X20022 – Infresco P 6kW
User Manual
Issue 6

Contents

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1 Key Features

- Energy saving – only provides heat when people are present.
- Extends lamp Life.
- Temperature sensor – lamps inhibited when ambient temperature exceeds set point.
- Control up to 4 x 1500W lamps.
- Soft-start/zero-voltage switch-off.
- Low-cost.
- Easy to install.

2 Technical Specifications

Supply Voltage	230V AC ±10% @ 50/60Hz
Switching Capacity	6kW Max.
Detection Range	5 metres
Detection Angle	100°
Temperature Set Point	5 to 25°C
Lamp On-time	1 to 60 Minutes
Current Consumption (control circuit)	20mA
Terminals	6.0mm^2 Rising Clamp
Operating Temperature	-20°C to +40°C
Protection Rating	IP65
Gland Diameter	Max. Cable Entry 2.5mm^2
Enclosure Dimensions (W x L x H) (mm)	130 x 130 x 75

3 Introduction

The Infresco-P 6kW is part of a family of controllers designed to provide energy saving when used with quartz infrared halogen lamps or other heating and lighting products. The 'P' model has a built in PIR sensor allowing the lamps to automatically switch on only when people are present. In addition to the PIR, a temperature sensor monitors the outside temperature and inhibits the lamps when the temperature exceeds a pre-determined set point of between 5°C and 25°C.

The microcontroller-based unit incorporates zero-voltage switching and a soft-start function to eliminate the lamps' initial high inrush current – potentially increasing lamp life by as much as 30%. The lamps are switched on for a user-settable time period of between 1 and 60 minutes. This period is reset each time the PIR detects any further movement. Installation of the unit is simple and once installed is relatively maintenance-free.

4 Installation

Important: Read carefully the following information before installing the unit.

The passive infrared sensor (PIR) fitted in this unit detects changes of infrared energy through the Fresnel lens on the front face of the unit. The detection area and range depend significantly on its mounting position.

The PIR not only detects movement of the human body, but also other heat sources similar to the human body. To prevent false activation, the unit must not be located directly facing or in close proximity to the heater lamps. Avoid locating the unit near to heating flues/exhausts, air conditioning units, moving trees/bushes and reflective surfaces.

Note: The PIR cannot detect the presence of a human body that is not moving.

To prevent malfunction of the PIR sensor, avoid subjecting it to rapidly-changing temperatures, strong shock or vibration or high humidity and temperature.

5 Wiring

It is recommended that installation and maintenance of this equipment should be done with reference to the current edition of the I.E.E. wiring regulations (BS7671) by suitably qualified/trained personnel. These regulations contain important requirements regarding safety of electrical equipment (for International Standards refer to I.E.C/ directive IEC950).

Warning! Isolate the mains supply before commencing any work on the unit. Failure to do so could result in serious injury or fatality.

The unit is fitted with three cable glands. Only one cable should be fitted per gland to prevent degrading the unit's IP rating. To connect 4 lamps, refer to the **Wiring Diagram** on the next page for an alternative configuration using two junction boxes.

The mains supply connects to the terminal block marked **'LINE'**. Connect the supply **LIVE** to the **'L'** terminal, **NEUTRAL** to the **'N'** terminal and **EARTH** to the **'E'** terminal.

The lamps connect to the terminal block marked **'LOAD'**. Connect the load **LIVE** to the **'L'** terminal, NEUTRAL to the 'N' terminal and EARTH to the 'E' terminal.

Important! Ensure all earth wires are connected to maintain earth continuity to the lamp fittings.

Ensure the 3-way plug is connected to the socket marked **'PIR SENSOR'** (CN4 or CN6).

Check all wiring and make sure the cable glands are tightened.

6 Commissioning

Turn the lamp on-time preset (VR2) fully anti-clockwise to select 'walk test' mode (see diagram opposite).

Check the PIR sensitivity preset (VR3) is set to approximately the half-way position (default). The temperature set point preset (VR1) is ignored in 'walk west' mode – adjust this later.

Replace the lid and switch on the mains supply to the unit. The controller will remain idle for 60 seconds to allow the PIR sensor to stabilise. After 60 seconds, the detection area should be walk tested to verify the PIR's coverage. Each time the PIR detects sufficient movement, the lamps switch on for 5 seconds.

Note: Each time the lamps switch off, the PIR is inhibited for 5 seconds to prevent the change in infrared energy given off by the lamps from causing a false activation.

Once the detection area has been verified, adjust the on-time preset to between 1 and 60 minutes. This will automatically disable 'walk test' mode.

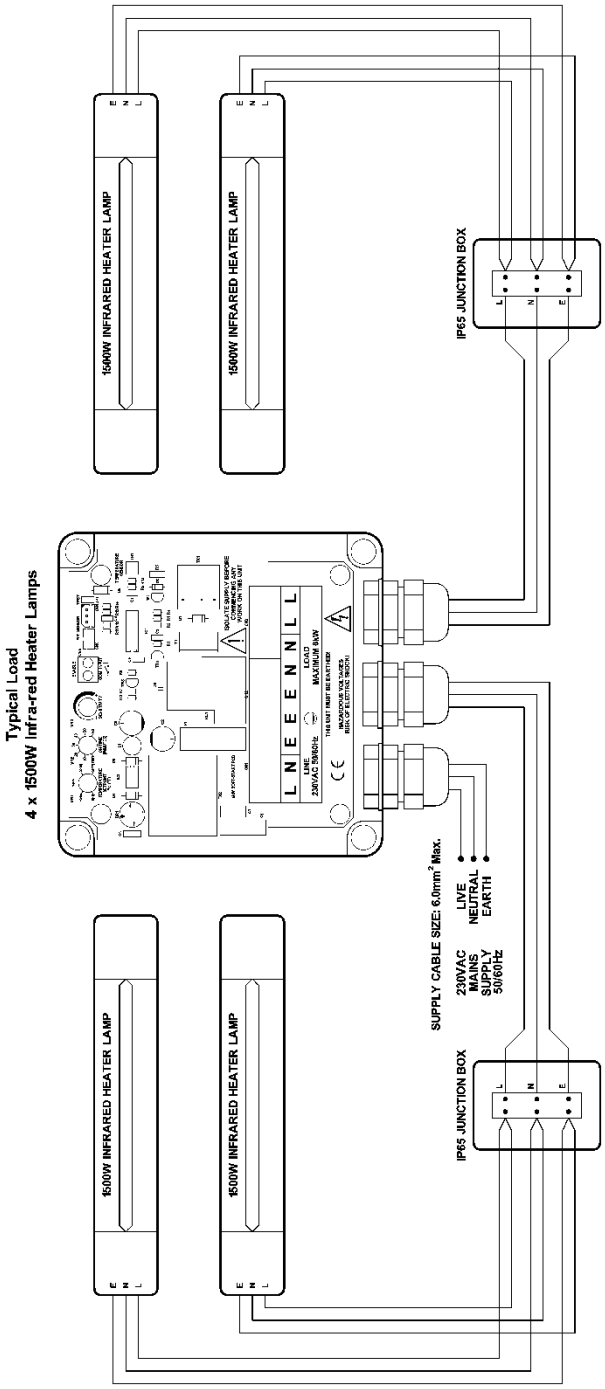
Finally, adjust the temperature set point preset (VR1). When the ambient temperature (measured by the sensor) exceeds the set point, the lamps will remain off until the ambient temperature drops below the set point.

For example, if the set point is 20°C the lamps will switch on when movement is detected as long as the ambient temperature is less than 20°C.

The PIR sensitivity preset can also be adjusted if necessary. Turning the preset clockwise increases the sensitivity.

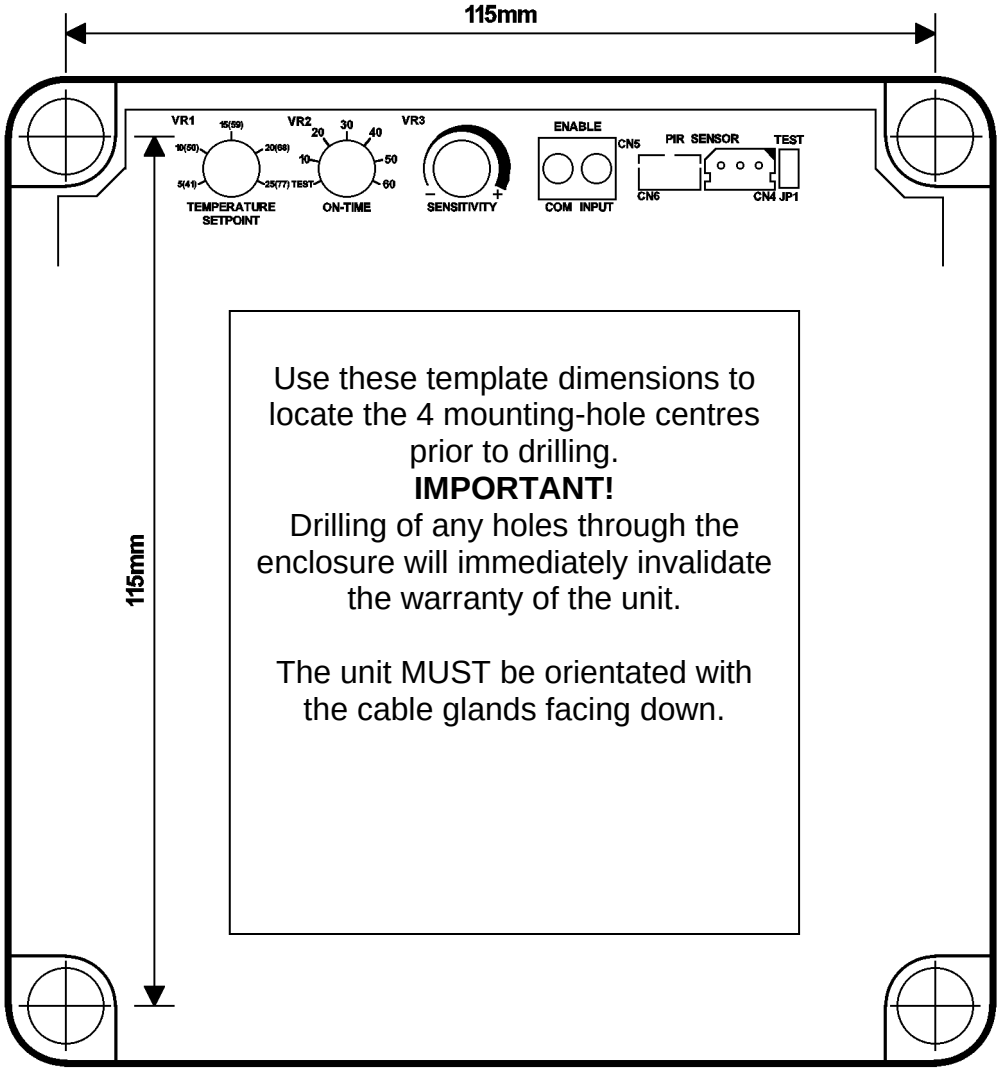
Note: Increasing the PIR sensitivity may also increase the likelihood of false activations.

7 Wiring Diagram



8 Mounting Template

IMPORTANT! When wall mounting, the unit must be orientated with the cable glands facing down.



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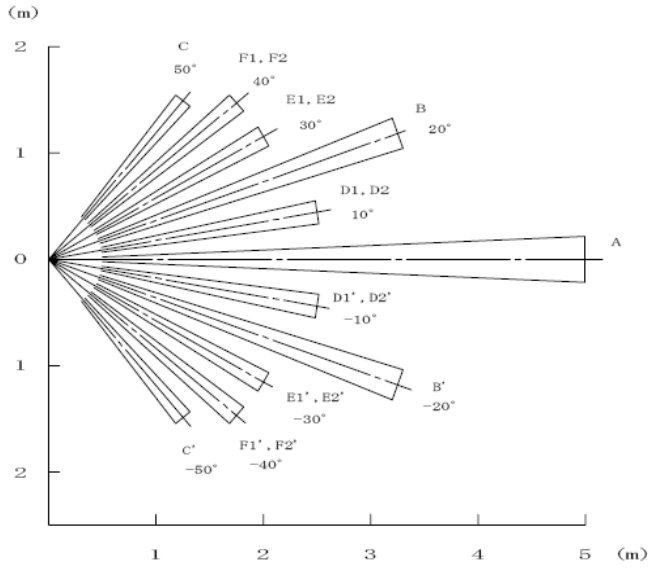
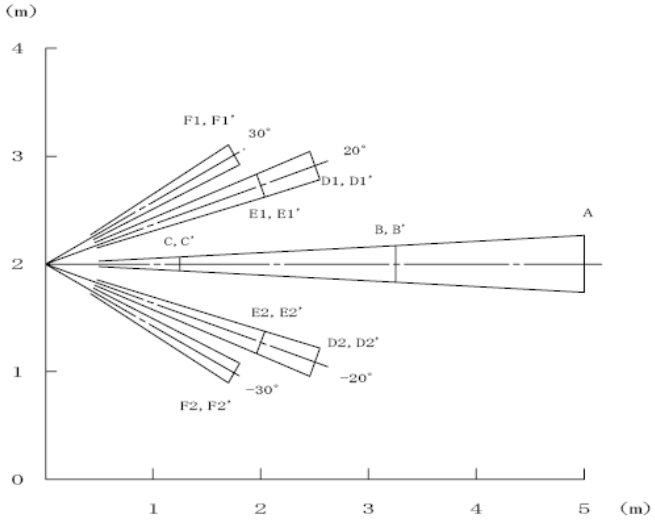
9 PIR Detection Area



Horizontal



Vertical

The Infresco-P 6kW can be wall or ceiling-mounted. For wall-mounting, the unit should be positioned 1 to 3 metres high. The diagram above shows the PIR's detection area.

The unit should be fixed securely using the four mounting holes accessible from the front of the unit. Remove the lid to access the mounting holes. To ease installation, a mounting template is provided on the next page to locate the 4 mounting hole centres.

10 Troubleshooting

Warning! Isolate the mains supply before commencing any work on the unit. Failure to do so could result in serious injury or fatality.

Problem: Lamps do not switch on.

Solution:

- Check the mains supply to the unit is switched on.
- The ambient temperature may be higher than the set point temperature. Either increase the set point temperature (VR1) or, to test the lamps, put the unit into 'walk test' mode.
- Check the LINE and LOAD wiring connections to the unit and lamps. Fit a lamp that you know is in working order.
- Contact your supplier.

Problem: Lamps do not switch off.

Solution:

- Check the on-time preset (VR2) is set correctly and ensure no movement occurs within the detection area. Allow the on-time to expire.
- The PIR may be receiving false activations. Either mask the PIR lens on the front of the unit or carefully unplug the 3-way PIR lead from the PCB inside the unit (CN4 or CN6) to disable the PIR. Allow the on-time to expire. If the lamps now switch off, the PIR is receiving false activations. See section 'Installation'.
- Contact your supplier.

11 Recommendations & Safety Requirements

Other documents, which may be appropriate to your application, are available on request.

Code	Identity	Description
X10255	SRA	Safety requirements: Addressing the Low Voltage Directive (LVD) including, Thermal Data/Cooling, Live Parts Warning, Earthing requirements and Fusing recommendations
P01.1	COS	UAL Conditions of Sale

Note: It is recommended that installation and maintenance of this equipment should be carried out by suitably qualified personnel, with reference to the current edition of the I.E.E. Wiring Regulations BS7671. The regulations contain important requirements regarding the safety of electrical equipment.

12 Product Applications

- Patio areas
- Smoking shelters
- Restaurants
- Warehouses
- Workshops
- Garden Lighting
- Livery Stables

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