

TC title: Circuit breakers and similar devices for household and similar applications **A Background**

TC field of activity

The scope of TC 23E is to prepare and to update standards for:

- circuit-breakers and residual current protective devices of rated currents not exceeding 125 A and rated voltages not exceeding 440 V for protection against overcurrent and/or against electric shock in domestic and similar installations,
- residual current devices for monitoring the conditions of insulation of domestic and similar installations,
- circuit-breakers of rated currents not exceeding 125 A and rated voltages not exceeding 440 V designed to protect equipment for use in domestic and similar installations,
- electromechanical contactors for household and similar purposes,
- In-cable control and protection devices for mode 2 charging of electric road vehicles (IC-CPD)
- Residual direct current detecting devices (RDC-DD) to be used for mode 3 charging of electric vehicles
- automatic reclosing devices (ARD) for household and similar applications,
- power frequency overvoltage protective (POP) device for household and similar applications,
- arc fault detection devices (AFDD).
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These standards are covering devices for AC and DC, for household and similar purposes, where “similar” includes locations such as offices, commercial and industrial premises, hospitals, public buildings, etc. The standards concern devices intended to be used by unskilled and uninstructed persons in installations or equipment not subject to maintenance and contain all specifications necessary for certification purposes: sets of samples to be submitted, test sequences to be applied and conditions for approval.

The standards are developed taking in consideration the essential requirements of the European Directives, with particular attention, but not exclusively, to the Low Voltage Directive (LVD) and the Electromagnetic Compatibility (EMC) Directive.

In working out such standards, coordination is being kept with TC 121A.

Coordination of parallel work of Technical Sub-Committee 23E of IEC is ensured, the Secretary being the same in both bodies, and by following the Frankfurt Agreement.

The work of the Sub-Committees takes into account the specifications prepared by TC 109, SC 77A and by TC 64.

B Business Environment

B.1 General

There is a continuous and increasing demand for improving the protection of people, livestock and property. This demand is of utmost importance for ordinary persons living in homes and for any person having no knowledge about the electrical danger during the use of an electrical installation.

The standardisation work aims to provide requirements and testing procedures to check the safety, performances and reliability of devices in the scope of TC23E.

Moreover, for devices to be used by unskilled persons the demand for certification of compliance with the qualified standards is increasing.

TC23E has the responsibility for product standards for protection during charging of electric vehicle.

The demand for direct current application has recently popped up. As a consequence, the need for standards providing requirements and testing procedures to check the safety, performances and reliability of the devices is necessary.

Moreover, new kind of products, e.g. ARD and POP, have been studied in order to increase the safety in the installation.

B.2 Market demand

The users of the standards issued by TC 23E are the manufacturers, the certification bodies, the national regulators and authorised bodies. These standards are also used by insurance companies, the power supplies authorities and other TCs and in particular those dealing with installation rules. They may be represented in the Committee and also in the various WGs.

B.3 Trends in technology

TC 23E acknowledged the numerous market request regarding

- the increasing use of technologies quickly spreading such as motor speed control, solar photovoltaic application or electrical vehicle,
- the reduction of the risk of fire,
- the introduction of additional functions,
- the restoring of electrical supply if no fault has been detected in the installation.

The demand for direct current application has recently popped up. As a consequence, the need for standards providing requirements and testing procedures to check the safety, performances and reliability of the devices is necessary.

Therefore, TC 23E either produced new standards or decided to start work on new issues most of them using more electronic components.

B.4 Market trends

Home and building electronic systems which have influence on accessories related to control imply some extensions of existing standards. In particular to take into account the presence of electronics in accessories and the subsequent electromagnetic compatibility.

B.5 Ecological environment

The Committee has not yet studied the impact on the environment during the life cycle of products dealt with by TC 23E.

B.6 Involvement of societal stakeholders

TC 23E is in direct contact with Manufacturer Associations, Installer Associations and Certification Bodies so as to guarantee the high applicability of the standards issued.

B.7 Involvement of SMEs

TC 23E is open to the contribution coming from any source in particular the participation of SME is welcome.

C System approach aspects

The system approach is very important in order to achieve a consistent set of standards.

The work on Energy Efficiency would certainly introduce a system approach as used in the field of EMC. TC 23E standards reference all the relevant horizontal standards in the frame of specific issues, material specifications, components specification and are also referenced in system and product standards.

D Objectives and strategies (3 to 5 years)

- To keep TC 23E standards up to date to reflect new/changing technologies and user requirements both in the marketplace and customer CLC and CEN Technical Committees.
- To ensure development times for deliverables are achieved within the time scales set by the market.
- To fully support the market requests for comprehensive standards and respond to the need of all stakeholders in the frame of interpretation, if any.
- To create and/or activate liaisons in order to be kept up to date about horizontal committees, component committees, end product committees and system committees evolutions.
- The standards shall provide requirements for the safety of persons, livestock and property against dangers and damage which may arise in the reasonable use of electrical installations and to provide for the proper functioning of those installations.
- In determining consistency with accepted safety principles, Sub-Committees shall use compliance with CLC basic safety standards.

E Action plan

TC 23E has set up different WGs in order to have exchange of views on the major new topics.

F Useful links to CENELEC web site

TC home page giving access to Membership, TC/SC Officers, Scope, Publications, Work programme [password-protected area].

TC 23E dashboard giving access to Membership, TC/SC Officers, Scope, Liaisons, WG/MT/PT structure:

https://www.cenelec.eu/dyn/www/f?p=104:7:3257513908889501:::FSP_ORG_ID,FSP_LANG_ID:1257221,25