
Električni rotacijski stroji - 27-4. del: Merjenje izolacijske upornosti in indeksa polarizacije izolacije navitja električnih rotacijskih strojev (IEC 60034-27-4:2018)

Rotating electrical machines - Part 27-4: Measurement of insulation resistance and polarization index of winding insulation of rotating electrical machines (IEC 60034-27-4:2018)

Drehende elektrische Maschinen - Teil 27-4: Messung des Isolationswiderstands und des Polarisationsindex der Wicklungsisolierung drehender elektrischer Maschinen (IEC 60034-27-4:2018)

Machines électriques tournantes - Partie 27-4: Mesure de la résistance d'isolement et de l'index de polarisation sur le système d'isolation des enroulements des machines électriques tournantes (IEC 60034-27-4:2018)

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EN IEC 60034-27-4

June 2018

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English Version

**Rotating electrical machines - Part 27-4: Measurement of
insulation resistance and polarization index on winding insulation
of rotating electrical machines
(IEC 60034-27-4:2018)**

Machines électriques tournantes - Partie 27-4: Mesure de la
résistance d'isolement et de l'index de polarisation sur le
système d'isolation des enroulements des machines
électriques tournantes
(IEC 60034-27-4:2018)

Drehende elektrische Maschinen - Teil 27-4: Messung des
Isolationswiderstands und des Polarisationsindex der
Wicklungsisolierung drehender elektrischer Maschinen
(IEC 60034-27-4:2018)

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Europäisches Komitee für Elektrotechnische Normung

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EN IEC 60034-27-4:2018**European foreword**

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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 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 60050-411	-	International Electrotechnical Vocabulary (IEV) - Chapter 411: Rotating machinery	-	-

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**Rotating electrical machines –
Part 27-4: Measurement of insulation resistance and polarization index of
winding insulation of rotating electrical machines**

**Machines électriques tournantes –
Partie 27-4: Mesure de la résistance d'isolement et de l'index de polarisation sur
le système d'isolation des enroulements des machines électriques tournantes**

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CONTENTS

FOREWORD.....	5
INTRODUCTION.....	7
1 Scope.....	8
2 Normative references	8
3 Terms and definitions	8
4 Insulation resistance – components and influence factors.....	10
5 Polarization index	10
6 Measurement.....	11
6.1 Influences on the measurement of the insulation resistance.....	11
6.1.1 General	11
6.1.2 Winding temperature correction	11
6.2 Measuring equipment.....	12
6.3 Test object and measuring circuit.....	13
6.3.1 General	13
6.3.2 Three-phase stator windings.....	13
6.3.3 Other windings	14
6.4 Measuring voltage.....	15
6.4.1 Type and magnitude	15
6.4.2 Polarity.....	15
6.5 Measuring time	15
6.6 Safety	15
6.7 Measurement procedures.....	15
6.7.1 Standard procedure.....	15
6.7.2 Special procedures.....	16
7 Interpretation of measurement results.....	16
7.1 General.....	16
7.2 Suitability for testing and operation	16
7.3 Trending of insulation condition	17
7.4 Comparison between machines or between phases	17
7.5 Effects at very high values of insulation resistance	17
7.6 Limitations of the insulation resistance test.....	17
8 Recommended limits of insulation resistance and polarization index.....	18
8.1 General.....	18
8.2 Insulation resistance	18
8.3 Polarization index	18
9 Test report.....	19
9.1 Operational aged windings	19
9.2 New windings.....	20
Annex A (informative) Components of the direct current	21
A.1 Total current I_T	21
A.2 Capacitive current I_C	21
A.3 Conduction current I_G	22
A.4 Polarization current I_P	23
A.5 Surface leakage current I_L	24
A.6 Stress control coating current I_S	24

Annex B (informative) Graphical estimation of the slope parameter X for temperature correction from measurement data	25
Annex C (informative) Examples of test results of synthetic resin based high voltage windings	27
C.1 Machine with dry and clean surface of the insulation	27
C.2 Machine with a wet and contaminated surface	28
C.3 Machine with continuous stress control layers in galvanic contact with high voltage conductors	29
C.3.1 Stress control coating current I_S	29
C.3.2 Effects on insulation resistance and polarization index	30
C.3.3 Examples of test results	30
Annex D (informative) Measurement of leakage current to assess interphase insulation resistance	32
Annex E (informative) Other DC tests	34
E.1 General	34
E.2 Dielectric absorption ratio (DAR)	34
E.3 Monitoring charge and discharge currents	35
E.4 High voltage DC tests	37
E.4.1 General	37
E.4.2 Uniform-time voltage step test	37
E.4.3 Graded-time voltage step test	37
E.4.4 Ramped-time voltage step test	37
E.5 Wet insulation resistance measurement	38
Bibliography	39
Figure 1 – Equivalent circuit diagram of winding insulation in a DC voltage test	10
Figure 2 – Connection for testing of the entire winding	14
Figure 3 – Connection for phase-to-earth measurement	14
Figure A.1 – Relationships between different currents and time	21
Figure B.1 – Graphical estimation of the slope parameter X in a semi-logarithmic diagram	26
Figure C.1 – Total current versus time on a clean and dry insulation. The scales are logarithmic	27
Figure C.2 – Insulation resistance versus time on a clean and dry insulation	28
Figure C.3 – Total current versus time on a wet and contaminated insulation	28
Figure C.4 – Insulation resistance versus time on a wet and contaminated insulation	29
Figure C.5 – Total current versus time on a dry and clean surface with a continuous stress control coating	30
Figure C.6 – Insulation resistance versus time on a dry and clean surface with a stress control coating	31
Figure D.1 – Connection for phase-to-phase measurement. The test instrument shall be floating with respect to earth. Other phase to phase combinations are permitted	32
Figure D.2 – Measurement of interphase leakage current with a measurement instrument equipped with a guard connection	33
Figure D.3 – Measurement of interphase leakage current with a measurement instrument not equipped with a guard connection	33
Figure E.1 – Measurement of current and insulation resistance that results in a DAR of 1,09	35

Figure E.2 – Charge and discharge currents after a step voltage of 2,5 kV for the three-phase windings of a 50 MVA hydro-generator:	36
Table 1 – Values of the parameter X for the temperature correction	12
Table 2 – Guidelines for DC voltage magnitudes to be applied during the insulation resistance measurement	15
Table 3 – Recommended minimum insulation resistance values at a base temperature of 40 °C	18
Table 4 – Recommended minimum values of polarization index for high voltage insulation systems	19
Table B.1 – Example data from insulation resistance measurements at different winding temperatures	25

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ROTATING ELECTRICAL MACHINES –

Part 27-4: Measurement of insulation resistance and polarization index of winding insulation of rotating electrical machines

FOREWORD

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International Standard IEC 60034-27-4 has been prepared by IEC technical committee 2: Rotating machinery.

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

FDIS	Report on voting
2/1880/FDIS	2/1890/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.

A list of all parts in the IEC 60034 series, published under the general title *Rotating electrical machines*, can be found on the IEC website.

NOTE A table of cross-references of all IEC TC 2 publications can be found in the IEC TC 2 dashboard on the IEC website.

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INTRODUCTION

This document provides guidelines for measurement of the insulation resistance and the polarization index on stator and rotor winding insulation of rotating electrical machines. The document also describes typical insulation resistance characteristics, the effect of influential factors which impact or change these characteristics, and how these characteristics indicate winding condition. It recommends minimum acceptable values of insulation resistance for AC and DC rotating machine windings. Interpretation will depend on the nature of the insulation materials – specifically if the insulation is of the thermoset or thermoplastic type.

Insulation resistance measurement has been recommended and used for over 50 years to evaluate the condition of electrical insulation. It is recommended to track periodic measurements, accumulated over months and years of service or in connection with servicing and overhaul of rotating machines.

Empirical limits verified in practice can be used as a basis for evaluating the quality of stator winding insulation systems in manufacturing. Furthermore, trend evaluation, e.g. diagnostic tests as part of the functional evaluation of insulation systems or in connection with servicing and overhaul of rotating machines, can also provide information on ageing processes, possible repair options and the recommended time interval between tests. These measurements give no indication of local weak points in the insulation system and the trend evaluations cannot be used to predict the time to failure of the winding insulation.

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