consultant specification

Operation

Each variable geometry DCV diffuser must be electronically controlled by a 12V DC actuator that is capable of varying the supply of fresh or extract air in an area through the vertical regulation of the diffuser's control disc.

The diffuser must alter the ventilation rate according to occupancy via a connected CO_2 sensor.

Supply air from the variable geometry diffuser must be horizontally discharged in a 360° pattern whilst maintaining air movement in the space throughout the volume variation range of 100%-10%.

Diffuser Specification

The diffusers should be manufactured from steel and have a high quality, epoxy powder coated finish in RAL 9010 matt, with other colours available on request.

The diffuser face plate must be easily removable to allow access to the diffuser components from below the ceiling.

The diffuser needs to be 595x595mm to fit into a standard, lay-in ceiling system and must have an aerodynamic design that minimises noise production.

The motors must have a two-year warranty and be lifecycle tested to a life of thirty years.

The diffuser sizes and quantities must be those indicated on the drawings/schedules.

Airlfow Sensing

An airflow sensor must be fitted to the neck of each diffuser and the pressure maintained between 10 Pa and 70 Pa. The airflow and pressure at every diffuser needs to be measured via the BMS and this information used to guarantee the required airflow levels into every room.

Control Features

To allow easy installation and to avoid incorrect connections, the diffusers must be interlinked by supplied daisy chain, 'plug and play' cables complete with Microfit connectors.

So that minimum and maximum ventilation rates for each diffuser and/or zone can be set, it must be possible to set up the diffusers via a computer using freely available software.

It must be possible to view and log airflow rates and CO_2 levels on a computer.

Room CO_2 levels must be measured via a matching, wired, CO_2 sensor.

PSU

The Power Supply Unit should power up to fifteen diffusers. All connections must be 'plug and play', with the cabling provided.

Cabling

Diffusers should be supplied with interconnecting 6m, 4-core slave cable with Microfit connector plugs at each end. For diffuser interconnection, two female Microfit connectors should be provided on each power supply and each diffuser connector box.

MCU

The Master Communications Unit must be a central data collection and distribution point for up to sixty diffusers. The device should feature four diffuser channel inputs that can accommodate up to fifteen diffusers each. These channels should be connected by dedicated communication cables by means of a Lin bus interface to the Power Supply Units.

It must be possible to use a computer to examine this centralised data for the purposes of monitoring, logging and finding faults.

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