

# TECHNICAL SPECIFICATION

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## Lightning protection system components (LPSC) – Part 8: Requirements for components for isolated LPS



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## Lightning protection system components (LPSC) – Part 8: Requirements for components for isolated LPS

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Technical Specifications are subject to review within three years of publication to decide whether they can be transformed into International Standards.

IEC TS 62561-8, which is a Technical Specification, has been prepared by IEC technical committee 81: Lightning protection.

A list of all parts in the IEC 62561 series, published under the general title *Lightning protection system components (LPSC)*, can be found on the IEC website.

The text of this Technical Specification is based on the following documents:

Enquiry draft	Report on voting
81/562/DTS	81/574/RVDTS

Full information on the voting for the approval of this Technical Specification can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- transformed into an International Standard,
- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.



## LIGHTNING PROTECTION SYSTEM COMPONENTS (LPSC) –

### Part 8: Requirements for components for isolated LPS

#### 1 Scope

This document specifies the requirements and tests for insulating stand-offs, used in conjunction with an air-termination system and down-conductors with the aim of maintaining the proper separation distance, and the requirements and tests for insulating down-conductors, including their specific fasteners, able to reduce the separation distance.

Testing of insulating stand-offs and insulating down-conductors components for an explosive atmosphere is not covered by this document.

Requirements and tests for other types of components for isolated LPS are under consideration.

#### 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 60060-2:2010, *High-voltage test techniques – Part 2: Measuring systems*

IEC 60068-2-52:2017, *Environmental testing – Part 2: Tests – Test Kb: Salt mist, cyclic (sodium chloride solution)*

IEC 60068-2-75:2014, *Environmental testing – Part 2: Tests – Test Eh: Hammer tests*

IEC 61083-1, *Instruments and software used for measurement in high-voltage impulse tests – Part 1: Requirements for instruments*

IEC 61083-2, *Instruments and software used for measurement in high-voltage and high-current tests – Part 2: Requirements for software for tests with impulse voltages and currents*

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

IEC 62561-1:2017, *Lightning protection system components (LPSC) – Part 1: Requirements for connection components*

IEC 62561-2:2012, *Lightning protection system components (LPSC) – Part 2: Requirements for conductors and earth electrodes*

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

ISO 4892-2, *Plastics – Methods of exposure to laboratory light sources – Part 2: Xenon-arc lamps*

ISO 4892-3:2016, *Plastics – Methods of exposure to laboratory light sources – Part 3: Fluorescent UV lamps*

ISO 4892-4, *Plastics – Methods of exposure to laboratory light sources – Part 4: Open-flame carbon-arc lamps*

ISO 6988:1985, *Metallic and other non-organic coatings – Sulfur dioxide test with general condensation of moisture*

ISO 6957:1988, *Copper alloys – Ammonia test for stress corrosion resistance*

### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

#### 3.1

##### **insulating stand-off**

non-metallic or composite component, consisting of the insulator and fixation parts, designed to retain, support and insulate the air-termination system and/or down-conductors at a required separation distance

#### 3.2

##### **effective length correction factor**

$k_x$

factor evaluating the different withstand voltage of air gaps and insulators under test voltages and environmental influences like pollution and/or UV light degradation

#### 3.3

##### **steepness correction factor for insulating stand-offs**

$c_{is\_st}$

factor considering the effect of higher steepness and the probability of occurrence of subsequent negative short strokes on the flashover voltage of an insulating stand-off

Note 1 to entry: The value is defined in the test procedure.

#### 3.4

##### **effective length of an insulating stand-off**

$l_{eff}$

length (distance) of an air gap with equivalent break down behaviour to an insulating stand-off

#### 3.5

##### **corrected distance value of an insulating stand-off**

$l_{st}$

shortest measured clearance distance between two conductive elements of different electrical potential, e.g. between a metallic conductor fastener and a mounting assembly

#### 3.6

##### **equivalent separation distance**

$s_e$

corrected distance value to be used instead of the insulating length of a stand-off distance value equivalent to the separation distance of conventional down-conductors required in IEC 62305-3