espire®

Alarm Powered by Mains Supply with a Sealed 10 Year Lithium Battery with Optional RF-Link Module
ES1CLV, ES1CHLV

UK Full Manual

General Information

Read the instructions before commencing installation. The user is to retain the instructions for future reference.

- Espire Alarms have been designed and developed for fixed residential installation and use.
- The Alarm is required to be permanently wired to a 230V mains electrical supply by a qualified and competent electrician in accordance with the local wiring regulations.
- Before commencing electrical work, ensure the mains isolator on the consumer unit is in the 'OFF' position to prevent electric shock and ensure the Alarm is complete with the Lock-in Wiring Base.
- After installation the Alarm is to be tested weekly: Press and hold the Test/ Hush button for at least 10 seconds to ensure the Alarm sounds and all interconnected Alarms activate.
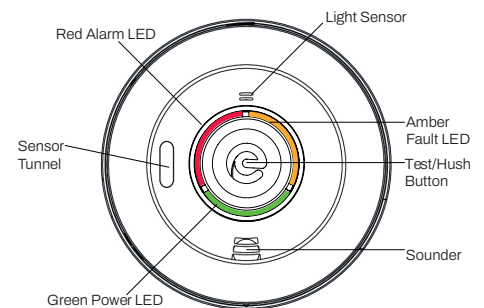

Product Description

- ES1CLV Carbon Monoxide Alarm Powered by Mains with a 10 Year Lithium Battery
- ES1CHLV Carbon Monoxide and Heat Multi-Sensor Alarm Powered by Mains with a 10 Year Lithium Battery

The Alarm is supplied with a Lock-In Wiring Base.
The RF-Link (ES1RF) module is supplied with the Alarm or available separately.
The Alarm's backup battery is sealed and non-replaceable

The CO Alarms response times are designed to act in accordance with BS EN 50291-1:2018;

Parts per Million (PPM) of CO	Time until Alarm
50	60-90 minutes
100	10-40 minutes
300	Must alarm in less than 3 minutes

Red Alarm LED · Light Sensor · Sensor Tunnel · Amber Fault LED · Test/Hush Button · Sounder · Green Power LED


Recommended Alarm Location

Alarm locations are to follow guidance provided in British Standard; BS EN 50292:2023.
A Fire Risk Assessment is used to determine the locations required.

The standard states that a carbon monoxide alarm should be fitted in:
- Rooms that have any fuel-burning appliances - such as an open fire, gas cooker or boiler
- Rooms where people spend the most time – such as living rooms
- Rooms where people sleep
- Any room that has a flue running through it

If there are a limited number of Alarms then cover the areas that are at the highest risk:
- Rooms with a flueless or open-flued appliance such as an open fire, gas cooker or portable heater – these appliances would leak carbon monoxide directly into the room producing the greatest risk
- Rooms where the occupants spend the most time (living rooms, bedrooms) – this is to ensure that they are protected against any carbon monoxide exposure in these areas and also hear the an Alarm as soon as possible.
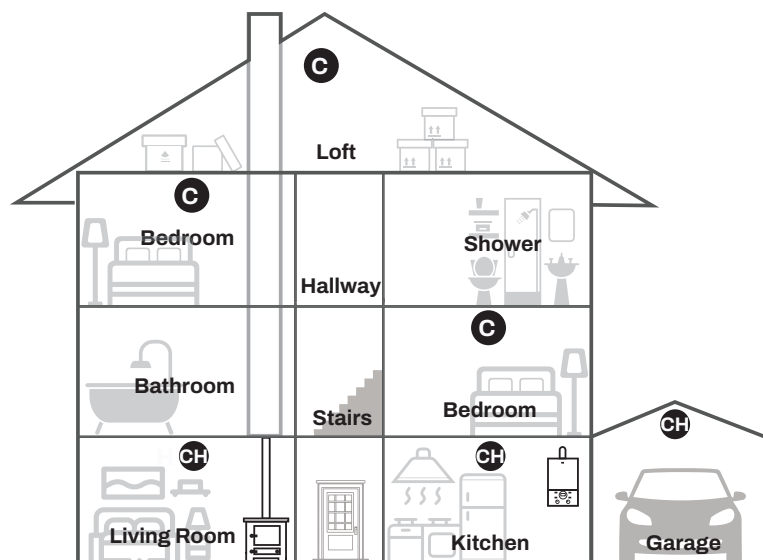
Multi Storey Dwelling Example

Diagram Key
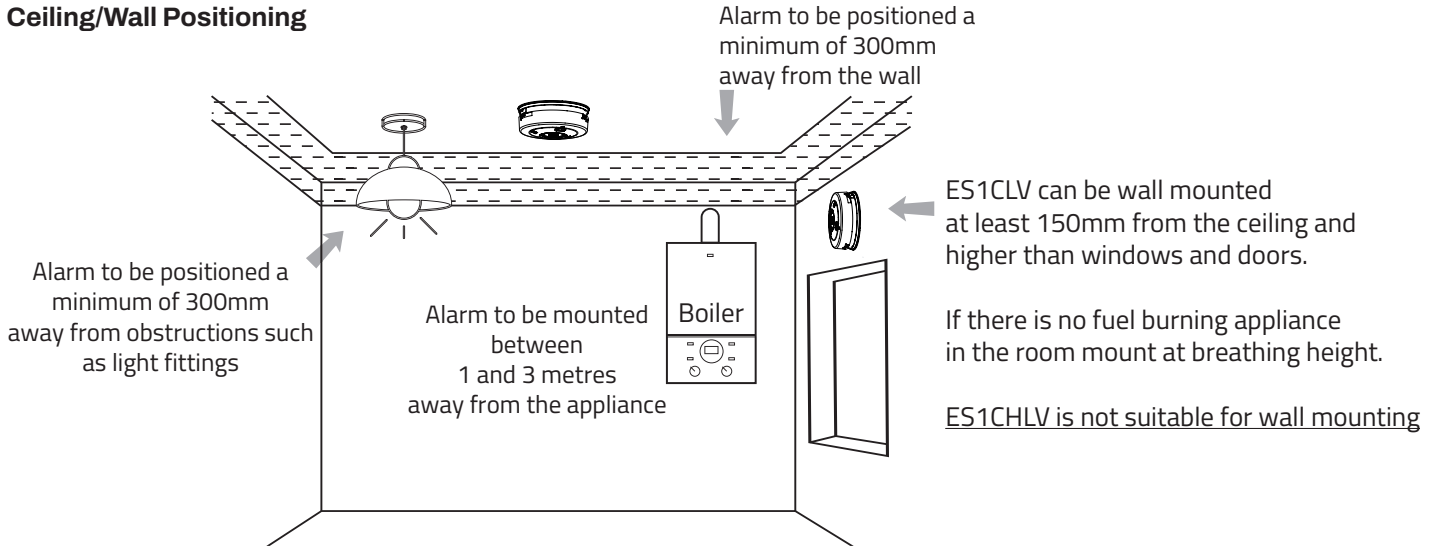
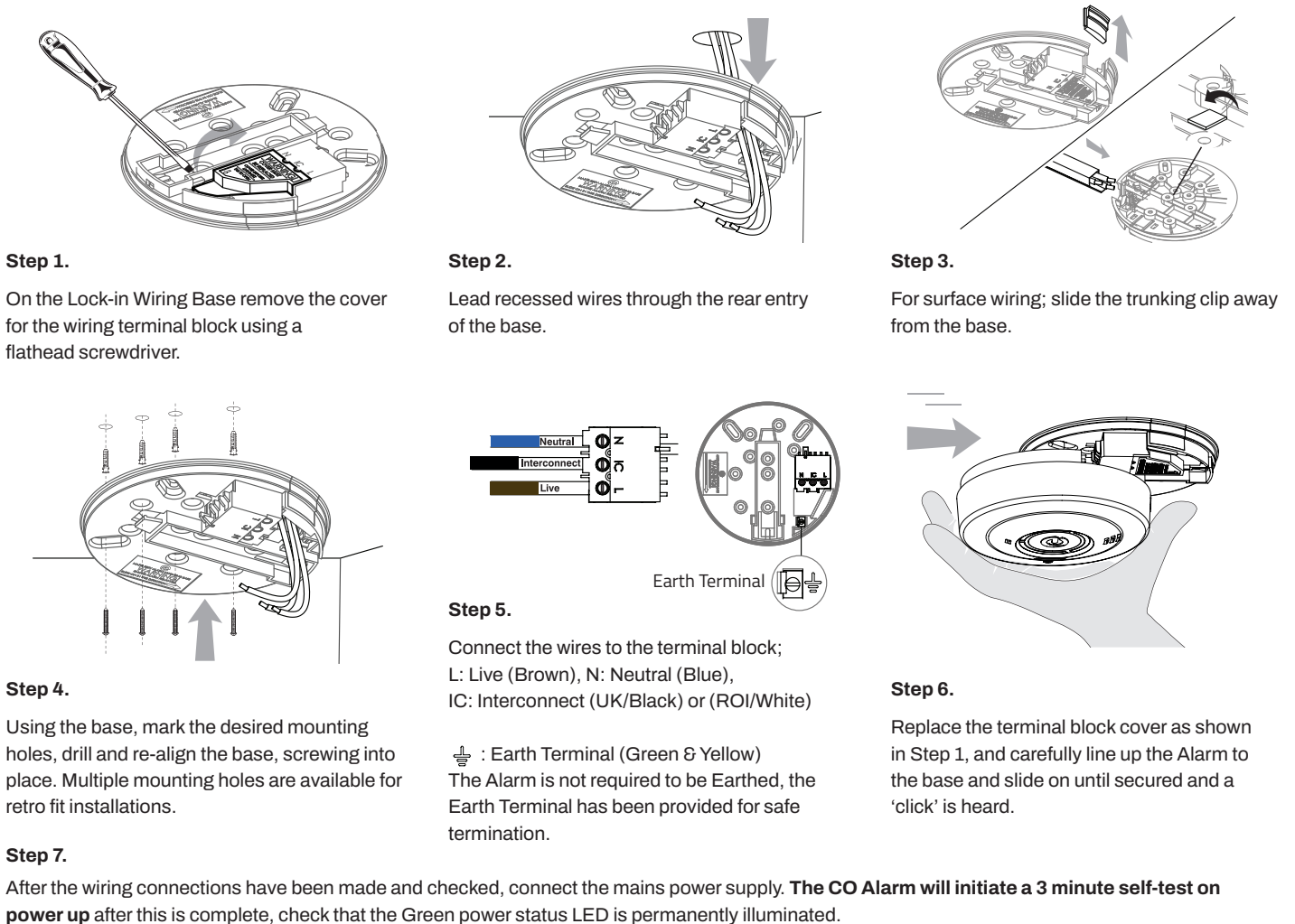C — ES1CLV CO Alarm   CH — ES1CHLV CO and Heat Alarm

Alarm Installation

Alarm Installations are to follow guidance provided in British Standard; BS EN 50292:2023.

- For ceiling mounting, the Alarm will be at least 300mm from walls and any objects such as light fittings. It should be mounted between 1 and 3 metres away from the appliance, on a flat surface, with no obstructions such as existing pipes or wiring
- Avoid the following locations: sources of high humidity, condensation or steam, such as bathrooms and shower rooms; extreme temperatures exceeding 40°C or below -10°C; close to sources of heat or cool air which cause sudden temperature fluctuations.

Ceiling/Wall Positioning

Alarm to be positioned a minimum of 300mm away from the wall

Alarm to be positioned a minimum of 300mm away from obstructions such as light fittings

Alarm to be mounted between 1 and 3 metres away from the appliance

Boiler

ES1CLV can be wall mounted at least 150mm from the ceiling and higher than windows and doors.

If there is no fuel burning appliance in the room mount at breathing height.

ES1CHLV is not suitable for wall mounting

Alarm Connections

Step 1.

On the Lock-in Wiring Base remove the cover for the wiring terminal block using a flathead screwdriver.

Step 2.

Lead recessed wires through the rear entry of the base.

Step 3.

For surface wiring; slide the trunking clip away from the base.

Step 4.

Using the base, mark the desired mounting holes, drill and re-align the base, screwing into place. Multiple mounting holes are available for retro fit installations.

Neutral
Interconnect
Live

Earth Terminal

Step 5.

Connect the wires to the terminal block;
L: Live (Brown), N: Neutral (Blue),
IC: Interconnect (UK/Black) or (ROI/White)

⏚ : Earth Terminal (Green & Yellow)
The Alarm is not required to be Earthed, the Earth Terminal has been provided for safe termination.

Step 6.

Replace the terminal block cover as shown in Step 1, and carefully line up the Alarm to the base and slide on until secured and a 'click' is heard.

Step 7.

After the wiring connections have been made and checked, connect the mains power supply. **The CO Alarm will initiate a 3 minute self-test on power up** after this is complete, check that the Green power status LED is permanently illuminated.

Alarm Testing

Test the Alarm after installation, and weekly thereafter.

Check that the Green power status LED is permanently illuminated.
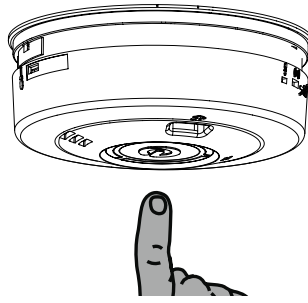
Step 1.
Press and hold the Test/Hush button for a minimum of 10 seconds.
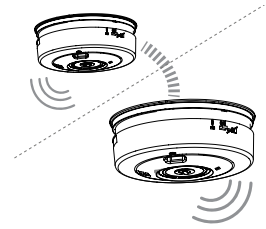
Step 2.
The Alarm will sound and the Red LED will flash, the Green and Amber LED will also be visible.
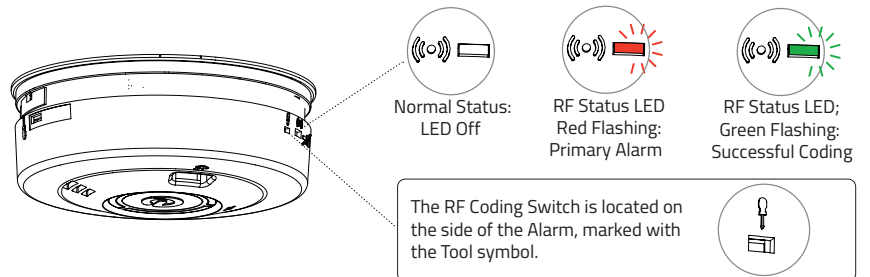
Interconnected Wiring Installation

- A maximum of 28 Alarms can be interconnected.
- In the event of an Alarm activation all Alarms will sound. The Alarm that triggered the activation will display the Red LED
- Do not connect Espire Alarms to any other type of Alarm produced by another manufacturer.
- Using the incorrect wiring connections is likely to damage all the Alarms connected to the system.
- The interconnect wire (minimum 1mm² cable) should be insulated and sheathed. A maximum of 300 metres of wire can be used.

L:Live
IC:Interconnect
N: Neutral
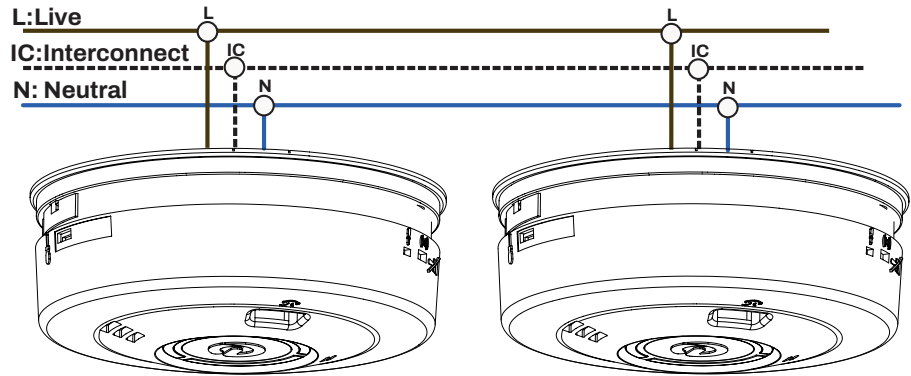
Heat Alarms must always be interconnected to a smoke or multi-sensor Alarm to ensure early warning.

RF-Link Introduction

Up to 28 Alarms can be interconnected wirelessly via the RF-Link function. Ensure the Alarms have been fitted with the RF-Link module. Prior to RF Coding, ensure that all system Alarms are correctly wired, powered and functioning independently.

Normal Status: LED Off

RF Status LED Red Flashing: Primary Alarm

RF Status LED; Green Flashing: Successful Coding

The RF Coding Switch is located on the side of the Alarm, marked with the Tool symbol.

RF-Link Coding

• As default the RF -Link modules are universally coded together. It is important to carry out the Alarm RF coding procedure to ensure the system operates independently from other nearby Espire Alarm systems.

• The first Alarm that enters RF Coding Mode will be assigned as the 'PRIMARY', all other Alarms will be assigned as a 'SECONDARY'. It is important to mark the PRIMARY Alarm with the label provided for future servicing of the system.

Alarm RF Coding
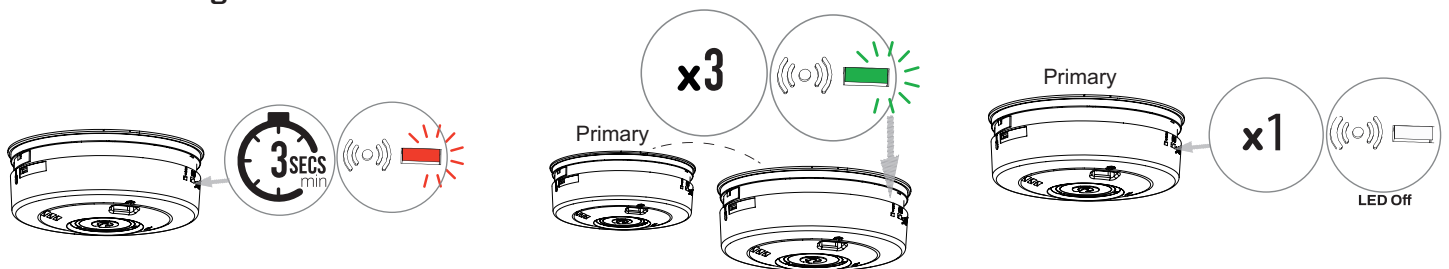
Step 1.
Using the supplied pairing tool press and hold the RF Coding Switch on one of the system's Alarms for a minimum of 3 seconds and release when the RF Status LED flashes Red.

Step 2.
While the PRIMARY Alarm is in coding mode, at the next Alarm press the RF Coding Switch 3 times and the RF Status LED will turn Green to confirm successful coding. Repeat the process on the remaining Alarms.
Note: RF Coding Mode will be active for 30 minutes before auto time out.

Step 3.
Once all the Alarms have been coded to the PRIMARY Alarm, return to the PRIMARY Alarm and single press the RF Coding Switch and the RF Status LED will stop flashing. RF Coding Mode has now ended.
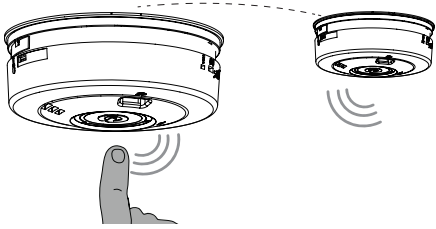
Step 4.

After coding is completed, test each individual Alarm and check that all interconnected Alarms sound.
Note: There may be up to a 10 second delay for the coded Alarms to respond after pressing the Test/Hush button.

Delete an RF-Link Coded Alarm

Press and hold the RF Coding Switch for 3 seconds and release when the RF Coding Status LED flashes Red.

Single press the RF Coding Switch to confirm deletion, the RF Status LED will stop flashing.

3 SECS min

Red Flash x1 **LED Off**
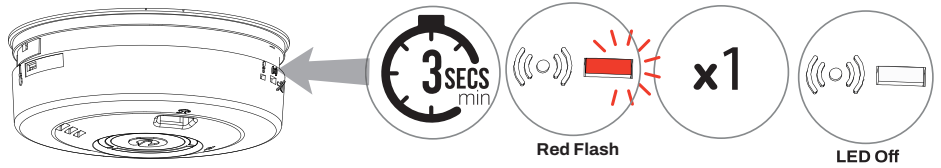
Important: If the PRIMARY Alarm is deleted , the system will require re-coding.

Alternative RF-Link System Setup

•   Hybrid System; Systems that incorporate hardwired and RF-Link Alarms, consult the RF-Link module manual (ES1RF) for limitations and further guidance.

•   Remote Control System; Systems that incorporate the Espire Remote Control, consult the Remote Control manual (ES1REM), for limitations and further guidance.

Alarm Maintenance and Cleaning

To avoid false alarms, clean the Alarm regularly to avoid debris build up from dust and insects . In dusty areas it may be necessary to clean the Alarm more frequently. Use a vacuum to remove dust build up and clean with a damp cloth, do not use cleaning products. Dry the Alarm thoroughly after cleaning.
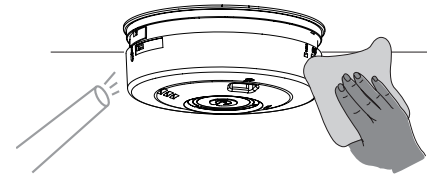
Alarm Removal

Isolate the mains power supply prior to the removal of the Alarm.
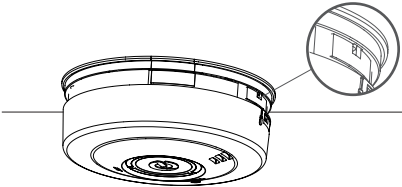
Step 1.

Locate the screwdriver symbol on the side of the Alarm.
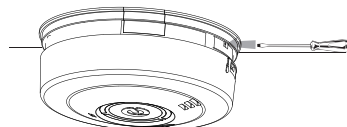
Step 2.

Insert a flathead screwdriver horizontally into the centre of the release lever.
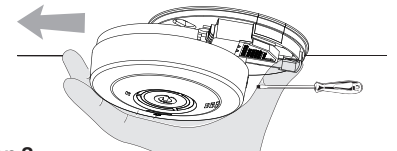
Step 3.

With the screwdriver in place, push away the lower half of the Alarm from the screwdriver.
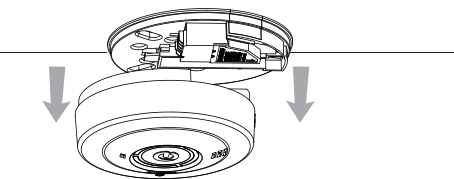
Step 4.

Hold the lower half of the Alarm and remove from the base.

When disposing of the Alarm, the Alarm must be recycled in accordance to the Waste Electrical & Electronic Equipment (WEEE) regulations.

Alarm Status Indication

Normal Mode

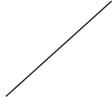| Green LED	Amber LED	Red LED	Sounder	Description
				A steady Green LED means that the power supply to the Alarm is normal. **Note:** The Auto Dim LED function automatically adjusts the brightness of the Green LED up to 50% in low light conditions such as at night to reduce distraction.

Alarm Activation

Green LED	Amber LED	Red LED	Sounder	Description
(lit)		(flashing)	3x	The Red LED flashes and the Alarm sounds 3 times to indicate a Heat Activation (Model: ES1CHLV)
(lit)		(flashing) 2 x 4 sec		The Red LED flashes twice every 4 seconds to indicate a CO Gas Level activation of >50PPM
(lit)		(flashing) 3 x 4 sec		The Red LED flashes three times every 4 seconds to indicate a CO Gas Level of >100PPM
(lit)		(flashing)	4x	The Red LED flashes and the Alarm sounds 4 times to indicate a CO Activation (>180PPM)
(lit)			(sounding)	An interconnected Alarm has been activated

Hush Mode

Green LED	Amber LED	Red LED	Sounder	Description
(lit)		(flashing) 2 x 8 sec		(i) During an Alarm activation if the 'Test/Hush' button is pressed the Alarm will enter Hush Mode* for 10 minutes before returning automatically to normal state. (ii) If the Red LED flashes twice every 8 seconds; the Alarm is in Hush mode and the sensor remains in activated state.

* Alarm cannot be Hushed if the CO concentration level is above 300ppm

Memory Mode

Green LED	Amber LED	Red LED	Sounder	Description
(lit)		(flashing) 2 x 50 sec		(i) The Red LED flashes twice every 50 seconds to indicate a Heat Alarm has stored an activation in the Alarm's memory. (ii) The Memory function assists identification of Alarms that have been activated.
(lit)		(flashing) 4 x 50 sec		The Red LED flashes four times every 50 seconds to indicate a CO Gas Level activation in the Alarm's memory of ≤50PPM
(lit)		(flashing) 6 x 50 sec		The Red LED flashes six times every 50 seconds to indicate a CO Gas Level activation in the Alarm's memory of ≤100PPM
(lit)		(flashing) 8 x 50 sec		The Red LED flashes eight times every 50 seconds to indicate a CO Gas Level activation in the Alarm's memory of ≤180PPM
(lit)		(flashing) 2x	(sounding) 2x	The memory will automatically clear after 24 hours of the activation or press and hold the 'Test/Hush' button until the Red LED flashes twice and the Alarm sounds twice.

Fault Mode

Green LED	Amber LED	Red LED	Sounder	Fault	Solution	Description
1 x 50 sec				AC Mains Off	Establish AC Mains Power	In the event that the mains supply is not detected by the Alarm; Check the circuit breaker, power supply wiring and connections. If there is any doubt contact a qualified electrician.
	1 x 40 sec		1 x 40 sec	AC Mains Off Low Battery Backup	Replace Alarm	If the backup battery is depleted and the Green LED is off, the Alarm will sound and the Amber LED flashes once every 40 seconds.
	1 x 40 sec		1 x 40 sec	Low Battery Backup	Replace Alarm	If the backup battery is depleted but the Green Power LED is on, the Alarm will sound and the Amber LED flashes once every 40 seconds.
	2 x 40 sec		2 x 40 sec	Alarm Fault	Replace Alarm	The Alarm performs automatic tests. If the Alarm detects an internal error the Alarm will sound and the Amber LED flashes twice every 40 seconds.
	3 x 40 sec		3 x 40 sec	End of Life	Replace Alarm	After the Alarm passes the 10th year of installation it performs and End Of Life cycle indicating that the Alarm is recommended to be replaced. The Alarm will sound and the Amber LED flashes three times every 40 seconds

Fault Hush Mode

Green LED	Amber LED	Red LED	Sounder	Description
	40 sec			(i) The Amber LED flashes every 40 seconds to indicate the Alarm is in Fault Hush mode for 12 hours (ii) Low battery fault and End of life fault can be hushed more than once. Sensor fault can only be hushed once

Product Safety

- This apparatus is designed to protect individuals from the acute effects of carbon monoxide exposure. It will not fully safeguard individuals with specific medical conditions. If in doubt consult a medical practitioner.

- Further guidance for the detection of Carbon Monoxide detector selection, installation, use and maintenance can be found in BS EN 50292:2023.

- The installation of the Alarm should not be used as a substitute for proper installation, use and maintenance of fuel burning appliances including appropriate ventilation and exhaust systems.

- The table below shows the physiological effects of exposure to increasing concentration of CO:

Parts per Million (PPM) of CO	Time until Alarm
100	Headache, sickness, nausea, fatigue and flu-like symptoms
200	Dizziness and headache within 2 to 3 hours
400	Nausea, frontal headache ,drowsiness confusion and rapid heat rate. Risk to life after over 3 hours of exposure
800	Severe headaches, convulsions, vital organ failures. Death possible within 2-3 hours.

- If there is any doubt about the cause of an Alarm activation, assume it was caused by an actual fire or gas event.

- Read and retain all instructions.

- Test Alarms regularly.

- Ensure emergency escape plans are in place (Contact the local fire prevention officer for more information).

- Do not paint or cover the Alarm.

- Commonly occurring materials, vapours or gases e.g cleaning fluids, paints , cooking operations, etc., may affect the reliability of the Alarm in the short or long term

- Do not attempt to repair the Alarm.

- Do not dispose of the Alarm in a fire.

- Do not expose the Alarm to wet and/or humid conditions, indoor use only.

- The Alarm shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the Alarm.

- Batteries (battery pack or batteries installed) shall not be exposed to excessive heat such as sunshine or the like.

- Any remote silencing feature shall only be used in line of sight of the Alarm

- Product operating temperature; -10°C~40°C, Humidity; ≤95%RH

Product Service

- If an Alarm fails to function as per the instructions contact the distributor.

- If advised to return the Alarm, ensure the wiring base is disconnected as the Test/Hush button will still be active. Complete all information that has been requested and return in a securely packaged shipment.

- The Alarm is covered by a 5-year warranty, the warranty period starts from the date an authorised distributor purchases the Alarm.

- The warranty covers defects arising from manufacturing processes. The warranty does not cover damage accidental or otherwise, contamination and unauthorised repair.

Product Limitations

Espire Alarms have been designed and developed for fixed residential installation and use.

- Alarms should be installed by a competent person and sited according to relevant standards.

- The Alarm will not work if a mains power supply is not present at the wiring terminal block and the sealed battery is depleted.

- The Alarm may not be heard for a number of reasons, for example; Alarm is positioned too far away from the occupants, occupants are impaired or high background noise. Interconnecting a number of Alarms improves the chances of hearing an Alarm.

- The Alarm may not detect every type of fire.

- Replace the Alarm by the date specified on the product or within 10 years of installation, whichever is first.

Product Installation

- To avoid serious risk of electric shock or fire hazards. Alarms are to be installed and interconnected by a qualified electrician in accordance with the local electrical Installations regulations BS 7671.

- Follow the guidance that is found in BS 5839-6:2019 which includes recommendations regarding the mains supply for 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:

(i) 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 the supply to a dedicated social alarm control unit)

(ii) or a separately electrically protected, regularly used local lighting circuit

- The Alarm is designed to be permanently fixed and to be supplied with a continuous mains supply using the provided wiring base.

- This Alarm is designed to be connected 230V 50Hz AC supply only.

- Energy sources using inverters must ensure the Total Harmonic Distortion (THD) is less than 5%.

- Do not power the Alarm from a lighting dimmer circuit or from a circuit that can be switched off.

- Do not perform insulation test on the Alarm.

- Ensure the Alarm cover that protects the Alarm has been removed only when the site location has been cleaned thoroughly. The Alarm will not function correctly with the cover fitted.

Product Specification

- Visit www.espireuk.com for the latest product data.