

**Railway applications - Fixed
installations - Particular requirements
for a.c.switchgear - Part 3-1:
Measurement, control and protection
devices for specific use in a.c. traction**

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requirements for a.c.switchgear - Part 3-1:
Measurement, control and protection devices for
specific use in a.c. traction

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 50152-3-1:2004 sisaldab Euroopa standardi EN 50152-3-1:2003 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 25.05.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 50152-3-1:2004 consists of the English text of the European standard EN 50152-3-1:2003.</p> <p>This document is endorsed on 25.05.2004 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala: EN 50152-3-1 provides assistance, guidance and requirements in the design of protection, control and measuring systems in a.c. installations at traction voltages (see EN 50163) intended to provide a power supply to traction systems. This application guide identifies the characteristics and parameters of equipment used in the measurement, control and protection of a.c. traction systems. Guidance is given in the correct use of protection.</p>	<p>Scope: EN 50152-3-1 provides assistance, guidance and requirements in the design of protection, control and measuring systems in a.c. installations at traction voltages (see EN 50163) intended to provide a power supply to traction systems. This application guide identifies the characteristics and parameters of equipment used in the measurement, control and protection of a.c. traction systems. Guidance is given in the correct use of protection.</p>
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Võtmesõnad: application guide, control, device, fixed installation, measurement, protection, railway applications, traction system

English version

**Railway applications – Fixed installations –
Particular requirements for a.c. switchgear
Part 3-1: Measurement, control and protection devices
for specific use in a.c. traction systems –
Application guide**

Applications ferroviaires –
Installations fixes –
Prescriptions particulières pour
appareillage à courant alternatif
Partie 3-1: Dispositifs de mesure,
de commande et de protection pour
usage spécifique dans les systèmes
de traction à courant alternatif –
Guide d'application

Bahnanwendungen –
Ortsfeste Anlagen –
Besondere Anforderungen an
Wechselstrom-Schaltanlagen
Teil 3-1: Mess-, Steuerungs-
und Schutzeinrichtungen
für Wechselstrom-Bahnanlagen –
Anwendungsleitfaden

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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 Central Secretariat has the same status as the official versions.

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CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

This European Standard was prepared by 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 text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 50152-3-1 on 2003-10-01.

This European Standard supersedes ENV 50152-3-1:1998.

The following dates were fixed:

- latest date by which the EN has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2004-10-01
 - latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2006-10-01
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Introduction

EN 50152-3 is divided as follows:

- Part 3-1: Application guide;
- Part 3-2: Single-phase current transformers;
- Part 3-3: Single-phase voltage inductive transformers.

This number of parts is subject to future additions as soon as a protection device is considered suitable for standard requirements.

Part 3-1 is a guide. Further parts are normative and apply when the equipment is concerned with the specified characteristics.

1 Scope

EN 50152-3-1 provides assistance, guidance and requirements in the design of protection, control and measuring systems in a.c. installations at traction voltages (see EN 50163) intended to provide a power supply to traction systems. This application guide identifies the characteristics and parameters of equipment used in the measurement, control and protection of a.c. traction systems. Guidance is given in the correct use of protection.

2 Normative references

This application guide makes reference to the other parts of EN 50152 as well as to EN 50163.

3 Measurement

Two types of measurements are made:

- a) measurement of current and voltage signals for connecting to instruments and telemetering;
- b) current and voltage signals used for operating protection relays on over-current, low impedance, over/under-voltage and short circuit or distance protection.

The class, ratio and burden should be selected from the values in EN 50152-3-2 or EN 50152-3-3. The accuracy and purpose are dependant on the class selected.

4 Closing control systems

4.1 General

The application of the features described below depends on the philosophy of the user's control system.

Closing control systems are usually only those which involve the electrical closing of switchgear devices. Their effect is to permit or inhibit a closure depending on the status of the system (and plant) and the compliance of specified requirements.

4.2 Anti-pumping

This system limits the closing device to effect a single attempt while the signal to close is maintained. If the device fails to complete a satisfactory close operation whilst the close signal is maintained, then attempts at further reclosing (pumping) are inhibited.

An anti-pumping can be achieved in the closing control circuit in various ways, either by using circuit-breaker mechanism auxiliary switches or a timing relay. It only allows a single closing pulse to the closing device, which resets when the initial closing signal is released.

The purchaser should specify the need for anti-pumping feature.

4.3 Auto-reclose with variable reclose time and final lock out

Auto-reclose is only applied to line circuit-breakers and its purpose is to restore the system voltage to the overhead contact line automatically when there is a temporary loss of supply.