SLOVENSKI STANDARD
oSIST prHD 60364-4-46:2014

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Nadomešča:
SIST HD 384.4.46 S2:2002

Električne inštalacije zgradb - 4-46. del: Zaščitni ukrepi - Ločevanje in stikanje

Low-voltage electrical installations - Part 4-46: Protection for safety - Isolation and switching

Errichten von Niederspannungsanlagen - Teil 4-46: Schutzmaßnahmen - Trennen und Schalten

Installations électriques à basse tension - Partie 4-46 : Protection pour assurer la sécurité - Sectionnement et commande

Ta slovenski standard je istoveten z: **prHD 60364-4-46:2014**

ICS:

29.120.50	Varovalke in druga medtokovna zaščita	Fuses and other overcurrent protection devices
91.140.50	Sistemi za oskrbo z elektriko	Electricity supply systems

oSIST prHD 60364-4-46:2014 **en,fr,de**

HARMONIZATION DOCUMENT

DOCUMENT D'HARMONISATION

HARMONISIERUNGSDOKUMENT

DRAFT
prHD 60364-4-46

August 2014

ICS 29.120.50; 91.140.50

Will supersede HD 384.4.46 S2:2001

English Version

Low-voltage electrical installations - Part 4-46: Protection for safety - Isolation and switching

Installations électriques à basse tension - Partie 4-46 : Protection pour assurer la sécurité - Sectionnement et commande

To be completed

This draft Harmonization Document is submitted to CENELEC members for enquiry.
Deadline for CENELEC: 2015-01-16.

It has been drawn up by CLC/TC 64.

If this draft becomes a Harmonization Document, 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.

This draft Harmonization Document was established by CENELEC in three official versions (English, French, German).

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

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a Harmonization Document. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a Harmonized Document.

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

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Foreword

This document (prHD 60364-4-46:2014) was prepared by CLC/TC 64 “Electrical installations and protection against electric shock”.

This document is currently submitted to the enquiry.

This document will supersede HD 384.4.46 S2:2001.

Secretary note: During its last plenary meeting, CLC/TC 64 took the following decision: WG7 has prepared a first draft of the revision of HD 60364-4-46 that is now submitted to the National Committees as first enquiry.

D8) The plenary supported the proposal of WG 7 to integrate HD 384-5-537 in the new part 53. The plenary asked WG 7 to have a look at part 46 with respect to possible integration into part 53 and report back the result of this analysis at the next TC 64 meeting

The text of this first enquiry of prHD 60364-4-46 has been kept separated from the prHD 60364-5-537 since the present structure of HD 60364 is to be kept unchanged until TC 64 decides otherwise.

460 Introduction

This chapter deals with non-automatic local and remote isolation and switching measures which prevent or remove dangers associated with electrical installations or electrically powered equipment.

461 General

461.1 According to the intended function(s), every device provided for isolation or switching shall comply with the relevant requirements of Clause 537.

461.2 In TN-C systems and in the TN-C part of the TN-C-S systems, the PEN conductor shall not be isolated or switched.

In TN-C-S and TN-S systems, the neutral conductor is not needed to be isolated or switched if the supply network operator declares that either the PEN or the N conductor of the supply is reliably connected to earth by a suitably low resistance.

This low resistance may be verified by measurement of the resistance of the earth electrode in accordance with Clause 612.

461.3 The measures described in this chapter are not alternatives to the protective measures described in Chapters 41 to 45 inclusive.

462 Isolation

462.1 Each electrical installation shall have provisions for isolation from each supply.

462.2 Every circuit shall be provided with a device capable of isolating each of the live supply conductors, except as detailed in Clause 461.2.

Provisions may be made for isolation of a group of circuits by a common means, if the service conditions allow this.

462.3 Suitable means shall be provided to prevent any equipment from being inadvertently or unintentionally energized/operated.

Such precautions may include one or more of the following measures:

- location within a lockable space or enclosure.
- padlocking;
- warning notices.

Where used, short-circuiting and earthing may be considered as supplementary precautions.

462.4 Where, storage, residual or coupling electrical energy is potentially present, suitable means shall be provided for the discharge (see details in Part 5-55).

463 Functional switching (control)

463.1 General

463.1.1 A functional switching device shall be provided for each part of a circuit which may require to be controlled independently of other parts of the installation.

463.1.2 Functional switching devices need not necessarily switch off all live conductors of a circuit. A single-pole switching device shall not be placed in the neutral conductor except for lamp control circuits, see Figure 46.1.

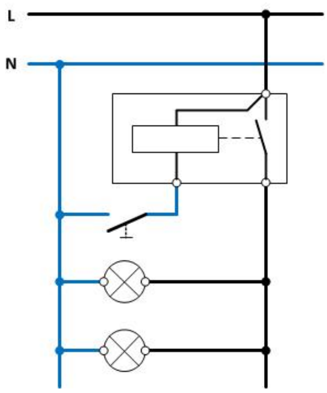

Figure 46.1 - Lamp control circuit with switching in the neutral conductor

Switching of the neutral shall be in compliance with 530.4.2.

463.1.3 In general, all current-using equipment requiring control shall be controlled by an appropriate functional switching device.

A single-functional switching device may control several items of current using equipment intended to operate simultaneously.

463.1.4 Functional switching devices ensuring the change-over of supply from alternative sources shall switch off all live conductors and shall not be capable of putting the sources in parallel, unless the installation is specifically designed for this condition.

In these cases, no provision is to be made for isolation of the PEN or protective conductors.

463.2 Control circuits (auxiliary circuits)

Control circuits shall be designed, arranged and protected to limit dangers resulting from a fault between the control circuit and other conductive parts liable to cause malfunction (e.g. inadvertent operations) of the controlled apparatus.

463.3 Motor control

463.3.1 Motor control circuits shall be designed so as to prevent any motor from restarting automatically after a stoppage due to a fall in or loss of voltage, if such starting is liable to cause danger.

463.3.2 Where reverse-current braking of a motor is provided, provision shall be made for the avoidance of reversal of the direction of rotation at the end of braking if such reversal may cause danger.

463.3.3 Where safety depends on the direction of rotation of a motor, provision shall be made for the prevention of reverse operation due to a reversal of phases.

NOTE Attention is called to danger which may arise from the loss of one phase.

464 Switching off for mechanical maintenance

464.1 Means of switching off shall be provided where mechanical maintenance may involve a risk of physical injury.

Electrically powered mechanical equipment may include rotating machines as well as heating elements and electromagnetic equipment.

Where electrically powered equipment is within the scope of EN 60204-1, the requirements for switching off for mechanical maintenance of that standard apply.

NOTE 2 Systems powered by other means, e.g. pneumatic, hydraulic or steam, are not covered by these rules. In such cases, switching off any associated supply of electricity may not be a sufficient measure.

464.2 Suitable means shall be provided to prevent electrically powered equipment from becoming unintentionally reactivated during mechanical maintenance, unless the means of switching off is continuously under the control of any person performing such maintenance.

Such means may include one or more of the following measures:

- padlocking,
- warning notices,
- location within a lockable space or enclosure.

465 Emergency switching off

NOTE In the informative annex, a proposal for definitions of emergency operation is reported.

465.1 Means shall be provided for emergency switching of any part of an installation where it may be necessary to control the supply to remove an unexpected danger.

NOTE Examples of installations where means for emergency switching are used:

- pumping facilities for flammable liquids;
- ventilation systems;
- data centers;
- high voltage discharge ligthing (e.g. neon signs);
- certain large buildings, e.g. department stores;
- electrical testing and research facilities;
- boiler-rooms;
- large kitchens;
- teaching laboratories.

465.2 Where a risk of electric shock is involved, the emergency switching shall cause the disconnection of all live conductors by a device suitable for isolation, except as provided in Clause 461.2.

465.3 Means for emergency switching, shall act as directly as possible on the appropriate supply conductors.

The arrangement for emergency switching shall be such that one single action only will interrupt the appropriate supply.

465.4 The arrangement of the emergency switching shall be such that its operation does not introduce a further danger or interfere with the complete operation necessary to remove the danger.

NOTE The operation of the switching device is to be understood as switching off in case of emergency and switching on to reenergize the relevant circuit.

The emergency operation function shall not impair the effectiveness of protective devices or of devices with other safety functions.