

INSTALLATION MAP

Panel Group/Grupo de los paneles:
Azimuth/Azmut:
Tilt/Inclinación:
Sheet/Hoja ____ of/de ____

Customer/Cliente:

Installer/Instalador:

N S E W
N S E O

12

1

2

3

4

5

6

7

8

9

A

B

C

D

E

F

G

H

J

K

L

M

Scan completed map and upload it to Enphase. Click "Add a New System" at <https://enlighten.enphaseenergy.com>. Use this map to build the virtual array in Enphase Installer Platform's Array Builder.

Escanee el mapa completo y cárguelo en Enphase. Haga clic en "Añadir nuevo sistema" en <https://enlighten.enphaseenergy.com>. Utilice este mapa para crear el conjunto de paneles virtual en el Creador de conjuntos de paneles de Enphase Installer Platform.

Gateway Serial Number Label /
Número de serie de Gateway

Enphase Customer Support: enphase.com/en-us/support/contact

To Sheet / A la hoja de: ____

To Sheet / A la hoja de: ____

QUICK INSTALL GUIDE

Install the Enphase IQ8 Series Microinverter

To install Enphase IQ8 Series Microinverters, read and follow all warnings and instructions in this guide and in the *Enphase IQ8 Series Microinverter Installation and Operation Manual* at enphase.com/support. Safety warnings are listed on the back page of this guide.

The Enphase Microinverter models listed in this guide do not require grounding electrode conductors (GEC), equipment grounding conductors (EGC), or grounded conductor (neutral). The microinverter has a Class II double-insulated rating, which includes ground fault protection (GFP). To support GFP use only PV modules equipped with DC cables labeled: **PV Wire** or **PV Cable**.

IMPORTANT: Enphase IQ8 Series Microinverters require the **IQ Cable**. An IQ Gateway is required to monitor performance of the IQ Microinverters. The Q Accessories work only with Enphase IQ8 Series Microinverters.

Note: After you log in to your Enphase Installer Platform account from Enphase Installer app, Scan the microinverter QR code and connect to the Enphase IQ Gateway to track the system installation progress.

PREPARATION

- A) Download the Enphase Installer App and open it to log in to your Enphase Installer Platform account. With this app, scan the microinverter QR code and connect to the Enphase IQ Gateway to track system installation progress. To download, go to enphase.com/tools/qd or scan the QR code at right.
- B) Refer to the following table and check PV module electrical compatibility at: enphase.com/en-us/support/troubleshooting-by.

Model	DC connector	Typical PV module* cell count
IQ8-0-24-US	MC-4 locking type	Pair with 60 cell / 120-half-cell modules
IQ8P-105-75-US	MC-4 locking type	Pair with 60 cell / 120-half-cell, 66 cell, or 72 cell / 144-half-cell
IQ8M-75-24-US		
IQ8P-180-75-24-US	MC-4 locking type	Pair with 60 cell / 120-half-cell, 66 cell, or 72 cell / 144-half-cell
IQ8M-75-24-US		

*Enphase IQ8 Series Microinverters are compatible with 64-cell PV modules if the inverter is adjusted to local parameters (maximum power, voltage and current) of the modules, considering the front side electrical parameters (i.e., 0% back side gain), are within the allowable microinverter input parameters range.
- C) In addition to the Enphase Microinverters, PV modules and racking, you will need these **Enphase IQ8 Series Microinverters**:

 - Enphase IQ Gateway (model ENV-IQ-M1-24US) communications gateway or Enphase IQ Combiner (check enphase.com for models); is required to monitor solar production.
 - Tie wraps or cable clips (Q-CLIP-100).
 - Enphase Sealing Caps (Q-SEAL-10), for any unused connectors on the Enphase IQ Cable.
 - Enphase Terminator (Q-TERM-10); one needed at the end of each AC cable segment.
 - Enphase Disconnect Tool (Q-DISC-10)
 - Enphase IQ Cable:

Cable model	Connector spacing*	PV module orientation	Connectors per box
Q-12-10-0-00	1.0m	Portrait (all)	240
Q-12-17-0-00	2.0m	Landscape (66- and 66-cell)	240
Q-12-05-0-00	2.3m	Landscape (72-cell)	200

*allows for 30cm of cable slack
- D) Check that you have these other items:

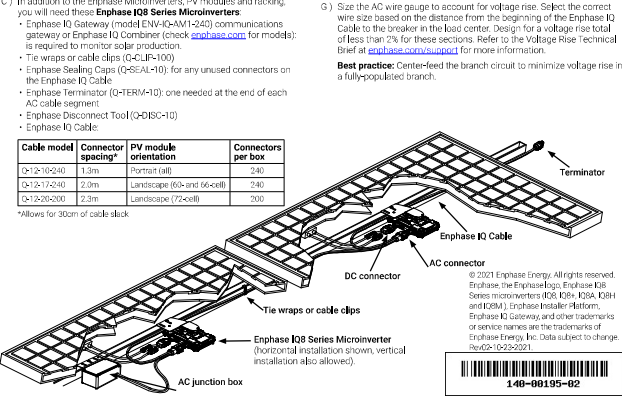
 - AC junction box.
 - Tools: screwdrivers, wire cutter, voltmeter, torque wrench, sockets, and wrenches for mounting hardware.

E) Protect your system with lightning and/or surge suppression devices. It is also important to have insurance that protects against lightning and electrical surges.

F) Plan your AC branch circuits to meet the following limits for maximum number of microinverters per branch when protected with a 20-amp over-current protection device (OCPD).

Maximum* IQ8 Series Microinverters per AC branch circuit (sin-gle-phase)			
IQ8 (240V)	IQ8+ (240V)	IQ8M (240V)	
16	13	11	
IQ8M (208V)	IQ8+ (208V)	IQ8+ (208V)	
11	10	9	

*Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.
- G) Size the AC wire gauge to account for voltage rise. Select the correct wire size based on the distance from the beginning of the Enphase IQ Cable to the breaker in the load center. Design for a voltage rise total of less than 2% for these sections. Refer to the Voltage Rise Technical Brief at enphase.com/support for more information.



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INSTALLATION

1 Position the Enphase IQ Cable

- Plan each cable segment to allow connectors on the Enphase IQ Cable to align with each PV module. Allow extra length for slack, cable turns, and any obstructions.
- Mark the approximate centers of each PV module on the PV racking.
- Lay out the cabling along the installed racking for the AC branch circuit.
- Cut each segment of cable to meet your planned needs.

WARNING: When transitioning between rows, secure the cable to the rail to prevent cable or connector damage. Do not count on the connector to withstand tension.

2 Position the Junction Box

- Verify that AC voltage at the site is within range:

Service Type and Voltage: L1-L2	
240V single phase	211 to 254 VAC
208V single phase	183 to 229 VAC

- Install a junction box at a suitable location on the racking.
- Provide an AC connection from the junction box back to the electricity network connecting using equipment and practices as required by local jurisdictions.

3 Mount the Microinverters

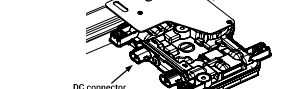
- Mount the microinverter horizontally bracket side up or vertically. Always place it under the PV module, protected from direct exposure to rain, sun, and other harmful weather events. Allow a minimum of 1.9 cm (3/4") between the roof and the microinverter. Also allow 1.3 cm (1/2") between the back of the PV module and the top of the microinverter.

For vertical mount, also maintain > 30 cm (12") clearance from the edges of the PV module to protect the microinverter from direct exposure to rain, UV, and other harmful weather events.

WARNING: Install the microinverter under the PV module to avoid direct exposure to rain, UV, and other harmful weather events. Do not mount the microinverter upside down.

- Torque the mounting fasteners (1/4-inch or 5/16-inch) as follows. Do not over torque:
 - 6 mm (5/16 inches) mounting hardware: 5 N·m (45 to 50 in-lbs)
 - 8 mm (5/16 inches) mounting hardware: 9 N·m (80 to 85 in-lbs)
 - When using UL 2703 mounting hardware, use the manufacturer's recommended torque value.

Horizontal mount:



Vertical mount:



4 Create an Installation Map

Create a paper installation map to record microinverter serial numbers and position in the array.

- Peel the removable serial number label from each microinverter and affix it to the respective location on the paper installation map.
- Peel the label from the IQ Gateway and affix it to the installation map.
- Always keep a copy of the installation map for your records.



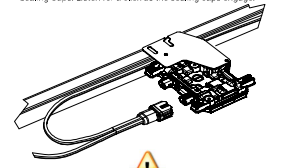
5 Manage the Cabling

- Use cable clips or tie wraps to attach the cable to the racking. The cable must be supported at least every 1.8 m (6 feet).
- Dress any excess cabling in loops so that it does not contact the roof. Do not form loops smaller than 12 cm (4.75 inches) in diameter.



6 Connect the Microinverters

- Connect the microinverter. Listen for a click as the connectors engage.
- Cover any unused connectors on the AC cable with Enphase Sealing Caps. Listen for a click as the sealing caps engage.

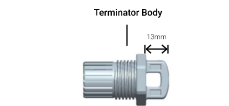


WARNING: Install sealing caps on all unused AC connectors as these connectors become live when the system is energized. Sealing caps are required for protection against moisture ingress.

To remove a sealing cap or AC connector, you must use an Enphase disconnect tool.

7 Terminate the Unused End of the Cable

- Remove 13 mm (1/2") of the cable sheath from the conductors. Use the terminator loop to measure.



- Slide the hex nut onto the cable. There is a grommet inside of the terminator body that should remain in place.
- Insert the cable into the terminator body so that each of the two wires land on opposite sides of the internal separator.



- Insert a screwdriver into the slot on the top of the terminator to hold it in place, and torque the nut to 7 Nm.
- Hold the terminator body stationary with the screwdriver and turn only the hex nut to prevent the conductors from twisting out of the separator.
- Attach the terminated cable end to the PV racking with a cable clip or tie wrap so that the cable and terminator do not touch the roof.

WARNING: The terminator can not be re-used. If you unscrew the nut, you must discard the terminator.

8 Complete Installation of the Junction Box

- Connect the Enphase IQ Cable into the junction box.

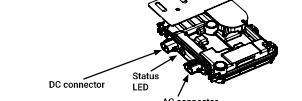
- The IQ Cable uses the following wiring color code:

Wire Colors
Black – L1
Red – L2

9 Connect the PV Modules

DANGER! Electric shock hazard. The DC conductors of this PV system are ungrounded and may be energized.

- If required, attach the Enphase DC bulkhead adapters to the microinverters. Make sure they are fully seated. **Do not reverse the adapter connections.**
- Connect the DC loads of each PV module to the DC input connectors or adapters of the microinverter.
- Check the LED on the connector side of the microinverter. The LED flashes six times when DC power is applied.
- Mount the PV modules above the microinverters.



10 Energize the System

- Turn ON the AC disconnect or circuit breaker for the branch circuit.
- Turn ON the main utility-grid AC circuit breaker. Your system will start producing power **after a five-minute wait time.**
- Check the LED on the connector side of the microinverter:

LED	Indicates
Flashing green	Normal operation. AC grid function is normal and there is communication with the IQ Gateway.
Flashing orange	The AC grid is normal but there is no communication with the IQ Gateway.
Flashing red	The AC grid is either not present or not within specification.
Solid red	There is an active DC Resistance Low Power (LPP) condition. To reset, refer to the Enphase IQ Gateway Installation and Operation Manual at http://info.enphase.com/installation

ACTIVATE MONITORING AND CONTROLS

After you have installed the microinverters, follow the procedures in the *Enphase IQ Gateway Quick Install Guide* to activate system monitoring, set up grid management functions, and complete the installation.

- Connecting the IQ Gateway
 - Detecting devices
- Connecting to Enphase Installer Platform
 - Registering the system
 - Building the virtual array

Enphase Connector Rating

Enphase Connectors on the cable assemblies in the following table have a maximum current of 20 A, a maximum DC voltage of 20 V, and maximum ambient temperature of -40° to +70° C (-40° to +174° F) and are rated for disconnection under load.

Part Number	Model	Maximum Voltage
840-00387	Q-12-00340	250 VAC
840-00388	Q-12-00340	250 VAC
840-00389	Q-12-00340	250 VAC
840-00385	Q-00C-2	100 VDC

PV Rapid Shutdown Equipment (PVRSE)

This product is UL Listed as PV Rapid Shut Down Equipment and conforms with NEC-2014 and NEC-2017 section 690.12 and 690.12(B) (4) (b) (2) (b) (3) (b) (4) (b) (5) (b) (6) (b) (7) (b) (8) (b) (9) (b) (10) (b) (11) (b) (12) (b) (13) (b) (14) (b) (15) (b) (16) (b) (17) (b) (18) (b) (19) (b) (20) (b) (21) (b) (22) (b) (23) (b) (24) (b) (25) (b) (26) (b) (27) (b) (28) (b) (29) (b) (30) (b) (31) (b) (32) (b) (33) (b) (34) (b) (35) (b) (36) (b) (37) (b) (38) (b) (39) (b) (40) (b) (41) (b) (42) (b) (43) (b) (44) (b) (45) (b) (46) (b) (47) (b) (48) (b) (49) (b) (50) (b) (51) (b) (52) (b) (53) (b) (54) (b) (55) (b) (56) (b) (57) (b) (58) (b) (59) (b) (60) (b) (61) (b) (62) (b) (63) (b) (64) (b) (65) (b) (66) (b) (67) (b) (68) (b) (69) (b) (70) (b) (71) (b) (72) (b) (73) (b) (74) (b) (75) (b) (76) (b) (77) (b) (78) (b) (79) (b) (80) (b) (81) (b) (82) (b) (83) (b) (84) (b) (85) (b) (86) (b) (87) (b) (88) (b) (89) (b) (90) (b) (91) (b) (92) (b) (93) (b) (94) (b) (95) (b) (96) (b) (97) (b) (98) (b) 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