



Air Vent Technology Ltd,
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SPE/EC PLANTROOM AHUS

Installation, Operation & Maintenance Manual

Introduction

Designed for internal applications, the SPE/EC range encompasses 4 models of direct driven centrifugal air handling units with airflow duties up to 1.4m³/s

Motor windings are fitted with an auto-reset thermal cut-out.

Motors are pre-wired to an external terminal box trickle - boost speed controller & isolator.

Units complete with integral G3 panel filter & electric heater battery

General Construction

The SPE range of units is of a standard construction of a 25mm thick double skinned case. The case has inner and outer skins of spangled galvanized sheet steel and is filled with 45kg/m³ density mineral wool slab.

Access is via removable side panels, bottom access for side by side units can be accommodated as a custom option

Inspection Upon Receipt Of Goods

Immediately upon receipt of any goods, a careful inspection should be undertaken to ensure neither damage has occurred nor parts missing. Particular attention should be paid to the fan impeller, motor shaft, anti-vibration mounts, flexible connection, coil connection & casework.

In the event of such damage or loss having occurred, inform AVT (01264 356 415) **WITHIN 3 WORKING DAYS** of the delivery date, giving the serial number which can be found on the nameplate. After this period we will be unable to entertain any claim for loss or damage.

Handling

Units must be handled with care to avoid damage, particularly units being craned into position attention must be paid to the overhanging weather lid & plastic finish A spreader bar should be employed so as to prevent damage to the top of the unit.

Installation

When installing our equipment, the following must be observed.

Safety: It is the responsibility of the installer to ensure that the installation complies with the legal regulations and the current HEALTH AND SAFETY AT WORK ACT.

Ambient Temperatures: The range of units covered by this manual are designed for use in an environment where the ambient air temperature is unlikely to exceed 40°C.

Mounting / Positioning: These units must be mounted in the horizontal plane mounted on a completely flat base. Other options available on request

Duct Connections: Adjoining ductwork should always be independently supported to avoid undue stress on the unit casing. Impellers are statically and dynamically balanced, anti-vibration mounts and fast clamps are available to suit.

Access: All units are designed with easily removable components for maintenance purposes. Sufficient room should be allowed to allow components to be withdrawn.

Electrical Wiring

Electrical supply must be fully isolated before attempting to affect any work on the unit.

All wiring should be carried out by a competent electrician and should comply fully with the current I.E.E. Wiring regulations.

The electrical supply must be as stated on the nameplate.

When the wiring is complete, check for free & correct rotation of the fan impeller

Maintenance

3 Monthly: Filters should be inspected and if found to be heavily soiled, replaced.

6 Monthly: The fan impeller should be carefully cleaned with a brush. This will prevent the impeller from becoming unduly dirty and become unbalanced.

12 Monthly: The security and integrity of all fastenings should be checked, particularly the motor mounting frame.

	Motor Power	Phase	FLC
SPE1EC	490W	1Φ	3.0A
SPE4EC	510W	1Φ	3.1A
SPE6EC	450W	1Φ	2.9A
SPE7EC	640W	1Φ	2.9A

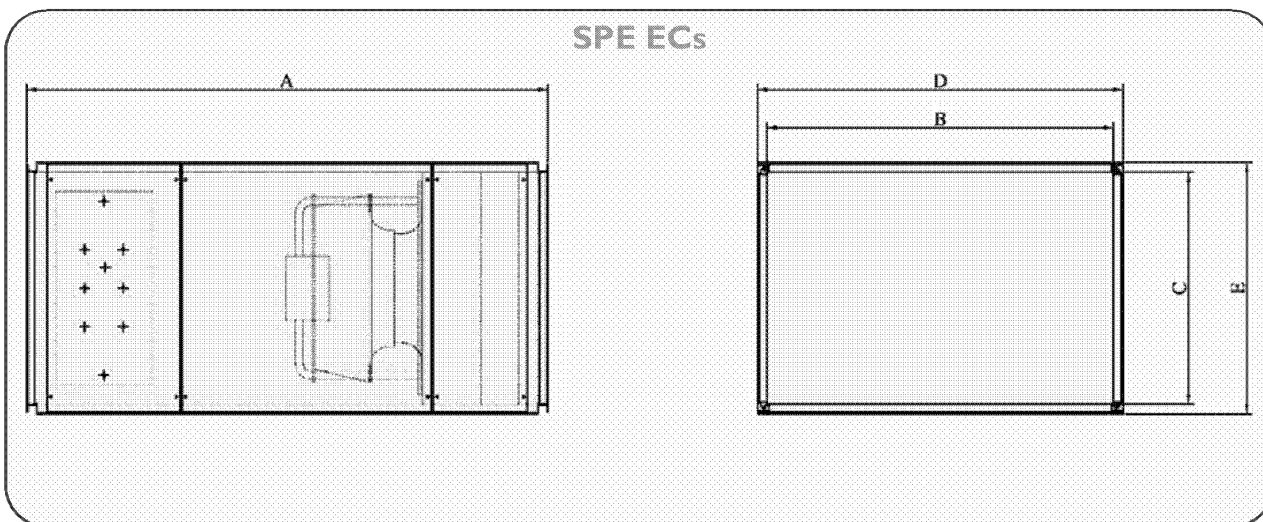


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SPE ECs



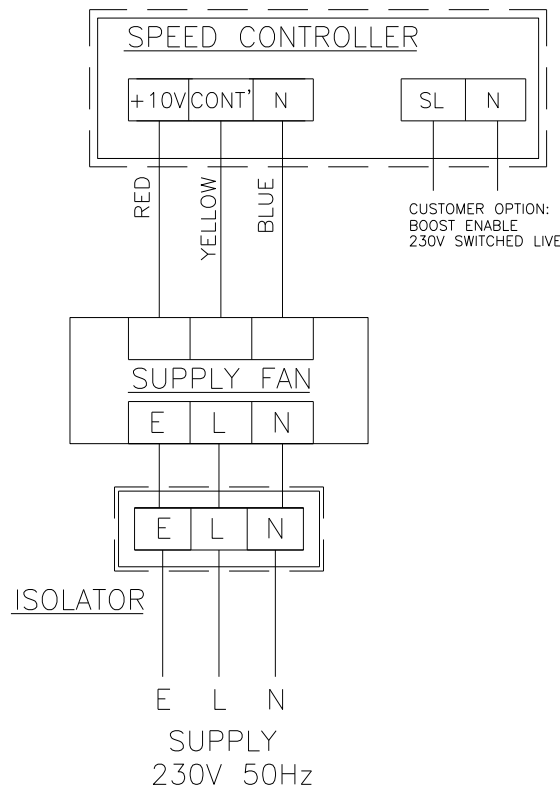
Model	A	B	C	D	E	kg
SPE1EC	1150	600	450	650	500	65
SPE2EC	1150	600	450	650	500	65
SPE3EC	1150	600	450	650	500	65
SPE4EC	1150	750	450	800	500	77
SPE5EC	1150	750	450	800	500	77
SPE6EC	1250	825	500	875	550	92
SPE7EC	1350	900	600	950	650	117



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Electric Heater Battery

Introduction

Heaters of the sheathed element type provide a safe means of heating using electricity. The surface temperature of the elements is relatively low and they will not give an electric shock. Heaters are suitable for either horizontal or vertical airflow, though care should be taken to ensure the cutout is near the top of the duct. An even flow of air across the elements **MUST** be maintained and the velocity should not fall below 1.75m/s. The heater should be positioned away from materials that may be damaged by

Controls

A suitable control system should be installed which must include a timer to **keep the fan running for a period of 2 minutes after the heater has been switched off.**

A range of compatible control panels is available from AVT.

If a speed controller is being fitted, it **MUST NOT** allow the fan to be turned off independently of the control panel nor must it allow the air volume to **FALL BELOW** that stated on the heater nameplate.

Testing

Elements are tested prior to dispatch and are within a tolerance of +7.5W.

Elements stored in damp conditions may require drying out in order to achieve the correct insulation levels. Contact AVT in case of uncertainty.

Wiring Instructions

1. The electrical supply to the heater should be either 1ph or 3ph (with separate neutrals) - refer to nameplate for clarification.
2. Electrical cables should be of a high temperature, insulated type (i.e. silicone rubber or fibreglass) and be installed in accordance with current IEE wiring regulations.
3. The heater is fitted with a manual reset, thermal overload which will break the contacts when the duct temperature exceeds 130°C. This should be wired in series with the operating coil of the control circuit.
4. Ensure a suitable earth connection is made to the terminal provided.
5. The element studs are fitted with terminal pillars and care should be taken not to over tighten and cause damage to the elements.
6. Always fit an isolator for maintenance of the heater.

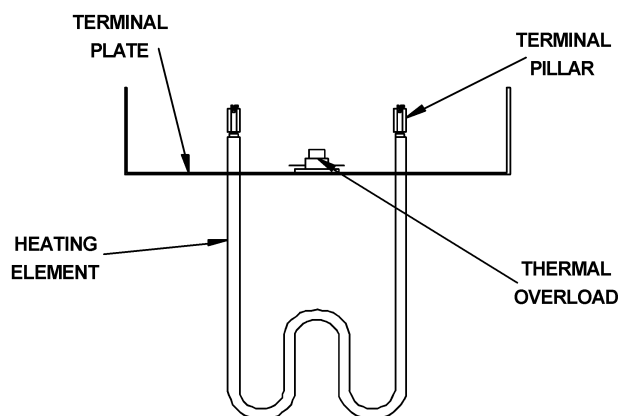


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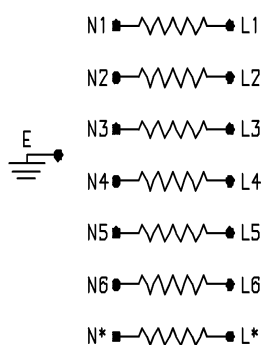
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Component Layout

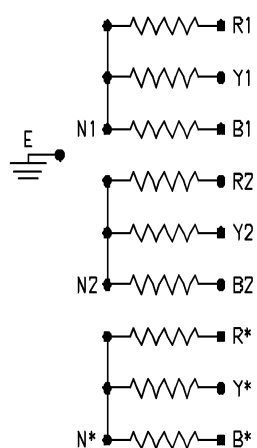


ELECTRIC HEATERS MUST BE WIRED AND INSTALLED IN ACCORDANCE WITH THE FOLLOWING DIAGRAMS AND INSTRUCTIONS.

SINGLE PHASE



THREE PHASE



Where * = any number of additional steps