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**Varnostne zahteve za električno opremo za meritve, nadzorovanje in laboratorijsko uporabo - 2-032. del: Posebne zahteve za ročne in ročno vodene tokovne senzorje za električno testiranje preskušanje in meritve**

Safety requirements for electrical equipment for measurement, control, and laboratory use -- Part 2-032: Particular requirements for hand-held and hand-manipulated current sensors for electrical test and measurement

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EUROPEAN STANDARD

**EN 61010-2-032**

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2002

ICS 19.080

Supersedes EN 61010-2-032:1995

English version

**Safety requirements for electrical equipment for measurement,  
control, and laboratory use**  
**Part 2-032: Particular requirements for hand-held and hand-manipulated  
current sensors for electrical test and measurement**  
(IEC 61010-2-032:2002)

Règles de sécurité pour appareils  
électriques de mesure, de régulation  
et de laboratoire  
Partie 2-032: Prescriptions particulières  
pour les capteurs de courant portatifs  
ou pris en main de mesure  
et d'essais électriques  
(CEI 61010-2-032:2002)

Sicherheitsbestimmungen für elektrische  
Mess-, Steuer-, Regel- und Laborgeräte  
Teil 2-032: Besondere Anforderungen  
für handgehaltene und handbediente  
Stromsonden für elektrische Messungen  
(IEC 61010-2-032:2002)

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This European Standard was approved by CENELEC on 2002-11-01. 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

The text of document 66/298/FDIS, future edition 2 of IEC 61010-2-032, prepared by IEC TC 66, Safety of measuring, control, and laboratory equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61010-2-032 on 2002-11-01.

This European Standard supersedes EN 61010-2-032:1995.

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) 2003-08-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2005-11-01

This Part 2-032 is to be used in conjunction with EN 61010-1:2001, Safety requirements for electrical equipment for measurement, control and laboratory use -- Part 1: General requirements. Consideration may be given to future editions of, or amendments to, EN 61010-1.

This Part 2-032 supplements or modifies the corresponding clauses of EN 61010-1 so as to convert it into the European Standard: Safety requirements for hand-held and hand-manipulated current sensors for electrical test and measurement.

Where a particular clause or subclause of Part 1 is not mentioned in this Part 2-032, that clause or subclause applies as far as is reasonable. Where this Part 2-032 states "addition", "modification" or "replacement", the relevant text of Part 1 is to be adapted accordingly.

In this standard:

- 1) the following print types are used:
  - requirements: in roman type;
  - NOTES: in smaller roman type;
  - *conformity and test*: in italic type;
  - terms used throughout this standard which have been defined in clause 3: SMALL ROMAN CAPITALS.
- 2) subclauses, figures and tables which are additional to those in Part 1 are numbered starting from 101, additional list items are numbered from aa).

Annexes designated "normative" are part of the body of the standard.

Annexes designated "informative" are given for information only.

In this standard, annexes D and ZA are normative and annex H is informative.

Annex ZA has been added by CENELEC.

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## Endorsement notice

The text of the International Standard IEC 61010-2-032:2002 was approved by CENELEC as a European Standard without any modification.

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**Annex ZA**  
(normative)

**Normative references to international publications  
with their corresponding European publications**

**Addition** to annex ZA of EN 61010-1:

| <u>Publication</u> | <u>Year</u>     | <u>Title</u>                                                                                                                                                                                 | <u>EN/HD</u> | <u>Year</u>        |
|--------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------------|
| IEC 61010-031      | - <sup>1)</sup> | Safety requirements for electrical equipment for measurement, control and laboratory use<br>Part 031: Safety requirements for hand-held probe assemblies for electrical measurement and test | EN 61010-031 | 2002 <sup>2)</sup> |

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<sup>1)</sup> Undated reference.

<sup>2)</sup> Valid edition at date of issue.

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61010-2-032

Deuxième édition  
Second edition  
2002-09

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PUBLICATION GROUPEE DE SÉCURITÉ  
GROUP SAFETY PUBLICATION

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**Règles de sécurité pour appareils électriques  
de mesurage, de régulation et de laboratoire –**

**Partie 2-032:**

**Prescriptions particulières pour les capteurs  
de courant portatifs ou pris en main  
de mesurage et d'essais électriques**

**(standards.iteh.ai)**

**Safety requirements for electrical equipment  
for measurement, control, and laboratory use –**

**Part 2-032:**

**Particular requirements for hand-held and  
hand-manipulated current sensors  
for electrical test and measurement**

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Commission Electrotechnique Internationale  
International Electrotechnical Commission  
Международная Электротехническая Комиссия

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SAFETY REQUIREMENTS FOR ELECTRICAL EQUIPMENT  
FOR MEASUREMENT, CONTROL, AND LABORATORY USE –**
**Part 2-032: Particular requirements for hand-held and hand-manipulated  
current sensors for electrical test and measurement**

## FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61010-2-032 has been prepared by IEC technical committee 66:  
Safety of measuring, control and laboratory equipment

This second edition cancels and replaces the first edition published in 1994, of which it constitutes a technical revision.

It has the status of a group safety publication, as specified in IEC Guide 104.

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

| FDIS        | Report on voting |
|-------------|------------------|
| 66/298/FDIS | 66/306/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 3.

This part 2 is intended to be used in conjunction with IEC 61010-1. It was established on the basis of the second edition (2001). Consideration may be given to future editions of, or amendments to, IEC 61010-1.

This part 2 supplements or modifies the corresponding clauses in IEC 61010-1 so as to convert that publication into the IEC standard: *Safety requirements for hand-held and hand-manipulated current sensors for electrical test and measurement.*

Where a particular subclause of part 1 is not mentioned in this part 2, that subclause applies as far as is reasonable. Where this part states "addition", "modification", "replacement", or "deletion", the relevant requirement, test specification or note in part 1 should be adapted accordingly.

In this standard:

- 1) the following print types are used:
  - requirements: in roman type;
  - NOTES: in smaller roman type;
  - *conformity and tests: in italic type;*
  - terms used throughout this standard which have been defined in clause 3: SMALL ROMAN CAPITALS.
- 2) subclauses, figures, and tables which are additional to those in part 1 are numbered starting from 101; and additional list items are numbered from aa).

The committee has decided that the contents of this publication will remain unchanged until 2004. At this date, the publication will be

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

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## SAFETY REQUIREMENTS FOR ELECTRICAL EQUIPMENT FOR MEASUREMENT, CONTROL, AND LABORATORY USE –

### Part 2-032: Particular requirements for hand-held and hand-manipulated current sensors for electrical test and measurement

#### 1 Scope and object

This clause of part 1 is applicable, except as follows:

##### 1.1 Scope

*Replacement:*

This International Standard applies to the HAND-HELD and hand-manipulated CURRENT SENSORS described below. These CURRENT SENSORS are for use in the measurement of current without physically opening the current path of the circuit being measured. They may be stand-alone CURRENT SENSORS or accessories to other equipment.

CURRENT SENSORS require hand manipulation before or after a test or measurement, but do not necessarily need to be HAND-HELD during the test or measurement.

Type A CURRENT SENSOR: a CURRENT SENSOR designed to be applied around or removed from uninsulated HAZARDOUS LIVE conductors. Type A CURRENT SENSORS have defined HAND-HELD or hand-manipulated parts providing protection against electric shock from the conductor being measured, and also have protection against short-circuits between wires and busbars during clamping.

Type B CURRENT SENSOR: a CURRENT SENSOR which has protection against a short-circuit between wires or busbars during clamping but without defined HAND-HELD or hand-manipulated parts which provide protection against electric shock during clamping. Additional protective means are necessary to avoid electric shock from HAZARDOUS LIVE conductors which cannot be de-energised during application or removal of the CURRENT SENSOR.

NOTE Type B CURRENT SENSORS include flexible CURRENT SENSORS.

Type C CURRENT SENSOR: a CURRENT SENSOR without protection against short-circuits between wires or busbars during clamping. Type C CURRENT SENSORS are intended to be applied to or removed from uninsulated HAZARDOUS LIVE conductors only when they are de-energised.

NOTE Type C CURRENT SENSORS include some types of split-core transducers.

#### 2 Normative references

This clause of part 1 is applicable except as follows:

*Addition:*

IEC 61010-031, *Safety requirements for electrical equipment for measurement, control and laboratory use – Safety requirements for hand-held probe assemblies for electrical measurement and test*