

# THINK SMARTER SOLAR



# Enphase technology changes everything.



## More power means lower energy bills

Traditional inverters operate at the level of the lowest-performing panel, so a little shade, dust or debris can have a huge effect on production—and your energy bill. Enphase Microinverters allow panels to operate independently, increasing performance even in the low light of morning, evening, or cloudy days.



## Long-term reliability

Fourth-generation Enphase Microinverters are the result of a highly refined design and testing process pioneered by the industry leader in microinverter technology. With that comes the confidence to offer an industry-leading 25-year Limited Warranty.



The leader in microinverter technology brings you simpler, smarter solar. **The Enphase System** connects each solar panel to a microinverter and monitors them through intelligent, web-based software.

It's a system that allows:

- Each panel to operate independently
- Remote monitoring and troubleshooting
- Maximum design flexibility to fit any roof

The result is a significant improvement in energy production, reliability, and safety—and a faster return on your solar investment.



## Faster return on your investment

With Enphase, your system is always running at maximum efficiency, giving you more power for your money. Rest assured knowing Enlighten monitoring software makes it easy for solar professionals to identify and resolve issues, maximizing system performance and delivering a faster return on your investment.



## Safer to install and own

Traditional inverters utilize high-voltage DC wiring, which is dangerous when damaged or installed improperly. Enphase Microinverters use low-voltage AC wiring, significantly reducing the risks of fire and injury.

## See the Difference Solar Makes With **MyEnlighten**



MyEnlighten is your online connection to system performance providing an **engaging, easy-to-use interface** that you can customize with your own photos and text. You can access MyEnlighten through your PC, tablet or smartphone and use it to keep track of your investment:

- Verify system health and performance at-a-glance
- View energy production by month, day, or hour
- Analyze performance against historical weather data
- Share system performance on Twitter or Facebook

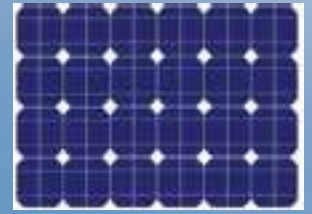
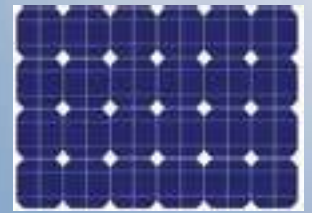
To learn more about  
The Enphase System,  
visit [enphase.com/smartersolar](http://enphase.com/smartersolar)

# HERE'S HOW IT WORKS

The Enphase System consists of three advanced components that work together to make solar more productive, more reliable, and easier to install and own.

## 1 Enphase® Microinverters

Installed beneath each solar panel, Enphase Microinverters maximize energy production and convert DC power into low-voltage AC electricity. They offer greater design flexibility to fit on different roof planes and multiple buildings.



Each solar panel has its own Enphase Microinverter.

## 2 Envoy® Communications Gateway

The Envoy acts as a messenger between your microinverters and Enlighten software, collecting energy production data over your home's electrical wiring and sending the data through your Internet router to Enphase's data centers.



## 3 Enlighten® Software

Solar professionals use Enlighten Software to remotely monitor, manage, and troubleshoot your system 24 hours a day from any PC, tablet, or smartphone. You can use MyEnlighten, a user-friendly version of the software, to keep track of energy production.



Ask your Enphase installer for a quote today.

## Enphase S230

Built on the fifth-generation platform, the **Enphase S230 Microinverter™** achieves the highest inverter efficiency for module-level power electronics. With its all-AC approach, the S230 simplifies design and installation, and delivers optimal energy harvest. The S230 is compatible with storage systems, including battery management systems.

The Enphase S230 integrates seamlessly with Engage Cable, the Enphase Envoy-S™ communications gateway, and Enphase Enlighten™ monitoring and analysis software.



### Productive

- Optimised for 60-cell modules
- Maximises energy production
- Minimises impact of shading, dust, and debris

### Simple and Reliable

- No DC design or string calculation required
- More than 1 million hours of testing
- Industry-leading warranty, up to 10 years
- Transformer isolated

### Advanced Grid Ready

- Complies with fixed power factor, voltage and frequency ride-through requirements
- Remote updating to respond to changing grid requirements
- Configurable for variable grid profiles
- Configurable for export limiting

# Enphase S230 Microinverter

<b>INPUT DATA (DC)</b>		<b>MODELS:</b> <b>S230-60-LN-2, S230-60-LN-2-AU,</b> <b>S230-60-LN-5, S230-60-LN-5-AU</b>
Commonly used module pairings <sup>1</sup>		195 W - 285 W
Maximum input DC voltage		48 V
Peak power tracking voltage		27 V - 37 V
Operating range		16 V - 48 V
Min/Max start voltage		22 V / 48 V
Max DC short circuit current		15 A
<b>OUTPUT DATA (AC)</b>		
Peak output power		230 VA
Maximum continuous output power		220 VA
Nominal voltage / range		230 V / 184 V - 276 V
Nominal output current		0.95 A
Nominal frequency / range		50 Hz / 45 - 55 Hz
Power factor at rated power		>0.95
Maximum units per 20 A branch circuit		17 (Ph + N), 48 (3PH + N)
Maximum output fault current (source)		49 Apk < 10 µs, 12 Arms 3 cycles
Current (inrush)		0 A
AC backfeed current to module		0 mA
Power factor (adjustable)		0.7 leading ... 0.7 lagging
Protective class / over voltage category (OVC)		I / 3
<b>EFFICIENCY</b>		
EN 50530 (EU) efficiency		95.8 %
Peak efficiency		96.7 %
Static MPPT efficiency (weighted, reference EN50530)		99.5 %
Night time power consumption		< 50 mW
<b>MECHANICAL DATA</b>		
Ambient temperature range		-40°C to +65°C
Enclosure environmental rating		Outdoor – IP 67
Connector type, MC4		S230-60-LN-2 S230-60-LN-2-AU
Connector type, Amphenol H4		S230-60-LN-5 S230-60-LN-5-AU
Dimensions (WxHxD)		172 mm x 175 mm x 35 mm (without bracket)
Weight		1.8 kg
Cooling		Natural convection - No fans
Humidity range		0% - 100% (condensing)
<b>FEATURES</b>		
Compatibility		60-cell PV modules
Communication		Power line
Monitoring		Enlighten Manager and MyEnlighten monitoring options
Compliance		AS 4777.2, AS 4777.3, RCM, IEC/EN 61000-6-3, IEC/EN 62019-1, IEC/EN 62109-2
Advanced grid ready		Power export limiting (zero export) and phase imbalance management when installed with an Enphase Envoy-S Metered™ gateway
Automatic disconnect		Automatic disconnect according to VDE 0126-1-1

1. Suggestion only, inverter self limits DC inputs.

To learn more about Enphase offerings, visit [enphase.com/au](http://enphase.com/au)

# Enphase **Envoy-S Metered**



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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 Installer Toolkit mobile app
- Flexible networking with Wi-Fi, Ethernet, or mobile

## **RELIABLE**

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

<b>MODEL NUMBERS</b>	
Envoy-S, Metered ENV-S-WM1-230-25 (single-phase)	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 mobile modem with five-year data plan for systems up to 12 kW. (Available where there is adequate mobile service in the installation area.)
<b>POWER REQUIREMENTS</b>	
Hardwired	230 VAC single-phase (ENV-S-WM1-230-25) Max 16 A overcurrent protection required
<b>CAPACITY</b>	
Number of microinverters polled	Up to 600
<b>MECHANICAL DATA</b>	
Dimensions (WxHxD)	213 x 126 x 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 meters
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, EN50065-1, EN61000-4-5, EN61000-6-1, EN61000-6-2

To learn more about Enphase Microinverter technology,  
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## Enphase Energy Limited Warranty – Australia and New Zealand

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### **Important note: This warranty is additional to your statutory rights**

This Enphase Limited Warranty applies in addition to the guarantees, rights and remedies conferred by the consumer laws in your jurisdiction. The Enphase Limited Warranty does not exclude, affect or limit those guarantees, rights or remedies except to the extent that their application may lawfully be excluded or limited.

The following paragraph relates to goods supplied in Australia only:

Our goods come with guarantees that cannot be excluded under the *Australian Consumer Law*. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

You may also be able to seek a remedy from us in relation to consumer guarantees for goods supplied in New Zealand.

This Enphase Energy, Inc. ("Enphase") limited warranty ("Limited Warranty") covers defects in workmanship and materials of the following Enphase products for the applicable warranty periods (each a "Warranty Period") set out below:

- M215/250, S230/270 Microinverter: 10 years commencing on the earlier of (i) 4 months from the date the product is shipped from Enphase and (ii) the installation of the product at the original end-user location ("Original Location").
- Envoy: 2 years commencing on the earlier of (i) 4 months from the date the product is shipped from Enphase and (ii) the installation of the product at the Original Location.
- Envoy-S Standard, Envoy-S Metered, Mobile Connect, Consumption CT: 5 years commencing on the earlier of (i) 4 months from the date the product is shipped from Enphase and (ii) the installation of the product at the Original Location.

Except as set forth above, this Limited warranty applies only to products installed in Australia and New Zealand. During the Warranty Period, the Limited Warranty is transferable to a different owner ("Transferee") as long as the product remains at the Original Location, the Transferee submits to Enphase a "Change of PV Ownership Form", and pays the applicable Transfer Fee within 30 days from the date of transfer to the Transferee. This submission is a requirement for continued Limited Warranty coverage. The Transfer Fee is set forth in the Change of PV Ownership Form, and is subject to reasonable adjustment from time to time (as determined at Enphase's discretion). The Change of PV Ownership Form and payment instructions are available at <http://www.enphase.com/warranty>.

During the Warranty Period, if Enphase establishes the existence of a defect that is covered by the Limited Warranty, Enphase will, at its option, either (1) repair or replace the product free of charge, or (2) issue a credit or refund for the product to the owner of the system in an amount up to its actual value at the time the owner notifies Enphase of the defect, as determined by Enphase.

If Enphase elects to repair or replace the product, Enphase will, at its option, use new and/or reconditioned parts or products of original or improved design. If Enphase repairs or replaces a product, the Limited Warranty continues on the repaired or replacement product for the remainder of the original Warranty Period or ninety (90) days from the date of receipt of Enphase's return shipment of the repaired or replacement product, whichever is later. The Limited Warranty covers a replacement unit but does not include labor costs related to (1) un-installing the product or (2) if applicable, re-installing a repaired or replacement product. To the extent applicable, the Limited Warranty also covers the costs of shipping a repaired or replacement product from Enphase, via a non-expedited freight carrier selected by Enphase, to



locations in Australia or New Zealand. The Limited Warranty does not cover, and Enphase will not be responsible for, shipping damage or damage caused by mishandling by the freight carrier.

To obtain repair or replacement service, credit or refund (as applicable) under this Limited Warranty, the customer must comply with the following policy and procedure:

- Contact an Enphase Customer Service representative to evaluate and troubleshoot the problem while the Enphase product is in the field, since many problems can be solved in the field.
- If in-field troubleshooting does not solve the problem, customer may return the defective product to Enphase with a Return Merchandise Authorization (RMA) number which customer must request from Enphase. The RMA request must include the following information:
  1. Proof-of-purchase of the defective product in the form of (1) the dated purchase receipt from the original purchase of the product at point of sale to the end user, or (2) the dated dealer invoice or purchase receipt showing original equipment manufacturer (OEM) status, or (3) the dated invoice or purchase receipt showing the product exchanged under warranty;
  2. model number of the defective product;
  3. serial number of the defective product;
  4. detailed description of the defect; and
  5. shipping address for return of the repaired or replacement product (as applicable).
- If in-field troubleshooting of the Enphase product is not able to be accomplished because the Envoy device does not exist or is not operational, and the unit is determined upon receipt and testing by Enphase personnel as being fully operational (no trouble found) the owner will incur a AUD \$200 handling fee.
- All defective product authorized for return must be returned in the original shipping container or other packaging that is equally protective of the product.
- The owner bears all expenses associated with initial claims under this Limited Warranty. However, Enphase will reimburse the owner for postage costs incurred in the event that the owner has made a valid claim under this warranty and posts the product to Enphase. Proof of postage expenses incurred must be provided to Enphase in order for such costs to be reimbursed.
- The returned defective product must not have been disassembled or modified without the prior written authorization of Enphase.

The Limited Warranty does not apply to, and Enphase will not be responsible for, any defect in or damage to any products: (1) that have been misused, neglected, tampered with, altered, or otherwise damaged, either internally or externally; (2) that have been improperly installed, operated, handled or used, including use under conditions for which the product was not designed, use in an unsuitable environment, or use in a manner contrary to the Enphase User Manual or applicable laws or regulations; (3) that have been subjected to fire, water, generalized corrosion, biological infestations, acts of nature, or input voltage that creates operating conditions beyond the maximum or minimum limits listed in the products specifications, including high input voltage from generators or lightning strikes; (4) that have been subjected to incidental or consequential damage caused by defects of other components of the solar system; (5) if the original identification markings (including trademark or serial number) of such products have been defaced, altered, or removed; or (6) for which the Trip Point Management (TPM) profile with either pre-loaded or pre-set functions has been altered, and such alteration of the profile causes the product to malfunction, fail, or fail to optimally perform. The Limited Warranty does not cover cosmetic, technical or design defects, or shortcomings which do not materially influence or affect energy production or degrade form, fit, or function of the products. The Limited Warranty does not cover costs related to the removal, installation or troubleshooting of the owner's electrical systems. The Limited Warranty does not extend beyond the original cost of the products.

To the extent permissible under the Australian Consumer Law, Enphase expressly reserves the right to novate or assign its rights and obligations under this warranty agreement to a third party with the demonstrated expertise and requisite resources needed to effectively discharge the obligations hereunder.

TO THE EXTENT PERMITTED BY LAW ENPHASE WILL NOT BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSSES, COSTS OR EXPENSES HOWEVER ARISING, WHETHER IN CONTRACT OR TORT, INCLUDING WITHOUT LIMITATION ANY ECONOMIC LOSSES OF ANY KIND, ANY LOSS OR DAMAGE TO PROPERTY, OR ANY PERSONAL INJURY.

This warranty is offered by Enphase Energy, Inc.

Contact Details:           Enphase Energy, Inc.  
                                  Attn: Customer Support  
                                  1420 N. McDowell Blvd.  
                                  Petaluma, CA 94954  
                                  (707) 763-7000  
                                  <https://enphase.com/en-au/support/contact>

For in country support in Australia or New Zealand please contact Enphase Customer Support at <http://enphase.com/global/au/> or by telephone at 1800 006 374 (AU) or +64 09 887 0421 (NZ).

The grant of this Limited Warranty by Enphase is conditioned upon agreement by the owner and any permitted Transferee to the terms, conditions and requirements herein.