Australian Standard™

Safety requirements for electrical equipment for measurement, control and laboratory use

Part 031: Safety requirements for hand-held probe assemblies for electrical measurement and test (IEC 61010-031:2002 MOD)

STANDARDS AUSTRALIA

This Australian Standard was prepared by Committee EL-049, Safety of Electrical Equipment for Measurement and Laboratory Use. It was approved on behalf of the Council of Standards Australia on 12 February 2004 and published on 29 April 2004.

The following are represented on Committee EL-049:

Australian Chamber of Commerce and Industry

Australian Electrical and Electronic Manufacturers Association

Consumers Federation of Australia

Department of Mineral Resources

Electrical Compliance Testing Association

Electrical Regulatory Authorities Council

Hunter Industries Electrical Safety Network

National Electrical and Communications Association

This Standard was issued in draft form for comment as DR 03627.

Australian Standard™

Safety requirements for electrical equipment for measurement, control and laboratory use

Part 031: Safety requirements for hand-held probe assemblies for electrical measurement and test (IEC 61010-031:2002 MOD)

First published as AS 61010.031—2004.

Published by Standards Australia International Ltd
GPO Box 5420, Sydney, NSW 2001, Australia

ISBN 0 7337 5889 4

PREFACE

This Standard was prepared by the Standards Australia Committee EL-049, Safety of Electrical Equipment for Measurement and Laboratory Use.

The objective of this Standard is to specify particular requirements for hand-held probe assemblies for electrical test and measuring equipment.

This Standard is an adoption with national modifications and has been reproduced from, IEC 61010-031:2002, *Safety requirements for electrical equipment for measurement, control and laboratory use, Part 031: Safety requirements for hand-held probe assemblies for electrical measurement*, and has been varied as indicated to take account of Australian/New Zealand conditions.

Variations to IEC 61010-031:2002 are indicated at the appropriate places throughout this standard. Strikethrough (~~example~~) identifies IEC text, tables and figures which, for the purposes of this Australian Standard, are deleted. Where text, tables or figures are added, each is set in its proper place and identified by shading (example). Added figures are not themselves shaded, but are identified by a shaded border.

This Standard is one of a series of Standards dealing with electrical test and measuring equipment. Currently this Series consists of the following parts; additional parts will be added from time to time.

AS

61010	Safety requirements for electrical equipment for measurement, control and laboratory use
61010.1	Part 1: General requirements
61010.031	Part 031: Safety requirements for hand-held probe assemblies for electrical measurement and test (this Standard)
61010.2.032	Part 032: Particular requirements for hand-held and hand-manipulated current sensors for electrical test and measurement

This part of the Standard complements Part 1.

As this Standard is reproduced from an International Standard, the following applies:

(a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.

(b) In the source text 'this international standard' should read 'this Australian Standard'.

(c) A full point should be substituted for a comma when referring to a decimal marker.

(d) Any French text on figures should be ignored.

In this Standard, the following print types are used:

– requirements proper: in arial type;

– *test specifications: in italic type;*

– explanatory matter: in smaller arial type.

The terms 'normative' and 'informative' are used to define the application of the annex to which they apply. A normative annex is an integral part of a standard, whereas an informative annex is only for information and guidance.

CONTENTS

NOTES

STANDARDS AUSTRALIA

Australian Standard

Safety requirements for electrical equipment for measurement, control and laboratory use

Part 031: Safety requirements for hand-held probe assemblies for electrical measurement and test (IEC 61010-031:2002 MOD)

1 Scope and object

1.1 Scope

This part of AS 61010 applies to hand-held and hand-manipulated PROBE ASSEMBLIES of the types described below, and related accessories which are intended for professional, industrial process, and educational use. These PROBE ASSEMBLIES are for use at the interface between an electrical phenomenon and test or measurement equipment. They may be fixed to the equipment or be detachable accessories for the equipment.

a) Low-voltage and high-voltage, non-attenuating PROBE ASSEMBLIES (type A). Non-attenuating PROBE ASSEMBLIES that are RATED for direct connection to voltages exceeding 33 V r.m.s. or 46,7 V peak or 70 V d.c., but not exceeding 63 kV. 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 that are RATED for direct connection to secondary voltages exceeding 1 kV but not exceeding 63 kV. The divider function may be carried out wholly within the PROBE ASSEMBLY, or partly within the test or measurement equipment 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 33 V r.m.s or 46,7 V peak or 70 V d.c., but not exceeding 1 kV r.m.s. or 1,5 kV d.c. The signal conditioning function may be carried out wholly within the PROBE ASSEMBLY, or partly within the test or measurement equipment intended to be used with the PROBE ASSEMBLY.

NOTE PROBE ASSEMBLIES which

– are not within the definitions of types A, B or C, or,

– which are designed to be powered from a low-voltage mains supply, or

– include other features not specifically addressed in this standard

may also need to meet the relevant requirements of other parts of AS 61010 ~~[6]~~[1)].

1.2 Object

1.2.1 ASPECTS INCLUDED IN SCOPE

The object of this standard is to ensure that the design and methods of construction used provide adequate protection for the OPERATOR and the surrounding area against:

a) electric shock or burn (see clauses 6, 10 and 11);

b) mechanical HAZARDS (see clauses 7, 8 and 11);

c) excessive temperature (see clause 9);

1) Figures in square brackets refer to the bibliography.