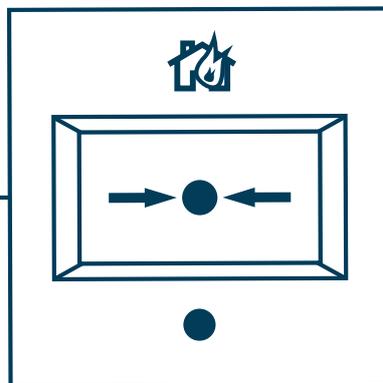


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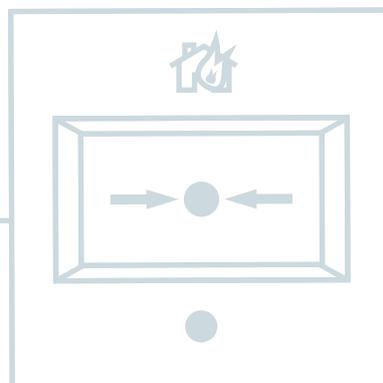
**Fire Industry Association**



**Connecting FD&A to an ARC  
via a security alarm**

# FIA Technical Document – Connecting FD&A to an ARC via a security alarm

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## 1. INTRODUCTION

This document has been written to make the reader aware of the implications of connecting a Fire detection and Alarm system to an ARC via an existing Security system installation and the considerations that should be taken.

Although one of the most common methods of connecting Fire Detection and Alarm systems to an ARC is using the Intruder system signalling, in these circumstances there are some important notes to consider.

Why would you choose to use the Intruder signalling path over a dedicated communications solution for the Fire detection and Alarm system?

- Budget limitations
- Signalling equipment choice
- Connection limitations preventing 2 systems to be used
- Size of building relative to the inefficiency of having a separate system

## 2. BATTERY STANDBY

Previously it was not clearly stated in BS5839-1 what was expected to be applied to the connection, equipment and standby times used when signalling via intruder systems. During the revision of BS5839-1 in 2017 this was amended.

There are some key points to consider when this type of monitoring is chosen; routing equipment power supplies must comply with section BS5839-1:2017 section 15.2, and those connections should be supported by Code of practice BS8591 - Remote centres receiving signals from alarm systems. The Alarm Receiving Centre should have in place an agreement with the appropriate fire and rescue service to pass on fire signals from fire alarm systems at the monitored property.

In addition, the power supplies that supply the routing equipment must also comply with BS5839-1:2017 section 25.4. This explains that the battery capacity and standby time should match that of the system it is monitoring; so the existing PSU and its batteries may not be sufficient to cover the power required for both fire and security systems in the event of power failure occurring.

- The power supply fault monitoring signal from the Intruder System should be clearly seen on the Fire detection and Alarm CIE
- Reference from the BS5839-1:2017 15.2 P). standard: Faults in either the alarm transmission equipment or in the alarm transmission path should be displayed at the CIE, meaning the cable should be monitored for Open and short circuit, this should also reported back at the CIE of the Fire detection and Alarm system
- When selecting the transmission equipment, there may also be a requirement for it to comply with the requirements of EN54-21 whereby the routing equipment may need to have dual path signalling

## 3. LABELLING

A label should be placed on the intruder equipment to make sure the maintenance engineer is aware that the fire system signalling is also connected via the intruder system.

## 4. OTHER PARTIES

When using the Security system signalling, it is of importance to consider the other parties that might be affected. Intruder service provider and service company need to be made aware the fire system is communicating with the ARC as well as the security system. The consideration surrounded other aspects of changes or alteration within the security system that could subsequently affect the Fire detection and alarm system, such;

- Antitamper issues if access is required to inspect or service the signalling equipment housed in the security system enclosure
- If the security system grade has different requirements for standby battery the fire detection system would take priority

- Should the connection dual path fail this will need to be reported to the fire system to meet the requirements of BS5839—1:2017
- The connection between the ARC signalling and the fire system needs to be monitored failure to do this may leave a building with no FRS response
- Connection should be detailed in the intruder as installed specification

## 5. ONWARD RISKS

Should a security system provider be subject to a takeover and change of supplier or ARC the connection to the Fire CIE should be retested and ensure it communicate correctly.

If the Security System and signalling is upgraded it is important to ensure the connection to the Fire Detection CIE tested as part of the commissioning this might mean the system be attended by both Fire System engineer and a Security engineer.

## 6. SUMMARY

Ensuring the integrity of the fire alarm signalling system is of paramount importance, failure to consider the details discussed in this document and those written in the relevant British Standards.

Consideration of the use of PSTN connected system should also be checked to ensure the service is going to continue, discussed in other FIA guidance notes there are recommendations to consider the long term connectivity of the fire detection and alarm system signalling system and system providers and maintainers may wish to consider newer future network and independent of the intruder system signalling.

## REFERENCES

BS5839-1:2017 section 25.4

BS5839-1:2017 section 15.2

BS5839-1:2017 section 15.2 p)

**DISCLAIMER**

*The information set out in this document is believed to be correct in the light of information currently available but it is not guaranteed and neither the Fire Industry Association nor its officers can accept any responsibility in respect of the contents or any events arising from use of the information contained within this document.*



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