IEC 62052-11

Edition 1.0 2016-11

INTERNATIONAL STANDARD

NORME INTERNATIONALE

AMENDMENT 1
AMENDEMENT 1

Electricity metering equipment (a.c.) – General requirements, tests and test conditions –
Part 11: Metering equipment

Equipement de comptage de l'électricité (c.a.) – Prescriptions générales, essais et conditions d'essai –
Partie 11: Equipement de comptage

IEC 62052-11:2003-02/AMD1:2016-11(en-fr)

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FOREWORD

This amendment has been prepared by IEC technical committee 13: Electrical energy measurement and control.

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

FDIS	Report on voting
13/1700/FDIS	13/1714/RVD

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

The committee has decided that the contents of this amendment and the base 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- withdrawn,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.

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.

The contents of the corrigendum of March 2018 have been included in this copy.

INTRODUCTION TO AMENDMENT 1

The purpose of this amendment is to identify and remove all safety related requirements and tests of IEC 62052-11:2003 that are replaced and extended by the complete set of requirements and tests in IEC 62052-31:2015.

Introduction

Add the following items to the list of standards:

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

IEC 62053-24:2014, *Electricity metering equipment (AC) – Particular requirements – Part 24: Static meters for reactive energy (classes 0,5 S, 1 S and 1)*

Add the following third item after the two existing dashed items:

– meters for use in networks equipped with or without earth fault neutralizers.

1 Scope

At the end of the clause, add the following:

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

2 Normative references

Add the following standard:

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

Remove the following standards:

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*

IEC 60085:1984, *Thermal evaluation and classification of electrical insulation*

IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)* Amendment 1:1999

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*

ISO 75-2:1993, *Plastics – Determination of temperature of deflection under load – Part 2: Plastic and ebonite*

Add the following note:

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

3.2 Definitions related to the functional elements

3.2.8
auxiliary circuit

Replace the existing definition by:

See IEC 62052-31:2015, 3.5.11.

3.3 Definitions of mechanical elements

3.3.1
indoor meter

Replace the existing definition by:

See IEC 62052-31:2015, 3.2.11.

3.3.2
outdoor meter

Replace the existing definition by:

See IEC 62052-31:2015, 3.2.12.

3.3.5
case

Replace the existing definition by:

See IEC 62052-31:2015, 3.2.5.

3.3.6
accessible conductive part

Replace the existing definition by:

See IEC 62052-31:2015, 3.5.1.

3.3.7
protective earth terminal

Replace the existing definition by:

See IEC 62052-31:2015, 3.2.8 (protective conductor terminal).

3.3.9
terminal cover

Replace the existing definition by:

See IEC 62052-31:2015, 3.2.6.

Delete the following two definitions:

3.3.10
clearance

3.3.11
creepage distance

3.4 Definitions related to insulation

Replace the existing definitions 3.4.1 to 3.4.6 by:

See IEC 62052-31:2015, 3.6.

3.7 Definition of tests

3.7.1
type test

Add the following at the end of the definition:

See also IEC 62052-31:2015, 3.4.1.

5 Mechanical requirements and tests

5.1 General mechanical requirements

Replace the first paragraph and the dashed items by the following:

Meters shall be designed and constructed in such a way as to avoid introducing any danger in normal use and under normal conditions, so as to ensure especially:

- protection against electrical shock, see IEC 62052-31:2015, Clause 6;
- protection against mechanical hazards and stresses, see IEC 62052-31:2015, Clauses 7 and 8;
- protection against spread of fire, see IEC 62052-31:2015, Clause 9;
- personal safety against effects of excessive temperature, see IEC 62052-31:2015, Clause 10;
- protection against penetration of dust and water, see IEC 62052-31:2015, Clause 11;
- protection against liberated gases and substances, explosion and implosion, see IEC 62052-31:2015, Clause 12.

5.2 Case

5.2.1 Requirements

Delete the penultimate paragraph.

5.2.2 Mechanical tests

5.2.2.1 Spring hammer test

Replace the existing text by:

The test shall be performed as part of safety testing as specified in IEC 62052-31:2015, 8.2.

5.4 Terminals – Terminal block(s) – Protective earth terminal

Replace the existing text by:

See IEC 62052-31:2015, 6.5.2, 6.9.5 and 6.9.7.

5.5 Terminal cover(s)

Replace the existing text by:

See IEC 62052-31:2015, 6.9.4.

5.6 Clearance and creepage distances

Replace the existing text by:

See IEC 62052-31:2015, 6.7.

5.7 Insulating encased meter of protective class II

Replace the existing text by:

See IEC 62052-31:2015:

- 3.6.8, (Protective) class II equipment;
- 5.4.5.1, Protective class and earthing;
- 6.5.2, Protective bonding;
- 6.8, Insulation requirements between circuits and parts, and Annex B, Examples for insulation between parts;
- 6.9.2, Insulating materials.

5.8 Resistance to heat and fire

Replace the existing text by:

See IEC 62052-31:2015, Clause 9.

5.9 Protection against penetration of dust and water

Replace the existing text by:

See IEC 62052-31:2015, Clause 11.

5.12 Marking of meter

At the beginning of the subclause, add the following:

This subclause shall be read together with IEC 62052-31:2015, Clause 5.

For metrology related markings, the existing text applies. For safety related markings, IEC 62052-31:2015, Clause, 5 applies.

6.1 Temperature range

At the beginning of the subclause, add the following:

This subclause shall be read together with IEC 62052-31:2015, 1.4.1, 1.4.2 and 1.4.3.

6.2 Relative humidity

Replace the existing text by:

The meter shall be designed to withstand the climatic conditions specified in IEC 62052-31:2015, 1.4.1 c), 1.4.2 c) and 1.4.3. For a combined temperature and humidity test, see 6.3.3 (of IEC 62052-11).

7 Electrical requirements

7.2 Heating

Keep the first paragraph.

Replace the other four paragraphs by:

For equipment temperature limits and resistance to heat, see IEC 62052-31:2015, Clause 10.

7.3 Insulation

Replace the second paragraph by:

The meter shall meet the requirements and shall pass the tests specified in IEC 62052-31:2015, 6.7, 6.8 and 6.10.

Delete subclauses 7.3.1, 7.3.2 and 7.3.3.

7.4 Immunity to earth fault

At the end of the subclause, add the following:

See also IEC 62052-31:2015, 6.10.3.2.

Annex A
(normative)

Relationship between ambient air temperature and relative humidity

Replace the existing text and Figure A.1 by:

See IEC 62052-31:2015, 1.4.1 c) and 1.4.2 c).

Annex F
(informative)

Test schedule – Recommended test sequences

Replace the existing table by the following new table:

Nr.	Tests	Subclause	Electro-mechanical meters	Electronic meters
1	Tests of insulation properties			
1.1	To be performed as part of safety testing, as specified in IEC 62052-31:2015, 6.10.	7.3	X	X
2	Tests of accuracy requirements			
2.1	Test of meter constant		X	X
2.2	Test of starting condition		X	X
2.3	Test of no-load condition		X	X
2.4	Test of influence quantities		X	X
3	Tests of electrical requirements			
3.1	Test of power consumption		X	X
3.2	Test of influence of supply voltage	7.1.2		X
3.3	Test of influence of short-time overcurrents: See the relevant standards specifying particular requirements		X	X
3.4	Test of influence of self-heating: See the relevant standards specifying particular requirements		X	X
3.5	Test of influence of heating: To be performed as part of safety testing, as specified in IEC 62052-31:2015, Clause 10.	7.2	X	X
3.6	Test of immunity to earth fault	7.4	X	X
4	Tests for electromagnetic compatibility (EMC)			
4.1	Radio interference suppression	7.5.8		X
4.2	Fast transient burst test	7.5.4		X
4.3	Damped oscillatory waves immunity test	7.5.7		X
4.4	Test of immunity to electromagnetic RF fields	7.5.3		X
4.5	Test of immunity to conducted disturbances, induced by radio-frequency fields	7.5.5		X
4.6	Test of immunity to electrostatic discharges	7.5.2		X
4.7	Surge immunity test	7.5.6		X
5	Tests of the effect of the climatic environments			
5.1	Dry heat test	6.3.1	X	X
5.2	Cold test	6.3.2	X	X
5.3	Damp heat, cyclic test	6.3.3	X	X
5.4	Solar radiation test	6.3.4	X	X
6	Mechanical tests			
6.1	Vibration test	5.2.2.3	X	X
6.2	Shock test	5.2.2.2	X	X
6.3	Spring hammer test: To be performed as part of safety testing, as specified in IEC 62052-31:2015, 8.2.	5.2.2.1	X	X