

CONSTANT PRESSURE

Consultants Specification

Constant Pressure Extract System

The main extract fan shall be as indicated on the drawings and in accordance with the relevant fan schedule. The vitiated air shall be extracted from the space using an energy efficient constant pressure principle via a variable air volume motorised damper/grille installed in each area, as detailed in the schedule.

Operation

The extract fan shall automatically vary its speed as the system pressure varies; the variation in pressure is caused by the opening and closing of the Nuair CVD extract damper/grille. The damper/grille is autonomous of the fan and requires no field wiring connecting it to the fan. The damper positions are open (boost) and closed (trickle). When the damper is closed, the grille will allow approx. 8 litres/sec flow rate, as background ventilation. When open, the boost ventilation rate is between 15 and 28 litres/sec, this is infinitely variable via an integral adjustment. The damper will be operated via the designated switching devices. The inline damper has an integrated airflow sensor which continuously monitors and controls the amount of air being moved. The air volume is adjusted via minimum and maximum potentiometers on the side of the CVD damper and a run on timer.

The damper/grille shall be as manufactured by Nuair Ltd.

The duct mounted damper CVD requires a 230V connection/power supply. Signal from 230V switch live i.e. light switch, PIR, humidistat etc.

(If the NRG grille is installed it shall be connected to a 12V ac supply via the inclusive 230V transformer unit and has an integral PIR, two position damper and overrun timer).

Once commissioned and set to work, the fan will maintain the preset pressure by varying its speed as the ventilation requirement within each area varies i.e. as dampers open and close. If the requirement exceeds the maximum or minimum limit, the fan will remain at the design/limiting speed.

Fan Specification

Each acoustically lined low noise Twinfan shall be fitted with an integral Ecosmart control inclusive of a specifically calibrated pressure transducer and inverter drive. The fans shall have the following energy saving and operational functions integrally installed within the fan unit, all components will be pre-wired and fitted by the manufacturer: -

- Factory calibrated pressure transducer.
- Frequency inverter with pressure transducer interface.
- Integral operating pressure adjustment (target pressure).
- BMS interface 0 - 10V.
- Integral auto changeover/duty share, fans changeover every 12 hours of run time.

- Auto changeover in the event of duty fan failure.
- Volt free run & failure/status indication.
- 4no. low voltage sockets for interconnection of remote failure indicator.

Fan, integrated Ecosmart controls and associated sensors/controllers shall be manufactured by Nuair Ltd.

CVD Features –

- Trickle/boost flow rate.
- Run on timer.
- Externally adjusted settings.
- CVD acts as a balancing damper.
- MEMS (air flow sensor) provide precise measurements and control of flow rate.

The Fan unit shall have a 5 year warranty, first year parts and labour the remainder parts only.

Installation –

By the appointed contractor.

Mechanical installation requires mounting of the extract unit in the designated position and connection to the associated duct work.

The contractor shall allow for all necessary ductwork transformations to and from the fan unit and any associated components in accordance with the manufacturers recommendations, DW 144 and general good practice.

Electrical installation requires the provision and connection of single phase electrical supply sizes 6 & 9 or three phase sizes 11 to 19 inclusive.

A volt free run/fail status indication at the fan.

A single phase supply to the duct mounted damper version CVD/NRG.

A single phase supply to the transformer feeding the grille with integrated damper and PIR, the 12V output of which is connected to the grille.

Commissioning -

By the appointed commissioning engineer.

The systems should be commissioned in the normal way and the operating or target pressure (inlet side of unit only) set via a potentiometer in the integral set-up box within the fan unit. This should be adjusted until the required air volume flow rate is achieved on the approved measuring device.

The manufacturer's recommendations must be observed at all times.

Download specification from www.nuairgroup.com/specifications