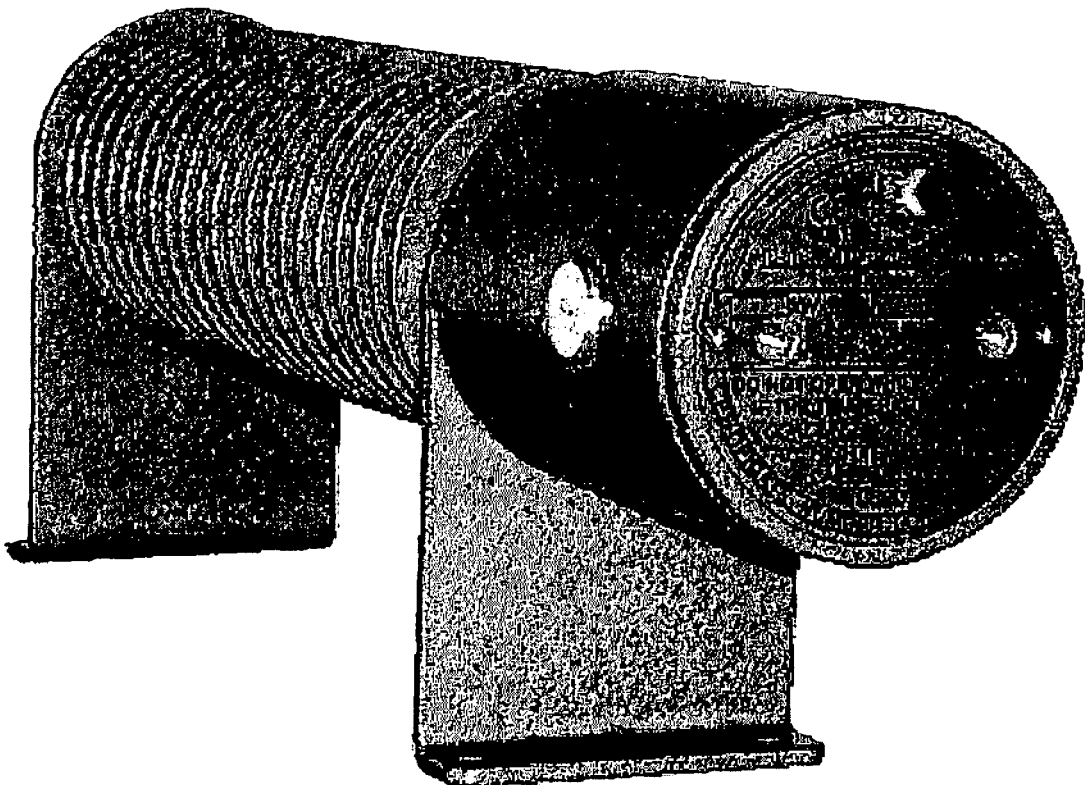




**INSTALLATION OPERATION AND  
MAINTENANCE INSTRUCTIONS FOR  
HEATEX FWD TYPE FLAMEPROOF AIR  
WARMER**



## **1.0 GENERAL**

- 1.1 All work should be carried out by suitable qualified personnel.
- 1.2 Carefully remove all protective packaging and visually inspect unit for any transit damage.
- 1.3 Heaters must be handled with care and stored in dry conditions.
- 1.4 Before connection ensure that the supply corresponds with that specified on the rating label.
- 1.5 Ensure that the sizes and types of cables to be used are suitably rated for the load and temperature of the unit.
- 1.6 Each heater must be protected by a suitably rated over current device.
- 1.7 All prevailing rules, regulations and bylaws in force at the time and place of installation must be observed.
- 1.8 The heater should be securely fixed in position and all terminal connections checked for tightness before energising.
- 1.9 Any modification not carried out by Heatex Limited or its approved agent will invalidate certification and warranty.
- 1.10 Reference must be made to EN 60079-17.
- 1.11 All electrical testing must be carried out in a non-hazardous area.
- 1.12 Precautions must be taken to prevent damage to machined surfaces and threads of flameproof enclosure.
- 1.13 Ensure that any special conditions for safe use on the hazardous area certification are complied with.

## **2.0 INSTALLATION**

- 2.1 The installer or end user shall ensure that the unit has free and unrestricted airflow to allow natural convection to occur.
- 2.2 At no time is the ambient temperature to be allowed to rise above 40° C (T3 & T4 rated units) or 60° C (T2 rated units). This shall be achieved by end user installation (suggested method – flameproof room thermostat – Heatex model HFT).
- 2.3 Orientation of heater must be strictly adhered to. The heater tube must remain horizontal at all times whilst energised.
- 2.4 The appliance must be securely fitted to a wall or floor using only the brackets provided.
- 2.5 Threaded cover flame path surfaces must be checked to ensure that they are undamaged and the 'o' ring must be fully located in its groove before re-fitting.

### **3.0 ELECTRICAL SUPPLY CONNECTION**

- 3.1 Please refer to the wiring diagram *fig 1*.
- 3.2 The cable entries are M20 and positioned on the side of the terminal box.
- 3.3 The cables must enter the FWD heater terminal box via a certified EEx d cable gland (not supplied) to suit the cable, and be fitted by a qualified person.
- 3.4 The installer or end-user must connect to the heater terminals within the terminal box - **DO NOT** connect to or disturb factory fitted heating element wires.
- 3.5 The cover of the FWD terminal box is unscrewed after slackening a locking grub screw using a 3mm A/F hex key. When re-fitting ensure that the 'O' Ring seal is in good condition and correctly located. The cover threads **MUST** be kept clean and free from any debris at all times.

### **4.0 EARTH CONNECTION**

- 4.1 **WARNING – the heater MUST BE EARTHED.**
- 4.2 The external earth connection is located on the outside of the terminal box.
- 4.3 The internal earth connection is via a pillar inside the terminal box (*see fig 1*).

### **5.0 OPERATION**

- 5.1 **WARNING – The Air Warmer must at no time be covered during operation, as this could lead to dangerous overheating.**
- 5.2 Once energized the Air Warmer will continue to operate until de-energised by an external control device (available separately).
- 5.3 The FWD Air Warmers are designed to operate in ambient temperatures of up to 40° C (T3 & T4 rated units) or 60° C (T2 rated units) and the user must ensure that this is not exceeded at any time.

### **6.0 MAINTENANCE**

- 6.1 All prevailing site safety regulations shall be adhered to at all times.
- 6.2 Before and whilst any maintenance activity is carried out, it must be ensured that there are no hazardous gases present.
- 6.3 Equipment is to be fully isolated from the electrical supply before and whilst any work is being carried out.
- 6.4 Any damage or faults should be notified to Heatex Limited immediately.
- 6.5 For equipment certified for use in hazardous areas reference should be made to EN60079-17 (especially table 1) in addition to the following recommendations.

### **6.5.1 3 Monthly**

- a. Generally inspect the equipment for external damage.
- b. Ensure that the spaces between the element fins remain clear and that the airflow remains unrestricted.

### **6.5.2 6 Monthly**

- a. Isolate the electrical supply and remove the cover.
- b. Internals should be clean and dry.
- c. Ensure terminals are intact and secure.
- d. Heating element insulation resistance to be at least 2 megohm.
- e. Refit cover with new 'O' ring if required.
- f. Earth continuity must be maintained between all earth points and main structure.

### **6.5.3 Annually**

- a. Check all above.
- b. Check for element failure or low insulation resistance.

6.6 If heaters are being left unused for a period greater than 3 months, carry out 6 monthly maintenance before energising.

### **6.7 Removal and Replacement of Ceramic Core Type Heating Element.**

6.7.1 Slacken lid locking grub screw and unscrew cover.

6.7.2 Disconnect electrical connections and remove cables to heater.

6.7.3 Release the clamp securing heater element.

6.7.4 Carefully withdraw heating element from its tube.

6.7.5 Ensure the tube is clean and dry internally.

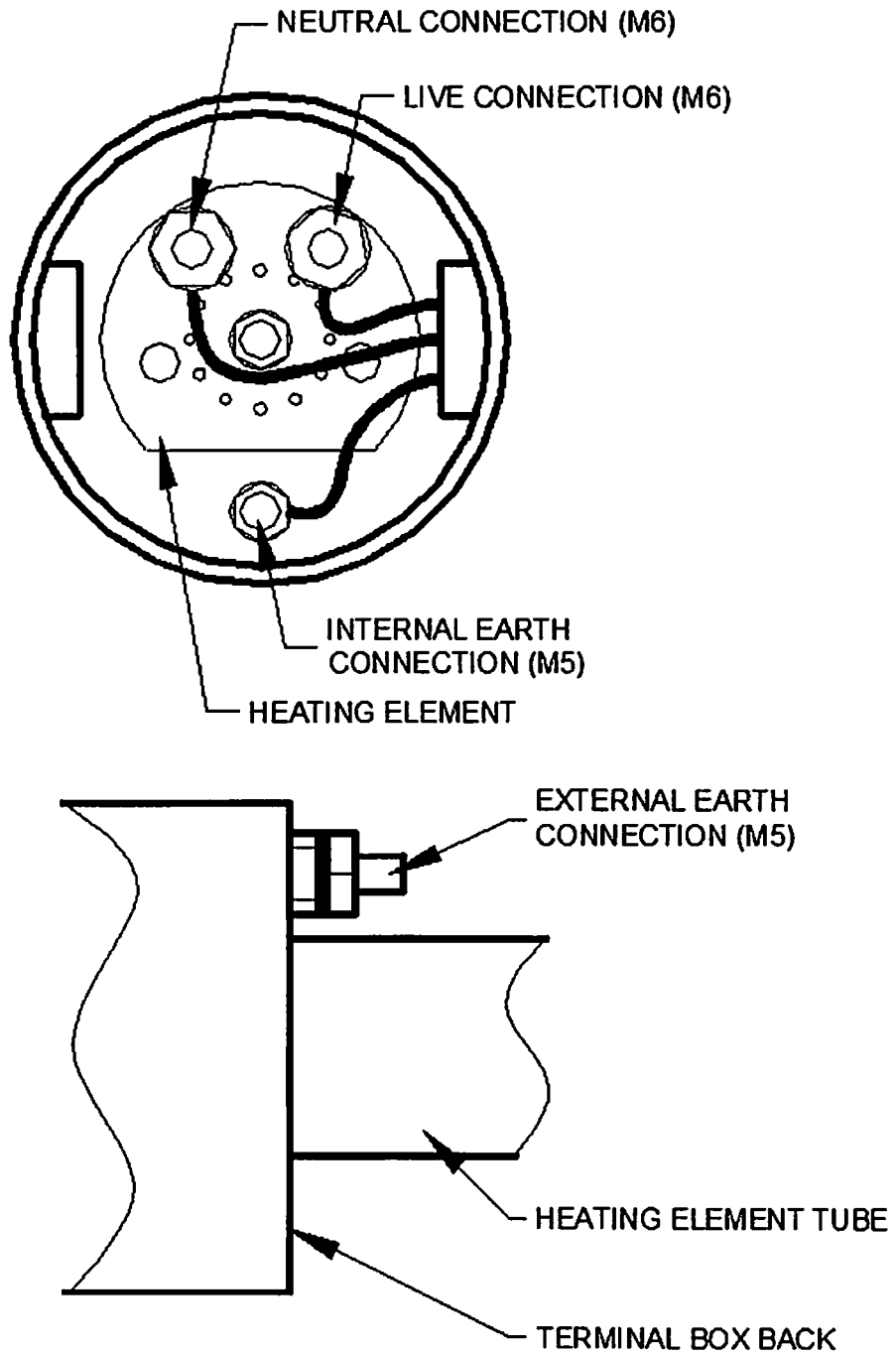
6.7.6 Carefully fit replacement heating element through a new sealing gasket and into tube whilst preventing it from bending and protecting it from mechanical shock.

6.7.7 Re-assemble heater and re-connect wiring (reverse of 6.7.1 to 6.7.3.)

6.7.8 Carry out 6 Monthly checks as above.

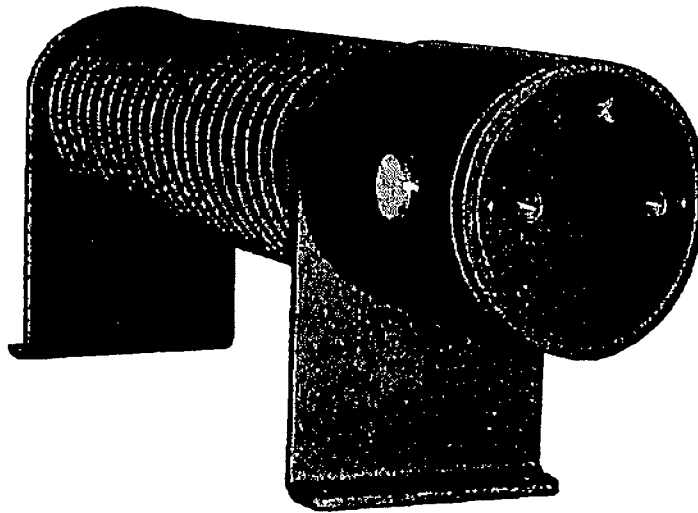
**Fig.1**

**WIRING DIAGRAM**



## 'FWD' Flameproof Air Warmers

The Heatex 'FWD' range of Air Warmers has been designed for heating small work or storage areas and similar applications, located in Zone 1 or 2 Hazardous Areas, where the flammable atmosphere is a IIC group.



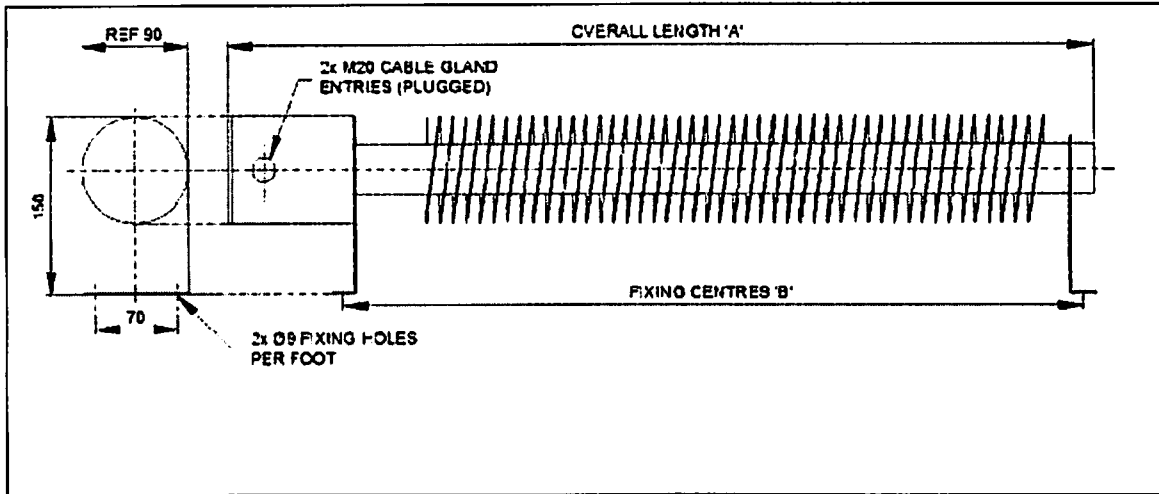
### **FEATURES**

- Certified to meet the ATEX directive 94/9/EC.
- Fabricated steel or stainless steel enclosure Weatherproof to IP66/67.
- Suitable for 110v or 230/254v supplies.
- Temperature classifications T2, T3 and T4 available.
- Suitable for floor or wall mounting.
- 2 x 20mm (plugged) cable entries provided as standard.
- Powder Coated Mild Steel or Natural Stainless Steel finish.
- Optional range of flameproof room thermostats.
- Suitable for ambient temperatures from -50 °C to +60 °C. (Subject to conditions to be discussed with sales engineer).
- Individually replaceable heating elements.

### **TYPICAL APPLICATIONS**

- Aircraft Hanger Service Bays
- Fuel servicing areas
- Chemical Plants
- Offshore Installations
- Battery Stores
- Gas Installations
- Containers
- Crane Cabs, etc.

# Specification



**Rating** Standard mild steel heater ratings and sizes are shown below, stainless steel and other ratings to suit client individual requirements can be provided upon request.

Model	T' Class	Rating Watts	Dimensions		Weight (kg)
			A	B	
FWD-500-T3	3	500	800	670	9
FWD-1000-T3	3	1000	1300	1170	12
FWD-1500-T3	3	1500	1900	1770	17
FWD-2000-T3	3	2000	2450	2320	20
FWD-500-T4	4	500	1300	1170	12
FWD-750-T4	4	750	1900	1770	17
FWD-1000-T4	4	1000	2450	2320	20

**Certification** ATEX certified EEx'd' IIC T2 to T4 EN50 014 & EN50 018.

**Enclosure** Fabricated mild steel or stainless steel.

**Controls** If required the heaters can be controlled from the Heatex range of remote mounted thermostats available for use in safe or Hazardous Areas. (See separate data sheet).

**Mounting** Pre-drilled support feet supplied as standard.

**Voltage** Single phase 230/254v or 110v.