

STN	Elektrické meracie prístroje priamo pôsobiace ukazovacie analógové a ich príslušenstvo Časť 1: Definície a všeobecné požiadavky spoločné pre všetky časti	STN EN 60051-1 35 6203
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Direct acting indicating analogue electrical measuring instruments and their accessories - Part 1: Definitions and general requirements common to all parts

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. 08/17

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EUROPEAN STANDARD

EN 60051-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2017

ICS 17.220.20

Supersedes EN 60051-1:1998

English Version

Direct acting indicating analogue electrical measuring
instruments and their accessories - Part 1: Definitions and
general requirements common to all parts
(IEC 60051-1:2016)

Appareils de mesure électriques indicateurs analogiques à
action directe et leurs accessoires - Partie 1: Définitions et
exigences générales communes à toutes les parties
(IEC 60051-1:2016)

Direkt anzeigende analoge elektrische Messgeräte und ihr
Zubehör - Teil 1: Definitionen und allgemeine
Anforderungen für alle Teile
(IEC 60051-1:2016)

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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

European foreword

The text of document 85/521/FDIS, future edition 6 of IEC 60051-1, 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 60051-1:2017.

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) 2017-10-28
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2020-04-28

This document supersedes EN 60051-1:1998.

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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.

Endorsement notice

The text of the International Standard IEC 60051-1:2016 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 standard indicated :

IEC 60359:2001	NOTE	Harmonized as EN 60359:2002.
IEC 61557-12:2007	NOTE	Harmonized as EN 61557-12:2008.
IEC 62052-11:2003	NOTE	Harmonized as EN 62052-11:2003.
IEC 62586-1:2013	NOTE	Harmonized as EN 62586-1:2014.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

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 60051-9	-	Direct acting indicating analogue electrical measuring instruments and their accessories -- Part 9: Recommended test methods	EN 60051-9	-
IEC 60359	2001	Electrical and electronic measurement equipment - Expression of performance	EN 60359	2002
IEC 60529	2013	Degrees of protection provided by-enclosures (IP Code)	-	-
+ A1 IEC 60721-3-3	1995 1994	Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities -- Section 3: Stationary use at weatherprotected locations	- EN 60721-3-3	- 1995
+ A2 IEC 60721-3-7	1996 1995	Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities -- Section 7: Portable and non-stationary use	+ A2 EN 60721-3-7	1997 1995
+ A1 IEC 61010-1	1996 2010	Safety requirements for electrical equipment for measurement, control and laboratory use -- Part 1: General requirements	+ A1 EN 61010-1	1997 2010
IEC 61010-2-030	2010	Safety requirements for electrical equipment for measurement, control and laboratory use -- Part 2-030: Particular requirements for testing and measuring circuits	EN 61010-2-030	2010
IEC 61326-1	2012	Electrical equipment for measurement, control and laboratory use - EMC requirements -- Part 1: General requirements	EN 61326-1	2013

EN 60051-1:2017

IEC 61326-2-1	-	Electrical equipment for measurement, control and laboratory use - EMC requirements -- Part 2-1: Particular requirements - Test configurations, operational conditions and performance criteria for sensitive test and measurement equipment for EMC unprotected applications	EN 61326-2-1	-
ISO 780	-	Packaging - Pictorial marking for handling of goods	EN ISO 780	-



INTERNATIONAL STANDARD

NORME INTERNATIONALE

Direct acting indicating analogue electrical measuring instruments and their accessories –

Part 1: Definitions and general requirements common to all parts

Appareils de mesure électriques indicateurs analogiques à action directe et leurs accessoires –

Partie 1: Définitions et exigences générales communes à toutes les parties





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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Direct acting indicating analogue electrical measuring instruments and their accessories –

Part 1: Definitions and general requirements common to all parts

Appareils de mesure électriques indicateurs analogiques à action directe et leurs accessoires –

Partie 1: Définitions et exigences générales communes à toutes les parties

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**DIRECT ACTING INDICATING ANALOGUE ELECTRICAL
MEASURING INSTRUMENTS AND THEIR ACCESSORIES –****Part 1: Definitions and general requirements common to all parts**

FOREWORD

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International Standard IEC 60051-1 has been prepared by IEC technical committee 85: Measuring equipment for electrical and electromagnetic quantities.

This sixth edition cancels and replaces the fifth edition published in 1997. This edition constitutes a technical revision.

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

- adding the EMC requirements;
- updating the safety symbols and requirements according to new IEC 61010 series;
- replacing the concept of “error” to the concept of “uncertainty”;
- adding service environment classification and classification by method of operation, mechanical condition and the degrees of protection;

- adding the requirements for transport and storage of instruments and accessories according to IEC 60359;
- updating the Annexes to provide more information.

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

FDIS	Report on voting
85/521/FDIS	85/536/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 in the IEC 60051 series, published under the general title *Direct acting indicating analogue electrical measuring instruments and their accessories*, 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 website 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

IEC 60051 is published in separate parts according to the following structure and under the general title *Direct acting indicating analogue electrical measuring instruments and their accessories*.

Part 1: Definitions and General Requirements Common to all Parts.

Part 2: Special Requirements for Ammeters and Voltmeters.

Part 3: Special Requirements for Wattmeters and Varmeters.

Part 4: Special Requirements for Frequency Meters.

Part 5: Special Requirements for Phase Meters, Power Factor Meters and Synchrosopes.

Part 6: Special Requirements for Ohmmeters (Impedance Meters) and Conductance Meters.

Part 7: Special Requirements for Multi-function Instruments.

Part 8: Special Requirements for Accessories.

Part 9: Recommended Test Methods.

Parts 2 to 9 are not complete in themselves and shall be read in conjunction with this Part 1.

All of these parts are arranged in the same format and a standard relationship between subject and clause number is maintained throughout. This re-arrangement will assist the reader of IEC 60051 to distinguish information relating to the different types of instruments.

DIRECT ACTING INDICATING ANALOGUE ELECTRICAL MEASURING INSTRUMENTS AND THEIR ACCESSORIES –

Part 1: Definitions and general requirements common to all parts

1 Scope

This part of IEC 60051 specifies definitions and general requirements for direct acting indicating analogue electrical measuring instruments and their accessories.

This part applies to direct acting indicating analogue electrical measuring instruments, such as:

- ammeters and voltmeters;
- wattmeters and varmeters;
- frequency meters of pointer and vibrating-reed types;
- phasemeters, power-factor meters and synchrosopes;
- ohmmeters(impedance meters) and conductance meters;
- multi-function instruments of the above types.

It also applies to:

- certain accessories used with these instruments, such as:
 - shunts;
 - series resistors and impedance elements;
- combination of the instruments and the accessories provided that the adjustments have been made for the combination;
- direct acting indicating electrical measuring instrument whose scale marks do not correspond directly to its electrical input quantity, provided that the relationship between them is known;
- instruments and accessories having electronic devices in their measuring and/or auxiliary circuits.

These series standards do not apply to:

- special purpose instruments which are covered by their own IEC standards;
- special purpose devices which are covered by their own IEC standards when they are used as accessories.

This standard does not specify requirements concerning dimensions of instruments or accessories (for the former, see IEC 60473).

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 60051-9, *Direct acting indicating analogue electrical measuring instruments and their accessories – Part 9: Recommended Test Methods*¹

IEC 60359:2001, *Electrical and electronic measurement equipment – Expression of performance*

IEC 60529:2013, *Degrees of protection provided by enclosures (IP Code)*

IEC 60721-3-3:1994, *Classification of environmental conditions – Part 3: Classification of groups of environmental parameters and their severities – Section 3: Stationary use at weatherprotected locations*

IEC 60721-3-3/AMD1:1995

IEC 60721-3-3/AMD2:1996

IEC 60721-3-7:1995, *Classification of environmental conditions – Part 3: Classification of groups of environmental parameters and their severities – Section 7: Portable and non-stationary use*

IEC 60721-3-7/AMD1:1996

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

IEC 61010-2-030:2010, *Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 2-030: Particular requirements for testing and measuring circuits*

IEC 61326-1:2012, *Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 1: General requirements*

IEC 61326-2-1:2012, *Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 2-1: Particular requirements – Test configurations, operational conditions and performance criteria for sensitive test and measurement equipment for EMC unprotected applications*

ISO 780:1997, *Packaging – Pictorial marking for handling of goods*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN

¹ To be published.