Alarm & Communication SYSTEMS LIMITED

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SPOTLIGHT ON

Open Area Fire Detection

The design and installation of fire alarm systems for large open areas presents difficult design problems. Several solutions are outlined below.

- Airports
- Train Stations
- Warehouses
- Convention Centers
- Shopping Centers
- Stadiums

Typical Problems

- Difficult access for detector installation, maintenance, testing and replacement.
- High ceilings – standard smoke detectors have a maximum installation height of 10.5m.
- Drafts through open doors diluting smoke.
- Building movement caused by factors such as temperature changes and high winds.
- Dust and Dirt.
- Rolling cranes and forklifts interrupting beams.
- Insects and birds inside premises interrupting beams.

Flame Detectors

Flame detectors offer open area protection by reacting to flickering infra-red radiation emitted by flames during combustion. Their use is suited to environments where flames can be expected to develop initially rather than smoke.

They offer the advantage of covering large areas whilst being unaffected by air currents, fumes and vapours etc. Consideration does have to be taken of objects in the field of view of the detector and other factors such as sun light.

Beam Detectors

Beam detectors use an IR transmitter combined with a receiver or reflector to detect the presence of smoke within an open area. Total obstruction of the beam is registered as a fault whilst partial obstruction (e.g. 30%) is registered as a fire.

They can be used to cover a 15m band of open area up to a distance of typically 100m. Fire Beams were traditionally affected by building movement which caused numerous false alarm and faults. To overcome this, some manufacturers have now developed transmitters with motorised heads that automatically compensate for building movement etc.

Open Area Smoke Image Detection (OSID)

OSID uses an optical imaging chip and wide-angle view which, combined with software analysis, compensates for vibrations and building movement etc. Dual light frequencies (UV & IR) are also used providing a greater accuracy in detecting real smoke compared to larger objects e.g. dust, thereby reducing false alarms.

In addition, OSID only requires 15-20cm line of view allowing it to be deployed between supporting structures and moving cranes etc.

3D coverage of a large open space can also be achieved by using multiple emitters within one area.

Aspirating Smoke Detectors (ASD)

ASD provides faster and more reliable detection compared to other detection systems but may not be cost effective if very early warning is not the priority. It also requires the installation of a air sampling pipe in the area to be protected which is often impracticable.

Alarm and Communication Systems are always happy to help with the design of any systems. If you need any information or advice please contact Matthew - 0191 4178882 or sales@alarmcommsys.co.uk

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Communication Systems

- Intercoms & Telephone Systems
- Electronic Signage
- Radio Printing & 2 way radios
- Nurse Call
- Public Address
- Fire Alarm Voice Evacuation
- Background Music
- Doctor/ Reception/ Patient Call
- Refuge Intercoms
- Queuing Systems

TV/ Radio/ Satellite

- Home Entertainment
- NetworkingVoice / Data Systems
- IRS – TV/Radio/Satellite

Maintenance

- Fully comprehensive
- Labour only
- Yearly check
- For 1/ 3/ 5 years
- Maintenance agreements and repair facilities offered on systems not installed by ACS

Security Systems

- Intruder
- Personal / Staff Attack
- CCTV
- Access Control
- Door Automation
- Automatic Gates/ Barriers

Specialist Solutions for: Academies, Colleges and Schools

- Announcements / Class Change Signals
- Projectors and Bulbs
- Sound Systems - portable & fixed
- Special Effects Lighting
- Interactive Whiteboards – SMART & Promethean
- Security & Safety
- Electronic Signage & Messaging TV
- Data & Computer Networks
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- Disposal of Redundant Electric/ Electronic Equipment
- Synchronised Time Clocks
- TV & Satellite Systems

DDA Compliance

- Induction Loops and Infra Red Systems for the Hearing Impaired installed in Reception desks, Multi Purpose Rooms, Function Rooms, Churches, Classrooms
- Refuge Area Communication Systems
- Soundfield Systems for Schools, Colleges
- Accessible Alarms for toilets, showers, changing rooms
- Automatic Door Operators

Corporate Solutions

- Training Room AV Equipment
- Lecture Theatre AV Equipment
- Boardroom AV Equipment
- Conference Room AV Equipment
- AMX Control Systems
- Electronic Signage & Messaging TV
- Synchronised Clocks