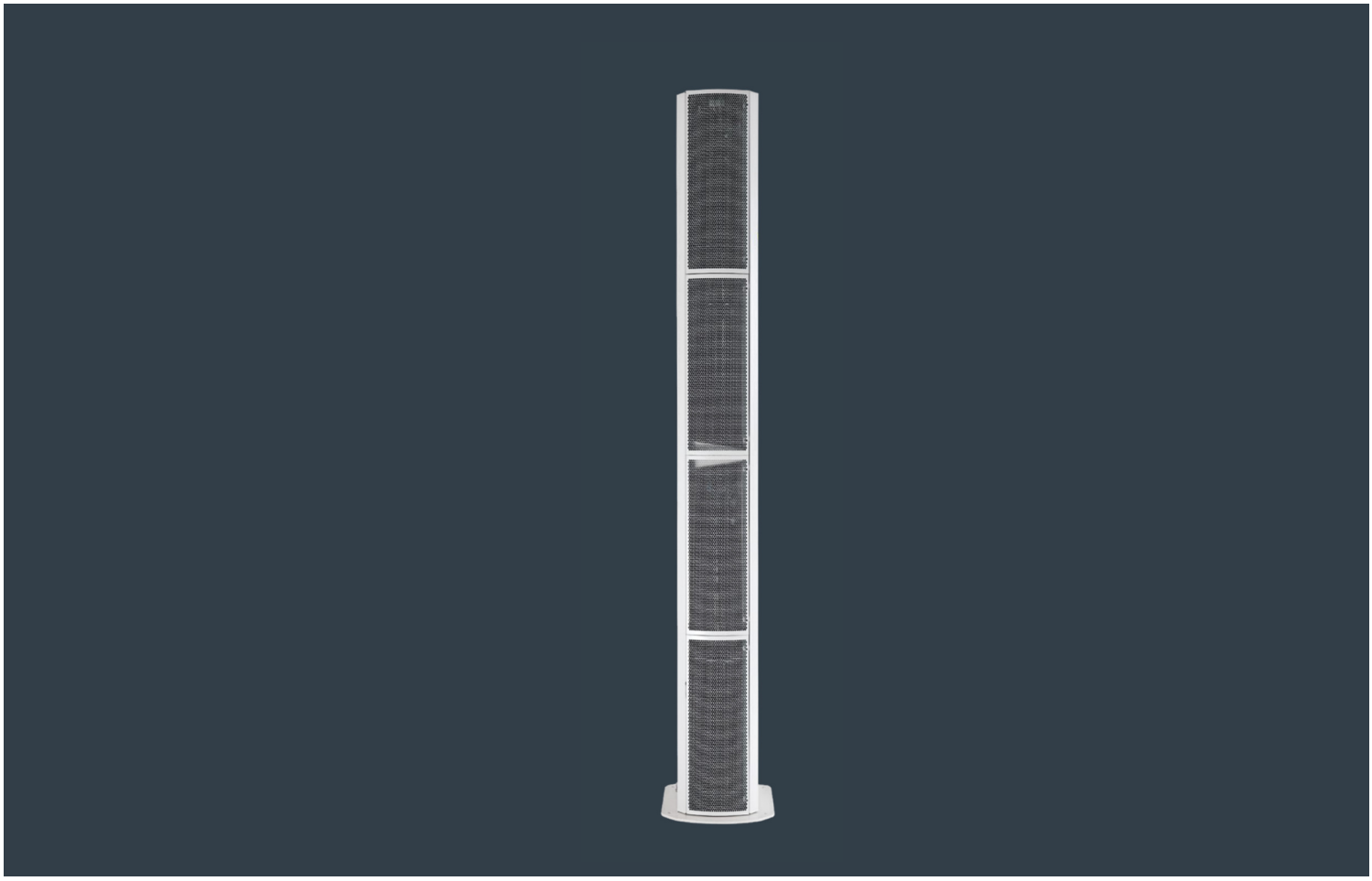
Thermoscreens

PHV Series Vertical.

Surface Mounted



INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

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English

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2. ELECTRICAL SAFETY

Electrical Supply and Wiring to the Air Curtain

All electrical wiring and connections MUST be carried out by a competent qualified electrician in accordance with the latest edition of national and local wiring regulations and/or local statutory regulations. **"Danger: Disconnect electrical supply before servicing"**

- A 1 phase or 3 phase local isolator having a contact separation of at least 3mm on all poles must be fitted in the electrical supply to the air curtain and located in an accessible position adjacent to the unit.
- The appliance must be connected by cables having an appropriate heat resistant temperature rating.
- All supply cables, circuit breakers and other electrical installation equipment must be correctly sized for the air curtain model being installed; see section 3: Specifications.
- Models operating on a 3 phase electrical supply - see section 3: Specifications - require a neutral connection (3N~).
- A 25mm size cable gland or conduit connector of IP21 rating or above should be used for the Electrical Supply into the air curtain.
- See Wiring Diagrams for connecting electrical supply and control cables to the air curtain. The air curtain must be earthed.

3 SPECIFICATIONS

Table 1

Air Curtain		Electrical Supply (V/ph/Hz)	Rated Power Input (kW)	Current per phase (A)	Heat Output (kW)	Weight (kg)
PHV1500A V		230/1/50	0.40	1.8	-	60
PHV2000A V			0.60	2.7		77
PHV2500A V (Stacked Unit)	Top air curtain		0.30	1.3		99
	Bottom air curtain		0.40	1.8		
PHV3000A V (Stacked Unit)	Top air curtain		0.30	1.3		116
	Bottom air curtain		0.60	2.7		
PHV1500W V		230/1/50	0.40	1.8	9.0/18.0	68
PHV2000W V			0.60	2.7	12.0/24.0	87
PHV2500W V (Stacked Unit)	Top air curtain		0.30	1.3	15.0/30.0	114
	Bottom air curtain		0.40	1.8		
PHV3000W V (Stacked Unit)	Top air curtain		0.30	1.3	18.0/36.0	133
	Bottom air curtain		0.60	2.7		
PHV1500E V		400/3/50	18.40	27.9	9.0/18.0	66
PHV2000E V			24.60	37.5	12.0/24.0	85
PHV2500E V (Stacked Unit)	Top air curtain		12.30	18.7	15.0/30.0	109
	Bottom air curtain		18.40	27.9		
PHV3000E V (Stacked Unit)	Top air curtain		12.30	18.7	18.0/36.0	128
	Bottom air curtain		24.60	37.5		

4. INTRODUCTION

Established in the 1960s, Thermoscreens is a leading air curtain manufacturer that exports to over 60 countries worldwide.

As with all our products, the PHV V NT range of air curtains is designed with energy efficiency in mind.

PHV V NT models suffixed E, W or A are designed to be surface mounted inside a building, located horizontally over a doorway or vertical close to door opening.

They must not be installed on the outside of a building or built into a cabinet or recessed in any way.

Please complete the following details for your reference:

Date of Purchase .....
Place of Purchase .....
Serial Number .....

Proof of purchase is required to make a claim under warranty.

Thermoscreens
St. Mary's Road
Nuneaton
Warwickshire
England
CV11 5AU

Email: sales@thermoscreens.com — http://www.thermoscreens.com

Tel: +44 (0) 24 7638 4646 — Fax: +44 (0) 24 7638 8578

5. DELIVERY CONTENTS

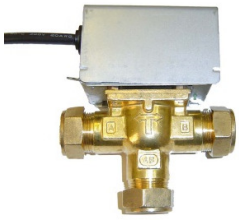
The following items are supplied in the box at delivery.

NOTE: If any parts are missing or damaged contact your place of purchase.

PHV V NT Vertical Air Curtain

Option 2
Touch Remote Control
(for Electric, Water and Ambient units)
Supplied with 6m RJ Control Cable

3-port control valve (for water heated units)



Fitted in pipework to air curtain by installer

Outdoor Air Thermostat (Optional – supplied by Installer)

Used for simple weather compensation control (disables heating on a warmer day)

Accessories

1 bracket for PHV1500V & PHV2000; 2 brackets for PHV2500V & PHV3000V

6. TOOLS REQUIRED

The following tools are required for installation:

- Flat blade screwdrivers
- Pozi head screwdrivers
- 10mm spanner
- Adjustable spanner
- Electric drill
- Ladders
- Appropriate lifting equipment

7. INSTALLATION

The PHV V NT air curtain should be surface mounted across a doorway and not exposed to the external environment or moist conditions. It should not be built-in or recessed in any way.

7.1 Vertical Installation

Prior to commencing any vertical installation it is essential to ensure the correct handing PHV V NT unit(s) have been selected.

The air curtain is located close to the door opening with the air discharge grille positioned nearest to the door (see “Handing Guide” in Appendix 1). Maximum doorway width = 2.0m per air curtain. For maximum effectiveness it is essential to ensure the height of the air curtain is slightly higher than the opening height of the door. Obstructions such as door opening devices, structural beams etc. will reduce the efficiency of the air curtain. There must be at least 200mm clearance at the air inlet for air to enter the unit, see Appendix 1.

7.1.1 Floor Fixing

Before installing the air curtain obtain four suitable fixing bolts, taking into account floor type and unit weight (see section 3: Specifications). Rawlplug ® M10 Projecting Rawlbolt ® 44356 type may be suitable. For dimensional details refer to the general assembly drawing, see Appendix 1.

Determine and place the unit at its most favourable position. A wall bracket is provided to secure the vertical air curtain to the wall and this must be used. So that the wall bracket touches the wall, ensure the back of the base plate touches against the wall, skirting board will need to be cut away if necessary.

Using the base plate as a template, mark the location of the four holes, as indicated in the adjacent picture.

Using a suitable masonry drill bit correctly drill the four marked out holes. Place M10 fixing bolts into each hole, ensuring all bolts are upright.

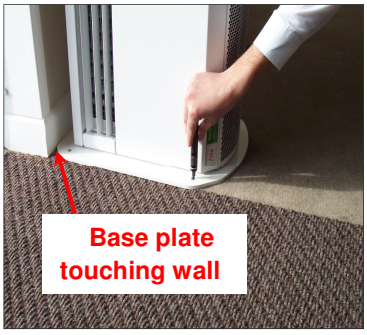


Fig 1

Reposition the air curtain base plate over the projecting bolts. Tighten each M10 nut as indicated in the adjacent picture. Ensure the vertical unit is secure, level and square. It may be necessary to pack under the base plate to ensure unit is vertical.

Fig 2

Using a hacksaw carefully cut the projecting bolt flush with the nut, ensuring the base plate is not damaged or marked in any way.

Fig 3

Remove only one M10 nut and refit and secure bolt with a stainless steel M10 dome nut supplied. Repeat for each of the other three projecting bolts one at a time.

NOTE: It is the sole responsibility of the installer to ensure that all the fixing points and bolts used are suitable for the air curtain.

Fig 4

7.1.2 Stacking Air Curtain

PHV1500V and PHV2000V air curtains are delivered as single units. PHV2500V and PHV3000V air curtains are delivered as separate 1.5m + 1m air curtains for a PHV2500V unit and 2m + 1m air curtains for a PHV3000V unit. The 1m air curtain must always be mounted as the top unit using the stacking kit supplied to secure it to the bottom unit. The spacer plate, in the stacking kit must be bolted between the two units using the 4 off M8 x 25 bolts and nyloc nuts. This will allow the removal of access panels when required. All wall brackets must be used to properly secure both the bottom and top air curtains in the stack to the wall (See Appendix 1).

ATTENTION: Please ensure all the protective film is removed before the air curtain is put into service.

7.2 LPHW Models

For the design of the water pipework system and pump, water flow rates and pressure drops for maximum heat output of the air curtain are given in Table 2 below.

Table 2

Air Curtain	2 row coil (based on 82/71°C)		3 row coil (based on 60/40°C)	
	Water Flow Rate (l/min)	Water Pressure Drop (kPa)	Water Flow Rate (l/min)	Water Pressure Drop(kPa)
PHV1000W V	15.6	4.9	8.6	9.8
PHV1500W V	23.4	9.3	12.9	10.0
PHV2000W V	31.2	14.9	17.1	18.4

NOTE: Water flow rates and pressure drops at different water temperatures can be calculated using the Thermoscreens coil calculation programme. Visit the Thermoscreens website for details.

For LPHW models ensure suitable water mains isolation valves are fitted in the flow and return pipework.

When fitting the 3-port valve ensure that the pipe connections are fitted as detailed and are in accordance with the manufacturers leaflet supplied with the valve.

For two air curtains in a stack each air curtain requires a separate and independent water flow and return connection with its separate control valve (See Fig 5). Each control valve is wired to the terminal block in each air curtain (see wiring diagram for water heated units).

In order to obtain optimum heat output, all air from the system and the heating coil must be vented. Refer to insert detailing the water coil air bleed valve.

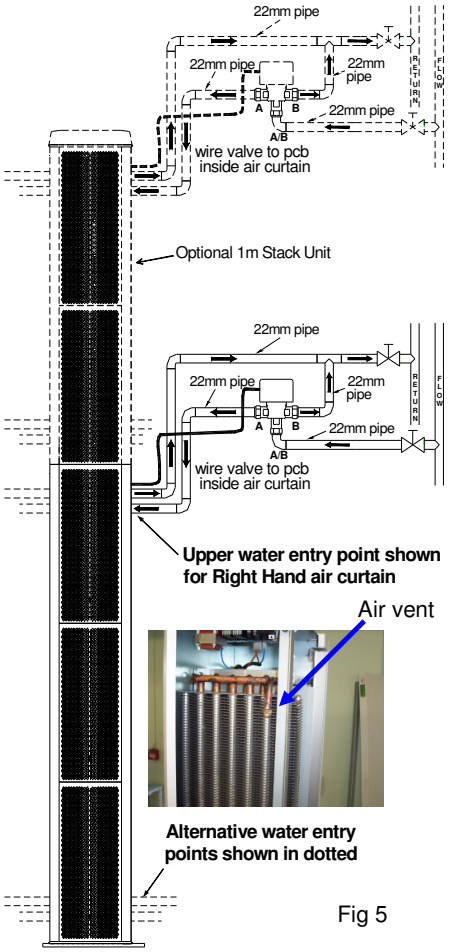


Fig 5

8. ACCESS FOR ELECTRICAL CONNECTION

To gain access for making electrical and/or water services the air intake grilles must be removed. Remove intake grilles by unfastening two screws on each grille; M4 x 10mm Pozi screws accessed via larger hole in the side of the grille (See Fig 6).

Access can now be gained to make the electrical connections and assist with water connections.

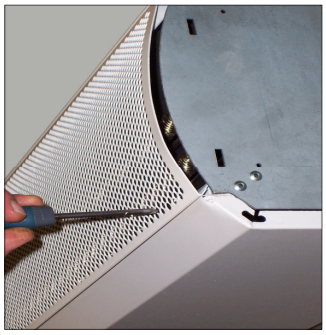


Fig 6

When making electrical connections first remove the safety cover plates over the electrical supply terminals. On 2m electric air curtains the safety cover plates are located towards the centre of the air curtain (See Fig 7).

For two air curtains in a stack electrical and water connections are made separately to the bottom air curtain and to the top air curtain (See Appendix 1, View B).

Fig 7

9. REMOTE CONTROL INSTALLATION

Mount the Touch Controller in a convenient position directly to the wall or onto a switch box.

9.1 Wall mounting

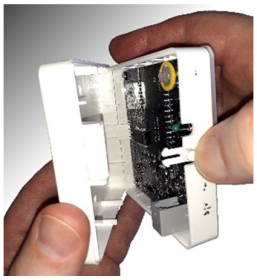


Fig 8

Step 1 Press release button on side of Controller case and pull the back case away (see Fig 8).

Step 2 Feed one end of the RJ control cable through the back case, secure it, then screw the back case to the wall using suitable fixings (not supplied).

Step 3 Connect the RJ plug to the RJ socket on the PCB in the remote control.

Step 4 Refit the front case.

9.2 Switch box mounting

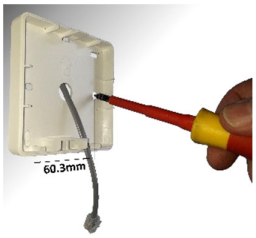


Fig 9

Step 1 Press release button on side of Controller case and pull the back case away (see Fig 9).

Step 2 Feed one end of the RJ control cable through the switch box, feed and secure the RJ control cable through the back case and secure back case to switch box using 2 mounting screws (not supplied) (see Fig 9).

Step 3 Connect the RJ plug to the RJ socket on the PCB in the remote control.

Step 4 Refit the front case.

10. REMOTE CONTROL SETTINGS

Touch Controller with four default software Flag settings provide following optional features, as Table 3.

If required, software Flag values can be changed by entering advanced settings as below.

With Controller ON, long press both Up and Down touchpad – 01 Flag menu displayed on screen
Tap Home touchpad to detail Flag 01 Reset on power-up

Follow instructions on LCD screen with:

- Tap Speed touchpad to cycle Flags 1 to 4
- Tap Up or Down touchpad to change selected Flag value

Tap Home touchpad to confirm value

Table 3

Flag	Feature	Explanation	Default	Notes
1	Reset on power-up	On restoring power after an electrical interruption all Remote Control settings are retained	01 (ON)	**WARNING!** – Fans start on their own after power is restored
2	Stop fan on cold	Fans are switched off when heating level is achieved (AUTO mode only)	00 (OFF)	Will not go to ambient mode
3	Never blow cold	Air curtain always heats in AUTO mode	00 (OFF)	Will not go to ambient mode
4	Room air temperature control	Enables the room air sensor in the Remote Control	00 (OFF)	Disables all other temperature sensors

11. EXTERNAL CONTROLS

11.1 Remote switch contacts IN0, IN1

Terminals IN0 and IN1 on the CCS PCB inside the air curtain can be used to provide different control strategies using remote volt-free contacts (see Fig 10). This could be to provide remote On/Off from a timer or BMS Digital/Output contact, to work with a door switch or for simple weather compensation control to disable heating when outdoor air temperatures become warmer. Table 4 describes the different functions:

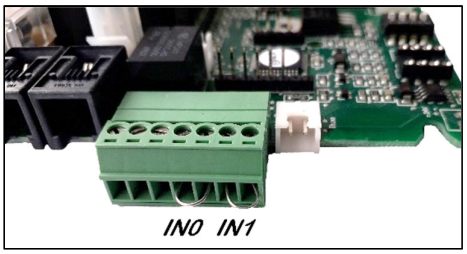


Fig 10

Table 4

Function	IN0		Notes
	⌐╲	⌐╲	
Remote On/Off (INHIBIT)	Unit operates normally in MANUAL Mode or AUTO Mode from the Remote Control	Unit switches off after 15s, with fan run-on at Medium fan speed if DIP 2 = OFF	Use the Remote Control to set up unit and then hide it away if required. * On/Off is then done via IN0 using a remote volt-free contact.

Function	IN1		DIP 4	IN0	Notes
	⌐╲	⌐╲			
Door Switch Control	After 30s the heating is disabled and the fan goes to low speed	Unit operates normally in MANUAL Mode or AUTO Mode from the Remote Control	ON	⌐╲ ✓	Door Open:- ⌐╲ Normal Control Door Closed:- ⌐╲ Heating Off Low Fan Speed
Summer Winter	Unit operates normally in MANUAL Mode or AUTO Mode from the Remote Control *COLD DAY*	Heating is disabled straight away, Fan speeds operate normally from the Remote Control *WARM DAY*	OFF	⌐╲ ×	Simple weather compensation control using an outdoor air thermostat with volt free contacts (see Section 11.3)

NOTE: Wire volt-free, remote switch contacts to 2-way screw terminals IN0 and IN1 using 2-core cable.

WARNING: Do not apply any voltage to terminals IN0 and IN1 as this will damage the CCS PCB inside the air curtain.

*** NOTE:** The Controller must stay plugged-in for the air curtain to keep working.
An optional plug-in EEPROM is available from Thermoscreens so the Remote Control can be un-plugged and the air curtain stay working. Visit the Thermoscreens website for details.

11.2 Overheat safety cut-out indication

For electric heated air curtains the CCS PCB includes a fault indication signal for if the overheat safety cut-out on the electric heater operates.

Volt free changeover contacts (1A 240VAC 30VDC) can be wired via the 7-way screw terminal (see Fig 11).

Refer to Section 17.1: Overheat Safety cut out, for how to reset a overheat safety cut-out situation.

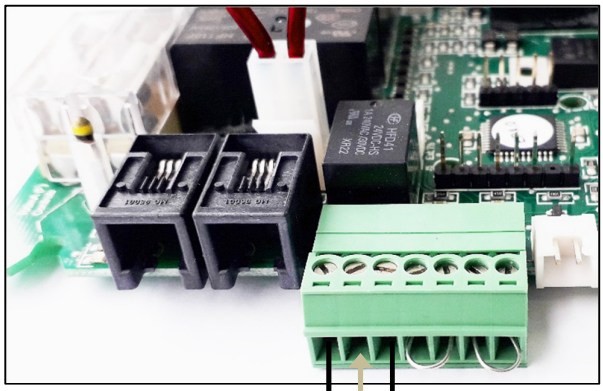


Fig 11

11.3 Weather compensation control (Summer/Winter)

To save heating energy on warmer days a simple weather compensation (Summer/Winter) heat control strategy can be used. Fit an outdoor air thermostat with volt-free contacts (supplied by the installer) to a north facing wall.

Use a 2-core cable to connect the outdoor air thermostat to 2-way terminal IN1 on the CCS PCB (see Fig 12)

On the CCS PCB, set DIP 4 to OFF as per Table 4, (see Section 11.1: Remote switch contacts IN0, IN1).

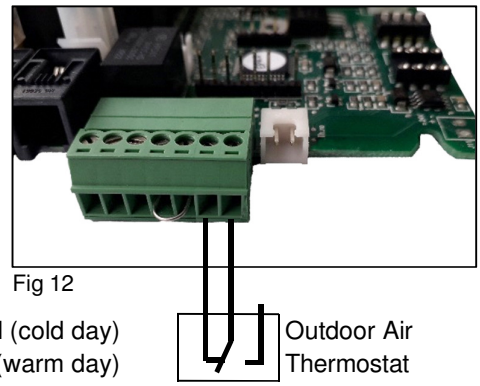


Fig 12

WARNING: Do not apply any voltage to terminal IN1 as this will damage the CCS PCB.

NOTE: To promote increased energy saving a more advanced weather compensation control strategy is available from Thermoscreens. Using a heating curve, the discharge air temperature of the airstream coming from the air curtain is controlled against the outside air temperature. Visit the Thermoscreens website for details.

12. MULTIPLE AIR CURTAIN SYSTEMS

When two air curtains are in a 2.5m or 3m stack the CCS control wiring needs to be wired “master/slave”, so the air curtain stack is controlled by a single CCS remote control. For “master/slave” configuration an independent mains supply, as per Table 1, must be supplied to each air curtain.

Plug the control cable from the remote control into one of the RJ sockets at the side of the top air curtain. Inside the air curtain stack connect the RJ master/slave cable that is already plugged into the top unit circuit board, into the CCS PCB of the bottom unit. Route the RJ master/slave cable safely via the hole in the stacking kit (Refer to Fig 13).

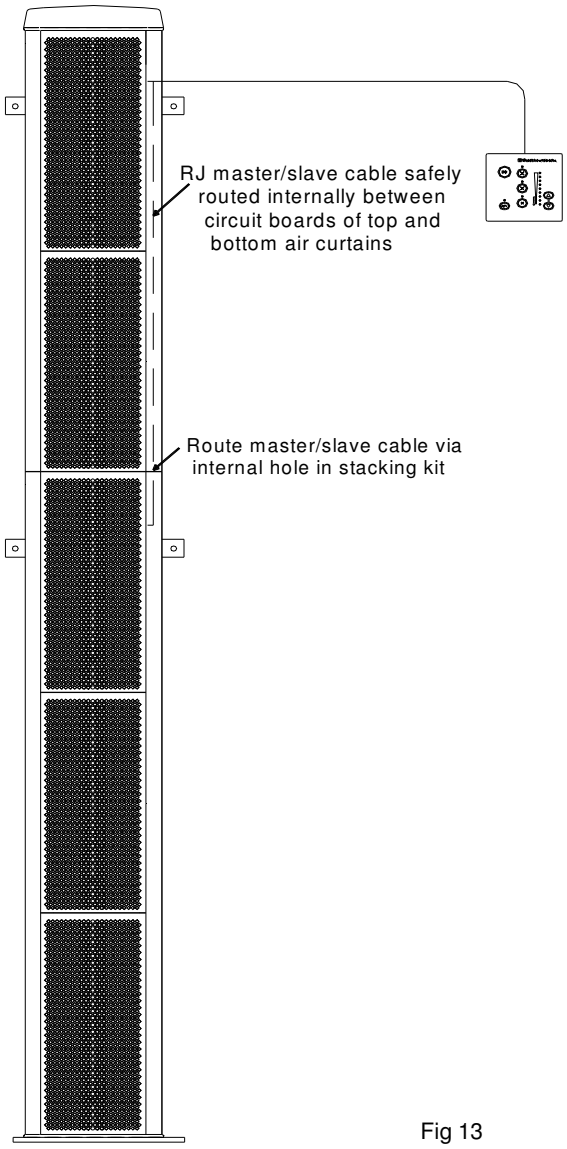


Fig 13

13. SYSTEM CONFIGURATION

13.1 Optional features

WARNING: Isolate and disconnect air curtain from the power source before making any changes.

DIP switches on the air curtain CCS PCB (see Fig 14) provide the following optional features, as explained below:

- Fan heat interlock
- Disable fan run-on
- Thermostat master (for master/slave installations)
- Weather compensation heat control (Summer/Winter)
- Door switch control

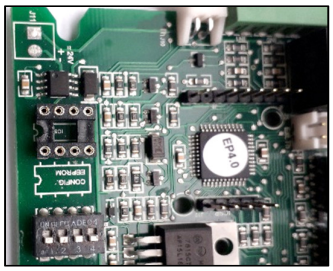
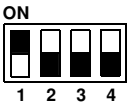
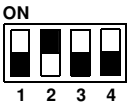
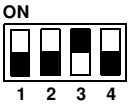
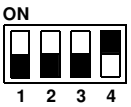


Fig 14

Feature	DIP setting	Default	Notes
Fan heat interlock Allows fan speed to govern heat output on electric heated units. If low or medium fan speed is selected, a lower heat output results. High heat operates only on high fan speed.	**DIP 1**  	**ON** Heat output is governed by fan speed.	This feature is only used with electric heated air curtains to limit very high air temperatures. Set DIP1 to OFF if unit is water heated or ambient.
Disable fan run-on The 2 minute fan run-on after switch off is enabled or disabled on electric heated air curtains.	**DIP 2**  	**OFF** Fan run-on at medium speed enabled.	Must only be used for water heated or ambient air curtains. Each air curtain must have DIP2 set to ON for no fan run-on.
Thermostat master For master/slave installations. Only the air sensor in the thermostat master air curtain is used to measure air temperature. Set DIP 3 to ON in the air curtain that will be the master unit.	**DIP 3**  	**OFF** Air curtains in master/slave systems all act independently.	Air sensor thermistors in all slave air curtains will be ignored. Stops some units blowing cold air and others blowing warm air in master/slave systems on larger doorways.
Weather compensation control **or Door switch control** Simple weather compensation control to save heating energy. **or** Door switch control.	**DIP 4**  	**OFF** IN1 Weather compensation **ON** IN1 Door switch	See section 11.1 Remote Switch Contacts IN0 and IN1 for details Weather compensation control is the same as Summer/Winter control

NOTE: ■ — Black rectangle is moveable head of DIP switch.

NOTE: A range of advanced factory fitted and plug-in control options are available from Thermoscreens to enhance the performance of the CCS PCB controller inside the air curtain. These include advanced weather compensation control using a heating curve, outlet air temperature control, ECObus® BACnet/Modbus BMS control, modulating heater outputs and EEPROMs for non-standard control strategies. Visit the Thermoscreens website for details.

14. REMOTE CONTROL OPERATION

14.1 Touch Controller

Please scan QR code and follow links to access the user guide and download App.

Controller connected via RJ communications lead to CCS PCB with Home, Speed, Up and Down touchpads below the LCD screen as detailed above.

On/Off

Press and hold Home touchpad for 2 seconds to turn air curtain ON or OFF.

NOTE: If an electric heated air curtain is heating when switched off the fan will run-on for approximately 2 minutes to dissipate excess heat.

Manual/Automatic

With Controller turned ON tap Home touchpad to switch between Automatic and Manual mode.

The screen displays either [A] for "Auto Mode" or [M] for "Manual Mode".

Heating level control

Manual mode
Select heating level and cycle between zero, half heat and to full heat with each short Up or Down touchpad press.

Automatic mode
Heat output is controlled automatically according to inlet air and the desired temperatures. The inlet air temperature is the upper temperature indication on the Controller adjacent to on the LCD screen.

Fan speed

Short press Switch touchpad to switch and cycle fan speed:

- low
- Medium
- High

Date and Time Settings

Configure Date and Time settings either via App or on Controller as below.

Turn Controller ON and hold Speed touchpad for 2 seconds

Follow instructions on LCD screen with:

- Tap Up touchpad to increase value
- Tap Down touchpad to decrease value
- Tap Speed touchpad to confirm values

15. COMMISSIONING THE SYSTEM

15.1 Verify system operation

To commission the system, verify the following conditions are met:

- All fans are working.
- Fans operate at Low, Medium and High speeds.
- There is no excessive mechanical noise coming from the fans.
- When heating is selected, the air stream from the discharge grille warms up across the whole length of the air curtain.
- When set to manual with fans set to high speed, heating increases as higher heat is selected.
- Warm air reaches across the doorway with door open or closed.
- For electric and water heated air curtains Controller operates correctly in both manual and auto modes.

15.2 Instruct customer and hand over

Before leaving site, hand over the installation to the customer/end user or their representative.

Explain that any person operating the air curtain must be given supervision and instruction by the person responsible for their safety, concerning the safe use of the unit and to understand any hazards involved. Children and those with reduced physical, sensory or mental capabilities should not operate the air curtain.

Recommend that the doorway should be closed whenever possible but that during times of high pedestrian use it will become an 'open doorway'. The air curtain then serves an essential purpose by saving energy and providing comfort to occupants.

Explain that the inlet grilles and air filters (if fitted) must be cleaned regularly and the unit serviced at schedule intervals – see section 18: Service & Maintenance.

NOTE:	Leave these instructions with the customer/end user or their representative!!

16. SIGN OFF

Complete the following once commissioning is completed:

Installer signature		**Customer signature**	
Installer name		**Customer name**	
Installer company		**Customer company**	
Date		**Date**	

17. FAULT CONDITIONS

An overheat fault in electric heated units may cause the overheat safety cut-out(s) to operate.

Before resetting ensure there is adequate air flow from the air curtain and the unit has been commissioned as per section 15.

17.1 Touch Controller Reset Overheat Safety cut-out

This is indicated by flashing warning symbol on Touch Controller and a red status LED on the CCS PCB inside the air curtain.

To reset a overheat safety cut-out:

Step 1 Switch off the electrical supply to the air curtain.

Step 2 Allow time for the air curtain to cool down, typically 10 minutes.

Step 3 Switch on the electrical supply to the air curtain.

Step 4 If Controller is switched off, press and hold Home button for 2 seconds to turn Controller ON.

Step 5 Press the Home touchpad on Controller 8 times.

Air curtain heaters will then operate and after 30 seconds the Controller warning symbol will disappear and status LED on CCS PCB flash green.

17.2 Fuses

In the event of an electrical fault internal electrical fuses may operate.

There are two internal fuses located on the CCS PCB inside the air curtain:

- Fuse 6.3A(T) supplies the fan motors within the air curtain
- Fuse 100mA(F) controls the circuitry of the CCS PCB

17.3 CCS PCB status indication

There is a status LED on the CCS PCB inside the air curtain (See LED shown on Wiring Diagrams in the Appendix).

This indicates the status of the CCS Controls as follows:

1. LED flashing green – operation normal
2. LED flashing red – low supply voltage, remote control not plugged in or RJ cable fault
3. LED permanently red – overheat safety cut-out(s) open circuit from an overheat situation (see Section 17: Fault Conditions for how to reset)

18. SERVICE & MAINTENANCE

WARNING: Failure to adequately maintain the unit and provide a suitable cleaning schedule will result in a loss of performance and reduced life expectancy of the air-curtain and possible overheating and fire risk with electric heated units.

19.1 Every week

NOTE: Weekly maintenance can be carried out by the Cleaner or Janitor from floor level.

Turn off the air curtain to prevent entry of dust then clean the face of the air inlet grilles using a vacuum cleaner with an extension tube and brush.

19.2 Every 3 months

WARNING: Before servicing, isolate and disconnect the air curtain from the electrical power.

WARNING: The following servicing and maintenance must be carried out by a competent electrician or a Thermoscreens appointed technician.

Clean and inspect the inside of the air curtain as follows:

Step 1 Remove the inlet grille panels.

Step 2 Clean and remove any build-up of dust and dirt within the air-curtain (inlet grille panels, electric heaters (if fitted), fan impellers, housings and motors) using a vacuum cleaner and soft brush.

NOTE: Build-up of dirt on fan impellers can cause vibration, noise and excessive wear on the motor bearings.

Step 3 Check within the unit to ensure all electrical connections and crimped terminals are tight and that all cables are in good condition.

Refit air inlet grilles after servicing. Reconnect electrical supply and test to ensure correct operation (see Section 15: Commissioning).

19. WARRANTY

All units are covered by a two year warranty.

Failure to adequately maintain the unit may void the warranty. If any problems are encountered, please contact your installer/supplier.

Failing this please contact the Thermoscreens warranty department.

Care has been taken in compiling these instructions to ensure they are correct. Thermoscreens disclaims all liability for damage resulting from any inaccuracies and/or deficiencies in this documentation. Thermoscreens retain the right to change the specifications stated in these instructions.

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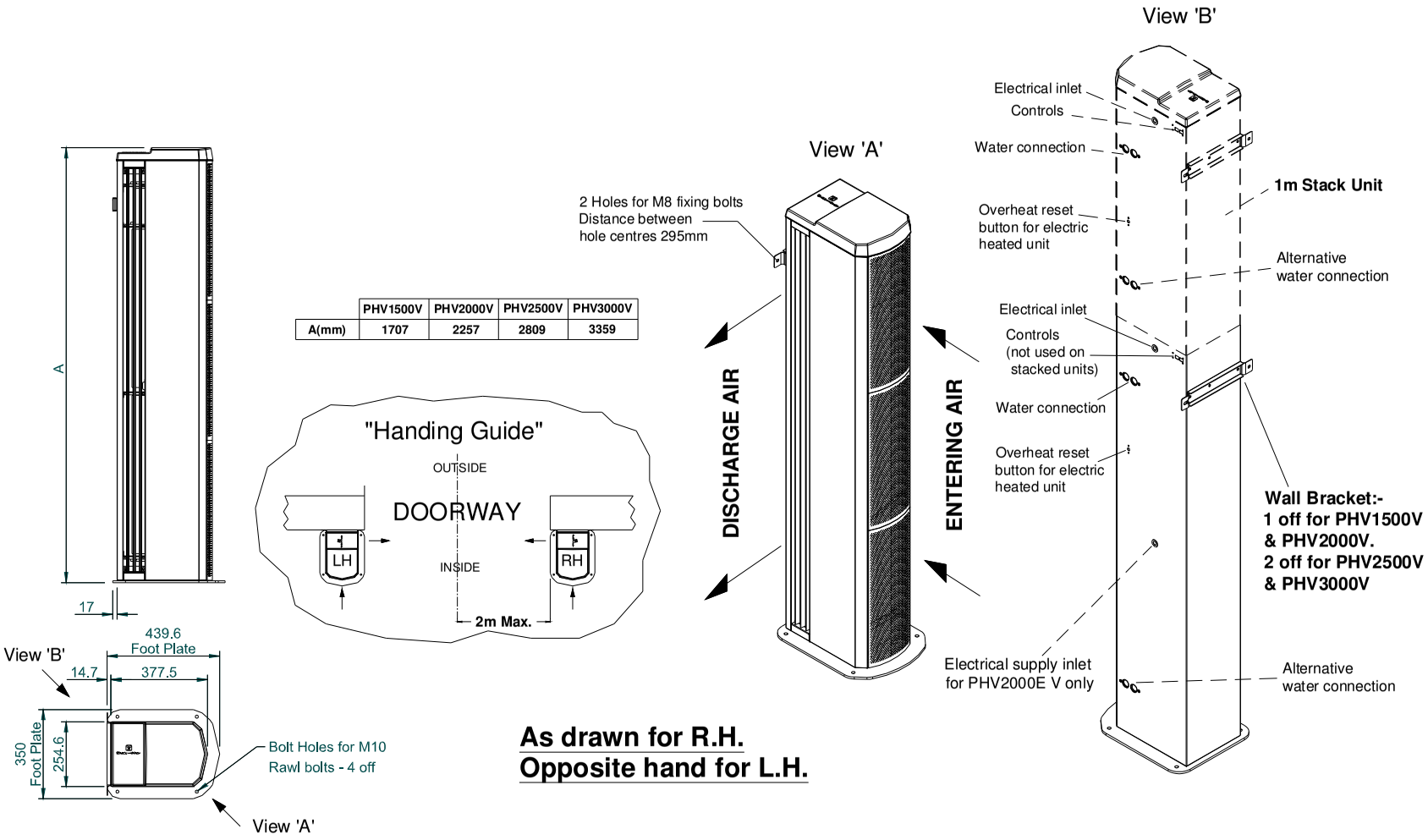
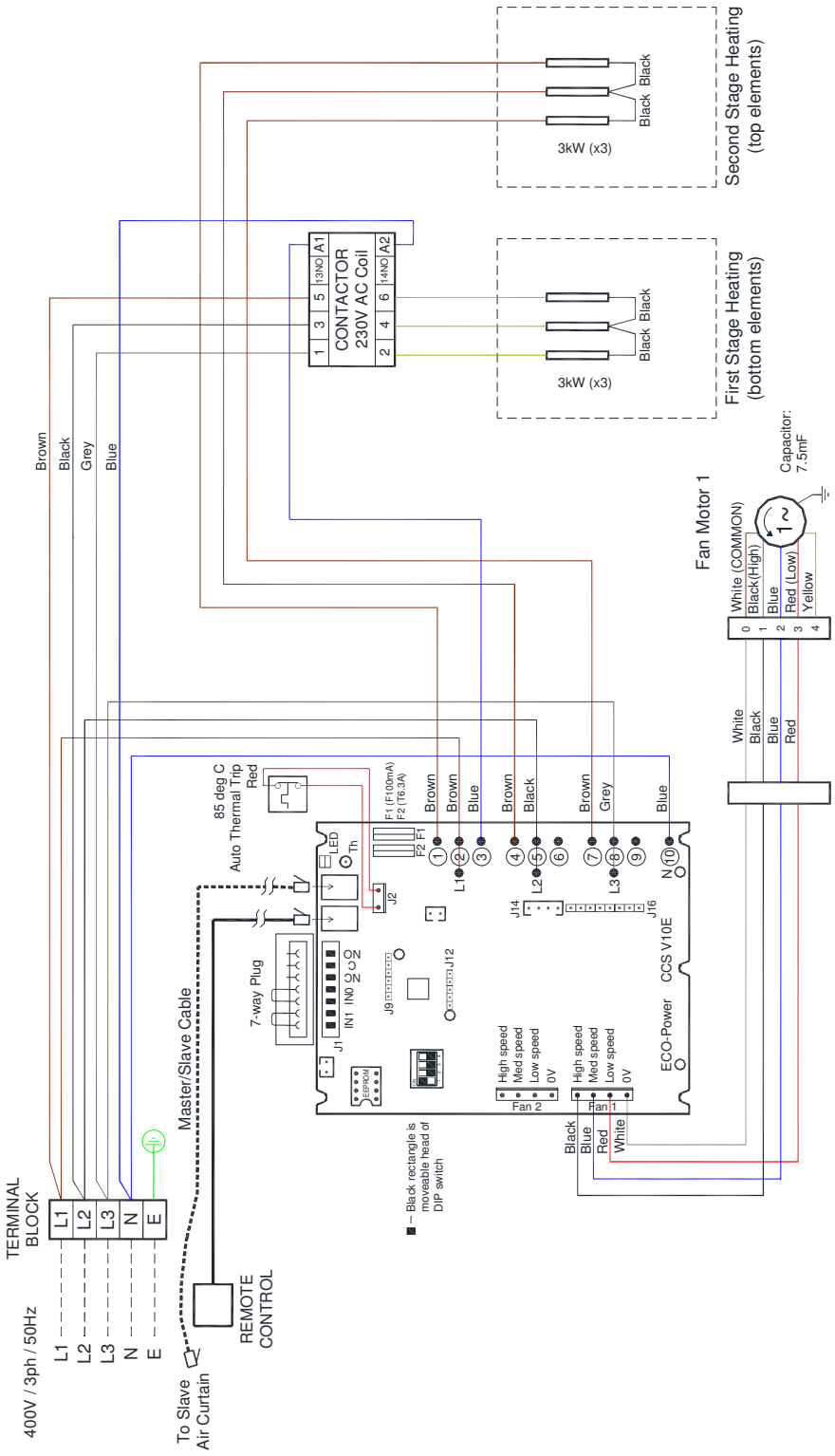


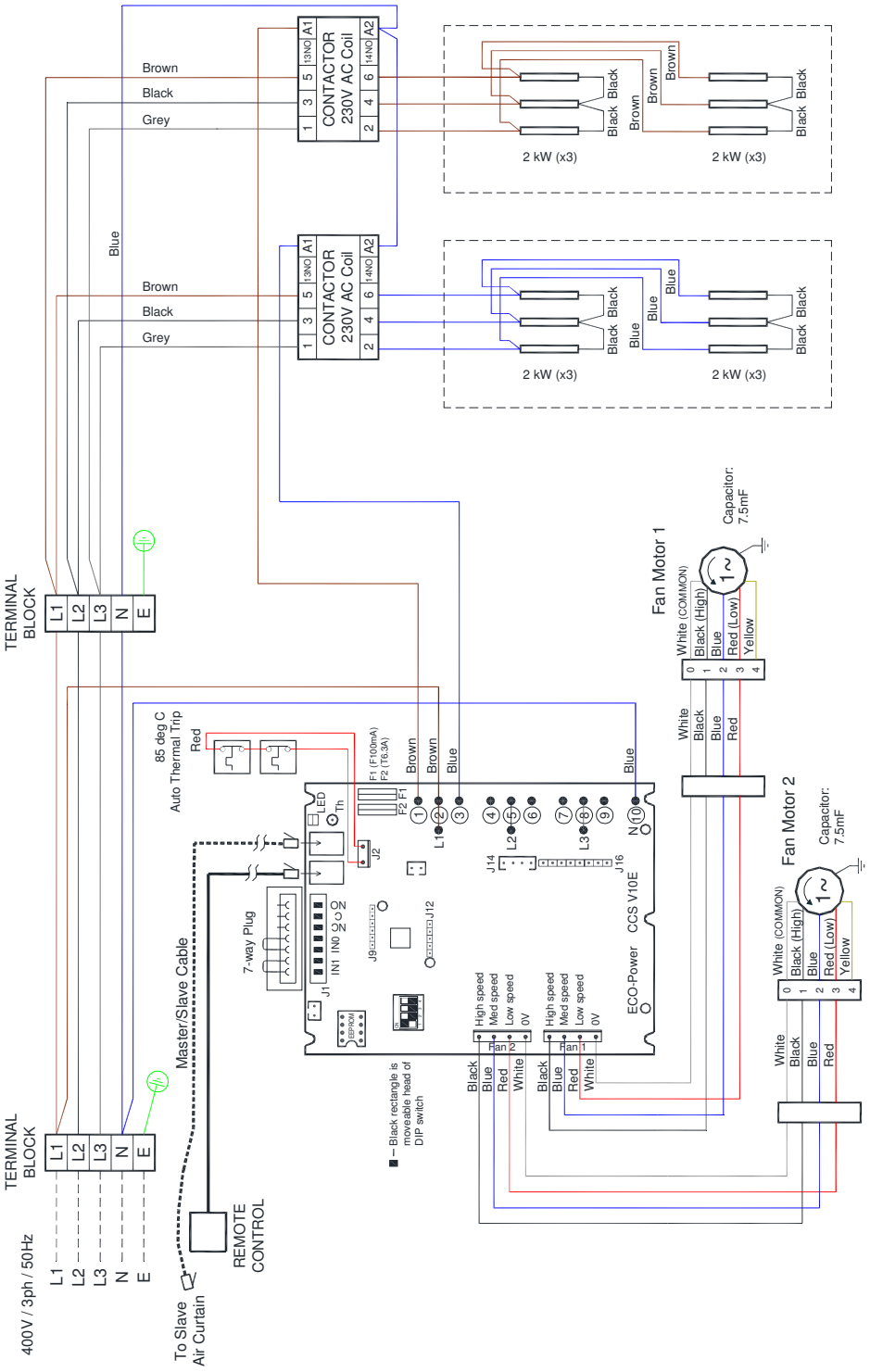
	PHV1500V	PHV2000V	PHV2500V	PHV3000V
A(mm)	1707	2257	2809	3359

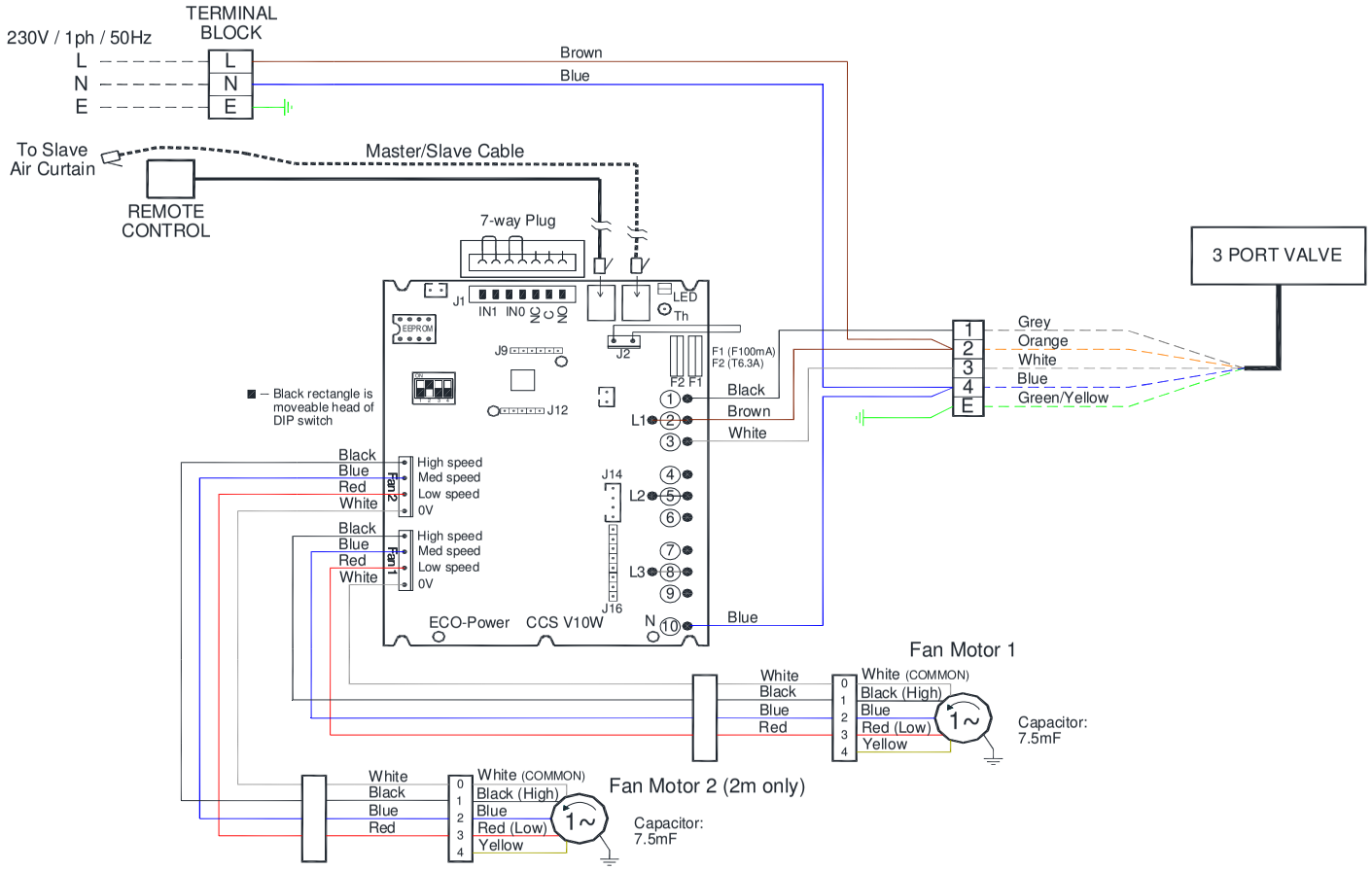
APPENDIX 1 — DIMENSIONS OF PHV V NT AIR CURTAIN (WALL MOUNTED)

APPENDIX 2A — WIRING DIAGRAM PHV1500E V

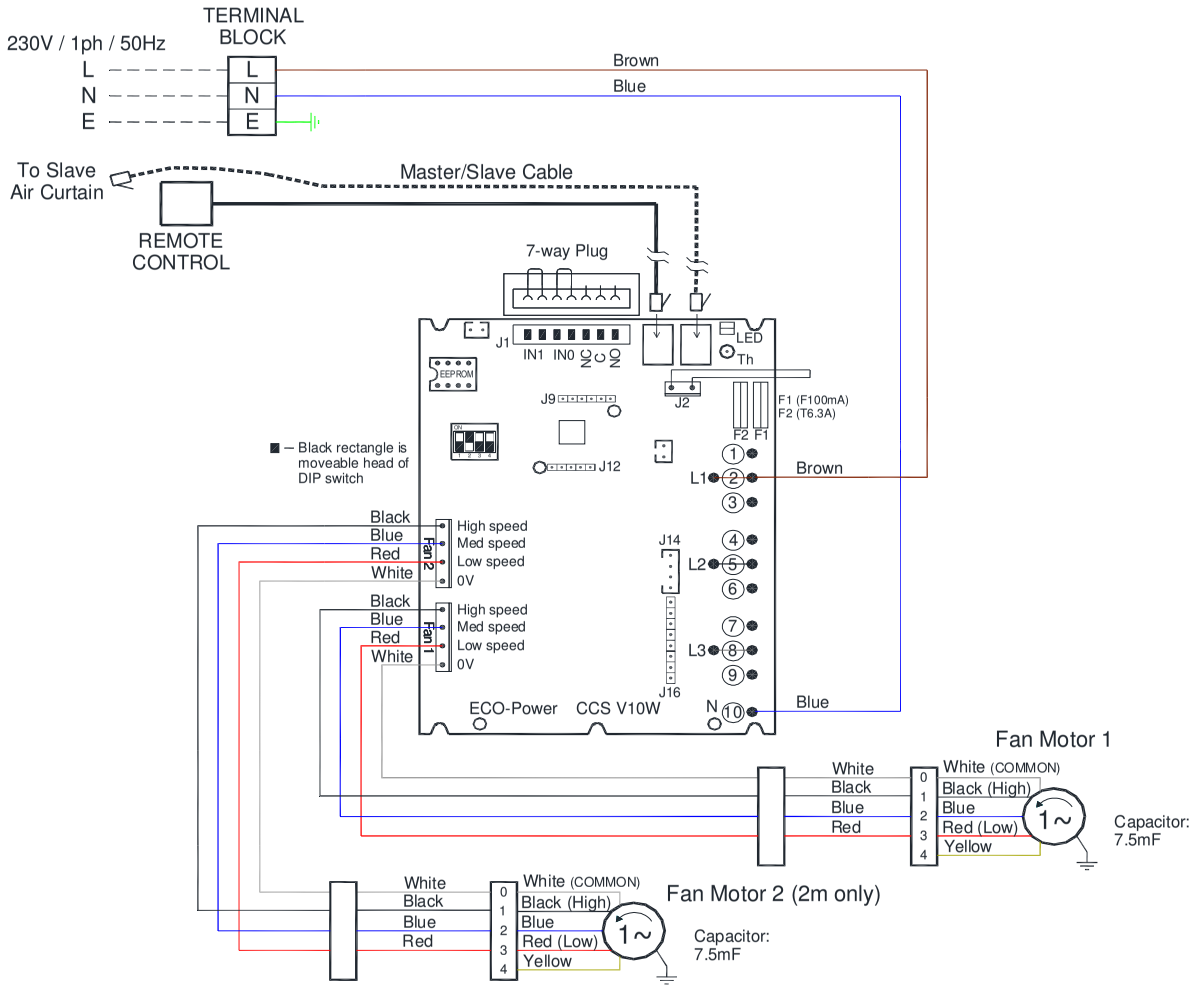


APPENDIX 2B — WIRING DIAGRAM PHV2000E V

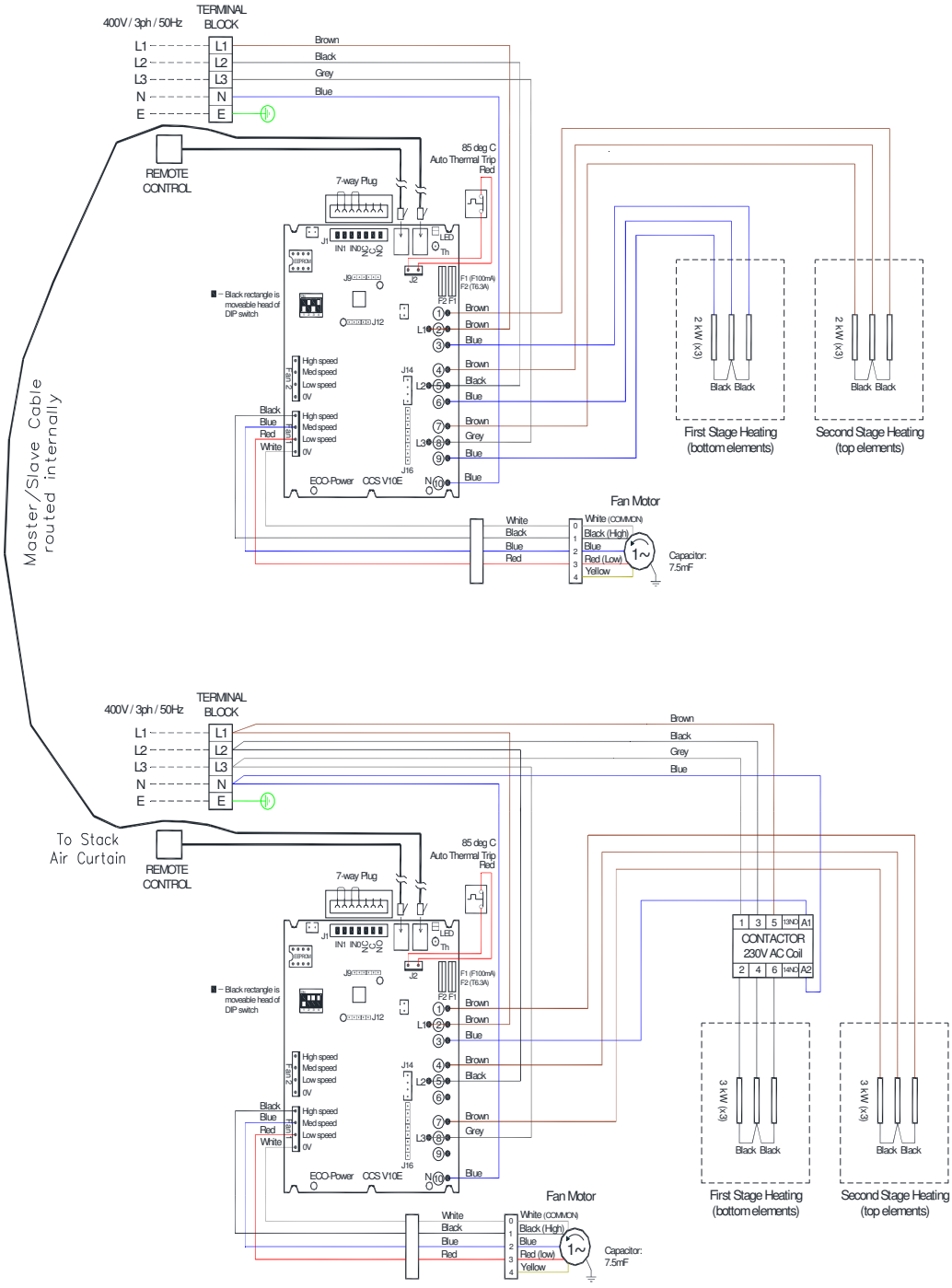


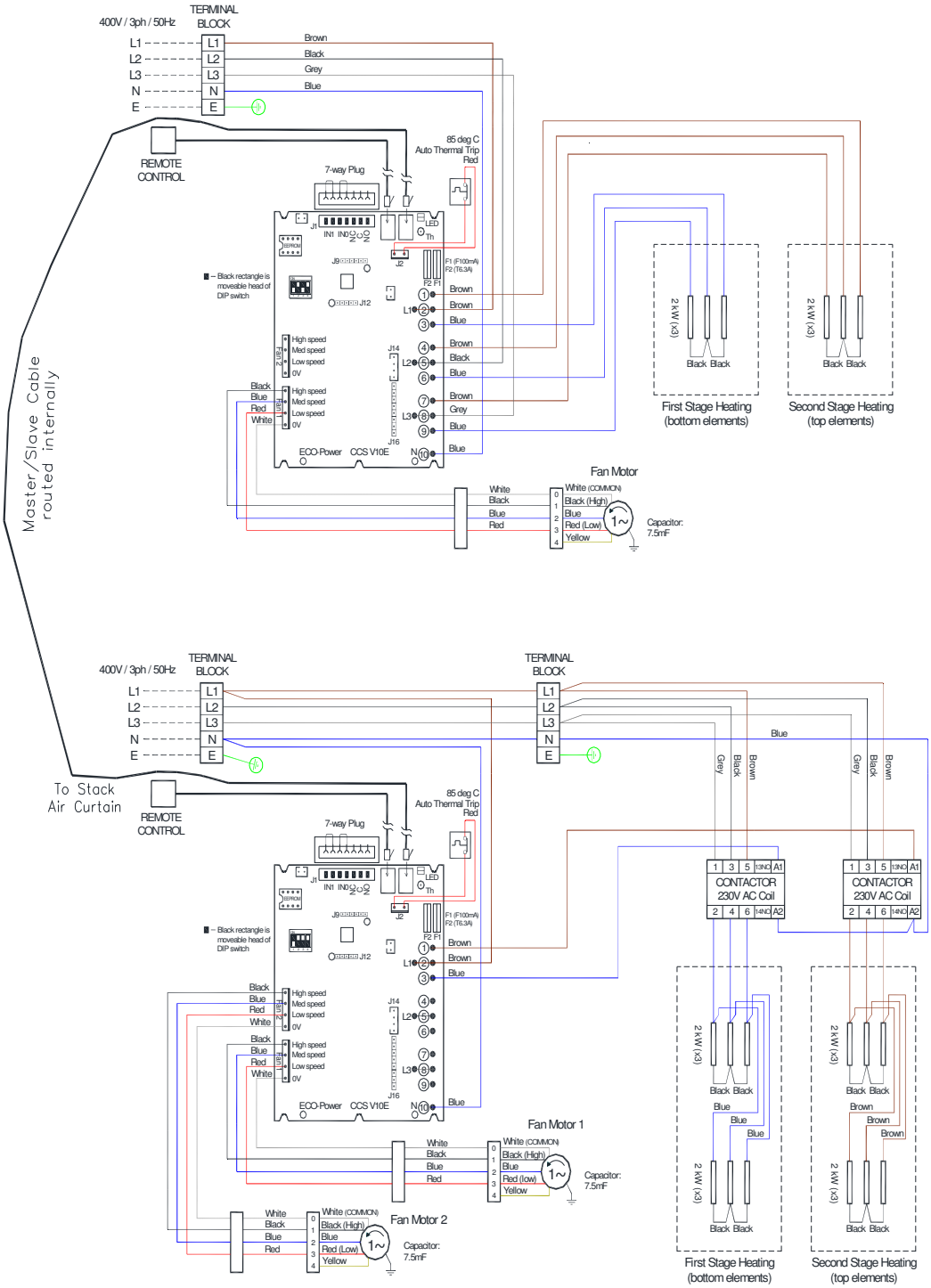


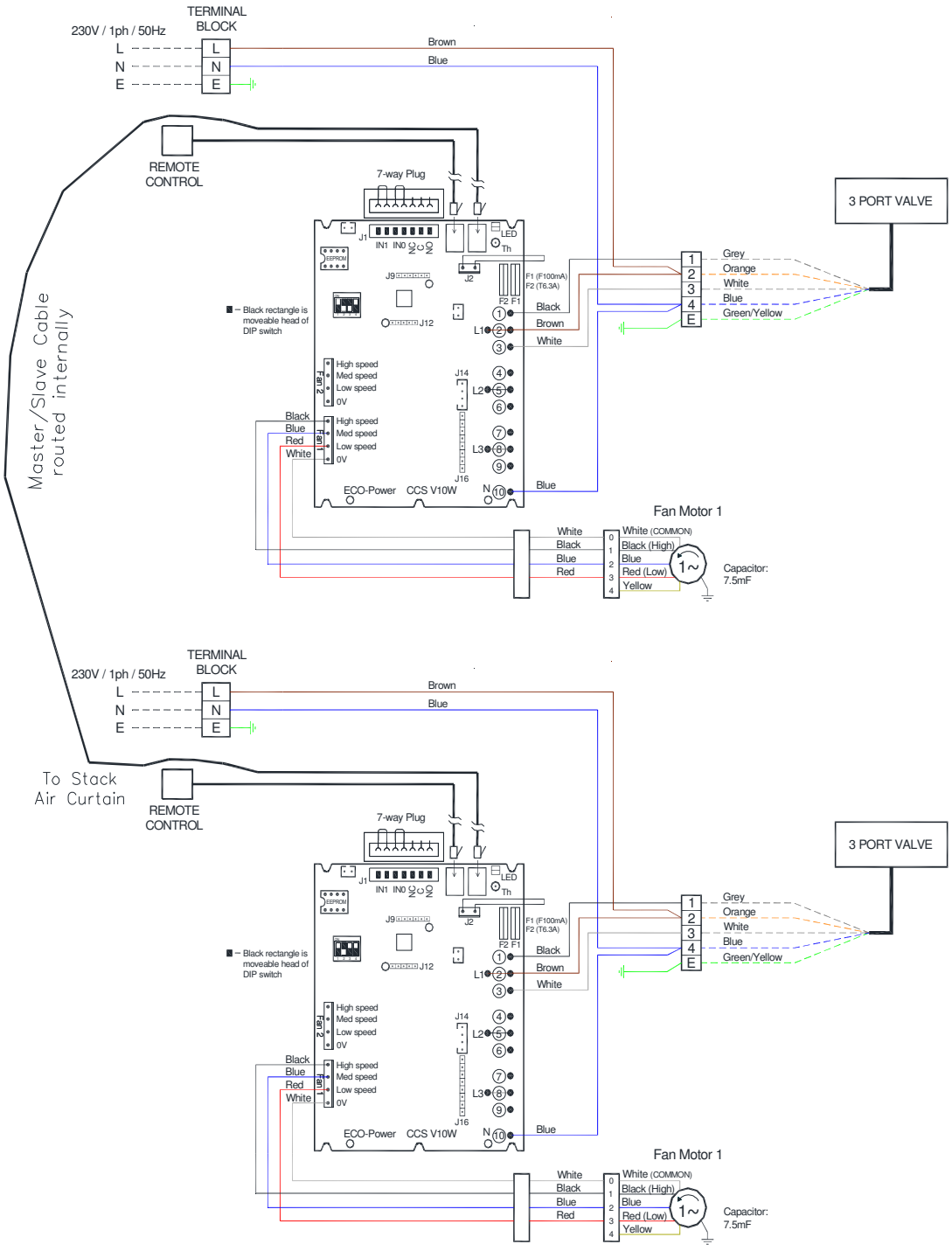
APPENDIX 2C — WIRING DIAGRAM PHV1500W V and PHV2000W V

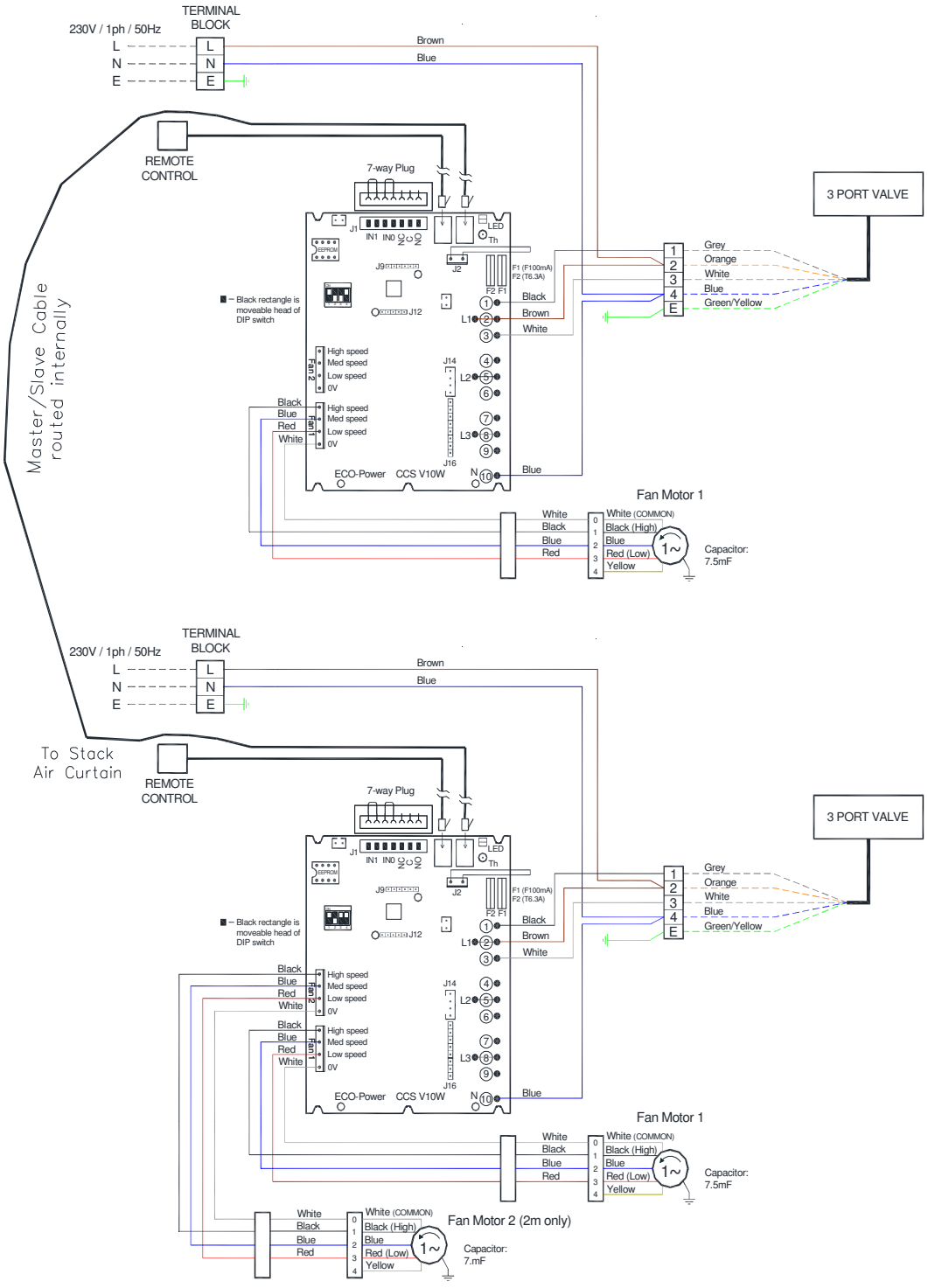


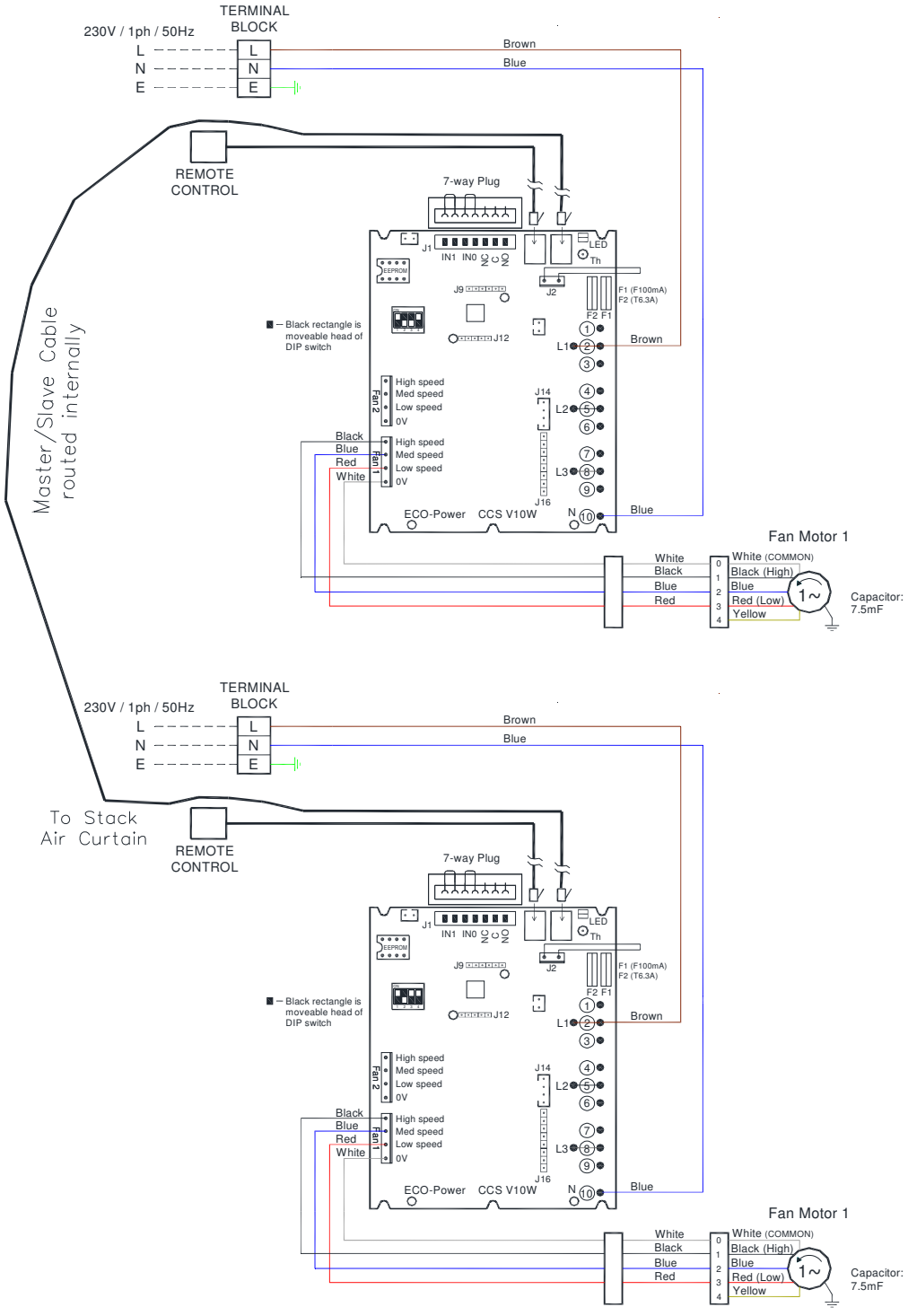
APPENDIX 2D — WIRING DIAGRAM PHV1500A V and PHV2000A V


400V / 3ph / 50Hz
TERMINAL BLOCK
L1
L2
L3
N
E
Brown
Black
Grey
Blue
REMOTE CONTROL
Master/Slave Cable routed internally
7-way Plug
85 deg C Auto Thermal Trip
Red
Black rectangle is moveable head of DIP switch
High speed
Med speed
Low speed
0V
ECO-Power
CCS V10E
2 kW (x3)
Black Black
First Stage Heating (bottom elements)
Second Stage Heating (top elements)
Fan Motor
White
Black
Blue
Red
White (COMMON)
Black (High)
Red (Low)
Yellow
Capacitor: 7.5mF
To Stack Air Curtain
CONTACTOR
230V AC Coil
3 kW (x3)

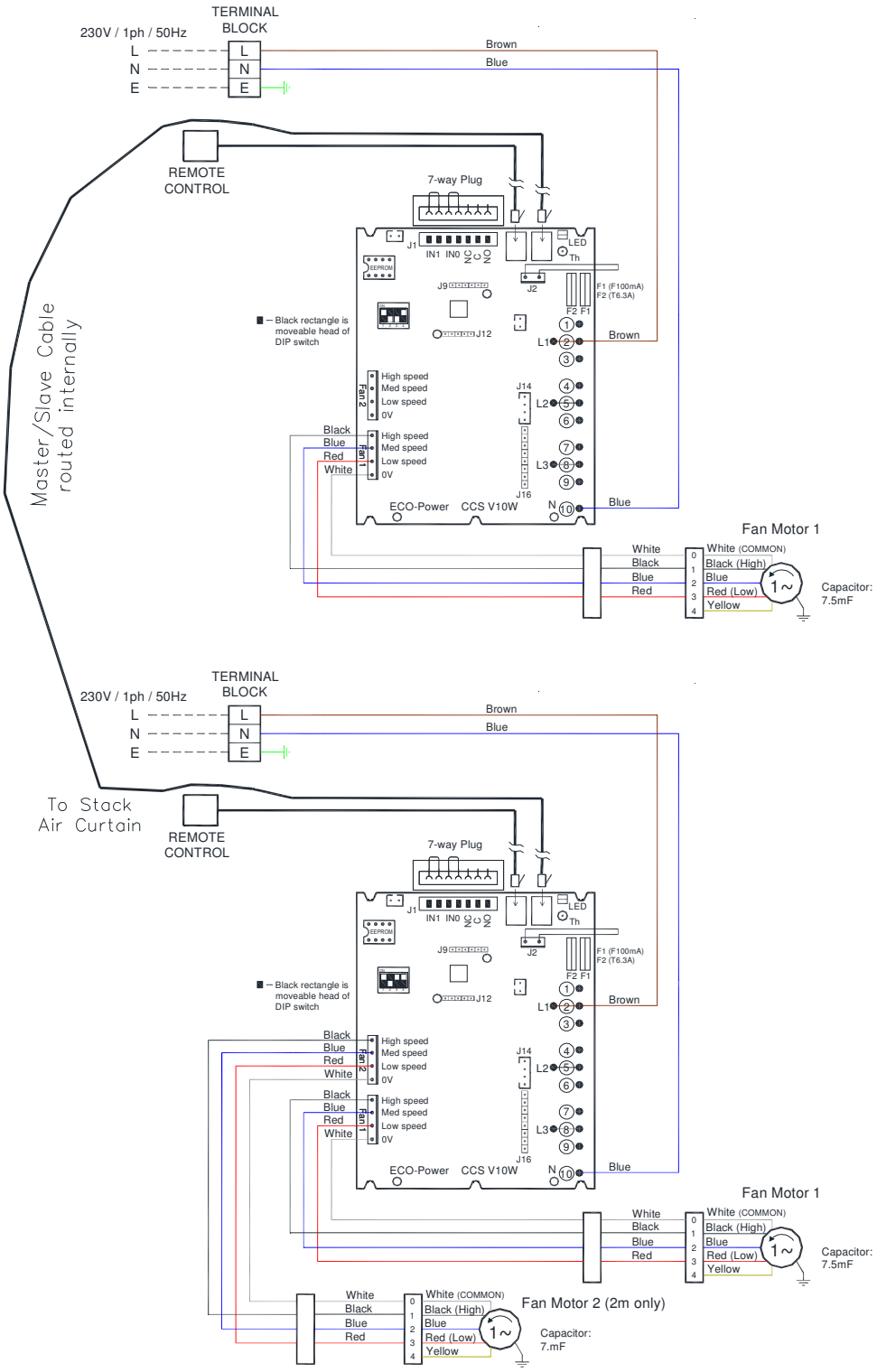

400V / 3ph / 50Hz
TERMINAL BLOCK
L1
L2
L3
N
E
Brown
Black
Grey
Blue
REMOTE CONTROL
7-way Plug
85 deg C Auto Thermal Trip
Red
Master/Slave Cable routed internally
Black rectangle is moveable head of DIP switch
High speed
Med speed
Low speed
0V
ECO-Power
CCS V10E
2 kW (x3)
Black Black
First Stage Heating (bottom elements)
Second Stage Heating (top elements)
Fan Motor
White (COMMON)
Black (High)
Red (Low)
Yellow
Capacitor: 7.5mF
To Stack Air Curtain
CONTACTOR 230V AC Coil
Fan Motor 1
Fan Motor 2


TERMINAL BLOCK
230V / 1ph / 50Hz
L
N
E
Brown
Blue
REMOTE CONTROL
7-way Plug
3 PORT VALVE
Master/Slave Cable routed internally
Grey
Orange
White
Blue
Green/Yellow
Black
Brown
White
High speed
Med speed
Low speed
0V
Fan 2
Fan 1
Black
Blue
Red
White
ECO-Power
CCS V10W
Blue
Fan Motor 1
White (COMMON)
Black (High)
Blue
Red (Low)
Yellow
Capacitor: 7.5mF
To Stack Air Curtain
TERMINAL BLOCK
230V / 1ph / 50Hz
REMOTE CONTROL
7-way Plug
3 PORT VALVE
Fan Motor 1
Capacitor: 7.5mF


TERMINAL BLOCK
230V / 1ph / 50Hz
L
N
E
Brown
Blue
REMOTE CONTROL
7-way Plug
3 PORT VALVE
Grey
Orange
White
Blue
Green/Yellow
Master/Slave Cable routed internally
■ – Black rectangle is moveable head of DIP switch
F1 (F100mA)
F2 (T6.3A)
Black
Brown
White
High speed
Med speed
Low speed
0V
Fan 2
Fan 1
Black
Blue
Red
White
ECO-Power
CCS V10W
Blue
Fan Motor 1
White (COMMON)
Black (High)
Blue
Red (Low)
Yellow
Capacitor: 7.5mF
TERMINAL BLOCK
230V / 1ph / 50Hz
To Stack Air Curtain
REMOTE CONTROL
7-way Plug
3 PORT VALVE
Fan Motor 1
Fan Motor 2 (2m only)
Capacitor: 7.5mF
Capacitor: 7.mF


TERMINAL BLOCK
230V / 1ph / 50Hz
L
N
E
Brown
Blue
REMOTE CONTROL
7-way Plug
Master/Slave Cable routed internally
■ – Black rectangle is moveable head of DIP switch
High speed
Med speed
Low speed
0V
Fan 2
Fan 1
Black
Blue
Red
White
ECO-Power
CCS V10W
Brown
Blue
Fan Motor 1
White (COMMON)
Black (High)
Blue
Red (Low)
Yellow
Capacitor: 7.5mF
To Stack Air Curtain

APPENDIX 2J — WIRING DIAGRAM PHV3000A V (STACKED AIR CURTAIN)



20. DECLARATION OF CONFORMITY

Carver International Ltd T/A Thermoscreens

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EC DECLARATION OF CONFORMITY
as defined by the EC Council Directive on Machinery 2006/42/EC, the Low Voltage Directive 2014/35/EC, Electromagnetic Compatibility Directive 2014/30/EC, the Energy related Products Directive 2009/125/EC

Herewith we declare that the air movement equipment designated below, on the basis of its design and construction in the form brought onto the market by us in accordance with the relevant safety, health and performance requirements of the Machinery. If alterations are made to the machinery without prior consultations with us, this declaration becomes invalid. This declaration of conformity is issued under the sole responsibility of the manufacturer.

Designation of Equipment: AIR CURTAINS

Series Type: PHV1000A V; PHV1000E V; PHV1000W V; PHV1500A V; PHV1500E V; PHV1500W V; PHV2000A V; PHV2000E V; PHV2000W V

Relevant EC Council Directives:
the Machinery Directive (2006/42/EC)
the Low Voltage Directive (2014/35/EU)
the Electromagnetic Compatibility Directive (2014/30/EU)
the Pressure Equipment Directive (97/23/EC)
the EcoDesign Products Directive (2009/125/EC;Comm. Reg.327/2011)
the Restriction of Hazardous Substances Directive (2017/2102)

The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:

Machinery -	BS EN ISO 12100:2010, BS EN ISO 13857:2008
LVD -	EN 60335-1:2012+A11:2014, EN 60335-2-30:2009+A11:2012
EMC -	EN 61000-6-1:2007, EN 61000-6-3:2007+A1:2011, EN 61000-3-2:2014 + A2:2009, EN61000-3-3:2013
PED -	EN 13133:2000, EN 13134:2000
ErP -	Commission Regulation (EU) No.327/2011, ISO 5801:2007, ISO 12759:2010
RoHS -	EN 63000:2018

Basis of Self Attestation:
Quality Assurance to BS EN ISO 9001: 2008
B.S.I. Registered Firm Certificate Number FM 85224 SGS Test Report ELS150049/2/R/DC/11;
SGS Test Report EMC150049/1
CE Marking Association Test Report 6799 and 6800

Responsible Person: Carole Keane, Group Marketing Director.

Date: 1st April 2020

Signed: