ENPHASE

DATA SHEET

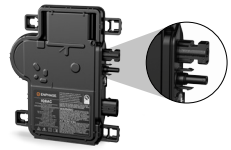
IQ8AC Microinverter

Our newest IQ8 Series Microinverters are the industry's first microgrid-forming*, software-defined microinverters with split-phase power conversion capability to convert DC power to AC power efficiently. The brain of the semiconductor-based microinverter is our proprietary application-specific integrated circuit (ASIC), which enables the microinverter to operate in grid-tied or off-grid modes. This chip is built in advanced 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.

Enphase 25 year limited warranty

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.

UL CERTIFIED SAFETY

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

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

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

- Produces 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 Series 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.

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INPUT DATA (DC)	UNITS	IQ8AC-72-M-US
Commonly used module pairings [1]	W	295–500
Module compatibility	–	To meet compatibility, PV modules must be within the maximum input DC voltage and maximum module I_{sc} listed below. Module compatibility can be checked at https://enphase.com/installers/microinverters/calculator.
MPPT voltage range	V	28–45
Operating range	V	18–58
Minimum/Maximum start voltage	V	22/58
Max. input DC voltage	V	60
Max. continuous input DC current	A	14
Max. input DC short-circuit current	A	25
Max. 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	IQ8AC-72-M-US @240 VAC	IQ8AC-72-M-US @208 VAC
Peak output power	VA	366	350
Max. continuous output power	VA	349	345
Nominal grid voltage (L-L)	V	240, split-phase (L-L), 180°	208, single-phase (L-L), 120°
Minimum and maximum grid voltage [2]	V	211-264	183-229
Max. continuous output current	A	1.45	1.66
Nominal frequency	Hz	60	
Extended frequency range	Hz	47-68	
AC short circuit fault current over three cycles	Arms	2.70	
Max. units per 20 A (L-L) branch circuit [3]	–	11	9
Total harmonic distortion	%	< 5	
Overvoltage class AC port	–	III	
AC port backfeed current	mA	18	
Power factor setting	–	1.0	
Grid-tied power factor (adjustable)	–	0.85 leading ... 0.85 lagging	
Peak efficiency	%	97.3	97.2
CEC weighted efficiency	%	97.0	96.5
Nighttime power consumption	mW	30	22

MECHANICAL DATA	UNITS
Ambient temperature range	-40°C to 65°C (-40°F to 149°F)
Relative humidity range	4% to 100% (condensing)
DC connector type	Stäubli MC4
Dimensions (H × W × D); Weight	212 mm (8.3") × 175 mm (6.9") × 30.2 mm (1.2"); 1.1 kg (2.43 lbs)
Cooling	Natural convection – no fans
Approved for wet locations; Pollution degree	Yes; PD3
Enclosure	Class II double-insulated, corrosion-resistant polymeric enclosure
Environ. category; UV exposure rating	NEMA Type 6; outdoor

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 manufacturer's instructions.

(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.

Revision history

REVISION	DATE	DESCRIPTION
DSH-00046-4.0	February 2024	Updated the information about IEEE 1547 interconnection standard requirements.
DSH-00046-3.0	October 2023	Included NEC 2023 specification in the "Compliance" section.
DSH-00046-2.0	September 2023	Updated module compatibility information.
DSH-00046-1.0	May 2023	Preliminary release.