



**SLOVENSKI STANDARD**  
**oSIST prEN IEC 62052-31:2023**  
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**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

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| 91.140.50 | Sistemi za oskrbo z elektriko             | Electricity supply systems                        |

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|---|---|
| IEC TC 13 : ELECTRICAL ENERGY MEASUREMENT AND CONTROL   |   |
| SECRETARIAT:<br>Hungary   | SECRETARY:<br>Mr Bela Bodi  |
| OF INTEREST TO THE FOLLOWING COMMITTEES:<br>TC 66,TC 85   | PROPOSED HORIZONTAL STANDARD:<br><input type="checkbox"/><br>Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary. |
| FUNCTIONS CONCERNED:<br><input type="checkbox"/> EMC <input type="checkbox"/> ENVIRONMENT <input type="checkbox"/> QUALITY ASSURANCE <input checked="" type="checkbox"/> SAFETY   |   |
| <input checked="" type="checkbox"/> SUBMITTED FOR CENELEC PARALLEL VOTING   | <input type="checkbox"/> NOT SUBMITTED FOR CENELEC PARALLEL VOTING  |
| <p><b>Attention IEC-CENELEC parallel voting</b></p> <p>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.</p> <p>The CENELEC members are invited to vote through the CENELEC online voting system.</p> |   |

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- 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**

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NOTE FROM TC/SC OFFICERS:

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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318

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

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**Part 31: Product safety requirements and tests**

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**FOREWORD**

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2) The formal decisions or agreements of 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 IEC National Committees.

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6) All users should ensure that they have the latest edition of this publication.

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7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.

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8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.

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

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

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

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

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

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

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

366 In this document, the following print types are used:

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

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

- 373 • reconfirmed,
- 374 • withdrawn,
- 375 • replaced by a revised edition, or
- 376 • amended.

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**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.**

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https://standards.iteh.ai/catalog/standards/sist/5135d895-c374-45db-b9e0-8537f3a8a1ed/osist-pren-iec-62052-31-2023](https://standards.iteh.ai/catalog/standards/sist/5135d895-c374-45db-b9e0-8537f3a8a1ed/osist-pren-iec-62052-31-2023)

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## INTRODUCTION

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

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

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

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

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

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

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

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

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

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

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

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

## Part 31: Product safety requirements and tests

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### 428 1 Scope and object

#### 429 1.1 Scope

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

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

436 This document applies to electricity metering equipment designed to:

- 437 • measure and control electrical energy on electrical networks (mains) with voltage up to  
438 1 000 V AC, or 1 500 V DC;

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

- 441 • have all functional elements, including add-on communication modules, enclosed in, or  
442 forming a single meter case with exception of indicating displays;  
<https://standards.iteh.ai/catalog/standards/sist/5135d895-c374-45db-b9e0->
- 443 • operate with integrated displays (electromechanical or static meters);
- 444 • operate with detached indicating displays, or without an indicating display (static meters  
445 only);
- 446 • wall-mounted or to be installed in specified matching sockets or racks;
- 447 • optionally, provide additional functions other than those for measurement of electrical  
448 energy.

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

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

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

461 This International Standard also applies to transducer-operated meters or meters designed for  
462 operation with Low Power Instrument Transformers (LPIT) or sensors (as defined in the IEC  
463 61869 series). These may be tested for compliance with this document only if such meters and  
464 their LPITs or sensors are tested together as directly connected meters.

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

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

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

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

475 NOTE 7 Examples are telecommunication modems and customer information units.

476 This International Standard does not apply to:

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

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

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

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

- 486 • conventional or low power instrument transformers.

487 NOTE 10 Safety of conventional power transformers and low power instrument transformers is covered in the IEC  
488 61869 series of standards.

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

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

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

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