

# INTERNATIONAL STANDARD



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**Lightning and surge voltage protection for photovoltaic (PV) power supply systems**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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## CONTENTS

FOREWORD.....	4
1 Scope.....	6
2 Normative references .....	6
3 Terms and definitions .....	7
4 Design principles .....	8
4.1 Causes of damage and damages .....	8
4.2 Galvanic coupling .....	8
4.3 Magnetic field coupling .....	9
4.4 Electric field coupling.....	10
4.5 Risk management .....	10
5 Lightning protection system (LPS) .....	11
5.1 General.....	11
5.2 External lightning protection.....	12
5.3 Internal lightning protection.....	14
5.4 Lightning equipotential bonding.....	15
5.5 Lightning protection zone concept.....	15
5.6 Selection of surge protective devices (SPDs).....	15
5.6.1 General .....	15
5.6.2 Class I tested SPD, lightning current-carrying capacity $I_{imp}$ .....	21
5.6.3 Class II tested SPD, nominal impulse discharge surge current $I_n$ .....	23
5.7 Coordination of surge protective devices.....	23
5.8 Selection of surge protective devices for a functionally earthed line conductor.....	23
6 Routing and shielding of cables/lines.....	23
7 Functional earthing/lightning equipotential bonding.....	25
8 Inspection and documentation .....	26
Annex A (informative) Shadowing .....	27
Annex B (informative) Tracking PV power supply system – External lightning protection/down-conductors.....	29
Annex C (informative) Practical example: lightning protection for a PV power supply system installed on a saddle roof building.....	30
Annex D (informative) PV power supply system as a free-field system.....	32
D.1 General.....	32
D.2 Earth screw foundations.....	32
D.3 Plate and strip or ring foundations .....	33
D.4 Lightning current-carrying capacity of Class I tested SPDs for free-field systems .....	34
Annex E (informative) Metal roof and metal façade .....	36
E.1 Metal roof .....	36
E.2 Metal façades .....	36
Bibliography.....	38
Figure 1 – Examples of direct-axis components of voltage for galvanic coupling .....	9
Figure 2 – Voltages induced in loops by the steepness of the lightning current .....	10

Figure 3 – High resolution full climatology (HRFC) .....	11
Figure 4 – Example for the design of the air-termination system for a PV power supply system using the rolling sphere method .....	12
Figure 5 – Maintaining the separation distance .....	13
Figure 6 – Example for the design of the air-termination system for a PV power supply system .....	14
Figure 7 – Use of SPDs in PV power supply systems .....	16
Figure 8 – Situation A) The surge voltage protection concept for a PV power supply system on a building without external lightning protection .....	17
Figure 9 – Situation B) Surge voltage protection concept for a PV power supply system on a building with external lightning protection, the separation distance $s$ is maintained .....	17
Figure 10 – Situation C) Surge voltage protection concept for a PV power supply system on a building with external lightning protection, the separation distance $s$ is not maintained .....	18
Figure 11 – Situation C) Surge voltage protection concept for a PV power supply system on a building with external lightning protection, the separation distance $s$ is not maintained, use of a shield able to carry the lightning current .....	18
Figure 12 – Flow chart for the selection of protective measures .....	20
Figure 13 – Example of a structure with two down-conductors of the external lightning protection system .....	22
Figure 14 – Reduction of the effects of induction by shielding and line routing .....	24
Figure 15 – Example for the shielding of the generator main lines by closed metal cable channels .....	25
Figure 16 – Functional earthing of the module racks in case no external lightning protection is available or the separation distance is not maintained .....	26
Figure 17 – Lightning equipotential bonding at the module racks in case the separation distance is not maintained .....	26
Figure A.1 – Shadowing of a PV module by a lightning rod .....	27
Figure A.2 – Minimum distance between the lightning rod or lightning line and the PV module required to prevent an umbra .....	28
Figure C.1 – Saddle roof building – Meshed air-termination systems of lightning protection level III, the PV power supply system spans several meshes .....	30
Figure C.2 – Example for the calculation of the separation distances for lightning protection level III .....	31
Figure D.1 – Connection of module tables to the earthing system for pile-driven foundations and earth screw foundations .....	33
Figure D.2 – Connection of module tables to the earthing system for strip foundations .....	34
Figure D.3 – Earthing concept and arrangement of the SPDs for a free field .....	35
Table 1 – Selection of the SPD test class (type) and minimum cross-section of the equipotential bonding .....	16
Table 2 – Selection of the minimum discharge capacity of voltage limiting SPDs of Class I tested (voltage limiting type) or combined SPDs of Type 1 (series connection of voltage limiting type and voltage switching type) .....	21
Table 3 – Selection of the minimum discharge capacity of voltage switching class I tested SPDs (voltage switching) or combined class I tested SPDs (parallel connection of voltage limiting and voltage switching) .....	22
Table A.1 – Minimum distance of air-termination systems required to avoid an umbra .....	28
Table D.1 – Minimum discharge capacity of voltage limiting or combined Class I tested SPDs and voltage switching type class I tested SPDs .....	35

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## LIGHTNING AND SURGE VOLTAGE PROTECTION FOR PHOTOVOLTAIC (PV) POWER SUPPLY SYSTEMS

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# LIGHTNING AND SURGE VOLTAGE PROTECTION FOR PHOTOVOLTAIC (PV) POWER SUPPLY SYSTEMS

## 1 Scope

This document deals with the protection of PV power supply systems against detrimental effects of lightning strikes and surge voltages of atmospheric origin. In the event that a lightning and/or surge voltage protection is required to be erected, this document describes requirements and measures for maintaining the safety, functionality, and availability of the PV power supply systems.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60364-4-44:2007/AMD1:2015, *Low-voltage electrical installations – Part 4-44: Protection for safety – Protection against voltage disturbances and electromagnetic disturbances*

IEC 60364-7-712:2017, *Low voltage electrical installations – Part 7-712: Requirements for special installations or locations – Solar photovoltaic (PV) power supply systems*

IEC 61643-11:2011, *Low-voltage surge protective devices – Part 11: Surge protective devices connected to low-voltage power systems – Requirements and test methods*

IEC 61643-21, *Low voltage surge protective devices – Part 21: Surge protective devices connected to telecommunications and signalling networks – Performance requirements and testing methods*

IEC 61643-31, *Low-voltage surge protective devices – Part 31: Requirements and test methods for SPDs for photovoltaic installations*

IEC 62305-1, *Protection against lightning – Part 1: General principles*

IEC 62305-2, *Protection against lightning – Part 2: Risk management*

IEC 62305-3:2010, *Protection against lightning – Part 3: Physical damage to structures and life hazard*

IEC 62305-4, *Protection against lightning – Part 4: Electrical and electronic systems within structures*

IEC 62561-1, *Lightning Protection System Components (LPSC) – Part 1: Requirements for connection components*

IEC 62561-2, *Lightning Protection System Components (LPSC) – Part 2: Requirements for conductors and earth electrodes*

IEC 62561-3, *Lightning Protection System Components (LPSC) – Part 3: Requirements for isolating spark gaps (ISG)*

IEC 62561-4, *Lightning protection system components (LPSC) – Part 4: Requirements for conductor fasteners*