



Colourfan Supply Fan Small Air Handling Units

1.1. General

A. Provide a supply fan unit to meet the performance and configuration as indicated in the schedule and detail drawings. The supply fan unit shall be tested to BS 848 and shall be of the Colourfan type as manufactured by VES Andover Ltd a company accredited with BS EN ISO 9001:2008.

1.2 Unit Construction

A. The unit shall be provided pre-assembled comprising of a rigidly constructed single skinned galvanised sheet steel case, centrifugal backward curved fan with direct drive motor, pleated panel filter & circular spigots.

B. The unit shall be supplied with a pleated panel filter as standard. Grade as indicated in the schedule & detail drawings.

C. The unit shall be available with optional fitted electric or hot water heating as indicated in the schedule & detail drawings.

D. The unit shall be available in plantroom or weatherproof construction as indicated in the schedule and detail drawings.

E. The unit shall have circular duct spigots complete with rubber gasket seals as indicated in the schedule and detail drawings.

F. Weatherproof units shall be fitted with an inlet cowl as standard, finished to match the unit casework.

G. The unit casework shall incorporate high quality dual layer memory rubber gasket seals on service doors and panels.

H. The unit shall be fitted with flame retardant acoustic lining as standard to ensure maximum thermal insulation and reduced noise transmission.

I. Access for maintenance shall be via removable panels, allowing access for the cleaning or removal of internal components as indicated in the schedule and detail drawings.

J. Plantroom units shall be suitable for top or bottom access as indicated in the schedule and detail drawings. Weatherproof units shall be suitable for top access only via a removable weather lid.

K. The casework shall incorporate mounting brackets compatible with drop-rod systems.

L. Weatherproof units shall be supplied as standard with mounting feet. Plantroom units shall be available with optional mounting feet as indicated in the schedule.

M. Plantroom unit casework & spigots shall be supplied naturally finished in high quality galvanised steel as standard. Optional powdercoat colour as indicated in the schedule.

N. Weatherproof units shall be supplied powdercoated signal grey RAL7004 as standard. Alternative colour according to schedule.

O. The unit shall be designed to be secured to a suitable base, wall or ceiling, ensuring the use of correct fixings for the application and taking into account individual unit weight as indicated in the schedule and detail drawings.



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1.3. Fans

- A. The fan impeller shall be of PA6 glass-fibre reinforced, backward curved plastic blade construction with galvanised steel mounting plate.
- B. The fan impeller shall be statically and dynamically balanced to G 2.5 / G 6.3 according to ISO1940 part 1.
- C. The fan impeller shall be mated with an aerodynamic bell inlet eye for high efficiency and low noise generation.

1.4. Motors

- A. The fan shall incorporate an external rotor motor to IP44 environmental protection rating & shall be supplied with thermal protection cut out as standard.
- B. The size 0 & 1 unit motor shall be to insulation class B. The size 2 and above unit motor shall be to insulation class F.
- C. The integrated motor shall be supplied epoxy painted blue to RAL5002.
- D. The integrated motor shall be available as AC or with high efficiency EC (Electronically Commutated) controller as standard.
- E. The motor shall be supplied pre-wired and fitted with a quick-change plug connector.

1.5 Filtration

- A. The filters shall be 98mm pleated filter media as standard, with rigid wax treated cardboard moisture resistant frame.
- B. Filters shall be to BS EN 779 Classification, grade as indicated in the schedule and detail drawings.

1.6. Heater Battery

- A. The unit shall be available with hot water or electric element heating as indicated in the schedule and detail drawings.
- B. The hot water heater battery shall be of copper tube, aluminium fin block construction, with galvanised sheet steel casework. The flow & return pipe connections shall be handed as indicated in the schedule and detail drawings.
- C. The hot water heater battery shall be available with alternative fin coatings by special order, as indicated in the schedule.
- D. The hot water heater battery shall be available with an optional fitted & pre-wired valve and actuator where indicated in the schedule and detail drawings.
- E. The electric heater battery shall be suitable for single or three-phase supply with thyristor control as indicated in the schedule and detail drawings.



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F. The electric heater battery shall consist of an element array sized to suit the power requirement and supply phase as indicated in the schedule and detail drawings. The elements shall consist of a tubular incolloy shroud containing compressed magnesium oxide powder packed around a Nickel Chromium resistance wire. The element array shall be evenly spread across the open area of the duct.

G. Where multiple elements are required to achieve the required power rating and supply phase as indicated in the schedule, elements shall be terminated with electrical connectors.

H. The electric heater battery shall be fitted as standard with a 130°C non-adjustable thermal safety cut out, with manual reset.

I. All electric heaters shall be 1500V flash tested, and resistance tested for correct component assembly. Test certificates shall be available on request.

1.7. Operation Environment

A. The unit shall be designed to operate with process air temperatures from -20°C to 40°C and humidity of up to 80%.

1.8. Controls

The unit shall be fully compatible with a standard range of controls, options can include pre-wired, factory fitted and tested or loose for wall mounting. Control packages shall include all necessary components to effectively operate the ventilation system as supplied by VES.

A. BlueSense controls combine integrated and pre-wired, factory fitted and tested control package, energy efficient speed controller and air quality sensor or PIR providing effective and efficient control of the fans, heater and other energy consuming components of the ventilation system.

The BlueSense energy saving package shall have the following features optimised for improved air quality and minimise energy usage:-

- Integral energy efficient speed controller
- Start stop from remote volt free contacts
- 7 day time clock with battery backup
- Speed control adjustment to aid commissioning complete with minimum and maximum speed limitations
- Demand ventilation control using air quality sensor calibrated to measure CO₂ and/or VOC
- Programmable, versatile LCD room unit with built in temperature sensor, control optimisation and access lock feature
- Precise closed loop air quality temperature, humidity or pressure control with P, PI commissioning
- Comfort and economy mode selection with setpoint limitation
- Additional input for supply or extract duct temperature control
- Supply and extract fan control
- Common volt free run and trip indicators
- Volt free enable, and 24Vdc fire alarm interface
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- Volt free enable, and 24Vdc fire alarm interface
- Supply and extract damper control via auxiliary 230Vac or 24Vac outputs
- Optional remote status indicator
- Suitable for internal and external locations



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B. The CPA controls range with versatile LCD room unit shall contain the following:-

- Programmable, versatile LCD room unit with built in temperature sensor, control optimisation and access lock feature
- Start stop from remote volt free contacts
- 7 day time clock with battery backup
- Precise closed loop temperature control with P, PI commissioning
- Comfort and economy mode selection with setpoint limitation
- Additional input for supply or extract duct temperature control
- Supply and extract fan control

C. The CPA controls range with interface suitable for remote source e.g BMS, shall contain the following:-

- Inputs responding to 0-10Vdc control signal from remote source to control temperature
- Supply and extract fan control
- Volt free enable signal from remote source to start and stop the system
- Common volt free run & trip signals to provide indication to a remote source (BMS)
- Optional remote status indicator
- Suitable for internal and external locations

D. If controls are not specified the unit shall come complete pre-wired to an external isolator.

E. If speed control is indicated in the schedule the unit shall be supplied with an internally mounted speed controller, pre-wired to an integral control package or external isolator.

1.9. Ancillaries

A. The unit shall be fully compatible with a standard range of spigot mounted silencers. The silencers shall be suitable for duct mounting or direct mounting to the unit as indicated in the schedule.

B. The silencer shall be a rigidly constructed single skinned galvanised sheet steel lining incorporating internal splitters lined with resin bonded mineral wool. Polythene & perforated metal sheet lining shall be available where indicated in the schedule.

C. The silencer casework shall be provided naturally finished in high quality galvanised steel as standard. Internal & External powder coat available as indicated in the schedule. Colour to be in accordance with schedule.

D. The plantroom unit shall be fully compatible with loose spigot mounted dampers suitable for direct fitting to the unit.

E. Dampers shall incorporate an aluminium extruded channel frame & aluminium damper blades, mounted on nylon cogs with nylon bearing inserts. Blade operation shall be via a 12mm sq. spindle mounted to one side of the damper.

F. Dampers shall be of opposed blade type, incorporating gasket seals between blades and sealed angles on the frame to ensure maximum sealing efficiency when the blades are closed.

G. Dampers shall be suitable for use with optional 230Vac or 24Vac open/close actuator as supplied by VES Andover Ltd.

Download specification from www.ves.co.uk/information-centre