



# SLOVENSKI STANDARD

## SIST HD 60364-5-537:2017

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**Nizkonapetostne električne inštalacije - 5-53. del: Izbira in namestitvev električne opreme - Stikalne in krmilne naprave - 537. oddelek: Ločevanje in stikanje**

Low voltage electrical installations - Part 5-53: Selection and erection of electrical equipment - Switchgear and controlgear - Clause 537: Isolation and switching

Errichten von Niederspannungsanlagen - Teil 5: Auswahl und Errichtung elektrischer Betriebsmittel - Kapitel 53: Schaltgeräte und Steuergeräte - Abschnitt 537: Geräte zum Trennen und Schalten

Installations électriques basse tension - Partie 5-53: Choix et mise en œuvre des matériels - Appareillage - Article 537: Sectionnement et coupure

**Ta slovenski standard je istoveten z: HD 60364-5-537:2016**

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**ICS:**

29.130.01	Stikalne in krmilne naprave na splošno	Switchgear and controlgear in general
91.140.50	Sistemi za oskrbo z elektriko	Electricity supply systems

**SIST HD 60364-5-537:2017**

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HARMONIZATION DOCUMENT  
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**HD 60364-5-537**

November 2016

ICS 29.120.50; 91.140.50

Supersedes HD 384.5.537 S2:1998

English Version

Low-voltage electrical installations -  
Part 5-53: Selection and erection of electrical equipment -  
Devices for protection, isolation, switching, control and  
monitoring - Clause 537: Isolation and switching

Installations électriques basse tension -  
Partie 5-53: Choix et mise en œuvre des matériels -  
Appareillage - Article 537: Sectionnement et coupure

Errichten von Niederspannungsanlagen -  
Teil 5-53: Auswahl und Errichtung elektrischer  
Betriebsmittel - Schaltgeräte und Steuergeräte -  
Abschnitt 537: Geräte zum Trennen und Schalten

This Harmonization Document was approved by CENELEC on 2016-07-04. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for implementation of this Harmonization Document at national level.

Up-to-date lists and bibliographical references concerning such national implementations may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

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

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

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## European foreword

This document (HD 60364-5-537:2016) was prepared by CLC/TC 64 “Electrical installations and protection against electric shock”.

The following dates are fixed:

- latest date by which the document has to be implemented (dop) 2017-05-11  
at national level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with (dow) 2019-11-11  
the document have to be withdrawn

This document supersedes HD 384.5.537 S2:1998.

HD 60364-5-537:2016 includes the following significant technical changes with respect to the previous edition: the contents of this document has been adapted to give requirements on implementation of the measures provided in HD 60364-4-46:2016 and requirements for proper functioning, in terms of selection and erection of electrical equipment for isolation and switching. Another significant technical change is the introduction of Annex A.

NOTE Complementarily, the text of HD 60364-4-46:2016 has been revised so that it only includes general requirements on measures for isolation and switching to provide for the safety of persons, livestock and property.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

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## HD 60364-5-537:2016 (E)

## 537 Devices for isolation and switching

## 537.0 Introduction

## 537.0.1 Scope

This part of HD 60364 deals with general requirements for isolation and switching and with the requirements for selection and erection of the devices provided to fulfil such functions.

## 537.0.2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 60269 / HD 60269 / CLC/TR 60269 series, *Low-voltage fuses* (IEC 60269 series)

EN 60309 (series), *Plugs, socket-outlets and couplers for industrial purposes* (IEC 60309 series)

EN 60669-1, *Switches for household and similar fixed-electrical installations – Part 1: General requirements* (IEC 60669-1)

EN 60669-2-1, *Switches for household and similar fixed electrical installations – Part 2-1: Particular requirements – Electronic switches* (IEC 60669-2-1)

EN 60669-2-2, *Switches for household and similar fixed electrical installations – Part 2-2: Particular requirements – Electromagnetic remote-control switches (RCS)* (IEC 60669-2-2)

EN 60669-2-3, *Switches for household and similar fixed electrical installations – Part 2-3: Particular requirements – Time delay switches (TDS)* (IEC 60669-2-3)

EN 60669-2-4, *Switches for household and similar fixed electrical installations – Part 2-4: Particular requirements – Isolating switches* (IEC 60669-2-4)

EN 60669-2-5, *Switches for household and similar fixed electrical installations – Part 2-5: Particular requirements – Switches and related accessories for use in home and building electronic systems (HBES)* (IEC 60669-2-5)

EN 60669-2-6, *Switches for household and similar fixed electrical installations – Part 2-6: Particular requirements – Fireman's switches for exterior and interior signs and luminaires* (IEC 60669-2-6)

EN 60898-1, *Electrical accessories – Circuit breakers for overcurrent protection for household and similar installations – Part 1: Circuit-breakers for a.c. operation* (IEC 60898-1)

EN 60898-2, *Electrical accessories – Circuit breakers for overcurrent protection for household and similar installations – Part 2: Circuit-breakers for a.c. and d.c. operation* (IEC 60898-2)

EN 60947-2, *Low-voltage switchgear and controlgear – Part 2: Circuit-breakers* (IEC 60947-2)

EN 60947-3, *Low-voltage switchgear and controlgear – Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units* (IEC 60947-3)

EN 60947-4-1, *Low-voltage switchgear and controlgear – Part 4-1: Contactors and motor-starters – Electromechanical contactors and motor-starters* (IEC 60947-4-1)

EN 60947-4-2, *Low-voltage switchgear and controlgear – Part 4-2: Contactors and motor-starters – AC semiconductor motor controllers and starters* (IEC 60947-4-2)

- EN 60947-4-3, *Low-voltage switchgear and controlgear – Part 4-3: Contactors and motor-starters – AC semiconductor controllers and contactors for non-motor loads* (IEC 60947-4-3)
- EN 60947-5-1, *Low-voltage switchgear and controlgear – Part 5-1: Control circuit devices and switching elements – Electromechanical control circuit devices* (IEC 60947-5-1)
- EN 60947-6-1, *Low-voltage switchgear and controlgear – Part 6-1: Multiple function equipment – Transfer switching equipment* (IEC 60947-6-1)
- EN 60947-6-2, *Low-voltage switchgear and controlgear – Part 6-2: Multiple function equipment – Control and protective switching devices (or equipment) (CPS)* (IEC 60947-6-2)
- EN 60947-7-1, *Low-voltage switchgear and controlgear – Part 7-1: Ancillary equipment – Terminal blocks for copper conductors* (IEC 60947-7-1)
- EN 61008-2-1, *Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCB's) – Part 2-1: Applicability of the general rules to RCCB's functionally independent of line voltage* (IEC 61008-2-1)
- EN 61009-2-1, *Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses (RCBO's) – Part 2-1: Applicability of the general rules to RCBO's functionally independent of line voltage* (IEC 61009-2-1)
- EN 61095, *Electromechanical contactors for household and similar purposes* (IEC 61095)
- EN 61984:2009, *Connectors – Safety requirements and tests* (IEC 61984:2008)
- EN 61995 (series), *Devices for the connection of luminaires for household and similar purposes* (IEC 61995 series)
- EN 62423, *Type F and type B residual current operated circuit-breakers with and without integral overcurrent protection for household and similar uses* (IEC 62423)
- EN 62606, *General requirements for arc fault detection devices* (IEC 62606)
- EN 62626-1, *Low-voltage switchgear and controlgear enclosed equipment – Part 1: Enclosed switch-disconnectors outside the scope of IEC 60947-3 to provide isolation during repair and maintenance work* (IEC 62626-1)
- HD 60364-4-46:2016, *Low-voltage electrical installations – Part 4-46: Protection for safety – Isolation and switching*
- IEC 60417, *Graphical symbols for use on equipment*
- IEC 60884 (series), *Plugs and socket-outlets for household and similar purposes*
- IEC 60906 (series), *IEC system of plugs and socket-outlets for household and similar purposes*

**HD 60364-5-537:2016 (E)****537.1 General**

**537.1.1** Any device for isolation and switching according to Clauses 462 to 465 of HD 60364-4-46:2016 shall comply with the relevant requirements included in this clause.

In certain instances, additional requirements may be necessary for combined functions.

NOTE 1 Table A.1 summarizes the functions provided by the devices for isolation and switching, together with indication of the relevant product standards.

NOTE 2 For some applications such as motor control, the switching device needs to withstand the inrush current.

**537.1.2** Where an installation or an item of equipment or enclosure contains live parts connected to more than one supply, a durable warning notice shall be placed in such a position that any person before gaining access to live parts, will be warned of the need to isolate those parts from the various supplies unless an interlocking arrangement is provided to ensure that all the circuits concerned are isolated.

**537.1.3** Plugs and socket-outlets, connectors and devices for connection of luminaires may be used for providing the isolation and switching functions in accordance with Annex A.

The isolation and switching functions are provided by the disconnection of the plug from the outlet or connector from the inlet as applicable.

**537.2 Devices for isolation**

**537.2.1** Devices for isolation shall be devices for which the isolation function is explicitly recognized by the relevant product standard.

The devices providing isolation function shall be selected in accordance with Annex A.

**537.2.2** Semiconductor devices shall not be used as isolating devices.

**537.2.3** Devices suitable for isolation shall be selected according to the requirements that are based on the overvoltage categories applicable at their point of installation.

Devices for isolation shall be designed for over voltage category III or IV except the plug of a plug and socket-outlet combination identified in Table A.1 as suitable for isolation.

NOTE Examples of overvoltage categories for devices are given in HD 60364-4-443.

Devices used for isolation shall comply with 537.2.4 to 537.2.8.

**537.2.4** Devices for isolation shall be selected and/or installed so as to prevent unwanted or unintentional closure (see HD 60364-4-46:2016, 462.3).

This may be achieved by locating the device in a lockable space or lockable enclosure or by padlocking or by other suitable means.

**537.2.5** Provision shall be made for securing off-load isolating devices against unwanted or unintentional opening.

This may be achieved, for example, by locating the device in a lockable space or lockable enclosure or by padlocking. Alternatively, the off-load device may be interlocked with a load-breaking one.



**537.2.6** Means of isolation shall preferably be provided by a multipole switching device which disconnects all applicable poles of the relevant supply but single-pole devices situated adjacent to each other are not excluded, subject to the provisions of HD 60364-4-46:2016, 461.2.

**537.2.7** Each device used for isolation shall be clearly identified by position or durable marking to indicate the installation or circuit it isolates.

**537.2.8** Where a link is inserted in the neutral conductor for isolating purposes, the link shall comply with the following requirements:

- it cannot be removed without the use of a tool; and
- it is accessible to skilled persons only.

### **537.3 Devices for switching**

#### **537.3.1 Functional switching and control devices**

**537.3.1.1** The devices for functional switching and control shall be selected in accordance with Annex A.

**537.3.1.2** Functional switching devices shall be suitable for the most onerous duty they are intended to perform. The characteristic of the load to be switched shall be considered (e.g. utilization category).

**537.3.1.3** Functional switching devices may control the current without necessarily opening the corresponding poles.

NOTE Semiconductor switching devices and some control auxiliaries are examples of devices capable of interrupting the current in the circuit but not opening the corresponding poles.

#### **537.3.2 Switching-off devices for mechanical maintenance**

**537.3.2.1** Selection and erection of devices for switching-off for mechanical maintenance shall be in accordance with the following subclauses and shall comply with 537.2.

**537.3.2.2** Devices for switching-off for mechanical maintenance shall be inserted in the supply circuit.

Where switches are provided for this purpose, they shall be capable of cutting off the full load current of the relevant part of the installation. They need not necessarily interrupt the neutral conductor.

Switching-off of a circuit for the control of mechanical movement is permitted only where

- supplementary safeguards, such as mechanical restrainers, or
- requirements of the applicable product standard for the control devices used

provide a condition equivalent to the direct interruption of the main supply.

**537.3.2.3** Devices for switching-off for mechanical maintenance or control switches for such devices shall require manual operation.

The open position of the contacts of the device shall be visible or be clearly and reliably indicated.

The indication required by this subclause may be achieved by the use of the symbols “O” and “I” to indicate the open and closed positions, respectively.