



Switch supplied with
HE7433 & HE8326 only

ScreenZone

Warm Air Curtains

HE7433 & HE8326

HE7433RX & HE8326RX

For use with single or 3 phase supply

All electrical appliances produced by the Company are guaranteed for one year 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.

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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 air curtain outlet/inlet grille must not be obstructed during use. Any modifications made to the unit not approved by Consort will void manufacturers 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 equipped with room thermostat and should not be used in small rooms so as to avoid overheating.

1.2 Health and Safety

Please read this 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 Electrical Supply

This heater must be permanently connected to the electricity supply via an isolation switch. It must provide all-pole disconnection and have a 3mm gap on each pole.

There are no exceptions.

All units must be wired in accordance with I.E.E. regulations for the Electrical Equipment of Buildings.

BMS control, time switches and door interlocks can be installed at the discretion and responsibility of the installer.

Follow section 5 'technical specification' for more details.

1.4 Location

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.

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.

1.5 Clearance Distance

It is recommended that a minimum clearance of 50mm is allowed around the case sizes detailed below. The clearance allows for cable entry and prevents combustible surfaces overheating.

The maximum mounting height (floor to grille) is 2.3m. When installed, the top of the heater case should be a minimum of 200mm from the ceiling.

1.6 Standards

The heater conforms to the following standards
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 Supply of Machinery (Safety) Regulations
2008 (SI 2008/1597)

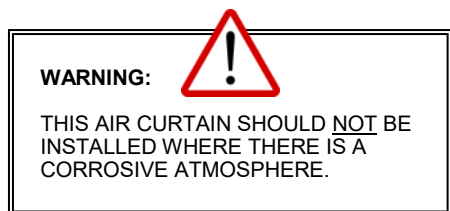
2. Introduction

2.1 Introduction

This instruction manual describes the Screen-Zone Warm range of air curtains. They are designed for discreet positioning in above the doorways of retail or commercial premises up to 2.3m from the floor, but may also be used as a space heater.

This unit is a 1035mm with nominal maximum power output from 6 or 9kW. For wider doorways, up to 7 air curtains can be easily interconnected using CAT5/CAT6 RJ45 networking cable.

It is recommended that this control cable is run separately within its own trunking to avoid external interference.



2.2 Mechanical switch Controller

The HE7433 & HE8326 air curtain is supplied with a HE8408 mechanical switch but not the RX model. More details at Installer wiring section. This controller will provide 2 fan speed and 3 heat setting options. The remote control box houses 4 single pole switches to give the following functions:

SWITCH 1 (left-hand)	ON/OFF
SWITCH 2	FAN SPEED LOW/HIGH
SWITCH 3	1/3 HEAT ON/OFF
SWITCH 4	2/3 HEAT ON/OFF

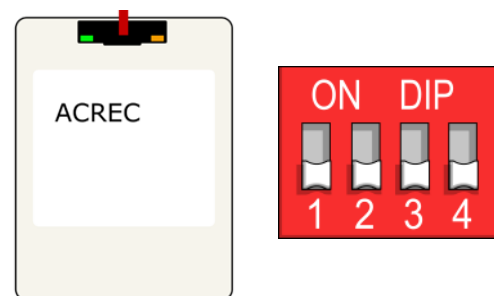


2.3 ACREC receiver

The RX model air curtain is supplied with an ACREC receiver but not with a mechanical switch. This receiver is connected to the heater with a RJ45 CAT5 cable or CAT6 cable, which sends a signal to a wireless controller such as a HRXSL or a CRXSL controller to maintain a connection to control the heater.

NOTE: You must ensure that dip switch 1 is set to zero and that the units have a unique setting for switches 2, 3, and 4.

The receiver has to be paired with the controller before it can be used.



2.4 HRXSL or CRXSL controller

Controller is not supplied with the heater.



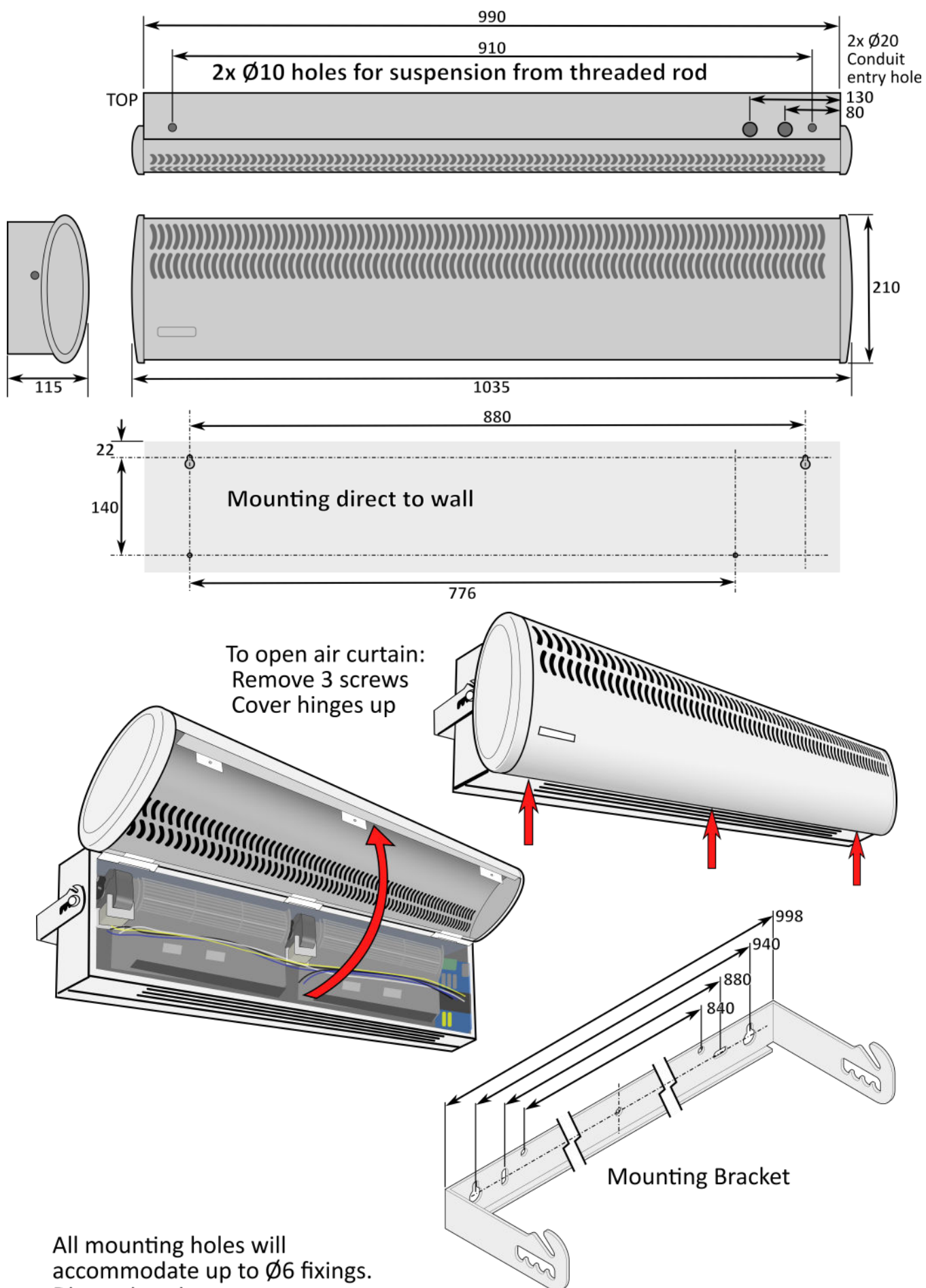
For detailed guide how to pair follow user instruction supplied with the controller. On the heater side, in order to pair heater to the controller, the power to the heater must be off.

1. Power up the heater, the green light on the receiver should blink.
2. Within 20 seconds enter pairing mode on the controller, the green light will blink every time it gets a signal.
3. If the pairing was successful heater should start working for several seconds.



3. Dimensions & Fixing locations

3.1 Air Curtain Dimensions



4. Installation Details

4.1 Mounting

When mounted over a standard shop doorway the unit should be fitted as low as possible and not more than 2.3 meters from ground level. A single unit will provide reasonable coverage for a one meter doorway, and for wider doorways units can be mounted end to end.

The unit should be positioned so that the airflow is not obstructed by any part of the doorframe. When installed the top of the heater case should be a minimum of 200mm from the ceiling.

4.2 Electrical Supply

The cable entry is located on the top right side of the heater. The heater is supplied with two 20mm cable glands. The cable gland holes can be enlarged by removing excess metal to 25mm.

4.3 Installation

Step 1

Carefully unpack the heater. Loosen mounting screws, allowing the mounting bracket to be removed from the unit.

Step 2

Remove the front cover by loosening the 3 screws at the bottom of the heater, on the left, right, and middle of the grille, as shown in section 3.

Step 3

For suspending from the ceiling:

Either drop rods or catenary wire can be used to fasten the air curtain to the ceiling support structure. The mounting points can be seen in section 3.

Using supplied bracket:

Making sure that the mounting bracket is horizontal, fix the bracket to the wall using appropriate fasteners. Place the unit on the mounting bracket ensuring the washers are spaced (a plain washer either side of the mounting bracket).

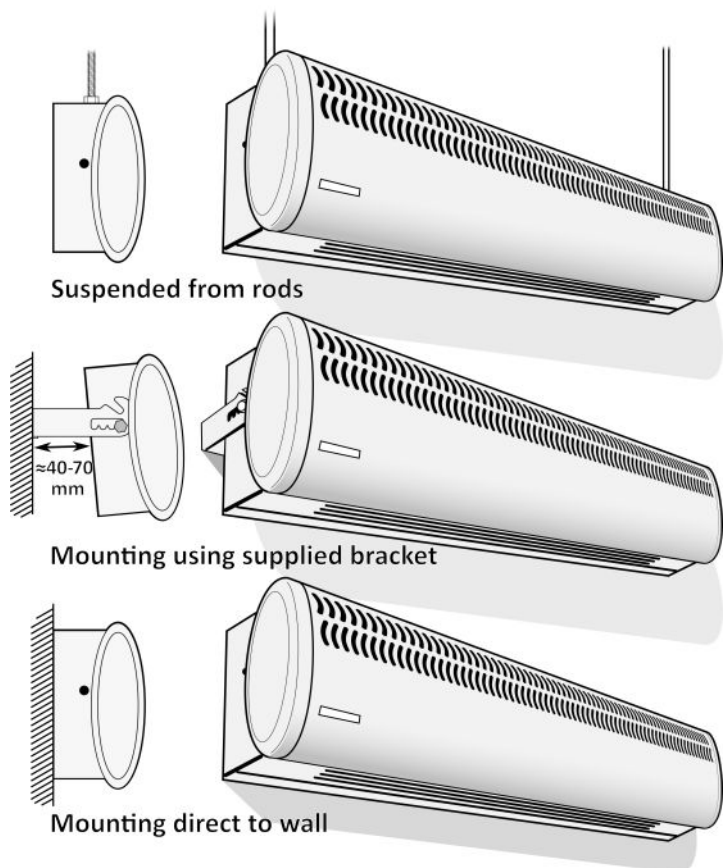
For wall mounting:

The heater can be fixed to the wall using 6mm holes provided.

Mark and drill required holes and fix heater to the wall using appropriate fasteners.

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.

All attachments must be capable of supporting the weight of the product.



Step 4

Connect electrical supply to appropriate terminals.

Step 5

Test the heater.

Step 6

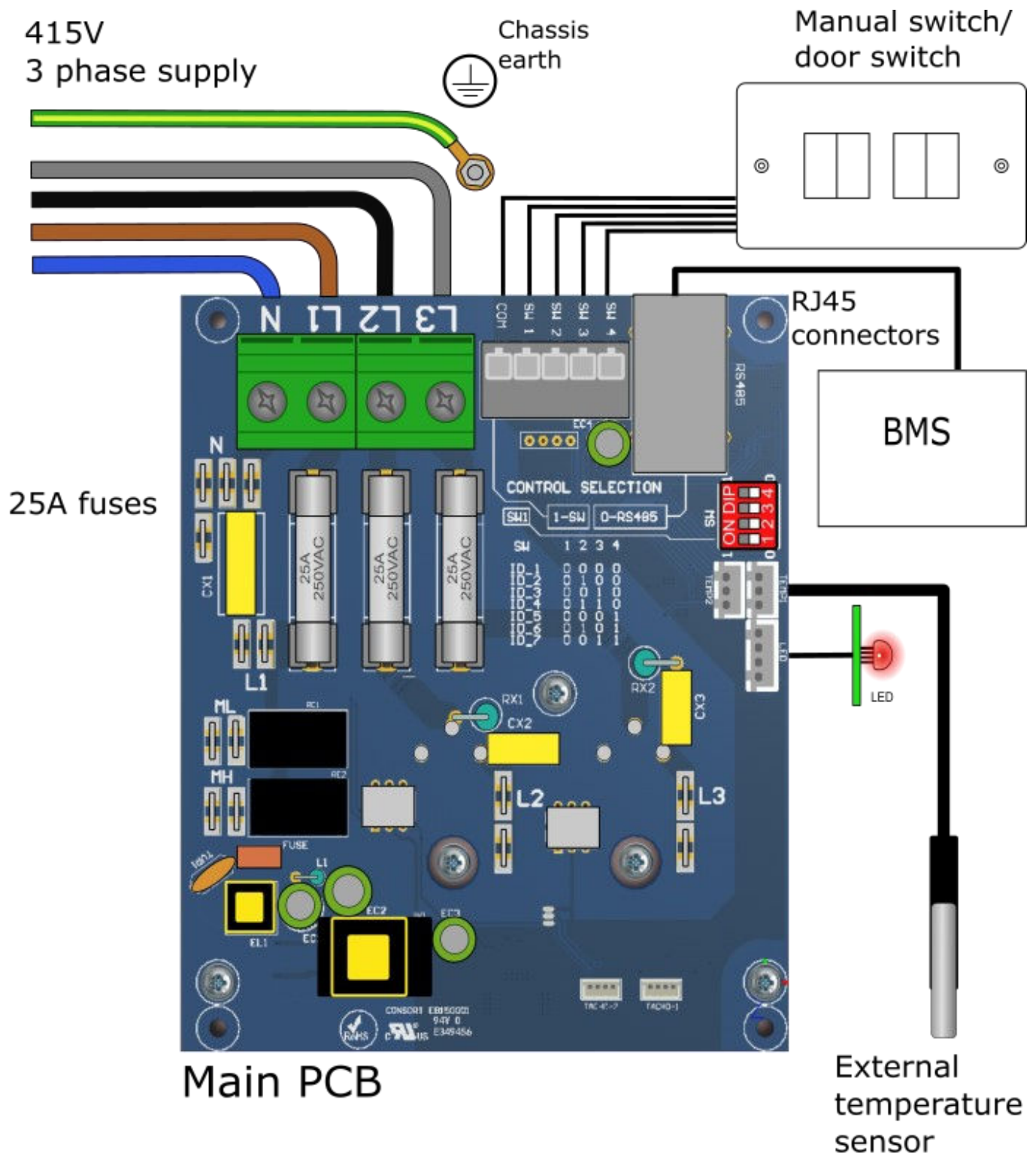
Refit the heater front cover.

5. Technical Specifications

5.1 General Data			HE8326/RX	HE7433/RX	
Maximum height	m	2.3			
Door width	m	1	1		
Heat medium		Electric heating element			
Heat output	kW	6	9		
Fan type		2x Shaded pole motors crossflow 60mm			
Fan control		2 fan speed settings, electronic switching			
Heat switching		Solid state electronic control			
Weight	kg	10	10		
Electrical Data					
Supply voltage		415V 3ph 50Hz			
Total load	kW	6	9		
Max current per phase	A/pha	8.5	12.5		
Max motor power	W	2 x 48	2 x 48		
External fuse size amps	A/pha	16	16		
Controller		Remote switch , HRXSL or CRXSL for RX models			
Controller wiring		5 core 1mm² or CAT5 / CAT6 with RJ45 connectors			
Cable terminal size		10mm ²Max			
Mains terminal block position		Right side of heater unit Terminals N; L1; L2 & L3			
Air Data					
Air volume	Max speed	m³/h	650	650	
Air velocity	Max speed @ 0M @ 1M @ 2M	m/s	5.2 2.9 2		
	Min speed @ 0M @ 1M @ 2M	m/s	5 2.6 1.6		
	Max Delta T @ 20°C	°C	40	60	
	Min speed	°C	45	66	
Noise level @ 3m	Max speed	dBA	60		
	Min speed	dBA	50		
Dims Data					
Length	mm			1035	
Depth	mm			115	
Height	mm			210	

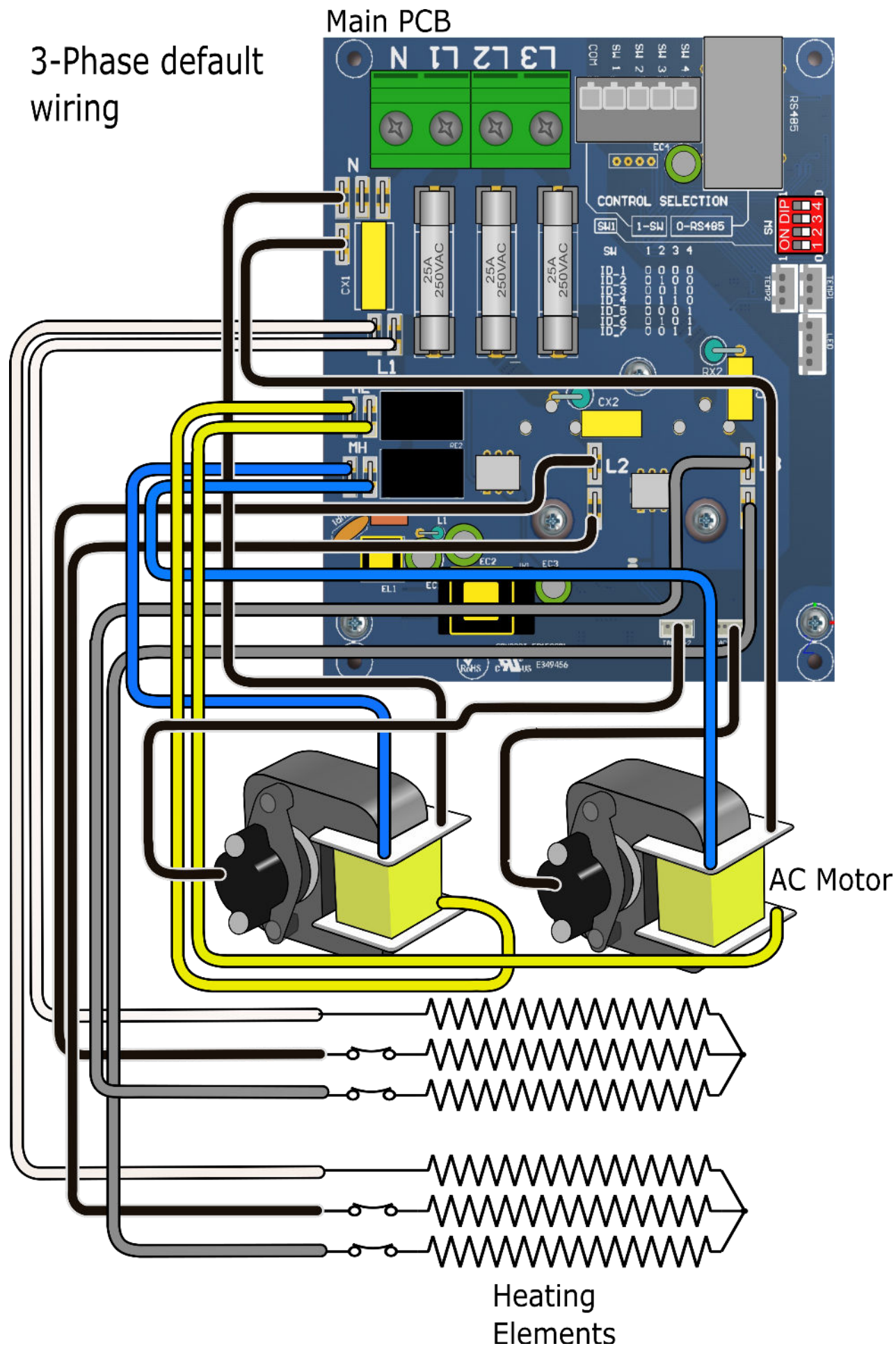
6. Wiring Details

6.1 Installer Wiring



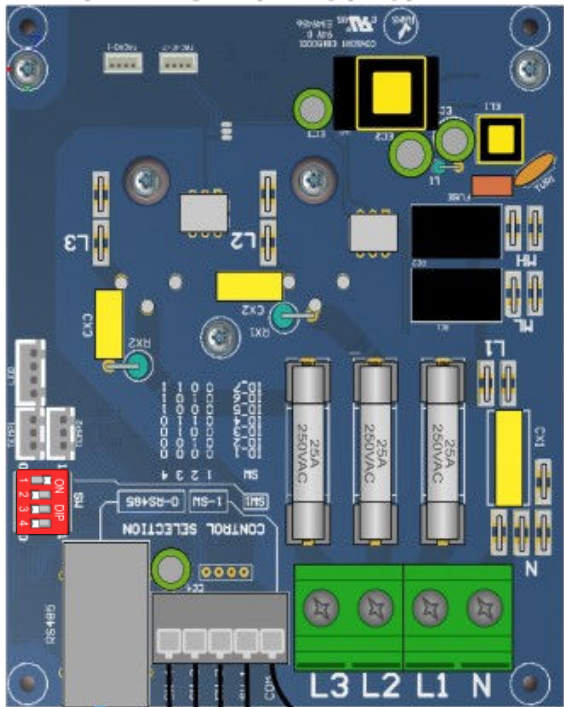
6.2 Factory Wiring

3-Phase default wiring



6.3 Network Wiring - Mechanical Switches

Main PCB air curtain 1



The air curtain can be controlled by mechanical switches.
In this configuration the touchscreen controller or BMS controls will not work.

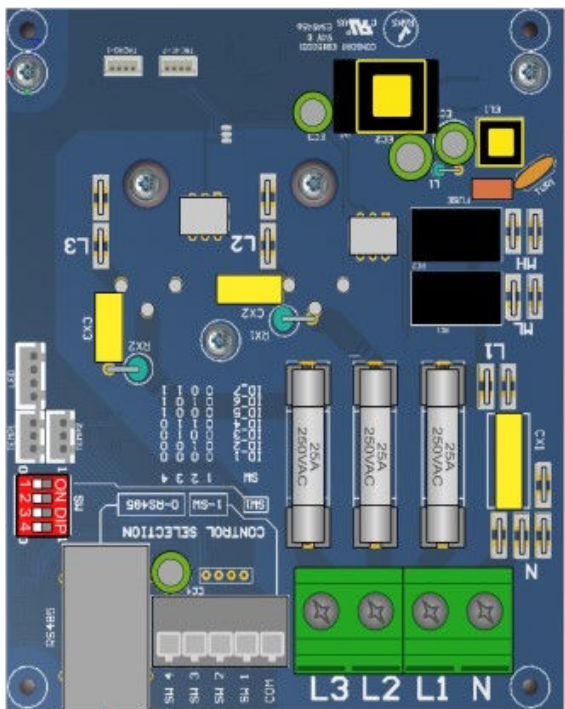
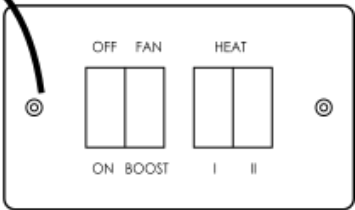
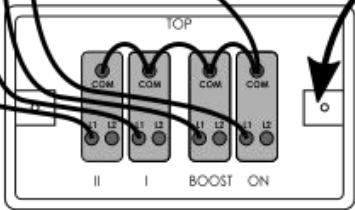
To operate heater by mechanical switches, the DIP switches on the main PCB need to be set to 1000.



External Switch Connections:

- COM - common connection
- SW1 - on / off
- SW2 - low speed / high speed
- SW3 - 1/3 heat output
- SW4 - 2/3 heat output

CAT5/6 cable



Main PCB air curtain 2

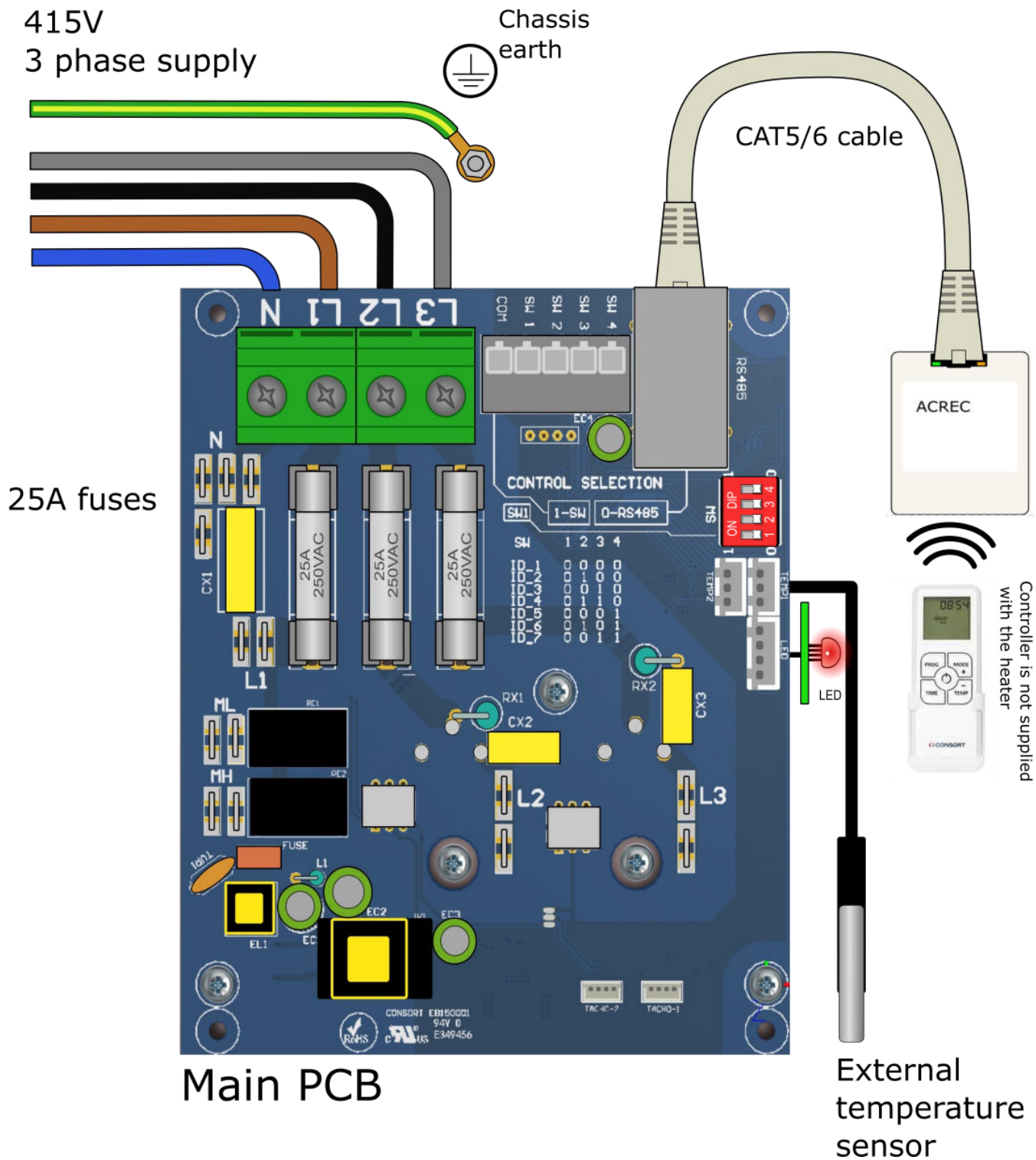
CAT5 cable with RJ45 connectors can be used to network up to 7 air curtains in a daisy-chain configuration.

The 3 DIP switches on all 7 connected air curtains must be set to different addresses.

All possible addresses are:

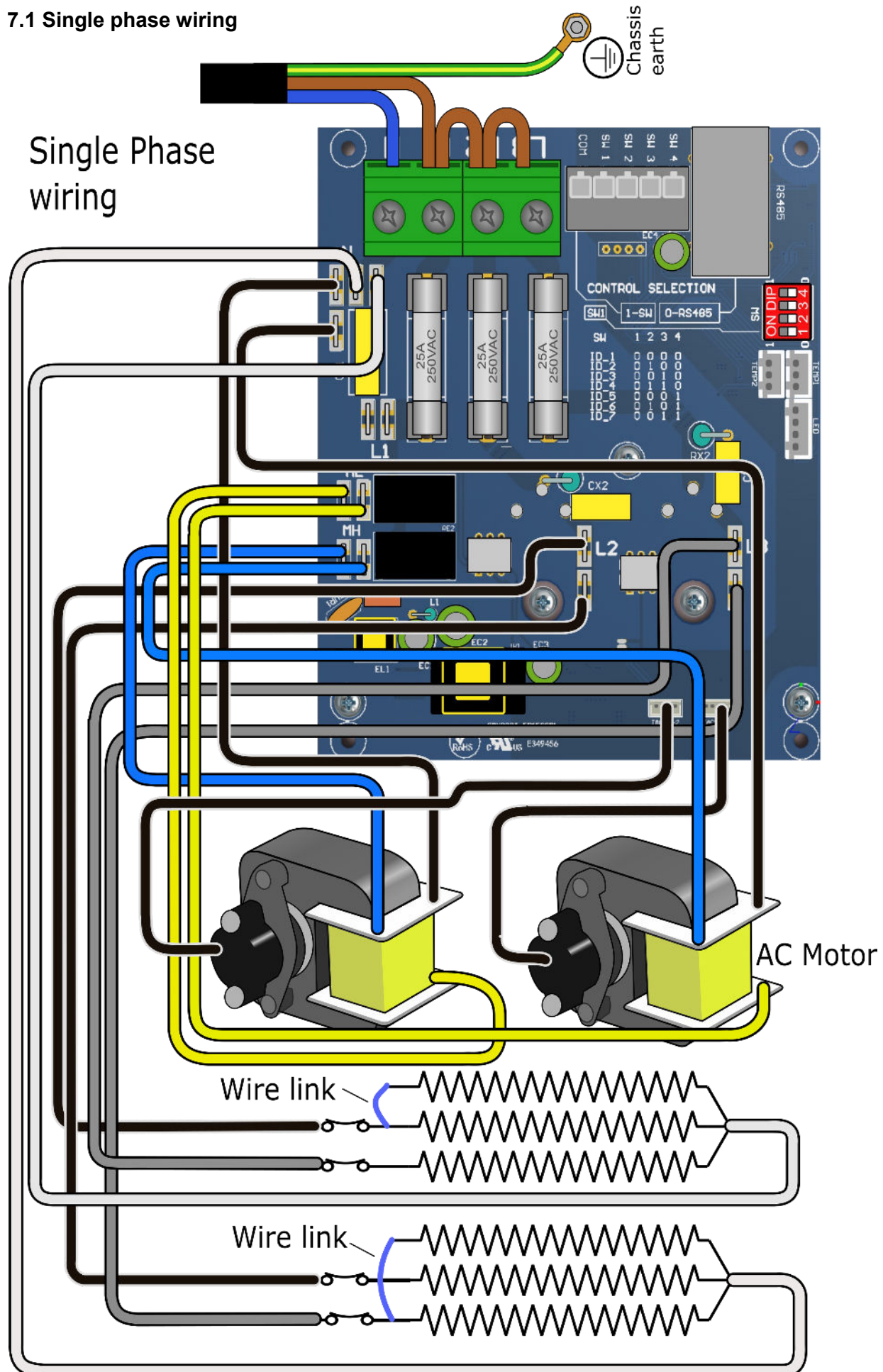
1	0000		5	0001	
2	0100		6	0101	
3	0010		7	0011	
4	0110				

6.4 Installer Wiring - ACREC receiver

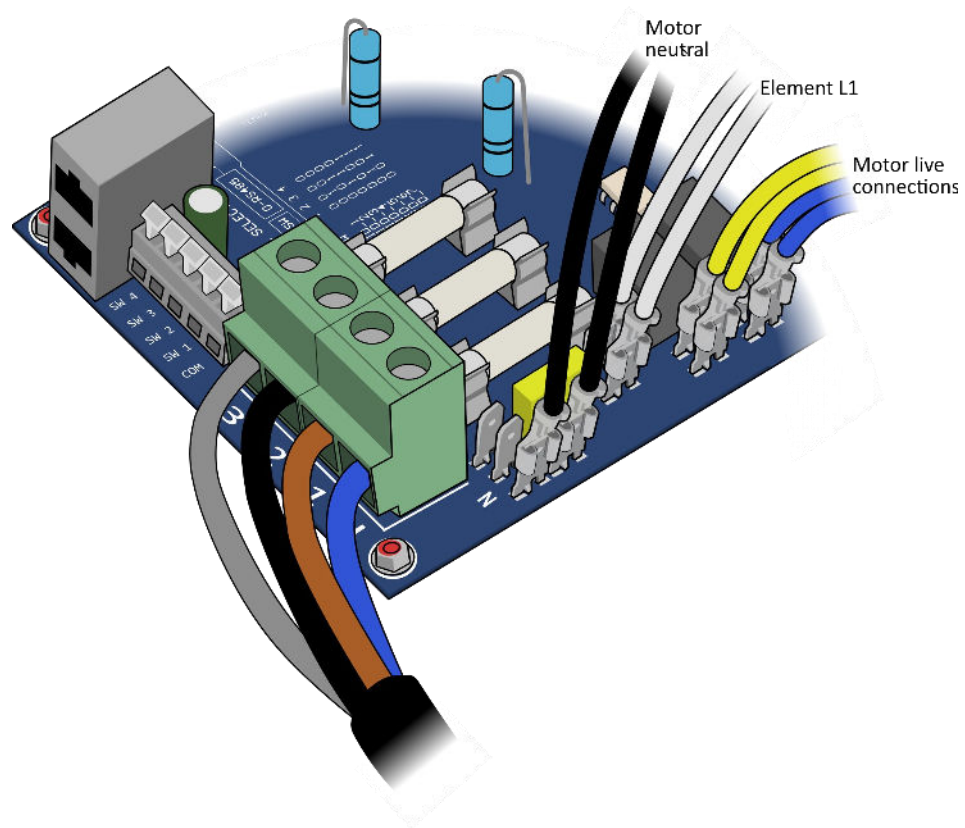


7. Modification for use on single phase

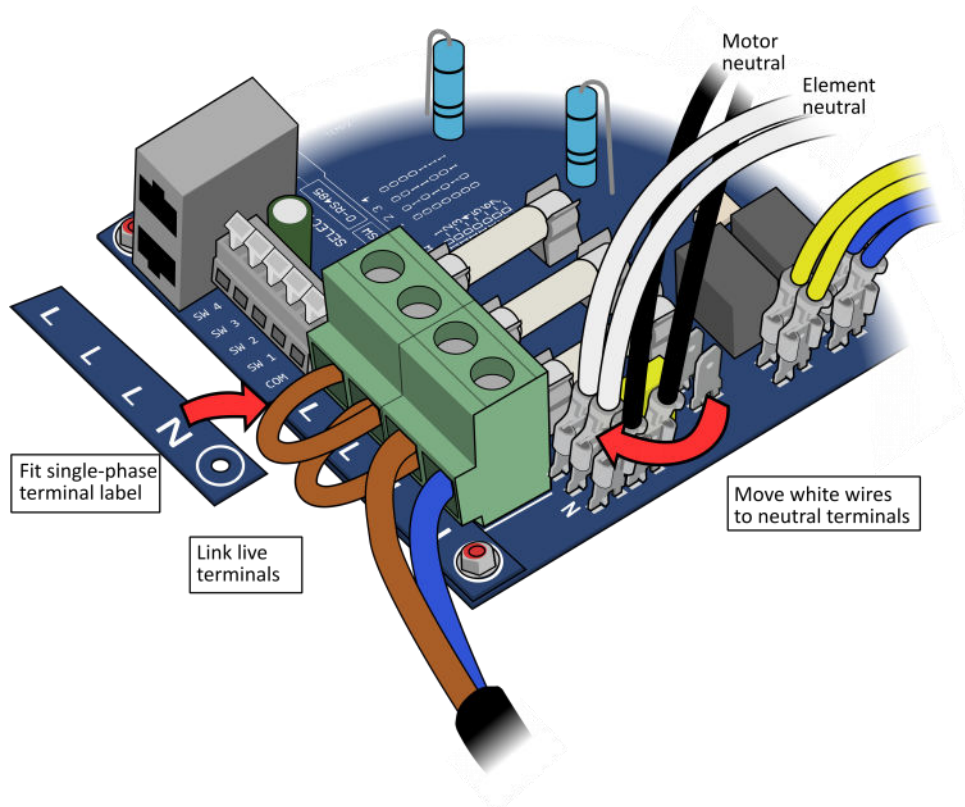
7.1 Single phase wiring



7.2 Internal wiring for 3 phase operation



7.3 Modification of internal wiring for single phase operation

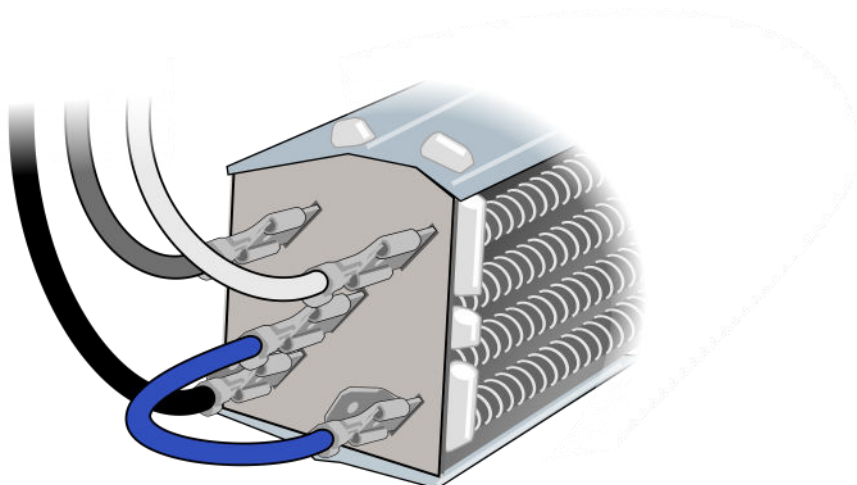


See next page for element wiring modification.

After modification, affix single-phase rating label to unit, covering original 3-phase label.



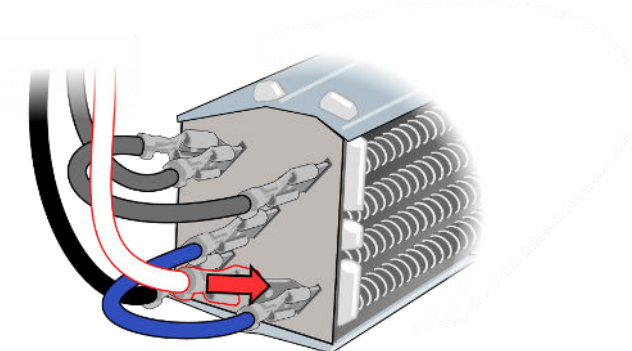
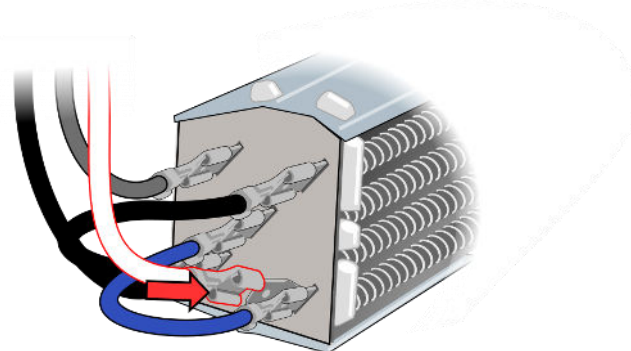
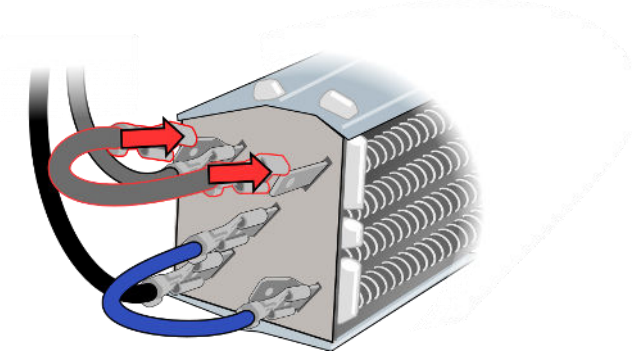
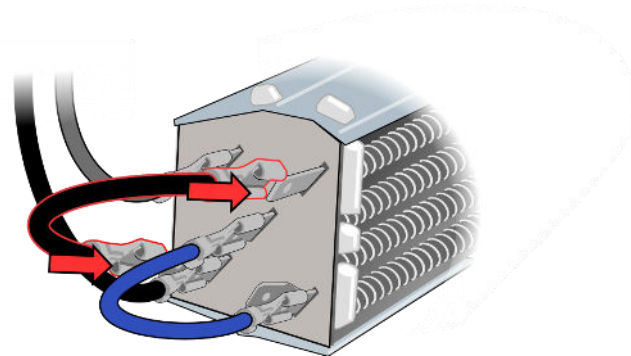
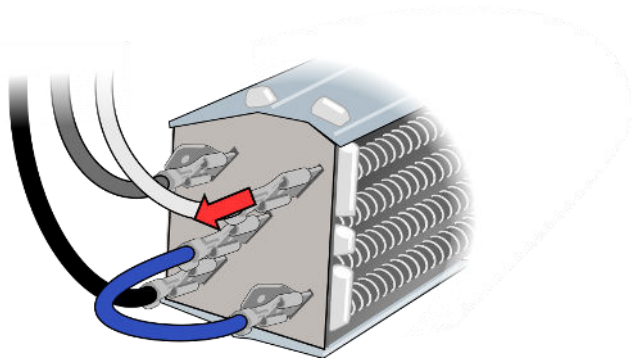
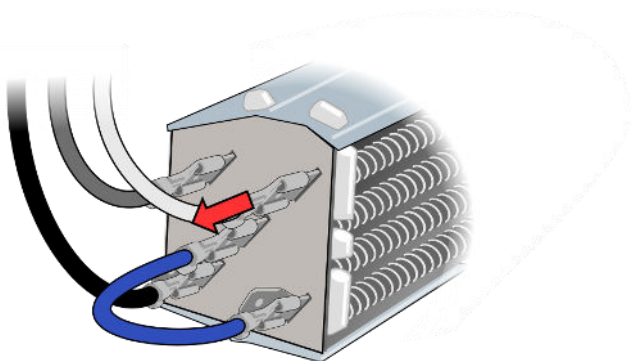
7.4 Internal wiring of the heating element for 3 phase operation



7.5 Modification of internal wiring of the heating element for single phase operation

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8. BMS Connection MODBUS Protocol

8.1 BMS Connection

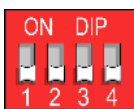
The heater is compatible with BMS systems using MODBUS protocol.

The connection to BMS system can be made using one of the RJ45 connectors.

Only one means of control can be used at the same time. If BMS is used to control the heater, the colour screen controller must not be used.

The BMS can control fan speed and heat output and also read and report the heater status. Heat output can be set in the range of 0 - 100% in 1% steps.

8.2 MODBUS Protocol



The DIP switches 2, 3 and 4 are used to configure each air curtain with a unique address.

RJ45 cable can be used to network up to 7 air curtains in a daisy-chain configuration.

Set DIP switch 1 OFF to enable control by MODBUS.

All possible addresses:

1	0000		5	0001	
2	0100		6	0101	
3	0010		7	0011	
4	0110				

RS485 serial half-duplex interface
MODBUS RTU

9600 baud

8 bits

1 start bit

no parity + 2 stop bits

'mark' parity + 1 stop bit

Supported MODBUS function codes:

0x03 read multiple input registers
0x04 read multiple holding registers
0x06 write single holding register
0x10 write multiple holding registers

16 Bit Input Registers:

1 Status
2 Temp 1
3 Temp 2
4 Temp Heatsink
5 Temp Motor 1
6 Temp Motor 2
7 RPM Motor 1
8 RPM Motor 2
9 Power
10-13 Reserved
14 External Switches

Temperatures are formatted as 16 bit signed integers. Units are sixteenths of a degrees Celsius, as used by DS18B20 temperature sensors. The hex value 0xF000 is used to denote an invalid reading.

The status register uses bits to indicate faults:

Bit 0 - overheat
Bit 1 - heatsink overheat
Bit 2 - temp sensor 1
Bit 3 - temp sensor 2
Bit 4 - heatsink temp sensor
Bit 5 - motor 1 temp sensor
Bit 6 - motor 2 temp sensor
Bit 7 - L2 on current low
Bit 8 - L2 off current high
Bit 9 - L3 on current low
Bit 10 - L3 off current high
Bit 11 - motor 1
Bit 12 - motor 2
Bit 13 - MCU
Bit 14 - connection
Bit 15 - reserved

External switches register uses bits to show the state of switches:

Bit 0 - Switch 1
Bit 1 - Switch 2
Bit 2 - Switch 3
Bit 3 - Switch 4

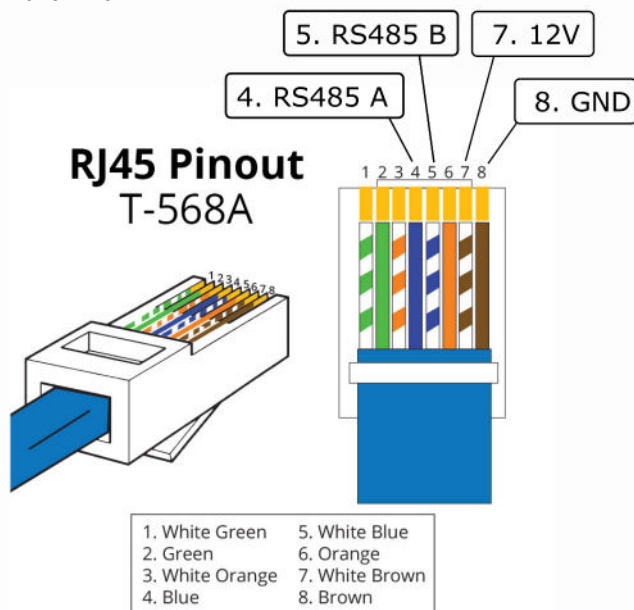
16 Bit Holding Registers:

1 RPM (units revolutions per minute)
2 Power (units percentage 0 -100)

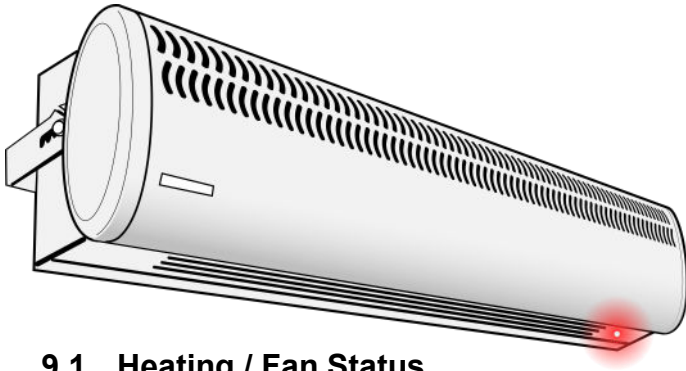
The RPM register value is used to control the fan speed, but does not directly correspond to the fan speed.

<600 - off
600-1199 - fan low speed
≥1200 - fan high speed

RJ45 Pins



9. Status / Fault indication



9.1 Heating / Fan Status

Located to the right of the grille.

- Green LED - Power is connected to the unit, unit is in standby mode.
- Blue LED - Cold blow mode.
- Orange LED - Unit is heating at reduced power output.
- Red LED - Unit is heating at full power output.
- Flashing White LED - Unit has detected a fault. See section 9.3.

9.2 Power Status LED

The green LED on the RJ45 connectors indicates that the power is connected to the unit.



9.3 Fault detection

Heaters are equipped with electronic fault detection. In the event of a fault being detected, heater will show the nature of the fault by flashing the status LED located at the front of the heater. The LED will flash white in one of the sequences as shown in the table below. The sequence is repeated every 5 seconds.

Number of white flashes	Fault
1	Overheating detected Response: Power reduced until heater cools down
2	Temperature measurement fault Response: Fan runs at high speed
3	Power not detected when heat switched ON Response: Fan operates as normal Possible causes: missing phase, blown fuse, faulty electronics
4	Problem with motor Response: Heater will not work
5	Power detected when not switched ON Response: Fan runs continuously
6	Internal communication error Response: Heater will not work

9.4 Over heat protection reset

The heater is equipped with electronic over heat protection and also resettable over temperature cut-outs. There are two cut-outs located on the top of the heating element. In the unlikely event of electronic failure, the mechanical cut-outs will switch off power to the heating element. In order to reset cut-outs, isolate the heater from power and leave heater to cool down.

The cause of cut-outs operating should be investigated before resetting as the only time the mechanical cut-out operates is when electronics can't protect heater from overheating.

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 Supply of Machinery (Safety) Regulations 2008 (SI 2008/1597)

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 303 645**
- **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 AND DESCRIPTION OF APPLIANCE:

NAME OF RESPONSIBLE PERSON:

POSITION:

DATE:

HE7433, HE8326, HE7433RX, HE8326RX AIRCURTAINS

DAVID O'SULLIVAN

OPERATIONS MANAGER

24/06/24



FM 12671

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