

Biological safety cabinets



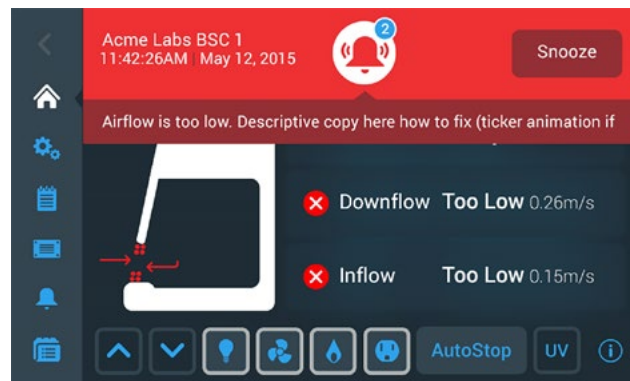
Question: Why are airflow alarms an important consideration for Biological Safety Cabinets (BSCs)?

Answer:

Airflow alarms will alert the user if there is a problem with containment or product protection.

Fluctuations in inflow or downflow velocities can disrupt the fragile air balance at the front opening of a BSC. Disruption of the airflow balance can result in sample contamination or inadvertent exposure to hazardous materials. Therefore, it is critical for the BSC user be alerted to these safety risks.

Unlike traditional BSCs, Thermo Scientific™ Biological Safety Cabinets are designed to combine independent DC motors and pressure sensor-based airflow alarms — Thermo Scientific™ DAVE (Digital Airflow Verification) Technology — to provide the utmost in product protection and worker safety.



Yesterday's outdated approach



Many BSC manufacturers monitor airflow using **pressure gauges**. Difficult to interpret, these devices provide no notification of unstable airflow or specification fallout, with high potential for undetected error.



Airflow can also be measured by **DC motors** that monitor the rpm of the fan and the torque required to achieve the rpm. Though they can be programmed to adjust torque to maintain specifications, they do not provide any alarm if airflow specifications are not maintained.



A thermal or **"hot-wire" anemometer** may also be used to independently measure airflow. Anemometers use a heated wire to measure airspeed, the more air crossing it, the more it's cooled, changing its electrical resistance. While these devices can trigger an audible or visual alarm for airflow specification deviation, they are limited to taking a reading at a single point in the airstream.

Today's Thermo Scientific DAVE approach

All Thermo Scientific Class II (Type A2) BSCs incorporate a **pressure sensor- based independent airflow monitoring system** called Digital Airflow Verification (DAVe). Separate sensors measure pressure change across the downflow and exhaust HEPA filters, helping ensure accurate overall measurement of both airflows. These measurements are converted into an audible and visual alarm alerting the user to an airflow restriction or excessive airflow variation greater than 20%.



Ease of service is designed in with the fan control and power supply made separate from the motor allowing replacement with an expensive or disruptive decontamination procedure.



Summary

Thermo Scientific BSC's combined approach of exceptional airflow control by **independent DC motors**¹, plus **independent pressure sensor-based airflow alarms** – DAVE – helps ensure high levels of worker safety and product protection!

¹ Smart Note "Why is a dual blower system better than a single blower system?" by Thermo Fisher Scientific, December 2023.

Find out more at thermofisher.com/bsc

For Laboratory Use. It is the customer's responsibility to ensure that the performance of the product is suitable for customers' specific uses or applications. © 2023 Thermo Fisher Scientific Inc. All rights reserved. All trademarks are the property of Thermo Fisher Scientific and its subsidiaries unless otherwise specified. **EXT6245 1223**

thermo scientific