SLOVENSKI STANDARD
oSIST prEN IEC 62052-31:2023

01-maj-2023

Oprema za merjenje električne energije (izmenični tok) - Splošne zahteve, preskusi in pogoji preskušanja - 31. del: Varnostne zahteve in preskusi proizvodov

Electricity metering equipment (AC) - General requirements, tests and test conditions - Part 31: Product safety requirements and tests

Wechselstrom-Elektrizitätszähler - Allgemeine Anforderungen, Prüfungen und Prüfbedingungen - Teil 31: Sicherheitsanforderungen und Prüfungen

Équipement de comptage de l'électricité (CA) - Exigences générales, essais et conditions d'essai - Partie 31: Exigences et essais sur la sécurité de produit

Ta slovenski standard je istoveten z: **prEN IEC 62052-31:2023**

ICS:

17.220.20	Merjenje električnih in magnetnih veličin	Measurement of electrical and magnetic quantities
91.140.50	Sistemi za oskrbo z elektriko	Electricity supply systems

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13/1885/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER: **IEC 62052-31 ED2**	
DATE OF CIRCULATION: **2023-03-10**	CLOSING DATE FOR VOTING: **2023-06-02**
SUPERSEDES DOCUMENTS: **13/1786/RR, 13/1848/CD**	

IEC TC 13 : ELECTRICAL ENERGY MEASUREMENT AND CONTROL	
SECRETARIAT: Hungary	SECRETARY: Mr Bela Bodi
OF INTEREST TO THE FOLLOWING COMMITTEES: TC 66,TC 85	PROPOSED HORIZONTAL STANDARD: ☐ Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.
FUNCTIONS CONCERNED: ☐ EMC ☐ ENVIRONMENT ☐ QUALITY ASSURANCE ☒ SAFETY	
☒ SUBMITTED FOR CENELEC PARALLEL VOTING **Attention IEC-CENELEC parallel voting** The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting. The CENELEC members are invited to vote through the CENELEC online voting system.	☐ NOT SUBMITTED FOR CENELEC PARALLEL VOTING

This document is still under study and subject to change. It should not be used for reference purposes.

Recipients of this document are invited to submit, with their comments, notification of

- any relevant patent rights of which they are aware and to provide supporting documentation,
- any relevant “in some countries” clauses to be included should this proposal proceed. Recipients are reminded that the enquiry stage is the final stage for submitting "in some countries" clauses. See AC/22/2007.

TITLE:

Electricity metering equipment (AC) - General requirements, tests and test conditions - Part 31: Product safety requirements and tests

PROPOSED STABILITY DATE: 2028

NOTE FROM TC/SC OFFICERS:

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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ELECTRICITY METERING EQUIPMENT– GENERAL REQUIREMENTS, TESTS AND TEST CONDITIONS –

Part 31: Product safety requirements and tests

FOREWORD

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International Standard IEC 62052-31 has been prepared by IEC technical committee 13: Electrical energy measurement and control.

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

FDIS	Report on voting

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

The French version of this document has not been voted upon.

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

A list of all parts of IEC 62052 series, under the general title *Electricity metering equipment (AC) – General requirements, tests and test conditions*, can be found on the IEC website.

In this document, the following print types are used:

- requirements and definitions: in roman type;
- NOTES: in smaller roman type;
- *conformity and tests: in italic type.*

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

INTRODUCTION

NOTE 1 The following text is based on IEC Guide 104, ISO/IEC Guide 51 and IEC 60255-27:2013.

The IEC addresses safety aspects by establishing *basic*, *group* and *product* safety publications.

A *basic safety publication* covers a specific safety-related matter, applicable to many electrotechnical products. It is primarily intended for use by technical committees in the preparation of standards in accordance with the principles laid down in IEC Guide 104 and ISO/IEC Guide 51. It is not intended for use by manufacturers or certification bodies. One of the responsibilities of a technical committee is, wherever applicable, to make use of basic safety publications in the preparation of its publications. The requirements, test methods or test conditions of basic safety publications will not apply unless specifically referred to or included in the relevant publications.

A *group safety publication* covers all safety aspects of a specific group of products within the scope of two or more product technical committees (TCs). Group safety publications are primarily intended to be stand-alone product safety publications but may also be used by TCs as source material in the preparation of their publications.

A *product safety publication* covers all safety aspects of one or more products within the scope of a single product TC.

The objectives of the development of this International Standard are the following:

- to specifically reference and include relevant requirements, test methods or test conditions of relevant basic safety publications so that they become applicable;
- to specifically reference and include – where appropriate, in a modified form – relevant requirements, test methods or test conditions of relevant group safety publications;
- to consider the latest developments in the technology used for the design and manufacture of equipment for electrical energy measurement and control;
- to achieve a uniform approach to product safety throughout the international metering industry.

This *product safety standard* is based on, among others, the following:

- the *basic safety standard* IEC 60664-1:2020, established by TC 109;
- standards from the IEC 60364 series related to electrical installations of buildings, established by TC 64;
- the *group safety standard* IEC 61010-1:2016 established by TC 66;
- the *group safety standard* IEC 62477-1:2022 established by TC 22;
- IEC 60255-27:2013, a *product safety standard* for measuring relays and protection equipment, established by TC 95. These products are similar in their design and to some extent in their use in equipment for electrical energy measurement and control.

To facilitate the use of this document, an integral text has been prepared, with appropriate references to source documents.

Being a product safety standard, this document takes precedence over the group safety standards IEC 61010-1:2016 and IEC 62477-1:2022.

ELECTRICITY METERING EQUIPMENT – GENERAL REQUIREMENTS, TESTS AND TEST CONDITIONS –

Part 31: Product safety requirements and tests

1 Scope and object

1.1 Scope

This part of IEC 62052 specifies general safety requirements and associated tests, with their appropriate conditions for type testing of directly connected, transformer-operated or transducer-operated AC and DC electricity meters and load control equipment.

NOTE 1 For other general requirements, such as EMC, dependability etc., see the relevant IEC 62052 or IEC 62059 standards. For accuracy requirements and other requirements specific to class indices, see the relevant IEC 62053 standards.

This document applies to electricity metering equipment designed to:

- measure and control electrical energy on electrical networks (mains) with voltage up to 1 000 V AC, or 1 500 V DC;

NOTE 2: The voltage mentioned above is the line-to-neutral voltage AC r.m.s or DC derived from nominal voltages. See Table 7.

- have all functional elements, including add-on communication modules, enclosed in, or forming a single meter case with exception of indicating displays;

- operate with integrated displays (electromechanical or static meters);
- operate with detached indicating displays, or without an indicating display (static meters only);
- wall-mounted or to be installed in specified matching sockets or racks;
- optionally, provide additional functions other than those for measurement of electrical energy.

NOTE 3 Modern electricity meters typically contain additional functions such as measurement of voltage magnitude, current magnitude, power, frequency, power factor, etc.; measurement of power quality parameters; load control functions; delivery, time, test, accounting, and recording functions; data communication interfaces and associated data security functions. The relevant standards for these functions may apply in addition to the requirements of this document. However, the requirements for such functions are outside the scope of this document.

NOTE 4 Product requirements for Power Metering and Monitoring Devices (PMDs) and measurement functions such as voltage magnitude, current magnitude, power, frequency, etc. are covered in IEC 61557-12. However, devices compliant with IEC 61557-12 are not intended to be used as billing meters unless they are also compliant with the IEC 62052-11:2020 and one or more relevant IEC 62053-xx particular requirements (accuracy class) standard.

NOTE 5 Product requirements for Power Quality Instruments (PQIs) are covered in IEC 62586-1. Requirements for power quality measurement techniques (functions) are covered in IEC 61000-4-30. Requirements for testing of the power quality measurement functions are covered in IEC 62586-2.

This International Standard also applies to transducer-operated meters or meters designed for operation with Low Power Instrument Transformers (LPIT) or sensors (as defined in the IEC 61869 series). These may be tested for compliance with this document only if such meters and their LPITs or sensors are tested together as directly connected meters.

When such equipment is designed to be installed in a specified matching socket, then the requirements apply to, and the tests shall be performed on, equipment installed in its specified matching socket. However, requirements for sockets and inserting / removing the meters from the socket are outside the scope of this document.

This document is also applicable to auxiliary input and output circuits, operation indicators, and test outputs of equipment for electrical energy measurement.

NOTE 6 Some examples include impulse inputs and outputs, control inputs and outputs, energy test outputs, and circuits for meter data exchange.

Equipment used in conjunction with equipment for electrical energy measurement and control may need to comply with additional safety requirements. See also Clause 13.

NOTE 7 Examples are telecommunication modems and customer information units.

This International Standard does not apply to:

- meters for which the voltage exceeds 1 000 V AC, or 1 500 V DC;
- metering systems comprising multiple devices physically remote from one another;
- portable meters;

NOTE 8 Portable meters are meters that are not permanently connected.

- meters used in rolling stock, vehicles, ships and airplanes;
- laboratory and mobile meter test equipment;
- reference standard meters;

NOTE 9 Nominal values, accuracy classes, requirements and test methods for reference standard meters are specified in IEC 62057-1: 13/1669/CD.

- conventional or low power instrument transformers.

NOTE 10 Safety of conventional power transformers and low power instrument transformers is covered in the IEC 61869 series of standards.

- equipment with solid-state or other non-electromechanical supply and load control switches

NOTE 11 For components and sub-assemblies, see Clause 13.

The safety requirements of this document are based on the following assumptions:

- metering equipment has been installed correctly;
- metering equipment is used generally by ordinary persons, including meter readers and consumers of electrical energy. In many cases, it is installed in a way that it is freely accessible. Its terminal covers cannot be removed, and its case cannot be opened without removing seals (if present) and using a tool;
- during normal use all terminal covers, covers and barriers providing protection against accessing hazardous live parts are in place;
- for installation, configuration, maintenance and repair it may be necessary to remove terminal cover(s), (a part of) the case or barriers so that hazardous live parts may become accessible. Such activities are performed by skilled persons, who have been suitably trained to be aware of working procedures necessary to ensure safety. Therefore, safety requirements covering these conditions are out of the Scope of this document.