IQ8P Microinverter

The IQ8P Microinverter is a high-powered, 480 VA rated, smart-grid ready microinverter designed to match the larger format residential and commercial PV modules. The IQ8P Microinveter has the highest energy production and reliability standards in the industry, and with Rapid Shutdown functionality, it meets the highest safety standards. The brain of the semiconductor-based microinverter is our proprietary, application-specific integrated circuit (ASIC) which enables the microinverter to operate reliably in a grid-connected mode.

IQ Gateway

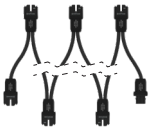
Part of the Enphase Energy System, IQ8P Microinverters integrate with the IQ Battery, IQ Gateway, and the Enphase App monitoring and analysis software.

IQ Relay single-phase and multi-phase

Production and storage circuit, integrated Neutral Sensing-protection device with PLC-phase coupler (multi-phase) and DC current injection monitoring.

Q-DCC-2-P-INT adapter cable

MC4 adapter Connect PV modules quickly and easily to IQ8P Microinverters using the included Q-DCC-2-P-INT adapter cable with plug-and-play branded MC4 connectors.



IQ Cabling

Install microinverters quickly and safely with IQ Cabling. With multi-phase IQ Cabling, the installed capacity is automatically distributed evenly across all three phases.

Enphase 25 year limited warranty

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

*25-year warranty is valid, provided an internet-connected IQ Gateway is installed.

Compatible with latest generation high-output PV modules

- Supports latest high-current PV modules up to 670 Wp
- IQ8P product range supports all common PV module powers and cell architectures

Easy to install and commission

- Lightweight and compact
- Fast installation with simple AC cabling
- New integrated circuit technology enables faster firmware upgrades

High energy production, reliability, and safety

- More than one million power-on hours of reliability testing
- Patented Burst Mode technology provides increased energy production
- Low-voltage DC and Rapid Shutdown for the ultimate fire safety

NOTE:
(i) Commissioning of IQ8P Microinverter systems requires Enphase Installer App version 3.34.x or higher.
(ii) IQ8P Microinverters cannot be mixed together with previous generations of Enphase microinverters (IQ Series) on the same IQ Gateway.

IQ8P Microinverter

INPUT DATA (DC)		UNITS	IQ8P-72-2-INT
Typical module compatibility	—	—	60-cell/120-half-cell, 66-cell/132-half-cell, 72-cell/144-half-cell, 78-cell/156-half-cell No enforced DC/AC ratio and maximum input power. Modules can be paired as long as the maximum input voltage is not exceeded and the maximum input current of the inverter at the lowest and highest temperatures is respected. See the compatibility calculator at https://enphase.com/th-th/installers/microinverters/calculator.
Minimum/Maximum input voltage	$U_{dc,min}/U_{dc,max}$	V	16/65
Start-up input voltage	$U_{dc,start}$	V	22
Rated input voltage	$U_{dc,r}$	V	45.5
Minimum/Maximum MPP voltage	$U_{mpp,min}/U_{mpp,max}$	V	36/55
Minimum/Maximum operating voltage	$U_{op,min}/U_{op,max}$	V	16/65
Maximum input current	$I_{dc,max}$	A	14
Maximum short-circuit DC input current	$I_{sc,max}$	A	25 Maximum short-circuit current for modules (I_{sc}) allowed to be paired with IQ8P Microinverters: 20 A (calculated with 1.25 safety factor as per IEC 62548)
Maximum input power[1]	$P_{dc,max}$	W	670
OUTPUT DATA (AC)		**UNITS**	**IQ8P-72-2-INT**
Maximum apparent power	$S_{ac,max}$	VA	480
Rated power	$P_{ac,r}$	W	475
Nominal grid voltage	$U_{ac,nom}$	V	230
Minimum/Maximum grid voltage	$U_{ac,min}/U_{ac,max}$	V	184/276
Maximum output current	$I_{ac,max}$	A	2.07
Nominal frequency	f_{nom}	Hz	50
Minimum/Maximum frequency	f_{min}/f_{max}	Hz	47/55
Maximum units per single-phase 20 A/ multi-phase 25 A circuits	—	—	8 (L+N)/30 (3L+N) Single-phase/three-phase For IQ Cable with 2.5 mm^2 stranded conductors and using a 1.20 safety factor. The safety factor applied may vary based on the local regulations or best practices, also upon the characteristic the OCPD selected.
Recommended maximum units per single/multi-phase IQ Cable section	—	—	7 (L+N)/15 (3L+N) Single-phase/three-phase Centre feeding is the best practice. These design limits should ensure voltage rise and line conductor resistance on the IQ Cable are maintained within acceptable limits. In locations with a risk of high grid voltage at the point of connection, it may be necessary to decrease the maximum number of microinverters on the IQ Cable section by as much as 50%.
Protective class (all ports)	—	—	II
Total harmonic distortion	—	%	<5
Power factor setting	—	—	1.0
Power factor range	cos phi	—	0.80 leading ... 0.80 lagging
Inverter maximum efficiency	η_{max}	%	97.4
European weighted efficiency	η_{EU}	%	97.0
Inverter topology	—	—	Isolated (HF Transformer)
Nighttime power loss	—	mW	100

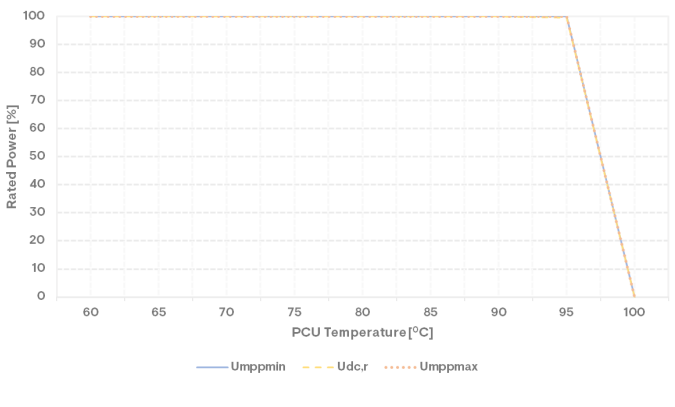
MECHANICAL DATA	IQ8P-72-2-INT
Ambient air temperature range	-40°C to 65°C (-40°F to 149°F)
Relative humidity range	4% to 100% (condensing)
Overvoltage class AC port	III

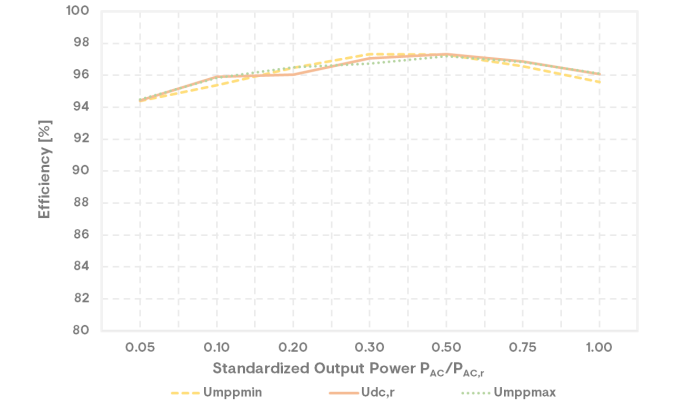
[1] Pairing PV modules with wattage above the limit may result in additional clipping losses. See the compatibility calculator at https://enphase.com/th-th/installers/microinverters/calculator.

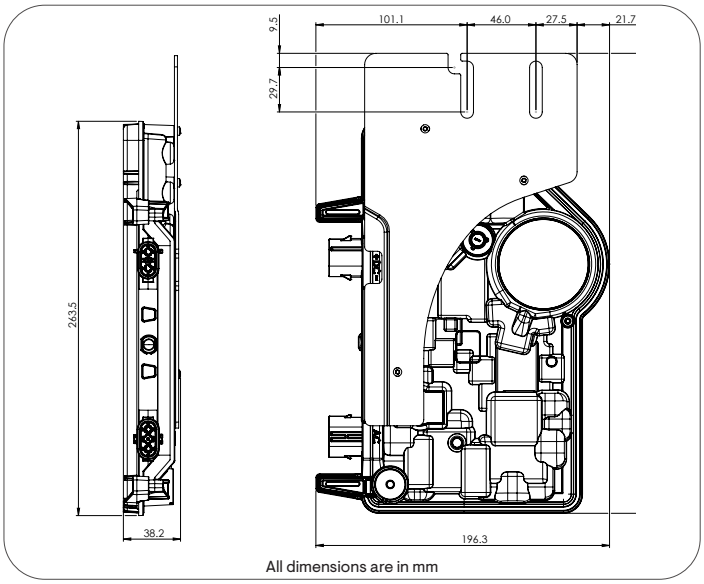
MECHANICAL DATA	IQ8P-72-2-INT
Number of input DC connectors (pairs) per single MPP-tracker	1
AC connector type	IQ Cabling (refer to the IQ Cable and accessories data sheet)
DC connector type	Supplied with Stäubli MC4 adapter
Dimensions (H × W × D)	265 mm (10.4 in) × 200 mm (7.9 in) × 35 mm (1.4 in) (without mounting brackets)
Weight (with mounting plate)	1.6 kg (3.5 lb)
Cooling	Natural convection – no fans
Enclosure	Class II double-insulated, corrosion-resistant polymeric enclosure
IP rating	Outdoor - IPX6/IP67
Altitude	<2,600 m

STANDARDS	IQ8P-72-2-INT
Grid compliance	MEA, PEA
Safety	EN IEC 62109-1, EN IEC 62109-2
EMC	EN IEC 61000-3-2, 61000-3-3, 61000-6-2, 61000-6-3, EN IEC 50065-1, 50065-2-1, EN55011 [2]
Product labelling	CE
Advanced grid functions[3]	Power export limiting (PEL), Phase imbalance management (PIM), Loss of phase detection (LOP), Power factor control Q (U), cos (phi) (P)
Microinverter communication	Power line communication (PLC) 110–120 kHz (Class B), narrowband 200 Hz

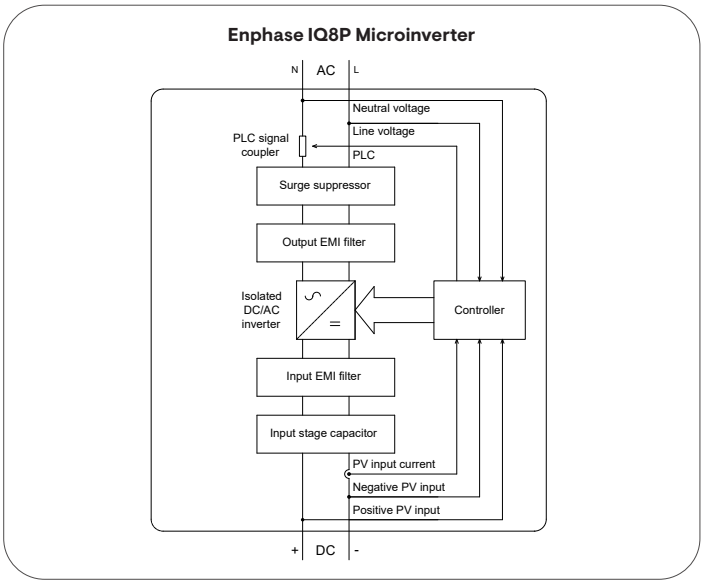
[2] At STC within MPP range.
[3] Some of these functions require IQ Gateway Metered with current transformers and/or IQ Relay installed.







All dimensions are in mm



Assembled in China, India, and Mexico.

Revision history

REVISION	DATE	DESCRIPTION
DSH-00135-2.0	August 2024	Updated the warranty information.
DSH-00135-1.0	February 2024	Initial release.