CONSULTANTS SPECIFICATION

FAN DESCRIPTION

The ventilation fan Unit shall be configured and arranged as detailed on the drawings and in accordance with the schedule of equipment and shall be of the AXUS axial flow fan as manufactured by Nuaire. The units shall be manufactured from galvanised steel to BS EN10142 1991. The case shall be fitted with an external terminal box to IP55.

The fan impeller and motor shall be selected to provide the most energy efficient solution conforming to part L regulations and shall be direct drive with IE2 high efficiency motors to BS5000 as standard and shall be foot mounted TEFV type with IP55 enclosures and class F insulation in accordance with BS4999 part 20. They shall have sealed for life ball bearings. Motors shall be pre-wired to an external electrical terminal box through weatherproof flexible conduit to IP55.

(Note: EExD (flameproof) wiring direct to motor by others). The units shall be suitable for operation in ambient temperatures up to 55°C.

The impeller blades shall be of special aero-foil section giving excellent performance and low noise characteristic manufactured from injection moulded chemically coupled glass reinforced polypropylene or cast aluminium alloy. All units shall be suitable for internal and external operation and can be installed any angle.

The units will be provided complete with matching flanges, flexible connections, anti vibration mounts and all other necessary components to complete the installation and shall be in accordance with the manufacturer's specification.

The unit shall be of the AXUS type as manufactured by Nuaire Ltd.

CONTROL SPECIFICATION

The fan unit may be supplied with one of the following control options:-

1. ECOSMART CONTROLS

The compact Ecosmart control system complete with all necessary controls to facilitate the operation of the ventilation system. It shall be come complete with an integral factory fitted Ecosmart PCB which will control the fan unit within the desired design parameters and provide the interface between all external control devices and the unit itself.

The fan unit shall have the following energy saving components integrally mounted, pre-wired to interface with the purpose made PCB, all components pre-wired, configured and factory fitted by the manufacturer: -

- Integral Frequency inverter/speed controller.
- Integral maximum and minimum speed adjustment for commissioning.
- Integral adjustable run on timer.
- Integral BMS interfaces – 0-10V speed adjustment.
- Integral BMS interfaces – Volt free failure and status indication.
- Integral background ventilation switch (trickle switch).
- Multiple IDC sockets for interconnection of sensors or fans using pre-plugged 4-core low voltage cable.

ECOSMART SYSTEM OPERATION

The Ecosmart controls will enable the unit to automatically vary its speed as it receives signals from one of the interconnected sensors. When the signal is received the fan shall either increase speed gradually until the required level is achieved or it will work on a trickle and boost principle. This will then move the fan duty point from trickle/background ventilation rate to the required boost ventilation rate. Both the trickle and boost rates are infinitely variable, easy to adjust and remove the need of a main balancing damper.

2. BMS interfaces

The fan unit shall be provided with the following integrated BMS interfaces

- 0 - 10 volt contacts to provide a full BMS interface. This will enable the following functions:-
  Switch the unit on/off.
  Switch from low speed to high speed.
  Full speed control facility.

- 2 No. Volt free contacts to provide fan run and failure indication to provide system status.

- An integrated commissioning/speed control to accurately commission the system, with minimum and maximum speeds easily adjusted via a miniature dial, as recommended in Part L. This will enable the unit to be configured to run between set parameters thus saving motor power and limiting noise.

CONSULTANTS SPECIFICATION

3. COMMISSIONING SET UP

The fan unit shall be provided with an integrated commissioning/speed control to accurately commission the system, as recommended in Part L, minimum and maximum speeds easily adjusted via miniature dial. The commissioning set up facility directly controls the integrated speed control/frequency inverter.

4. STANDARD CONTROLS

The unit shall be provided with a standard speed control or a standard inverter in accordance with the manufacturers recommendations.

The unit and ancillaries shall be supplied with a 3 years manufacturers warranty. Ecosmart Axus shall have a 5 year warranty.

All equipment shall be as manufactured by Nuaire Ltd.