



SLOVENSKI STANDARD SIST EN 50123-7-3:2003

01-maj-2003

BUXca Yý U
SIST EN 50123-7-3:1999

þY Ynbjý_Y bUdfUj YË`GHUV] bY bUdfUj YYY_fj bYj`Y_YË`GH_U bY bUdfUj YnU
Ybcga Yfb]hc_`Ë`+! "XY.`A Yf]bYž_fa]bY]b`nUý]fbY bUdfUj YnU]n`f bc`i dcfUwc
j`j`Y b]`g]ghYa]`nU Ybcga Yfb]hc_ž`nc`UM]g_] bUdYcgb]dfYhj cfb_]]b`Xfi [Y
bUdfUj YnUa Yf`Yb`Y`hc_U

Railway applications - Fixed installations - D.C. switchgear -- Part 7-3: Measurement, control and protection devices for specific use in d.c. traction systems - Isolating voltage transducers and other voltage measuring devices

(standards.iteh.ai)

Bahnanwendungen - Ortsfeste Anlagen - Gleichstrom-Schaltanlagen -- Teil 7-3: Mess-, Steuer- und Schutzeinrichtungen in Gleichstrom-Bahnanlagen - Messumformer für Spannungsmessung und andere Spannungsmesseinrichtungen

Applications ferroviaires - Installations fixes - Appareillage à courant continu -- Partie 7-3: Appareils de mesure, de commande et de protection pour usage spécifique dans les systèmes de traction à courant continu - Transducteurs et autres appareils de mesure de la tension

Ta slovenski standard je istoveten z: EN 50123-7-3:2003

ICS:

29.130.99	Druge stikalne in krmilne naprave	Other switchgear and controlgear
29.280	Ò\^ dã } æ\^ } æ] !^ { æ	Electric traction equipment

SIST EN 50123-7-3:2003 en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 50123-7-3:2003

<https://standards.iteh.ai/catalog/standards/sist/85009a18-8639-4a12-827f-0f74e471e903/sist-en-50123-7-3-2003>

EUROPEAN STANDARD

EN 50123-7-3

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2003

ICS 29.280

Supersedes EN 50123-7-3:1999

English version

**Railway applications –
Fixed installations – D.C. switchgear
Part 7-3: Measurement, control and protection devices
for specific use in d.c. traction systems –
Isolating voltage transducers and other voltage measuring devices**

Applications ferroviaires –
Installations fixes –
Appareillage à courant continu
Partie 7-3: Appareils de mesure,
de commande et de protection pour
usage spécifique dans les systèmes
de traction à courant continu –
Transducteurs et autres appareils
de mesure de la tension

Bahnanwendungen –
Ortsfeste Anlagen –
Gleichstrom-Schaltanlagen
Teil 7-3: Mess-, Steuer- und
Schutzeinrichtungen in Gleichstrom-
Bahnanlagen –
Messumformer für Spannungsmessung
und andere Spannungsmesseinrichtungen

<https://standards.iteh.ai/catalog/standards/sist/85009a18-8639-4a12-827f-0f74e471e903/sist-en-50123-7-3-2003>

This European Standard was approved by CENELEC on 2002-09-01. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

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 the 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 50123-7-3 on 2002-09-01.

This European Standard supersedes EN 50123-7-3:1999.

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) 2003-09-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2005-09-01

This Part 7-2 is to be used in conjunction with EN 50123-1:2003.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 50123-7-3:2003](https://standards.iteh.ai/catalog/standards/sist/85009a18-8639-4a12-827f-0f74e471e903/sist-en-50123-7-3-2003)

<https://standards.iteh.ai/catalog/standards/sist/85009a18-8639-4a12-827f-0f74e471e903/sist-en-50123-7-3-2003>

Contents

	Page
1 Scope	4
2 Normative references.....	4
3 Definitions	4
4 Service requirements	4
5 Characteristics	4
5.1 Electrical characteristics	4
5.2 Mechanical characteristics	6
6 Information to be exchanged between purchaser and supplier	6
7 Tests	7
7.1 Dielectric tests.....	7
7.2 Calibration test	7
7.3 EMC tests.....	7

iTech STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 50123-7-3:2003](https://standards.iteh.ai/catalog/standards/sist/85009a18-8639-4a12-827f-0f74e471e903/sist-en-50123-7-3-2003)

<https://standards.iteh.ai/catalog/standards/sist/85009a18-8639-4a12-827f-0f74e471e903/sist-en-50123-7-3-2003>

1 Scope

This European Standard gives the requirements for isolating voltage transducers and other voltage measuring devices used in d.c. railway applications, fixed installations.

This transducer is normally positioned between the voltage sensor on the live switchboard conductor or rail and the secondary device, giving galvanic insulation between the input and the output.

2 Normative references

This European Standard incorporates by dated or undated references, 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 references the latest edition of the publication referred to applies (including amendments).

See EN 50123-1:2003.

3 Definitions

For the purposes of this European standard, the terms and definitions given in EN 50123-1 apply.

4 Service requirements

Where the equipment described in this standard is mounted on devices or in assemblies covered by the EN 50123 series, the service requirements of the devices or assemblies apply.

In this European standard the pollution degree PD4 and overvoltage categories (see Table 1, notes of EN 50123-1), as described in EN 50124-1, are considered to be the normal conditions.

The normal service requirements are given in Annex B of EN 50123-1.

5 Characteristics

5.1 Electrical characteristics

5.1.1 General

The isolating transducer has an insulation level between its primary terminals and secondary terminals which is the same as that of the main circuit.

An isolating transducer shall have an insulation level in accordance with Table 1 of EN 50123-1.

Transducers intended for location near live conductors shall be provided with an insulated enclosure, unless alternative arrangements are agreed with the purchaser. Its output signal shall preferably be one of the appropriate devices described in 3.1.8 to 3.1.12 of EN 50123-1.

Transducers shall be suitable for use providing inputs to measuring devices and/or protection devices. The output impedance, accuracy, linearity of response and phase shift between input and output shall be compatible with its designated application.

The frequency range shall be from d.c. to a minimum of 1 kHz.

Based on the rated voltage assigned to the device U_{Ne} , the voltage transducer shall be able to operate correctly at rated accuracy in the range $0 U_{Ne}$ to $1,2 U_{Ne}$ within the defined tolerance. It is recommended that U_{Ne} is assigned higher or at least equal to U_{max2} (see EN 50163).

The input impedance on the primary side shall be $> 1 M\Omega$ or as agreed with the purchaser.

NOTE 1 It is recommended that a fuse (preferably accessible from outside the live compartment to provide safe access when the main circuit is still energised) is fitted in the transducer or divider primary connection. It is suggested that for systems connected to the transducer or divider secondary, where both the live and return conductors are unearthed, a second fuse/removable link is fitted between the transducer or divider and return conductor.

NOTE 2 Attention is required to be paid to EMC emissions and immunity in locating the sensor.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Preferred secondary signal may either be a voltage in the range from 0 V to 10 V or a current in the range from 4 mA to 20 mA (e.g. 0 mA to 20 mA, 4 mA to 20 mA or 0 mA to 10 mA).

[https://standards.iteh.ai/catalog/standards/sist/85009a18-8639-4a12-827f-](https://standards.iteh.ai/catalog/standards/sist/85009a18-8639-4a12-827f-0f74e471e903/sist-en-50123-7-3-2003)

When the transducer uses an auxiliary power supply, means shall be provided to indicate that the power supply is not available. If the principle of operation of the transducer is electronic, then self-checking means shall be provided. The need for this requirement depends on the duty of the transducer and shall be specified by the purchaser.

Due consideration shall be given to providing adequate protection of the transducer and associated circuits against overloads and short circuits.

5.1.2 Isolating transducer requirements

The following requirements characterise the isolating transducer:

- | | | |
|----|-----------------------------------|------------------|
| a) | rated input voltage | (V); |
| b) | rated insulation voltage | (V); |
| c) | input signal at 100 % signal | (mV); |
| d) | input impedance at 100 % signal | (Ω); |
| e) | output signal at 100 % signal | (mA or mV or V); |
| f) | output impedance at 100 % signal | (Ω); |
| g) | accuracy range at 100 % signal | (%); |
| h) | accuracy | (\pm %); |
| i) | upper limit of response frequency | (kHz); |

- j) power frequency withstand voltage (60 s) (kV);
- k) impulse withstand (if applicable) (kV_{cr});
- l) power consumption (W);
- m) auxiliary voltage (V).

5.1.3 Divider requirements

The following requirements characterise the divider and shall be specified:

- a) rated insulation voltage (V);
- b) output signal at U_{Nm} (V);
- c) total divider resistance (Ω);
- d) footing divider resistance (Ω);
- e) accuracy range based on U_{Nm} (%);
- f) accuracy (\pm %);
- g) upper limit of response frequency (kHz);
- h) burden (VA).

iTeh STANDARD PREVIEW
(standards.iteh.ai)

5.2 Mechanical characteristics

The enclosure of the transducer may be metal enclosed, or of insulating material. Both may have earthed metal mounting feet.

SIST EN 50123-7-3:2003
<https://standards.iteh.ai/catalog/standards/sist/85009a18-8639-4a12-827f-0f74e471e903/sist-en-50123-7-3-2003>

Mechanical stress caused by operation of other acting devices within the switchgear or adjacent to the transducer shall not cause damage or loss of accuracy to the transducer.

6 Information to be exchanged between purchaser and supplier

The supplier shall give the requirements specified in 5.1.2 and 5.1.3 as far as applicable and the purchaser shall confirm or complement these requirements as necessary.

If requested the following information shall be provided by the supplier in addition to the requirements specified above:

- a) insulation levels of the circuits;
- b) accuracy range and tolerances;
- c) overvoltage capability;
- d) input impedance;
- e) output impedance;
- f) input impedance of the device connected to the secondary side of the transducer;
- g) thermal deviation of the secondary signal expressed per °C;
- h) if inversion of polarity in the auxiliary supply may damage the device;
- i) burden.