

AS 7240.13:2021



Fire detection and alarm systems

Part 13: Compatibility assessment of system components (ISO 7240-13:2018 (ED.2.0) MOD)



AS 7240.13:2021

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The following are represented on Committee FP-002:

- Australasian Fire and Emergency Service Authorities Council
- Australian Building Codes Board
- Australian Chamber of Commerce and Industry
- Australian Industry Group
- Australian Institute of Building Surveyors
- CSIRO
- Deafness Forum of Australia
- Engineers Australia
- Fire Protection Association Australia
- Hydraulic Consultants Association Australasia
- National Electrical and Communications Association
- National Fire Industry Association
- Property Council of Australia
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Preface

This Standard was prepared by the Australian members of Joint Standards Australia/Standards New Zealand Committee FP-002, Fire Detection, Warning, Control, and Intercom Systems, to supersede AS 7240.13:2006, *Fire detection and alarm systems, Part 13: Compatibility assessment of system components*.

The objective of this document is to specify the requirements for compatibility and connectability assessment of the components of fire detection and alarm systems, fire protection systems and voice alarm systems.

This document only includes system requirements when these are necessary for compatibility assessment.

This document also specifies requirements for the integrity of the fire detection and fire alarm system when connected to other systems.

This document does not specify the manner in which the system is designed, installed and used in any particular application.

This document does not cover components or functions which are not included in the fire detection and alarm systems (FDAS), such as functions performed by a building management system.

Methods of assessment are specified to permit an acceptable degree of confidence within predetermined operational and environmental conditions to be achieved.

The requirements for the transmission path used for a distributed function are covered by a relevant ISO standard and not by this document.

This document is applicable to systems where the components are connected to control-and-indicating equipment (CIE) and where the components are interconnected by electrical wires or optical fibre or by radio frequency links or by any combination of these.

AS ISO 7240.25 provides additional information and requirements about systems using radio frequency links.

This document is an adoption with national modifications, and has been reproduced from, ISO 7240-13:2020, *Fire detection and alarm systems — Part 13: Compatibility assessment of system components*.

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 ISO 7240-13:2020 for the application of this document in Australia.

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.

The terms “normative” and “informative” are used in Standards to define the application of the appendices or annexes to which they apply. A “normative” appendix or annex is an integral part of a Standard, whereas an “informative” appendix or annex is only for information and guidance.

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 21, *Equipment for fire protection and fire fighting*, Subcommittee SC 3, *Fire detection and alarm systems*.

This second edition cancels and replaces the first edition (ISO 7240-13:2005), which has been technically revised.

The main changes compared to the previous edition are as follows:

- This edition takes into account new techniques in communication and the availability of new technologies and concepts.
- This edition is applicable to electrical wires, optical fibre or radio frequency connections. The previous edition was only applicable to electrical wires.
- Clarification introduced that it is possible to use this document to establish compatibility with fire protection equipment such as sprinkler flow switches and electrically activated sprinkler heads.
- Levels (field, control and management) and a network transmission path for the basis of system configuration introduced.
- References to EN standards have been replaced with the appropriate IEC standard references.
- Introduction of [Annex A](#), Example of levels used in FDAS.
- Introduction of [Annex B](#), Classification of functions of the FDAS.
- Introduction of [Annex C](#), Example methodology for theoretical analysis.
- Introduction of [Annex D](#), Software design documentation.
- Introduction of [Annex E](#), Flowchart for assessment of compatibility/connectability.

- Introduction of [Annex E](#), previously [Annex A](#), upgraded to the latest fire detection and alarm system functions diagram from ISO 7240-1.

A list of all parts in the ISO 7240 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The purpose of fire detection is to detect a fire at the earliest practicable moment and to give signals and indications so that appropriate action can be taken.

The purpose of a fire alarm is, at a minimum, to give audible and/or visible signals to the occupants of a building who may be at risk from fire.

A fire detection and alarm system including voice alarm systems combines the functions of detection and alarm in a single system and typically consists of a number of inter-linked components including automatic fire detectors, manual call points and alarm devices. These components are connected to control and indicating equipment by means of one or more transmission paths. All system components, including the control and indicating equipment, are also directly or indirectly connected to a power supply.

A separate voice alarm system can be assessed for compatibility and connectability independently of the fire detection and alarm system.

ISO 7240-1 provides additional information about the components performing these functions, listed in [Annex F](#) of this document.

A fire protection system and/or building management system, or remote fault and fire alarm monitoring stations that are linked to a fire detection and alarm system, are not considered part of the fire detection and alarm system.

It is necessary for all of the components constituting the fire detection and alarm system to be compatible or connectable and it is necessary that requirements relating to the performance of the overall system be fulfilled.

Differentiation is made between components classified as components type 1 and other components, classified as components type 2.

As the possible configurations of fire detection and alarm systems are unlimited, the assessment is only carried out on the configuration(s) declared by the applicant.

This document recognizes that it is not practical to assess the compatibility or connectability of components in all possible configurations. Methods of assessment are specified to reach an acceptable degree of confidence within pre-determined operational and environmental conditions.

National application guidelines (also known as codes of practice) also contain system requirements.

System requirements are also included for fire detection and alarm systems which are linked to fire protection systems and/or other systems (for example: fire suppression and building management systems).

The intended use of this document is to demonstrate the compatibility and connectability of components, even if they are not defined by an ISO standard.

Australian Standard®

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1 Scope

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ISO 7240-25 provides additional information and requirements about systems using radio frequency links.

NOTE Other International Standards are expected to cover the requirements of other systems to which the fire detection and fire alarm system is connected.

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.

ISO 7240-1, *Fire detection and alarm systems — Part 1: General and definitions*

ISO 7240-2, *Fire detection and alarm systems — Part 2: Fire detection control and indicating equipment*

ISO 7240-4, *Fire detection and alarm systems — Part 4: Power supply equipment*

ISO 7240-16, *Fire detection and alarm systems — Part 16: Sound system control and indicating equipment*

ISO 7240-25, *Fire detection and fire alarm systems — Part 25: Components using radio transmission paths*

IEC 62599-1, *Alarm systems — Part 1: Environmental test methods*

IEC 62599-2, *Alarm systems — Part 2: Electromagnetic compatibility — Immunity requirements for components of fire and security alarm systems*