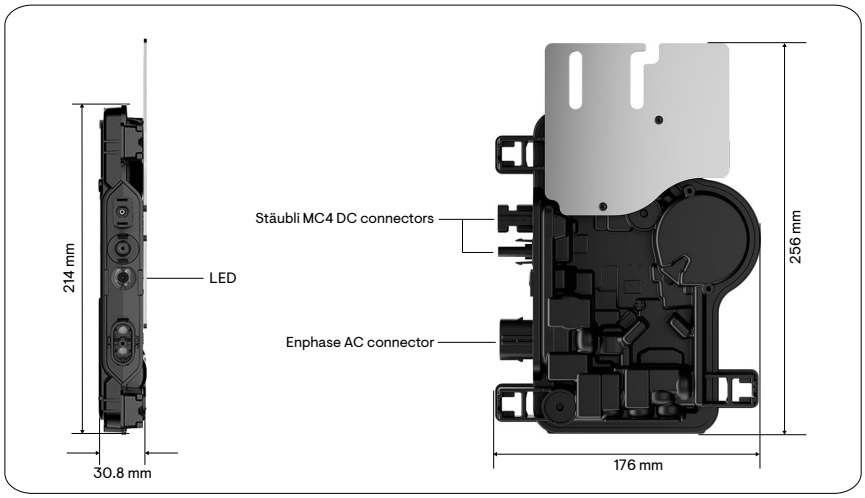
# IQ9N Microinverters

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


Enphase 25 year warranty

CE

| Key specifications | IQ9N-A-INT |
|---|---|
| Maximum apparent power | 427 VA |
| Nominal grid voltage | 230 V |
| Nominal frequency | 50 Hz |
| European weighted efficiency | 97.44% |
| Minimum/Maximum voltage | 18/60 V |
| Minimum/Maximum MPP voltage | 28/45 V |
| Maximum short-circuit DC input current | 25 A |
| Ambient air temperature range | –40°C to 65°C |




## Easy

- 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[1]

## Compatible

- Supports all common PV module powers and cell architecture
- Compatible with existing IQ7, IQ8 systems. Seamlessly expand your solar capacity as your energy requirements increase[2]

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

| Input data (DC) | Parameters | Units | IQ9N-A-INT |
|---|---|---|---|
| Typical module compatibility | — | — | 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 is respected at the lowest and highest temperatures. See the compatibility calculator at https://enphase.com/en-gb/installers/microinverters/calculator. |
| Minimum/Maximum voltage | Udcmin/ Udcmax | V | 18/60 |
| Startup input voltage | Udcstart | V | 21 |
| Rated input voltage | Udc,r | V | 36.5 |
| Minimum/Maximum MPP voltage | Umppmin/ Umppmax | V | 28/45 |
| Minimum/Maximum operating voltage | Uopmin/ Uopmax | V | 18/58 |
| Maximum input current | Idcmax | A | 16 |
| Maximum short-circuit DC input current | Iscmax | A | 25<br>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). |
| Maximum input power[3] | Pdcmax | W | 600 |
| Maximum inverter backfeed current to array | Irms | A | 0 |

| Output data (AC) | Parameters | Units | IQ9N-A-INT |
|---|---|---|---|
| Maximum apparent power | Sac,max | VA | 427 |
| Rated power | Pac,r | W | 427 |
| Nominal grid voltage | Uacnom | V | 230 |
| Minimum/Maximum grid voltage | Uacmin/ Uacmax | V | 184/276 |
| Maximum output current | Iacmax | A | 1.86 |
| Nominal frequency | fnom | Hz | 50 |
| Minimum/Maximum frequency | fmin/fmax | Hz | 45/55 |
| Maximum units per single/ multi-phase 20 A circuit | 16 A/Iacmax | — | 8 (L+N)/24 (3L+N)<br>For IQ Cable with 2.5 sq mm stranded conductors and using a 1.25 safety factor, 16 A per phase is calculated as the maximum current according to IEC 60364. Safety factors applied may vary based on local regulations or best practices, as well as upon the characteristics of the OCPD. |
| Maximum units per single/ multi-phase IQ Cable section | — | — | 7 (L+N)/15 (3L+N)<br>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] Pairing PV modules with wattage above the limit may result in additional clipping losses. See the compatibility calculator at https://enphase.com/en-gb/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 | % | 97.95 |
| European weighted efficiency | ηEU | % | 97.44 |
| Maximum output fault current | Irms | A | 2.32 |
| Inverter topology | — | — | Isolated (HF transformer) |
| Night-time power loss | — | mW | 40 |

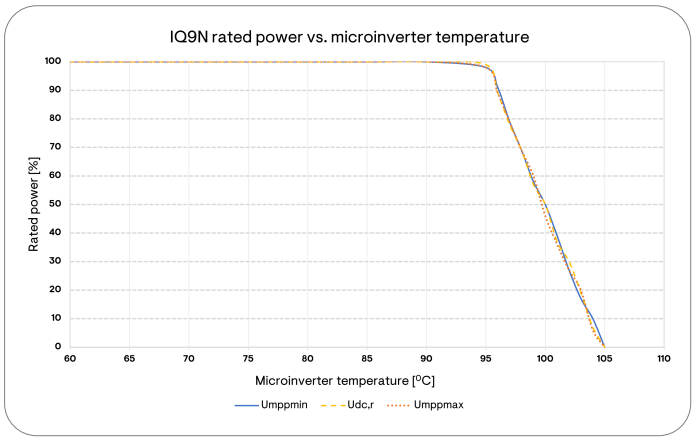
| Mechanical data | Units | IQ9N-A-INT |
|---|---|---|
| Ambient air temperature range | — | –40°C to 65°C |
| Relative humidity range | % | 4 to 100 (condensing) |
| Decisive voltage class (DVC) | — | AC: DVC C \| DC: DVC B |
| Number of input DC connectors (pairs) per single MPP tracker | — | 1 |
| 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 |
| Suitable for wet locations | — | Yes |
| Altitude | m | <3000 |
| Calorific value | MJ/unit | 15.0 |
| Noise level | dBA | <25 |
| AC overvoltage category | — | III |
| Pollution degree | — | PD3 |

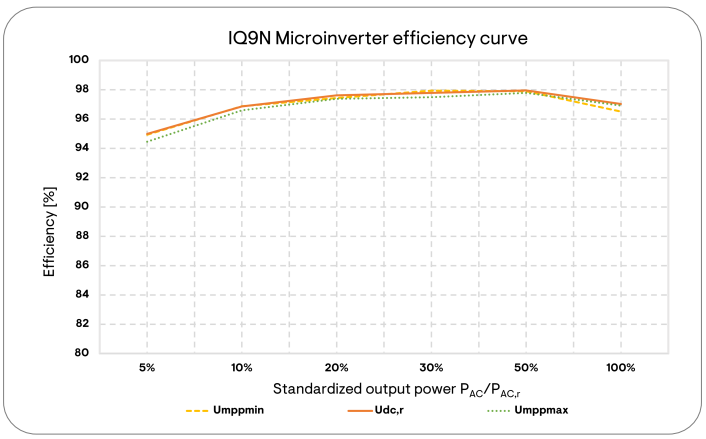
| Standards | IQ9N-A-INT |
|---|---|
| Grid compliance | G98, G99, G100, G98-NI, G99-NI |
| Safety | EN IEC 62109-1, EN IEC 62109-2 |
| EMC | EN IEC 61000-3-2, 61000-3-3, 61000-6-2, 61000-6-3, EN IEC 50065-1, 50065-2-2, EN 55011[4] |
| Product labelling | CE, RCM |
| Advanced grid functions[5] | Power 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 |

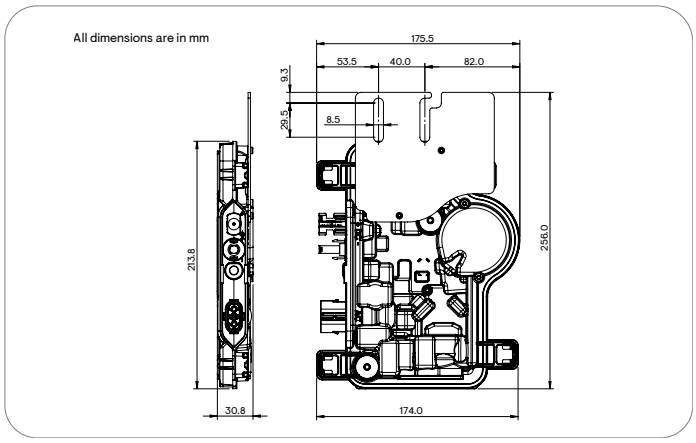
[4] At STC within the MPP range.
[5] Some of these functions require an IQ Gateway Metered with current transformers and/or an IQ Relay installed.

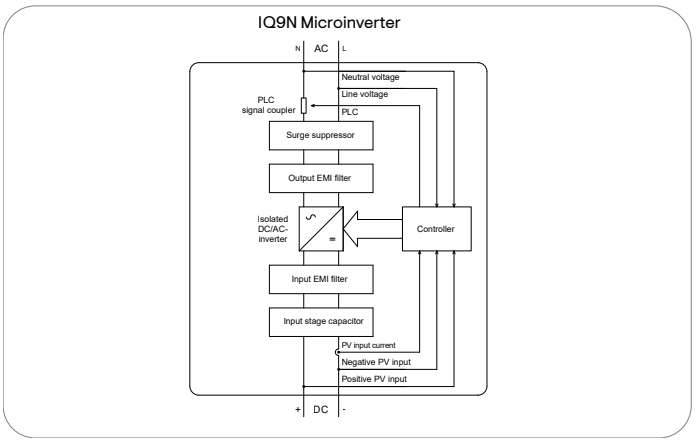
## Compatibility with IQ7, IQ8 Series Microinverters

- 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 Plus Battery (IQ Battery 3T/10T or IQ Battery 5P) grid-tied or Solar Plus 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.
- A mixed system of IQ7, IQ8, and IQ9N will not support the microinverter-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 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 NL B.V., Het Zuiderkruis 65, 5215MV, 's-Hertogenbosch, The Netherlands, Tel: +31 73 3035859

# 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 System Controller

The IQ System Controller connects the house to the power grid, the IQ Battery, and the PV system with microinverters.

### 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 EV Charger 2

The IQ EV Charger 2 combines advanced hardware with AI-powered energy management to deliver seamless, reliable EV charging for every home. It optimizes charging based on the lowest utility rates and maximizes the use of solar energy.

### 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.

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

# Revision history

| Revision | Date | Description |
|---|---|---|
| DSH-00748-1.0 | December 2025 | Initial release. |