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IEC 60947-5-3, Ed. 2.0 (2013)

AS/NZS IEC 60947.5.3:2015

Australian/New Zealand Standard™

Low-voltage switchgear and controlgear

Part 5.3: Control circuit devices and switching elements—Requirements for proximity devices with defined behaviour under fault conditions (PDDB)

STANDARDS Australia

STANDARDS® NEW ZEALAND PAEREWA AOTEAROA

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-006, Industrial Switchgear and Controlgear, to supersede AS/NZS 3947.5.3:2000.

The objective of this Standard is to provide additional requirements to those given in AS/NZS IEC 60947.5.2. It addresses the fault performance aspects of proximity devices with a defined behaviour under fault conditions (PDDB). It does not address any other characteristics that can be required for specific applications.

This Standard is identical with, and has been reproduced from, IEC 60947-5-3, Ed. 2.0 (2013), *Low-voltage switchgear and controlgear*, Part 5.3: *Control circuit devices and switching elements—Requirements for proximity devices with defined behaviour under fault conditions (PDDB)*.

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

(i) In the source text 'this part of IEC 60947' should read 'this Australian/New Zealand Standard'.

(ii) 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	
60529	Degrees of protection provided by enclosures (IP Code) Amendment 1:1999	60529	Degrees of protection provided by enclosures (IP Code)
		AS/NZS IEC	
60947	Low-voltage switchgear and controlgear	60947	Low-voltage switchgear and controlgear
60947-5-1	Part 5-1: Control circuit devices and switching elements—Electromechanical control circuit devices Amendment 1:2009	60947.5.1	Part 5.1: Control circuit devices and switching elements—Electromechanical control circuit devices
		AS/NZS	
61000	Electromagnetic compatibility (EMC)	61000	Electromagnetic compatibility (EMC)
61000-4-2	Part 4-2: Testing and measurement techniques—Electrostatic discharge immunity test	61000.4.2	Part 4.2: Testing and measurement techniques—Electrostatic discharge immunity test
61000-4-3	Part 4-3: Testing and measurement techniques—Radiated, radio-frequency, electromagnetic field immunity test Amendment 1:2007 Amendment 2:2010	61000.4.3	Part 4.3: Testing and measurement techniques—Radiated, radio-frequency, electromagnetic field immunity test
61000-4-4	Part 4-4: Testing and measurement techniques—Electrical fast transient/burst immunity test	61000.4.4	Part 4.4: Testing and measurement techniques—Electrical fast transient/burst immunity test
61000-4-5	Part 4-5: Testing and measurement techniques—Surge immunity test	61000.4.5	Part 4.5: Testing and measurement techniques—Surge immunity test

IEC		AS/NZS IEC	
61000-4-6	Part 4-6: Testing and measurement techniques—Immunity to conducted disturbances, induced by radio-frequency fields	61000.4.6	Part 4.6: Testing and measurement techniques—Immunity to conducted disturbances, induced by radio-frequency fields
60947-4-11	Part 4-11: Testing and measurement techniques—Voltage dips, short interruptions and voltage variations immunity tests	60947.4.11	Part 4.11: Testing and measurement techniques—Voltage dips, short interruptions and voltage variations immunity tests (IEC 61000-4-11, Ed. 2.0 (2004) MOD)
		AS IEC	
61131	Programmable controllers	61131	Programmable controllers
61131-2	Part 2: Equipment requirements and tests	61131.2	Part 2: Equipment requirements and tests
		AS	
61508	Functional safety of electrical/electronic/programmable electronic safety-related systems	61508	Functional safety of electrical/electronic/programmable electronic safety-related systems
61508-1	Part 1: General requirements	61508.1	Part 1: General requirements
61508-2	Part 2: Requirements for electrical/electronic/programmable electronic safety-related systems	61508.2	Part 2: Requirements for electrical/electronic/programmable electronic safety-related systems
61508-3	Part 3: Software requirements	61508.3	Part 3: Software requirements
62061	Safety of machinery—Functional safety of safety-related electrical, electronic and programmable electronic control systems Amendment 1:2012		Safety of machinery—Functional safety of safety-related electrical, electronic and programmable electronic control systems

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

The term ‘informative’ has been used in this Standard to define the application of the annex to which it applies. An ‘informative’ annex is only for information and guidance.

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1 General

1.1 Scope

This part of IEC 60947 series provides additional requirements to those given in IEC 60947-5-2. It addresses the fault performance aspects of proximity devices with a defined behaviour under fault conditions (PDDB). It does not address any other characteristics that can be required for specific applications.

This standard does not cover proximity devices with analogue outputs.

This Standard does not deal with any specific requirements on acoustic noise as the noise emission of control circuit devices and switching elements is not considered to be a relevant hazard.

For a PDDB used in applications where additional characteristics, dealt with in other standards, are required, the requirements of all relevant standards apply.

The use of this standard alone does not demonstrate suitability for the implementation of any specific safety related functionality. In particular, this standard does not provide requirements for the actuation characteristics of a PDDB, or for means to reduce the effects of mutual interference between devices, e.g. coded targets. Therefore these and any other application-specific requirements will need to be considered in addition to the requirements of this standard.

NOTE 1 Due to their behaviour under fault conditions, PDDBs can, for example, be used as interlocking devices (see ISO 14119).

NOTE 2 The requirements for electro-sensitive protective equipment for the detection of persons are given in the IEC 61496 series.

1.2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60068-2-1:2007, *Environmental testing – Part 2-1: Tests – Test A: Cold*

IEC 60068-2-30:2005, *Environmental testing – Part 2-30: Tests – Test Db: Damp heat, cyclic (12 + 12 h cycle)*

IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*
Amendment 1:1999

IEC 60947-1:2007, *Low-voltage switchgear and controlgear – Part 1: General rules*
Amendment 1:2010