



INTERNATIONAL STANDARD

**Low voltage surge protective devices -
Part 21: Surge protective devices connected to telecommunications and
signalling networks - Requirements and test methods**



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and signalling networks - Requirements and test methods**

FOREWORD

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IEC 61643-21 has been prepared by subcommittee 37A: Low-voltage surge protective devices, of IEC technical committee 37: Surge arresters. It is an International Standard.

This second edition cancels and replaces the first edition published in 2000, Amendment 1:2008 and Amendment 2:2012. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) New structure of IEC 61643-21 based on IEC 61643-01:2024;
- b) Several safety requirements based on IEC 61643-01:2024 have been added.

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The requirements of this part of IEC 61643 supplement, modify or replace certain of the general requirements contained in IEC 61643-01 and are to be read and applied together with IEC 61643-01:2024.

Numbering of clauses follows the numbering of IEC 61643-01, but, dependent on the application of clauses from part 01, does not necessarily follow sequentially.

If a clause in IEC 61643-01 is not explicitly called up or referred to in this document, then this clause does not apply to SPDs covered by this document. Any instructions in this document calling up clauses from IEC 61643-01 are written in *Italic type*.

NOTE In other words, if e.g. Clause 4 is called up in this document all subclauses of Clause 4 of IEC 61643-01 are applied without modification. But, if e.g. some modifications are required on subclauses of Clause 9 of IEC 61643-01, then the relevant second level subclauses of IEC 61643-01 (e.g. 9.3, 9.5 etc.) are called up separately and it is indicated how they are applied.

The numbering of additional subclauses, figures and tables to IEC 61643-01 in this document starts with the number 100 in the last section of the subclauses added (e.g. 4.100 or 6.2.100). The numbering of additional tables and figures to IEC 61643-01 in this document starts with the number 100.

The text of this International Standard is based on the following documents:

Draft	Report on voting
37A/432/FDIS	37A/445/RVD

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

A list of all parts in the IEC 61643 series, published under the general title *Low-voltage surge protective devices*, can be found on the IEC website.

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

- reconfirmed,
- withdrawn, or
- revised.

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It has been assumed in the drafting of this International Standard that the execution of its provisions is entrusted to appropriately qualified and experienced persons.

This document recognizes the internationally accepted level of protection against hazards such as electrical, mechanical, thermal, fire and radiation of SPDs when operated as in normal use taking into account the manufacturer's instructions.

The purpose of this document is to identify the requirements for Surge Protective Devices (SPDs) used in protecting telecommunications and signalling networks, for example, low-voltage data, voice, and alarm circuits.

If the intended applications of an SPD are covered by different parts of the IEC 61643-X1 series, all relevant parts are applied.

This part of the IEC 61643 series addresses safety and performance tests for surge protective devices (SPDs) for telecommunications and signalling networks in conjunction with IEC 61643-01:2024.

This document addresses SPDs containing voltage-limiting components only, or a combination of voltage-limiting components and current-limiting components. Protection devices containing current-limiting components only are not within the coverage of this document.

This document covers a wide range of testing conditions and requirements; the use of some of these is at the discretion of the user. How the requirements of this document relate to the different types of SPD is described in Table 100.

Selection and application principles are covered in IEC 61643-22.

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This document, together with IEC 61643-01:2024, is applicable to devices for surge protection against indirect and direct effects of lightning or other transient overvoltages.

These devices are intended to be connected to telecommunications and signalling networks, and equipment rated up to 1 000 V RMS and 1 500 V DC.

These telecommunications and signalling networks can also provide power on the same line, e.g. Power over Ethernet (PoE).

Performance and safety requirements, tests and ratings are specified in this document. These devices contain at least one voltage-limiting component (clamping or switching) and are intended to limit surge voltages and divert surge currents.

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 61643-01:2024, *Low-voltage surge protective devices - Part 01: General requirements and test methods*