



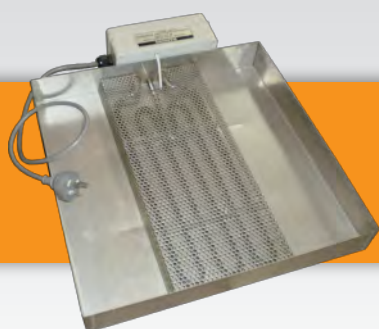
Heating Solution Professionals



**THERMAL ELECTRIC ELEMENTS
AUSTRALIA**

HEATING SOLUTION PROFESSIONALS

Products for the HVAC Industry



**Including the
Evapodry condensate tray!**

Air Heater Banks for duct applications

Complete air heater banks incorporating the choice of elements are designed and built to meet the requirements of individual air conditioning installations.

Once we have been provided with full details for the job, the most economic arrangement of elements, banks, etc, will be selected to comply with requirements.

Terminal boxes are custom made to suit your duct size.

Heaters are wired in number of steps required to a terminal block inside, therefore enabling your electrician to connect up power supply easily.

Job data required for finned or unfinned heater banks

1. Nominate the element to be fitted or standard specified, ie. AS1668 Part 1 or AS3102
2. Size of duct and entry side for bank.
3. Total kilowatts required.
4. Number of control steps needed and whether wiring is single or 3 phase.
5. Details of controls required to be fitted to banks.

Air Heater Banks for package units

Package unit heaters comprise of elements mounted in a steel frame with removable terminal cover for easy connection of power supply by electrician.

Job data required as above. Omit Item 2 in lieu of, state size or brand model of air conditioning unit requiring heater.



Finned air heating elements

Element specifications

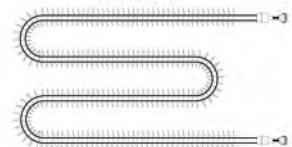
- Elements are available in straight, U, W or Triple U-forms and rated at 240V
- Rating capacity: 500W - 6000W
- Construction: Stainless steel sheath
- Stainless terminals, complete with screws and saddle washers, are provided for electrical connection
- Mounting bushes are fixed to each end of U, W and triple U form elements
- Securing nuts and washers are provided
- All types offered, to suit most duct sizes
- Replacement elements available. Please quote capacity and model number.

Finned Air heating elements

U Form



W Form



Triple U Form



Air heating elements

Air heating can be divided into two broad classes:

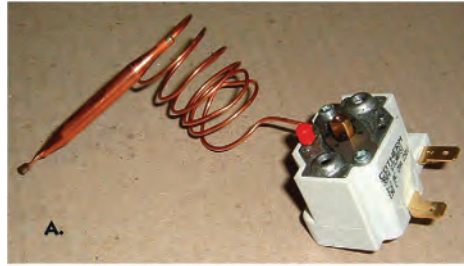
- Comfort heating for air conditioned commercial buildings, offices, etc - typically requiring large volumes of comparatively low temperature air with elements operating in a passive environment.
- Process heating for industrial usage, eg. Ovens, where both temperatures and air volumes can vary widely, but high temperatures and corrosive environments are commonplace.
- Thermal Electric can provide elements and heaters to AS1668 Part 1.



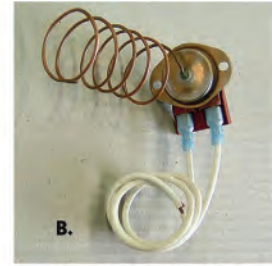
HVAC Controls & Accessories

A - Adjustable temperature cutouts are also available.

B - Fixed set point over-temperature cutouts. Manual or automatic reset types are available for incorporation in banks, in either surface mounted Klixon or capillary tube versions such as GEC TL4.



Adjustable Manual Reset 60 deg-150deg C



Manual Reset Overload



Air Pressure Switch

Air Pressure Switch

Current Rating - 15A - resistive at 125VAC
Operating Pressure - .05" + .02" - .02" to 12.0" WC
Temp range - -40°C to +82°C

PENN Type Over Temp

Single Pole Double Throw (for alarm circuit)
Opens on rise, Manual reset
Temp range - -4°C to +101°C



PENN Type Over Temp

Terminal Boxes



Standard Boxes

- 22g galvanised or zincanneal material
- Removable cover
- 75mm deep

Under normal circumstances we select appropriate boxes, elements, etc, to give the most economic combination to give you the best airspace coverage inside the duct.

Weather resistant boxes are also available at slightly extra cost for use in external applications.

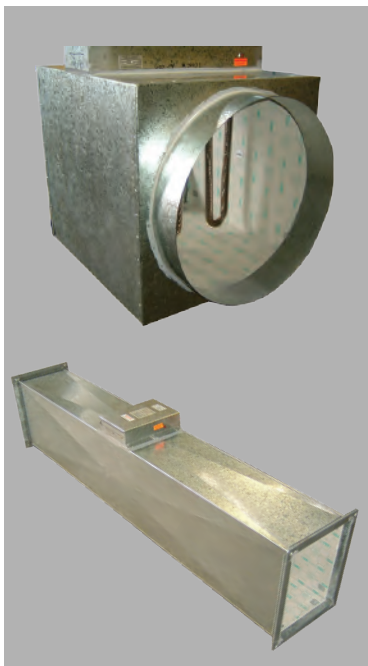
Heated Duct Units

Thermal can offer you a complete solution to your duct heating installation. We can supply the whole duct section saving you hundreds of dollars in on site costs!

They come complete with:

- Internal insulation
- Electric duct heater inserts (including terminal box and safety's)
- Spiggots, TDF Flanges or Slides
- Stage switching and contactors
- Pre wired if required

Normally each part of the duct heater would have to be organised through different suppliers. A company for the elements, a company for the duct section and someone to wire it on site. By ordering the completely pre-assembled unit from Thermal you'll save time and money knowing the unit is connected and working, all you have to do is insert it into your existing duct work!



Air Heating Maintenance

In air conditioned buildings

Comfort during winter months is usually provided by ducted heated air throughout a building from a central air conditioning plant room.

This plant is either a reverse cycle unit (cooling and heating) or a cooling unit only, with electric heaters mounted along the duct or inside the air conditioning unit.

Such heaters are used to:

- provide back up (booster) heating for reverse cycle units.
- reheat air to comfort level after chilling below dewpoint for dehumidification in summer.

Location of the heater banks can be obtained by referring to the duct design layout, supplied by the installer, which should be kept either by the building maintenance staff or in some cases in the air conditioning plant room.

1. Generally the heater is installed and wired either single phase or three phase back through the electrical contactor, usually located in the air conditioning switch panel; this is controlled by a sensor or room thermostat located in the area heated by that particular heater bank.
2. The quantity of heat output - for a given heater capacity - is sometimes regulated in stages or time proportional control. (For all this information above refer to Electrical Wiring Diagram supplied by installer.)
3. Maintenance of electric duct heaters is generally minimal; however, A WARNING SHOULD BE GIVEN THAT BECAUSE OF HIGH VOLTAGE CURRENT NO ATTEMPT TO CHECK OPERATION OR REMOVE A HEATER BY ANYONE OTHER THAN BY QUALIFIED PERSONNEL IS RECOMMENDED.
4. If a fall-off of heating in an area is experienced, firstly, the power supply should be checked; if power supply is on line, then call for the maintenance personnel to check the heater bank; a simple check on Amps/Volts/Resistance by an electrician will determine if an element is dead or open-circuited; if not, it is most likely that the fault is in the control circuit.
5. The elements contained in a duct heater are subject after a time to corrosion from: salt, acid or excessive moisture-laden air. It should be considered by maintenance personnel, say, every 3 years, to withdraw the heater from the ductwork for inspection of the element radiation fins. The operation of the safety overtemp. cut-out should be checked, together with the inspection of internal wiring for breakages or looseness of terminal connections. Providing an adequate air supply is maintained across the heating elements, a duct heater should last for many seasons of trouble-free operation.
All elements and spares are available from Thermal Electric.

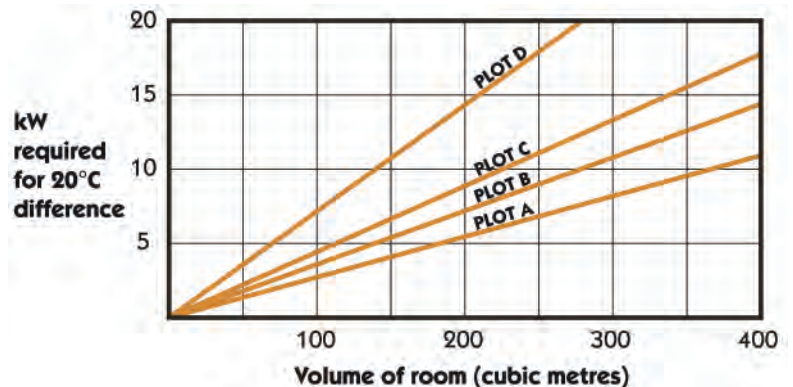
Technical Considerations

Technical information contained in this publication is intended only as a guide for equipment selection. Users should note that Thermal Electric are not under any obligation for selections made, this is carried out at the users own responsibility.

Comfort Heating

Guide for kilowatts required for room heating based on a 20°C difference between inside and outside temperatures (interpolate for lower differentials).

- Plot A.** Room with low external exposure, window and door area < 15%
- Plot B.** Insulated room, 2 or 3 external walls, window and door area < 30%
- Plot C.** Uninsulated room, fully exposed but lined inside
- Plot D.** Temporary structure, fully exposed, uninsulated, unlined.



Evapodry Condensate Tray

Suffering from unwanted condensate from your airconditioning unit?

Evapodry can solve this problem by evaporating the condensate from the collection tray under the split system's compressor.

A new and improved control unit ensures a more reliable evaporation process. The probe senses condensate or rainwater that has accumulated in the tray and energises the heating element. When the probe senses that the liquid has evaporated, the heating element is turned off.

The electric heating element together with its condensate sensing probe, fits inside the collection tray as an integral unit. All electrical terminations are inside an IP55 enclosure.

Condensate collection tray is stainless steel measuring 400 x 400 x 55mm deep, with the integrated heating element fitted to the front.

Specifications



- Heating Element 240V 1000W or 2400W
- Enclosure is IP55 with weatherproof flexible conduit entry, and termination is by the 1 metre flexible 3 core lead (For installation by a qualified electrician)
- Evaporation rate is one litre per hour (for 1kW unit) or 2.5 litres per hour (for 2.4kW unit) and this may vary dependent upon atmospheric conditions
- Condensate tray is stainless steel 400 x 400 x 55mm deep. Other sizes to order
- Element safety cover fabricated from perforated stainless steel

The Evapodry tray conforms to health and safety standards in accordance with Plumbing Industry Commission - Section 7 part E.



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