AS/NZS 4024.2602:2020

Australian/New Zealand Standard™

Safety of machinery

Part 2602: Requirements for cableless control systems of machinery (IEC 62745 (ED.1.0) MOD)

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AS/NZS 4024.2602:2020

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Part 2602: Requirements for cableless control systems of machinery (IEC 62745 (ED.1.0) MOD)

First published as AS/NZS 4024.2602:2020.

Preface

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee SF-41, Safety of Machinery.

The objective of this Standard is to specify requirements for the functionality and interfacing of cableless (for example, radio, infrared) control systems that provide communication between operator control station(s) and the control system of a machine. Specific requirements are included for such operator control stations that are portable by the operator.

This Standard does not deal with cableless communication between parts of a machine(s) that are not operator control stations.

This Standard is not intended to specify all of the requirements that are necessary for the design and construction of a cableless control system.

This Standard is an adoption with national modifications, and has been reproduced from, IEC 62745:2017, *Safety of machinery — Requirements for cableless control systems of machinery*. The modifications are additional requirements and are set out in Appendix ZZ, which has been added at the end of the source text.

Appendix ZZ lists the variations to IEC 62745:2017 for the application of this Standard in Australia and New Zealand.

As this document has been reproduced from an International Standard, a full point substitutes for a comma when referring to a decimal marker.

Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably. Refer to the online catalogue for information on specific Standards.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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SAFETY OF MACHINERY – REQUIREMENTS FOR CABLELESS CONTROL SYSTEMS OF MACHINERY

FOREWORD

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International Standard IEC 62745 has been prepared by IEC technical committee 44: Safety of machinery – Electrotechnical aspects.

The text of this standard is based on the following documents:

FDIS	Report on voting
44/783/FDIS	44/785/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

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INTRODUCTION

Cableless control systems (CCS) are increasingly being used to provide an operator interface on a wide range of machinery. The functionality of a CCS and the way in which it interfaces with the overall machine control system can therefore affect the safety of the machinery.

IEC 62745 specifies requirements for the functionality of a CCS that is interfaced with or is part of a machine control system for use as an operator control station on a machine.

The extent to which the functionality of a CCS is relied upon to minimise risk on a machine is a key selection criterion. It is therefore important to select a CCS that provides suitable control functions with an appropriate safety integrity in accordance with the risk assessment at the machine.

In some particular applications, the requirements for a CCS can exceed those specified in this document.

SAFETY OF MACHINERY – REQUIREMENTS FOR CABLELESS CONTROL SYSTEMS OF MACHINERY

1 Scope

This standard specifies requirements for the functionality and interfacing of cableless (for example, radio, infra-red) control systems that provide communication between operator control station(s) and the control system of a machine. Specific requirements are included for such operator control stations that are portable by the operator.

NOTE The part of the cableless control system that is used as an operator control station is sometimes referred to as the 'transmitter' and the part that interfaces with the machine control system is sometimes referred to as the 'receiver'. However, to take account of the possibility of bi-directional communication, this standard refers to these individual parts as the 'remote station' and the 'base station' respectively.

This document does not deal with cableless communication between parts of a machine(s) that are not operator control stations.

This document is not intended to specify all of the requirements that are necessary for the design and construction of a cableless control system. For example, it does not specify communication protocols, frequency or bandwidth aspects, nor the full range of constructional requirements such as impact resistance, ingress protection, electromagnetic compatibility, etc.

The provisions of this document are intended to be applied in addition to the requirements for electrical equipment in the IEC 60204-1.

This document is a type-B2 standard as stated in ISO 12100.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60068-2-31:2008, *Environmental testing – Part 2-31: Tests – Test Ec – Rough handling shocks, primarily for equipment-type specimens*

IEC 60204-1:2005, *Safety of machinery – Electrical equipment of machines – Part 1: General requirements*

IEC 60947-5-1:2016, *Low-voltage switchgear and controlgear – Part 5-1: Control circuit devices and switching elements – Electromechanical control circuit devices*

IEC 60947-5-5, *Low-voltage switchgear and controlgear – Part 5-5: Control circuit devices and switching elements – Electrical emergency stop device with mechanical latching function*

IEC 62061, *Safety of machinery – Functional safety of safety-related electrical, electronic and programmable electronic control systems*

ISO 13849-1, *Safety of machinery – Safety-related parts of control systems – Part 1: General principles for design*