SLOVENSKI STANDARD
oSIST prEN IEC 61557-17:2021

01-marec-2021

Električna varnost v nizkonapetostnih razdelilnih sistemih izmenične napetosti do 1 kV in enosmerne napetosti do 1,5 kV - Oprema za preskušanje - Merjenje in nadzorovanje zaščitnih ukrepov - 17. del: Nekontaktni indikatorji napetosti

Electrical safety in low voltage distribution systems up to 1 000 V AC and 1 500 V DC - Equipment for testing,- Measuring and monitoring of protective measures - Part 17: Non contact voltage indicators

Ta slovenski standard je istoveten z: **prEN IEC 61557-17:2020**

ICS:

17.220.20	Merjenje električnih in magnetnih veličin	Measurement of electrical and magnetic quantities
29.080.01	Električna izolacija na splošno	Electrical insulation in general
29.240.01	Omrežja za prenos in distribucijo električne energije na splošno	Power transmission and distribution networks in general

oSIST prEN IEC 61557-17:2021 **en,fr,de**

85/738/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER:	
IEC 61557-17 ED1	
DATE OF CIRCULATION:	CLOSING DATE FOR VOTING:
2020-12-25	**2021-03-19**
SUPERSEDES DOCUMENTS:	
85/708/CD, 85/718A/CC	

IEC TC 85 : MEASURING EQUIPMENT FOR ELECTRICAL AND ELECTROMAGNETIC QUANTITIES	
SECRETARIAT: China	SECRETARY: Ms Guiju HAN
OF INTEREST TO THE FOLLOWING COMMITTEES: TC 66,TC 78	PROPOSED HORIZONTAL STANDARD: ☐ Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.

FUNCTIONS CONCERNED:

☐ EMC ☐ ENVIRONMENT ☐ QUALITY ASSURANCE ☒ SAFETY

☒ SUBMITTED FOR CENELEC PARALLEL VOTING ☐ NOT SUBMITTED FOR CENELEC PARALLEL VOTING

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) is submitted for parallel voting.

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

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.

TITLE:

ELECTRICAL SAFETY IN LOW VOLTAGE DISTRIBUTION SYSTEMS UP TO 1000V AC AND 1500V DC-EQUIPMENT FOR TESTING;MEASURING AND MONITORING OF PROTECTIVE MEASURES-Part 17: Non contact voltage indicators

PROPOSED STABILITY DATE: 2026

NOTE FROM TC/SC OFFICERS:

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 17: Non-contact AC voltage indicators

FOREWORD

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International Standard IEC 61557-17 has been prepared by IEC technical committee 85: Measuring equipment for electrical and electromagnetic quantities.

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

FDIS	Report on voting
85/708/CD	85/718/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.

This International Standard is to be used in conjunction with IEC 61557-1:2019

A list of all parts of the IEC 61557 series, published under the general title *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*, can be found on the IEC website

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

The National Committees are requested to note that for this document the stability date is 2026.

THIS TEXT IS INCLUDED FOR THE INFORMATION OF THE NATIONAL COMMITTEES AND WILL BE DELETED AT THE PUBLICATION STAGE.

INTRODUCTION

It is the intention of this standard to specify the minimum construction and performance requirements of the non-contact AC voltage indicator in normal use and in case of reasonably foreseeable misuse to reduce the risk of hazard during and after the voltage test.

The most reasonably foreseeable misuse of the non-contact AC voltage indicator is that the operator uses it to check the absence of hazardous voltages followed by an unsafe interpretation of the negative indication with respect to the current situation.

The assessment of the absence of hazardous live voltage shall be performed by using of a 2-pole low-voltage detector in compliance with IEC 61243-3.

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 17: Non-contact AC voltage indicators

1 Scope

This part of IEC 61557 defines minimum performance requirements for non-contact AC voltage indicators to reduce the risk of electric shock caused by the wrong interpretation of the indication for the testing person and bystanders.

Products designed and manufactured in accordance with this standard are for use by (electrically) skilled persons only. Non-contact AC voltage indicators are not designed for testing the absence of the operating voltage.

2 Normative references

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.

IEC 61010-1:2010, *Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements*
IEC 61010-1:2010/AMD1:2016

IEC 61010-031:2015, *Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 031: Safety requirements for hand-held and hand-manipulated probe assemblies for electrical test and measurement*
IEC 61010-031:2015/AMD1:2018

IEC 61557-1:2019, *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 1: General requirements*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
non-contact AC voltage indicator
hand-held and battery powered probe without direct contact with the live part, indicating the potential between the live part and the human body, which is usually close to the earth potential

3.2
protective fingerguard
part of the enclosure that indicated the limit of safe access and reduces the risk of the operator touching hazardous live parts

[SOURCE: IEC 61010-031:2015/AMD1:2018]

3.3
sensitivity range
range of voltage where the non-contact AC voltage indicator is triggering

4 Requirements

4.1 General

The requirements of IEC 61557-1:2019, Clause 4 and the following requirements apply.

4.2 Influencing quantities – Operating uncertainty (B), percentage operating uncertainty (B [%])

IEC 61557-1:2019, 4.2 does not apply.

4.3 Rated operating conditions

The following rated operating conditions shall apply:

a) ambient temperature range from: -10 °C to + 45 °C;

b) maximum relative humidity 95 % at temperatures up to 31 °C, decreasing linearly to 50 % relative humidity at 45 °C (IEC 61010-1 modified);

c) c) distance through air between live conductor and probe tip: ≤ 2 mm;

d) position within a solid angle of 30° around the vertical axis between probe tip and conductor;

e) capacitance greater than or equal to 100 pF between the hand-held part and reference earth, see Figure 2.

4.4 Battery test facility

In addition to IEC 61557-1:2019, 4.4 the following applies.

Non-contact AC voltage indicators shall have a self-test implemented. As a minimum, the self-test function shall confirm correct operation of the batteries and indication.

4.5 Safety

The requirements of IEC 61557-1, 4.5 do not apply. The following requirements shall apply instead.

All electrical safety aspects are covered by IEC 61010-031.

The hand-held parts of the non-contact AC voltage indicator and the probe tip shall be separated by a protective fingerguard, see Figure 1.

The clearance and creepage distance between the probe tip of the indicator and the protective fingerguard of the hand-held part shall fulfil the requirements for double or reinforced insulation according to IEC 61010-031.

Solid insulation between the probe tip and hand-held parts shall also fulfil the requirements for double or reinforced insulation according to IEC 61010-031.

Non-contact AC voltage indicators shall be designed for measurement category III at a minimum and for a minimum rated voltage to earth of 300 V.

The design of the protective fingerguard shall fulfil the requirements of IEC 61010-031.

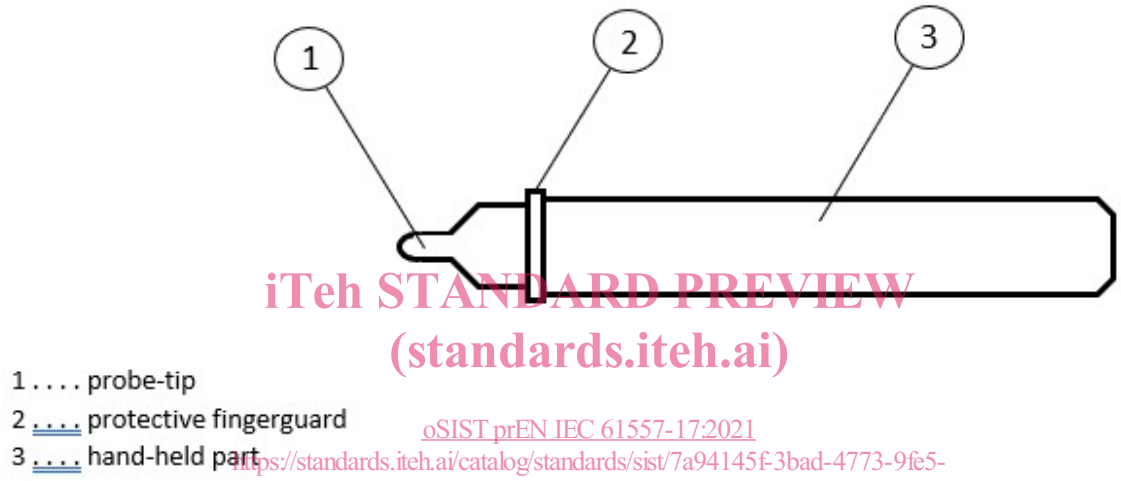

Figure 1 – Non-contact AC voltage indicator

4.6 Electromagnetic compatibility

The requirements of IEC 61557-1:2019, 4.6 apply, except for the reference to 6.5.

4.7 Indication

The presence of voltage on a conductor within the specified sensitivity range of the non-contact AC voltage indicator shall be indicated optically. Additional means of indication, for example acoustic means or vibration, are permitted.

5 Marking and operating instructions

The requirements of IEC 61557-1:2019, Clause 5 do not apply. The following requirements shall apply instead.

The non-contact AC voltage indicator shall be marked according to IEC 61010-031:2015/AMD:2018, Table 1, with symbol 5 and symbol 7, the rated voltage to earth and measurement category, the rated frequency and the specified range of sensitivity at a minimum.

The operating instructions shall comply with the requirements of IEC 61010-031 and, in addition, shall include the following: