



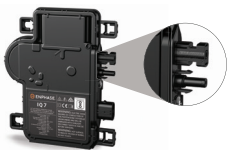
IQ7 Series Microinverters

The high-powered smart grid-ready Enphase IQ7 Series Microinverters - IQ7, IQ7+, and IQ7A dramatically simplify 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.



IQ7 Series with Integrated MC4 connectors

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



Q-Relay 1P and 3P

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



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.



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*.

* 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.

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

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 2.5mm ² 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	η_{max}	%	97.40	97.24	97.23
European weighted efficiency	η_{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.

