

**Elektriohutus madalpingevõrkudes vahelduvpingega kuni 1000 V ja alalispingega kuni 1500 V.
Kaitstesüsteemide katsetamis-, mõõte- ja seireseadmed.
Osa 15: IT-süsteemide isolatsiooniseireseadmete ja IT-süsteemide isolatsioonirikke tuvastamise seadmete funktsionaalse ohutuse nõuded**

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 15: Functional safety requirements for insulation monitoring devices in IT systems and equipment for insulation fault location in IT systems

EESTI STANDARDI EESSÕNA	NATIONAL FOREWORD
See Eesti standard EVS-EN 61557-15:2014 sisaldab Euroopa standardi EN 61557-15:2014 ingliskeelset teksti.	This Estonian standard EVS-EN 61557-15:2014 consists of the English text of the European standard EN 61557-15:2014.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 16.05.2014.	Date of Availability of the European standard is 16.05.2014.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

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ICS 17.220.20, 29.080.01, 29.240.01

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ICS 17.220.20; 29.080.01; 29.240.01

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 15: Functional safety
requirements for insulation monitoring devices in IT systems and
equipment for insulation fault location in IT systems
(IEC 61557-15:2014)

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 15: Exigences de sécurité fonctionnelle
pour les contrôleurs d'isolement de réseaux IT et les
dispositifs de localisation de défauts d'isolement pour
réseaux IT
(CEI 61557-15:2014)

Elektrische Sicherheit in Niederspannungsnetzen bis AC 1
000 V und DC 1 500 V - Geräte zum Prüfen, Messen oder
Überwachen von Schutzmaßnahmen - Teil 15:
Anforderungen zur Funktionalen Sicherheit von
Isolationsüberwachungsgeräten in IT-Systemen und von
Einrichtungen zur Isolationsfehlersuche in IT-Systemen
(IEC 61557-15:2014)

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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

Foreword

The text of document 85/465/FDIS, future edition 1 of IEC 61557-15, 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 61557-15:2014.

The following dates are fixed:

- latest date by which the document has to be (dop) 2014-12-19
implemented at national level by
publication of an identical national
standard or by endorsement
- latest date by which the national (dow) 2017-03-19
standards conflicting with the
document have to be withdrawn

This standard is to be used in conjunction with EN 61557-8 and EN 61557-9.

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 61557-15:2014 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 60300-3-1	NOTE	Harmonized as EN 60300-3-1.
IEC 60335-1:2001	NOTE	Harmonized as EN 60335-1:2002 ¹⁾ (not modified).
IEC 60335-1:2001/A1:2004	NOTE	Harmonized as EN 60335-1:2002/A1:2004 ¹⁾ (not modified).
IEC 60335-1:2001/A2:2006 + Corr. 08-2006	NOTE	Harmonized as EN 60335-1:2002/A2:2006 ¹⁾ (not modified).
IEC 60364-4-41:2005	NOTE	Harmonized as HD 60364-4-41:2007 (modified).
IEC 60364-5-55:2011	NOTE	Harmonized as HD 60364-5-55:2012 (modified).
IEC 60364-7-710:2002	NOTE	Harmonized as HD 60364-7-710:2012 (modified).
IEC 60730-1:2010	NOTE	Harmonized as EN 60730-1:2011 (modified).
IEC 60812:2006	NOTE	Harmonized as EN 60812:2006 (not modified).
IEC 61010-1:2010 + Corr. 05-2011	NOTE	Harmonized as EN 61010-1:2010 (not modified).
IEC 61025	NOTE	Harmonized as EN 61025.
IEC 61078	NOTE	Harmonized as EN 61078.
IEC 61165	NOTE	Harmonized as EN 61165.
IEC 61508-7:2010	NOTE	Harmonized as EN 61508-7:2010 (not modified).
IEC 61709:1996	NOTE	Harmonized as EN 61709:1998 ²⁾ (not modified).
IEC 61784-3:2007	NOTE	Harmonized as EN 61784-3:2008 ³⁾ (not modified).
IEC 61800-5-2:2007	NOTE	Harmonized as EN 61800-5-2:2007 (not modified).
IEC/ISO 31010:2009	NOTE	Harmonized as EN 31010:2010 (not modified).
ISO 9001:2008	NOTE	Harmonized as EN ISO 9001:2008 (not modified).

¹⁾ Superseded by EN 60335-1:2012 (IEC 60335-1:2010, mod.)

²⁾ Superseded by EN 61709:2011 (IEC 61709:2011).

³⁾ Superseded by EN 61784-3:2010 (IEC 61784-3:2010).

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 61326-2-4	2012	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	EN 61326-2-4	2013
IEC 61326-3-1 + corr. August	2008 2008	Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 3-1: Immunity requirements for safety-related systems and for equipment intended to perform safety-related functions (functional safety) - General industrial applications	EN 61326-3-1	2008
IEC 61508-1	2010	Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 1: General requirements	EN 61508-1	2010
IEC 61508-2	2010	Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 2: Requirements for electrical/electronic/programmable electronic safety-related systems	EN 61508-2	2010
IEC 61508-3	2010	Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 3: Software requirements	EN 61508-3	2010
IEC 61508-4	2010	Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 4: Definitions and abbreviations	EN 61508-4	2010
IEC 61508-5	2010	Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 5: Examples of methods for the determination of safety integrity levels	EN 61508-5	2010

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61508-6	2010	Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 6: Guidelines on the application of IEC 61508-2 and IEC 61508-3	EN 61508-6	2010
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 61557-8	-	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	EN 61557-8	-
IEC 61557-9	2009	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 9: Equipment for insulation fault location in IT systems	EN 61557-9	2009

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INTRODUCTION

IEC 61508 deals with functional safety, this topic being of utmost importance for safety related systems. Functional safety may be applicable to IT systems where safety is based on insulation monitoring devices (IMD) and insulation fault location systems (IFLS), and also on additional safety related measures (e.g. circuit-breakers).

Insulation monitoring devices and insulation fault location systems comprise electrical and electronic components and can comprise embedded software.

Product requirements for these devices are defined in IEC 61557-8 and IEC 61557-9. These standards include elementary requirements which need to be taken into account for the functional safety approach according to IEC 61557-15, but do not cover the whole range of requirements which shall be fulfilled for the assignment of a defined level of functional safety and for the respective validation.

IEC 61508 series covers basic aspects to be considered when electrical and electronic systems are used to carry out safety functions. One of the major objectives of this series of standards is to facilitate the development of international application or equipment standards by the responsible technical committee. This will allow the technical committee to take the special requirements of their application fully into account.

It is recognized that there is a great variety of applications of insulation monitoring devices and of insulation fault location systems in IT systems. This part of IEC 61557 defines basic safety functions as well as their related levels of functional safety (SIL) and defines feasible measures and principles to develop and validate these devices and systems under functional safety aspects.

Figure 1 shows the link between IEC 61557-15 and the relevant product, safety and EMC standards as well as the link to the IEC 61508 series.

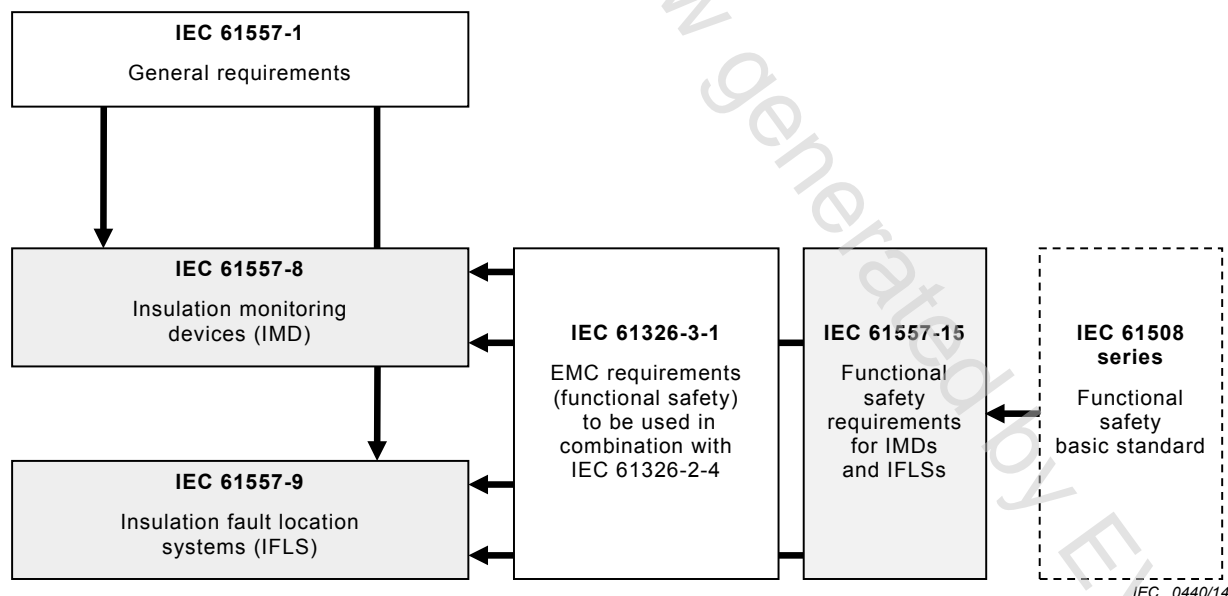


Figure 1 – Relationship between IEC 61557-15 and related standards

This part of IEC 61557 does not cover phases 1 to 9 and 11 to 16 of IEC 61508-1 for the complete IT systems. In particular, this standard does not cover the use of IMDs and IFLSs in customer application.