

Lightweight.  
Flexible.  
Powerful.

# Enphase IQ



 **ENPHASE.**  
**IQ7+**  
IQ7+ Grid Support Interactive Inverters  
For Enphase patent information, see  
[enphase.com/company/patents](http://enphase.com/company/patents)

## Enphase IQ 7, IQ 7+, IQ 7X

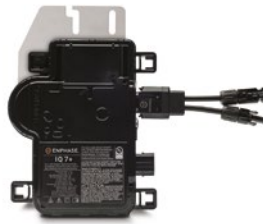
# Component list

### Enphase Microinverters and Monitoring



#### IQ7-60-2-INT

Enphase IQ 7 Micro™, +350 Wc input power.



#### IQ7PLUS-72-2-INT

Enphase IQ 7 Micro™, +440 Wc input power.



#### IQ7X-96-2-INT

Enphase IQ 7 Micro™, +460 Wc input power.



#### ENV-S-WB-230-G

Enphase Envoy-S™ communications gateway with basic PV production monitoring ( $\pm 5\%$ ).

Compatible with M215, M250 and IQ 7-Series microinverters.



#### ENVOY-S-WM-230

Enphase Envoy-S Metered™ communications gateway with integrated single-phase PV and consumption metering. Compatible with M215, M250 and IQ 7-Series microinverters.



#### CT-100-SPLIT

Enphase current transformer (CT).  $\pm 2.5\%$  accuracy. Production and consumption monitoring. Accessory for Envoy-S Metered.

### Enphase AC battery and Accessories



#### IQ7-B1200-LN-I-INT01-RVO

Enphase AC Battery™  
270W/1.2 kWh, 230 VAC.



#### BWM-450MM-A

Enphase Wall-Mount Bracket™  
487 mm (W) × 311 mm (H)  
(allow 450-mm battery-battery spacing)  
Compatible with the Enphase AC Battery.

#### CELLMODEM-02 M

Enphase plug and play industrialgrade modem with five-year data plan for systems up to 60 microinverters. (Available where there is adequate mobile service in the installation area).



### Enphase Q Relay



#### Q-RELAY-1P-INT

External relay acts as a grid monitoring and disconnection device. Automatically reconnects when valid grid conditions resume.  
Single-phase



#### Q-RELAY-3P-INT

External relay acts as a grid monitoring and disconnection device. Automatically reconnects when valid grid conditions resume.  
Three-phase

## Enphase Q Cable and Accessories



**Q-25-10-240**

**Enphase Q Cable™**

2.5 mm<sup>2</sup>, single-phase, 1.3-m connector spacing. 240 connectors per box & 1 male and female connector.



**Q-25-17-240**

**Enphase Q Cable™**

2.5 mm<sup>2</sup>, single-phase, 2-m connector spacing. 240 connectors per box & 1 male and female connector.



**Q-25-20-200**

**Enphase Q Cable™**

2.5 mm<sup>2</sup>, single-phase, 2.3-m connector spacing. 200 connectors per box & 1 male and female connector.



**Q-25-17-3P-160**

**Enphase Q Cable™**

2.5 mm<sup>2</sup>, three-phase, 2-m connector spacing. 160 connectors per box & 1 male and female connector.



**Q-25-10-3P-200**

**Enphase Q Cable™**

2.5 mm<sup>2</sup>, three-phase, 1.3-m connector spacing. 200 connectors per box & 1 male and female connector.



**Q-25-20-3P-160**

**Enphase Q Cable™**

2.5 mm<sup>2</sup>, three-phase, 2.3-m connector spacing. 160 connectors per box & 1 male and female connector.



**EFM-35MM / EFM-40M**

**Enphase Frame Mount**

for mounting Enphase M and IQ-Series microinverters to 35 mm or 40 mm module frames.



**Q-SEAL-10**

**Enphase Q Sealing Cap (female)**

One cap per unused Q Cable connector.



**Q-25-RAW-300**

**Enphase Q Cable™**

2.5 mm<sup>2</sup>, single-phase, 300-metre cable with no connectors.



**Q-25-RAW-3P-300**

**Enphase Q Cable™**

2.5 mm<sup>2</sup>, three-phase, 300-metre cable with no connectors.



**Q-ET-2LN**

**Engage Cable – IQ Micro connector**



**Q-DCC-2-INT**

Enphase IQ Replacement DC Adapter (MC4). DC Adapter to MC4 (100 VDC max.).



**Q-DISC-10**

**Enphase Q Cable Disconnect Tool**

For single-phase installation.



**Q-DISC-3P-10**

**Enphase Q Cable Disconnect Tool**

For three-phase installation.



**Q-TERM-R-10**

**Enphase Q Cable Terminator**

For single-phase installation.



**Q-TERM-3P-10**

**Enphase Q Cable Terminator**

For three-phase installation.



**Q-CONN-R-10M**

**Enphase Single-Phase Field-Wireable Connector (male)**



**Q-CONN-R-10F**

**Enphase Single-Phase Field-Wireable Connector (female)**



**Q-CONN-3P-10M**

**Enphase Three-phase Field-Wireable Connector (male)**



**Q-CONN-3P-10F**

**Enphase Three-phase Field-Wireable Connector (female)**

## Enphase Microinverters

# Enphase IQ 7, IQ 7+ and IQ 7X Microinverters

The high-powered smart grid-ready Enphase IQ 7™, Enphase IQ 7+™ and Enphase IQ 7X™ microinverters achieve the highest system efficiency.

Part of the Enphase IQ system, the IQ 7, IQ 7+ and IQ7X integrate perfectly with the Envoy-S™ and the Enphase Enlighten™ monitoring and analysis software.

The IQ 7, IQ 7+ and IQ7X micros extend the reliability standards set forth by previous generations and undergo over a million hours of power-on testing, enabling Enphase to provide an industry-leading warranty.



### Easy to install

- Lightweight and simple
- Faster installation with improved, lighter two-wire cabling

### Productive and reliable

- Optimised for all high-powered modules
- More than one million hours of testing
- Class II double-insulated enclosure

### Smart-Grid ready

- Complies with advanced grid support, voltage and frequency ride-through requirements
- Remotely updates to respond to changing grid requirements
- Configurable for varying grid profiles



## Enphase IQ 7, IQ 7+ and IQ 7X Microinverters

INPUT DATA (DC)	IQ7-60-2-INT	IQ7PLUS-72-2-INT	IQ7X-96-2-INT
Commonly used module pairings <sup>1</sup>	235 W – 350 W + <sup>1</sup>	235 W – 440 W + <sup>1</sup>	320 W – 460 W + <sup>1</sup>
Module compatibility (see online calculator) <sup>2</sup>	60 cells only	60 & 72 cells	96 cells
Maximum input DC voltage	48 V	60 V	79.5 V
Peak power tracking range	27 V – 37 V	27 V – 45 V	53 V – 64 V
Operating range	16 V – 48 V	16 V – 60 V	25 V – 79.5 V
Min/Mas start voltage	22 V / 48 V	22 V / 60 V	33 V / 79.5 V
Max DC short-circuit current (module I <sub>sc</sub> )	15 A	15 A	10 A
Overvoltage class DC port	II	II	II
DC port backfeed under single fault PV array configuration	0 A	0 A	0 A
	AC side protection requires max. 20 A per branch circuit.		
OUTPUT DATA (AC)	IQ 7	IQ 7+	IQ 7X
Peak output power	250 VA	295 VA	320 VA
Maximum continuous output power	240 VA	290 VA	315 VA
Nominal (L-N) voltage range <sup>2</sup>	230 V / 184-276 V	230 V / 184-276 V	230 V / 184-276 V
Maximum continuous output current	1.04 A	1.26 A	1.37 A
Nominal frequency	50 Hz	50 Hz	50 Hz
Frequency range	45 – 55 Hz	45 – 55 Hz	45 – 55 Hz
Maximum units per 20 A branch circuit <sup>3</sup>	15 (Ph + N) 45 (3Ph + N)	12 (Ph + N) 36 (3Ph+N)	11 (Ph + N) 33 (3Ph + N)
Maximum units per cable	15 (Ph+N), 24 (3Ph+N)	12 (Ph+N), 21 (3Ph+N)	11 (Ph + N), 21 (3Ph + N)
Overvoltage class AC port	III	III	III
AC port backfeed current	0 A	0 A	0 A
Power factor setting	1.0	1.0	1.0
Power factor (adjustable)	0.7 lagging ... 0.7 leading	0.7 lagging ... 0.7 leading	0.7 lagging ... 0.7 leading
EFFICIENCY	@230 V	@230 V	@230 V
EN 50530 (EU) weighted efficiency	96.5%	96.5%	96.5%
MECHANICAL DATA			
Ambient operating temperature range	–40 °C to +65 °C	–40 °C to +65 °C	–40 °C to +60 °C
Relative humidity range	4% to 100% (condensing)		
DC connector type	MC4 (or Amphenol H4 UTX with additional Q-DCC-5 adapter)		
Dimensions (W×H×D)	212 mm × 175 mm × 30.2 mm (without bracket)		
Weight	1.08 kg		
Cooling	Natural convection – No fans		
Approved for wet locations	Yes		
Pollution degree	3		
Enclosure	Class II double-insulated, corrosion-resistant polymeric enclosure		
IP rating	Outdoor – IP67		
FEATURES			
Communication with Envoy-S	PLC (power-line communication)		
Monitoring	Enlighten Manager and MyEnlighten compatible with Enphase Envoy-S monitoring options		
Compliance	AS 4777.2, RCM, IEC/EN 61000-6-3, IEC/EN 62109-1, IEC/EN 62109-2		
Warranty	25 years		

1. No enforced DC/AC ratio. See the compatibility calculator at [enphase.com/en-us/support-client/module-compatibility](https://enphase.com/en-us/support-client/module-compatibility).

2. Nominal voltage range can be extended beyond nominal if required by the utility.

3. Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

## Enphase communications gateway

# Enphase Envoy-S

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The **Enphase Envoy-S Metered™** communications gateway delivers solar production and energy consumption data to Enphase Enlighten™ monitoring and analysis software for comprehensive, remote maintenance and management of the Enphase System.

With production metering and consumption monitoring options, Envoy-S is the platform for total energy management and integrates with the Enphase AC Battery™.

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### Smart

- Enables web-based monitoring and control
- Bidirectional communications for remote upgrade

### Simple

- Easy system configuration using Enphase Installer Toolkit™ mobile app
- Flexible networking with Wi-Fi, Ethernet, or mobile

### Reliable

- Designed for installation indoors or in an outdoor enclosure
- 5-year warranty

## Enphase Envoy-S Metered

<b>MODEL NUMBER</b>	
Envoy-S Metered ENV-WM-230 multiphase	Enphase Envoy-S communications gateway with integrated single-phase PV and consumption metering
<b>ACCESSORIES</b> (order separately)	
Enphase Mobile Connect™ CELLMODEM-02	Plug and play industrial-grade modem with five-year data plan for systems up to 60 microinverters. (Available where there is adequate mobile service in the installation area)
<b>POWER REQUIREMENTS</b>	
Hard	230 VAC or 400Y/230 VAC, 50 Hz Max 20 A over-current protection required
<b>CAPACITY</b>	
Number of microinverters polled	Up to 600
<b>MECHANICAL DATA</b>	
Dimensions (W × H × D)	213 × 126 × 45 mm
Weight	0.5 kg
Ambient temperature range	–40 to +65°C –40 to +46°C if installed in an enclosure
Environmental rating	IP30. For installation indoors or in an IP54-rated (or better) enclosure.
Altitude	To 2000 metres.
USB ports	Two USB 2.0 ports, auto-sensing, auto-negotiation
<b>INTERNET CONNECTION OPTIONS</b>	
Integrated Wi-Fi	802.11b/g/n (2.4 GHz, 5 GHz)
Ethernet	Optional, 802.3, Cat5E (or Cat 6) UTP Ethernet cable (not included)
Mobile	Optional, CELLMODEM-02 (not included)
<b>COMPLIANCE</b>	
Compliance	IEC/EN 61010-1:2010, EN 50065-1, EN 61000-4-5, EN 61000-6-1, EN
<b>WARRANTY</b>	
	<b>5 YEARS</b>

## Enphase storage system

# Enphase AC battery™

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The **Enphase AC battery™** is **simple** to install, **safe**, very **reliable** and provides the lowest lifetime energy cost for both new solar customers and retrofit customers. As an installer, you can design the right system size to meet the needs of the homeowner.

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### **Simpler**

- Quick and easy single-person installation
- Plug and play installation
- Interconnects with standard household AC wiring

### **Safer**

- No high voltage DC in system
- Cells safety tested and certified by TÜV Rheinland
- Prismatic cells are highly stable over time

### **Greater reliability**

- Lithium iron phosphate (LFP) chemistry for long cycle life
- 10-year warranty
- Modular design promotes redundancy



# Enphase AC Battery

<b>MODEL NUMBER</b>	
IQ7-B1200-LN-I-INT01-RVO (with integrated Enphase Microinverter)	
<b>ACCESSORIES (ORDER SEPARATELY)</b>	<b>DIMENSIONS</b>
Enphase Wall Mount Bracket (BWM-450MM-A)	487 mm (W) × 311 mm (H) (allowing 450-mm battery-battery spacing)
Enphase Wall Mount Bracket (BWM-600MM-A)	487 mm (W) × 311 mm (H) (allowing 600-mm battery-battery spacing)
Enphase Q Relay (Q-RELAY-1P-INT)	Required when the AC Battery is installed in France, Luxembourg, Switzerland or Germany. The connection of the ACB must be on the PV side of the Q Relay.
<b>OUTPUT DATA (AC)</b>	<b>@230 VAC</b>
Peak output power	270 VA
Rated (continuous) output power	260 VA
Nominal frequency	50 Hz
Extended line to neutral voltage range	184 to 276 VAC
Extended frequency range	45 to 55 Hz
Power factor (adjustable)	0.7 (leading) to 0.7 (lagging)
Maximum units per 20 A branch circuit	13
Peak inverter efficiency	96.9%
<b>BATTERY CHEMISTRY</b>	
Capacity	1.2 kWh
Depth of discharge (usable capacity)	100%
Ambient operating temperature range	-20 °C to 45 °C
Chemistry	Lithium Iron Phosphate (LFP)
Cell safety certifications	TÜV Rheinland, UL
Roundtrip cell efficiency <sup>1</sup>	96%
<b>MECHANICAL DATA</b>	
Dimensions	390 mm (W) × 325 mm (H) × 220 mm (D) (without bracket)
Weight	23 kg
Installation	Wall-mounted in an indoor space using standard AC wiring in conduit or in wall, where allowed.
Enclosure	Indoor – IP20
Cooling	Natural convection – No active or passive cooling infrastructure required
<b>FEATURES AND COMPLIANCE</b>	
Compatibility	Compatible with grid-tied PV systems using the Enphase Envoy-S Metered™ gateway
Communication	Power Line Communication (PLC), TCP/IP through Envoy-S <sup>2</sup>
Duties	Maximizing self-consumption of solar power, time-of-use bill management, power export limiting <sup>3</sup>
Monitoring	Enlighten Manager and MyEnlighten monitoring options
Compliance	IEC 62109-1, IEC 62109-2, IEC 62133, G59/3, G83/2, VDE 0126-1-1, VDE-AR-N 4105, UN38.3
Cell and battery safety	TÜV Rheinland (IEC 62619)
<b>LIMITED WARRANTY</b>	
Limited warranty <sup>4</sup>	>80% capacity, up to 10 years or 3650 cycles

1. At 30 °C.

2. Software version 4.10 or later.

3. Optional. Requires Enphase S/IQ-Series Microinverters™ to implement.

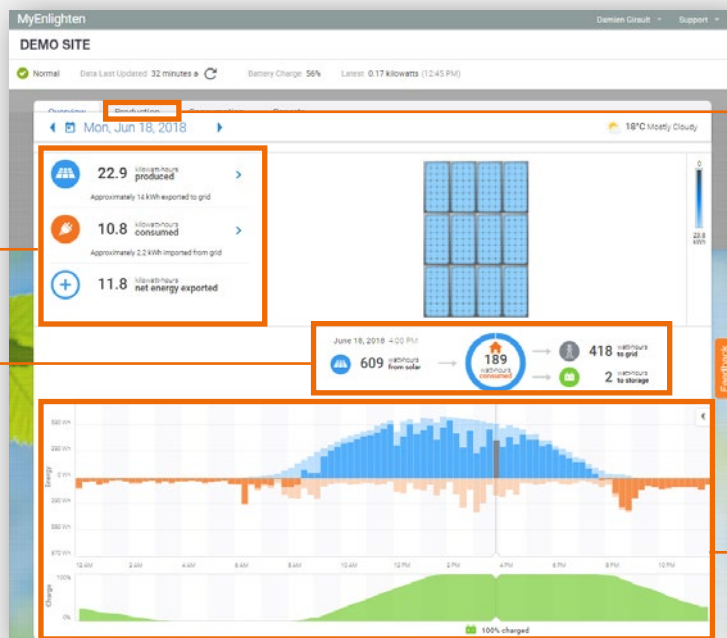
4. Whichever occurs first. Restrictions apply. Average annual internal temperature below 23 °C.

## Enphase MyEnlighten – For system owners

# Production and consumption metrics on a single screen

Monitoring the production and energy consumption of your Enphase PV system on any connected mobile device is now possible!

MyEnlighten enables you to view electricity production and consumption data in a single glance and provides customers with a summary view of their electricity usage.

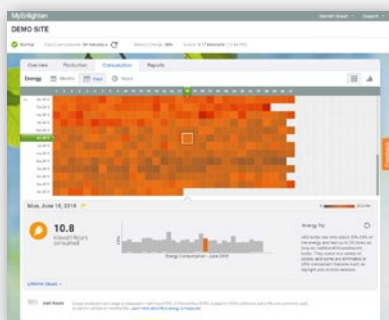


Monitor the production of your Enphase system more closely and look up historical weather data to understand efficiency fluctuations.



Easily display energy production and consumption trends. Blue = production Orange = consumption

Your customers can view reports on their energy production and consumption levels at any time.



### Monitor electricity usage

Collect energy-usage data once a month, once a week, once a day or every 15 minutes.

**Consumption monitoring and net-energy reports are accessible with the new Envoy-S Metered™ communications gateway.**

## Enphase Enlighten – For system owners

# The new Enlighten mobile app

The new Enlighten mobile app, which has a cleaner and more intuitive user interface, is available. We have worked on improving our system offerings to better serve system owners. We've just released the new Enlighten mobile app with a cleaner and more intuitive interface to enhance your customers' experience.



### Now homeowners can see system status at a glance

We have enhanced the mobile app design to allow system owners to easily navigate the menu and view key metrics on a single screen. We have added a battery status display for system owners with storage installed. It shows the percentage of charge stored on their batteries and their status, whether charging or discharging.



### Energy and power

We've also added energy and power to a single screen. System owners can tap into the Energy screen and see energy totals for the period they select or drag their finger across the graph to see a snapshot of power for the same period.

The system owner can also run reports of energy production and energy usage from the app in daily, weekly, monthly or the custom period of his/her choice.

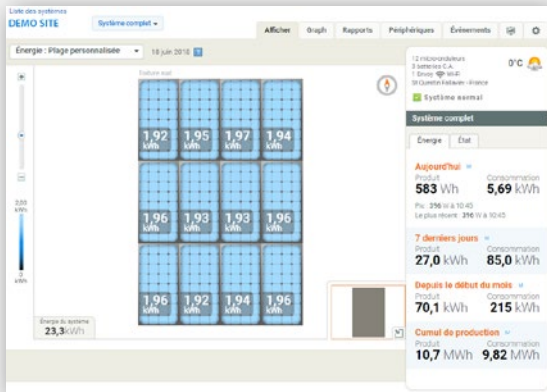


For solar professionals

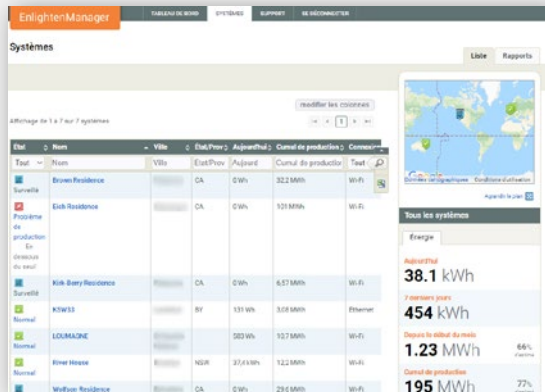
# Enphase Enlighten Manager\*

All the data you need for smarter, simpler management.

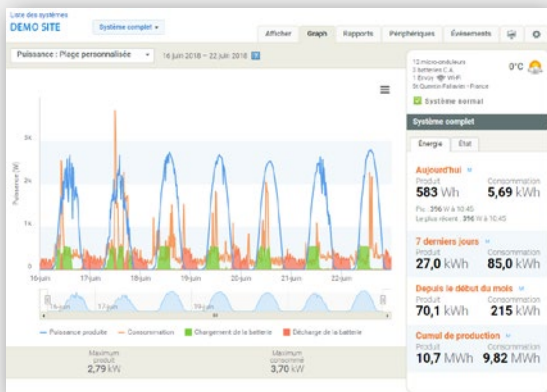
View of potential yield per panel



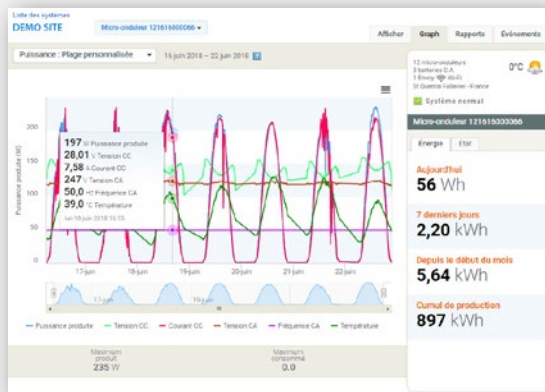
Overview of your systems



Detailed view of system data



Detailed view of microinverter data



\* Enlighten Manager is free and reserved for installers.  
Available to private individuals who acquire a fee-based licence.



## Enphase® IQ7/IQ7+/IQ7X Microinverters

Enphase 7th generation microinverters convert direct current to alternating current. The heart of your system, they deliver optimum efficiency and maximum safety.



## Enphase® Envoy-S

The Envoy-S communications gateway is the brain of your system, collecting PV production and site consumption data.



## Enphase® Monitoring MyEnlighten, Enlighten Manager and Enlighten Mobile

Enlighten lets you track your energy production and usage.



## Enphase® AC battery

Enphase AC Batteries store a maximum of energy that you can use when you need it.

To learn more about Enphase products, go to [enphase.com/en-uk](http://enphase.com/en-uk)

