



Deliverable Report

Deliverable No:	WP 2.3B
Dissemination level:	Confidential
Title:	Functionally tested prototypes junction box
Date:	05-05-2018
Version:	FINAL
Author(s):	RL. Van der Ven & M. van der Ven – Solned BV
Reviewed by:	WP2 Leader – Paul Schouten – Femtogrid Energy Solutions B.V. Paul Stassen - TPS
Approved by:	Coordinator – Paul Stassen – TPS

Grant Agreement Number:	322425
Project Type:	FP7 – ENERGY.2012.2.1.2: Demonstrations of smart multifunctional PV modules
Project acronym:	SuMMiT
Project title:	Smart large lightweight long life Multifunctional PV Module Technology for large Power Installations and Distributed Energy Generation
Project start date:	01/12/2013
Project website:	www.summit-project.eu
Technical coordination:	TULiPPS (www.tulipps.com) (NL)
Project management:	TULiPPS / Uniresearch (www.uniresearch.com) (NL)



Executive Summary

This document describes the functionally testing of the Solned junction box for the Summit smart modules. This task is closely connected to the task 2.2B, the functionally tested prototype models of the junction box. The tests carried out in the task 2.2B are the start for the testing in task 2.3B. Task 2.2B and 2.3B are very similar to each other, but the difference in task 2.3B is that we now define all materials and the values we want to use for the production series.

We have defined all production steps and have established specifications in all technical drawings for production and assembly.

Testing of the prototypes has been executed successfully at our own test equipment and with simulated electrical loads.

The following tests have been executed in our laboratory:

1. Long period testing with continuous electrical power load on the samples.
2. Different electrical power load-values at the different samples to see the behaviour of the junction box over longer period at different settings.
3. Continues switching load to measure the impact on the components.
4. Diodes that switches many times each hour, for 14 days long.

During the tests, we measure the functionality of all the parts of the junction box.

No deviation of the Solned SP2-SL905 junction box is found. All tests of the final design product are passed. This is an excellent outcome for the further scaling of production runs for the new SP2-SL905 junction box.

The excellent results achieved, in particular in relation to the new fretting corrosion test as well as the diode selection and performance testing, has resulted in an improved junction box compared to state-of-art in the market available in terms of overall reliability and long-life performance.

Acknowledgement



This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 322425 (Project acronym: SUMMIT)

http://cordis.europa.eu/fp7/cooperation/home_en.html

<http://ec.europa.eu>

Project participants:

TPS | TULiPPS B.V. (NL)
FTG | FemtoGrid Energy Solutions B.V. (NL)
Fh-ICT | Fraunhofer-gesellschaft zur foerderung der angewandten forschung E.V. (DLD)
IBC NL | IBC Solar B.V. (NL)
KIWA | KIWA Italia SPA (IT)
UNR | Uniresearch B.V. (NL)
YPR | Yparex B.V. (NL)
RTG | Rimas B.V. (NL)
SOL | Solned B.V. (NL)

Disclaimer

This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 322425.

Every effort has been made to ensure complete and accurate information concerning this document. However, the author(s) and members of the consortium cannot be held legally responsible for any mistake in printing or faulty instructions. The authors and consortium members retrieve the right not to be responsible for the topicality, correctness, completeness or quality of the information provided. Liability claims regarding damage caused by the use of any information provided, including any kind of information that is incomplete or incorrect, will therefore be rejected. The information contained on this website is based on author's experience and on information received from the project partners.