

Australian Standard™

Fire detection and alarm systems
Part 21: Routing equipment



This Australian Standard was prepared by Committee FP-002, Fire Detection, Warning, Control and Intercom Systems. It was approved on behalf of the Council of Standards Australia on 8 November 2005.
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Australian Government Analytical Laboratories, Scientific Services Laboratory
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STANDARDS AUSTRALIA

RECONFIRMATION

OF

AS 7240.21—2006

Fire detection and alarm systems

Part 21: Routing equipment

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Technical Committee FP-002 has reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

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NOTES

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PREFACE

This Standard was prepared by the Standards Australia Committee FP-002, Fire Detection, Warning, Control and Intercom Systems.

This Standard is identical with and has been reproduced from ISO 7240-21:2005, *Fire detection and alarm systems—Part 21: Routing equipment*.

Variations to ISO 7240-21:2005 are indicated at the appropriate places throughout this Standard. Strikethrough (~~example~~) identifies ISO 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 appears on the cover and title page while the international Standard number appears only on the cover.
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- (c) A full point substitutes 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.

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INTRODUCTION

This part of ISO 7240 combines the requirements for both fire-alarm routing (transmitting) equipment (ISO 7240-1:—, Figure 1, item E) and fault (trouble) warning routing equipment (ISO 7240-1:—, Figure 1, item J) into a single equipment Standard.

Routing equipment receives signals from control and indicating equipment (ISO 7240-1:—, Figure 1, item B) and sends fire alarm signals to a fire-alarm receiving station (ISO 7240-1, Figure 1, item F) and fault signals to a fault warning (trouble signal) receiving station (ISO 7240-1, Figure 1, item K). The receiving stations may be in the same or different locations.

This part of ISO 7240 describes the mandatory functions which are required to be provided on all routing equipment covered by this part of ISO 7240, and optional functions with their associated requirements. It is intended that the options will be used for specific applications, as recommended in application guidelines.

Each optional function is included as a separate entity, with its own set of associated requirements, in order to permit routing equipment covered by this document with different combinations of functions to conform to this part of ISO 7240. Routing equipment complying with this part of ISO 7240 will need to fulfil requirements of all of the mandatory functions, together with the requirements of those optional functions which are provided.

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Australian Standard

Fire detection and alarm systems

Any table, figure or text of the international standard that is struck through is not part of this standard. Any Australian/New Zealand table, figure or text that is added is part of this standard and is identified by shading.

1 Scope

This part of ISO 7240 specifies requirements, methods of test, and performance criteria for fire-alarm routing (transmitting) equipment (ISO 7240-1:—, Figure 1, item E) and for fault (trouble) warning routing equipment (ISO 7240-1:—, Figure 1, item J) for use in fire detection and fire alarm systems installed in buildings.

2 Normative references

~~The following referenced documents are indispensable for the application 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.~~

References to international standards that are struck through in this clause are replaced by references to Australian or Australian/New Zealand Standards that are listed immediately thereafter and identified by shading. Any Australian or Australian/New Zealand Standard that is identical to the International Standard it replaces is identified as such.

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

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

AS 7240.4, *Fire detection and alarm systems — Part 4: Power supply equipment* (ISO 7240-15, 2004, MOD)

~~IEC 60068-1:1990-05, *Environmental testing — Part 1: General and guidance*~~

AS 60068.1, *Environmental testing — Part 1: General and guidance*

~~IEC 60068-2-1, *Environmental testing — Part 2: Tests. Tests A: Cold*~~

AS 60068.2.1, *Environmental testing — Part 2.1: Tests—Test A: Cold*

~~IEC 60068-2-6, *Environmental testing — Part 2: Tests. Test Fc: vibration (sinusoidal)*~~

AS 60068.2.6, *Environmental testing — Part 2.6: Tests—Test Fc: Vibration (sinusoidal)*

~~IEC 60068-2-47, *Environmental testing — Part 2-47: Test methods — Mounting of components, equipment and other articles for vibration, impact and similar dynamic tests*~~

AS 60068.2.47, *Environmental testing — Part 2.47: Tests—Mounting of components, equipment and other articles for vibration, impact and similar dynamic tests*

~~IEC 60068-2-75, *Environmental testing — Part 2-75: Tests. Test Eh: Hammer tests*~~

AS 60068.2.75, *Environmental testing — Part 2.75: Tests—Test Eh: Hammer tests*

~~IEC 60068-2-78, *Environmental testing — Part 2-78: Tests — Test Cab: Damp heat, steady state*~~
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AS 60068.2.78, *Environmental testing — Part 2.78: Tests — Test Cab: Damp heat, steady state*

~~IEC 60529:2001-02, *Degrees of protection provided by enclosures (IP Code)*~~

AS 60529, *Degrees of protection provided by enclosure (IP Code)*

IEC 60721-3-3:2002-10, *Classification of environmental conditions — Part 3-3: Classifications of groups of environmental parameters and their severities — Stationary use and weatherprotected locations*

EN 50130-4, *Alarm systems — Part 4: Electromagnetic compatibility — Product family standard: Immunity requirements for components of fire, intruder and social alarm systems*

3 Definitions

For the purposes of this document, the definitions given in ISO 7240-1 and the following apply.

3.1

access level

one of several states of a routing equipment in which selected

- controls can be operated;
- manual operations can be carried out;
- indications are visible, and/or;
- information can be obtained.

NOTE See Annex A.

3.2

field

sub-division of a window

3.3

functional condition

condition of the routing equipment characterized by its indication at the routing equipment

NOTE The functional conditions recognized in this part of the ISO 7240 are the following:

- fire alarm condition, when a fire alarm is indicated;
- supervisory signal condition, when a supervisory signal is indicated;
- fault warning condition, when a fault is indicated;
- disabled condition, when the disablement of functions is indicated;
- test condition, when the testing of functions is indicated;
- quiescent condition, when the routing equipment is powered by a power supply conforming to ISO 7240-4 and no other functional condition is indicated.

3.4

indicator

device which can change its state to give information

3.5

indication

information given by an indicator

3.6

mandatory

<adjective> qualification applied to those functions required to be provided on all routing equipment and the functions' requirements and to the requirements of any optional functions that have requirements, if such optional functions are provided

3.7 non-volatile memory

memory elements which do not require the presence of an energy source for the retention of their contents

3.8 point

component connected to a detection circuit enabling the transmission or reception of information in relation to fire detection

NOTE Includes ISO 7240-1:—, Figure 1, items A and D.

3.9 program

software necessary for routing equipment to comply with at least the requirements of this part of ISO 7240, including initializing data, reset and interrupt vectors, operating code, and declarations

3.10 reset

operation capable of terminating the fire alarm condition and/or the fault warning condition

3.11 running data

alterable data subject to temporary modification during operation, either automatically or by manual controls

3.12 separate

〈adjective〉 physically separate and exclusively provided for the purpose or purposes stated in this part of ISO 7240

3.13 silencing

〈noun〉 manual operation for switching off the audible signal of a sounding device that is capable of being automatically re-sounded by a new event

3.14 transmission path

connection, external to the cabinet of the routing equipment, for the transmission of information and/or power

- between the routing equipment and other components of a fire detection and fire alarm system as defined in ISO 7240-1, and/or
- between parts of routing equipment contained in different cabinets

3.15 volatile memory

memory elements which require the presence of an energy source for the retention of their contents

3.16 window

part or all of an alphanumeric display used for information relating to one functional condition at a given time

NOTE A sub-division of the display might be realized either by mechanical separation, or under software control.

3.17 zone

geographical sub-division of the protected premises in which one or more points are installed and for which a common zonal indication is provided

4 General requirements

If functions other than those specified in this part of the ISO 7240 are provided, they shall not jeopardize compliance with any requirements of this part of the ISO 7240.

If an optional function is included in the routing equipment, then all the corresponding requirements shall be met.

5 General requirements for indications

5.1 Display of functional conditions

5.1.1 The routing equipment shall be capable of unambiguously indicating the following functional conditions, as described in Clauses 6 to 11:

- quiescent condition;
- fire alarm condition;
- supervisory signal condition;
- fault warning condition;
- disabled condition;
- test condition.

5.1.2 The routing equipment shall be capable of being simultaneously, in any combination of the following functional conditions:

- fire alarm condition;
- supervisory signal condition;
- fault warning condition;
- disabled condition;
- test condition.

5.2 Display of indications

All mandatory indications shall be clearly identifiable, except where otherwise specified in this part of ISO 7240.

5.3 Indications on alphanumeric displays

Where an alphanumeric display is used to display indications relating to different functional conditions, these may be displayed at the same time. However, for each functional condition there shall be only one window in which all of the fields relating to that functional condition are grouped.

5.4 Indication of the supply of power

A visible indication shall be given by means of a separate light-emitting indicator while the routing equipment is supplied with power.

5.5 Additional indications

Where indications are used in addition to mandatory indications, these shall not result in contradiction or confusion.

6 Quiescent condition

Any kind of system information may be displayed during the quiescent condition. However, no indications shall be given which could be confused with control-and-indicating equipment indications used in the

- fire alarm condition,
- supervisory signal condition,
- fault warning condition,
- disabled condition,