

# Install the Enphase IQ Battery

To install the Enphase IQ Battery 3 or IQ Battery 10 and the Enphase wall-mount bracket, read and follow all warnings and instructions in this guide. Safety warnings are listed at the end of the guide. These instructions are not meant to completely explain how to design and install an energy storage system. All installations must comply with the national and local electrical codes and standards. Only qualified electricians shall install, troubleshoot, or replace the IQ Battery 3 or IQ Battery 10.

The IQ Battery includes the Enphase IQ Battery(ies) with integrated Enphase IQ Microinverters. The Enphase IQ Gateway communication gateway measures PV production and home energy consumption. The IQ Battery senses when it is optimal to charge or discharge the battery so that energy is stored when it is abundant and used when scarce. IQ Batteries are capable of providing power backup when an Enphase IQ System Controller is installed at the site.

Five unique installation scenarios are shown below:

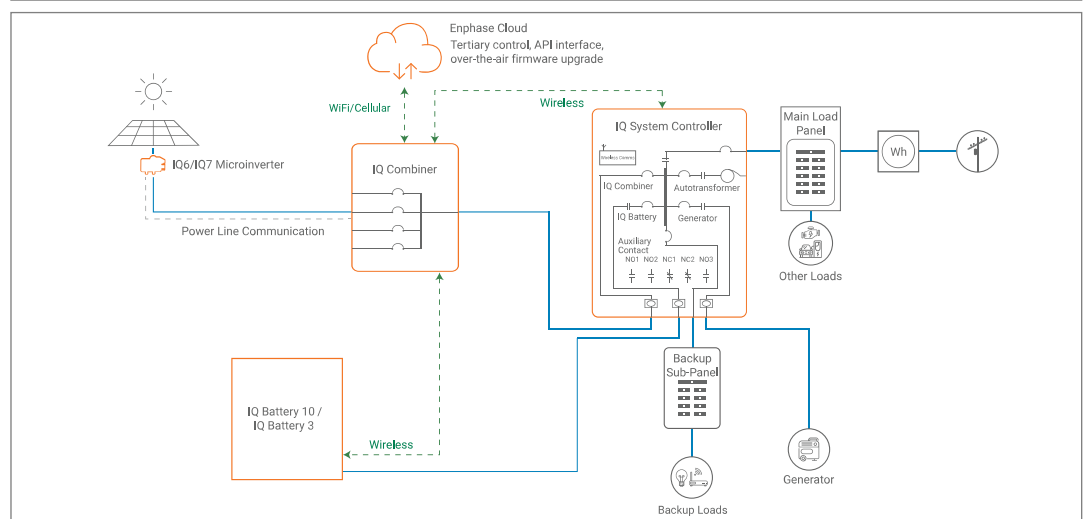
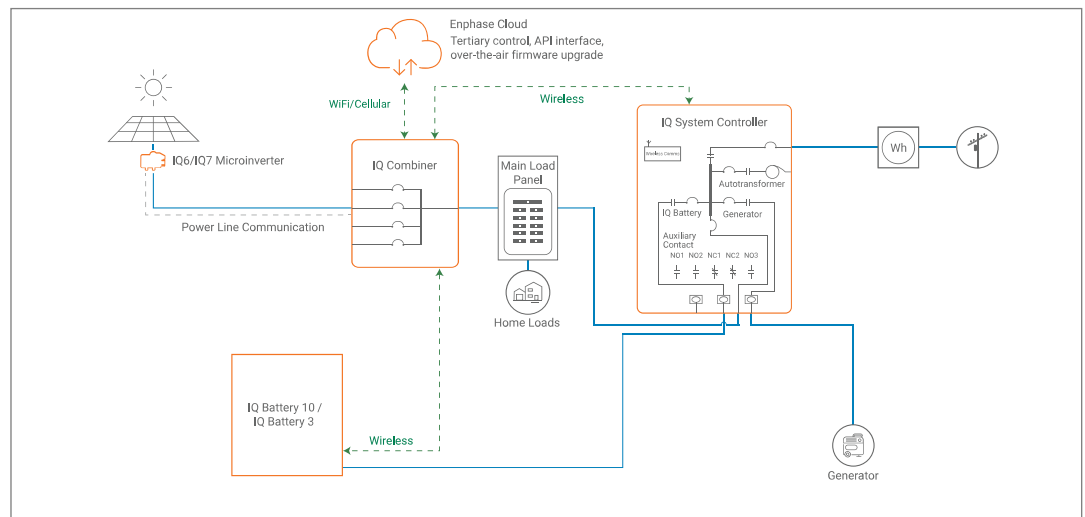
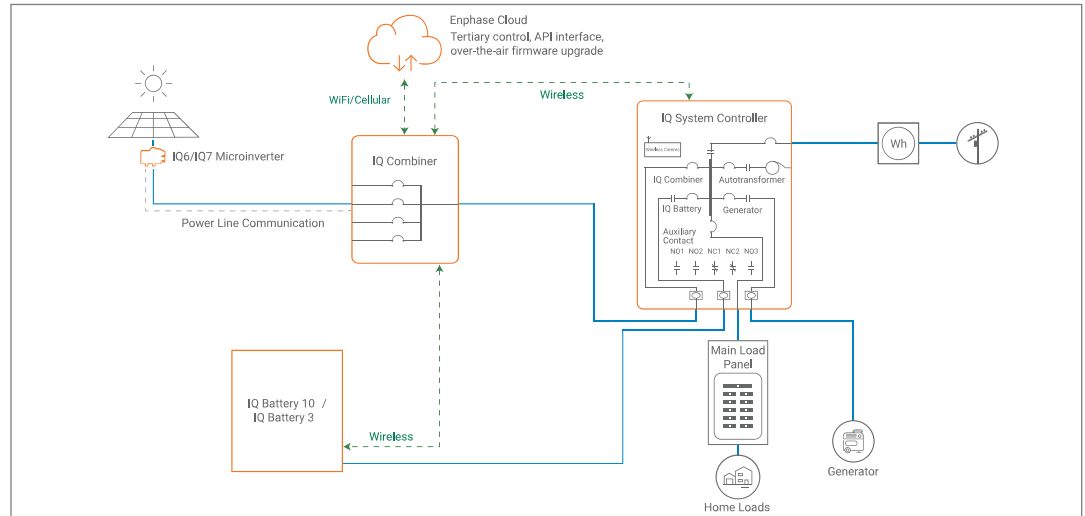
*Whole home backup with the IQ System Controller as service entrance and PV combiner connected to IQ System Controller. This is the preferred configuration for back-up of the entire main load panel. This configuration supports up to an 80 A breaker for the PV circuit and an 80 A breaker for battery storage.*

## NOTE:

1. For M215/M250 connection to Enphase Energy System, refer tech brief at <https://enphase.com/en-us/storage-m-series>.
2. M Series Microinverters require the IQ Gateway Metered.

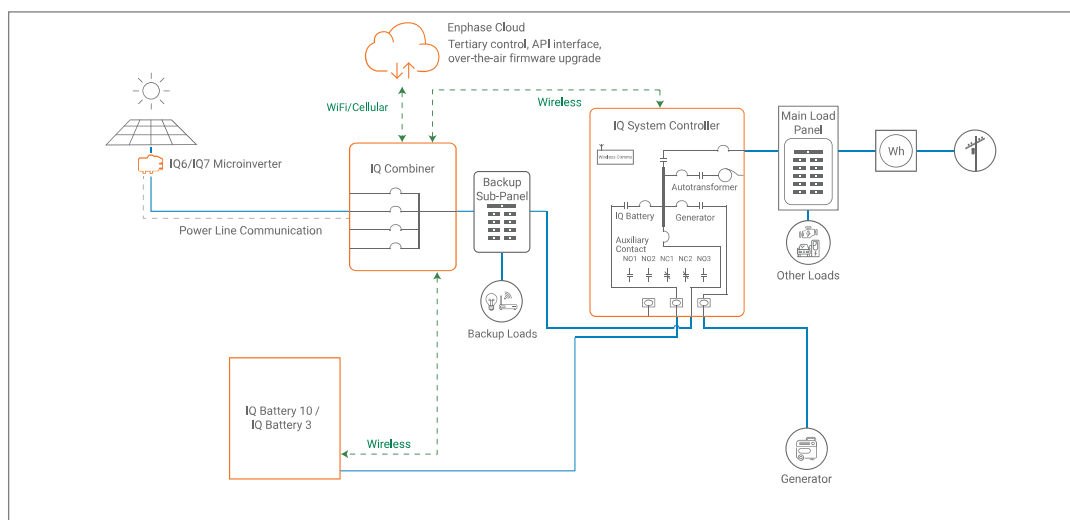
*Whole home backup with the IQ System Controller as service entrance and PV combiner connected to main load panel. This is the preferred configuration when you back up the entire main load panel and the size of the PV combiner circuit is more than 80 A. In this configuration, the PV combiner circuit connection space in the IQ System Controller is left vacant. When existing PV combiner circuits are connected to the main load panel, and you want to add battery storage to the system, you can keep the PV combiner connected to the main load panel and connect only the battery storage system to the IQ System Controller.*

*Partial home backup with main load panel as service entrance and PV combiner connected to the IQ System Controller. When the PV circuit breaker size is less than 80 A, this is the preferred configuration for partial home backup with a subpanel.*

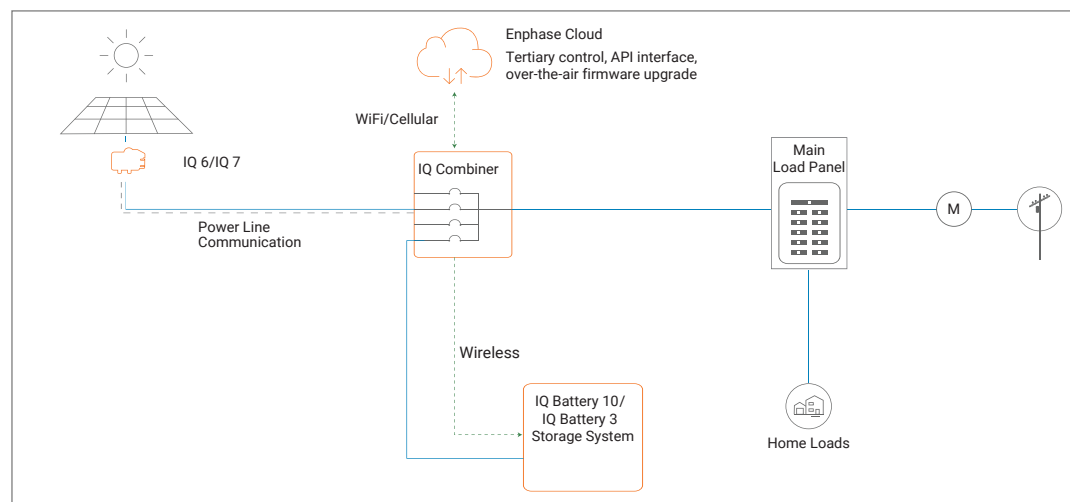


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Partial home backup with main load panel as service entrance and PV combiner connected to the subpanel. This is the preferred connection configuration for partial home backup using a subpanel when the PV circuit breaker size is more than 80 A. The space available in the IQ System Controller for combiner (solar) connection is left vacant.



Self-consumption, no IQ System Controller. The preferred configuration is when adding battery storage and PV for self-consumption in a grid-tied application with no option for backup during outages. PV and IQ Battery will not operate when the grid is unavailable.



## PREPARATION

- Inspect the packaging and the IQ Battery(ies) for damage, such as cracks, dents, or leaking electrolytes. Do not install or use the IQ Battery(ies) if it has been damaged in any way. If damaged, contact your distributor for replacement.
- Ensure that your kit includes the following IQ Battery components:
  - The **IQ Battery 10** includes three batteries and two inter-unit raceways, an IQ Battery 10 triple-width cover, and a triple-width mounting bracket.
  - The **IQ Battery 3** includes one battery and a single-width cover with a mounting bracket.

✓ **NOTE:** 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 to discuss the next steps.

⚠ **WARNING:** Risk of injury. Take care when lifting. The IQ Battery unit is heavy (44.2 kg/ 97.4 lb) and requires two persons to lift.
- Ensure you have the following required Enphase items for backup systems:
  - An Enphase IQ System Controller with microgrid interconnect device (MID) functionality and an Enphase IQ Combiner.
  - The Enphase IQ Battery 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](https://enphase.com/warranty) for full terms.
  - Wireless communications kit (COMMS-KIT-01) to be installed at the IQ Gateway for communications with IQ Battery and IQ System Controller. Includes USB cable for connection to IQ Gateway / IQ Combiner and allows wireless communication with IQ Battery and IQ System Controller.
  - IQ Battery lifting handles, two pieces (ENCHARGE-HNDL-R1).
- Make sure you also have the following required items:
  - Mounting location that is structurally suited to bearing the weight of the IQ Battery(ies). the total weight for the IQ Battery 3, including the IQ Battery base unit, cover, and wall-mount bracket, is 52 kg (114.6 lb).

Total weight for the IQ Battery 10, including the three IQ Battery base units, cover, and wall-mount bracket, is 154.7 kg (341 lb). The wall must contain blocked studs that can bear the battery weight or can be made of masonry or other suitable structures.

- Tools: Conduit (with fittings and fitting tools), drill, 5/32 inch pilot bit (or metric equivalent), screwdriver, socket wrench, torque wrench, level, wire stripper, and stud finder if installing on studs.
  - Fasteners for wall-mount bracket. Slots are 6.8 mm (0.27 inch). Check with a structural engineer and local standards for requirements:
    - Single-wide bracket: Three 1/4" lag bolts or screws, 7.6 cm (3 inch) long (depending on attachment wall).
    - Triple-wide bracket: Nine 1/4" lag bolts or screws, 7.6 cm (3 inch) long (depending on attachment wall).
  - Washers for use between fastener heads and wall-mount brackets.
  - Copper conductors: No. 14-8 AWG (11mm/7/16 inch strip length) copper conductors rated at 75°C or 90°C (167°F to 194°F) for terminals.
  - Conduit fittings: 3/4 inch (left side) and 1/2 inch (right side) hubs are required for all installations, and NEMA Type 3R conduit fittings (hubs) are needed when installing out of doors (one for each used conduit opening). Also needed are conduit plugs to close unused conduit openings and conduit grounding nuts.
  - Overcurrent protection: The overcurrent protection in the IQ Battery is not branch circuit overcurrent protection and cannot be relied upon for that purpose. The branch circuit overcurrent protection is located in the IQ System Controller or, when combining in a separate combiner. See the Enphase IQ System Controller Quick Install Guide for more information.
  - Personal protective equipment (PPE) for handling lithium batteries as required by local safety standards.
- 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.
  - Install the PV system and the IQ Combiner as directed by the Enphase installation manuals.

# INSTALLATION

## 1 Plan a location for the IQ Batteries

The IQ Battery housing is NEMA type 3R and can be installed indoors or outdoors. The terminal blocks accept copper conductors of No. 14–8 AWG.

- A) Following local standards, choose a well-ventilated location where the ambient temperature and humidity are within -15°C to 55°C (5°F to 131°F) and 5% to 100% RH, non-condensing, preferably out of direct sunlight. The optimum ambient temperature range for installation location is 0°C to 30°C (32°F to 86°F).
- B) Ensure that the mounting location can sustain the total weight of the IQ Batteries and mounting bracket. The Total weight for the IQ Battery 3, including the IQ Battery base unit, cover and wall-mount bracket, is 52 kg (114.6 lb). Total weight for the IQ Battery 10, including the three IQ Battery base units, cover, and wall-mount bracket, is 154.7 kg (341 lb).

**⚠ WARNING:** The installer should install blocking between studs to ensure that no single stud carries the entire weight load of the IQ Batteries.

- C) Plan the mounting location to be at least 15 cm (6 inches) off the ground and 15cm (6 inches) from the ceiling. Keep the IQ Battery away from falling or moving objects, including motor vehicles.

**⚠ WARNING:** If mounted in the path of a motor vehicle, we recommend a mounting height that is 91 cm (36 inches) minimum above the floor.

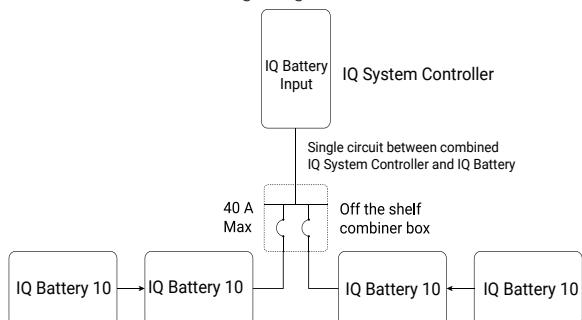
- D) Ensure that there are no pipes or electrical wires where you plan to drill.
- E) Plan to maintain at least three feet of clearance in front of each IQ Battery. Allow at least 15cm (6 inches) clearance on the top and bottom of the IQ Battery so that the vents on the top and bottom of the units are not blocked for air circulation.
- F) Consider the dimensions of the IQ Batteries, easy access, height, and length of cable when selecting the location.
- G) Select a location where you can interconnect to the Enphase IQ System Controller.
- H) Follow all local standards.
- J) Review your external conduit plan to determine to which side of the field wiring compartment you will connect the conduit.

- K) Up to two IQ Battery 10 (or six IQ Battery 3) units can be daisy-chained on a single branch circuit. For installations with more than this number of units, there must be a separate load center, subpanel, or circuit combiner with overcurrent protection to combine the daisy-chained circuits, and you must run only one circuit for all the IQ Battery units to the IQ System Controller (or to Enphase IQ Combiner for grid-tied-only installations). You must select proper conductors and circuit breakers for these circuits according to local codes, standards, and other applicable requirements. IQ System Controller supports up to a maximum of 80 A breakers for IQ Battery connection circuit.

The subpanel could be a small, two-circuit box with circuit breakers. The circuit breakers in the box would have to be suitable for back-feeding, per NEC 408.36(D).

Select the subpanel and breakers of the right size based on the number of IQ Battery units being installed. Up to four IQ Battery 10s or twelve IQ Battery 3s can be safely connected to 80 A load center.

To do this, you must purchase an off-the-shelf subpanel and install it as shown in the following image:



**⚠ WARNING!** Parallel power production sources only. Do not connect load circuits.

## 2 Install the AC disconnect

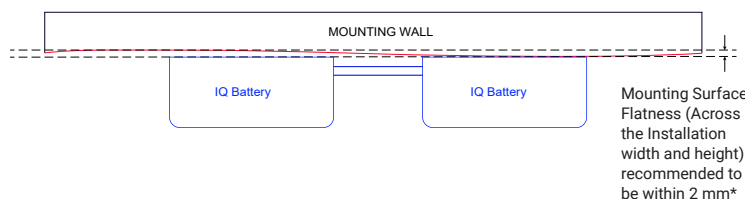
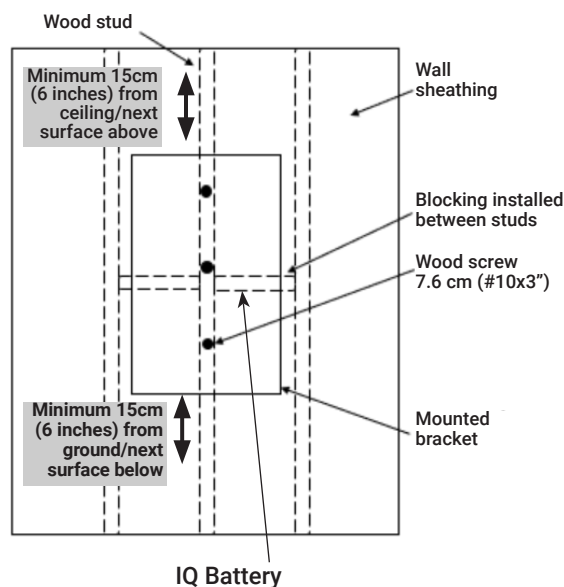
Following all local codes and standards:

- A) Install an AC disconnect that can break the maximum rated current of the branch circuit under load. The AC disconnect must be readily accessible and located within line-of-sight of IQ Battery, per NEC 2017 706.7(A).
- B) Each IQ Battery unit is suitable for use with up to No. 8 AWG wires on a maximum 40 A branch circuit. If more than 32 A of IQ Batteries (corresponding to a 40 A branch circuit) are installed, a separate subpanel must be installed between the IQ Battery units and IQ System Controller to combine the IQ System Controller circuits together. All circuit breakers in the subpanel must be suitable for back-feeding, per NEC 408.36(D).
- C) Verify that AC voltage at the site is within range: single-phase L1 to L2 voltage must measure between 211 and 264 VAC, while L-N should measure between 106 and 132 VAC.

## 3 Prepare to install the wall-mount bracket

- A) Make sure that the planned position for the wall-mount bracket meets clearance requirements as shown. The image depicts a single bracket, but clearances and requirements are the same for the triple-width bracket.
- B) Ensure that the mounting location can sustain the weight of the IQ Batteries and mounting bracket. Total weight for the IQ Battery 3, including the mounting brackets and the cover is 52 kg (114.6 lb), while the total weight for IQ Battery 10, including the mounting bracket and cover adds up to 154.7 kg (341 lb).
- C) Starting at the installation position closest to the power source, mark a level line on the wall as a guide.

**⚠ WARNING!** Multiple risks. Make sure not to drill or attach to electric wiring or pipes that are in the wall!



✓ **NOTE:** The above-specified surface flatness requirement is applicable to all the combinations of IQ Battery 3 and 10.

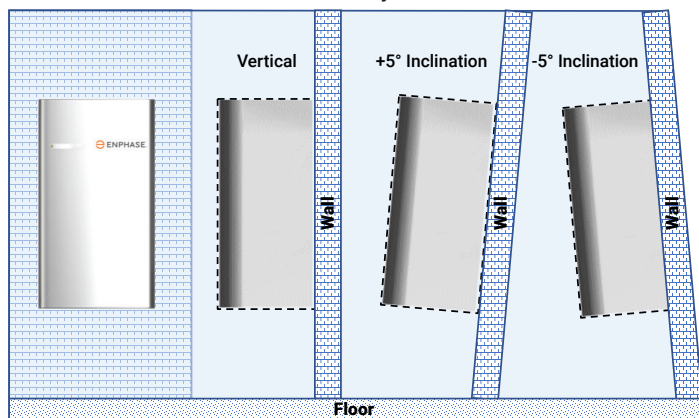
\* If the difference in flatness is more than 2 mm, recommend installing a substructure like unistrut for better alignment of the units.

## 4 Install the IQ Battery 3 (single width) or IQ Battery 10 (triple width) wall-mount bracket

Follow the instructions below for the bracket style (single-width or triple-width) you are installing.

**⚠ WARNING!** Risk of injury and equipment damage. Attach the wall mount to the wall so that it is no more than five percent vertical. See the following image for reference:

### Allowable tilt from vertical for IQ Battery installation



### IQ Battery 3 – single-width bracket

- Place the wall-mount bracket on the wall so that the mounting holes in the middle of the bracket align with the center of the stud.
- Use a level to keep the bottom of the wall-mount bracket level.
- Use 1/4 inch screws (or masonry attachments for masonry) to attach the bracket using one screw and washer for each slot (6.8 mm / 0.27 inch). Tighten all the screws to manufacturer's specified torque values.

- Verify that the wall-mount bracket is solidly attached to the wall. You must use four screws in each mounting bracket.

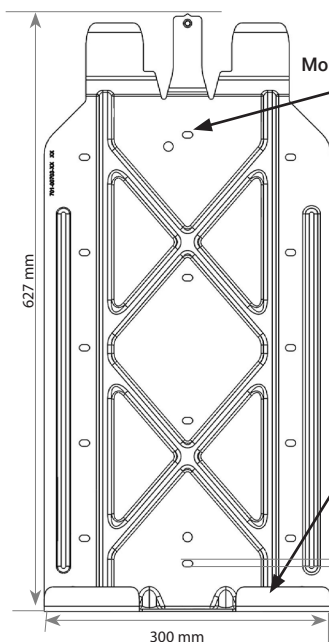
**⚠ WARNING!** Risk of injury and equipment damage. Do not mount an IQ Battery 3 on a bracket that is not properly mounted.

- If installing additional batteries, install adjacent wall-mount brackets, as needed. Be sure to align the mounting holes in the wall-mount bracket to the center of the wall stud. You may install another row of brackets above the one already installed. Maintain at least 15 cm (six inch) vertical clearance between rows of IQ Battery installations, and ensure that the wall can support the structural load (weight) of the installation.

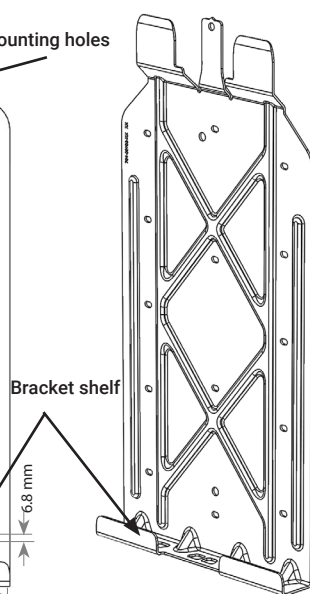
**⚠ WARNING!** Risk of injury and equipment damage. Do not install more than three IQ Battery 3 units per 20 A branch circuit.

### IQ Battery 3 wall-mount bracket

#### Front view



#### Angle view



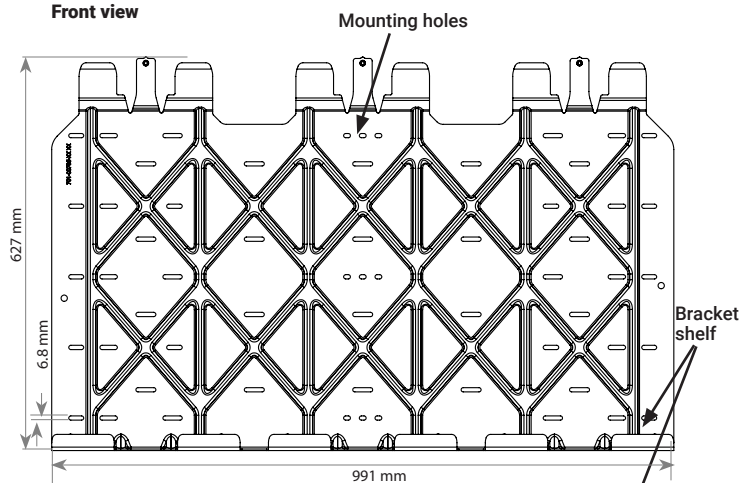
### IQ Battery 10 – triple-width bracket

- Place the wall-mount bracket on the wall so that the mounting holes in the middle of the bracket align with the center of the stud and the mounting holes on the left and right align with the adjacent studs.
  - Use a level to keep the bottom of the wall-mount bracket level.
  - Use 1/4 inch screws (or masonry attachments for masonry) to attach the bracket using one screw and washer for each slot (6.8 mm/0.27 inch). Use screws in each section of the mounting bracket to support the three IQ Battery units. There is an array of slots so that you can choose those that allow you to mount the bracket on studs. Tighten all the screws to the manufacturer's specified torque values.
  - Verify that the wall-mount bracket is solidly attached to the wall.
- ⚠ WARNING!** Risk of injury and equipment damage. Do not mount 10 IQ Batteries on a bracket that is not properly mounted.
- If installing additional batteries, install adjacent wall-mount brackets as needed. Be sure to align the mounting holes in the wall-mount bracket to the center of the wall stud. You may install another row of brackets above the one already installed. Maintain at least 15 cm (six inches) vertical clearance between rows of IQ Battery installations and ensure that the wall can support the structural load (weight) of the installation.

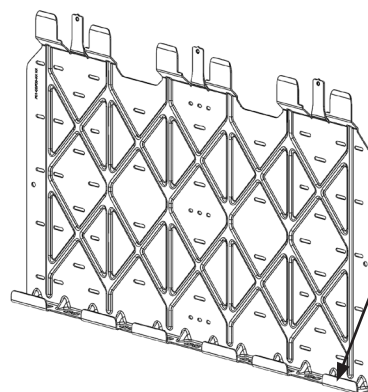
**⚠ WARNING!** Risk of injury and equipment damage. Do not install more than one IQ Battery 10 unit per 20 A branch circuit.

### IQ Battery 10 wall-mount bracket

#### Front view



#### Angle view



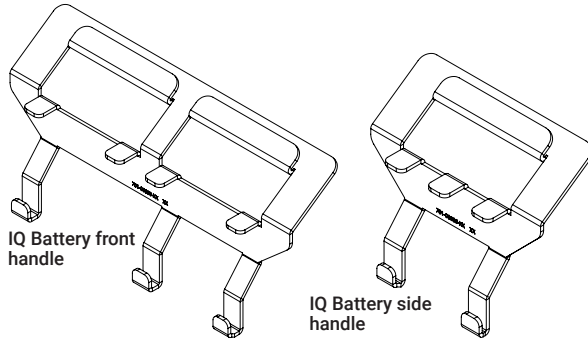
## 5 Mount the IQ Battery(ies) on the wall

**⚠ WARNING:** Risk of injury. Take care when lifting. Each IQ Battery base unit is heavy (44.2 kg/97 lb) and requires two persons to lift.

**⚠ WARNING!** Risk of injury and equipment damage. Avoid dropping the IQ Battery(ies). Doing so may create a hazard, cause serious injury, and/or damage the equipment.

**⚠ WARNING!** Risk of injury and equipment damage. Protect the IQ Battery(ies) from impact damage and improper use.

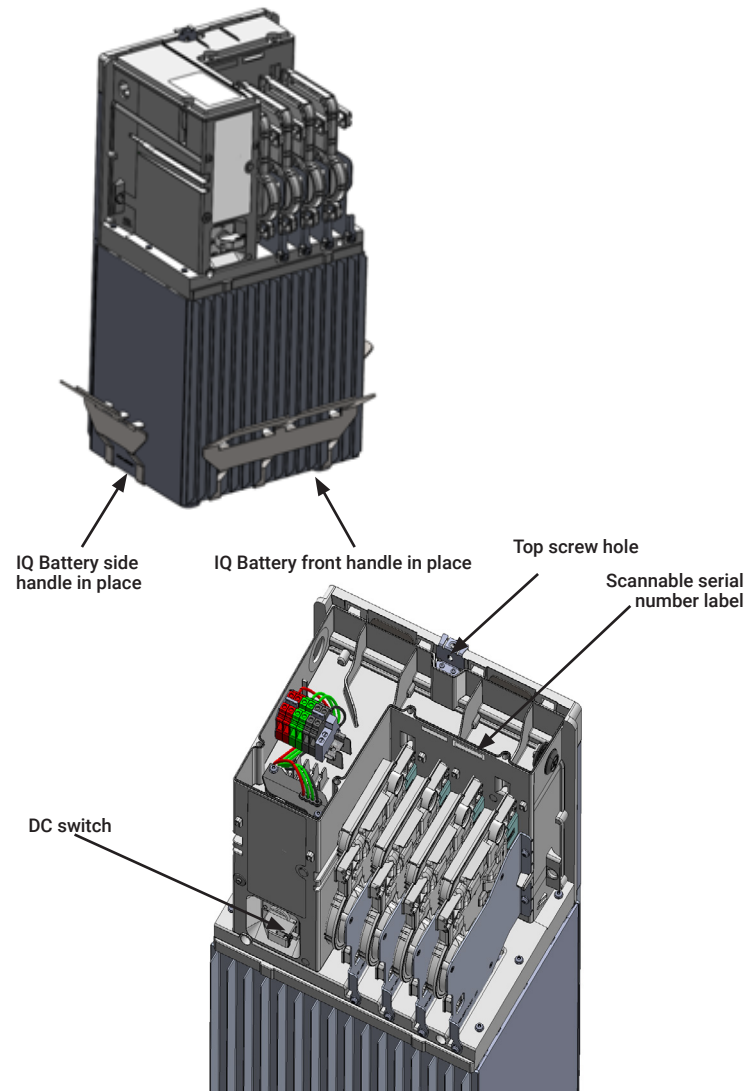
- Two persons together must lift a single IQ Battery base unit from the packaging and place it right side up on a flat surface.
- Locate the IQ Battery lifting handles:



- If installing multiple battery units, plan to install the IQ Battery unit located closest to the main supply.
- The first person lifting must slide the longer front handle under the front edge of the IQ Battery, then tilt the handle up so that handle tabs engage with the slots on the front side of the battery.
- The second person lifting must slide the shorter side handle under the left or right side (as needed) of the IQ Battery and support the upper back of the IQ Battery with their free hand.
- Together, lift the IQ Battery and bring it to the already mounted bracket.
- Hold the IQ Battery at an angle so the top of the unit sets into the top of the wall-mount bracket.

**⚠ WARNING!** Risk of injury and equipment damage. Do not release the IQ Battery unit until you ensure that the IQ Battery unit is fully seated in the wall-mount bracket shelf.

- Once the top of the battery is engaged with the top tabs of the wall-mount bracket, keep the battery vertical, make sure the battery is flush against the bracket, and lower the battery down until fully seated with the wall-mount bracket and set into the bracket shelf.
- Remove the handles and reserve them for the next IQ Battery installation.
- Use a Phillips screwdriver to loosen the screws securing the field wiring compartment cover and remove the cover. Keep the cover and screws handy, as you will need them later.
- Attach the battery to the mounting bracket aligning the screw hole at the top of the battery with the screw hole at the top of the bracket.
- To record the installation of each IQ Battery base unit, scan the serial number label using the Enphase Installer App and your mobile device.



## 6 Install conduit and field wiring

**⚠ DANGER!** Risk of electric shock. The DC switch must be in the locked position before performing this step.

- If not already done, use a Phillips screwdriver to loosen the screws securing the field wiring compartment cover and remove the cover. Keep the cover and screws handy, as you will need them later.
- Remove the sealing plug for entry into the field wiring compartment. If installing only one battery or when installing the last battery in the array, seal up the hole with the supplied sealing plug.
- Size the conductors (Lines and Ground) to account for voltage rise and to conform to the tables below. Design for a voltage rise total of less than 2%. IQ Battery can use any circuit breaker size between 10 A and 40 A. Breaker rating and wire size are installation-dependent.

| Number of IQ Battery E3/E10 units       | Current (A) | Minimum wire size (AWG) | Breaker rating (A) |
|-----------------------------------------|-------------|-------------------------|--------------------|
| 1xE3                                    | 5.3         | 14                      | 10                 |
| 2xE3                                    | 10.7        | 14                      | 15                 |
| 3xE3 or 1xE10                           | 16.0        | 12                      | 20                 |
| 4 x E3 or (1 x E10 + 1 x E3)            | 21.3        | 10                      | 30                 |
| 5 x E3 or (1 x E10 + 2 x E3)            | 27.7        | 8                       | 35                 |
| 6 x E3 or 2 x E10 or (1 x E10 + 3 x E3) | 32.0        | 8                       | 40                 |

\*E3 refers to IQ Battery 3

\*E10 refers to IQ Battery 10

In all cases in the table, it is possible to always use larger conductors and a breaker sized for that conductor or smaller. For Example in row 3, with 3xE3 or 1xE10, it is possible to use:

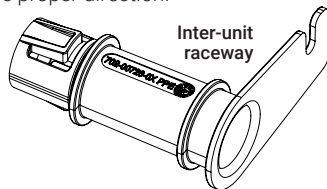
- 12 AWG wire with 20 A breaker, or
- 10 AWG wire with 20 A or 30 A breaker, or
- 8 AWG wire with 30, 35, or 40 A breaker

## 6 Install conduit and field wiring, continued

**⚠ DANGER!** Risk of electric shock. Check that the dedicated circuit breaker protecting the branch where the IQ Battery(ies) will be connected is turned off before wiring.

**⚠ WARNING!** Risk of equipment damage. The DC switch must be OFF before installing; otherwise, IQ Battery will try to form a grid.

- D) **If installing an IQ Battery 10**, install the inter-unit raceways. The left-side and right-side conduit openings are different diameters, so you must install the raceway in the proper direction.
- Face the fronts of the batteries, and insert the raceway through the right-hand unit's left-side conduit opening from within the field wiring compartment, with the arm of the raceway pointing up.
  - Push the raceway through the right-hand unit's left-side conduit opening and into the left-side unit's right-side conduit, opening until the two snap features on the raceway engage the left-side unit's enclosure.
  - Once fully inserted, rotate the "arm" toward you until it stops.
  - The left-side conduit opening of each battery unit has a flat surface without additional features. The larger seal (green) on the raceway mates with this opening. The right-side conduit opening has a groove around the hole to fit the O-ring (red) of the raceway. Make sure that the O-ring is captured in the groove between the IQ Battery enclosure and the raceway flange adjacent to the O-ring.



- E) Using the conductors and suitable conduits, connect the AC disconnect and the first adjacent IQ Battery. Use the conduit openings provided to connect the conduit and pass the wires through them. Note that if an Enphase IQ System Controller is in line-of-sight, the breaker can service as a disconnect.

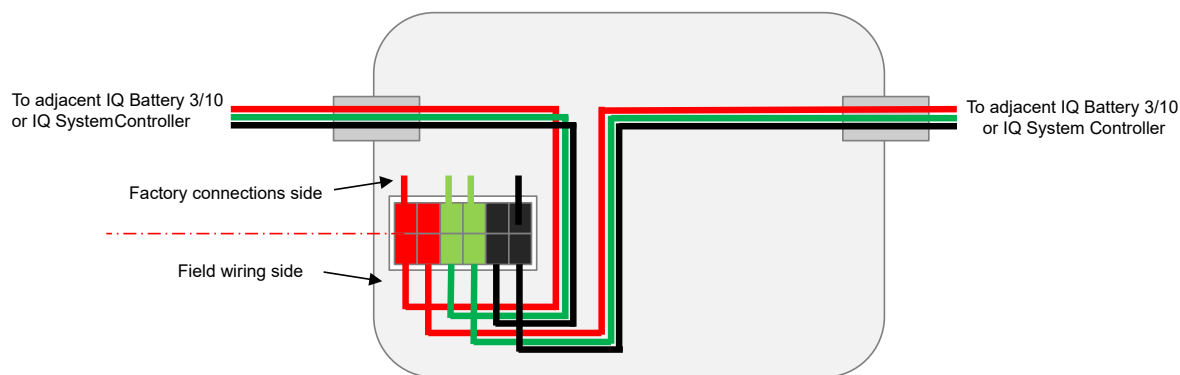
**⚠ WARNING!** Risk of equipment damage. Do not modify or rewire the pre-installed wiring or bonding connections in the field wiring compartment.

**⚠ WARNING!** Risk of equipment damage. Always connect to two Lines (active) and one ground.

- F) Connect each wire in the field wiring compartment to its corresponding conductor (Lines and Ground). Each terminal accepts two 14–8 AWG conductors (11 mm or 7/16 inch strip length). Tighten to a torque of 14 lb-in.
- G) **If installing an IQ Battery 10**, route the wires from the first IQ Battery to the adjacent IQ Battery through the inter-unit raceway. There are two positions for each line and for ground in the terminal block to allow for daisy-chaining.
- ⚠ WARNING!** Risk of equipment damage. Do not daisy chain more than six total IQ Battery 3 or two IQ Battery 10 on a single branch circuit.
- H) After all wires in the field wiring compartment are connected and secured, check that there are no exposed conductors.
- I) If connecting additional IQ Batteries, use another conduit and another set of wires to connect between field wiring compartments.

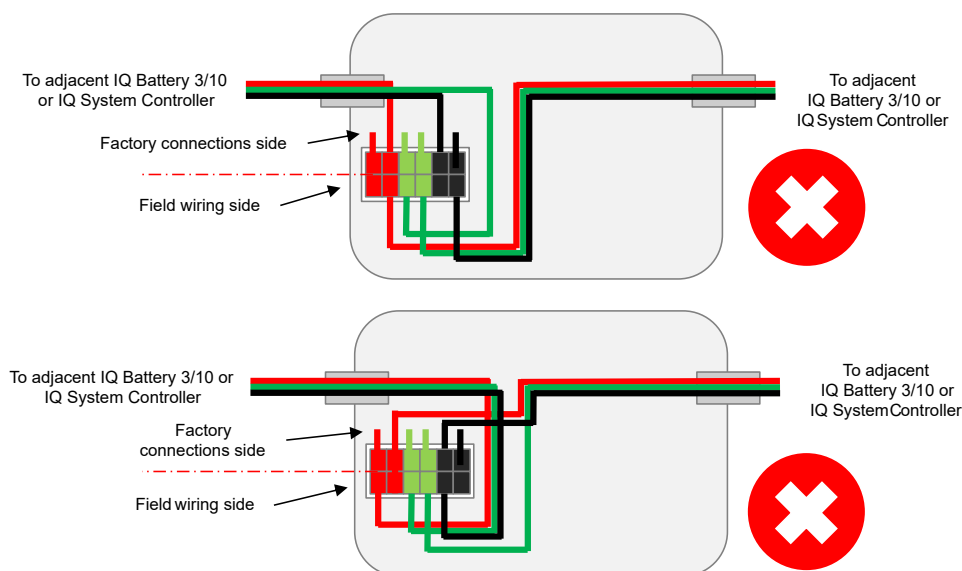
### Correct wiring

Always connect the field wiring to the terminal blocks from the field wiring side, as shown below.

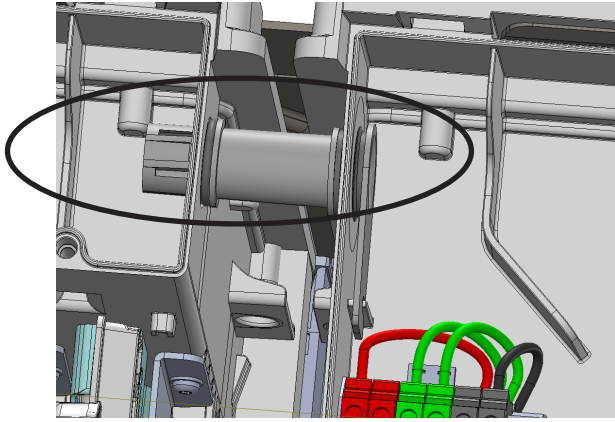


### Incorrect wiring

Do not connect any field wiring to the terminal block from the factory connections side.



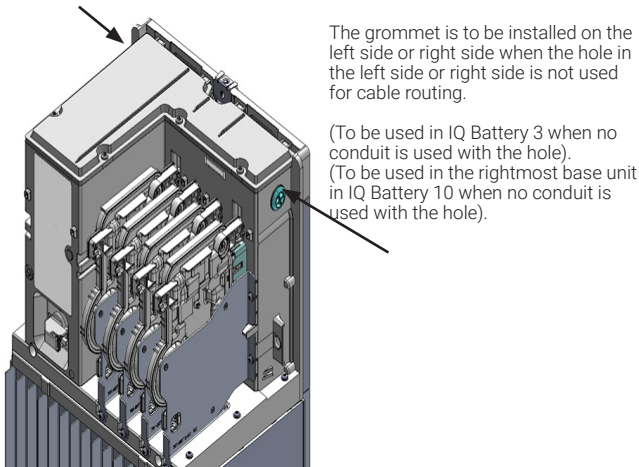
- J) Gently arrange all the wires and connectors inside the field wiring compartment.



- K) Plug any unused conduit openings before proceeding.  
 L) Replace the field wiring compartment cover. Use a cross-head screwdriver to tighten the cover screws to 2.3 N m (20.3 lb-in).

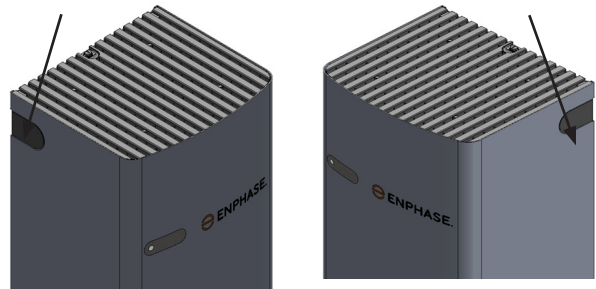
**⚠ WARNING!** Risk of equipment damage. Ensure that no wires are pinched before replacing the cover.

**⚠ DANGER!** Risk of electric shock. The system is not ready to be energized! Do not close the circuit breaker or turn on the DC switch.

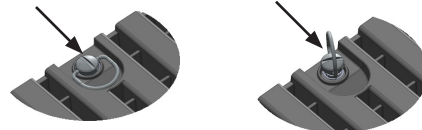


## 7 Dismounting of IQ Battery 3 Cover

- A) Remove the conduit covers from either side of the IQ Battery cover.



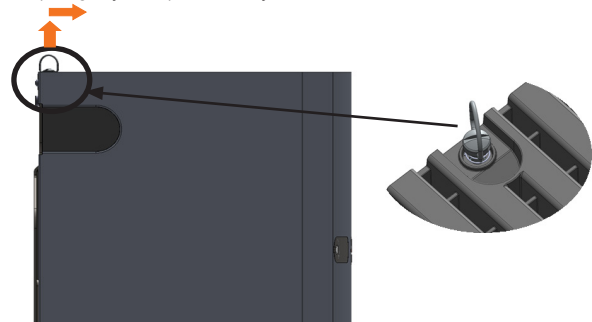
- B) Lift up the ring of the quarter-turn screw.



- C) Turn the ring in the anticlockwise direction to unlock the screw.



- D) After unlocking, hold the ring of the screw and lift the top cover up slightly and pull it away from the wall in the indicated direction.



- E) While pulling out the cover, make sure that the indicated snaps at the bottom of the unit are being unlocked.  
 F) Similarly, to dismount the IQ Battery 10 Cover, please follow the instructions from A to E.

## 8 Cover and energize the system

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

✓ **NOTE:** Check the box for updates on cover installation instructions.

- A) Check that the field wiring compartment cover(s) for all IQ Batteries in the system are closed and secured.

**⚠ DANGER: Risk of electric shock.** Before continuing, check that IQ Battery units are properly wired and ground connection does not have an L1 or L2 connection, as this introduces a safety hazard.

- Apply AC power to the IQ Battery circuits. Do NOT turn On the DC switch on IQ Batteries.
- Using a voltmeter measure the IQ Battery chassis metal to ground (e.g., grounded conduit) and ensure no AC voltage source is present. If wiring is incorrect, a ground fault may exist, and the AC voltage may read ~120 VAC. If voltage is present, DO NOT touch the chassis, and immediately remove AC power from the IQ Battery circuits.
- Remove AC power to the IQ Battery circuits and correct the wiring.

**⚠ WARNING:** Before commissioning, the DC switch on the IQ Battery shall not be turned on unless instructed in the Enphase Installer App. Turning the DC switch On before it is instructed in the Enphase Installer App can damage the IQ Battery.

B ) Connect the AC power (branch circuit protection On) to the IQ Battery and commission the IQ Battery using the Enphase Installer App with the DC switch in the Off position. Wait for IQ Gateway to update the IQ Battery firmware. Turn the DC switch On only after you see a message in the Enphase Installer App asking you to turn it On.

**⚠ WARNING:** After commissioning, always follow the sequence to supply the AC power first and then turn the DC switch On. The turn-off sequence for AC power or DC switch does not matter.

✓ **NOTE:** Do not leave the IQ Battery unit's DC switch in the On position for any extended period of time (such as overnight or for more than 24 hours) unless IQ Battery is commissioned (communicating with IQ Gateway), connected to AC, and has passed functional testing and is operational. Leaving the DC switch On without an AC connection and communication with the system will drain the battery and may cause damage to the battery cells such that they will no longer be able to charge. Damage resulting from this improper installation and misuse is not covered under the product's limited warranty.

C ) Place enclosure cover(s) over the battery(ies) as follows.

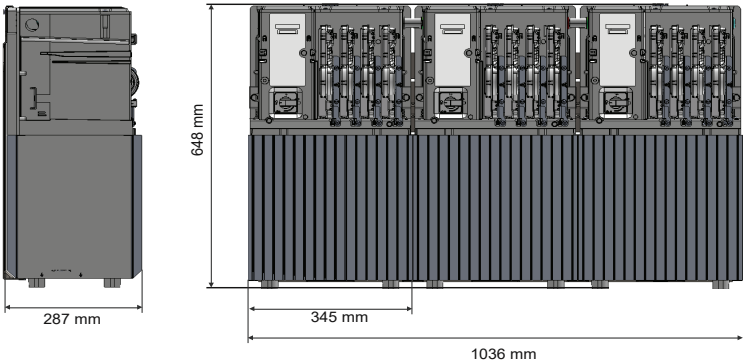
**IQ Battery 3 (single-width battery cover)**

- Pick up the IQ Battery 3 Battery cover, stand in front of the battery so that the cover and battery are on a level, and slide the cover over the battery so that the interior guides of the cover slide easily over the guides on the battery unit.
- Check that the screw hole on top of the battery cover aligns with that on the battery.
- Use the included screw to attach the cover to the battery. Tighten the screw as needed.

**IQ Battery 10 (triple-width battery cover)**

- The IQ Battery 10 Battery cover is wide and may require two persons to guide smoothly over the battery units.
- Pick up the IQ Battery 10 battery cover, stand in front of the battery so that the cover and battery are on a level, and slide the cover over the battery so that the interior guides of the cover slide easily over the guides on the battery units.
- Check that the screw holes on top of the battery cover align with those on the batteries.
- Use the included screws to attach the cover to the batteries. Tighten the screws as needed.

**IQ Battery 10 without cover**



**OPERATION**

**a LED overview**

After being commissioned, the LED flashes yellow while each IQ Battery 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 the IQ Battery 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/en-us/support/contact](https://enphase.com/en-us/support/contact).

| State                                          | Description                                                                                                                                                           |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Uncommissioned</b>                          |                                                                                                                                                                       |
| Flashing blue                                  | After booting up, when the IQ Battery 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.                                                                                                            |
| <b>After commissioning (normal operation)*</b> |                                                                                                                                                                       |
| Rapidly flashing yellow                        | Starting up/Establishing communications                                                                                                                               |
| Red flashes in sequences of 2                  | 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. You can check the Enphase Installer Platform for charge status.                          |
| Soft pulse blue                                | Discharging                                                                                                                                                           |
| Soft pulse green                               | Charging                                                                                                                                                              |
| Soft pulse yellow                              | Sleep mode activated                                                                                                                                                  |
| Off                                            | Not operating. See "Troubleshooting".                                                                                                                                 |

\* IQ Battery batteries have a one-hour orphan timer. If the IQ Gateway stops communicating with them, after one hour, the IQ Battery batteries return to an "uncommissioned" state.

**b Troubleshooting**

If the IQ Battery(ies) are not operating correctly, perform the following steps. If the issue persists, contact Enphase Support at [enphase.com/en-us/support/contact](https://enphase.com/en-us/support/contact).

A ) If the IQ Battery(ies) do not operate, check the temperature in the room and increase cooling and/or ventilation as required. Check that the front, top, and sides of the IQ Battery batteries have at least 15 cm (6 inches) of unobstructed clearance.

B ) If the IQ Battery LED is off, turn off the breaker for the branch circuit, wait for at least one minute, and turn it back on.

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

C ) If you do not see IQ Battery information in the Enphase Installer Platform, check that the IQ Gateway and the Internet connection are working. If the issue persists, contact Enphase Support at [enphase.com/en-us/support/contact](https://enphase.com/en-us/support/contact).

**Limitation of Use :**

Your IQ Battery 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 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 device in such circumstances.

**CONFIGURE and ACTIVATE**

A ) 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.

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

# SAFETY

Important safety instructions. Save these instructions. This guide contains important instructions that you must follow during installation and maintenance of the Enphase IQ Battery(ies). Failing to follow any of these instructions may void the warranty ([enphase.com/warranty](https://enphase.com/warranty)).

## In case of fire or other emergency

### In all cases:

- If safe to do so, switch off the AC breaker for the IQ Battery circuit, and if an isolator switch is present, switch off the AC isolator for the IQ Battery circuit.
- Contact the fire department or other required emergency response team.
- Evacuate the area.

### 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.
- Contact Enphase Support at [enphase.com/en-us/support/contact](https://enphase.com/en-us/support/contact).

## Safety and advisory symbols

|                                                                                  |                                                                                                                                                                                               |
|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>DANGER:</b> This indicates a hazardous situation, which if not avoided, will result in death or serious injury.                                                                            |
|  | <b>WARNING:</b> 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. |
|  | <b>NOTE:</b> This indicates information particularly important for optimal system operation. Follow instructions carefully.                                                                   |

## Safety instructions

|                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>DANGER:</b> Risk of electric shock. Risk of fire. Only qualified electricians should install, troubleshoot, or replace the IQ Battery(ies).                                                                                                                                                                                                                                                                              |
|  | <b>DANGER:</b> Risk of fire or explosion. Only qualified personnel using personal protective equipment (PPE) should transport or handle the IQ Battery(ies).                                                                                                                                                                                                                                                                |
|  | <b>DANGER:</b> Risk of explosion. Do not dispose of IQ Battery(ies) in a fire or by burning. The IQ Battery(ies) can explode.                                                                                                                                                                                                                                                                                               |
|  | <b>DANGER:</b> 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 and on vehicles and trailers and should not be used in such applications.                                                                                                                                               |
|  | <b>DANGER:</b> 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 -15°C to 55°C (5°F to 131°F) and 5% to 100% RH, non-condensing, preferably out of direct sunlight. Do not install the IQ Battery(ies) at elevations over 2500 m (8,200 feet) above sea level. |
|  | <b>DANGER:</b> Risk of fire. If the IQ Battery(ies) generate smoke, remove AC power from the Enphase Energy System and turn the DC connect switch to the off position so that charging/discharging stops.                                                                                                                                                                                                                   |
|  | <b>DANGER:</b> Risk of electric shock. Risk of fire. Do not attempt to repair the IQ Battery(ies). DO NOT OPEN THE ENCLOSURE – NO SERVICEABLE PARTS. Tampering with or opening the IQ Battery(ies) will void the warranty. If the IQ Battery(ies) fail, contact Enphase Support for assistance at <a href="https://enphase.com/en-us/support/contact">enphase.com/en-us/support/contact</a> .                               |
|  | <b>DANGER:</b> 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.                                                                                                                                                                                                                                   |
|  | <b>DANGER:</b> 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.                                                                                                                                                                                                  |
|  | <b>DANGER:</b> Risk of electric shock. Always de-energize the AC branch circuit during an emergency and/or before servicing the IQ Battery(ies). Never disconnect the DC switch under load.                                                                                                                                                                                                                                 |
|  | <b>DANGER:</b> Risk of electric shock. Risk of high short-circuit current. Observe the following precautions when working on batteries: <ul style="list-style-type: none"><li>• Remove watches, rings, or other metal objects.</li><li>• Use tools with insulated handles.</li><li>• Wear insulating gloves and boots.</li><li>• Do not lay tools or metal parts on top of batteries.</li></ul>                             |
|  | <b>DANGER:</b> Risk of electric shock. Risk of fire. Do not work alone. Someone should be in the range of your voice or close enough to come to your aid when you work with or near electrical equipment.                                                                                                                                                                                                                   |



## 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.

## Safety instructions, continued

|                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <b>DANGER:</b> Risk of fire. Do not allow or place flammable, sparking, or explosive items near the IQ Battery(ies).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|    | <b>DANGER:</b> Risk of electric shock. In areas where flooding is possible, install the IQ Battery(ies) at a height that prevents water ingress.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|    | <b>DANGER:</b> Risk of electric shock. AC voltage is present at the output when the DC switch is on.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|    | <b>DANGER:</b> Risk of electric shock. Branch circuit protection must be off before switching DC power on or off.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|    | <b>DANGER:</b> Risk of electric shock. The DC switch must be locked in the OFF position for shipping and service.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|    | <b>WARNING:</b> Risks of electric shock, energy hazard, and chemical hazard. Do not disassemble.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|    | <b>WARNING:</b> Risk of equipment damage. During use, storage, transport, or installation, always keep the IQ Battery(ies) in an upright position.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|    | <b>WARNING:</b> You must install the IQ Battery(ies) only on a suitable wall using an Enphase wall-mount bracket.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|    | <b>WARNING:</b> Before installing or using the IQ Battery(ies), read all instructions and cautionary markings in this guide and on the equipment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|    | <b>WARNING:</b> Do not install or use the IQ Battery(ies) if it has been damaged in any way.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|    | <b>WARNING:</b> Do not exceed the maximum number (3) of IQ Batteries in a 20 A AC branch circuit.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|    | <b>WARNING:</b> Do not sit on, step on, place objects on, or insert objects into the IQ Battery(ies).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|    | <b>WARNING:</b> 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|    | <b>WARNING:</b> When placing the IQ Battery(ies) in storage, ensure that AC power is not present and that the DC switch is in the Locked 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. <ul style="list-style-type: none"><li>• The IQ Battery(ies) must be installed and energized by the "Must Energize By" date on the shipping box label.</li><li>• 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 <b>Sleep Mode</b>.</li><li>• If the IQ Battery(ies) has already been installed, it must be placed into <b>Sleep Mode</b> prior to uninstalling. A battery in <b>Sleep Mode</b> can be stored for a maximum of two months after being placed into <b>Sleep Mode</b>.</li></ul> |
|    | <b>NOTE:</b> Perform installation and wiring, including protection against lightning and resulting voltage surge, in accordance with all applicable local electrical codes and standards.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|    | <b>NOTE:</b> Because IQ Battery(ies) are grid forming, you must install signage in accordance with NEC articles 705, 706, and 710.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|   | <b>NOTE:</b> Using unapproved attachments or accessories could result in damage or injury.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|  | <b>NOTE:</b> Install properly rated over current protection as part of the system installation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|  | <b>NOTE:</b> 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|  | <b>NOTE:</b> The IQ Battery(ies) are compatible only with the IQ Gateway communications gateway properly fitted with USB hub, USB radios, and Production and Consumption CTs. The IQ Gateway is required for the operation of the IQ Battery(ies). Earlier versions of the Enphase IQ Gateway communication gateways are incompatible.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|  | <b>NOTE:</b> 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 ( <a href="https://enphase.com/warranty">enphase.com/warranty</a> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|  | <b>NOTE:</b> 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|  | <b>NOTE:</b> When disconnected and stored, no automatic charge of the battery is possible.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|  | <b>NOTE:</b> Properly mount the IQ Battery(ies). Ensure that the mounting location is structurally suited to bearing the weight of the IQ Battery(ies).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|  | <b>NOTE:</b> During use, storage, and transport, keep the IQ Battery(ies): <ul style="list-style-type: none"><li>• Properly ventilated</li><li>• Away from water, other liquids, heat, sparks, and direct sunlight</li><li>• Away from excessive dust, corrosive and explosive gases, and oil smoke</li><li>• Away from direct exposure to gas exhaust, such as from motor vehicles</li><li>• Free of vibrations</li><li>• Away from falling or moving objects, including motor vehicles. If mounted in the path of a motor vehicle, we recommend a 91 cm (36 inches) minimum mounting height</li><li>• At an elevation of lower than 2,500 m (8,200 feet) above sea level</li><li>• In a location compliant with fire safety regulations</li><li>• In a location compliant with local building codes and standards</li></ul>                                                                                                                                                                          |
|  | <b>NOTE:</b> Conditions for the IQ Battery installation site also apply to storage conditions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

**Enphase Support:** [enphase.com/en-us/support/contact](https://enphase.com/en-us/support/contact)

# Revision history

| REVISION           | DATE     | DESCRIPTION                                                  |
|--------------------|----------|--------------------------------------------------------------|
| 140-00151-11       | May 2024 | Updated the <b>Install conduit and field wiring</b> section. |
| Previous releases. |          |                                                              |