SVENSK STANDARD SS-EN IEC 61010-2-030

Fastställd	Utgåva	Sida	Ansvarig kommitté
2021-05-19	2	1 (1+47)	SEK TK 66

Elektrisk utrustning för mätning, styrning och för laboratorieändamål – Säkerhet – Del 2-030: Särskilda fordringar på kretsar för mätning och provning

Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 2-030: Particular requirements for equipment having testing or measuring circuits

Som svensk standard gäller europastandarden EN IEC 61010-2-030:2021. Den svenska standarden innehåller de officiella engelska språkversionerna av EN IEC 61010-2-030:2021 och EN IEC 61010-2-030:2021/A11:2021.

Nationellt förord

Europastandarden EN IEC 61010-2-030:2021

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 61010-2-030, Second edition, 2017 - Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 2-030: Particular requirements for equipment having testing or measuring circuits**

utarbetad inom International Electrotechnical Commission, IEC.

Standarden ska användas tillsammans med SS-EN 61010-1, utgåva 3, 2010.

Tidigare fastställd svensk standard SS-EN 61010-2-030, utgåva 1, 2010, gäller ej fr o m 2024-04-02.

ICS 19.080.00; 71.040.10

Denna standard är fastställd av SEK Svensk Elstandard,
som också kan lämna upplysningar om **sakinnehållet** i standarden.
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Standarder underlättar utvecklingen och höjer elsäkerheten

Det finns många fördelar med att ha gemensamma tekniska regler för bl a mätning, säkerhet och provning och för utförande, skötsel och dokumentation av elprodukter och elanläggningar.

Genom att utforma sådana standarder blir säkerhetsfordringar tydliga och utvecklingskostnaderna rimliga samtidigt som marknadens acceptans för produkten eller tjänsten ökar.

Många standarder inom elområdet beskriver tekniska lösningar och metoder som åstadkommer den elsäkerhet som föreskrivs av svenska myndigheter och av EU.

SEK är Sveriges röst i standardiseringsarbetet inom elområdet

SEK Svensk Elstandard svarar för standardiseringen inom elområdet i Sverige och samordnar svensk medverkan i internationell och europeisk standardisering. SEK är en ideell organisation med frivilligt deltagande från svenska myndigheter, företag och organisationer som vill medverka till och påverka utformningen av tekniska regler inom elektrotekniken.

SEK samordnar svenska intressenters medverkan i SEKs tekniska kommittéer och stödjer svenska experters medverkan i internationella och europeiska projekt.

Stora delar av arbetet sker internationellt

Utformningen av standarder sker i allt väsentligt i internationellt och europeiskt samarbete. SEK är svensk nationalkommitté av International Electrotechnical Commission (IEC) och Comité Européen de Normalisation Electrotechnique (CENELEC).

Standardiseringsarbetet inom SEK är organiserat i referensgrupper bestående av ett antal tekniska kommittéer som speglar hur arbetet inom IEC och CENELEC är organiserat.

Arbetet i de tekniska kommittéerna är öppet för alla svenska organisationer, företag, institutioner, myndigheter och statliga verk. Den årliga avgiften för deltagandet och intäkter från försäljning finansierar SEKs standardiseringsverksamhet och medlemsavgift till IEC och CENELEC.

Var med och påverka!

Den som deltar i SEKs tekniska kommittéarbete har möjlighet att påverka framtida standarder och får tidig tillgång till information och dokumentation om utvecklingen inom sitt teknikområde. Arbetet och kontakterna med kollegor, kunder och konkurrenter kan gynnsamt påverka enskilda företags affärsutveckling och bidrar till deltagarnas egen kompetensutveckling.

Du som vill dra nytta av dessa möjligheter är välkommen att kontakta SEKs kansli för mer information.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 61010-2-030

April 2021

ICS 19.080; 71.040.10

Supersedes EN 61010-2-030:2010 and all of its amendments and corrigenda (if any)

English Version

Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 2-030: Particular requirements for equipment having testing or measuring circuits (IEC 61010-2-030:2017)

Exigences de sécurité pour appareils électriques de mesurage, de régulation et de laboratoire - Partie 2-030: Exigences particulières pour les appareils équipés de circuits d'essai ou de mesure (IEC 61010-2-030:2017)

Sicherheitsbestimmungen für elektrische Mess-, Steuer-, Regel- und Laborgeräte - Teil 2-030: Besondere Anforderungen für Geräte mit Prüf- oder Messstromkreis (IEC 61010-2-030:2017)

This European Standard was approved by CENELEC on 2017-02-16. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN IEC 61010-2-030:2021 E

European foreword

The text of document 66/613/FDIS, future edition 2 of IEC 61010-2-030, prepared by IEC/TC 66 "Safety of measuring, control and laboratory equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61010-2-030:2021.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2021-10-02
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2024-04-02

This document supersedes EN 61010-2-030:2010 and all of its amendments and corrigenda (if any).

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

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directive(s) see informative Annex ZZ, which is an integral part of EN IEC 61010-2-030:2021/A11:2021.

Endorsement notice

The text of the International Standard IEC 61010-2-030:2017 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 61010-2-033 NOTE Harmonized as EN 61010-2-033

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

Part 2-030: Particular requirements for equipment having testing or measuring circuits

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 61010-2-030 has been prepared by IEC technical committee 66: Safety of measuring, control and laboratory equipment.

It has the status of a group safety publication in accordance with IEC Guide 104.

This second edition cancels and replaces the first edition published in 2010. This edition constitutes a technical revision.

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

a) Reference to IEC 61010-031 for probe assemblies and IEC 61010-032 for current sensors has been added.

b) Indirect bonding for testing and measuring circuits has been modified, in particular to take into account the duration of current flow versus body current for a.c. and d.c. currents according to IEC TS 60479-1 and IEC TS 60479-2.

c) CLEARANCE and CREEPAGE DISTANCE for WET LOCATIONS and for measuring circuit TERMINAL exceeding 1 000 V a.c. or d.c have been specified.

d) The voltage source for testing overvoltage limiting component or circuit may be limited to 400 V.

e) Requirements against TRANSIENT OVERVOLTAGES for MAINS voltage measuring circuits have been added.

f) Requirements for measuring circuits from 1 000 V d.c. to 1 500 V d.c. have been added.

g) The corrigendum has been included in Tables K.102 to K.104.

h) Requirements for reduction of TRANSIENT OVERVOLTAGES have been modified.

i) An informative Annex CC about the dimensions of banana TERMINALS has been added.

j) Flowchart for insulation according to the type of circuit has been added in a new Annex DD.

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

FDIS	Report on voting
66/613/FDIS	66/621/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 Part 2-030 is to be used in conjunction with the latest edition of IEC 61010-1. It was established on the basis of the third edition (2010) of IEC 61010-1, including its amendment 1 (2016).

This Part 2-030 supplements or modifies the corresponding clauses in IEC 61010-1 so as to convert that publication into the IEC standard: *Particular requirements for equipment having testing or measuring circuits.*

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:

a) the following print types are used:
   - requirements: in roman type;
   - NOTES: in small roman type;
   - *conformity and test: in italic type;*
   - terms used throughout this standard which have been defined in Clause 3: SMALL ROMAN CAPITALS;

b) subclauses, figures, tables and notes which are additional to those in Part 1 are numbered starting from 101. Additional annexes are lettered starting from AA and additional list items are lettered from aa).

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

A list of all parts of the IEC 61010 series, under the general title *Safety requirements for electrical equipment for measurement, control, and laboratory use*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website 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 document using a colour printer.

INTRODUCTION

IEC 61010-1 specifies the safety requirements that are generally applicable to all equipment within its scope. For certain types of equipment, the requirements of IEC 61010-1 and its amendment will be supplemented or modified by the special requirements of one, or more than one, particular Part 2 of the standard which are read in conjunction with the Part 1 requirements.

This Part 2-030 specifies the safety requirements for equipment with testing or measuring circuits which are connected for test or measurement purposes to devices or circuits outside the measurement equipment itself.

Part 2-032 specifies the safety requirements for HAND-HELD and hand-manipulated current sensors (see Clause 1 of Part 2-032). Requirements of Part 2-030 have been included in Part 2-032. Equipment within the scopes of Part 2-030 and Part 2-032 are considered to be covered by the requirements of Part 2-032.

Part 2-033 specifies the safety requirements for HAND-HELD MULTIMETERS and other METERS that have a primary purpose of measuring voltage on a live MAINS. Requirements of Part 2-030 have been included in Part 2-033. Parts of equipment within the scopes of Part 2-030 and Part 2-033 are considered to be covered by the requirements of Part 2-033.

Part 2-034 specifies the safety requirements for measurement equipment for insulation resistance and test equipment for electric strength which are connected to units, lines or circuits for test or measurement purposes. Requirements of Part 2-030 have been included in Part 2-034. Equipment within the scopes of Part 2-030 and Part 2-034 are considered to be covered by the requirements of Part 2-034.

However, for equipment within the scope of Part 2-032, Part 2-033 and Part 2-034, the standards are read in conjunction.

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

Part 2-030: Particular requirements for equipment having testing or measuring circuits

1 Scope and object

This clause of Part 1 is applicable except as follows:

1.1.1 Equipment included in scope

Replacement:

Replace the text with the following:

This group safety publication is primarily intended to be used as a product safety standard for the products mentioned in the scope, but shall also be used by technical committees in the preparation of their publications for products similar to those mentioned in the scope of this standard, in accordance with the principles laid down in IEC Guide 104 and ISO/IEC Guide 51.

This part of IEC 61010 specifies safety requirements for equipment having testing or measuring circuits which are connected for test or measurement purposes to devices or circuits outside the measurement equipment itself.

These include measuring circuits which are part of electrical test and measurement equipment, laboratory equipment, or process control equipment. The existence of these circuits in equipment requires additional protective means between the circuit and an OPERATOR.

NOTE These testing and measuring circuits can, for example:

– measure voltages in circuits of other equipment,
– measure temperature of a separate device via a thermocouple,
– measure force on a separate device via a strain gauge,
– inject a voltage onto a circuit to analyse a new design.

Equipment having these testing and measuring circuits may be intended for performing tests and measurements on hazardous conductors, including MAINS conductors and telecommunication network conductors. See Annex BB for considerations of HAZARDS involved in various tests and measurements.

2 Normative references

This clause of Part 1 is applicable except as follows:

Replacement:

Replace

IEC 60364-4-44*, Low-voltage electrical installations – Part 4-44: Protection for safety – Protection against voltage disturbances and electromagnetic disturbances*

with the following new reference:

IEC 60364-4-44:2007*, Low-voltage electrical installations – Part 4-44: Protection for safety – Protection against voltage disturbances and electromagnetic disturbances*
IEC 60364-4-44:2007/AMD1:2015

Addition:

Add the following new normative reference:

IEC 61010-2-032, *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*