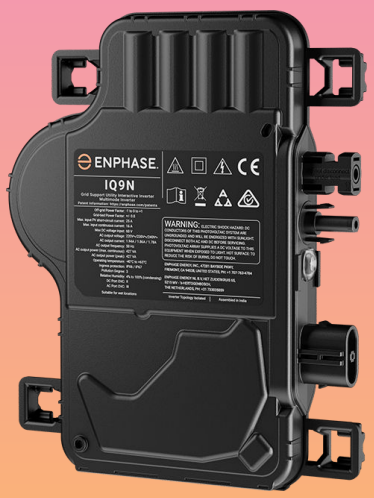
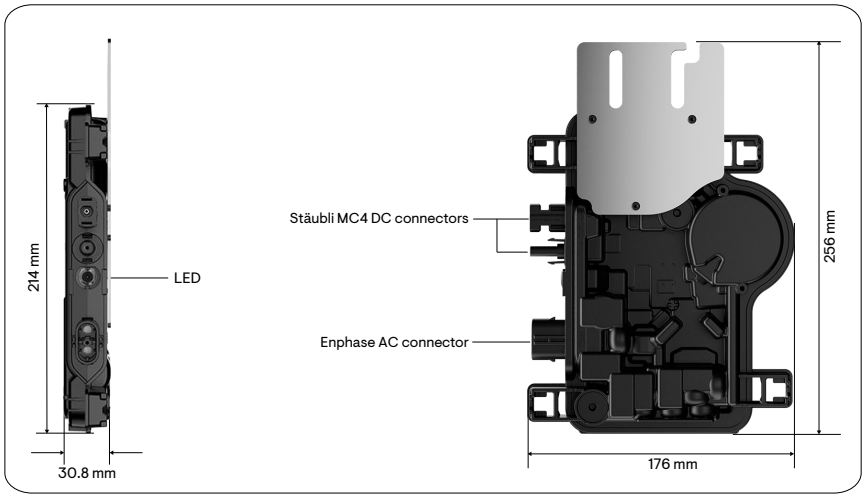
IQ9N Microinverters

The high-powered, smart grid-ready IQ9N Microinverters are designed to match the latest generation high-output PV modules. The IQ9N Microinverters has the highest energy production and reliability standards in the industry, and with rapid shutdown functionality, it meets the highest safety standards.[1]



Enphase 25 year warranty

Key specifications	IQ9N-A-INT
Max. AC output power	427 W
Nominal grid voltage	230 V
Nominal frequency	50 Hz
European weighted efficiency	97.3%
Min./Max. voltage	18/60 V
Min./Max. MPP voltage	28/45 V
Max. short-circuit DC input current	25 A
Ambient air temperature range	-40°C to 65°C (-40°F to 149°F)



Easy

- Compatible with existing IQ7, IQ8 systems. Seamlessly expand your solar capacity as your energy requirements increase[1]
- Lightweight and compact with integrated Stäubli MC4 connectors for easy installation
- Fast installation with simple AC cabling
- Faster firmware upgrades enabled by the new integrated circuit technology

Reliable

- More than 1 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
- Industry-leading warranty of up to 25 years[2]

Compatible

- Supports all common PV module powers and cell architecture

[1] For details, see the "Compatibility with IQ7, IQ8 Series Microinverters" section.
[2] A 25-year warranty is valid, provided an internet-connected IQ Gateway is installed.

Input data (DC)	Parameters	Units	IQ9N-A-INT
Typical module compatibility	–	–	No enforced DC/AC ratio and the 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 module compatibility calculator at https://enphase.com/en-au/installers/microinverters/calculator.
Min./Max. voltage	Udcmin/ Udcmax	V	18/60
Startup input voltage	Udcstart	V	21
Rated input voltage	Udc,r	V	36.5
Min./Max. MPP voltage	Umppmin/ Umppmax	V	28/45
Min./Max. operating voltage	Uopmin/ Uopmax	V	18/58
Max. input current	Idcmax	A	16
Max. short-circuit DC input current	Iscmax	A	25 Maximum short circuit current for modules (Isc) allowed to be paired with IQ9N Microinverters: 20 A (calculated with 1.25 safety factor as per IEC 62548).
Max. input power[3]	Pdcmax	W	560

Output data (AC)	Parameters	Units	IQ9N-A-INT
Max. AC output power	Pac,max	W	427
Max. apparent power	Sac,max	VA	427
Rated apparent power	Pac,r	W	Not used
Nominal grid voltage	Uacnom	V	230
Min./Max. grid voltage	Uacmin/ Uacmax	V	184/276
Rated/Max. output current	Iacmax	A	1.86
Nominal frequency	fnom	Hz	50
Min./Max. frequency	fmin/fmax	Hz	45/55
Max. units per single-phase 20 A circuit / per multi-phase 25 A circuit	16 A/Iacmax	–	9 (L+N)/27 (3L+N) For IQ Cable with 2.5 sq.mm stranded conductors and using a 1.20 safety factor. The safety factors applied may vary based on local regulations or best practices, as well as upon the characteristics the OCPD selected.
Recommended maximum units per single/multi-phase IQ Cable section to reduce voltage rise in IQ Cable	–	–	Not used Centre feeding is the best practice. These design limits 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	–	%	<3

[3] The installer must not exceed the small-scale technology certificate (STC) wattage limit for PV modules when claiming the STC. Pairing PV modules with wattage above the limit may result in additional clipping losses. See the compatibility calculator at https://enphase.com/en-au/installers/microinverters/calculator.

Output data (AC)	Parameters	Units	IQ9N-A-INT
Power factor setting	–	–	1.0
Power factor range	cos phi	–	0.8 leading ... 0.8 lagging
Inverter maximum efficiency	ηmax	%	97.8
European weighted efficiency	ηEU	%	97.3
Inverter topology	–	–	Isolated (HF transformer)
Night-time power loss	–	mW	80

Mechanical data	Units	IQ9N-A-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/DC port	–	III
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	–	Stäubli MC4
Dimensions (H × W × D)	mm	214 × 176 × 30.8 (without mounting brackets)
Weight (with mounting plate)	kg	1.1
Cooling	–	Natural convection – no fans
Enclosure	–	Class II double-insulated, corrosion-resistant polymeric enclosure
IP rating	–	Outdoor - IP67
Altitude	m	<3000
Calorific value	MJ/unit	37.5
Noise level	dBA	<25

Standards	IQ9N-A-INT
Grid compliance (with IQ Relay)	AS/NZS 4777-2:2020 +A2
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, 50065-2-2, EN 55011[4]
Product labelling	CE, RCM, BIS
Advanced grid functions[5]	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

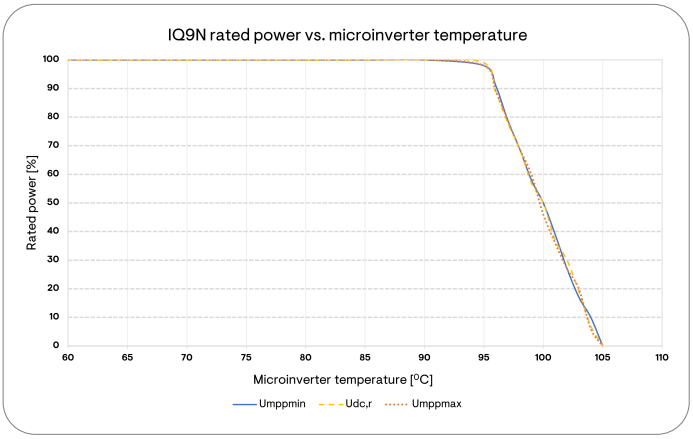
Compatibility with IQ7, IQ8 Series Microinverters

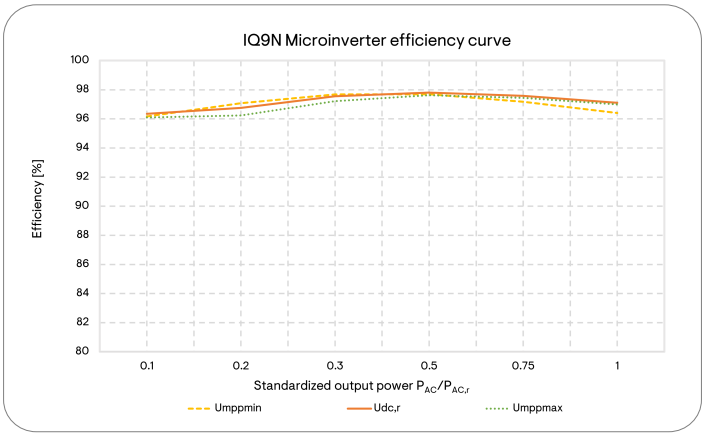
- IQ9N Microinverters can be added to existing IQ7 or IQ8 systems on the same IQ Gateway/IQ Combiner/IQ System Controller only in the following configurations: (i) Solar Only (ii) Solar + Battery (IQ Battery 3T/10T or IQ Battery 5P) grid-tied or Solar + Battery (IQ Battery 5P) with backup and IQ System Controller 3 INT.
- IQ7 or IQ8 Series Microinverters cannot be added to a site with existing IQ9N Microinverters on the same gateway.

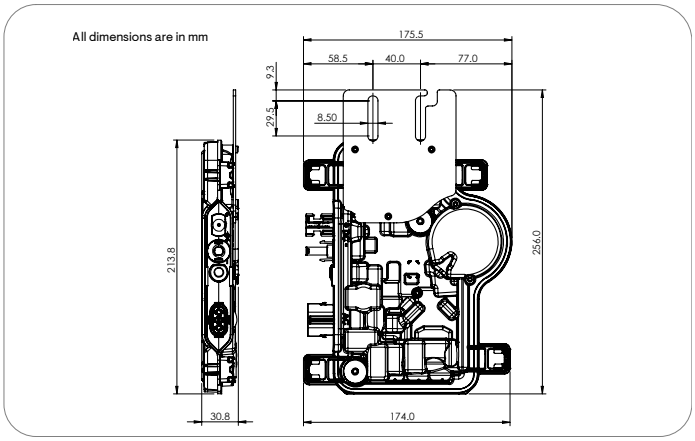
[4] At STC within the MPP range.
[5] Some of these functions require IQ Gateway Metered with current transformers and/or IQ Relay installed.

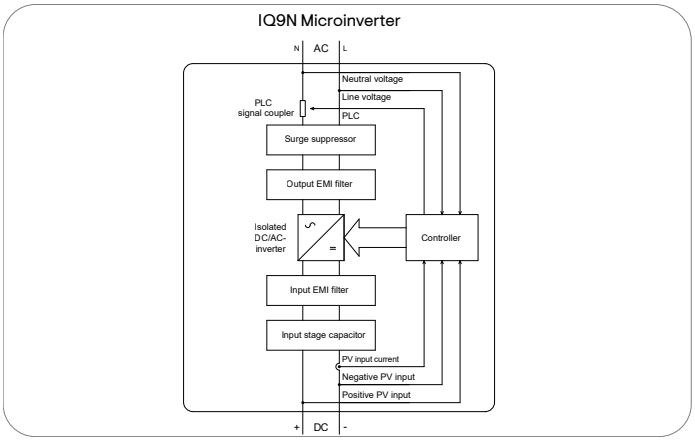
Compatibility with IQ7, IQ8 Series Microinverters

- A mixed system of IQ7, IQ8, and IQ9N will not support the IQ9N-specific Sunlight Jump Start feature. However, a mixed system of IQ8 and IQ9N will support the Sunlight Jump Start feature.
- The combined peak power output of the IQ7, IQ8, and IQ9N Microinverters in the system must not exceed 150% of the IQ Battery array's rated power output. If the microinverter array exceeds this ratio, PV load shedding must be implemented to shed excess PV when the system transitions to off-grid mode. However, this ratio (PV/ESS) increases to a 200% limit for a mixed system of IQ8 and IQ9N Microinverters.









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Importer: Enphase Energy Aust. Pty/Ltd., 88 Market St., South Melbourne, VIC 3205. PH: +61 386691679

Components of the Enphase Energy System

IQ Battery

All-in-one AC-coupled storage solution that integrates seamlessly with your solar energy system, providing reliable backup power and intelligent energy management for maximum performance and energy savings.

IQ Gateway

The IQ Gateway is a device that performs energy management, provides internet connectivity, and integrates with the IQ Series Microinverters to provide complete control and insights into the Enphase Energy System.[6]

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.

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.

IQ System Controller

The IQ System Controller connects the home to the grid power, IQ Batteries, generator and solar PV with microinverters.

[6] A 25-year warranty is valid, provided an internet-connected IQ Gateway is installed.

Revision history

Revision	Date	Description
DSH-00859-1.0	July 2025	Preliminary release.