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Friedland™

SPECTRA PLUS

L420N WHI and L420N BLK

Friedland

ENG

Before starting any installation work, please read carefully

L420N WHI and L420N BLK

Instruction Manual and Guarantee

Introduction

Your Spectra Plus Wirefree Passive Infrared (PIR) Movement Detector and Switching Receiver provides you with the ability to convert any standard exterior light fitting to an automatic movement activated system. A built in Dusk/Dawn sensor can be adjusted to prevent movement from activating the light during daylight and to set the level of darkness when the light will be activated by detected movement. Both the PIR Detector and the Switching Receiver Unit are suitable for mounting outdoors.

No Wires! - There is no physical wiring connection between the PIR and Receiver. Instead the system uses radio technology to provide the link which makes installation even quicker and allows the PIR to be located remotely at the most appropriate position for the area being monitored. To prevent interference from other devices the PIR detector is coded with a unique identification code that is already learnt into the Receiver to make installation even quicker.

The PIR and Receiver are also compatible with Friedland Libra Plus Chimes system, (Chimes and Pushes).

Device range

The quoted range of the system is measured in ideal conditions. Any barrier (e.g. walls/ceilings aluminium reinforced UPVC windows and metallic parts of house structures etc) between the PIR and receiver will reduce the effective radio range by an amount dependant upon the construction of and number of barriers between the PIR (MP) and receiver. In extreme cases where metal barriers are involved then it is possible for the signal to be blocked out completely.
Whilst the majority of installations are not adversely affected, you may have to experiment a little to discover the best location for your PIR and Receiver Unit.

KIT CONTENTS

PIR Detector
Switching Receiver
Instruction Manual
Fixing pack containing:

- 2 slot-in PIR window masking curtains
- 4 fixing screws and plastic wall plugs
- 2 fixing screw sealing plugs

You will also need

- One 9V PP3 (6LR61) Alkaline Battery

TOOLS REQUIRED

- No.2 Philips Screwdriver
- 3mm flat bladed screwdriver
- Drill
- 6mm Masonry drill bit
- Wire Cutter and Strippers

SAFETY

Always follow the manufacturers advice when using power tools; steps, ladders etc. and wear suitable protective equipment (e.g. safety goggles) when drilling holes etc. Before drilling holes in walls, check for hidden electricity cables and water pipes, the use of a cable/pipe locater maybe advisable if in doubt.

The mains supply to this product should be installed by a competent person (e.g. a qualified electrician) in accordance with these instructions and in accordance with the appropriate clauses of the current edition of the IEEE wiring regulations (BS7671).

It is essential that all connections are made as instructed, that cables are not stressed and that terminals are fully tightened.

DANGER - 230 VOLTS. To prevent the risk of electrocution, always turn off the mains electricity supply before commencing any work on the installation or opening the receiver.

Do not attempt to install or program this product while it is wet or raining.

Installing the Receiver

Positioning the Receiver

The Receiver has been designed so that it can be fitted to the wiring of an existing light fitting without the need to rewire. The cable is cut at a convenient point and the receiver connected to the cut cable ends. However, with this approach you can only use the top and bottom cable entry holes closest to terminals A and B ensuring that the supply cable is connected to Terminals A and the cable from the lights is connected to Terminals B.

Important: the mains supply to existing wiring must be disconnected and isolated before installing in this way.

When selecting a position for the receiver the following points should be taken into consideration:

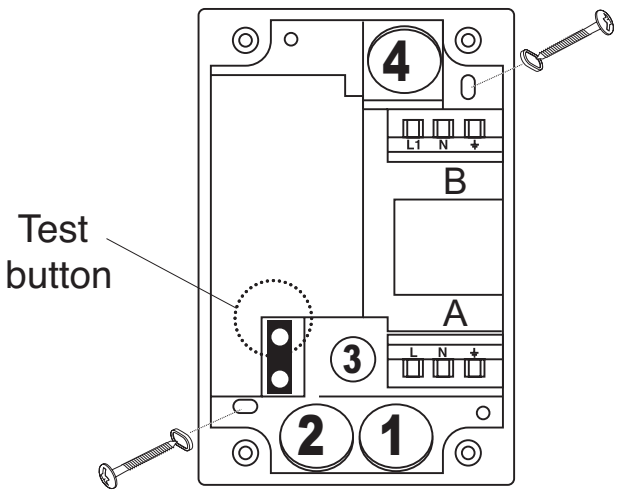
- The product should only be mounted on a sound flat surface in a vertical position, (it should not be mounted horizontally).
- The 220-240Vac 50Hz electricity supply cable must be connected to terminals A.
- The cable to the light fitting must be connected to terminals B.
- The top cable entry point hole next to terminals B cannot be used for the power supply cable.
- Only one cable (up to 14mm diameter) may be fitted through each cable grommet. The receiver unit is not designed for direct connection to conduit.

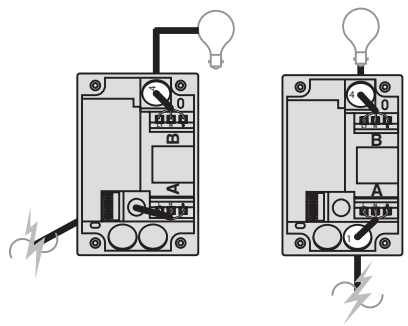
Testing the Receiver

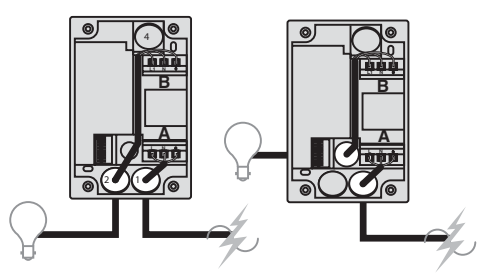
The Receiver has a built in Test/Manual operation facility which can be operated by pressing the Learn button for under 1 second. If the lights are OFF, they will be switched on for a period of 5 seconds.

If the lights are already ON, pressing the learn button will cancel any remaining time on period and immediately switch them OFF.

Receiver



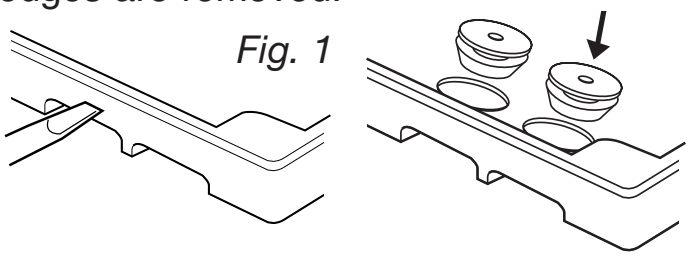




Installing the Receiver

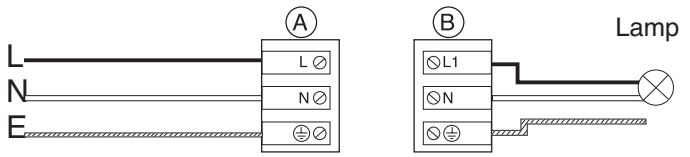
- Undo the four cover screws and remove the cover.
- Select the required cable access holes according to your wiring route and prepare and fit the cable grommets as necessary.
  Ensure that the pierced grommets are properly positioned in the entry holes and that blank unpierced grommets are fitted in the unused entry points.
  If the rear access hole is needed, use firm pressure with your screwdriver to remove the knock out and then clean up the edges of the hole with a sharp knife to ensure a good seal for the grommet.
  If the cable to be passed through the access opening is too large in diameter to fit, break out the extra material with a small screwdriver or pliers to create a larger opening making sure that all sharp edges are removed.

Fig. 1



- Hold the receiver in the required position, ensuring that it is on a flat surface, and ensure that the cables will be able to enter the chosen entry holes and reach the terminals.
  Mark the position of the fixing holes and drill two 6mm holes, then insert the wall plugs (supplied).
  Note: If fixing to non-solid or wood surface the wall plugs will not be needed and only a small pilot hole will be required.
- Feed the cables through the grommets as required ensuring the grommet is correctly fitted in the hole.
- Push the fixing screws through the rubber sealing plugs. Fix the unit to the wall and tighten the screws ensuring that the rubber seals are correctly seated.
- Cut the cable to length so that it comfortably reaches the terminals and can be neatly fitted in the enclosure without interfering with the lid when it s fitted and then carefully trim the insulation of the cable wires removing about 6mm from the ends.
- Connect the power supply cable to Terminal Block A and the cable from the lighting load to Terminal Block B as follows:

Cable Colour	**Supply Terminals A**	**Load Terminals B**
LIVE Brown	L	L1
NEUTRAL Blue	N	N
EARTH Green/Yellow	⏚	⏚



Any bare Earth wire must be fitted with Green/Yellow sleeving

Terminal Block A Supply Connections

Terminal Block B Supply Connections

Any bare Earth wire must be fitted with Green/Yellow sleeving

- Ensure the rubber gasket is correctly in position and then refit the cover and tighten the fixing screws.

Important: Do not switch on the power until the installation of the lighting is completed.

Testing the Receiver:

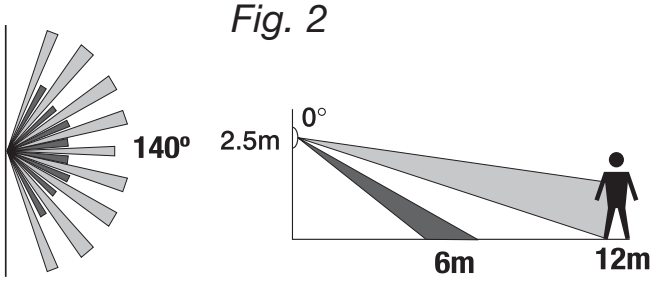
The Receiver has a built in Test/Manual Operation facility which can be operated by pressing the Learn button for under 1 second. If the lights are OFF, they will be switched on for a period of 5 seconds.
If the lights are already ON, pressing the learn button will cancel any remaining time-on period and immediately switch them OFF.

Installing the PIR Detector

Positioning the PIR

- Position the Wirefree PIR Detector within range of the Receiver, taking into consideration any reduction in the 200m maximum range caused by any objects in between. Avoid mounting the unit on or near large metal objects.
- The recommended mounting height for the detector is 2.5m. At this height, the detector will have a range of approximately 12m. Mounting the detector higher will increase the detection range but it will be less sensitive to movement at the extreme range and also may not be able to detect movement very close to it. Tilting the detector head up and down will have the same effect.

Fig. 2



- Mount the detector on a firm stable surface where the logical path of a person would cut across the detection pattern. The detector is more sensitive to movement across its detection pattern than to movement directly towards it.

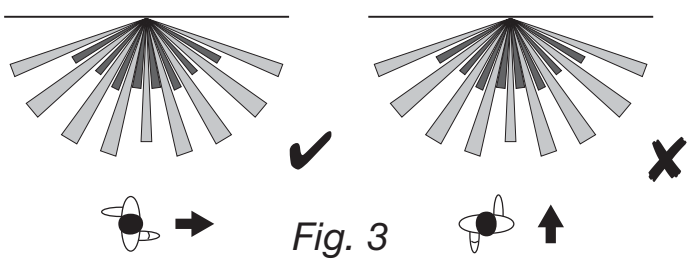


Fig. 3

Avoid positioning the detector where there are any heat sources in the detection area (e.g. heating or tumble drier exhaust vents etc.). Also avoid highly reflective surfaces or hanging branches in the detection area as these can cause false activation in some weather conditions.

Installing the PIR

NOTE: Before fixing the PIR unit to the mounting surface, it is advisable to check that the system works correctly (i.e. that the PIR and receiver are within radio range of each other) by temporarily operating the PIR Detector in the chosen location.

- Open the PIR Detector by inserting a flat bladed screwdriver into the slot at the base of the unit and pushing gently to release the catch and to allow the front cover to be opened.

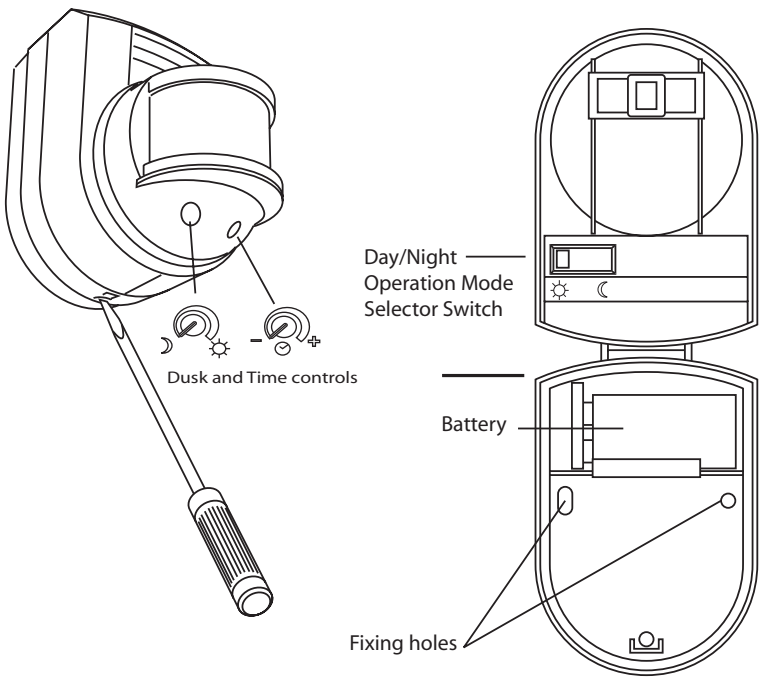


Fig. 4

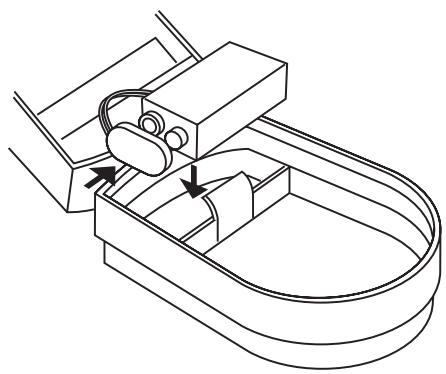
- Set the Day/Night operation switch to the NIGHT setting for use with lights.

Note: "Day" operation is for use with chimes when activation of the chime is required during the day and not at night.

- Mark the position of the fixing holes and drill two 6mm holes, then insert the wall plugs (supplied). If fixing to non-solid or wood surface the wall plugs will not be needed and only a small pilot hole will be required.
- Clip a 9V PP3 (6LR61) Alkaline battery to the connector and fit the battery in its holder.

Note: When the battery is connected the LED behind the detector lens will continuously flash or stay ON while the detector goes through its warm up cycle.
The unit will not operate normally until the LED stops flashing.
The light connected to the receiver may also activate during this period if the receiver is switched on. This is because the unique identification code of the PIR detector is already learnt into the Receiver when it is supplied.

Fig. 5



- Fix the unit in place on the wall and then close the cover ensuring it clicks fully closed.
- Adjust the sensor head to point in approximately the desired direction.

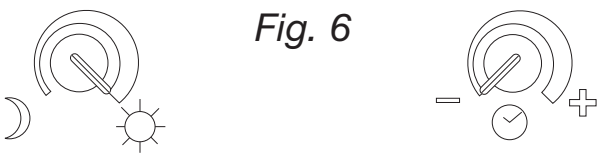
PIR Walk Test

Important: Before commencing walk test ensure the RED indicator behind the PIR lens is not flashing continuously. If it is wait until the PIR has completed its warm up cycle and the flashing stops.

Configure the detector for walk testing as follows:

1) Set the TIME control fully anti-clockwise to its minimum setting.
2) Set the DUSK control fully clockwise to its maximum setting.

The PIR will now operate during the day and switch the lights for its minimum period of 5 seconds.

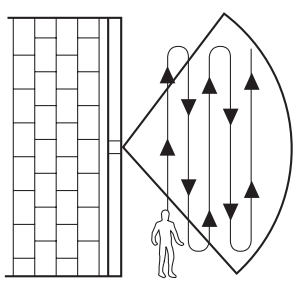


Dusk control Time control

Fig. 6

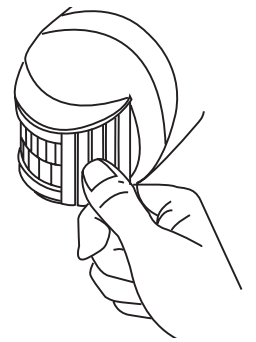
Slowly walk across the detection area approximately 5m from the unit. As you cross a detection zone and your movement is detected a small red indicator behind the lens will illuminate for a few seconds. Stand still until the indicator goes out after a few seconds. Continue moving around at various distances and angles to the unit, stopping each time the indicator illuminates, until you have established the detection area.
If the PIR has already been linked to the Switching Receiver or Chime when the Walk test is performed then the lights will illuminate for approximately 5 seconds or the Chime will sound each time movement is detected.

Fig. 7



Adjust the position of the detector head to give approximately the desired detection area as required. Angling the PIR head downwards will reduce the range and produce a smaller coverage area. Angling the head upwards will increase the range and produce a larger coverage area. If necessary the detection area can also be reduced by masking the detection window (see below).

Fig. 8



Masking the PIR window

To prevent movement detection in unwanted areas or to shield off shrubs etc which can cause false activation in the wind, the detection area may be reduced by masking off sections of the lens using either the window mask curtain provided or electrical insulation tape.

To discover how much screening is needed, first obscure the PIR unit's lens with insulation tape, progressively covering more of the lens until the required detection area is achieved. The top half of the PIR Detector lens deals with long-range detection, the bottom half is for short range. Then simply cut a piece of the plastic window masking curtain to cover the same area as the tape. Remove the tape from the lens (ensuring that any adhesive residue is removed) and clip the cut masking curtain into the window recess.
Alternatively, the PIR Detector can be easily re-positioned in a more suitable location.

Operating Instructions

To prevent interference from other devices the PIR detector is coded with a unique identification code. This code is already learnt into the Receiver when it is supplied. However, if the Receiver does not respond to the PIR it may be necessary to reset the Receiver and relearn the code again. These procedures are described in "Expanding your System" below.

Setting the PIR for Automatic NIGHT Operation with a Spectra Plus Switching Receiver:

Having completed the 'walk test' procedure, you can set the unit for automatic operation as follows:

1) The TIME control determines how long the unit remains illuminated following activation and after all motion ceases and is adjustable between approximately 5 seconds (- setting) and 20 minutes (+ setting). Rotate the control to set the TIME to approximately the desired setting.

The DUSK control determines how dark it needs to be before detected movement will trigger the controlled lights and can be set as follows:

2) Turn the DUSK control knob to the ☽ setting and wait until darkness falls.
3) When the ambient light level reaches the level at which you wish the lights to turn on (i.e. at dusk), SLOWLY turn the control in a clockwise direction towards ☼ the mark until movement causes the light(s) to illuminate. Leave the control set at this point.
4) The PIR will become operative at approximately the same level of darkness each evening. Observe the operation of the unit over several nights to ensure it is set as required and adjust as necessary. If the unit activates too early (i.e. when it is too light), turn the control slightly towards the ☽ mark. If the unit activates too late (i.e. when it is too dark), turn the control slightly towards the ☼ mark.

PIR low battery indication:

The PP3 battery should operate the PIR Detector for approximately 12 months depending on the number of activations each day and the effect of low temperatures.
When the battery is nearing the end of its life (about 30 days before failure), the low battery status will be indicated by the red LED behind the detector lens flashing 5 times after movement is detected.
You should change the battery in the PIR as soon as you notice the low battery signal or if the PIR stops working altogether.

Testing:

The system may be tested by placing the PIR into Walk Test, (see “PIR Walk Test”).

The Receiver may also be tested on its own by briefly operating the learn button (see “Testing the Receiver”).

Expanding or Resetting Your System

Your system can be expanded by adding additional PIR detectors and also by linking in Libra Plus door chime pushes. Up to a maximum of 10 PIRs or Chime Pushes may be linked to the receiver. Remember that if you have more than one PIR Detector in the same system the light or lights will stay on until the last detector no longer detects any movement, and then continue to be illuminated for the duration of the ‘light on’ timing you have chosen.

Important: Do not attempt to reset your Receiver or learn the codes of additional devices to expand your system if it is set or raining and always follow manufacturers guidelines when using ladders.

Notes: Signals from existing linked devices will not activate the lights while the receiver is in program mode. If no signal is received within 3 minutes the receiver will automatically exit program mode.

Adding a Spectra Plus Wirefree PIR Detector:
To program an additional PIR into the receiver first activate the PIR and configure it for “Walk Testing”. Undo the four cover screws and remove the cover from the Receiver. Press and hold the program button down for approximately 3 seconds until the LED starts flashing slowly and program mode is activated. The LED will continue to flash slowly waiting for a signal from a device. Trigger the PIR detector by moving around in front of it, the receiver will record the ID code of the door push into memory and automatically exit program mode.

Adding a Libra Plus Chime Push Switch:
The receiver can be linked to a Friedland Libra Plus Door Push which will activate the lighting for a fixed time period of 3 minutes.

To program a Libra Plus Door Push into the receiver first undo the four cover screws and remove the cover. Press and hold the program button down for approximately 3 seconds until the LED starts flashing slowly and program mode is activated. The LED will continue to flash slowly waiting for a signal from a device. Press the button on the Libra Plus Door Push, the receiver will record the ID code of the door push into memory and automatically exit program mode.

Resetting the Receiver:
If for any reason you need to completely reset the receiver and erase all linked devices:

First undo the four cover screws and remove the cover. Press and hold the program button down for 10 seconds until the LED starts flashing quickly. The LED will continue to flash for 5s while any linked devices are being erased. The LED will then flash slowly waiting for a signal from a device to be linked.

The Receiver will now have to relearn the identification codes of any devices in your system

Troubleshooting

If your wirefree system fails to work properly, complete the relevant test or tests which follow.
Note: Also refer to the trouble shooting guide in your Chime or Switching Receiver manual.

PIR does not detect movement…

- Check that the battery in the PIR is not exhausted.
- Detection area is set incorrectly.

PIR does not activate Switching Receiver and lights at all…

- Check that the battery in the PIR is not exhausted.
- Check that the power to the Receiver is switched ON.
- Check the bulb and replace if defective. Ensure that the light bulb is correctly fitted.
- Turn OFF the power to the unit and check the wiring connections as per the wiring diagram. Ensure all connections are correct and terminals are tight. Check the connections at the switch, PIR and Light.
- Check that the fuse or Miniature Circuit Breaker (MCB) supplying the lighting circuit has not blown or tripped. Before replacing the fuse or resetting the MCB be sure to check for the cause.
- Check that the Receiver has correctly learned the PIR identification code by following the test procedure. If necessary reset the Receiver and relearn the code

PIR activates Switching Receiver during the day and not during the night…

- Check that the PIR operating switch is set to the NIGHT position.

PIR activates Switching Receiver during the day as well as at night…

- The ambient level of light at the Detector may be too low for the current dusk setting permanently simulating night-time. In normal daylight, adjust the dusk control slightly anticlockwise. Wait outside the detection area until the light goes out, then re-enter it to see if the movement activates the light. If necessary continue to adjust the dusk setting until movement does not activate the light. In extreme cases it may be necessary to reposition the PIR.

PIR activates for no apparent reason at random without any movement in its detection area…

- Wind, small animals or pets, passing traffic or pedestrians may be activating the detector. Try adjusting the detector head or masking sections of the lens to reduce the detection area. You may even have to move the PIR to a different position.

Detection range varies from day to day...

- The PIR Detector operates by sensing temperature changes caused by a person moving through its detection zones. These temperature changes are measured relative to the background temperature so on a colder day the PIR may appear more sensitive than on a warmer day.

Specification

PIR DETECTOR

Battery:	9V PP3 (6LR61) Alkaline battery
Battery life:	Approx 12 months
	(based on 20 activations per day and constant 15°C)
PIR detection range:	12m
PIR detection angle:	140°
Time on adjustment:	5 secs - 20 mins
Photocell adjustment:	5 lux to daylight
Protection:	IP54
Operating Frequency:	868MHz
RF range:	up to 200m (in open field conditions)
Operating temperature:	-20°C to +35°C

SWITCHING RECEIVER:

Power supply:	230Vac ~ 50Hz
Load switching capacity	
Tungsten Filament:	1200W
Tungsten Halogen:	1200W
Fluorescent:	250W

Note: Not suitable for compact fluorescent lamps

Protection:	IP54
Operating temperature:	-20°C to +50°C
Operating Frequency:	868MHz
RF range:	see transmitter device spec
No of linkable devices:	10

If you require advice on this product please contact the technical service helpline on: 01268 563066.

(Lines open 9.00am to 5.00pm, Monday to Friday)

Maintenance

The product may be cleaned with a soft damp cloth and then wiped dry. Do not use abrasive, solvent based or aerosol cleaners as this may damage and/or discolour the product. Take care not to accidentally move the detector head. Do not allow water to enter or attempt to clean inside the units.

Changing the PIR battery:

Change the PIR battery immediately the low battery indication is noticed, (i.e. the red LED behind the detector lens flashes 5 times after each movement detection). Only fit a new Alkaline PP3 (6LR61) battery.

Disposal & Recycling

At the end of their useful life the packaging and product should be disposed of via a suitable Recycling Centre. Do not dispose of with your normal household waste. DO NOT BURN.

Declaration

Novar ED&S hereby declares that this Wirefree PIR Detector is in compliance with the essential requirements and other relevant provisions of the Radio and Telecommunications Terminal Equipment (R&TTE) directive, 1999/5/EC.

Guarantee

Novar ED&S undertakes to replace or repair at its discretion goods (excluding non rechargeable batteries) should they become defective within 2 years solely as a result of faulty materials and workmanship. Understandably if the product has not been installed, operated or maintained in accordance with the instructions, has not been used appropriately or if any attempt has been made to rectify, dismantle or alter the product in any way the guarantee will be invalidated.

The guarantee states Novar ED&S Ltd's entire liability. It does not extend to cover consequential loss or damage or installation costs arising from the defective product. This guarantee does not in any way affect the statutory or other rights of the consumer.

If an item develops a fault, the product must be returned to the point of sale with proof of purchase, a full description of the fault and all relevant batteries (disconnected).

Friedland is a trademark of Novar ED&S.

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