

## CONSULTANTS SPECIFICATION

### FAN DESCRIPTION

The Roof mounted extract fan/s shall be located in the positions indicated on the drawings and in accordance with the relevant fan schedule. It shall be a low profile cowl manufactured in aluminium alloy, colour to be confirmed.

The fan shall be of the MARK TEN vertical discharge type and shall be supplied complete with backdraught shutters, birdguard, purlin box curb, hand guard and soaker sheet, specific details of the curb to be confirmed by the main contractor. The mechanical contractor shall make due allowance for supporting the fan via the provision of purpose made trimmers between purlin. The trimmers shall be sized to adequately support the weight of the fans.

The direct drive units can be mounted up to an angle of 80 degrees, except for the 1000 which cannot be mounted at an angle greater than 10 degrees.

The belt drive units can not be mounted at an angle greater than 5 degrees.

The unit and ancillaries shall be supplied with a 3 years manufacturer's warranty, first year parts and labour the remainder parts only. Ecosmart Ecosmart Mark ten shall have a 5 year warranty, first year parts and labour the remainder parts only.

The unit and ancillaries shall be of the Mark Ten type as manufactured by Nuair Ltd.

### CONTROL SPECIFICATION

The fan unit can 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 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:

1. 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. Volt free contacts to provide fan run and failure indication to provide system status.
3. 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.
4. 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.

#### 3. STANDARD CONTROLS

The unit shall be provided with a standard speed control or starter in accordance with the manufacturer's recommendations.

Mark Ten has a 3 year warranty.

Ecosmart Mark Ten has a 5 year warranty.

All equipment shall be as manufactured by Nuair Ltd.