

Sentinel Door Curtain - Model 270

Installation, Operation & Maintenance

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INSTALLER: Please leave these instructions, other relevant literature and any controls/accessories with the user

INTRODUCTION

This booklet provides guidance to identify, handle, install and commission Dunham-Bush Sentinel door curtains. The instructions apply to models from the standard range of standard models only. Please study the instructions carefully before commencing any installation work.

IDENTIFICATION

The door curtain model description is displayed on a label found inside the unit casing. If specified, a stencil reference may also be marked inside the unit casing for on-site identification.

DESCRIPTION

Dunham-Bush Sentinel door curtains consist of a casing, motor, tangential fan(s), optional LPHW coil or black bar electric heating elements and electrical connection box. Each door curtain is supplied with a wall mounting bracket and a remote switching control box as standard. Casings are finished in durable polyester powder coat.

STANDARD RANGE MODELS & SIZES

Dunham-Bush Sentinel door curtain is available in three standard models; electric, low pressure hot water and ambient. These are available in three sizes; 1000mm, 1500mm, and 2000mm.

RANGE OF STANDARD MODELS

Model	Overall Length (mm)	Heating Option	Nominal Duty (kW)
270-A-10	1113	Ambient	N/A
270-A-15	1621	Ambient	N/A
270-A-20	2121	Ambient	N/A
270-E-10	1113	Electric	9.0
270-E-15	1621	Electric	13.5
270-E-20	2121	Electric	18.0
270-W-10	1113	LPHW	9.5
270-W-15	1621	LPHW	14.1
270-W-20	2121	LPHW	22.6

Table 1: Nominal outputs for LPHW option are based on LTHW 80/70°C, entering air at 18°C.

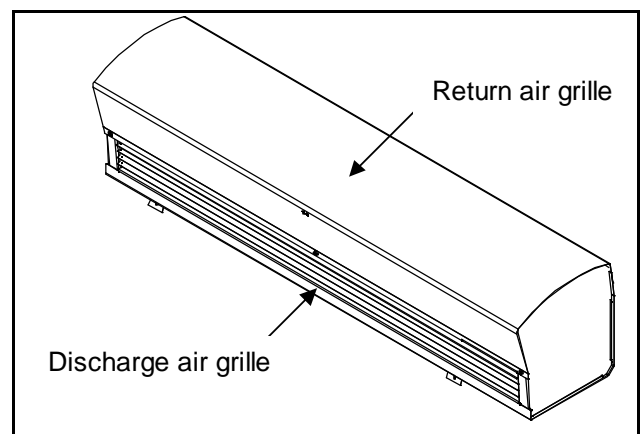


Diagram 1: Sentinel door curtain

Note: All model 270 Sentinel door curtains are suitable for doorway heights between 1800mm and 2700mm.

⚠ WARNING

This appliance should be used by persons who are adequately trained and/or supervised. This door curtain is not equipped with a device to control the room temperature. Do not use this door curtain in rooms occupied by persons not capable of leaving the room on their own.

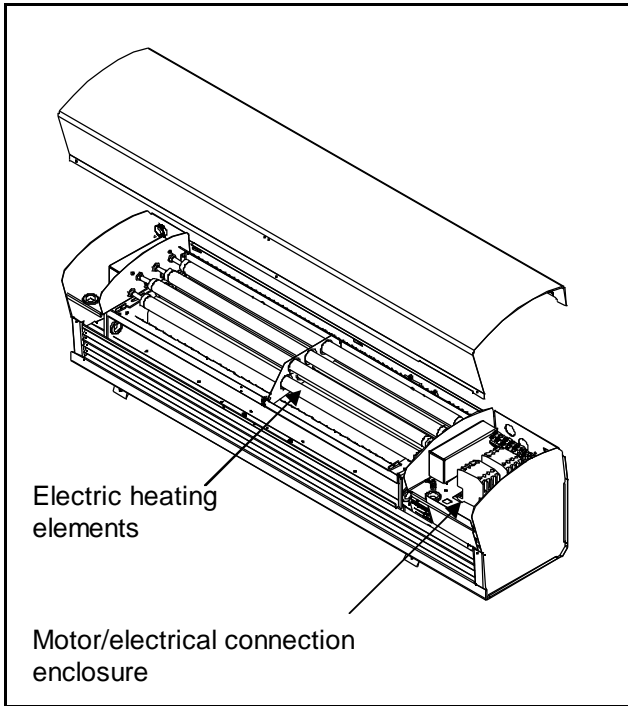


Diagram 2: Electric Heating option
(Model 270-E-10 shown)

CONTROLS/ACCESSORIES

The following controls/accessories are supplied as standard with the Sentinel door curtain. A wiring diagram is enclosed with these instructions and should be studied prior to installation.

Remote Switches

On/off switch and high/low fan speed adjustment switch supplied as standard on all units.

On 3 phase electric heating models the high/low switch automatically selects the full and ½ power heating settings. These are supplied loose for on-site fitting, remote wiring not supplied by Dunham Bush.

Electric Heating Element

Electric heating element units incorporate two thermal switches. One thermal switch provides the fan over-run. The fan will continue to run after the unit is switched off until the air temperature in the casing drops below 50°C. The other manual reset thermal switch provides the safety cut out. If the air temperature in the casing rises above 60°C this will cause the safety cut out to trip. The safety cut out can be reset by pressing the red button located on top of the unit. If the safety cut out trips regularly; check the operation of the fan and that the airflow through the unit is not restricted by dust and the inlet or outlet are not obstructed. If the problem persists please contact Dunham-Bush.

Wall Hanging Bracket

All models come complete with a hanging plate for vertical wall surface mounting.

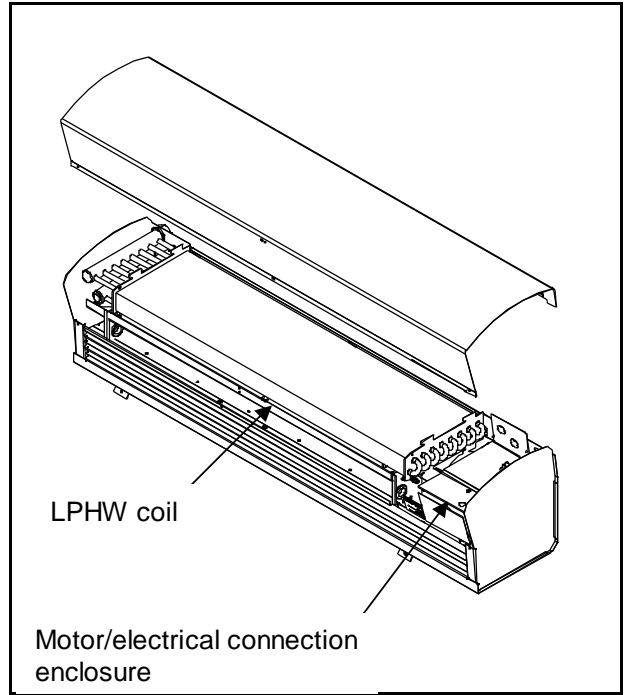


Diagram 3: LPHW option
(Model 270-W-10 shown)

Note: Ambient option, same as LPHW option excluding LPHW coil.

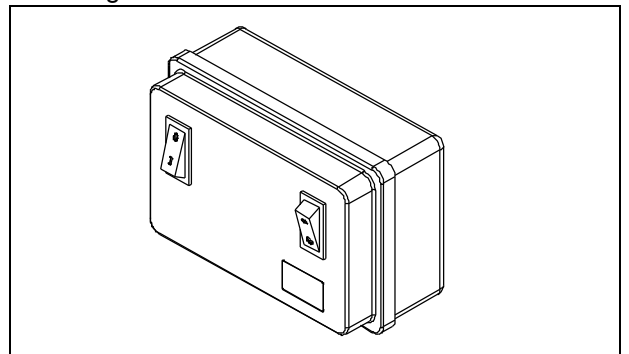


Diagram 4: Ambient/LPHW heating remote switch module. Part no. 228-151-001

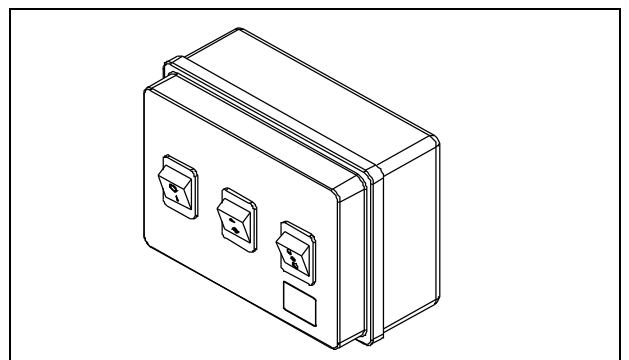
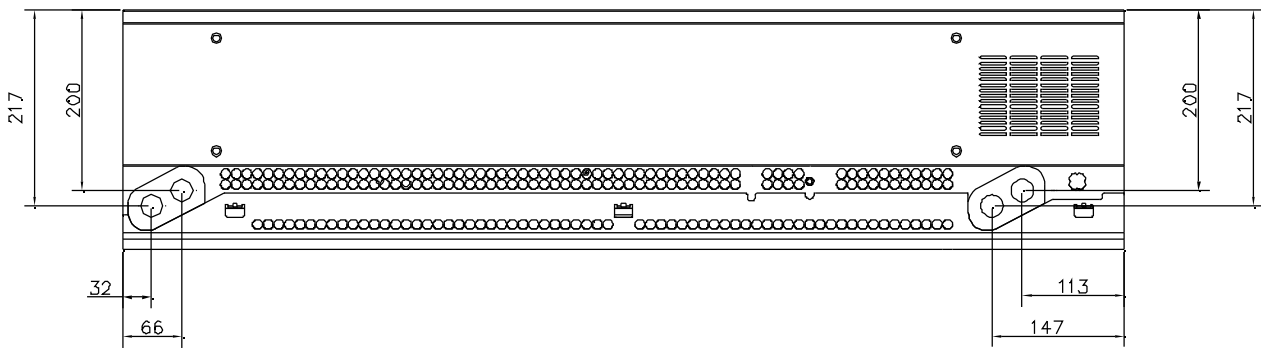
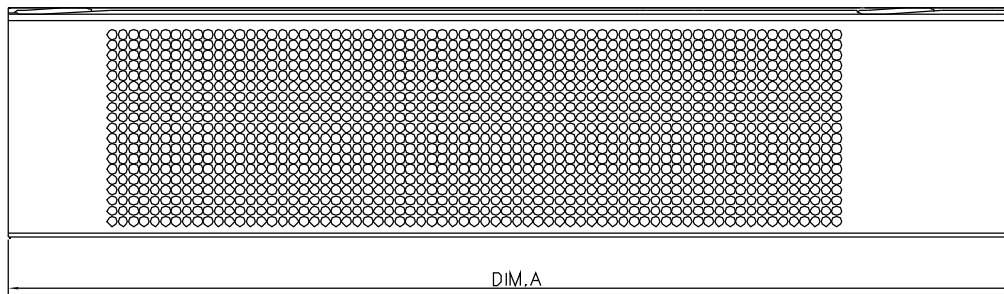


Diagram 5: Electric heating remote switch module
Part no. 228-150-001

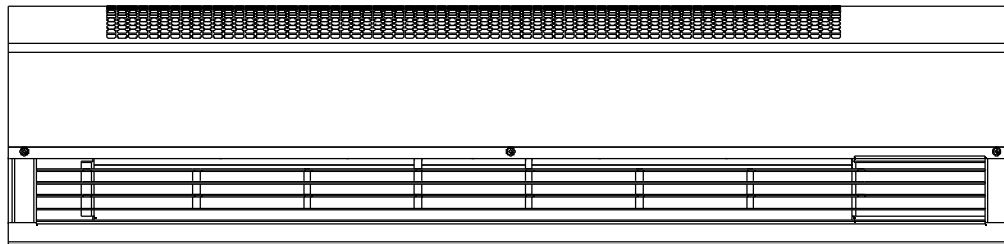
View from above, connection details



View from front, return air inlet grille



View from below, air supply/discharge grille



View from side

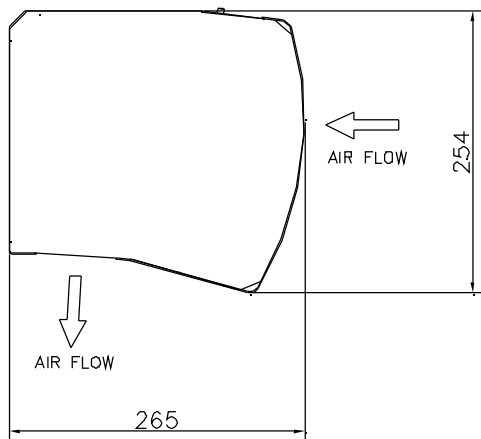


Figure Number	Dimension A
10	1113
15	1621
20	2121

Table 2: All dimensions in millimetres

Diagram 6: Dimensions of Model 270 Sentinel door curtain

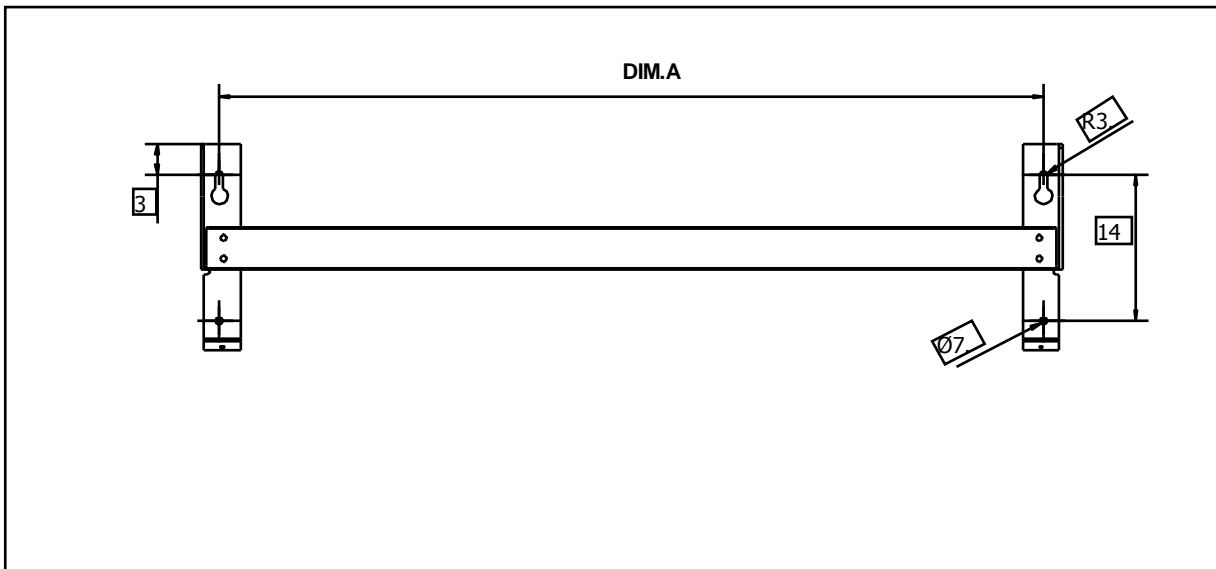


Diagram 7: Hanging bracket dimensions

Figure Number	Dimension A
10	787
15	1295
20	1795

Table 3: All dimensions in millimetres.
M6 bracket wall fixings not included

CONSTRUCTION

Handling and Storage

Door curtains and accessories are individually packaged in cardboard cartons, two/three persons can usually handle the heaviest door curtain. When a significant quantity of door curtains are delivered, they may be palletised and shrink-wrapped, so a fork-lift or similar will be required for lifting. The door curtain(s) must not be dropped or suffer impact in any circumstances.

Storage

Door curtains should be stored in clean, dry conditions. Any packaging should not be removed until the door curtain is required for installation. Packaging should only be removed if damage is suspected at the time of delivery.

⚠ WARNING

Some components on the door curtain may have sharp edges. Care must be taken when handling the product and protective gloves should be worn.

Preparation

Provision must be made for proper fixings. The ceiling or soffit must be suitable to accept fixings such as expanding anchors and/or drop rods, loads given in table 4.

Access is required for maintenance i.e. pipe and electrical connections and removal of door curtain outer casing.

Piping and electrical conduit should, as far as possible, have been completed.

Approximate dry masses

Model	Weight (kg)
270-A-10	16.4
270-A-15	19.8
270-A-20	24.6
270-E-10	19.6
270-E-15	25.4
270-E-20	31.9
270-W-10	19.9
270-W-15	24.4
270-W-20	30.4

Table 4: Approximate dry masses of Sentinel door curtain

INSTALLATION

General

Before removing any packaging, check the identity of the heater against the model reference. Packaging should be retained to protect the heater from damage by other works after installation.

To gain access to the electrical connections / LPHW coil / electric heating elements, remove the return air grille by undoing the screws and unhooking it from the fixing tabs on top of the unit, see page 5, Diagram 8.

Fitting

1. Position and fix the air curtain.
 - a. Use hanging bracket provided, refer to page 6, Diagram 9 for wall mounted installation. (refer to page 4, Diagram 7 for bracket dimensions) M6 fixings not supplied.
 - b. Alternatively, suspend door curtain from drop rods, refer to page 7, Diagram 10 for ceiling suspended installation. M6 fixings not supplied.
2. The discharge grille should be installed as close as possible to the top of the doorway opening to ensure minimal air leakage around the door curtain. It is recommended that the door curtain is wider than the doorway by a minimum of 100mm on both sides.
3. For correct installation and operation, observe minimum spacing to wall and soffit surface shown page 6, Diagram 9 for wall mounted installation, or, page 7, Diagram 10 for ceiling suspended installation.
4. Position of the LPHW and/or power supply connections are to be taken into consideration during installation, refer to page 8, Diagram 11. Both can be adapted on site to suit installation.
5. LPHW models - Connect pipework, refer to page 8, Diagram 11, observe the correct flow and return connections..
6. Connect electrical supply and remote control accessories, refer to page 8, see specific diagram depending on model supplied. Wiring diagrams shown on page 10. Identify unit model reference when referring to wiring diagrams.
7. LPHW models - After filling the hot water system, check door curtain for leaks.
8. Refit all components previously removed.

LPHW models

Coil connections are DN20 (3/4" BSP) female parallel. Local isolating and regulating valves are recommended. Refer to page 8, Diagram 11 for correct flow and return connections.

All Sentinel door curtains are supplied with left hand LPHW connections (when facing door curtain return air grille). LPHW coil can be reversed on site to suit installation, refer to page 9, Diagram 12 for coil reversal instructions.

Ambient / LPHW models

Remove door curtain return air grille to expose electrical connections. Ambient/LPHW models require a 230V/1Ø/50Hz electrical supply. Refer to page 10, Diagram 13 for specific wiring details.

A Ø20mm knockout is provided on the right side of the door curtain above the motor/electrical connection enclosure, refer to page 8, Diagram 11.

Electric heating models

Remove door curtain return air grille to expose electrical connections. Electric heating models require a 400V/3Ø/50Hz TP&N electrical supply. Two Ø25mm holes are provided on both sides of the door curtain, with a cable channel located above the discharge grille, allowing electrical connections to be left or right handed to suit installation, refer to page 8, Diagram 12.

Cable strain relief is recommended e.g. with proprietary cable glands.

NOTE:

Electric heating units should normally be enabled and disabled via the switch supplied with the unit as this allows for fan overrun to operate. Cutting the main supply (although not damaging) will cause the safety cut out to trip due to the residual heat in the casing.

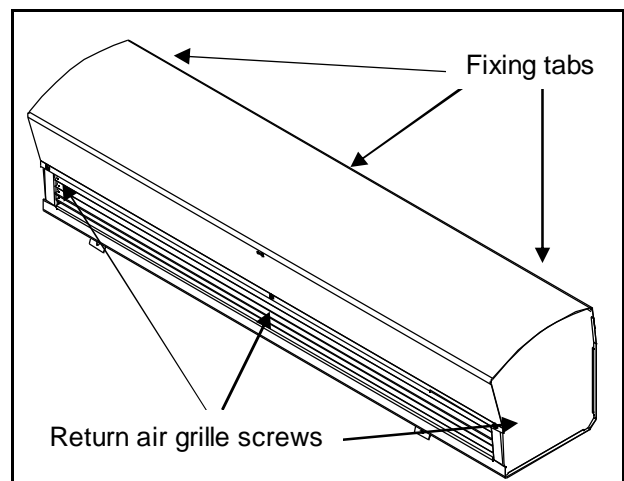


Diagram 8: Return air grille removal

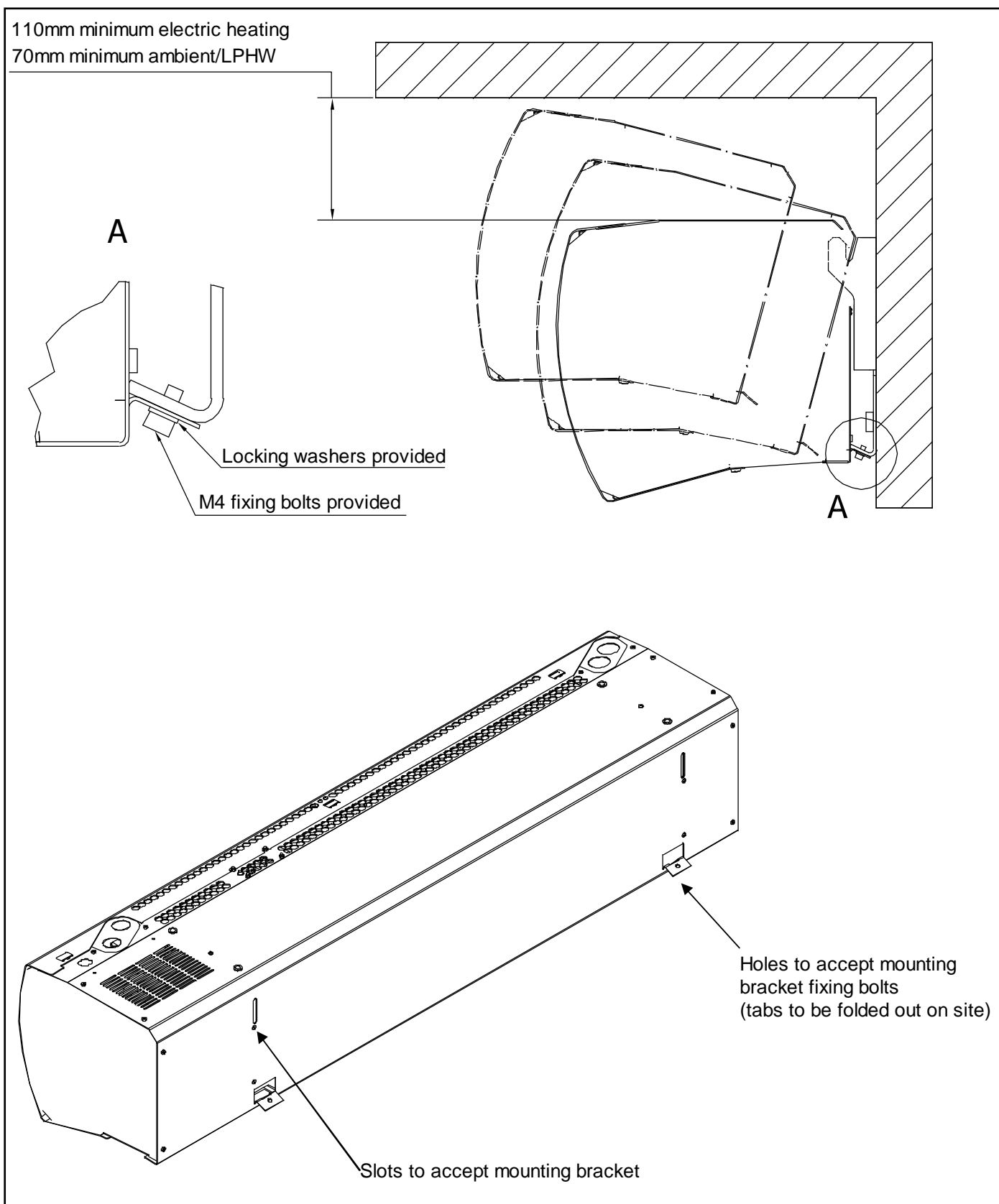
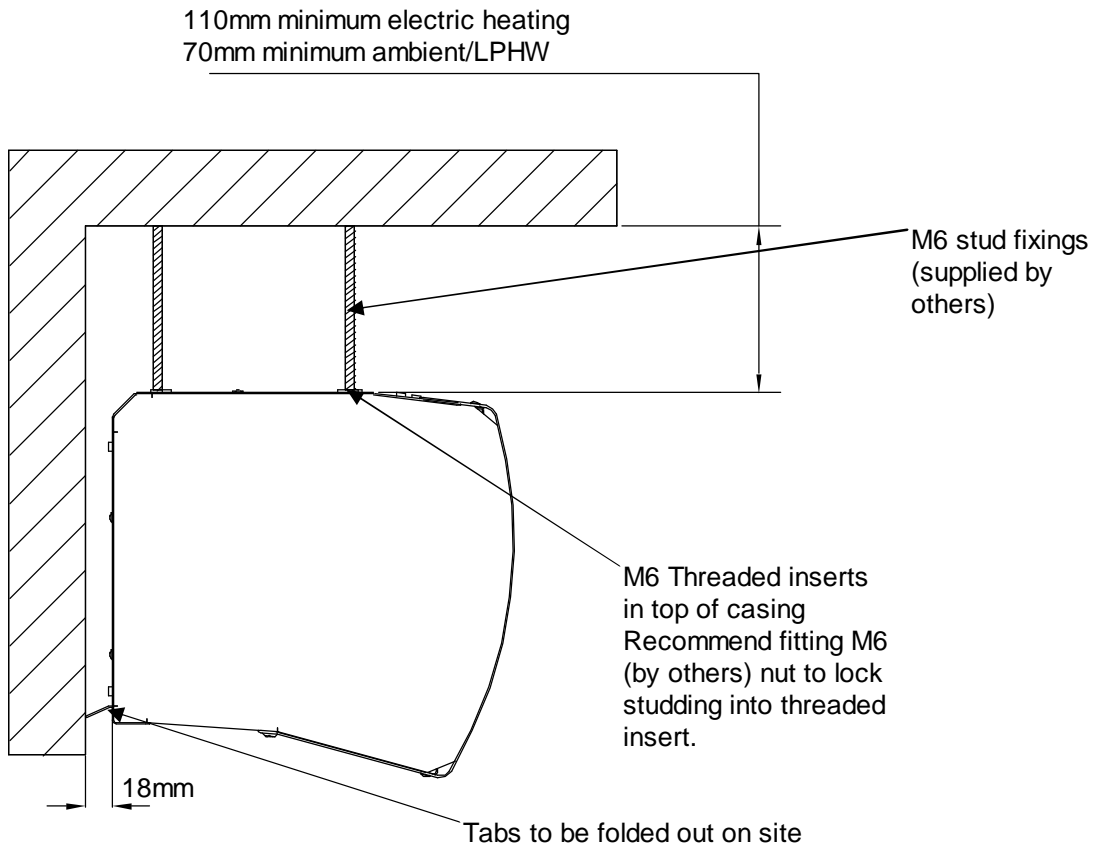


Diagram 9: Wall mounted installation

View from side, mounting distances



View from above, electrical/pipework connections

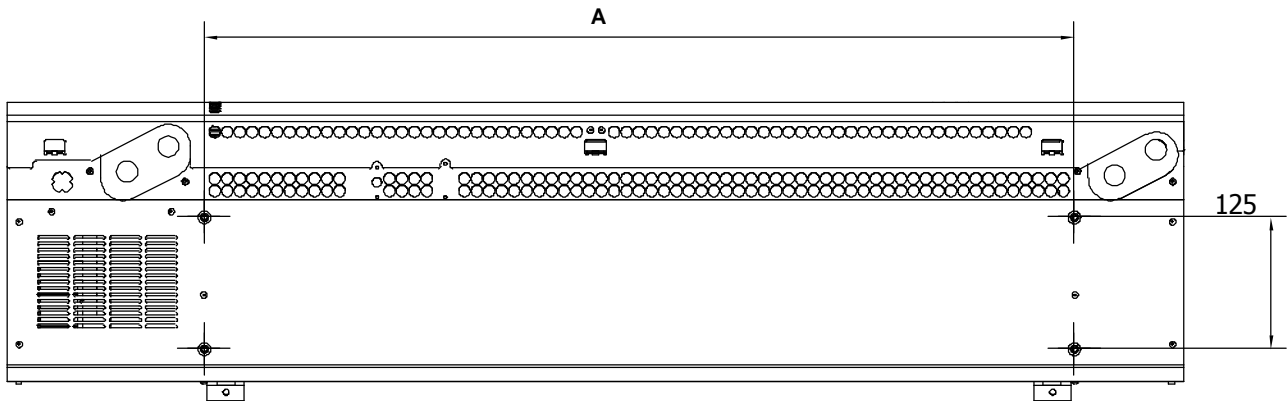


Diagram 10: Ceiling suspended installation

Figure Number	Dimension A
10	823
15	1331
20	1831

Table 5: All dimensions in millimetres

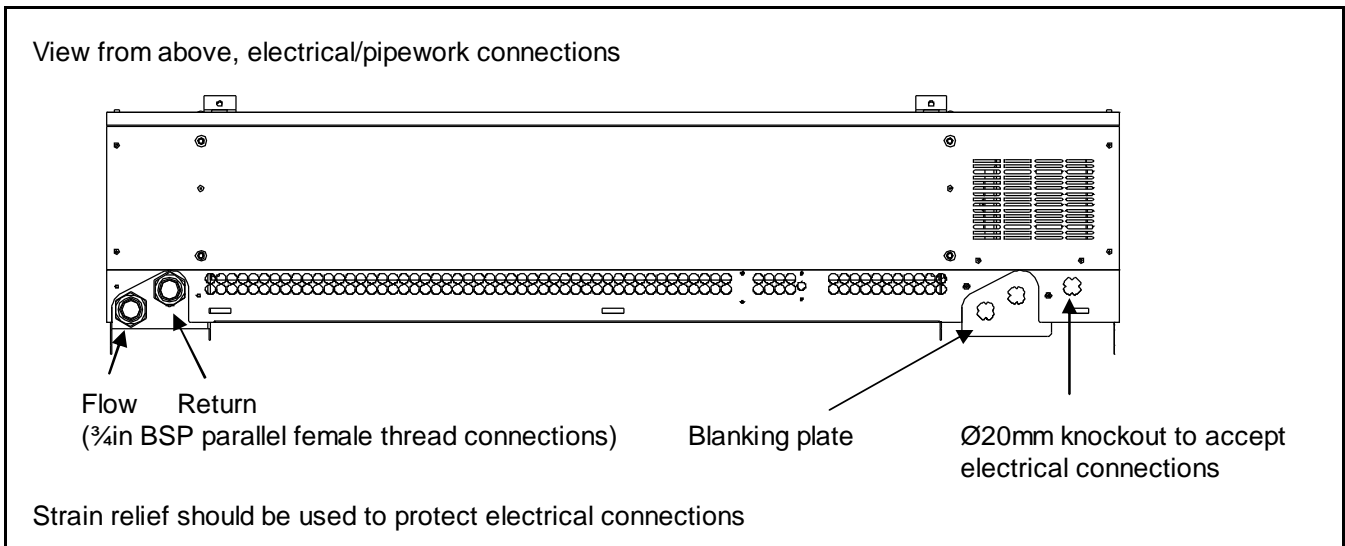


Diagram 11: LPHW / Ambient model – Pipework/electrical connections (figure 10 illustrated)
 Note: Ambient models do not include an LPHW coil.

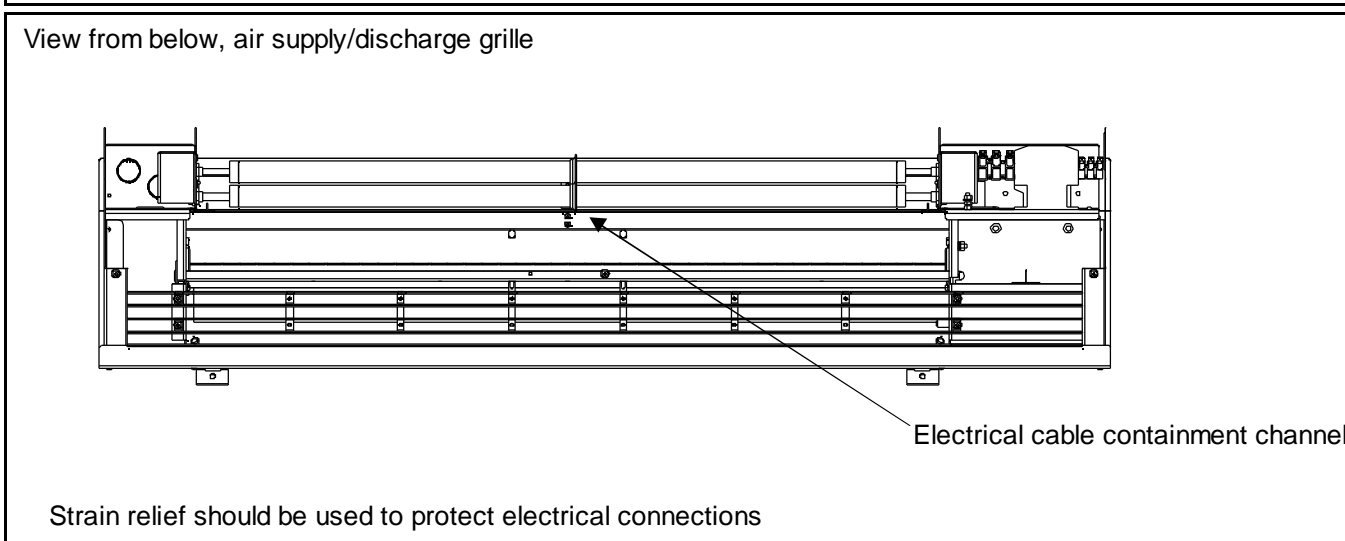
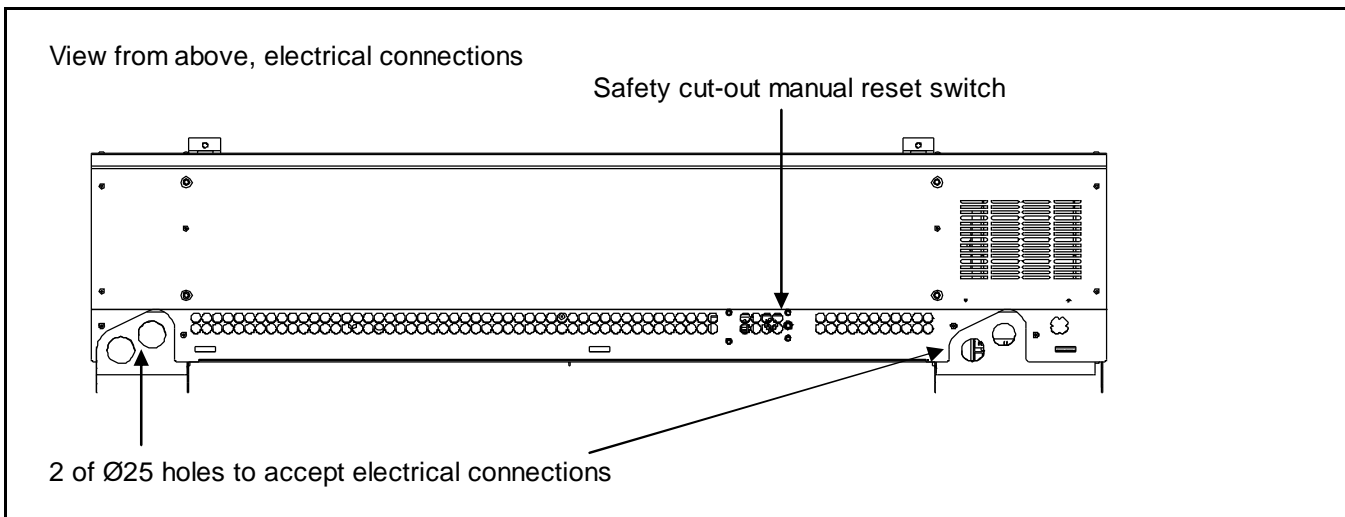
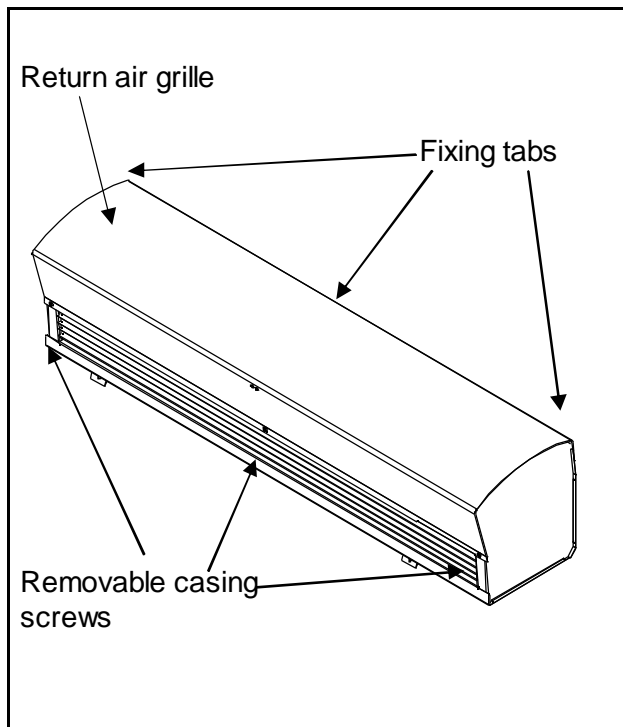
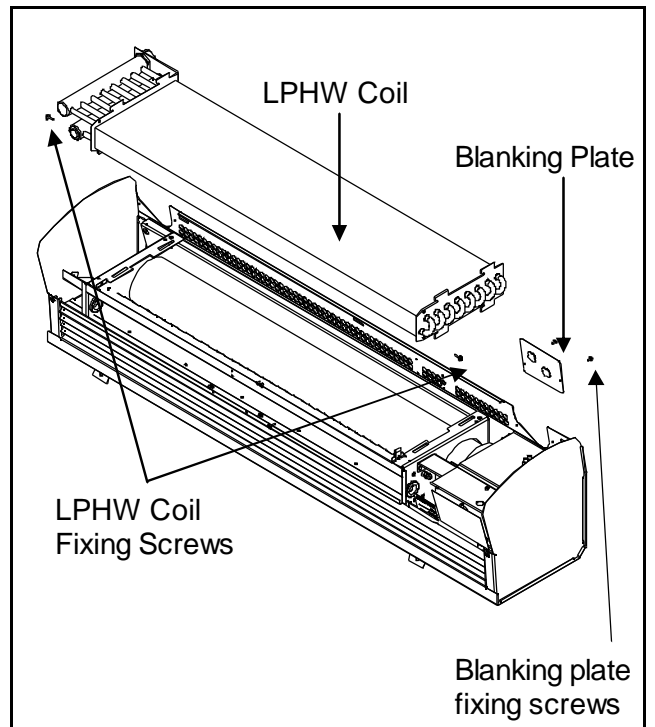


Diagram 12a & 12b: Electric heating model – Electrical connections (figure 10 illustrated)

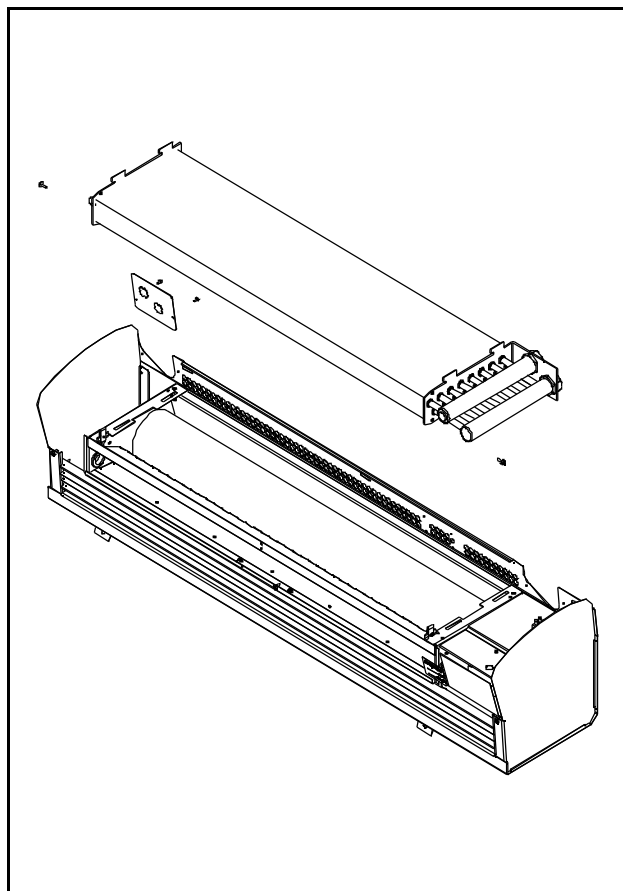
COIL REVERSAL INSTRUCTIONS FOR LPHW MODELS



A. Remove return air grille



B. Remove LPHW coil and blanking Plate



C. Rotate coil, replace fixings and reposition blanking plate. Replace return air grille.

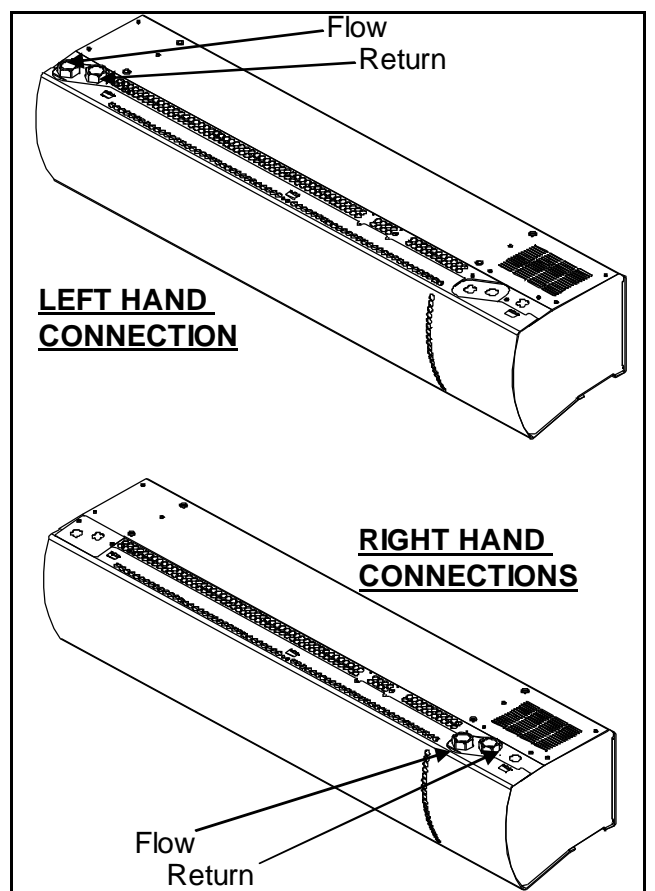


Diagram 13: LPHW coil connection reversal (Model 270-W-10 illustrated)

REFER TO
WIRING DIAGRAM
ENCLOSED WITH UNIT

Diagram 14: Standard wiring Diagram – Ambient / LPHW models

REFER TO
WIRING DIAGRAM
ENCLOSED WITH UNIT

Diagram 15: Standard wiring Diagram – Electric heating models



Declaration of Conformity

We, Dunham-Bush Ltd. of Downley Road, Havant, Hampshire, England, PO9 2JD, hereby declare conformity of the 'Sentinel' door curtain product with the following European Union Directives: -

The Electromagnetic Compatibility Directive 2004/108/EC

The Low Voltage Directive 2006/95/EC.

The Energy Related Products Directive 2009/125/EC

In addition, we declare that the 'Sentinel' door curtain product complies with the following standards: -

EN 61000-6-3:2007 Electromagnetic Compatibility - generic emission standard

EN 61000-6-1:2007 Electromagnetic Compatibility - generic immunity standard

EN61000-3-2:2006 Electromagnetic Compatibility – Harmonic emissions

EN61000-3-3:2008 Electromagnetic Compatibility – Voltage fluctuations and flicker.

EN 60 335-1:2002 A14:2010 Household and Similar Electrical Appliances. Safety General Requirements

EN 60 335-2-30:2009 Household and Similar Electrical Appliances. Safety Particular Requirements for Room Heaters.

For and on behalf of Dunham-Bush Ltd.

A handwritten signature in black ink, consisting of a large, stylized 'D' followed by a series of loops and a horizontal stroke.

David Shuttleworth B.Sc., C.Eng. MCIBSE.
Technical Director

Date

11/4/13

COMMISSIONING

LPHW models – Purge air from the coil through the heating pipe work above the coil. Balance the water flow rate through the whole system to accepted practice to achieve the specified flow rate required.

Check remote on/off and fan speed switches for satisfactory operation. (Electric heating models also incorporate a high/off/low electric element switch).

Electric heating models – check safety cut-out manual reset switch (located top of casing) for satisfactory operation.

MAINTENANCE

▲ WARNING

Maintenance should be undertaken by qualified personnel only.

Prior to undertaking any maintenance, ensure that all electrical supplies are disconnected from the air curtain via local isolators.

Some internal components may have sharp edges. Care must be taken when servicing this product and it is recommended that protective gloves are worn.

A visual inspection of the unit and its internal components should be carried out once every 6 months.

Coil – (LPHW models only) Visual inspection of coil. Purge any air from the coil through the heating pipe work above the coil. If required the coil may be vacuumed clean using a soft bush attachment taking care not to damage the aluminium fins.

Electric elements – (Electric heating models only) The elements do not require any maintenance, other than a visual inspection, however when cool they may be vacuumed clean to remove dust using a soft bush attachment.

Spare parts/service – Please contact our office, contact information shown below.

Manufacturer reserves the right to change any product specification without notice.

Dunham-Bush Ltd, Downley Road, Havant, Hants, PO9 2JD

Sales and Technical Support

Tel: 023 9247 7700 Fax: 023 9245 3601

Email: infouk@dunham-bush.com

Check that the airflow discharges at a satisfactory velocity. The airflow should be reasonably uniform across the doorway width, and should reach down to floor level. If necessary, fan speed can be adjusted using the fan speed switch.

Leave this document with the end user.

Cold test pressure (bar g)	Working pressure (bar g)
16.0	12.0

Table 6: Site Test and Working Pressures (maximum flow temperature 110°C)

Fuse – The mains inlet connector incorporates a 5A fuse which does not require any maintenance, other than a visual inspection. Replace with a fuse of the same type and value.

Fan motor – The fan motor has a ‘seal for life’ bearing which does not require any maintenance, other than a visual inspection however they may be vacuumed clean to remove dust using a soft bush attachment. All accessible surfaces can be wiped with a dry cloth

Controls – Check remote on/off and speed switches for satisfactory operation. (Electric heating models also incorporate a high/off/low electric element switch).

Check fan run on and safety cut-out for satisfactory operation (located top of casing) – (Electric heating models only). If the safety cut out trips regularly in normal operation; check the operation of the fan and that the airflow through the unit is not restricted by dust and the inlet or outlet are not obstructed. If the problem persists please contact Dunham-Bush.



Spare Parts and Service

Tel: 023 9247 7700 Fax: 023 9245 3601

Email: spares@dunham-bush.com