IEC 60364-4-44

Edition 3.0 2024-12
REDLINE VERSION

INTERNATIONAL STANDARD

colour inside

Low-voltage electrical installations –
Part 4-44: Protection for safety – Protection against voltage disturbances and electromagnetic disturbances

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 91.140.50; 33.100.10; 33.100.20

ISBN 978-2-8327-0121-8

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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LOW-VOLTAGE ELECTRICAL INSTALLATIONS –

Part 4-44: Protection for safety – Protection against voltage disturbances and electromagnetic disturbances

FOREWORD

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This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition IEC 60364-4-44:2007+AMD1:2015+AMD2:2018 CSV. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

IEC 60364-4-44 has been prepared by IEC technical committee 64: Electrical installations and protection against electric shock. It is an International Standard.

This third edition cancels and replaces the second edition published in 2007, Amendment 1:2015 and Amendment 2:2018. This edition constitutes a technical revision.

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

a) the structure of the document has been updated in accordance with the ISO/IEC Directives, Part 2:2021: the terms, definitions and symbols have been regrouped under a new Subclause 440.3, the tables and figures have been renumbered;
b) Clause 443 has been amended to better introduce the DC SPD and to improve some of the wording.

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

Draft	Report on voting
64/2696/FDIS	64/2737/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 60364 series, published under the general title *Low-voltage electrical installations,* can be found on the IEC website.

The reader's attention is drawn to the fact that Annex C lists all of the "in-some-country" clauses on differing practices of a less permanent nature relating to the subject of this document.

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

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INTRODUCTION

This part of IEC 60364 covers the protection of electrical installations and measures against voltage disturbances and electromagnetic disturbances.

The requirements are arranged into four clauses as follows:

Clause 442 Protection of low-voltage installations against temporary overvoltages due to earth faults in the high-voltage system and due to faults in the low-voltage system

Clause 443 Protection against transient overvoltages of atmospheric origin or due to switching

Clause 444 Measures against electromagnetic influences

Clause 445 Protection against undervoltage

LOW-VOLTAGE ELECTRICAL INSTALLATIONS –

Part 4-44: Protection for safety – Protection against voltage disturbances and electromagnetic disturbances

440 Protection against voltage disturbances and electromagnetic disturbances

440.1 Scope

~~The rules of~~ This part of IEC 60364 ~~are intended to provide~~ provides requirements for the safety of electrical installations in the event of voltage disturbances and electromagnetic disturbances generated for different specified reasons.

The ~~rules~~ requirements of this document are not intended to apply to systems for distribution of energy to the public, or power generation and transmission for such systems (see the scope of IEC 60364-1) although such disturbances ~~may~~ can be conducted into or between electrical installations via these supply systems.

440.2 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 60038:2009, *IEC standard voltages*~~

~~IEC 60050-604:1987, *International Electrotechnical Vocabulary – Chapter 604: Generation, transmission and distribution of electricity – Operation*~~

IEC 60364-1, *Low-voltage electrical installations – Part 1: Fundamental principles, assessment of general characteristics, definitions*

~~IEC 60364-4-41:2005, *Electrical installations of buildings – Part 4-41: Protection for safety – Protection against electric shock*~~

IEC 60364-5-52, *Low-voltage electrical installations – Part 5-52: Selection and erection of electrical equipment – Wiring systems*

IEC 60364-5-53:~~2001~~2019, *Low-voltage electrical installations ~~of buildings~~ – Part 5-53: Selection and erection of electrical equipment – Devices for protection for safety, isolation, switching ~~and~~, control and* monitoring
IEC 60364-5-53:~~2001~~2019/AMD1:~~2002~~2020
IEC 60364-5-53:~~2001~~2019/AMD2:~~2015~~2024

IEC 60364-5-54:~~2002,~~2011, *Low-voltage electrical installations ~~of buildings~~ – Part 5-54: Selection and erection of electrical equipment – Earthing arrangements and protective ~~bonding~~ conductors* ~~[1]~~
IEC 60364-5-54:2011/AMD1:2021

~~[1] A third edition is currently in preparation.~~

~~IEC 60479-1:2005, *Effects of current on human beings and livestock – Part 1: General aspects*~~

IEC 60664-1:~~2007~~2020, *Insulation coordination for equipment within low-voltage supply systems – Part 1: Principles, requirements and tests*

~~IEC 60950-1, *Information technology equipment – Safety – Part 1: General requirements*~~

~~IEC 61000-2-5:1995, *Electromagnetic compatibility (EMC) – Part 2: Environment – Section 5: Classification of electromagnetic environments – Basic EMC publication*~~

~~IEC 61000-6-1, *Electromagnetic compatibility (EMC) – Part 6-1: Generic standards – Immunity for residential, commercial and light-industrial environments*~~

~~IEC 61000-6-2, *Electromagnetic compatibility (EMC) – Part 6-2: Generic standards – Immunity for industrial environments*~~

~~IEC 61000-6-3, *Electromagnetic compatibility (EMC) – Part 6-3: Generic standards – Emission standard for residential, commercial and light-industrial environments*~~

~~IEC 61000-6-4, *Electromagnetic compatibility (EMC) – Part 6-4: Generic standards – Emission standard for industrial environments*~~

IEC 61156 (all parts), *Multicore and symmetrical pair/quad cables for digital communications*

IEC 61196-7, *Coaxial communication cables – Part 7: Sectional specification for cables for BCT cabling in accordance with ISO/IEC ~~15018~~ 11801-4 – Indoor drop cables for systems operating at 5 MHz – ~~3 000~~ 6 000 MHz*

~~IEC 61558-2-1, *Safety of power transformers, power supplies, reactors and similar products – Part 2-1: Particular requirements for tests for separating transformers and power supplies incorporating separating transformers for general applications*~~

~~IEC 61558-2-4, *Safety of power transformers, power supply units and similar – Part 2-4: Particular requirements for isolating transformers for general use*~~

~~IEC 61558-2-6, *Safety of power transformers, power supply units and similar – Part 2-6: Particular requirements for safety isolating transformers for general use*~~

~~IEC 61558-2-15, *Safety of power transformers, power supply units and similar – Part 2-15: Particular requirements for isolating transformers for the supply of medical locations*~~

~~IEC 61643 (all parts), *Low-voltage surge protective devices*~~

~~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 61643-22, *Low-voltage surge protective devices – Part 22: Surge protective devices connected to telecommunications and signalling networks – Selection and application principles*~~

IEC 61936-1, *Power installations exceeding 1 kV AC and 1,5 kV DC – Part 1: ~~Common rules~~ AC*

~~IEC 62305 (all parts), *Protection against lightning*~~

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

IEC 62305-3, *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*~~

ISO/IEC 11801-1, *Information technology – Generic cabling for customer premises – Part 1: General requirements*

ISO/IEC 14763-2:~~2012~~2019, *Information technology – Implementation and operation of customer premises cabling – Part 2: Planning and installation*
~~ISO/IEC 14763-2:2012/AMD1:2015~~

ISO/IEC TR 29106, *Information technology – Generic cabling – Introduction to the MICE environmental classification*

IEC 60364-4-44

Edition 3.0 2024-12

INTERNATIONAL STANDARD

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Low-voltage electrical installations –
Part 4-44: Protection for safety – Protection against voltage disturbances and electromagnetic disturbances



IEC 60364-4-44:2024-12(en)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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LOW-VOLTAGE ELECTRICAL INSTALLATIONS –

Part 4-44: Protection for safety – Protection against voltage disturbances and electromagnetic disturbances

FOREWORD

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- withdrawn, or
- revised.

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INTRODUCTION

This part of IEC 60364 covers the protection of electrical installations and measures against voltage disturbances and electromagnetic disturbances.

The requirements are arranged into four clauses as follows:

Clause 442 Protection of low-voltage installations against temporary overvoltages due to earth faults in the high-voltage system and due to faults in the low-voltage system

Clause 443 Protection against transient overvoltages of atmospheric origin or due to switching

Clause 444 Measures against electromagnetic influences

Clause 445 Protection against undervoltage

LOW-VOLTAGE ELECTRICAL INSTALLATIONS –

Part 4-44: Protection for safety – Protection against voltage disturbances and electromagnetic disturbances

440 Protection against voltage disturbances and electromagnetic disturbances

440.1 Scope

This part of IEC 60364 provides requirements for the safety of electrical installations in the event of voltage disturbances and electromagnetic disturbances generated for different specified reasons.

The requirements of this document are not intended to apply to systems for distribution of energy to the public, or power generation and transmission for such systems (see the scope of IEC 60364-1) although such disturbances can be conducted into or between electrical installations via these supply systems.

440.2 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 60364-1, *Low-voltage electrical installations – Part 1: Fundamental principles, assessment of general characteristics, definitions*

IEC 60364-5-52, *Low-voltage electrical installations – Part 5-52: Selection and erection of electrical equipment – Wiring systems*

IEC 60364-5-53:2019, *Low-voltage electrical installations – Part 5-53: Selection and erection of electrical equipment – Devices for protection for safety, isolation, switching, control and* monitoring
IEC 60364-5-53:2019/AMD1:2020
IEC 60364-5-53:2019/AMD2:2024

IEC 60364-5-54:2011, *Low-voltage electrical installations – Part 5-54: Selection and erection of electrical equipment – Earthing arrangements and protective* conductors
IEC 60364-5-54:2011/AMD1:2021

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