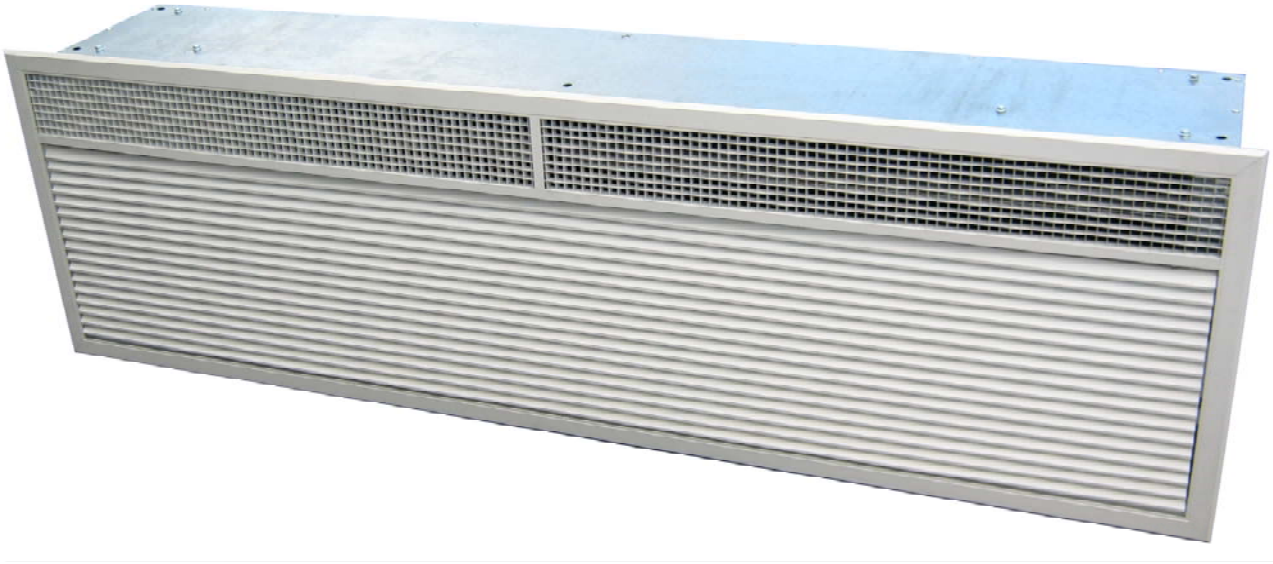
thermoscreens®

AIR CURTAIN
HX RECESSED RANGE



INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

N. America
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 the IEE wiring regulations and/or local statutory regulations.

- A 1 phase or 3 phase local disconnect 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. Units with dual electrical supplies (see * in Table below) must have a common disconnect to switch off both supplies simultaneously.
- 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 480V or 600V, 3 phase electrical supply - see section 3: Specifications, Electrical Supply * – also need a separate 208V to 240V electrical supply to operate fan motors and controls.
- A 25mm / 1in size cable gland or conduit connector should be used for the Electrical Supply into the air curtain.
- The air curtain must be grounded.

3 SPECIFICATIONS

Air Curtain Model	Electrical Supply (V/ph/Hz)	Rated Electrical Power Input (kW)	Rated Current per phase (A)	Heat Output [Low/High] (kW)	Effective Width of Airstream (m / in)	Weight (kg / lbs)
HX1000AR	208…240/1/60	0.35	1.4	–	1.10 / 43	45 / 99
HX1500AR	208…240/1/60	0.5	2.0	–	1.63 / 64	66 / 146
HX2000AR	208…240/1/60	0.7	2.8	–	2.15 / 85	80 / 176
HX1000WR	208…240/1/60	0.35	1.4	6/12	1.10 / 43	52 / 115
HX1500WR	208…240/1/60	0.5	2.0	9/18	1.63 / 64	75 / 165
HX2000WR	208…240/1/60	0.7	2.8	12/24	2.15 / 85	93 / 205
HX1000ER (208V)	208/3/60	12.35	36.0	6/12	1.10 / 43	46 / 101
HX1500ER (208V)	208/3/60	18.5	54.0	12/18	1.63 / 64	67 / 148
HX2000ER (208V)	208/3/60	24.7	72.0	12/24	2.15 / 85	84 / 185
HX1000ER (480V)	480/3/60* + 208…240/1/60	12 0.35	14.5 1.4	6/12	1.10 / 43	46 / 101
HX1500ER (480V)	480/3/60* + 208…240/1/60	18 0.5	21.7 2.0	12/18	1.63 / 64	67 / 148
HX2000ER (480V)	480/3/60* + 208…240/1/60	24 0.7	28.9 2.8	12/24	2.15 / 85	84 / 185
HX1000ER (600V)	600/3/60* + 208…240/1/60	12 0.35	11.6 1.4	6/12	1.10 / 43	46 / 101
HX1500ER (600V)	600/3/60* + 208…240/1/60	18 0.5	17.3 2.0	12/18	1.63 / 64	67 / 148
HX2000ER (600V)	600/3/60* + 208…240/1/60	24 0.7	23.1 2.8	12/24	2.15 / 85	84 / 185

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 HX range of air curtains is designed with energy efficiency in mind.

HX models suffixed ER, WR or AR are designed to be recess mounted inside a building and located horizontally over a doorway.

They must not be installed on the outside of a building.

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 Canada
11 King Street, Unit #3
Barrie, Ontario
Canada L4N 6BS

Toll Free: 877 445 3739
Tel: 705 797 0012
Fax: 705 797 0013
Email: salescanada@thermoscreens.com

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.

HX Recessed Air Curtain

Note: The recessed grille is packed separately.

Ecopower Remote Control

Supplied with 6m / 20ft control cable

Outdoor Air Sensor (Optional)

Available for weather compensation control

6. TOOLS REQUIRED

The following tools are required for installation:

- Flat head screwdrivers
- Phillips head screwdrivers
- 10mm wrench
- Adjustable wrench
- Electric drill
- Ladders
- Appropriate lifting equipment
- Appropriate tools for cutting ceiling aperture

7. INSTALLATION

The air curtain is designed to be recessed within ceiling voids or bulkheads within a building and located horizontally over a doorway. It must not be installed outside of the building.

7.1 Location

Mount the air curtain above and as close to the doorway as possible, with:

- the recessed grille not more than 3.5m / 11ft 6in above floor level
- the air discharge (see 1, Fig 1) section of the recessed grille nearest the doorway and the air inlet section (see 2, Fig 1) furthest from the doorway

Beware of doorway top edges, structural beams, door opening/closure devices, etc., which may interfere with the air stream and affect the location of the unit.

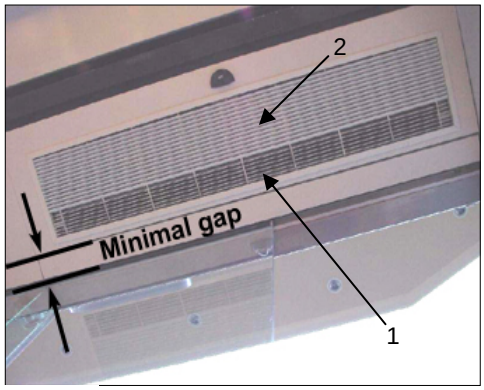


Fig 1

NOTE: For the air curtain to work well the doorway should be less than the width of the airstream.

7.2 Ceiling Suspension

Step 1 Cut an aperture in the ceiling to the dimensions in Appendix 1. Cut notches, if necessary, to clear screws in the air curtain casing.

NOTE: For LPHW models, pipework will need to be installed above the curtain. Allow sufficient access and height clearance within the ceiling void to do this.

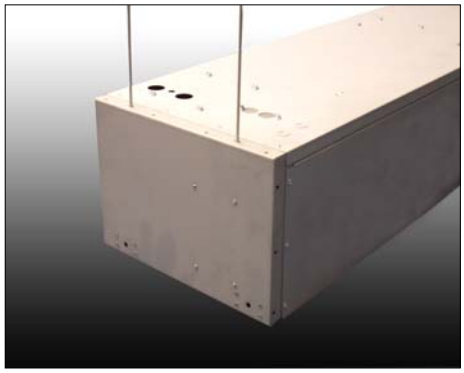


Fig 2

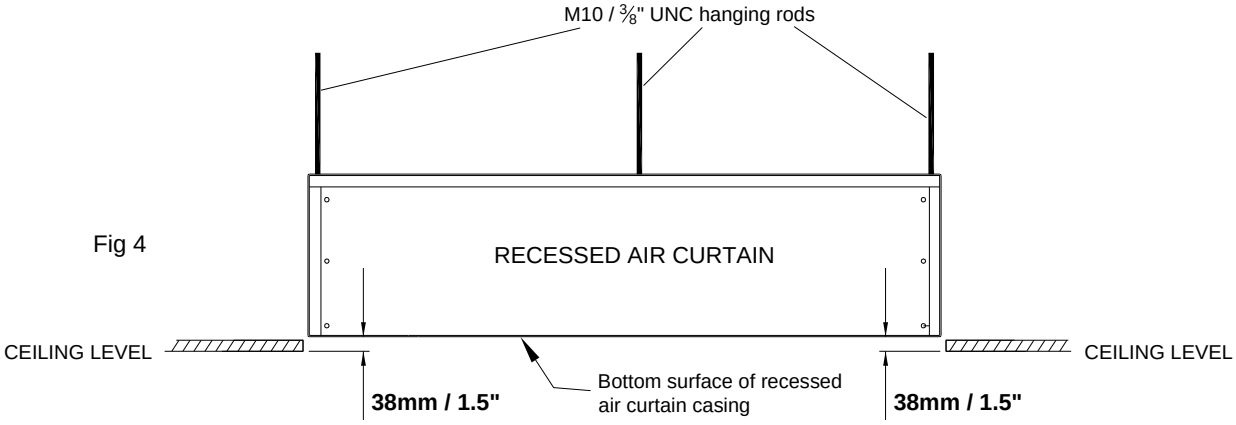
Step 2 Fix M10 / 3/8" UNC threaded rods (not supplied) through the 2 holes at each end in the top casing (see Fig 2). Feed the rods through the casing and attach to fixing brackets near the bottom of the unit (see Fig 3, looking up into the air curtain). Use M10 / 3/8" UNC lock-nuts either side of the fixing bracket to secure the hanging rod.

NOTE: Do not let these four hanging rods come below the bottom of the unit casing or they may prevent the recessed grille fitting properly.


Fig 3

Step 3 If you are installing model HX1500R or HX2000R, fit a 5th M10 / 3/8" UNC threaded rod into the hanging point in the middle of the unit. Refer to Appendix 1 and Fig 4.

Fig 4



Step 4 Secure each rod to a suitable structure that can support the weight of the unit (see section 3: Specifications for weights).

WARNING: It is the sole responsibility of the installer to ensure that the fixing locations and suspension system used are suitable for the air curtain being installed.

Step 5 Adjust the height of the unit on its hanging rods so the bottom surface of the casing goes 38mm / 1.5in up into the ceiling as shown in Fig 4. Ensure the unit is level.

7.3 LPHW Models

For LPHW models ensure that water isolation valves are fitted in the flow and return pipework adjacent to the air curtain and connected correctly as shown in the diagram in Appendix 1.

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 the table below.

Air Curtain	Water Flow Rate (l/min at 82/71°C / US Gall/min at 180/160°F)	Water Pressure Drop * (kPa / psi / ft H_2O)
HX1000WR, 2-row (12kW)	15.6 / 4.1	6.3 / 0.91 / 2.1
HX1500WR, 2-row (18kW)	23.4 / 6.2	12.9 / 1.87 / 4.3
HX2000WR, 2-row (24kW)	31.2 / 8.2	22.9 / 3.32 / 7.6
Air Curtain	**Water Flow Rate (l/min at 60/40°C / US Gall/min at 140/100°F)**	**Water Pressure Drop * (kPa / psi / ft H_2O)**
HX1000WR, 4-row (12kW)	8.6 / 2.3	9.5 / 1.38 / 3.2
HX1500WR, 4-row (18kW)	12.9 / 3.4	10.3 / 1.49 / 3.4
HX2000WR, 4-row (24kW)	17.1 / 4.5	10.9 / 1.58 / 3.6

* Water Pressure Drop is across the flow and return connections of the air curtain and includes for the coil and valve fitted inside the unit.

7.4 Attaching the recessed grille to the air curtain

The recessed grille consists of:

- Metal frame
- Cellular discharge grille
- Hinged inlet grille

There are 4 fixing points on the HX1000R, 6 on the HX1500R and 7 on the HX2000R (see Fig 5).
Fix the grille as follows:

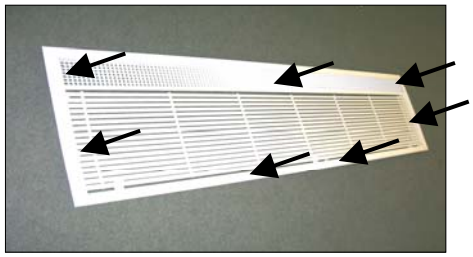


Fig 5 (HX2000R shown)

Step 1 Open the hinged inlet grille using a flat headed screwdriver to release the quarter turn fasteners (see Fig 6). There are two fasteners on the HX1000R unit and three fasteners on HX1500R and HX2000R units.

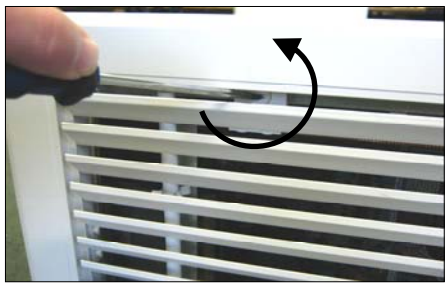


Fig 6

Step 2 Make sure the grille will go the correct way around (cellular discharge nearest to doorway). Offer the recessed grille up through the cut-out in the ceiling and attach it to the bottom of the air curtain casing using the Philips head screws supplied. Start with the screws shown in Fig 7 and then fit the two at each end of the discharge grille.

Fig 7

Step 3 If fitting model HX1500R or HX2000R units insert 1 or 2 screws towards the middle of the unit as shown in Fig 8.

Step 4 On model HX1500R or HX2000R units fit 1 screw in the middle of the discharge grille. This screw is easier to access if the hinged inlet grille is temporarily shut.

Fig 8

Step 5 With the hinged inlet grille open again adjust the hanging rods (see Fig 9) so the grille frame fits neatly against the ceiling. Ensure the grille frame is a snug fit against the ceiling with no gaps all the way around.

Fig 9

NOTE: Open the hinged grille core to gain access to electrical connections, and for servicing and maintenance.

8. REMOTE CONTROL INSTALLATION

Mount the remote control unit in a convenient position directly to the wall or onto a switch box.

8.1 Wall mounting

Step 1 Using a screwdriver undo the screw on the top of the remote control case and pull the back case away (see Fig 10).

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.

Step 4 Refit the front case.

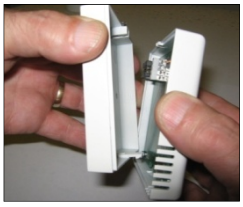


Fig 10

8.2 Switch box mounting

Step 1 Using a screwdriver undo the screw on the top of the remote control case and pull the back case away (see Fig 10).

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 x mounting screws (not supplied) (see Fig 11).

Step 3 Connect the RJ plug to the RJ socket on the PCB.

Step 4 Refit the front case.

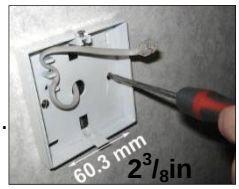


Fig 11

NOTE: For optional remote control settings, see section 9.

9. REMOTE CONTROL SETTINGS

On the back of the remote controller PCB you will find four DIP switches that provide the following optional features.

DIP1 – Reset on power-up
On restoring power after an electrical interruption all remote control settings are retained. DEFAULT SETTING ON

Dip2 – Stop fan on cold
Fans are switched off when heating level is achieved (Automatic mode only).
DEFAULT SETTING OFF

DIP3 – Never blow cold
Air curtain always heats in Automatic mode (i.e. will not go to ambient mode).
DEFAULT SETTING OFF

DIP4 – Room air temperature control
Enabling the room air sensor in the remote control disables all other temperature sensors.
DEFAULT SETTING OFF

10. EXTERNAL CONTROLS

10.1 Remote switch contacts IN0, IN1

Terminals IN0 and IN1 on the Ecopower PCB inside the air curtain can be used to provide different control strategies using remote volt-free contacts (see Fig 8). 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:

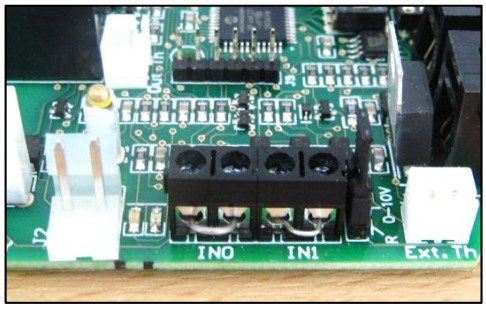


Fig 8

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 12.3)

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 Ecopower PCB inside the air curtain.

*** NOTE:** The Ecopower Remote Control 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.

10.2 Overheat safety cut-out indication

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

Volt free changeover contacts (6A 250VAC 30VDC) can be wired via the 3-way screw terminal “HEALTHY” (see Fig 9).

Refer to Section 19.1 Overheat Safety cut out, for how to reset a overheat safety cut-out situation.

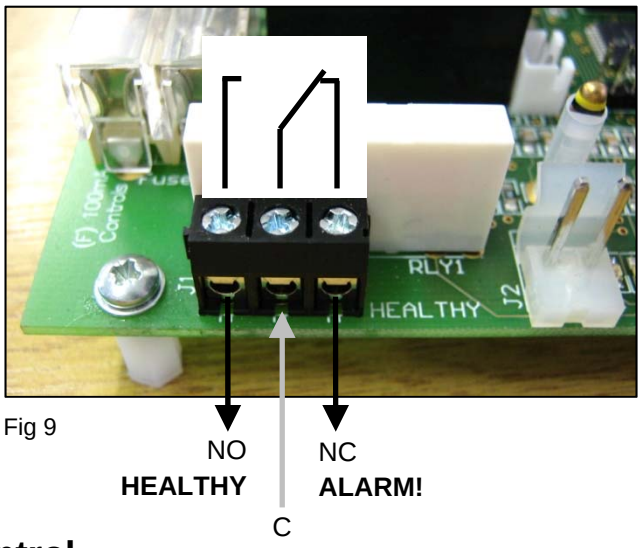


Fig 9

10.3 Weather compensation control

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 Ecopower PCB (see Fig 10)

On the Ecopower PCB, set DIP 4 to OFF as per Table 4, (see Section 12.1 Remote switch contacts IN0, IN1).

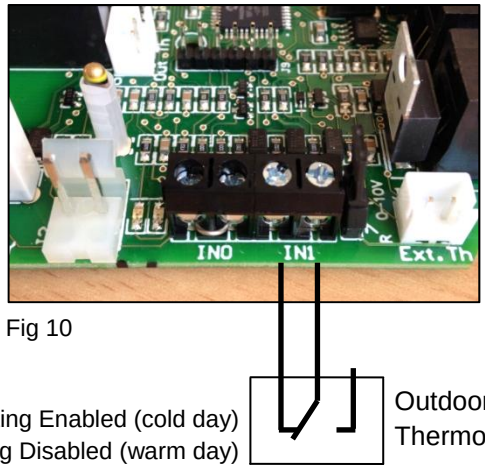


Fig 10

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

11. SYSTEM CONFIGURATION

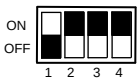
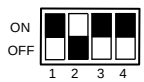
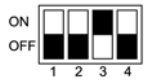
11.1 Optional features

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

DIP switches fitted to the air curtain motherboard (see Fig 13) 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

Fig 13

Function	Control	Comments	Factory Setting
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.	DIP1  	This function applies to electric heated air curtains only to limit high air temperatures. Set DIP1 to OFF if unit is water heated or ambient.	ON Heat output is governed by fan speed.
Disable fan run-on The 2 minute fan run-on after switch off is enabled or disabled on electric heated air curtains.	DIP2  	Must only be used for LPHW and Ambient air curtains. Each air curtain must have DIP2 set to ON for no fan run-on.	OFF Run-on enabled.
Thermostat master For master/slave installations. Only the air sensor thermistor in the thermostat master air curtain will be used for measuring air temperature. Set DIP switch 1 to ON in the air curtain that will be the master unit.	DIP3  	Air sensor thermistors in all slave air curtains will be ignored. Avoids some units blowing cold air and others blowing warm air in master/slave arrangements on larger doorways.	OFF Air sensors on multiple installations measure and act independently
Weather compensation heat control Enables heat output of air curtain to vary with outside temperature. Set DIP switches 2 and 4 to ON to enable. See Note 1 below.	DIP2 & 4  DIP1 shown ON for fan heat interlock. Set DIP3 to ON in master/ slave installations.	If enabled, connect a suitable outside air temperature sensor (e.g. Siemens QAC2030) to the air curtain terminal block (see section 10.3: Weather compensation). See Note 2 below for weather compensation heat control strategy.	OFF Weather compensation not active.

Note 1
See section 10.3: Weather compensation for details of outside air temperature sensor and wiring to the air curtain.

Set DIP switch 2 and 4 to the ON position in the air curtain that has the outdoor air temperature sensor wired into it. For Master/Slave multiple installations this must be the Thermostat Master unit.

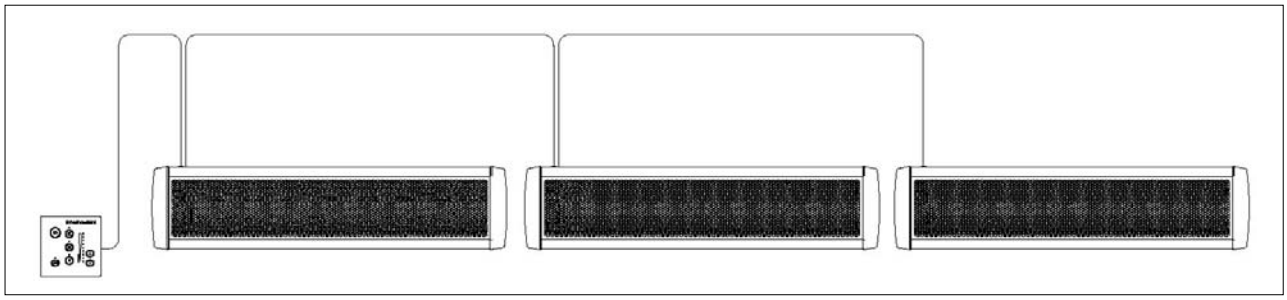
Note 2
When remote controller is set to automatic the outdoor air temperature determines the heat output as follows:

- Less than 10°C / 50°F, full heat operates.
- Between 10°C / 50°F and 15°C / 60°F, half-heat operates.
- More than 15°C / 60°F, no heat operates

12. MULTIPLE AIR CURTAINS

When controlling multiple air curtains in a master/slave arrangement, plug the remote controller into any one of the units.

Connect this unit to other unit(s) with a Thermoscreen RJ extension lead (not supplied), as per the diagram below. Each air curtain must have its own electrical supply.

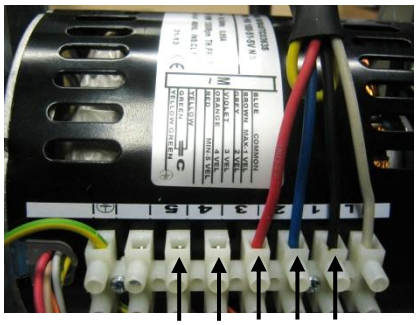


13. FAN SPEED SELECTION

If required, select fan speed at commissioning to suit outdoor environmental conditions and indoor noise levels.

Factory settings for the 3 fan speeds are as follows:

- HIGH fan speed (black wire) is wired into motor tapping 1 (highest motor speed tapping)
- MEDIUM fan speed (blue wire) is wired into motor tapping 2
- LOW fan speed (red wire) is wired into motor tapping 3



Set fan speeds according to the following tables:

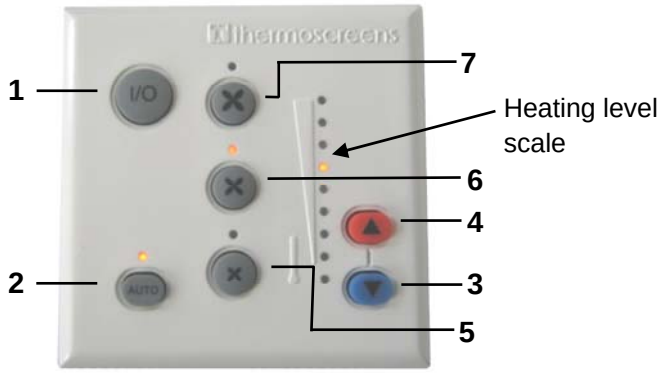
Fan running on 208v (refer to wiring diagrams)

Fan Speed (air curtain as delivered)	**Motor Speed Tapping**	**Maximum air curtain mounting height** (m / ft)	**Sound Pressure Level of air curtain** [dB(A) at 3m/10ft]	**Air Volume Flow Rate** (m^3/h / cfm)
HIGH (black wire)	1 (highest speed) air velocity at discharge is 10 m/s / 1970 ft/min	3.4 / 11ft 2in	HX1000 - 58 HX1500 - 58 HX2000 - 58	1340 / 790 1960 / 1155 2585 / 1520
MEDIUM (blue wire)	2	3.0 / 9ft 10in	HX1000 - 54 HX1500 - 52 HX2000 - 54	1120 / 660 1540 / 905 2165 / 1275
LOW (red wire)	3	2.4 / 7ft 10in	HX1000 - 50 HX1500 - 49 HX2000 - 50	925 / 545 1290 / 760 1815 / 1070
	4	1.9 / 6ft 3in	HX1000 - 47 HX1500 - 46 HX2000 - 47	730 / 430 965 / 570 1445 / 850
	5 (lowest speed)	1.6 / 5ft 3in	HX1000 - 43 HX1500 - 40 HX2000 - 43	640 / 375 785 / 460 1305 / 770

Fan running on 230v (refer to wiring diagrams)

Fan Speed (air curtain as delivered)	**Motor Speed Tapping**	**Maximum air curtain mounting height** (m / ft)	**Sound Pressure Level of air curtain** [dB(A) at 3m/10ft]	**Air Volume Flow Rate** (m^3/h / cfm)
HIGH (black wire)	1 (highest speed) air velocity at discharge is 10 m/s / 1970 ft/min	3.5 / 11ft 6in	HX1000 - 60 HX1500 - 60 HX2000 - 60	1530 / 900 2230 / 1315 2945 / 1735
MEDIUM (blue wire)	2	3.2 / 10ft 6in	HX1000 - 58 HX1500 - 56 HX2000 - 58	1340 / 790 1845 / 1085 2595 / 1525
LOW (red wire)	3	2.6 / 8ft 6in	HX1000 - 54 HX1500 - 53 HX2000 - 54	1135 / 670 1580 / 930 2225 / 1310
	4	2.1 / 6ft 10in	HX1000 - 48 HX1500 - 47 HX2000 - 48	890 / 525 1170 / 690 1760 / 1035
	5 (lowest speed)	1.8 / 5ft 11in	HX1000 - 45 HX1500 - 42 HX2000 - 45	765 / 450 930 / 545 1550 / 910

14. REMOTE CONTROL OPERATION



Use the remote control to operate the air curtain as follows:

1 On/Off

Turns the 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.

2 Manual/Automatic

Switches between Manual and Automatic modes.
The Auto On indicator LED is lit for "Auto Mode" and unlit for "Manual Mode".

3 & 4 Heating level controls

Manual mode
Select heating level from zero, to half heat, to full heat by stepping up or down with the heating level controls. The heating level scale shows the level selected.

Automatic mode
Heat output is controlled automatically according to:

- Room air temperature
- Incoming air temperature, or
- External air temperature

This is dependent on the settings made in Section 11: System Configuration (DIP switches 2 and 4), and Section 8: Remote Control Settings (DIP switch 4).

5, 6 & 7 Fan speed

Switch fan speed between Low, Medium and High respectively. The appropriate LED illuminates.

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.
- Ecopower remote controller operates correctly in both manual and auto modes.

15.2 Instruct operator and hand over

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

Recommend that any person operating the air curtain be given adequate instruction and supervision by a person responsible for their safety. 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.

Recommend 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.

16. SIGN OFF

Complete the following once commissioning is completed.

Installer signature: _____

Installer name: _____

Company name: _____

Date: _____

17. FAULT CONDITIONS

17.1 Thermal cut-out

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

This is indicated by flashing LEDs on the remote control and a red status LED on the air curtain motherboard.

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

To reset a thermal cut-out trip:

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 Press the Auto button on the remote control 4 times.

Air curtain heaters will then operate and after 30 seconds the LEDs on the remote control will stop flashing and the status LED will 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 motherboard inside the air curtain:

- Fuse 6.3A (T) supplies the fan motors within the air curtain
- Fuse 100mA (F) controls the operation of the motherboard

17.3 PCB status indication

LED1 on the air curtain motherboard is a status LED (See LED1 on Appendices, Wiring Diagrams).

This indicates the status of the Ecopower Control system as follows:

1. LED flashing green – operation normal
2. LED flashing red – low supply voltage or controller not plugged into motherboard
3. LED permanently red – thermal cut-outs open circuit from an overheat situation (see Section 17, Fault Conditions for how to reset)
4. LED flashing alternate red/green – air curtain configured for Weather Compensation Control (DIP 2 and 4 ON) but no outdoor air sensor is connected to Ecopower PCB. Remote Control LEDs will also flash to indicate a connection error.

18. SERVICE & MAINTENANCE

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

18.1 Every week

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

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

18.2 Every 3 months

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

WARNING: The following servicing, 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 Open the hinged inlet grille using a flat headed screwdriver to release the quarter turn fasteners (see Fig 6, Section 7.3).

Step 2 Clean and remove any build-up of dust and dirt within the air-curtain (inlet/outlet grilles, 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.

Step 4 On electric heated air curtains, remove the fan deck(s) as follows to inspect electric heaters, electrical wiring and connections and to remove dust, dirt and debris:

- Unclip the fan motor electrical connector.
- Unfasten 4 x M6 nuts/bolts on each fan deck.
- Unfasten M4 screws at bottom edge of fan deck.
- Carefully lift the fan deck away from the air curtain.

Refit fan deck(s) and close the hinged air inlet grille 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.

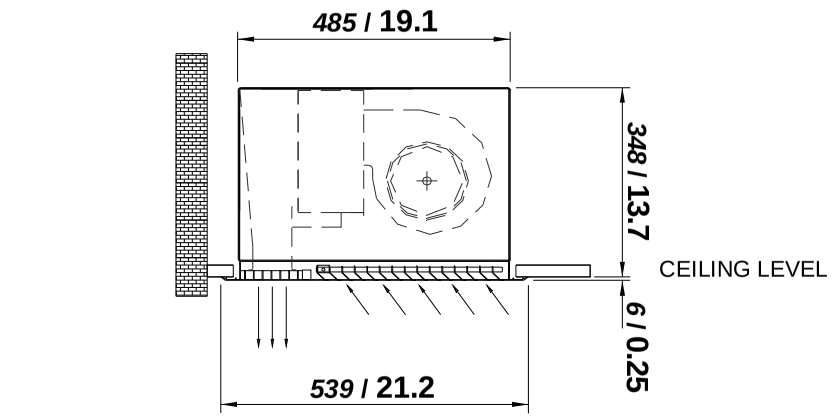
Failure to adequately maintain the unit may void the warranty. If any problems are encountered, please contact your installer/supplier.

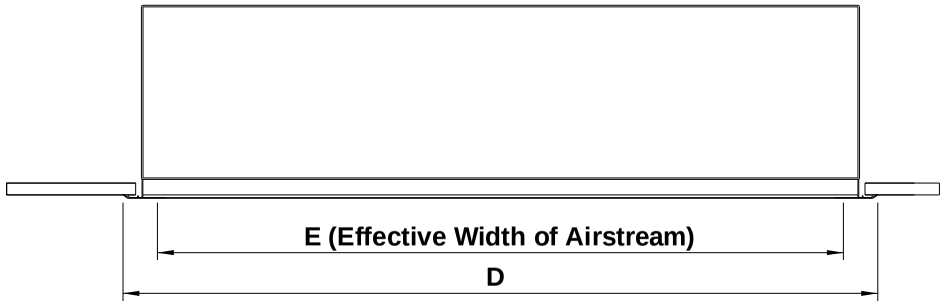
Failing this please contact Thermoscreens Canada.

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

Thermoscreens Canada
11 King Street, Unit #3
Barrie, Ontario
Canada L4N 6BS

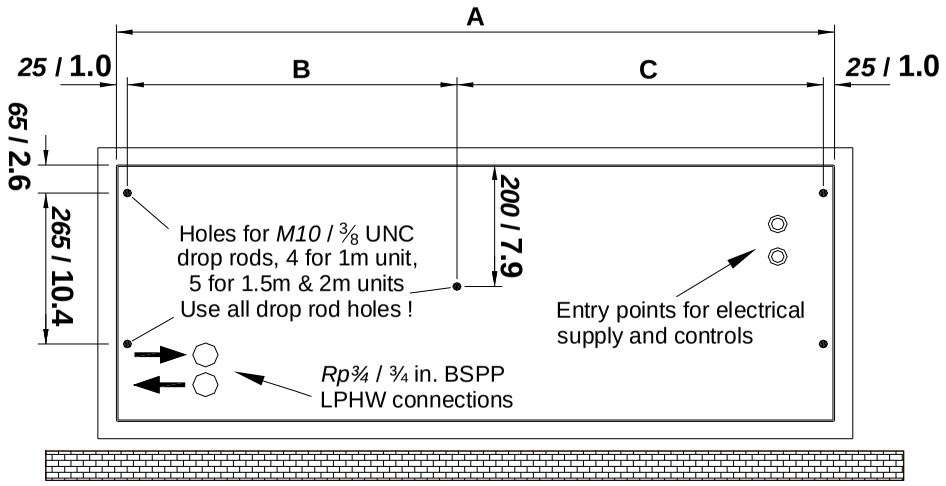
Toll Free: 877 445 3739
Tel: 705 797 0012
Fax: 705 797 0013
Email: salescanada@thermoscreens.com



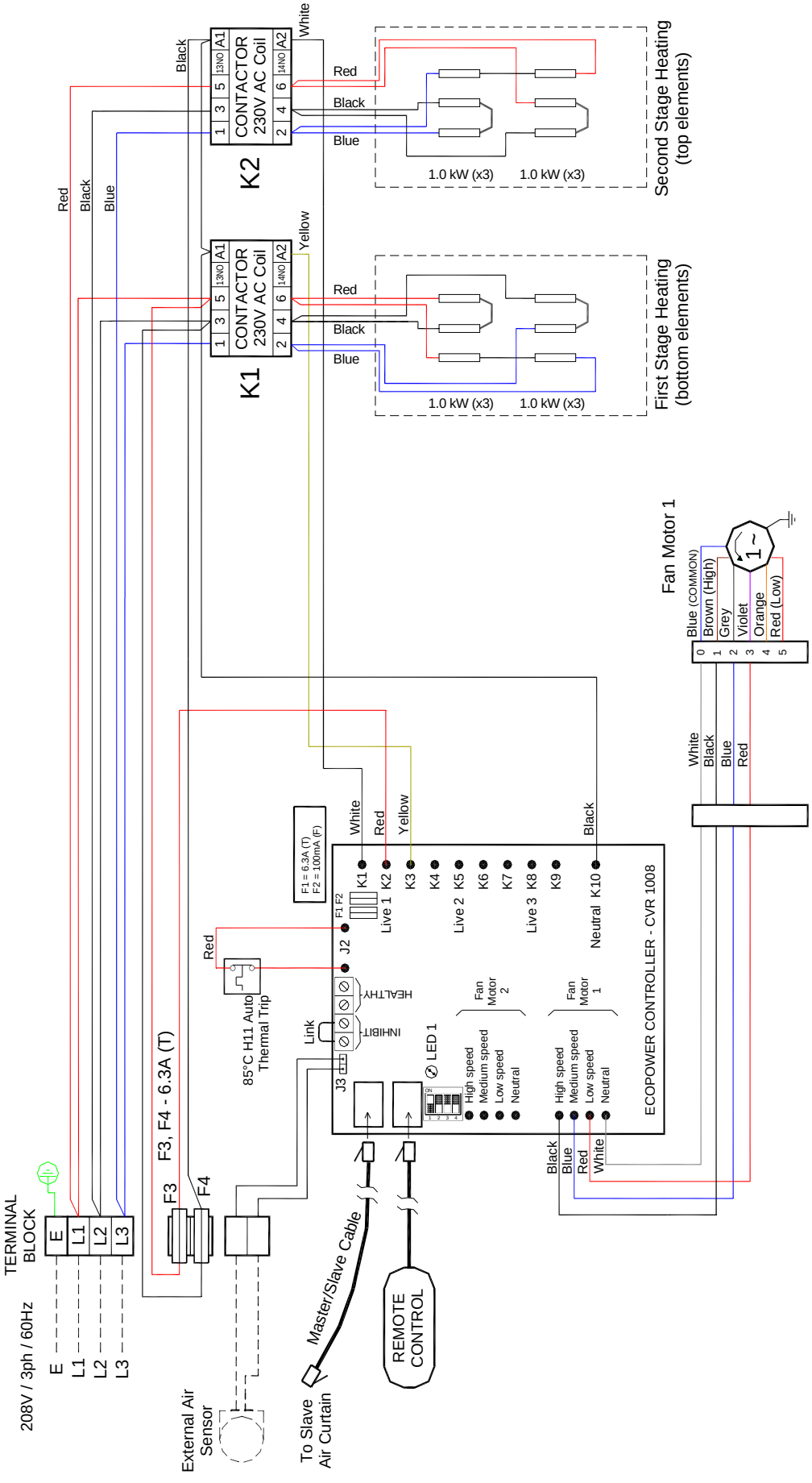


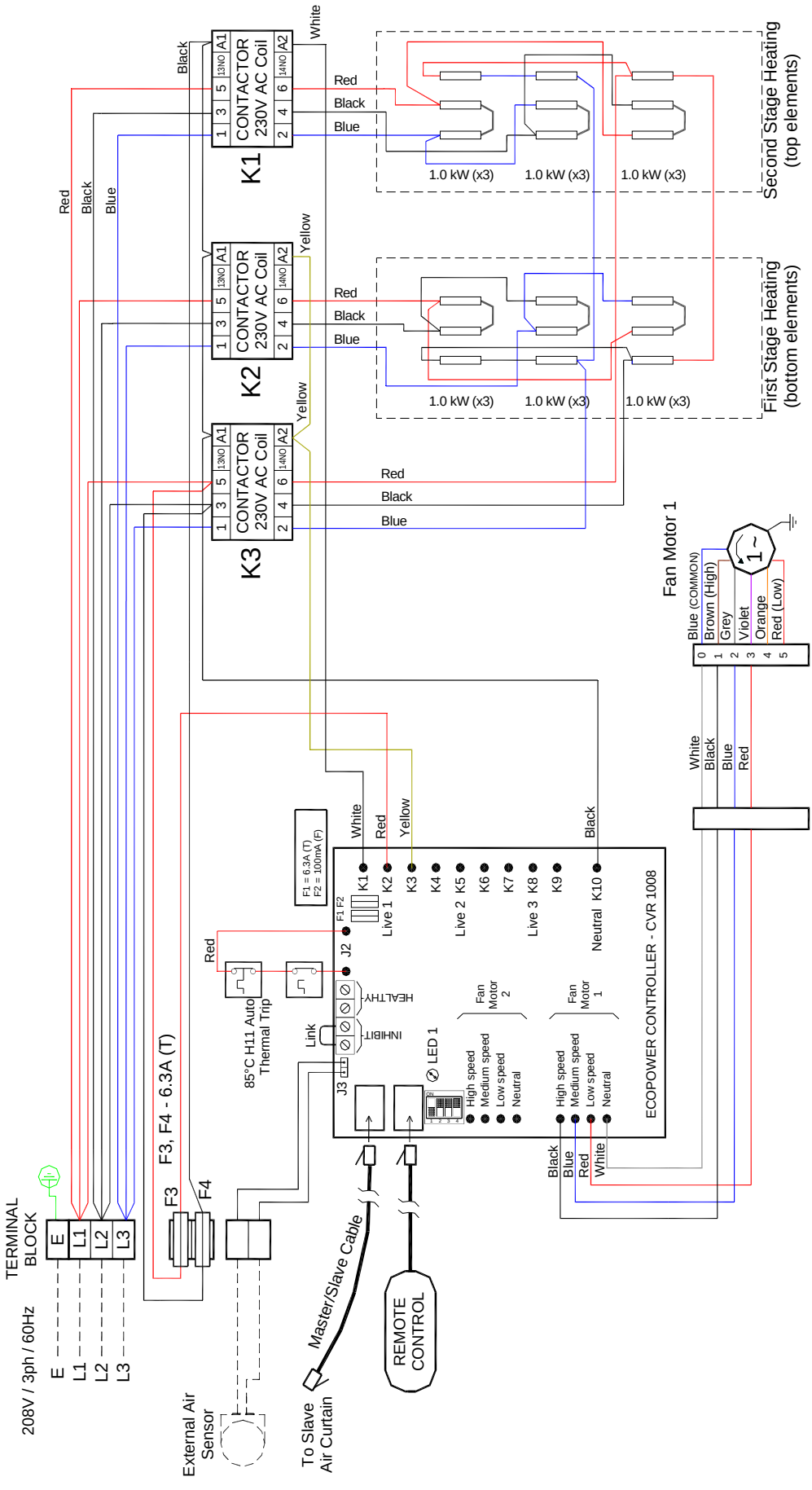
mm / inch

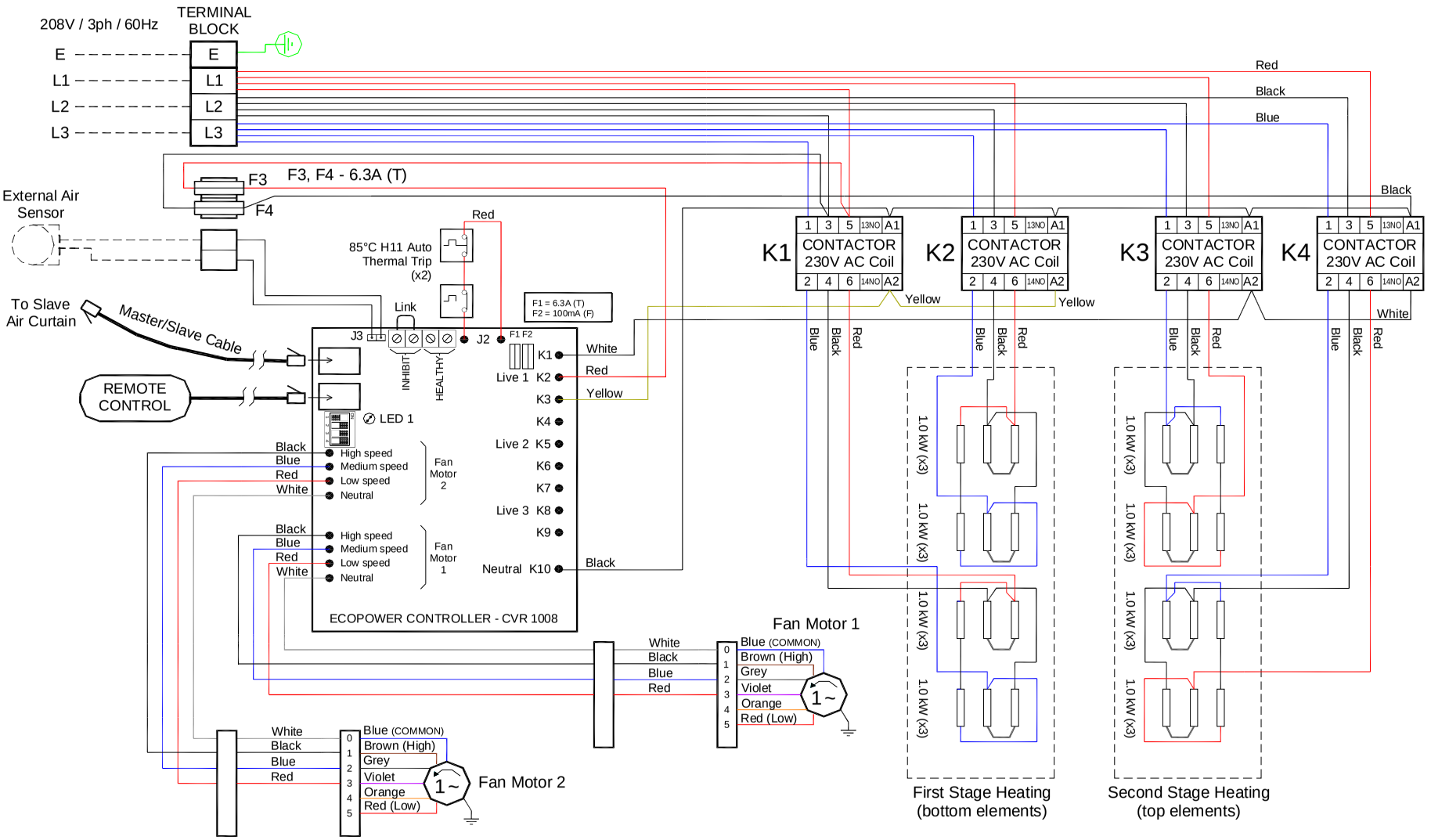
		HX1000R	HX1500R	HX2000R
	A	*1185* / 46.7	*1710* / 67.3	*2235* / 88.0
	B	-	*726* / 28.6	*1077* / 42.4
	C	-	*933* / 36.7	*1109* / 43.7
	D	*1238* / 48.7	*1763* / 69.4	*2290* / 90.2
	E	*1100* / 43.3	*1630* / 64.2	*2150* / 84.7
Cut-Out in Ceiling	Length	*1185* / 46.7	*1710* / 67.3	*2235* / 88.0
	Width	*485* / 19.1	*485* / 19.1	*485* / 19.1



APPENDIX 1 — DIMENSIONS OF HX RECESSED AIR CURTAIN

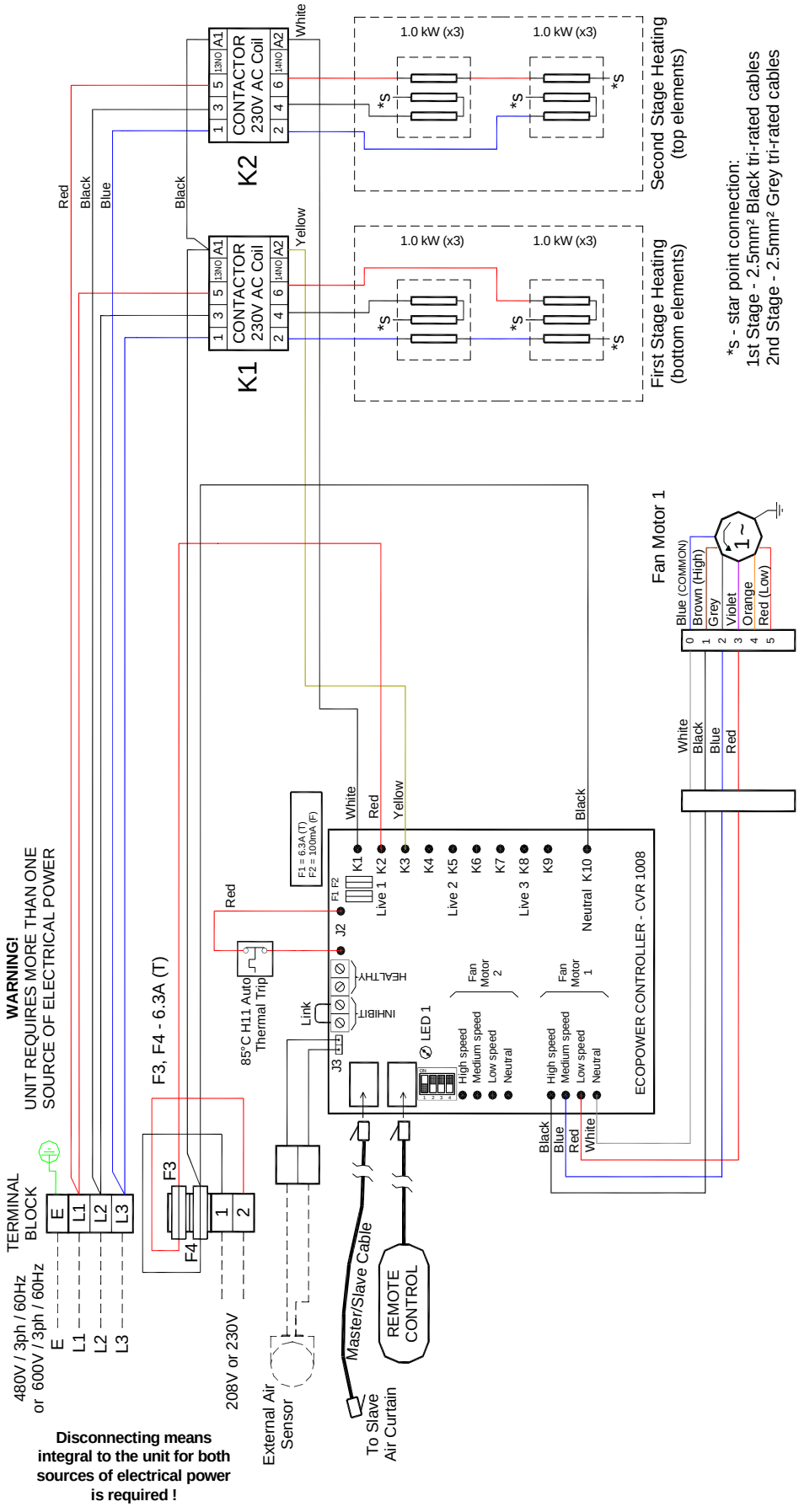

208V / 3ph / 60Hz
E
L1
L2
L3
TERMINAL BLOCK
F3
F4
F3, F4 - 6.3A (T)
External Air Sensor
To Slave Air Curtain
Master/Slave Cable
REMOTE CONTROL
85°C H11 Auto Thermal Trip
Link
HEALTHY
INHIBIT
LED 1
J2
J3
F1 F2
F1 = 6.3A (T)
F2 = 100mA (F)
K1
K2
K3
K4
K5
K6
K7
K8
K9
K10
Live 1
Live 2
Live 3
Neutral
Fan Motor 2
Fan Motor 1
High speed
Medium speed
Low speed
Neutral
ECOPOWER CONTROLLER - CVR 1008
K1
K2
CONTACTOR 230V AC Coil
1.0 kW (x3)
1.0 kW (x3)
First Stage Heating (bottom elements)
Second Stage Heating (top elements)
Fan Motor 1
Blue (COMMON)
Brown (High)
Grey
Violet
Orange
Red (Low)
Red
Black
Blue
White
Yellow

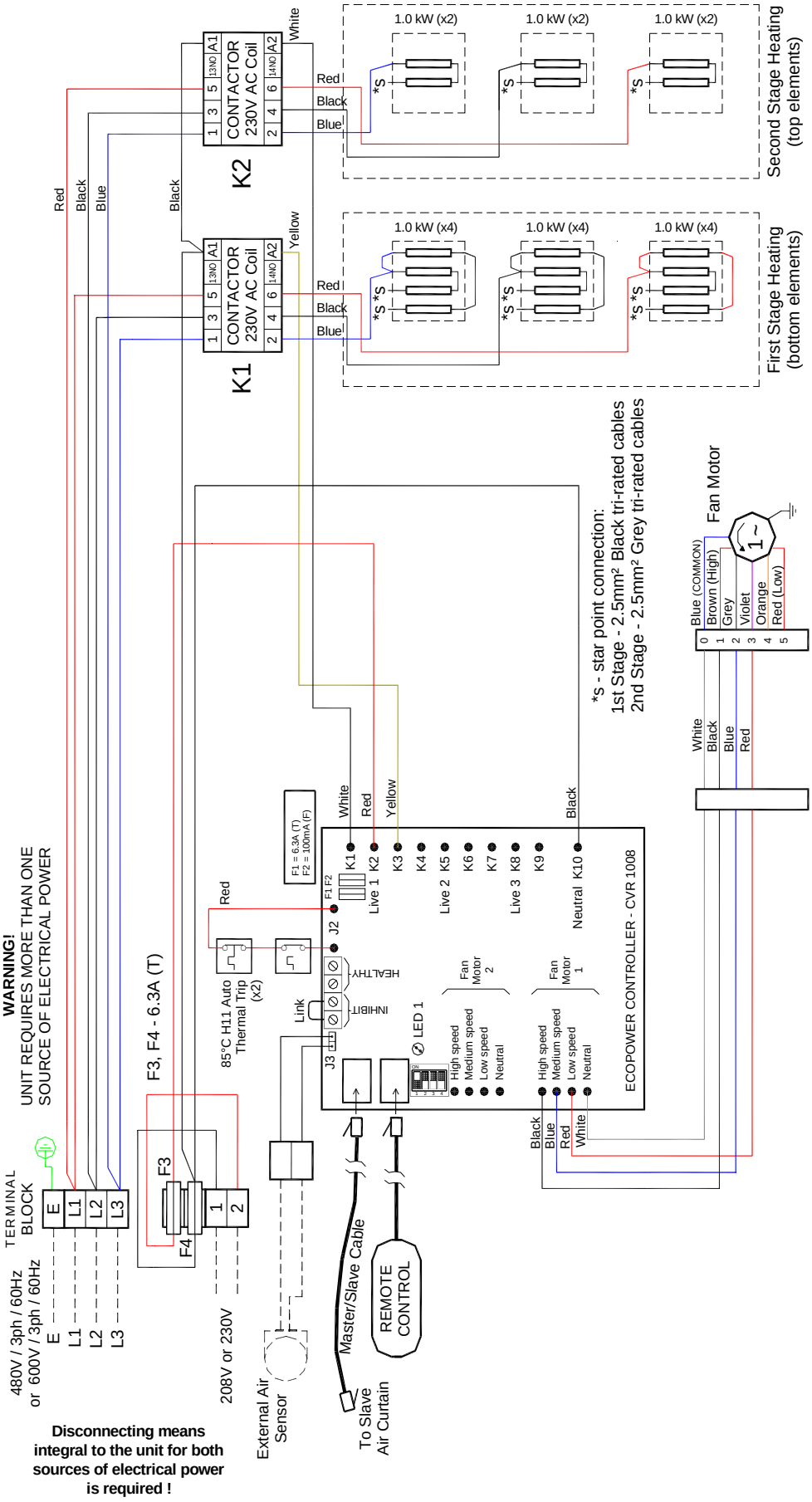

208V / 3ph / 60Hz
E
L1
L2
L3
TERMINAL BLOCK
F3, F4 - 6.3A (T)
F3
F4
External Air Sensor
To Slave Air Curtain
Master/Slave Cable
REMOTE CONTROL
85°C H11 Auto Thermal Trip
Link
INHIBIT
HEALTHY
LED 1
J2
J3
F1 = 6.3A (T)
F2 = 100mA (F)
ECOPOWER CONTROLLER - CVR 1008
Live 1
Live 2
Live 3
Neutral
Fan Motor 2
Fan Motor 1
High speed
Medium speed
Low speed
Neutral
K1
K2
K3
CONTACTOR 230V AC Coil
1.0 kW (x3)
Second Stage Heating (top elements)
First Stage Heating (bottom elements)
Fan Motor 1
Blue (COMMON)
Brown (High)
Grey
Violet
Orange
Red (Low)
White
Black
Blue
Red
Yellow

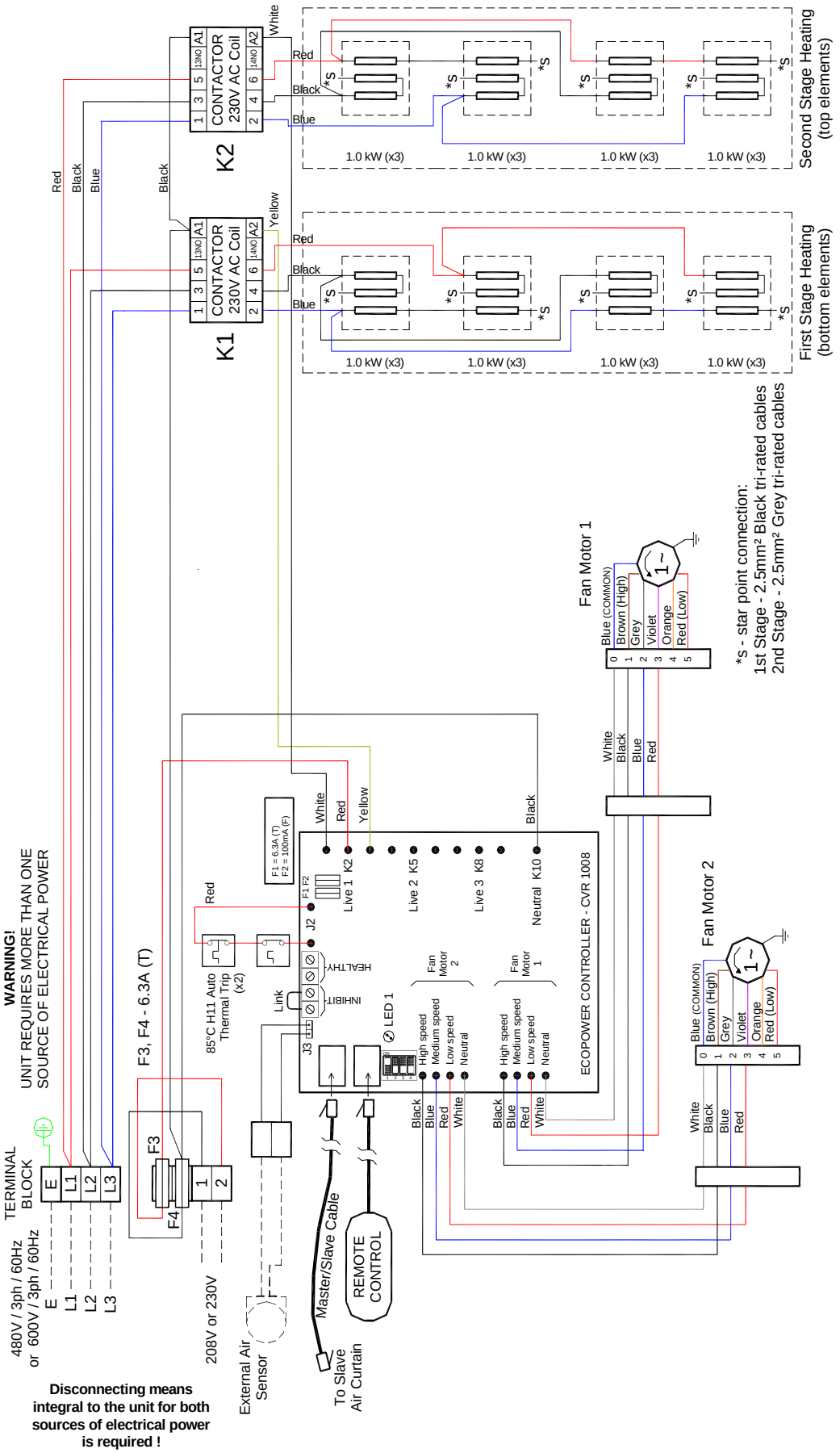


APPENDIX 2C — WIRING DIAGRAM HX2000ER 208V

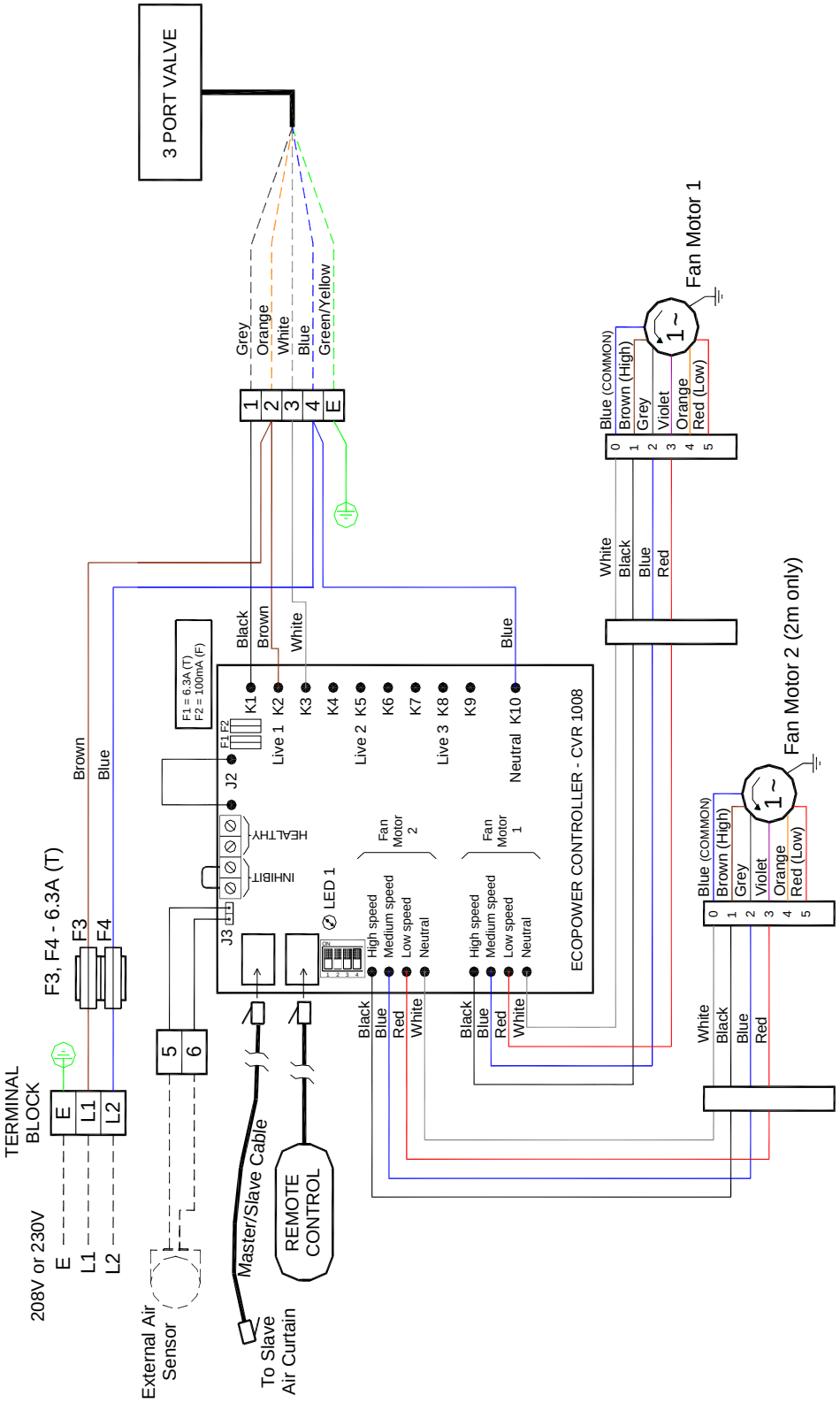
APPENDIX 2D — WIRING DIAGRAM -HX1000ER 480V or 600V

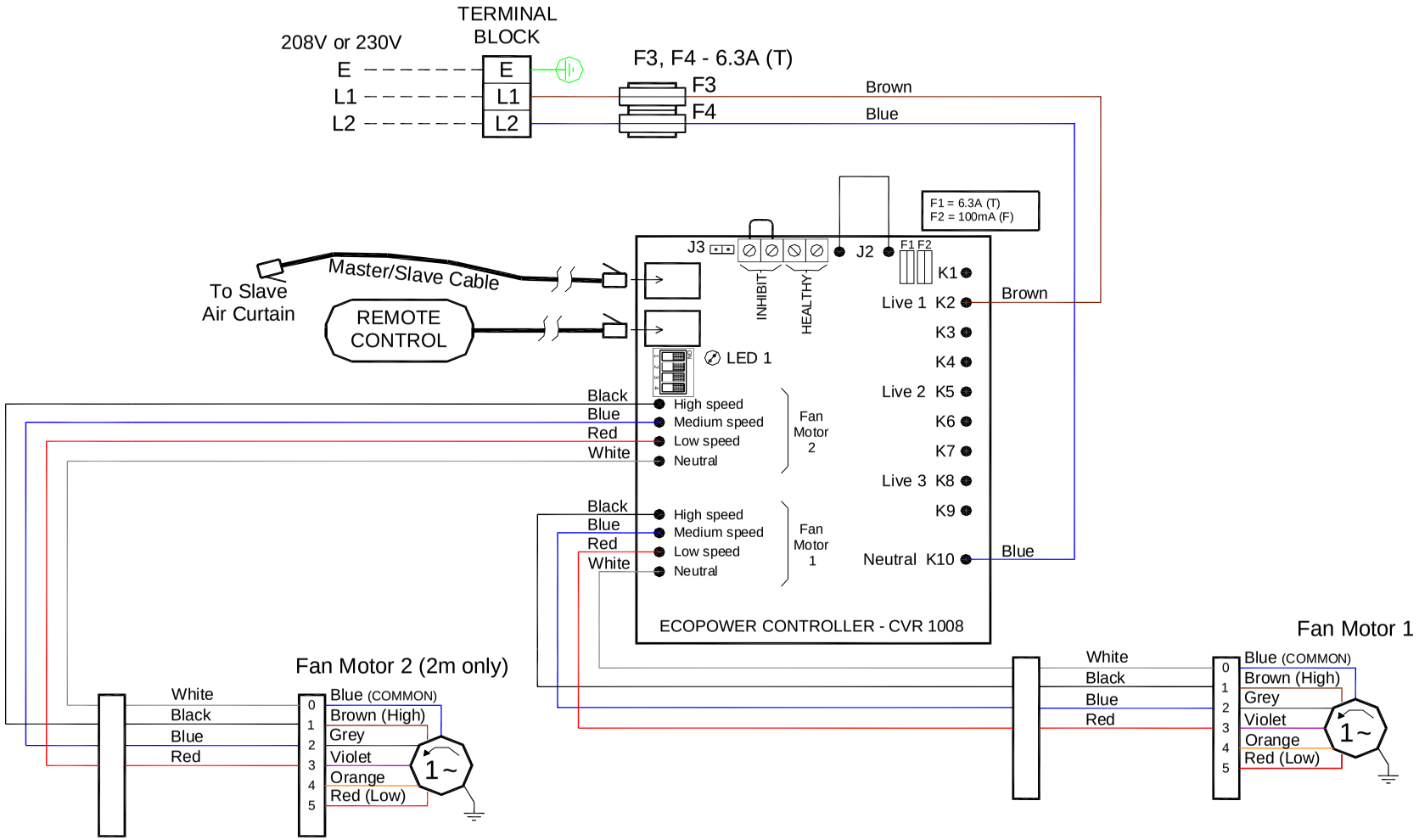



WARNING!
UNIT REQUIRES MORE THAN ONE SOURCE OF ELECTRICAL POWER
480V / 3ph / 60Hz or 600V / 3ph / 60Hz
E
L1
L2
L3
TERMINAL BLOCK
F3, F4 - 6.3A (T)
F3
F4
208V or 230V
1
2
85°C H11 Auto Thermal Trip (x2)
Link
External Air Sensor
Master/Slave Cable
REMOTE CONTROL
To Slave Air Curtain
K1
K2
CONTACTOR 230V AC Coil
13NO
14NO
A1
A2
Red
Black
Blue
White
Yellow
1.0 kW (x2)
1.0 kW (x4)
*s
*s - star point connection:
1st Stage - 2.5mm² Black tri-rated cables
2nd Stage - 2.5mm² Grey tri-rated cables
Second Stage Heating (top elements)
First Stage Heating (bottom elements)
Fan Motor
Blue (COMMON)
Brown (High)
Grey
Violet
Orange
Red (Low)
F1 = 6.3A (T)
F2 = 100mA (F)
F1 F2
J2
J3
K1
K2
K3
K4
K5
K6
K7
K8
K9
K10
Live 1
Live 2
Live 3
Neutral
HEALTHY
INHIBIT
LED 1
Fan Motor 2
Fan Motor 1
High speed
Medium speed
Low speed
Neutral
ECOPOWER CONTROLLER - CVR 1008
Disconnecting means integral to the unit for both sources of electrical power is required !


WARNING!
UNIT REQUIRES MORE THAN ONE SOURCE OF ELECTRICAL POWER
480V / 3ph / 60Hz
or 600V / 3ph / 60Hz
E
L1
L2
L3
TERMINAL BLOCK
F3, F4 - 6.3A (T)
F3
F4
208V or 230V
1
2
External Air Sensor
Disconnecting means integral to the unit for both sources of electrical power is required !
K1
K2
CONTACTOR 230V AC Coil
13NO
14NO
A1
A2
1.0 kW (x3)
*S
First Stage Heating (bottom elements)
Second Stage Heating (top elements)
*s - star point connection:
1st Stage - 2.5mm² Black tri-rated cables
2nd Stage - 2.5mm² Grey tri-rated cables
Red
Black
Blue
Yellow
White
ECOPOWER CONTROLLER - CVR 1008
F1 F2
F1 = 6.3A (T)
F2 = 100mA (F)
J2
J3
Live 1 K2
Live 2 K5
Live 3 K8
Neutral K10
HEALTHY
INHIBIT
Link
LED 1
85°C H11 Auto Thermal Trip (x2)
Fan Motor 1
Fan Motor 2
High speed
Medium speed
Low speed
Neutral
Fan Motor 1
Fan Motor 2
Blue (COMMON)
Brown (High)
Grey
Violet
Orange
Red (Low)
0
1
2
3
4
5
Master/Slave Cable
To Slave Air Curtain
REMOTE CONTROL

APPENDIX 2G — WIRING DIAGRAM HX1000WR, HX1500WR and HX2000WR





APPENDIX 2H — WIRING DIAGRAM HX1000AR, HX1500AR and HX2000AR