



# SLOVENSKI STANDARD SIST EN 50152-3-2:2002

01-julij-2002

Željezniške aplikacije - Fiksne naprave - Posebne zahteve za a.c. preklopne naprave --  
Del 3-2: Merilne, nadzorne in zaščitne naprave za uporabo v a.c. vlečnih sistemih -  
Enofazni tokovni transformatorji

Railway applications - Fixed installations - Particular requirements for a.c. switchgear --  
Part 3-2: Measurement, control and protection devices for specific use in a.c. traction  
systems - Single-phase current transformers

Bahnanwendungen - Ortsfeste Anlagen - Besondere Anforderungen an Wechselstrom-  
Schalteinrichtungen -- Teil 3-2: Mess-, Steuerungs- und Schutzeinrichtungen für  
Wechselstrom-Bahnanlagen - Einphasen-Stromwandler

Applications ferroviaires - Installations fixes - Exigences particulières pour appareillage à  
courant alternatif -- Partie 3-2: Dispositifs de mesure, de commande et de protection  
pour usage spécifique dans les systèmes de traction à courant alternatif -  
Transformateurs de courant monophasés

**Ta slovenski standard je istoveten z: EN 50152-3-2:2001**

**ICS:**

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29.280	Električna oprema za vlečenje	Electric traction equipment

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EUROPEAN STANDARD

**EN 50152-3-2**

NORME EUROPÉENNE

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March 2001

ICS 29.200

English version

**Railway applications - Fixed installations -  
Particular requirements for a.c. switchgear  
Part 3-2: Measurement, control and protection devices  
for specific use in a.c. traction systems -  
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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

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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 SC9XC, Electric supply and earthing systems for public transport equipment and ancillary apparatus (fixed installations), of the Technical Committee CENELEC TC 9X, Electrical and electronic applications for railways.

The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 50152-3-2 on 2000-01-01.

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) 2001-09-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2003-01-01

This European Standard is to be used in conjunction with EN 60044-1:1999.

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## Introduction

Part 3 of EN 50152, "Railway applications - Fixed installations - Particular requirements for a.c. switchgear", concerning the measurement, control and protection devices for specific use in a.c. traction systems, comprises:

- ENV 50152-3-1: Application guide (informative document)
- EN 50152-3-2: Single-phase current transformers (normative document)
- EN 50152-3-3: Single-phase inductive voltage transformers (normative document)

This European Standard applies when the equipment is concerned with the specified characteristics.

The requirements contained in this EN 50152-3-2 complement those given in EN 60044-1:1999.

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## 1 Scope

This European Standard gives particular requirements for current transformers used in a.c. single-phase railway applications, fixed installations.

This European Standard refers to single-phase current transformers for railway applications on 15 kV, 16 ⅔ Hz and 25 kV, 50 Hz overhead lines, these voltages and frequencies being defined in accordance with EN 50163.

The main uses of these current transformers are:

- measurement;
- protection.

## 2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated reference the latest edition of the publication referred to applies.

EN 50121-5	2000	Railway applications - Electromagnetic compatibility -- Part 5: Emission and immunity of fixed power supply installations and apparatus
EN 50124-1	2001	Railway applications - Insulation coordination -- Part 1: Basic requirements - Clearances and creepage distances for all electrical and electronic equipment
EN 50152	series	Railway applications - Fixed installations - Part 1: Particular requirements for a.c. switchgear
EN 50163	1995	Railway applications - Supply voltages of traction systems
EN 60044-1	1999	Instrument transformers – Part 1: Current transformers (IEC 60044-1:1996 modified)
EN 60529	1991	Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989)

## 3 Definitions

For the purposes of this part of EN 50152; the terms and definitions given in EN 50152-1:1996, clause 3 and in EN 60044-1:1999, clause 2, apply.

## 4 Service conditions

Where the equipment described in this part of the standard is mounted on circuit breakers to EN 50152-1, then the service conditions of that standard apply. Where they are separately mounted and are used in association with switchgear then the same service conditions as the switchgear apply.

## 5 Characteristics and use

The current transformer shall be:

- a) either mounted inside the circuit breaker specified in EN 50152-1 and accommodated within special bushings on the circuit breaker; technical requirements of this EN 50152-3-2 apply together with the construction and test requirements (as applicable) of EN 50152-1;
- b) or separately mounted free standing; technical requirements of this EN 50152-3-2 apply.

## 6 Rating and design requirements

Clauses 4 and 5 of EN 60044-1:1999 apply with the following exceptions:

- In subclause 4.2 the words “but the preferred value is 5 A.” shall be replaced by “but the preferred values are 1 A or 5 A.”
- In clause 5 the entire subclause 5.1.1 shall be replaced by:  
**5.1.1 Rated insulation levels for the primary winding**  
Current transformers covered by this standard shall have the same insulation ratings and test values as the equipment into which they are installed. See table Z1 of EN 50152-1 and EN 50152-2. Free standing current transformers shall meet the same requirements.
- Subclause 5.1.6 of EN 60044-1 is valid unless inconsistent with 8.1 of this European Standard.

## 7 Short circuit conditions on the primary side

The following requirements, additional to those of EN 60044-1:1999, apply:

Current transformers shall have a rated short time withstand current for a duration of 1 s, with a peak value of 2,5 p.u. in accordance with the requirements of EN 60044-1:1999.

NOTE These events occur often and special attention should be paid to protect these current transformers.

It shall be taken into account the operating sequence of the associated circuit breaker as defined in 4.104 of EN 50152-1.

## 8 Particular design and construction characteristics

The following requirements, additional to those of EN 60044-1:1999, apply:

### 8.1 Pollution

The dust pollution on railway tracks (e.g. in tunnels and at the seaside) is often higher than on HV transmission lines. For this reason the creepage distance shall not be less than indicated in EN 50124-1, table A.7, for the appropriate pollution degree.

NOTE For the choice of the appropriate pollution degree, the degree used in the associated switchgear (see EN 50152-1 and EN 50152-2) should be taken into account.

### 8.2 Floating potentials and earthing

No metallic part of the current transformer shall be left at floating potential. The grounding connection shall be able to carry the rated short time withstand current for a duration of 1 s.

### 8.3 Electromagnetic compatibility

The current transformer shall comply with EN 50121-5 for electromagnetic compatibility.