

Enphase IQ 7-Based S-Series Microinverters

S230 and S280

The new Enphase **S230™ and S280™ Microinverters on IQ 7™ platform** allow easy replacement and site expansion* of 240 VAC and 208 VAC S-Series PV installations.

The DC circuit is isolated and insulated from ground, so no Ground Electrode Conductor (GEC) is required for the microinverter. This simplifies installation, enhances safety, and saves on labor and materials costs.

The Enphase S230 and S280 integrate perfectly with the Engage Cable™, the Envoy-S™ Communications Gateway, and Enphase Enlighten™ monitoring and analysis software. They are also compatible with storage systems, including battery management systems.

The IQ platform microinverters extend reliability standards set forth by previous generations and undergo over a million hours of testing, enabling Enphase to provide an industry-leading warranty of up to 25 years.



Productive

- Maximizes energy production
- Minimizes impact of shading, dust, and debris
- No single point of system failure

Simple

- Lighter weight than earlier S-Series Microinverters
- No GEC needed for microinverter
- No DC design or string calculation required
- Easy installation with Engage Cable

Reliable

- Envoy and Internet connection required
- Configurable for varying grid profiles
- Built-in rapid shutdown compliant (NEC 2014 & 2017)
- UL listed

* Not recommended for Site expansion in California and Hawaii.

* Site expansions allowed up to 1kW. Please refer to AHJ regulations for allowed system expansion



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INPUT DATA (DC)	S230240LL-IQ7-2-RMA S230240LL-IQ7-5-RMA	S230208LL-IQ7-2-RMA	S280240LL-IQ7-2-RMA S280240LL-IQ7-5-RMA	S280208LL-IQ7-2-RMA
Commonly used module pairings ¹	195 W - 285 W +	195 W - 285 W +	235- 365 W +	235- 365 W +
Module compatibility	60-cell PV modules only	60-cell PV modules only	60-cell PV modules only	60-cell PV modules only
Maximum input DC voltage	60 V	60 V	60 V	60 V
Peak power tracking voltage	27 V - 45 V	27 V - 45 V	27 V - 45 V	27 V - 45 V
Operating range	16 V - 60 V	16 V - 60 V	16 V - 60 V	16 V - 60 V
Min/Max start voltage	22 V / 60 V	22 V / 60 V	22 V / 60 V	22 V / 60 V
Max DC short circuit current (module I _{sc})	15 A	15 A	15 A	15 A
Overvoltage class DC port	II	II	II	II
DC port backfeed current	0 A	0 A	0 A	0 A
OUTPUT DATA (AC)				
Peak output power	230 VA	230 VA	280 VA	280 VA
Maximum continuous output power	220 VA	220 VA	270 VA	270 VA
Nominal (L-L) voltage/range ²	240 V / 211-264 V	208 V / 183-229 V	240 V / 211-264 V	208 V / 183-229 V
Nominal output current	0.92 A (A rms at nominal duration)	1.06 A (A rms at nominal duration)	1.13 A (A rms at nominal duration)	1.30 A (A rms at nominal duration)
Nominal frequency / range	60 Hz / 57-61 Hz	60 Hz / 57-61 Hz	60 Hz / 57-61 Hz	60 Hz / 57-61 Hz
Extended frequency range	57 - 63 Hz	57 - 63 Hz	57 - 63 Hz	57 - 63 Hz
AC short circuit fault current over 3 cycles	5.8 Arms	5.8 Arms	5.8 Arms	5.8 Arms
Maximum units per 20 A (L-L) branch circuit ³	17	15	14	12
Overvoltage class AC port	III	III	III	III
AC port backfeed current	18mA	18mA	18mA	18mA
Power factor	1.0	1.0	1.0	1.0
Power factor (adjustable)	0.85 leading ...0.85 lagging	0.85 leading ... 0.85 lagging	0.85 leading ... 0.85 lagging	0.85 leading ... 0.85 lagging
EFFICIENCY @ 240 V				
Peak efficiency	97.2 %	96.7 %	97.3 %	96.8 %
CEC weighted efficiency	97.0 %	96.5 %	97.0 %	96.5 %
Static MPPT efficiency (weighted, reference EN50530)	99.5 %	99.5 %	99.5 %	99.5 %
MECHANICAL DATA				
Ambient temperature range	-40°C to +65°C (-40°F to +149°F) ⁵			
AC Connector type	Q-ET-2LL (Engage cable to microinverter adapter)			
DC Connector type	S230XXX-IQ7-S2-US and S280XXX-IQ7-S2-US: MC4 locking type (dongle included) S230XXX-IQ7-S5-US and S280XXX-IQ7-S5-US: UTX (dongle included)			
Dimensions (HxWxD)	212 mm x 175 mm x 30.2 mm (without bracket)			
Weight	1.08 kg (2.38 lbs)			
Cooling	Natural convection - No fans			
Approved for wet locations	Yes			
Pollution degree	PD3			
Enclosure	Class II double-insulated, corrosion resistant polymeric enclosure			
Environmental category / UV exposure rating	NEMA Type 6 / outdoor			
FEATURES				
Communication	Power Line Communication (PLC)			
Monitoring	Enlighten Manager and MyEnlighten monitoring options. Both options require installation of an Enphase Envoy-S Communications Gateway.			
Disconnecting means	The AC and DC connectors have been evaluated and approved by UL for use as the load-break disconnect required by NEC 690 and C22.1-2018 Rule 64-220.			
Integrated ground	Equipment ground is provided in the Engage Cable. No additional GEC or ground is required. Ground fault protection (GFP) is integrated into the microinverter.			
Compliance	UL1741/IEEE1547, FCC Part 15 Class B, CAN/CSA-C22.2 NO. 0-M91, 0.4-04, and 107.1-01 This product is UL Listed as PV Rapid Shut Down Equipment and conforms with NEC-2014 and NEC-2017 section 690.12 and C22.1-2015 Rule 64-218 Rapid Shutdown of PV Systems, for AC and DC conductors, when installed according manufacturer's instruction			

1. No enforced DC/AC ratio. See the compatibility calculator at <https://enphase.com/en-us/support/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.

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