AS/NZS 3947.5.6:2000
IEC 60947-5-6:1999

Australian/New Zealand Standard™

Low-voltage switchgear and controlgear

Part 5.6: Control circuit devices and switching elements—D.C. interface for proximity sensors and switching amplifiers (NAMUR)

Standards Australia

STANDARDS NEW ZEALAND

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL/6, Industrial Switchgear and Controlgear. It was approved on behalf of the Council of Standards Australia on 28 March 2000 and on behalf of the Council of Standards New Zealand on 20 March 2000. It was published on 30 May 2000.

The following interests are represented on Committee EL/6:

Australasian Railway Association
Australian Chamber of Commerce and Industry
Australian Electrical and Electronic Manufacturers Association
Bureau of Steel Manufacturers of Australia
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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL/6, Industrial Switchgear and Controlgear.

The objective of this Standard is to provide constructional and performance requirements and tests to verify performance, in addition to those specified in AS/NZS 3947.1 and AS/NZS 3947.5.2, for proximity switches connected for operation by a two-wire interconnecting cable to the control input of a switching amplifier.

This Standard is Part 5.6 of a series which, when complete, will consist of the following:

AS(/NZS) 3947	Low-voltage switchgear and controlgear	
AS/NZS 3947.1	Part 1:	General rules
AS 3947.2	Part 2:	Circuit-breakers
AS/NZS 3947.3	Part 3:	Switches, disconnectors, switch-disconnectors and fuse-combination units
AS/NZS 3947.3 Supp1	Part 3:	Switches, disconnectors, switch-disconnectors and fuse-combination units Supplement 1: Fuse-switch-disconnectors and switch-disconnectors for use with low voltage aerial bundled cables
AS 3947.4.1	Part 4.1:	Contactors and motor-starters–Electromechanical contactors and motor-starters
AS 3947.4.2	Part 4.2:	Contactors and motor-starters–A.C. semiconductor motor controllers and starters
AS/NZS 3947.4.3	Part 4.3:	Contactors and motor-starters–A.C. semiconductor controllers and contactors for non-motor loads
AS/NZS 3947.5.1	Part 5.1	Control circuit devices and switching elements–Electromechanical control circuit devices
AS/NZS 3947.5.2	Part 5.2:	Control circuit devices and switching elements–Proximity switches
AS/NZS 3947.5.3	Part 5.3	Control circuit devices and switching elements–Requirements for proximity devices with defined behaviour under fault conditions
AS/NZS 3947.5.4	Part 5.4:	Control circuit devices and switching elements–Methods of assessing the performance of low-energy contacts–Special tests
AS/NZS 3947.5.5	Part 5.5	Control circuit devices and switching elements–Electrical emergency stop devices with mechanical latching function
AS/NZS 3947.5.6	Part 5.6	Control circuit devices and switching elements–D.C. interface for proximity sensors and switching amplifiers (NAMUR)
AS 3947.6.1	Part 6.1:	Multiple function equipment–Automatic transfer switching equipment
AS 3947.6.2	Part 6.2:	Multiple function equipment–Control and protective switching devices (or equipment) (CPS)
AS 3947.7.1	Part 7.1:	Ancillary equipment–Terminal blocks for copper conductors
AS 3947.7.2	Part 7.2:	Ancillary equipment–Protective conductor terminal blocks for copper conductors
AS/NZS 3947.7.3	Part 7.3:	Ancillary equipment–Safety requirements for terminal blocks for the reception of cartridge fuse-links

This Standard is identical with and has been reproduced from IEC 60947-5-6:1999, *Low-voltage switchgear and controlgear – Part 5-6: Control circuit devices and switching elements – DC interface for proximity sensors and switching amplifiers (NAMUR)*.

A reference to an International Standard identified in the Normative References Clause by strikethrough (~~example~~) is replaced by a reference to the Australian or Australian/New Zealand Standard(s) listed immediately thereafter and identified by shading (example). Where the struck-through referenced document and the referenced Australian or Australian/New Zealand Standard are identical, this is indicated in parenthesis after the title of the latter.

In January 1997, the IEC commenced numbering its Standards from 60000 by adding 60000 to the number of each existing Standard. This coordinates IEC numbering with ISO numbering. During the transition period an IEC Standard might be identified by its new number or its old number (for example, IEC 60050 or IEC 50).

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 standard’ should read ‘this Australian/New Zealand Standard’.

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

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Any IEC table, figure or passage of text that is struckthrough is not part of this Standard. Any Australian/New Zealand table, figure or passage of text that is added (and identified by shading) is part of this Standard.

1 Scope

This International Standard applies to proximity sensors connected for operation by a two-wire connecting cable to the control input of a switching amplifier. The switching amplifier contains a d.c. source to supply the control circuit and is controlled by the variable internal resistance of the proximity sensor.

These devices can be used in an explosive atmosphere if they also comply with IEC 60079-11.

NOTE These devices have been defined by the German organization “Normenausschuß für Meß- und Regelungstechnik (NAMUR)” (Office for Standardization of Measurement and Regulation Techniques).

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

References to International Standards that are struck through in this Appendix are replaced by references to equivalent Australian or Australian/New Zealand Standards that are listed immediately thereafter and identified by shading. Any Australian or Australian/New Zealand Standard that is identical to the International Standard it replaces is appropriately identified.

IEC 60079-11:1999, *Electrical apparatus for explosive gas atmospheres – Part 11: Intrinsic safety “i”*

~~IEC 60947-1:1999, *Low-voltage switchgear and controlgear – Part 1: General rules*~~

AS/(NZS) 3947, *Low-voltage switchgear and controlgear*
AS/NZS 3947.1 *Part 1: General rules*