



# TS IEC 62804-1:2015

Photovoltaic (PV) Modules - Test Methods for the detection of potential-induced degradation  
Part 1: Crystalline silicone

**Ref.:** 5005440-3972-0001/226102

**Applicant:** SolarWorld AG  
Martin-Luther-King-Str. 24, 53175 Bonn

**Product:** Crystalline silicon Photovoltaic (PV)-Modules

**Type:** C) Sunmodule Protect SW XXX mono Y  
D) Sunmodule Bisun SW XXX duo Y  
E) Sunmodule Bisun SW XXX XL duo

XXX in the type replace the power in watt and can be any number between:  
200 – 320 for C) and D), 305 – 385 for E)

Y in the type replaces a potential suffix and can be black or clear

**Manufacturer:** SolarWorld AG

**Standard:** TS IEC 62804-1:2015, modified

## Test conditions

Testing time: 96h

Chamber temperature: 60°C

Relative Humidity: 85%

Potential to ground: -1000V for Protect SW XXX mono  
and Bisun SW XXX duo Y  
-1500V for Bisun SW XXX XL duo

## Pass criteria

Power degradation: < 5%

Dry Insulation: > 40 MΩm<sup>2</sup>

Wet insulation: > 40 MΩm<sup>2</sup>





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### Summary of test results:

**Maximum power degradation:** required max. 5%  
measured max. 0,52% for Protect SW XXX mono  
and Bisun SW XXX duo Y  
measured max. 2,07% for Bisun SW XXX XL duo

The measured degradation is below the allowed degradation.

**Dry insulation resistance:** required 23,81 M $\Omega$  for Protect SW XXX mono  
and Bisun SW XXX duo Y  
required 20,10 M $\Omega$  for Bisun SW XXX XL duo  
measured >500 M $\Omega$

The measured dry insulation resistance is above the limit.

**Wet insulation resistance:** required 23,81 M $\Omega$  for Protect SW XXX mono  
and Bisun SW XXX duo Y  
required 20,10 M $\Omega$  for Bisun SW XXX XL duo  
measured >500 M $\Omega$

The measured wet insulation resistance is above the limit.

**Visual inspection:** No findings

The complete test results are given in Test Report No.: TRPVM-2017-40037-1 and TRPVM-2017-40037-2

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