

Technical Bulletin



Fire Industry Association

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The use of Low-Level Controllers within BS 5839-6 Domestic Fire Detection and Fire Alarm Systems

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1. Introduction

A commonly asked question within the fire industry relates to the use of low-level controllers (sometimes referred to as low-level control switches, remote test switches, or accessible alarm controllers) within domestic fire detection and fire alarm systems in accordance with BS 5839-6.

Confusion often arises as to whether such devices are recommended by BS 5839-6, whether they are mandated by Building Regulations, and, if used, whether they affect the grade classification of a fire detection and fire alarm system.

This Technical Bulletin provides guidance on the purpose of low-level controllers, their relationship with BS 5839-6 and Approved Document M (ADM) and addresses common industry misconceptions.

2. What is a Low-Level Controller

A low-level controller is a device installed at an accessible height that allows occupants to undertake one or more of the following functions (where provided by the manufacturer) without requiring direct access to a smoke alarm or heat alarm or to the control and indicating equipment (provided in Grade A and Grade C systems):

- Routine alarm testing;
- Temporary alarm silencing functions;
- System status indication;
- Location and identification of alarm activations;
- Other user-operable functions permitted by the system design.

Low-level controllers are typically connected to compatible Grade C or Grade D fire detection and fire alarm systems but may also be a feature on some Grade A systems. They are intended to improve usability and accessibility for occupants.

A Low-level controller may be mains-powered or battery-powered, and either type may be suitable depending on the nature of the installation. In new-build developments, where electrical installation work is already being undertaken, mains-powered controllers may be a more suitable and practical option as a mains supply and cabling can be incorporated into the installation with relative ease. Whilst a battery powered controller is not precluded from use in a new build premises, their use from an installation perspective may be better suited for existing properties, as they offer a more practical solution which involves minimal disruption, avoiding the need to locate a suitable mains supply or undertake additional building work, such as chasing walls to install new cabling.

3. BS 5839-6 & Low-Level Controllers

BS 5839-6 does not currently make any specific recommendations concerning the inclusion or provision of low-level controllers within domestic premises, nor does it make recommendations regarding the particular functions and features of such controllers. However, it does make reference to the functionality that can be implemented by low level controllers in relation to routine testing and to the reduction of false alarms.

Specifically, the standard recognises that remote testing facilities may be beneficial and in commentary to clause 25 states *“All grades of system need to be tested periodically to ensure that there has not been any major failure. This does not require any specialist knowledge, and can normally be carried out, quite easily, by the occupier of the premises”*. It specifically recommends that Grade A systems should be tested weekly while other grades should be tested monthly (See Clause 25.2). A further note acknowledges that some Grade C and Grade D systems can incorporate a manual test switch to permit routine testing without requiring access to controls on individual alarms. Such convenient, occupant-operated test switches may also be provided on Grade A systems (though the standard does not specifically state this).

Essentially, Clause 25 emphasises the importance of routine testing (whether by the user for Grade C & D system or in accordance with BS 5839-1 for Grade A systems) and acknowledges that an additional manual test switch can avoid having to access test controls on the detectors. By inference, such accessible test switches make it more likely that routine testing will not be neglected by the occupants.

In summary, low-level controllers are not currently a recommendation of BS 5839-6. However, the standard acknowledges that they may assist occupiers in complying with routine testing recommendations.

In relation to reducing the disruption caused by false alarms, Clause 12 of BS 5839-6 documents the potential benefits of providing occupants with a means of silencing nuisance alarms and 12.2 a) recommends that such means should be provided and should be “suitable for use” by occupants. Reference is made to BS 5839-1 for Grade A systems but for smoke alarms, NOTE 3 simply suggests that a silence function conforming to BS EN 14604 may be suitable.

The debate in relation to low-level controllers is regarding accessibility. For many occupants, the silence button on the smoke alarm is sufficient and note 3 of clause 12.2 a) suggests it should be operable “when standing at floor level”. However, this is not a recommendation. Ultimately the decision on whether a silence button on the smoke alarm is accessible depends on the capabilities of the occupants. There is no doubt that the use of a low-level controller has the potential to make the silence function more accessible but there is no specific recommendation as to when they should be used beyond the suggestion given in Note 3.

The standard notes that this is particularly beneficial in dwellings occupied by vulnerable persons, or in multi-storey rented properties, where repeated unwanted alarms may otherwise encourage occupants to disable the smoke alarms.

4. Accessibility Considerations

Approved Document M (ADM) provides guidance on the provision of controls and equipment whilst promoting that they are accessible and convenient for occupants, including those with reduced mobility, limited reach, or other accessibility needs. Whilst ADM does not specifically reference fire alarm low-level controllers, it

establishes the broader principle that controls intended for regular use should be positioned where they can be operated safely and conveniently by occupants.

In many domestic premises, particularly those occupied by:

- Elderly people;
- Persons with mobility impairments;
- Wheelchair users; and
- Residents with limited reach capability,

accessing ceiling-mounted alarms for routine testing may be challenging or impractical without the use of ladders, steps or assistance from others.

The provision of a low-level controller can therefore support the accessibility objectives documented within ADM and contribute to inclusive design principles.

5. Benefits of Low-Level Controllers

The potential benefits of low-level controllers include:

- **Improved Accessibility**

Users can operate key system functions without requiring access to ceiling-mounted devices.

- **Increased Likelihood of Routine Testing**

Routine testing is more likely to be undertaken when the test function is easily accessible.

- **Improved User Engagement**

Occupants may be more familiar with the operation of their system if controls are positioned at an accessible and identifiable location.

- **Reduced Need for Access Equipment**

Testing can be undertaken without ladders, steps or specialist equipment.

- **Support for Independent Living**

Low-level controllers may be particularly beneficial in housing occupied by older persons or those with accessibility needs.

- Reducing false alarm impact

Low level controllers can provide a more accessible remote silence function which means occupants are more readily able to avoid disruption caused by unwanted alarms.

6. Impact on System Grade Classification

A common misconception within the industry is that the inclusion of a battery-powered low-level controller connected to a mains-powered fire detection and fire alarm system reduces the Grade classification of the system.

BS 5839-6 details the technology required to meet each particular Grade of system. This relates to the primary fire detection and alarm system architecture, power supplies and system configuration.

The inclusion of a low-level controller does not alter the Grade of the fire detection and fire alarm system, provided that:

- The fire detection and fire alarm system itself continues to satisfy the requirements of the applicable Grade;
- The controller is compatible with the system; and
- The controller does not adversely affect the operation, reliability or integrity of the fire detection and alarm system.

Therefore, the presence of a battery-powered low-level controller should not automatically be interpreted as reducing a Grade D or Grade C system to a lower Grade classification.

Designers, installers and approving authorities should assess compliance based on the overall fire detection and fire alarm system rather than on the power source of an ancillary user interface device.

7. Design Considerations

Where low-level controllers are provided, consideration should be given to:

- Manufacturer compatibility;
- Accessibility requirements of the occupants;
- Location and mounting height; (various mounting heights for other services and controls are provided within ADM but not specifically low-level controllers, although these heights may be considered appropriate)
- Ease of operation;
- Protection against inadvertent operation;
- User instructions and training; and
- Ongoing maintenance requirements.

The controller should be installed in accordance with the manufacturer's instructions and should not compromise the reliability or performance of the fire detection and fire alarm system.

8. Future Developments

Industry discussions and ongoing standards development activities have identified the potential benefits of low-level controllers in some domestic fire detection and fire alarm systems.

Consideration is currently being given to future revisions of BS 5839-6 and strengthening recommendations relating to accessible testing and user interaction facilities.

Until such changes are incorporated within the standard, the provision of low-level controllers remains a design choice based on the needs of the occupants and the findings of a fire risk assessment.

9. Conclusion

BS 5839-6 does not currently recommend the installation of low-level controllers within domestic fire detection and fire alarm systems.

Nevertheless, low-level controllers can provide significant benefits in terms of accessibility, usability and routine testing, particularly for occupants who may experience difficulty accessing ceiling-mounted alarms.

Building Regulations and the guidance within ADM do not currently mandate low-level alarm controls, but the accessibility principles contained within the document support the provision of controls that can be safely and conveniently operated by building users.

The inclusion of a low-level controller should therefore be considered as a means of enhancing accessibility and encouraging routine testing rather than as a mandatory requirement. Furthermore, the inclusion of a battery-powered low-level controller should not be assumed to affect the Grade classification of an otherwise compliant fire detection and fire alarm system.



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