



Fire Alarm Management Strategy

“Fire alarm! – fire alarm? – meh, probably just another false alarm....”

This is the unfortunate common perception of automatic fire alarm systems – very few people have personal experience of a major fire but almost everybody has experienced a false alarm at some time in their lives.

Currently, the universal immediate response to the fire alarm sounding (in the UK) is to evacuate the building and call 999. While this simple response is certainly effective in maximising life safety, the potential for ‘unwanted’ alarms is high. Such a simple strategy causes personal frustration, business disruption and unnecessary calls to the Fire & Rescue Services (FRS) – but there are other, more sophisticated, responses to an alarm signal which can minimise the potential disruption while still providing effective life safety.

Firstly it is important to realise that there are two distinct outputs from the fire alarm system. One is to sound the evacuation signal and the other is to automatically signal the FRS. In many cases they occur simultaneously – an ‘evacu-l-ation’ (or elevated evacuation!) but this does not have to be the case and modern systems can support a much smarter response strategy.

1. Delayed Alarm – to allow time to investigate

When a fire sensor is triggered it starts a timer and an alert signal is given to trained personnel (fire wardens) to investigate the source of the alert before it escalates to a full alarm. The alert signal can be either transmitted discreetly to the trained personnel or transmitted generally to all occupants (e.g. pulsed sounders) to which only specific trained personnel respond to investigate on hearing this signal.

BS5839-1 recommends that the delay is limited to a maximum of six minutes and that any signal from a manual call point overrides the delay immediately. In some systems the triggering of a second sensor may also override the delay (see confirmed alarm below) while in others this delayed mode reverts to a simple, single trigger = evacu-l-ate (evacuate *and* call to the FRS) at night (see day night below).

2. Confirmed Alarm – to ensure that two devices have been triggered before signalling an alarm

Similar to the above delayed alarm but the investigation time is indefinite but limited and **MUST** be confirmed by a second sensor or Manual Call Point.

Refer to the leaflet ‘How a Fire Alarm Control Panel Can Reduce Unwanted Alarms’ for other options similar to this.

3. Pre-Alarm – to provide an indication that the probability of an alarm is increased

Many detectors can provide a pre-alarm signal to indicate that an alarm condition is approaching. Other systems (such as aspirating smoke detectors) can provide early warning signals that indicate abnormal conditions have been detected, which may lead to an alarm but are not yet threatening. Such signals can be transmitted to trained personnel to maximise the time they have to investigate and in many cases to mitigate the cause of an unwanted alarm before it escalate to a disruptive alarm state.



Refer to the leaflet 'How Your Fire Alarm Detectors Can Reduce Unwanted Alarms' for other options similar to this.

4. Informed Onward Transmission

Fewer than 10% of unwanted alarms are connected to the FRS (whether directly or via an alarm receiving centre (ARC)) and of those most only transmit a fire alarm and sometimes a fault signal. In many cases the transmission hardware provides for other signals to be transmitted. Many FRS' are refusing to attend any system where there has been no alarm verification – however, where the signal is appropriately verified automatically this might encourage the FRS to take an alternative position.

5. Day/Night

In many systems the response strategy during occupied periods is different from that during unoccupied periods. For example, during night mode the first trigger may be routed via an ARC to call a local key holder whereas in day mode it may trigger a call to the site itself to verify the alarm condition before calling the FRS.

What Next?

If you have read this far the chances are that you have a reason to be concerned with unwanted alarms causing unnecessary evacuations or calls to the FRS - or perhaps you are responsible for the fire response strategy in your building and want to ensure that it is appropriate and effective.

1. Review and document the existing fire response strategy for your building
2. Consider and record the potential effects (and indirect costs) of unwanted fire alarms
3. Use our leaflets and discuss with your fire alarm provider the opportunities available for preventing unwanted warning signals escalating into nuisance alarms

Warning – Filtering is likely to delay the response of a system to a REAL FIRE

Please discuss with your fire alarm system provider whether these unwanted alarm features are available in your current fire alarm panel or whether upgrades are possible and if they are suitable for the risk. For example any form of delay is unlikely to be a suitable solution for residential care homes.