



Vacuum and Volume Control

Purex Fume Extractors can be supplied with two types of airflow control systems depending on the application requirements.

Method 1 - Airflow Control by Vacuum (Digital & Analogue)

- Used on tip and arm systems and analogue system

Method 2 - Airflow Control by Velocity (Digital Only)

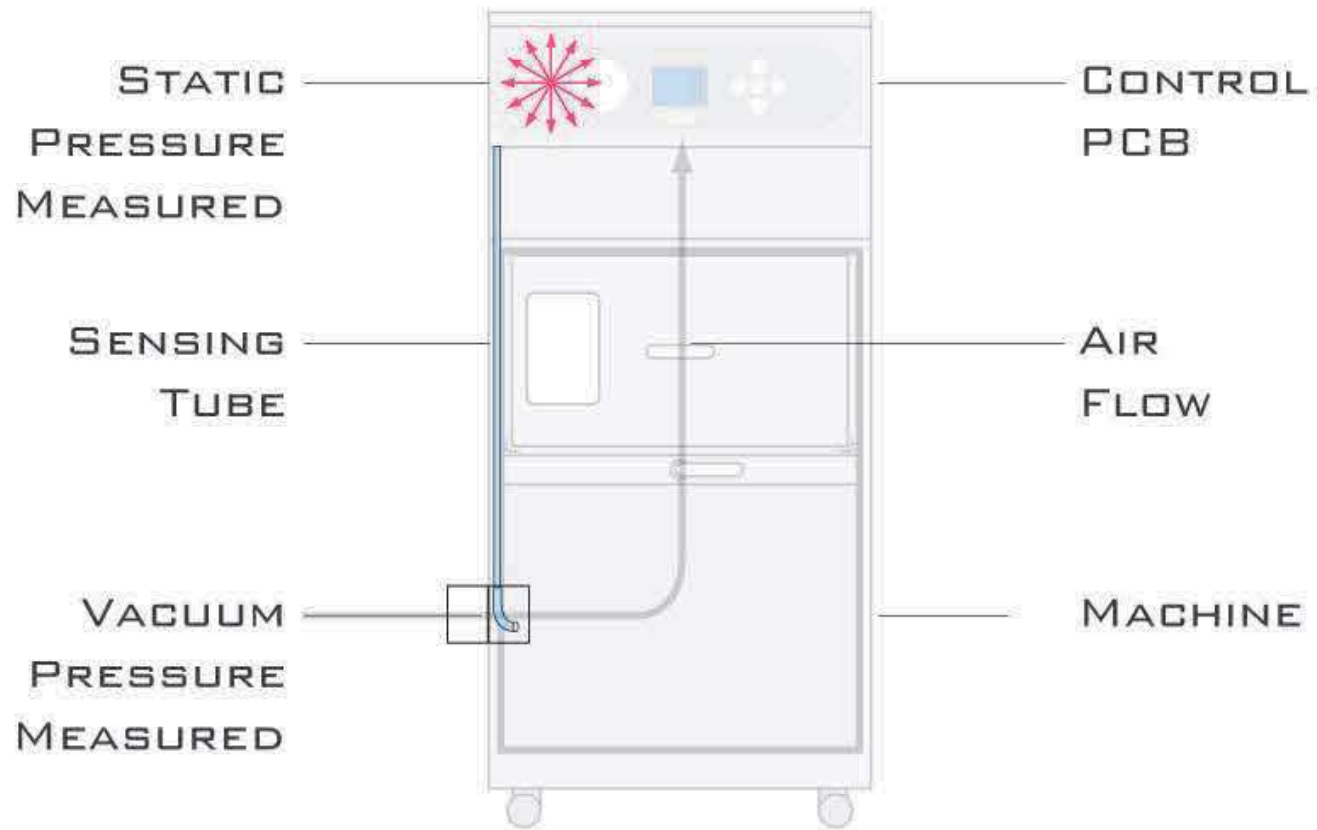
- Used on Digital systems for most other applications

Vacuum

Control of flow by **vacuum** by measurement at inlet to unit.

- The negative static pressure (vacuum) is measured via a sense pipe at the inlet to the unit, connected to a single port transducer on the Control Board.
- The software compares this value with a target value (set wg) set by the operator and causes the blower to speed up until the two values are equal i.e. the flow is maintained at a constant level.
- **Benefit:** Slows the blower as tips or arms are closed on the system so maintaining constant extraction at each work station. Also saves energy, particularly on larger machines.
- *see next slide...*

Vacuum

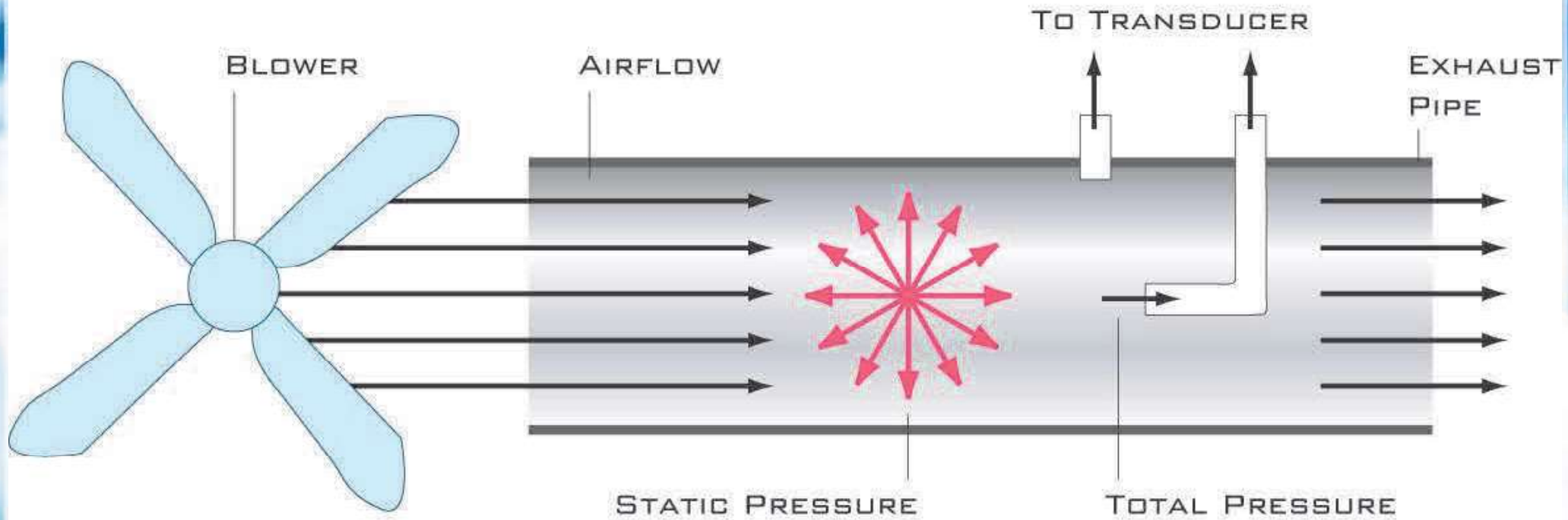


Volume

The air speed in the final discharge duct from the blower(s) is determined using the Pitot principle.

- This involves measurement of total pressure (static pressure and velocity pressure), in the pipe together with the static pressure alone.
- The sense ports are connected by short tubes to a twin port transducer on the new Digital Control board. The software subtracts the static pressure from the total and derives the air speed from the velocity pressure value.
- *see next slide...*

Volume





Volume

Benefits:

- Any obstruction which causes the airflow through the system to fall (E.g. a label from a packaging line entering the pipe work.) will result in the blower increasing speed to bring the flow back to the selected value or trigger the alarm. All sensing is carried out on the clean side of the filters, i.e. less chance of sense pipe blockage.
- Continuous visual confirmation that the system is achieving the control parameter required under the COSHH regulations or equivalent.
- Where multiple systems are being installed on similar processes, the operating parameters can be set on the first extractor and then simply replicated onto the remaining systems regardless of the hose configuration.