SLOVENSKI STANDARD
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Električne inštalacije zgradb – 7-715. del: Zahteve za posebne inštalacije ali lokacije – Inštalacije razsvetljav za malo napetost

Electrical installations of buildings -- Part 7-715: Requirements for special installations or locations - Extra-low-voltage lighting installations

Elektrische Anlagen von Gebäuden -- Teil 7-715: Anforderungen für Betriebsstätten, Räume und Anlagen besonderer Art - Kleinspannungs-Beleuchtungsanlagen

Installations électriques des bâtiments -- Partie 7-715: Règles pour les installations et emplacements spéciaux - Installations d'éclairage à très basse tension

Ta slovenski standard je istoveten z: **HD 60364-7-715:2005**

ICS:

29.140.50	Instalacijski sistemi za razsvetljavo	Lighting installation systems
91.140.50	Sistemi za oskrbo z elektriko	Electricity supply systems

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HARMONIZATION DOCUMENT **HD 60364-7-715**

DOCUMENT D'HARMONISATION

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ICS 29.140.50; 91.140.50

English version

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Part 7-715: Requirements for special installations or locations – Extra-low-voltage lighting installations
(IEC 60364-7-715:1999, modified)

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This Harmonization Document was approved by CENELEC on 2005-03-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for implementation of this Harmonization Document on a national level.

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

This Harmonization Document exists in three official versions (English, French, German).

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

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

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Foreword

The text of the International Standard IEC 60364-7-715:1999, prepared by IEC TC 64, Electrical installations and protection against electric shock, together with the common modifications prepared by SC 64B, Protection against thermal effects, of Technical Committee CENELEC TC 64, Electrical installations and protection against electric shock, was submitted to the formal vote and was approved by CENELEC as HD 60364-7-715 on 2005-03-01.

The following dates were fixed:

– latest date by which the existence of the HD has to be announced at national level	(doa)	2005-09-01
– latest date by which the HD has to be implemented at national level by publication of a harmonized national standard or by endorsement	(dop)	2006-03-01
– latest date by which the national standards conflicting with the HD have to be withdrawn	(dow)	2008-03-01

In this standard, the common modifications to the International Standard are indicated by a vertical line in the left margin of the text.

Clauses, subclauses, annexes and notes which are additional to those of IEC 60364-7-715 are prefixed "Z".

Annex ZA has been added by CENELEC.

Introduction

The requirements of this part of HD 60364 modify or replace certain of the general requirements of HD 60364.

The clause numbering of Part 7-715 follows the pattern and corresponding references of HD 60364.

The numbers following the particular number of Part 7-715 are those of the corresponding parts or clauses of HD 60364.

The absence of reference to a part or a clause means that the general requirements of HD 60364 are applicable.

Numbering in parenthesis corresponds to the numbering of the “non restructured” IEC 60364 (HD 384) dated before 2002.

715 Extra-low-voltage lighting installations

715.1 Scope

The particular requirements of this part apply to extra-low-voltage lighting installations supplied from sources with a maximum rated voltage of 50 V a.c. or 120 V d.c.

NOTE 1 For the definition of an extra-low-voltage lighting system, see EN 60598-1.

NOTE 2 AC voltages are given as r.m.s. values.

NOTE Z1 The maximum d.c. value for SELV luminaires is under consideration.

715.2 Normative references

See Annex ZA.

715.411 Protection against both direct and indirect contact

715.411.1 For extra-low-voltage lighting installations only SELV shall be applied. Where bare conductors are used (see 715.521.7), the maximum voltage shall be 25 V a.c. or 60 V d.c. according to 411.1.4.3 of HD 384.4.41.

715.411.1.2 Safety isolating transformers shall conform with EN 61558-2-6.

Parallel operation of transformers in the secondary circuit is allowed only if they are also paralleled in the primary circuit and the transformers have identical electrical characteristics.

Safety isolating converters shall conform to EN 61347-2-2, Annex I.

Parallel operation of converters is not accepted.

715.43 Protection against overcurrent

The SELV circuit shall be protected against overcurrent either by a common protective device or a protective device for each SELV circuit, in accordance with the requirements of HD 384.4.43.

NOTE 1 When selecting the protective device for the primary circuit, account should be taken of the magnetising current of the transformer.

Self-resetting overcurrent protective devices shall only be required for transformers up to 50 VA.

NOTE 2 Overcurrent protection may be provided by a protective device complying with the requirements of 715.482.5.2.

715.46 *(715.536)* Isolation and switching

715.462.5 Where transformers are operated in parallel the primary circuit shall be permanently connected to a common isolating device.

715.482 *(715.422)* Protection against fire

715.482.2 *(715.422.3)* Nature of processed or stored materials

715.482.2.3 ***(422.3.3)*** The manufacturer's installation instructions shall be followed, including those relating to mounting on flammable or non-flammable surfaces. See also HD 60364-5-559.

NOTE Z1 Luminaires suitable for direct mounting on normally flammable surfaces are marked with the symbol  .

715.482.4 *(422.5)* Fire risk of transformers/converters

715.482.4.1 ***(422.5.1)*** Transformers shall be either:

- protected on the primary side by the protective device required in 715.482.5.2; or
- short-circuit proof transformers (both inherently and non-inherently proof), see Annex A for the symbol.

715.482.4.2 Electronic converters shall comply with EN 61347-2-2, and with the requirements of EN 60598-2-23.

NOTE It is recommended that converters marked with the symbol  are used. See Annex A for the symbol.

715.482.5 Fire risk by short circuit

715.482.5.1 If both circuit conductors are uninsulated, they shall be either:

- provided with a special protective device complying with the requirements of 715.482.5.2; or
- systems complying with EN 60598-2-23.

715.482.5.2 The special protective device against the risk of fire shall comply with the following requirements:

- continuous monitoring of the power demand of the luminaires;
- automatic disconnection of the supply circuit within 0,3 s in case of a short circuit or failure which causes a power increase of more than 60 W;
- automatic disconnection while the supply circuit is operating with reduced power (for example by gating control or a regulating process or a lamp failure) if there is a failure which causes a power increase of more than 60 W;
- automatic disconnection, in the case of switching on the supply circuit if there is a failure which causes a power increase of more than 60 W;
- the special protective device shall be fail safe.

NOTE Z1 Account needs to be taken of starting currents.

715.52 Wiring systems

715.521 Types of wiring systems

715.521.1.1 The following wiring systems shall be used:

- insulated conductors in conduit or cable trunking;
- cables;
- flexible cables or cords;
- systems for extra-low-voltage lighting according to EN 60598-2-23;
- track systems according to EN 60570.

Conductors shall not be used for other purposes (e.g. for supporting sign plates, coat hanger, price tables, etc.).

Where parts of the extra-low-voltage lighting installation are accessible, the requirements of Section 423 of HD 384.4.42 apply.

Metallic structural parts of buildings, for example, pipe systems or parts of furniture, shall not be used as live conductors.

715.521.7 Bare conductors

If the nominal voltage does not exceed 25 V a.c. or 60 V d.c., bare conductors may be used provided that the extra-low-voltage lighting installation complies with the following requirements:

- the lighting installation is designed, installed or enclosed in such a way that the risk of a short-circuit is reduced to a minimum; and
- the conductors used have a cross-sectional area of at least 4 mm², for mechanical reasons; and
- the conductors or wires are not placed directly on combustible material.

For suspended bare conductors at least one conductor and its terminals shall be insulated, for that part of the circuit between the transformer and the protective device, to prevent a short circuit.

NOTE Z1 Where bare conductors are used, consideration should be given to the possible presence of combustible material.

715.521.8 Suspended systems

Suspension devices for luminaires, including supporting conductors, shall be capable of carrying five times the mass of the luminaires (including their lamps) intended to be supported, but not less than 5 kg.

Terminations and connections of conductors shall be made by screw terminals or screwless clamping devices complying with EN 60998-2-1 or EN 60998-2-2.

Insulation piercing connectors and termination wires, with counterweights, hung over suspended conductors shall not be used.

The suspended system shall be fixed to walls or ceilings by insulated distance cleats and shall be continuously accessible throughout the route.

715.521.9 Track systems for luminaires

Track systems for luminaires shall comply with the requirements of EN 60570.

715.523 Current-carrying capacities

Void

715.524 Cross-sectional areas of conductors

715.524.1 The minimum cross-sectional area of the extra-low-voltage conductors shall be:

- 1,5 mm^2 copper for the wiring systems mentioned above, but in the case of flexible cables with a maximum length of 3 m a cross-sectional area of 1 mm^2 copper may be used;

- 4 mm^2 copper in the case of suspended flexible cables or insulated conductors, for mechanical reasons;

- 4 mm^2 copper in the case of composite cables consisting of braided tinned copper outer sheath, having a material of high tensile strength inner core.

715.525 Voltage drop in consumers' installations

715.525.1 In extra-low-voltage lighting installations, the voltage drop between the transformer and the furthest luminaire should not exceed 5 % of the nominal voltage of the installation.

715.55 Other equipment

Luminaires complying with EN 60598 shall be used.

Protective devices shall be easily accessible.

Protective devices may be located above false ceilings, which are moveable or easily accessible, provided that information is given about the presence and location of the device.

If the identification of a protective device for a circuit is not immediately evident, a sign or diagram (label) close to the protective device shall identify the circuit and its purpose.

SELV sources, protective devices or similar equipment mounted above false ceilings or in a similar place shall be permanently connected.

SELV sources and their protective devices shall be installed so as:

- to avoid mechanical stress being placed on their electrical connections;
- to be adequately supported; and
- to avoid overheating of the equipment due to thermal insulation.