TECHNICAL SPECIFICATION

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CLC/TS 50544

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English version

Low voltage d.c. surge protective device for traction systems - Selection and application rules for surge arresters

Parafoudres basse tension courant continu pour traction - Principes de choix et d'application pour les parafoudres

Überspannungsschutzgeräte für Niederspannungs-Gleichstrom-Bahnsysteme - Auswahl und Anwendungsregeln für Überspannungsableiter

This Technical Specification was approved by CENELEC on 2009-12-25.

CENELEC members are required to announce the existence of this TS in the same way as for an EN and to make the TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force.

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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 Technical Specification was prepared by the Technical Committee CENELEC TC 37A, Low voltage surge protective devices.

It also concerns the expertise of SC 9XC, Electric supply and earthing systems for public transport equipment and ancillary apparatus (Fixed installations), of Technical Committee CENELEC TC 9X, Electrical and electronic applications for railways.

The broad subject of overvoltage protection in d.c. traction systems need to address the approaches, requirements and definitions of several disciplines and TC's. Concerned European Standards are referenced for generic definitions.

This Technical Specification reflects the common practise of overvoltage protection in the d.c. traction community, as far as protection of equipment in the primary power supply is concerned (e.g. feeders, overhead contact lines, return circuits, power side of rolling stock).

Therefore, definitions and approaches in this Technical Specification, covering a specific application in line with EN 50526-1, are different for some aspects from the definitions and approaches in the EN 61643 series.

The text of the draft was circulated for voting in accordance with the Internal Regulations, Part 2, Subclause 11.3.3.3. and was approved by CENELEC as CLC/TS 50544 on 2009-12-25.

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 date is proposed:

– latest date by which the existence of the CLC/TS has to be announced at national level (doa) 2010-06-25

This Technical Specification will be withdrawn once the SC 9XC document [1)] on the same subject is published.

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[1)] Under development at the time of issue.

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1 Scope

This Technical Specification applies to non linear metal-oxide resistor type surge arresters (MO surge arresters) without spark gaps designed to limit voltage surges on d.c. traction systems with nominal voltage up to 1 500 V.

This Technical Specification applies to protection of equipment.

Same principles for selection and application apply for MO surge arresters on d.c. traction systems with nominal voltage 3 000 V.

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 50122-2	Railway applications – Fixed installations – Part 2: Protective provisions against the effects of stray currents caused by d.c. traction systems
EN 50124-1	Railway applications – Insulation coordination – Part 1: Basic requirements – Clearances and creepage distances for all electrical and electronic equipment
EN 50163	Railway applications – Supply voltages of traction systems
EN 50526-1 [1)]	Railway applications – Fixed installations – D.C. surge arresters and voltage limiting devices – Part 1: Surge arresters
EN 60071-1	Insulation co-ordination – Part 1: Definitions, principles and rules (IEC 60071-1)
EN 62305-3	Protection against lightning – Part 3: Physical damage to structures and life hazard (IEC 62305-3, mod.)

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1 System voltages

3.1.1
nominal voltage
U_n
designated value for a system

[EN 50163]

3.1.2
highest permanent voltage
U_{max1}
maximum value of the voltage likely to be present indefinitely

[EN 50163]

1) At draft stage.