

**Elektri mõõteseadmed (vahelduvvool). Tarbimise ja koormuse kontrollimise seadmed. Osa 11:  
Erinõuded elektroonilistele pulsatsioonivasturitele**

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

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 62054-11:2004 sisaldab Euroopa standardi EN 62054-11:2004 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 14.12.2004 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 28.10.2004.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN 62054-11:2004 consists of the English text of the European standard EN 62054-11:2004.

This standard is ratified with the order of Estonian Centre for Standardisation dated 14.12.2004 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

Date of Availability of the European standard text 28.10.2004.

The standard is available from Estonian standardisation organisation.

ICS 91.140.50

Võtmesõnad:

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Aru 10 Tallinn 10317 Eesti; [www.evs.ee](http://www.evs.ee); Telefon: 605 5050; E-post: [info@evs.ee](mailto:info@evs.ee)

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)

This European Standard was approved by CENELEC on 2004-07-06. 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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, 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**

## 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.

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## 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)".
-

## 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	- <sup>1)</sup>

## 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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<sup>1)</sup> To be published.

# INTERNATIONAL STANDARD

**IEC**  
**62054-11**

First edition  
2004-05

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**Electricity metering (a.c.) –  
Tariff and load control –**

**Part 11:  
Particular requirements for  
electronic ripple control receivers**



Reference number  
IEC 62054-11:2004(E)

## Publication numbering

As from 1 January 1997 all IEC publications are issued with a designation in the 60000 series. For example, IEC 34-1 is now referred to as IEC 60034-1.

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The IEC is now publishing consolidated versions of its publications. For example, edition numbers 1.0, 1.1 and 1.2 refer, respectively, to the base publication, the base publication incorporating amendment 1 and the base publication incorporating amendments 1 and 2.

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# INTERNATIONAL STANDARD

**IEC**  
**62054-11**

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## **Electricity metering (a.c.) – Tariff and load control –**

### **Part 11: Particular requirements for electronic ripple control receivers**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTRICITY METERING (AC) –  
TARIFF AND LOAD CONTROL –****Part 11: Particular requirements for electronic ripple  
control receivers**

## 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 62054-11 has been prepared by IEC technical committee 13: Equipment for electrical energy measurement and load control. This standard, in conjunction with IEC 62052-21, cancels and replaces IEC 61037:1990, *Electricity metering – Tariff and load control – Particular requirements for electronic ripple control receivers*.

This standard is to be used in conjunction with IEC 62052-21 and the relevant parts of the IEC 62059 series.

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

FDIS	Report on voting
13/1306/FDIS	13/1315/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

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

The committee has decided that the contents of this publication will remain unchanged until 2013. At this date, the publication will be

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

A bilingual version of this publication may be issued at a later date.

## 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.)*

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 prediction<sup>1</sup>

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<sup>1</sup> 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.

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* <sup>2</sup>

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