SVENSK STANDARD SS-EN 61557-8

Fastställd	Utgåva	Sida	Ansvarig kommitté
2015-05-13	3	1 (1+50)	SEK TK 85

Elsäkerhet i elektriska starkströmsanläggningar för lågspänning – Utrustning för provning, mätning och övervakning av skyddsåtgärder – Del 8: Isolationsövervakning i IT-system

Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. – Equipment for testing, measuring or monitoring of protective measures – Part 8: Insulation monitoring devices for IT systems

Som svensk standard gäller europastandarden EN 61557-8:2015. Den svenska standarden innehåller den officiella engelska språkversionen av EN 61557-8:2015.

Nationellt förord

Europastandarden EN 61557-8:2015

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 61557-8, Third edition, 2014 - Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. - Equipment for testing, measuring or monitoring of protective measures - Part 8: Insulation monitoring devices for IT systems**

utarbetad inom International Electrotechnical Commission, IEC.

Standarden ska användas tillsammans med SS-EN 61557-1.

Tidigare fastställd svensk standard SS-EN 61557-8, utgåva 2, 2007, gäller ej fr o m 2018-01-15.

ICS 17.220.20; 29.080.01; 29.240.01

Denna standard är fastställd av SEK Svensk Elstandard,
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Det finns många fördelar med att ha gemensamma tekniska regler för bl a mätning, säkerhet och provning och för utförande, skötsel och dokumentation av elprodukter och elanläggningar.

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Stora delar av arbetet sker internationellt

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61557-8

February 2015

ICS 17.220.20; 29.240.01; 29.080.01

Supersedes EN 61557-8:2007

English Version

Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. - Equipment for testing, measuring or monitoring of protective measures - Part 8: Insulation monitoring devices for IT systems (IEC 61557-8:2014)

Sécurité électrique dans les réseaux de distribution basse tension de 1 000 V c.a. et 1 500 V C:C - Dispositifs de contrôle, de mesure ou de surveillance de mesures de protection - Partie 8: Contrôleur permanent d'isolement pour réseaux IT
(CEI 61557-8:2014)

Elektrische Sicherheit in Niederspannungsnetzen bis AC 1 000 V und DC 1 500 V - Geräte zum Prüfen, Messen oder Überwachen von Schutzmaßnahmen - Teil 8: Isolationsüberwachungsgeräte für IT-Systeme
(IEC 61557-8:2014)

This European Standard was approved by CENELEC on 2015-01-15. 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, 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

Ref. No. EN 61557-8:2015 E

SEK Svensk Elstandard

Foreword

The text of document 85/485/FDIS, future edition 3 of IEC 61557-8, 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 61557-8:2015.

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)	2015-10-15
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2018-01-15

This document supersedes EN 61557-8:2007.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

This standard covers the Principle Elements of the Safety Objectives for Electrical Equipment Designed for Use within Certain Voltage Limits (LVD).

Endorsement notice

The text of the International Standard IEC 61557-8:2014 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 60364-4-41	NOTE	Harmonized as HD 60364-4-41.
IEC 60664-1	NOTE	Harmonized as EN 60664-1.
IEC 60664-3	NOTE	Harmonized as EN 60664-3.
IEC 61140	NOTE	Harmonized as EN 61140.
IEC 60027-7	NOTE	Harmonized as EN 60027-7.
IEC 61557-9	NOTE	Harmonized as EN 61557-9.
IEC 60364-7-712	NOTE	Harmonized as HD 60364-7-712.

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.

Publication	Year	Title	EN/HD	Year
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 60068-2-27	-	Environmental testing -- Part 2-27: Tests - Test Ea and guidance: Shock	EN 60068-2-27	-
IEC 60364-7-710 (mod)	2002	Electrical installations of buildings -- Part 7-710: Requirements for special installations or locations - Medical locations	HD 60364-7-710	2012
			+AC	2013
IEC 60691	-	Thermal-links - Requirements and application guid	-	-
IEC 60721-3-1	-	Classification of environmental conditions -- Part 3: Classification of groups of environmental parameters and their severities -- Section 1: Storage	EN 60721-3-1	-
IEC 60721-3-2	-	Classification of environmental conditions -- Part 3: Classification of groups of environmental parameters and their severities -- Section 2: Transportation	EN 60721-3-2	-
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	EN 60721-3-3	-
IEC 60947-5-1	-	Low-voltage switchgear and controlgear -- Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices	EN 60947-5-1	-
			+EN 60947-5-1:2004/corrigendum Jul. 2005	2005
			+EN 60947-5-1:2004/corrigendum Nov. 2004	2004
IEC 60947-5-4	-	Low-voltage switchgear and controlgear -- Part 5-4: Control circuit devices and switching elements - Method of assessing the performance of low-energy contacts - Special tests	EN 60947-5-4	-

IEC 61010-1	2010	Safety requirements for electrical equipment for measurement, control and laboratory use -- Part 1: General requirements	EN 61010-1	2010
IEC 61010-2-030:2010/corrigendum May 2011	-	Safety requirements for electrical equipment for measurement, control and laboratory use -- Part 2-030: Particular requirements for testing and measuring circuits	-	-
IEC 61326-2-4	-	Electrical equipment for measurement, control and laboratory use - EMC requirements -- Part 2-4: Particular requirements - Test configurations, operational conditions and performance criteria for insulation monitoring devices according to IEC 61557-8 and for equipment for insulation fault location according to IEC 61557-8	EN 61326-2-4	-
IEC 61557-1	-	Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. - Equipment for testing, measuring or monitoring of protective measures -- Part 1: General requirements	EN 61557-1	-
IEC 61810-2	-	Electromechanical elementary relays -- Part 2: Reliability	EN 61810-2	-
IEC 62109-2	2011	Safety of power converters for use in photovoltaic power systems -- Part 2: Particular requirements for inverters	EN 62109-2	2011
CISPR 11	-	Industrial, scientific and medical equipment - Radio-frequency disturbance characteristics - Limits and methods of measurement	EN 55011	-

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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ELECTRICAL SAFETY IN LOW VOLTAGE DISTRIBUTION SYSTEMS UP TO 1 000 V AC AND 1 500 V DC – EQUIPMENT FOR TESTING, MEASURING OR MONITORING OF PROTECTIVE MEASURES –

Part 8: Insulation monitoring devices for IT systems

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.
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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.
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International Standard IEC 61557-8 has been prepared by IEC technical committee 85: Measuring equipment for electrical and electromagnetic quantities.

This third edition cancels and replaces the second edition published in 2007. This edition constitutes a technical revision.

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

a) Terms and definitions have been complemented;
b) Abbreviations are listed and explained;
c) Requirements have been revised;
d) Mandatory and optional functions and their terminology have been adapted from IEC 61557-15;

e) Mechanical requirements have been added;

f) Information on operating instructions has been added;

g) Type tests and routine tests have been complemented;

h) An Annex C: ‘Insulation monitoring devices for photovoltaic systems (PV-IMD)’ has been added;

i) An Annex D: ‘Insulation monitoring function of a photovoltaic inverter (PV-IMF) or in a charge controller’ has been added.

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

FDIS	Report on voting
85/485/FDIS	85/502/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.

This part of IEC 61557 shall be used in conjunction with Part 1.

A list of all parts in the IEC 61557 series, published under the general title *Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. – Equipment for testing, measuring or monitoring of protective measures,* 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 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.

ELECTRICAL SAFETY IN LOW VOLTAGE DISTRIBUTION SYSTEMS UP TO 1 000 V AC AND 1 500 V DC – EQUIPMENT FOR TESTING, MEASURING OR MONITORING OF PROTECTIVE MEASURES –

Part 8: Insulation monitoring devices for IT systems

1 Scope

This part of IEC 61557 specifies the requirements for insulation monitoring devices (IMD) which permanently monitor the insulation resistance R_F to earth of unearthed a.c. IT systems, of a.c. IT systems with galvanically connected d.c. circuits having nominal voltages up to 1 000 V a.c., as well as of unearthed d.c. IT systems with voltages up to 1 500 V d.c. independent from the method of measuring.

IT systems are described in IEC 60364-4-41 amongst other literature. Additional data for the selection of devices in other standards should be noted.

NOTE Various standards specify the use of IMDs in IT systems. In such cases, the objective of the equipment is to signal a drop in insulation resistance R_F below a minimum limit.

IMDs according to this part of IEC 61557 can also be used for de-energized TT, TN and IT systems or appliances.

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

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

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

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

IEC 60364-7-710:2002, *Electrical installations of buildings – Part 7-710: Requirements for special installations or locations – Medical locations*

IEC 60691, *Thermal-links – Requirements and application guide*

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 60947-5-1, *Low-voltage switchgear and controlgear – Part 5-1: Control circuit devices and switching elements – Electromechanical control circuit devices*

IEC 60947-5-4, *Low-voltage switchgear and controlgear – Part 5-4: Control circuit devices and switching elements – Method of assessing the performance of low-energy contacts – Special tests*

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 61326-2-4, *Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 2-4: Particular requirements – Test configurations, operational conditions and performance criteria for insulation monitoring devices according to IEC 61557-8 and for equipment for insulation fault location according to IEC 61557-9*

IEC 61557-1, *Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. – Equipment for testing, measuring or monitoring of protective measures – Part 1: General requirements*

IEC 61810-2, *Electromechanical elementary relays – Part 2: Reliability*

IEC 62109-2:2011, *Safety of power converters for use in photovoltaic power systems – Part 2: Particular requirements for inverters*

CISPR 11, *Industrial, scientific and medical equipment - Radio-frequency disturbance characteristics - Limits and methods of measurement*