QUICK INSTALL GUIDE (Model: IQ-LCFE-200-1P)

Installing the Power Line Filter

In single-phase applications, the IQ-LCFE-200-1P Power Line Filter separates power line communication domains across the Enphase IQ7 and IQ8 Series Microinverters installation. Also when multiple Enphase IQ Gateways are located on a single utility transformer or when site loads generate electrical noise that disrupts communications.

SAFETY

IMPORTANT SAFETY INSTRUCTIONS. SAVE THIS INFORMATION.

Follow all safety and assembly instructions when installing the Power Line Filter.

Safety instructions

⚠	**DANGER:** Risk of electric shock. Risk of fire. Do not attempt to repair the Power Line Filter; it contains no user-serviceable parts. Tampering with or opening the Power Line Filter will void the warranty. Warranty void if cover removed. If the Power Line Filter fails, contact Enphase Support at enphase.com/contact/support.
⚠	**DANGER:** Risk of electric shock. Always open or disconnect the circuit from the power distribution system (or service) of the building before installing or servicing the Power Line Filter.
⚠	**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. Be aware that installation of this equipment includes the risk of electric shock. If you wire the Power Line Filter at the sub-board, always de-energize the sub-board before beginning.
⚠	**DANGER:** Risk of electric shock. Risk of fire. Only qualified personnel should troubleshoot, install, or replace the Power Line Filter.
⚠	**WARNING:** Risk of electric shock. Always make the PV terminal connections before completing the grid terminal connections. If grid terminals are connected first, the PV terminals become live.
⚠	**WARNING:** Before installing or using the Power Line Filter, read all instructions and cautionary markings in the technical description and on the Power Line Filter.
⚠	**WARNING:** Risk of equipment damage. When installing the Power Line Filter in an enclosure, choose an area for installation where the ambient temperature remains between –40°C and 65°C.
⚠	**WARNING:** The temperature of the terminals may approach 90°C. Use an appropriately temperature-rated cable to connect to the terminals.
✓	**NOTE:** Perform all electrical installations in accordance with all national and local electrical codes.
✓	**NOTE:** Install a residual current circuit breaker if required by national regulations.
✓	**NOTE:** To ensure optimal reliability and to meet warranty requirements, the Enphase Power Line Filter must be installed according to the instructions in this guide.

In case of fire or other emergency

In all cases:
- If safe to do so, turn off all DC switches on each IQ Battery. Turn off the PV breaker and battery breakers inside the IQ System Controller.
- Turn off the AC breaker for the IQ System Controller circuit.
- If an isolator switch is present, switch off the AC isolator for the IQ System Controller 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 System Controller 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 unit, 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 System Controller or the venting area on top of the IQ System Controller.
- Ventilate the room.

Contact Enphase Support at enphase.com/contact/support

INSTALLATION

Follow the below procedure for installing the Power Line Filter.

1 Follow the mechanical fittings specifications as shown in the table below.

FITTING	DESCRIPTION
Maximum cable size	250 kcmil copper: about 0.7" diameter, THHN insulated, 350 kcmil aluminum: about 0.8" diameter, THHN insulated
Bend radius	4" for 4/0 or 250 kcmil 5" for 350 kcmil
Lug size	M10
Torque	18 N m
Recommended hole position	All penetrations should be on the sides or bottom. Never drill holes on the top of the enclosure.
Follow NFPA 70 (NEC)or CSA C22.1 part 1 and all local codes.	

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2 Verify the filter input and output terminals and decide the appropriate position for cable glands or conduit holes on the enclosure to allow proper cable bend radius. Never drill holes on the top of the enclosure or within 6" of the electrical terminal lugs. Use appropriate liquid-tight cable glands or conduits to ensure that the IP rating of the enclosure is maintained.

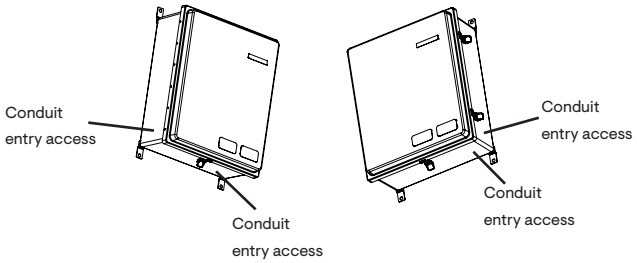


Figure 1: Positions for input and output cable routing terminals

3 Fix all four wall mounting brackets on the enclosure and apply the appropriate torque (Figure 2).

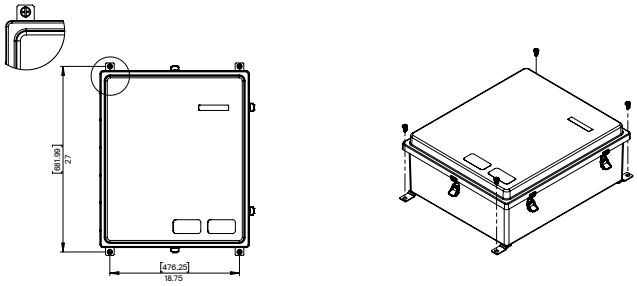


Figure 2: Filter wall mounting positions

4 Locate the filter on the wall and mark all four mounting locations on the wall. The installer is responsible for proper mounting and anchoring of the enclosure based on wall materials and field conditions. Mounting hardware and anchors should be rated at least 75 lb supporting the weight for each of the four marked locations.

5 Conduit entry points are not allowed directly across from the lug terminals, and the outer case is labeled with a minimum of 6" from the lugs.

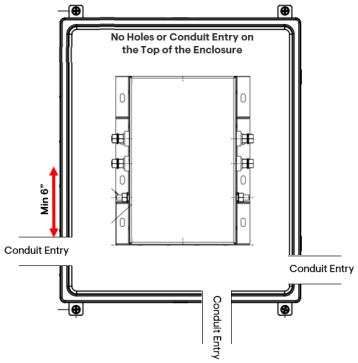


Figure 3: Conduit entry points

6 Route the input and output cables through cable glands or conduits, and maintain proper cable bending radius within the enclosure.

7 Attach cover boots and appropriate UL Listed compression lug terminations (Figure 5) on all free ends of the cables. Use a crimping tool that conforms to the lug manufacturer's specification for appropriate compression force. Use appropriate field practices (type: shrink wrap) as needed in combination with the provided boot, to cover any additional exposed area of the lug or exposed wire where insulation gaps exist.

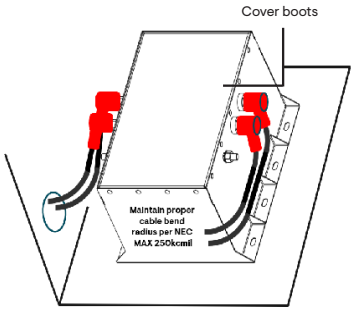


Figure 4: Boot installation and cable routing

✓ **NOTE**: Maintain the proper bend radius of the cable as per NEC requirements.

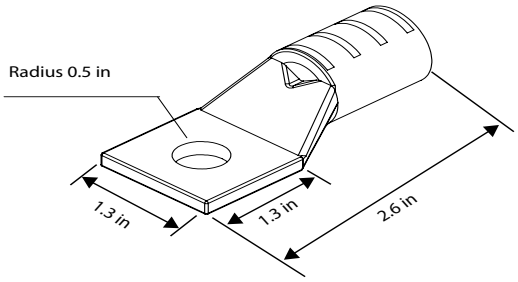


Figure 5: Example of compression lug termination (sized according to the cable used as provided by the field installer). Maximum lug size is 1.3"x1.3" pad and total of 2.6" in length for the provided cover boot.

8 Fix the cable terminals to the LOAD and LINE sides of the filter as per the wiring diagram in Figure 6.

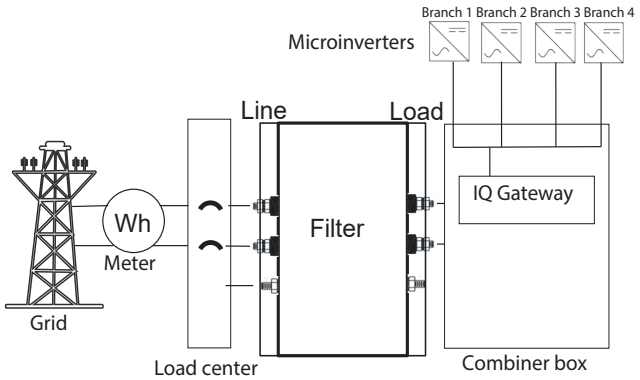
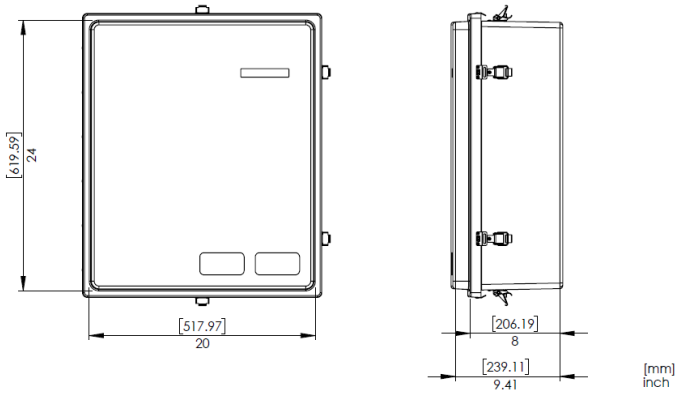


Figure 6: Filter wiring diagram

9 Ensure the cable terminals are fixed, and appropriate torque (18 N m) is applied.

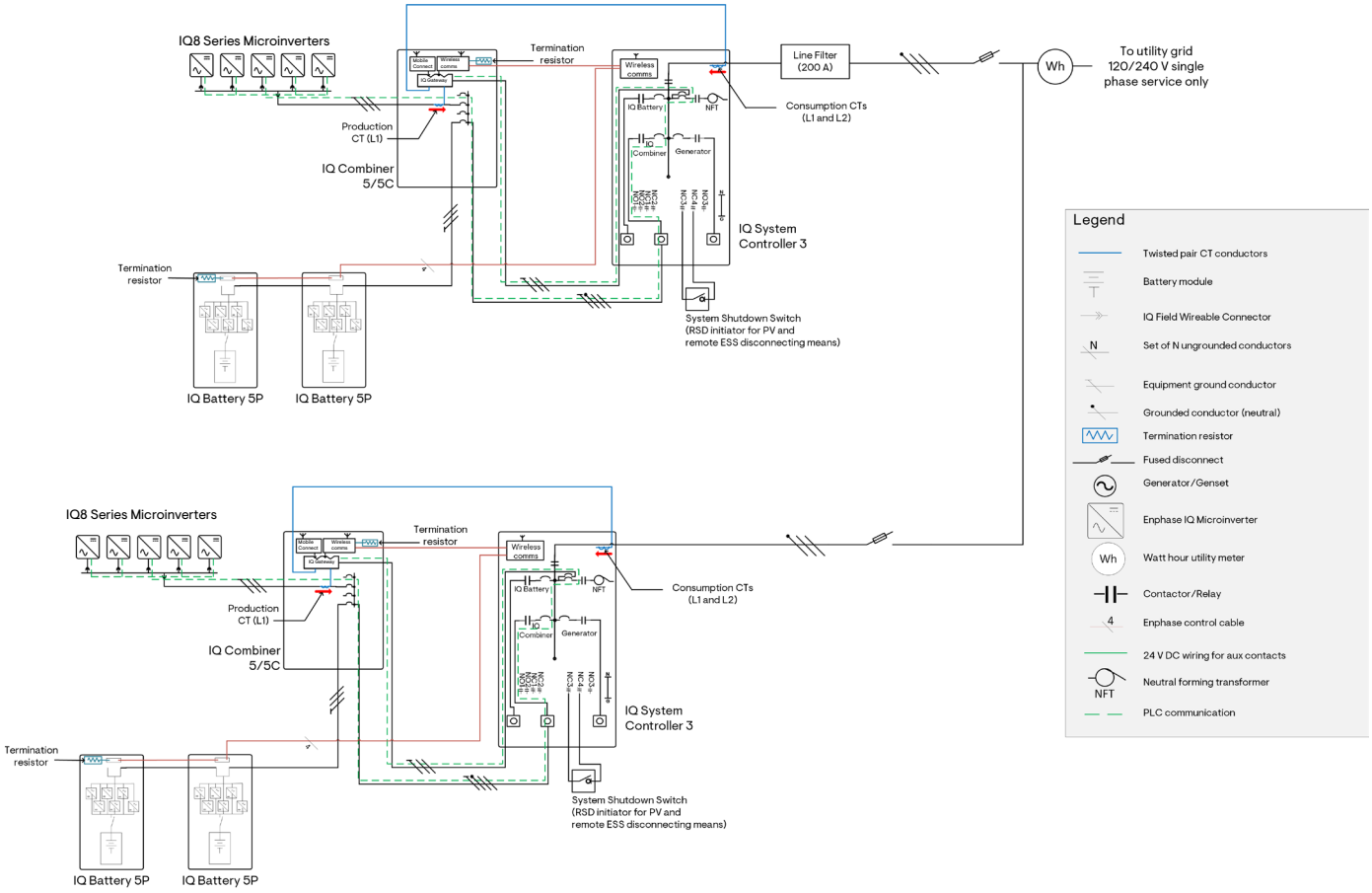
Detailed IQ Microinverters system configurations with line filters are captured in the following system planning guide: enphase.com/download/enphase-energy-system-planning-guide-tech-brief.

PRODUCT DIMENSIONS



USE CASE

Below is the use case of 200 A Power Line Filter for Whole home backup configuration with IQ8 Series Microinverters and IQ Battery 5P.



Troubleshooting measurements using a hand-held multimeter set to measure resistance.

1. Ensure all wires are de-energized and disconnected from the filter when troubleshooting.
2. All Line A-to-Line A and Line B-to-Line B measurements (across the filter) should read 0.1 ohms or similar (direct connection).
3. All Line A-to-Line B measurements should read 1 Mohm or similar.
4. All Line to Neutral or ground measurements should read 500 Kohms or similar.

Revision history

REVISION	DATE	DESCRIPTION
140-00370-01	October 2024	Initial release.

Enphase Support: enphase.com/support/contact