AS 62061—2006 IEC 62061, Ed. 1.0 (2005)

Australian Standard[™]

Safety of machinery—Functional safety of safety-related electrical, electronic and programmable electronic control systems



This is a free page sample. Access the full version online.

This Australian Standard was prepared by Committee EL-017, Electrical Equipment of Industrial Machinery. It was approved on behalf of the Council of Standards Australia on 19 April 2006.

This Standard was published on 10 May 2006.

The following are represented on Committee EL-017:

Australian Electrical and Electronic Manufacturers Association Department of Consumer and Employment Protection, WorkSafe Division (WA) Department of Industrial Relations (QLD) Department of Primary Industries, Mine Safety (NSW) Electrical Regulatory Authorities Council Federal Chamber of Automotive Industries Victorian WorkCover Authority

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 Standards may also be withdrawn.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 Standards can be found by visiting the Standards Web Shop at www.standards.com.au and looking up the relevant Standard in the on-line catalogue.

Alternatively, the printed Catalogue provides information current at 1 January each year, and the monthly magazine, *The Global Standard*, has a full listing of revisions and amendments published each month.

Australian Standards[™] and other products and services developed by Standards Australia are published and distributed under contract by SAI Global, which operates the Standards Web Shop.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Contact us via email at mail@standards.org.au, or write to the Chief Executive, Standards Australia, GPO Box 476, Sydney, NSW 2001.

This Standard was issued in draft form for comment as DR 06015.

Australian Standard[™]

Safety of machinery—Functional safety of safety-related electrical, electronic and programmable electronic control systems

First published as AS 62061-2006.

COPYRIGHT

© Standards Australia

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher.

Published by Standards Australia, GPO Box 476, Sydney, NSW 2001, Australia ISBN 0 7337 7400 8

ii

PREFACE

This Standard was prepared by the Standards Australia Committee EL-017, Electrical Equipment of Industrial Machinery.

The objective of this Standard is to provide guidance and criteria on the use of safety-related electrical control systems, with the goal of ensuring a suitably high level of performance. More information is given in the Introduction.

This Standard is technically identical with, and has been reproduced from IEC 62061, Ed. 1.0 (2005), Safety of machinery—Functional safety of safety-related electrical, electronic and programmable electronic control systems.

Editorial variations to IEC 62061, Ed. 1.0 (2005) 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.

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 'IEC 62061' should read 'AS 62061'.
- (c) A full point should be substituted for a comma when referring to a decimal marker.

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.

iii

CONTENTS

Page

Introduction			
1	Scope 1		
2	Norm	Normative references	
3	Terms, definitions and abbreviations		3
	3.1	Alphabetical list of definitions	3
	3.2	Terms and definitions	5
	3.3	Abbreviations	. 12
4	Management of functional safety		. 13
	4.1	Objective	. 13
	4.2	Requirements	. 13
5	Requ	irements for the specification of Safety-Related Control Functions (SRCFs)	. 14
	5.1	Objective	. 14
	5.2	Specification of requirements for SRCFs	. 14
6	Desig	on and integration of the safety-related electrical control system (SRECS)	. 17
	6.1	Objective	. 17
	6.2	General requirements	. 17
	6.3	Requirements for behaviour (of the SRECS) on detection of a fault in the SRECS	. 18
	6.4	Requirements for systematic safety integrity of the SRECS	. 18
	6.5	Selection of safety-related electrical control system	. 20
	6.6	Safety-related electrical control system (SRECS) design and development	. 20
	6.7	Realisation of subsystems	. 26
	6.8	Realisation of diagnostic functions	. 41
	6.9	Hardware implementation of the SRECS	. 42
	6.10	Software safety requirements specification	. 43
	6.11	Software design and development	. 44
	6.12	Safety-related electrical control system integration and testing	. 50
	6.13	SRECS installation	. 52
7	Information for use of the SRECS		. 52
	7.1	Objective	. 52
	7.2	Documentation for installation, use and maintenance	. 52
8	Validation of the safety-related electrical control system		. 53
	8.1	Objective	. 53
	8.2	General requirements	. 53
	8.3	Validation of SRECS systematic safety integrity	. 54
9	Modi	fication	. 55
	9.1	Objective	. 55
	9.2	This Clause specifies the modification procedure(s) to be applied when modifying the SRECS during design, integration and validation (e.g. during	
		SRECS installation and commissioning). Modification procedure	. 55
	9.3	Configuration management procedures	. 55
10 Documentation			
Annex A (informative) SIL assignment			



This is a free preview. Purchase the entire publication at the link below:

Product Page

S Looking for additional Standards? Visit Intertek Inform Infostore

> Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation