Kaitseseade tööstussageduslike liigpingete eest majapidamis- ja muudele taolistele paigaldistele

Power frequency overvoltage protective device for household and similar applications (POP)

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 50550:2011 sisaldab Euroopa standardi EN 50550:2011 ingliskeelset teksti.	This Estonian standard EVS-EN 50550:2011 consists of the English text of the European standard EN 50550:2011.
Standard on kinnitatud Eesti Standardikeskuse 31.03.2011 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 31.03.2011 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 25.02.2011.	Date of Availability of the European standard text 25.02.2011.
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English version

Power frequency overvoltage protective device for household and similar applications (POP)

Dispositif de protection contre les surtensions à fréquence industrielle pour les applications domestiques et analogues

Schutzeinrichtung gegen netzfrequente Überspannungen für Hausinstallationen und für ähnliche Anwendungen

This European Standard was approved by CENELEC on 2011-01-17. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

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CENELEC

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

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Foreword

This European Standard was prepared by the CENELEC BTTF 128-1, Power frequency overvoltage protective device for household and similar applications.

It was submitted to the formal vote and was approved by CENELEC as EN 50550 on 2011-01-15.

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

The following dates are proposed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2012-01-15
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2014-01-15

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and covers essential requirements of EC Directive 2004/108/EC. See Annex ZZ.

Contents

Figures

Tables

1 Scope

This European Standard applies to power frequency overvoltage protection devices (hereafter referred to as “POP”) for household and similar uses, with a rated frequency of 50 Hz, a rated voltage 230 V a.c. (between phase and neutral), intended to be used in combination with a main protective device being either a CB in compliance with EN 60898-1 or EN 60898-2, a RCCB in compliance with EN 61008-1 or a RCBO in compliance with EN 61009-1.

NOTE 1 Requirements for POPs in combination with switching devices other than a main protective device, or a POP integrated in a MPD, are under consideration.

NOTE 2 Requirements for POP with functional earth connection regarding temporary overvoltage withstand are under consideration.

NOTE 3 A POP is not a protective device to be used for automatic disconnection of the supply in the meaning of HD 60364-4-41.

They are intended for use in an environment with pollution degree 2 and overvoltage category III.

They can be designed for factory assembly or for assembly on site.

These devices are intended to mitigate the effects of power frequency overvoltages between phase and neutral conductor (e.g. caused by loss of neutral conductor in the three phase supply upstream the POP) for downstream equipment by actuating the main protective device when an overvoltage between phase and neutral is detected.

NOTE 4 To mitigate means in this context that the POP will provide protection in most cases of power frequency overvoltages.

NOTE 5 Protection in case of overvoltage between phases is under consideration. In case of phase to phase electrical supply system with rated voltage between phases 230 V a.c. and no neutral conductor, one line monitored POP in compliance to this standard can be used according to manufacturer’s instruction.

The POP does not impair the protective function of the main protective device.

This European Standard does not apply for protection against common mode over voltages.

This European Standard does not apply to surge protective devices.

This European Standard states:

– the definitions of terms used for POP (Clause 3);

– the classification of POP (Clause 4);

– the characteristics of POP (Clause 5);

– the preferred values of the operating and influencing quantities (Clause 5);

– the marking and information to be provided for POP (Clause 6);

– the standard conditions for installation and operation in service (Clause 7);

– the requirements for construction and operation (Clause 8);

– the list of minimum requirements to be tested (Clause 9).

2 Normative references

The following referenced documents are indispensable for the application 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.

EN 50160:2010	Voltage characteristics of electricity supplied by public electricity networks
EN 55014-1:2006 + A1:2009	Electromagnetic compatibility – Requirements for household appliances, electric tools and similar apparatus – Part 1: Emission (CISPR 14-1:2005 + A1:2008)
EN 55022:2010	Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement (CISPR 22:2008, mod.)
EN 60065:2002 + corr. Aug. 2007	Audio, video and similar electronic apparatus – Safety requirements (IEC 60065:2001, mod.)
EN 60384-14	Fixed capacitors for use in electronic equipment – Part 14: Sectional specification – Fixed capacitors for electromagnetic interference suppression and connection to the supply mains (IEC 60384-14)
EN 60664-1:2007	Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests (IEC 60664-1:2007)
EN 60664-3	Insulation coordination for equipment within low-voltage systems – Part 3: Use of coating, potting or moulding for protection against pollution (IEC 60664-3)
EN 60898-1:2003 + corr. Feb. 2004 + A1:2004 + A11:2005 + A12:2008	Electrical accessories – Circuit breakers for overcurrent protection for household and similar installations – Part 1: Circuit-breakers for a.c. operation (IEC 60898-1:2002, mod. + A1:2002, mod.)
EN 60898-2:2006	Electrical accessories – Circuit-breakers for overcurrent protection for household and similar installations – Part 2: Circuit-breakers for a.c. and d.c. operation (IEC 60898-2:2000, mod. + A1:2003, mod.)
EN 60998-2-3	Connecting devices for low-voltage circuits for household and similar purposes – Part 2-3: Particular requirements for connecting devices as separate entities with insulation-piercing clamping units (IEC 60998-2-3)
EN 61000 series	Electromagnetic compatibility (EMC) (IEC 61000 series)
EN 61008 series	Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCB's) (IEC 61008 series)
EN 61008-1:2004 + A11:2007 + A12:2009	Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCB's) – Part 1: General rules (IEC 61008-1:1996, mod. + A1:2002, mod.)
EN 61009 series	Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses (RCBO's) (IEC 61009 series)
EN 61009-1:2004 + corr. Jul. 2006 + A11:2008 + A12:2009 + A13:2009	Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses (RCBO's) – Part 1: General rules (IEC 61009-1:1996, mod. + A1:2002, mod. + corrigendum May 2003)

EN 61543:1995 + corr. Dec. 1997 + A11:2003 + corr. May. 2004 + A12:2005 + A2:2006	Residual current-operated protective devices (RCDs) for household and similar use – Electromagnetic compatibility (IEC 61543:1995 + A2:2005)
EN 61558-1	Safety of power transformers, power supplies, reactors and similar products – Part 1: General requirements and tests (IEC 61558-1)
EN 61558-2 series	Safety of power transformers, power supplies, reactors and similar products – Part 2-X: Particular requirements and tests (IEC 61558-2 series)
EN ISO 306	Plastics – Thermoplastic materials – Determination of Vicat softening temperature (VST) (ISO 306:2004)
EN 61249-2 series	Base materials for printed circuits – Part 2: Specifications

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 60898-1:2003, EN 61008-1:2004, EN 61009-1:2004 and the following apply.

3.1
power frequency overvoltage
increase of the voltage at the rated frequency in the electrical supply system, above a specified threshold

3.2
Power frequency Overvoltage Protective device
POP
device intended to mitigate the effects of power frequency overvoltages between phase and neutral conductor (e.g. caused by loss of neutral conductor in the three phase supply upstream the POP) for downstream equipment

NOTE One line monitored POP can be used also to mitigate the effects of power frequency overvoltages between two phase's conductors in phase to phase electrical supply system.

3.3
main protective device
device to which the POP is intended to be associated, directly or through a release unit, with and that trips under specified conditions

NOTE The main protective device is a circuit breaker (EN 60898-1 or EN 60898-2) or a RCCB (EN 61008-1) or a RCBO (EN 61009-1).

3.4
actuating voltage
U_a
voltage values, measured between phase and neutral conductor, for which POP device shall actuate the main protective device

3.5
release unit
device mechanically connected to a main protective device, which releases the holding means and permits the automatic opening of the main protective device