

STN	Meranie kvality napájania v elektrických napájacích systémoch Časť 1: Prístroje na meranie kvality napájania (PQI)	STN EN 62586-1 35 6150
------------	---	--

Power quality measurement in power supply systems - Part 1: Power quality instruments (PQI)

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. 02/18

Obsahuje: EN 62586-1:2017, IEC 62586-1:2017

Oznámením tejto normy sa od 10.11.2020 ruší
STN EN 62586-1 (35 6150) z decembra 2014

126349

Úrad pre normalizáciu, metrológiu a skúšobníctvo Slovenskej republiky, 2018
Podľa zákona č. 264/1999 Z. z. o technických požiadavkách na výrobky a o posudzovaní zhody a o zmene a doplnení niektorých zákonov v znení neskorších predpisov sa slovenská technická norma a časti slovenskej technickej normy môžu rozmnožovať alebo rozširovať len so súhlasom slovenského národného normalizačného orgánu.

English Version

**Power quality measurement in power supply systems -
Part 1: Power quality instruments (PQI)
(IEC 62586-1:2017)**

Mesure de la qualité de l'alimentation dans les réseaux
d'alimentation - Partie 1: Instruments de qualité de
l'alimentation (PQI)
(IEC 62586-1:2017)

Messung der Spannungsqualität in
Energieversorgungssystemen - Teil 1: Messgeräte für die
Spannungsqualität
(IEC 62586-1:2017)

This European Standard was approved by CENELEC on 2017-06-27. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard 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.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

EN 62586-1:2017**European foreword**

The text of document 85/586/FDIS, future edition 2 of IEC 62586-1, prepared by IEC/TC 85 "Measuring equipment for electrical and electromagnetic quantities" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62586-1:2017.

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) 2018-05-10
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2020-11-10

This document supersedes EN 62586-1:2014.

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.

Endorsement notice

The text of the International Standard IEC 62586-1:2017 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 60359	NOTE	Harmonized as EN 60359.
IEC 61010 Series	NOTE	Harmonized as EN 61010 Series.

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 60068-1	-	Environmental testing - Part 1: General and guidance	EN 60068-1	-
IEC 60068-2-1	-	Environmental testing - Part 2-1: Tests - Test A: Cold	EN 60068-2-1	-
IEC 60068-2-2	-	Environmental testing - Part 2-2: Tests - Test B: Dry heat	EN 60068-2-2	-
IEC 60068-2-6	-	Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)	EN 60068-2-6	-
IEC 60068-2-14	-	Environmental testing - Part 2-14: Tests - Test N: Change of temperature	EN 60068-2-14	-
IEC 60068-2-27	-	Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock	EN 60068-2-27	-
IEC 60068-2-31	-	Environmental testing - Part 2-31: Tests - Test Ec: Rough handling shocks, primarily for equipment-type specimens	EN 60068-2-31	-
IEC 60068-2-52	-	Environmental testing - Part 2-52: Tests - Test Kb: Salt mist, cyclic (sodium chloride solution)	EN 60068-2-52	-
IEC 60068-2-57	-	Environmental testing - Part 2-57: Tests - Test Ff: Vibration - Time-history and sine- beat method	EN 60068-2-57	-
IEC 60068-2-78	-	Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state	EN 60068-2-78	-
IEC 60529	-	Degrees of protection provided by enclosures (IP Code)	EN 60529	-
IEC 60654-1	-	Industrial-process measurement and control equipment - Operating conditions - Part 1: Climatic conditions	EN 60654-1	-
IEC 60664-1	2007	Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests	EN 60664-1	2007

EN 62586-1:2017

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60721-3-1	-	Classification of environmental conditions - EN 60721-3-1 Part 3: Classification of groups of environmental parameters and their severities - Section 1: Storage	-	-
IEC 60721-3-2	-	Classification of environmental conditions - EN 60721-3-2 Part 3: Classification of groups of environmental parameters and their severities - Section 2: Transportation	-	-
IEC 60721-3-3	-	Classification of environmental conditions - EN 60721-3-3 Part 3: Classification of groups of environmental parameters and their severities - Section 3: Stationary use at weatherprotected locations	-	-
IEC 61000-4-7	2002	Electromagnetic compatibility (EMC) - Part 4-7: Testing and measurement techniques - General guide on harmonics and interharmonics measurements and instrumentation, for power supply systems and equipment connected thereto	EN 61000-4-7	2002
+A1	2008		+A1	2009
IEC 61000-4-15	-	Electromagnetic compatibility (EMC) - Part 4-15: Testing and measurement techniques - Flickermeter - Functional and design specifications	EN 61000-4-15	-
IEC 61000-4-30	2015	Electromagnetic Compatibility (EMC) - Part 4-30: Testing and measurement techniques - Power quality measurement methods	EN 61000-4-30	2015
IEC 61000-6-5	-	Electromagnetic compatibility (EMC) - Part 6-5: Generic standards - Immunity for equipment used in power station and substation environment	EN 61000-6-5	-
IEC 61010-1	2010	Safety requirements for electrical equipment for measurement, control and laboratory use - Part 1: General requirements	EN 61010-1	2010
IEC 61010-2-030	-	Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 2-030: Particular requirements for equipment having testing or measuring circuits	EN 61010-2-030	-
IEC 62262	-	Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)	EN 62262	-
IEC 62586-2	-	Power quality measurement in power supply systems - Part 2: Functional tests and uncertainty requirements	EN 62586-2	-
CISPR 32	-	Electromagnetic compatibility of multimedia equipment - Emission requirements	EN 55032	-



INTERNATIONAL STANDARD

NORME INTERNATIONALE



BASIC EMC PUBLICATION
PUBLICATION FONDAMENTALE EN CEM

**Power quality measurement in power supply systems –
Part 1: Power quality instruments (PQI)**

**Mesure de la qualité de l'alimentation dans les réseaux d'alimentation –
Partie 1: Instruments de qualité de l'alimentation (PQI)**





THIS PUBLICATION IS COPYRIGHT PROTECTED
Copyright © 2017 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'IEC ou du Comité national de l'IEC du pays du demandeur. Si vous avez des questions sur le copyright de l'IEC ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de l'IEC de votre pays de résidence.

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

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

About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigenda or an amendment might have been published.

IEC Catalogue - webstore.iec.ch/catalogue

The stand-alone application for consulting the entire bibliographical information on IEC International Standards, Technical Specifications, Technical Reports and other documents. Available for PC, Mac OS, Android Tablets and iPad.

IEC publications search - www.iec.ch/searchpub

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee,...). It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and also once a month by email.

Electropedia - www.electropedia.org

The world's leading online dictionary of electronic and electrical terms containing 20 000 terms and definitions in English and French, with equivalent terms in 16 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

IEC Glossary - std.iec.ch/glossary

65 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

IEC Customer Service Centre - webstore.iec.ch/csc

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: csc@iec.ch.

A propos de l'IEC

La Commission Electrotechnique Internationale (IEC) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

A propos des publications IEC

Le contenu technique des publications IEC est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

Catalogue IEC - webstore.iec.ch/catalogue

Application autonome pour consulter tous les renseignements bibliographiques sur les Normes internationales, Spécifications techniques, Rapports techniques et autres documents de l'IEC. Disponible pour PC, Mac OS, tablettes Android et iPad.

Recherche de publications IEC - www.iec.ch/searchpub

La recherche avancée permet de trouver des publications IEC en utilisant différents critères (numéro de référence, texte, comité d'études,...). Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

IEC Just Published - webstore.iec.ch/justpublished

Restez informé sur les nouvelles publications IEC. Just Published détaille les nouvelles publications parues. Disponible en ligne et aussi une fois par mois par email.

Electropedia - www.electropedia.org

Le premier dictionnaire en ligne de termes électroniques et électriques. Il contient 20 000 termes et définitions en anglais et en français, ainsi que les termes équivalents dans 16 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.

Glossaire IEC - std.iec.ch/glossary

65 000 entrées terminologiques électrotechniques, en anglais et en français, extraites des articles Termes et Définitions des publications IEC parues depuis 2002. Plus certaines entrées antérieures extraites des publications des CE 37, 77, 86 et CISPR de l'IEC.

Service Clients - webstore.iec.ch/csc

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: csc@iec.ch.



INTERNATIONAL STANDARD

NORME INTERNATIONALE



BASIC EMC PUBLICATION
PUBLICATION FONDAMENTALE EN CEM

**Power quality measurement in power supply systems –
Part 1: Power quality instruments (PQI)**

**Mesure de la qualité de l'alimentation dans les réseaux d'alimentation –
Partie 1: Instruments de qualité de l'alimentation (PQI)**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 17.220.20

ISBN 978-2-8322-4358-9

**Warning! Make sure that you obtained this publication from an authorized distributor.
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

CONTENTS

FOREWORD.....	5
INTRODUCTION.....	7
1 Scope.....	8
2 Normative references	8
3 Terms, definitions, symbols and abbreviated terms.....	10
3.1 General definitions.....	10
3.2 Terms and definitions related to environments	11
3.3 Definitions related to uncertainty.....	11
3.4 Notations	12
3.4.1 Functions.....	12
3.4.2 Symbols and abbreviated terms.....	12
3.4.3 Indices.....	12
4 Environmental conditions.....	13
4.1 General.....	13
4.2 Environments FI1, FI2, FI1-H, FI2-H, FO and FO-H	14
4.3 Environments PI, PI-H, PO and PO-H	15
4.4 Relationship between ambient air temperature and relative humidity.....	16
5 Ratings.....	17
5.1 Rated input energising voltages.....	17
5.2 Rated frequencies.....	17
6 Design and construction	17
6.1 General.....	17
6.2 General architecture	17
6.3 Functions embedded in PQI-A and PQI-S	18
6.3.1 PQI-A minimum functions definition	18
6.3.2 PQI-S minimum functions definition	19
6.3.3 Summary of IEC 61000-4-30 requirements for functions	20
6.4 Additional requirements complementary to IEC 61000-4-30	21
6.4.1 Data to be provided for testing reasons	21
6.4.2 Resolution of the presented data	23
6.4.3 Clarification about “data flagging”	23
6.4.4 Temperature drift requirement within the rated range of operation for ambient air temperature.....	23
6.5 Safety requirements.....	25
6.6 EMC requirements	25
6.6.1 Emissions.....	25
6.6.2 Immunity.....	25
6.7 Climatic requirements of PQI	25
6.8 Mechanical requirements	25
6.8.1 Product mechanical robustness	25
6.8.2 Enclosure robustness	25
6.9 Degree of protection by enclosures.....	26
6.10 Start-up requirements	26

7	Marking and operating instructions	27
7.1	General.....	27
7.2	Marking.....	27
7.3	Operating instructions	27
8	Functional, environmental and safety type tests.....	27
8.1	General.....	27
8.2	Reference conditions for type tests	28
8.3	Safety tests.....	28
8.4	EMC tests	28
8.4.1	Emissions	28
8.4.2	Immunity.....	28
8.5	Climatic tests	29
8.6	Mechanical tests	30
8.6.1	Product mechanical robustness	30
8.6.2	Degree of protection provide by enclosures for electrical equipment against external mechanical impacts (IK code)	31
8.6.3	Degree of protection by enclosure (IP code)	31
8.7	Functional and uncertainty tests.....	31
9	Routine tests	32
9.1	General.....	32
9.2	Protective bonding test	32
9.3	Dielectric strength test	32
9.4	Intrinsic uncertainty test	32
10	Declarations	32
11	Re-calibration and re-verification	32
	Annex A (informative) Information about environment “EMC environment G” and environment “EMC environment H”	33
	Bibliography.....	34
	Figure 1 – Instrument generic measurement chain	18
	Figure 2 – Uncertainty requirement as a function of temperature	24
	Figure A.1 – Example for the situation inside a power station	33
	Table 1 – Products coding table.....	13
	Table 2 – Definition of class A products	13
	Table 3 – Definition of class S products	13
	Table 4 – Description of FI1, FI2, FI1-H, FI2-H, FO, FO-H environments	15
	Table 5 – Description of PI, PI-H, PO and PO-H environments.....	16
	Table 6 – PQI-A functions	19
	Table 7 – PQI-S minimum functions	20
	Table 8 – Summary of measurements requested for testing	22
	Table 9 – Uncertainty multipliers for different temperature ranges.....	24
	Table 10 – Enclosure mechanical requirements	26
	Table 11 – Minimum IP requirements	26

Table 12 – Characteristics specification template.....	27
Table 13 – Reference conditions for testing	28
Table 14 – Performance criteria applicable for EMC testing	29
Table 15 – Climatic requirements.....	30
Table 16 – Product mechanical requirements.....	31

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**POWER QUALITY MEASUREMENT IN POWER
SUPPLY SYSTEMS –****Part 1: Power quality instruments (PQI)**

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 62586-1 has been prepared by IEC technical committee 85: Measuring equipment for electrical and electromagnetic quantities.

This second edition cancels and replaces the first edition published in 2013. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) integration of the new measurement functions of IEC 61000-4-30:2015 (e.g. RVC and current functions);
- b) integration of the new requirements of IEC/TS 61000-6-5:2015, update of definitions of environment G and H, update of applicable EMC performance criteria;
- c) correction of minor mistakes, improvement in specification.

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

FDIS	Report on voting
85/586/FDIS	85/590/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.

It has the status of a basic EMC publication in accordance with IEC Guide 107.

A list of all parts of the IEC 62586 series, published under the general title *Power quality measurement in power supply systems*, 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.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

Electricity as delivered to the customers has several characteristics that are variable and that affect its usefulness to the customers.

Power quality instruments on the market have different characteristics. This document provides a common system of references in order to facilitate their selection, comparison and evaluation. This document specifies a classification based on product performance, environment and safety.

It is acknowledged that IEC 61000-4-30 is a basic EMC publication. Detailed guidance on instrument performance, performance verification methods, additional influence quantities and other similar information should, in general, be found in a product standard.

IEC 62586-1 is a product standard that refers to IEC 61000-4-30, IEC 61000-4-7 and IEC 61000-4-15 for measuring methods. IEC 62586-2 specifies functional tests and uncertainty requirements for instruments in the scope of IEC 62586-1.

IEC 62586-1 is therefore complementing basic EMC standards with environmental, safety and performance requirements.

POWER QUALITY MEASUREMENT IN POWER SUPPLY SYSTEMS –

Part 1: Power quality instruments (PQI)

1 Scope

This part of IEC 62586 specifies product and performance requirements for instruments whose functions include measuring, recording and possibly monitoring power quality parameters in power supply systems, and whose measuring methods (class A or class S) are defined in IEC 61000-4-30.

These requirements are applicable in single, dual- (split phase) and 3-phase AC power supply systems at 50 Hz or 60 Hz.

These instruments can be used:

- in the generation, transmission and distribution of electricity, for example inside a power station, substation or a distributed generator connection;
- at the interface point between the installation and the network, e.g. in order to check the compliance of the connection agreement between a network operator and the customer.

NOTE These instruments can also be used for other applications, e.g. inside commercial / industrial installations especially where comparable measurements are needed (i.e. data centres or petrochemical plants).

These instruments are fixed-installed or portable. They are intended to be used both indoors and/or outdoors.

Devices such as digital fault recorders, energy/power meters, protection relays or circuit breakers can include power quality functions of class A or class S defined in IEC 61000-4-30. If such devices are specified according to this document, then this document fully applies and applies in addition to the relevant product standard. This document does not replace the relevant product standard.

This document does not address the user interface or topics unrelated to measurement performance of device.

This document does not cover post-processing and interpretation of the data with, for example, dedicated software.

2 Normative references

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.

IEC 60068-1, *Environmental testing – Part 1: General and guidance*

IEC 60068-2-1, *Environmental testing – Part 2-1: Tests – Tests A: Cold*

IEC 60068-2-2, *Environmental testing – Part 2-2: Tests – Tests B: Dry heat*

IEC 60068-2-6, *Environmental testing – Part 2-6: Tests – Test Fc: Vibration (sinusoidal)*

IEC 60068-2-14, *Environmental testing – Part 2-14 Tests – Test N: Change of temperature*

IEC 60068-2-27, *Environmental testing – Part 2-27: Tests – Test Ea and guidance: Shock*

IEC 60068-2-31, *Environmental testing – Part 2-31: Tests – Test Ec: Rough handling shocks, primarily for equipment-type specimens*

IEC 60068-2-52, *Environmental testing – Part 2-52: Tests – Test Kb: Salt mist, cyclic (sodium chloride solution)*

IEC 60068-2-57, *Environmental testing – Part 2-57: Tests – Test Ff: Vibration – Time-history and sine-beat method*

IEC 60068-2-78, *Environmental testing – Part 2-78: Tests – Test Cab: Damp heat, steady state*

IEC 60529, *Degrees of protection provided by enclosures (IP Code)*

IEC 60654-1, *Industrial-process measurement and control equipment – Operating conditions – Part 1: Climatic conditions*

IEC 60664-1:2007, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

IEC 60721-3-1, *Classification of environmental conditions – Part 3: Classification of groups of environmental parameters and their severities – Section 1: Storage*

IEC 60721-3-2, *Classification of environmental conditions – Part 3: Classification of groups of environmental parameters and their severities – Section 2: Transportation*

IEC 60721-3-3, *Classification of environmental conditions – Part 3: Classification of groups of environmental parameters and their severities – Section 3: Stationary use at weatherprotected locations*

IEC 61000-4-7:2002, *Electromagnetic compatibility (EMC) – Part 4-7: Testing and measurement techniques – General guide on harmonics and interharmonics measurements and instrumentation, for power supply systems and equipment connected thereto*
Amendment 1:2008

IEC 61000-4-15, *Electromagnetic compatibility (EMC) – Part 4-15: Testing and measurement techniques – Flickermeter – Functional and design specifications*

IEC 61000-4-30:2015, *Electromagnetic compatibility (EMC) – Part 4-30: Testing and measurement techniques – Power quality measurement methods*

IEC 61000-6-5, *Electromagnetic compatibility (EMC) – Part 6-5: Generic standards – Immunity for power station and substation environments*

IEC 61010-1:2010, *Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: General requirements*

IEC 61010-2-030, *Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 2-030: Particular requirements for testing and measuring circuits*

IEC 62262, *Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)*

IEC 62586-2, *Power quality measurement in power supply systems – Part 2: Functional tests and uncertainty requirements*

CISPR 32, *Electromagnetic compatibility of multimedia equipment – Emission requirements*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN