

Solar Power Clamp

Power analysis tool for photovoltaic installations.



The **Solar Power Clamp** is especially designed for installers and technicians interested in power measurement and analysis on AC & DC systems and carrying out diagnostic checks.

In order to ensure the maximum yield from a PV system it is important to check the efficiency of the conversion of DC power generated by the PV modules to AC power fed into the electrical installation. Efficiency is determined by measurement of both the voltage and current on the DC and AC sides of the inverter and using the measured values to calculate the DC and AC power. Alternatively, the DC or AC power can be measured directly on either side of the inverter in seconds using the Seaward **Solar Power Clamp**. The Power Clamp simply clips over the cable to measure current and the supplied in-line connectors can be used to measure the DC voltage whilst the PV modules are connected to the inverter, giving an accurate true RMS reading of the power whilst the system is operational.

The **Solar Power Clamp** can be used when installing a PV system to ensure the inverter is operating correctly or for maintenance and troubleshooting on the PV system after commissioning. If a PV system isn't generating the expected level of power under known irradiance and temperature conditions, this may indicate a fault with one or more components in the system.

Why buy the Solar Power Clamp?

- > Measure the voltage and current of the AC and DC sides of inverters
- > Can be used with the Seaward range of PV testers to give an accurate RMS reading
- > Detect faults within the inverter with the harmonic analysis function
- > Ensure the correct power output of the PV system to maximise ROI

To find out more about the **Solar Power Clamp** go to seawardsolar.com/solar-power-clamp



SEAWARD
ELECTRICAL SAFETY TESTING & MEASURING.

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Similarly, the presence of harmonics on the AC output of an inverter may indicate a fault within the inverter. In addition to power and efficiency measurements, the harmonic analysis function of the Solar Power Clamp can be used as a means of detecting faults within the inverter.

As PV systems have a lifetime of over 25 years, periodic inspection and testing is necessary to ensure that they are operating efficiently. Most inverters have a lifetime much shorter than that of the entire system and so require particular attention as part of system inspection and testing, to ensure optimal system return on investment and power output.

Key Features:

- > High performance instrument for measuring AC and DC power
- > Includes MC4 test leads for DC power measurements
- > Power Factor measurement and harmonic analysis up to 25th harmonic for inverter performance analysis
- > Rugged, robust and handheld, with active backlight and inbuilt cable illuminating torch - ideal for use in confined and/or dark spaces
- > Full clamp-on multimeter capabilities

Supplied with the instrument:

- > 2 x MC4 - 4mm test leads
- > Test lead, red, with test probe
- > Test lead, black, with test probe
- > Carrying case
- > Quick start guide

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Technical Specification:

Accuracy is \pm (% reading + number of digits) AT $23^{\circ}\text{C} \pm 5^{\circ}\text{C} < 80\% \text{RH}$

Active Power

Function	Range	Accuracy
ACW / DCW	0.000kW - 599.9kW	A, error*V, reading + V, error *A, reading

Voltage

Function	Range	Accuracy
DCV	0.00A - 999.9V	\pm (0.7% + 2dgt)
ACV	0.00 - 999.9V	\pm (1.0% + 5dgt)
LPF (ACV)	0.00 - 999.9V	\pm (1% + 5dgt) @ 50Hz - 500Hz \pm (5% + 5dgt) @ >60Hz - 400Hz
Resolution (all)	0.01 V	

Current

Function	Range	Accuracy
DCA	0.00A - 99.99A 100.0A - 599.9A	\pm (1.5% + 0.2 A) \pm (1.5% + 5dgt)
ACA	0.10A - 599.9A	\pm (1.5% + 5dgt) 50Hz - 60 Hz \pm (2% + 5dgt) >60Hz - 500 Hz
LPF ACA	0.10A - 599.9A	\pm (1.5% + 5dgt) 50Hz - 60 Hz \pm (5% + 5dgt) >60Hz - 500 Hz

Peak Hold: Peak Max / Peak Min

Function	Range	Accuracy
ACV	140.0V 140.0V	\pm (3.0% + 15dgt)
ACA	140.0A 850A	\pm (3.0% + 15dgt)

Frequency

Function	Range	Accuracy
Frequency	20.00Hz - 9.999kHz	\pm (0.5% + 3dgt)

Total Harmonic Distortion

Function	Range	Accuracy
ACA /ACV	0.1 - 99.9%	\pm (3.0% + 10dgt)
Resolution	0.1%	

Harmonic Order

Function	Range	Accuracy
H01 ~ H12	0.1 - 99.9%	\pm (5% + 10dgt)
H13 ~ H25	0.1 - 99.9%	\pm (10% + 10dgt)
Resolution	0.1%	

Inrush Current

Function	Range	Accuracy
ACA	0.00A - 99.99A 100.0A - 599.9A	\pm (2.5 % + 0.2A) \pm (2.5 % + 5dgt)

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Power Factor

Range	-1.00 - 1.00
Resolution	0.01
Basic Accuracy	$\pm 3^{\circ} \pm 1 \text{dgt}$

Resistance, Continuity & Diode

Function	Range	Accuracy
Resistance	0.0 Ω - 999.9 Ω	$\pm (1.0\% + 5\text{dgt})$
	1.000k Ω - 99.99k Ω	$\pm (1.0\% + 3\text{dgt})$
Continuity	0.0 Ω - 999.9 Ω	$\pm (1.0\% + 5\text{dgt})$
Diode	0.40 - 0.80V	$\pm 0.1\text{V}$

Capacitance

Function	Range	Accuracy
Capacitance	0.000 μF - 4000 μF	$\pm (1.9\% + 8\text{dgt})$
Resolution	0.001 μF max	

General Specification:

Instrument Dimensions and Weight

Weight	0.45kg / 1.0lb
Dimensions	8.7 x 23.9 x 5.1 cm / 3.43 x 9.41 x 2.0 inch
Power Source	Single 9V battery
Battery life	~ 100 hours (alkaline battery)

Services

2 year warranty (subject to terms and conditions, available at www.sewardsolar.com/warranty).

Safety

IEC 61010

Part Number: 396A961



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Rev 2

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