IEC 62052-21

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 21: Tariff and load control equipment

Équipement de comptage d'électricité (c.a.) – Prescriptions générales, essais et conditions d'essai – Partie 21: Equipement de tarification et de contrôle de charge

IEC 62052-21:2004-05/AMD1:2016-11(en-fr)

IEC Central Office
3, rue de Varembé
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
info@iec.ch
www.iec.ch

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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
13/1702/FDIS	13/1716/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- withdrawn,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 62052-21:2004 that are replaced and extended by the complete set of requirements and tests in IEC 62052-31:2015.

In addition, Annex F has been amended to refer to IEC 62058-11:2008 instead of IEC 60410 which has been withdrawn.

Introduction

Add the following 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*

1 Scope

Add the following after the fourth paragraph:

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)*

IEC 60695-2-10:2000, *Fire hazard testing – Part 2-10: Glowing/hot-wire based test methods – Glow-wire apparatus and common test procedures*

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

3.5 Definitions related to the output elements

3.5.6
rated breaking voltage

Replace the existing definition by:

See IEC 62052-31:2015, 6.9.8.2.2.

3.5.7
rated breaking current

Replace the existing definition by:

See IEC 62052-31:2015, 3.7.8, (breaking current) and 3.7.9, (breaking capacity).

3.5.8
maximum total current

Replace the existing definition by:

See IEC 62052-31:2015, 3.7.5.

3.6 Definitions of mechanical elements

3.6.4
case

Replace the existing definition by:

See IEC 62052-31:2015, 3.2.5.

3.6.5
accessible conductive part

Replace the existing definition by:

See IEC 62052-31:2015, 3.5.1.

3.6.6
protective earth terminal

Replace the existing definition by:

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

3.6.8
terminal cover

Replace the existing definition by:

See IEC 62052-31:2015, 3.2.6.

Delete the following two definitions:

3.6.9
clearance

3.6.10
creepage distance

3.7 Definitions of insulations

Replace the existing definitions 3.7.1 to 3.7.6 by:

See IEC 62052-31:2015, 3.6.

3.9 Definition of tests

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:

Tariff and load control equipment 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.

Add the the following at the end of the last paragraph:

See also IEC 62052-31:2015, 6.5.2.2, 6.9.1 and 6.9.7.3.

5.2 Case

5.2.1 Requirements

Delete the last 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 tariff and load control equipment 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 tariff and load control equipment

At the beginning of the subclause, add the following:

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

For tariff and load control 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:

Tariff and load control equipment 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 62052-21).

7.2 Heating

7.2.1 Requirements

Keep the first paragraph.

Replace the last two paragraphs by:

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

7.2.2 Test

Replace the existing text by:

See IEC 62052-31:2015, 10.4.

7.3 Insulation

Replace the second sentence by:

Tariff and load control equipment shall meet the requirements and shall pass the tests specified in IEC 62052-31:2015, 6.7, 6.8 and 6.10.

Delete subclause 7.3.2.

7.4 Output elements

7.4.1 Rated breaking voltage (U_c)

Replace the first paragraph and Table 7 by the following:

The switch or switches – except switches rated for 30 V d.c. – shall meet the requirements specified in IEC 62052-31:2015, 6.9.8.5.

7.4.2 Rated breaking current (I_c)

Replace the first paragraph and Table 8 by the following:

The switch or switches – except switches rated for 30 mA d.c. – shall meet the requirements specified in IEC 62052-31:2015, 6.9.8.5.

7.4.3 Number of operations of the output element

7.4.3.1 Requirements

Replace the first paragraph by:

Each load switch shall meet the endurance requirements specified in IEC 62052-31:2015, 6.9.8.5.

7.4.3.2 Test of number of operations of a.c. switches

Replace the first four paragraphs and the bullet points by:

Load control switches shall be tested as part of safety testing, as specified in IEC 62052-31:2015, 6.10.7.1, 6.10.7.2, 6.10.7.3, 6.10.7.6, 6.10.7.7.

Keep the paragraph on maximum indicator switches that follows the three bullet points.

In the following paragraph, delete the first bullet point.

7.4.4 Short circuit performance

7.4.4.1 Requirements

Replace the existing text by:

See IEC 62052-31:2015, 6.9.8.5.

7.4.4.2 Test of short-circuit performance

Replace the existing text by:

See IEC 62052-31:2015, 6.10.7.1, 6.10.7.2, 6.10.7.4, 6.10.7.5, 6.10.7.6 and 6.10.7.7.

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 E
(informative)

Test schedule

Replace the existing Table E.1 by the following new table:

Nr.	Tests	Test of general requirements IEC 62052-21 Subclause	Test of particular requirements for ripple control receivers IEC 62054-11 Subclause	Test of particular requirements for time switches IEC 62054-21 Subclause
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	Test of control performance requirements			
2.1	Operation	X	7.5.2.2	N/A
2.2	Non-operation	X	7.5.3.2	N/A
2.3	Correct operation within the tolerance of the message	X	7.5.5.2	N/A
2.4	Variation of the supply frequency	7.1.2	X	X
3	Tests of time-keeping accuracy requirements			
3.1	Time switch supplied by mains	X	N.A.	7.5.2.3.2.1 7.5.2.3.3.1
3.2	Time switch on operation reserve	X	N.A.	7.5.2.3.2.2 7.5.2.3.3.2
3.3	Time-keeping accuracy with temperature	X	N.A.	7.5.2.3.3.3
4	Tests of electrical requirements			
4.1	Power consumption	7.1.3.2	X	X
4.2	Heating: To be performed as part of safety testing as specified in IEC 62052-31:2015, Clause 10.	7.2.2		
5	Tests of output elements			
5.1	Number of operation of a.c. switches: To be performed as part of safety testing, as specified in by IEC 62052-31:2015 6.10.7.1, 6.10.7.2, 6.10.7.3, 6.10.7.6 and 6.10.7.7.	7.4.3.2	X	X
5.2	Number of operation of low rating d.c. switches	7.4.3.3	X	X
5.3	Short-circuit performance: To be performed as part of safety testing, as specified in IEC 62052-31:2015, 6.10.7.1,6.10.7.2, 6.10.7.4, 6.10.7.5, 6.10.7.6 and 6.10.7.7.	7.4.4.2	X	X
5.4	Accuracy of maximum demand indicator switch	7.4.5.2	X	X
6	Tests for electromagnetic compatibility (EMC)			
6.1	Radio interference suppression	X	7.7	7.7
6.2	Fast transient burst test	X	7.6.5	7.6.5
6.3	Immunity to electromagnetic r.f. fields	X	7.6.4	7.6.4
6.4	Immunity to conducted disturbances, induced by r.f. fields	X	7.6.6	7.6.6
6.5	Immunity to electrostatic discharges	X	7.6.3	7.6.3
6.6	Surge immunity test	X	7.6.7	7.6.7
6.7	Immunity to voltage dips and short interruptions	X	7.6.8	7.6.8