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

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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EUROPEAN STANDARD

EN IEC 62052-11

NORME EUROPÉENNE

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English Version

**Electricity metering equipment - General requirements, tests and test conditions - Part 11: Metering equipment
(IEC 62052-11:2020)**

Équipement de comptage de l'électricité - Exigences générales, essais et conditions d'essai - Partie 11:
Équipement de comptage
(IEC 62052-11:2020)

Elektrizitätszähler - Allgemeine Anforderungen, Prüfungen und Prüfbedingungen - Teil 11: Messeinrichtungen
(IEC 62052-11:2020)

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European foreword

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- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2021-10-02
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2024-04-02

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Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60038 (mod)	2009	IEC standard voltages	EN 60038	2011
IEC 60068-2-1	2007	Environmental testing - Part 2-1: Tests - Test A: Cold	EN 60068-2-1	2007
IEC 60068-2-2	2007	Environmental testing - Part 2-2: Tests - Test B: Dry heat	EN 60068-2-2	2007
IEC 60068-2-5	2018	Environmental testing – Part 2-5: Tests – Test S: Simulated solar radiation at ground level and guidance for solar radiation testing and weathering	EN IEC 60068-2-5	2018
IEC 60068-2-6	2007	Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)	EN 60068-2-6	2008
IEC 60068-2-27	2008	Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock	EN 60068-2-27	2009
IEC 60068-2-30	2005	Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle)	EN 60068-2-30	2005
IEC 60381-1	1982	Analogue signals for process control systems. Part 1: Direct current signals	HD 452.1 S1	1984
IEC 60404-5	2015	Magnetic materials - Part 5: Permanent magnet (magnetically hard) materials - Methods of measurement of magnetic properties	EN 60404-5	2015
IEC 60404-8-1	2015	Magnetic materials - Part 8-1: Specifications for individual materials - Magnetically hard materials	EN 60404-8-1	2015
IEC 60404-8-4	2013	Magnetic materials - Part 8-4: - Specifications for individual materials - Cold-rolled non-oriented electrical steel strip and sheet delivered in the fully-processed state	-	-

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60664-1	2007	Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests	EN 60664-1	2007
IEC 60721-1	1990	Classification of environmental conditions - Part 1: Environmental parameters and their severities	EN 60721-1	1995
IEC 60947-1	2007	Low-voltage switchgear and controlgear - Part 1: General rules	EN 60947-1	2007
+ A1	2010		+ A1	2011
+ A2	2014		+ A2	2014
IEC 61000-4-2	2008	Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	EN 61000-4-2	2009
IEC 61000-4-3	2006	Electromagnetic compatibility (EMC) - Part 4-3 : Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	EN 61000-4-3	2006
+ A1	2007		+ A1	2008
+ A2	2010		+ A2	2010
IEC 61000-4-4	2012	Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test	EN 61000-4-4	2012
IEC 61000-4-5	2017	Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test	-	-
IEC 61000-4-6	2013	Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields	EN 61000-4-6	2014
IEC 61000-4-8	2009	Electromagnetic compatibility (EMC) - Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test	EN 61000-4-8	2010
IEC 61000-4-11	2020	Electromagnetic compatibility (EMC) - Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests for equipment with input current up to 16 A per phase	EN IEC 61000-4-11	2020
IEC 61000-4-12	2017	Electromagnetic compatibility (EMC) – Part 4-12: Testing and measurement techniques – Ring wave immunity test	EN 61000-4-12	2017
IEC 61000-4-18	2019	Electromagnetic compatibility (EMC) - Part 4-18: Testing and measurement techniques - Damped oscillatory wave immunity test	EN IEC 61000-4-18	2019

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61000-4-19	2014	Electromagnetic compatibility (EMC) - Part 4-19: Testing and measurement techniques - Test for immunity to conducted, differential mode disturbances and signalling in the frequency range 2 kHz to 150 kHz at a.c. power ports	EN 61000-4-19	2014
IEC 61000-4-20	2010	Electromagnetic compatibility (EMC) - Part 4-20: Testing and measurement techniques - Emission and immunity testing in transverse electromagnetic (TEM) waveguides	EN 61000-4-20	2010
IEC 61000-4-29	2000	Electromagnetic compatibility (EMC) - Part 4-29: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations on d.c. input power port immunity tests	EN 61000-4-29	2000
IEC 61869-3	2011	Instrument transformers - Part 3: Additional requirements for inductive voltage transformers	EN 61869-3	2011
IEC 62052-31	2015	Electricity metering equipment (AC) - General requirements, tests and test conditions - Part 31: Product safety requirements and tests	EN 62052-31	2016
IEC 62054-21	2004	Electricity metering (a.c.) - Tariff and load control - Part 21: Particular requirements for time switches	EN 62054-21	2004
IEC 62056-6-1	2017	Electricity metering data exchange - The DLMS/COSEM suite - Part 6-1: Object Identification System (OBIS)	EN 62056-6-1	2017
IEC 62056-6-2	2017	Electricity metering data exchange - The DLMS/COSEM suite - Part 6-2: COSEM interface classes	EN IEC 62056-6-2	2018
IEC 62057-1	-	Test equipment, techniques and procedures for electrical energy meters - Part 1: Stationary Meter Test Units (MTU)	EN IEC 62057-1 ¹	-
IEC 62059-32-1	2011	Electricity metering equipment - Dependability - Part 32-1: Durability - Testing of the stability of metrological characteristics by applying elevated temperature	EN 62059-32-1	2012
IEC GUIDE 98-3	-	Uncertainty of measurement – Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)	-	-
CISPR 32	2015	Electromagnetic compatibility of multimedia equipment - Emission requirements	EN 55032	2015
-	-		+ A11	2020

¹ Under preparation. Stage at time of preparation: prEN IEC 62057-1.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
JCGM 100	2008	Evaluation of measurement data – Guide to the expression of uncertainty in measurement. (GUM 1995 with minor corrections)	-	-
-	-	Designation systems for steels – Part 1: Steel names	EN 10027-1	2016

INTERNATIONAL STANDARD

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



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

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTRICITY METERING EQUIPMENT –
GENERAL REQUIREMENTS, TESTS AND TEST CONDITIONS –**

Part 11: Metering equipment

FOREWORD

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International Standard IEC 62052-11 has been prepared by IEC technical committee 13: Electrical energy measurement and control.

This second edition cancels and replaces the first edition published in 2003, and its amendment 1:2016. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition: see Annex O.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
13/1808/FDIS	13/1812/RVD

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

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 62052 series, published under the general title *Electricity metering equipment – General requirements*, tests and test conditions, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document 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 prepare 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 two years from the date of publication.

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INTRODUCTION

The general overview and organization of the IEC 6205x series of standards applicable to electricity metering and load control equipment is as follows:

PRODUCT FAMILY STANDARDS – GENERAL REQUIREMENTS	PRODUCT FAMILIES				
	AC meters rated up to 1 000 V for direct connection or connection through conventional transformers	Tariff and load control equipment	DC meters rated up to 1 500 V for direct connection	AC meters for connection through LPITs (as defined in the IEC 61869 series of standards)	DC meters for connection through LPITs (as defined in the IEC 61869 series of standards)
NOMINAL VALUES, CONSTRUCTION, ELECTRICAL, CLIMATIC AND EMC REQUIREMENTS. TEST METHODS	IEC 62052-11:2020	IEC 62052-21 2004	IEC 62052-11:2020	Planned: IEC 62052-XX general requirements for meters for connection through LPITs.	
SAFETY	IEC 62052-31:2015		Planned: IEC 62052-31 2 nd edition including safety requirements for DC meters	Planned: IEC 62052-XX safety requirements for meters for connection through LPITs.	
DEPENDABILITY	IEC 62059-11: 2002, IEC 62059-21:2002, IEC 62059-32-1 2011, IEC 62059-41:2006		Planned: IEC 62059-XX dependability requirements for DC meters	Planned: IEC 62059-XX dependability requirements for meters for connection through LPITs.	
ACCEPTANCE INSPECTION	IEC 62058-11:2008			Planned: IEC 62058-XX acceptance inspection requirements for meters for connection through LPITs.	
EMBEDDED SOFTWARE	Planned: IEC 6205x-xx embedded software (firmware) requirements and test methods for electricity metering and load control equipment				

PRODUCT FAMILY STANDARDS – PARTICULAR REQUIREMENTS AND ACCURACY CLASSES				
AC meters rated up to 1 000 V for direct connection or connection through conventional transformers	Tariff and load control equipment	DC meters rated up to 1 500 V for direct connection	AC meters for connection through LPITs (as defined in the IEC 61869 series of standards)	DC meters for connection through LPITs (as defined in the IEC 61869 series of standards)
Electromechanical, active energy directly connected, classes 0,5, 1, 2 IEC 62053-11:2003, IEC 62058-21:2008	Ripple control receivers IEC 62054-11:2004	Static, DC energy, directly connected, classes 0,5, 1 IEC 62053-41 –	Planned: LPIT operated meters IEC 62053-xx	Planned: LPIT operated meters IEC 62053-xx
Static, active energy directly connected, and transformer operated, classes 1, 2 IEC 62053-21:2020, IEC 62058-31:2008,	Time switches IEC 62054-21:2004	—	—	—
Static, active energy, transformer operated, classes 0,1S, 0,2S, 0,5S IEC 62053-22:2020, IEC 62058-31:2008	—	—	—	—
Static, reactive energy directly connected, and transformer operated, classes 2, 3 IEC 62053-23:2020	—	—	—	—
Static, reactive energy directly connected, and transformer operated, classes 0,5 S, 1S, 1, 2, 3 IEC 62053-24:2020	—	—	—	—
Static, active energy directly connected, prepayment classes 1, 2 IEC 62055-31:2005	—	—	—	—

This part of IEC 62052 is to be used with relevant parts of the IEC 62052, IEC 62053, IEC 62058 and IEC 62059 series:

IEC 62052-31:2015,	<i>Electricity metering equipment (AC) – General requirements, tests and test conditions – Part 31: Product safety requirements and tests</i>
IEC 62053-11:2003,	<i>Electricity metering equipment (AC) – Particular requirements – Part 11: Electromechanical meters for active energy (classes 0,5, 1 and 2)</i>
IEC 62053-21:2020,	<i>Electricity metering equipment – Particular requirements – Part 21: Static meters for AC active energy (classes 1 and 2)</i>
IEC 62053-22:2020,	<i>Electricity metering equipment – Particular requirements – Part 22: Static meters for AC active energy (classes 0,1S, 0,2S and 0,5S)</i>
IEC 62053-23:2020,	<i>Electricity metering equipment – Particular requirements – Part 23: Static meters for reactive energy (classes 2 and 3)</i>

IEC 62053-24:2020,	<i>Electricity metering equipment– Particular requirements – Part 24: Static meters for fundamental component reactive energy (classes 0,5S, 1S, 1, 2 and 3)</i>
IEC 62053-41: – ,	<i>Electricity metering equipment– Particular requirements – Part 41: Static meters for direct current energy (classes 0,5 and 1)</i>
IEC 62055-31:2005,	<i>Electricity metering – Payment systems – Part 31: Particular requirements – Static payment meters for active energy (classes 1 and 2)</i>
IEC 62056-6-1:2017,	<i>Electricity metering data exchange – The DLMS/COSEM suite – Part 6-1: Object Identification System (OBIS)</i>
IEC 62056-6-2:2017,	<i>Electricity metering data exchange – The DLMS/COSEM suite – Part 6-2: COSEM interface classes</i>
IEC 62057-1: – ,	<i>Test equipment, techniques and procedures for electrical energy meters – Part 1: Stationary Meter Test Units (MTU)</i>
IEC 62058-11:2008,	<i>Electricity metering equipment (AC) – Acceptance inspection – Part 11: General acceptance inspection methods</i>
IEC 62058-21:2008,	<i>Electricity metering equipment (AC) – Acceptance inspection – Part 21: Particular requirements for electromechanical meters for active energy (classes 0,5, 1 and 2)</i>
IEC 62058-31:2008,	<i>Electricity metering equipment (AC) – Acceptance inspection – Part 31: Particular requirements for static meters for active energy (classes 0,2 S, 0,5 S, 1 and 2)</i>
IEC 62059-11:2002,	<i>Electricity metering equipment – Dependability – Part 11: General concepts</i>
IEC 62059-21:2002,	<i>Electricity metering equipment – Dependability – Part 21: Collection of meter dependability data from the field</i>
IEC 62059-32-1:2011,	<i>Electricity metering equipment – Dependability – Part 32-1: Durability – Testing of the stability of metrological characteristics by applying elevated temperature</i>

This document is intended to be used in conjunction with the appropriate part of IEC 62053 for the type of equipment under consideration.

The test levels are regarded as minimum values for the proper functioning of the meter under normal working conditions. For special application, other test levels may be used and are subject to an agreement between the manufacturer and the purchaser.