IEC 62054-11

Edition 1.1 2016-11

CONSOLIDATED VERSION

colour inside

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

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ICS 91.140.50

ISBN 978-2-8322-3767-0

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REDLINE VERSION

colour inside

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



IEC 62054-11:2004-05+AMD1:2016-11 CSV(en)

CONTENTS

FOREWORD 3
INTRODUCTION 5
INTRODUCTION TO AMENDMENT 1 6
1 Scope 7
2 Normative references 7
3 Terms and definitions 7
4 Standard electrical values 8
5 Mechanical requirements and tests 8
5.1 Operation status indicator 8
6 Climatic conditions, requirements and tests 8
7 Electrical requirements and tests 8
7.1 Supply voltage 8
7.2 Heating 9
7.3 Insulation 9
7.4 Output elements 9
7.5 Functional requirements and tests – Control performance 9
7.6 Electromagnetic compatibility (EMC) 11
7.7 Radio interference suppression 17
8 Test conditions and type test 17
Annex A (normative) Harmonic levels for testing ripple control receivers 18
Annex B (normative) Selection of frequency for tests with harmonics 19
Annex C (normative) Combination of parameters for operation and non-operation tests 20
Annex D (informative) Acceptance tests 21
Annex E (informative) Code terms 22
Annex F (informative) Example of a test configuration for operation and non-operation tests and for measurement of disturbance-limit curves 23
Annex G (informative) Values of the influence quantities for the different tests 24

Figure B.1 – Examples for selection of the frequency H_C 19
Figure B.2 – Frequency deviations for measurement of the disturbance-limit curves 19
Figure F.1 – Test configuration 23

Table A.1 – Recommended values for 50 Hz networks 18
Table C.1 – Combination of parameters 20

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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ELECTRICITY METERING (AC) – TARIFF AND LOAD CONTROL –

Part 11: Particular requirements for electronic ripple control receivers

FOREWORD

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DISCLAIMER
This Consolidated version is not an official IEC Standard and has been prepared for user convenience. Only the current versions of the standard and its amendment(s) are to be considered the official documents.

This Consolidated version of IEC 62054-11 bears the edition number 1.1. It consists of the first edition (2004-05) [documents 13/1306/FDIS and 13/1315/RVD] and its amendment 1 (2016-11) [documents 13/1697/FDIS and 13/1711/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.

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.

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.

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

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.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

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 62052-21:2004, *Electricity metering equipment (AC) – General requirements, tests and test conditions – Part 21: Tariff and load control equipment* ~~*(Replaces the general requirements of IEC 61037 and IEC 61038.)*~~
Amendment 1 (2016)

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 – 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*[1]

INTRODUCTION TO AMENDMENT 1

The purpose of this amendment is to identify and remove all safety related requirements and tests of IEC 62054-11:2004 that are replaced and extended by the complete set of requirements and tests in IEC 62052-31:2015.

[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.

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

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

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 62052-21:2004, *Electricity metering equipment (AC) – General requirements, tests and test conditions – Part 21: Tariff and load control equipment*~~[2]~~
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~~[2] To be published~~

IEC 62054-11

Edition 1.1 2016-11

FINAL VERSION

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

FOREWORD 3
INTRODUCTION 5
INTRODUCTION TO AMENDMENT 1 6
1 Scope 7
2 Normative references 7
3 Terms and definitions 7
4 Standard electrical values 7
5 Mechanical requirements and tests 8
5.1 Operation status indicator 8
6 Climatic conditions, requirements and tests 8
7 Electrical requirements and tests 8
7.1 Supply voltage 8
7.2 Heating 9
7.3 Insulation 9
7.4 Output elements 9
7.5 Functional requirements and tests – Control performance 9
7.6 Electromagnetic compatibility (EMC) 11
7.7 Radio interference suppression 16
8 Test conditions and type test 16
Annex A (normative) Harmonic levels for testing ripple control receivers 17
Annex B (normative) Selection of frequency for tests with harmonics 18
Annex C (normative) Combination of parameters for operation and non-operation tests 19
Annex D (informative) Acceptance tests 20
Annex E (informative) Code terms 21
Annex F (informative) Example of a test configuration for operation and non-operation tests and for measurement of disturbance-limit curves 22
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