



World-leading electrical safety test solutions for solar photovoltaic installations.



Solar Photovoltaic systems are on the rise. So is the need for fast, easy, reliable methods of testing their safety. Welcome to Seaward Solar.

Seaward. A reputation for tester confidence.

The success of a photovoltaic installation is measured by three factors:

- Maximum financial return on investment
- Optimum conversion of solar energy to electricity
- Safe operation throughout the lifetime of the installation

For an installer to deliver effective solutions, the system must be carefully designed and installed to standards which comply to international regulations. The only way to demonstrate this is to rigorously test and document the results.

At Seaward, we have over 75 years' experience in all aspects of electrical safety testing, not least in product innovation.

We have pioneered several world firsts, including the first automated appliance tester with data logging facility, the first totally integrated installation tester and the original hand-held battery-powered appliance tester.

Now we've applied our expertise to the Solar Photovoltaic field. The product range we've developed bears all the hallmarks of our expertise and helps manufacturers and installers to quickly and easily meet the requirements of IEC 62446, as well as many national regulations and requirements worldwide.

It's all part of the Seaward total solution - expertise, a wealth of accessories and safe, effective testing at the touch of a button.



The new PV100.

The most technically advanced, easiest-to-use solar PV installation tester on the market.



The new PV100 installation tester combines all of the PV electrical test functions into one easy-to-use, hand-held device. It also signals a significant and market-leading advance in the safety of PV testing.

Because Solar PV arrays can generate hazardous levels of DC electricity as soon as they're exposed to light, they must be regarded with extreme caution. In order to minimise the risk of direct contact with hazardous DC voltages, the Seaward Solar PV100 uses connectors which plug directly into the leads from the PV array, cutting out the huge areas of risk you'd experience with standard test probes.

With the new Solar Installation PV100 from Seaward, our test plugs and sockets protect you from exposure to live conductors and connect easily to all standard PV modules and arrays.

4 steps to safe and easy solar PV testing

- 1** Isolate the AC and DC supply
- 2** Connect the PV100 to the PV array using the test adaptors supplied
- 3** Press the test key and watch the measurements appear on screen
- 4** Press the store key to save all on-screen measurements

Key features and functions

- Tests to IEC 62446
- Simple, safe, user interface
- Single key testing & measurement
- Safe test connections with energised PV arrays
- Direct connection to PV modules
- Earth continuity measurement
- Earth test lead null (up to 10 ohms) for long test-leads
- PV string open circuit voltage measurement up to 1000V DC
- Open circuit voltage polarity indication
- PV string short circuit current measurement up to 10A DC
- PV array insulation test at 250/500/1000V
- AC/DC current test via current clamp
- Rugged and robust



www.seawardsolar.com

“The PV100 has revolutionised the way we work. Our installers now use one piece of equipment instead of three. We can test a system quickly, simply and we can ensure it's doing what we want it to do.”

Martin Cotterell - Sundog Energy Limited

The new Solar Installation PV100 Test Kit.

Helping you meet MCS installation requirements.

MCS certification is a requirement for any PV installation owner who wishes to take advantage of the Feed-in Tariff scheme in the UK. Our new Solar PV100 Test Kit is an efficient, cost-effective means of demonstrating compliance with MCS requirements. An array's electrical safety and performance can now be determined quickly, easily and, most importantly when you're dealing with a DC current, in complete safety.

The Kit comprises:

- PV100 Installation Tester
- 2 x MC4 Test Lead Adaptors
- 2 x Sunclix Test Lead Adaptors
- Red Test Lead (with test probe & detachable alligator clip)
- Black Test Lead (with test probe & detachable alligator clip)
- AC/DC Current Clamp
- Carry Case
- Support CD Rom
- Calibration Certificate



Solar Installation PV100 Test Kit in detail



The AC/DC Current Clamp

A compact instrument capable of providing accurate measurement of AC or DC currents in conductors up to 22mm in diameter. It connects directly to the PV100 and can be used to measure currents up to 40A AC or DC. It's ideal for operational tests on PV systems. When used with the PV100 installation tester, AC and DC currents can be measured from 0.5A to 40.0A.



MC4 & Sunclix Test Adaptors

The test adaptors supplied as standard are fitted with MC4 and Sunclix test connectors which allow direct connection to PV systems or panels fitted with MC4 or Sunclix connectors. Other test adaptors are available as optional accessories.



Fused Test Leads

A set of two 4mm fused test leads, 1.2m in length (one red, one black). Supplied with alligator clips. Probes are fitted with 500mA HBC fuses and have GS38 compliant probe tips.

Carry Case

A rugged holdall with enough room to hold all test leads as well as the PV100 and AC/DC clamp.



Support CD-Rom

This includes an instructional video on how to use the PV100, a full operating manual and a trial version of SolarCert Elements software.

Specification:

EARTH CONTINUITY

Display Range	0.00Ω to 199Ω
Measuring Range	0.01Ω to 199Ω
Resolution	0.01Ω maximum
Open Circuit Test Voltage	4Vdc, nominal
Short Circuit Test Current	>200mA (as per IEC 61557-4)
Test Lead Compensation	Null out up to 10Ω
User Protection	Warning and test inhibited if ≥ 30V AC/DC detected at inputs

INSULATION RESISTANCE

Display Range	0.05MΩ to 199MΩ
Measuring Range	0.05MΩ to 199MΩ
Resolution	0.01MΩ maximum
Open Circuit Test Voltage	250V, 500V, 1000V (as per IEC 61557-2)
Short Circuit Test Current	>1mA, <2mA s/c as per IEC 61557-2
Audible/Visible Warning	≥ 30V AC or DC at inputs
User Protection	Test inhibited if ≥ 30V AC/DC detected at inputs

OPEN CIRCUIT VOLTAGE

Display Range	0.0V to 1000V
Measuring Range	5.0V to 1000V
Resolution	0.1V maximum
Enunciators	DC voltage polarity correct or reversed

SHORT CIRCUIT CURRENT

Display Range	0.0A – 9.99A
Measurement Range	0.5A – 9.99A
Resolution	0.01A

OPERATING CURRENT (USING AC/DC CURRENT CLAMP)

Display Range	0.0A – 40A
Measurement Range	0.5A – 40A
Resolution	0.1A max

GENERAL SPECIFICATIONS

Display	Custom LCD with backlight
Power Supply	6 x 1.5V Alkaline LR06
Battery Life	>1000 test sequences
Auto Power Down	After 1 minute

ADDITIONAL INFORMATION

Warranty Period	2 years
Calibration Interval	1 year

SolarCert Software.

Easy-to-use Software for Solar PV Test Reporting and Certification.



Our SolarCert software range is easy to use, fast and functional. It's another Seaward total solution, designed to help you test, report and certificate in virtually every Solar PV testing situation with all the major types of Solar PV installation.

You can use SolarCert's manual data entry program to record and store data from each Solar PV installation you test.

Finding individual pieces of measurement data is easy, as is viewing and printing records. With SolarCert, you can also access professional test and inspection reports as well as verification certificates required by many certification schemes (including MCS).

How SolarCert software helps your business

- Produces PV system verification certificate, PV array test report and PV system inspection reports as required by IEC 62446 and certification schemes
- Generates professional reports and certificates
- Intuitive, easy to use
- Searches, views and prints records
- Saves to PDF format
- Improves efficiency and productivity
- Provides full traceability

PV Inspection Test Reports & PV System Verification Certificate pads for hand written records are also available



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PV System Verification Certificate

Initial verification Periodic verification



PV System Inspection Report

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PV Array Test Report

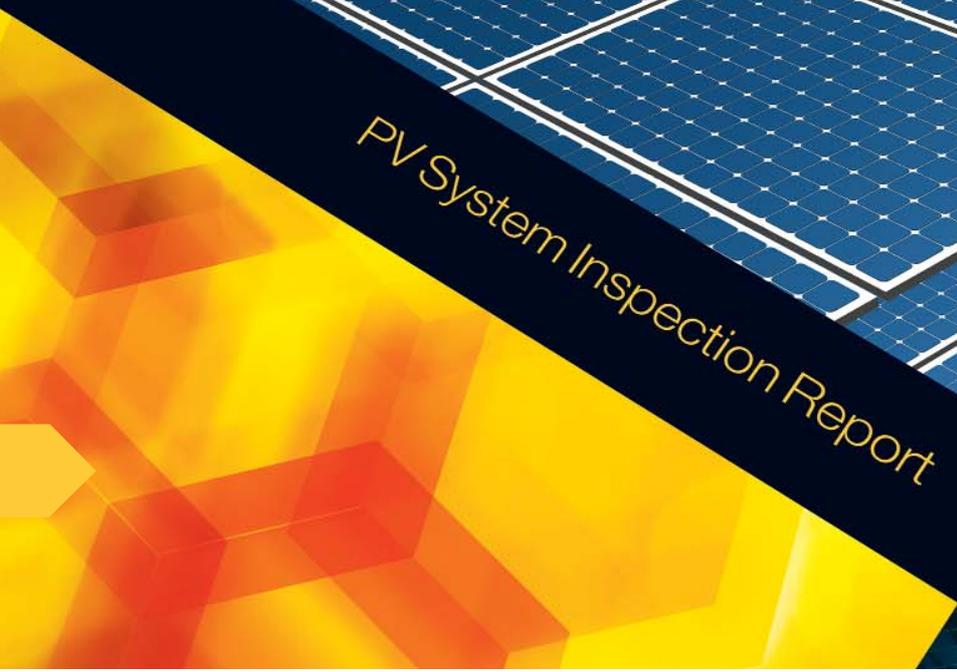
Initial verification Periodic verification



SEAWARD
Experts in what we do



PV System Inspection Report



Welcome to the Seaward Solar range. The total solution to Solar PV testing.

Installation



PV100 Installation Kit

Our expertise and workface experience mean that you'll find that this kit has everything you need for safe and simple PV installation testing.

It contains:

- PV100 installation tester
- 2 x MC4 test lead adaptors
- 2 x Sunclix test lead adaptors
- Test lead, red, with test probe and detachable alligator clip
- Test lead, black, with test probe and detachable alligator clip
- AC/DC current clamp
- Carrying case
- Support CD Rom
- Calibration certificate

Part No: 388A910



AC/DC Current Clamp

The AC/DC Current Clamp is a compact instrument capable of providing accurate measurement of AC or DC currents in conductors up to 22mm in diameter. It connects directly to the PV100 and can be used to measure currents up to 40A AC or DC. It's ideal for operational tests on PV systems. When used in conjunction with the PV100 installation tester, AC and DC currents can be measured from 0.5A to 40A.

Part No: 396A951



Solar Tags

A range of durable, tough label markers for use on PV systems, including PV array cable identifiers and full system markers that meet the requirements for labelling and identification of IEC 62446

Installation Labels

PV array cable identifiers and full system markers. Warning messages are clear and concise and brightly coloured to attract attention.

Part No: 396A952

DC Cable Labels

Brightly coloured warning label markers for use on DC cables on PV systems.

Part No: 396A953



Leads, Adaptors, Probes & Clips

MC3 Leads

There's a number of different Solar PV installations in current use. Often, the leads connecting the array to the inverter are different too. You may need a variety of leads to use on different jobs. The Sunclix and MC4 are the most common connectors and are included in the new kit. MC3 connectors are another type which enable the PV100 to connect to a PV installation and are available as an optional accessory.

Part No: 396A958

Fused Test Leads

A set of two 4mm Fused Test Leads, 1.2m in length (one red, one black). Supplied with detachable alligator clips. Probes are fitted with 500mA HBC fuses and have GS38 compliant probe tips.

Part No: 44B075

Manufacturing



PV Inspection Test Reports & Certificates

Quality A4 Test Reports and Certificates. Everything you need for PV Test Inspection & Certification.

3 Books of PV Inspection & Test Reports containing:

- 25 x PV System Inspection Report plus carbon copy
- 25 x PV Array Test Report plus carbon copy
- 25 x PV System Verification Certificates plus carbon copy

Set (including all above pads)

Part No: 396A957

Each book is also available separately.

PV System Inspection Report

Part No: 396A954

PV Array Report

Part No: 396A955

PV System Verification Certificates

Part No: 396A956



SolarCert Elements Software

Record, certify and report your test results easily with Seaward SolarCert Elements. This manual data entry program records and stores test and measurement data from individual solar PV installations to IEC 62446 standard. Searching, viewing and printing records is simple with this software. It also produces professional test and inspection reports and verification certificates (required as part of the Microgeneration Certification Scheme) which can be generated and saved, printed or emailed.

Part No: 393A910



Irradiance Meter for installers

With measurement of irradiance, temperature, compass bearing and angle of inclination.

Irradiance Meter for installers & surveyors

With measurement of irradiance, temperature, compass bearing, angle of inclination and a data logging facility.

Thermal Imaging Camera



Solar Manufacturing

This multi-functional tester is designed for ensuring production line safety in the manufacture of PV Solar arrays. Its simple and intuitive user interface makes for simple push-button manual testing. It can be also used to automate testing sequences for fast performance on demanding production lines.

*Casing colour may vary.

Part No: 486A910



To watch our PV video scan this code with your smartphone. Or visit www.sewardsolar.com

UK Office:

Seaward, Bracken Hill, South West Industrial Estate,
Peterlee, County Durham, SR8 2SW United Kingdom

Tel: +44 (0) 191 586 3511

Fax: +44 (0) 191 586 0227

Email: sales@seaward.co.uk

Web: www.seaward.co.uk

USA Office:

Seaward Group USA
6304 Benjamin Road, Suite 506, Tampa, Florida, 33634

Web: www.seaward-groupusa.com

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