



**INSTALLATION, OPERATION AND
MAINTENANCE INSTRUCTIONS**

**FAW, FAW-C, AND STW TYPE AIR
WARMERS**

FCR TYPE CONVECTORS

HFT AND AFT TYPE AIR THERMOSTATS

**Please read these instructions thoroughly before installation and ensure they are
passed on to the end-user**

1.0 GENERAL

- 1.1 All work should be carried out by suitable qualified personnel.
- 1.2 Equipment must be handled with care and stored in dry conditions.
- 1.3 **CAUTION** - FCR convectors and airwarmers over 1m long are **HEAVY** and must be handled appropriately.
- 1.4 **CAUTION** - These heaters are designed for industrial use only and additional personnel protection against contact with hot surfaces may be required in some installations.
- 1.5 Carefully remove all protective packaging and visually inspect unit for any transit damage.
- 1.6 FAW and FAW-C - note that the heating elements should be parallel and equi-spaced within the guard.
- 1.7 Before connection ensure that the supply corresponds with that specified on the rating label.
- 1.8 Ensure that the sizes and types of cables to be used are suitably rated for the load and temperature of the unit.
- 1.9 Each heater must be protected by a suitably rated over current device.
- 1.10 All prevailing rules, regulations and bylaws in force at the time and place of installation must be observed.
- 1.11 The heater should be securely fixed in position and all terminal connections checked for tightness before energising.
- 1.12 Any modification not carried out by Exheat Limited or its approved agent will invalidate certification and warranty.
- 1.13 Reference must be made to IEC/EN 60079-17.
- 1.14 All electrical testing must be carried out in a non-hazardous area.
- 1.15 Precautions must be taken to prevent damage to machined surfaces of flameproof enclosures (HFT and AFT).

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 at all times. **DO NOT COVER OR REST ANYTHING ON THE HEATER.**
- 2.2 FAW and FAW-C heaters - 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 – Exheat model HFT).
- 2.3 STW heaters may be regulated by a Exheat industrial thermostat (separate or integral).
- 2.4 Orientation of heater must be strictly adhered to ('TOP' label to be on top).
- 2.5 **WARNING** – air warmers must at no time be covered during operation, as this could lead to dangerous overheating and will invalidate the hazardous area certification.

3.0 ELECTRICAL SUPPLY CONNECTION

- 3.1 Please refer to the wiring diagram *figs 1 to 5*.
- 3.2 The cable entry is positioned on the side of the terminal box.
- 3.3 The cables must enter the FAW, FAW-C or FCR heater terminal box via a certified Ex e or Ex d cable gland (not supplied) and enter the HFT or AFT 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 only connect to the Exheat supplied terminals within the terminal box - DO NOT connect to or disturb factory fitted wiring.
- 3.5 HFT and AFT thermostats – the spigot 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 the cover.
- 3.6 The cover of the HFT or AFT terminal box is removed after releasing the socket head screws in the cover. When re-fitting ensure that the ‘o’ ring seal is in good condition and correctly located. The main cover mating and spigot faces MUST be kept clean and free from any debris at all times.
- 3.7 After re-fitting, the gap between the cover and the body of the HFT or AFT terminal box must be checked to ensure that it does not exceed 0.15mm.

4.0 EARTH CONNECTION

- 4.1 The external earth connection (hazardous area units only) is located underneath the protective guard of the FAW, FAW-C and FCR in the same orientation as the elements and on the corner of the HFT and AFT terminal box.
- 4.2 The internal earth connection is to one end of the terminal rail (FAW, FAW-C and FCR) or via a pillar (STW, HFT and AFT) inside the terminal box.

5.0 OPERATION

- 5.1 Once energized the Air Warmer will continue to operate until de-energised by an external control device (available separately).
- 5.2 The FAW and FAW-C Air Warmers and FCR Convector 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.
- 5.3 The STW Air Warmers are designed to operate in ambient temperatures of up to 60°C. Where an integral adjustable thermostat is provided, this senses ambient air temperature. Rotate the control clockwise to increase the set-point or anticlockwise to reduce the set-point.
- 5.4 Where an integral adjustable thermostat is provided with the HFT (externally adjustable – AFT only), rotate the control clockwise to increase the set-point or anticlockwise to reduce the set-point.

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 Exheat Limited immediately.
- 6.5 Any replacement parts required must be obtained directly from Exheat. The use of any other parts will void any certification and warranty
- 6.6 For equipment certified for use in hazardous areas reference should be made to IEC/EN60079-17 (especially table 1) in addition to the following recommendations:

6.6.1 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.

6.6.2 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 gasket or 'o' ring if required (NOTE – this must be secured in place using RTV sealant supplied with replacement gasket or 'o'ring).
- f. HFT and AFT only – check the flamepath gap as 3.7 above.
- g. Earth continuity must be maintained between all points and the main structure.

6.6.2 Annually

- a. Carry out 3 monthly and 6 monthly check as above.
 - b. Check for element failure or low insulation resistance.
- 6.7 FAW, FAW-C and FCR heaters - only Exheat Ltd or its approved agent to carry out heating element replacement otherwise the Hazardous Area certification will be invalidated.
 - 6.8 If heaters are being left unused for a period greater than 3 months, carry out 6 monthly maintenance before energising.

7.0 Marking & certification reference


7.1 FAW, FAW-C and FCR

 II 2 G (ATEX certified units only)

Ex e II T(2, 3 or 4 depending on model)

LCIE 00 ATEX 6013 X (ATEX certified units only)

7.2 HFT and AFT

 II 2 G/D (ATEX certified units only)

Ex d IIC T6

Ex tD A21 IP6X T85°C

LCIE 99 ATEX 6017 X (ATEX certified units only)

IECEX LCI 07.0003X (IECEX certified units only)

DO NOT OPEN WHILE ENERGISED

DO NOT OPEN IN THE PRESENCE OF AN EXPLOSIVE ATMOSPHERE

Fig.1

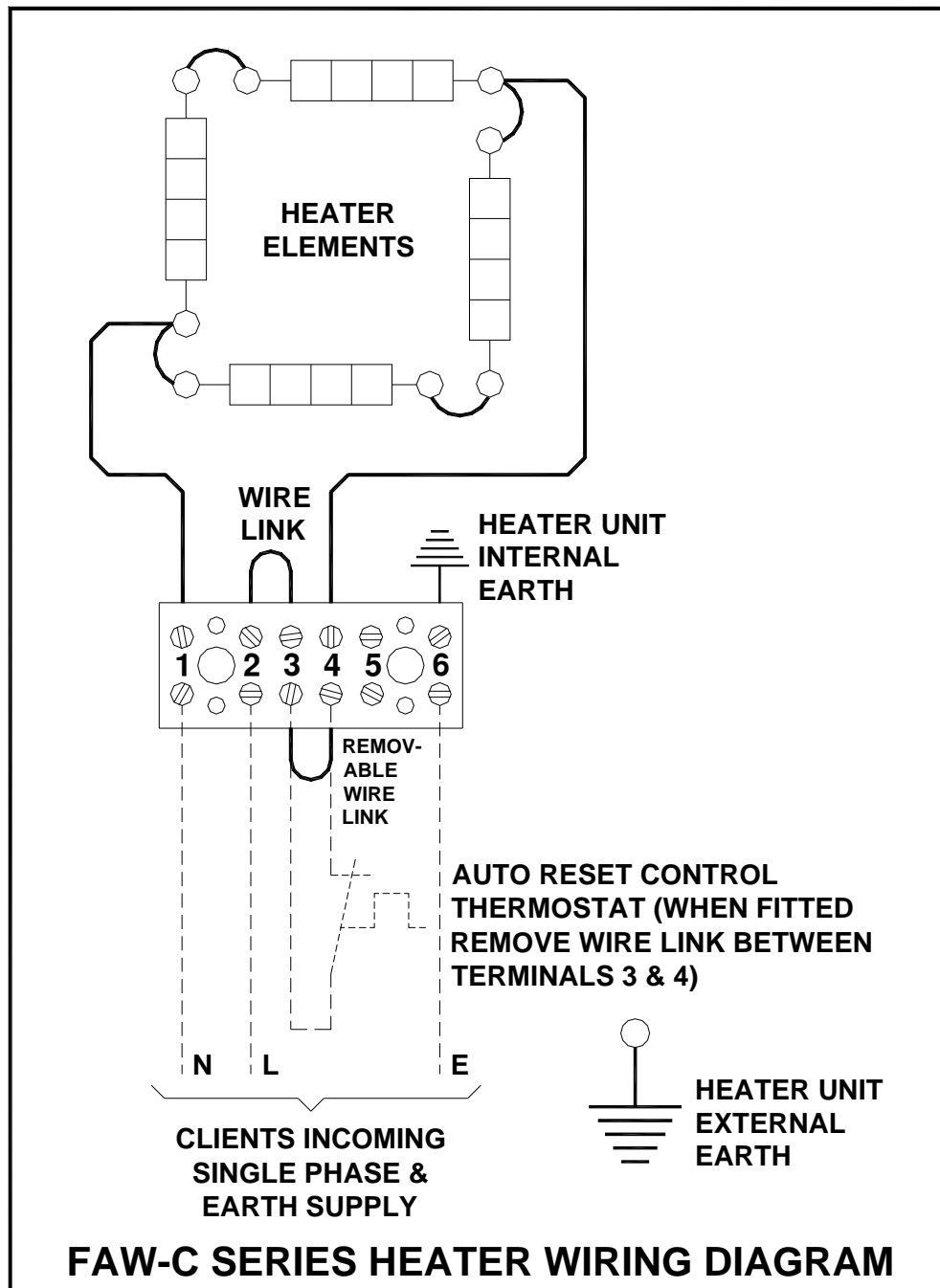


Fig 2.

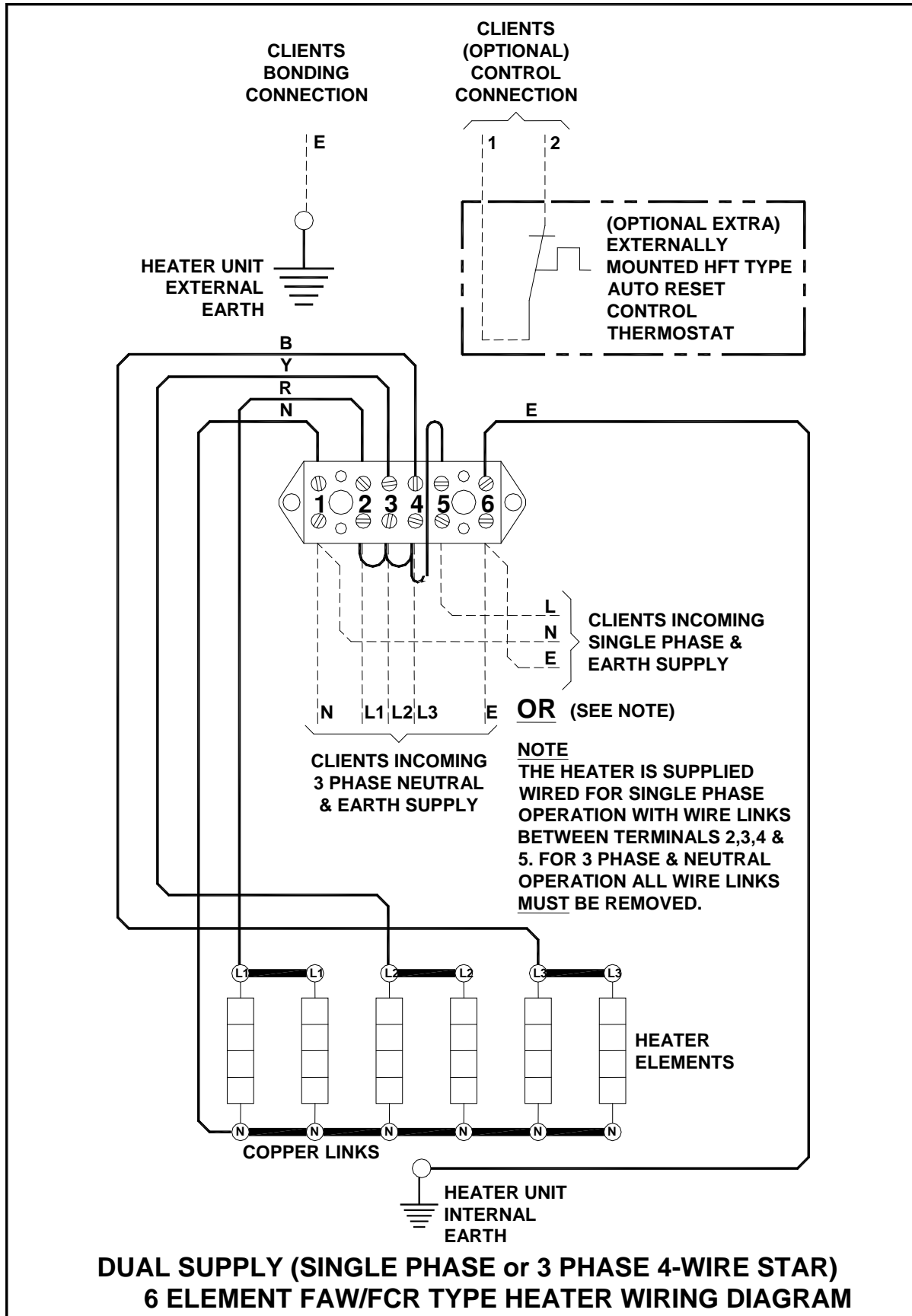


Fig 3.

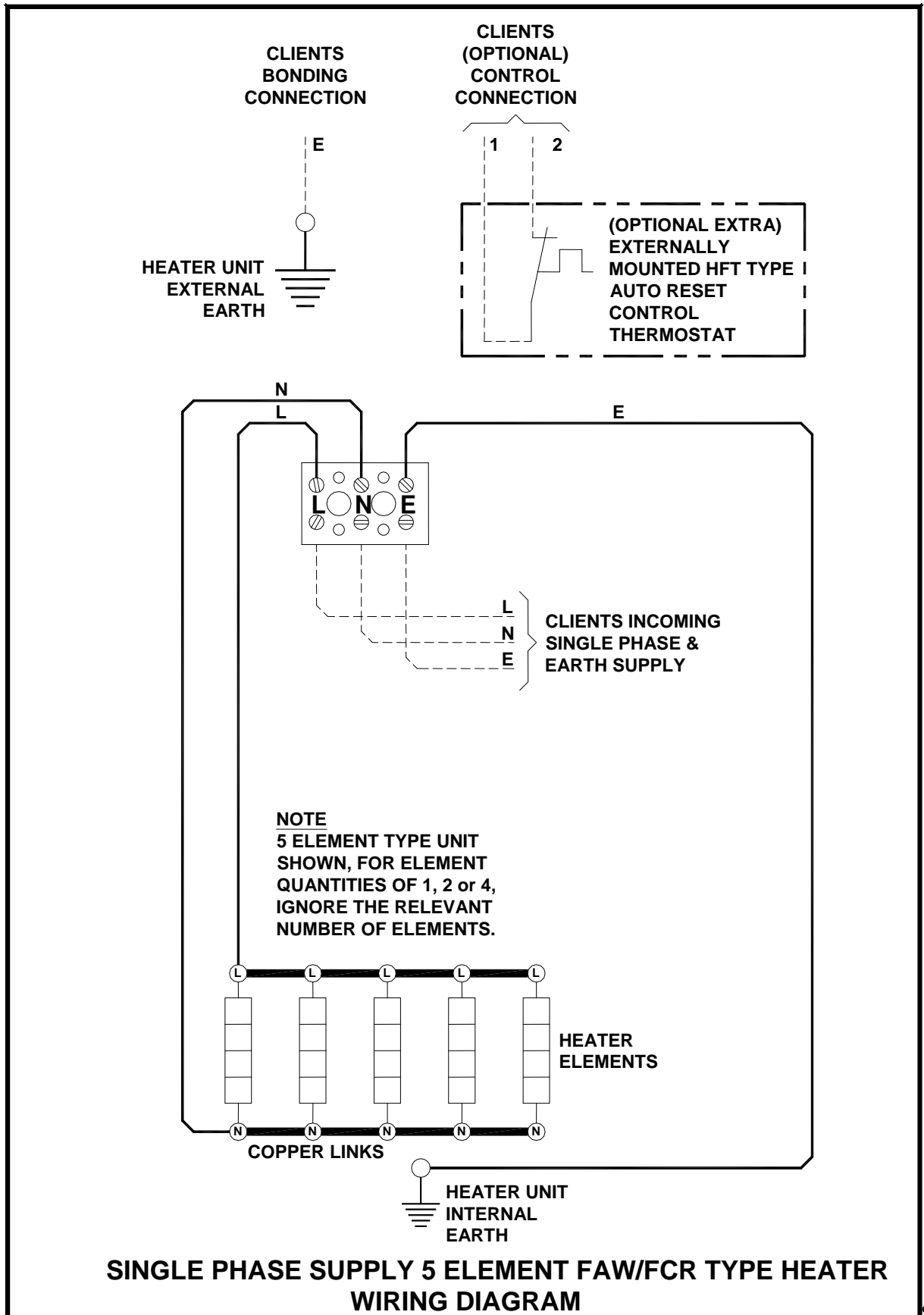


Fig 4.

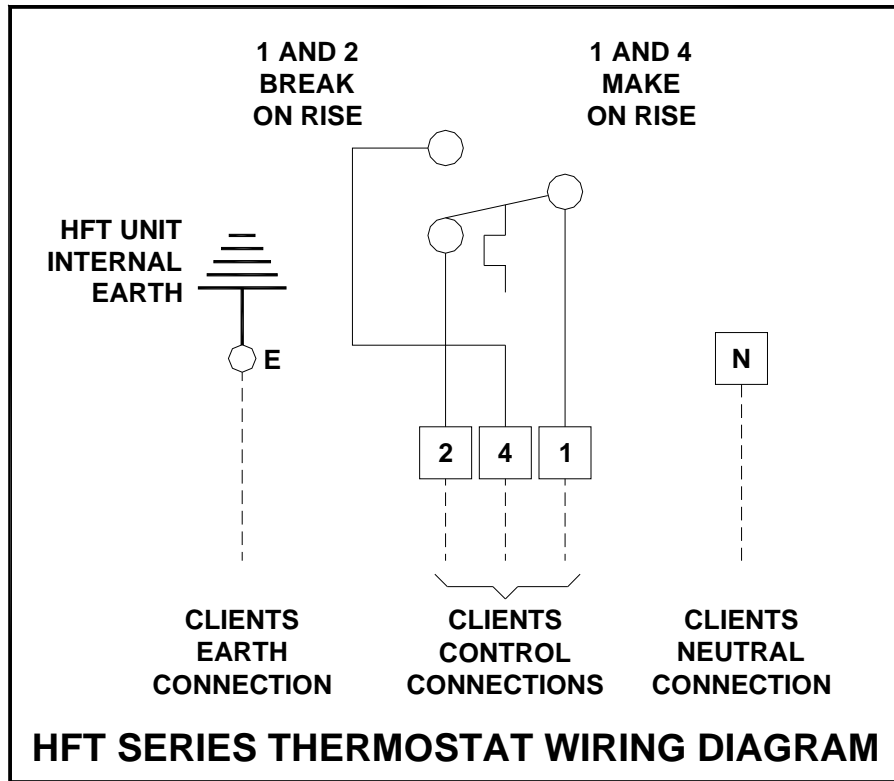


Fig 5.

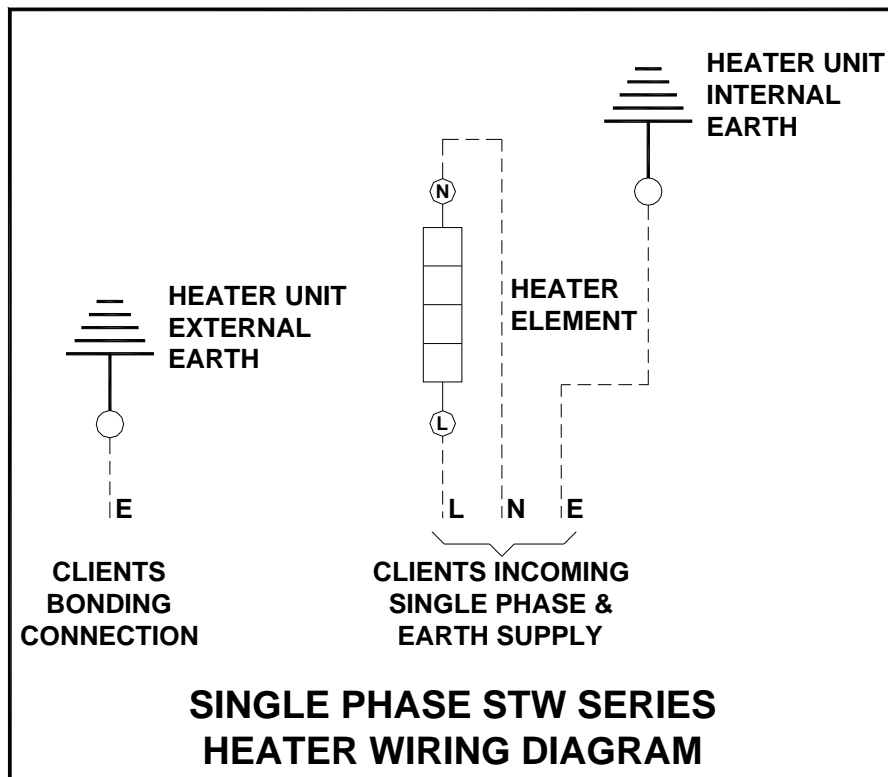
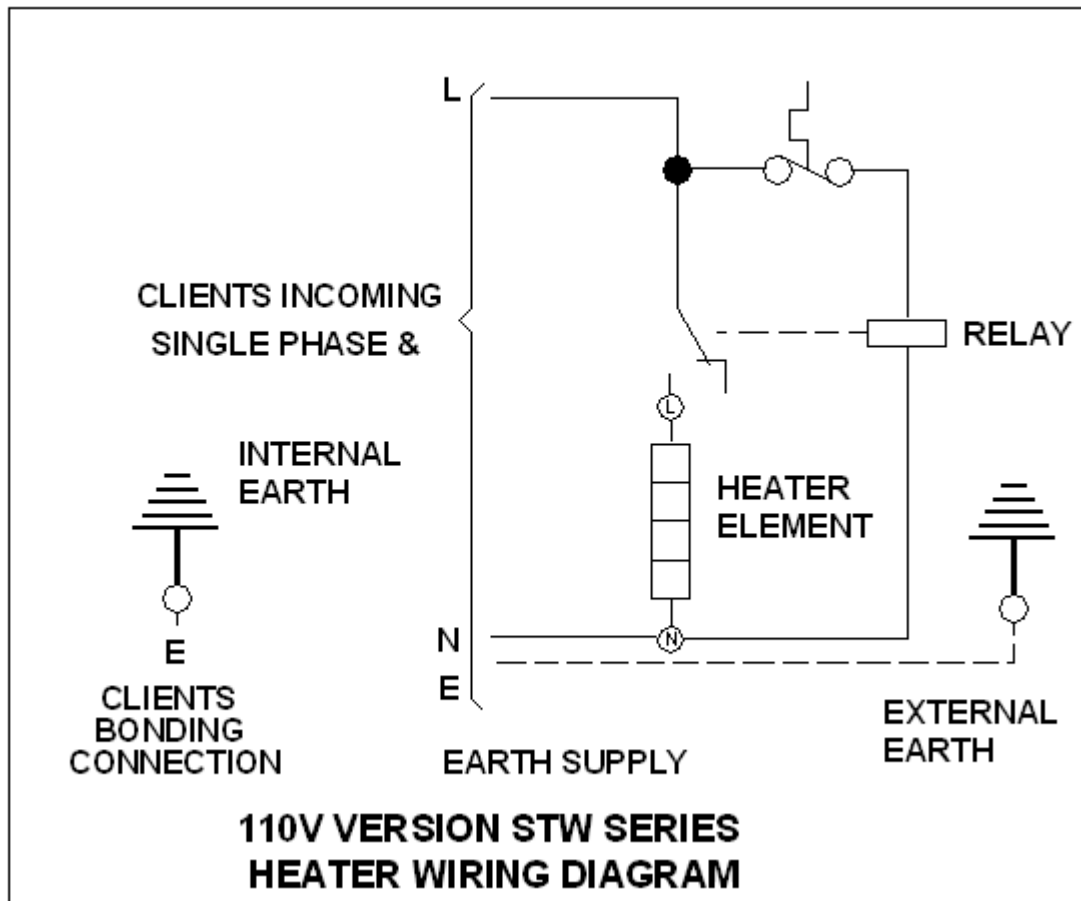


Fig 6.



This page intentionally left blank

EXHEAT LTD

**Threxton Road Industrial Estate
Watton, Thetford, IP25 6NG**

Tel: +44 (0)1953 886200

Fax: +44 (0)1953 886222

**For sales and new product information see our website
www.exheat.com**



73/23/EEC

89/336/EEC

94/9/EC (Excluding STW)

Stock Code S90.00.00.14

Issue H