



Deliverable Report

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Executive Summary

This document describes the production of the validation of manufacturability of the Solned junction box for the SUMMIT smart modules and the steps that are needed to make the production of the first series possible. For the validation for the production of the Solned junction box SP2-SL905 we have to make several tooling changes and tools for making all the components for the first series.

The tools we have produced and mould changes we have introduced are:

- Mould changes of cover for extra contact.
- Mould change for base plate.
- Production tools for the contacts for production on manual toggle presses.
- Assembly tools.
- Redesign the PCB for the extra dipole contact and components.

The production run is done with success. All tool changes are carried out very well, based on the production parameters that have been defined in task 2.3B, therefore the settings for moulding the enclosures and parts are all set. No problems occurred during the first production run.

For the assembly of the first batch we use a lot of hand-tools to find out how the assembly can be done in a later stadium more automated. We produced simple hand tools for the assembly and find out that the assembly of the cable is a difficult part if we want to make it more automated. We must be sure that during the assembly of the cable to the PCB all strands of the cable are feed into the cable contact on the PCB, and not a part is out of the connector.

Insert the cable with the cable lock and cable seal into the housing was no issue. We had expected that this would give some issues, but with a simple pressing tool it was easy without any trouble.

The quality of the complete junction box assembly is good, also because this first run involves a lot of manual assembly and therefore we executed a lot of quality checks and visible inspections. This also to get better insight how to manage the large production run with more automated tools in the future.

The junction boxes are tested by Eurotron on several types of modules, but also by customers outside of the SUMMIT project like Exasun, ECN and Soltech. The application is glass-glass modules and MWT modules. All of our testing customers give positive feedback about the performance as far as it is tested. The difficulty some testing partners gave as feedback, is that the connection of the junction box is all close to each other due to the very slim line design, so this has to be prepared very well in the solar module. As a result, it takes slightly more time to connect it, but when it is connected, it is a very small box which is highly preferred by glass-glass modules.

The junction box can be used by the SUMMIT partners for demonstration purpose, but at the beginning of the project, the junction box is not fully certified by Kiwa. As Kiwa will do pre-certification of the SUMMIT modules as complete product, this is not a requirement for using the Solned SP2-SL905 to use within the project. By the end of the SUMMIT project, the Solned SP2-SL905 junction box has been certified according to the IEC62790, in January 2018. This excellent result confirms the quality of the design and performance reliability of the junction box.

In the meantime during the project we have made the samples available for the demonstrations after this validation of manufacturability.

Solned has started start commercial market introduction for the Solned junction box SP2-SL905 to potential customers, to make them aware of the existing of our junction box . Now with IEC62790 testing being completed, it is easier for potential customers to implement the junction box into their Bill Of Material (BOM) and define the program for recertification of their own products.

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