

# Solar Power Clamp

## Power analysis tool for photovoltaic installations



The new Solar Power Clamp is a clamp meter capable of measuring AC and DC circuit power, in addition to true RMS voltage and current, resistance & continuity, diode check, capacitance, harmonic distortion and power factor.

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

### KEY FEATURES:

- High performance instrument for measuring AC and DC power

- Includes MC4 test leads for DC power measurements (others available)

- 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

### KIT INCLUDES:

- Seaward Solar Power Clamp

- 2 x MC4 – 4mm test leads

- Test lead, red, with test probe

- Test lead, black, with test probe

- Carrying case

- Quick start guide

irradiance and temperature conditions, this may indicate a fault with one or more components in the system.

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.

**TECHNICAL SPECIFICATION:** Accuracy is  $\pm$  (% reading + number of digits) AT 23°C  $\pm$  5°C < 80%RH

#### ACTIVE POWER

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

#### VOLTAGE

	Range	Basic Accuracy
DCV	0.00 – 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	$\pm$ (1.5% + 0.2 A)
	100.0A - 599.9A	$\pm$ (1.5% + 5dgt)
ACA	0.10A – 599.9A	$\pm$ (1.5% + 5dgt) 50Hz - 60 Hz $\pm$ (2% + 5dgt) >60Hz - 500 Hz
LPF	0.10A – 599.9A	$\pm$ (1.5% + 5dgt) 50Hz - 60 Hz
		$\pm$ (5% + 5dgt) >60Hz - 500 Hz
ACA		

#### PEAK HOLD : PEAK MAX / PEAK MIN

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

#### FREQUENCY

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

#### ACCESSORIES (OPTIONAL):

Test lead adaptors  
(MC3, Tyco Solarlok and Sunclix)

Fused test leads – 1 pair of  
fused red and black test probes  
with alligator clips

#### TOTAL HARMONIC DISTORTION

Function	Range	Accuracy
ACA /ACV	0.1 – 99.9%	± (3.0% + 10dgt)
Resolution	0.1%	
<b>Harmonic Order</b>	<b>Range</b>	<b>Accuracy</b>
H01 ~ H12	0.1 – 99.9%	± (5% + 10dgt)
H13 ~ H25	0.1 – 99.9%	± (10% + 10dgt)
Resolution	0.1%	

#### INRUSH CURRENT

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

#### POWER FACTOR

Range	-1.00 - 1.00
Resolution	0.01
Basic Accuracy	± 3°± 1dgt

#### RESISTANCE, CONTINUITY & DIODE

Function	Range	Accuracy
Resistance	0.0Ω - 999.9Ω	± (1.0% + 5dgt)
	1.000 kΩ -99.99 kΩ	± (1.0% + 3dgt)
Continuity	0.0Ω - 999.9Ω	± (1.0% + 5dgt)
Diode	0.40 ~ 0.80V	± 0.1V

#### CAPACITANCE

Function	Range	Accuracy
Capacitance	0.000 μF - 4000 μF	± (1.9% + 8dgt)
Resolution	0.001 μF max	

#### GENERAL

<b>Safety</b>	<b>IEC 61010</b>
Power Requirement	Single 9V battery
Battery life	~ 100 hours (alkaline battery)
Size	87 mm (W) x 239 mm (L) x 51 mm (H)

#### ADDITIONAL INFORMATION

Warranty Period : 2 year (Terms and conditions apply.  
Go to [www.seawardsolar.com/register-product](http://www.seawardsolar.com/register-product) for details)

Calibration Interval: 1 year

**Part No:** 396A961

#### ALSO AVAILABLE:

Solar PV100 Installation Test Kit

Solar Survey 100 and 200 irradiance meters

SolarCert Elements Test Reporting & Certification Software

Solar Certificate & Report Pads

SolarTags

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