IEC 60364-7-716

Edition 1.0 2023-08

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Low-voltage electrical installations –
Part 7-716: Requirements for special installations or locations – ELV DC power distribution over information and communications technology (ICT) cable infrastructure

Installations électriques à basse tension –
Partie 7-716: Exigences pour les installations et emplacements spéciaux – Distribution de l'alimentation en courant continu TBT sur l'infrastructure de câbles des technologies de l'information et de la communication (TIC)



IEC 60364-7-716:2023-08(en-fr)



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CONTENTS

FOREWORD 3
INTRODUCTION 5
716 ELV DC power distribution over information and communications technology (ICT) cable infrastructure 6
716.1 Scope 6
716.2 Normative references 6
716.3 Terms and definitions 7
716.4 Protection for safety 7
716.41 Protection against electric shock 7
716.410.3 General requirements 7
716.43 Protection against overcurrent 8
716.433 Protection against overload current 8
716.433.1 Coordination between conductors and overload protective devices 8
716.433.1.101 Protection against overcurrent 8
716.52 Selection and erection of electrical equipment – Wiring systems 8
716.521 Types of wiring system 8
716.523 Current-carrying capacities 9
716.526 Electrical connections 9
Annex A (informative) List of notes concerning certain countries 10
Bibliography 11

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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LOW-VOLTAGE ELECTRICAL INSTALLATIONS –

Part 7-716: Requirements for special installations or locations – ELV DC power distribution over information and communications technology (ICT) cable infrastructure

FOREWORD

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IEC 60364-7-716 has been prepared by IEC technical committee 64: Electrical installations and protection against electric shock. It is an International Standard.

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

Draft	Report on voting
64/2617/FDIS	64/2637/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 A 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

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- withdrawn,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

INTRODUCTION

For the purpose of this part of IEC 60364 (IEC 60364-7-716) the requirements of the general Parts 1 to 6 and Part 8 of IEC 60364 apply.

The IEC 60364-7-7XX parts of IEC 60364 contain particular requirements for special installations or locations which are based on the requirements of the general parts of IEC 60364 (IEC 60364-1 to IEC 60364-6 and IEC 60364-8). These IEC 60364-7-7XX parts are considered in conjunction with the requirements of the general parts.

The particular requirements of this part of IEC 60364 supplement, modify or replace certain of the requirements of the general parts of IEC 60364 being valid at the time of publication of this part. The absence of reference to the exclusion of a part or a clause of a general part means that the corresponding clauses of the general part are applicable (undated references).

Requirements of other 7XX parts being relevant for installations covered by this part also apply, and circuits serving such parts are limited by the requirements of those 7XX parts.

The clause numbering of this part follows the pattern and corresponding references of IEC 60364. The numbers following the particular number of this part are those of the corresponding parts, or clauses of the other parts of the IEC 60364 series, valid at the time of publication of this part, as indicated in the normative references of this document (dated references).

If requirements or explanations additional to those of the other parts of the IEC 60364 series are necessary, the numbering of such items appears as 716.101, 716.102, 716.103, etc.

In the case where new or amended general parts with modified numbering were published after this part was issued, it is possible that the clause numbers referring to a general part in this Part 716 will no longer align with the latest edition of the general part. Dated references should be observed.

LOW-VOLTAGE ELECTRICAL INSTALLATIONS –

Part 7-716: Requirements for special installations or locations – ELV DC power distribution over information and communications technology (ICT) cable infrastructure

716 ELV DC power distribution over information and communications technology (ICT) cable infrastructure

716.1 Scope

This part of IEC 60364 specifies requirements in electrical installations for the distribution of ELV DC power using balanced, information technology cables and accessories primarily designed for data transmission, as specified in terms of a category within the channels of ISO/IEC 11801-1 using power sourcing equipment in accordance with IEC 62368-3.

Requirements are included for the design, erection, and verification of telecommunications infrastructure for the purpose of both telecommunications and distribution of ELV DC power. In addition, requirements are included for use of existing telecommunications infrastructure for distribution of ELV DC power.

The power delivery systems include, but are not restricted to, the Power over Ethernet systems specified by IEEE 802.3.

This document does not apply to the use of cables and accessories within the core and access networks for example private branch exchange (PBX).

716.2 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 60364-4-41:2005, *Low-voltage electrical installations – Part 4-41: Protection for safety – Protection against electric shock*
IEC 60364-4-41:2005/AMD1:2017

IEC 60364-4-43:2008, *Low-voltage electrical installations – Part 4-43: Protection for safety - Protection against overcurrent*

IEC 60364-5-52:2009, *Low-voltage electrical installations – Part 5-52: Selection and erection of electrical equipment – Wiring systems*

IEC 60512-9-3, *Connectors for electronic equipment – Tests and measurements – Part 9-3: Endurance tests – Test 9c: Mechanical operation (engaging and separating) with electrical load*

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

ISO/IEC 11801-1:2017, *Information technology – Generic cabling for customer premises – Part 1: General requirements*
ISO/IEC 11801-1:2017/COR1:2018

716.3 Terms and definitions

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

ISO and IEC maintain terminology 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

716.3.1
balanced cable
cable consisting of one or more metallic symmetrical cable elements (twisted pairs or quads)

[SOURCE: ISO/IEC 11801-1:2017, 3.1.12]

716.3.2
core network
functional elements (equipment and infrastructure) that enable communication between operator sites and network data centres

716.3.3
access network
functional elements (equipment and infrastructure) that enable communication between the core network and a customer network

716.3.4
connecting hardware
device or combination of devices used to connect cables or cable elements

716.4 Protection for safety

716.41 Protection against electric shock

716.410.3 General requirements

716.410.3.3

Only the following protective measures shall be applied:

– extra-low voltage (SELV and PELV) systems (Clause 414).

716.414.1.1

Replace the second paragraph by:

This protective measure SELV requires the following:

– limitation of the voltage to 60 V ripple free DC in dry locations and 15 V ripple free DC in all other locations, and
– protective separation system from all circuits other than SELV and PELV circuits, and basic insulation between the SELV system and other SELV or PELV systems, and
– for SELV systems, basic insulation between the SELV system and earth.