**Series CM Fan Convectors**

**Sitework Instructions/Recommendations**

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**INTRODUCTION**

This booklet provides guidance for site activities necessary to identify, handle, install and commission Series CM fan convectors. The instructions refer to standard models only. Please study the instructions carefully before commencing installation.

**IDENTIFICATION**

The fan convector heater serial number, model and figure number (size) are displayed on the heater name plate, located on the inner cover, behind the access panel. A simple fan convector description code is used to identify heaters and accessories.

If identification references were given to us when the heaters were ordered, they will have been marked on the heater cartons and the delivery note, for site identification.

**COMPOSITION - FEATURES**

Each series CM fan convector heater comprises a free standing sheet metal casing fitted with extruded aluminium alloy pencil proof recirculation and discharge grilles, and lockable access panel. The casing contains a fan/motor platform, auto transformer, air filter and hot water heating coil. Series CM fan convectors are 600mm high x 230mm wide. Nominal lengths are 700mm, 900mm, 1200mm and 1500mm.

Model SA figure number 4 (left hand connections)
Heaters are supplied for single or dual fan speed operation. Single speed heaters are set to low, medium or high speed. Dual speed heaters are set to low/medium, low/high or medium/high speeds. Fan control is by means of switches and/or air thermostats, depending upon the accessories specified.

**RANGE**

The range consists of two models.
Model SA standard air flow, bottom front recirculation and top front discharge.
Model RA reversed air flow, top front recirculation and bottom front discharge.
Both model are offered in a range figure numbers which relate to the output and length, as shown below.

<table>
<thead>
<tr>
<th>Figure number</th>
<th>Nominal output (kW)</th>
<th>Csing length (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>2.6</td>
<td>695</td>
</tr>
<tr>
<td>4</td>
<td>4.7</td>
<td>895</td>
</tr>
<tr>
<td>6</td>
<td>6.0</td>
<td>895</td>
</tr>
<tr>
<td>8</td>
<td>8.2</td>
<td>1195</td>
</tr>
<tr>
<td>10</td>
<td>9.4</td>
<td>1195</td>
</tr>
<tr>
<td>12</td>
<td>11.4</td>
<td>1495</td>
</tr>
<tr>
<td>15</td>
<td>12.7</td>
<td>1495</td>
</tr>
</tbody>
</table>

**ACCESSORIES**

**Air thermostats**
Air thermostats can be provided to automatically switch the fan motor on/off and to change speed, in response to a fall or rise in ambient air temperature.

**Fitted air thermostats - Model SA only**
Capillary thermostats can be fitted for on/off and speed change.

**Remote thermostats**
Standard or tamper resistant room thermostats can be provided for on/off and speed change.

**Low-limit thermostat**
A low limit thermostat can be provided to prevent the fan motor operating until the heating water temperature is hot enough for the heater to work efficiently. This thermostat will automatically stop the heater at the end of the normal operating period, when the boiler plant closes down.

Type 1 fixed setting low limit thermostat, break circuit 43°C±3K, make circuit 54°C±3K.
If fitted, type 1 is wired into the control circuit and clamped to the coil tube nearest to the LTHW flow connection.

Type 2 adjustable setting low limit thermostat, range 30°C to 90°C.
If supplied, type 2 is wired into the control circuit and are stored inside the heater casing, for clamping to the LTHW flow pipe by the installer (set @ approx 20°C below the MWT).

**Switches**
Fitted external or remote switches can be provided to switch the fan motor on/off, to change speed and to override thermostats.

**Fitted switches**
1) on/off, 2) high/off/low, 3) manual/off/auto, 4) manual/off/auto and high/low.

**Remote switches-surface or flush mounting**
1) on/off, 2) high/off/low, 3) manual/off/auto, 4) manual/off/auto and high/low.

**Plinth**
A plinth, finished black powder coated paint, can be fitted to raise the heater 100mm above FFL.

**Fitted isolating valves**
DN20(3/4 BSP) isolating ball valves can be provide, fitted within the casing of model SA only.

**HANDLING**

The purchaser is responsible for off loading. Heaters are individually cartoned and two men can usually handle the heaviest heater. When a quantity of heaters is delivered, they may be palletised and shrink wrapped, so a fork lift truck or some form of lifting equipment is desirable. Care should be taken to ensure the heaters are not dropped or knocked under any circumstances.

**STORAGE**

Heaters should be stored under clean, dry conditions. The cartons should not be removed until heaters are required for installation, unless damage in transit is suspected. Note - the purchaser must examine the heaters promptly upon receipt and any claims for damage will only be accepted if at the time of delivery, the consignment note is endorsed with a note detailing the damage and counter signed by the transport driver. Each heater is marked to show the model, figure number, serial number and any reference given on the order for site identification. This information also appears on the consignment note.

**PREPARATION**

Make proper provision for fixings. The structure to which heaters are to be fixed must be fit for purpose and capable of accepting plugs and screws. A sound flat perpendicular surface and level base are necessary. Heater casings are supplied with left or right hand bottom coil connections. Knockouts are provided in the bottom and back for pipework and conduit entry. There are also knockouts in the side for conduit entry. It is assumed that prior to lifting heaters into position, piping mains and stubs and electrical conduit, will, as far as possible have been completed.

**WARNING**

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

1. Before removing the carton, check the identity of the heater marked on the outside of the carton. It is suggested that the carton is saved to protect the heater from damage by other trades, after installation is completed.

2. The access panel can only be removed with the special key provided (attached to the heater). With the heater in the vertical position, unlock the access panel and pull it out at the top, before lifting it clear.

3. Re-check the identity of the heater, from the serial number on the nameplate, which is on the inner cover.

4. The inner cover, motor/fan platform, pipework cover plate, bottom grille and filter can all be removed, to provide better access when making pipework connections.

5. Remove casing knockouts, as necessary.

6. Note the positions of the Ø5 fixing holes in the heater backplate, mark out, drill and plug.

7. Place the heater into position and secure with suitable fixings.

8. Pipe up as detailed in Pipework Connections.

9. Wire up as detailed in Electrical Connections and Controls.

10. If supplied, fit type 2 adjustable low-limit thermostat to the LTHW flow pipe.

11. After filling the system, check for leaks (see commissioning).

12. Replace all the components removed in step 4.

13. Replace the access panel and lock into position.

14. Where appropriate, cut the back out of the carton and tape in position over the heater.

15. When ordered with the heater, a plinth will be fitted at our works.

Pipework connections

Coil connections are DN20 (3/4 BSP) female parallel. Local isolating and regulating valves are recommended. Observe the correct flow and return positions, to ensure the rated heat output. (see back cover).

Electrical connections and controls

Remove the IEC mains inlet connector from the fused panel mounted mains inlet and connect a 230/240 volt, single phase 50 Hertz supply to the inlet connector.

Fix any remote accessories, switches or thermostats in the appropriate locations and connected to the 12 way terminal block, as shown on the dedicated wiring diagram supplied with the unit (note, 12 way terminal block only supplied when remote accessories are ordered and shown on our wiring diagram). When supplied the terminal block is located behind the plate on which the mains inlet connector is fitted.

Site test and working pressures - bar gauge

<table>
<thead>
<tr>
<th>Coils fitted with</th>
<th>Cold test pressure</th>
<th>Working test pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1 air vent</td>
<td>10.5</td>
<td>7.0</td>
</tr>
<tr>
<td>Type 2 air vent</td>
<td>9.0</td>
<td>7.0</td>
</tr>
</tbody>
</table>

COMMISSIONING

1. Coil - purge air from the coil using the manual or automatic air vent provided. Balance the water mass flow rate with the regulating valve.

2. Controls- see Accessories
   a) If a low limit thermostat is fitted, the fan motor will not operate unless the surface temperature at the position where the thermostat is clamped, reaches the temperature setting - approx. 54°C±3K type1, fixed setting or, 30°C to 90°C, type adjustable setting. The fan motor will operate if a temporary link is fitted. The setting of an adjustable low limit thermostat will depend upon the system design conditions but for a normal LTHW system, 55°C is usually acceptable.
   b) If air thermostats are fitted or wall mounted thermostats are being used, adjust to the specified temperatures. If no settings are specified, set an on/off thermostat at 20°C and a speed change thermostat at 16°C. Check the operation of all thermostats.
   c) If fitted or remote switches are being used, check that they operate correctly. Note: if a manual/off/auto switch is provided, all thermostats are by-passed in the manual position, which allows the fans to circulate room air, when the boiler plant is shut down, during the summer.
Coil flow and return connections

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