

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**

The European Standard EN 61010-2-032:2002 has the status of a
British Standard

ICS 19.080

National foreword

This British Standard is the official English language version of EN 61010-2-032:2002. It is identical with IEC 61010-2-032:2002. It supersedes BS EN 61010-2-032:1995 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee EPL/66, Safety of measuring, control and laboratory equipment, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the *BSI Catalogue* under the section entitled “International Standards Correspondence Index”, or by using the “Search” facility of the *BSI Electronic Catalogue* or of British Standards Online.

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This British Standard, having been prepared under the direction of the Electrotechnical Sector Policy and Strategy Committee, was published under the authority of the Standards Policy and Strategy Committee on 8 January 2003

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Amendments issued since publication

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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**
(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)

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.

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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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*

3 Terms and definitions

This clause of part 1 is applicable except as follows:

Addition:

3.101 CURRENT SENSORS and their parts (see figure 101)

3.101.1

CURRENT SENSOR

PORTABLE EQUIPMENT or HAND-HELD EQUIPMENT for measuring, detecting or injecting current or indicating current waveforms on circuits, without physically opening the current path of the circuit

NOTE 1 Some CURRENT SENSORS are also known as current clamps and current probes.

NOTE 2 Some CURRENT SENSORS designed for portable use may also be used for fixed installations.

3.101.2

JAWS

parts of a CURRENT SENSOR which surround the conductor under test

3.101.3

JAW OPENING

part of the JAWS where opening occurs while clamping around a conductor