

# SLOVENSKI STANDARD

## SIST EN 60051-6:1995

01-avgust-1995

---

**Neposredni kazalni analogni električni merilni instrumenti in njihov pribor – 6. del:  
Posebne zahteve za ohmmetre (merilnike impedance) in merilnike konduktance  
(IEC 60051-6:1984)**

Direct acting indicating analogue electrical measuring instruments and their accessories -  
- Part 6: Special requirements for ohmmeters (impedance meters) and conductance  
meters

Direkt wirkende anzeigende elektrische Meßgeräte und ihr Zubehör - Meßgeräte mit  
Skalenanzeige -- Teil 6: Spezielle Anforderungen für Widerstands- (Scheinwiderstands-)  
und Leitfähigkeits-Meßgeräte

Appareils mesureurs électriques indicateurs analogiques à action directe et leurs  
accessoires -- Partie 6: Prescriptions particulières pour les ohmmètres (les  
impédancemètres) et les inductancemètres

**Ta slovenski standard je istoveten z: EN 60051-6:1989**

**ICS:**

17.220.20	Merjenje električnih in magnetnih veličin	Measurement of electrical and magnetic quantities
-----------	---	---

**SIST EN 60051-6:1995**

**en**

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST EN 60051-6:1995](https://standards.iteh.ai/catalog/standards/sist/f94af406-0a44-4da9-a95a-ad650f9eff8c/sist-en-60051-6-1995)

<https://standards.iteh.ai/catalog/standards/sist/f94af406-0a44-4da9-a95a-ad650f9eff8c/sist-en-60051-6-1995>

UDC: 621.317.73.037.33:620.1

KEY WORDS: Electrical measuring instruments; analogue indicating instruments; direct acting measuring instruments; accessories for electrical measuring instruments; ohmmeters; impedance meters; conductance meters

### ENGLISH VERSION

DIRECT ACTING INDICATING ANALOGUE ELECTRICAL  
MEASURING INSTRUMENTS AND THEIR ACCESSORIES  
PART 6: SPECIAL REQUIREMENTS FOR OHMMETERS  
(IMPEDANCE METERS) AND CONDUCTANCE METERS  
(IEC 51-6 (1984) edition 4)

Appareils mesureurs électriques  
indicateurs analogiques  
à action directe  
et leurs accessoires  
Sixième partie: Prescriptions  
particulières pour les ohmmètres  
(les impédancemètres) et les  
conductancemètres  
(CEI 51-6 (1984) édition 4)

Direkt wirkende anzeigende  
elektrische Meßgeräte und  
ihr Zubehör  
Meßgeräte mit Skalenanzeige  
Teil 6: Spezielle  
Anforderungen für  
Widerstands-(Scheinwiderstands-)  
und Leitfähigkeits-Meßgeräte  
(IEC 51-6 (1984) Ausgabe 4)

This European Standard was ratified by CENELEC on 11 September 1989. CENELEC members are bound to comply with the requirements of the CENELEC Internal Regulations which stipulate that, on the date of approval of 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 CENELEC Central Secretariat or to any CENELEC member.

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

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxemburg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

### CENELEC

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

Central Secretariat: rue Bréderode 2, B-1000 Brussels

Page 2 EN 60 051-6

#### BRIEF HISTORY

The text of IEC-Publication 51-6 (4th edition - 1984) was submitted to the CENELEC members for unique acceptance.

#### TECHNICAL TEXT

The text of the International Standard IEC 51-6 (4th edition - 1984) was approved by CENELEC on 11 September 1989 as a European Standard.

## iTeh STANDARD PREVIEW (standards.iteh.ai)

The following dates are applicable:

- latest date of announcement  
of the EN at national level (doa) : 1990-03-01
- date of latest publication of  
a new harmonized standard (dop) : 1990-09-01
- date of withdrawal of conflicting  
national standards (dow) : 1990-09-01

**NORME  
INTERNATIONALE  
INTERNATIONAL  
STANDARD**

**CEI  
IEC  
51-6**

Quatrième édition  
Fourth edition  
1984

**Appareils mesureurs électriques indicateurs  
analogiques à action directe et  
leurs accessoires**

**Sixième partie:**

**Prescriptions particulières pour les ohmmètres  
(les impédancemètres) et les conductancemètres**

SIST EN 60051-6:1995

<https://standards.iteh.ai/catalog/standards/sist/34a8105-0a44-4da9-a95a-ad6509ef8c/sist-en-60051-6-1995>

**Direct acting indicating analogue electrical  
measuring instruments and their accessories**

**Part 6:**

**Special requirements for ohmmeters (impedance  
meters) and conductance meters**

© CEI 1984 Droits de reproduction réservés — Copyright - all rights reserved

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'éditeur.

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 the publisher

Bureau central de la Commission Electrotechnique Internationale 3, rue de Varembe Genève Suisse



Commission Electrotechnique Internationale  
International Electrotechnical Commission  
Международная Электротехническая Комиссия

CODE PRIX  
PRICE CODE

**J**

● Pour prix, voir catalogue en vigueur  
For price, see current catalogue

## CONTENTS

	Page
FOREWORD .....	5
PREFACE .....	5
Clause	
1. Scope .....	7
2. Definitions .....	7
3. Description, classification and compliance .....	7
4. Reference conditions and intrinsic errors .....	9
5. Nominal range of use and variations .....	9
6. Further electrical and mechanical requirements .....	11
7. Constructional requirements .....	13
8. Information, general markings and symbols .....	13
9. Markings and symbols for terminals .....	15
10. Tests to prove compliance with this standard .....	15
APPENDIX A-6 — Suggestions for routine tests .....	17

(standards.iteh.ai)

[SIST EN 60051-6:1995](https://standards.iteh.ai/catalog/standards/sist/f94af406-0a44-4da9-a95a-ad6509eff8c/sist-en-60051-6-1995)

<https://standards.iteh.ai/catalog/standards/sist/f94af406-0a44-4da9-a95a-ad6509eff8c/sist-en-60051-6-1995>

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

DIRECT ACTING INDICATING ANALOGUE ELECTRICAL MEASURING  
INSTRUMENTS AND THEIR ACCESSORIESPart 6: Special requirements for ohmmeters (impedance meters)  
and conductance meters

## FOREWORD

- 1) The formal decisions or agreements of the IEC on technical matters, prepared by Technical Committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
- 2) They have the form of recommendations for international use and they are accepted by the National Committees in that sense.
- 3) In order to promote international unification, the IEC expresses the wish that all National Committees should adopt the text of the IEC recommendation for their national rules in so far as national conditions will permit. Any divergence between the IEC recommendation and the corresponding national rules should, as far as possible, be clearly indicated in the latter.

## iTeh STANDARD PREVIEW

## PREFACE

This standard has been prepared by IEC Technical Committee No. 85: Measuring Equipment for Basic Electrical Quantities (former Sub-Committee 13B: Electrical Measuring Instruments).

This fourth edition replaces the third edition of IEC Publication 51.

This standard constitutes Part 6.

The general layout for the revised Publication 51 is as follows:

- 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 Part 1.

All of these parts are arranged in the same format and a standard relationship between subject and clause number is maintained throughout. In addition, tables, figures and appendices add a suffix to the part number in order to differentiate the parts. This re-arrangement will assist the reader of IEC Publication 51 to distinguish information relating to the different types of instruments.

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

Six Months' Rule	Report on Voting
13B(CO)89	13B(CO)98

Further information can be found in the Report on Voting indicated in the table above.

## DIRECT ACTING INDICATING ANALOGUE ELECTRICAL MEASURING INSTRUMENTS AND THEIR ACCESSORIES

### Part 6: Special requirements for ohmmeters (impedance meters) and conductance meters

---

#### 1. Scope

1.1 to 1.8 See Part 1.

1.9 Part 6 of the standard does not apply to resistivity meters (specific resistance meters), insulation resistance meters used in energized circuits or conductivity meters (specific conductance meters).

#### 2. Definitions

See Part 1.

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

#### 3. Description, classification and compliance

<https://standards.iteh.ai/catalog/standards/sist/f94af406-0a44-4da9-a95a-ad6509eff8c/sist-en-60051-6-1995>

##### 3.1 Description

Ohmmeters shall be described:

3.1.1 According to their method of operation as given in Sub-clause 2.2 of Part 1.

3.1.2 According to whether they measure resistance values by a two-terminal or a four-terminal method.

3.1.3 According to whether they have a linear scale or a non-linear scale.

##### 3.2 Classification

Ohmmeters shall be classified in one of the accuracy classes denoted by the following class indices:

0.05, 0.1, 0.2, 0.5, 1, 1.5, 2, 2.5, 3, 5, 10, 20.

##### 3.3 Compliance with the requirements of this standard

3.3.1 and 3.3.2 See Part 1.

3.3.3 For impedance meters and for instruments not scaled in units of resistance or conductance, the manufacturer's instructions shall be followed.



#### 4. Reference conditions and intrinsic errors

##### 4.1 *Reference conditions*

4.1.1 to 4.1.3 See Part 1.

4.1.4 The requirements of Table I-1 concerning ripple, distortion, peak-factor and frequency do not apply to ohmmeters.

##### 4.2 *Limits of intrinsic error: fiducial value*

See Part 1.

##### 4.2.1 *Correspondance between intrinsic error and accuracy class*

See Part 1.

##### 4.2.2 *Fiducial value*

The fiducial value for an ohmmeter corresponds to:

##### 4.2.2.1 The indicated value for non-linear scale ohmmeters.

The class index is marked using Symbol E-3 given in Table III-1 (see Part 1, Clause 8).

##### 4.2.2.2 The span for linear scale ohmmeters.

The class index is marked using Symbol E-10 given in Table III-1 (see Part 1, Clause 8).

iteh STANDARD PREVIEW  
(standards.iteh.ai)

SIST EN 60051-6:1995

##### 4.3 *Rated values* <https://standards.iteh.ai/catalog/standards/sist/f94af406-0a44-4da9-a95a-ad650f9eff8c/sist-en-60051-6-1995>

4.3.1 When a rated voltage is stated, the open circuit voltage at the measuring terminals shall not differ from the rated voltage by more than 10% of the rated voltage.

4.3.2 When a rated voltage across a given value of test resistance is stated, the voltage shall not differ from the rated voltage by more than 10% of the rated voltage.

4.3.3 When a maximum (or a minimum) value is stated, it shall not exceed (or be less than) the stated voltage at any permissible supply voltage and at any setting of the controls and adjustments which are accessible to the user.

4.3.4 When a rated, maximum or minimum current is stated, the requirements of Sub-clauses 4.3.1 to 4.3.3 shall apply, substituting current for voltage.

#### 5. Nominal range of use and variations

##### 5.1 *Nominal range of use*

5.1.1 and 5.1.2 See Part 1.

5.1.3 The requirements of Table II-1 concerning ripple, distortion, peak-factor and frequency do not apply to ohmmeters.