ANSI/ISA-S82.02.02-1996 (IEC 1010-2-031)

Approved May 31, 1996

Standard

Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use

Identical to IEC 1010-2-031:
Particular requirements for hand-held PROBE ASSEMBLIES for electrical measurement and test

ANSI/ISA-S82.02.02-1996 (IEC 1010-2-031) — Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use

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Preface

This preface as well as all footnotes and annexes are included for informational purposes and is not part of ANSI/ISA-S82.02.02-1996 (IEC 1010-2-031).

This standard has been prepared as part of the service of ISA, the international society for measurement and control, toward a goal of uniformity in the field of instrumentation. To be of real value, this document should not be static but should be subject to periodic review. Toward this end, the Society welcomes all comments and criticisms and asks that they be addressed to the Secretary, Standards and Practices Board; ISA; 67 Alexander Drive; P. O. Box 12277; Research Triangle Park, NC 27709; Telephone (919) 549-8411; Fax (919) 549-8288;
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Contents

Foreword

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international cooperation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. 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. The 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 the IEC on technical matters, prepared by technical committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.

3) They have the form of recommendations for international use published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.

4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.

5) The IEC provides no marking procedure to indicated its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.

International Standard 1010-2-0301 has been prepared by IEC technical committee No. 66: Safety of measuring, control, and laboratory equipment.

It has the status of a group safety publication in accordance with IEC Guide 104.

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

DIS	Report on Voting
66E(CO)13	66(CO)53*

* TC 66 has taken over the scope of SC 66E

Full information on the voting for the approval of this standard can be found in the Voting Report indicated in the above table.

This Part 2 is intended to be used in conjunction with IEC 1010-1. It was established on the basis of the first edition (1990) and its Amendment 1 (1991). Consideration may be given to future editions of, or amendments to, IEC 1010-1.

This Part 2 supplements or modifies the corresponding clauses in IEC 1010-1 so as to convert that publication into the IEC standard: Safety requirements for hand-held PROBE ASSEMBLIES for electrical measurement and test.

Where a particular subclause of Part 1 is not mentioned in this Part 2, that subclause applies as far as is reasonable. Where this part states “addition”, “modification” or “replacement”, the relevant requirement, test specification or note in Part 1 should be adapted accordingly.

In this standard:

the following print types are used:

– requirements: in roman type;

– NOTES: in small roman type;

– *compliance: in italic type;*

– terms used throughout this standard which have been defined in clause 3:

SMALL ROMAN CAPITALS

1 Scope and object

This clause of part 1 is applicable except as follows:

1.1 *Scope*

Replacement:

This International Standard applies to hand-held and hand-manipulated PROBE ASSEMBLIES of the types described below, and related accessories. These PROBE ASSEMBLIES are for use in the interface between an electrical phenomenon and a measuring or test instrument. They may be stand-alone PROBE ASSEMBLIES which are themselves within the scope of part 1, or accessories to other equipment within the scope of part 1.

a) Low-voltage and high-voltage, non-attenuating PROBE ASSEMBLIES (type A).

   Non-attenuating PROBE ASSEMBLIES for direct connection to voltages exceeding 63 kV r.m.s. or d.c. They do not incorporate active components, nor are they intended to provide a voltage divider function or a signal conditioning function, but they may contain passive non-attenuating components such as fuses.

b) High-voltage attenuating or divider PROBE ASSEMBLIES (type B).

   Attenuating or divider PROBE ASSEMBLIES for direct connection to voltages exceeding 1 kV r.m.s. or d.c. but not exceeding 63 kV r.m.s. or d.c. The divider function may be carried out wholly within the PROBE ASSEMBLY, or partly in the test or measuring equipment intended to be used with the PROBE ASSEMBLY.

c) Low-voltage attenuating or divider PROBE ASSEMBLIES (type C).

   Attenuating, divider or other signal conditioning PROBE ASSEMBLIES for direct connection to voltages exceeding 30 V r.m.s or 42,4 V peak or 60 V d.c., but not exceeding 1 kV r.m.s, peak or d.c. The signal conditioning function may be carried out wholly within the PROBE ASSEMBLY, or partly within the test or measuring equipment intended to be used with the PROBE ASSEMBLY.

2 Normative references

This clause of part 1 is applicable.