



Model: Ei428

# RadioLINK Relay Base

## 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 device. The manual should be regarded as part of the product.

If you are just installing this device, the manual **MUST** be given to the householder. The manual is to be given to any subsequent user.

### 1. Introduction

The Ei428 RadioLINK Relay Module is a device that switches a relay upon receipt of an RF alarm signal from a compatible Ei Alarm. The electrically isolated contacts can be used for many applications such as signalling, turning on lights, etc. The Ei428 is designed to operate with Ei RF devices.

The Ei428 RadioLINK Relay Module is powered by the 230VAC mains and has rechargeable back-up cells. As supplied the relay operates continuously (i.e. it switches when one of the Alarms detects fire and switches back when the alarm condition is finished).

### 2. Overview

#### INDICATOR LIGHT

GREEN - MAINS

FLASHING RED - LOW BATTERY

ALTERNATING GREEN / RED

- HOUSE CODING

HOUSE  
CODE  
SWITCH

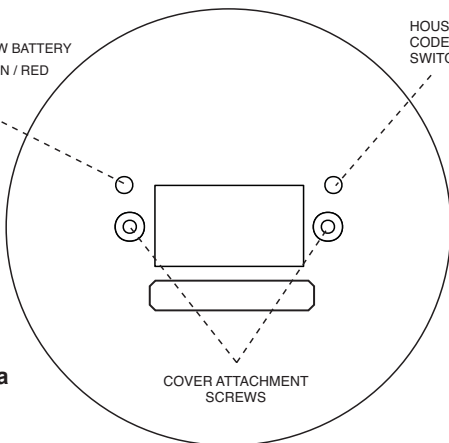


Figure 1a

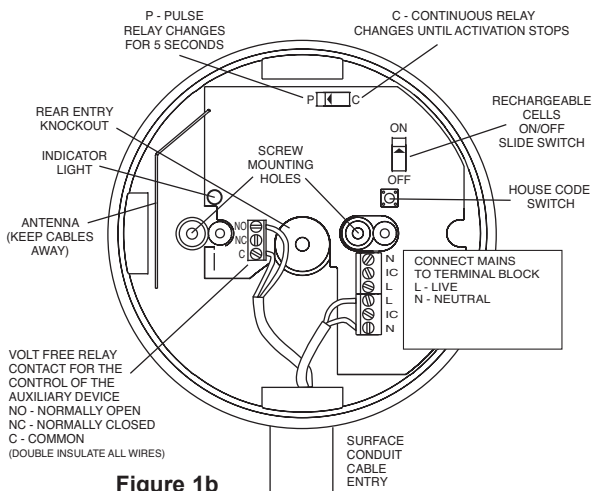


Figure 1b

### 3. Technical Specifications

<b>Power Supply:</b>	230V AC
<b>Battery back up:</b>	6V rechargeable Lithium cells
<b>Power consumption</b>	0.8W (standby)
<b>Contact Rating:</b>	250V AC, 5A resistive Continuous or Pulse mode
<b>Output:</b>	One volt free contact (NO/NC)
<b>Visual Indicator:</b>	2 colour LED: Green & Red <b>Green:</b> Power <b>Flashing Red:</b> Low Battery <b>Red &amp; Green alternating:</b> house code mode
<b>RF Frequency:</b>	868.499MHz (1% duty cycle)
<b>Max RF Power:</b>	2.5dBm
<b>Receiver category:</b>	2
<b>Interconnect*:</b>	Up to 12 RF devices
<b>Temperature Range:</b>	-10°C to 40°C
<b>Humidity Range:</b>	15% to 95% RH (non-condensing)
<b>Dimensions:</b>	Product: 141 x 26 mm Package: 145 x 30 x 146 mm
<b>Weight:</b>	180g (Pack +30g)

\*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 advice if additional RF devices are required.

## 4. Important Safety Instructions

**WARNING:** Mains powered Ei428 RadioLINK Relay modules should be installed by a qualified electrician in accordance with the relevant local Regulations for Electrical Installations. Failure to install this device correctly may expose the user to shock or fire hazards and damage the product. This unit is not waterproof and must not be exposed to dripping or splashing.

**WARNING:** An all-pole mains switch shall be incorporated in the electrical installation of the building.

**Attention:** Alternative Energy Sources – (Wind, solar, UPS, etc.). This product is designed to be connected to a Pure or True Sine Wave 230V AC 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.

**The relay base must not be powered from a light dimmer circuit.**

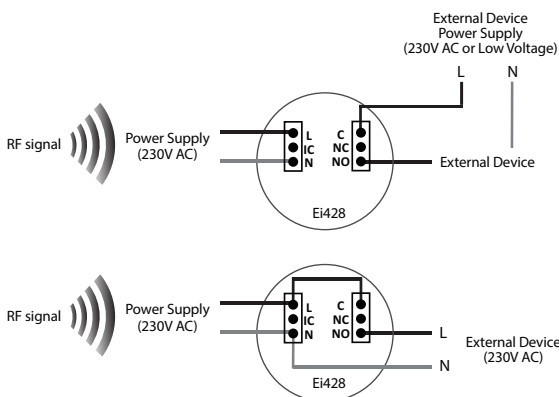
## 5. Installation

**WARNING:** First disconnect the mains from the circuit to be used.

**WARNING:** To prevent injury, this apparatus must be securely attached to the ceiling or wall in accordance with the installation instructions.

1. Choose a suitable mounting position near the mains supply and the device to be connected to the relay. Keep it away from metal surfaces or large metal objects (e.g. water cylinder, fuse boards) which can reduce the RF signal range.
2. Where the incoming wiring is on the surface of the wall/ceiling, the appropriately sized trunking / conduit must be chosen to mate with the unit. Use a sharp knife to remove the material from the knockout, making sure that there is no gap when mated with trunking/conduit. There is one suitable surface cabling knockout (the other two surface entries are not recommended as the wiring will reduce the antenna signal). There is one rear entry knockout. See figure 1b.
3. Screw the Ei428 module to the wall after first removing the required knockout and bringing the house wires through it (see figure 1b).
4. Connect the power supply wires (Live & Neutral) to the mains terminal block as shown in figure 1b. (Screw tightening torque: max 0.5Nm (5.1kgf.cm))  
NB: The unit must not be earthed so do not connect a green / yellow or copper earth wire to any terminal.
5. Connect the L (Live) wire from the power supply of the auxiliary device to the C (Common) terminal.

6. Then connect either the NC or NO contact of the relay (depending on what is required for controlling the auxiliary device) to the auxiliary device. For example, if the relay is used to cut out a boiler in case of alarm, then NC should be used but for a Beacon that should only be on in case of alarm, then the NO should be used.
7. Alternatively, if the auxiliary device is powered from the same circuit as the relay ie 230VAC, a link wire can be inserted between the L (Live) terminal and the C (Common) terminal of the relay. Then, connect either the NC or NO contact of the relay (depending on what is required) to the auxiliary device. Connect the N (Neutral) terminal from the relay to the auxiliary device see below diagrams.



8. If momentary (pulse) relay operation is required, carefully and gently slide the yellow switch to the “P” position. This is commonly used with warden call systems where only momentary short circuit signalling is required. This must be done before the mains power is connected or the rechargeable cells are activated.

With the switch in the “C” position, the alarm signal will switch the latching relay until it receives a cancel signal.

9. Connect the rechargeable cells by carefully and gently sliding the switch to the “ON” position (see figure 1b). This switch must be in the ‘ON’ position to ensure correct operation.
10. Fit and screw the cover to the module pillars using the two screws supplied.
11. Connect the mains power to the Ei428 module.
12. Check the green light is on. If the green light changes to red every 10 seconds then switch off the mains power, remove the cover and check that the battery slide switch is in the “ON” position (see figure 1b). Replace the cover and turn the mains power back on. If there is still a problem the rechargeable cells may be depleted, leave the unit on mains power for 2 hours to charge and test again.
13. Press and hold the House Code switch through the hole in the cover using a small screwdriver, see figure 1a, until

the green light changes to red. Release the switch and the light will flash red quickly, a few times. The red light will then flash every 5 seconds.

14. House code all other RF Alarms and devices in the system. Consult the instruction manuals on how to house code the Alarms and devices. It is essential that each individual Alarm/device is put into House Code mode in its final location.

15. Check the number of flashes on the Ei428 and on every other device. They should correspond to the total number of devices in your system (provided no more than 12 RF devices are installed in the system). A system with 3x Alarms and 1x Ei428 will result in 4 flashes. It may take up to 10 minutes before all 4 flashes are seen.

The flash pattern will repeat every 5 to 10 seconds while the Ei428 remains in house code mode. If it fails to flash the correct number of times, then consult the "Troubleshooting the RF interconnection" section of this instruction manual. To complete the commissioning, the RF system must exit House Code mode.

16. The Ei428 will automatically exit House code mode after 30 minutes. Other devices may exit after only 15 minutes. Once coded, the system will not communicate with any other RF Alarms and devices outside of the house coded group.

To manually exit House Code mode, press the House Code button again on the Ei428 until the RF indicator lights up red, then release. This will send a signal to all the other RF Alarms and devices to exit House Code mode.

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

**Note:** Not all devices are able to receive the Exit House Code mode signal from another device. If some devices continue to flash amber / red, please consult their instruction manual to manually exit house code mode.

Check that the RF indicators have stopped flashing on all devices.

17. To check the system, press the Test button for up to 60 seconds on any house coded Alarm. After a few seconds all Alarms should sound. Ensure that the device connected to the relay contacts operates. After 60 seconds release the test button – check the device switches off. (If the continuous/pulse slide switch is in the pulse position, check the relay just switches on for 5 seconds and then switches off). All RF devices in the house code system should be checked similarly.

**Note:** A maximum of 12 RF devices may be interconnected to one relay. When one Alarm sounds, all interconnected Alarms will sound and the relay will switch.

**Attention:** Do not interconnect Carbon Monoxide Alarms with smoke/Heat Alarms unless and Ei450 control switch is used in that system. The Ei450 will allow the user to identify quickly the source of the alarm (e.g. fire or CO gas) and take appropriate action. This is important as the occupant will need to open all windows and doors if it is a CO incident but do the opposite to slow down a fire.

**Note:** The rechargeable cells enable the Ei428 to switch during mains failure upon receipt of an alarm signal. They will power the relay for up to 2 months in the event of the mains being off.

## 6. Checking & Maintaining Your Alarm System

We recommend a monthly check of your alarm system. When checking the system also check the Ei428 as follows:

- (i) Check that the green LED power indicator is on. If it is off, check circuit breaker fuse, wiring etc.. When the mains is restored the green light will come on solid.
- (ii) The LED flashing red every 10 seconds indicates a battery problem. Check that the slide switch is in the "ON" position (See fig 1b) and leave the battery to recharge for 2 hours before checking again. If the unit continues to flash red every 10 seconds then the unit is defective and must be replaced, see "Getting your Relay Base Serviced" section.
- (iii) Press the Alarm Test Button and check that:
  - a) The relay switches and
  - b) The auxiliary device behaves as expected

### End of Life

After 10 years (see date label on the side of the Relay), the RadioLINK Relay Base must be replaced.

## 7. Checking the Relay Back Up Cells

It is important to check that the rechargeable cells in the Ei428 are switched on, charged and capable of switching the relay contacts.

This should be done after installation and then at least annually.

1. Disconnect the mains supply
2. Check the relay as described in section 6
3. If everything is satisfactory, re-connect the mains.

If the relay fails to operate, then the unit is defective and must be replaced.

## 8. Troubleshooting the RF interconnection

If when testing, the Ei428 does not respond, then:

- a. Ensure you have held the Alarm Test button down until the RF light comes on (this can take up to 40 seconds).
- b. Reset the house code. Sometimes to resolve an RF communication issue, it may be necessary to reset and

house code all RF Alarms and devices in the system again. To reset the Ei428, press and hold the House Code button until it the LED starts flashing Red. At this point release the House Code button. The Ei428 is now reset. To reset the other devices in the system, consult the appropriate instruction manuals. Once all devices are reset, repeat the House Coding procedure.

- c. Relocate the Ei428 and/or rotate/relocate the Alarms. There are several reasons why RF signals may not reach all the devices in your system. Try rotating or relocating Alarms as this can significantly improve signal reception.

Rotating and/or relocating the RF devices may move them out of the range of existing devices even though they may have already been house coded correctly in the system. It is important therefore to check that all detectors/relays are communicating in their final installed positions. If units are rotated and/ or resited, we recommend that all units are returned to the factory settings. Then house code all units again in their final positions as indicated above. The RF interconnection should then be re-checked again.

## **9. Getting your Relay Base Serviced**

If, within the guarantee period, your RadioLINK Relay Base fails to work after you have carefully read all the instructions and checked that the device has been installed correctly and is receiving AC power, then contact us. If you are advised to return your product, follow the instructions given. Open the cover and turn off the rechargeable cells with slide switch (see fig 1b). Put the device in a padded box with proof of purchase, your contact details and a note stating the nature of the fault.

## **10. Five Year Guarantee**

Ei Electronics guarantees this device for five years from 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 incidental and consequential damage.

Do not interfere with this device 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 does not apply to any product that has been modified in any way by a third party or has been fitted with a third-party element.

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

## 11. 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:

- Receivers may be blocked by radio signals occurring on or near their operating frequencies, regardless of the House Coding.
- RF systems should be tested regularly, at least monthly. 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.

The crossed out wheellie 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.



Hereby, Ei Electronics declares that this Ei428 RadioLINK Relay Base 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](http://www.eielectronics.com/compliance)



Hereby, Ei Electronics declares that this Ei428 RadioLINK Relay Base 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](http://www.eielectronics.com/compliance)

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