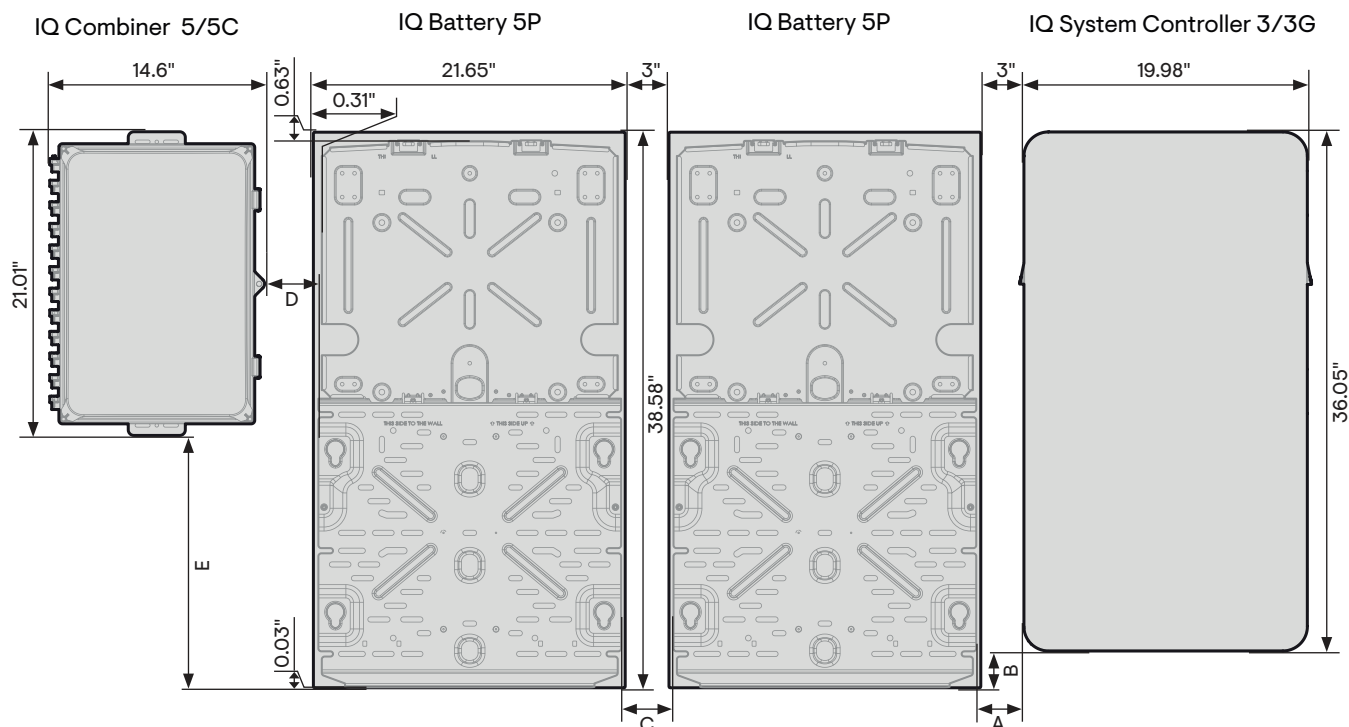
NOTE: These are minimum manufacturer's clearances. Make sure to comply with all local compliance and regulation standards.

NOTE: Installation handles cannot be used for clearance less than 5.5". Installers need to consider adjusting the distance between batteries based on the cable bending radius.

Section A - Mounting the product

Spacing requirements

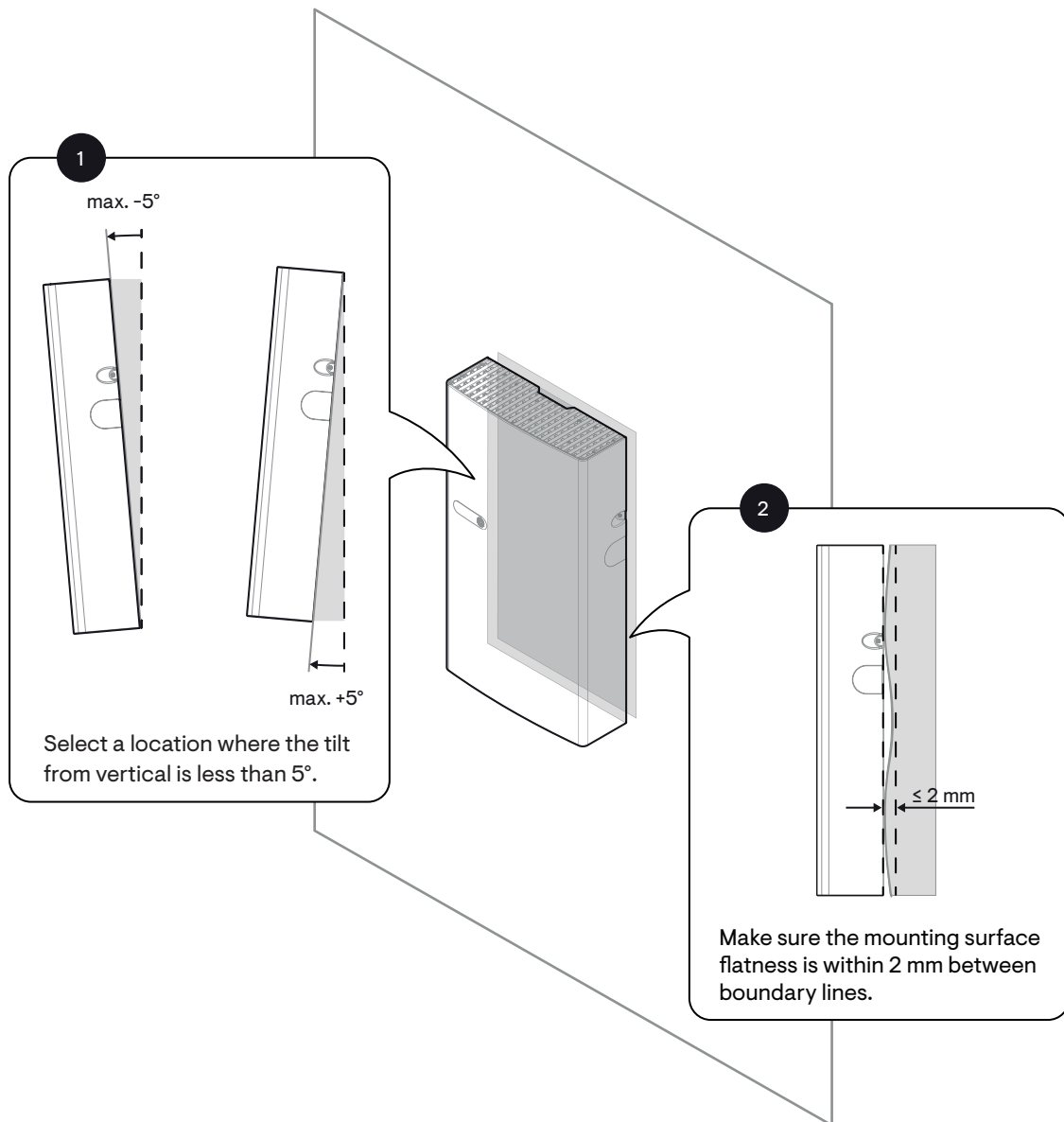
Follow the below mentioned clearances to plan the system installation layout.



DIMENSION	DESCRIPTION	RECOMMENDED MINIMUM
A	IQ System Controller 3/3G and IQ Battery 5P wall bracket horizontal spacing	3.315"
B - Bottom aligned	IQ System Controller 3/3G bottom to IQ Battery 5P wall mount bracket bottom	0.00"
B - Center aligned	IQ System Controller 3/3G bottom to IQ Battery 5P wall mount bracket bottom	1.26"
B - Top aligned	IQ System Controller 3/3G bottom to IQ Battery 5P wall mount bracket bottom	2.52"
C	IQ Battery 5P wall bracket horizontal spacing	3.63"
D	IQ Battery 5P wall bracket to IQ Combiner horizontal spacing	3.63"
E - Bottom aligned	IQ Combiner 5/5C bottom to IQ Battery 5P wall mount bracket bottom	0.00"
E - Center aligned	IQ Combiner 5/5C bottom to IQ Battery 5P wall mount bracket bottom	8.74"
E - Top aligned	IQ Combiner 5/5C bottom to IQ Battery 5P wall mount bracket bottom	17.48"

Section A - Mounting the product

Step 2: Mounting surface




NOTE: If the variation of the flatness is more than 2 mm, the battery might not properly sit on the bottom mounting bracket through keyholes. Use spacers if the variation is more than 2 mm.

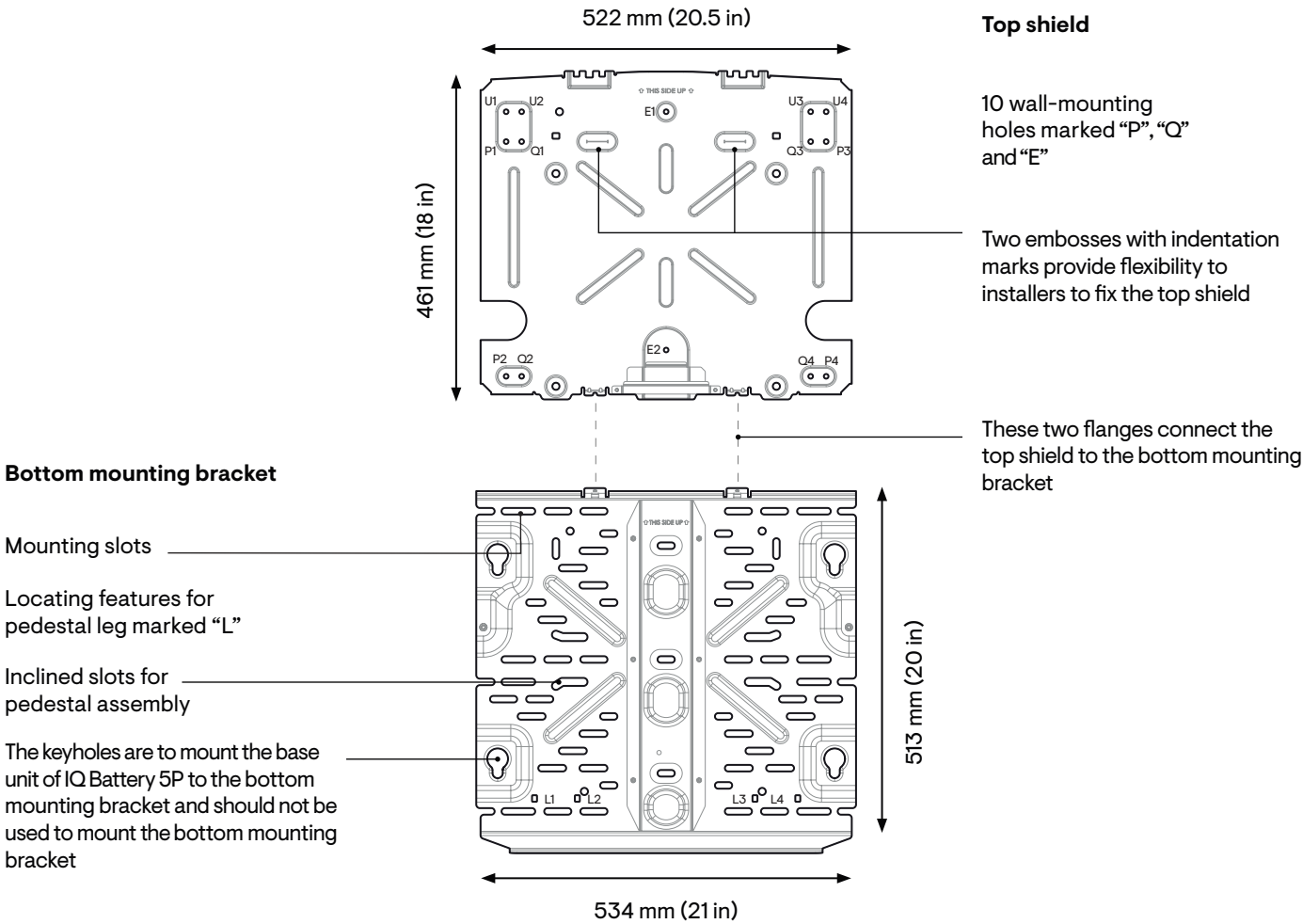
Section A - Mounting the product

Step 3:
Install the bottom mounting bracket and the top shield

The bottom mounting bracket carries the weight of the IQ Battery 5P, and the Top shield covers the back of the IQ Battery 5P.

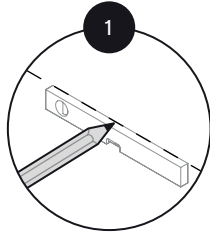
 Risk of injury and equipment damage. Do not mount an IQ Battery 5P on a bracket that is not properly mounted.

- Use 1/4 in screws to fasten the top shield to the wall.
- Use #20 (5/16 in) screws/lag bolts (or masonry attachments for masonry wall) to attach the bottom mounting bracket using one screw/lag bolt and washer for each slot (9.2 mm/0.36 in).

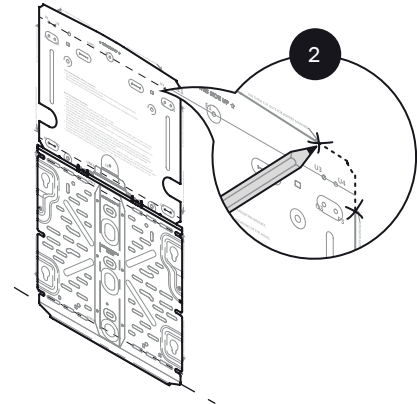


Section A - Mounting the product

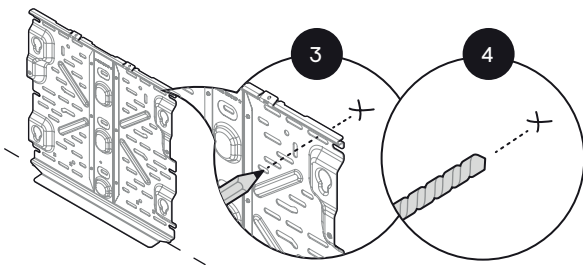
Install the bottom mounting bracket as per the following instructions.
Make sure the bottom mounting bracket is solidly attached to the wall.




Starting at the installation position closest to the power source, mark a level line on the wall as a guide.



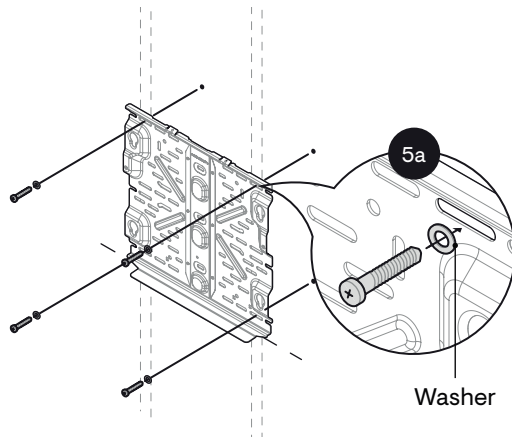
For the ease of marking all the required drilling points, a dedicated drill template is provided along with the packaging. Depending on the type of installation wall, choose the instructions stated on the template.



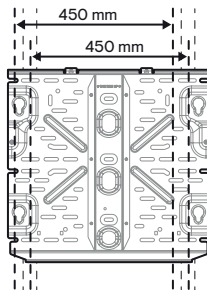
 Multiple risks. Make sure not to drill into or attach to electric wiring or pipes in the wall.

Section A - Mounting the product

Mounting on multiple vertical studs (450 mm/17.72 in. stud spacing)

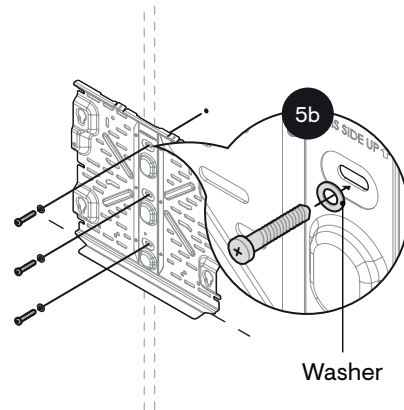


Position the bottom mounting bracket on the wall and fasten it using the mounting slots. Use a minimum of four screws/lag bolts (symmetrically distributed) for dual stud mounting. Tighten all screws to the manufacturer's specified torque values.



The bottom mounting bracket can accommodate a slight offset in stud positioning with respect to the battery unit with pre-drilled holes/slots, as shown in the image.

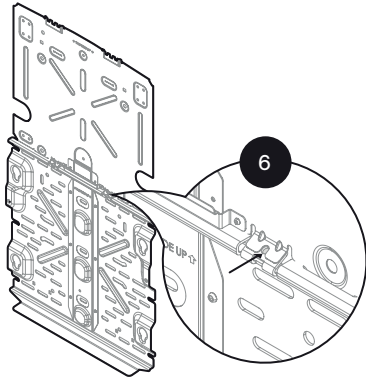
Mounting on a single vertical stud



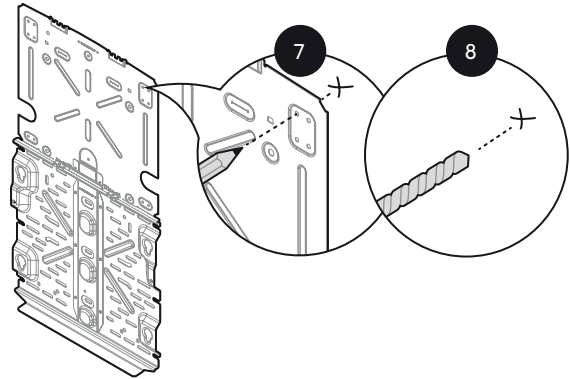
Position the bottom mounting bracket on the wall and fasten it using the mounting slots. Use a minimum of three screws/lag bolts (on the centerline) for single-stud mounting. Tighten all screws to the manufacturer's specified torque values.


NOTE: Any one of the above mounting methods can be used for mounting a battery on a masonry wall.

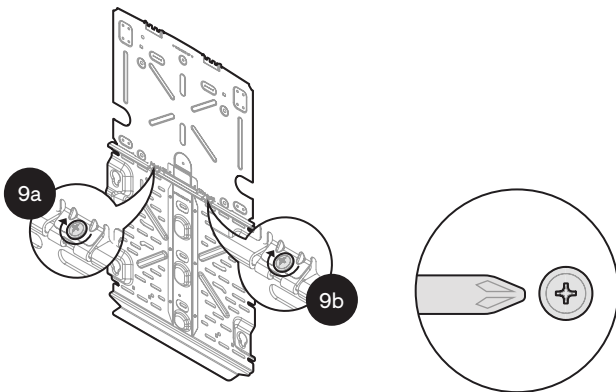
Section A - Mounting the product



Position the ground contact flange of the top shield on that of the bottom mounting bracket and align the screw slot/hole.



 Multiple risks. Make sure not to drill into or attach to electric wiring or pipes in the wall.



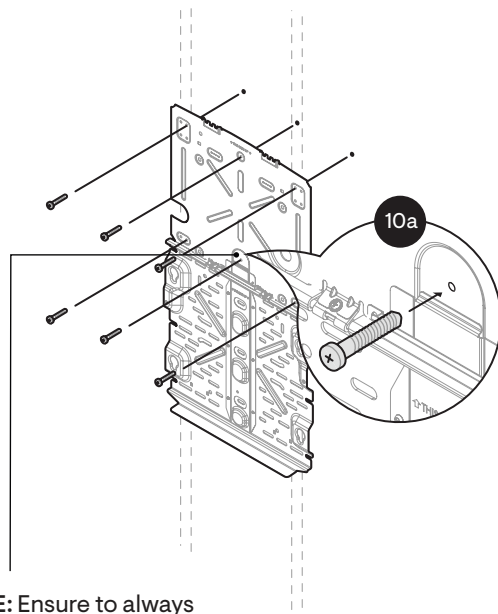
Partially tighten the top shield to the bottom mounting bracket at the ground contact flange.

Two M4 grounding screws

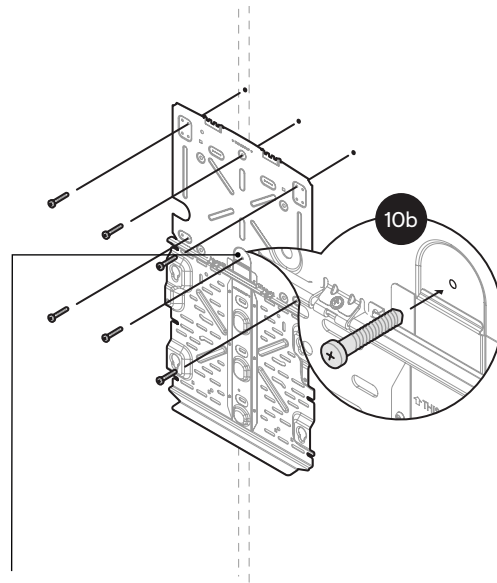
NOTE: The top shield is not a structural part and need not always be mounted to the studs. It can be fastened to the supporting wall with the pre-drilled holes if the studs are not aligned.

Section A - Mounting the product

Mounting on multiple vertical studs



Mounting on single vertical stud



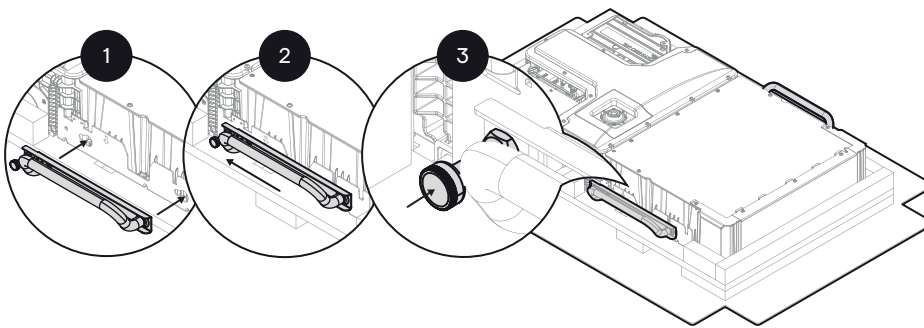
Fasten the top shield using the mounting holes. Use a minimum of six screws for single stud and dual stud mounting to fasten the top shield to the wall. Use standard screws only (head thickness <5 mm). Finally, fully tighten the grounding screws (torque to 1.5 N m/13.28 lb-in).

NOTE: Use an electric drive; do not use impact drives/impact drills while tightening grounding screws.

Section B

Installing IQ Battery 5P

Prepare to install IQ Battery 5P on the bottom mounting bracket




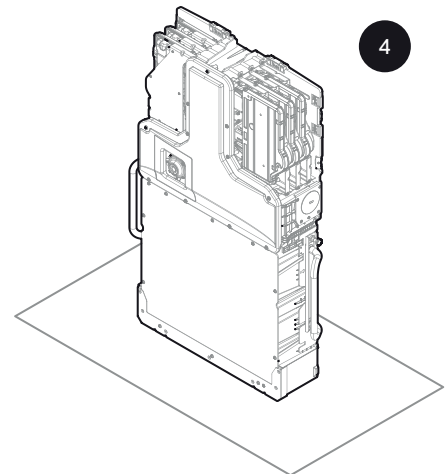
NOTE: Make sure to complete all steps before installing IQ Battery 5P on the wall.

Remove the ID cover from the packaging and keep it aside. Use the reusable lifting handles (sold separately) and check that the plungers are extended and ready to engage into the IQ Battery 5P slots.


Align the left handle on the left side of IQ Battery 5P and insert it into the slots and slide it toward the top of the IQ Battery 5P enclosure until it locks into place. Check that the handle is secure.


Repeat on the other side with the right handle.

 Risk of injury and equipment damage. The total lifting weight with handles attached is 148.5 lbs. Lift according to local law. Handles must be used while lifting the battery. Two-person manual lifting is allowed only if permitted by local law. Else use mechanical lifting.



Two people together must lift the IQ Battery 5P unit from the packaging using the handles and place it in an upright position on a flat surface.


 Lift IQ Battery 5P from the packaging using the handles and make sure the battery's front side is facing toward you.

 Do not lift the IQ Battery 5P using microinverters or the plastic behind the microinverters. This may damage the unit permanently.

Section B – Installing IQ Battery 5P

- 5 IQ Battery 5P can have the field cable entry from the back, left, or right side. Finalize the side from where the field cable enters and leaves IQ Battery 5P. Use the following table to decide the cutout for all the units.

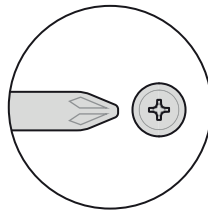
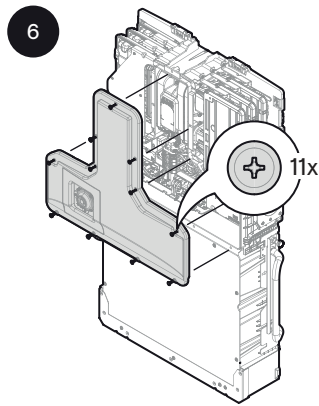
NOTE: The conduit may be rigid, EMT, PVC, or liquid-tight. The rear entry can support the conduit with a diameter of 1/2 in (13 mm) to 3/4 in (19 mm), while the side entry can support the conduit with a diameter of 1/2 in (13 mm) to 1-1/4 in (32 mm). Follow manufacturer-recommended instructions for conduit installation.

 Risk of electric shock. The DC control switch must be in the OFF position before performing this step.

NAME	BACK VIEW	LEFT-BACK CONDUIT	RIGHT-BACK CONDUIT	LEFT-SIDE CONDUIT	RIGHT-SIDE CONDUIT
Both side conduit		✗	✗	✓	✓
Only left side conduit*		✗	✗	✓	✗
Only right side conduit*		✗	✗	✗	✓
Left-side conduit & Right back conduit		✗	✓	✓	✗
Left-back conduit & Right side conduit		✓	✗	✗	✓
Both back conduit		✓	✓	✗	✗
Only left back conduit*		✓	✗	✗	✗
Only right back conduit*		✗	✓	✗	✗

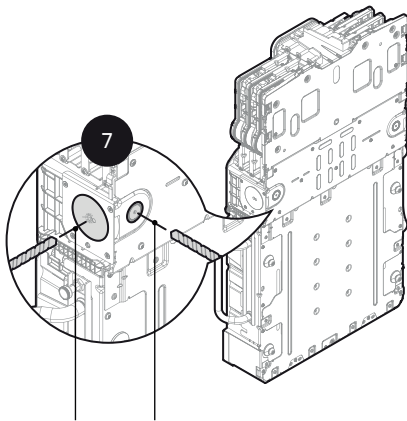
* One-side conduit configuration is supported only if the system has one IQ Battery 5P or for the unit last in the daisy chain farthest from the IQ System Controller.

Section B - Installing IQ Battery 5P

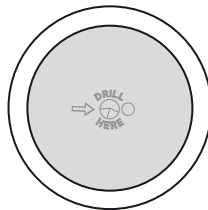


Captive screws torque to 1.5 N m (13.28 lb-in)

Open the front wiring cover by unfastening the 11 captive screws from the wiring cover. Use an electric drive; do not use impact drives/impact drills.



Drill to appropriate cutout



Drill here

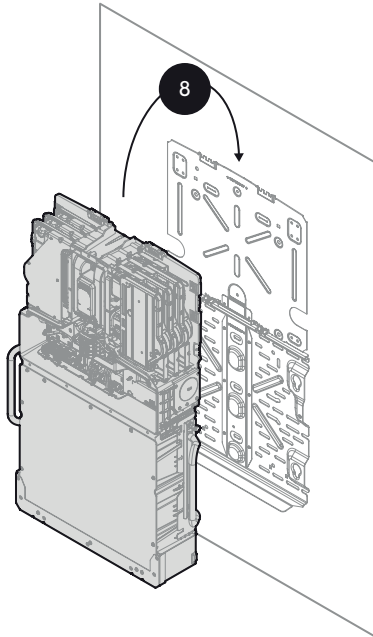
Drill the appropriate cutout on either the back or side of the unit or on both based on configurations. The rear entry can support the conduit with a diameter of 1/2 in (13 mm) to 3/4 in (19 mm) while side entry can support the conduit with a diameter of 1/2 in (13 mm) to 1-1/4 in (32 mm). Decide the required conductor size for L1, L2, GND, and cutout diameter based on the conduit selected.

⚠ Ensure that the drilling machine does not touch any internal components or walls.

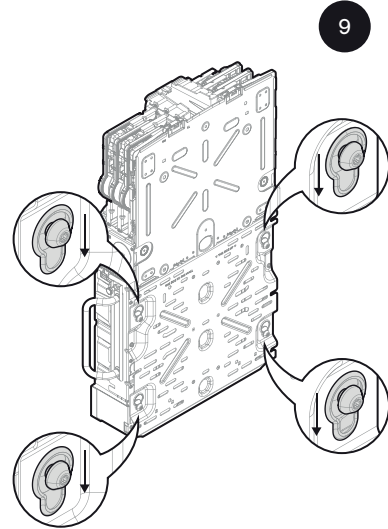
⚠ Clean the debris from inside the battery unit after drilling.

NOTE: Before mounting the unit on the wall, drill the appropriate cutout. Drilling after mounting the unit to the wall can lead to internal component damage, which is not covered by the warranty.

Section B - Installing IQ Battery 5P

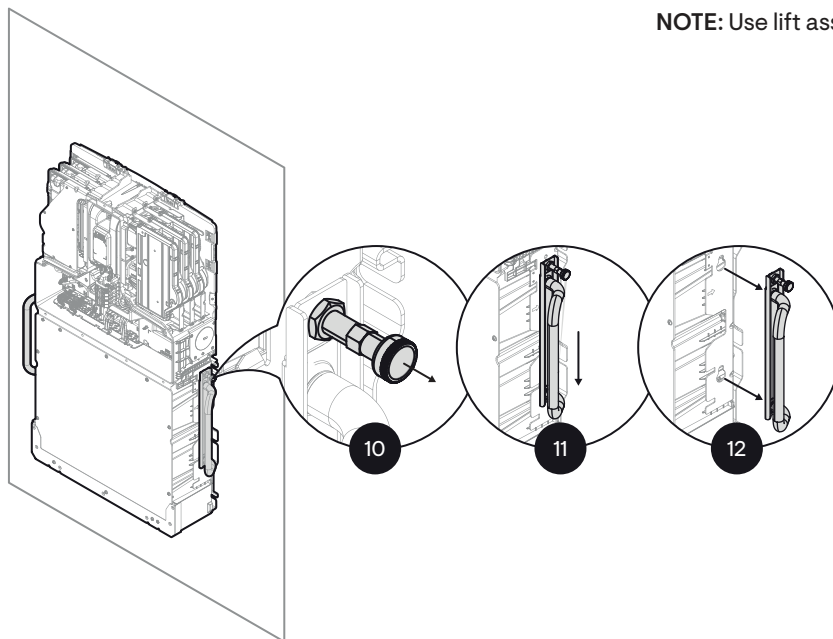


Bring the IQ Battery 5P unit to the already mounted bottom mounting bracket.



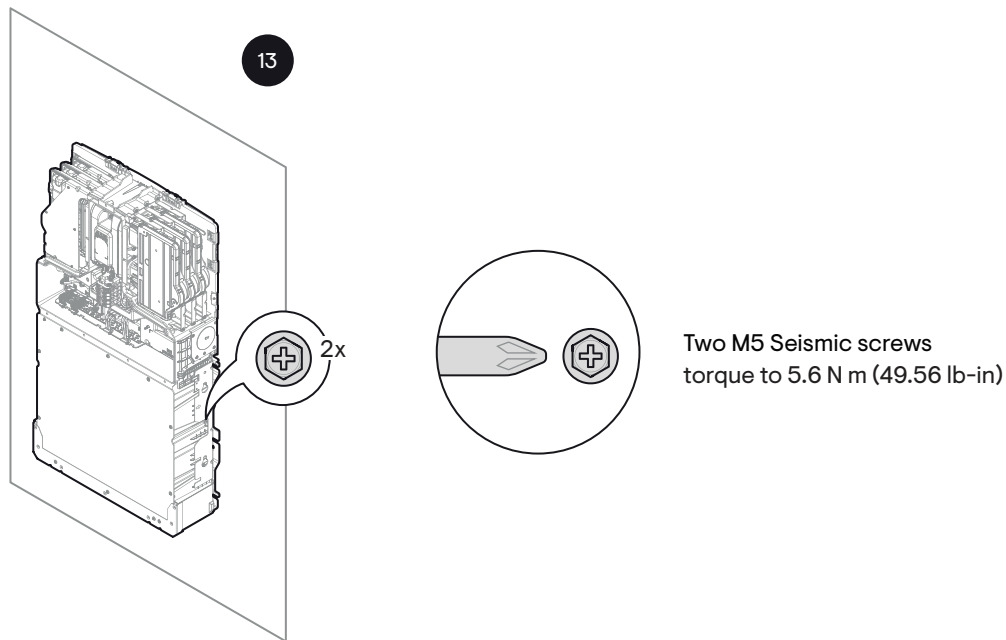
Hold IQ Battery 5P straight, align, and insert four mount bolts on the battery unit into the bottom mounting bracket keyholes and slide it down.

NOTE: Use lift assist to avoid any mishap during lifting.



To remove the installation handles, pull the plunger outward to unlock them. Then, slide the handle down and pull it away from the unit to remove it.

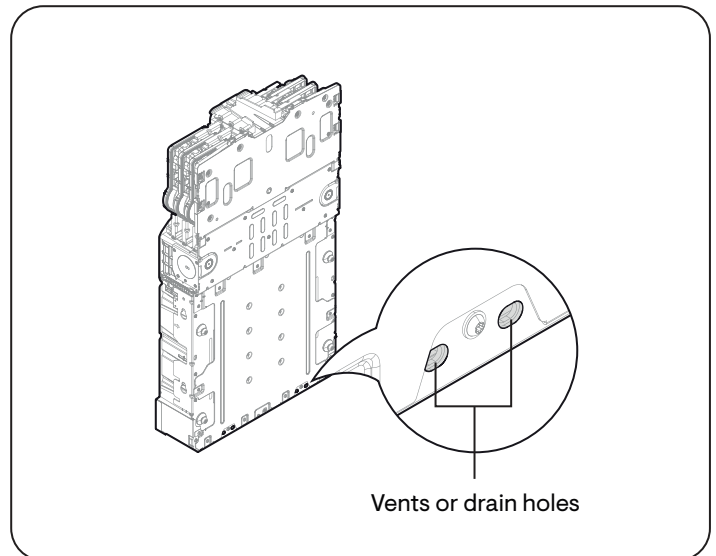
Section B - Installing IQ Battery 5P



Secure the battery unit on the bottom mounting bracket using two M5 Seismic screws. This is required to comply with seismic requirements.

NOTE: Use an electric drive; do not use impact drives/impact drills while tightening seismic screws.

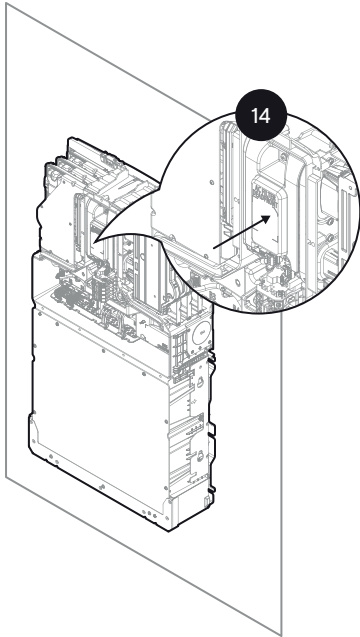
NOTE: It is recommended to use a screwdriver extension bit to reach the screw head.



⚠ The vent or drain holes provided at the back of the unit serve the dual purpose of natural ventilation and condensation drainage. Blocking these holes can affect the functionality of the product.

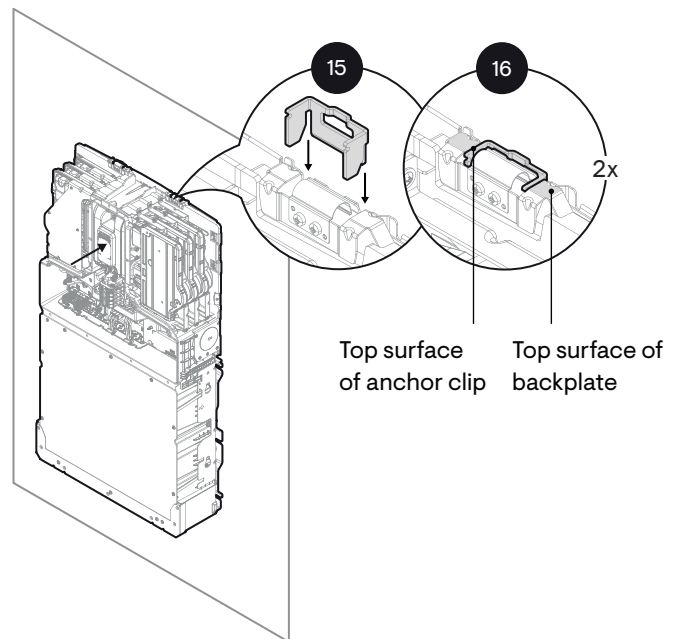
Section B - Installing IQ Battery 5P

Installation of Anchor Clip



Push against the wiring cover and hold the IQ Battery 5P top section as close to the wall as possible.

 Do not push from PCUs to avoid any damage.



Install two anchor clips to secure the top section of the IQ Battery 5P to the wall. Slide the anchor clip downwards until the top surface of the clip coincides with the top surface of the IQ Battery 5P backplate. This ensures no obstructions during the IQ Battery 5P cover installation.

Section C

Wiring

Install conduits and field wiring

1. When installing a single IQ Battery 5P unit, insert the conduit in the cutouts drilled in the previous step.

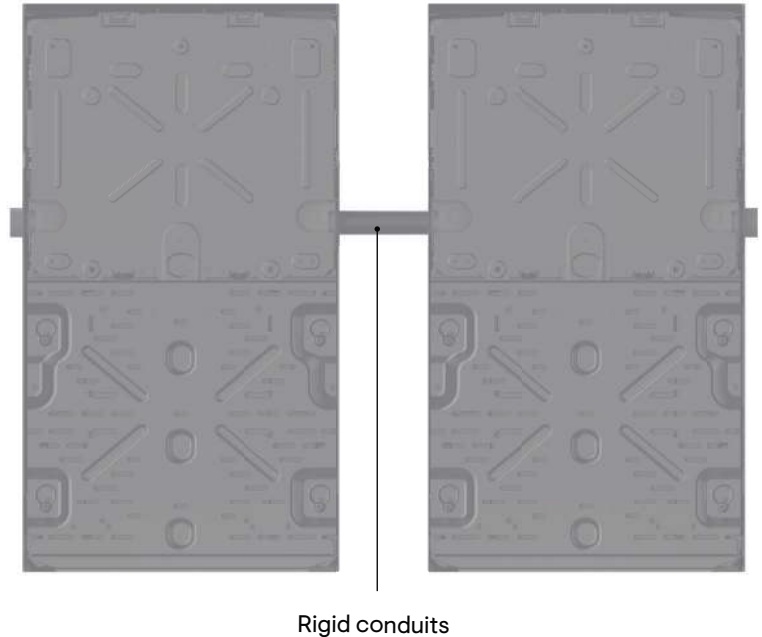
NOTE: When upgrading an IQ Battery 5P site with a new unit, disconnect B1 and B2 (DC connectors) on the adjacent IQ Battery 5P (units).

NOTE: Use a “chase nipple” and “rigid coupling” as spacers for connecting 90° fitting to the battery. This avoids interference between the 90° fitting and battery ID cover. Make sure the joints are properly fastened and are watertight.

2. If installing more than one IQ Battery 5P, insert the conduit on the side of the unit closest to the AC disconnect. If an IQ System Controller is in line of sight, the breaker on IQ System Controller can service as the AC disconnect.

NOTE: Follow the steps below when installing rigid conduits between units:

- a. Mount only one IQ Battery 5P on the wall.
- b. Add rigid conduit to it.
- c. Adjust the rigid conduit in the first unit as required and mount the second IQ Battery 5P on the wall.
- d. Repeat steps a,b, and c for mounting additional IQ Battery(ies)

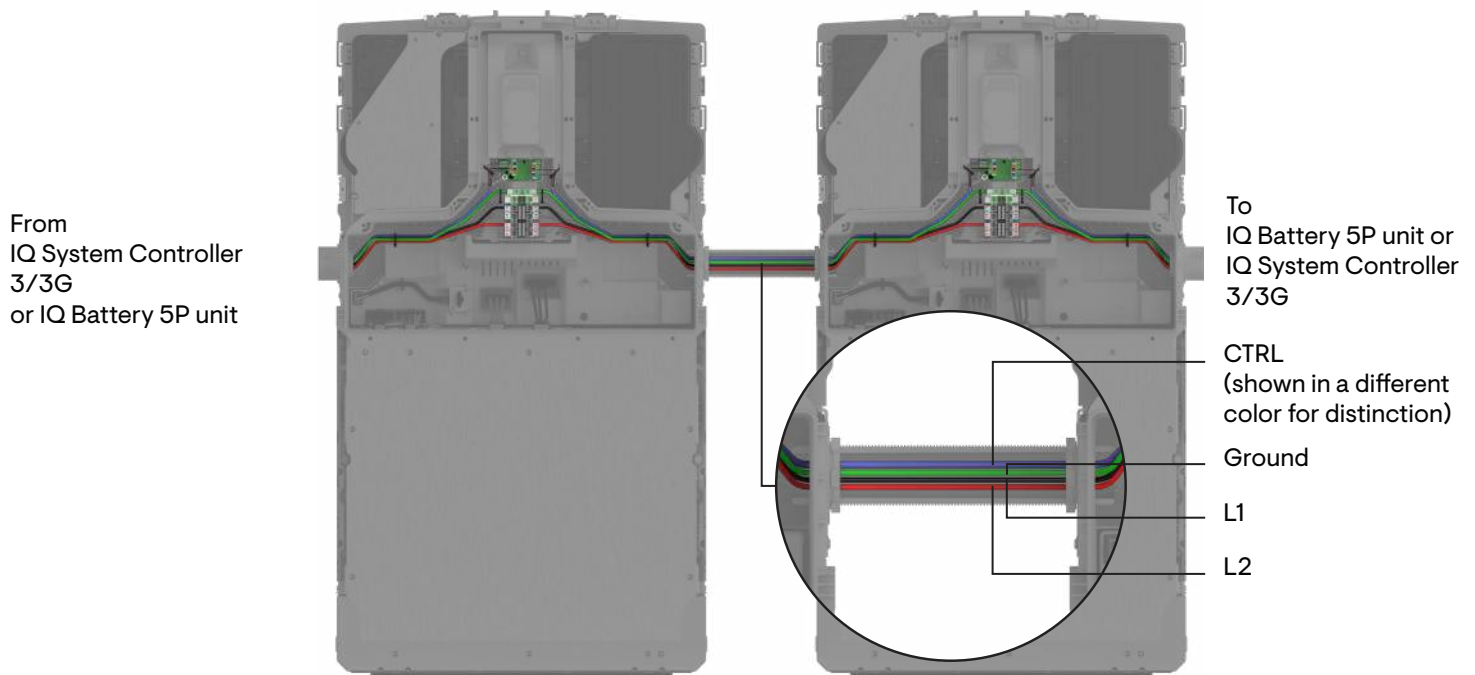


Section C - Wiring

3. Starting from the unit closest to the IQ System Controller 3/3G, pass the power and control communication conductors through the conduit and make the two ends of conductors available on the unit and IQ System Controller 3/3G side.
4. Connect the power conductors and control communication cables on the terminal blocks (L1, L2, and Ground) and the control communication connector, respectively. Each terminal block accepts 10–3 AWG conductors. Tighten L1 and L2 terminals to 2.5 N m (27 lb-in) and small Ground terminal to 1.5 N m (13.2 lb-in).
5. If connecting more than one IQ Battery 5P, connect power conductors between the terminal blocks and control communication cables between the CTRL connectors of these units such that the conductors connect on the right side of one unit and the left side of another unit after passing through the conduit. Repeat these steps until you arrive at the unit that is farthest from the IQ System Controller 3/3G.

NOTE: Do not disturb the factory termination connections on terminal blocks during field wiring.

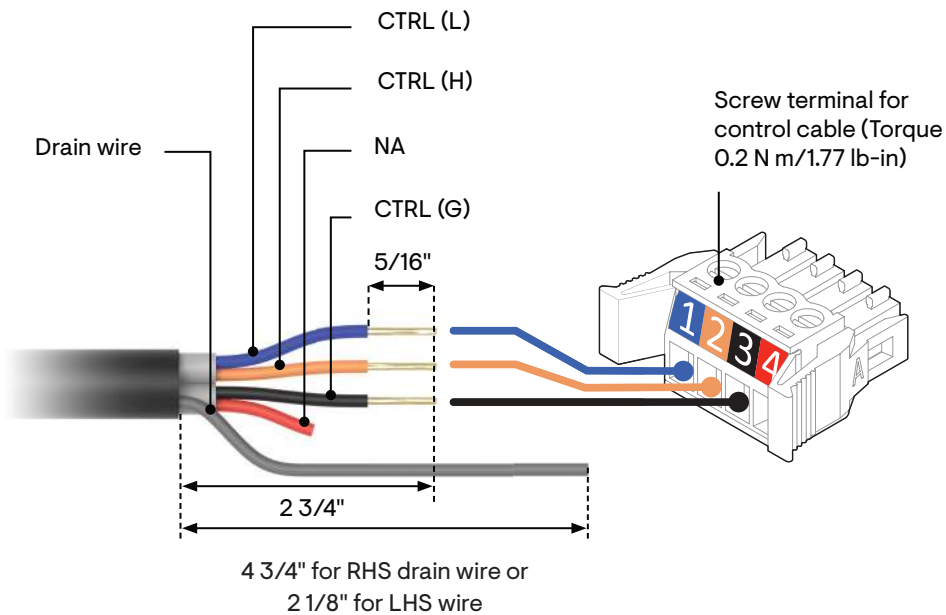
NOTE: Power and control communication cables will run in parallel through conduits.



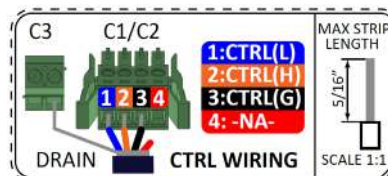
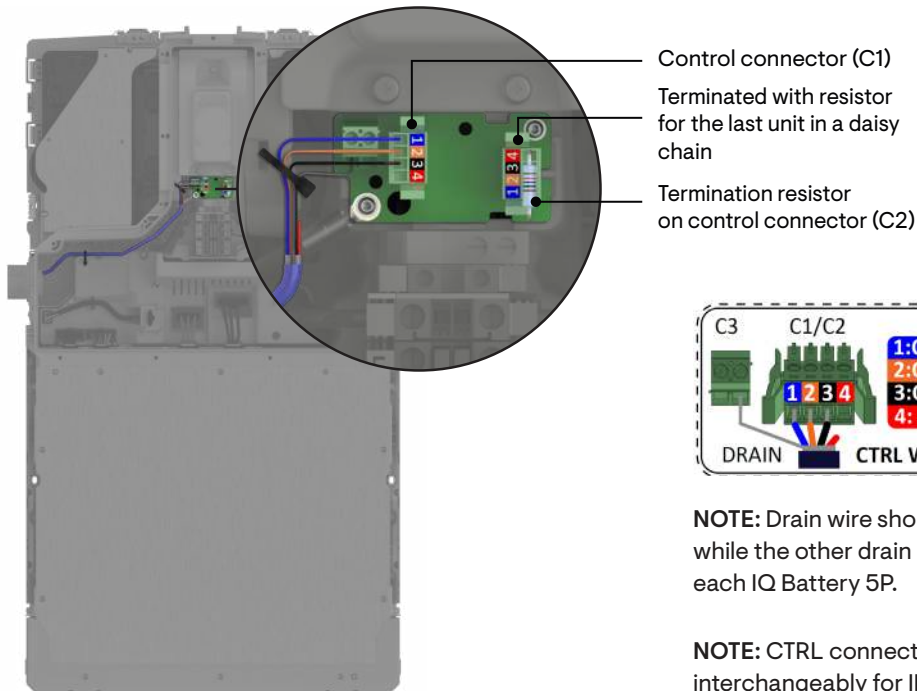
Section C - Wiring

- Follow the jacket stripping length and connect the control communication wires to the 4-pin connectors as per the color code shown in the following image. Keep the terminating resistor only on the devices which are on the two ends of the control communication bus and remove the resistor from the rest of the devices. (Refer to the next page for details).

Enphase SKU for control cable: CTRL-SC3-NA-01



NOTE: Use the following tool to strip the jacket of control communication cable



NOTE: Drain wire should be terminated only at one drain connector while the other drain connector shall remain unconnected within each IQ Battery 5P.

NOTE: CTRL connectors (C1/C2) are identical and can be used interchangeably for IN and OUT connections.

Section C - Wiring

Control (CTRL) Wiring
between system components

Control wiring guidance for the Enphase Energy System

Refer to the following wiring sequences to understand the position of the header with termination resistor, wiring order, and drain wire termination location.

NOTE: Ensure the following guidelines are followed to avoid failures during system commissioning:

1.

One header with a termination resistor should be installed on each component that is at the extreme end of the control network
2.

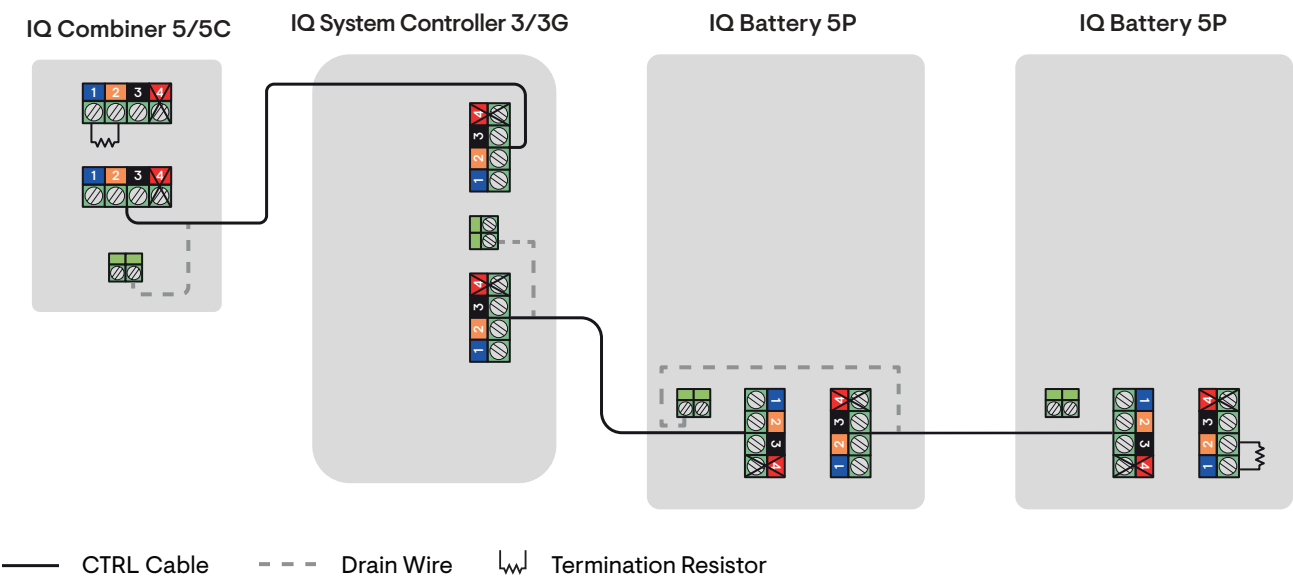
The drain wire should only be terminated on one end of the control wiring between system components
3.

It is recommended that the drain wire be terminated at the component from which control wiring for the section is initiated
4.

The same conduits can be used for power and control wire routing only when using an Enphase CTRL cable, i.e. CTRL-SC3-NA-01

The following are four common wiring sequences:

Sequence 1a:
IQ Combiner 5/5C → IQ System Controller 3G → IQ Battery(s) 5P



NOTE: Total length of CTRL wiring across the system cannot exceed 250 feet to ensure the system operates as per specifications.

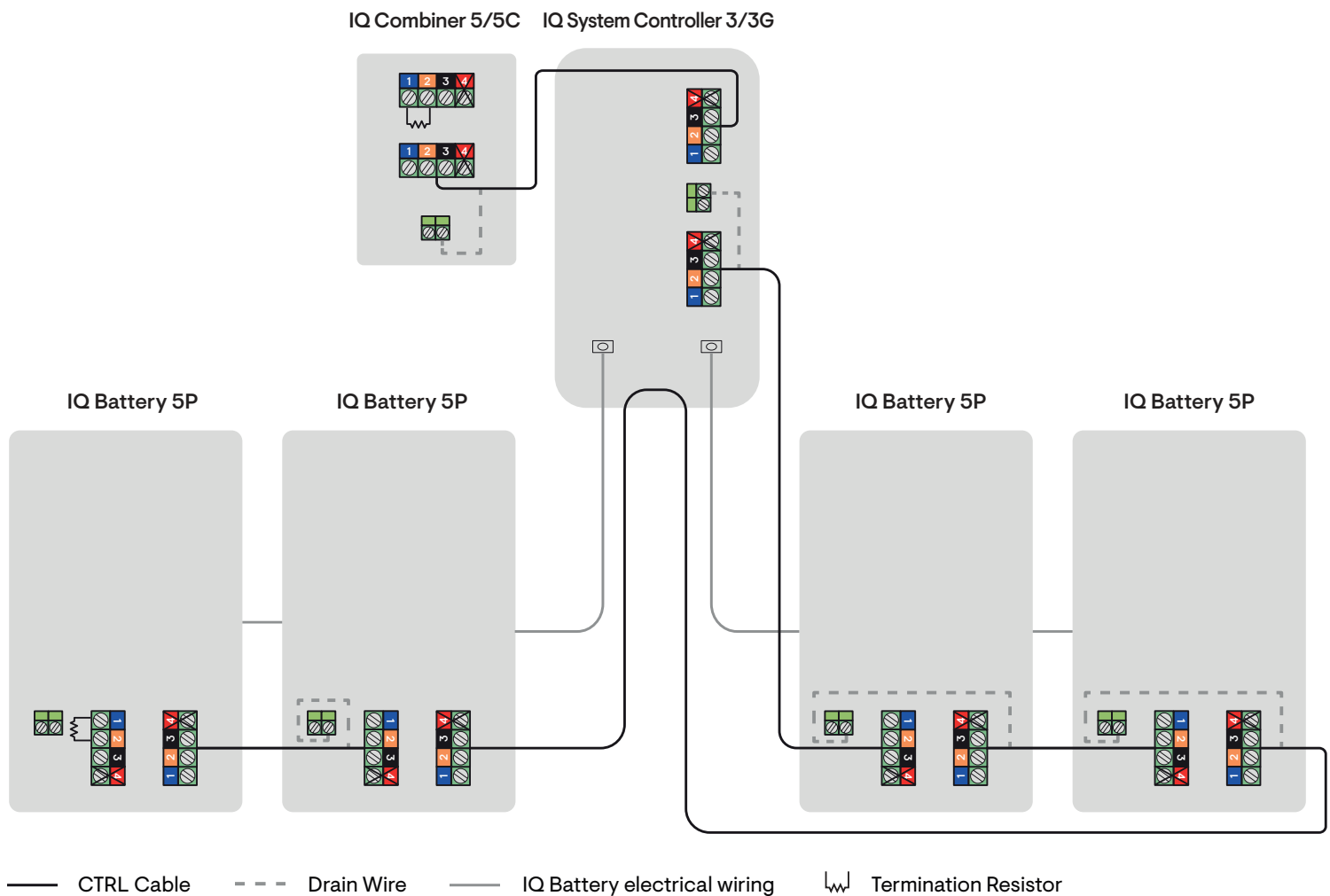


The drain wire should only be terminated on one end of the control wiring between the system components.


Section C - Wiring

Sequence 1b:

IQ Combiner 5/5C → IQ System Controller 3 → IQ Battery(s) 5P (this is only applicable to IQ System Controller 3, where a third DER port can be used for additional batteries)

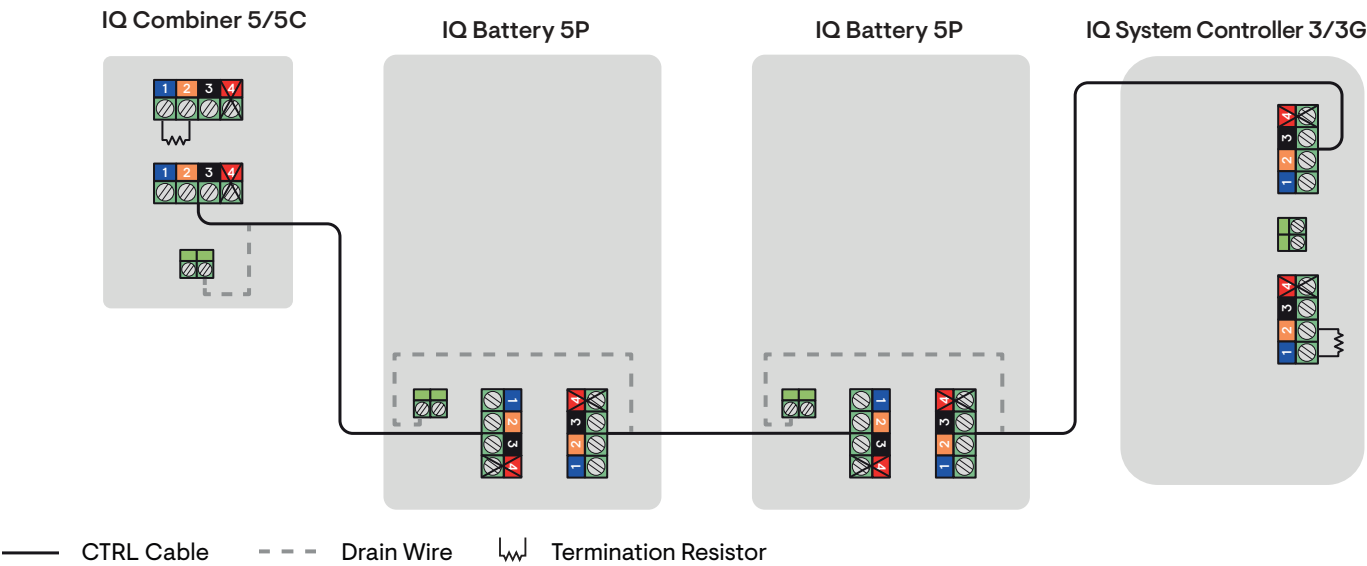


NOTE: Total length of CTRL wiring across the system cannot exceed 250 feet to ensure the system operates as per specifications.

 The drain wire should only be terminated on one end of the control wiring between the system components.

Section C - Wiring

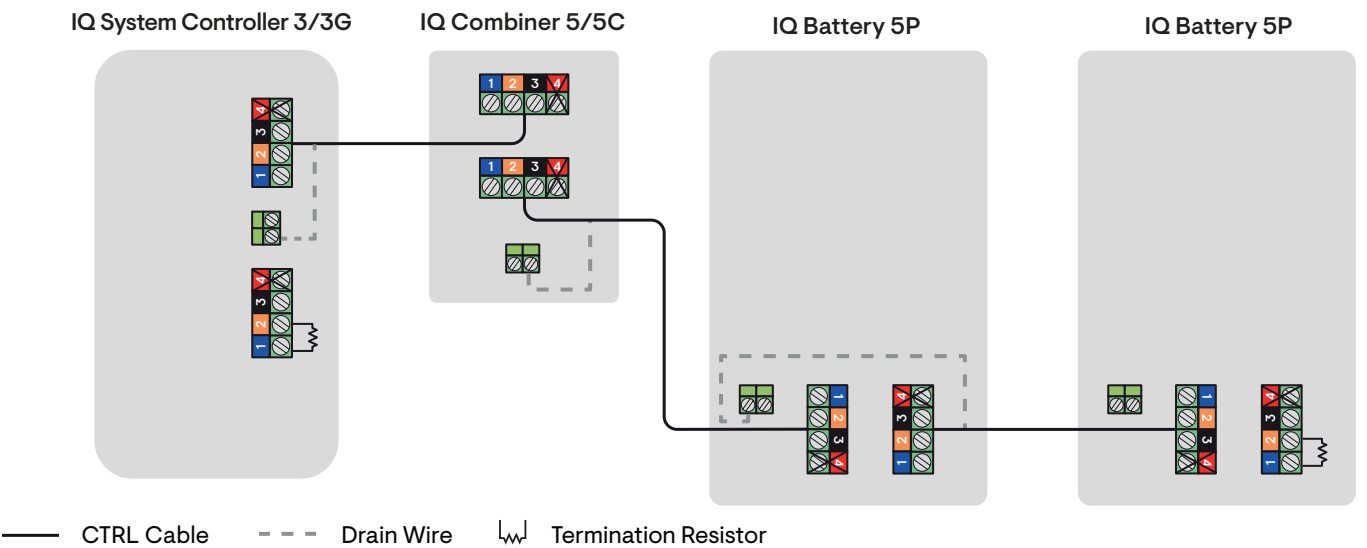
Sequence 2:
IQ Combiner 5/5C → IQ Battery(s) 5P → IQ System Controller 3/3G



NOTE: Total length of CTRL wiring across the system cannot exceed 250 feet to ensure the system operates as per specifications.

The drain wire should only be terminated on one end of the control wiring between the system components.

Sequence 3:
IQ System Controller 3/3G → IQ Combiner 5/5C → IQ Battery(s) 5P



NOTE: Total length of CTRL wiring across the system cannot exceed 250 feet to ensure the system operates as per specifications.

The drain wire should only be terminated on one end of the control wiring between the system components.

Section C - Wiring

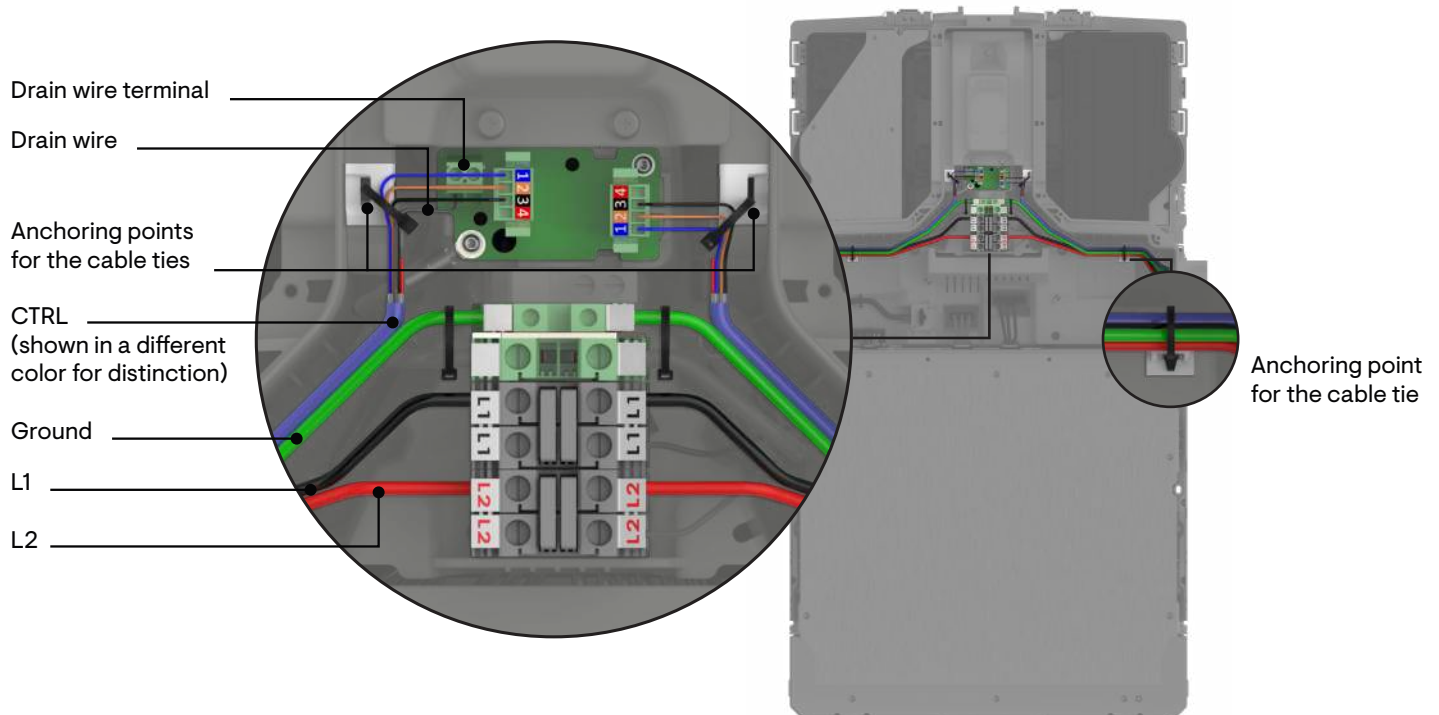
Here is a table providing termination resistor locations for the above sequences:


CONTROL WIRING SEQUENCE	TERMINATION RESISTOR LOCATION
IQ Combiner 5/5C → IQ System Controller 3G → IQ Battery(s) 5P	1. IQ Combiner 5/5C 2. Last IQ Battery 5P in the daisy chain
IQ Combiner 5/5C → IQ System Controller 3 → IQ Battery(s) 5P	1. IQ Combiner 5/5C 2. Last IQ Battery 5P in the daisy chain (this last battery can be on either DER circuit for IQ Battery or generator)
IQ Combiner 5/5C → IQ Battery(s) 5P → IQ System Controller 3/3G	1. IQ Combiner 5/5C 2. IQ System Controller 3/3G
IQ System Controller 3/3G → IQ Combiner 5/5C → IQ Battery(s) 5P	1. IQ System Controller 3/3G 2. Last IQ Battery 5P in the daisy chain

Section C - Wiring

Cable routing and closing the wiring cover

1. Route the conductors between conduit and terminal blocks using anchoring points as shown in the following figure:



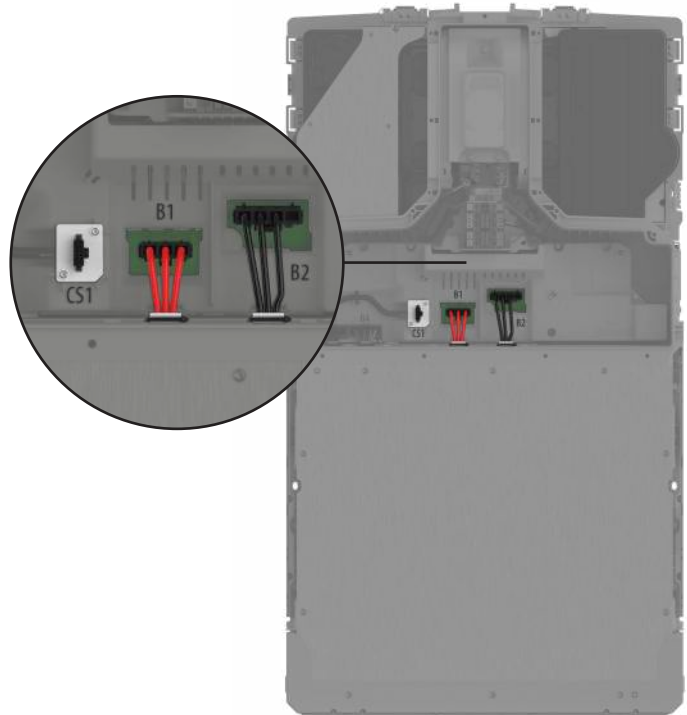
 Make sure the drain wires do not come in contact with any live connection.

NOTE: Cable ties are available in the accessories kit inside the packaging box. Anchor the cables as shown to ensure the proper cable routing, avoid wire separation from the terminals, and provide unrestricted access for the wiring cover assembly.

2. After all wires in the field wiring compartment are connected and secured, make sure there are no exposed conductors.
3. Make sure the IQ Battery 5P unit is farthest from IQ System Controller 3/3G has a cutout only on one side, and all other sides are covered.
4. Apply AC power to the IQ Battery 5P circuits. Using a voltmeter, make sure the voltage between L1 and L2 on the terminal blocks of each IQ Battery 5P unit measures 240 VAC.
5. If the voltage is within the range as required by local codes, turn off the AC power supply.

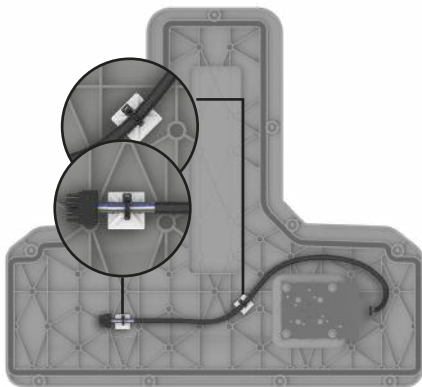
Section C - Wiring

6. Connect the following connectors to the BMS board:
- B1: Battery DC positive connector termination
 - B2: Battery DC negative connector termination
 - CS1: Control switch intermediate connector termination

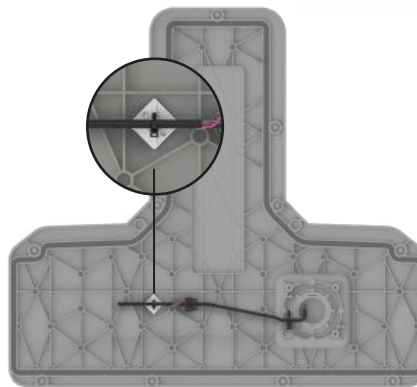


NOTE: Connect CS1 at last to avoid damage to the wiring cover

⚠ Ensure that all the connectors are latched properly and clicking sound is heard.



Cut two cable ties and insert the connector on CS1 in BMS board

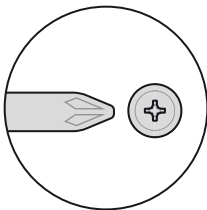
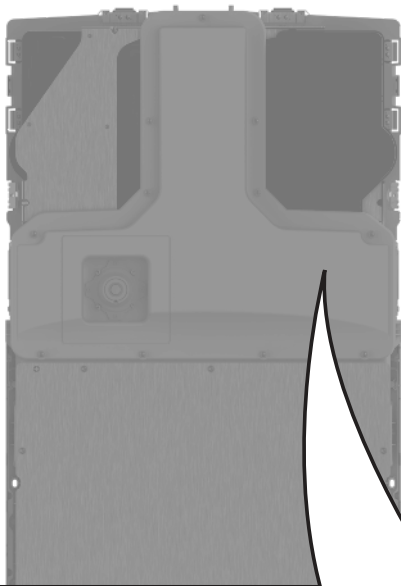


Cut one cable tie and insert the connector on CS1 in the BMS board

NOTE: There are two variants of the control switch available in IQ Battery 5P. The control switch cable is secured to the wiring cover using cable ties. Select the control switch available at the site based on the below images and cut the cable ties on the wiring cover to access the control switch cable.

Section C - Wiring

- 7. Fasten the 11 captive screws at the wiring cover as shown.
Use an electric drive; do not use impact drives/impact drills.



Captive screws torque to 1.5 N m
(13.28 lb-in)



CAUTION!

FOLLOW THE SEQUENCE SHOWN TO PARTIALLY TORQUE THE 11x SCREWS. FULLY TORQUE ALL THE SCREWS TO MAX 1.5 ± 0.15 Nm AT MAX 1000RPM, ONLY AFTER ALL OF THEM ARE IN POSITION.

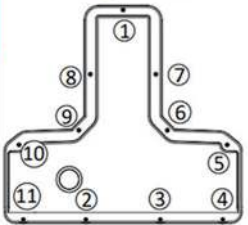
INSTRUCTIONS TO REMOVE THE WIRING COVER PRIOR TO INSTALLATION / SERVICING

- 1.LOOSEN THE 11x SCREWS TO REMOVE THE WIRING COVER FOR INSTALLATION/ SERVICING. REFER QIG FOR MORE DETAILS.
- 2.FOR SERVICING, MOVE THE WIRING COVER GENTLY AWAY FROM THE UNIT TO FIND THE CONTROL SWITCH (CS1) INTERMEDIATE CONNECTION AND UNPLUG IT FROM THE PANEL MOUNT CONNECTOR BEFORE REMOVING WIRING COVER COMPLETELY.

INSTRUCTIONS TO ASSEMBLE THE WIRING COVER AFTER INSTALLATION / SERVICING

- 1.PLUG THE CONTROL SWITCH INTERMEDIATE CONNECTOR (CS1) TO THE PANEL MOUNT CONNECTOR AND ENSURE THAT THE CABLE IS ROUTED INSIDE THE UNIT PROPERLY BEFORE ASSEMBLING THE WIRING COVER COMPLETELY.
- 2.FASTEN THE SCREWS AS PER ABOVE INSTRUCTIONS. REFER QIG FOR MORE DETAILS.

SCREW FASTENING SEQUENCE



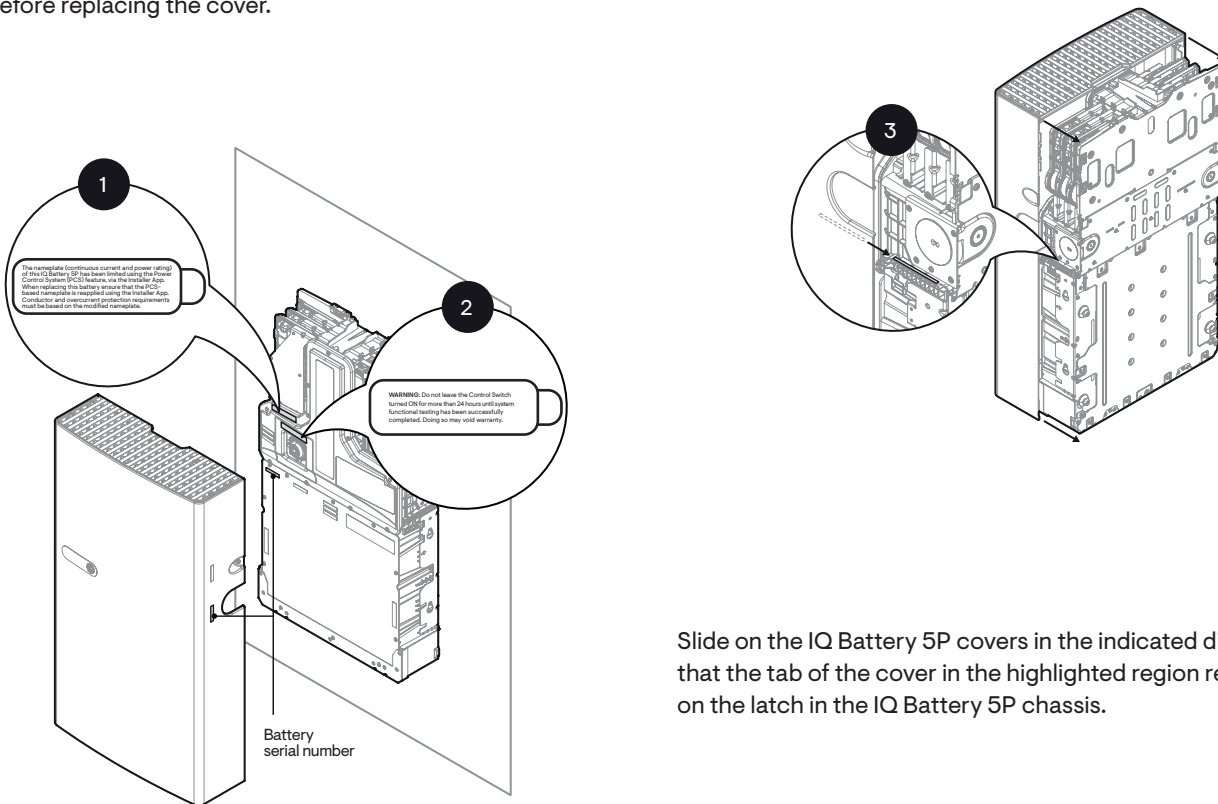
Section D

Close and energize the system

Make sure the wiring cover(s) for all IQ Batteries in the system are closed and secured.

⚠ Before energizing, make sure that all IQ Batteries in the system are properly installed and conductors terminated.

⚠ Risk of equipment damage. Make sure no wires are pinched before replacing the cover.

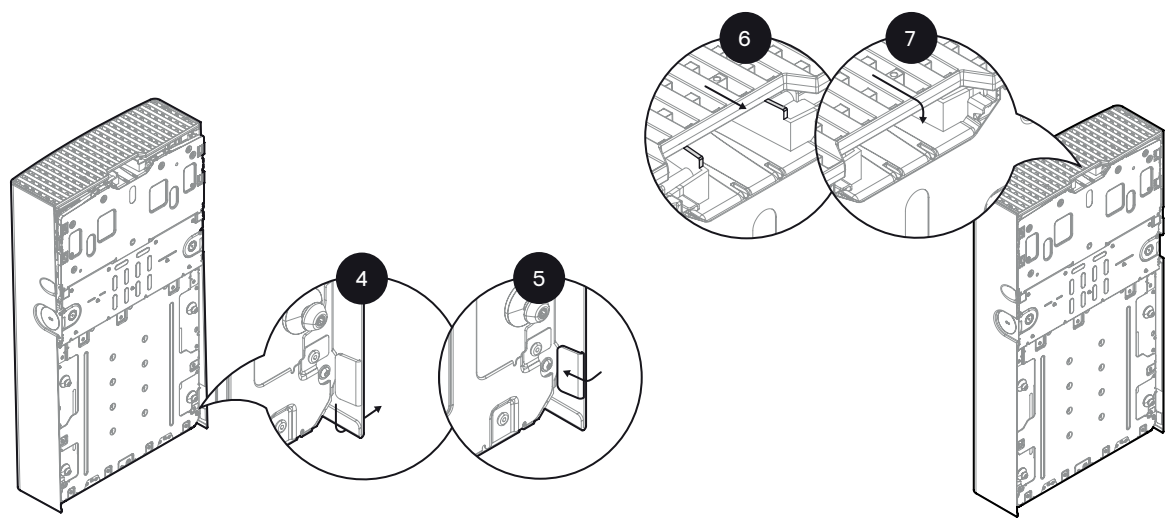


Peel off this sticker before installing the ID cover.

NOTE: Paste the PCS disclaimer label on the wiring cover as shown above for all PCS-enabled IQ Battery 5P units.

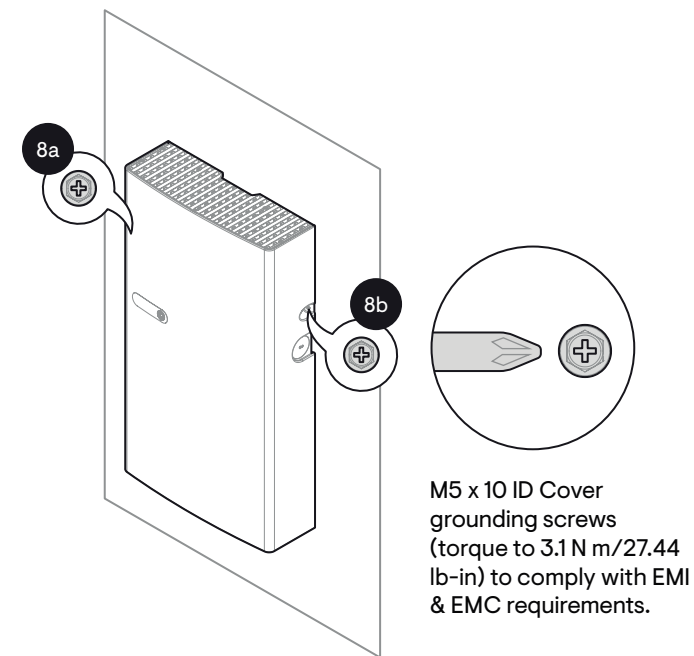
NOTE: Ensure the serial number label on the ID cover matches that on the heatsink before assembling the ID cover.

Section D - Close and energize the system



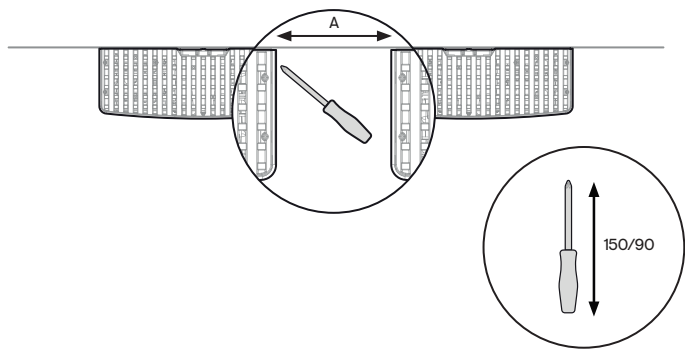
Before releasing, pull out the lower edges while sliding in the cover and make sure the tabs are locked to the back plate.

Push in the top portion of the cover as shown and make sure that the cover is locked in place.



Fasten the cover to the backplate.

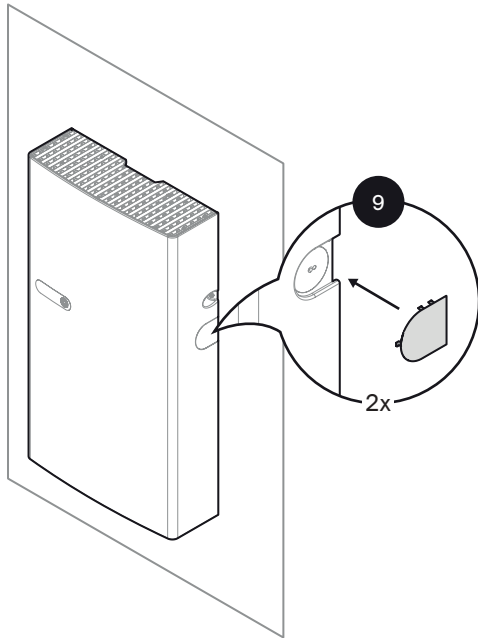
NOTE: Use an electric drive; do not use impact drives/impact drills.



SCREWDRIVER OF MAXIMUM LENGTH 150 MM (5.91 IN)	SHORT STUB SCREWDRIVER OF MAXIMUM LENGTH 90 MM (3.54 IN)
Spacing 'A' between the units must be 5.5 in - 6.5 in	Spacing 'A' between the units must be 3.0 in - 5.5 in
Can access the screws at an angle.	Can access the screws at an angle.

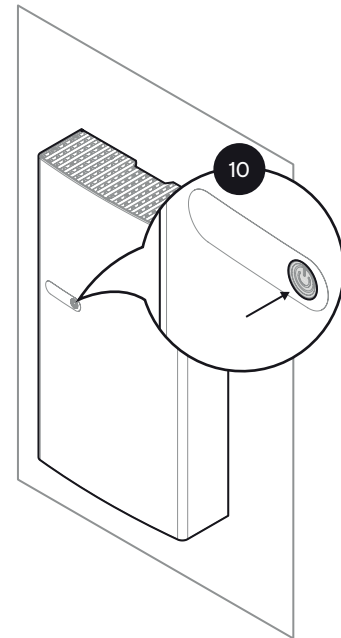
To fasten the cover to the backplate when two IQ Battery 5P units are placed close to each other, refer to the table.

Section D - Close and energize the system




After installing the cover, the conduit cover should be installed to cover the opening in the IQ Battery 5P cover on the side.

If the conduit hub is installed, the conduit cover is not necessary on this side.

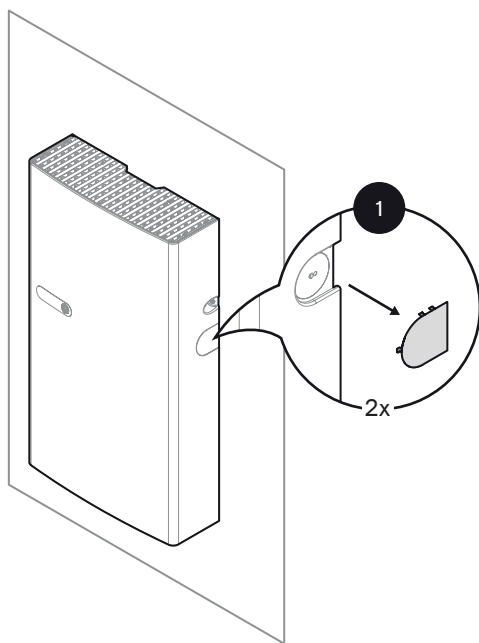


Apply AC power to the IQ Battery 5P circuits. Turn ON the DC control switch. A green LED will glow around the control switch. IQ Battery 5P is ready for commissioning.

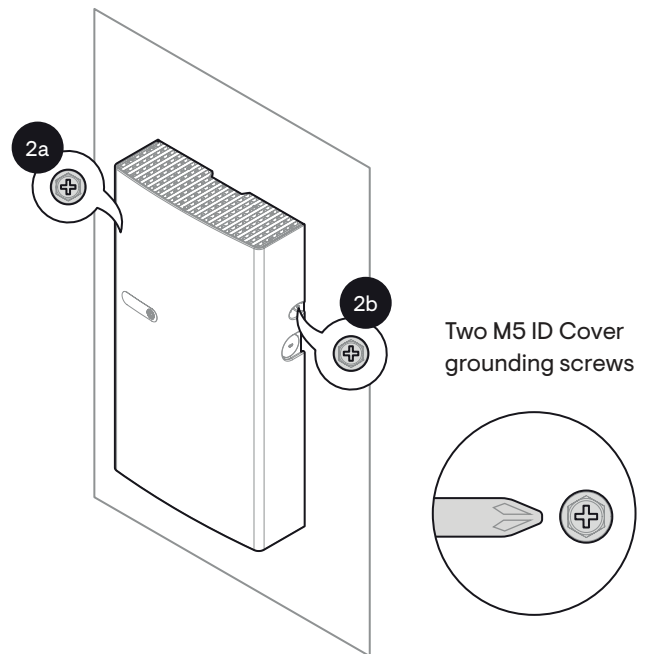
 Do not leave the DC control switch in the ON position without an AC power supply available. This will deplete the battery and may lead to a condition where the battery cannot be turned ON and cannot be commissioned.

Disassembly of IQ Battery 5P cover

Refer to these instructions when you need to remove the cover.
This is not a required step prior to commissioning.



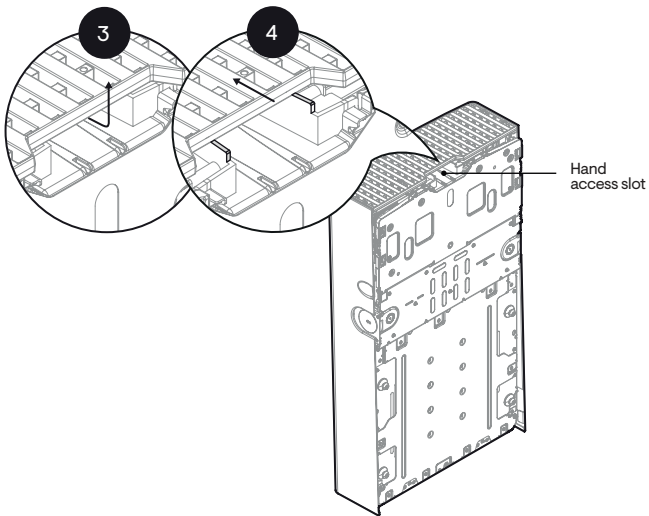
Remove the conduit covers from both sides of the IQ Battery 5P cover.



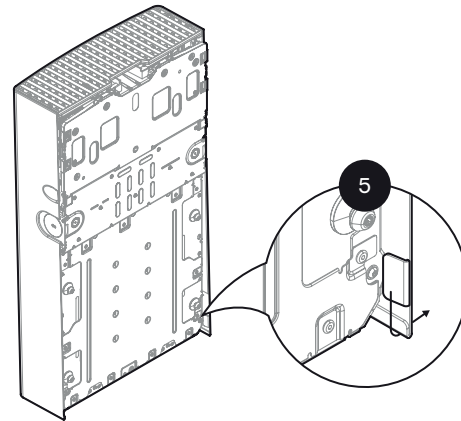
Remove the two M5 ID Cover grounding screws that are used to affix the cover to the backplate.

NOTE: Use electric drive; do not use impact drives/impact drills.

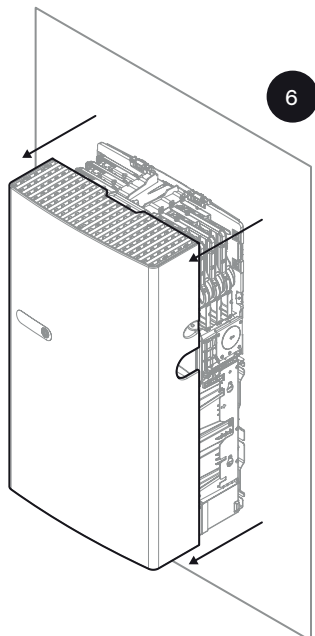
Disassembly of IQ Battery 5P cover



Using the hand access slot, pull the top plastic grill slightly, as shown in step 3.
Unlock the top plastic cover from the ribs, as shown in step 4.
Make sure the cover is slightly inclined after this step.



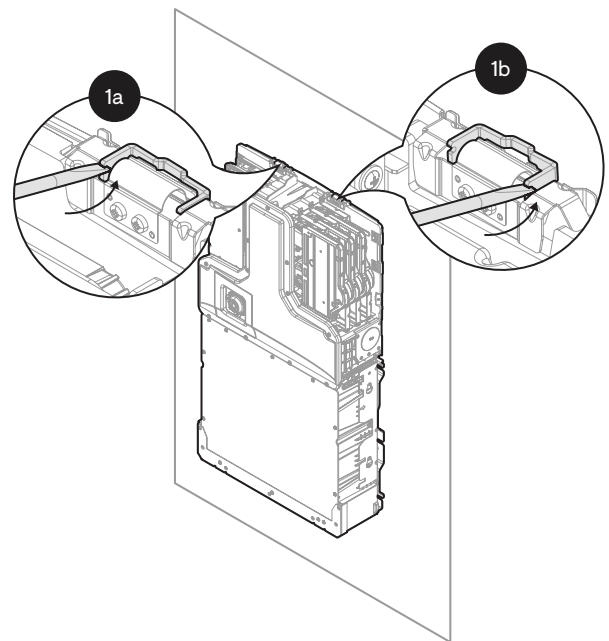
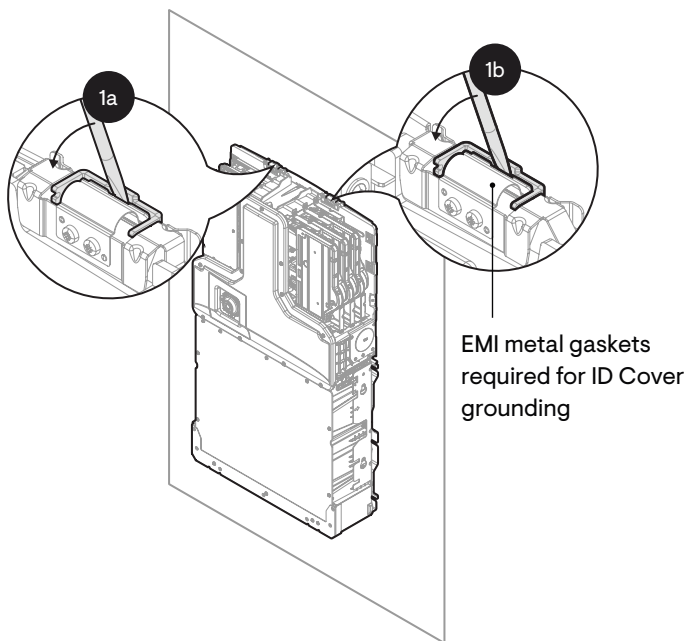
Pull out the lower portion of the cover in order to unlock the angular tabs and move it away from the wall slightly.




Pull the cover off in the indicated direction.

Disengaging Anchor Clip

Refer to these instructions when you need to remove the Anchor clip. This is not a required step prior to commissioning.

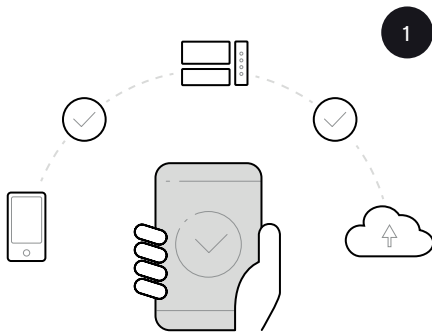


Disengaging of the anchor clip can be done by lifting it up using a flathead screwdriver or nose plier. Installers need to carefully insert the tool at the back slot, as shown below, and pull the clip upwards.

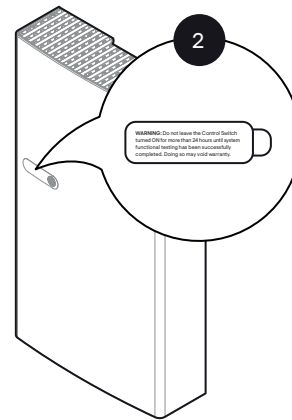
 Ensure not to touch or damage the EMI metal gaskets while removing the clips. EMI metal gaskets are delicate and need to be handled carefully.

Alternatively, anchor clips can also be lifted by using the front slots on either side of the clip using a flathead screwdriver.

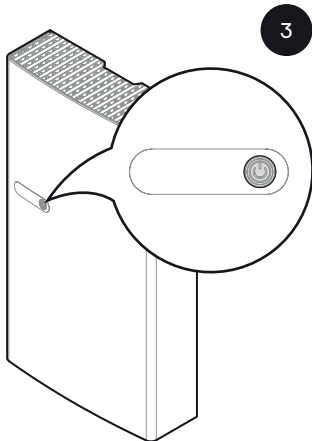
Configure and activate



Use the Enphase Installer App to commission the IQ Battery(ies). Once connected to the IQ Gateway, refer to the Enphase Installer App help topics for more information.



Peel off the sticker after the functional test is complete.



After the IQ Gateway has detected the IQ Battery(ies), the IQ Battery 5P LEDs operate as described in the following section.

Operation

LED overview

After being commissioned, the LED flashes yellow while each IQ Battery 5P boots up. If the LED rapidly flashes green for more than two minutes, the battery is in trickle charge mode and will remain so until it reaches a minimum state of charge (up to 30 minutes). After IQ Battery 5P is booted up, the LED becomes blue or green, depending on the charge level. If the LED flashes yellow after one hour or changes to a flashing red state, contact Enphase Support at enphase.com/contact/support.

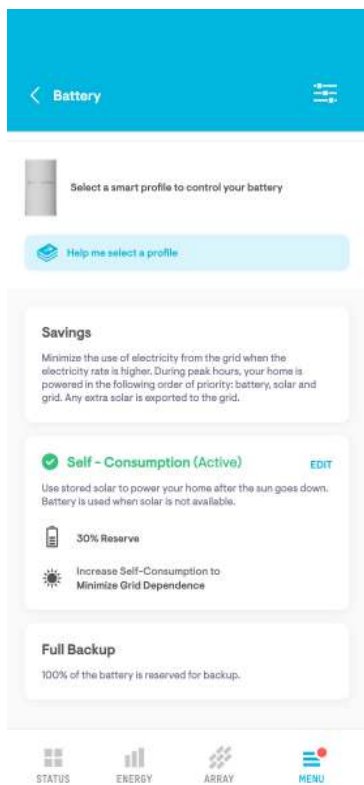
STATE	DESCRIPTION
UNCOMMISSIONED	
Flashing blue	After booting up, IQ Battery 5P has paired with an IQ Gateway but has not passed the commissioning three-way handshake to confirm that it is an Enphase device
Flashing green	After passing the three-way handshake with the IQ Gateway
AFTER COMMISSIONING (NORMAL OPERATION)	
Rapidly flashing yellow	Starting up/establishing communications
Red double flash	Error. See “Troubleshooting”
Solid yellow	Not operating due to high temperature. See “Troubleshooting”
Solid blue or green	Idle. Color transitions from blue to green as the state of charge increases. Check Enphase Installer Platform for charge status
Soft pulse blue	Discharging
Soft pulse green	Charging
Soft pulse yellow	Sleep Mode
Red triple flashes	DC switch OFF
Red one-second flash	Rapid shutdown mode
Off	Not operating. See “Troubleshooting”

Operation

Operating mode and set points

IQ Battery 5P supports multiple storage interactive system modes based on usage.

1. Using Enphase App, select “Menu” > “Settings” > “Battery Storage”.
2. Select one of three battery modes:
 - Self-Consumption mode (default, no setting change required)
 - Savings Mode
 - Full Backup



For more information on Operation modes, refer to the storage system owner's guide at enphase.com/en-us.

Operation

Troubleshooting

If the IQ Battery(ies) are not operating correctly, follow these troubleshooting steps. If the issue persists, contact Enphase at enphase.com/contact/support.

1. If the IQ Battery(ies) does not operate, check the temperature in the room and increase cooling and/or ventilation as required. Check that the bottom, top, and sides of IQ Battery 5P have at least 15 cm (6 in) clearance from the wall.
2. If the IQ Battery 5P LED is off, turn off the breaker for the branch circuit, wait for at least one minute, and turn it back on.

NOTE: IQ Battery 5P has multiple field-replaceable parts. These must be replaced by trained service personnel. Contact Enphase Support before replacing any part.

NOTE: During a brownout or blackout, IQ Battery 5P powers down automatically. This is normal. When power is restored, it automatically starts up again.

3. If you do not see IQ Battery 5P information in the Enphase App, check that the IQ Gateway and the internet-connection are working.
4. If the issue persists, contact Enphase Support at <https://enphase.com/contact/support>.

Limitation of Use:

Your IQ Battery 5P unit is not intended for use as a primary or backup power source for life-support systems, other medical equipment, or any other use where product failure could lead to injury, loss of life, or catastrophic property damage. Enphase disclaims any and all liability arising out of any such use of your IQ Battery 5P unit. Further, Enphase reserves the right to refuse to provide support in connection with any such use and disclaims any and all liability arising out of Enphase's provision of, or refusal to provide support for your IQ Battery 5P device in such circumstances.

Safety

IMPORTANT SAFETY INSTRUCTIONS. SAVE THESE INSTRUCTIONS.

This guide contains important instructions that you must follow during the installation and maintenance of the Enphase IQ Battery(ies).

Failing to follow any of these instructions may void the warranty (enphase.com/warranty). Refer to the MSDS document and safety datasheet at enphase.com/en-us.

In case of fire or other emergency

In all cases:

- If safe to do so, switch off the AC breaker for the IQ Battery 5P circuit, and if an isolator switch is present, switch off the AC isolator for the IQ Battery 5P circuit.
- Contact the fire department or other required emergency response team.
- Evacuate the area.
- Contact Enphase Support at <https://enphase.com/contact/support>

In case of fire:

- When safe, use a fire extinguisher. Suitable types are A, B, and C dry chemical fire extinguishers. Additional extinguishing media include carbon dioxide or alcohol-resistant foams.

In case of flooding:

- Stay out of the water if any part of the IQ Battery(ies) or wiring is submerged.
- If possible, protect the system by finding and stopping the source of the water and pumping it away.
- If water has contacted the battery, call your installer to arrange an inspection. If you are sure that water has never contacted the battery, let the area dry completely before use.

In case of unusual noise, smell, or smoke:

- Ensure nothing is in contact with the IQ Battery(ies) or in the venting area of the IQ Battery(ies).
- Ventilate the room.

In case of electrolyte exposure:

The Enphase IQ Battery 5P has a lithium iron phosphate (LFP) battery that contains organic electrolytes and is sealed in a protective case. The leaked electrolyte is toxic and highly flammable. The leaked electrolyte is colorless and has a sweet odor. Electrolyte fluid tends to evaporate quickly, leaving behind a white grainy substance. If an odor is obvious, proceed to the following steps:



DANGER: DO NOT TOUCH OR INGEST ANY LIQUID SUSPECTED TO BE BATTERY ELECTROLYTE.

- Evacuate personnel to a safe area and keep unauthorized personnel away.
- Isolate the spill area to a minimum distance of 75 feet (25 m).
- Eliminate all ignition sources (no smoking, sparks, flames, or hot equipment) in the immediate area around the spill.
- Do not touch or walk through spilled material.
- Avoid breathing vapors. Ensure adequate ventilation.
- Use personal protective equipment.
- Emergency Telephone Number (Chem Tel):
 - Inside United States Territories and Canada: (800) 255-3924
 - Outside United States Territories and Canada: +01 (813) 248-0585

Safety and advisory symbols



DANGER: This indicates a hazardous situation, which, if not avoided, will result in death or serious injury.



WARNING: This indicates a situation where failure to follow instructions may be a safety hazard or cause equipment malfunction. Use extreme caution and follow instructions carefully.



NOTE: This indicates information particularly important for optimal system operation. Follow instructions carefully.

Safety instructions



DANGER: Risk of electric shock. Risk of fire. Only qualified electricians should install, troubleshoot, or replace the IQ Battery(ies).



DANGER: Risk of fire or explosion. Only qualified personnel using personal protective equipment (PPE) should transport or handle the IQ Battery(ies).



DANGER: Risk of explosion. Do not dispose of IQ Battery(ies) in a fire or by burning. The IQ Battery(ies) can explode.



DANGER: Risk of fire or explosion. This product is designed for stationary installation only and should be used accordingly. It is not designed for mobile applications such as installation on vehicles and trailers and should not be used in such applications.



DANGER: Risk of fire. During use, when stored, or during transport, keep the IQ Battery(ies) in an area that is well-ventilated and protected from the elements, where the ambient temperature and humidity are within -20°C to 55°C (-4°F to 131°F) and 5% to 95% RH, non-condensing, preferably out of direct sunlight. Do not install the IQ Battery(ies) at elevations over 2,500 m (8,202 feet) above sea level.



DANGER: Risk of fire. If the IQ Battery(ies) generate smoke, remove AC power from the Enphase system and turn the DC control switch to the off position so that charging/discharging stops.



DANGER: Risk of electric shock. Do not use Enphase equipment in a manner not specified by the manufacturer. Doing so may cause death or injury to persons or damage to equipment.



DANGER: Risk of electric shock. Do not install the IQ Battery(ies) without first removing AC power from the photovoltaic system. Disconnect the power coming from the photovoltaics before servicing or installing.


















DANGER: Risk of electric shock. Always de-energize the AC branch circuit during an emergency and/or before servicing the IQ Battery(ies).













DANGER: Risk of electric shock. Risk of high short-circuit current. Observe the following precautions when working on batteries:

- Remove watches, rings, or other metal objects.
- Use tools with insulated handles.
- Wear insulating gloves and boots.
- Do not lay tools or metal parts on top of batteries.

Safety

-  **DANGER:** Risk of electric shock. Risk of fire. Do not work alone. Someone should be in range of your voice or close enough to come to your aid when you work with or near electrical equipment.
-  **DANGER:** Risk of fire. Do not allow or place flammable, sparking, or explosive items near the IQ Battery(ies).
-  **DANGER:** Risk of electric shock. In areas where flooding is possible, install the IQ Battery(ies) at a height that prevents water ingress.
-  **DANGER:** Risk of electric shock. AC voltage is present at the output when the DC switch is on.
-  **DANGER:** Risk of electric shock. Branch circuit protection must be off before switching DC power on or off.
-  **DANGER:** Risk of electric shock. The DC switch must be in the OFF position for shipping and service.
-  **WARNING:** Risks of electric shock, energy hazard, and chemical hazard. Do not disassemble.
-  **WARNING:** Risk of equipment damage. During use, storage, transport, or installation, always keep the IQ Battery(ies) in an upright position.
-  **WARNING:** You must install the IQ Battery(ies) only on a suitable wall using an Enphase wall-mount bracket.
-  **WARNING:** Before installing or using the IQ Battery(ies), read all instructions and cautionary markings in this guide and on the equipment.
-  **WARNING:** Do not install or use the IQ Battery(ies) if it has been damaged in any way.
-  **WARNING:** Do not exceed the maximum number (1) of IQ Batteries in a 20 A AC branch circuit.
-  **WARNING:** Do not sit on, step on, place objects on, or insert objects into the IQ Battery(ies).
-  **WARNING:** Do not place beverages or liquid containers on top of the IQ Battery(ies). Do not expose the IQ Battery(ies) to liquids or flooding.
-  **WARNING:** When placing the IQ Battery(ies) in storage, ensure that AC power is not present and that the DC switch is in the OFF position. While in storage, damage to the battery can occur from over-discharge. If the battery state of charge falls to 0%, the IQ Battery(ies) can be damaged or destroyed. Because of this, the IQ Battery(ies) must only be stored for a limited amount of time.
 - The IQ Battery(ies) must be installed and energized by the “Must Energize By” date on the shipping box label.
 - The IQ Battery(ies) must have a charge state of no more than 30% when placed in storage. To do this, the IQ Battery(ies) must be placed in Sleep Mode.
 - If the IQ Battery(ies) has already been installed, it must be placed into Sleep Mode prior to uninstalling. A battery in Sleep Mode can be stored for a maximum of two months after being placed into Sleep Mode.

-  **NOTE:** Perform installation and wiring, including protection against lightning and resulting voltage surges, in accordance with all applicable local electrical codes and standards.
-  **NOTE:** Using unapproved attachments or accessories could result in damage or injury.
-  **NOTE:** Install properly rated overcurrent protection as part of the system installation.
-  **NOTE:** To ensure optimal reliability and to meet warranty requirements, the IQ Battery(ies) must be installed and/or stored according to the instructions in this guide.
-  **NOTE:** The Enphase IQ Battery(ies) are intended to operate with an internet connection. Failure to maintain an internet connection may have an impact on the warranty. See limited warranty for full terms and services (enphase.com/warranty).
-  **NOTE:** When replacing Enphase IQ Battery(ies), you must replace it with an IQ Battery(ies) of the same type with the same AC current rating.
-  **NOTE:** When disconnected and stored, no automatic charge of the battery is possible.
-  **NOTE:** Properly mount the IQ Battery(ies). Ensure that the mounting location is structurally suited to bearing the weight of the IQ Battery(ies).
-  **NOTE:** During use, storage, and transport, keep the IQ Battery(ies):
 - Properly ventilated
 - Away from water, other liquids, heat, sparks, and direct sunlight
 - Away from excessive dust, corrosive and explosive gases like ammonia, and oil smoke
 - Away from direct exposure to gas exhaust, such as from motor vehicles
 - Free of vibrations
 - Away from falling or moving objects, including motor vehicles. If mounted in the path of a motor vehicle, we recommend a 91 cm (36 in) minimum mounting height
 - At an elevation of lower than 2,500 m (8,202 feet) above sea-level
 - In a location compliant with fire safety regulations
 - In a location compliant with local building codes and standards
-  **NOTE:** Conditions for the IQ Battery 5P installation site also apply to storage conditions.



Environmental Protection

ELECTRONIC DEVICE: DO NOT THROW AWAY. Waste electrical products should not be disposed of with household waste.

Proper disposal of batteries is required. Refer to your local codes for disposal requirements.

Enphase Support: <https://enphase.com/contact/support>

Revision history

REVISION	DATE	DESCRIPTION
140-00279-05	August 2023	General editorial updates.
140-00279-04	July 2023	General editorial updates. Updated control sequence diagrams and introduced drill template, PCS disclaimer, and Anchor clip.
140-00279-03	May 2023	Added “Control (CTRL) Wiring between system components” section. Updated images (minimum clearance, mounting the bottom mounting bracket, and ID cover)
Previous releases		

Installer notes

Installer notes

IQ Battery-5P-QIG-EN-US-Rev05-2023-09-15

© 2023 Enphase Energy. All rights reserved. Enphase, the e and CC logos, IQ, and certain other marks listed at <https://enphase.com/trademark-usage-guidelines> are trademarks of Enphase Energy, Inc. in the US and other countries. Data subject to change.





IQ System Controller 3/3G

The Enphase IQ System Controller 3/3G connects the home to grid power, the IQ Battery system, and solar PV. It provides microgrid interconnect device (MID) functionality by automatically detecting and seamlessly transitioning the home energy system from grid power to backup power in the event of a grid failure. It consolidates interconnection equipment into a single enclosure and streamlines grid-independent capabilities of PV and storage installations by providing a consistent, pre-wired solution for residential applications.



IQ Series Microinverters

The high-powered smart grid-ready IQ Series Microinverters (M Series, IQ6, IQ7, and IQ8 Series) dramatically simplify the installation process



IQ Combiner 5/5C

Consolidates PV interconnection equipment into a single enclosure and streamlines IQ Series Microinverters and IQ Gateway installation by providing a consistent, pre-wired solution for residential applications



10-year limited warranty



IQ Battery 5P

Fully integrated AC battery system. Includes six field-replaceable IQ8D-BAT microinverters



IQ Load Controller

Helps prioritize essential appliances during a grid outage to optimize energy consumption and prolong battery life

Easy to install

- Connects to service entrance⁽¹⁾ or main load center
- Includes neutral-forming transformer
- Mounts on single stud with centered brackets
- Provides conduit entry from the bottom, left, or right
- Includes color-coded wires for ease of wiring the System Shutdown Switch
- Integrates hold-down functionality to eliminate the need for hold-down kits and special breakers

Flexible

- Can be used for Sunlight Backup, Home Essentials Backup, or Full Energy Independence
- IQ System Controller 3 integrates with IQ Battery 5P
- IQ System Controller 3G integrates with select AC standby generators. See the [Generator integration tech brief](#) for a list of generators
- Provides a seamless transition to backup

Safe and reliable

- System Shutdown Switch can be used to disconnect PV, battery, and generator systems
- System Shutdown Switch acts as a rapid shutdown initiator of grid-forming IQ8 PV Microinverters for the safety of maintenance technicians/first responders
- 10-year limited warranty

IQ System Controller 3/3G

DATASHEET

MODEL NUMBER	DESCRIPTION
SC200D111C240US01	IQ System Controller 3 streamlines the grid-independent capabilities of PV and storage installations. Integrates hold-down capability. Supports IQ Battery 5P units up to 40 kWh (without PCS*) and 80 kWh (with PCS*). Does not support generator integration
SC200G111C240US01	IQ System Controller 3G streamlines the grid-independent capabilities of PV and storage installations. Integrates hold-down capability. Supports IQ Battery 5P units up to 20 kWh (without PCS*) and 40 kWh (with PCS*). Supports generator integration
WHAT'S IN THE BOX	
IQ System Controller 3/3G	Includes neutral-forming transformer (NFT) and microgrid interconnect device (MID)
System Shutdown Switch	Includes pre-wired red, black, orange, and purple 12 AWG wire (EP200G-NA-02-RSD)
Wall-mounting bracket	Screws provided in the accessories kit for mounting
4-pole circuit breaker	Pre installed Quad breaker (BRK-20A40A-4P-240V), 20 A-40 A, 10 kAIC, Eaton BQC220240 ²
Accessories kit	IQ System Controller 3/3G literature kit, including labels, CTRL headers, screws, filler plates, and Quick Install Guide (QIG) (EP200G-LITKIT)
OPTIONAL ACCESSORIES AND REPLACEMENT PARTS	
CT-200-SPLIT	200 A split core current transformers for metering (accuracy: ±2.5%) ³
CT-200-CLAMP	200 A clamp-type current transformers for metering (accuracy: ±2.5%) ³
Main or load circuit breakers (order separately, as needed) ⁴	<ul style="list-style-type: none">BRK-100A-2P-240V : 2-pole, 100A, 25kAIC, CSR2100N or CSR2100BRK-125A-2P-240V: 2-pole, 125A, 25kAIC, CSR2125NBRK-150A-2P-240V: 2-pole, 150A, 25kAIC, CSR2150NBRK-175A-2P-240V: 2-pole, 175A, 25kAIC, CSR2175NBRK-200A-2P-240V: 2-pole, 200A, 25kAIC, CSR2200N
Distributed energy resource (DER) circuit breakers (order separately, as needed) ⁵	<ul style="list-style-type: none">BRK-20A-2P-240V-B: 2-pole, 20 A, 10 kAIC, BR220B/BR220BRK-30A-2P-240V-B: 2-pole, 30 A, 10 kAIC, BR230BRK-40A-2P-240V-B: 2-pole, 40 A, 10 kAIC, BR240B/BR240BRK-60A-2P-240V: 2-pole, 60 A, 10 kAIC, BR260BRK-80A-2P-240V: 2-pole, 80 A, 10 kAIC, BR280
EP200G-HNDL-R1	IQ System Controller 3/3G installation handle kit (order separately)
CTRL-SC3-NA-01	Control cable, 500 ft. spool (order separately)
ALTERNATE DER CIRCUIT BREAKERS	
GE/ABB	THQL21xx (20/40/60/80 A)
Siemens	Q2xx (20/40/60/80 A)
Siemens (quad breaker)	Q24020CT2 (20/40 A)
ELECTRICAL SPECIFICATIONS	
Nominal voltage/Range (L-L)	240 V~ ⁶ /±20%
Voltage measurement accuracy	±1% V nominal (±1.2V L-N and ±2.4V L-L)
Auxiliary (dry) contact for load control, excess PV control, and generator two-wire control	24 V, 1 A
Nominal frequency/Range	60 Hz/56–63 Hz
Frequency measurement accuracy	±0.1 Hz
Maximum continuous current rating	160 A
Maximum input overcurrent protection device	200 A
Maximum output overcurrent protection device	200 A
Maximum overcurrent protection device rating for generator circuit	80 A (IQ System Controller 3G only - SC200G111C240US01)
Maximum overcurrent protection device rating for storage circuit	2 x 80 A (IQ System Controller 3 - SC200D111C240US01), 1 x 80 A (IQ System Controller 3G - SC200G111C240US01)

(2) Factory installed quad breaker (Siemens or Eaton). NFT pre-wired to 40 A terminal of the quad breaker.

(3) Two units of CT-200-SPLIT or CT-200-CLAMP must be bought separately for generator integration.

(4) The IQ System Controller 3 is rated at 22 kAIC.

(5) Integrated hold-down kit support breakers (BR230/BR230/BR240) without predrilled hole.

Integrated hold-down kit also supports GE/ABB and Siemens as mentioned under section alternate DER circuit breakers.

(6) "~" indicates alternating current (AC) supply.

(*) Power Control System.

ELECTRICAL SPECIFICATIONS		
Maximum overcurrent protection device rating for PV combiner unit	80 A	
Internal busbar rating	200 A	
Neutral-forming transformer (NFT)	<ul style="list-style-type: none">• Breaker rating (pre-installed): 40 A between L1 and Neutral; 40 A between L2 and Neutral• Continuous rated power: 3,600 VA• Maximum continuous unbalance current: 30 A @ 120 V• Peak unbalanced current: 80 A @ 120 V for two seconds	
MECHANICAL DATA		
Dimensions (WxHxD)	50 cm x 91.6 cm x 24.6 cm (19.7 in x 36 in x 9.7 in)	
Weight	39.4 kg (87 lbs)	
Ambient temperature range	-40°C to 50°C (-40°F to 122°F)	
Cooling	Natural convection and a heat shield	
Enclosure environmental rating	Outdoor, NEMA type 3R, polycarbonate construction	
Maximum altitude	2500 meters (8200 feet)	
WIRE SIZES		
Connections (All lugs are rated to 90°C)	Main lugs and backup load lugs CSR breaker bottom wiring lugs AC combiner lugs, IQ Battery lugs, and generator lugs Neutral (large lugs)	Cu/Al: 6 AWG–300 kcmil Cu/Al: 2 AWG–300 kcmil 14 AWG–2 AWG Cu/Al: 6 AWG–300 kcmil
Neutral and ground bars	Large holes (5/16–24 UNF) Small holes (10–32 UNF)	14 AWG–1/0 AWG 14 AWG–6 AWG
COMPLIANCE		
Compliance (under progress)	UL 1741, UL 1741 SA, IEEE 1547:2018 (UL 1741-SB, 3rd Ed.), UL 1741 PCS CRD, UL1 998, UL 869A, UL 675, UL 508 ⁷ , UL 50E ⁷ CSA 22.2 No. 107.1, 47 CFR Part 15 Class B, ICES 003, ICC ES AC156. The IQ System Controller 3/3G is approved for use as service equipment in the United States	
WARRANTY		
Limited warranty (restrictions apply)	Up to 10 years (EP200G-NA-02-RSD has a 5-year warranty)	
COMPATIBILITY ⁸		
Battery	IQ Battery 5P (IQBATTERY-5P-1P-NA)	
Microinverters	IQ8, IQ7, IQ6, and M Series Microinverters ⁹	
IQ Combiner	IQ Combiner 5/5C (X-IQ-AM1-240-5C, X-IQ-AM1-240-5)	
Communications Kit 2	COMMS-KIT-02	

(7) Sections from these standards were used during the safety evaluation and included in the UL 1741 listing.

(8) For more details, refer to IQ System Controller 3/3G Quick Install Guide.

(9) M Series Microinverters can only be supported in states that have not yet adopted IEEE 1547:2018.

Enphase does not support mixing IQ8 Series Microinverters with other series on the same IQ Gateway.

Figure 1A: Installing DER breakers for IQ8 System without generator

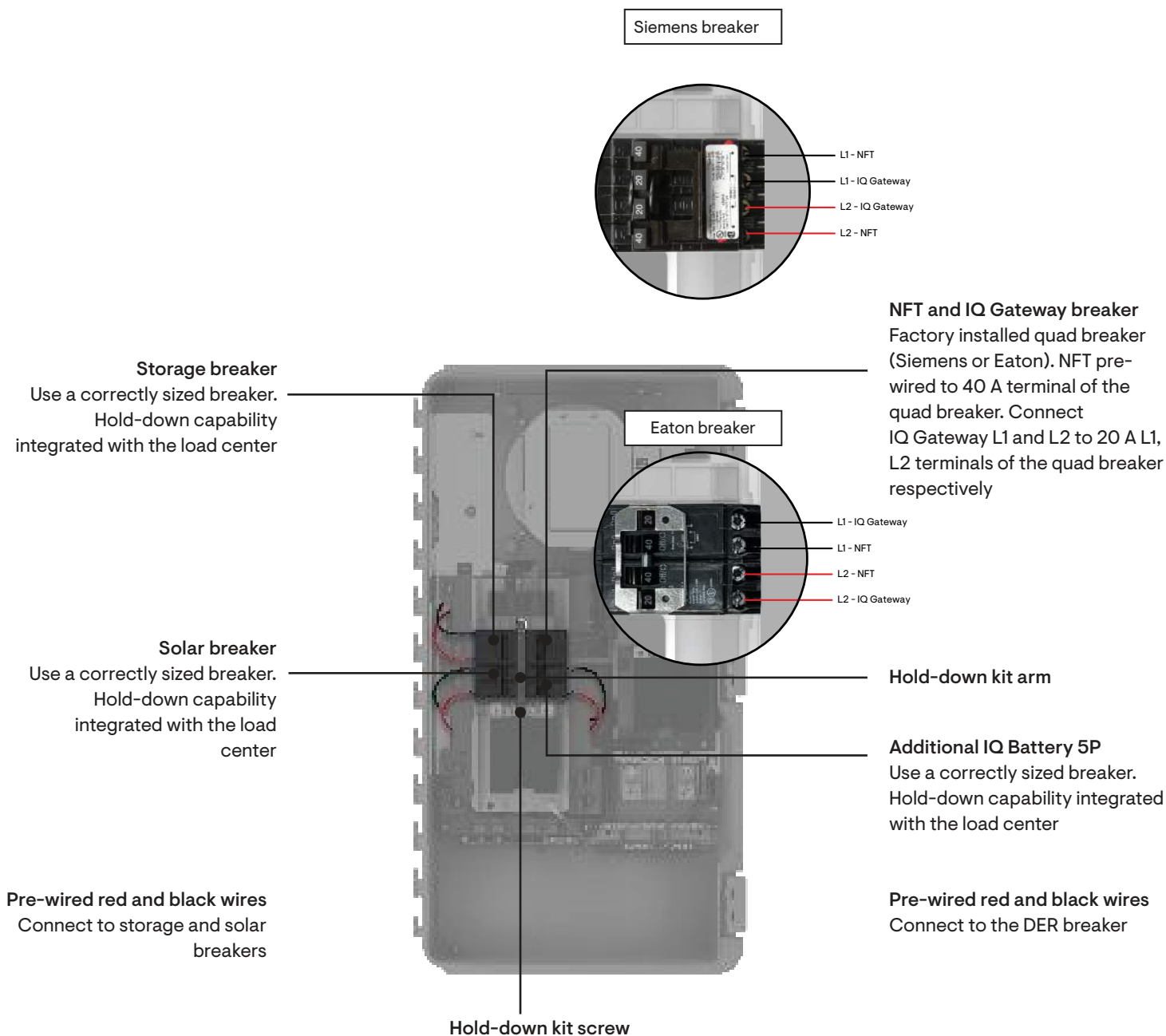


Figure 1B: Installing DER breakers for IQ8 System with generator

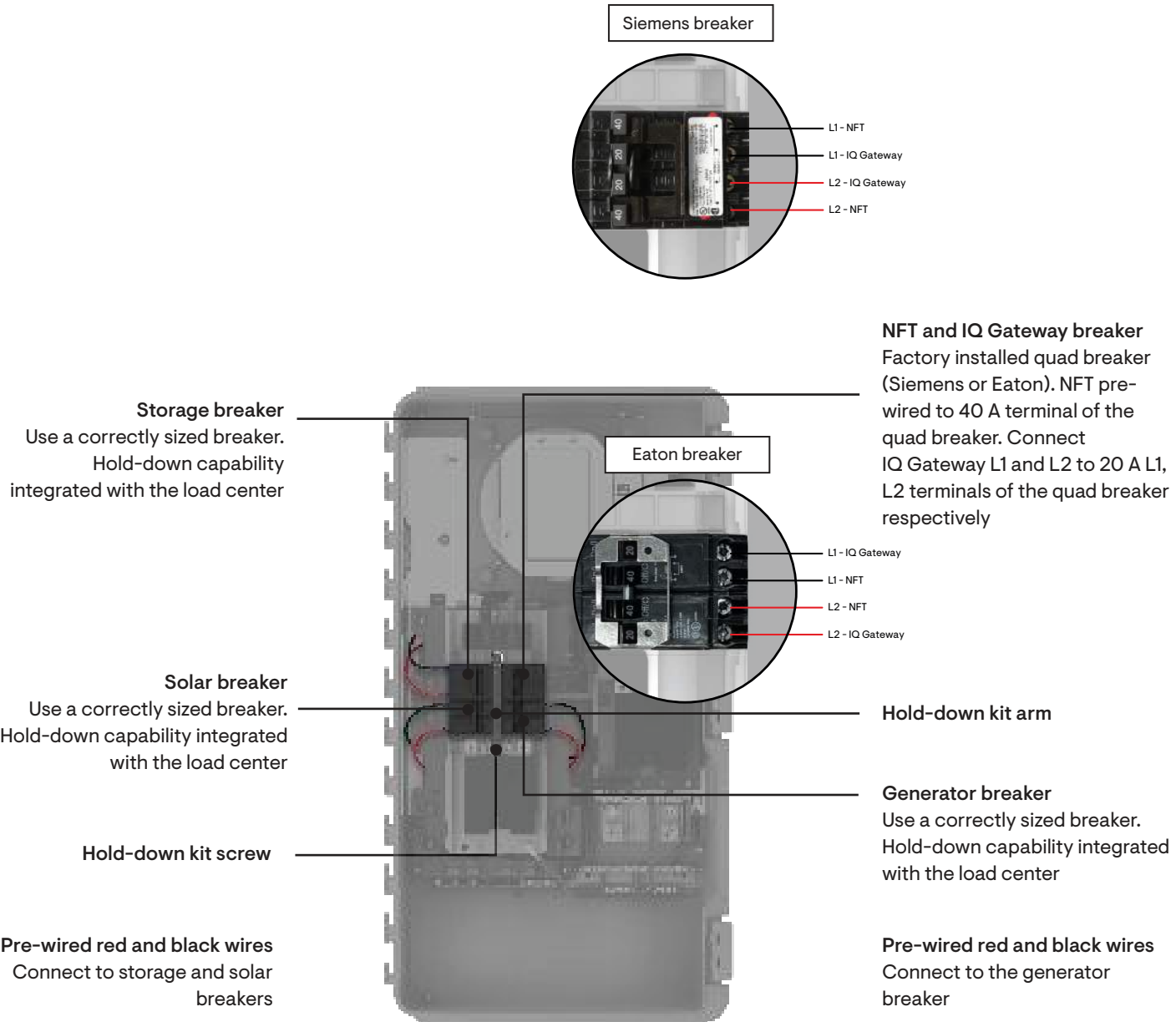
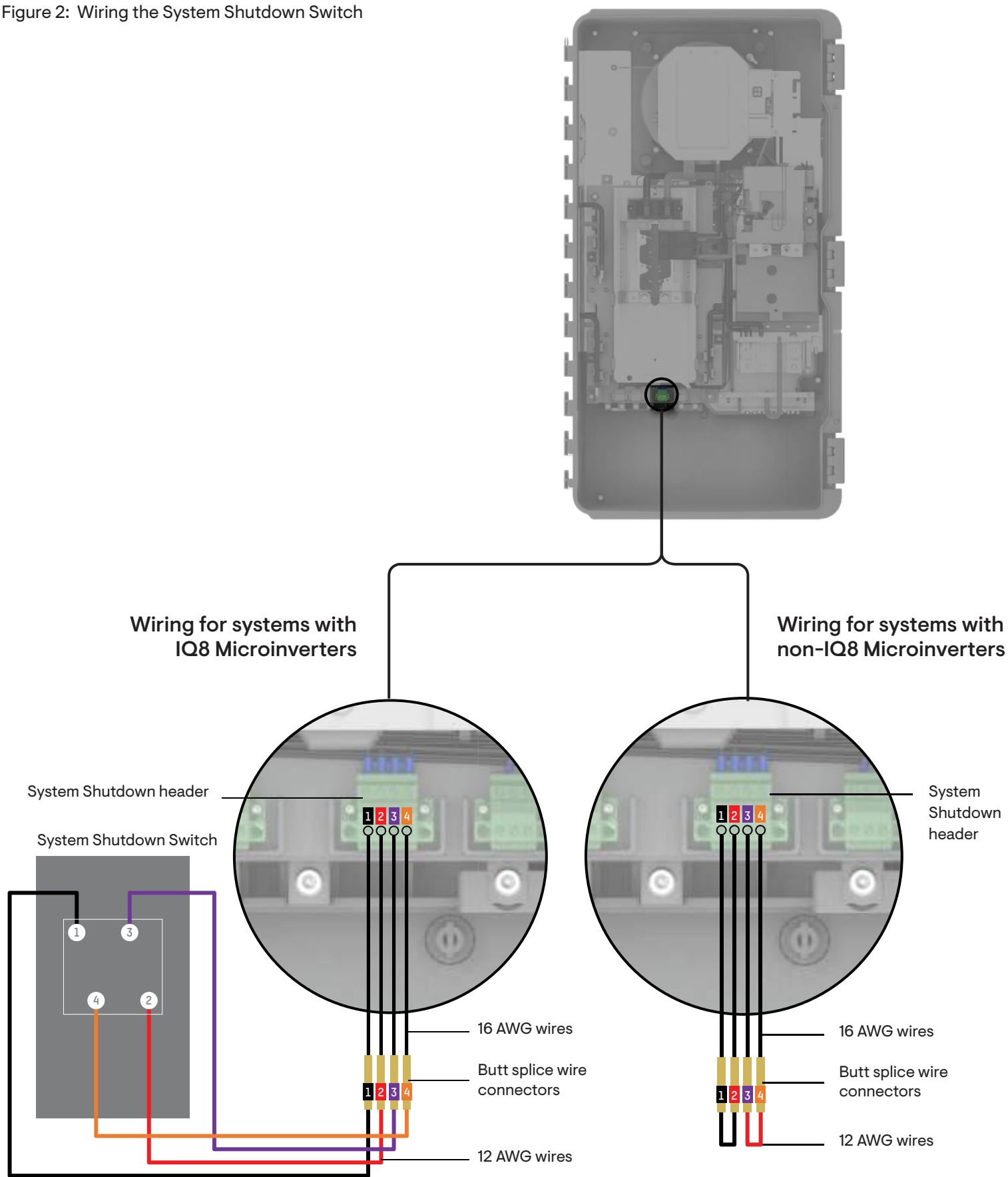


Figure 2: Wiring the System Shutdown Switch



Revision history

REVISION	DATE	DESCRIPTION
DSH-00021-3.0	August 2023	Updated the section "Optional accessories and replacement parts"
DSH-00021-2.0	July 2023	Added new section "Alternative breakers for Eaton load centre"
DSH-00021-1.0	May 2023	Initial release



IQ8 Series Microinverters

Our newest IQ8 Microinverters are the industry's first microgrid-forming, software-defined microinverters with split-phase power conversion capability to convert DC power to AC power efficiently. The brain of the semiconductor-based microinverter is our proprietary application-specific integrated circuit (ASIC) which enables the microinverter to operate in grid-tied or off-grid modes. This chip is built in advanced 55nm technology with high speed digital logic and has super-fast response times to changing loads and grid events, alleviating constraints on battery sizing for home energy systems.



Part of the Enphase Energy System, IQ8 Series Microinverters integrate with the Enphase IQ Battery, Enphase IQ Gateway, and the Enphase App monitoring and analysis software.



IQ8 Series Microinverters redefine reliability standards with more than one million cumulative hours of power-on testing, enabling an industry-leading limited warranty of up to 25 years.



Connect PV modules quickly and easily to IQ8 Series Microinverters using the included Q-DCC-2 adapter cable with plug-n-play MC4 connectors.



IQ8 Series Microinverters are UL Listed as PV Rapid Shut Down Equipment and conform to various regulations, when installed according to manufacturer's instructions.

Easy to install

- Lightweight and compact with plug-n-play connectors
- Power Line Communication (PLC) between components
- Faster installation with simple two-wire cabling

High productivity and reliability

- Produce power even when the grid is down*
- More than one million cumulative hours of testing
- Class II double-insulated enclosure
- Optimized for the latest high-powered PV modules

Microgrid-forming

- Complies with the latest advanced grid support**
- Remote automatic updates for the latest grid requirements
- Configurable to support a wide range of grid profiles
- Meets CA Rule 21 (UL 1741-SA) requirements

IQ8 Series Microinverters

INPUT DATA (DC)		IQ8-60-2-US	IQ8PLUS-72-2-US	IQ8M-72-2-US	IQ8A-72-2-US	IQ8H-240-72-2-US	IQ8H-208-72-2-US ¹
Commonly used module pairings ²	W	235 – 350	235 – 440	260 – 460	295 – 500	320 – 540+	295 – 500+
Module compatibility		60-cell/120 half-cell, 66-cell/132 half-cell and 72-cell/144 half-cell					
MPPT voltage range	V	27 – 37	29 – 45	33 – 45	36 – 45	38 – 45	38 – 45
Operating range	V	25 – 48			25 – 58		
Min/max start voltage	V	30 / 48			30 / 58		
Max input DC voltage	V	50			60		
Max DC current ³ (module Isc)	A			15			
Overvoltage class DC port				II			
DC port backfeed current	mA	0					
PV array configuration		1x1 Ungrounded array; No additional DC side protection required; AC side protection requires max 20A per branch circuit					
OUTPUT DATA (AC)		IQ8-60-2-US	IQ8PLUS-72-2-US	IQ8M-72-2-US	IQ8A-72-2-US	IQ8H-240-72-2-US	IQ8H-208-72-2-US ¹
Peak output power	VA	245	300	330	366	384	366
Max continuous output power	VA	240	290	325	349	380	360
Nominal (L-L) voltage/range ⁴	V			240 / 211 – 264			208 / 183 – 250
Max continuous output current	A	1.0	1.21	1.35	1.45	1.58	1.73
Nominal frequency	Hz			60			
Extended frequency range	Hz			50 – 68			
AC short circuit fault current over 3 cycles	Arms			2			4.4
Max units per 20 A (L-L) branch circuit ⁵		16	13	11	11	10	9
Total harmonic distortion				<5%			
Overvoltage class AC port				III			
AC port backfeed current	mA			30			
Power factor setting				1.0			
Grid-tied power factor (adjustable)				0.85 leading – 0.85 lagging			
Peak efficiency	%	97.5	97.6	97.6	97.6	97.6	97.4
CEC weighted efficiency	%	97	97	97	97.5	97	97
Night-time power consumption	mW			60			
MECHANICAL DATA							
Ambient temperature range		-40°C to +60°C (-40°F to +140°F)					
Relative humidity range		4% to 100% (condensing)					
DC Connector type		MC4					
Dimensions (HxWxD)		212 mm (8.3") x 175 mm (6.9") x 30.2 mm (1.2")					
Weight		1.08 kg (2.38 lbs)					
Cooling		Natural convection – no fans					
Approved for wet locations		Yes					
Pollution degree		PD3					
Enclosure		Class II double-insulated, corrosion resistant polymeric enclosure					
Environ. category / UV exposure rating		NEMA Type 6 / outdoor					
COMPLIANCE							
Certifications		This product is UL Listed as PV Rapid Shut Down Equipment and conforms with NEC 2014, NEC 2017, and NEC 2020 section 690.12 and C22.1-2018 Rule 64-218 Rapid Shutdown of PV Systems, for AC and DC conductors, when installed according to manufacturer's instructions.					

(1) The IQ8H-208 variant will be operating in grid-tied mode only at 208V AC. (2) No enforced DC/AC ratio. See the compatibility calculator at <https://link.enphase.com/module-compatibility> (3) Maximum continuous input DC current is 10.6A (4) Nominal voltage range can be extended beyond nominal if required by the utility. (5) Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

IQ8SE-DS-0001-01-EN-US-2022-03-17

MSE PERC 66

MISSION SOLAR
ENERGY

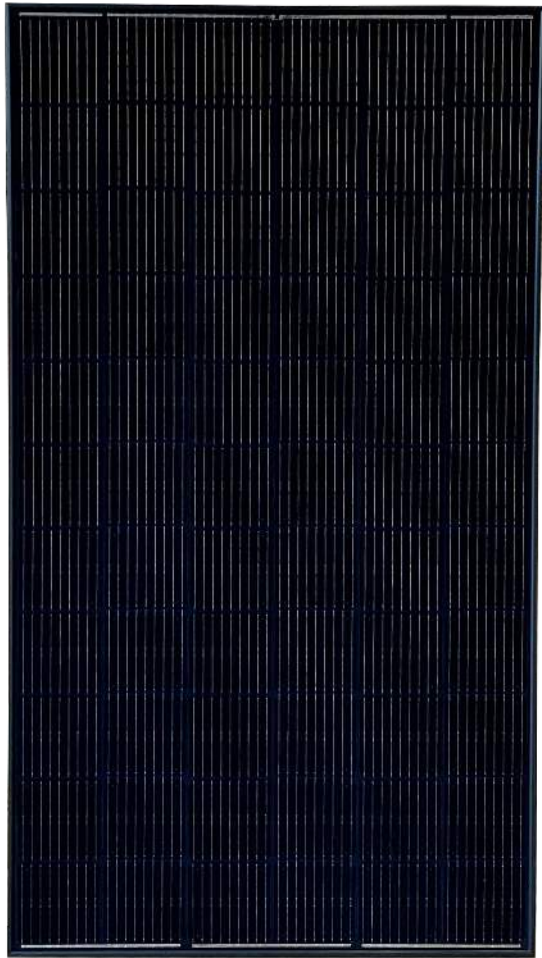


395W

Class leading power output

Positive
Power
Tolerance

-0 to +3%



True American Quality True American Brand

Mission Solar Energy is headquartered in San Antonio, Texas where we manufacture our modules. We produce American, high-quality solar modules ensuring the highest-in-class power output and best-in-class reliability. Our product line is tailored for residential, commercial and utility applications. Every Mission Solar Energy solar module is certified and surpasses industry standard regulations, proving excellent performance over the long term.

Demand the best. Demand Mission Solar Energy.



Certified Reliability

- Tested to UL 61730 & IEC Standards
- PID resistant
- Resistance to salt mist corrosion



Advanced Technology

- 9 Busbar
- Passivated Emitter Rear Contact
- Ideal for all applications



Extreme Weather Resilience

- Up to 5,400 Pa front load & 3,600 Pa back load
- Tested load to UL 61730
- 40 mm frame



BAA Compliant for Government Projects

- Buy American Act
- American Recovery & Reinvestment Act

FRAME-TO-FRAME WARRANTY

Degradation guaranteed not to exceed 2% in year one and 0.58% annually from years two to 30 with 84.08% capacity guaranteed in year 25.

For more information, visit www.missionsolar.com/warranty

CERTIFICATIONS

CEC

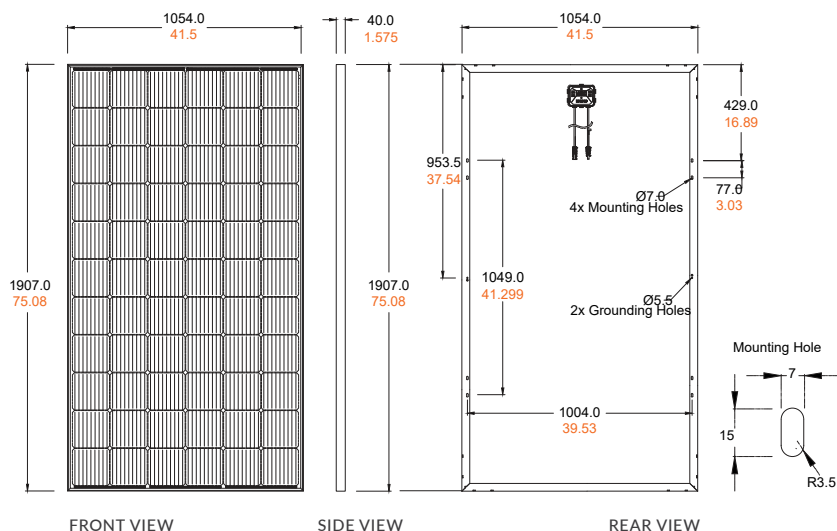


UL 61730 / IEC 61215 / IEC 61730 / IEC 61701

If you have questions or concerns about certification of our products in your area, please contact Mission Solar Energy.

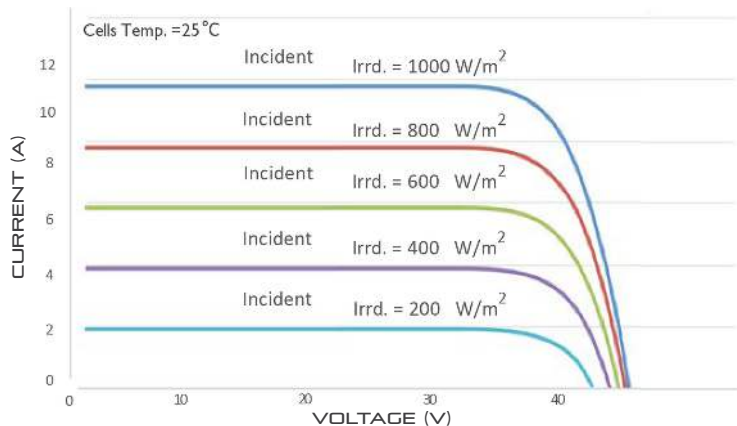


[UNITS: MM/IN]



MSE385SX9R: 385WP, 66 CELL SOLAR MODULE

Current-voltage characteristics with dependence on irradiance and module temperature



IEC	61215, 61730, 61701
UL	61730



PRODUCT TYPE	MSE $_{xxx}$ SX9R ($xxx = P_{max}$)
--------------	---------------------------------------

Power Output	P_{\max}	W_p	390	395	400
Module Efficiency		%	19.4	19.7	19.9
Tolerance		%	0/+3	0/+3	0/+3
Short Circuit Current	I_{sc}	A	11.19	11.24	11.31
Open Circuit Voltage	V_{oc}	V	45.04	45.18	45.33
Rated Current	I_{mp}	A	10.63	10.68	10.79
Rated Voltage	V_{mp}	V	36.68	36.99	37.07
Fuse Rating		A	20	20	20
System Voltage		V	1,000	1,000	1,000

Normal Operating Cell Temperature (NOCT)	43.75°C (±3.7%)
Temperature Coefficient of Pmax	-0.367%/°C
Temperature Coefficient of Voc	-0.259%/°C
Temperature Coefficient of Isc	0.033%/°C

Maximum System Voltage	1,000Vdc
Operating Temperature Range	-40°F to 185°F (-40°C to +85°C)
Maximum Series Fuse Rating	20A
Fire Safety Classification	Type 1*
Front & Back Load (UL Standard)	Up to 5,400 Pa front and 3,600 Pa back load, Tested to UL 61730
Hail Safety Impact Velocity	25mm at 23 m/s

**Mission Solar Energy uses quality sourced materials that result in a Type 1 fire rating. Please note, the 'Fire Class' Rating is designated for the fully-installed PV system, which includes, but is not limited to, the module, the type of mounting used, pitch and roof composition.*

Solar Cells	P-type mono-crystalline silicon
Cell Orientation	66 cells (6x11)
Module Dimension	1,907mm x 1,054mm x 40mm
Weight	48.5 lbs. (22 kg)
Front Glass	3.2mm tempered, low-iron, anti-reflective
Frame	40mm Anodized
Encapsulant	Ethylene vinyl acetate (EVA)
Junction Box	Protection class IP67 with 3 bypass-diodes
Cable	1.2m, Wire 4mm2 (12AWG)
Connector	Staubli PV-KBT4/6II-UR and PV-KST4/6II-UR, MC4, Renhe 05-8

Container Feet	Ship To	Pallet	Panels	390W Bin
53'	Most States	30	780	304.20 kW
Double Stack	CA	26	676	263.64 kW

PALLET [26 PANELS]

Weight	Height	Width	Length
1,300 lbs.	47.56 in	46 in	77 in
(572 kg)	(120.80 cm)	(116.84 cm)	(195.58 cm)

Mission Solar Energy

8303 S. New Braunfels Ave., San Antonio, Texas 78235
www.missionsolar.com | info@missionsolar.com