

9`Y_f] bUj Ufbcghj `b]n_cbUdYrcgh] `fUnXY]b] `g]ghYa] `]na Yb] bY`bUdYrcgh]`Xc %_J `]b`Ybcga YfbY`bUdYrcgh]`Xc`%`_J`!`CdfYa UnUdfYg_i yUb`Yza Yf`Yb`YU] bUXncfcj Ub`YnUy]]b] `i_fYdcj `!`%`"XY.`Fc bY]b`fc bc`i dfUj `UbY`c_cj bY _`Yy Y]b`gYbncf`]nUa Yf`Yb`Yi \ UUj] `lc_cj `j`Y`Y_f] b] `fUnXY]b] `g]ghYa]

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

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: Pinces et capteurs de courant portatifs et manipulés à la main pour la mesure des courants de fuite dans les réseaux de distribution électriques

Ta slovenski standard je istoveten z: FprEN 61557-13:2009

ICS:

17.220.20	T ^\ b} b`Á \ dā} æá { æ} ^q æá^ ã ā	Measurement of electrical and magnetic quantities
29.080.01	Ò\ dā} æá [æáæ) æ •] [z] [Electrical insulation in general
29.240.01	U{ ^0æá æá ^} [• Á ãã dā` &ap Á \ dā} ^Á} ^!` æ } æá] [z] [Power transmission and distribution networks in general

oSIST FprEN 61557-13:2009 en,fr

**85/355/CDV**
**COMMITTEE DRAFT FOR VOTE (CDV)
PROJET DE COMITÉ POUR VOTE (CDV)**

Project number Numéro de projet		IEC 61557-13 Ed.1	
IEC/TC or SC: TC 85 CEI/CE ou SC:		Secretariat / Secrétariat China	
<input checked="" type="checkbox"/> Submitted for parallel voting in CENELEC <input type="checkbox"/> Soumis au vote parallèle au CENELEC	Date of circulation Date de diffusion 2009-09-18	Closing date for voting (Voting mandatory for P-members) Date de clôture du vote (Vote obligatoire pour les membres (P)) 2010-02-19	
Also of interest to the following committees Intéresse également les comités suivants		Supersedes document Remplace le document 85/342/CD, 85/351/CC	
Proposed horizontal standard Norme horizontale suggérée <input type="checkbox"/> Other TC/SCs are requested to indicate their interest, if any, in this CDV to the TC/SC secretary Les autres CE/SC sont requis d'indiquer leur intérêt, si nécessaire, dans ce CDV à l'intention du secrétaire du CE/SC			
Functions concerned Fonctions concernées			
<input checked="" type="checkbox"/> Safety Sécurité	<input type="checkbox"/> EMC CEM	<input type="checkbox"/> Environment Environnement	<input type="checkbox"/> Quality assurance Assurance qualité

CE DOCUMENT EST TOUJOURS A L'ÉTUDE ET SUSCEPTIBLE DE MODIFICATION. IL NE PEUT SERVIR DE RÉFÉRENCE.

LES RÉCIPIENDAIRES DU PRÉSENT DOCUMENT SONT INVITÉS À PRÉSENTER, AVEC LEURS OBSERVATIONS, LA NOTIFICATION DES DROITS DE PROPRIÉTÉ DONT ILS AURAIENT ÉVENTUELLEMENT CONNAISSANCE ET À FOURNIR UNE DOCUMENTATION EXPLICATIVE.

THIS DOCUMENT IS STILL UNDER STUDY AND SUBJECT TO CHANGE. IT SHOULD NOT BE USED FOR REFERENCE PURPOSES.

RECIPIENTS OF THIS DOCUMENT ARE INVITED TO SUBMIT, WITH THEIR COMMENTS, NOTIFICATION OF ANY RELEVANT PATENT RIGHTS OF WHICH THEY ARE AWARE AND TO PROVIDE SUPPORTING DOCUMENTATION.

Titre : CEI 61557-13: 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

Title : IEC 61557-13: 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

Note d'introduction

Introductory note

**ATTENTION
VOTE PARALLÈLE
CEI – CENELEC**

L'attention des Comités nationaux de la CEI, membres du CENELEC, est attirée sur le fait que ce projet de comité pour vote (CDV) de Norme internationale est soumis au vote parallèle.

Les membres du CENELEC sont invités à voter via le système de vote en ligne du CENELEC.

**ATTENTION
IEC – CENELEC
PARALLEL VOTING**

The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) for an International Standard is submitted for parallel voting.

The CENELEC members are invited to vote through the CENELEC online voting system.

Copyright © 2009 Commission Electrotechnique Internationale, CEI. Droits de reproduction réservés. Il est uniquement autorisé de télécharger ce fichier électronique, d'en faire une copie et d'en imprimer le contenu en vue de la préparation des positions du Comité National. Il n'est pas autorisé de copier ou de "mirror" le fichier ou la version imprimée du document ou toute partie de celle-ci dans un autre but sans la permission écrite de la CEI.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23

CONTENTS

1	Scope.....	6
2	Normative references	6
3	Terms and definitions	6
4	Requirements	7
4.1	General	7
4.2	Operating classes	8
4.3	Measuring Range / Percentage operating uncertainty of reading	8
4.4	Reference conditions.....	11
4.5	Minimum rated operating conditions	12
4.6	Mechanical requirements.....	14
4.7	Pollution degree	14
4.8	Measurement category	14
4.9	Electromagnetic compatibility	14
5	Marking and operating instructions	14
5.1	Marking	14
5.2	Operating instructions	15
6	Tests	15
6.1	Type tests	15
6.2	Routine tests	15
Annex A	(informative)	17

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**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: Portable, hand-held and hand-manipulated current clamps and
sensors for measurement of leakage currents in electrical distribution
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.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with an IEC Publication.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 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.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61557-13 has been prepared by Technical committee 85: Measuring equipment for electrical and electromagnetic quantities.

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

CD	CC
85/342/CD	85/351/CC

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.

77 The committee has decided that the contents of this publication will remain unchanged until
78 the maintenance result date¹⁾ indicated on the IEC web site under "<http://webstore.iec.ch>" in
79 the data related to the specific publication. At this date, the publication will be

- 80 • reconfirmed,
- 81 • withdrawn,
- 82 • replaced by a revised edition, or
- 83 • amended.

1) The National Committees are requested to note that for this publication the maintenance result date is

84

INTRODUCTION

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

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

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

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

99 **ELECTRICAL SAFETY IN LOW VOLTAGE DISTRIBUTION SYSTEMS UP TO**
100 **1 000 V a.c. AND 1 500 V d.c. EQUIPMENT FOR TESTING, MEASURING OR**
101 **MONITORING OF PROTECTIVE MEASURES -**

102
103 **Part 13: Portable, hand-held and hand-manipulated current clamps and**
104 **sensors for measurement of leakage currents in electrical distribution**
105 **systems**

106 **1 Scope**

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

113 **2 Normative references**

114 The following referenced documents are indispensable for the application of this document.
115 For dated references, only the edition cited applies. For undated references, the latest edition
116 of the referenced document (including any amendments) applies.

117 IEC 60359: *Electrical and electronic measurement equipment - Expression of the performance*

118
119 IEC 61010-1: *Safety requirements for electrical equipment for measurement, control and*
120 *laboratory use - Part 1: General requirements*

121
122 IEC 61010-2-032: *Safety requirements for electrical equipment for measurement, control and*
123 *laboratory use - Part 2-032: Particular requirements for hand-held and hand-manipulated*
124 *current sensors for electrical test and measurement*

125
126 IEC 61557-1: *Electrical safety in low voltage distribution systems up to 1000Va.c. and*
127 *1500Vd.c. - Part 1: General requirement*

128
129 IEC 61326-1: *Electrical equipment for measurement, control and laboratory use - EMC*
130 *requirements - Part 1: General requirements*

131
132 IEC 61326-2-2: *Electrical equipment for measurement, control and laboratory use - EMC*
133 *requirements - Part 2-2: Particular requirements - Test configurations, operational conditions*
134 *and performance criteria for portable test, measuring and monitoring equipment used in low-*
135 *voltage distribution systems*

136
137 IEC 61000-4-8: *Electromagnetic compatibility (EMC) - Part 4-8: Testing and measurement*
138 *techniques - Power frequency magnetic field immunity test*

139 **3 Terms and definitions**

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

142 **3.1**

143 **Portable, hand-held and hand-manipulated current clamps and sensors**

144 portable or hand-held device for measurement, display or for indication of types of leakage
145 currents in distribution systems without interruption of this circuits including defined attached
146 equipment; in the following text only the expression “current sensors” is used