EUROPE

DATA SHEET


# IQ7 Series Microinverters

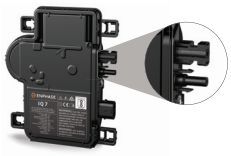
The high-powered smart grid-ready Enphase IQ7 Series Microinverters - IQ7, IQ7+, and IQ7A dramatically simplfy the installation process while achieving the highest system performance.

**Enphase IQ Gateway**

Part of the Enphase Energy System, IQ7 Series Microinverters integrate with the Enphase IQ Battery, Enphase IQ Gateway, and the Enphase App monitoring and analysis software.

**Q-Relay 1P and 3P**

Production and storage, circuit integrated, NS-protection device with PLC-Phase coupler (3P) and DC current injection monitoring*.



**IQ7 Series with Integrated MC4 connectors**

Connect PV modules quickly and easily to the IQ7 Series Microinverters that has Integrated MC4 connectors.

**IQ Cables**

The IQ Cables allow quick and safe connection of the microinverters. With 3P variants, the installed capacity is automatically distributed evenly across all three phases.

Enphase 25 year limited warranty

IQ7 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**.

**Easy to install**

- Lightweight and compact with plug-n-play connectors
- Power Line Communication (PLC) between components
- Familiar AC cabling architecture

**High productivity and reliability**

- More than one million cumulative hours of testing
- Class II double-insulated enclosure
- Safer AC cabling methods

**Smart Grid Ready**

- Complies with the latest advanced grid support
- Remote automatic updates for the latest grid requirements
- Configurable to support a wide range of grid profiles

* IQ Relay is not required in all countries, check local grid connection requirements to confirm.
** 25 years warranty is valid provided an internet connected IQ Gateway is installed.

# IQ7 Series Microinverters

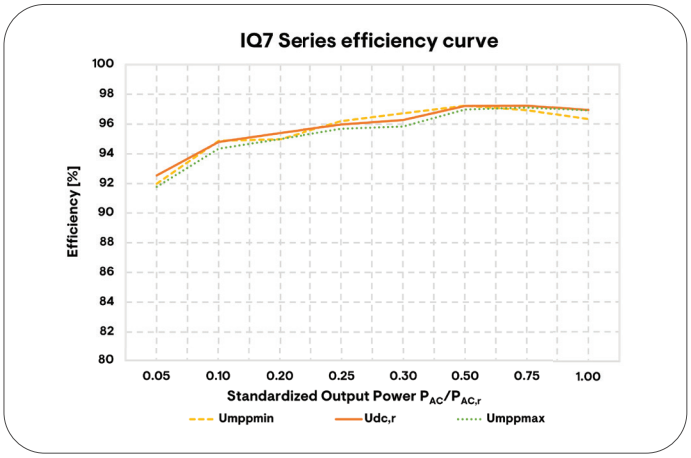
| INPUT DATA (DC) | | UNITS | IQ7-60-M-INT | IQ7PLUS-72-M-INT | IQ7A-72-M-INT |
|---|---|---|---|---|---|
| Typical Module compatibility | | | 60-cell / 120 half-cell | 60-cell / 120 half-cell, 66-cell / 132 half-cell, 72-cell / 144 half-cell | 60-cell / 120 half-cell, 66-cell / 132 half-cell, 72-cell / 144 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 Maximum input current of the inverter at the lowest and highest temperatures are respected. See the compatibility calculator at https://enphase.com/installers/microinverters/calculator. | | |
| Minimum / Maximum input voltage | $U_{dcmin}$ / $U_{dcmax}$ | V | 16 / 48 | 16 / 60 | 18 / 58 |
| Start-up input voltage | $U_{dcstart}$ | V | 22 | 22 | 33 |
| Rated input voltage | $U_{dc,r}$ | V | 32 | 36 | 40.5 |
| Minimum / Maximum MPP voltage | $U_{mppmin}$ / $U_{mppmax}$ | V | 27 / 37 | 27 / 45 | 38 / 43 |
| Minimum / Maximum operating voltage | $U_{opmin}$ / $U_{opmax}$ | V | 16 / 48 | 16 / 60 | 18 / 58 |
| Maximum input current | $I_{dcmax}$ | A | 10 | 12 | 10.2 |
| Maximum short-circuit DC input current | $I_{scmax}$ | A | 15 | 15 | 15 |
| Maximum input power | $P_{dcmax}$ | W | 350+ | 440+ | 500+ |

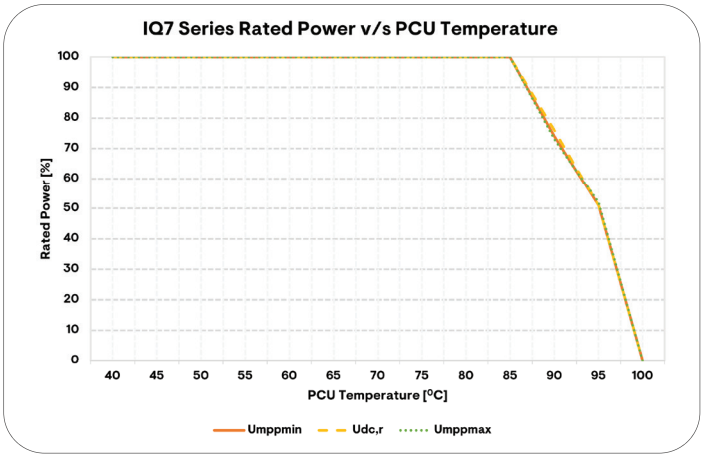
| OUTPUT DATA (AC) | | UNITS | IQ7-60-M-INT | IQ7PLUS-72-M-INT | IQ7A-72-M-INT |
|---|---|---|---|---|---|
| Maximum apparent power | $S_{ac,max}$ | VA | 245 | 295 | 366 |
| Rated power | $P_{ac,r}$ | W | 240 | 290 | 349 |
| Nominal grid voltage | $U_{acnom}$ | V | 230 | | |
| Minimum / Maximum grid voltage | $U_{acmin}$ / $U_{acmax}$ | V | 184 / 276 | | |
| Maximum output current | $I_{acmax}$ | A | 1.07 | 1.28 | 1.59 |
| Nominal frequency | $f_{nom}$ | Hz | 50 | | |
| Minimum / Maximum frequency | $f_{min}$ / $f_{max}$ | Hz | 45 / 55 | | |
| Maximum units per single / multi-phase 20 A circuit | | A | 15 (L+N) / 45 (3L+N) | 12 (L+N) / 36 (3L+N) | 10 (L+N) / 30 (3L+N) |
| | | | For IQ Cable with 2.5mm² stranded conductors and using a 1.25 safety factor, 16 A per phase is calculated as maximum current according to IEC 60364. Safety factor applied may vary based on local regulation or best practice, also upon the characteristic the OCPD selected. | | |
| Maximum units per single / multi-phase IQ cable section | | | 15 (L+N) / 24 (3L+N) | 12 (L+N) / 21 (3L+N) | 10 (L+N) / 18 (3L+N) |
| | | | Centre feeding is 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 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 | cosphi | | 0.8 leading – 0.8 lagging | | |
| Inverter maximum efficiency | $\eta_{max}$ | % | 97.40 | 97.24 | 97.23 |
| European weighted efficiency | $\eta_{EU}$ | % | 96.50 | | |
| Inverter topology | | | Isolated (HF Transformer) | | |
| Night-time power loss | | mW | 50 | | |

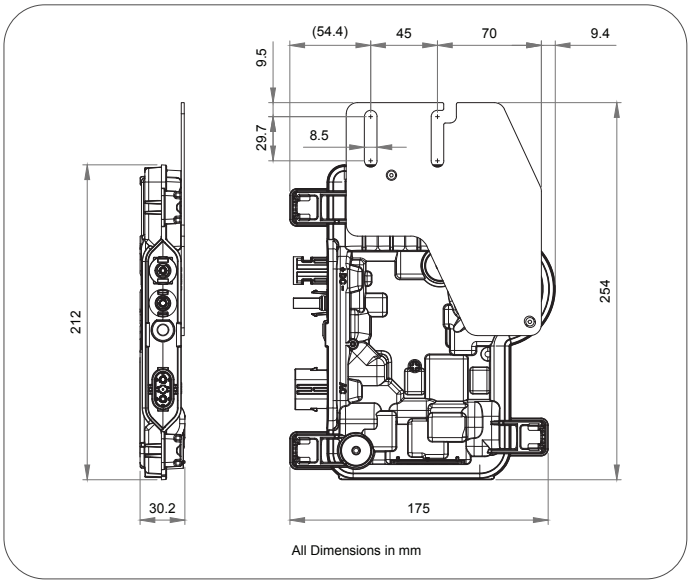
| MECHANICAL DATA | IQ7-60-M-INT | IQ7PLUS-72-M-INT | IQ7A-72-M-INT |
|---|---|---|---|
| Ambient air temperature range | -40 °C to +65 °C (-40 F to +149 F) | | -40 °C to +60 °C (-40 F to +140 F) |
| Relative humidity range | 4 % to 100 % (condensing) | | |
| Overvoltage class AC port | III | | |
| Number of input DC connectors (pairs) per single MPP-tracker | 1 | | |
| AC Connector type | Enphase IQ Cabling (refer to separate datasheet for cable and accessories) | | |
| DC Connector type | Staubli made MC4 | | |

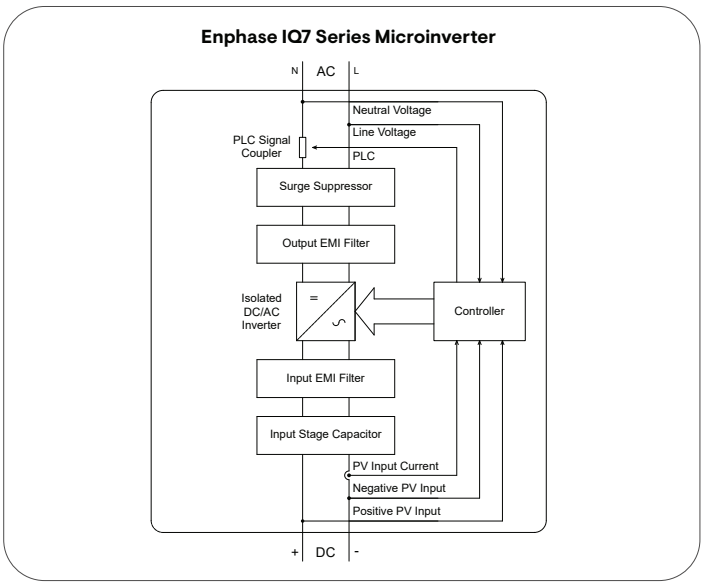
| MECHANICAL DATA | IQ7-60-M-INT | IQ7PLUS-72-M-INT | IQ7A-72-M-INT |
|---|---|---|---|
| Dimensions (HxWxD) | 212 mm (8.3") x 175 mm (6.9") x 30.2 mm (1.2") (without mounting brackets) | | |
| Weight (with mounting plate) | 1.1 kg (2.4 lbs) | | |
| Cooling | Natural convection – no fans | | |
| Enclosure | Class II double-insulated, corrosion resistant polymeric enclosure | | |
| IP Rating | Outdoor - IP67 | | |
| Maximum altitude | < 2,000 metres | | |
| Calorific value | 37.5 MJ / unit | | |
| **STANDARDS** | **IQ7-60-M-INT** | **IQ7PLUS-72-M-INT** | **IQ7A-72-M-INT** |
| Grid Compliance (with Q Relay) | TOR Erzeuger Typ A, C10/11, PPDS Annex 4, VFR 2019, VDE-AR-N 4105:2018, CEI 0-21, NEN1010, EN 50549-1, UNE206007-1/2 | | |
| Grid Compliance (without Q Relay) | G98, G98 NI, G99, G99 NI, G100 | | |
| 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 | | |
| Product labelling | CE, UKCA & RCM | | |
| Advanced Grid Functions[1] | Power export limiting (PEL), Phase imbalance management (PIM), Loss of phase detection (LOP), Power factor control Q (U), cos (phi) (P) | | |
| Microinverter Communication | Powerline communication (PLC) 110 – 120 kHz (Class B), Narrow band 200 Hz | | |

(1) Some of these functions require Envoy-S Metered with current transformers and/or Q Relay installed.




Assembled in China, India, and Mexico.