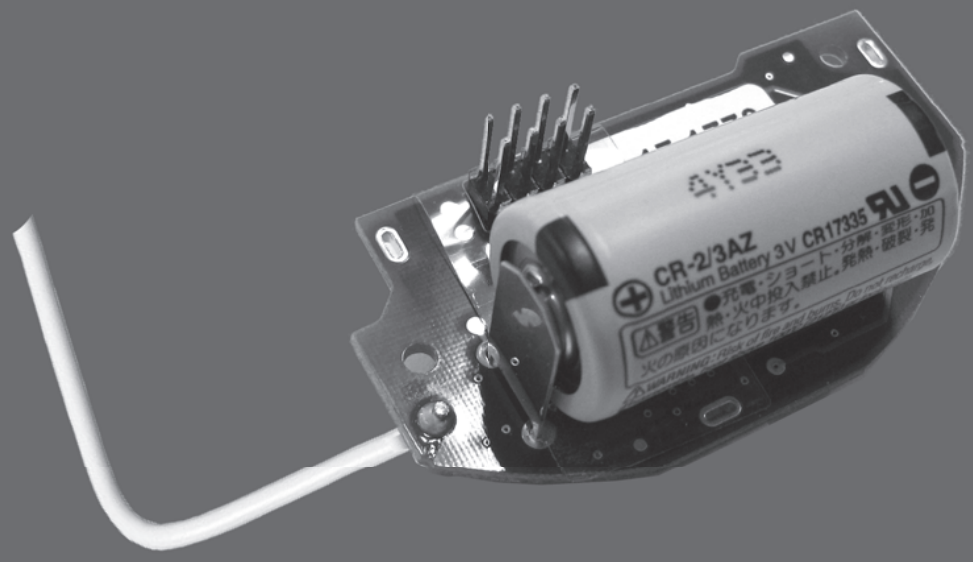

RadioLINK+ Module

Ei200MRF

for use with Ei208 Series compatible Alarms only

Installation Manual

Read and retain carefully for as long as the product is being used. It contains vital information on the operation and installation. This manual should be regarded as part of the product.

If you are just installing the Alarm, this manual must be given to the householder. This manual is to be given to any subsequent user.

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Introduction

The Ei200MRF RadioLINK^{+} Module is the next generation RF module designed to fit in the Ei208W & Ei208DW CO Alarms. The Ei200MRF RadioLINK^{+} Module is a direct replacement for the Ei200MRF RadioLINK Module, but now with added features.

The primary function of the Ei200MRF is to interconnect all Ei Electronics Alarms in a system by the means of an RF signal i.e. when one Alarm senses Carbon Monoxide (CO), the Ei200MRF module fitted to the CO Alarm will transmit an RF signal that will activate the sounders in all the other Alarms in the system.

The Ei200MRF module is plugged into the rear of the base of an Ei208W/DW CO Alarm. RF communication through this module eliminates the need to install long interconnect wires between all the Alarms on different floors in different rooms. The Ei200MRF is powered from its own 3V Lithium battery.

The module also has “multiple repeater” transmission – this provides multiple signal paths to create a robust RF ‘mesh’ system and also increase the RF range.

Installation and House Coding

To fit the Ei200MRF module, plug it into the base of the Alarm while being careful to align the pins and insert the flexible antenna into the antenna hole (See Fig 1). N.B. Ensure that the Ei200MRF is fully inserted.

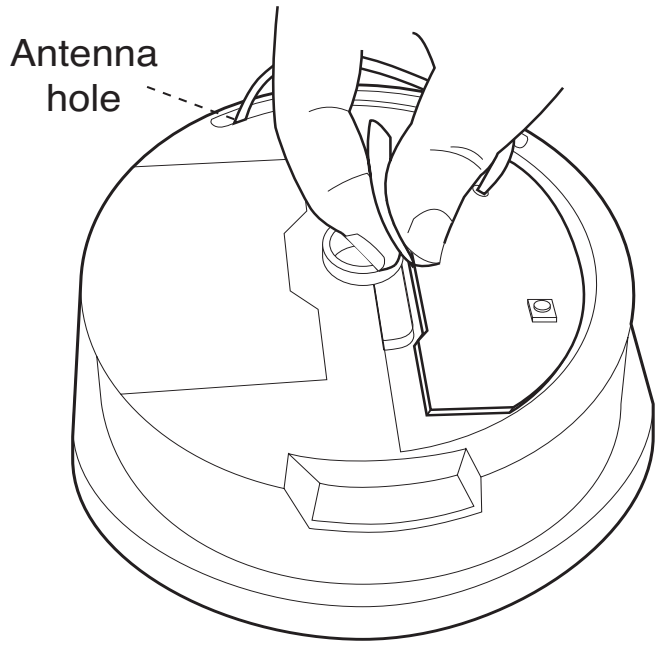


Figure 1

House Coding the Unit

Power supply to the Ei200MRF will be confirmed by an initial flash of the red, blue and green LED on the cover (see Fig 2).

Press and hold the House Code button on the module until the blue light illuminates on the cover. (see Fig 2 & 3).

Immediately release the button, the blue light will flash rapidly and then stop. Now attach the Alarm to its mounting plate (see 'Installation' section in the Ei207/208 Series booklet).

The flashing will repeat every 5 seconds thereafter. Repeat this procedure for all Alarms in the system and any RF accessories such as the Ei450 Alarm Controller.

Check to ensure all RF devices have been successfully House Coded. This can be done by counting the number of blue flashes on each RF Module. The number of flashes should correspond to the number of RF devices in the system. (i.e. 4 flashes if there are 4 RF devices in the system).

N.B. We recommend, for ease of installation and RF communication, that up to 12 RF devices can be installed in any one RF coded system. Please contact us for further advise if additional RF devices are required.

You can exit this mode by pressing the House Code button on one of the RF Alarms. Keep the button pressed until the blue light comes on solid and then release.

Figure 2

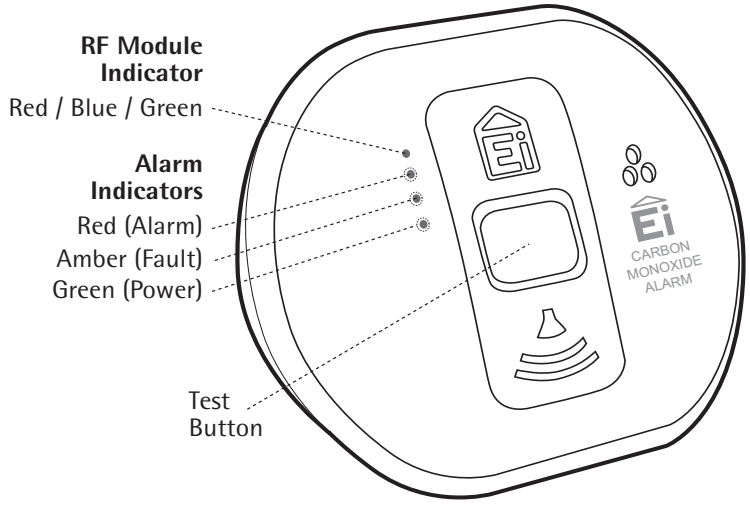
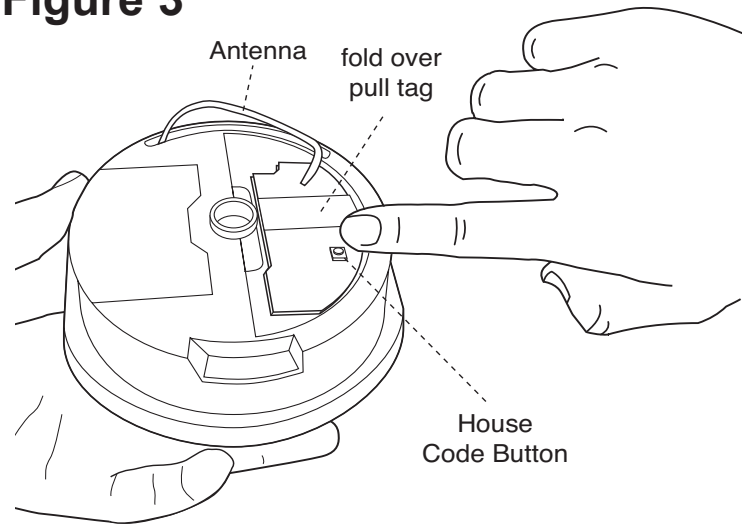


Figure 3



You can exit this mode by pressing the House Code button on one of the RF Alarms. Keep the button pressed until the blue light comes on solid and then release. Now re-affix the Alarm to its mounting plate.

The Alarm will now send a signal to all the other RF devices in the system to exit House Code. Alternatively, the RF Alarms will automatically exit the House Code mode after 30 minutes. (Note: Some RF devices do not support the on demand exit House Code feature. You may allow them to automatically exit House Code after the time period or if you wish, you can do it manually. Consult the individual RF device manual for further instructions).

To check the system, press the test button on any Alarm. After a few seconds all Alarms should now sound. All Alarms in the system should be checked similarly. **Caution**: Do not House Code another group (e.g. adjacent apartment) until the current House Code has been completed.

Factory Reset

Sometimes in order to resolve an RF communication issue it may be necessary to reset (factory reset) and House Code the system again. To do so, press and hold the House Code button until you see a flashing blue light on the Alarm cover (approx. 7 seconds), release immediately. Repeat this procedure on all other Alarms.

Additional Features

The Ei200MRF RadioLINK$^+$ Module provides additional features not available with Ei Electronics RadioLINK products. The following features will only work with RadioLINK$^+$ devices.

1. Remote House Coding (required if you want to add an Alarm to an installed system)

2. Monitoring

3. Data Extraction

*Note these functions will not be available unless you have completed House Code Entry.

1. Remote House Coding

If it is necessary to extend an RF system or you find that you want to add an extra Alarm to a system you can now do so quite simply via the ‘Remote House Coding’ feature. Firstly using a screwdriver, press and hold the House Code button of one of the previously installed Alarms until you see all colours flashing (red, blue, green).

Immediately release the button. This Alarm will now send an RF message to all the previously installed (compatible) devices to re-enter House Code mode. Similarly, install and put the new Alarm you wish to add to the system into House Code mode (see “Installation and House Coding” section). As before, allow sufficient time so that all Alarms are now house coded correctly (this can be confirmed by counting the number of flashes on each Alarm). You can then exit House Code mode manually or let it exit automatically after 30 minutes. **(N.B. for this feature to work all devices in the system must be RadioLINK+).**

2. Monitoring

The Ei200MRF RadioLINK+ Module has the ability to “Monitor” the RF signal path and strength. This is an enhanced self-monitoring function that recognises system tampering or Alarm head removal. In monitoring mode each Alarm will check the presence of its strongest received RF signal. If the signal is missing then the Alarm will record a monitoring failure event. It will also signal the failure via a change in the indicator light pattern.

For more information on using this feature, please visit www.eielectronics.com and refer to the relevant section on the RadioLINK+ Monitoring feature.

3. Data Extraction

The Ei200MRF RadioLINK+ Module allows for the extraction of information from an Ei Electronics Compatible Alarm, using an Ei Electronics download device. Once the system has been set up, information can be accessed securely from within or outside a property if access is an issue The event log can contain very useful information about any recorded events in the history of the Alarm such as: CO Events, Alarm Head removals, Button Tests, and so on.

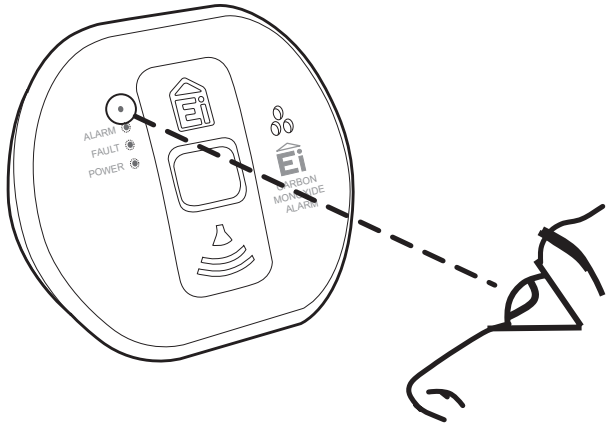
Event logs can be retrieved as many times as necessary.

For more information on using this feature, please visit www.eielectronics.com and refer to the relevant section on the RadioLINK+ Data Extraction feature.

Ei200MRF Indicator Summary					
Normal Operation		**Blue LED**	**Red LED**	**Green LED**	**Sounder**
Power Up		1 flash	1 flash	1 flash	Off
Standby		Off	Off	Off	Off
Alarm		3.5 Sec flash followed by flash every 10 Sec	Off	Off	Full Sound
Head Removal		3.5 Sec flash every 6 mins for 4 hrs	Off	Off	Off
Low Battery		Flash every 60 Sec	Off	Off	1 Beep with flash
Mode-Enter / Exit	**Button Action**	**Blue LED**	**Red LED**	**Green LED**	**Sounder**
House Code Enter	Press & Release on Solid Blue	Flashes briefly & stops	Off	Off	Off
In House code		(1 flash per unit) every 5 Sec *	Off	Off	Off
House code Exit	Press & Release on Solid Blue	3.5 Sec flash	Off	Off	Off
Factory Reset	Press & Release on Flashing Blue	Rapid flashing followed by single flash	Off	Off	Off
Remote House Coding	Press & Release on Multi- Colour Flashing	Rapid flashing followed by 3.5 Sec flash	Off	Off	Off

* See 'Installation and House Coding' section for further details

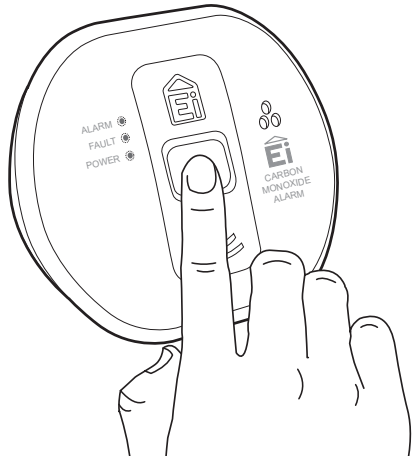
Testing the System



Frequent testing of the system is a requirement to ensure its reliable operation. Guidelines and best practices for testing are as follows:

1. After the system is installed.
2. Regularly (monthly testing is recommended).
3. After prolonged absence from the dwelling (e.g. after holiday period).
4. After repair or servicing of any of the components.
5. After renovations to the house.

To test an individual Alarm press and hold the test button until the horn sounds. This ensures that the Alarm is powered and that the circuit is functioning correctly.



To test the RadioLINK^{+} system, press and hold the test button on one of the Alarms. The blue LED from the Ei200MRF will illuminate for approximately 3.5 seconds. Continue to hold the test button until all the Alarms in the system are sounding. This will take a few seconds depending on the number of Alarms and their locations in the system, e.g. a system with 12 Alarms may take up to 45 seconds for all to sound. Release the test button when the test is completed.

The local Alarm will stop sounding but you will hear the other Alarms still sounding in the distance.

Module Battery Check

It is important to ensure that the batteries on both the Alarm and the module itself are in full working order. Depending on the Alarm that the Ei200MRF is inserted to, there will be slightly different indicators for low battery on the Alarm itself (see table below).

Press the test button on one Alarm and check that all the Alarms sound. In addition check that the blue LED on the Alarm is not flashing with a beep every 60 seconds. (Note: A blue LED flashing along with a beep every 60 seconds indicates a low battery condition. If this is the case then the module shoud be replaced). If the Alarm beeps once every 60 seconds and the amber LED flashes it indicates that the Alarm itself has a low battery. In this case you should replace the Alarm.

Beeping in RF System

One of the features of Ei RadioLINK & RadioLINK^{+} systems is that if there is a fault either in the Alarm itself, or in the RF module fitted, a beep will be transmitted around the system every 4 hours. Depending on the Alarm type, the beep may just be a short beep or it may be a 2 second alarm. If your RF system is demonstrating this, you have a fault either in 1 of your Alarms or in 1 of the RF modules fitted.

In order to find the problem unit, please visually check each Alarm. The fault will be indicated on the Alarm through a combination of beeps or flashes within a 60 second period. (see individual Alarm booklet for indicators).

N.B. When replacing Alarms or modules, please remember to housecode and test the system again.

End of Life (EOL) Check

Check the ‘replace by date’ label on all Ei200MRF modules and attached Alarms. If the date has been exceeded then the device should be replaced.

Interconnected Carbon Monoxide Alarms & Smoke/Heat Alarms

Identifying source of Alarm

Ei Electronics Carbon Monoxide Alarms and Smoke/Heat Alarms can be interconnected via RadioLINK or RadioLINK+ so that one device sensing danger will cause all the other Alarms to sound.

When a system sounds, check to see which device has its red light flashing rapidly - this is the source of the alarm.

If it is a Carbon Monoxide Alarm, ventilate the residence and follow the instructions in the Carbon Monoxide Alarm manual.

If it is a Smoke/Heat Alarm, evacuate the residence and follow the instructions in the Smoke/Heat Alarm manual.

For added convenience we recommend that an Ei450 Alarm Controller is used with these systems. When there is an alarm, an icon on the Ei450 Alarm Controller shows if it is a CO or Fire incident and can be remotely controlled accordingly.

RadioLINK+ Troubleshooting

It is important that all Alarms in your system communicate with each other. The number of walls, ceilings and metal objects in the signal path will reduce the strength of the RadioLINK+ signals between the Alarms. Accordingly, one or more CO/ Smoke/Heat Alarms may have difficulties in communicating to all the other Alarms in the system.

If, when checking the RadioLINK+ interconnection, some of the Alarms do not respond to the button test, then you will need to either:

(i) Position another RadioLINK+ Alarm to act as a 'repeater' between the Alarms which are not communicating and so shorten the path and/or by-pass an obstacle which is blocking the signal. When the new Alarm is fitted, House Code all Alarms again, as described above.

(ii) Rotate / re-locate the Alarms (e.g. move them away from metal surfaces or wiring).

After making these changes to the RF signal path, the RadioLINK+ signals may still not be reaching all the Alarms in your system, even though they have already been House Coded successfully. (see Section on "Limitations of Radio Communications").

It is important to check that all Alarms are communicating in their final installed positions. If Alarms are rotated and/or re-sited, we would recommend that all the Alarms are returned to the factory settings and then House Coded again in their final positions (see above). The RadioLINK+ interconnection should then be checked again by button testing all units.

(Note: The RadioLINK^{+} module can be returned to the original factory settings by pressing and holding the House Code switch until the blue light flashes and then releasing. This will take about 7 seconds. This clears the House Codes that have been learnt).

Technical Specifications

Supply Voltage:	3V internal lithium battery (non-replaceable)
RF Range:	A minimum of 100 metres in free space
RF Visual Indicator:	Blue light flashes continuously for 0.5 to 3.5 seconds while transmitting RF signal
RF Frequency:	868.499MHz (1% duty cycle)
Max RF Power:	0dBm
Receiver Category:	Cat 2
Dimensions:	57mm length x 30mm depth x 18mm height
Temperature Range:	-10° to 40°C
Humidity Range:	15% to 95% Relative Humidity (non-condensing)
Interconnect *:	Up to 12 RF devices
Approvals:	RF performance to EN 300 220-1 in accordance with EN 300 220-2 EMC performance to EN 301 489-1 in accordance with EN 301 489-3

* We recommend, for ease of installation and RF communication, that up to 12 RF devices can be installed in any one RF coded system. Please contact us for further advise if additional RF devices are required.

Guarantee

Ei Electronics guarantees this RF RadioLINK+ Module for five years from the 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 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.

If this RF RadioLINK+ Module 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. We shall at our discretion repair or replace the faulty unit.

Do not interfere with this 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.

Limitations of Radio Communications

Ei Electronics radio communication systems are very reliable and are tested to high standards. However, due to their low transmitting power and limited range (required by regulatory bodies) there are some limitations to be considered:

(i) Receivers may be blocked by radio signals occurring on or near their operating frequencies, regardless of the House Coding.

(ii) Alarms with RadioLINK^{+} modules should be tested regularly, at least weekly. This is to determine whether there are sources of interference preventing communication, that the radio paths have not been disrupted by moving furniture or renovations, and if so, to give a warning of these and other faults.

Hereby, Ei Electronics declares that this Ei200MRF RadioLINK+ Module 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

Hereby, Ei Electronics declares that this Ei200MRF RadioLINK+ module is in compliance with the essential requirements of the Radio Equipment Regulations 2017. 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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