Fire and CO

Alarm Controller

Model: Ei450



Instruction Manual

Read and retain carefully for as long as the product is being used. It contains vital information on the operation and installation of your Alarm Controller. The manual should be regarded as part of the product.
If you are just installing the unit, the manual must be given to the householder. The manual is to be given to any subsequent user.

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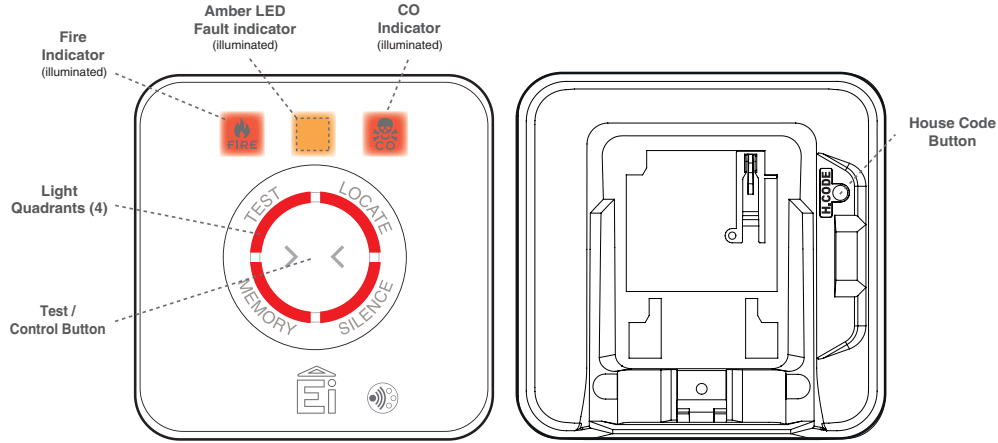
1. Introduction

The Ei450 single button Alarm Controller tests and controls Fire, CO and combined (Fire + CO) Ei Electronics RF Alarm systems.

Alarm Controller functionality

Function	Description
Test	All the Alarms can be tested from a centralised location
Locate	This will silence all the Alarms in the system except the one sensing Fire or CO
Silence	This will silence the source Alarm(s)
Memory	When flashing, indicates that a Fire or a CO Alarm has been activated
Fire Indicator	When illuminated, indicates that a Fire Alarm has been activated
CO Indicator	When illuminated, indicates that a CO Alarm has been activated
Fault Indicator	When flashing, indicates that the Alarm Controller has a fault and must be replaced

1.1 Overview



Front View of Controller

Rear View of Controller

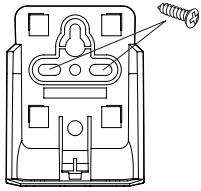
1.2 Technical Specifications

Supply Voltage	Power for life Lithium battery
Battery Capacity	CR2/3AZ, Lithium, 1600mAh
BLE Standard	Bluetooth 5.4
RF Protocol	RadioLINK Connect with RadioLINK fallback
RF Frequency	868.2 MHz (0.1% duty cycle) / 868.5MHz (1% duty cycle) / 2.4 GHz
RF Encryption	AES-128
RF Range	>100 meters in free air [1] (868 MHz) / < 5 meters (2.4 GHz)
Max RF Power	<14dBm (868 MHz) / < 2dBm (2.4 GHz)
Max RF system size	32 RF devices for RadioLINK Connect only systems or 12 RF devices for RadioLINK systems [2]
Receiver category	2
Visual indicators	Fire icon (Red LED) - Fire alarm triggered Fault indicator (Yellow LED) - Low battery, System fault or End of Life CO icon (Red LED) - CO alarm triggered (see Indicator Summary Table for more details)
Normal operating and storage temperature	-10°C - 40°C [3]

Normal operating and storage humidity	15% - 95% Relative Humidity [3]
Plastic material	PC, HIPS and ABS. UL94 HB rated
Dimensions	90mm x 90mm x 29mm
Weight	112g
Guarantee	5 years
Approvals	Compliant with Radio Equipment Directive 2014/53/EU and Safety standard EN62368-1

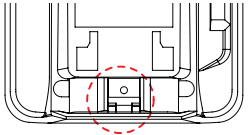
1. Obstructions of any sort will result in a reduction in range from the free space specification. The range may vary depending on installation.
2. Please contact us for further advice if additional RF devices are required.
3. Temperature and Humidity conditions are for normal operation and storage. Units will function outside these ranges as required by the specific product Standards. Extended exposure to conditions outside these ranges can reduce product life. For advice on prolonged operation outside these ranges consult the manufacturer.

2. Installation



Install the Alarm Controller mounting plate at an accessible point on the wall 1.4m +/- 0.2m from floor level. Consider an alternative location if the Controller will be operated by a disabled person.

Also consider security and chose a location where it will not be accidently or otherwise operated.



If you choose to make the Alarm Controller tamper proof remove the pip (plastic post) on the back of the Ei450 using a pliers or similar tool. **Do not do this until the house coding procedure has been completed!**

Once the mounting plate is installed, slide the Alarm Controller on the mounting plate to power it up. (NB: The Alarm Controller can also be powered up by pressing the House Code button at the back of the Alarm Controller for more than 1 second). The visual indicators will light up in the following sequence:



The quadrants will flash blue then amber every 60 seconds until the Ei450 is house coded. Once house coded, all lights will go off to indicate standby mode.

3. House Coding

The Ei450 must be house coded to all the other RF devices in the system for the system to function and to prevent interferences from unauthorised devices. Failure to house code the system may also result in a system malfunction. Several House Coding methods are available depending on the RF devices that make up the RF system as described below.

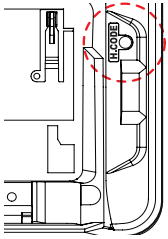
3.1 House Coding RadioLINK Connect devices with the SmartLINK app

If all the RF devices in the system being House Coded are RadioLINK Connect, the SmartLINK app can be used to House Code the devices together following the below steps:

1. Open the SmartLINK app.
2. Enable the Bluetooth communication by clicking twice in quick succession on the House Code button of the Ei450. The quadrants will flash white/blue alternatively rapidly. (If the quadrants flash either only blue or purple, the Ei450 has entered House Code mode. In this event, press the House Code button again and release as soon as the quadrants illuminate to exit House Code mode. Re-try to establish the Bluetooth communication by double-clicking quickly on the House Code button).
3. In the SmartLINK app, select "Add installation" and follow the steps outlined.

IMPORTANT: If a RadioLINK Connect device has been left powered but not housecoded for more than 4 hours, click twice on the House Code button in quick succession to enable the device to be added to the RadioLINK Connect system using the SmartLINK app.

3.2 Manually House coding RadioLINK Connect devices



Using a small screwdriver press and hold the House Code button on the Ei450 until the quadrants illuminate purple. Immediately release the button. The quadrants will flash Purple rapidly and then stop.

Put all other RadioLINK Connect Alarms and RF devices in the system in House Code mode (see relevant section in respective instruction manual). It is essential that each individual RF Alarm / device is put into House Code mode in its actual location. The RF devices will flash purple until all RF devices are known to each other, the relevant LED will then flash green.

To check that the system has been successfully housecoded check that the amount of green flashes on one RF device matches the number of RF devices in the system (i.e. 4 flashes if there are 4 RF devices in the system. For systems containing more than 10 RF devices, 1 long flash is equal to 10 units and 1 short flash is equal to 1 unit to facilitate the counting. For instance, an alarm system with 22 RadioLINK Connect devices will emit 2 long green flashes and 2 short green flashes.

If the LED indicator fails to flash green the correct number of times, then consult the **"Troubleshooting"** section of this instruction manual.

To complete the commissioning, the system must exit House Code mode.

To manually exit House Code mode press the House Code button on the Ei450. When the quadrants light up purple, release the button. This unit will then send an exit House Code signal to all the other RF devices to exit House Code mode.

After a short period the purple light will turn off and the system will return to standby mode (normal). Depending on the number of RF devices in the system this period could vary from 5 to 20 seconds.

Alternatively, the units will automatically exit House Code mode after 30 minutes. Once coded the system will not communicate with any other RF Alarms and RF devices outside the House Coded group.

3.3 House coding an RF system containing one or more RF devices that are not RadioLINK Connect.

If some RF devices in the system being house coded use a protocol older that RadioLINK Connect, the Ei450 will need to be house coded manually.

Using a small screwdriver press and hold the House Code button on the Ei450 until the quadrants illuminate purple[1]. Immediately release the button. The quadrants will flash rapidly Purple[1] and then stop.

Put all other RF Alarms and devices in the system in House Code mode (see relevant section in respective instruction manual). It is essential that each individual RF Alarm / RF device is put into House Code mode in its actual location. Note: When a RadioLINK Connect device detects an older RF device in House Code mode, the LED will change from flashing purple or green to blue.

To check that all RF devices have been successfully House Coded, count the number of blue flashes on each RF device. The number of blue flashes should correspond to the number of RF devices in the system. A system with 5 RF devices will result in 5 blue flashes. For systems containing more than 10 RF devices, the 10th flash is longer than the other flashes. For instance, an Alarm in a system with 12 RF devices will emit 9 short blue flashes, 1 long blue flash, and 2 short blue flashes.

Note: If the RF system includes Alarms with both Fire and CO sensors (ie Ei4050, Ei3028, etc.), there will be an extra blue flash corresponding to the 2 independent sensors in the Alarm head e.g. in a RF system with 4 devices, one of which is an Ei3028, the expected number of blue flashes in a successfully housecoded system is 5.

If any RF device fails to flash the correct number of times, then consult the **"Troubleshooting"** section of this instruction manual.

To complete the commissioning, the system must exit House Code mode.



The units will automatically exit House Code mode after 30 minutes. Once coded the system will not communicate with any other RF Alarms and devices outside the House Coded group.

To manually exit House Code press the House Code button on the Ei450. When the quadrants light up blue, release the button. This unit will then send an exit House Code signal to all the other RF Alarms and devices to exit House Code mode.

After a short period the blue light will turn off and the system will return to standby mode (normal). Depending on the number of RF Alarms and devices in the system this period could vary from 5 to 20 seconds.

[1] If the Ei450 is put back into House Code mode after having already been housecoded to an older RF device, it will flash blue.

3.4 Remote House Coding

If it is necessary to extend an existing RF system or an extra Alarm/device has to be added to a system, it can be done via the 'Remote House Coding' feature.
If all RF devices are RadioLINK Connect, pressing the House Code button on one RF device will put all other RF devices in House Code mode.

Otherwise, press the House Code button on the Ei450 and hold the button until the quadrants flash red, blue, green and then release. The Ei450 will now send an RF message to all the previously installed (compatible) RF devices to re-enter House Code mode.

Then, install and put the new Alarm/device you wish to add to the system into House Code mode and follow the steps previously listed in this section.

In a RadioLINK Connect system housecoded using the SmartLINK app. adding and removing RF devices from an existing system is done via the SmartLINK app.

IMPORTANT: Factory reset

Sometimes in order to resolve an RF communication issue, it may be necessary to reset and House Code the system again.

To reset the Ei450 press and **hold** the House Code button. The quadrants will flash blue or purple briefly and then go solid. After 5 seconds approx. the quadrants will start flashing blue or purple slowly. At this point release the House Code button. The Ei450 has now been reset. It will flash blue and amber once every 60 seconds until it is house coded again or for a maximum of 3 days.

To reset the other RF Alarms and devices in the system consult the appropriate instruction manuals.

4. Testing

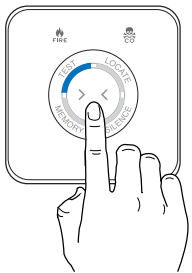
WARNING

Frequent testing of the system is advised to ensure its continued and safe operation. Guidelines and best practices for testing are as follows:

1. After the system is installed.
2. Once monthly thereafter.
3. After prolonged absence from the dwelling (e.g. after holiday period).
4. After repair or servicing of any of the systems elements or household electrical works.

Press and hold the button on the Alarm Controller until the TEST quadrant lights up blue. Keep the button pressed until all the Alarms in the system are sounding. Release the button. The Alarms will stop sounding after a short period.

For installations with Alarms that are far apart, remove the Alarm Controller from its mounting plate (if the unit has been tamper proofed, a screwdriver will be required to release the latch). Walk around the dwelling with the button pressed to verify that each Alarm is sounding. When testing is complete, release the button and place the Alarm Controller back on its mounting plate.



If the test fails go to **"Troubleshooting"** section.

NB: If the fault LED lights up when pressing the button, it indicates a low battery.

5. What to do in case of alarm

If there is a fire, immediately evacuate the premises and telephone the fire brigade.



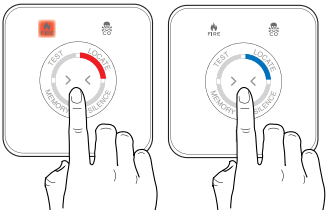
If the source of the alarm is not obvious and only if safe to do so, go to the Alarm Controller and check to see which indicator is illuminated, FIRE or CO. If the indicators are not lit, press the button to reactivate them.

If the CO indicator is illuminated, open doors and windows while evacuating the premises. Contact the appropriate authorities to report the incident.

5.1 LOCATE

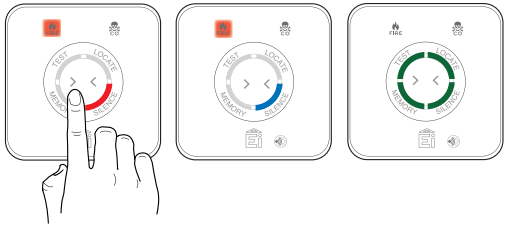
If the FIRE indicator is illuminated and there is no obvious fire, press the button on the Ei450. The LOCATE quadrant will change from red to blue.

After a 10 to 40 seconds period, all the Alarms in the system will stop sounding except for the source Alarm(s) that triggered the system.



5.2 SILENCE

If you are satisfied there is no fire but the Smoke/Heat Alarm is still continuing to alarm you may now silence the system. Wait until the SILENCE quadrant is flashing red and then press the button. The SILENCE quadrant will turn blue, after a delay the Alarm(s) will stop sounding and all quadrants on the controller will flash green momentarily to confirm this action has been carried out. N.B.: all quadrants will also flash green 3 times whenever the Ei450 receives a cancellation message.



Hold until segment turns blue

5.3 MEMORY

The alarm system can be activated by a temporary alarm condition and then return to normal standby mode without being noticed (if no one is present at the time of the alarm).
The Ei450 will indicate that this has happened by red flashes of the MEMORY quadrant and the FIRE or CO icon depending on what type of Alarm triggered the system as follows:

- For the first 2 minutes: the MEMORY quadrant, followed by the FIRE or CO Icon and then the MEMORY quadrant again will flash red in quick succession every 5 seconds.
- In case of a CO event, after the initial 2-minute period, the same flashing sequence (MEMORY, CO icon, MEMORY) will repeat, but at a rate of once every minute for the following 12 hour period. Should you observe this condition contact the appropriate authorities immediately.

To erase the memory, press the button.

Memory Indicator Summary Table			
Mode	Indicator sequence	Frequency	Duration
Memory (triggered by Fire alarm)		Every 5 seconds	0 - 2 Minutes
Memory (triggered by CO alarm)		Every 5 seconds	0 - 2 Minutes
		Every 60 seconds	2 Minutes - 12 Hours

6. Indicator Summary Table

When placing the Ei450 on the mounting plate					
All Quadrants			FIRE	Fault LED	CO
 x 1	 x 1	 x 1	 x 1	 x 1	 x 1

 = LED flashing

 = LED on solid

Standard Operation								
Mode	Action	Test Quadrant	Locate Quadrant	Silence Quadrant	Memory Quadrant	FIRE	Amber LED	CO
Standby		—	—	—	—	—	—	—
In Alarm	Activated by Fire Alarm	—	 x 1 every 60 s	—	—		—	—
	Activated by CO Alarm	—	 x 1 every 60 s	—	—	—	—	
Fault	Low Battery	—	—	—	—	—	 x 1 every 60 s	—
	System fault	—	—	—	—	—	 x 2 every 60 s	—
	End of Life	—	—	—	—	—	 x 3 every 60 s	—

Manual House Coding

Mode	House Code Button	All quadrants				
		Red	Blue ②	Amber	Green	Purple ②
					RadioLINK Connect	
Un-housecoded ①		—	 x 1 in quick succession every 60 s for 3 days	 x 1	—	—
Entering House code mode	Press and Release as soon as the LED lights up Purple/Blue ②	—		—	—	
In House code mode		—	 x④/ 5 s	—	—	 x④/ 5 s
In House code mode ③		—	—	—	 x④/ 5 s	—
Exiting House code mode	Press and Release as soon as the LED lights up Purple/Blue ②	—		—	—	
Factory Reset	Press until the LED starts flashing Purple/Blue ②. Then release.	—		—	—	
Entering Remote House Coding ⑤	Press until the LED flashes Red - Blue - Green. Then release.			—		—

① Until the Ei450 is housecoded, the quadrants will flash Blue and then Amber once every 60 seconds or for a maximum of 3 days. Purple flashing occurs in RadioLINK

② Connect only systems. Blue flashing occurs if system contains at least one RF device that uses an older RF protocol.

③ In RadioLINK Connect only systems, the quadrants will flash green every 5 seconds to indicate that all RF devices have been memorized and are now house coded together.

④ The number of flashes in house code mode is dependent on the number of devices being house coded.

⑤ The same behaviour will occur in both RadioLINK Connect systems and systems using older RF protocols.

 = LED on solid

 = LED flashing

7. Troubleshooting

Not all Alarms sound when the button is pressed to test the system

If, when checking the RF interconnection, some of the Alarms do not respond to the Alarm Controller remote control test, then:

1- Repeat House Code procedure (see **"House Coding"** section).

2- Relocate the Alarm Controller and/or rotate/relocate the RF Alarms. There are a number of reasons why the RF signals may not reach all the Alarms in your system. Try rotating the Alarms or relocating the Alarms (e.g. move them away from metal surfaces or wiring) as this can significantly improve signal reception.

Rotating and/or relocating the Alarms may move them out of the range of existing units even though they may have already been House Coded correctly in the system. It is therefore important to check that all Alarms are communicating in their final installed positions. If Alarms are rotated and/or relocated, we recommend that all Alarms are returned to the factory settings (see the respective use and care instructions). Then House Code all Alarms again in their final positions. The RF interconnection should then be checked again.

No Alarms sound when the button is pressed to test the system

If the Fault LED is flashing, the device must be replaced, otherwise, repeat the House Code procedure (see **"House Coding"** section).

Pressing the button when the silence quadrant is lit does not silence the Alarm

- If the source of the alarm is a CO Alarm, a CO Alarm can only be silenced once and only if it detects <150ppm CO
- If the Ei450 is part of an hybrid system containing both hardwired and RF interconnected devices, not all devices may be able to receive the silence message from the Ei450.

Device does not react

If the Ei450 is left unmounted for over 1 hour, it will switch off. Placing the Ei450 back on the mounting plate will re-activate it.

Device does not connect with SmartLINK app

1- Ensure the Bluetooth communication is enabled (see "**House coding RadioLINK Connect devices with the SmarLINK app**" section)
2- If one of the device being housecoded is not a RadioLINK Connect device, House Coding using the SmartLINK app is not possible

Fault LED is flashing

In this case, the device must be replaced (see **"Service and Guarantee"** section).

8. Service and Guarantee

8.1 Getting the Ei450 serviced

If, within the guarantee period, the Ei450 fails to work after having read carefully all the instructions, checked that the device has been installed correctly and is powered, contact us.

If you are advised to return your device, follow the instructions given and de-activate the Ei450 by removing it from its mounting plate. Place it in a padded box with the proof of purchase, your contact details and a note stating the nature of the fault.

8.2 Guarantee

Ei Electronics guarantees this device for five years from the date of purchase against any defects that are due to faulty materials or workmanship. If this device should become defective within the guarantee period, we shall at our discretion repair or replace the faulty unit.

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 batteries which have degraded due to external factors outside of reasonable use and/or Ei Electronics' control. This guarantee also excludes incidental and consequential damage.

This guarantee does not cover any product that has been connected to or used with non-Aico/Ei alarms, accessories, bases, or system components that are not designed for compatible connection, modified by a third party, or improperly fitted to or used in combination with unsupported third-party elements.

Do not interfere with the device or attempt to tamper with it. This will invalidate the guarantee and may result in malfunction.

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

Hereby, Ei Electronics declares that this Ei450 Alarm Controller is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU. The Declaration of Conformity may be consulted at www.eielectronics.com/compliance

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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