AS/NZS IEC 60947.5.6:2015
IEC 60947-5-6, Ed. 1.0 (1999)

AS/NZS IEC 60947.5.6:2015

Australian/New Zealand Standard™

Low-voltage switchgear and controlgear

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

STANDARDS Australia

STANDARDS NEW ZEALAND PAEREWA AOTEAROA

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL-006, Industrial Switchgear and Controlgear. It was approved on behalf of the Council of Standards Australia on 27 May 2015 and on behalf of the Council of Standards New Zealand on 4 August 2015.
This Standard was published on 23 September 2015.

The following are represented on Committee EL-006:

Association of Accredited Certification Bodies
Ausgrid
Australian Chamber of Commerce and Industry
Australian Industry Group
Bureau of Steel Manufacturers of Australia
Business New Zealand
Electrical Contractors Association of New Zealand
Engineers Australia
National Electrical and Communications Association
National Electrical Switchboard Manufacturers Association
Rail Industry Safety and Standards Board (RISSB)

Keeping Standards up-to-date

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about joint Australian/New Zealand Standards can be found by visiting the Standards Web Shop at www.saiglobal.com.au or Standards New Zealand web site at www.standards.co.nz and looking up the relevant Standard in the on-line catalogue.

For more frequent listings or notification of revisions, amendments and withdrawals, Standards Australia and Standards New Zealand offer a number of update options. For information about these services, users should contact their respective national Standards organization.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of either Standards Australia or Standards New Zealand at the address shown on the back cover.

This Standard was issued in draft form for comment as DR AS/NZS IEC 60947.5.6:2015.

Australian/New Zealand Standard™

Low-voltage switchgear and controlgear

Part 5.6: Control circuit devices and switching elements – DC interface for proximity sensors and switching amplifiers (NAMUR)

Originally as AS/NZS 3947.5.6:2000.
Jointly revised and redesignated AS/NZS IEC 60947.5.6:2015.

Jointly published by SAI Global Limited under licence from Standards Australia Limited, GPO Box 476, Sydney, NSW 2001 and by Standards New Zealand, Private Bag 2439, Wellington 6140.

ISBN 978 1 76035 234 9

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-006, Industrial Switchgear and Controlgear, to supersede AS/NZS 3947.5.6:2000.

The objective of this Standard is to provide characteristics, constructional and performance requirements and tests to verify performance for proximity sensors connected for operation by a two-wire connecting cable to the control input of a switching amplifier with a d.c. source.

This Standard is identical with, and has been reproduced from, IEC 60947-5-6, Ed. 1.0 (1999), *Low-voltage switchgear and controlgear*, Part 5.6: *Control circuit devices and switching elements—DC interface for proximity sensors and switching amplifiers (NAMUR)*.

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

(a) In the source text 'this International Standard' should read 'this Australian/New Zealand Standard'.

(b) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

Reference to International Standard		*Australian/New Zealand Standard*	
IEC		AS/NZS	
60079	Electrical apparatus for explosive gas atmospheres	60079	Electrical apparatus for explosive gas atmospheres
60079-11	Part 11: Intrinsic safety "i"	60079.11	Part 11: Intrinsic safety "i"
		AS/NZS IEC	
60947	Low-voltage switchgear and controlgear	60947	Low-voltage switchgear and controlgear
60947-1	Part 1: General rules	60947.1	Part 1: General rules
60947-5-2	Part 5-2: Control circuit devices and switching elements—Proximity switches	60947.5.2	Part 5.2: Control circuit devices and switching elements—Proximity switches

Only normative references that have been adopted as Australian or Australian/New Zealand Standards have been listed.

CONTENTS

AUSTRALIAN/NEW ZEALAND STANDARD

Low-voltage switchgear and controlgear

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

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.

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*

IEC 60947-5-2:1999, *Low-voltage switchgear and controlgear – Part 5-2: Control circuit devices and switching elements – Proximity switches*

3 Definitions

For the purposes of this International Standard the following definitions apply.

3.1
proximity sensor
device which converts the travel of an influencing body relative to it into an output signal

NOTE 1 The proximity sensor is preferably contactless (e.g. inductive, capacitive, magnetic, photoelectric).

NOTE 2 The proximity sensor may be operated with or without mechanical contact.

3.2
switching amplifier
device which converts the signal from the proximity sensor presented at the control input into a binary output signal which may be produced e.g. by an electromagnetic relay or a semi-conductor switching element