

SALAMANDER

BRITISH STANDARD - BS 7273-4:2007

Code of practice for the operation of fire protection measures -

Part 4: Actuation of release mechanisms for doors

- Self closing fire doors
- Security door locks
- Powered sliding doors

Contact us for more advice and recommendations, or for more information on the Geofire range of Fire Security solutions.

HELP GUIDE

BS7273: Part 4: Actuation of Release Mechanisms for Doors

The Standard makes recommendations for: Selection of Category of Actuation

- Design,
- Installation,
- Commissioning, and
- Maintenance of door actuation systems

Defines 3 categories of actuation by the ability of a system to Fail Safe: If listed faults occur in the door holder system, the fire detection system, or the interconnection between the two, the system should perform as it would in the event of a fire and release the doors.

Category A

Must fail safe under the following conditions:

- Open or short circuit faults in the wiring between fire control system and release mechanism, or the "critical path" within 120 seconds (5.1.1.a)
- Communication failure for radio systems within 6 minutes (5.1.1.m)
- Faults in the power supply or in the fire detection system that will affect the areas protected by the fire doors in question.

Refer to Section 5 of BS7273-4 for a detailed list.

Category B

Must fail safe under the following conditions:

- Open or short circuit faults in the wiring between fire control system and release mechanism, or the "critical path" within 120 seconds (5.1.1.a)
- Communication failure for radio systems within 120 minutes (5.1.1.m)
- Specifies no requirements relating to power supply failure in the fire detection system or to fault monitoring in the fire system.

Category C

Specifies the same conditions as Category B but there is no direct communications path between the fire alarm CIE and the release mechanism.

BS7273-4 does not prescribe which category suits every situation. The choice should be based on a risk assessment. If unsure gain advice from Building Control or Fire & Rescue Authorities.

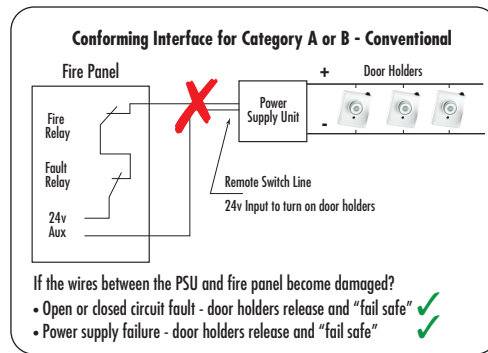
If in doubt, Category A will give the highest protection and is suitable for all areas. The category selected will have to be stated in the Specification and included in the Commissioning Certificate.

Equipment Selection, Design and Installation

Hold open devices should conform to EN1155 or BS5839-3 (9.3) and preferably be CE marked.

Hard-wired systems

This diagram shows an example of how to meet the requirements of the Standard.



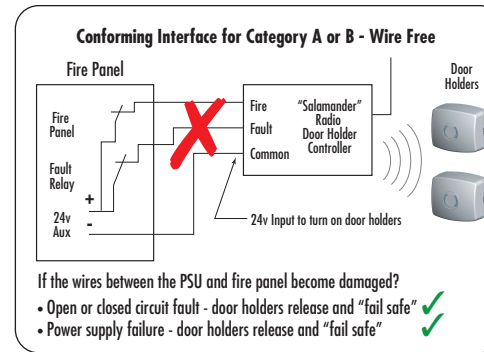
A 24V signal is used to control the PSU using the fire panel fire and fault relay.

Wire Free & Acoustically Operated Systems

- Sounder circuits should be fault monitored and use cable rated to PH30 classification (16.4)
- Alarm volume must be sufficient to trigger release when all other doors are closed (16.5)

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Radio Actuated Systems



In the diagram, the fire panel auxiliary 24V supply provides the fault and fire signals to the Salamander control unit. The wiring between the controller and the panel is fail safe for short and open circuit faults. This equipment has separate inputs for fault and fire signals to the controller. With the fault sensing correctly configured at the panel this will meet Category A actuation.

Also:

- Thorough radio survey should be performed to avoid false releases (17.3)
- Cables to external aerials should be fault monitored (17.4)
- 6 hour backup battery for supply to radio transmitters is recommended (17.5)

Installation

Recommendations include:

- Apart from acoustically-actuated systems, release systems should not be wired into the sounder circuit (10.1)
- Cables: 1 mm² minimum. Unless MIC or armoured they should have additional mechanical protection (15.3)
- Specific requirements for fire detection systems that are not category L1, L2 or L3 systems, ref BS5839-1 (13.2)

Commissioning and Maintenance recommendations

Commissioning:

- Competent person with access to the specification and any other relevant documents and a working knowledge of BS 7273-4 (21.1/2)
- Fully tested and inspected, including release tests to specification, labelling of doors, audible warnings and suitability of fire detection system (ref BS5839) (21.3 and 13)
- Doors should have a warning sign on both sides (20.1)

Also:

- A commissioning certificate is required that clearly states the Category of actuation (21.4)
- Any variations from standard should be agreed and listed on the certificate (7.2/3)
- Acoustically activated systems are not suitable for situations requiring Category A actuation (16) Refer to the standard for more detail.

Maintenance:

- The system should be tested weekly (22.1)
- An inspection/service should be carried out every six months, including sounders for acoustic units, batteries and fault indicators (e.g. for a radio system) (22.2)
- A full inspection/service should be carried out annually, including the replacement of non-rechargeable batteries and all cables should be checked (22.3)

Also:

- Although not specified in BS7273-4, Geofire recommends an annual full check of fault monitoring criteria!

Geofire is CPD certified. To arrange a training seminar on Hold-Open Systems for Self-Closing Fire Doors: A Guide to the Best Practice Recommendations of BS7273-4, contact us now on 01388 832 252.