

**Elektriohutus madalpingevõrkudes vahelduvpingega kuni 1000 V ja alalispingega kuni 1500 V.  
Kaitstesüsteemide katsetamis-, mõõte- ja seireseadmed.  
Osa 13: Käeshoitavad ja käsitsi kasutatavad voolutangid lekkevoolude mõõtmiseks elektrijaotussüsteemides**

**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 13: Hand-held and hand-manipulated current clamps and sensors for measurement of leakage currents in electrical distribution systems**

## EESTI STANDARDI EESSÕNA

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See Eesti standard EVS-EN 61557-13:2011 sisaldab Euroopa standardi EN 61557-13:2011 ingliskeelset teksti.	This Estonian standard EVS-EN 61557-13:2011 consists of the English text of the European standard EN 61557-13:2011.
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.
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Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

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**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 13: Hand-held and hand-manipulated current clamps and sensors for  
measurement of leakage currents in electrical distribution systems  
(IEC 61557-13:2011)**

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 13: Pincés et capteurs de courant  
portatifs et manipulés à la main pour la  
mesure des courants de fuite dans les  
réseaux de distribution électriques  
(CEI 61557-13:2011)

Elektrische Sicherheit in  
Niederspannungsnetzen bis AC 1 000 V  
und DC 1 500 V -  
Geräte zum Prüfen, Messen oder  
Überwachen von Schutzmaßnahmen -  
Teil 13: Handgehaltene und handbediente  
Strommesszangen und Stromsonden zur  
Messung von Ableitströmen in  
elektrischen Anlagen  
(IEC 61557-13:2011)

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European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
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**Management Centre: Avenue Marnix 17, B - 1000 Brussels**

## Foreword

The text of document 85/387/FDIS, future edition 1 of IEC 61557-13, 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 61557-13:2011.

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) 2012-05-12
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2014-08-12

This standard is to be used in conjunction with EN 61557-1:2007.

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## Endorsement notice

The text of the International Standard IEC 61557-13:2011 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 60359

NOTE Harmonized as EN 60359.

## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61000-4-8	2009	Electromagnetic compatibility (EMC) - Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test	EN 61000-4-8	2010
IEC 61010-1	-	Safety requirements for electrical equipment for measurement, control and laboratory use - Part 1: General requirements	EN 61010-1	-
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	EN 61010-2-030	-
IEC 61010-2-032	2002	Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 2-032: Particular requirements for hand-held and hand-manipulated current sensors for electrical test and measurement	EN 61010-2-032	2002
IEC 61326-1	-	Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements	EN 61326-1	-
IEC 61326-2-2	-	Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 2-2: Particular requirements - Test configurations, operational conditions and performance criteria for portable test, measuring and monitoring equipment used in low-voltage distribution systems	EN 61326-2-2	-
IEC 61557-1	2007	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	2007

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## INTRODUCTION

During periodical inspections of electrical installations, it is increasingly difficult to carry out measurements of insulation resistances with devices according to IEC 61557-2 when the installations cannot be switched off for long periods and when there are sensitive appliances connected. Therefore, the measurement of leakage currents can provide additional information about the safe or unsafe situation of an installation.

Furthermore, the user has the opportunity to place current clamps and sensors on different points of the distribution system for troubleshooting nuisance tripping of RCDs, alarms of RCMs and other problems caused by low frequency leakage currents.

Unfortunately, the presence of high external magnetic fields has a big impact on the performance of commonly used current clamps and sensors. High uncertainty and non-repeatability of readings can lead to unsafe interpretations.

This standard defines performance classes for current clamps and sensors in relationship to ranges of high external magnetic fields and gives guidance to the user to choose the appropriate measuring device for a given situation.



# **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 13: Hand-held and hand-manipulated current clamps and sensors for measurement of leakage currents in electrical distribution systems**

### **1 Scope**

This part of IEC 61557 defines special performance requirements for hand-held and hand-manipulated current clamps and sensors for measurement of leakage currents in electrical distribution systems up to 1 000 V a.c. and 1 500 V d.c., taking into account the influence of high external low-frequency magnetic fields and other influencing quantities. This standard does not apply to current clamps or sensors which are used in combination with devices for insulation fault location according to IEC 61557-9, unless it is specified by the manufacturer.

### **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 61000-4-8:2009, *Electromagnetic compatibility (EMC) – Part 4-8: Testing and measurement techniques – Power frequency magnetic field immunity test*

IEC 61010-1, *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 61010-2-032:2002, *Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 2-032: Particular requirements for hand-held and hand-manipulated current sensors for electrical test and measurement*

IEC 61326-1, *Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 1: General requirements*

IEC 61326-2-2, *Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 2-2: Particular requirements – Test configurations, operational conditions and performance criteria for portable test, measuring and monitoring equipment used in low-voltage distribution systems*

IEC 61557-1:2007, *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*

### **3 Terms and definitions**

For the purposes of this document, the definitions given in IEC 61557-1 and the following definitions apply.