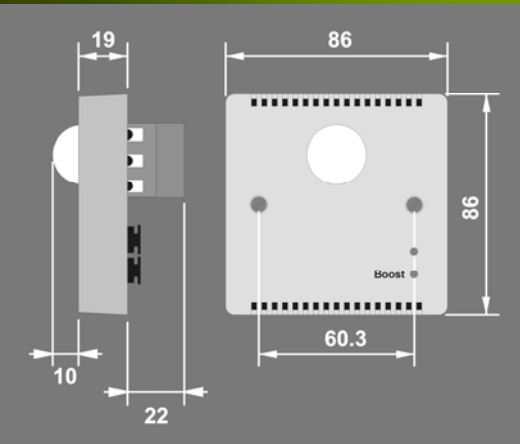


# Energy Saving Controls



## ENERSTAT-PIR ELECTRONIC THERMOSTAT



## DESCRIPTION AND OPERATION

The ENERSTAT-PIR electronic thermostat will accurately maintain the temperature of a room at two levels (or setpoints): the setback temperature and the boost temperature. The boost temperature is automatically selected using a PIR (passive infrared) occupancy detector which detects moving body heat.

Normally the lower setback temperature level is maintained. When occupancy is detected by the PIR sensor the higher boost level is selected; when occupancy is no longer detected and after an adjustable time period the unit reverts to using the setback temperature.

Typically the setback level would be used to maintain background heat in a room. When the room is occupied, the boost level provides a comfortable heat, but only while the room remains occupied.

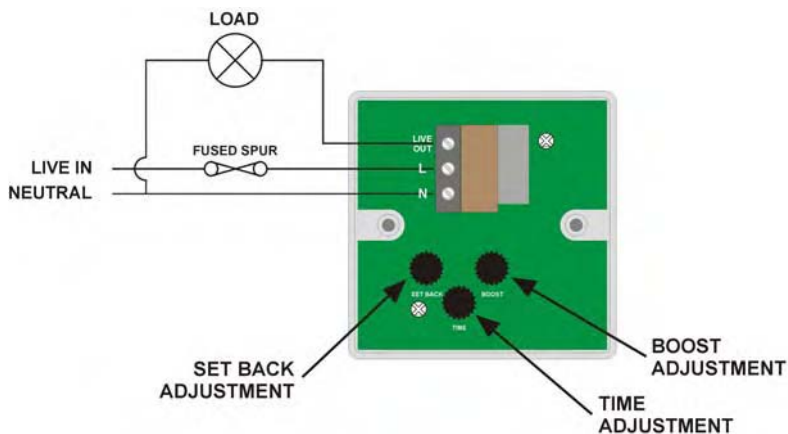
The ENERSTAT-PIR can directly switch a heating load making it ideal for the control of panel heaters.

## WIRING

Wire the ENERSTAT-PIR as in the diagram.

To get accurate temperature measurements, siting the unit in the correct location is important:

- Always mount onto a wall not a ceiling
- Do not install above a heater
- Allow a clearance of 500mm from the heater being controlled and 1m from forced air heating or ventilation
- Avoid installing near drafts of airflow
- Ideally install at a height of 1.2m to 1.5m
- Do not cover the slots at the top and bottom
- Mounting on an internal wall or partition gives the best measurement accuracy
- Avoid direct sunlight entering the PIR sensor
- Do not fix to a vibrating surface



## INSTALLATION

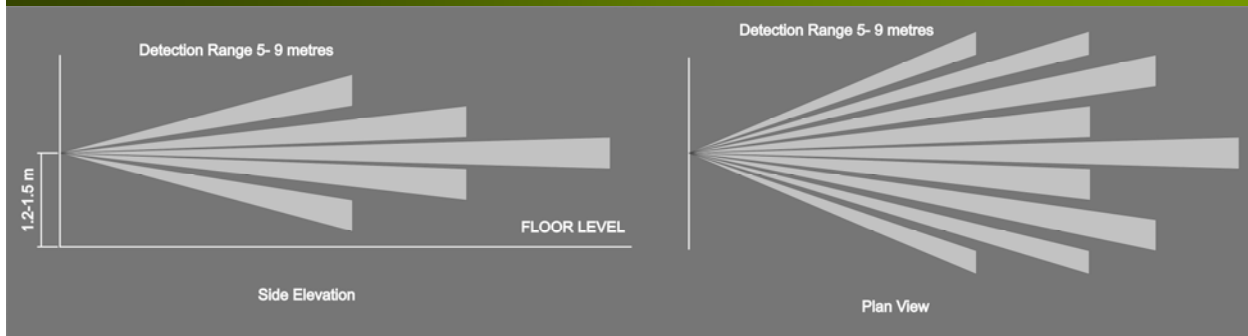
**Warning.** This device works at mains potential. Be sure to take care when working with electricity.

1. Make sure the load is connected and in working order.
2. Isolate the mains supply to the circuit at the main distribution board.
3. Adjust the setback, boost and time settings according to the diagram.



4. Connect the controller via the terminal block. Live supply to the *L* terminal, Neutral supply to the *N* terminal and the load to the *LIVE OUT* terminal.
5. Screw unit to the wall and switch the mains supply on.
6. If the heater has its own internal thermostat, turn this to maximum.
7. When the RED LED is lit, this indicates that the unit is supplying power to the heater.
8. When the GREEN LED is lit, the unit is using the BOOST temperature.
9. Wait approximately 1 minute for the thermostat to operate.
10. The heater will now come on only if the temperature in the room is less than the thermostat setpoint.
11. Due to variations in room size, heater efficiency, airflow, mounting position, drafts etc. the temperature settings on the dial s should be used as guidance only. It may be necessary to adjust the unit to different settings in order to achieve the required temperatures.
12. To test that the unit is functioning correctly, repeat from step 2 and select maximum boost temperature and minimum timing.
13. To test the PIR detector set to minimum timing. Stay extremely still for approximately 40 seconds and wait for the green light to go out. Subsequent movement should bring the green light on again.

## DETECTION PATTERN



## FAULT FINDING

### HEATER DOES NOT COME ON

Note that there is a delay of approximately 1 minute from power being applied before anything happens.

Check that the temperature in the room is below the setpoint. If not, then the heater will not come on. Adjust the temperature settings accordingly.

Check that the boost has been selected—the green light should be on. If this has not been selected then the lower setback temperature setting will be used.

Check the circuit by strapping across L and LIVE OUT terminals.

### BOOST LIGHT DOES NOT COME ON

Note that there is a delay of approximately 1 minute from power being applied before anything happens.

Check that the unit is powered up by measuring the supply voltage across L and N

### BOOST LIGHT STAYS ON

The boost light will stay on when occupancy is detected.

### ROOM TOO COLD

Check that the heater is working and the thermostat on the heater is turned to maximum.

Check the temperature settings and increase if necessary.

Make sure that the thermostat is not installed above or near to the heater.

## SPECIFICATION

### LOAD

16 Amp resistive heating  
Not suitable for controlling quartz heaters

### SUPPLY VOLTAGE

220-240 Volts AC 50 Hz

### TIME OUT PERIOD

Adjustable 30 seconds to 4 hours

### SETBACK TEMPERATURE

Adjustable 5°C to 20°C

### BOOST TEMPERATURE

Adjustable 10°C to 30°C

### FIXING METHOD

Surface fixing 25mm deep plastic surface mount moulded box.  
Flush fixing 35mm steel wall box (ensure top and bottom lugs are removed) or 35mm deep cavity wall box.

### TERMINAL CAPACITY

4.0mm<sup>2</sup>

### MATERIAL

Flame retardant ABS

### TYPE

Class 2

### TEMPERATURE

-10°C to 40°C

### CONFORMITY

EMC-89/336/EEC

LVD-73/23/EEC



## IMPORTANT NOTICE!

This device should be installed by a qualified electrician in accordance with the latest edition of the IEE wiring regulations.

Due to our policy of continual product improvement CP Electronics reserves the right to alter the specification of this product without prior notice.

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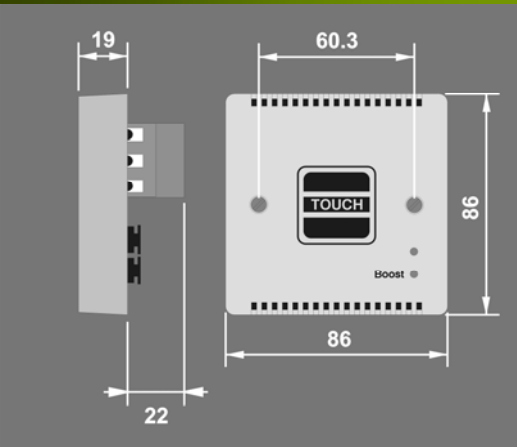
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FMA5709



## ENERSTAT-T ELECTRONIC THERMOSTAT



## DESCRIPTION AND OPERATION

The ENERSTAT-T electronic thermostat will accurately maintain the temperature of a room at two levels (or setpoints): the setback temperature and the boost temperature.

Normally the lower setback temperature level is maintained. When the front of the unit is touched, the higher boost level is selected, but only for a preset time period. After the time period the unit reverts to using the setback temperature.

Typically the setback level would be used to maintain background heat in a room. When the occupant requires extra heat, the boost level provides this, but only for the duration of the time period.

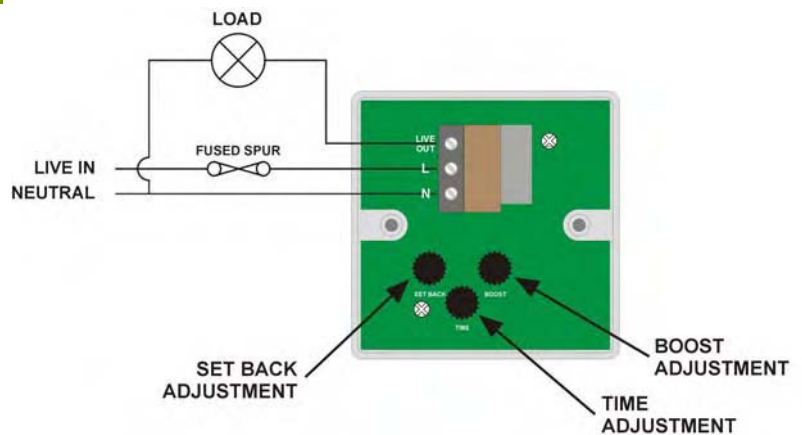
The ENERSTAT-T can directly switch a heating load making it ideal for the control of panel heaters.

## WIRING

Wire the ENERSTAT-T as in the diagram.

To get accurate temperature measurements, siting the unit in the correct location is important:

- Always mount onto a wall not a ceiling
- Do not install above a heater
- Allow a clearance of 500mm from the heater being controlled
- Avoid installing near drafts of airflow
- Ideally install at a height of 1.2m to 1.5m
- Do not cover the slots at the top and bottom
- Mounting on an internal wall or partition gives the best measurement accuracy



## INSTALLATION

**Warning.** This device works at mains potential. Be sure to take care when working with electricity.

1. Make sure the load is connected and in working order.
2. Isolate the mains supply to the circuit at the main distribution board.
3. Adjust the setback, boost and time settings according to the diagram.



4. Connect the controller via the terminal block. Live supply to the *L* terminal, Neutral supply to the *N* terminal and the load to the *LIVE OUT* terminal.
5. Screw unit to the wall and switch the mains supply on.
6. If the heater has its own internal thermostat, turn this to maximum.
7. When the RED LED is lit, this indicates that the unit is supplying power to the heater.
8. When the GREEN LED is lit, the unit is using the BOOST temperature.
9. The heater will now come on only if the temperature in the room is less than the thermostat setpoint.
10. Due to variations in room size, heater efficiency, airflow, mounting position, drafts etc. the temperature settings on the dial s should be used as guidance only. It may be necessary to adjust the unit to different settings in order to achieve the required temperatures.
11. To test that the unit is functioning correctly, repeat from step 2 and select maximum boost temperature and minimum timing.

## FAULT FINDING

### HEATER DOES NOT COME ON

Check that the temperature in the room is below the setpoint. If not, then the heater will not come on. Adjust the temperature settings accordingly.

Check that the boost has been selected—the green light should be on. If this has not been selected then the lower setback temperature setting will be used.

Check the circuit by strapping across L and LIVE OUT terminals.

### BOOST LIGHT DOES NOT COME ON

Press the touch pad on the front of the unit.

Check that the unit is powered up by measuring the supply voltage across L and N

### ROOM TOO COLD

Check that the heater is working and the thermostat on the heater is turned to maximum.

Check the temperature settings and increase if necessary.

Make sure that the thermostat is not installed above or near to the heater.

### ROOM TOO HOT

Check the temperature settings and reduce if necessary.

## SPECIFICATION


### LOAD

16 Amp resistive heating  
Not suitable for controlling quartz heaters

### SUPPLY VOLTAGE TIME OUT PERIOD SETBACK TEMPERATURE BOOST TEMPERATURE FIXING METHOD

220-240 Volts AC 50 Hz  
Adjustable 30 seconds to 4 hours  
Adjustable 5°C to 20°C  
Adjustable 10°C to 30°C  
Surface fixing 25mm deep plastic surface mount moulded box.  
Flush fixing 35mm steel wall box (ensure top and bottom lugs are removed) or 35mm deep cavity wall box.

### TERMINAL CAPACITY MATERIAL TYPE TEMPERATURE CONFORMITY

4.0mm<sup>2</sup>  
Flame retardant ABS  
Class 2  
-10°C to 40°C  
EMC-89/336/EEC  
LVD-73/23/EEC 

### IMPORTANT NOTICE!

This device should be installed by a qualified electrician in accordance with the latest edition of the IEE wiring regulations.

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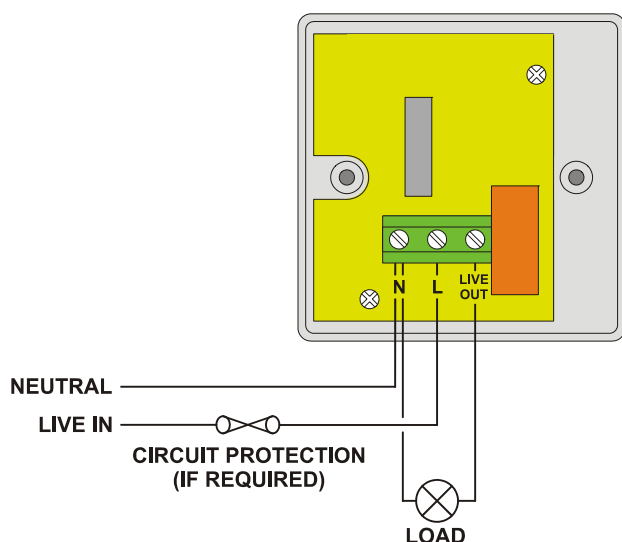
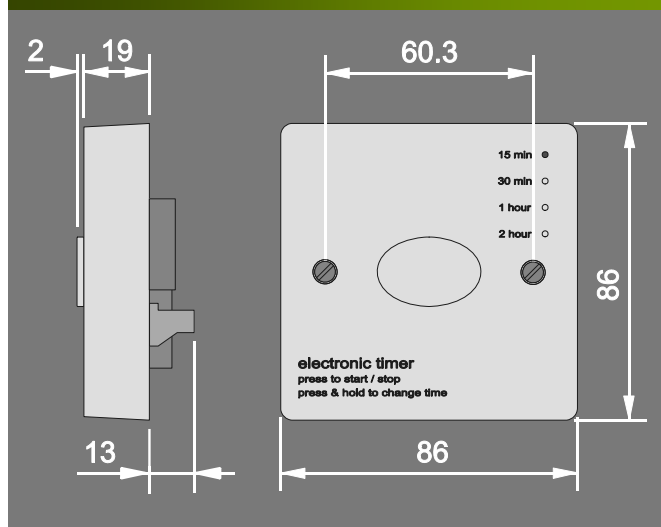
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FMA5709



## RBT2 RUN-BACK TIMER



## DESCRIPTION AND OPERATION

The RBT2 run back timer is a high output electronic timer which provides control for a wide range of loads. The unit allows an appliance to be powered for a set time period which can be adjusted by the user. A simple LED display shows the user how much time is left to run, and its "Night Light" feature illuminates all the LED's when the unit is not in use, so the unit can be located in the dark. Pressing the switch whilst the unit is operating allows the user to cancel the timing program, and the memory function of the timer will remember the last time period selected.

To operate the unit, follow these steps:

1. Press the button to start the timing sequence - the last selected time period will be used.
2. As the unit times out the position of the LED will change to show how much time is left. The LED will give a warning flash when 2 minutes are left on the timing sequence.
3. Pressing the button again during timing will turn the unit off.
4. Press and hold the button to set the desired time period (15 minutes; 30 minutes; 1 hour or 2 hours). The LED will illuminate next to the selected time. After holding the button for a few seconds the timing will change to the next time period available. Release the button when it illuminates next to the desired time period — the LED will stay on the selected time.
5. When the unit has turned off, it is not necessary to select the time period again, just press the button to repeat the previous time period.

## INSTALLATION

**Warning.** This device works at mains potential. Be sure to take care when working with electricity.

1. Make sure the load is connected and in working order.
2. If fitting to a metal back box ensure that top and bottom lugs are removed.
3. Isolate the mains supply to the circuit at the main consumer unit.
4. Connect the controller via the terminal block. Live supply to the L terminal, the load to the LIVE OUT terminal and neutral to the N terminal.
5. Screw the unit to the wall and switch the mains supply back on at the distribution board.

## SPECIFICATION

### LOAD

16 Amp resistive load (including immersion heaters)  
 6 Amp fluorescent lighting  
 3 Amp compact fluorescent lighting  
 3 Amp low energy lighting  
 3 Amp low voltage lighting (switch primary of transformer)  
 Fluorescent lighting (max 6 fittings recommended)

### SUPPLY VOLTAGE

220-240 Volts AC 50 Hz

### TIME OUT PERIOD

15 minutes; 30 minutes; 1 hour or 2 hours (selectable)

### FIXING METHOD

Surface fixing 16mm deep plastic surface mount moulded box.  
 Flush fixing 16mm deep steel wall box or 20mm deep cavity wall box.

### TERMINAL CAPACITY

4.0mm<sup>2</sup>

### MATERIAL

Flame retardant ABS

### TYPE

Class 2

### TEMPERATURE

-10°C to 35°C

### CONFORMITY

EMC-89/336/EEC  
 LVD-73/23/EEC



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### IMPORTANT NOTICE!

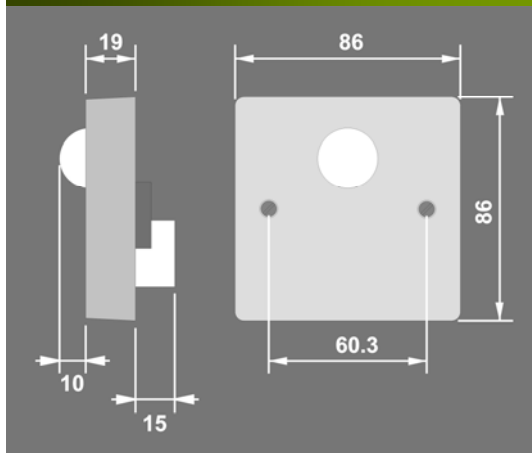
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## SPIR-F SERIES PRESENCE DETECTOR



## DESCRIPTION AND OPERATION

The SPIR-F series of presence detector switches are designed to provide automatic control of lighting, heating or ventilation loads. They detect movement using a PIR sensor and turn the load on. When an area is no longer occupied the load will switch off after an adjustable time out period.

An optional internal light sensor provides additional energy saving in lighting applications (SPIR-LSF). When an area is occupied lighting is only switched on when the level of natural light is below a preset level.

When the unit is first powered up the PIR sensor will always detect immediately regardless of whether the room is occupied. A selectable power up delay allows the installer to choose whether the load comes on immediately when the unit is powered up or is kept off for a small time (about 40 seconds) to allow the sensor to settle.

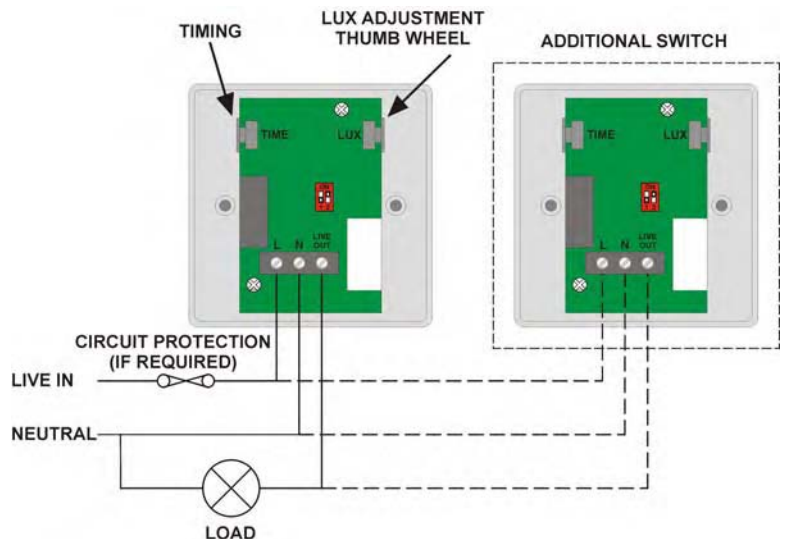
## WIRING

Wire the SPIR-F products as in the diagram.

To switch from more than one position simply wire two or more units in parallel to achieve two way and intermediate switching.

The detector should be sited so that the occupants of the room fall inside the detection pattern shown overleaf, at a recommended height of 1.2m to 1.5m for wall sensors. Note that the higher the sensor is installed the shorter the detection range will be.

- Avoid direct sunlight entering the sensor.
- Do not site within 1m of forced air heating or ventilation.
- Do not site within 1m of any lighting.
- Do not fix to a vibrating surface.



## INSTALLATION

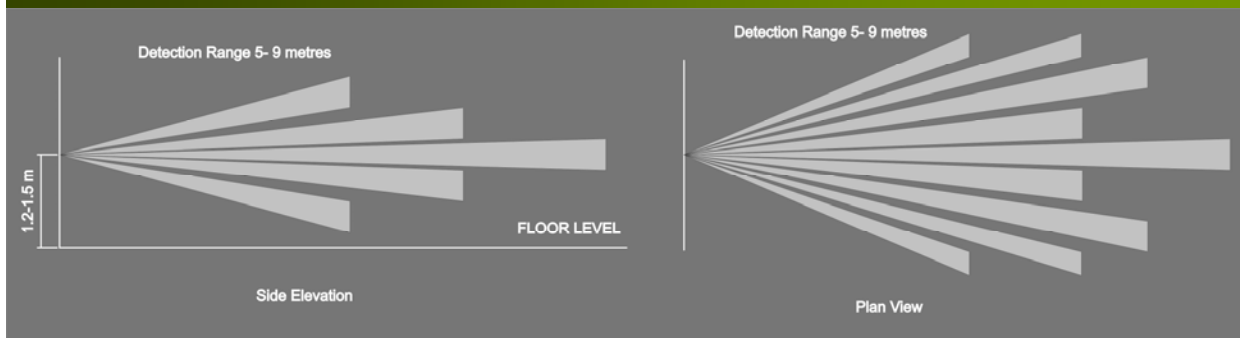
**Warning.** This device works at mains potential. Be sure to take care when working with electricity.

1. Make sure the load is connected and in working order.
2. Isolate the mains supply to the circuit at the main consumer unit.
3. Connect the controller via the terminal block. Live supply to the L terminal, Neutral to the N terminal and the load to the LIVE OUT terminal.
4. If fitted set the LUX level thumbwheel fully clockwise.
5. Set the time to minimum (fully anticlockwise) and set both switches to ON (0-1/2 hour range, no power up delay) according to the chart below.



6. Screw the unit to the wall and switch the mains supply back on at the distribution board.
7. The load should come on immediately.
8. Vacate the room or remain very still and wait for the load to switch off (should take no more than 2 minutes).
9. Check that the load switches on when movement is detected.
10. Now set the final LUX level and timing by isolating mains supply to the circuit at the main consumer unit.
11. To set the LUX level wait until the level of natural daylight is just enough that lighting is required. Starting with the LUX thumbwheel fully anticlockwise. Very slowly turn the thumbwheel clockwise until the lights come on. Note that when the LUX thumbwheel is fully clockwise then the lights will **always** come on with occupancy.
12. Select the time out range using the switch 1 according to the chart below. Set the time out period using the thumbwheel, fully clockwise is the maximum (either 1/2 hour or 1 hour depending on the range).
13. If required, select the power up delay (to prevent the load coming on immediately on power up).
14. Screw the unit to the wall and switch the mains supply back on at the distribution board.

## DETECTION PATTERN



## FAULT FINDING

### LOAD DOES NOT COME ON

Check to see if the live supply to the circuit is good. Strap across the *L* and *LIVE OUT* terminal to turn the load on.

For LUX versions only, if the supply and wiring are good, check the LUX level setting. Increase the LUX level setting to allow the controller to turn on at higher ambient natural light level.

### LIGHTS DO NOT GO OFF

Ensure that the area is left unoccupied for a greater time period than the time out period set using the switch.

Make sure that the sensor is not adjacent to circulating air, heaters or lamps.

## SPECIFICATION

### LOAD

16 Amp resistive load  
 10 Amp incandescent lighting  
 6 Amp fluorescent lighting  
 3 Amp compact fluorescent lighting  
 3 Amp low energy lighting  
 3 Amp low voltage lighting (switch primary of transformer)  
 Fluorescent lighting (max 6 fittings recommended)  
 For fluorescent lighting total power factor correction capacitance must not exceed 40µF.  
 3 Amp fans and ventilation equipment  
 Switch SON lighting loads via a contactor

**SUPPLY VOLTAGE** 220-240 Volts AC 50 Hz  
**TIME OUT PERIOD** Adjustable 10 seconds to 60 minutes in two ranges  
**LIGHT LEVEL** Optional adjustment by thumbwheel light to dark.  
**FIXING METHOD** Surface fixing 25mm deep plastic surface mount moulded box.  
 Flush fixing 25mm steel wall box or 32mm deep cavity wall box.

**TERMINAL CAPACITY** 4.0mm<sup>2</sup>  
**MATERIAL** Flame retardant ABS  
**TYPE** Class 2  
**TEMPERATURE** -10°C to 35°C  
**CONFORMITY** EMC-89/336/EEC  
 LVD-73/23/EEC



## PART NUMBERS

SPIR-F Wall mounted presence detector  
 SPIR-LSF Wall mounted presence detector with integral light sensor

### IMPORTANT NOTICE!

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