SLOVENSKI STANDARD
SIST EN IEC 62052-11:2021/A11:2022

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Oprema za merjenje električne energije - Splošne zahteve, preskusi in preskuševalni pogoji - 11. del: Merilna oprema - Dopolnilo A11

Electricity metering equipment - General requirements, tests and test conditions - Part 11: Metering equipment

Elektrizitätszähler - Allgemeine Anforderungen, Prüfungen und Prüfbedingungen - Teil 11: Messeinrichtungen

Équipement de comptage de l'électricité - Exigences générales, essais et conditions d'essai - Partie 11: Équipement de comptage

Ta slovenski standard je istoveten z: **EN IEC 62052-11:2021/A11:2022**

ICS:

17.220.20	Merjenje električnih in magnetnih veličin	Measurement of electrical and magnetic quantities
91.140.50	Sistemi za oskrbo z elektriko	Electricity supply systems

SIST EN IEC 62052-11:2021/A11:2022 **en,fr**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 62052-11:2021/A11

June 2022

ICS 17.220.20

English Version

Electricity metering equipment - General requirements, tests and test conditions - Part 11: Metering equipment

Équipement de comptage de l'électricité - Prescriptions générales, essais et conditions d'essai - Partie 11: Équipement de comptage

Elektrizitätszähler - Allgemeine Anforderungen, Prüfungen und Prüfbedingungen - Teil 11: Messeinrichtungen

This amendment A11 modifies the European Standard EN IEC 62052-11:2021; it was approved by CENELEC on 2022-04-11. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 CEN-CENELEC Management Centre or to any CENELEC member.

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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European foreword

This document (EN IEC 62052-11:2021/A11:2022) has been prepared by CLC/TC 13 “Electrical energy measurement and control”.

The following dates are fixed:

• latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2023-04-11
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2025-04-11

This document amends EN IEC 62052-11:2021.

EN IEC 62052-11:2021/A11:2022 includes the following significant technical changes with respect to EN IEC 62052-11:2021:

— adaptation to MID and EMCD, addition of Annexes ZZA and ZZB.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

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

For the relationship with EU Directive(s) / Regulation(s), see informative Annexes ZZA and ZZB, which are an integral part of this document.

Any feedback and questions on this document should be directed to the users’ national committee. A complete listing of these bodies can be found on the CENELEC website.

Introduction

The purpose of this amendment is to identify and modify all requirements that would not fit the EMCD or MID requirements, so that the amended document could be harmonized under those two Directives.

1 Modification to Introduction

Remove

“

IEC 62057-1: –, Test equipment, techniques and procedures for electrical energy meters – Part 1: Stationary Meter Test Units (MTU)

”

2 Modification to Clause 1, “Scope”

Remove Note 10 and renumber Notes.

3 Modifications to Clause 2, “Normative references”

In Clause 2 and throughout the text, replace

“

IEC 61000-4-5:2017, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 5: Surge immunity test*

”

with

“

IEC 61000-4-5:2014/AMD1:2017, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 5: Surge immunity test*

”

Remove

“

IEC 62057-1: *Test equipment, techniques and procedures for electrical energy meters – Part 1: Stationary Meter Test Units (MTU)*

”

4 Modifications to Clause 3, “Terms and definitions”

Replace 3.1.11 with:

“

3.1.11
reference standard
reference meter
meter used to measure the unit of electrical energy, designed and operated to obtain the highest accuracy and stability in a controlled laboratory environment and traceable to national or international primary standards”

Replace 3.1.14 with:

“

3.1.14
AC active power
is defined at any single sinusoidal frequency component of a periodic signal in a single-phase circuit as the product of the RMS values of current and voltage and the cosine of the phase angle between them, where the phase angle is the angle of the voltage signal vector with respect to the current signal vector

Note 1 to entry: Under sinusoidal conditions, the AC active power is the real part of the complex power.

Note 2 to entry: The AC active power of a non-sinusoidal periodic signal is the algebraic sum of the AC active power of the sinusoidal frequency components.

Note 3 to entry: The coherent SI unit for AC active power is the watt, W.”

Replace 3.1.15 with:

“

3.1.15
active energy
electrical energy transformable into some other form of energy

Note 1 to entry: The coherent SI unit of active energy is joule, J. Another unit is watt hour. Its multiple, kilowatt hour, kWh, is commonly used for billing consumers of electric energy and is therefore indicated on electric energy meters.

Note 2 to entry: For AC signals, the active energy is the time integral of the AC active power as defined under 3.1.14.

Note 3 to entry: For DC signals, the active energy is the time integral of the DC active power as defined under 3.1.25.

[SOURCE: IEV 601-01-19:1985, modified – Notes to entry added]”

Replace 3.1.25 with:

“

3.1.25
DC active power
DC power
power in DC circuit is defined as the product of the mean value of DC current and the mean value of DC voltage

Note 1 to entry: It is assumed that the DC voltage and current is constant over the integration period.”

Add the following 3.1.26, 3.1.27 and 3.1.28:

“

3.1.26
apparent power
product of the rms voltage *U* between the terminals of a two-terminal element or two-terminal circuit and the rms electric current *I* in the element or circuit

$S = UI$

Note 1 to entry: Under sinusoidal conditions, the apparent power is the modulus of the complex power $\underline{S}$, thus $S = |\underline{S}|$

Note 2 to entry: The coherent SI unit for apparent power is voltampere, VA.

[SOURCE: IEV 131-11-41]

3.1.27
power factor
λ
under periodic conditions, ratio of the absolute value of the active power *P* to the apparent power *S*:

$$\lambda = \frac{|P|}{S}$$

Note 1 to entry: Under sinusoidal conditions, the power factor is the absolute value of the active factor.

Note 2 to entry: Active factor is also referred to as cos(*φ*) for active energy.

[SOURCE: IEV 131-11-46, modified – Note 2 to entry has been added]

3.1.28
non-active power factor
$\lambda_{\sim}$
under periodic conditions, ratio of the non-active power $Q_{\sim}$ to the apparent power *S*:

$$\lambda_{\sim} = \frac{Q_{\sim}}{S}$$

Note 1 to entry: Under sinusoidal conditions, the non-active power factor is the absolute value of the reactive factor.

Note 2 to entry: Reactive factor is also referred to as sin(*φ*) for reactive energy.

[SOURCE: IEV 131-11-47, modified – Note 2 to entry has been added]"

5 Modifications to Clause 5, "Construction requirements"

Delete subclause 5.6.2, "Meters without indicating displays" and renumber the following subclause.

*Add the following note to 5.1 after "*The meter shall comply with the safety requirements covered *in IEC 62052-31:2015.":*

"

NOTE IEC 62052-31:2015 covers AC voltages only up to 600 V and Ed. 2 of IEC 62052-31 will cover AC voltages up to 1000 V."

6 Modifications to Clause 6, "Meter marking and documentation"

In 6.2, remove a).

In 6.2, remove d).

In 6.2, replace g) with

"

g) the minimum current, nominal current and the maximum current: I_{min} – I_n (I_{max});

NOTE For example, 0,5 – 10(40) A, for a meter having a minimum current of 0,5 A, nominal current of 10 A and a maximum current of 40 A."

In 6.2, replace h) with

"

h) the rated secondary current of transformer(s) to which a transformer-operated meter should be connected, for example /5 A or /1 A, may be included in the type designation;"

7 Modifications to Clause 7, “Metrological performance requirements and tests”

In 7.1. replace

“

f) For requirements regarding test stations, see IEC 62057-1:–. *”*

with

“

f) For requirements regarding test stations, see relevant or established test methods. *”*

In 7.2. replace

*“*The verification of accuracy may be performed using any of the meter test methods specified in IEC 62057-1:–, or alternatively by reading the meter’s energy registers. The content of the meter’s energy registers may be verified by reading the energy registers through the meter’s communication ports using the communication protocols specified by the manufacturer. *”*

with

*“*The verification of accuracy may be performed using the relevant or established test methods, or alternatively by reading the meter’s energy registers. The content of the meter’s energy registers may be verified by reading the energy registers through the meter’s communication ports using the communication protocols specified by the manufacturer.*”*

8 Modifications to Clause 9, “The effects of external influence quantities and disturbances”

In 9.3.1.2.2, replace

*“*The manufacturer shall specify the number of test pulses necessary for the verification of accuracy, or an alternative and equivalent method of verification of accuracy.*”*

with

*“*The number of test pulses necessary for the verification of accuracy shall be applied, or an alternative and equivalent method of verification of accuracy shall be applied.*”*

In 9.3.2.1, add the following note to ***Table 16, “Voltage dips, short interruptions and voltage variations immunity tests”****:*

“

NOTE 2 Δ*U* specifies the relative voltage reduction in Table 16. The basic standard IEC 61000-4-11 specifies the residual voltage instead. Also, tests were modified partly compared to the basic standard based on long field experience with TC 13 products.”

Renumber the original NOTE as “NOTE 1”.

In 9.3.2.2, add the following note to ***Table 17, “Voltage dips, short interruptions and voltage variations on DC input power port immunity tests”****:*

“

NOTE Δ*U* specifies the relative voltage reduction in Table 17. The basic standard IEC 61000-4-11 specifies the residual voltage instead. Also, tests were modified partly compared to the basic standard based on long field experience with TC13 products.”

In 9.3.14, replace

“

e) Indicating display shall be exercised during the test with a test image constructed and provided by the manufacturer according to the CISPR 32:2015, Clause B.2.*”*

with

“

e) Indicating display shall be exercised during the test with a test image according to the CISPR 32:2015, Clause B.2.*”*

In 9.4.3, in the notes after Table 19, replace

“

[a] $U_{n\text{-}min}$ and $U_{n\text{-}max}$ refer respectively to the lowest nominal voltage and to the highest nominal voltage specified by the manufacturer; In three-phase three-wire meters, $U_{n\text{-}min}$ and $U_{n\text{-}max}$ refer respectively to the lowest nominal line-to-line voltage and to the highest nominal line-to-line voltage specified by the manufacturer.

[b] For meters powered only from the measured circuits (mains port), criteria apply for voltages above the lowest power supply voltage specified by the manufacturer.

[c] For meters powered only from the measured circuits (mains port), criteria apply for voltages below the lowest power supply voltage specified by the manufacturer.

”

with

“

[a] $U_{n\text{-}min}$ and $U_{n\text{-}max}$ refer respectively to the lowest nominal voltage and to the highest nominal voltage specified; In three-phase three-wire meters, $U_{n\text{-}min}$ and $U_{n\text{-}max}$ refer respectively to the lowest nominal line-to-line voltage and to the highest nominal line-to-line voltage specified.

[b] For meters powered only from the measured circuits (mains port), criteria apply for voltages above the lowest power supply voltage specified.

[c] For meters powered only from the measured circuits (mains port), criteria apply for voltages below the lowest power supply voltage specified.

”

9 Modification to Clause 10, “Type test”

In 10.2, remove f).

10 Modification to Annex ZA, “Normative references to international publications with their corresponding European publications”

Replace the Annex ZA with the following:

“