

This is a preview of "IEC 62561-1 Ed. 1.0 ...". Click here to purchase the full version from the ANSI store.



Edition 1.0 2012-02

INTERNATIONAL STANDARD

Lightning protection system components (LPSC) – Part 1: Requirements for connection components

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

PRICE CODE

S

ICS 29.020; 91.120.40

ISBN 978-2-88912-925-6

Warning! Make sure that you obtained this publication from an authorized distributor.

CONTENTS

FOREWORD.....	4
INTRODUCTION.....	6
1 Scope.....	7
2 Normative references	7
3 Terms and definitions	7
4 Classification.....	8
5 Requirements	9
5.1 General.....	9
5.2 Installation instructions.....	9
5.3 Lightning current carrying capability	9
5.4 Static mechanical stress.....	9
5.5 Screwed clamping connection	9
5.6 Dismantling of test joints	9
5.7 Damage to conductors and metal installations.....	9
5.8 Safe connection	10
5.9 Terminals of bonding bars	10
5.10 Marking	10
6 Tests.....	10
6.1 General conditions for tests.....	10
6.2 Test preparation	11
6.2.1 Arrangement of the specimen	11
6.2.2 Conditioning/ageing.....	11
6.3 Electrical test	11
6.4 Static mechanical test	12
6.5 Marking test	13
7 Electromagnetic compatibility (EMC)	13
8 Structure and content of the test report	13
8.1 General.....	13
8.2 Report identification	13
8.3 Specimen description	13
8.4 Conductor	14
8.5 Standards and references	14
8.6 Test procedure	14
8.7 Testing equipment description.....	14
8.8 Measuring instruments description	14
8.9 Results and parameters recorded.....	14
8.10 Statement of pass/fail.....	15
Annex A (informative) Summary of the requirements and corresponding tests	18
Annex B (informative) Typical arrangements for various LPSCs.....	19
Annex C (normative) Conditioning/ageing for connection components	20
Bibliography.....	21
Figure 1 – Basic arrangement of specimen with cross connection component.....	15
Figure 2 – Basic arrangement of specimen with parallel connection component.....	16
Figure 3 – Basic arrangement of specimen with bridging component.....	16

This is a preview of "IEC 62561-1 Ed. 1.0 ...". [Click here to purchase the full version from the ANSI store.](#)

Figure 4 – Basic arrangement of specimen with equipotential bonding bar	17
Figure 5 – Basic arrangement for contact measurement of expansion piece	17
Table 1 – Lightning impulse current (I_{imp}) parameters	12
Table A.1 – Requirements and corresponding tests	18

INTERNATIONAL ELECTROTECHNICAL COMMISSION

LIGHTNING PROTECTION SYSTEM COMPONENTS (LPSC) –

Part 1: Requirements for connection components

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 62561-1 has been prepared by IEC technical committee 81: Lightning protection.

The text of this standard is based on the following documents:

FDIS	Report on voting
81/416/FDIS	81/422A/RVD

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

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

The content of this part of IEC 62561 is taken from European Standard EN 50164-1.

This is a preview of "IEC 62561-1 Ed. 1.0 ...". [Click here to purchase the full version from the ANSI store.](#)

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

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

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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

This is a preview of "IEC 62561-1 Ed. 1.0 ...". [Click here to purchase the full version from the ANSI store.](#)

INTRODUCTION

This part of IEC 62561 deals with the requirements and tests for lightning protection system components (LPSC) used for the installation of a lightning protection system (LPS) designed and implemented according to the IEC 62305 series of standards.

LIGHTNING PROTECTION SYSTEM COMPONENTS (LPSC) –

Part 1: Requirements for connection components

1 Scope

This part of IEC 62561 specifies the requirements and tests for metallic connection components that form part of a lightning protection system (LPS). Typically, these can be connectors, bonding and bridging components, expansion pieces and test joints.

Testing of components for an explosive atmosphere is not covered by this standard.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60068-2-52:1996, *Environmental testing – Part 2-52: Tests – Test Kb: Salt mist, cyclic (sodium chloride solution)*

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

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

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

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