



BSI Standards Publication

Electricity metering equipment (AC) - General requirements, tests and test conditions

Part 11: Metering equipment

National foreword

This British Standard is the UK implementation of EN 62052-11:2003+A1:2017, incorporating corrigendum March 2018. It is identical to IEC 62052-11:2003, incorporating amendment 1:2016. It supersedes BS EN 62052-11:2003, which is withdrawn.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to IEC text carry the number of the IEC amendment. For example, text altered by IEC amendment A1 is indicated by A1 A1.

The UK participation in its preparation was entrusted to Technical Committee PEL/13, Electricity Meters.

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

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2018
Published by BSI Standards Limited 2018

ISBN 978 0 539 00548 6

ICS 17.220.20

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 25 June 2003.

Amendments/corrigenda issued since publication

Date	Text affected
31 July 2017	Implementation of IEC amendment 1:2016 with CENELEC endorsement A1:2017. Annex ZA updated.
31 October 2018	Implementation of IEC corrigendum March 2018: IEC Foreword added

**Electricity metering equipment (AC) -
General requirements, tests and test conditions
Part 11: Metering equipment
(IEC 62052-11:2003)**

Equipement de comptage
de l'électricité (CA) -
Prescriptions générales, essais
et conditions d'essai
Partie 11: Equipement de comptage
(CEI 62052-11:2003)

Wechselstrom-Elektrizitätszähler -
Allgemeine Anforderungen, Prüfungen
und Prüfbedingungen
Teil 11: Messeinrichtungen
(IEC 62052-11:2003)

This European Standard was approved by CENELEC on 2003-03-01. 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

European foreword

The text of document 13/1285/FDIS, future edition 1 of IEC 62052-11, prepared by IEC TC 13, Equipment for electrical energy measurement and load control, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 62052-11 on 2003-03-01.

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) 2003-12-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2006-03-01

Annexes designated "normative" are part of the body of the standard.

Annexes designated "informative" are given for information only.

In this standard, annexes A, B, C, D and ZA are normative and annexes E and F are informative.

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 62052-11:2003 was approved by CENELEC as a European Standard without any modification.

Foreword to amendment A1

The text of document 13/1700/FDIS, future IEC 62052-11:2003/A1, prepared by IEC/TC 13 "Electrical energy measurement and control" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62052-11:2003/A1:2017.

The following dates are fixed:

- latest date by which the document has to be implemented at (dop) 2017-09-30
national level by publication of an identical national
standard or by endorsement
- latest date by which the national standards conflicting with (dow) 2020-03-31
the document have to be withdrawn

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

Endorsement notice

The text of the International Standard IEC 62052-11:2003/A1:2016 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 62058-11

NOTE

Harmonized as EN 62058-11.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60038 (mod)	1983	IEC standard voltages ¹⁾	HD 472 S1 + corr. February	1989 2002
A1	1994		-	-
A2	1997		-	-
IEC 60044-1 (mod)	1996	Instrument transformers Part 1: Current transformers	EN 60044-1	1999
IEC 60044-2 (mod)	1997	Part 2: Inductive voltage transformers	EN 60044-2	1999
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	-	-

A1 Text deleted A1

IEC 60068-2-1	1990	Environmental testing Part 2: Tests - Tests A: Cold	EN 60068-2-1	1993
A1	1993		A1	1993
A2	1994		A2	1994
IEC 60068-2-2	1974	Part 2: Tests - Test B: Dry heat	EN 60068-2-2 ²⁾	1993
A1	1993		A1	1993
A2	1994		A2	1994

¹⁾ The title of HD 472 S1 is: Nominal voltages for low-voltage public electricity supply systems.

²⁾ EN 60068-2-2 includes supplement A:1976 to IEC 60068-2-2.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60068-2-5	1975	Part 2: Tests - Test Sa: Simulated solar radiation at ground level	EN 60068-2-5	1999
IEC 60068-2-6 + corr. March	1995 1995	Part 2: Tests - Test Fc: Vibration (sinusoidal)	EN 60068-2-6	1995
IEC 60068-2-11	1981	Part 2: Tests - Test Ka: Salt mist	EN 60068-2-11	1999
IEC 60068-2-27	1987	Part 2: Tests - Test Ea and guidance: Shock	EN 60068-2-27	1993
IEC 60068-2-30	1980	Part 2: Tests - Test Db and guidance: Damp heat, cyclic (12 + 12 hour cycle)	EN 60068-2-30 ³⁾	1999
[A ₁] Text deleted [A ₁]				
IEC 60085	1984	Thermal evaluation and classification of electrical insulation	HD 566 S1	1990
IEC 60359	2001	Electrical and electronic measurement equipment - Expression of performance	EN 60359	2002
IEC 60387	1992	Symbols for alternating-current electricity meters	EN 60387	1992
IEC 60417-2	1998	Graphical symbols for use on equipment Part 2: Symbol originals	EN 60417-2	1999
[A ₁] Text deleted [A ₁]				
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	EN 60721-3-3	1995
A1	1995		-	-
A2	1996		A2	1997
IEC 61000-4-2	1995	Electromagnetic compatibility (EMC) Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	EN 61000-4-2	1995

³⁾ EN 60068-2-30 includes A1:1985 to IEC 60068-2-30.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61000-4-3	2002	Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	EN 61000-4-3	2002
IEC 61000-4-4	1995	Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test	EN 61000-4-4	1995
IEC 61000-4-5	1995	Part 4-5: Testing and measurement techniques - Surge immunity test	EN 61000-4-5	1995
IEC 61000-4-6	1996	Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields	EN 61000-4-6	1996
IEC 61000-4-12	1995	Part 4-12: Testing and measurement techniques - Oscillatory waves immunity test	EN 61000-4-12	1995
A1 IEC 62052-31	2015	Electricity metering equipment (AC) - General requirements, tests and test conditions - Part 31: Product safety requirements and tests	EN 62052-31	2016 A1
IEC 62053-31	1998	Electricity metering equipment (a.c.) Particular requirements - Part 31: Pulse output devices for electromechanical and electronic meters (two wires only)	EN 62053-31	1998
CISPR 22 (mod)	1997	Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement	EN 55022 + corr. July	1998 2001
A1	2000		A1	2000
A1 Text deleted A1				

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

Part 11: Metering equipment

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 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

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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 4 years from the date of publication.

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:

- A1** IEC 62052-31:2015, *Electricity metering equipment (AC) – General requirements, tests and test conditions – Part 31: Product safety requirements and tests* **A1**
- 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)
- A1** IEC 62053-24:2014, *Electric metering equipment (AC) – Particular requirements – Part 24: Static meters for reactive energy (classes 0,5 S, 1 S and 1)* **A1**
- 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.

- A1** – meters for use in networks equipped with or without earth fault neutralizers. **A1**

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.

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

Part 11: Metering equipment

1 Scope

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*

 Text deleted 

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)*

 Text deleted 

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*

 Text deleted 

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*