

# Solution Profile: Air Filter Monitoring



Monitoring industrial air filters can greatly benefit your operation



## Reduced Costs

- Replace filters only when needed
- Save energy costs because equipment with cleaner filters works more efficiently
- Enhance efficiency for procurement, logistics, handling, and warehousing
- Lower filter disposal fees by using fewer filters



## Increased Productivity

- Keep lines operational by avoiding unexpected shutdowns due to maintenance
- Reduce manufacturing rejects due to excessive particulates in the air
- Improve worker comfort and safety
- Easily maintain regulatory compliance



## Efficient Labor Allocation

- Minimize manual inspection of filters and reading mechanical gauges
- Eliminate time spent replacing perfectly good filters
- Lessen equipment maintenance needs due to excess wear caused by poor filtration
- Spend less time cleaning areas thanks to high-quality filtration

Reduce  
Air Filter Cost by  
**50%**

Save  
in Excess of

**\$100,000**

Pay Back Your  
Investment in Less Than  
**1 Month**

After adding our monitoring solution to their paint booth air filtration system, a customer discovered that their filters could last twice as long as they previously thought.

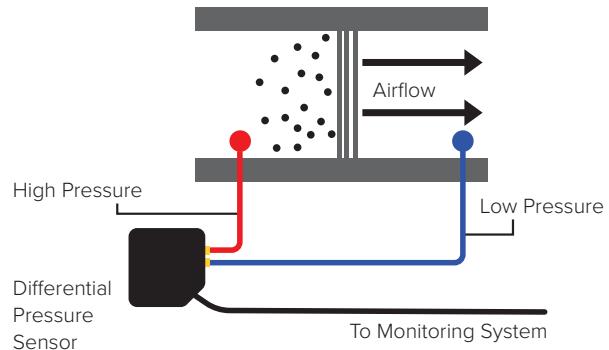
In this paint booth application, the savings from extending the filter replacement interval, along with the reduction in labor and disposal costs, resulted in an estimated savings of over \$100,000 per year.

A \$5,000 investment in our monitoring solution provided immediate ROI when considering the costs of excessive filter changes, disposal fees, and product scrap/rework.

# How to Begin Monitoring Air Filter Health

## Core principle: air filter health is monitored using differential pressure sensors

By monitoring the pressure drop across the filter—or differential pressure—you can infer how much airflow restriction the filter is creating. A new air filter will have little restriction, and therefore, little pressure drop. However, as your equipment gets used and the filter collects particulates, it increases the restriction to airflow, and you will see an increase in pressure drop across the filter.



## Parts you will need

This is a basic list of parts you will need to get started. Keep in mind, many more options exist for sensor types, cable lengths, and remote connectivity. Wireless options offer simpler installation, while the wired version offers local monitoring with faster sensor update rates. Consult your local Banner representative for help building the solution that best fits your application.

Solution with Wireless Sensors



Differential Pressure Sensor

+/- 5 in. W.C.  
DX80N9Q45DPSD-DPS5

Area Monitoring Gateway with Cloud ID

with Verizon Modem  
DXM1200-CK9-V

Solution with Wired Sensors



Differential Pressure Sensor

+/- 5 in. W.C.  
QM42-DPS5-2Q

Asset Monitoring Gateway with Snap ID

with Verizon Modem  
AMG-SNAP-ID-V



Scan to View Products

## Install and commission your monitoring system

The differential pressure sensor has two ports: one is used to sense the high-pressure, or upstream, side of the filter; the other port is for the low-pressure, or downstream, side of the filter. Install tubing between these locations on the filter assembly (you will need to install your own fittings here), and then run the tubing back to the correct locations on the sensor.

Mount your Area Monitoring Gateway to a suitable location per the instruction manual and apply power to the device. Follow the instructions to connect the wireless sensor to the gateway.

Follow the instructions to log on to your free trial of Banner Cloud Data Services (CDS). Once you are logged on and your gateway is sending data to the cloud, you will be able to monitor the differential pressure on your filters from anywhere by viewing the dashboard in CDS. Set an alert that triggers an alarm based on the appropriate differential pressure value and have it text or email you when that value is reached, so you can schedule a filter replacement.

## Take the next step

Visit [www.bannerengineering.com/monitoringsolutions](http://www.bannerengineering.com/monitoringsolutions) to build your next monitoring system, find an authorized distributor, or chat with a technical expert.



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