HEATSTORE

THE TOTAL ELECTRIC HEATING SOLUTION

HSACR-X Recessed Warm Air Curtains

Installation and Operating Manual

All electrical appliances produced by the company are guaranteed for two years against faulty materials or workmanship. This applies only if the appliance has been used for purposes in accordance with the instructions provided and has not been connected to an unsuitable electricity supply, or subject to misuse, neglect, damage or modified or repaired by any person not authorised by us. This guarantee is offered to you as an extra benefit and does not affect your legal rights.

The correct electricity supply voltage is shown on the rating label attached to the appliance.

Reasonable care has been taken to ensure that this guide is accurate at the time of printing.

In the interest of progress the company reserve the right to vary specifications from time to time without notice

Contents

1. General Information

1.1 Warnings

All installations must be in accordance with the regulations. These instructions must be handed to the user on completion of the installation. Installers and service engineers must be able to demonstrate competence and be suitably qualified in accordance with the regulations. To ensure continued and safe operation it is recommended that the appliance is serviced annually. The heater's outlet/inlet grille must not be obstructed during use. Any modifications made to the unit not approved by Heatstore will void manufacturer's warranty and potentially create a hazard. The appliance is NOT intended for use by persons (including children) with reduced physical, sensory or mental capabilities or lack of experience or knowledge unless they have been given instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance. Parts of the heater can become very hot when in operation and cause burns. The heater is not suitable for spot heating in large rooms with a low ambient temperature.

1.2 Health and Safety

Please read these instructions thoroughly before installing the appliance. Sole liability rests with the installer to ensure that all site safety procedures are adhered to during installation. Sole liability rests with the installer to ensure that protective safety wear such as hand, eye, ear and head protection is used during installation of the product. Ensure that all anchoring points are suitable for the weight of the appliance.

1.3 Location

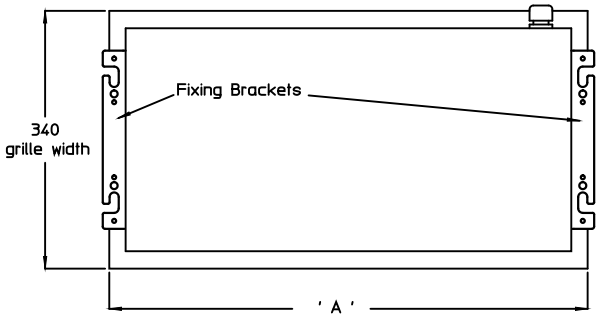
The heaters are designed for discreet positioning in a suspended ceiling or on a bulkhead in the doorways of retail or commercial premises. Overall energy saving is likely when the heater is sited above a frequently opened external door as the air stream can prevent heat loss. Will fit a recess as shallow as 195mm.

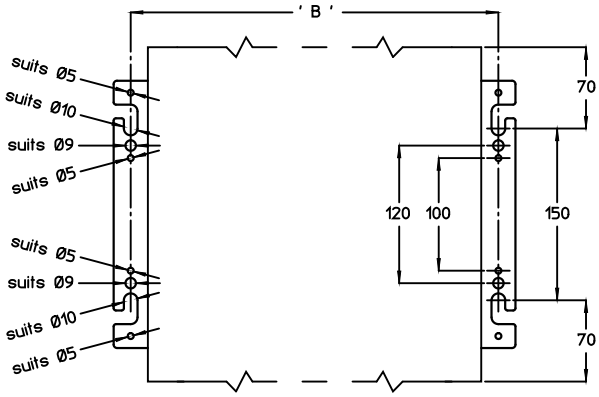
2. Dimensions

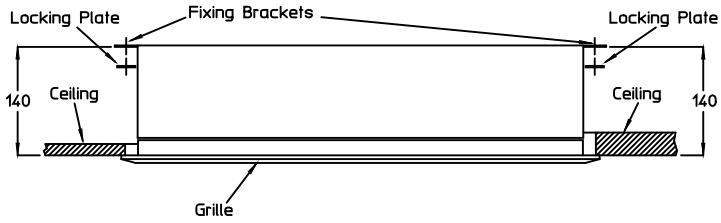
2.1 Air Curtain Dimensions

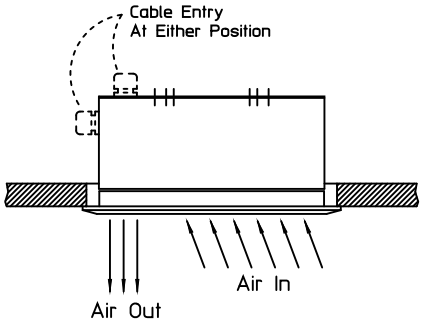
It is recommended that a minimum clearance of 100mm is allowed around the case and 55mm above. The clearance allows for cable entry and prevents combustible surfaces overheating.

The minimum mounting height (floor to grille) is 2m. The maximum mounting height is 3m.

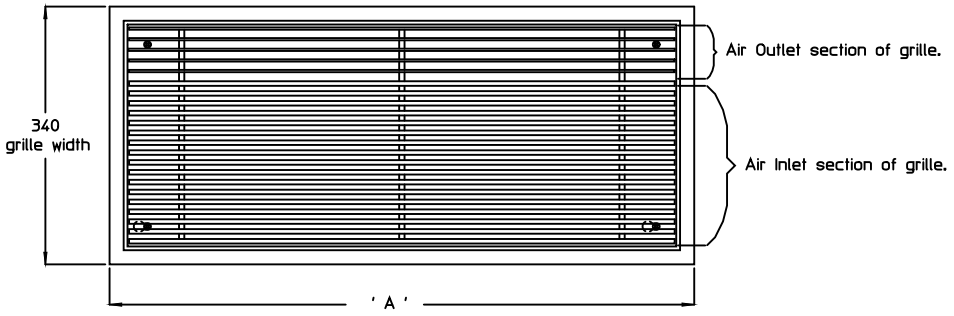








DIMENSION	HSACR3000X	HSACR4500X	HSACR6000
' A '	618	618	930
' B '	608	608	920
' C '	608	608	920



3. Installation Details

3.1 Mounting

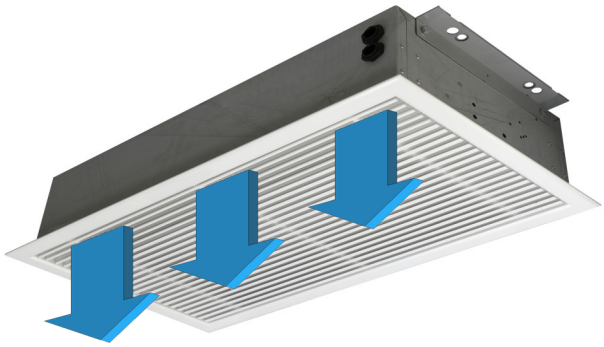
All units should be installed horizontally directly over the door opening. It is recommended that the air curtain is installed on the inside of the building, within the open room space against a wall or ceiling.

Care must be taken to allow complete free air movement into the inlet grilles of the unit to ensure correct working operation of the air curtain. The discharge opening should be as close to the top of the door as possible and cover the entire door width.

Units can be mounted adjacent to each other to cover the full door opening across wider entrances.

The weight of the HSACR3000X and HSACR4500X is 8kg

The weight of the HSACR6000 is 11.5kg



ENSURE AIR OUTLET LOUVRES ARE NEAREST TO THE DOOR APPERTURE.

Fig.1 RAC air outlet

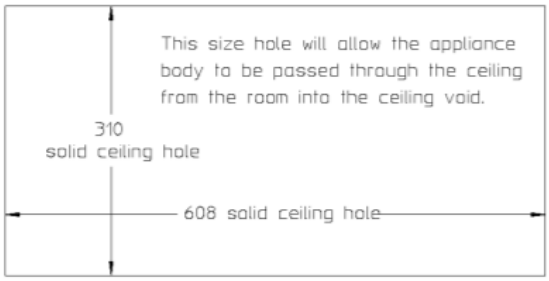


Fig.2 Ceiling cutout for HSACR3000X and HSACR4500X

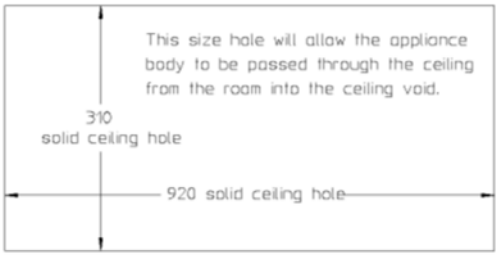


Fig.3 Ceiling cutout for HSACR6000

3.2 Electrical Installation

These units are suitable for connection to 230/240 Volt 50 Hz single phase supply.

The appliance shall be connected to the supply via an appropriate switched fused double pole isolator having a contact separation of greater than 3mm.

There are no exceptions.

For connection to the mains supply it will be necessary to remove the grille from the unit. It will be necessary to connect the mains supply and the lead from the controls prior to refitting the cover. Wire in accordance with wiring diagrams. Test for correct operation and refit the grille.

For safety reasons, a sound earth connection must always be made to the unit before it is put to use. The unit should be wired in accordance with IEE Regulations for the Electrical Equipment of Buildings.

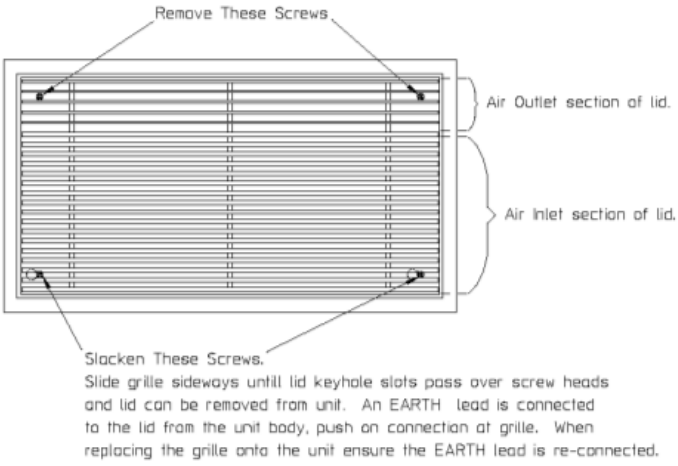


Fig.4 Grille fixings detail

3. Installation Details

3.3 Installation

It is the sole responsibility of the installer to ensure that the points of attachment to the building are sound. Consultation with the consultant/architect or owner of the building is recommended to ensure that a sound, mechanically stable installation is achieved.

Before fitting or wiring the air curtain, ensure the outlet is facing the doorway as on the (Fig.1) and see the general installation guidance notes.

Using a pozidrive screwdriver slacken the two M5 screws in the corners near air inlet side and remove the two M5 screws in opposite corner near the outlet. Slide the lid sideways until the keyhole slots pass over the screw heads. The grille assembly can now be removed from the case. (Fig 4)

Each unit has 2 fixing brackets from which it is suspended. The brackets may be removed to assist in passing the air curtain through the recess then reattached when in-situ.

Either drop rods or catenary wire can be used to fasten the air curtain to the ceiling support structure.

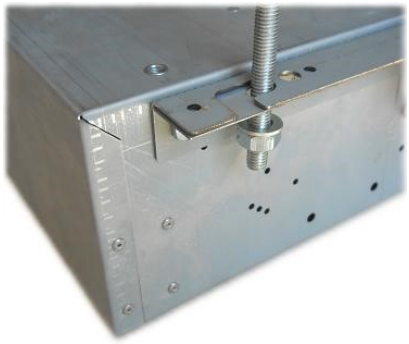
The height between the ceiling face and the top of the air curtain case needs to be adjusted to circa 140mm to enable the grille assembly to fit flush with the ceiling. Adjust accordingly.

After fitting the product in the ceiling recess and adjusting the height to ensure that the grille sits flush to the ceiling (when re-fitted) take the grille assembly and refit using the screws removed.

Fig.5 Fixing points

Fig.6 Wire fixing

Fig.7 Rod fixing



4. Electrical Connections

4.1 Electrical connections

With grille removed, connect the electrical supply and controls wiring to the appropriate terminals (see relevant wiring diagram section).

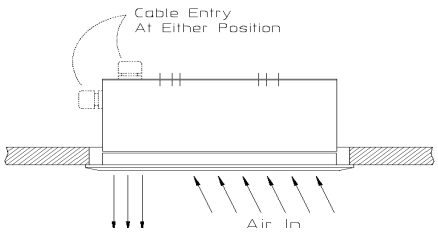
The unit has four holes for the cable entry, two on the top and two on the side. Cable entry may be moved to alternative position if desired (see Fig.9 drawing).

An **EARTH** lead is connected to the lid from the unit body via a push on connection at grille. When replacing the grille onto the unit ensure the **EARTH** lead is re-connected. (see Fig.8)

Electrical supply is 230/240V single phase, Neutral and Earth. The maximum cable inlet size is 4mm².

Fig.8 Grille Earth lead

Fig.9 Cable entry position



4. Electrical Connections

4.2 Electrical connections for standard models

Fig.10 Mains supply direct to heater

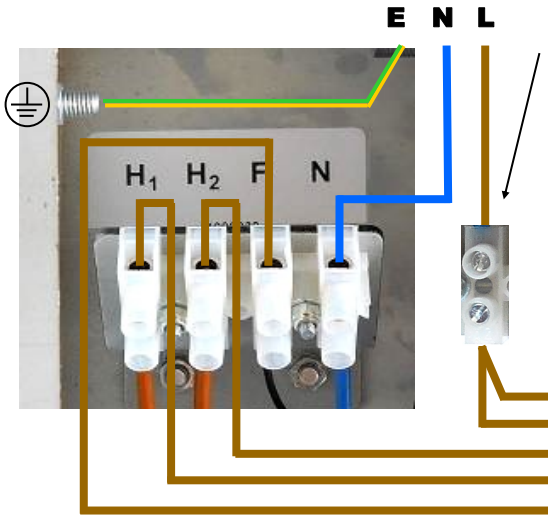


Fig.11 Remote switch terminal side view

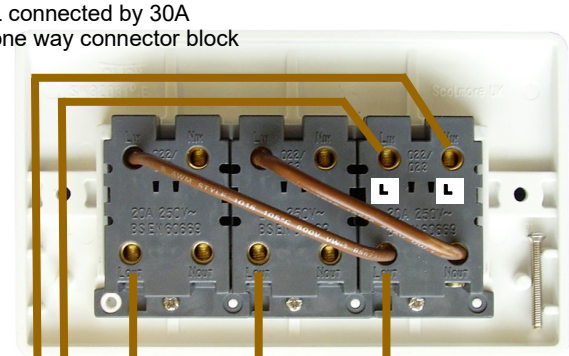
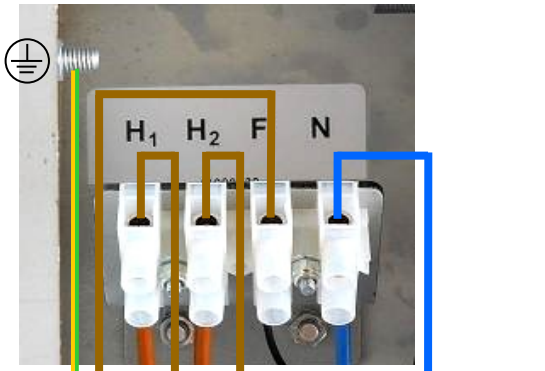
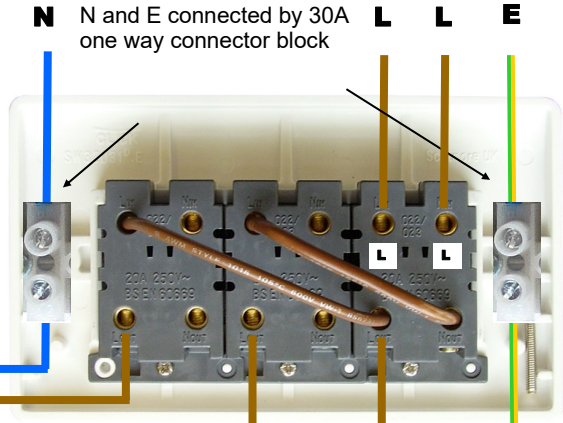


Fig.12 Mains supply via remote switch



F - Fan
H1 - Heating element
H2 - Heating element
N - Neutral
E - Earth

Two independent live feeds must be used on 4.5kW and 6kW heaters as shown on the diagrams



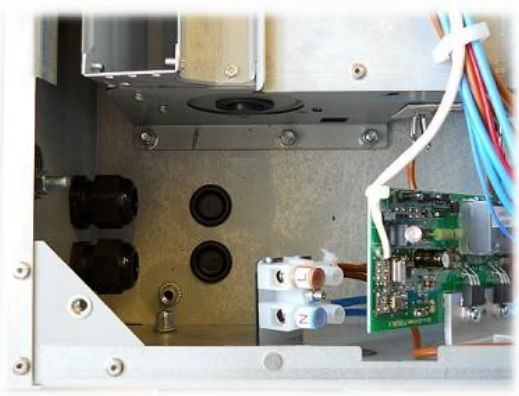
4.3 Electrical connections without using the remote switch standard models

If the heaters are to be controlled by means other than the remote switch supplied, e.g. BMS, then the heat output can be selected by connecting the appropriate terminals.

Fig.13 Wiring of the heaters without using remote switch

WIRED TERMINALS	HSACR3000X	HSACR4500X	HSACR6000
H1 + H2 + F	3000W	4500W	6000W
H1 + F	1000W	1500W	2000W
H2 + F	2000W	3000W	4000W

Please note the 'F' terminal must always be connected



5.1 Heater operation and Status light

WARNING

The standard model heaters rely up on a circulation of relatively cool air to operate efficiently. If the heater is being used in a small space or where there isn't constant traffic through doors it is advised that an independent temperature control is fitted close to the heater to disable or reduce the heat output if the room temperature is too high.

5.1.1 Standard models

All standard HSACR heaters are supplied with a remote switch that gives the following functions; On/off, fan only and heat.

Fig.17
Remote switch

For thermostatic control, a room thermostat of appropriate switch rating maybe connected to the circuit. The thermostat should be wired between the isolator switch and the heater remote switch.

For HSACR4500X and HSACR6000, or to control more than one HSACR3000X heaters by a thermostat, a contactor or a relay in conjunction with the thermostat should be used.

To switch on the appliance and operate the blower, depress the left-hand switch (marked "FAN").

When the centre switch only (marked with a single bar) is depressed the heat output is ⅓ of full heat.
HSACR3000X - 1kW, HSACR4500X - 1.5kW, HSACR6000 - 2kW

When the right hand switch only (marked with a double bar) is depressed the heat output is ⅔ of full heat.
HSACR3000X - 2kW, HSACR4500X - 3kW, HSACR6000 - 4kW

When both the centre switch and the righthand switch are depressed the full heat output is available.
HSACR3000X - 3kW, HSACR4500X - 4.5kW, HSACR6000 - 6kW

The HSACR4500X has an additional operating feature protecting the heater from overheating. In the event of the temperature around the heater reaching excessive levels the heater will automatically reduce its heat output until the temperature in the heater reduces.

5.1.2 Controller standard models

The HSACR3000X, HSACR4500X, HSACR6000 heaters are supplied with a remote controller. The remote control unit houses 3 double pole 20A rocker switches.

The heater can also be controlled remotely via BMS or any controls with contact rated at 20A for HSACR3000X, HSACR4500X, and 30A for HSACR6000.

The controller is wired to the base unit via an appropriate sized cable specified by the current IEE standard.

5.1.3 Noise Levels

Sound pressure levels dBA are measured at a 3m distance with a single air curtain mounted at its maximum mounting height, operating in a room with average acoustic characteristics as defined in CIBSE Guide B5 (reverberation time 0.7s at 1kHz) and a room size equivalent to 8 air changes per hour (ac/h).

The dB meter must not be in the direct airflow of the heater.

Care needs to be taken when selecting air curtains for an installation as noise levels can be several dB higher if the mounting height is reduced, if the room is more 'live' (i.e. hard surfaces, no furnishings or absorbent materials), if the room is smaller than 8 ac/h equivalent or a combination of these factors.
Noise levels will also increase if more than one air curtain is installed at the same doorway (e.g. +3dBA for 2 equal point sources: direct field).

6. Servicing & Maintenance

6.2 General

If the air curtain does not operate after switching on, then a suitably competent service engineer should be called to identify the nature of the fault.

All air curtains are fitted thermal cut-outs and motor thermal protection.

Other faults in relation to the element, motor and wiring should be identified using conventional fault finding techniques.

In the event that electrical components are replaced, please ensure that electrical safety checks in accordance with the regulations in force in the country of use are undertaken.

6.3 Thermal and Fault Protection

The units are protected from overheating in the event of fan failure or an obstruction of the free airflow by thermal cut-outs.

If this happens, the thermal cut-outs effectively switch off the appliance by disconnecting power to the control circuit. The appliance will not operate until the thermal cut-outs have been disconnected from power; then allowed to cool for 15 minutes. This should be done by a competent electrician.

The heaters are also protected by thermal fuses to prevent catastrophic failure. The thermal fuse will trip and disconnect power to the affected heater. Thermal fuses are not resettable.

The cause of cut-outs operating should be investigated before resetting

6.4 Maintenance

Always ensure that the main external electricity supply is switched off before commencing any maintenance on this heater

To obtain the best results from the heater, it is essential to avoid the accumulation of dust and dirt within the unit on the air inlet and discharge grilles. For this reason regular cleaning is necessary, paying particular attention to the removal of dirt build up on the rotor blades.

Cleaning of the fan is best carried out with a soft brush. The product should be serviced annually. Servicing shall be undertaken by a competent person.

6.5 Replacing Fan Heater Assembly

1. Remove the lid.
2. Disconnect the internal wiring from the main terminal block.
3. Remove the four nuts and washers fixing the fan heater assembly to the back of the case.
4. The fan heater assembly can now be eased forward and removed from the heater case.
5. Fit replacement fan heater and reassemble in reverse order.

7. Wiring Diagrams, PCB & Heater Connections

7.1 Wiring Diagram - Standard Models

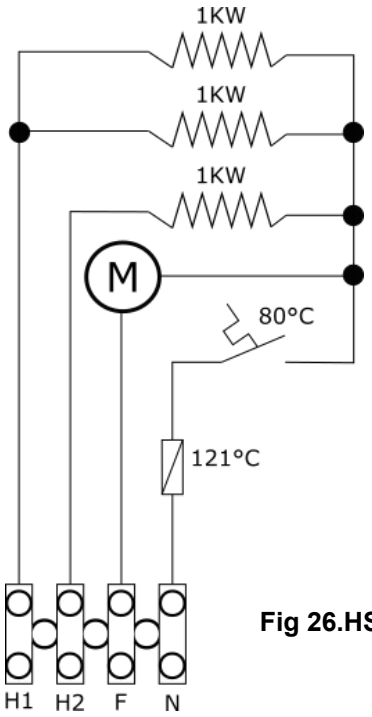


Fig 26.HSACR3000X

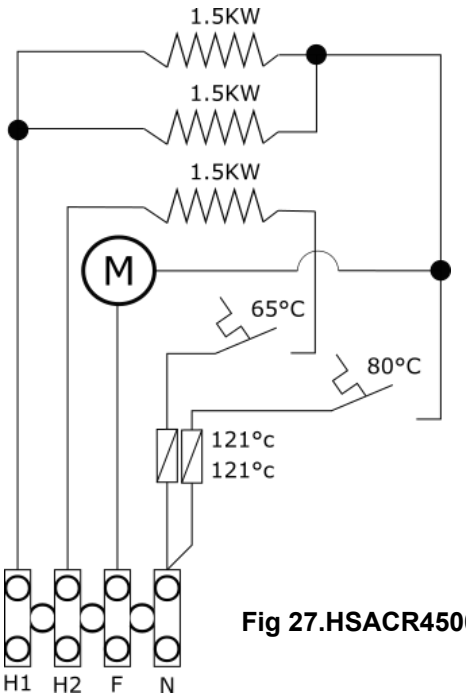


Fig 27.HSACR4500X

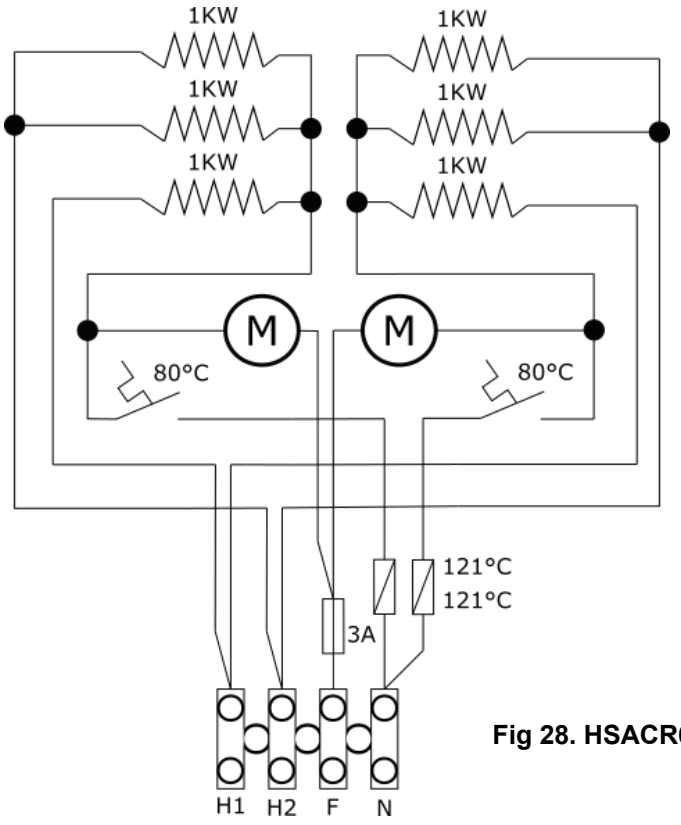


Fig 28. HSACR6000

7. Wiring Diagrams, PCB & Heater Connections

7.2 Heater Connections - Standard Models

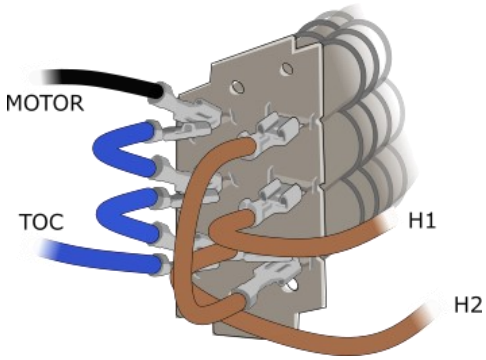


Fig.29.HSACR3000X

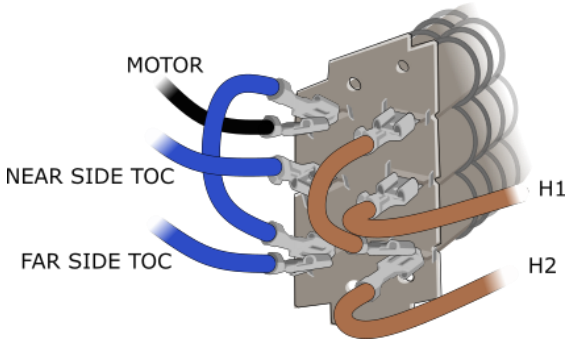


Fig.30. HSACR4500X

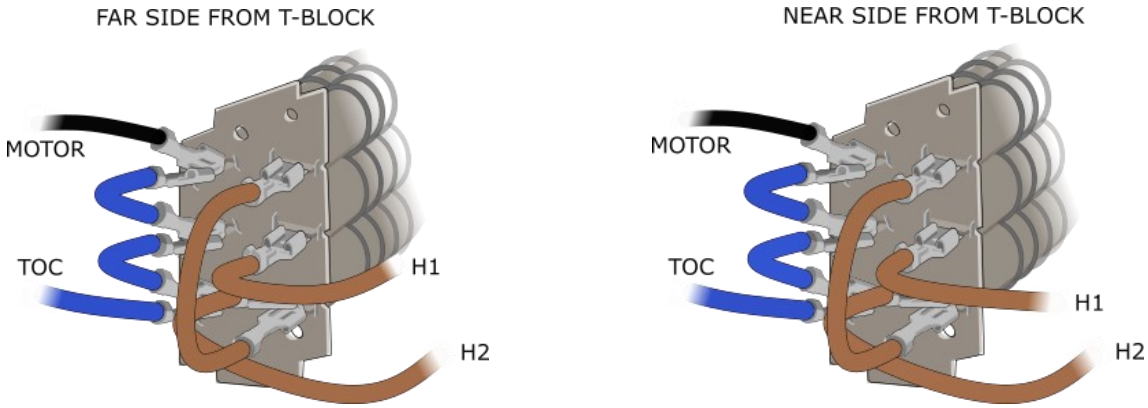


Fig 31 & 32. HSACR6000

HEATSTORE

THE TOTAL ELECTRIC HEATING SOLUTION

Declaration Of Conformity

In accordance with UK Government Guidance.

WE HEREBY CERTIFY THAT THE APPLIANCES DETAILED HEREON HAVE BEEN INSPECTED AND TESTED, AND CONFORM TO THE REQUIREMENTS OF THE FOLLOWING UK STATUTORY INSTRUMENTS WHERE APPLICABLE:

Electrical Equipment (Safety) Regulations 2016 SI. 2016 1101

Electromagnetic Compatibility Regulations 2016 SI. 2016 No. 1091

Radio Equipment Regulations 2017 SI. 2017 No. 1206

The Ecodesign for Energy Related Products and Energy Information (Amendment) (EU Exit) Regulations 2019. SI. 2010 2617

The Restriction of use of Certain Hazardous Substances. SI. 2012 No. 3032

The Waste Electrical and Electronic Equipment Regulations 2013. SI. 2013 No. 3113

Security Requirements for 'Connectable Products' PTSI Act 2022

The Product Security and Telecommunications Infrastructure (Security Requirements for Relevant Connectable Products) Regulations 2023

Transposed standards used:

- **BS EN 55014 (2006)**
- **BS EN 301489.1 & .3**
- **BS EN 300220.1 & .2**
- **BS EN 60730.2.9**
- **BS EN 60335.1 (2012)**
- **BS EN 60335.2.30 (2009)**
- **ETSI BS EN 303645**
- **EN 50663 (2017)**
- **EN 60730-2-9 (2010)**
- **EN 60730-1 (2011)**
- **ETSI EN 300 220-1 V3.1.1 (2017-02)**
- **ETSI EN 300 220-2 V3.2.1 (2018-06)**
- **ETSI EN 301 489-1 V2.2.2 (2019)**
- **ETSI EN 301 489-3 V2.1.1 (2019)**

PART NUMBER:

HSACR3000X, HSACR4500X, HSACR6000

NAME OF RESPONSIBLE PERSON:	**Martyn Field**
POSITION:	**Technical Manager**
DATE:	**14/01/25**

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