



BSI Standards Publication

Electricity metering equipment (a.c.) - General requirements, tests and test conditions

Part 21: Tariff and load control equipment

National foreword

This British Standard is the UK implementation of EN 62052-21:2004+A1:2017, incorporating corrigendum March 2018. It is identical to IEC 62052-21:2004, incorporating amendment 1:2016. It supersedes BS EN 62052-21:2004, which is withdrawn.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 1 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.

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Amendments/corrigenda issued since publication

Date	Text affected
12 December 2005	Correction to supersession information
31 March 2017	Implementation of IEC amendment 1:2016 with CENELEC endorsement A1:2017
31 July 2018	Implementation of IEC corrigendum March 2018: IEC Foreword added

**Electricity metering equipment (a.c.) -
General requirements, tests and test conditions
Part 21: Tariff and load control equipment
(IEC 62052-21:2004)**

Equipement de comptage de l'électricité -
Prescriptions générales,
essais et conditions d'essai
Partie 21: Equipement de tarification et
contrôle de charge
(CEI 62052-21:2004)

Wechselstrom-Elektrizitätszähler -
Allgemeine Anforderungen,
Prüfungen und Prüfbedingungen
Teil 21: Einrichtungen für Tarif-
und Laststeuerung
(IEC 62052-21:2004)

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CENELEC

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

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Foreword

The text of document 13/1307/FDIS, future edition 1 of IEC 62052-21, 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 62052-21 on 2004-07-06.

This standard, in conjunction with EN 62054-11 and EN 62054-21, supersedes EN 61037:1992 (+ corrigendum December 1997) + A1:1996 + A2:1998 and EN 61038:1992 (+ corrigendum December 1997) + A1:1996 + A2:1998.

This standard is to be used in conjunction with the relevant parts of the EN 62054 and the EN 62059 series.

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) 2005-07-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2007-07-01

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and covers essential requirements of EC Directive(s). See Annex ZZ.

Annexes ZA, ZB and ZZ have been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 62052-21:2004 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60068-2-11	NOTE	Harmonized as HD 323.2.11 S1:1988(not modified).
IEC 62053-61	NOTE	Harmonized as EN 62053-61:1998(not modified).

Foreword to amendment A1

The text of document 13/1702/FDIS, future IEC 62052-21:2004/A1, prepared by IEC/TC 13 "Electrical energy measurement, tariff- and load control" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62052-21:2004/A1:2017.

The following dates are fixed:

- latest date by which the document has to be (dop) 2017-09-28
implemented at national level by
publication of an identical national
standard or by endorsement
- latest date by which the national (dow) 2019-12-28
standards conflicting with 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 62052-21:2004/A1:2016 was approved by CENELEC as a European Standard without any modification.

In the Bibliography of EN 62052-21:2004, the following note has to be **added** for the standard indicated:

IEC 62058-11:2008

NOTE Harmonized as EN 62058-11:2010.

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.

Delete:

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60060-1	1989	High-voltage test techniques -- Part 1: General definitions and test requirements	-	-
IEC 60068-2-75	1997	Environmental testing -- Part 2-75: Tests - Test Eh: Hammer tests	EN 60068-2-75	1997
IEC 60085	1984	Thermal evaluation and classification of electrical insulation	-	-
IEC 60529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529	1991
-	-		+ corrigendum May 1993	
IEC 60695-2-10	2000	Fire hazard testing -- Part 2-10: Glowing/hot-wire based test methods - Glow-wire apparatus and common test procedure	-	-
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	EN 60695-2-11	2001
ISO 75-2	-	Plastics - Determination of temperature of deflection under load -- Part 2: Plastics and ebonite	-	-

Addition:

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
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

Annex ZB (normative)

Special national conditions

Special national condition: National characteristic or practice that cannot be changed even over a long period, e.g. climatic conditions, electrical earthing conditions.

NOTE If it affects harmonization, it forms part of the European Standard.

For the countries in which the relevant special national conditions apply these provisions are normative, for other countries they are informative.

<u>Clause</u>	<u>Special national condition</u>
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7.4.4 United Kingdom

Replace the entire subclause by:

7.4.4 Short-circuit performance

7.4.4.1 Requirements

Short-time overcurrents shall not damage the output element. The output element shall still operate under specified conditions, the surroundings of the tariff and load control equipment shall not be endangered and protection against indirect contact shall be assured in all cases. The test circuit shall be practically non-inductive.

7.4.4.2 Test of short-circuit performance of the output element

The output element shall be able to carry a short-time overcurrent of 3 000 A rms with a relative tolerance of + 0% to - 10 % for one half-cycle. The test circuit shall be practically non-inductive. The open-circuit source voltage of the generator used for this test shall be $U_n + 5\%$ to $- 5\%$. This test shall be carried out with the switch closed and the contacts shall remain closed after the test overcurrent has been applied. The test is passed if the protection against indirect contact remains assured and if the output element can still be operated correctly after the test overcurrent has been applied.

Where the output element is incorporated into an integrated meter the meter shall still meet the requirements for influence of short-time overcurrents in the relevant standard for the meter, including where the switch contact is in the current circuit. For polyphase meters and switches the test shall be performed phase-by-phase.

NOTE The short-circuit test is not applicable to the low rating d.c. switch (30 V, 30 mA) and to load switches up to a rated breaking current of 2 A.

Annex ZZ (informative)

Coverage of Essential Requirements of EC Directives

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and within its scope the standard covers all relevant essential requirements as given in Article 4 of the EC Directive 89/336/EEC.

Compliance with this standard provides one means of conformity with the specified essential requirements of the Directive[s] concerned.

WARNING: Other requirements and other EC Directives may be applicable to the products falling within the scope of this standard.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTRICITY METERING EQUIPMENT (A.C.) –
GENERAL REQUIREMENTS, TESTS AND TEST CONDITIONS –****Part 21: Tariff and load control 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 62052-21 has been prepared by IEC technical committee 13: Equipment for electrical energy measurement and load control.

This standard is to be used in conjunction with the relevant parts of the IEC 62054 and the IEC 62059 series.

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 standard distinguishes between protective class I and protective class II tariff and load control equipment.

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

For information, the relevant parts of IEC 62052, IEC 62054 and IEC 62059 are listed:

IEC 62052-21 Electricity metering (a.c.) – General requirements, tests and test conditions – Part 21: Tariff and load control equipment

(Replaces the general requirements of IEC 61037 and IEC 61038.)

A1 IEC 62052-31:2015, *Electricity metering equipment (AC) – General requirements, tests and test conditions – Part 31: Product safety requirements and tests* **A1**

IEC 62054-11 Electricity metering (a.c.) – Tariff and load control – Part 11: Particular requirements for electronic ripple control receivers

(Replaces the particular requirements of IEC 61037.)

IEC 62054-21 Electricity metering (a.c.) – Tariff and load control – Part 21: Particular requirements for time switches¹

(Replaces the particular requirements of IEC 61038.)

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

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

IEC 62059-41 Electricity metering equipment (a.c.) – Dependability – Part 41: Reliability prediction²

¹ To be published.

² To be published.

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

Part 21: Tariff and load control equipment

1 Scope

This part of IEC 62052 specifies general requirements for the type test of newly manufactured indoor tariff and load control equipment, like electronic ripple control receivers and time switches that are used to control electrical loads, multi-tariff registers and maximum demand indicator devices.

This standard gives no requirements for constructional details internal to the tariff and load control equipment.

In the case where tariff and load control functionality is integrated into multifunction electricity metering equipment, the relevant parts of this standard apply.

This standard does not cover the acceptance tests and the conformity tests. Nevertheless, an example of what could be an acceptance test is given in Annex F.

A1 The safety aspect is covered by IEC 62052-31:2015. A1

The dependability aspect is covered by the documents of the IEC 62059 series.

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 60050-300:2001 *International Electrotechnical Vocabulary (IEV) – 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*

IEC 60068-2-2:1974, *Environmental testing – Part 2: Tests – Tests B: Dry heat*

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

IEC 60068-2-27:1987, *Environmental testing – Part 2: Tests – Test Ea and guidance: Shock*

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

A1 Text deleted A1

IEC 60269-3-1:1994, *Low-voltage fuses – Part 3-1: Supplementary requirements for fuses for use by unskilled persons (fuses mainly for household and similar applications) – Sections I to IV*

IEC 60417-2:1998, *Graphical symbols for use on equipment – Part 2: Symbol originals*
Amendment 1(2000)

 *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 weather protected locations*

IEC 61000-4-2:1995, *Electromagnetic compatibility (EMC) – Part 4-2: Testing and measurement techniques – 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 4-5: Testing and measurement techniques – Surge immunity test*

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

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

IEC 62054-11, *Electricity metering (a.c.) – Tariff and load control equipment – Part 11: Particular requirements for electronic ripple control tariff and load control equipment*³

IEC 62054-21, *Electricity metering (a.c.)– Tariff and load control equipment – Part 21: Particular requirements for time switches*³

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

 *Text deleted* 

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 document, the following definitions, together with those of IEC 60050-300, apply.

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 To be published.