



# The multifunctional service tool for solar mechanics, licensed electricians and surveyors specialised in inspection and service in the field of photovoltaics.

The pvServe mains receiver is the versatile device for solar mechanics, licensed electricians and surveyors, specialised in monitoring and maintenance of photovoltage systems.

The device has a free adjustable DC voltage between 0 – 1000 VDC, so that a reversed power-up of aliened solar modules with up to 19 solar modules with 72 pcs. of 5 inch cells, and up to 22 solar modules with 60 pcs. of 6 inch cells in series can be done.

The maximum current lies at 5 amps. The actual adjustable current is depending on the systems voltage, as the electrical performance of the device is limited to 3,3 kW. Therefore it is possible to operate the electrical power supply with a conventional 230 VAC power outlet or socket. (The circuit should be fused with 16 amps)

At a current of 5 amps, there are 660 VDC available only, as it is still satisfactory for solar generators of up to 12 solar modules with 72 pcs 5 inch cells and 15 solar modules with 6 inch cells in series.

### Technical Data of the pvServe:

Free adjustable DC voltage:	0 ... 1.000 VDC
Free adjustable current:	0 ... 5 amps
Maximum electrical performance:	3,3 kW
Dimensions:	H x W x D 58 cm x 57 cm x 24 cm
Weight:	19,5kg
Connection to 230 VAC (16 amps) with plug (IEC-60320 C13/ C14)	
Operating via graphic display	
Connection of DC power (plus & minus) with 4 mm pin-plug	

distributed by



### The pvServe is capable of:

#### Reverse current thermography

The power supply offers the possibility to specifically power up the aliened solar modules. This enables to generate thermographic images to track hotspots, without the normal required minimum irradiation of 400 W/m2. The measurements can be taken at any time, even during the night. Thereby possible damages of the thermo-graphic camera due to direct sunlight can be avoided.

#### Electroluminescence

The power supply can be used to utilise an additional required infrared camera to generate high quality electro-luminescence images. With this technique it is possible to detect the smallest micro cracks in the solar panels.

#### Bypass Diode Test

Connecting the power supply in inversed-polarity connection to a covered solar generator, the function of all bypass diodes of the aliened solar modules can be checked.

#### Commissioning Inverter

With the service power supply the inverter can be easily commissioned without the solar generator being installed. Therefore electrical works can be finished off at any time and checked for error-free function, even before roof works are fully completed.

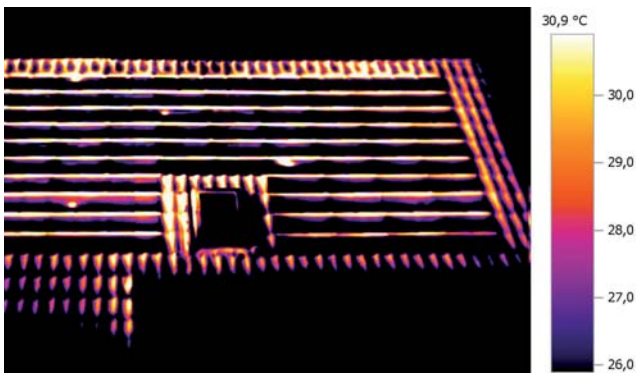
#### Thawing Snow

Through reversed current the surface temperature of the module glass can be lifted up by 2 – 4 degrees. Thereby premature slipping of snow can be achieved on a solar generator at a roof slope of 30 degree.



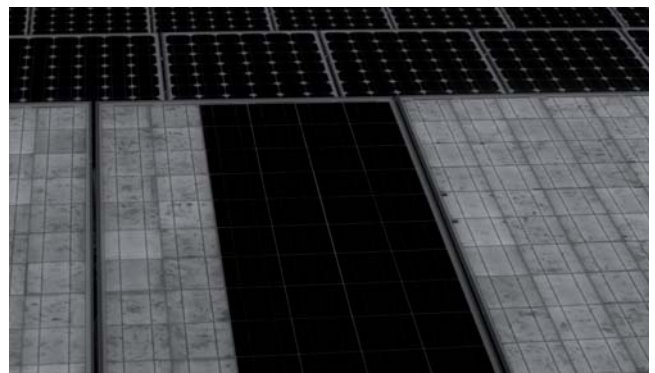
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**Exemplary images for reversed thermography:**

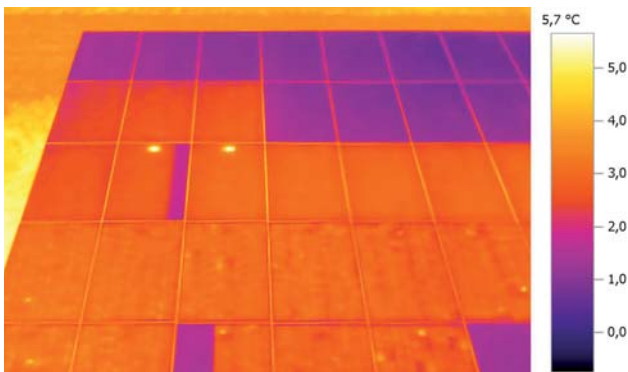


The thermographic image shows clearly the 4 hotspots

**Exemplary images for electroluminescence:**



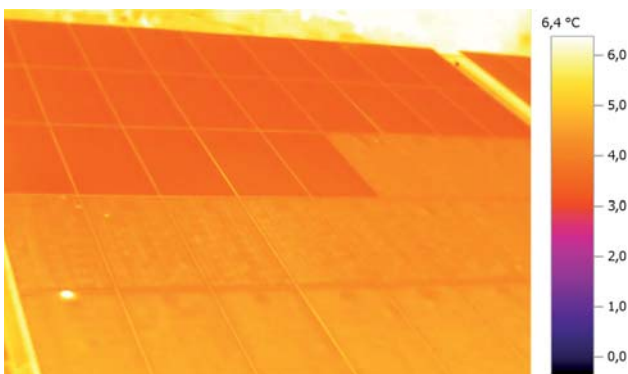
The electroluminescence image shows 2 faulty bypass diodes



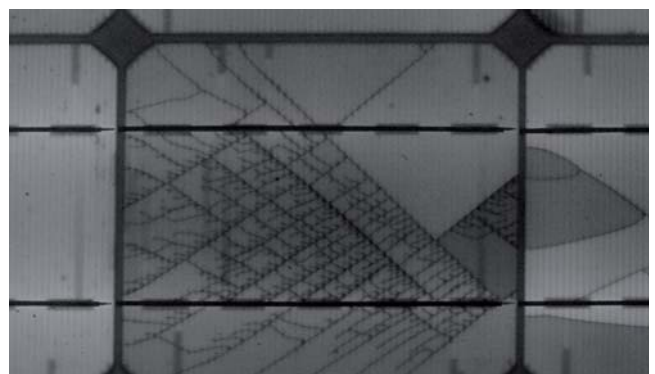
Corrodated cell connections of two modules causing partial failure



Electroluminescence image to detect allied solar modules



Solar module with hotspot at junction box



Electroluminescence image of cell with heaps of micro cracks