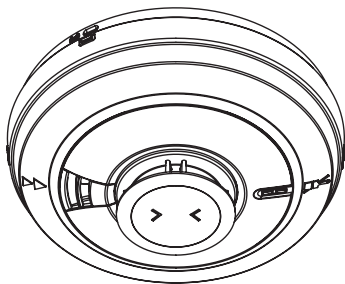


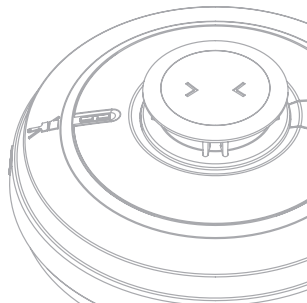
230V~

MULTI-SENSOR FIRE ALARM

with Rechargeable Lithium Cell Back-up



Ei2110e Series



P/N B18397 Rev2

Instruction Manual

INSTALLER Section

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1. QUICK GUIDE



INSTALL IN THE CENTRE OF CEILING AT LEAST 300mm FROM LIGHT FITTINGS & WALLS



INTERCONNECT ALL ALARMS



ENSURE MAINS POWER IS CORRECTLY CONNECTED TO L & N TERMINALS ON ALL INTERCONNECTED ALARMS - OTHERWISE UNITS WILL BE DAMAGED



DO NOT FIT ACTUAL ALARMS UNTIL ALL BUILDING WORK IS COMPLETED TO AVOID CONTAMINATION. AFTER CHECKING OPERATION, COVER ALARMS WITH DUST COVER UNTIL REQUIRED FOR USE



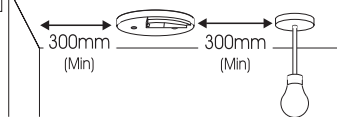
HIGH VOLTAGE INSULATION TESTS CAN BE APPLIED TO MOUNTING PLATES ONLY. ALARM HEADS **MUST** BE REMOVED



DO NOT ATTEMPT TO OPEN THE ALARM AS IT IS PERMANENTLY SEALED FOR SAFETY

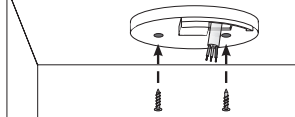
1.1 Installation Guide

1 DECIDE ON CORRECT POSITION



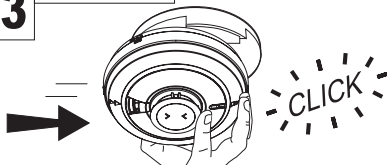
ALARM SHOULD BE CEILING MOUNTED AT LEAST 300mm FROM WALLS & OBSTRUCTIONS, IDEALLY CENTRALLY IN ROOM/AREA

2 FIX & WIRE BASEPLATE



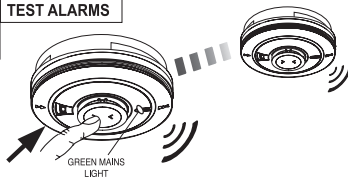
WIRE TO TERMINALS ON BASEPLATE AND FIX BASEPLATE TO CEILING USING THE FIXINGS PROVIDED

3 SLIDE ON ALARM



SLIDE ALARM ONTO BASEPLATE. A CLICK SHOULD BE HEARD AS THE TAMPER-PROOF CATCH ENGAGES. SWITCH ON MAINS

4 TEST ALARMS



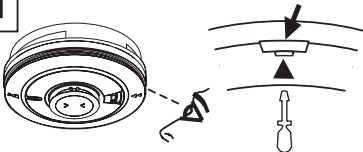
PRESS AND HOLD THE TEST BUTTON ON THE ALARM. CHECK THE ALARM AND ANY INTERCONNECTED UNITS SOUND.

**ATTENTION: THIS SECTION IS ONLY A GUIDE.
PLEASE READ FULL INSTRUCTIONS BEFORE INSTALLATION**

1.2 Alarm Removal

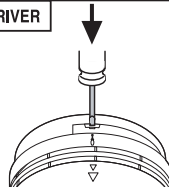
*** DISCONNECT MAINS BEFORE REMOVAL ***

1 LOCATE REMOVAL SLOT



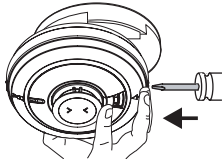
LOCATE THE ARROW ON THE FRONT FACE OF THE ALARM
THE SLOT IS LOCATED DIRECTLY ABOVE THE ARROW

2 INSERT SCREWDRIVER



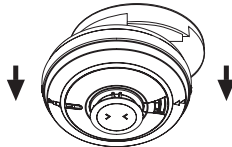
INSERT A FLAT-BLADED SCREWDRIVER HORIZONTALLY
ABOUT 10mm INTO THE CENTRE OF THE REMOVAL SLOT

3 SLIDE ALARM OFF BASE



WITH THE SCREWDRIVER STILL INSERTED, PUSH THE LOWER
HALF OF THE ALARM AWAY FROM THE SCREWDRIVER, IN THE
DIRECTION OF THE ARROW ON THE COVER

4 REMOVE ALARM



HOLD THE LOWER HALF OF THE ALARM AND REMOVE FROM
THE BASE PLATE BY LOWERING THE ALARM TOWARDS
THE FLOOR

2. How many Alarms to install

- Categories & Grades -

The ideal system would consist of Multi-Sensor Fire Alarms installed throughout the dwelling apart from the kitchen which should have a Heat Alarm installed (Note: Alarms should not be installed in toilets/bathrooms).

The Multi-Sensor Alarm can be installed for superior performance anywhere the regulations specify an Optical Smoke Alarm or an Ionisation Smoke Alarm.

(The Ei2110e Multi-Sensor Fire Alarm can also be used and interconnected with any Ei Electronics mains powered compatible Alarm if necessary).

The advice here follows the guidance in British Standard BS 5839-Part 6:2013 in general (for further information see the BS standard itself).

The main reason for fitting Alarms in dwellings is to ensure that when there is a fire, sufficient early warning is given so that everybody can escape safely.

This means that the fire Alarms should ideally be located in all escape routes and in all rooms that contain potential sources of fire. Another important consideration is that the alarm should be heard throughout the house – particularly in the bedrooms.

It is also important that nuisance/false alarms are minimised to ensure the Alarms are not disabled or ignored.

BS 5839-Part 6:2013 gives guidance on:

- how many Alarms to install
- what type of Alarm to use
- where to position Alarms

The above points will depend on the type of dwelling to be protected and the level of fire risk.

Fire Risk Assessment

The 'Grade' and 'Category' of system that should be installed depends on the fire risk. It is therefore recommended that a Fire Risk Assessment is undertaken. The Risk Assessment would be based on a combination of probabilities:

- fire occurring
- injury or death to occupant
- system operating correctly with a fire
- early detection and warning to occupants in the event of a fire.

The greater the risks, the more comprehensive and reliable systems are needed.

2.1 LD Systems

LD (**L**ife protection in **D**wellings) systems define the level of fire protection required for households, depending on the fire risk and regulations. Ei Electronics recommends that an LD1 system be installed for optimum protection.

Please see following pages for detailed information.

LD1 OPTIMUM PROTECTION

for dwellings where occupants may be at high risk (e.g. elderly)

Optimum Protection LD1: As LD2, but in addition Smoke or Heat Alarms should be located in all rooms and other areas of the dwelling.
(apart from toilets or bathroom)
Interconnect all alarms

LD2 BASIC PROTECTION

for new or materially altered dwellings or existing dwellings with poor structural fire precautions

Basic Protection LD2: Smoke or Heat Alarms in all rooms or areas that present a high fire risk to occupants.
Interconnect all alarms



Smoke Alarms located:

- on each storey
- every 7.5 m of hallways and escape routes
- within 3m of all bedroom doors
(apart from toilets & bathrooms ☒)



Heat Alarms located in:

- each Kitchen
(Heat Alarms must be within 5.3m of potential fire sources)



Smoke or Heat Alarms located in:

- each Living room (i.e. most frequently used daytime room)



Multi-Sensor Fire Alarm



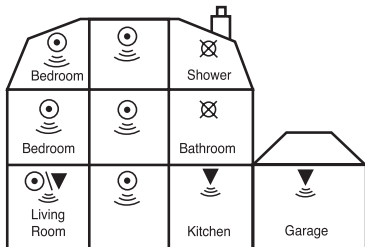
Heat Alarm



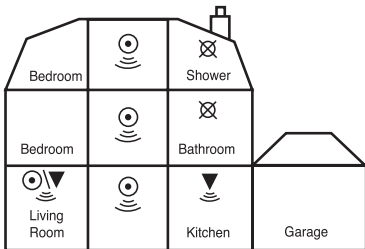
do not fit alarm

LD3 MINIMUM PROTECTION

Minimum Protection LD3: Alarms in all hallways, stairways and circulation areas that form part of the escape routes from the dwelling.



Multi Storey Dwelling LD1



Multi Storey Dwelling LD2

2.2 Selecting Alarm Type

	Alarm Type	
	Multi-Sensor Fire Alarm	Heat Alarm
<u>Locations</u>		
Hall, Corridors, Escape Routes	✓✓✓	X
Kitchens	X	✓✓✓ ²
Living Rooms	✓✓✓	✓ ¹
Bedrooms	✓✓✓	X
Shower / Bathroom	X	X
<u>Fire Response</u>		
Slow Smouldering Fires (polyurethane foam, ignited bedding etc.)	✓✓✓	X
Fast Flaming Fires (flaming wood/plastic, oil, solvents, chip pans etc.)	✓✓ ³	X
Temperature >58°C	✓✓✓ ⁴	✓✓✓ ²
<u>Nuisance Alarm Immunity</u>		
Cooking Fumes	✓✓	✓✓✓
Steam, Condensation & Dust Build-up	✓✓	✓✓✓

X - Not Suitable ✓ - Good ✓✓ - Better ✓✓✓ - Best

1 Some Fire authorities (concerned with the slow response of Heat Alarms) advise that Smoke Alarms (or Multi-Sensor Alarms) should be fitted. This is acceptable according to BS 5839-6 provided there are clearly not going to be problems with nuisance alarms. Fit Heat Alarms only if nuisance alarms are very likely and it is acceptable that a warning will only be given by the Heat Alarm when there is a very significant flaming fire in the room. If the door(s) and windows are not closed to contain the fire and heat, it is extremely unlikely that the Heat Alarm would respond before a Multi-Sensor Alarm sited outside in the corridor.

2 In enclosed kitchens with doors closed.

3 Fast flaming fires generate considerable amounts of heat. The Multi-Sensor Fire Alarm has a heat enhanced optical smoke sensor to improve the response of the sensor to these types of fires.

4 Do not install in kitchens.

Improved Audibility

The effectiveness of a Category LD2 system can be significantly enhanced if an additional Alarm (interconnected) is installed in the master bedroom. This will help ensure that a responsible person will quickly be alerted to a fire and can arrange for an orderly evacuation of children and other vulnerable occupants.

2.3 Grade D System

The mains powered, with battery back-up, Multi-Sensor Fire Alarm covered by these instructions will meet the requirements for a Grade D System.

A Grade D system is needed for:

- new or materially altered dwellings up to three-storeys, with no floor over 200m² in area
- existing dwellings with poor structural fire precautions, up to three storeys, with no floor over 200m² in area
- Houses in Multiple Occupation (HMOs) of one or two-storeys, with no floor over 200m² in area
- Individual dwellings units of two or more rooms in HMOs

Check that a Grade D system is adequate for the dwelling into which the system is being installed.

3. Positioning Alarms

The locations must comply with applicable building regulations.

Hot smoke rises and spreads out, so a central ceiling position is the preferred location. The air is “dead” and does not move in corners, therefore alarms must be mounted away from corners. Place the Alarm:

- At least 300mm away from walls. See **Figure 1**.
- At least 300mm from any light fitting or decorative object which might obstruct smoke / heat entering the Alarm.

Note: Ceiling mounting is recommended - do not wall mount Alarms.

Sloping Ceiling

With a sloping or peaked ceiling install a Smoke Alarm within 600mm of the peak or a Heat Alarm within 150mm of the peak (measured vertically). If this height is less than 600mm for Smoke Alarms or 150mm for Heat Alarms it is regarded as being flat (see **Figure 2**).

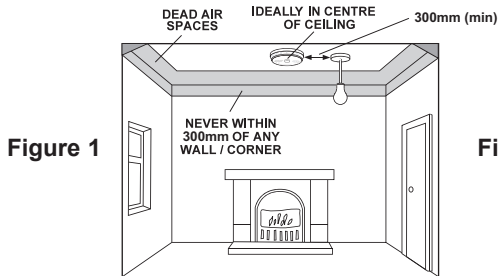


Figure 1

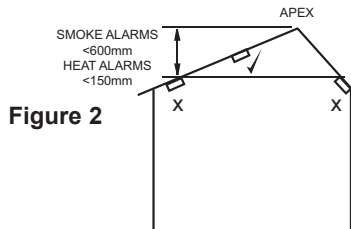


Figure 2

3.1 Locations To Avoid

DON'T place Multi-Sensor Fire Alarms in any of the following areas:

- *Bathrooms, kitchens, shower rooms, garages* or other rooms where the Alarm may be triggered by steam, condensation, normal smoke or fumes. Keep at least 6 metres away from sources of normal smoke/fumes.

DON'T place Multi-Sensor Fire Alarms in any of the following areas:

- Places where the normal temperature can exceed 40°C or be below 4°C (e.g. *attics, furnace rooms*, directly above *ovens* or *kettles* etc.) as the heat/steam could cause nuisance alarms.
- Near a *decorative object, door, light fitting, window moulding* etc., that may prevent smoke or heat from entering the Alarm.
- Surfaces that are normally warmer or colder than the rest of the room (e.g. *attic hatches*). Temperature differences might stop smoke or heat from reaching the Alarm.
- Next to or directly above *heaters* or *air conditioning vents, windows, wall vents* etc. that can change the direction of airflow and cause rapid temperature fluctuations.
- In very *high* or *awkward areas* (e.g. over stairwells) where it may be difficult to reach the Alarm (for testing, hushing etc.).
- Locate away from very *dusty* or *dirty areas* as dust build-up in the optical sensor chamber can impair performance. It can also block the insect screen mesh and prevent smoke from entering the chamber.
- Locate the Alarm at least 1m from *dimmer controlled lights and wiring* as some dimmers can cause interference.
- Locate the Alarm at least 1.5m and route wiring at least 1m away from *fluorescent light fittings* as electrical “noise” and/or flickering may affect the Alarm. Do not wire into the same circuit as fluorescent lights or dimmers.

- Do not locate in *insect infested areas*. Small insects getting into the optical sensor chamber can cause intermittent alarms. Insects and contamination on the heat sensor can increase its response time.

4. Installation

The Alarm is designed to be permanently mounted, using its own built-in terminal block to connect it to the mains. The mounting plate can be screwed directly to the ceiling. Alternatively it can be screwed to a standard junction box. It requires a current of 60mA. The Alarm must not be exposed to dripping or splashing. There are important markings on the underside of the Alarm.

Caution

Alternative Energy Sources - (Wind, Solar, UPS etc.)

This product is designed to be connected to a Pure or True Sine Wave 230 Vac supply. If connecting to a power source that utilises an inverter, e.g. PV solar panel, the Total Harmonic Distortion (THD) must be less than 5%. If in doubt please check with the manufacturer of the inverter.

This also applies to battery powered UPS (Uninterruptible Power Supply) inverters.

Light Dimmer Circuits – The Alarms **must not** be powered from a light dimmer circuit.

IMPORTANT PRECAUTION: Do not install Alarms in new or renovated buildings until all work is completed (including floor coverings) and the building has been fully cleaned. The wiring can be installed when appropriate. (*Excessive dust and debris from building work can contaminate the optical sensor chamber or heat sensor and cause problems. It will also invalidate the guarantee.*) If it must be

installed, first cover it completely, particularly around the edges, with a dust cover (eg. with the elasticated cover supplied or a plastic bag), until all cleaning is finished.

The Alarm must not be connected when the house wiring insulation is being checked with high voltages.

i.e. Do not use a high voltage insulation tester on the Alarm.

WARNING: Mains operated Alarms should be installed and interconnected by a qualified electrician in accordance with the Regulations for Electrical Installations published by the Institution of Electrical Engineers (BS7671). Failure to install this Alarm correctly may expose the user to shock or fire hazards.

WARNING: The alarm must be continuously powered 24 hours a day so it is important that it is not on a circuit that can be turned off by a switch.

Note: BS 5839-6: 2013 gives the following recommendations regarding the mains supply to be used in a Grade D system. The power supply for the Alarms should be derived from the public electricity supply to the dwelling. The mains supply to the Alarms should take the form of either:

- (a) an independent circuit at the dwelling's main distribution board, in which case no other electrical equipment should be connected to this circuit (other than a dedicated monitoring device installed to indicate failure of the mains supply to the Alarms); or
- (b) a separately electrically protected, regularly used local lighting circuit.

Alarms should be connected on a single final circuit, unless the means of interconnection is by radio signals (e.g. RadioLINK). (See BS 5839-6: 2013 for further information).

4.1 Mounting & Wiring Alarms

1. Select a location complying with the advice in previous sections (see pages 8-18).
2. Disconnect the AC mains supply from the circuit that is going to be used.
3. Lift off the wiring cover as shown in **Figure 3**.

The wiring must be connected to the terminal block on the mounting plate as follows:

L: Live - connect to the house wires coloured brown or marked L.

N: Neutral - connect to the house wires coloured blue or marked N.

IC: Interconnect - see Section 4.2 & Figure 6 for information on interconnection.

Note: *Wiring must be installed in compliance with local regulations.*

Warning: Mixing the Live and Neutral connections when interconnecting Alarms will damage all the Alarms - ensure that the same colours are used throughout the premises for Live, Neutral and Interconnect wires.

We strongly recommend that you check for the following **before connecting the Alarm:**

- check for Live and Neutral using a two probe tester.

FOAM CEILING GASKET
(MUST BE IN PLACE)

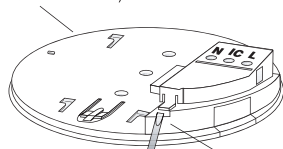



Figure 3

INSERT SCREWDRIVER
TO LIFT AND REMOVE
WIRING COVER

- check for Live using a neon tester.
- check that the Interconnect wire is NOT connected to Live, Neutral or Earth. **Do not use an Earth wire for the Interconnect line.**

N.B. The Alarm does not need to be earthed. However the terminal marked  is provided for the convenience of the installer so that any copper Earth wire or cable coloured green & yellow, can be safely terminated.

To interconnect Alarms connect all the IC terminals together as shown in **Figure 4** (see “**Interconnecting Alarms**” section).

4. If the mains wires are recessed, bring the wires through the rear hole in the mounting plate as shown in **Figure 4**.

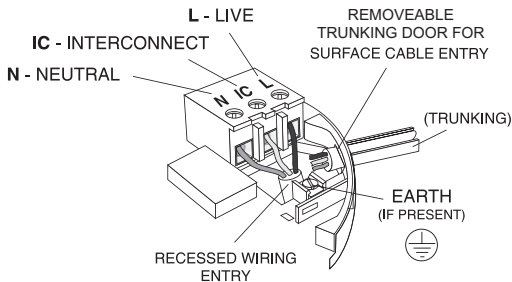


Figure 4

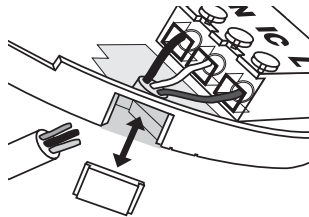


Figure 5

If the mains wires are being brought along the surface:

(a) position the mounting plate so the cable trunking is as shown in **Figure 4**.

(b) the mounting plate has a removable section, take it out to interface directly with 25mm trunking as shown in **Figure 5**. If interfacing to 16mm trunking carefully cut around the marked section, leaving the top intact and replace the section. (If you are not using surface wiring, the removable section must be left in place for electrical safety reasons).

There are two other positions which are also suitable for the surface wiring to enter (and exit) the Alarm, one next to the removable section and another directly opposite.

5. Carefully align the mounting plate and screw into place. Connect the wires to the terminal block. With recessed wiring, ensure the rear gasket seals around the edge of the hole in the ceiling or wall. This is to prevent air draughts affecting the smoke/heat entering the Alarm. If the hole is too large or the Alarm does not seal it, it should be sealed with silicone rubber or equivalent.

6. Replace the wiring cover & carefully line up the Alarm on the base and slide on.

7. Press and hold the test/hush button for 10 seconds. The horn will sound. Check that any interconnected Alarms also sound within this period. With the Multi-Sensor Alarm, the test button sounds the local horn and on release this horn stops immediately, and all the interconnected Alarms can then be heard in the distance as they will continue to sound for a further 3 seconds.

8. Connect the mains power to the Alarm circuit. Check the green light on the front of the Alarm is on.

9. Attach the '*Smoke Alarm*' identification label provided to the distribution board to identify the Alarm circuit.

10. Attach the 'Mains Smoke / Heat Alarms' label provided on or near the distribution board and write in date installed and the number of Alarms on the circuit.

Ensure the Alarm operates correctly - see “**TESTING & MAINTAINING YOUR ALARM**” section.

4.2 Interconnecting Alarms

Note: A maximum of twelve Ei2110e Multi-Sensor Fire Alarms can be interconnected in an Ei Electronics Alarm system. (Note the Multi-Sensor Fire Alarm Ei2110e can also be interconnected to Ei140RC / Ei160RC / Ei140e / Ei160e Series Smoke/Heat Alarms if required). It can also be interconnected to Ei261ENRC / 261DENRC Carbon Monoxide Alarms provided an Ei1529RC Remote Control Switch is incorporated in the system. Make electrical connections as shown in Figure 6.

The Ei2110e Multi-Sensor Fire Alarm can also be RF interconnected to other RF devices by installing an Ei100MRF RadioLINK⁺ Module. See the User manual for the Ei100MRF for further details on RF interconnection. The Ei2110e is also equipped to work in a hybrid system (combination of hard-wired & RF interconnected devices).

Please note in a hybrid system containing Ei160e Series Smoke/Heat Alarms we recommend using the Ei2110e as the hybrid link to the RF section of the system.

If you wish to connect more than twelve alarms contact your local helpline (see page 20).

Systems using more than 3 or 4 Alarms must be very carefully planned to ensure nuisance alarms are not excessive. e.g. from cooking fumes or steam. The following is suggested:

- An Ei Electronics Remote Control Switch should be incorporated into the system and be readily accessible to all occupants so that the source of an alarm can be quickly identified.

- All Alarms must be cleaned and maintained regularly.
- A qualified person must be on call to quickly remove any nuisance Alarms (i.e. Alarm with red light flashing rapidly) which are causing all the other Alarms to sound.

WARNING: Do not connect these Alarms to any other type of Ei Alarm (apart from those listed above) or to any other model produced by another manufacturer. Doing so may damage the Alarms and could result in a shock or fire hazard.

Wiring must be installed in compliance with local regulations.

In the UK it is recommended that the following coloured cores are used (for example with triple flat 6243YH cable).

230V supply	Brown
Neutral	Grey - sleeved blue at terminations
Interconnect	Black

In the Republic of Ireland consult the local regulations as they are different from the UK regulations.

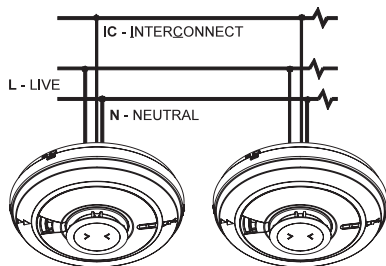


Figure 6

The interconnect wire (minimum 0.75mm² cable) must be treated as if it was Live. It should be insulated and sheathed.

A maximum of 250 metres of wire can be used (maximum resistance between detectors 50 Ohms).

Alarms should be interconnected only within the confines of a single family living unit. If they are connected between different units there may be excessive nuisance alarms.

Everybody may not be aware that they are being tested or that it is a nuisance alarm caused by cooking etc.

Ensure the Alarms operate correctly - see “**TESTING & MAINTAINING YOUR ALARM**” section.

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Tel: 01691 664100

www.aico.co.uk

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Tel:+353 (0)61 471277

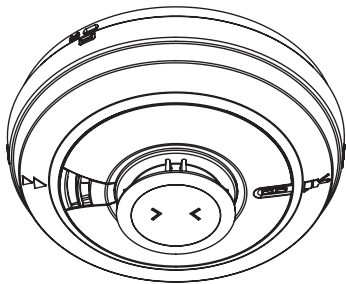
www.eielectronics.com

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230V~

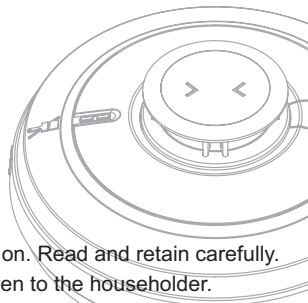
MULTI-SENSOR FIRE ALARM

with Rechargeable Lithium Cell Back-up



Ei2110e Series

Ei Electronics®
fire + gas detection



Contains vital information on unit operation and installation. Read and retain carefully.
If you are just installing this unit this leaflet **MUST** be given to the householder.

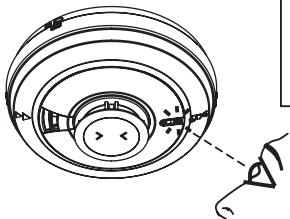
Instruction Manual

USER Section

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1. REGULAR CHECKS



Look for:

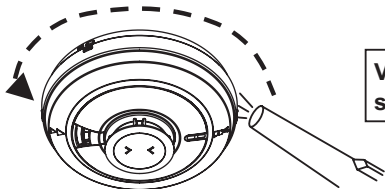
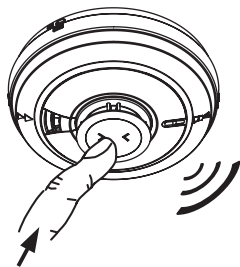
Constant green light



Red light flash every 40 sec.



Press **test button** for 10 sec.
Alarm will **sound loudly**.



Vacuum around
side vents to clean.



2. IMPORTANT INFORMATION



Do not paint your Alarm. Do not allow paint, water or dust to contaminate your Alarm.



Your Alarm is a mains 230V AC electrical appliance. Do not open or insert anything into the Alarm.



N.B. If the cause of an alarm is uncertain then it should be deemed to be an actual fire and the dwelling should be evacuated immediately.



Regularly check that the green mains indicator light on the cover is on.



Test monthly - press and hold the Test/Hush button on the Alarm for 10 seconds. The Alarm will sound loudly and the red light on the cover should flash rapidly. All the other interconnected Alarms should sound.



If the Alarm beeps and the yellow light flashes at the same time the battery is depleted – ensure green mains power light is on.



If a nuisance alarm occurs, press the Test/Hush button to silence the Alarm for 10 minutes.



Clean your Alarm regularly. This will reduce the risk of false alarms.



Remove or completely cover your Alarm when decorating to prevent dust or other contamination damaging the Alarm.



If your Alarm sounds for no reason and will not reset, it can be removed by releasing the clip on the base.
(see "**ALARM REMOVAL**" in the **INSTALLER** section).

3. Ei2110e INDICATOR SUMMARY

Normal Operation	Action	Red LED	Yellow LED	Sounder
Power up	Slide on Base	1 Flash	1 Flash	Off
Standby		1 Flash every 48 Sec	Off	Off
Sensing Fire		Rapid flashing (0.5 sec)	Off	Full Sound
Sensing Fire Interconnect		Off	Off	Full Sound
Fault Mode	Action	Red LED	Yellow LED	Sounder
Low Battery		Off	1 Flash every 48 Sec	1 Beep with Flash
Faulty Smoke Sensor		Off	2 Flashes every 48 Sec	2 Beeps with Flash
Silence Sounding Alarm	Press & Release Button	1 Flash every 8 Sec	Off	Off for 10 Minutes
Test Mode	Button Action	Red LED	Yellow LED	Sounder
Test Smoke Alarm	Press Button	Rapid Flashing (0.5 Sec)	Off	Full Sound
Diagnostic Mode	Button Action	Red LED	Yellow LED	Sounder
Predict Low Battery	Press & Hold Button	Off	1 Flash	1 Beep
Predict Faulty Sensor	Press & Hold Button	Off	2 Flashes	2 Beeps
Predict End of Life (EOL)	Press & Hold Button	Off	3 Flashes	3 Beeps
Predict Contaminated Chamber	Press & Hold Button	Off	4 Flashes	4 Beeps
Alarm OK	Press & Hold Button	Rapid Flashing (0.5 Sec)	Off	Full Sound
Alarm Memory	Button Action	Red LED	Yellow LED	Sounder
24 Hour Memory		2 Flashes every 48 Sec	Off	Off
Long Term Memory	Press & Hold Button	Rapid Flashing (0.5 Sec)	Off	Rapid Chirping

4. MULTI-SENSOR FIRE ALARM FEATURES

The state of the art Ei2110e Multi-Sensor Fire Alarm, with its Heat enhanced Optical Smoke Sensor, has a significantly improved performance as described below.

1. Faster Response to a wider range of fires -The combination of the ultra fast temperature sensing thermistor and the high performance optical sensor within the Alarm, enhances the fire sensing performance such that the Alarm detects all the 7 different Test Fires (TF) specified in the standard BS ISO 7240-15: 2014. These Test Fires are designed to produce different levels of smoke/heat and as such are a good test of the Alarm's performance to the different fires that could possibly occur in the home.

2. Reduced Nuisance Alarms - The Ei2110e can tolerate up to 50% higher levels of cooking fumes and steam when compared with normal optical sensor Alarms.

3. Increased Longevity and Ruggedness - The Ei2110e can tolerate up to 100% more dust and contamination build-up when compared with normal optical sensor Alarms. This is due to the unique automatic DUST* compensation built into the Alarms which monitors the contamination in the smoke sensing chamber and adjusts the alarm trigger point accordingly. *DUST – Dust Ups Sensor Threshold.

Additionally, the optical sensor chamber features a fine mesh insect screen that is bonded to the plastic of the chamber. This significantly improves immunity to insect contamination.

4. Alarm Memory - After an alarm activation, the red alarm light will flash twice (1 second apart) every 48 seconds to indicate that the Alarm has sounded in the previous 24 hours. Additionally, pressing the test button on this Alarm will cause it to emit short, rapid beeps instead of the normal alarm sound. Both these features allow easy identification, for example, of the source of nuisance alarms during the night.

5. RadioLINK⁺ Upgradeable - The Ei2110e has modular RF capability when used in conjunction with the Ei100MRF RadioLINK⁺ Module. This feature allows the Ei2110e to communicate with other RF devices as an alternative to a hard-wired interconnection. The Ei2110e can function in RF, hard-wired or hybrid systems. For more information on the added RadioLINK⁺ features please visit www.eielectronics.com.

6. AudioLINK - The Ei2110e is equipped with the AudioLINK feature. This allows for the download of information such as a record of any alarm incidents / battery status / chamber contamination levels from the Ei2110e using the AudioLINK smart phone app. For more information on this feature please visit www.eielectronics.com.

5. TESTING & MAINTAINING YOUR ALARM

INSPECTION & TESTING PROCEDURE

Check **all** your Alarms monthly, and also after initial installation or after re-occupation (e.g. following a holiday):

- (i) Check that the **green mains indicator light** is on. (If it is off check circuit breakers, fuses and wiring etc.) Check the red light on the cover flashes every 48 seconds.
- (ii) Press the **test button** for up to 10 seconds and ensure that the Alarm sounds. This tests the sensors, electronics and sounder are working. A red light on the cover will flash while the Alarm is sounding. The Alarm will stop when the button is released. Pressing the test button simulates the effect of smoke and heat during a real fire and is the best way to ensure the Alarm is operating correctly.

WARNING: DO NOT TEST WITH FLAME

This can set fire to the Alarm and damage the house

We do not recommend testing with smoke or heat as the results can be misleading unless special apparatus is used.

(iii) Check for any sign of **contamination** such as cobwebs or dust and clean the Alarm as described in the “**CLEANING YOUR ALARM**” section, if necessary.

(iv) **Interconnected Alarms only** - Test the first unit by pressing the test button for 10 seconds. All the Alarms should sound within 10 seconds of the first horn sounding. After releasing the test button, the local horn will stop sounding immediately and the interconnected Alarms will be heard sounding in the distance for a further 3 seconds. The red light on the first Alarm only will flash about twice a second. Check all the other Alarms similarly in turn.

(v) Check the functioning of the **mains battery back-up** directly **after installation** and then **at least yearly** as follows:

- Turn off the mains power at the distribution board and check that the green indicator light is extinguished.
- Press the Test/Hush button for up to 10 seconds and ensure the horn sounds loudly.
- Monitor the Alarm over a 3 minute period for any beeps.

Turn on the mains supply at the distribution board only if the Alarm passes the above test.

If the Alarm is beeping

The Alarm automatically monitors the battery every 48 seconds to ensure that it is satisfactory. If it is depleted it will give a short beep with an amber light flash every 48 seconds.

(i) Check that the green mains power light is on. If it is off the Alarm is not receiving mains power and is being powered from its internal back-up cells. The beeps indicate that these cells are depleted. The cells are not replaceable. Check fuses, circuit breakers and wiring to determine the cause of the interruption to the mains power supply. If in doubt contact a qualified electrician. Once mains power is reinstated, the beeps should cease within 2 hours as the cells charge up. Fully charged, the cells will provide up to 2 months back-up without mains power.

(ii) If the Alarm beeps twice with 2 amber light flashes at the same time it indicates a problem with the smoke sensor or the heat sensor - see **“GETTING YOUR ALARM SERVICED”** section.

If all of the above possible causes of beeps have been ruled out, but the beeping has still persisted for over 2 hours with the green light on, there may be some other problem with the Alarm. The Alarm must be returned for repair or replacement - see **“GETTING YOUR ALARM SERVICED”** section.

The entire Alarm must be replaced if it is over 10 years old (see “replace by” date on the label on the side of the Alarm).

6. CLEANING YOUR ALARM

WARNING: *Electrical shock hazard. Disconnect the AC mains power at the fuse box or circuit breaker powering the Alarm before following the cleaning instructions.*

Clean your Alarm regularly. In dusty areas it may be necessary to clean the Alarm more frequently. Use the narrow nozzle attachment of your vacuum cleaner to remove dust, insects and cobwebs from the sides and cover slots where the smoke/heat enters. To clean the cover, wipe with a damp cloth then dry thoroughly with a lint free cloth.

WARNING: Do not paint your Alarm.

Automatic Dust Compensation.

The Alarm monitors the contamination build-up in the chamber and then slowly compensates for it over an extended period - this is to ensure that a slow burning smouldering fire over a long period is not confused with dust build-up.

If the contamination has occurred quickly (e.g. due to dust from carpets being replaced) remove the Alarm from the ceiling, leave it disconnected for 5 minutes, then reinstall the Alarm (the air must be clean i.e. dust and smoke free). The dust compensation will now operate quickly within 45 seconds.

Other than the cleaning described above, no other customer servicing of this product is required. Servicing/repairs, when needed, must be performed by the manufacturer.

All Alarms are prone to dust and insect ingress which can cause false alarms or failure to alarm.

The latest design, materials and manufacturing techniques have been used in the construction of our Alarms to minimize the effects of contamination. However it is impossible to completely eliminate the effect of dust and insect contamination, and therefore, to prolong the life of the Alarm you must ensure that it is kept clean so that excess dust does not build up. Any insects or cobwebs in the vicinity of the Alarm should be promptly removed.

In certain circumstances even with regular cleaning, contamination can build up in the smoke sensing chamber causing the Alarm to sound or fail. If this happens the Alarm must be returned to us for servicing or replacement. Contamination is beyond our control, it is totally unpredictable and is considered normal wear and tear.

For this reason, contamination is not covered by the guarantee.

Hush Feature

The Alarm has a combined Test/Hush Button to help you control nuisance false alarms.

To silence a false alarm, press the Test/Hush Button located on the cover. This condition allows unwanted alarms to be silenced for a period of approximately 10 minutes.

When in 'Hush' mode the Alarm will flash the red light every 8 seconds (instead of the normal 48 seconds) to indicate the sensitivity is reduced.

On interconnected Alarms, pressing the Test/Hush Button on the Alarm sensing smoke or fire (i.e. the one with the red light flashing rapidly) will silence all Alarms. Pressing the Test/Hush Button on any other Alarm will not cancel the alarm.

The Alarm will reset to normal sensitivity at the end of the 10 minute 'Hush' period. If additional silenced time is required, simply push the Test/Hush Button again.

7. ALARM MEMORY

After an alarm activation, the red indicator light will flash twice (1 second apart), every 48 seconds. This will continue for the following 24 hours to indicate that the Alarm has previously activated. . Additionally, pressing the test button on this Alarm will cause it to emit short, rapid beeps instead of the normal alarm sound. Both these features allow for easy identification, for example, of the source of nuisance alarms during the night. This memory can be very helpful after the entire system has gone into alarm and then stopped, for no obvious reason. After 24 hours, the Alarm memory will automatically reset. Alternatively, pressing the Test/Hush button will also reset the memory.

Once the Alarm has been identified, appropriate action can be taken e.g. ensure kitchen or bathroom doors are kept closed to prevent cooking fumes or steam reaching the Alarm, locate the Alarm further away from the source of fumes, replace the Alarm if its thought to be defective or remove the unit in the short term.

8. IMPORTANT SAFEGUARDS

When a fire Alarm system is installed, basic safety precautions should always be followed, including those listed below:

- Please read all instructions.
- Rehearse emergency escape plans so everyone at home knows what to do in case the Alarm sounds. Further information can be obtained from your local fire prevention officer.
- To maintain sensitivity to smoke/heat, do not paint or cover the Alarm in any manner and; do not allow cobwebs, dust or grease to accumulate.
- If the Alarm has been damaged in any way or does not function properly, do not attempt a repair. Return the Alarm - see “**GETTING YOUR ALARM SERVICED**” section.
- This appliance is only intended for premises having a residential type environment.
- Fire/Smoke/Heat Alarms are not a substitute for insurance. The supplier or manufacturer is not your insurer.
- Do not dispose of your Alarm in a fire.

9. PLANNING YOUR ESCAPE ROUTE

Use the Test/Hush Button on the Alarm to familiarise your family with the alarm sound and practice fire drills regularly with all family members. Draw up a floor plan that will show each member at least 2 escape routes from each room in the property.

Children tend to hide when they don't know what to do. Teach children how to escape, open windows, and use roll up fire ladders and stools without adult help. Make sure they know what to do if the Alarm goes off.

1. Check room doors for heat or smoke. Do not open a hot door. Use an alternate escape route. Close doors behind you as you leave.



2. If smoke is heavy, crawl out, staying close to floor. Take short breaths, if possible, through a wet cloth or hold your breath. More people die from smoke inhalation than from flames.



3. Get out as fast as you can. Do not stop for packing. Have a prearranged meeting place outside for all family members. Check everybody is there.



4. Call the Fire Brigade immediately on a mobile phone or from a neighbour's house. Make sure to call the Brigade for all fires no matter how small - fires can suddenly spread. Also call the Brigade even if the alarm is automatically transmitted to a remote manned centre - the link may have failed.



5. **NEVER** re-enter a burning house.



Limitations of Fire Alarms

Fire Alarms have significantly helped to reduce the number of fire fatalities in countries where they are widely installed. However independent authorities have stated that they may be ineffective in some circumstances. There are a number of reasons for this:

- The Alarms will not work if the mains power is off and the battery back-up is depleted.

NOTE: Constant exposure to high or low temperatures or high humidity may reduce the life of the battery.

- Alarms will not detect fire if sufficient smoke / heat does not reach the Alarm. Smoke / Heat may be prevented from reaching the Alarm if, for example, the fire is too far away, if the fire is on another floor, behind a closed door, in a chimney, in a wall cavity, or if the prevailing air draughts carry the smoke / heat away. Installing Alarms on both sides of closed doors and installing more than one Alarm as recommended in the '**INSTALLER SECTION**' of this booklet, significantly improves the probability of early detection. Installing an LD1 system gives the best coverage.
- The Alarm may not be heard.
- The Alarm may not wake a person who has taken drugs or alcohol.
- Alarms may not detect every type of fire to give sufficient early warning.
- Alarms don't last indefinitely. For example if there is a build up of contamination then the performance of the Alarm will be impaired.

It is recommended that Alarms are replaced after 10 years as a precaution (see 'replace by' date on the side of the Alarm).

10. GETTING YOUR ALARM SERVICED

If your Alarm fails to work after you have carefully read all the instructions, checked the Alarm has been installed correctly, and is receiving AC power (green light on) contact Customer Assistance at the address given at the end of this leaflet. If it needs to be returned for repair or replacement put it in a padded box and send it to “Customer Assistance and Information” at the nearest address given on the Alarm or in this leaflet. Do not slide the Alarm on to the mounting plate as this connects the battery and the Alarm may beep or alarm in the post. **State the nature of the fault**, where the Alarm was purchased and the date of purchase.

11. FIVE YEAR GUARANTEE

Ei Electronics guarantees this Alarm for five years from date of purchase against any defects that are due to faulty materials or workmanship. This guarantee only applies to normal conditions of use and service, and does not include damage resulting from accident, neglect, misuse, unauthorised dismantling, or contamination howsoever caused. This guarantee excludes incidental and consequential damage. If this Alarm should become defective within the guarantee period, it must be returned to Ei Electronics, with proof of purchase, carefully packaged, with the problem clearly stated. (see “**GETTING YOUR ALARM SERVICED**”) We shall at our discretion repair or replace the faulty Alarm.

Do not interfere with the Alarm or attempt to tamper with it. This will invalidate the guarantee, but more importantly may expose the user to shock or fire hazards.

This guarantee is in addition to your statutory rights as a consumer.

12. TROUBLESHOOTING

1. FREQUENT NUISANCE ALARMS OCCUR:

- (1) Close kitchen / bathroom door when in use.
- (2) Ensure that the Alarm is sited at least 6m away from sources of fumes.
- (3) Contamination from insects, paint or paint fumes may have occurred. Clean the Alarm - see "**CLEANING YOUR ALARM**" section.
- (4) If the problem persists, resiting of the Alarm should be considered.

2. ALARM SOUNDS FOR NO APPARENT REASON:

- (1) Identify the alarm source. For interconnected Alarms, only the unit sensing fire will have the red light flashing. Using the Memory Feature; If an Alarm has been activated, the red LED will flash twice (1 second apart) every 48 seconds for 24 hours (or until the test button is pressed, which ever is the shorter). If an optional Ei Electronics Control Switch is installed, press Locate when the system is sounding to identify the source of the alarm.
- (2) Check for fumes, steam etc. from the kitchen or bathroom. Paint and other fumes can cause nuisance alarms.
- (3) Press the Test/Hush button to silence the Alarm for 10 minutes.
- (4) If alarm does not stop, switch off the mains and remove the Alarm - see "**ALARM REMOVAL**" section. Only remove the Alarm with the rapidly flashing red light.

3. REGULAR OR IRREGULAR SINGLE BEEPS:

Check the green mains power light is on. If not, check the fuse, circuit breakers and wiring connections. If the green light is off, the internal back-up cells will deplete after some months and will need to be recharged. Reinstatement of the mains supply to the Alarm and the back-up cells will automatically recharge. If the mains has been reinstated for a number of hours and the beeps have not ceased, a fault may exist. Switch off the mains, remove the Alarm - (see "**ALARM REMOVAL**" section) and return it to the nearest address in this booklet - see "**GETTING YOUR ALARM SERVICED**" section.

If 2 beeps occur at the same time as 2 amber light flashes on the cover, then one of the sensors may be defective. Switch off the mains, remove the Alarm (see "**ALARM REMOVAL**" section) and return it to the nearest address given at the end of this leaflet - see "**GETTING YOUR ALARM SERVICED**" section.

4. INTERCONNECTED ALARMS DO NOT ALL SOUND:

- (1) Hold Test/Hush button for 10 seconds after first Alarm has sounded to ensure the interconnect signal is transmitted to all units.
- (2) One or more of the connections may not be correctly connected. We recommend you consult a qualified electrician.

see Indicator chart in Section 3 for further information on the status of the Alarm

The crossed out wheelie bin symbol that is on your product indicates that this product should not be disposed of via the normal household waste stream. Proper disposal will prevent possible harm to the environment or to human health. When disposing of this product please separate it from other waste streams to ensure that it can be recycled in an environmentally sound manner. For more details on collection and proper disposal, please contact your local government office or the retailer where you purchased this product.





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Ei Electronics, Shannon, Co. Clare, Ireland

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DoP No.15-0005

EN14604:2005 + AC:2008

Smoke Alarm Devices:

Ei2110e

Fire Safety

Nominal activation conditions/ sensitivity, response delay (response time) and performance under fire condition	Pass	Vibration resistance	Pass
Operational reliability	Pass	Humidity resistance	Pass
Tolerance to voltage supply	Pass	Corrosion resistance	Pass
Response delay and temperature resistance	Pass	Electrical stability	Pass

The Declaration of Performance No. 15-0005 may be consulted at www.eielectronics.com/compliance