



Electric Heaters

Installation, Operation and maintenance Manual

General

Sheathed element air heaters provide a safe means of heat transfer using electricity; the elements will not produce an electric shock if touched. Sufficient clearance should be provided adjacent to terminal box of the heater to enable the elements to be withdrawn.

Airflow

The heater may be ordered for horizontal or vertical airflow, if no preference is stated, all heaters are manufactured for horizontal mounting. Care must be taken to ensure the thermal cutout is near the top of the duct. The air should be evenly distributed across the duct and the minimum air volume as stated on the air heater name plate must be maintained. The minimum velocity across the elements must not fall below 2.0 m/s. Position the heater away from materials which may be damaged by heat.

Speed Controllers

If speed controllers are fitted to the system contact VES Andover Limited. The speed controller must not switch off fan independent of control system or allow airflow to fall below stated volume on the electric heater battery.

Control System

A suitable control system should be provided and should include a timer to keep fan running for two minutes after heater has been shut off. The Standard VES Andover control panels are designed for easy operation and connection to all VES electric heater batteries. Standard heaters are suitable for 1ph or 3ph control with neutral connection.

Thermal Cutout (Manual)

Every heater is provided with a thermal cutout which will break contacts when the duct temperature rises above 130°C. **This must be connected in series with the operating coil of the controller contactor which will switch off the heater in the event of a cut out tripping.** This cutout is provided to comply with M & E specifications and will require removal of the terminal cover to reset. **Supply must be isolated before removing cover.** Maximum switching 12A 1ph single pole.

Thermal Automatic Type Cutout (where fitted)

This is wired in series. Installation as manual type. Reset is automatic.

Connection

20mm conduit holes are provided for incoming cables. N.B. Terminal pillars are fitted to element studs and care should be taken not to strain studs which will damage elements permanently. Always fit an isolator for maintenance of the heater.

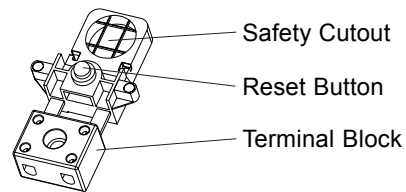
Testing

N.B. It is very important that all electrical connections are properly made. Elements are tested prior to dispatch and are within a tolerance of $\pm 7\frac{1}{2}W$. If the elements are found to be faulty they can be easily removed and replaced. Elements stored in damp conditions may need drying to attain correct insulation readings - contact VES Andover Ltd, if in doubt.

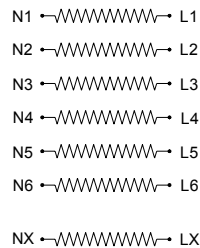
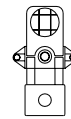
Notes

1. Supply to heater should be 1ph or 3ph with separate neutrals - refer to nameplate.
2. Cables should be silicone rubber, fibreglass or similar high temperature insulated type and be installed to current I.E.E. Regulations.
3. The heater is fitted with a manual reset high temperature cutout which has NC (normally closed) terminals. This must be connected in series with the main contactor coil circuit, to isolate the heater in the event of over-temperature (i.e. airflow failure).
4. Ensure sufficient earth connection to terminal provided.

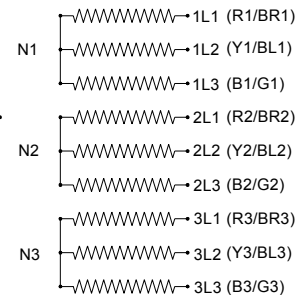
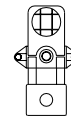
Wiring Diagram



Single Phase



Three Phase Star



X = any number above those already stated.

If in doubt contact VES Customer Services Department, quoting the Electric Heater Battery reference number

Telephone	08702 40 43 40
Fax	08702 40 45 50



PLEASE ENSURE THAT THIS DOCUMENT IS PASSED ON TO THE END USER.

We reserve the right to alter the specification without notice