

Service power supply pvServe1000

Data sheet

The service power supply pvServe1000 is an ideal aid for solar installers, electrical specialists and experts who specialize in the inspection and maintenance of photovoltaic systems.

The device has a freely adjustable DC voltage between 0 and 1,000V, so that solar module strings with up to 22 solar modules with 60 6 „cells in series (or 120 half-cells) can be re-energized.

The maximum current is 5A. The actual adjustable current, however, depends on the system voltage, as the device was limited to a maximum output of 3.3kW. This makes it possible to operate the power supply from a conventional 230V socket. (The circuit should be fused with 16 A.) With a current of 5A, only 660V is available, which is still absolutely sufficient for solar generators with up to 15 solar modules with 60 6 „cells in series (or 120 half cells).



Technical data of the pvServe1000:

Freely adjustable DC voltage:	0 ... 1,000 V
Freely adjustable current limit:	0 ... 5 A
Maximum power:	3.3 kW
Weight:	19.5 kg
Connection to 230V (16A) alternating voltage with IEC-60320 C13 / C14)	
Operation via graphic display	
Connection of the DC voltage (plus and minus) via a 4mm banana plug	

What the pvServe1000 can do:

Reverse current thermography

The power supply offers the possibility to feed a reverse current into the solar module string. This makes it possible to take thermographic images to detect hotspots without the minimum irradiation of 600W / m² that is normally required for this. The measurements can also be carried out at night at any time. In this way, possible damage to a thermographic camera from direct sunlight can be safely avoided.

Electroluminescence

The power supply unit can be used to take high-quality electroluminescence images with an additionally required nearinfrared camera. With this technology it is possible to detect the smallest micro-cracks in the solar cells.

Bypass diode test

If you connect the power supply unit with reverse polarity to a darkened solar generator, you can check the function of all bypass diodes of the solar module string.

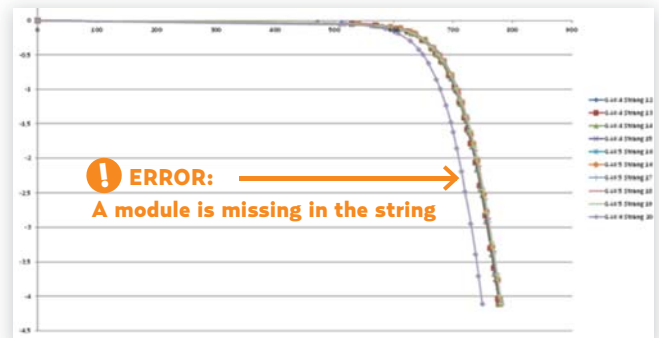
The multifunctional service tool for solar installers,
the electrical specialist and expert in the field of photovoltaics.

Measurement of the dark iv-curves: faster fault diagnosis – even with larger systems

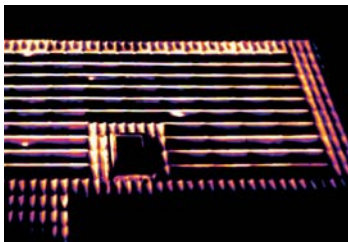
With the function for measuring the dark iv-curves, it is now also possible to carry out a pre-diagnosis on a photovoltaic system to be tested. Many error patterns can already be recognized from the dark iv-curve, so that only conspicuous module strings then have to be subjected to the more complex electroluminescence examination.

This enables an even faster fault diagnosis – even with larger systems.

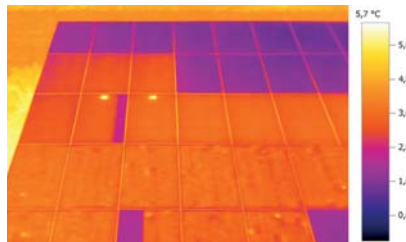
An example: diagnosis of a defective bypass diode



Example images of reverse current thermography:



The thermographic image clearly shows 4 hotspots



Corroded cell connections on two Modules lead to partial failures



Solar module with a hotspot on the junction box

Example images electroluminescence:



The electroluminescence image shows 2 defective bypass diodes



Electroluminescence image for detecting a module string



Electroluminescence image of a cell with many microcracks