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English Version

**Railway applications - Fixed installations - Particular
requirements for AC switchgear - Part 4: AC metal-enclosed
traction switchgear**

Applications ferroviaires - Installations fixes - Exigences
particulières pour appareillage à courant alternatif - Partie 4:
Appareillage ferroviaires sous enveloppe métallique pour
courant alternatif

Bahnwendungen - Ortsfeste Anlagen - Besondere
Anforderungen an Wechselstrom-Schaltanlagen -
Teil 4: Metallgekapselte Wechselstrom-Bahnschaltanlagen

This Technical Specification was approved by CENELEC on 2021-07-19.

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European foreword

This document (CLC/TS 50152-4:2021) has been prepared by CLC/SC 9XC “Electric supply and earthing systems for public transport equipment and ancillary apparatus (Fixed installations)”.

CLC/TS 50152-4:2021 has been elaborated to set out requirements for AC metal-enclosed switchgear and controlgear which are operated at traction system voltages 15 kV 16,7 Hz or 25 kV 50 Hz named traction switchgear in this document.

The EN 50152 series under the generic title “*Railway applications - Fixed installations - Particular requirements for a.c. switchgear*” is divided as follows:

- *Part 1: Circuit-breakers with nominal voltage above 1 kV;*
- *Part 2: Disconnectors, earthing switches and switches with nominal voltage above 1 kV;*
- *Part 3-1: Measurement, control and protection devices for specific use in a.c. traction systems — Devices;*
- *Part 3-2: Measurement, control and protection devices for specific use in a.c. traction systems — Current transformers;*
- *Part 3-3: Measurement, control and protection devices for specific use in a.c. traction systems — Voltage transformers.*
- *Part 4: AC metal-enclosed traction switchgear.*

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

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

Introduction

This document needs to be read in conjunction with EN 62271-1:2017 and EN IEC 62271-200:2021.

Where a particular clause of EN IEC 62271-200:2021 is not mentioned in this standard, that clause applies as far as reasonable. Where requirements relate exclusively to three-phase systems or to voltages outside those in use in traction systems, they are not applicable. Where this standard states “addition” or “replacement”, the relevant text of EN IEC 62271-200:2021 needs to be adapted accordingly.

The numbering of clauses in the EN 62271 series is not used in this document. For easier understanding the numbering of clauses in EN IEC 62271-200:2021 is given in square brackets.

Where terms defined in EN 62271-1:2017 and EN IEC 62271-200:2021 conflict with definitions of the same terms as given in IEC 60050-811:1991 or of the other railway application documents listed in the normative references, the definitions in EN 62271-1:2017 and EN IEC 62271-200:2021 need to be used.

The term ‘traction switchgear’ is used whenever EN 62271 series uses ‘switchgear and controlgear’, except for headlines which are kept.

NOTE The suffix N which appears in this standard for rated values is not present in EN 62271-1:2017 and EN IEC 62271-200:2021.

References in subclauses of EN 62271-1:2017 and EN IEC 62271-200:2021 need to be replaced by references to applicable subclauses in this document as far as reasonably possible.

1 Scope

This document specifies requirements for prefabricated metal-enclosed traction switchgear for alternating current with traction voltages and frequencies as specified in EN 50163:2004 and used in indoor and outdoor installations. Enclosures may include fixed and removable components and may be filled with fluid (liquid or gas) to provide insulation.

NOTE 1 EN 50163 specifies the AC traction systems 15 kV 16,7 Hz and 25 kV 50 Hz.

NOTE 2 This document applies to single-phase or two-phase systems.

For metal-enclosed traction switchgear containing gas-filled compartments, the design pressure is limited to a maximum of 300 kPa (relative pressure).

NOTE 3 EN 62271-203 can be used as a guide for design and testing in case the design pressure of gas-filled compartments exceeds 300 kPa (relative pressure).

Components contained in metal-enclosed traction switchgear are to be designed and tested in accordance with their various relevant standards. This document supplements the standards for the individual components regarding their installation in traction switchgear assemblies.

This document does not preclude that other equipment may be included in the same enclosure. In such a case, any possible influence of that equipment on the traction switchgear is to be taken into account.

NOTE 4 Traction switchgear having an insulation enclosure is covered by EN 62271-201. For definition see there or IEC 441-12-06.

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.

EN 50121-5:2017, *Railway applications - Electromagnetic compatibility - Part 5: Emission and immunity of fixed power supply installations and apparatus*

EN 50124-1:2017, *Railway applications - Insulation coordination - Part 1: Basic requirements - Clearances and creepage distances for all electrical and electronic equipment*

EN 50152-1:2012, *Railway applications - Fixed installations - Particular requirements for alternating current switchgear - Part 1: Circuit-breakers with nominal voltage above 1 kV*

EN 50152-2:2012, *Railway applications - Fixed installations - Particular requirements for alternating current switchgear - Part 2: Disconnectors, earthing switches and switches with nominal voltage above 1 kV*

EN 50163:2004, *Railway applications - Supply voltages of traction systems*

EN 62271-1:2017, *High-voltage switchgear and controlgear - Part 1: Common specifications for alternating current switchgear and controlgear*

EN IEC 62271-200:2021, *High-voltage switchgear and controlgear – Part 200: AC metal-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV (IEC 62271-200:2021)*