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**IEC 60393-1**

Edition 3.0 2008-05

# **INTERNATIONAL STANDARD**

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**Potentiometers for use in electronic equipment –  
Part 1: Generic specification**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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## CONTENTS

FOREWORD.....	6
1 General.....	8
1.1 Scope.....	8
1.2 Normative references .....	8
2 Technical data.....	10
2.1 Units and symbols.....	10
2.2 Terms and definitions .....	10
2.3 Preferred values.....	28
2.4 Marking.....	28
3 Assessment procedures .....	28
4 Test and measurement procedures.....	28
4.1 General.....	28
4.2 Standard atmospheric conditions.....	29
4.3 Drying .....	30
4.4 Visual examination and check of dimensions.....	30
4.5 Continuity (except for continuously rotating potentiometers).....	32
4.6 Element resistance.....	32
4.7 Terminal resistance.....	33
4.8 Maximum attenuation .....	33
4.9 Resistance law (conformity) .....	33
4.10 Matching of the resistance law (for ganged potentiometers only).....	34
4.11 Switch contact resistance (when appropriate).....	34
4.12 Voltage proof (insulated styles only).....	38
4.13 Insulation resistance (insulated styles only).....	39
4.14 Variation of resistance with temperature.....	40
4.15 Rotational noise .....	42
4.16 Contact resistance at low-voltage levels.....	44
4.17 Setting ability (adjustability) and setting stability.....	45
4.18 Starting torque .....	49
4.19 Switch torque .....	49
4.20 End stop torque.....	50
4.21 Locking torque.....	50
4.22 Thrust and pull on shaft.....	51
4.23 Shaft run-out .....	52
4.24 Lateral run-out.....	53
4.25 Pilot (or spigot) diameter run-out .....	53
4.26 Shaft end play .....	54
4.27 Backlash .....	55
4.28 Dither .....	57
4.29 Output smoothness .....	58
4.30 Robustness of terminals .....	59
4.31 Sealing.....	60
4.32 Solderability .....	61
4.33 Resistance to soldering heat .....	61
4.34 Change of temperature.....	62

4.35	Vibration.....	63
4.36	Bump .....	64
4.37	Shock.....	64
4.38	Climatic sequence .....	65
4.39	Damp heat, steady state.....	67
4.40	Mechanical endurance (potentiometers) .....	68
4.41	AC endurance testing of mains switches on capacitive loads.....	71
4.42	DC endurance testing of switches .....	73
4.43	Electrical endurance.....	74
4.44	Component solvent resistance.....	78
4.45	Solvent resistance of the marking.....	78
4.46	Microlinearity.....	79
4.47	Mounting (for surface mount potentiometers).....	81
4.48	Shear (adhesion) test .....	83
4.49	Substrate bending test (formerly bond strength of the end face plating).....	83
4.50	Solderability (for surface mount potentiometers).....	83
4.51	Resistance to soldering heat (for surface mount potentiometers).....	83
Annex A	(normative) Rules for the preparation of detail specifications for capacitors and resistors for electronic equipment .....	84
Annex B	(normative) Interpretation of sampling plans and procedures as described in IEC 60410 for use within the IEC Quality Assessment System for Electronic Components .....	85
Annex C	(normative) Measuring methods for rotational noise.....	86
Annex D	(normative) Apparatus for measuring mechanical accuracy .....	89
Annex E	(normative) Measuring method for microlinearity.....	90
Annex F	(normative) Preferred dimensions of shaft ends, bushes and for the mounting hole, bush-mounted, shaft-operated electronic components .....	92
Annex G	(informative) Example of common potentiometer's law .....	93
Annex H	(normative) Quality assessment procedures .....	95
Figure 1	– Shaft-sealed potentiometer .....	14
Figure 2	– Shaft- and panel-sealed potentiometer.....	14
Figure 3	– Fully sealed potentiometer .....	14
Figure 4	– Linear law .....	16
Figure 5	– Logarithmic law .....	16
Figure 6	– Inverse logarithmic law.....	16
Figure 7	– Output ratio.....	17
Figure 8	– Loading error .....	18
Figure 9	– Total mechanical travel (or angle of rotation) .....	18
Figure 10	– Conformity .....	20
Figure 11	– Absolute conformity.....	20
Figure 12	– Linearity .....	21
Figure 13	– Independent linearity.....	22
Figure 14	– Zero-based linearity .....	23
Figure 15	– Absolute linearity .....	24

Figure 16 – Terminal based linearity .....	25
Figure 17 – Effective tap width.....	25
Figure 18 – Backlash .....	27
Figure 19 – Example of insulation resistance and voltage proof test jig for surface mount potentiometers .....	39
Figure 20 – Test circuit contact resistance .....	45
Figure 21 – Measuring circuit for setting ability (as divider).....	46
Figure 22 – Measuring circuit for setting ability (as current controller).....	47
Figure 23 – Shaft run-out .....	52
Figure 24 – Lateral run-out .....	53
Figure 25 – Pilot (spigot) diameter run-out.....	54
Figure 26 – Shaft end play.....	55
Figure 27 – Test circuit for measurement of backlash .....	56
Figure 28 – Measurement of backlash.....	57
Figure 29 – Test circuit for measurement of output smoothness.....	58
Figure 30 – The circuit for continuous monitoring of the contact resistance .....	71
Figure 31 – Test circuit a.c. endurance testing.....	72
Figure 32 – Test circuit d.c. endurance testing.....	73
Figure 33 – Example of microlinearity measurement .....	79
Figure 34 – Block diagram of a circuit for evaluation of microlinearity .....	80
Figure 35 – Example of simultaneous evaluation of linearity and microlinearity .....	80
Figure 36 – Suitable substrate for mechanical and electrical tests (may not be suitable for impedance measurements).....	82
Figure 37 – Suitable substrate for electrical tests.....	82
Figure C.1 – Measuring circuit for method A, rotational noise .....	87
Figure C.2 – Measuring circuit for CRV .....	87
Figure C.3 – Measuring circuit for ENR.....	88
Figure E.1 – Block diagram of a digital reference unit (synthetic high-precision master).....	90
Figure G.1 – Definition of rotation (shaft-end view) .....	93
Figure G.2 – Linear law, without centre tap.....	94
Figure G.3 – Linear law, with centre tap.....	94
Figure G.4 – Logarithmic law, without tap .....	94
Figure G.5 – Logarithmic law, with tap .....	94
Figure G.6 – Inverse logarithmic law without tap .....	94
Figure G.7 – Inverse logarithmic law with tap.....	94
Figure H.1 – General scheme for capability approval .....	98
Table 1 – Standard atmospheric conditions.....	30
Table 2 – Measuring voltages .....	32
Table 3 – Calculation of resistance value( $R$ ) and change in resistance ( $\Delta R$ ) .....	41
Table 4 – Calculation of temperature differences ( $\Delta T$ ).....	41
Table 5 – Current values ( $IB_p$ ) .....	43
Table 6 – Moving contact current .....	48
Table 7 – End stop torque.....	50

Table 8 – Locking torque .....	50
Table 9 – Shaft torque .....	51
Table 10 – Thrust and pull .....	51
Table 11 – Thrust and pull .....	52
Table 12 – Backlash .....	57
Table 13 – Dither for non-wire wound types .....	57
Table 14 – Dither for wire wound types (under consideration) .....	58
Table 15 – Tensile force .....	59
Table 16 – Number of cycles.....	66
Table 17 – Number of cycles.....	69
Table 18 – Number of operations .....	73
Table 19 – Panel size .....	75
Table G.1 – Resistance law and code letter .....	93

# INTERNATIONAL ELECTROTECHNICAL COMMISSION

## POTENTIOMETERS FOR USE IN ELECTRONIC EQUIPMENT –

### Part 1: Generic specification

#### FOREWORD

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International Standard IEC 60393-1 has been prepared by IEC technical committee 40: Capacitors and resistors for electronic equipment.

This third edition cancels and replaces the second edition published in 1989 and constitutes a technical revision, including minor revisions related to tables, figures and references.

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

- implementation of Annex H which replaces Section 3 of the previous edition.

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

FDIS	Report on voting
40/1897/FDIS	40/1914/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 the parts of the IEC 60393 series, under the general title *Potentiometers for use in electronic equipment*, can be found on the IEC web site.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result 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.

A bilingual version of this publication may be issued at a later date.

# POTENTIOMETERS FOR USE IN ELECTRONIC EQUIPMENT –

## Part 1: Generic specification

### 1 General

#### 1.1 Scope

This part of IEC 60393 is applicable to all types of resistive potentiometers, including lead-screw actuated types, presets, multi-turn units, etc. to be used in electronic equipment.

It establishes standard terms, inspection procedures and methods of test for use in sectional and detail specifications of electronic components for quality assessment or any other purpose.

It has been mainly written, and the test methods described, to conform to the widely used single-turn rotary potentiometer with an operating shaft.

For other types of potentiometers:

- the angle of rotation may be several turns;
- the reference to an operating shaft shall apply to any other actuating device;
- the angular rotation shall be taken to mean mechanical travel of the actuating device;
- a value for force shall be prescribed instead of a value for torque if the actuating device moves in a linear instead of a rotary manner.

These alternative prescriptions will be found in the sectional or detail specification.

When a component is constructed as a variable resistor, i.e. as a two-terminal device, the detail specification shall prescribe the modifications required in the standard tests.

#### 1.2 Normative references

The following referenced documents are indispensable for the application 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 60027-1, *Letter symbols to be used in electrical technology – Part 1: General*

IEC 60050 (all parts), *International Electrotechnical Vocabulary (IEV)*

IEC 60062, *Marking codes for resistors and capacitors*

IEC 60063:1963, *Preferred number series for resistors and capacitors*  
Amendment 1 (1967)  
Amendment 2 (1977)

IEC 60068-1:1988, *Environmental testing – Part 1: General and guidance*  
Amendment 1 (1992)

IEC 60068-2-1:1990, *Environmental testing – Part 2: Tests – Tests A: Cold*  
Amendment 1 (1993)  
Amendment 2 (1994)



IEC 60068-2-2:1974, *Environmental testing – Part 2: Tests – Tests B: Dry heat*  
Amendment 1 (1993)  
Amendment 2 (1994)

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

IEC 60068-2-13, *Environmental testing – Part 2: Tests – Test M: Low air pressure*

IEC 60068-2-14:1994, *Environmental testing – Part 2: Tests – Test N: Change of temperature*  
Amendment 1 (1986)

IEC 60068-2-17, *Environmental testing – Part 2: Tests – Test Q: Sealing*

IEC 60068-2-20:1979, *Environmental testing – Part 2: Tests – Test T: Soldering*  
Amendment 2 (1987)

IEC 60068-2-21, *Environmental testing – Part 2-21: Tests – Test U: Robustness of terminations and integral mounting devices*

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

IEC 60068-2-29, *Environmental testing – Part 2: Tests – Test Eb and guidance: Bump*

IEC 60068-2-30, *Environmental testing – Part 2-30: Tests – Test dB : Damp heat, cyclic (12 h + 12 hour cycle)*

IEC 60068-2-45:1980, *Environmental testing – Part 2: Tests – Test XA and guidance: Immersion in cleaning solvents*  
Amendment 1 (1993)

IEC 60068-2-58, *Environmental testing – Part 2-58: Tests – Test Td: Test methods for solderability, resistance to dissolution of metallization and to soldering heat of surface mounting devices (SMD)*

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

IEC 60410, *Sampling plans and procedures for inspection by attributes*

IEC 60617, *Graphical symbols for diagrams*

IEC 60915, *Capacitors and resistors for use in electronic equipment – Preferred dimensions of shaft ends, bushes and for the mounting of single-hole, bush-mounted, shaft-operated electronic components*

IEC 61249-2-7, *Materials for printed boards and other interconnecting structures – Part 2-7: Reinforced base materials clad and unclad – Epoxide woven E-glass laminated sheet of defined flammability (vertical burning test), copper-clad*

IECQ 001002-3, *IEC Quality Assessment System for Electronic Components (IECQ) – Rules of procedure – Part 3: Approval procedures*

IECQ 001005, see [www.iecq.org/certificates](http://www.iecq.org/certificates) for relevant information

ISO 1000, *SI units and recommendations for the use of their multiples and of certain other units*

