Irish Standard
I.S. EN 62059-32-1:2012

Electricity metering equipment - Dependability -- Part 32-1: Durability - Testing of the stability of metrological characteristics by applying elevated temperature (IEC 62059-32-1:2011 (EQV))

I.S. EN 62059-32-1:2012

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English version

Electricity metering equipment - Dependability - Part 32-1: Durability - Testing of the stability of metrological characteristics by applying elevated temperature

(IEC 62059-32-1:2011)

Appareils de comptage d'électricité - Sûreté de fonctionnement - Partie 32-1: Durabilité - Contrôle de stabilité des caractéristiques métrologiques en appliquant une température élevée
(CEI 62059-32-1:2011)

Elektrizitätszähler - Zuverlässigkeit - Teil 32-1: Haltbarkeit - Prüfung der Stabilität der metrologischen Eigenschaften unter Anwendung erhöhter Temperatur
(IEC 62059-32-1:2011)

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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 13/1483/FDIS, future edition 1 of IEC 62059-32-1, 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 62059-32-1:2012.

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)	2012-10-11
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2015-01-11

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.

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directive(s) see informative Annex ZZ, which is an integral part of this document.

Endorsement notice

The text of the International Standard IEC 62059-32-1:2011 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 62053-11:2003	NOTE	Harmonized as EN 62053-11:2003 (not modified).
IEC 62053-22:2003	NOTE	Harmonized as EN 62053-22:2003 (not modified).
IEC 62053-23:2003	NOTE	Harmonized as EN 62053-23:2003 (not modified).
IEC 62055-31:2005	NOTE	Harmonized as EN 62055-31:2005 ((not modified).

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

Publication	Year	Title	EN/HD	Year
IEC 60068-2-2	2007	Environmental testing - Part 2-2: Tests - Test B: Dry heat	EN 60068-2-2	2007
IEC 62052-11	2003	Electricity metering equipment (AC) - General requirements, tests and test conditions - Part 11: Metering equipment	EN 62052-11	2003
IEC 62053-21	2003	Electricity metering equipment (a.c.) - Particular requirements - Part 21: Static meters for active energy (classes 1 and 2)	EN 62053-21	2003

Annex ZZ
(informative)

Coverage of Essential Requirements of EU Directives

This European Standard has been prepared under the mandate M/374 given to CENELEC by the European Commission and within its scope, this part 32-1 of EN 62059 specifies a method for testing the stability of metrological characteristics of electricity meters, suitable for verification of conformity with the durability requirements.

The standard covers the Essential Requirement 5, *Durability,* Annex I of the Directive 2004/22/EC of the European Parliament and of the council of 31 March 2004 on measuring instruments (MID):

“A measuring instrument shall be designed to maintain an adequate stability of its metrological characteristics over a period of time estimated by the manufacturer, provided that it is properly installed, maintained and used according to the manufacturer's instruction when in the environmental conditions for which it is intended.”

Compliance with this standard provides one means of conformity with the specified essential requirements of the Directives concerned.

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

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTRICITY METERING EQUIPMENT – DEPENDABILITY –

Part 32-1: Durability – Testing of the stability of metrological characteristics by applying elevated temperature

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 62059-32-1 has been prepared by IEC technical committee 13: Electrical energy measurement, tariff- and load control.

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

FDIS	RVD
13/1483/FDIS	13/1493/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.

A list of all parts of IEC 62059 series, under the general title *Electricity metering equipment – Dependability*, can be found on the IEC website.

The committee has decided that the contents of this publication 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.

INTRODUCTION

Electricity meters are products designed for high reliability and durability to operate continuously for extended periods without supervision.

To manage metering assets effectively, it is important to have tools for predicting and estimating life characteristics of various types.

IEC 62059-41 provides methods for predicting the failure rate – assumed to be constant – of metering equipment, based on the parts stress method.

IEC 62059-31-1 provides a method for estimating life characteristics using accelerated reliability testing by operating the test specimens at elevated temperature and humidity. Future parts of IEC 62059-31 may be established to cover accelerated reliability testing, applying other stresses.

This standard, IEC 62059-32-1 provides a test method to evaluate one important aspect of durability, the stability of metrology characteristics, by operating a test specimen at the upper limit of the specified operating range of temperature, voltage and current for an extended period. Future parts of IEC 62059-32 may be established to cover other kinds of stress or other aspects of durability.

ELECTRICITY METERING EQUIPMENT – DEPENDABILITY –

Part 32-1: Durability – Testing of the stability of metrological characteristics by applying elevated temperature

1 Scope

The stability of metrological characteristics is one important aspect of durability.

This part of IEC 62059 specifies a method for testing the stability of metrological characteristics of electricity meters, by operating a test specimen at the upper limit of the specified operating range of temperature, voltage and current for an extended period.

Functional performance other than the accuracy of energy measurement is out of the scope of this standard.

Note, that from the results of this test, no conclusion can be drawn for the length of period during which the stability of the metrological characteristics will be maintained when the meter is operated under usual conditions.

This International Standard is applicable to all types of electricity meters in the scope of IEC TC 13.

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 60068-2-2:2007, *Environmental testing – Part 2-2: Tests – Test B: Dry heat*

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

IEC 62053-21:2003, *Electricity metering equipment (a.c.) – Particular requirements – Part 21: Static meters for active energy (classes 1 and 2)*

3 Terms and definitions

For the purposes of this document, the terms and definitions in IEC 62052-11 as well as the following apply.

3.1
durability
the ability of an item to perform a required function under given conditions of use and maintenance, until a limiting state is reached

NOTE A limiting state of an item may be characterized by the end of the useful life, unsuitability or any economic or technological reasons or other relevant factors.