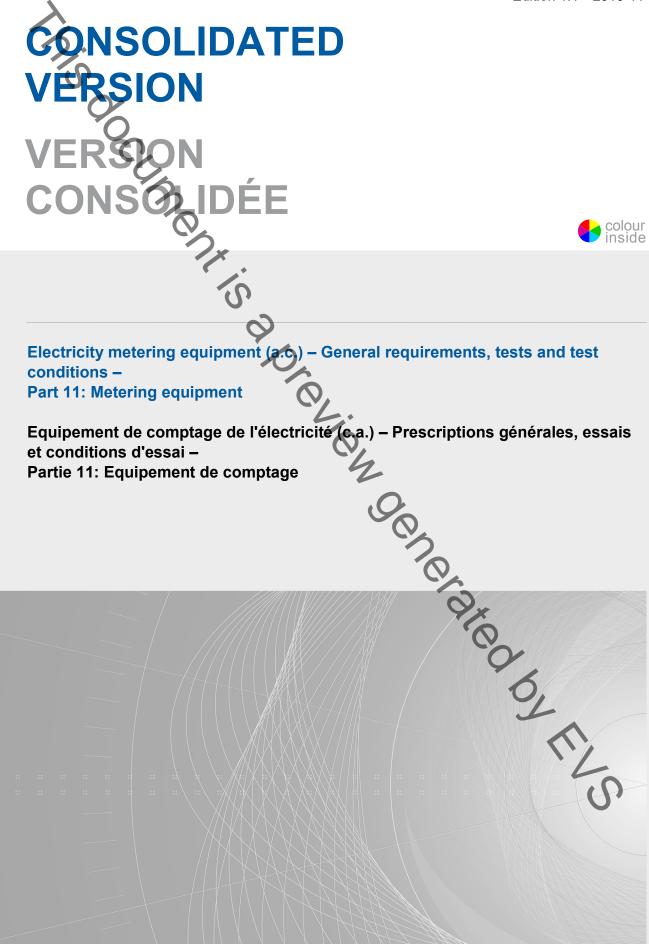


IEC 62052-11

Edition 1.1 2016-11





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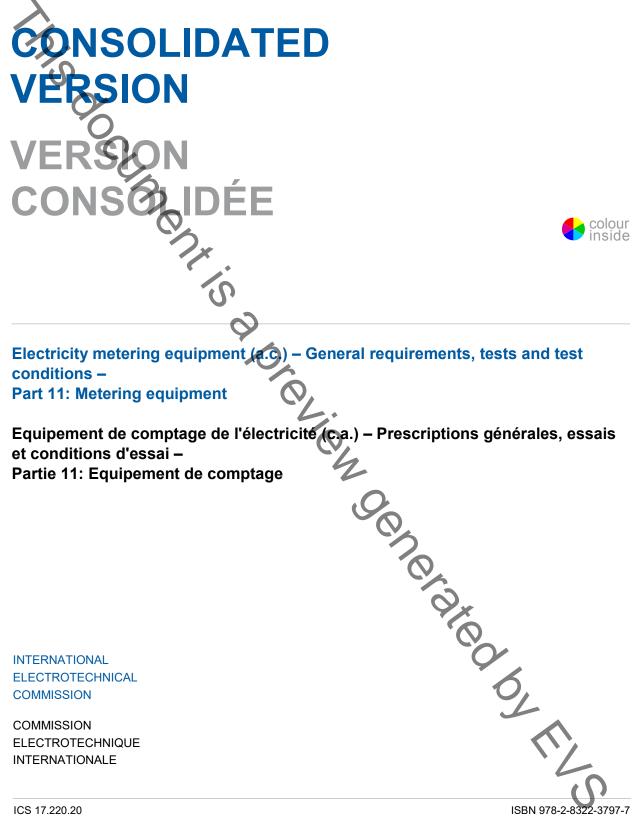
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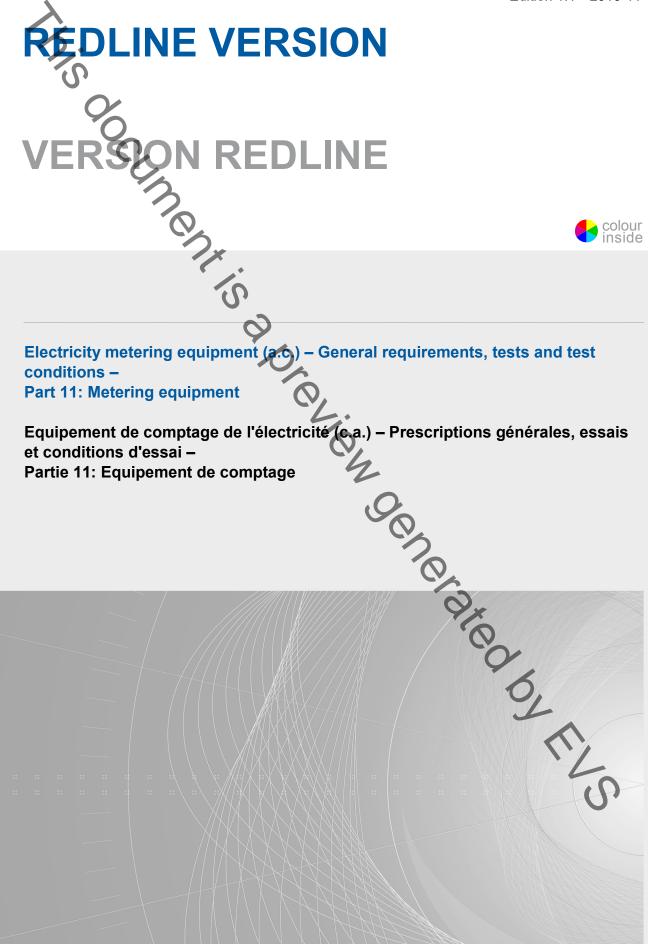
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This Consolidated version of IEC 62052-11 bears the edition number 1.1. It consists of the first edition (2003-02) [documents 13/1285/FDIS and 13/1292/RVD] and its amendment 1 (2016-11) [documents 13/1700/FDIS and 13/1714/RVD]. The technical content is identical to the base edition and its amendment.

In this Redline version, a vertical line in the margin shows where the technical content is modified by amendment 1. Additions are in green text, deletions are in strikethrough red text. A separate Final version with all changes accepted is available in this publication. IEC 62052-11:2003+AMD1:2016 CSV - 5 -© IEC 2016

International Standard IEC 62052-11 has been prepared by IEC technical committee 13: Equipment for electrical energy measurement and load control.

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

The committee has decided that the contents of the base publication and its amendment 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

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NOTE The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations may need a transitional period following publication of a new, amended or revised IEC publication in which to make products in accordance with the new requirements and to equip themselves for conducting new or revised tests.

It is the recommendation of the committee that the content of this publication be adopted for implementation nationally not earlier than 2 years from the date of publication.

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INTRODUCTION

This part of IEC 62052 is to be used with relevant parts of the IEC 62052, IEC 62053 and IEC 62059 series, Electricity metering equipment:

IEC 62052-31:2015, Electricity metering equipment (AC) – General requirements, tests and test conditions – Part 31: Product safety requirements and tests

IEC 62053-11:2002, *Electricity metering equipment (a.c.) – Particular requirements – Part 11: Electromechanical meters for active energy (classes 0,5, 1 and 2)* Replaces particular requirements of IEC 60521:1988 (2nd edition)

IEC 62053-21: 2002, Electricity metering equipment (a.c.) – Particular requirements – Part 21: Static meters for active energy (classes 1 and 2) Replaces particular requirements of IEC 61036: 2000 (2nd edition)

IEC 62053-22:2002, *Electricity metering equipment (a.c.) – Particular requirements – Part 22: Static meters for active energy (classes 0,2 S and 0,5 S)* Replaces particular requirements of IEC 60687:1992 (2nd edition)

IEC 62053-23:2002, *Electricity metering equipment (a.c.) – Particular requirements – Part 23: Static meters for reactive energy (classes 2 and 3)* Replaces particular requirements of IEC 61268:1995 (1st edition)

IEC 62053-24:2014, Electricity metering equipment (AC) – Particular requirements – Part 24: Static meters for reactive energy (classes 0,5 S, 1 S and 1)

IEC 62053-31:1998, Electricity metering equipment (a.c.) – Particular requirements – Part 31: Pulse output devices for electromechanical and electronic meters (two wires only)

IEC 62053-61:1998, Electricity metering equipment (a.c.) – Particular requirements – Part 61: Power consumption and voltage requirements

IEC 62059-11:2002, *Electricity metering equipment (a.c.)* Dependability – Part 11: General concepts

IEC 62059-21:2002, Electricity metering equipment (a.c.) Dependability – Part 21: Collection of meter dependability data from the field

This part is a standard for type testing electricity meters. It covers the general requirements for "normal meters", being used indoors and outdoors in large quantities worldwide. It does not deal with special implementations (such as metering-part and/or displays in separate housings).

This standard is intended to be used in conjunction with the appropriate part of IEC 62053 for the type of equipment under consideration.

This standard distinguishes between

- meters intended to be used indoors and outdoors; and
- protective class I and protective class II meters;
- meters for use in networks equipped with or without earth fault neutralizers.

The test levels are regarded as minimum values to guarantee the proper functioning of the meter under normal working conditions. For special application, other test levels might be necessary and should be agreed upon between the user and the manufacturer.

INTRODUCTION TO AMENDMENT 1

The purpose of this amendment is to identify and remove all safety related requirements and

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ELECTRICITY METERING EQUIPMENT (AC) – GENERAL REQUIREMENTS, TESTS AND TEST CONDITIONS –



Part 11: Metering equipment

This part of IEC 62052 covers type tests for electricity metering equipment for indoor and outdoor application and applies to newly manufactured equipment designed to measure the electrical energy on 50 Hz or 60 Hz networks, with a voltage up to 600 V.

It applies to electromechanical or static meters for indoor and outdoor application consisting of a measuring element and register(s) enclosed together in a meter case. It also applies to operation indicator(s) and test output(s). If the meter has a measuring element for more than one type of energy (multi-energy meters), or when other functional elements, such as maximum demand indicators, electronic tariff registers, time switches, ripple control receivers, data communication interfaces, etc. are enclosed in the meter case, then the relevant standards for these elements apply.

It does not apply to:

- a) portable meters;
- b) data interfaces to the register of the meter;
- c) reference meters.

For rack-mounted meters, the mechanical properties are not covered in this standard.

The safety aspect is covered by IEC 62052-31:2015.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60038:1983, *IEC standard voltages* Amendment 1:1994, Amendment 2:1997

IEC 60044-1:1996, Instrument transformers – Part 1: Current transformers

IEC 60044-2:1997, Instrument transformers – Part 2: Inductive voltage transformers

IEC 60050-300:2001, International Electrotechnical Vocabulary – Electrical and electronic measurements and measuring instruments – Part 311: General terms relating to measurements – Part 312: General terms relating to electrical measurements – Part 313: Types of electrical measuring instruments – Part 314: Specific terms according to the type of instrument

IEC 60060-1:1989, High-voltage test techniques – Part 1: General definitions and test requirements

IEC 62052-11:2003+AMD1:2016 CSV - 9 -© IEC 2016 IEC 60068-2-1:1990, *Environmental testing* - *Part 2: Tests* - *Tests A: Cold* Amendment 1:1993, Amendment 2:1994

IEC 60068-2-2:1974, Basic environmental testing procedures – Part 2: Tests – Tests B: Dry heat Amendment 1:1993, Amendment 2:1994

IEC 60068-2-5:1975, Basic environmental testing procedures – Part 2: Tests – Test Sa: Simulated solar radiation at ground level

IEC 60068-2-6:1995, Environmental testing – Part 2: Tests – Test Fc: Vibration (sinusoidal)

IEC 60068-2-11:1981, Basic environmental testing procedures – Part 2: Tests – Test Ka: Salt mist

IEC 60068-2-27:1987, Basic environmental testing procedures – Part 2: Tests – Test Ea and guidance: Shock

IEC 60068-2-30:1980, Basic environmental testing procedures – Part 2: Tests – Test Db and guidance: Damp heat, cyclic (12 + 12-hour cycle)

IEC 60068-2-75:1997, Environmental testing – Part 2-75: Tests – Test Eh: Hammer tests

IEC 60085:1984, Thermal evaluation and classification of electrical insulation

IEC 60359:2001, Electrical and electronic measurement equipment – Expression of performance

IEC 60387:1992, Symbols for alternating-current electricity meters

IEC 60417-2:1998, Graphical symbols for use on equipment – Part 2: Symbols originals

IEC 60529:1989, Degrees of protection provided by enclosures (IP Code) Amendment 1:1999

IEC 60695-2-11:2000, Fire hazard testing – Part 2-11: Glowing/hot wire based test methods – Glow-wire flammability test method for end-products

IEC 60721-3-3:1994, Classification of environmental conditions – Part 3: Classification of groups of environmental parameters and their severities – Section 3: Stationary use at weatherprotected locations Amendment 1:1995, Amendment 2:1996

IEC 61000-4-2:1995, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 2: Electrostatic discharge immunity test.* Basic EMC publication

IEC 61000-4-3:2002, Electromagnetic compatibility (EMC) – Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test

IEC 61000-4-4:1995, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 4: Electrical fast transient/burst immunity test.* Basic EMC publication

IEC 61000-4-5:1995, Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 5: Surge immunity test

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IEC 61000-4-6:1996, Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 6: Immunity to conducted disturbances, induced by radio-frequency fields

IEC 61000-4-12:1995, Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 12: Oscillatory waves immunity test. Basic EMC publication

IEC 62052 31:2015, Electricity metering equipment (AC) – General requirements, tests and test conditions – Part 31: Product safety requirements and tests

IEC 62053-31:1998, Electricity metering equipment (a.c.) – Particular requirements – Part 31: Pulse output devices for electromechanical and electronic meters (two wires only)

CISPR 22:1997, Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement Amendment 1:2000

ISO 75-2:1993, Plastics – Determination of temperature of deflection under load – Part 2: Plastic and ebonite

NOTE Some standards referenced in IEC 62052-11:2003 have been revised or replaced, but these changes will be considered in the full revision of this standard.

3 Terms and definitions

For the purposes of this International Standard, the following definitions apply.

Expression of the performance of electrical and electronic measuring equipment has been taken from IEC 60359.

Where there is a difference between the definitions in the glossary and those contained in product standards produced by TC 13, then the latter shall take precedence in applications of the relevant standard.

3.1 General definitions

3.1.1

electromechanical meter

meter in which currents in fixed coils react with the currents induced in the conducting moving element, generally (a) disk(s), which causes their movement proportional to the energy to be measured

3.1.2

static meter

meter in which current and voltage act on solid state (electronic) elements to produce an output proportional to the energy to be measured

3.1.3

watt-hour meter

instrument intended to measure active energy by integrating active power with respect to time

[IEV 301-06-01]

3.1.4

var-hour meter

instrument intended to measure reactive energy by integrating reactive power with respect to time