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I.S. EN 50468:2009

# Resistibility requirements to overvoltages and overcurrents due to lightning for equipment having telecommunication ports

## I.S. EN 50468:2009

*Incorporating amendments/corrigenda issued since publication:*

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 50468**

April 2009

ICS 29.120.50; 91.120.40

English version

**Resistibility requirements to overvoltages and overcurrents  
due to lightning for equipment having telecommunication ports**

Exigences de tenue  
aux surtensions et aux surintensités  
dues à la foudre pour les matériels  
avec port de communication

Anforderungen zur Zerstörfestigkeit  
von Einrichtungen  
mit Telekommunikationsanschluss  
gegen Überspannungen  
und -ströme infolge Blitzschlags

This European Standard was approved by CENELEC on 2009-02-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

**CENELEC**

European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**Central Secretariat: avenue Marnix 17, B - 1000 Brussels**

**I.S. EN 50468:2009**

EN 50468:2009

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**Foreword**

This European Standard was prepared by the Technical Committee CENELEC TC 81X, Lightning protection.

The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 50468 on 2009-02-01.

The following dates were fixed:

- latest date by which the EN has to be implemented  
at national level by publication of an identical  
national standard or by endorsement (dop) 2010-02-01
  - latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 2012-02-01
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## **1 Scope**

This European Standard specifies the minimum level of resistibility of equipment having telecommunication port(s) to overvoltages and overcurrents.

This European Standard covers telecommunication equipment installed at customer premises as shown in Figure 1.

Overvoltages or overcurrents covered by this European Standard are surges due to direct or indirect lightning on the telecommunication line plant.

Overvoltages or overcurrent not covered by this European Standard are

- short-term induction of alternating voltages from electric power systems (including electrified railway),
- earth potential rise due to power faults or load switching,
- direct contacts between telecommunication lines and low voltage power lines.

This European Standard is intended for use by network (public/private) operators and the equipment manufacturers.

This European Standard applies to equipment having telecommunication port(s) connected to external conductors, i.e. conductor located outside the customer's building.

The tests are type tests and, although they are applicable to a complete system, it is recognised that they may be applied to individual items of equipment during development and design work.

## **2 Normative references**

The following referenced documents are indispensable for the application 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.

CLC/TR 50450:2006, Resistibility requirements for equipment having (a) telecommunication port(s)

EN 60950-1:2006, Information technology equipment – Safety – Part 1: General requirements (IEC 60950-1:2005, mod.)

IEC 60050-701:1988, International Electrotechnical Vocabulary (IEV) – Chapter 701: Telecommunications, channels and networks

ITU-T Recommendation K.21, Resistibility of telecommunication equipment installed in customer premises to overvoltages and overcurrents

ITU-T Recommendation K.44, Resistibility tests for telecommunication equipment exposed to overvoltages and overcurrents – Basic Recommendation

### 3 Terms, definitions and abbreviations

For the purposes of this document, the following terms and definitions apply, in addition with those definitions and abbreviations in ITU-T recommendation K.44.

#### 3.1

##### **resistibility**

ability of telecommunication equipment or installations to withstand, in general without damage, the effects of overvoltages or overcurrents, up to a certain, specified extent, and in accordance with a specified criterion

[ITU-T K.44]

NOTE Two acceptance criteria are recognized:

Criterion A – Equipment shall withstand the test without damage or other disturbance (such as corruption of software or misoperation of fault-protection facilities) and shall operate properly within the specified limits after the test. It is not required to operate correctly during the test.

Criterion B – A fire hazard shall not arise in the equipment as a result of the tests. Any damage, if it occurs, shall be confined to a small part of the equipment.

#### 3.2

##### **telecommunication port**

port which is intended to be connected to telecommunication networks, Local Area Networks (e.g. Ethernet, Token Ring) and similar networks, either through physical connection (cable optical fibre) or radio connection

[CLC/TR 50450]

NOTE In the latter case the antenna port is the telecommunication port.

#### 3.3

##### **external ports**

particular interface of the specified equipment, which is directly connected to metallic conductors extending beyond the building or shelter boundary

[ITU-T K.44]

#### 3.4

##### **internal ports**

particular interface of the specified equipment which is connected to metallic conductors which do not leave the building or shelter. These interfaces connect to cables which interconnect system blocks

[ITU-T K.44]

#### 3.5

##### **telecommunication**

any transmission, emission or reception of signs, signals, writing, images and sounds or intelligence of any nature by wire, radio, optical or other electromagnetic systems

[IEV 701-01-05 of IEC 60050-701:1988]

### 4 Reference configuration

The diagram below shows equipment with telecommunication port(s) installed at customers premises. This ensures that the appropriate electromagnetic environment for the installation is considered, independent of the ownership of the equipment.

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