

STN	Zariadenia na meranie elektrickej energie (striedavého prúdu). Osobitné požiadavky. Časť 24: Statické elektromery na základnú zložku jalovej energie (triedy presnosti 0,5 S, 1 S a 1).	STN EN 62053-24 35 6133
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Electricity metering equipment (a.c.) - Particular requirements - Part 24: Static meters for reactive energy at fundamental frequency (classes 0,5 S, 1 S and 1)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 05/15

Obsahuje: EN 62053-24:2015, IEC 62053-24:2014

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EUROPEAN STANDARD

EN 62053-24

NORME EUROPÉENNE

EUROPÄISCHE NORM

January 2015

ICS 17.220.20; 91.140.50

English Version

Electricity metering equipment (a.c.) - Particular requirements -
Part 24: Static meters for reactive energy at fundamental
frequency (classes 0,5 S, 1 S and 1)
(IEC 62053-24:2014)

Équipement de comptage de l'électricité (c.a.) - Exigences
particulières - Partie 24: Compteurs statiques d'énergie
réactive à la fréquence fondamentale
(classes 0,5 S, 1 S et 1)
(IEC 62053-24:2014)

Wechselstrom-Elektrizitätszähler - Besondere
Anforderungen - Teil 24: Elektronische Grundschnungungs-
Blindverbrauchszähler
der Genauigkeitsklassen 0,5 S, 1 S und 1
(IEC 62053-24:2014)

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

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Foreword

The text of document 13/1569/FDIS, future edition 1 of IEC 62053-24, prepared by IEC/TC 13 "Electrical energy measurement and control" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62053-24:2015.

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) 2015-07-16
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2017-07-24

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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.

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

Endorsement notice

The text of the International Standard IEC 62053-24:2014 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 61869-2:2012	NOTE	Harmonized as EN 61869-2:2012 (not modified).
IEC 62053-21:2003	NOTE	Harmonized as EN 62053-21:2003 (not modified).
IEC 62053-23:2003	NOTE	Harmonized as EN 62053-23:2003 (not modified).
IEC 62053-61:1998	NOTE	Harmonized as EN 62053-61:1998 (not modified).

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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NOTE 1 When 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 62052-11	2003	Electricity metering equipment (AC) - General requirements, tests and test conditions - Part 11: Metering equipment	EN 62052-11	2003

Annex ZZ (informative)

Coverage of Essential Requirements of EU Directives

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and within its scope this standard covers all relevant essential requirements as given in Annex I of the EU Directive 2004/108/EC.

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

WARNING: Other requirements and other EU Directives can be applied to the products falling within the scope of this standard.



INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Electricity metering equipment (a.c.) – Particular requirements –
Part 24: Static meters for reactive energy at fundamental frequency (classes
0,5 S, 1 S and 1)**

**Équipement de comptage de l'électricité (c.a.) – Exigences particulières –
Partie 24: Compteurs statiques d'énergie réactive à la fréquence fondamentale
(classes 0,5 S, 1 S et 1)**





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INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Electricity metering equipment (a.c.) – Particular requirements –
Part 24: Static meters for reactive energy at fundamental frequency (classes
0,5 S, 1 S and 1)**

**Équipement de comptage de l'électricité (c.a.) – Exigences particulières –
Partie 24: Compteurs statiques d'énergie réactive à la fréquence fondamentale
(classes 0,5 S, 1 S et 1)**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTRICITY METERING EQUIPMENT (a.c.) –
PARTICULAR REQUIREMENTS –****Part 24: Static meters for reactive energy at fundamental frequency
(classes 0,5 S, 1 S and 1)**

FOREWORD

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International Standard IEC 62053-24 has been prepared by IEC technical committee 13: Electrical energy measurement and control.

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

FDIS	Report on voting
13/1569/FDIS	13/1578/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 series 62053, under the general title *Electricity metering equipment (a.c.) – Particular requirements*, 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

This part of IEC 62053 is to be used with the following relevant parts of the IEC 62052, IEC 62053 and IEC 62059 series, *Electricity metering equipment*:

IEC 62052-11:2003, *Electricity metering equipment (a.c.) – 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)*

IEC 62053-22:2003, *Electricity metering equipment (a.c.) – Particular requirements – Part 22: Static meters for active energy (classes 0,2 S and 0,5 S)*

IEC 62053-31:1998, *Electricity metering equipment (a.c.) – Particular requirements – Part 31: Pulse output devices for electromechanical and electronic meters (two wires only)*

IEC 62053-52:2005, *Electricity metering equipment (a.c.) – Particular requirements – Part 52: Symbols*

IEC 62053-61:1998, *Electricity metering equipment (a.c.) – Particular requirements – Part 61: Power consumption and voltage requirements*

IEC 62059-11:2002, *Electricity metering equipment (a.c.) – Dependability – Part 11: General concepts*

IEC 62059-21:2002, *Electricity metering equipment (a.c.) – Dependability – Part 21: Collection of meter dependability data from the field*

IEC 62059-31-1:2008, *Electricity metering equipment – Dependability – Part 31-1: Accelerated reliability testing – Elevated temperature and humidity*

IEC 62059-32-1:2011, *Electricity metering equipment – Dependability – Part 32-1: Durability – Testing of the stability of metrological characteristics by applying elevated temperature*

IEC 62059-41:2006, *Electricity metering equipment – Dependability – Part 41: Reliability prediction*

This part is a standard for type testing electricity meters. It covers the particular requirements for meters, used indoors and outdoors. It does not deal with special implementations (such as metering-part and/or displays in separate housings).

This standard is intended to be used in conjunction with IEC 62052-11. When any requirement in this standard concerns an item already covered in IEC 62052-11, the requirements of this standard take precedence over the requirements of IEC 62052-11.

This standard distinguishes:

- between transformer operated meters of accuracy class index 0,5 S and 1 S and direct connected meters of accuracy class index 1;
- between protective class I and protective class II meters;
- between meters for use in networks equipped with or without earth fault neutralizers.

The test levels are regarded as minimum values that provide for the proper functioning of the meter under normal working conditions. For special application, other test levels might be necessary and should be agreed on between the user and the manufacturer.

ELECTRICITY METERING EQUIPMENT (a.c.) – PARTICULAR REQUIREMENTS –

Part 24: Static meters for reactive energy at fundamental frequency (classes 0,5 S, 1 S and 1)

1 Scope

This part of IEC 62053 applies only to newly manufactured transformer operated static var-hour meters of accuracy classes 0,5 S, and 1 S as well as direct connected static var-hour meters of accuracy class 1, for the measurement of alternating current electrical reactive energy in 50 Hz or 60 Hz networks and it applies to their type tests only.

This standard uses a conventional definition of reactive energy where the reactive power and energy is calculated from the fundamental frequency components of the currents and voltages only. See Clause 3.

NOTE 1 This differs from the approach of IEC 62053-23, where reactive power and energy is defined only for sinusoidal signals. In this standard reactive power and energy is defined for all periodic signals. Reactive power and energy is defined in this way to achieve proper reproducibility of measurements with meters of different designs. With this definition, reactive power and energy reflects the generally unnecessary current possible to compensate with capacitors rather than the total unnecessary current.

It applies only to static var-hour meters for indoor and outdoor application consisting of a measuring element and register(s) enclosed together in a meter case. It also applies to operation indicator(s) and test output(s). If the meter has a measuring element for more than one type of energy (multi-energy meters), or when other functional elements, like maximum demand indicators, electronic tariff registers, time switches, ripple control receivers, data communication interfaces, etc., are enclosed in the meter case, then the relevant standards for these elements also apply.

NOTE 2 IEC 61869-2:2012 describes transformers having a measuring range of $0,05 I_n$ to I_{max} for accuracy classes 0,2, 0,5, 1 and 2, and transformers having a measuring range of $0,01 I_n$ to I_{max} for accuracy classes 0,2 S and 0,5 S. As the measuring range of a meter and its associated transformers have to be matched and as only transformers of classes 0,2 S / 0,5 S have the current error and phase displacement characteristics suitable to operate a class 0,5 S / 1 S meter respectively as specified in this standard, the measuring range of the transformer operated meters will be $0,01 I_n$ to I_{max} . Reactive meters intended to be used together with non-S transformers are, therefore, not covered by this standard.

It does not apply to:

- var-hour meters where the voltage across the connection terminals exceeds 600 V (line-to-line voltage for meters for polyphase systems);
- portable meters;
- data interfaces to the register of the meter;
- reference meters.

The dependability aspect is covered by the standards of the IEC 62059 series.

2 Normative references

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.

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

koniec náhľadu – text ďalej pokračuje v platenej verzii STN