SLOVENSKI STANDARD
SIST EN 61010-031:2015/oprA1:2017

01-julij-2017

Varnostne zahteve za električno opremo za meritve, nadzorovanje in laboratorijsko uporabo - 031. del: Varnostne zahteve za ročne sonde za električne meritve in preskušanje

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

Ta slovenski standard je istoveten z: **EN 61010-031:2015/prA1:2017**

ICS:

19.080	Električno in elektronsko preskušanje	Electrical and electronic testing
71.040.10	Kemijski laboratoriji. Laboratorijska oprema	Chemical laboratories. Laboratory equipment

SIST EN 61010-031:2015/oprA1:2017 **en,fr,de**

66/632/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER:	
IEC 61010-031/AMD1 ED2	
DATE OF CIRCULATION:	CLOSING DATE FOR VOTING:
2017-05-19	**2017-08-11**
SUPERSEDES DOCUMENTS:	

IEC TC 66 : SAFETY OF MEASURING, CONTROL AND LABORATORY EQUIPMENT	
SECRETARIAT: United Kingdom	SECRETARY: Mr David Hyde
OF INTEREST TO THE FOLLOWING COMMITTEES: TC 78,TC 85	PROPOSED HORIZONTAL STANDARD: ☒ GROUP SAFETY FUNCTION 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

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:

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.

NOTE FROM TC/SC OFFICERS:

FOREWORD

This amendment has been prepared by IEC technical committee 66: Safety of measuring, control and laboratory equipment.

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

FDIS	Report on voting
66/XX/FDIS	66/XX/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.

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.

The National Committees are requested to note that for this publication the stability date is 2021.

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

Change the sub-title to read:

Part 031: Safety requirements for hand-held and hand-manipulated probe assemblies for electrical test and measurement

1 Scope and object

1.1.1 Probe assemblies included in Scope

Figure 4, Key 3

Deletion
Delete the words “or clamp”

2 Normative references

3 Terms and definitions

3.1.1
TERMINAL

Note 1 to entry

Deletion
Delete the word “connectors”

3.1.5
CONNECTOR

Deletion
*Delete the word "*connector*" so the sentence will read:*

"...to connect to a TERMINAL of the equipment or to another probe assembly"

3.4.11
MEASUREMENT CATEGORY

Replacement
Replace the text with the following:

classification of testing and measuring circuits according to the types of mains to which they are intended to be connected

4 Tests

4.3.9 Duty cycle

Replacement
Replace the title with the following:

4.3.9 Short-term or intermittent operation

4.4.4.2 Temperature

Replacement
Replace the second paragraph with the following:

This temperature is determined by measuring the temperature rise of the surface or part and adding it to the ambient temperature of 40 °C, or to the maximum RATED ambient temperature if higher.

4.5.2 Fuses

Replacement
Replace the fourth sentence of the second paragraph with the following:

With respect to prospective short circuit currents associated with mains installations, the fuse shall be RATED according to 12.2 and no additional testing related to the interrupt current RATING is necessary.

5 Marking and documentation

5.1.5 RATING

Replacement
Replace the second paragraph by the following:

a) Probe assemblies which do not have a RATING for MEASUREMENT CATEGORIES II, III or IV (see 6.5.2) shall be marked with the RATED voltage to earth and with symbol 7 of Table 1 (see also 5.4.3 k)).

6 Protection against electric shock

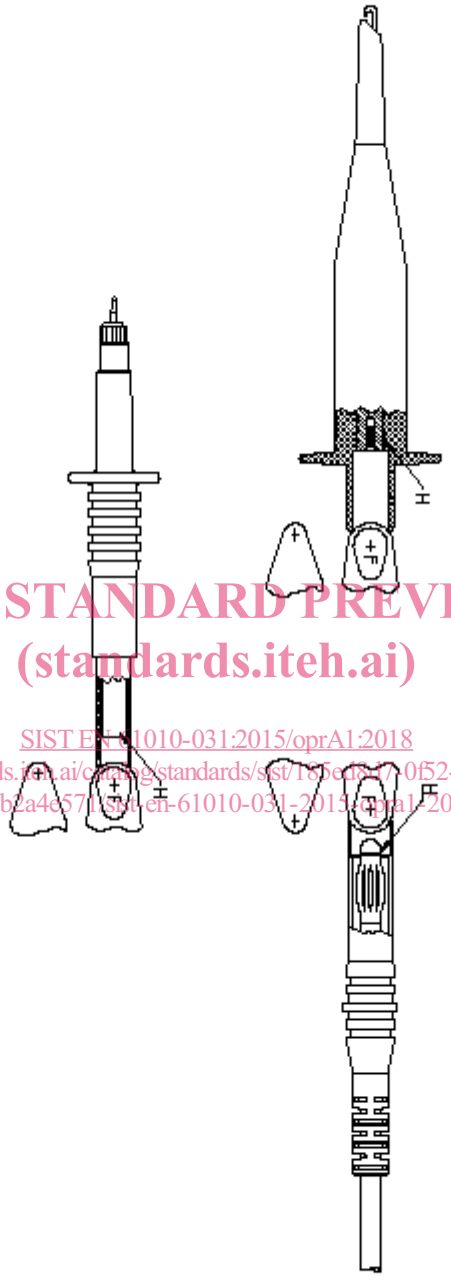
6.2.2 Examination

Replacement
Replace figures 6c and 6d by the following figures

77

78 Connecting parts are partially mated so as just to make electrical contact while allowing maximum access to the
79 test finger. Note the two possible positions of the testfinger.

80 **Figure 6c – Partially mated probe assemblies (see 6.2 and 6.4.2 b))**



81

82 Key

83 F rigid test finger (see Figure B.1)

84 H potentially HAZARDOUS LIVE part

85 Note the two possible positions of the testfinger

86 **Figure 6d – Unmated parts of a probe assembly (see 6.2 and 6.4.2 c))**

6.3.4.1 General

Figure 8

Replacement
Replace the list with the following:

a) the probe body;

b) hand-held or hand-manipulated parts of each CONNECTOR;

c) 150 mm ± 20 mm of the PROBE WIRE or the maximum length of the cable whichever is shorter;

d) other hand-held or hand-manipulated parts.

Deletion
Delete in the key 2c) the following:

(see 12.3.2)

6.3.4.2 Probe assemblies with floating outer connection

Figure 10

Deletion
Delete in the key 2c) the following:

(see 12.3.2)

6.4.1 General

Replacement
Replace the list in the fourth paragraph by the following:

a) DOUBLE INSULATION, consisting of BASIC INSULATION plus SUPPLEMENTARY INSULATION (see 6.4.6)

b) BASIC INSULATION plus impedance (see 6.4.4)

c) REINFORCED INSULATION (see 6.4.6)

d) PROTECTIVE IMPEDANCE (see 6.4.5)

6.4.3.2 Protection by a PROTECTIVE FINGERGUARD

Replacement
Replace the third paragraph by the following:

The height of the protective FINGERGUARD from the side where the fingers are intended to be applied shall be at least 2 mm.

6.4.3.4 Protection by tactile indicator

Replacement
Replace the first paragraph by the following:

SPRING-LOADED CLIPS RATED for MEASUREMENT CATEGORY II or without MEASUREMENT CATEGORY for maximum 300 V which require finger pressure at about 90° to the axis of the clip are acceptable without a PROTECTIVE FINGERGUARD, provided that there is a tactile indicator to indicate the limit of safe access for the OPERATOR.

6.4.3.5 Probe tips used as connectors

Replacement
Replace the text with the following text:

PROBE TIPS which can be used as CONNECTORS and are intended to be connected to specified accessories (for example to a SPRING-LOADED CLIP) shall, in combination with those accessories, also meet the requirements for CONNECTORS in fully-mated position and partially-mated position (see 6.4.2 a) and b)).

6.5.1.2.4 Solid insulation

6.5.1.2.4.1 General

Replacement
Replace the text and the Table 4 by the following:

Solid insulation shall withstand the electrical and mechanical stresses that may occur in NORMAL USE, in all RATED environmental conditions (see 1.4), during the intended life of the equipment.

The manufacturer should take the expected life of the equipment into account when selecting insulating materials.

Conformity is checked by both of the following tests for probe assemblies RATED for use in MEASUREMENT CATEGORIES II, III or IV:

a) the a.c. voltage test of 6.6.5.1 with a duration of at least 5 s or the impulse voltage test of 6.6.5.3 or, using the applicable test voltage of Table 4 or Table 4a;

b) the a.c. voltage test of 6.6.5.1 with a duration of at least 1 min or, for measuring circuits stressed only by d.c., the d.c. voltage test of 6.6.5.2 with a duration of at least 1 min using the formula: Testvoltage = 1,5 times RATED voltage + 750 V.

NOTE Test a) checks the effects of TRANSIENT OVERVOLTAGES, while test b) checks the effects of long-term stress of solid insulation.

Table 4 – Test voltages for testing electric strength of solid insulation in measuring circuits of MEASUREMENT CATEGORY II

RATED a.c. r.m.s. or d.c. voltage to earth	Testvoltage a.c. r.m.s					
	BASIC INSULATION and SUPPLEMENTARY INSULATION			REINFORCED INSULATION		
	MEASUREMENT CATEGORY II	MEASUREMENT CATEGORY III	MEASUREMENT CATEGORY IV	MEASUREMENT CATEGORY II	MEASUREMENT CATEGORY III	MEASUREMENT CATEGORY IV
≤ 50	480	530	840	530	710	1 390
> 50 ≤ 100	530	840	1 390	710	1 390	2 210
> 100 ≤ 150	840	1 390	2 210	1 390	2 210	3 510
> 150 ≤ 300	1 390	2 210	3 310	2 210	3 510	5 160
> 300 ≤ 600	2 210	3 310	4 260	3 510	5 160	6 270
> 600 ≤ 1 000	3 310	4 260	6 590	5 160	6 270	10 540
> 1 000 ≤ 1 500	4 260	5 370	6 970	7 400	9 700	14 800
> 1 500 ≤ 2 000	6 590	6 970	9 710	11 900	14 800	17 600
> 2 000 ≤ 3 000	6 970	9 710	10 800	14 800	17 600	19 600