

## Solar Energy South Africa

# Lightning protection requirements for rooftop photovoltaic panels

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## Overview

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Do rooftop photovoltaic systems need a lightning protection system?

This guideline also requires that LPL III and thus a lightning protection system according to class of LPS III be installed for rooftop PV systems (> 10 kWp) and that surge protection measures be taken. As a general rule, rooftop photovoltaic systems must not interfere with the existing lightning protection measures.

Do PV systems need a lightning protection system?

The necessities of lightning protection on the PV systems and its barrier, the need for different lightning protection system on PV systems as well as its recommended practices are also discussed in this paper.

Can Lightning affect a roof top PV system?

It has been shown that for buildings with roof top PV systems only the avoidance of lightning attachment to unprotected parts of the building is not sufficient. Lightning currents passing through the lightning protection system may still affect the PV power system through inductive coupling.

Are PV systems vulnerable to lightning?

Similar to other power systems [ , , , ], PV systems are vulnerable to lightning because they are always installed in unsheltered open areas. Recent studies on lightning protection of PV systems have drawn much attentions [ 9 ].

Does a lightning protection system need to be installed on a building?

The energy released by a lightning discharge is one of the most frequent causes of fire. Therefore, personal and fire protection is of paramount importance in case of a direct lightning strike to the building. At the design stage of a PV system, it is evident whether a lightning protection system is installed on a building.

Can a PV mounting system carry a lightning current?

The metal components of the PV mounting system must be connected to the external lightning protection system in such a way that they can carry lightning currents (copper conductor with a cross-section of at least 16 mm<sup>2</sup> or equivalent).

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### **(PDF) Lightning Protection of Rooftop Photovoltaic Systems: A**

2013 --In this paper, the lightning protection requirements of a typical residential building have been discussed and techniques have been provided to protect the building from both direct ...

### **Lightning and surge protection for photovoltaic facilities**

PV systems with external lightning protection  
Type II surge protection can be used, provided the separation distance is maintained (usually > 0.7 m to 1 m). If the separation distance is not ...



### **How to protect your solar power system from ...**

Lightning is a common cause of failures in photovoltaic (PV) and wind-electric systems. A damaging surge can occur from lightning that strikes a long distance from the system or between clouds. But most lightning damage is preventable. ...

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