





AHU Electric Heater Batteries


Installation, Operation and Maintenance Manual


Important  **This manual must be read in full before Installation, Operation and Maintenance of the units supplied.**

Please ensure that this document is passed to the end user. This manual forms an integral part of the product and should be kept for the working life of the product. Additional copies of this and supporting documents are available by contacting VES or by visiting www.ves.co.uk and following the 'Information Centre' link.

The following symbols used within this document refer to potential dangers, advice for safe operation or important points of reference

Warning  Indicates hazards associated with electric current and high voltages

Caution  Indicates hazards that require safety advice for personnel or potential unit/property damage

Important  Indicates important information


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 Sufficient clearance should be provided adjacent to terminal box of the heater to enable the elements to be withdrawn.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 a set temperature.

Important  **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.**

Warning  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 Cutout (Automatic) This is wired in series. Installation as manual type. Reset is automatic.



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Connection

Please see the accompanying unit O&M for information regarding cable entry. EHB terminal pillars are fitted to element studs and care should be taken not to strain studs which will damage elements permanently.

Warning



Always fit an isolator for maintenance of the heater.

Important

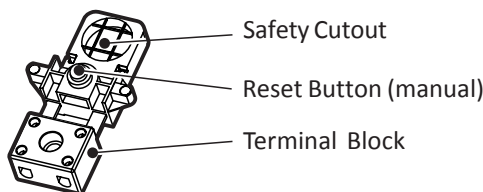


It is important that all electrical connections are properly made. Elements are tested prior to dispatch and are within a tolerance of $\pm 7\frac{1}{2} W$. If the elements are found to be faulty they can be easily removed and replaced. Elements stored in damp conditions may need drying to attain correct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

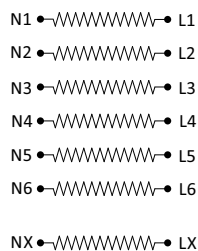
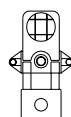
Notes

- 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 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.

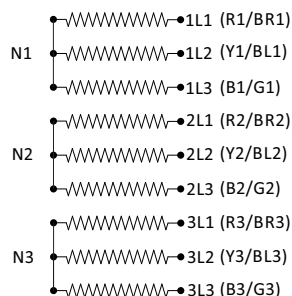
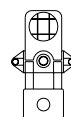
Wiring Diagram



Single Phase



Three Phase Star



X = any number above those already stated.

Important



If in doubt contact VES Customer Services Department, quoting the Heater Battery reference number. **Tel: 08448 15 60 60 • Fax: 02380 26 12 04**



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