

English version

**Electricity metering (a.c.) –
Tariff and load control
Part 11: Particular requirements for
electronic ripple control receivers
(IEC 62054-11:2004)**

Equipement de comptage d'électricité
(c.a.) –
Tarification et contrôle de charge
Partie 11: Prescriptions particulières
pour récepteurs électroniques de
télécommande centralisée
(CEI 62054-11:2004)

Wechselstrom-Elektrizitätszähler –
Tarif- und Laststeuerung
Teil 11: Besondere Anforderungen
an elektronische Rundsteuerempfänger
(IEC 62054-11:2004)

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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.

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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 13/1306/FDIS, future edition 1 of IEC 62054-11, 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 62054-11 on 2004-07-06.

This standard, in conjunction with EN 62052-21, supersedes EN 61037:1992 + A1:1996 + A2:1998.

This standard is to be used in conjunction with EN 62052-21 and the relevant parts of 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) 2005-05-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2007-07-01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 and ZZ have been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 62054-11:2004 was approved by CENELEC as a European Standard without any modification.

Corrigendum to text of IEC 62054-11:2004

In subclause 7.6.4,

- **replace** "Field strength of the unmodulated signal: 10 V/m" by "At field strength of 10 V/m (measured according to EN 61000-4-3)".
 - **replace** "Field strength of the unmodulated signal: 30 V/m" by "At field strength of 30 V/m (measured according to EN 61000-4-3)".
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Foreword to amendment A1

The text of document 13/1697/FDIS, future IEC 62054-11:2004/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 62054-11:2004/A1:2017.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2017-09-23
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2019-12-23

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 62054-11:2004/A1:2016 was approved by CENELEC as a European Standard without any modification.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE Where an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 62052-21	2004	Electricity metering equipment (AC) - General requirements, tests and test conditions Part 21: Tariff and load control equipment	EN 62052-21	- ¹⁾
IEC 62052-21	2004	Electricity metering equipment (a.c.) - General requirements, tests and test conditions - Part 21: Tariff and load control equipment	EN 62052-21	2004
+A1	2016		+A1	2017
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 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.

¹⁾ To be published.

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INTRODUCTION

This standard distinguishes between protective class I and protective class II equipment

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

Ripple control receivers are components of a system of remote control permitting the simultaneous operation of a large number of receivers from a central point. The signal generally used for this purpose is an audio-frequency voltage superimposed on the mains frequency and coded in the form of pulses, which can provide a multiplicity of control functions. Other types of signals, such as frequency modulation, deformation of the mains frequency, etc. may also be used. These signals are propagated through the electricity supply network, from the injection point to the receiver sites.

Some characteristics of such systems, for example, the value of the frequency or the method of coding, are not standardized here.

To facilitate the application of this standard the following principles should be applied.

- 1) The requirements of this standard are not limiting. If it is absolutely unavoidable, a user can add additional technical requirements in his specification.

The technical requirements and tests relate to the general functioning of the receiver. The method of operation of the functional elements is not specified. These requirements and tests may, however, be the subject of additional technical agreements.

- 2) Ripple control systems are auxiliary equipment for network operation. Their design is determined by the network characteristics and other factors. At the present time rapid development of power electronic equipment is leading to a parallel increase in the amount of harmonic distortion in the supply voltage. The harmonic levels indicated in this standard take account of this development. They are not to be considered as values that could be regarded as permissible on the network but as recommended values for designing and testing receivers. These recommended levels could be adapted to particular characteristics of networks under consideration.

Receivers designed for use with transmitters already in operation and having a control frequency equal, or very close, to a harmonic, need not conform to the whole of the requirements of this standard.

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

IEC 62052-21 Electricity metering equipment (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 62052-21:2004, *Electricity metering equipment (AC) – General requirements, tests and test conditions – Part 21: Tariff and load control equipment*
Amendment 1 (2016)

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 – 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 – Tariff and load control – Part 21: Particular requirements for time switches

(Replaces the particular requirements of IEC 61038.)

- IEC 62059-11 Electricity metering equipment – Dependability – Part 11: General concepts
- IEC 62059-21 Electricity metering equipment – Dependability – Part 21: Collection of meter dependability data from the field
- IEC 62059-41 Electricity metering equipment – Dependability – Part 41: Reliability prediction¹

¹ To be published.

ELECTRICITY METERING (AC) – TARIFF AND LOAD CONTROL –

Part 11: Particular requirements for electronic ripple control receivers

1 Scope

This part of IEC 62054 specifies particular requirements for the type test of newly manufactured indoor electronic ripple control receivers for the reception and interpretation of pulses of a single audio frequency superimposed on the voltage of the electricity distribution network and for the execution of the corresponding switching operations. In this system the mains frequency is generally used to synchronize the transmitter and receivers. Neither the control frequency nor the encoding are standardized in this standard.

This standard gives no requirements for constructional details internal to the receiver.

In the case where ripple control functionality is integrated in 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 D.

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.

When using this standard in conjunction with IEC 62052-21, the requirements of this standard take precedence over those of IEC 62052-21 with regard to any item already covered in it.

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 62052-21, *Electricity metering equipment (a.c.) – General requirements, tests and test conditions – Part 21: Tariff and load control equipment*²

A1 IEC 62052-21:2004, *Electricity metering equipment (AC) – General requirements, tests and test conditions – Part 21: Tariff and load control equipment*
Amendment 1 (2016)

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

3 Terms and definitions

For the purposes of this document, the definitions of IEC 62052-21 apply.

4 Standard electrical values

The values given in IEC 62052-21 apply.

² To be published