

# AUTOMATIC FIRE DETECTION AND ALARM SYSTEMS

An introductory guide to components and systems

Robert Dudley



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# 1 INTRODUCTION

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An automatic fire detection and alarm system protects a building and its occupants by detecting a fire at an early stage of its development. By providing an early warning to the building management team, action can be taken to deal with the fire before it takes hold. Automatic fire detection and alarm systems are a relatively recent development in the range of equipment that has been deployed to combat the threat of fire within commercial and domestic buildings. Smoke detectors, alarm bells and manual call points appear as part of the hi-tech clutter that proliferates on the ceilings and walls of our commercial and public buildings. Although they appear to be passive, the reality is that the automatic fire detection and alarm equipment used within these systems is constantly vigilant.

This guide introduces the components that are used in automatic fire detection and alarm systems, and the types of system that are available to designers. Automatic fire detection and alarm systems used in buildings have a good record of performance and have demonstrated that they can be effective in reducing the risk to life and property damage from fire.

The guide is aimed at building owners, building managers, specifiers, automatic fire detection and alarm equipment installers, maintenance companies, insurance surveyors, building control practitioners, fire safety officers, risk assessors, and fire and rescue service inspectors. It will also be of interest to anyone who needs to consider or deal with automatic fire detection and

alarm systems. The guide sets out to pull together the elements associated with these systems so that the reader has a comprehensive understanding of what goes into putting them together, how to manage them in use and ensure that applicable regulatory requirements are met.

Only fixed automatic fire detection and alarm systems are considered in the guide; it is concerned only with these systems installed in commercial and industrial buildings: residential smoke alarms are not dealt with.

A range of issues are covered:

- brief background and description
- types of system available to the end user
- detection and alarm devices available for use in automatic fire detection and alarm systems
- relevant, current European standards applicable to the UK
- false alarms and false alarm reduction
- ensuring compliance with standards, installation codes and legislation.

This guide is primarily intended for use in the UK and consequently British and European standards and codes of practice have been referenced. The principles of system operation and maintenance, as well as the technical information about components and systems, can be applied in other countries subject to local code requirements.

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## AUTOMATIC FIRE DETECTION AND ALARM SYSTEMS

An excellent overview of automatic fire detection and alarm systems used in commercial and industrial buildings – how they are designed, how you can manage them, and how to ensure that all your regulatory requirements are met.



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