PVCHECK
MULTIFUNCTION INSTRUMENT TO CHECK SAFETY, PARAMETERS AND PERFORMANCE OF A PV PLANT

The multifunction instrument PVCHECK allows prompt and safe electrical checks required for a PV system (section DC) as well as controls on working of modules / strings in accordance with IEC/EN62446 guidelines. PVCHECK verifies the continuity of the protective conductors (and the associated connections) and executes insulation resistance measurement of the active conductors on a module, a string or a photovoltaic field in accordance with the requirements of IEC/EN62446, without the need of short-circuiting the positive and negative terminals. PVCHECK allows verification of a PV string's working in accordance with the requirements of IEC/EN62446 by measuring the open circuit voltage and short-circuit current under operating conditions and reporting the results to STC (by means of radiation measurement). It provides an immediate outcome for both absolute measurements and for measurements compared with the previously tested PV strings. PVCHECK also allows carrying out performance analysis of PV array (DC) under operating conditions (connected to the inverter) providing an indication of the power generated and the efficiency of the field as specified by IEC/EN62446.

FUNCTIONS

Safety test on PV installation
- Continuity test on protective conductors with 200mA
- Insulation test with test voltage of 250, 500, 1000VDC

DC efficiency of PV installation

- DC voltage, DC current, DC Power
- Solar irradiation [W/m2] with reference cell
- Environmental and module temperature by means of PT1000 probe
- SOLAR-02: remote unit for irradiance and temperature measurements
- Recording of PV plant parameters (DC side) with programmable IP (5s – 60m)
- Use of PDC compensation ratios according to environmental and module temperature
- Use of relationship to maximise the DC efficiency
- Outcome OK/NO

Performance of PV modules / strings
- Measurement of open circuit voltage up to 1000V DC
- Measurement of short circuit current up to 10A DC
- Measurement of temperature, automatic or by means of PT1000 probe
- Measurement of solar radiation [W/m2] with reference cell
- Mechanical inclinometer for the detection of solar radiation incidence angle
- Data extrapolation to standard test conditions (1000W/m2, 25°C)
- Outcome: OK / NO
- Database to manage up to 30 types of photovoltaic modules

MODEL SPECIFICATIONS

Display:	LCD Custom, 128x128pxl, backlight
Power supply:	6x1.5V alkaline bat. type AA LR06
Auto power off:	After 5 minutes in stand-by
Internal memory:	256kBytes
PC interface:	0ptoisolated optical/USB port
Safety:	IEC/EN61010-1
Meas. accessory safety:	IEC/EN61010-031
Measures:	IEC/EN 62446
Insulation:	Double insulation
Pollution degree:	2
Measurement category:	CAT III 300V (to earth) Max 1000V between inputs
Dimensions:	235x165x75mm
Weight (with batteries):	1.2kg

HellermannTyton

PVCHECK

ACCESSORIES

Kit of 4 cables with 4mm banana plugs + 4 alligator clips
Kit of 2 adapters with MC3 compatible connectors
Kit of 2 adapters with MC4 compatible connectors
Trasducer for DC currents 0÷10 - 0÷100A
diameter 30 mm
TOPVIEW2006 - Windows software + optical/USB cable C2006
Transport bag
Calibration certificate ISO9000

Optional Accessories:
TOPVIEW2006 - *C2006*
USB Cable and Software

Some standard accessories

HT4003   KITGSC4   KITPCMC3(2 PCS)

Ungrounded PV System

(−)   (+)

Ground reference

PVCHECK
Insulation resistance
measurement of a whole
PV field at once

PVCHECK
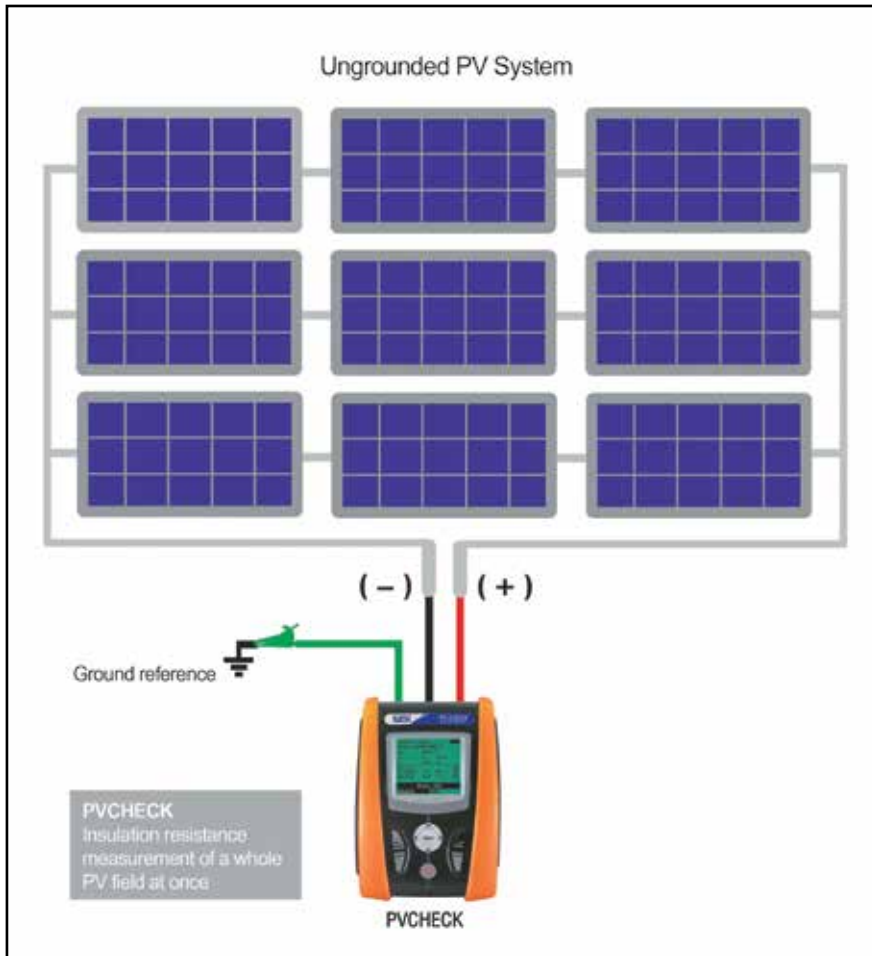


```
15/05/12  14:52:47
Module: SUNPOWER210
Vdc          548.0   V
Irr          0       W/m2
Tc           Auto    °C
Voc, Isc                    OK
Ri (1000V)   116     MΩ     OK
Rpe (Cal)    2.00    Ω      OK
         Outcome: OK
Selection      IVCK
```

Auto Test: Voc, Isc+ insulation
resistance + continuity test

```
15/12/12  14:52:47
RPE max      2       Ω
Rcal         0.01    Ω

Rpe          0.23    Ω
Itest        210     mA

         Outcome: OK
Selection      LOWΩ
```

LOWΩ: 200mA continuity test

```
15/12/12  14:52:47
Iso Test     1000    V
Ri min       1.0     MΩ
Mode         String

Vtest        1020    V
Rp           >100    MΩ

         Outcome: OK
Selection      MΩ
```

MΩ: string mode insulation
resistance measurement

LOADS   INVERTER

DC

MAINS

kWh   kWh

W/m²   °C

SOLAR-02

RF

PVCHECK
DC efficiency recording

SOLAR-02

Max. 1m

PVCHECK

```
15/12/12  14:52:47
Iso Test     1000    V
Ri min       1.0     MΩ
Mode         Field

Vtest  1025 V  1020  V
Ri (+)       >100    MΩ
Ri (−)       >100    MΩ
Rp           69      MΩ
         Outcome: OK
Selection      MΩ
```

MΩ: field mode insulation
resistance measurement