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

Part 3: Fire brigade panel

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

Part 3: Fire brigade panel

Originated as AS 4428.3—2004.
Previous edition 2010.
Third edition AS 4428.3:2020.

Preface

This Standard was prepared by the Standards Australia Committee FP-002, Fire Detection, Warning, Control and Intercom Systems, to supersede AS 4428.3—2010.

The objective of this Standard is to provide a standardized user interface between the firefighter and the fire detection control and indicating equipment.

This Standard makes extensive references to the related Standard, AS 7240.2, *Fire detection and alarm systems, Part 2: Fire detection control and indicating equipment (ISO 7240-2:2017, MOD)*.

The major changes in this edition are as follows:

(a)   Clarifies the difference between integrated and non-integrated FBPs.

(b)   Requires the individual display of addressable point(s) in alarm.

(c)   Requires the use of display **b** where addressable points are to be displayed.

(d)   Requires disablement of addressable points in alarm.

(e)   Introduces the term "alarm event".

(f)   Requires automatic reset when all alarm events are disabled.

(g)   Provides an option for a backward scrolling function in addition to the standard forward scroll.

Contents

NOTES

Australian Standard®

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

Part 3: Fire brigade panel

Section 1   Scope and general

1.1   Scope

This Standard specifies requirements and performance criteria for a fire brigade panel (FBP) to be integrated with or designed to be a non-integrated unit for use with fire detection control and indicating equipment in accordance with AS 7240.2.

1.2   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:

AS 7240.2, *Fire detection and alarm systems, Part 2: Fire detection control and indicating equipment (ISO 7240-2:2017, MOD)*

AS 7240.4, *Fire detection and alarm systems, Part 4: Power supply equipment (ISO 7240-4:2017, MOD)*

AS ISO 7240.1, *Fire detection and alarm systems, Part 1: General and definitions*

1.3   Terms and definitions

For the purpose of this document, the definitions given in AS ISO 7240.1 and those below apply.

1.3.1
fire alarm devices
audible, visual or other sensory occupant warning device

1.3.2
integrated fire brigade panel
fire brigade panel (FBP) where manual controls and indicators are shared with the FDCIE

1.3.3
non-integrated fire brigade panel
fire brigade panel (FBP) constructed as a separate unit that provides all the required functions, controls and indications

1.3.4
FBP frame
visible line enclosing FBP indicators and controls

1.3.5
may
indicates the existence of an option

1.3.6
non-addressable zone
zone consisting of points which are not individually identified at the FDCIE

Note 1 to entry: Previously known as collective or conventional.

1.3.7
shall
indicates that a statement is mandatory

1.3.8
should
indicates a recommendation

1.4 Abbreviations

FBP   Fire brigade panel

FDCIE   Fire detection control and indicating equipment

PSE   Power supply equipment

1.5 Tolerances

Requirements specified in this Standard that are not subject to AS 7240.2 shall have a maximum deviation limit of ± 5 % applied.

Section 2   Requirements

2.1   General

FBPs shall meet the requirements of this Section, and the requirements and tests set out in AS 7240.2. The requirements in this Section shall be verified by visual inspection or engineering assessment as appropriate.

In addition, the following shall apply:

(a)   The indicators and controls shall be enclosed within an FBP frame as shown in Figures 2.1 or 2.3.

(b)   No other indicators and controls shall be within the FBP frame except as detailed in this Standard.

Functions and indications on the FBP and FDCIE shall be consistent so that contradicting information does not occur.

2.2   Indicators and controls

2.2.1   General

Controls and indicators shall be provided and labelled in accordance with Table 2.1.

Non-addressable fire detection zones in alarm shall be indicated by means of a separate light-emitting indicator for each zone or on an alphanumeric display, or both.

Addressable points in alarm shall be individually indicated on an alphanumeric display.

Labelling may be in upper case, lower case, or any combination thereof.

2.2.2   General fire alarm indicator

A general fire alarm condition shall be indicated without prior manual intervention by means of the separate light-emitting indicator **a**. The general fire alarm indicator **a** shall be labelled "FIRE".

2.2.3   FBP using alphanumeric alarm display

The following shall apply to indicators and controls of an FBP using an alphanumeric display:

(a)   No other indicators within the FBP frame shall be above or to the left of the general fire alarm indicator, except for display **b**.

(b)   Indicators and controls shall be wholly within equally sized fields as specified in Table 2.1 and in accordance with Figure 2.2.

NOTE 1   Where several fields are permitted, the indicators and controls may be placed across all listed fields.

The labelling shall be clearly associated with the indicators and controls, but need not be wholly within the fields specified in Table 2.1.

NOTE 2   Figure 2.1(a) and (b) shows examples of the layout of controls and indicators on an FBP.

(c)   Fire detection zones and addressable points in alarm and their location descriptor shall be shown in display **b**.

The total number of alarm events shall be indicated.

(d)   In addition to the requirements of AS 7240.2, a prefix "ZONE", "ZN" or "Z" shall be used together with the zone number. The zone prefix and number shall precede the location descriptor text.

(e)   For addressable points, an ID number, device type and location description shall also be indicated.

(f)   A maximum of 10 optional manual controls **p** using display **b** for their functional description may be placed within the FBP frame around the perimeter of display **b**. The labelling and function of these controls shall be suppressed in the fire alarm condition at Access Levels 1 and 2.

> NOTE 3   Figure 2.1(a) and (b) shows examples of the layout for optional controls **p**.

> NOTE 4   Controls outside of the FBP frame may use display **b** at the appropriate access level.

(g)   No manual controls shall be placed directly above the display **b**.

2.2.4   FBP using separate light-emitting zone alarm indicators

The following shall apply to indicators and controls of an FBP using separate light-emitting indicators for each fire detection zone:

(a)   Indicators and controls shall be in accordance with Table 2.1 and Clause 2.2.12.

> NOTE 1   Figure 2.2 fields do not apply.

> NOTE 2   The required indicators in Table 2.1 may also be within the FBP frame.

(c)   An FBP shall indicate fire detection zones in alarm by means of individual zone alarm indicators, as shown in Figure 2.3(a) and (b).

(d)   An integrated FBP shall not provide individual zone alarm indicators if provided by the FDCIE.

(e)   The individual zone indicators shall not be within the FBP frame.

(f)   Individual indicators shall be numbered. The number may be prefixed by "ZONE", "ZN" or "Z", but no other prefix shall be used.

> NOTE 3   Placement of a common zone prefix header at the beginning of each row or column of zone alarm indicators is acceptable. The location descriptor text may be given on the same line as, or immediately below, the zone identifier number or in a table adjacent to the FBP.

2.2.5   Manual control for silencing the audible indication

The manual control **k** shall be provided for silencing the audible indication. The manual control **k** shall —

(a)   silence the FBP fire alarm audible indication and the FDCIE fire alarm audible indication by manual operation at Access Level 2;

(b)   be labelled "SILENCE BUZZER"; and

(c)   not be coloured red, green or yellow.

When the audible indication is activated by a fault warning condition on a non-integrated FBP, only the audible fault warning may be silenced at Access Level 1.

2.2.6   Indication of several alarms

If all possible alarm events cannot be shown simultaneously in display **b**, then the indicator **h** shall be provided. The following shall also apply:

(a)   The indicator **h** shall be red when lit, and activate if more alarm events exist than those simultaneously shown in display **b**.

(b)   If the indicator **h** is chosen to flash, the function shall meet the requirements of AS 7240.2.

(c)   Indicator **h** shall be labelled "SEVERAL ALARMS" and be associated with scroll control **i** as shown in Figure 2.1.

Where all possible alarm events can be displayed simultaneously, the indicator **h** is not required.

NOTE   Alarm events include non-addressable fire detection zones and addressable points.

2.2.7   Scroll control of several alarms

If indicator **h** is required, a scroll control **i** shall be provided. This control shall not function unless the FBP has been enabled for Access Level 2. The scroll control **i** shall —

(a)   display all further alarm events in chronological order by scrolling alarms in display **b**;

(b)   not be coloured red, green or yellow; and

(c)   be provided with a graphic to indicate the forward scrolling direction of the control.

Optionally, the scroll control(s) may provide a backward scrolling function in addition to the forward scrolling function. In this case **i** shall —

(i)   maintain the chronological order of alarm events;

(ii)   not be coloured red, green or yellow; and

(iii)   be provided with a graphic to indicate the scrolling direction of the control(s).

2.2.8   Manual control for silencing fire alarm device(s)

The manual control **j** shall be provided for silencing fire alarm devices. This control shall not function unless the FBP has been enabled for Access Level 2.

The following shall apply:

(a)   The manual control **j** shall be coloured red.

(b)   The control shall be labelled "SILENCE ALARM" or "SILENCE/RESOUND ALARM".

(c)   In the fire alarm condition, after silencing the fire alarm devices, operating control **j** shall resound the fire alarm devices.

(d)   Manual resounding of the fire alarm devices shall not resound the audible indication.

2.2.9   Manual control for resetting

A manual control **l** shall be provided for resetting all alarm events and the FDCIE fire alarm condition. This control shall not function unless the FBP has been enabled for Access Level 2 and only after fire alarm devices have been silenced.

The following shall apply for the manual control **l**:

(a)   The control shall be coloured green.

(b)   The control shall be labelled "RESET".

(c)   A single operation of the control shall initiate the reset process.

NOTE   Attempting to reset alarms without first silencing fire alarm devices may provide audible or visual operator feedback.

2.2.10   Manual control for disablement

The manual control **o** shall be provided to disable non-addressable fire detection zones and addressable points in alarm. This control shall not function unless the FBP has been enabled for Access Level 2 and only after fire alarm devices have been silenced.

The following shall apply for the manual control **o**:

(a)   The control shall be coloured yellow.

(b)   The control shall be labelled "DISABLE".

(c)   A single operation of the control shall disable —

        (i)   all non-addressable fire detection zones in alarm; and

        (ii)   all addressable points in alarm.

(d)   When all fire alarm events are disabled, the fire alarm condition shall automatically reset.

NOTE   Attempting to disable alarms without first silencing alarm devices may provide audible or visual operator feedback.

2.2.11   Indication that non-integrated FBP is operating

2.2.11.1   General

Indication shall be provided showing that a non-integrated FBP is operating by at least one of the following methods:

(a)   Text in display **b**.

(b)   Indicator **g**.

2.2.11.2   Fault indication

The following shall be indicated by at least a general fault at the FDCIE:

(a)   Incorrect operation of any stored programs.

(b)   Any fault in transmission paths to the FBP.

2.2.11.3   Power available indicator g

Indicator **g** shall be —

(a)   normally lit when power is available;

(b)   green when lit; and

(c)   labelled "POWER".

2.2.12   Indicators and controls

2.2.12.1   Alignment of indicators and controls

Indicators **c**, **d**, **e** and **f** located within the FBP frame shall be in line, horizontally or vertically.

Controls **k**, **j**, **l** and **o** shall be grouped together horizontally or vertically in line, and in the order shown in Figures 2.1 and 2.3.

Rows or columns of indicators and controls shall not intersect or overlap.

2.2.12.2   Maximum number of optional indicators

The total number of optional indicators **c**, **d**, and **e** shall not exceed 6 when located inside the FBP frame.

2.2.13   Field for alarm signalling equipment address code

The FBP shall have a field **m** for the alarm signalling equipment address or ID code.

NOTE   The alarm signalling equipment address or ID code is allocated by the monitoring service provider.

2.2.14   Audible indication

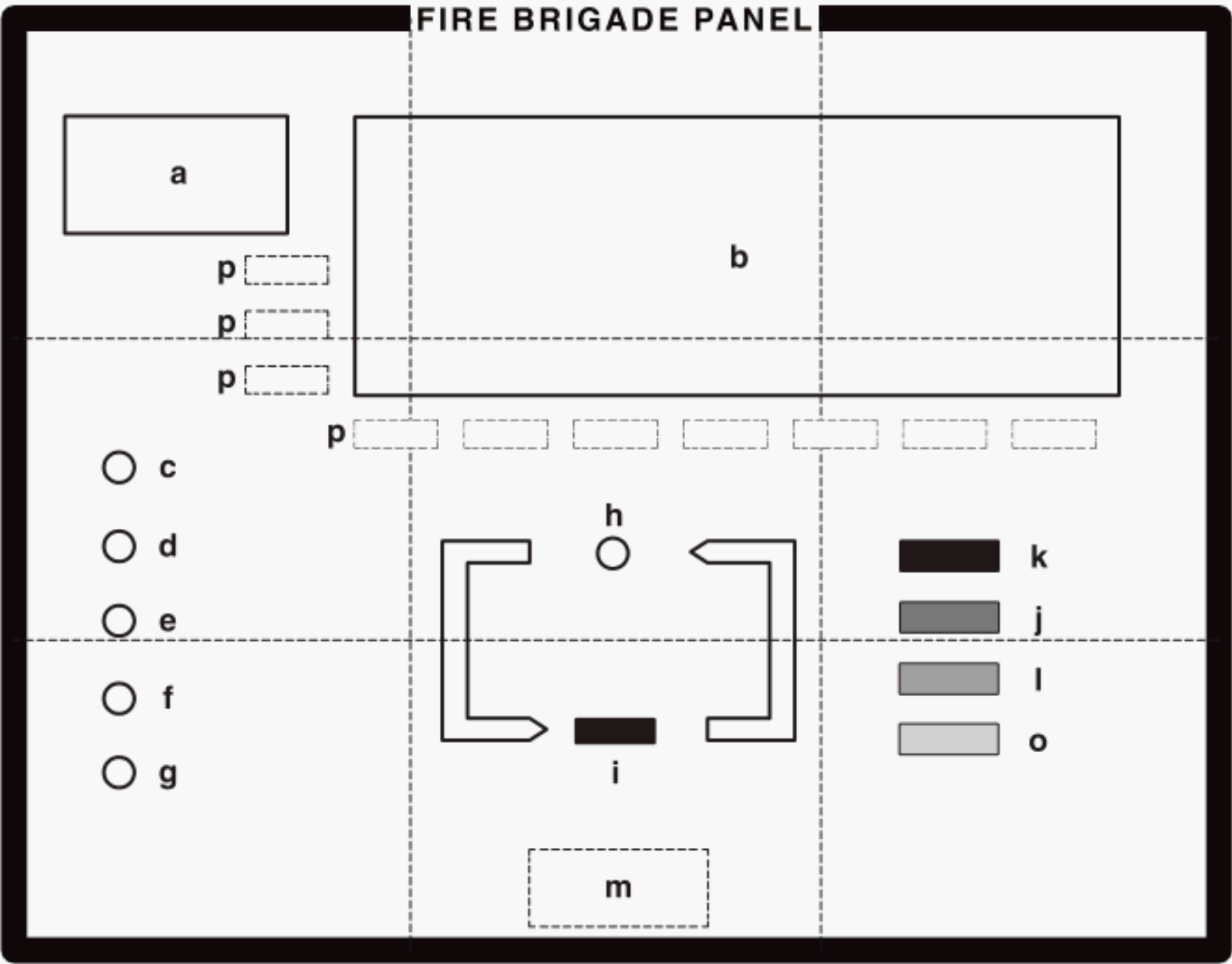Audible indication shall be provided to indicate fault and alarm conditions on a non-integrated FBP.

2.2.15   Fault condition signalling from non-integrated FBP

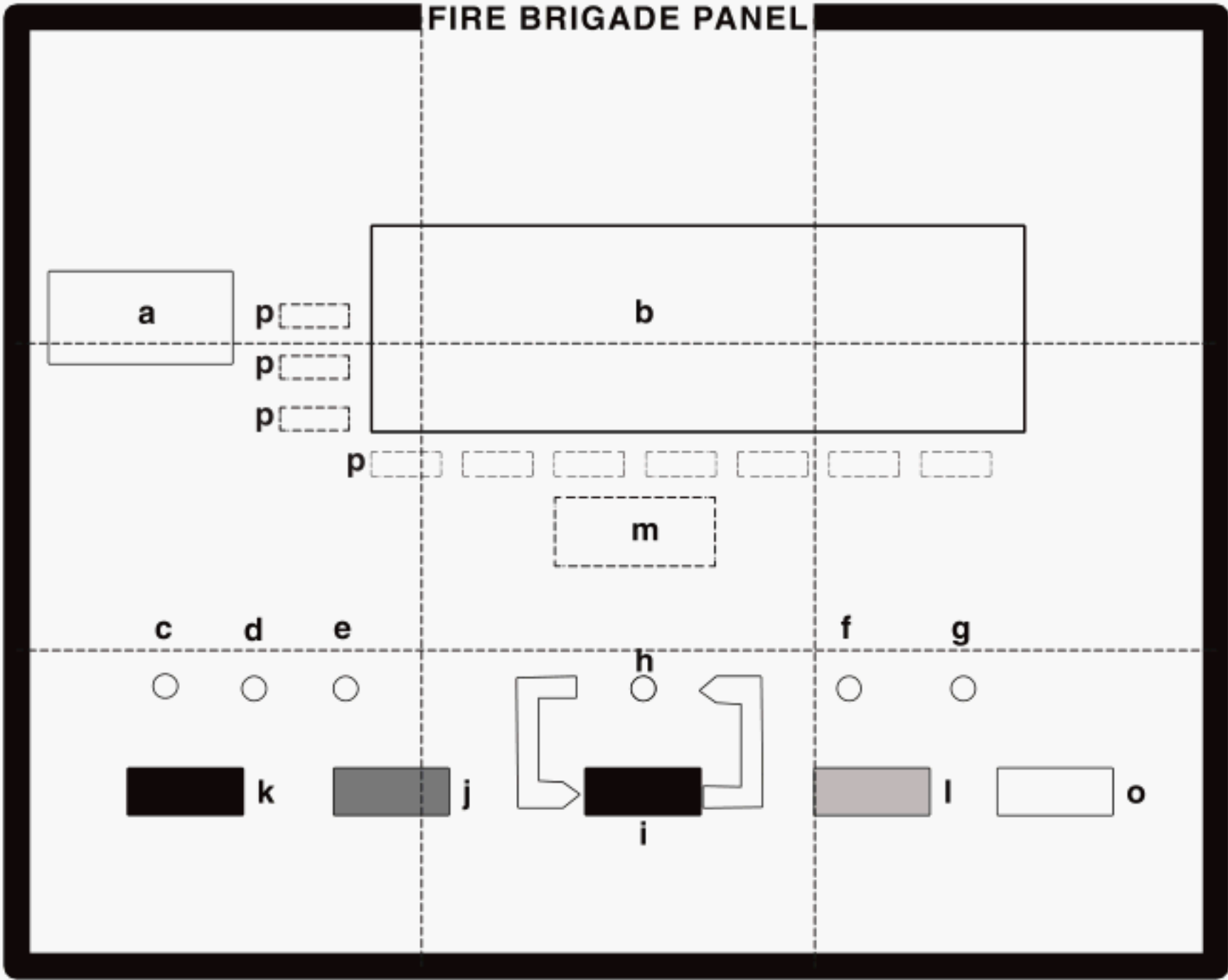Any of the faults specified in Clause 2.2.11.2 shall cause a fault condition to be indicated at the FDCIE.

Where a non-integrated FBP has its own PSE, a PSE fault shall be indicated at the FDCIE.

Table 2.1 — Indicators and manual controls

Indicators and controls	Function	Required labelling	Mandatory field locations (see Figure 2.2)	
			Vertical orientation	Horizontal orientation
a	General fire alarm indicator	"FIRE"	1, 4	1, 4, 7
b	Display for detailed alarm information (see Clause 2.2.3)	—	1, 2, 3, 4, 5, 6	1, 2, 3, 4, 5, 6
c (Optional)	Indicator for fire protection equipment activated	"FIRE PROTECTION ACTIVATED"	1, 4, 7	1, 4, 5, 6, 7, 8, 9
d (Optional)	Indicator for smoke and or heat control activated	"SMOKE CONTROL ACTIVATED"	1, 4, 7	1, 4, 5, 6, 7, 8, 9
e (Optional)	Indicators for other control functions activated	"Relevant to the type ACTIVATED"	1, 4, 7	1, 4, 5, 6, 7, 8, 9
f	Indicator for alarm signalling equipment activated	"Alarm signalling equipment activated" or "ASE activated"	1, 4, 7	1, 4, 5, 6, 7, 8, 9
g	Indicator showing that power is available on non-integrated FBP	"POWER"	1, 4, 7 or outside the FBP frame	1, 4, 5, 6, 7, 8, 9 or outside the FBP frame
h	Indicator for several alarms	"SEVERAL ALARMS"	5, 8	5, 8
i	Scroll control to show alarms not currently displayed	Symbol(s) or label(s) indicating direction of scrolling	5, 8	5, 8
j	Manual control for silencing/resound alarm device(s)	"SILENCE ALARM" or "SILENCE/RESOUND ALARM"	6, 9	7, 8, 9
k	Manual control for silencing the FBP audible indication, including the audible indication in the FDCIE	"SILENCE BUZZER"	6, 9	7, 8, 9
l	Manual control for resetting	"RESET"	6, 9	7, 8, 9
m	Field for alarm signalling equipment address or ID code	See Clause 2.2.13	1 to 9 or outside the FBP frame	1 to 9 or outside the FBP frame
n	Marking	See Clause 2.7	1 to 9 or outside the FBP frame	1 to 9 or outside the FBP frame
o	Manual control for disabling alarm(s)	"DISABLE"	6, 9	7, 8, 9
p (Optional)	Optional manual controls	See Clause 2.2.3(f)	See Clause 2.2.3(f)	See Clause 2.2.3(f)

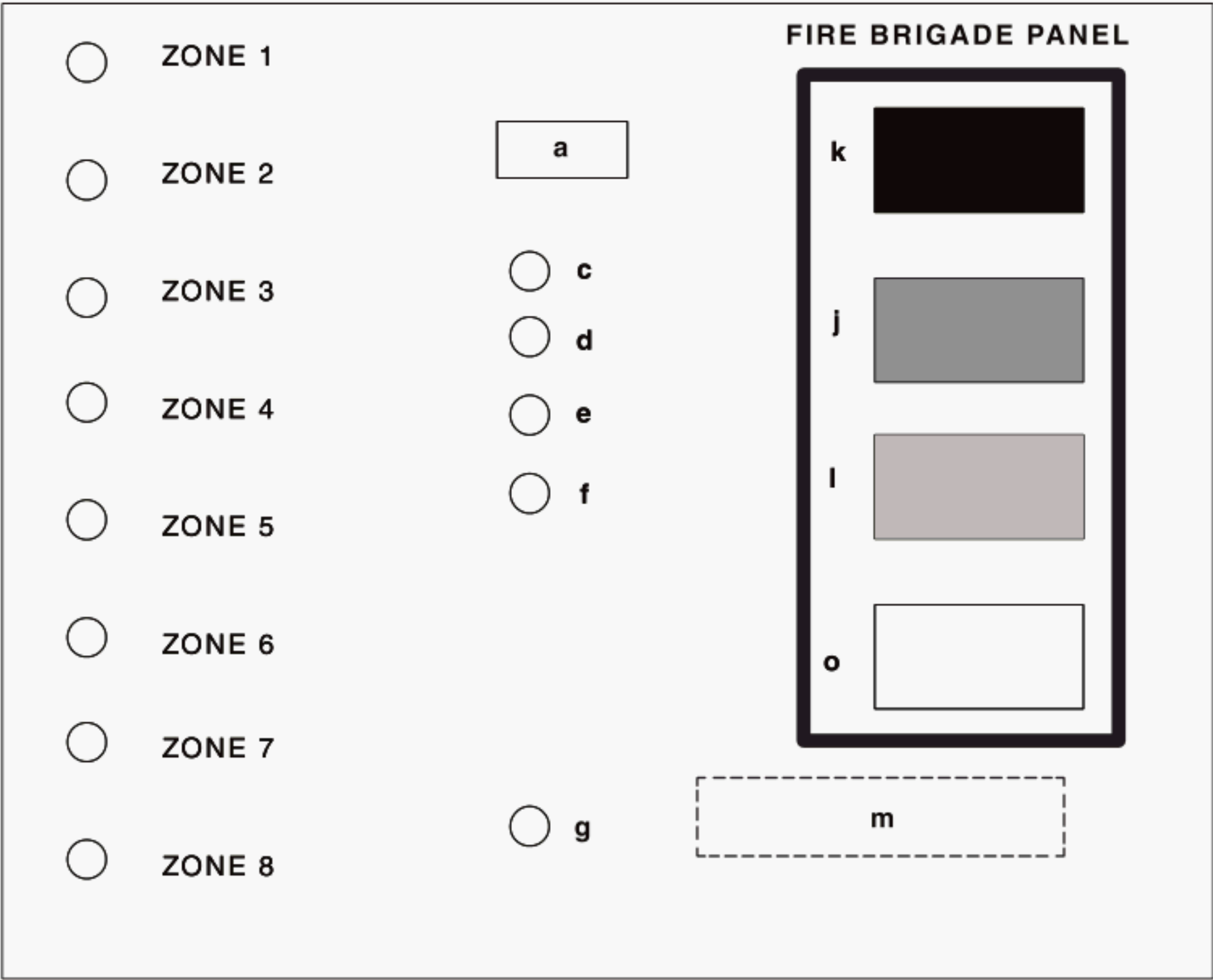**(a) Vertical orientation with display b**

(b) Horizontal orientation with display b
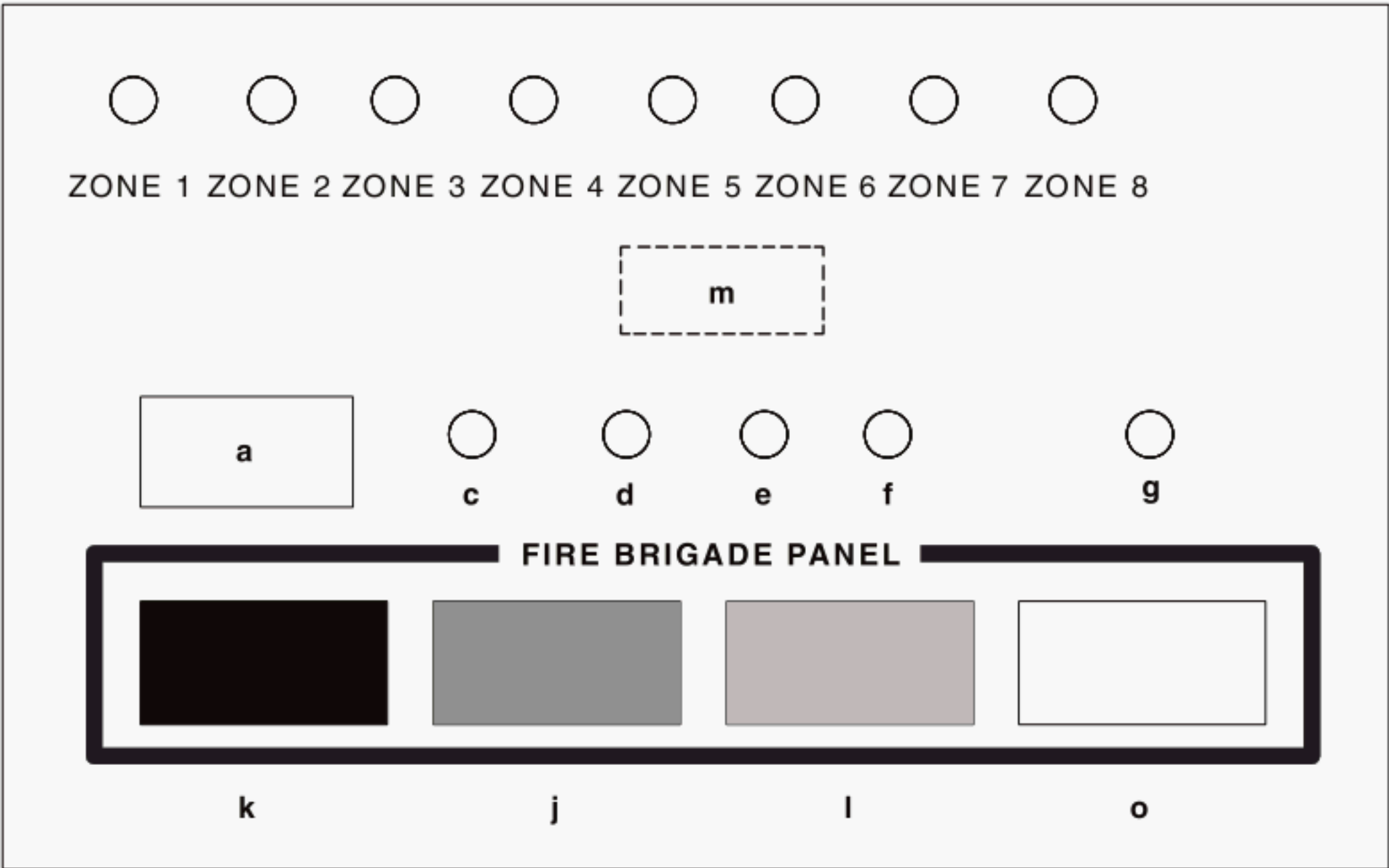
Figure 2.1 — Examples of controls and indicators with display b

Field 1	Field 2	Field 3
Field 4	Field 5	Field 6
Field 7	Field 8	Field 9

Figure 2.2 — Field locations for FBP with display b

(a) Vertical orientation without display b

(b) Horizontal orientation without display b

Figure 2.3 — Examples of controls and indicators without display b

2.3   Power supply equipment (PSE)

The PSE shall conform to the requirements in AS 7240.4.

2.4   Access level

Access Level 2 shall be enabled by means of a 003 key lock or switch fitted to the FBP facia or protective door.

Where there is no door, the key switch shall be outside the FBP frame and labelled "ACCESS". It shall not be possible to remove the key when Access Level 2 is selected.

NOTE   For an explanation of access levels, see AS 7240.2.

2.5   Layout and measurements

2.5.1   General

The FBP may be integrated in the same enclosure as FDCIE in accordance with AS 7240.2 or may be non-integrated in an enclosure in accordance with AS 7240.2.

2.5.2   Shape, colour and dimensions

The following shall apply:

(a)   The FBP frame shall —

    (i)   be red;

    (ii)   be unbroken except for the required wording;

    (iii)   be rectangular;

    (iv)   have corners that may be either chamfered or rounded;

    (v)   have internal angles no greater than 120°;

    (vi)   be no less than 3 mm in width; and

    (vii)   have the words "FIRE BRIGADE PANEL" as part of the top line of the FBP frame or immediately above, in letters not less than 3 mm high.

(b)   The background colour of the FBP facia shall be in a contrasting colour to the FBP frame.

(c)   The centre-to-centre distance of controls shall be not less than 15 mm.

(d)   The face dimensions of the push buttons shall be not less than 10 mm.

(e)   Controls and indicators shall be labelled in letters not less than 3 mm high.

2.6   Operating software

The firmware and any site-specific data versions shall be able to be shown on display **b** if used. When display **b** is not used, the information shall be clearly marked on the firmware and data storage devices. The information shall be available at Access Level 3 or 4 but may also be accessible at other levels.

2.7   Marking

The FBP shall be durably marked with the following information, which shall be legible at Access Level 1 or 2:

(a)   The number and date of this Standard, i.e. AS 4428.3:2020.

(b)   The name or trademark of the manufacturer or supplier.

(c)   The type number or other designation of the FBP.

It shall be possible to identify a code or number that identifies the production period of the FBP at Access Level 1 or 2.

NOTE   The markings specified in AS 7240.2 and AS 7240.4 may be included.

2.8 Documentation

2.8.1 General

Documentation shall meet the requirements of AS 7240.2.

2.8.2 Test reports

FBPs shall conform to this Standard and the requirements and tests in AS 7240.2 which shall be documented and include the following information:

(a)   Identification of the test specimen.

(b)   Reference to:

    (i)   this Standard, including date, i.e. AS 4428.3:2020; and

    (ii)   the current version of AS 7240.2.

(c)   Environmental classification of the FBP.

(d)   Results of assessment of the requirements of this Standard as an integrated or non-integrated FBP.

(e)   Results of tests and any other data as specified in individual tests.

(f)   Details of any deviation from this Standard or from the Standards to which reference is made.

(g)   Details of any operations regarded as optional.

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