



Fire detection, warning, control and intercom systems—Control and indicating equipment

Part 6: Alarm signalling equipment



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Australian Standard®

**Fire detection, warning, control and
intercom systems—Control and
indicating equipment**

Part 6: Alarm signalling equipment

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PREFACE

This Standard was prepared by the Standards Australia Committee FP-002, Fire Detection, Warning, Control and Intercom Systems, to supersede AS 4428.6—1997.

The objective of this Standard is to specify the minimum equipment requirements for alarm signalling equipment (ASE) for use in monitoring automatic fire detection and alarm system.

This edition updates and aligns the minimum performance requirements for ASE with the requirements of the AS 7240 series, *Fire detection and alarm systems*, and allows new telecommunications technologies to be utilized.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A normative appendix is an integral part of a Standard, whereas an informative appendix is only for information and guidance.

Statements expressed in mandatory terms in notes to figures and tables are deemed to be requirements of this Standard. Notes used in this Standard, not associated with figures or tables, are of an advisory nature only and are used to give explanation or guidance to the user on recommended considerations or technical procedures, or to provide an informative cross-reference to other documents or publications.

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STANDARDS AUSTRALIA

Australian Standard

Fire detection, warning, control and intercom systems—Control and indicating equipment**Part 6: Alarm signalling equipment****1 SCOPE**

This Standard specifies requirements, methods of test, and performance criteria for alarm signalling equipment (ASE) for use in fire detection and alarm systems (FDAS) installed in buildings. It specifies the functions that are required and applies to ASE that receives signals from FDAS and transmits the information to a monitoring centre, as defined by AS 1670.3.

Figure 1 below illustrates the location of an ASE in a fire alarm monitoring system. It also displays the transmission path that connects the FDAS to the ASE and the telecommunications path that connects the ASE to the monitoring centre which are the terms used when assessing for conformity to this Standard.

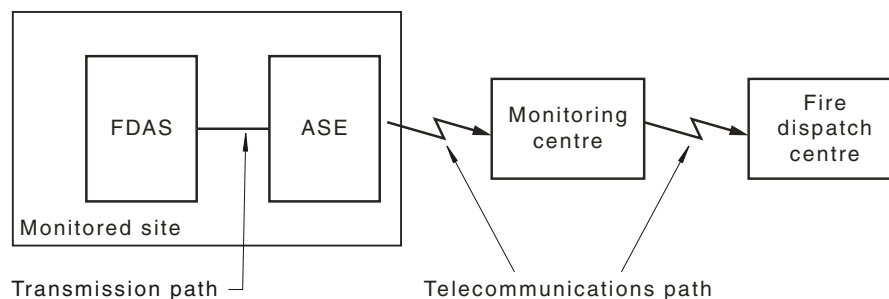


FIGURE 1 BLOCK DIAGRAM OF FIRE ALARM MONITORING SYSTEM

2 NORMATIVE REFERENCES

The following are the normative documents referenced in this Standard:

NOTE: Documents referenced for informative purposes are listed in the Bibliography.

AS	
4428	Fire detection, warning, control and intercom systems—Control and indicating equipment (series)
7240	Fire detection and alarm systems
7240.1	Part 1: General and definitions
7240.4	Part 4: Power supply equipment (ISO 7240-4, MOD)
60068	Environmental testing
60068.1	Part 1: General and guidance
60068.2.1	Part 2.1: Tests—Test A: Cold
60068.2.2	Part 2.2: Tests—Test B: Dry heat
60068.2.6	Part 2.6: Tests—Test Fc: Vibration (sinusoidal)
60068.2.47	Part 2.47: Test—Mounting of compounds, equipment and other articles for vibration, impact and similar dynamic tests

AS

60068.2.75 Part 2.75: Tests—Test Eh: Hammer tests

60068.2.78 Part 2.78: Tests—Test Cab: Damp heat, steady state

IEC

60529 Degrees of protection provided by enclosures (IP Code)

60721 Classification of environmental conditions

60721-3-3 Part 3-3: Classification of groups of environmental parameters and their severities—Stationary use at weatherprotected locations

62599 Alarm systems

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

3 DEFINITIONS AND ABBREVIATIONS

3.1 Definitions

For the purposes of this document, the definitions given in AS 7240.1 and the following apply.

3.1.1 *Access level*

One of several states of an ASE in which selected—

- (a) controls can be operated;
- (b) manual operations can be carried out;
- (c) indications are visible; and/or
- (d) information can be obtained.

NOTE: See Appendix A.

3.1.2 *Field*

Sub-division of a window (see Clause 3.1.17).

3.1.3 *Fire detection and alarm system (FDAS)*

Group of components including a FDCIE, which, when arranged in a specified configuration(s), is capable of detecting and indicating a fire, and giving signals for appropriate action.

3.1.4 *Functional condition*

Condition of the ASE characterized by its indication at the signalling equipment (see Clause 5.1).

3.1.5 *Indication*

Information given by an indicator.

3.1.6 *Indicator*

Device which can change its state to give information.

3.1.7 *Mandatory*

Qualification applied to those functions required to be provided on all ASE and the functions' requirements.

3.1.8 *Non-volatile memory*

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

3.1.9 *Program*

Software necessary for ASE to comply with at least the requirements of this Standard, including initializing data, reset and interrupt vectors, operating code, and declarations.

3.1.10 *Reset*

An operation which returns a condition to the quiescent state.

3.1.11 *Running data*

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

3.1.12 *Separate*

Physically separate and exclusively provided for the purpose or purposes stated in this Standard.

3.1.13 *Silencing*

Manual operation for switching off the audible signal of a sounding device that is capable of being automatically re-sounded by a new event.

3.1.14 *Telecommunications path*

Connection between the ASE, monitoring centre and fire dispatch centre.

3.1.15 *Transmission path*

Connection, external to the cabinet of the ASE, for the transmission of information and/or power—

- (a) between the ASE and other components of a fire detection and fire alarm system as defined in AS 7240.1; and/or
- (b) between parts of ASE contained in cabinets which are not adjacent.

NOTE: Examples include electrical cables, fibre optic cable and electromagnetic radiation (radio, microwave and infrared light).

3.1.16 *Volatile memory*

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

3.1.17 *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.

3.2 **Abbreviations**

ASE	Alarm signalling equipment
FDAS	Fire detection and alarm system
FDCIE	Fire detection control and indicating equipment
PSE	Power supply equipment

3.3 **Tolerance measurements**

Unless otherwise stated, the tolerances for the environmental test parameters shall be as given in the relevant part of the AS 60068 series.

If a specific tolerance or deviation is not specified in a test procedure, a deviation limit of $\pm 5\%$ shall be applied.

4 GENERAL REQUIREMENTS

4.1 Additional functions

If functions other than those specified in this Standard are provided, they shall not jeopardize conformance to this Standard.

4.2 Disablement of ASE

It shall not be possible to disable the mandatory functions at the ASE.

4.3 Power supply

Power supply equipment (PSE) shall conform to AS 7240.4.

The PSE may be internal or external to the ASE.

5 GENERAL REQUIREMENTS FOR INDICATIONS

5.1 Display of functional conditions

The ASE shall be capable of unambiguously indicating the following functional conditions, as described in Clauses 6 to 13:

- (a) Quiescent condition.
- (b) Fire alarm condition.
- (c) Fault warning condition.
- (d) Disabled condition.
- (e) ASE test condition.
- (f) Power supply failure condition.
- (g) ASE transmission path fault condition.
- (h) ASE telecommunication fault condition.

The ASE shall be capable of being simultaneously in any combination of the following functional conditions:

- (i) Fire alarm condition.
- (ii) Fault warning condition.
- (iii) Disabled condition.
- (iv) ASE test condition.
- (v) Power supply failure condition.
- (vi) ASE transmission path fault condition.
- (vii) ASE telecommunication fault condition.

5.2 Display of indications

All mandatory indications shall be clearly identifiable, except where otherwise specified in this Standard.

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 ASE 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 with any mandatory indication.

6 QUIESCENT CONDITION

Any kind of system information may be displayed during the quiescent condition, provided no indications are given that can be confused with indications used in—

- (a) fire alarm condition;
- (b) fault warning condition;
- (c) disabled condition;
- (d) ASE test condition;
- (e) Power supply failure condition;
- (f) ASE transmission path fault condition; or
- (g) ASE telecommunication fault condition.

7 FIRE ALARM CONDITION

7.1 Reception and processing of fire alarm signals

The ASE shall report the fire alarm condition to the monitoring centre when fire alarm signals are received from the FDAS.

7.2 Indication of the fire alarm condition

The fire alarm condition shall be indicated by means of a separate light-emitting indicator and/or a field on the alphanumeric display when the ASE receives the fire alarm signal from the FDAS.

The time taken for processing of signals from FDAS shall not delay the indication of the fire alarm condition at the signalling equipment by more than 5 seconds.

The indicator shall flash when the condition is received by the ASE and go steady when the ASE receives acknowledgement from the monitoring centre that the signal has been correctly received.

7.3 Reset from the fire alarm condition

The ASE shall automatically reset from reporting and displaying the fire alarm condition when the fire alarm condition signal from the FDAS returns to normal.

Following a reset, the indication of the correct functional conditions shall be re-established within 5 seconds.

8 FAULT WARNING CONDITION

8.1 Reception and processing of fault warning signals

The ASE shall report the fault warning condition to the monitoring centre when fault warning signals are received from the FDAS and/or ASE PSE.

8.2 Indication of the fault condition

The fault warning condition shall be indicated by means of a separate light-emitting indicator and/or a field on the alphanumeric display when the ASE receives the fault warning condition signal from the FDAS or ASE PSE.