



IQ8M and IQ8A Microinverters

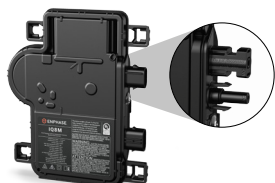
Our newest IQ8 Microinverters are the industry’s first microgrid-forming, software-defined microinverters with split-phase power conversion capability to convert DC power to AC power efficiently. The brain of the semiconductor-based microinverter is our proprietary application-specific integrated circuit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



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



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



Connect PV modules quickly and easily to the IQ8 Series Microinverters that have integrated MC4 connectors.



IQ8 Series Microinverters are UL Listed as PV rapid shutdown equipment and conform with various regulations when installed according to the manufacturer’s instructions.

Easy to install

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

High productivity and reliability

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

Microgrid-forming

- Complies with the latest advanced grid support**
- Remote automatic updates for the latest grid requirements
- Configurable to support a wide range of grid profiles
- Meets CA Rule 21 (UL 1741-SA) and IEEE 1547:2018 (UL 1741-SB)

NOTE:

- IQ8 Microinverters cannot be mixed together with previous generations of Enphase microinverters (IQ7 Series, IQ6 Series, and so on) in the same system.
- IQ Microinverters ship with default settings that meet North America’s IEEE 1547 interconnection standard requirements. Region-specific adjustments may be requested by an Authority Having Jurisdiction (AHJ) or utility representative according to the IEEE 1547 interconnection standard. An IQ Gateway is required to make these changes during installation.

* Meets UL 1741 only when installed with IQ System Controller 2 or 3.

** IQ8M and IQ8A support split-phase, 240 V installations only.

IQ8M and IQ8A Microinverters

INPUT DATA (DC)		UNITS	IQ8M-72-M-US	IQ8A-72-M-US
Commonly used module pairings ¹		W	260-460	295-500
Module compatibility			To meet compatibility, PV modules must be within the following maximum input DC voltage and maximum module I_{sc} . Module compatibility can be checked at https://enphase.com/installers/microinverters/calculator .	
MPPT voltage range		V	30-45	32-45
Operating range		V	16-58	
Minimum/Maximum start voltage		V	22/58	
Maximum input DC voltage		V	60	
Maximum continuous input DC current		A	12	
Maximum input DC short-circuit current		A	25	
Maximum module (I_{sc})		A	20	
Overvoltage class DC port			II	
DC port backfeed current		mA	0	
PV array configuration			Ungrounded array; no additional DC side protection required; AC side protection requires max 20 A per branch circuit	
OUTPUT DATA (AC)		UNITS	IQ8M-72-M-US	IQ8A-72-M-US
Peak output power		VA	330	366
Maximum continuous output power		VA	325	349
Nominal grid voltage (L-L)		V	240, split-phase (L-L), 180°	
Minimum and Maximum grid voltage ²		V	211-264	
Maximum continuous output current		A	1.35	1.45
Nominal frequency		Hz	60	
Extended frequency range		Hz	47-68	
AC short-circuit fault current over three cycles		Arms	2	
Maximum units per 20 A (L-L) branch circuit ³			11	
Total harmonic distortion		%	<5	
Overvoltage class AC port			III	
AC port backfeed current		mA	30	
Power factor setting			1.0	
Grid-tied power factor (adjustable)			0.85 leading ... 0.85 lagging	
Peak efficiency		%	97.8	97.7
CEC weighted efficiency		%	97.5	97
Nighttime power consumption		mW	21	22
MECHANICAL DATA				
Ambient temperature range			-40°C to 60°C (-40°F to 140°F)	
Relative humidity range			4% to 100% (condensing)	
DC connector type			Stäubli MC4	
Dimensions (H × W × D)			212 mm (8.3") × 175 mm (6.9") × 30.2 mm (1.2")	
Weight			1.1 kg (2.43 lbs)	
Cooling			Natural convection—no fans	
Approved for wet locations			Yes	
Pollution degree			PD3	
Enclosure			Class II double-insulated, corrosion-resistant polymeric enclosure	
Environmental category/UV exposure rating			NEMA Type 6/outdoor	

(1) No enforced DC/AC ratio.

(2) Nominal voltage range can be extended beyond nominal if required by the utility.

(3) Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

COMPLIANCE

Certifications

CA Rule 21 (UL 1741-SA), UL 62109-1, IEEE 1547:2018 (UL 1741-SB), FCC Part 15 Class B, ICES-0003 Class B, CAN/CSA-C22.2 NO. 107.1-01.

This product is UL Listed as PV rapid shutdown equipment and conforms with NEC 2014, NEC 2017, NEC 2020, and NEC 2023 section 690.12 and C22.1-2018 Rule 64-218 rapid shutdown of PV Systems, for AC and DC conductors, when installed according to the manufacturer's instructions.

Revision history

REVISION	DATE	DESCRIPTION
DSH-00205-3.0	February 2024	Updated the information about IEEE 1547 interconnection standard requirements.
DSH-00205-2.0	November 2023	Updated the nighttime power consumption values. Included NEC 2023 specification in the "Compliance" section.
DSH-00205-1.0	September 2023	Updated the module compatibility specification.
Previous releases.		