

INTERNATIONAL STANDARD

NORME INTERNATIONALE



Power frequency overvoltage protection devices (POPs) for household and similar applications

Dispositifs de protection contre les surtensions à fréquence industrielle (POP) pour les applications domestiques et similaires



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**POWER FREQUENCY OVERVOLTAGE PROTECTION DEVICES (POPs)
FOR HOUSEHOLD AND SIMILAR APPLICATIONS**

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

FDIS	Report on voting
23E/1131/FDIS	23E/1155/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

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POWER FREQUENCY OVERVOLTAGE PROTECTION DEVICES (POPs) FOR HOUSEHOLD AND SIMILAR APPLICATIONS

1 Scope

This document applies to devices for power frequency overvoltage protection (hereafter referred to as "POP") for household and similar uses, with a rated frequency of 50 Hz, 60 Hz or 50/60 Hz, with rated voltage not exceeding 230 V AC (between phase and neutral), and with rated current not exceeding 63 A, either consisting of a functional unit in combination with a main protective device (MPD), or as one single device having opening means able to open the protected circuit in specified conditions.

The main protective device is a circuit-breaker, an RCCB or an RCBO.

NOTE 1 A POP, as one single device, is not a protective device to be used for automatic disconnection of the supply within the meaning specified in IEC 60364-4-41.

POPs are intended for use in an environment with pollution degree 2 and overvoltage category III. Devices for POPs are suitable for isolation.

POPs can be designed as a POP unit assembled to or integrated in a main protective device by the manufacturer or as an assembly of a main protective device mechanically or electrically coupled on site with the POP unit, or as one single POP having opening means able to open the protected circuit in specified conditions.

POPs are intended to mitigate the effects of power frequency overvoltages between a phase and neutral conductor (e.g. caused by loss of a neutral conductor in the three-phase supply upstream of the POP) for downstream equipment by opening the protected circuit when an overvoltage between phase and neutral is detected.

NOTE 2 In this context, the verb "mitigate" means that the POP will provide protection in most cases of power frequency overvoltages.

POPs intended for monitoring one line-to-neutral conductor voltage can be used between two-phase conductors in a phase-to-phase electrical supply system not exceeding 230 V if both conductors are switched and declared as such by the manufacturer.

POPs according to this document are suitable for use in an IT system provided all active conductors are switched.

This document does not apply to protection against common mode overvoltages.

This document does not apply to surge protective devices.

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 60065:2014, *Audio, video and similar electronic apparatus – Safety requirements*

IEC 60269 (all parts), *Low-voltage fuses*