

Australian standard requirements

AS 2252 Part 2 specifies that Class II cabinets be fitted with alarms that:

- (a) Operate briefly at start-up of the fan(s).
- (b) Warn of reduction in exhaust airflow to the point where air barrier containment fails.
- (c) Warn of a variation of 20% or greater in laminar airflow velocity.
- (d) Provide an unmistakable visual signal to an operator or observer.

Cabinets with pressure switch alarms

The majority of Class II cabinets in Australia use pressure switches to operate alarms. These are a device that senses a change in pressure and opens or closes an electrical switching element when a predetermined pressure point is reached. They consist of a spring-controlled diaphragm that is deflected by air pressure to perform the switching function. Spring tension is adjustable to increase or reduce the pressure needed to operate the switch.

Limitations of pressure switch alarms

These devices are relatively insensitive and may be affected by temperature change. Cabinets with pressure switches are often set up by service technicians to minimise the probability of an alarm condition that is the result of the alarm set-point being close to the normal exhaust airflow. When set up in this way, cabinets are left with the alarm trigger point well below the normal airflow. This means that:

- a) The probability of a free service call to deal with an alarm condition is reduced; &
- b) A cabinet could be operated in an *unsafe* condition without an alarm being triggered.

Gelaire cabinets use air velocity sensors for alarms

Gelaire BH Series cabinets do not use pressure switches or have the inherent limitation of unreliable alarm sensitivity.

- A microprocessor-based monitoring system automatically controls all functions and safety alarms.
- Sensitive rotating vane anemometers detect the smallest variation in airflow.
- Fans *automatically* adjust to maintain safe airflows, regardless of gradual filter dust loading or power fluctuations.
- Laminar flow and air barrier velocities are constant displayed in an illuminated LCD.