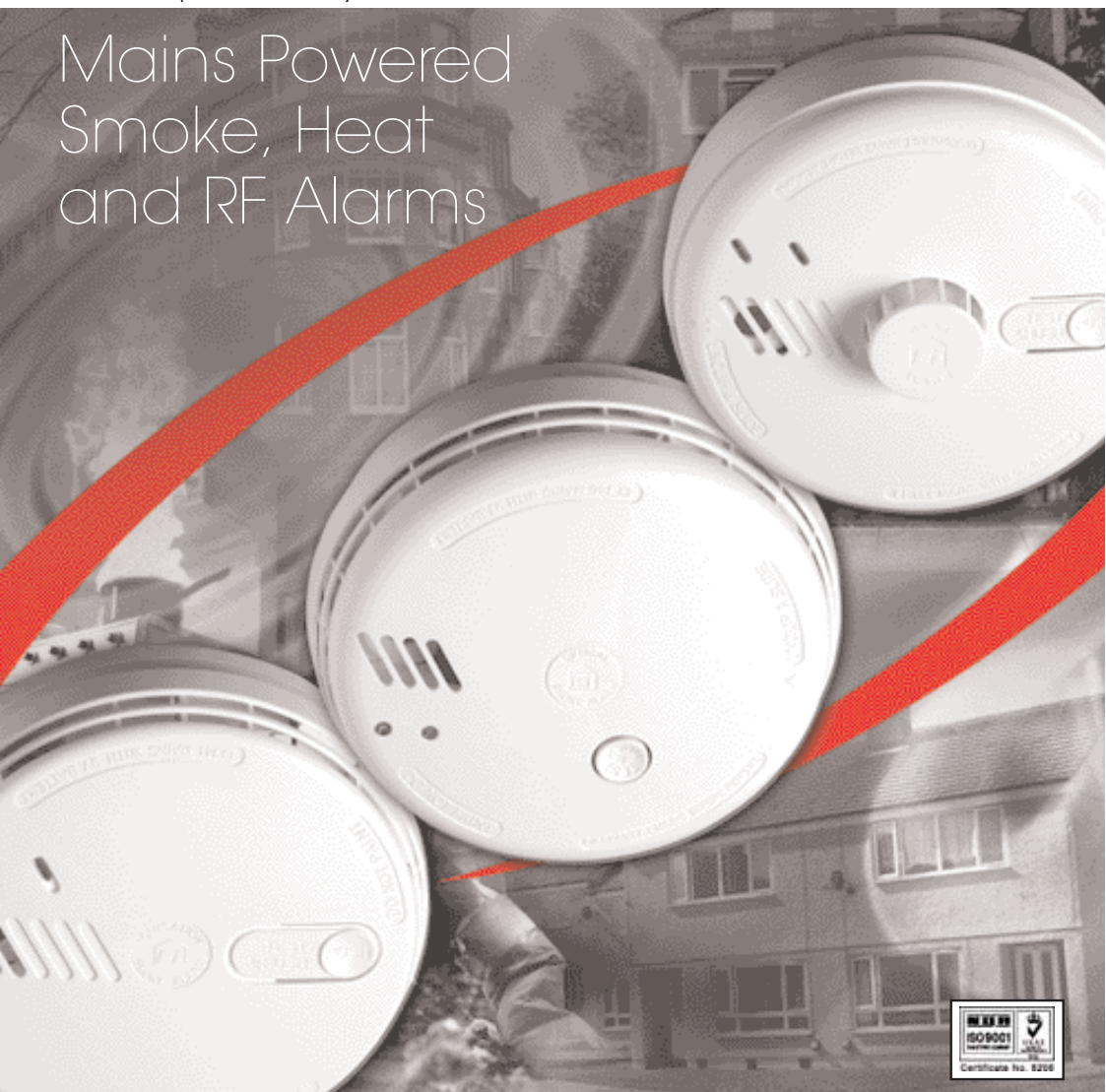




Frequently Asked Questions

Mains Powered Smoke, Heat and RF Alarms



Aico Ltd, Mile End Business Park, Maesbury Road, Oswestry, Shropshire SY10 8NN
Tel: 0870 758 4000 • Fax: 0870 758 4010 • e-mail: enquiries@aico.co.uk • www.aico.co.uk

Customer Service Helpline: 0870 758 4000

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Frequently Asked Questions

Mains Powered Smoke, Heat and RF Alarms



Standards & Regulations for Domestic Fire Alarm Systems

1. What are the fire alarm requirements for New – Build properties?

BS 5839: Pt.6: 2004 recommends that a new-build property consisting of no more than 3 storeys (less than 200sqm per storey) should be fitted with a **Grade D, LD2** system

Building Regulations in England, Wales & Scotland recommend that BS 5839: Pt.6 should be followed, but as a minimum a **Grade D, LD3** system should be installed.

Building Regulations in Northern Ireland require a **Grade D, LD2** system to be installed, with smoke alarms fitted in the escape routes and the main living room and a heat alarm in the kitchen.

2. What is a Grade D system?

The BS 5839: Pt.6 standard places different alarm types into Grades, simply described as follows:

Grade A – a system of detectors and sounders with control and indicating equipment (a panel & perhaps call points)

Grade B – a similar system to Grade A with some minor amendments.

Grade C – detectors and sounders, or smoke alarms, with some control features.

Grade D – mains smoke & heat alarms with a battery back-up supply.

Grade E – mains only smoke & heat alarms

Grade F – battery only smoke & heat alarms

3. What do LD2 and LD3 mean?

This refers to the level of coverage supplied by the system to be installed. Simply put, the number of alarms to fit in the property. The BS 5839: Pt.6 standard lists three 'Categories' of system and these are summarised as follows:

LD1 – alarms fitted in all rooms or areas where a fire may start.

LD2 – alarms fitted in escape routes and high fire risk areas e.g hall, landing/s plus kitchen and main living room.

LD3 – alarms fitted in escape routes only e.g hallway and landing/s.

4. What are the requirements for existing properties?

Building Regulations do not cover existing properties (unless material alterations are taking place e.g an extension). In this type of property BS 5839: Pt.6 should be followed. The minimum requirement for a 2 storey rented property would be **Grade D, LD3**, but the standard does recommend that a Fire Risk Assessment should be conducted to correctly determine what system should be installed.

Frequently Asked Questions

5. What is a Fire Risk Assessment?

This is where each individual property is assessed for the fire risk present. The property itself must of course be assessed, as there may be an unusual layout, or other features that could contribute to the consequences of a fire. However, the occupier is often the greatest factor in firstly whether a fire is likely to occur, and secondly what the consequences of the fire are likely to be. The Fire Risk Assessment should be an on-going process that may require amendment at any time. Clearly, this would be very time consuming and create many problems for landlords. To overcome this many landlords are finding that it is easier and possibly cheaper in the long run to install an **LD2** category of cover in all properties to minimise the need to undertake a Fire Risk Assessment on every property.

6. If I install an LD2 level of cover can this remove my responsibilities to conduct a Fire Risk Assessment?

The short answer is no! The installation of a Grade D, LD2 system will almost certainly be acceptable for general needs properties, but there may be special needs people or groups that require additional protection e.g alarms for the deaf, and these should be identified. It is likely that specific support groups have this information and may be able to assist.

7. What do I need to do to address the requirements of 'special needs' people or groups?

This will depend entirely upon what their special needs are! Some examples are; the elderly or infirm and the deaf or hearing impaired. The elderly and/or infirm may require additional protection from fire due to the fact that they may be less mobile. Consequently, additional alarms should be considered perhaps in bedrooms. In addition, these groups cannot be expected to climb steps or chairs to test the alarm system. In these instances a Remote System Control switch could be fitted to alleviate this problem. There may also be a need to have a connection to a Warden Call system to alert them to a problem in the dwelling. This can be achieved in most systems by the addition of a relay. The deaf cannot hear a standard smoke alarm, so it may be necessary to add a strobe and vibrating pad to the smoke alarm system.

Choice of Alarm Sensor Type

8. What types of sensor are available?

Smoke alarms incorporating either an Ionisation or an Optical sensor are available in mains with Alkaline battery back-up, or mains with rechargeable Lithium back-up formats. Heat Alarms are also available in these ranges, but these only sense heat; not smoke. A comprehensive Fire Alarm system will contain all 3 elements of detection.

9. How do Ei Ionisation and Optical Smoke Alarms work?

Ionisation Smoke Alarms contain a small sealed ionising source which causes a small electrical current to flow through the air in the smoke chamber. Smoke particles entering the chamber reduce the current, this is sensed by the electronics and when a pre-set threshold level is reached the alarm will sound.

Optical Smoke Alarms send a pulsed beam of infra red light through the smoke chamber periodically. If visible smoke is present, it scatters the light on to the photodiode light receiver and this is detected by the electronics causing the alarm to sound. Ei Optical Alarms are individually calibrated to ensure correct operation and to reduce the risk of nuisance alarm.

10. What are the advantages and disadvantages of both sensor types ?

Both have a sufficiently wide range of response to different types of fire to be of general use. However:
Ionisation Alarms tend to respond quicker to fast flaming fires producing small smoke particles (e.g flaming wood, petrol). This makes them particularly sensitive to the "invisible" particles produced by toasting, grilling or frying. They are also susceptible to nuisance alarm when redecoration takes place. In view of this, they should be located well away from the sources of such fumes or particles.
Optical alarms tend to respond faster to slow smouldering fires producing large smoke particles (e.g smouldering wood, overheating PVC wiring). They are somewhat more susceptible to contamination from dust and fibres so they should not be installed in particularly dusty areas. Both should be removed, or fully covered when renovation work is being carried out.

11. How do Ei Heat Alarms work?

These are fixed temperature alarms which incorporate a thermistor sensor. The thermistor is a heat sensitive resistor, when the ambient temperature reaches a pre-set point of 58°C, the resistance is lowered and the alarm will sound. They are designed for use in areas where due to high levels of dust or fumes, a conventional Smoke Alarm is not suitable. They are particularly suited for use in a kitchen (source of 40% of domestic fires), garages or boiler rooms. Although they are stand alone units they should be interconnected with our Smoke Alarms to provide an adequate warning system in the event of a fire. BS 5839: Pt:6 recommends the use of fixed temperature heat detectors in preference to 'rate of rise' types due to the reduced risk of nuisance alarm which can be caused by opening hot oven doors etc.

12. Which Alarm should I use where?

Both types of Smoke Alarms give good performances in a range of situations. The BS 5839: Pt:6: 2004 British Standards that deals with fire alarm systems in dwellings recommends that the choice of detector should take account of the type of fire that may be expected and the need to avoid false alarms. BS 5839: Pt:6 now strongly

Frequently Asked Questions

12. Cont...

recommends the use of optical alarms in circulation spaces of a property, such as hallways and landings and areas in which a likely cause of ignition of furniture or bedding is by a cigarette. Ionisation alarms are considered to be more suited for use in rooms where a fast flaming fire may present a greater danger, dining rooms and bedrooms being possibilities. The standard recommends that in new build properties heat alarms should be installed in kitchens and the 'Principal habitable room' e.g. living room; in addition to any smoke alarms used in the escape routes.

13. Where should alarms be sited?

Location

They should be sited on the ceiling, close enough to a potential source of fire so they can respond quickly. The Building Regulations requires that the installation of self-contained mains powered with battery back-up Smoke Alarms in all new and refurbished dwelling houses should, at least, meet the following requirements:

- Within 7.5m of any door to a room where a fire is likely to start.
- On each storey of a multi-storey dwelling.
- All Smoke and Heat Alarms in the dwelling should be interconnected.

BS 5839: Pt6 broadly supports these recommendations for alarm systems in existing dwellings, adding that alarms should be sited no more than 3m from bedroom doors so that they can be more easily heard if a fire should occur during the night. We would recommend the fitting of alarms in all rooms (apart from bathrooms and shower rooms) for the earliest possible response. Very large dwelling houses may require more elaborate alarm systems and the relevant sections of BS 5839: Pt6 should be consulted for specific guidance.

14. How many do I need?

One Smoke Alarm in each of the circulation spaces of a property is the minimum recommendation. This would normally mean the hallway, and the landings of any subsequent floors. However, the only way to achieve good coverage is to install an alarm in every habitable room. Building Regulations requires the installation of a heat alarm in the kitchen if there is no door separating it from the circulation spaces. Please note the circulation spaces could be a lounge or dining room in a property where there is no hallway and the stairway leads off a living area.

SMOKE & HEAT ALARMS

Frequently Asked Questions

15. Where shouldn't Smoke Alarms be sited?

In summary, they should not be sited in Kitchens, Bathrooms, Shower rooms Garages or other places where there are likely to be excessive nuisance alarms from steam, fumes and high levels of airborne contamination. Heat Alarms are considered more suitable for use in Kitchens and Garages, but not Bathrooms or Shower rooms or places where the normal temperature can exceed 40°C.

16. Will they always work?

The only restrictions to the correct operation of a Smoke Alarm system in a fire situation are: that there are a sufficient number of alarms in the system, sufficient smoke reaches the alarms, they are correctly installed and sited, and that they are regularly maintained and tested for correct operation. If all of these factors are right, there is a very high probability that sufficient warning will be given in life-threatening situations caused by a fire.

17. What cable do I need for the Mains connections and where should the supply be taken from?

Fitting

We recommend the use of 6243Y 3 core and earth PVC insulated cable to BS6004 standard. Building Regulations and BS 5839: Pt 6 state that mains only alarms with back-up, can be wired from a dedicated circuit at the distribution board, or they can be wired from a regularly used lighting circuit. In both cases, all hard wired alarms should be on a single final circuit.

18. What cable do I need for the interconnect line?

Use the third core of 6243Y cable as stated above. Do NOT use the earth wire of twin and earth cable as this could cause problems of mistaken identity at a later date.

19. How do I mount the Alarms on the ceiling?

The 140 and 160 series Smoke and Heat Alarms have an Easi-fit mounting plate, which incorporates an enclosure for the electrical connections, so no back box or mounting kit would normally be required.

Frequently Asked Questions

20. Can I fit the Smoke or Heat Alarm on the wall?

All of the Ei alarms are designed for ceiling mounting and will under most circumstances perform better if sited in this position. If it really is not practical to mount them on the ceiling, a Smoke Alarm can be wall mounted with the top edge 15-30cm from the ceiling. Ensure that it is 30cm away from any corner or obstruction which may impede the movement of smoke to the alarm. Do not wall mount heat alarms.

21. How many Smoke and Heat Alarms can I link together?

We recommend that under normal circumstances Smoke and Heat Alarms should only be interconnected within the confines of a single family dwelling. If they are connected between different units, there may be excessive nuisance alarms and it can be difficult to locate and silence the unit causing the alarm. However, there is no technical reason why up to 20 alarms cannot be interconnected in a single system that encompasses a number of individual dwellings - such as may be required in an HMO, for instance. In circumstances such as these, a very high level of system design, management and maintenance is necessary to reduce the level of nuisance alarm. The minimum requirement should be to install a System Remote Control Switch Ei1529RC on each floor of the property. By pressing the locate switch, all alarms in the system are silenced, for a period of approx. 8 - 10 minutes, except for the unit initiating the alarm state. This allows time to rectify the problem before the system is automatically reinstated to full working order.

22. Can I use a relay to signal other devices?

There are a number of options available for using a relay with Ei Smoke and Heat Alarms. All the relays have volt-free output contacts rated at up to 240V and have both Normally Open and Normally Closed connections. There are relay options available for use with mains operated devices such as bells, sounders and door closers. In addition, there are relays available with a battery back-up for use with devices that will operate even in the event of a mains failure, such as Warden Call Systems. The relay can be mounted under an alarm, or can be remotely sited using the optional cover for electrical safety.

23. Can I use the relay to connect to a 24 Volt Fire Alarm System?

Technically it can be used but if the system has to comply to BS 5839: Pt 1 it may not meet all the requirements. For example, it is not possible to silence the sounder in the smoke alarm from the control panel. Many regulatory bodies now recognise that a dual system (smoke/heat alarms in the individual occupancies and a Pt.1 system in the communal areas) in HMOs can be an extremely effective means of reducing the incidence of false alarms. In this instance, subject to approval, it could be an advantage to have this link.

SMOKE & HEAT ALARMS

Frequently Asked Questions

Maintenance

24. How often should they be tested?

We recommend weekly testing by pressing the test button on the alarm/s for between 5 - 10 seconds, or until all interconnected alarms sound. The use of a low level System Control Switch sited at low level can be used to make this easier for the occupier.

25. Should they be tested with smoke/heat?

BS 5839: Pt.6: 2004 recommends that a smoke/heat test is preformed when the system is commissioned. Pressing the test button checks the electronics, interconnect and the horn are operational, so it is our view that it is not necessary to test with smoke or heat and a 'variation' can be invoked in order to comply with the standard. However, if it is considered that testing of smoke alarms is a necessity, we would only recommend the use of special purpose built equipment such as the SAT332 Smoke Alarm Tester with the SAA300 Synthetic Smoke Aerosol. This device ensures that sufficient synthetic "smoke" enters the sensor chamber and remains long enough for the Smoke Alarm to respond. Other methods of smoke testing, e.g. a lighted taper or smoke pellets, can give misleading results. Testers for Heat Alarms are also available. Do Not test with a flame - this can be a hazard in itself.

26. What maintenance schedule is recommended?

The Ei range of Smoke and Heat Alarms are suitable for use in Grades D, E and F systems as defined in the British Standard which covers alarm systems in domestic dwellings, BS 5839: Pt6: 2004 It states that these alarms "should be cleaned periodically in accordance with the manufacturers instructions".

Our recommendations are as follows:

- Regularly check to see that the green mains power light is on.
- Press the test button weekly to check all alarms in the system.
- Regularly check that the red light under the test button or on the cover flashes approx. every 40 seconds.
- Clean the cover of the alarm regularly using a barely damp, lint free cloth.
- On a monthly basis (at least) check the alarm for signs of contamination from dust, cobwebs or insects. Use a vacuum cleaner around the cover of the alarm to remove contamination.
- Check (at least annually) that the alarm will operate on back-up battery power only by switching off the mains supply and pressing the test button.

Frequently Asked Questions

27. How long will the battery last?

This will depend on a number of factors that will differ slightly according to the type of alarm in use.

The 140 series alarms are supplied with an Alkaline battery which, dependent on conditions, can provide up to 4 years standby supply, up to 2 years without mains power.

The 150 series and the 160 series alarms are fitted with rechargeable Lithium power cells which are continuously charged by the alarm circuitry. They have a life expectancy greater than that of the Smoke Alarm, i.e 10 years or more, which eliminates the need for replacement.

28. How will I know if the battery has failed?

If either, the voltage of the battery falls to a sufficiently low level, or the internal resistance of the battery reaches a predetermined state, the alarm unit will emit a warning beep every 40 seconds. In the case of the 140 series alarms, it is probable that the alkaline battery in the unit requires replacement. Access to the battery is gained by removing the alarm from the Easi-fit mounting plate. The power cells on the 150 and 160 series alarms are not replaceable. If these units emit a low battery warning beep it is probable that the mains supply has failed. The cables, fuses etc should be investigated and the fault rectified. If the beeping continues the alarm may have a fault and it should be returned for inspection.

29. How long do Smoke Alarms last?

There is no technical reason why a Smoke or Heat Alarm should not last up to 10 years, but the actual lifespan will depend to a large extent on where and how the alarm has been sited, installed and maintained. The most common cause of alarm failure is due to contamination of the sensor chamber and/or electronics. In certain circumstances, even with regular cleaning, contamination can build up in the smoke sensing chamber causing the alarm to sound. If this happens the alarm must be returned for servicing or repair. All manufacturers of smoke alarms recommend that their products are replaced after 10 years use.

Miscellaneous

30. How do I stop nuisance alarms?

False alarms are usually a result of incorrect siting of the Smoke Alarm, by contamination as a result of building/redecoration operation, or poor levels of maintenance. For instance, if Ionisation alarms are sited too close to a Kitchen, false alarm will often result due to invisible cooking fumes reaching the alarm. Optical alarms are liable to contamination from dust and fibres, often associated with building work being undertaken without the alarms being properly covered. The 140, 150 and 160 series smoke alarms are supplied with a 'hush button' that can be pressed to desensitise them to allow time for the source of the problem to be investigated. Use of the 'hush button' will only silence the alarm for 8 - 10 minutes after which the alarm will automatically reset. If the cause of the false alarm is contamination, the only method of permanently silencing the alarm is to remove the contamination source. This may not be possible without removal and cleaning of the alarm itself. It can be difficult to reach the hush button in some instances, particularly for the elderly and infirm, so the installation of a wall mounted System Remote Control Switch Ei1529RC should be considered to overcome this problem.

31. What is the radiation risk from Ionisation Smoke Alarms?

The National Radiological Protection Board (NRPB), UK have carried out extensive tests on Ei professional Ionisation Smoke Alarms and have concluded that they are radiologically safe. They estimate that we receive 10,000 times as much radiation from our surroundings as we would from an ionisation alarm in normal use.

32. How do I dispose of redundant Ei alarms that contain a NiCad battery?

The early 150 series alarms contained a NiCad battery and some may now be reaching their end of life. The Cadmium contained within the battery is a restricted substance under The Batteries and Accumulators Regulations 1994 and cannot be disposed of in normal waste. Aico Ltd and Ei Electronics take their responsibilities to the environment seriously, and will accept redundant Ei product back for recycling/disposal. The Ei151TL, Ei156TL, Ei156TLH, 140 and 160 series do not contain NiCad batteries, so are not subject to disposal restrictions.

33. Are the Ei alarms with rechargeable Lithium Cells compatible with previous models?

These have been designed to be fully compatible with previous Smoke and Heat Alarm models. Therefore if an old model 150 series mains powered alarm should require replacement, the equivalent model in the new 150 series can be easily and safely installed in its place. All 140, 150 and 160 series alarms are also fully compatible with each other.

Frequently Asked Questions

34. Why choose Ei Professional Smoke Alarms?

Ei Professional Alarms are designed and manufactured by Europe's largest producer of Smoke and Heat Alarms, with over 30 years experience in producing quality life safety devices. The latest techniques are used in the manufacturing process, with the highest quality and reliability standards (including BS EN ISO 9001:2000) being practised to ensure trouble-free performance. Smoke and Heat Alarms are fully 3rd Party tested and Kitemarked to the relevant British Standard (BS 5446: Pt.1: 2000 for Smoke Alarms, BS 5446: Pt.2: 2003 for Heat Alarms). All the alarms are easily installed and come with comprehensive instruction leaflets and a 5 year guarantee.

PLEASE NOTE: The information contained in this leaflet is only a summary of some of the key points about our Smoke and Heat Alarms. It is not intended to replace the instruction leaflet supplied with the product.

Smoke and Heat Alarms must be installed by a qualified person according to the recommendations contained in whichever of the following documents are relevant to the specific installation; BS 5839 : Pt.6 : Building Regulations and I.E.E. Wiring Regulations. The information supplied in this leaflet is believed to be in conformity with these codes. However, Ei Electronics and Aico Ltd cannot be held responsible for ensuring the Smoke and Heat Alarms, as installed, are in compliance with these codes. This is the responsibility of the installer and we recommend that the original source documents are consulted to achieve this end.

1. What is RadioLINK?

It is a totally new concept enabling smoke alarm systems to be interconnected without the need for cabling between the alarms. Instead, a radio signal is used to trigger all the alarms in the system.

2. Which alarms can be used with RadioLINK?

The Ei141, Ei144, Ei146, Ei161RC, Ei164RC and Ei166RC smoke and heat alarms can all be used with an Ei168 base to make a RadioLINK system. These all require a mains supply to them. The Ei405 and Ei405TY are battery operated alarms, these contain all the RF components and do not require the use of an Ei168RC base.

3. Do I have to wire the alarms at all?

The Ei168RC RadioLINK base requires a mains supply to each of the alarms in the system. The power supply can be taken from any convenient light pendant, with a permanent live feed, to where the alarm is to be sited. The Ei405 and Ei405TY don't require any cabling as they are battery powered, but they will not be suitable for use in new build and most tenanted properties.

4. What benefit is there in RadioLINK if I still have to connect the to the mains?

There are significant savings to be made, mainly in time, but also in materials.

a) There is no need to feed the wiring from one alarm to another. This can be very time consuming and can cause problems with tenants not wanting to have trunking running up walls and across ceilings. There is no need to lift floorboards either. Both of these points mean that damage claims to floors, carpets and decoration are minimised, if not eliminated.

b) Less cable and trunking is required so further reducing costs.

5. How can the alarms interconnect without a cable connection?

A radio signal is sent when the test button is pressed, or the alarm senses smoke. This is received by all the RadioLINK alarms in the system and they will also sound.

6. Will interference from other RF devices be a problem?

The frequency and duration of the RF signal used by the Ei RadioLINK system meets strict European guidelines. These are designed to virtually eliminate interference. Interference cannot be completely ruled out but it is our experience that hard wired cable connections are far more likely to be affected by interference than RadioLINK will be.

There have been problems with doorbells using RF causing interference with other doorbells of the same type. These problems were mainly due to there being only a few codes available that the user could choose from. This made it very easy to select a code that was used by a neighbour. The consequence was that when one doorbell was pressed, a number of them sounded! This cannot happen with RadioLINK because each alarm base has a unique code that is set at the factory. The code cannot be repeated so interference is eliminated.

Frequently Asked Questions

7. Will security systems and car alarms affect the smoke alarm system?

Security systems may use the same frequency as the RadioLINK but they will normally be on a different band and/or be restricted to using the channel for 1% of the time, for a maximum of 4 seconds at any one time. Also, the unique code used by RadioLINK units means that interference is a very remote possibility. Car alarms and mobile phones use a completely different frequency so interference is not possible from either of these. Television remote controls mostly use infra-red, which cannot affect the RadioLINK system.

8. How far will the radio signal travel?

The radio signal can travel a very long way if there are no obstructions to block it – 250 metres or more. But, it is more relevant to consider the practical application of RadioLINK where there will be walls, ceilings and many other obstructions to impede the radio signal path. In the vast majority of properties, where there will be 2 or 3 alarms, the signal from a RadioLINK unit will be more than adequate. In fact, it is quite probable that the radio signal will transmit well beyond the limits of the property. This is a very important reason why the alarms in a property must be 'House Coded' – see question 9.

9. If all the alarms can interlink how can I stop the next door sounding the ones in my house?

Simply House Code each separate system of alarms. In this way they cannot cause nearby alarms to sound. 'House Coding' takes a matter of minutes after installation of all the alarms in the system and can be easily undertaken by anyone following the instructions supplied with the product.

10. Can you use RadioLINK to interconnect between as well as within properties?

Yes, this is a big advantage in blocks of flats and HMO's. In ordinary hard-wired installations it is necessary to cross property boundaries with mains cable in order to interlink the alarms (and provide the mains power). This could pose an electrical safety risk if people working in the dwelling were unaware that there are 2 mains power supplies to the property. With RadioLINK each alarm in the system can be connected to a local power supply, the interconnect signal is provided by the radio signal, therefore overcoming this risk.

In flats and HMO's where interconnection between dwellings is not required, but a connection to the communal areas is (for early warning purposes), it is easy to provide a simple, yet effective system. Simply, 'House Code' the alarms in each flat separately and then 'House Code' the alarms in the communal areas with say a heat alarm in the individual dwellings. In this way, if a nuisance alarm should occur within one of the dwellings it will not affect the other residents. However, if a real fire has occurred, the heat alarm in the dwelling will operate the communal system – and all other dwellings – when sufficient heat has been generated.

11. How will I know if the RF interconnect line has failed?

How do you know if a hard wired cable connection has failed or not? There is a much greater chance that damage will occur to a cable than there is that the RF signal will fail. Cables can be disconnected, a nail can be put through them, or rodents gnaw through them. An RF interconnect cannot be affected by any of these. The only effective method of checking that the RF interconnect link is operating is by pressing the test button on the alarms and checking that they all sound. This is also the only way that you can check a hard-wired interconnect.

12. Are the RadioLINK units kitemarked to BS 5446:Pt.1?

BS 5446: Pt.1 is the standard that smoke alarms should be Kitemarked to. As the Ei405 and Ei405TY are smoke alarms, they have been 3rd Party tested and Kitemarked to this standard. The Ei168RC RadiOLINK base is not a smoke alarm; it is a base that a smoke alarm is attached to. Consequently, this standard is not applicable to the Ei168RC.

13. To which standards does the Ei168RC conform?

The Ei168RC is CE marked to demonstrate conformance to BS EN 60065:1998 (Electrical safety), EN 300220-1 V1.3.1 (2000-09) (RF performance), EN 301489 V1.4.1 (2002-08) (EMC) and has been 3rd party tested for electrical safety in accordance with Annex K of BS 5446: Pt.1: 2000.

14. Is RadioLINK suitable for use in all properties?

The simple answer is yes! But it is easier to justify the additional cost when retro fitting smoke alarms as this is where surface trunking often has to be used. Cable is relatively cheap and easy to install in new build properties without the need for trunking so the extra cost may not be a viable proposition. However, some new build properties have concrete ceilings and this may mean that surface wiring via trunking will still be necessary. In these applications the use of RadioLINK could play a useful role. Other applications could include...

- a) Individual dwellings within a block of flats or HMO's. We would not recommend interconnecting individual dwellings together as nuisance alarm could cause considerable aggravation to other occupiers. But, many enforcing authorities insist that this is done. RadioLink allows this without the need to cross boundaries with mains cable, so potentially creating an electrical safety risk. In addition, separation of dwellings and communal areas is possible yet still allowing a warning to be given throughout the building via RadioLink.
- b) Connection of remote areas to a central smoke alarm system avoiding the need to run cable for extended distances.
- c) Allows existing systems installed without a hard wired interconnect to be connected, avoiding the need for a complete rewire.
- d) Existing hard wired systems can use RadioLink to extend the system into additional rooms or areas without all the extra wiring and disruption this may cause.

Frequently Asked Questions

15. How many alarms can be interconnected using RadioLINK?

Technically, up to 30 alarms can be interconnected but the limiting factor is likely to be due to distance between alarms and obstructions that may block the radio signal. In most domestic properties a realistic maximum number of alarms would be 12.

16. Is there any method of controlling a RadioLINK system?

A fixed wall switch, Ei411H, is available. This allows Test, Hush and Locate features to be incorporated into a RadioLINK system without having to reach up to the smoke alarms. The switch is the same size as a normal light switch and is powered by a Lithium cell having a realistic 10 year life. This means that the switch is easily installed, as it does not require any wiring, the signals to the alarms being transmitted by a radio link. A Manual Call Point, Ei407, is available for use in larger installations. This also has the benefits of a Lithium cell power supply and no wiring connection being required.

In applications where a relay is required to signal to other devices the Ei428 is available; this is mains operated, but has a rechargeable Lithium cell back-up supply to ensure that it is operational even in a mains failure. This is an essential requirement when signalling to Warden Call Systems. The unit is supplied with a cover to enable it to be sited at any convenient position within the property.

17. BS 5839: Pt.6: says that all alarms must be on one final circuit. Will RadioLINK comply with this?

BS 5839: Pt.6: 2004 recognises the benefits of radio communication in the note to Clause 15.5 dealing with power supply requirements for smoke alarms, thus: "This recommendation (for a single final circuit) does not apply if the form of interconnection is not capable of conducting current, e.g. if the means of interconnection compromises radio communication rather than wiring".

Building Regulations Document B (England & Wales) allows the use of a radio link between alarms under section 1.21. The Building Regulations in Scotland and Northern Ireland currently make no reference of a radio link, but it is considered that the new recommendations of BS 5839: Pt.6: 2004 would be an acceptable means of meeting the requirements of both documents.

18. Can the smoke alarms be connected on different phases of the mains supply?

Yes, the individual smoke alarms and RF bases are not electrically connected so a phase difference will not affect them. The only connection between the alarms and bases is by a radio signal.