



## PV-installations on roofs with Lightning Protection System (LPS)

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### General

When a PV-system is to be installed on a roof that has a Lightning Protection System (LPS) in place, there are important rules to follow:

- Inform the customer of the PV-system prior to installation that additional information is required.
- Always get in contact with the installer of the LPS and follow their guidelines. It could be that additional measures need to be taken and the existing LPS or the layout of the PV-system needs to be adapted.

### Situation 1

- In case the PV-system is placed within the protection area of the LPS and the separation distance between the PV-system and the LPS-system is kept ( $s > 50$  cm): the substructure of the PV-system and the LPS should not be connected. Only functional equipotential bonding of the PV-system is required, using 6 mm<sup>2</sup> Cu in accordance to EN 62305-3.

### Situation 2

- In case the PV-system is placed within the protection area of the LPS and the separation distance is not kept ( $s < 50$  cm): the substructure of the PV-system and the LPS must be connected for lightning equipotential bonding, using 16 mm<sup>2</sup> Cu or 25 mm<sup>2</sup> Al.
- Use approved clamps to make the connection between the LPS and the mounting structure of the PV-system. The mounting structure of the PV-system and combination with the clamps must meet the requirements in accordance to IEC 62561-1.
- Apply type 1+2 SPDs (Surge Protection Device) on the DC and AC side of the inverter(s) in accordance to IEC 62305-3.

### Standards

The information in this leaflet is based on the following international standards:

IEC 60364	Electrical installations for buildings
IEC 62305-3	Protection against lightning - Physical damage to structures and life hazard
IEC 62305-4	Protection against lightning - Electrical and electronic systems within structures
IEC 62561-1	Lightning Protection System Components (LPSC) - Part 1: Requirements for connection components

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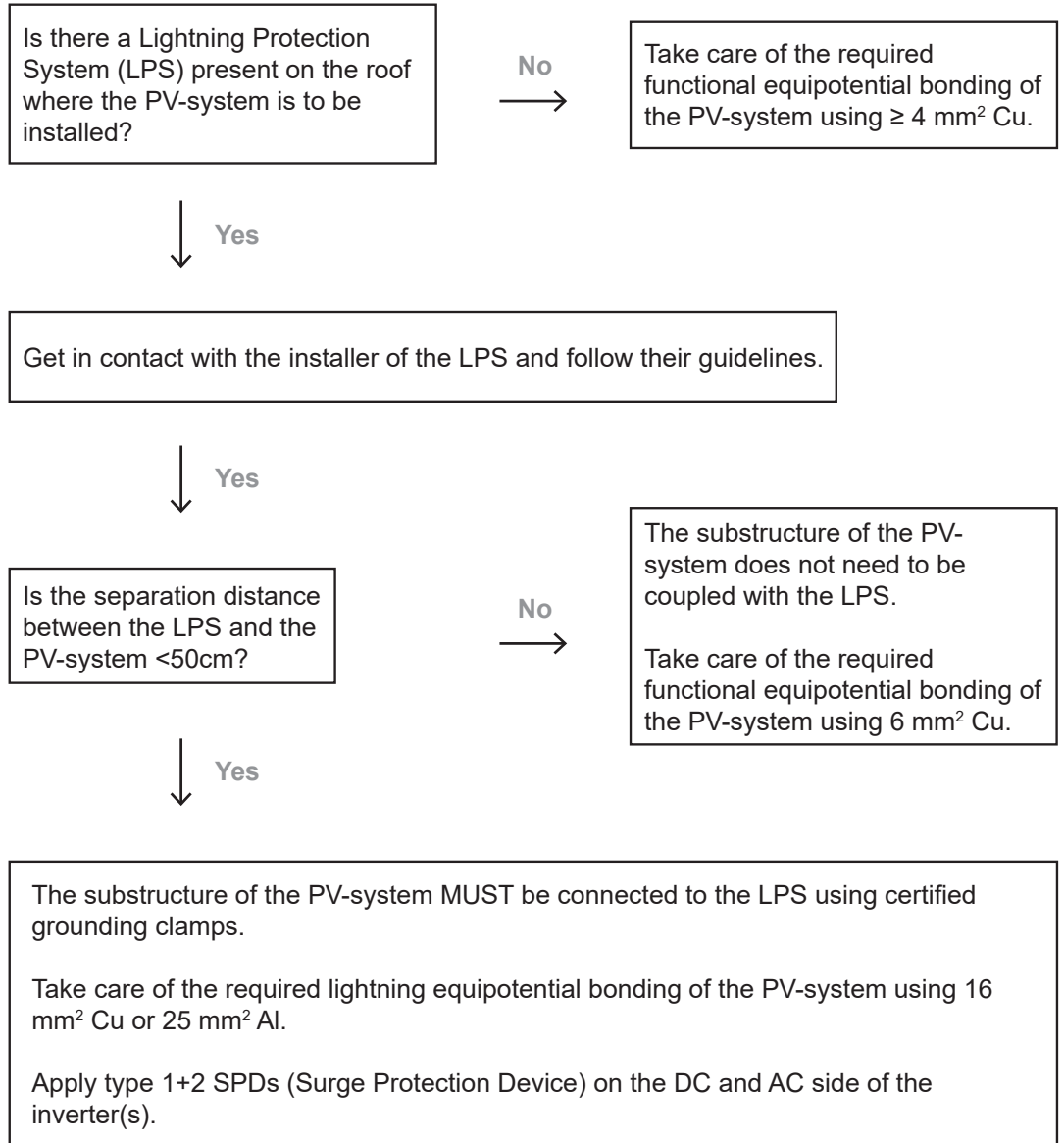
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### Decision scheme



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## Connecting the Lightning Protection System (LPS) to ValkPro+ (Situation 2)

### ValkPro+

The ValkPro+ mounting system has a unique base structure of steel roof carriers that are connected by bolts and nuts (no click connections). This is required to make the reliable framework as integrated part of the LPS.

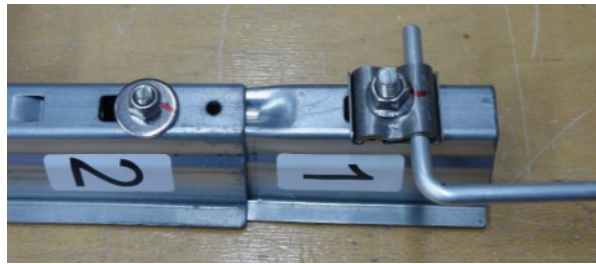
### Certification

DEHN has certified the ValkPro+ system in accordance to IEC62561-1. This guarantees that the assembly of the roof carriers and grounding clamps can withstand expected lightning partial currents based on LPL III (100 kA), provided that the system is properly installed in line with the guidelines in the installation manual of the ValkPro+ system from Van der Valk Solar Systems.

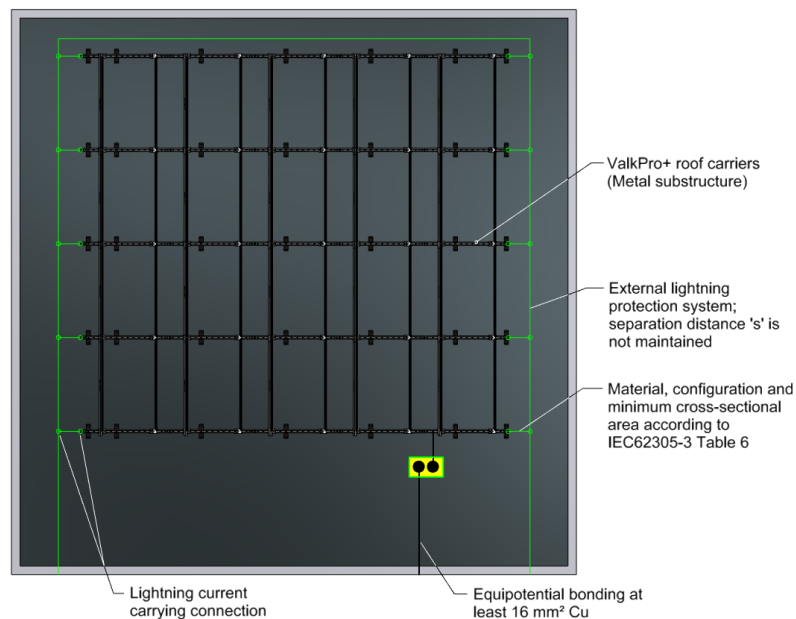
The full report is available upon request at Van der Valk Solar Systems.

### Installation

For the lightning equipotential bonding  $16 \text{ mm}^2$  Cu or  $25 \text{ mm}^2$  Al needs to be used, in combination with approved grounding clamps (DEHN) to make the connection to the ValkPro+ roof carriers. See image below. The clamps are available at Van der Valk Solar Systems under article number 762805 (M10) / 762806 (M8).



Each length of coupled roof carriers needs to be connected at both ends to the LPS. See image below.



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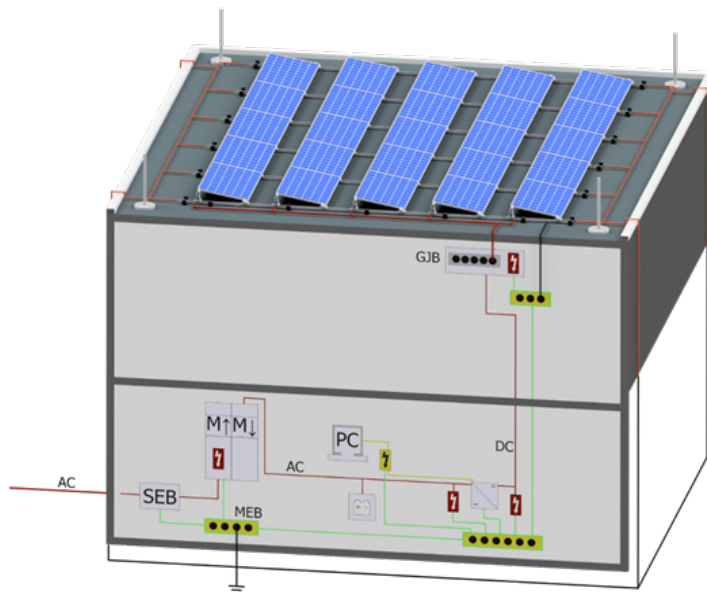
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## Connecting the Lightning Protection System (LPS) to ValkPro+ (Situation 2)

### Important!

When connecting the ValkPro+ roof carriers to the LPS, you are obliged to provide the PV inverter(s) on the DC and AC side with type 1+2 SPDs (Surge Protection Device) in accordance to IEC 62305-3 to prevent dangerous sparking and fire.



### Reliable

With this tested equalization of the lightning partial currents between the LPS and ValkPro+ system and building grounding in combination with matching type 1+2 SPDs, you can be sure of a reliably functioning PV-system in the event of a lightning strike.

For more information about ValkPro+, please contact Van der Valk Solar Systems or contact DEHN for information on lightning and surge protection.

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