Irish Standard
I.S. EN 50152-3-3:2016

Railway applications - Fixed installations - Particular requirements for a.c. switchgear - Part 3-3: Measurement, control and protection devices for specific use in a.c. traction systems - Voltage transformers

I.S. EN 50152-3-3:2016

Incorporating amendments/corrigenda/National Annexes issued since publication:

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National Foreword

I.S. EN 50152-3-3:2016 is the adopted Irish version of the European Document EN 50152-3-3:2016, Railway applications - Fixed installations - Particular requirements for a.c. switchgear - Part 3-3: Measurement, control and protection devices for specific use in a.c. traction systems - Voltage transformers

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EUROPEAN STANDARD

NORME EUROPÉENNE

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EN 50152-3-3

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Supersedes EN 50152-3-3:2001

English Version

Railway applications - Fixed installations - Particular requirements for a.c. switchgear - Part 3-3: Measurement, control and protection devices for specific use in a.c. traction systems - Voltage transformers

Applications ferroviaires - Installations fixes - Spécifications particulières pour appareillage à courant alternatif - Partie 3-3: Dispositifs de mesure, de commande et de protection pour usage spécifique dans les systèmes de traction à courant alternatif - Transformateurs de tension

Bahnanwendungen - Ortsfeste Anlagen - Besondere Anforderungen an Wechselstrom-Schalteinrichtungen - Teil 3-3: Mess-, Steuerungs- und Schutzeinrichtungen für Wechselstrom-Bahnanlagen - Spannungswandler

This European Standard was approved by CENELEC on 2016-04-25. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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

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European foreword

This document (EN 50152-3-3:2016) has been prepared by SC 9XC “Electric supply and earthing systems for public transport equipment and ancillary apparatus (Fixed installations)” of CLC/TC 9X “Electrical and electronic applications for railways”.

The following dates are fixed:

- latest date by which the existence of this document has to be announced at national level (doa) 2016-10-25
- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2017-04-25
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2019-04-25

This document supersedes EN 50152-3-3:2001.

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.

This standard was revised to reflect the latest versions of standards referenced and to remove text already included in the EN 61869 Series. The structure of the document was adapted to that of EN 50152-1 and EN 50152-2. Ratings have been added to provide designations in line with other railway standards e.g. EN 50124. Tests requirements have been detailed to meet operating conditions of railway applications. Partial discharge voltages have been specified in Table 2.

This standard has to be read in conjunction with EN 61869-1:2009 and EN 61869-3:2011.

Where a particular clause/subclause of EN 61869-3 is not mentioned in this standard, that clause/subclause 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 61869-3 is to be adapted accordingly.

The numbering of clauses in EN 61869 Series is similar to that in the EN 50152 Series.

Where terms defined in EN 61869-1 and EN 61869-3 conflict with definitions of the same terms as given in IEC 60050-811:1991 or of the other railway applications documents listed in the normative references, the definitions in EN 61869-1 and EN 61869-3 are to be used.

NOTE The suffix N which appears in this standard for rated values is not present in EN 61869–1 and EN 61869–3.

References in subclauses of EN 61869-1 and EN 61869-3 have to be replaced by references to applicable subclauses in this standard as far as reasonably possible.

EN 50152-3-3:2016 (E)

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.

1 Scope

This EN 50152-3-3 is applicable to new voltage transformers which are:

— intended for use in indoor or outdoor fixed installations in tractions systems, and

— operated with an a.c. line voltage and frequency as specified in EN 50163.

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

NOTE 2 As rails of a.c. traction systems are typically connected to earth and included in the return current path, all phase to earth voltages are subject to the limits as given in EN 50163. Nevertheless conductor to conductor voltages are some times higher e.g. in autotransformer systems.

Voltage transformers are mainly used with:

— measuring instruments,

— protective devices.

This EN 50152-3-3 also applies to voltage transformers other than inductive types as far as reasonably possible. Requirements of this EN 50152-3-3 have priority.

NOTE 3 Combined current and voltage transformers also capacitive voltage transformers are typically not used in fixed installations in traction systems.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 50124-1:2001, *Railway applications - Insulation coordination - Part 1: Basic requirements - Clearances and creepage distances for all electrical and electronic equipment*

EN 50125-2:2002, *Railway applications - Environmental conditions for equipment - Part 2: Fixed electrical installations*

EN 50152 (series), *Railway applications - Fixed installations - Particular requirements for a.c. switchgear*

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

EN 61869-1:2009, *Instrument transformers - Part 1: General requirements (IEC 61869-1:2007, mod.)*

EN 61869-3:2011, *Instrument transformers - Part 3: Additional requirements for inductive voltage transformers (IEC 61869-3:2011)*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 61869-1:2009 and EN 61869-3:2011 except of 3.2.1 to 3.2.9 and the following apply.

NOTE Terms 3.2.1 to 3.2.3 of EN 61869–1:2009 address voltage definitions which are differently defined in railway systems. Terms 3.2.4 to 3.2.9 of EN 61869–1:2009 address aspects specific to three-phase systems.