



# Air Cleaning Blowers, LLC

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## **Preventing False Alarms and Other Error Messages from Alarm-Panel Boxes**

As all experienced installers know, and many end-users have found out the hard way, dirty and overheated alarm panel boxes can make mistakes. Preventing false alarms ranks as one of the top goals of setting up, using and maintaining alarm systems.

The constant maintenance of alarm panels can become a daunting and expensive task. Dust and other contaminants often enter panel boxes and collect on electronics inside the boxes as well as collect on remote sensors. These contaminants, dry or wet, can cause many problems that include hindering sensitivity, speed, and cooling, as well as overheating, corrosion, and interference with signals.

Printed circuit boards (PCB's) exposed to dust, dirt, bugs, heat and/or water can experience failures that range from overheating due to clogged heat sinks to corrosion caused by aggressive particles entering the printed circuitry. Increasing and decreasing temperatures can cause the PCBs and the components mounted on them to contract or expand, which can produce damage and cause the panels to operate improperly or even to fail. Batteries in the boxes can overheat as well. These problems cause alarm panels to produce misleading or erroneous messages, miss a critical event or cause a false alarm that brings the police or fire department .

As we all know, false fire alarms cause serious issues, from employee injuries and loss of production to, if police or fire fighters come unnecessarily, fines and even loss of insurance coverage. NFPA (National Fire Protection Association) data shows that fire-protection-system malfunctions cause one-third of all false alarms that bring out fire departments unnecessarily.

Source: NFPA's Survey of Fire Departments

Municipalities' fines for these wasted trips can range from \$200-\$2,000.00 per call, expenses that can often be avoided by keeping boxes and sensors clean.

Source: NFPA's Survey of Fire Departments

What are the options currently available to minimize false alarms?

- 1) Blowing unfiltered air into the panel to ventilate and keep the equipment cool. While this may help with an overheating issue it does NOT address the real issue: accumulating dust. Blowing dirty, dusty air into a box only exacerbates the problem and requires a service visit.
- 2) Fan with filter to blow air into the boxes. Here the maintenance problem stems from the clogging of the filter elements. If they clog, they block the cooling air. The expense come from the cost of service and of new filter elements.
- 3) Connecting the box to a flow of clean air, such as compressed or service air. The setup is expensive, operating costs can be high, and if not properly adjusted, condensation can form in the box and on its components.
- 4) Traps to capture bugs, rodents and other animals to prevent their living in the boxes. Again, they require service.
- 5) Air-Cleaning Blowers™ (ACBs) that clean air without filter media to clog and blow it into the electrical box to pressurize and/or ventilate it. Without clogging because they use no filter elements, the boxes need far less maintenance to keep dust, bugs and other contaminants off sensitive components.

This last option is the new one and it well worth considering for both new installations and retrofits. Air Cleaning Blowers filter and blow air without requiring any filter media, thereby eliminating all filter maintenance. Since they do not clog, ACBs truly sustain:

- Constant and Predictable Air Flow
- Constant and Predictable Air Pressure
- Constant and Predictable Air Quality
- Constant and Predictable Energy Consumption

Independent testing found that ACBs remove the mass of virtually all particles down to 10 microns (about 1500 mesh) and nearly half down to respirables. Since the smallest a person with good eyes can see is about 60 microns, ACBs make air clean enough to keep alarm-control boxes and their components clean with a minimum of service time and cost. Better yet, they can also keep remote sensors in ductwork and elsewhere clean. Therefore, they can ventilate and pressurize alarm boxes even in in dusty, heavy-industrial and mining facilities, as well as commercial, medical, residential, agricultural, and institutional applications.

The wide variety of ACBs available can ventilate and pressurize alarm panels and other electrical enclosures of all sizes. The air-cleaning blowers also come in retrofit packages to add to existing boxes.

Since ACBs do not clog, blasts of dirt- or sand-laden air will not fill and block the airflow quickly the way that they can filter elements. In addition, the ACBs treat rain and mist like solid particles and eject them as well, so unlike filter media that can lose much of its effectiveness and strength when wet or frozen, the ACBs' will not degrade under those conditions. Consequently, ACBs will keep working properly even after storms or other disruptions, allowing the users to focus on other problems while the ACBs keep the air quality within the alarm panels and around

the sensors constant. Since ACBs remove mist, snow and rain, they also help keep components inside the enclosures dry.

The ACBs provide the further advantage of **sustainability** because they reduce the need for replacement of alarm parts, and they eliminate the need for filter media altogether, all while extending the life of the circuit boards, sensors and other components within the system.

In total, ACBs will reduce the contractor's and user's need to visit and maintain the alarm boxes regularly to assure their proper performance. The reduced workload can make service contracts more profitable and less labor intensive for the contractor and less expensive for their clients. The longer lives of the components will also reduce the quantity of spare parts required to assure that the system functions properly.

Some models of ACB are designed to install next to sensors—either stand-alone sensors or those in ductwork—to protect and keep them clean. Hence, ACBs can also help to assure that the alarm-control boxes receive more-dependable inputs and reduce the maintenance labor substantially.

Air-Cleaning Blowers™ can come pre-installed from the manufacturer of the alarm box or other electrical enclosure, or they can be readily and easily retrofitted into existing enclosures and to protect sensors in the field.

Air-Cleaning Blowers™ provide the alarm-system contractor and their end-users with an additional, low-maintenance tool to help improve both the reliability of alarm systems and the security of facilities that they protect.