



SLOVENSKI STANDARD
SIST EN 61243-3:2011

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Nadomešča:
SIST EN 61243-3:2000

**Delo pod napetostjo - Indikator napetosti - 3. del: Dvopolni nizkonapetostni tip
(IEC 61243-3:2009)**

Live working - Voltage detectors -- Part 3: Two-pole low-voltage type

Arbeiten unter Spannung - Spannungsprüfer -- Teil 3: Zweipoliger Spannungsprüfer für Niederspannungsnetze

(standards.iteh.ai)

Travaux sous tension - Détecteurs de tension -- Partie 3: Type bipolaire basse tension

[SIST EN 61243-3:2011](https://standards.iteh.ai/catalog/standards/sist/14808a12-88f2-425d-8c48-8e1a08/sist-en-61243-3-2011)

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13.260	Varstvo pred električnim udarom. Delo pod napetostjo	Protection against electric shock. Live working
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en

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 61243-3

May 2010

ICS 13.260; 29.240.20; 29.260.99

Supersedes EN 61243-3:1998 + corr. Feb.2002

English version

**Live working -
Voltage detectors -
Part 3: Two-pole low-voltage type
(IEC 61243-3:2009)**

Travaux sous tension -
DéTECTEURS de tension -
Partie 3: Type bipolaire basse tension
(CEI 61243-3:2009)

Arbeiten unter Spannung -
Spannungsprüfer -
Teil 3: Zweipoliger Spannungsprüfer
für Niederspannungsnetze
(IEC 61243-3:2009)

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This European Standard was approved by CENELEC on 2010-05-01. 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.

<https://standards.iteh.ai/catalog/standards/sist/14808a12-88f2-425d-8c48-14964b29da00/standards/en-61243-3-2011>

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, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 78/821/FDIS, future edition 2 of IEC 61243-3, prepared by IEC TC 78, Live working, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61243-3 on 2010-05-01.

This European Standard supersedes EN 61243-3:1998 + corr. Feb. 2002.

This edition includes the following significant technical changes with respect to EN 61243-3:1998:

- no more switches are allowed for scale change;
- all the voltage detectors are now for use indoor and outdoor excluding the use under rain conditions;
- no contact electrode which has the construction of a hook is allowed;
- no more voltage classes (A and B) are considered;
- the concept of double or reinforced insulation design (or constructional arrangements providing an equivalent protection) is added;
- for testing, the consideration of normal and single fault conditions is added;
- EMC requirements and tests are upgraded;
- the influence of interference voltage is now considered;
- the classification of the voltage detector into an overvoltage category is increased to at least category III;
- the protection against electrical stresses is reinforced (transient and temporary overvoltages);
- the degree of protection provided by all the enclosures (IP code) is increased to be at least IP54, unless otherwise specified;
- the requirement and test for switches for temporary loading have been reviewed;
- the requirement for ELV indication has been reviewed (a redundant non-disconnectable indicating system is not anymore the unique means allowed);
- the ranges of climatic conditions for operation of voltage detectors of category N and of category S have been reviewed;
- the ball pressure test now refers to EN 60695-10-2;
- a wear test concerning the insulating material of the lead(s) is added;
- the conformity assessment of voltage detectors having completed the production phase is added;
- the normative annex on supplementary functions has been reviewed;
- the normative annex on sampling plans and procedure has been deleted (not applicable according to EN 61318);
- the informative annex on acceptance tests has been deleted (consideration now included in EN 61318).

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

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) | 2011-02-01 |
| – latest date by which the national standards conflicting with the EN have to be withdrawn | (dow) | 2013-05-01 |

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61243-3:2009 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60743:2001 NOTE Harmonized as EN 60743:2001 (not modified).

ISO 9000:2005 NOTE Harmonized as EN ISO 9000:2005 (not modified).

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Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application 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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60068-2-6	-	Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)	EN 60068-2-6	-
IEC 60068-2-31	2008	Environmental testing - Part 2-31: Tests - Test Ec: Rough handling shocks, primarily for equipment-type specimens	EN 60068-2-31	2008
IEC 60068-2-75	1997	Environmental testing - Part 2-75: Tests - Test Eh: Hammer tests	EN 60068-2-75	1997
IEC 60112	-	Method for the determination of the proof and the comparative tracking indices of solid insulating materials	EN 60112	-
IEC 60304	-	Standard colours for insulation for low- frequency cables and wires	HD 402 S2	-
IEC 60417	-	Graphical symbols for use on equipment	-	-
IEC/TS 60479-1	2005	Effects of current on human beings and livestock - Part 1: General aspects	-	-
IEC 60529 + A1	1989 1999	Degrees of protection provided by enclosures (IP Code)	EN 60529 + A1	1991 2000
IEC 60664-1	2007	Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests	EN 60664-1	2007
IEC 60664-3	-	Insulation coordination for equipment within low-voltage systems - Part 3: Use of coating, potting or moulding for protection against pollution	EN 60664-3	-
IEC 60695-10-2	2003	Fire hazard testing -		



IEC 61243-3

Edition 2.0 2009-11

INTERNATIONAL STANDARD

NORME INTERNATIONALE



Live working – Voltage detectors –
Part 3: Two-pole low-voltage type

STANDARD PREVIEW
(standards.iteh.ai)

Travaux sous tension – Détecteurs de tension –
Partie 3: Type bipolaire basse tension

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CONTENTS

FOREWORD.....	5
INTRODUCTION.....	7
1 Scope.....	8
2 Normative references.....	8
3 Terms and definitions.....	10
4 Requirements.....	13
4.1 General requirements.....	13
4.1.1 Safety.....	13
4.1.2 Indication.....	13
4.1.3 Electromagnetic compatibility (EMC).....	14
4.2 Functional requirements.....	14
4.2.1 Clear indication.....	14
4.2.2 Clear perceptibility.....	15
4.2.3 Temperature and humidity dependence of the indication.....	15
4.2.4 Frequency dependency for a.c. voltage detector.....	16
4.2.5 Ripple dependency for d.c. voltage detector.....	16
4.2.6 Response time.....	16
4.2.7 Power source dependability.....	16
4.2.8 Testing element.....	16
4.2.9 Time rating.....	16
4.3 Electrical requirements.....	17
4.3.1 Insulating material.....	17
4.3.2 Protection against electric shocks.....	17
4.3.3 Current limiting elements.....	17
4.3.4 Minimum clearance and creepage distances.....	17
4.3.5 Protection against electrical stresses.....	20
4.3.6 Lead(s).....	20
4.3.7 Probes.....	20
4.3.8 Connector(s) (if any).....	20
4.3.9 Accessible switches in the detecting circuit for temporary loading (if any).....	20
4.4 Mechanical requirements.....	20
4.4.1 Design.....	20
4.4.2 Dimensions, construction.....	22
4.4.3 Degree of protection provided by enclosures.....	22
4.4.4 Resistance to vibration.....	22
4.4.5 Drop resistance.....	22
4.4.6 Shock resistance.....	22
4.4.7 Possible disassembling.....	22
4.4.8 Surface temperature.....	23
4.4.9 Resistance to heat.....	23
4.4.10 Probes.....	23
4.4.11 Lead(s).....	23
4.5 Marking.....	23
4.5.1 General.....	23
4.5.2 Marking on the indicator.....	23

4.5.3	Marking on the probe and/or the lead	24
4.6	Instructions for use.....	24
4.7	Requirements in case of reasonably foreseeable misuse during live working.....	24
4.7.1	AC/DC voltage misuse.....	24
4.7.2	Maximum current to earth in case of misuse	25
4.7.3	Misuse in case of mistaking of the voltage of the low voltage network	26
5	Tests.....	26
5.1	General.....	26
5.2	Tests for general requirements.....	27
5.2.1	Indication.....	27
5.2.2	Electromagnetic compatibility (EMC)	27
5.3	Tests for functional requirements	28
5.3.1	Clear indication	28
5.3.2	Clear perceptibility of visual indication.....	30
5.3.3	Clear perceptibility of audible indication (when available)	32
5.3.4	Temperature and humidity dependence of the indication	34
5.3.5	Frequency dependency for a.c. voltage detector.....	35
5.3.6	Ripple dependency for d.c. voltage detector	36
5.3.7	Response time	36
5.3.8	Power source dependability.....	37
5.3.9	Testing element.....	37
5.3.10	Time rating	37
5.4	Tests for electrical requirements.....	38
5.4.1	Tests on the insulation.....	38
5.4.2	Protection against electric shocks.....	39
5.4.3	Current limiting elements.....	40
5.4.4	Minimum clearance and creepage distances.....	40
5.4.5	Protection against electrical stresses.....	40
5.4.6	Lead(s).....	41
5.4.7	Probe(s)	41
5.4.8	Connector(s)	41
5.4.9	Switches for temporary loading (if any).....	41
5.5	Tests for mechanical requirements	42
5.5.1	Design.....	42
5.5.2	Dimensions, construction.....	42
5.5.3	Degree of protection provided by enclosures	42
5.5.4	Vibration resistance.....	42
5.5.5	Drop resistance	43
5.5.6	Shock resistance	44
5.5.7	Possible disassembling	44
5.5.8	Surface temperature	44
5.5.9	Heat resistance	45
5.5.10	Probes.....	45
5.5.11	Lead(s).....	47
5.6	Marking	48
5.6.1	Visual inspection and measurement	48
5.6.2	Durability of marking.....	48
5.7	Instructions for use.....	48
5.7.1	Type test	48

5.7.2	Alternative test in case of voltage detectors having completed the production phase	49
5.8	Tests for reasonably foreseeable misuse during live working.....	49
5.8.1	AC/DC voltage misuse.....	49
5.8.2	Maximum current to earth in case of misuse	49
5.8.3	Misuse in case of mistaking of the voltage of the low voltage network	50
6	Conformity assessment	50
7	Modifications	50
Annex A (informative)	Differences with IEC 61010 series.....	51
Annex B (normative)	Supplementary functions Phase indication – Rotating field indication – Continuity check	56
Annex C (normative)	Instructions for use	62
Annex D (normative)	General type test procedure.....	63
Annex E (normative)	Classification of defects and associated requirements and tests	65
Annex F (informative)	In-service care and use	67
	Bibliography.....	69
	Figure 1a – Illustration of the electrical insulation of an indicator casing	18
	Figure 1b – Illustration of the electrical insulation of a probe with a detachable lead.....	18
	Figure 1 – Illustration of the electrical insulation features applicable to components of a voltage detector	18
	Figure 2a – Example of a voltage detector with the indicator integrated in a probe.....	21
	Figure 2b – Example of a voltage detector with the indicator not integrated in a probe.....	21
	Figure 2 – Voltage detector.....	21
	Figure 3 – Maximum rms a.c. current to earth in case of misuse	25
	Figure 4 – Maximum d.c. current to earth in case of misuse.....	25
	Figure 5 – Test set-up for the influence of interference voltage	29
	Figure 6 – Test set-up for measurement of clear perceptibility of visual indication.....	31
	Figure 7a – Positioning of the voltage detector in the test set-up	33
	Figure 7b – Key measurement points on the hemisphere	33
	Figure 7 – Test set-up for measurement of clear perceptibility of audible indication	33
	Figure 8 – Test set-up for close adhesion of insulation of the insulated part of the contact electrode	46
	Table 1 – Climatic categories of voltage detectors	16
	Table 2 – Minimum clearance distances for basic insulation and for supplementary insulation	19
	Table 3 – Minimum clearance distances for reinforced insulation	19
	Table 4 – Parameters to be observed to check the climatic dependence.....	34
	Table 5 – AC voltage values for test on the complete equipment	39
	Table 6 – Maximum permissible surface temperatures	45
	Table B.1 – Classification of defects and associated requirements and tests	61
	Table D.1 – Sequential order for performing type tests	63
	Table D.2 – Type tests out of sequence	64
	Table E.1 – Classification of defects and associated requirements and tests	65
	Table F.1 – Periodic testing	68

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**LIVE WORKING –
VOLTAGE DETECTORS –**
Part 3: Two-pole low-voltage type

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 61243-3 has been prepared by IEC technical committee 78: Live working.

This second edition cancels and replaces the first edition published in 1998. It is a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- no more switches are allowed for scale change;
- all the voltage detectors are now for use indoor and outdoor excluding the use under rain conditions;
- no contact electrode which has the construction of a hook is allowed;
- no more voltage classes (A and B) are considered;
- the concept of double or reinforced insulation design (or constructional arrangements providing an equivalent protection) is added;

- for testing, the consideration of normal and single fault conditions is added;
- EMC requirements and tests are upgraded;
- the influence of interference voltage is now considered;
- the classification of the voltage detector into an overvoltage category is increased to at least category III;
- the protection against electrical stresses is reinforced (transient and temporary overvoltages);
- the degree of protection provided by all the enclosures (IP code) is increased to be at least IP54, unless otherwise specified;
- the requirement and test for switches for temporary loading have been reviewed;
- the requirement for ELV indication has been reviewed (a redundant non-disconnectable indicating system is not anymore the unique means allowed);
- the ranges of climatic conditions for operation of voltage detectors of category N and of category S have been reviewed;
- the ball pressure test now refers to IEC 60695-10-2;
- a wear test concerning the insulating material of the lead(s) is added;
- the conformity assessment of voltage detectors having completed the production phase is added;
- the normative annex on supplementary functions has been reviewed;
- the normative annex on sampling plans and procedure has been deleted (not applicable according to IEC 61318);
- the informative annex on acceptance tests has been deleted (consideration now included in IEC 61318).

The text of this standard is based on the following documents:

<https://standards.iteh.ai/catalog/standards/sist/14808a12-88f2-425d-8c48-149c4a53da08/sist-en-61243-3-2011>

FDIS	Report on voting
78/821/FDIS	78/832/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of the IEC 61243 series can be found, under the general title *Live working – Voltage detectors*, on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition; or
- amended.

IMPORTANT – The “colour inside” logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this publication using a colour printer.

INTRODUCTION

The devices covered by this standard are designed to be used in a live working environment to determine the status (presence or absence of operating voltage) of low-voltage installations.

The live working environment comes with its specific hazards and working conditions which are generally more severe than the ones encountered by workers in other fields than live working.

This International Standard is a product standard giving essential requirements and tests to verify that the devices perform well and will contribute to the safety of the users, provided they are used by skilled persons, and according to safe working procedures and to local or national regulations.

Voltage detectors are not considered as measuring or testing devices, separately covered by IEC 61010 series. However, in case of misuse by general electrical workers, the requirements and tests included in this document are intended to achieve an equivalent level of safety.

To take into consideration the specific needs of a live working environment, the following differences exist with IEC 61010 series:

- some requirements and tests exist in both standards but with different sanctions or pass test criteria (see A.1);
- some requirements of IEC 61010 are not included in this standard with the rationale (see A.2);
- some additional requirements of this standard are not specified in IEC 61010 with the rationale (see A.3).

This International Standard has been prepared according to the requirements of IEC 61477, where applicable.

The product covered by this standard may have an impact on the environment during some or all stages of its life cycle. These impacts can range from slight to significant, be of short-term or long-term, and occur at the global, regional or local level.

This standard does not include requirements and test provisions for the manufacturers of the product, or recommendations to the users of the product for environmental improvement. However, all parties intervening in its design, manufacture, packaging, distribution, use, maintenance, repair, reuse, recovery and disposal are invited to take account of environmental considerations.

LIVE WORKING – VOLTAGE DETECTORS –

Part 3: Two-pole low-voltage type

1 Scope

This part of IEC 61243 is applicable to hand-held two-pole voltage detectors with its accessories (crocodile clips and detachable leads) to be used in contact with parts of electrical systems:

- for a.c. voltages not exceeding 1 000 V at nominal frequencies between 16 2/3 Hz and up to 500 Hz,

and/or

- for d.c. voltages not exceeding 1 500 V.

NOTE The a.c. voltages defined in this standard refer either to phase-to-phase voltages or phase to neutral voltages.

Contact electrode extensions are not covered by this standard.

Voltage detectors covered by this standard are intended to be used under dry and humid conditions, both indoor and outdoor. They are not intended to be used under rain conditions.

Voltage detectors covered by this standard are not intended to be used for continuous operation.

Voltage detectors covered by this standard are intended to be used up to 2 000 m above sea level.

This standard also includes provisions for the following supplementary functions when available (see Annex B):

- phase indication,
- rotating field indication, and
- continuity check.

Other supplementary functions are not covered by this standard.

Voltage detectors covered by this standard are not considered as measuring devices. Relevant safety requirements for measuring devices are included in IEC 61010 series.

2 Normative references

The following referenced documents are indispensable for the application 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.

IEC 60068-2-6, *Environmental testing – Part 2-6: Tests – Test Fc: Vibration (sinusoidal)*

IEC 60068-2-31:2008, *Environmental testing – Part 2-31: Tests – Test Ec: Rough handling shocks, primarily for equipment-type specimens*

IEC 60068-2-75:1997, *Environmental testing – Part 2: Tests – Test Eh: Hammer tests*

IEC 60112, *Method for the determination of the proof and the comparative tracking indices of solid insulating materials*

IEC 60304, *Standard colours for insulation for low-frequency cables and wires*

IEC 60417, *Graphical symbols for use on equipment*

IEC/TS 60479-1:2005, *Effects of current on human beings and livestock – Part 1: General aspects*

IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*
Amendment 1:1999¹

IEC 60664-1:2007, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

IEC 60664-3, *Insulation coordination for equipment within low-voltage systems – Part 3: Use of coating, potting or moulding for protection against pollution*

IEC 60695-10-2:2003, *Fire hazard testing – Part 10-2: Abnormal heat – Ball pressure test*

IEC 60942, *Electroacoustics – Sound calibrators*

IEC 61010-031:2002, *Safety requirements for electrical equipment for measurement, control and laboratory use – Part 031: Safety requirements for hand-held probe assemblies for electrical measurement and test*
Amendment 1:2008²

IEC 61010-1:2001, *Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: General requirements*

IEC 61140:2001, *Protection against electric shock – Common aspects for installation and equipment*
Amendment 1:2004

IEC 61180-1, *High-voltage test techniques for low-voltage equipment – Part 1: Definitions, test and procedure requirements*

IEC 61180-2, *High-voltage test techniques for low-voltage equipment – Part 2: Test equipment*

IEC 61260, *Electroacoustics – Octave-band and fractional-octave-band filters*

IEC 61318, *Live working – Conformity assessment applicable to tools, devices and equipment*

IEC 61326-1:2005, *Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 1: General requirements*

IEC 61477, *Live working – Minimum requirements for the utilization of tools, devices and equipment*

¹ There exists a consolidated edition 2.1 (2001) that includes Edition 2 and its Amendment 1.

² There exists a consolidated edition 1.1 (2008) that includes Edition 1 and its Amendment 1.