Nederman

Nederman SAVE

Optimized filtration performance through
Intelligent Airflow Control

Innovation in control technology

Energy savings, improved safety, increased productivity

Nederman SAVE provides a comprehensive solution for optimizing and enhancing the performance of your industrial filtration system, leveraging operational data from your machines or processes to determine the precise amount of air needed for effective dust extraction and safe material transport. This not only results in significant energy savings but also reduces the risk of fire and explosion, as well as minimizes maintenance time.

Common challenges is industrial dust collection systems

Effective dust collection is a critical process for modern manufacturers. Traditional dust collection systems may face challenges that lead to suboptimal performance resulting in wasted energy, poor dust extraction, health related air quality issues and increased risk of fire and explosion on combustible dust applications.

- Constant operation. Dust collection systems are often set up to provide constant airflow regardless of the mix of active and inactive machines resulting in energy waste, elevated noise levels and increased system wear and tear.
- Inconsistent dust extraction. Dust collection system requirements change versus time as filters collect dust, dampers are adjusted, or machines are added / removed. These changes may lead to inconsistent extraction, increased worker dust exposure, dust accumulation and reduced tool life.
- Dust accumulation in duct. Inconsistent or unbalanced airflow in ducts can make maintaining minimum transport velocity challenging. Poor transport velocity can lead to dust accumulating in the duct increasing fire or explosion risks and structural issues from increased weight.
- Expansion limitations. As factories grow and machines are added, dust collection systems may be difficult to expand if filters, fans and controls are designed to only support one static arrangement.

Nederman SAVE is a technology that helps manage challenges within traditional dust collection system to reduce energy waste, maintain proper extraction, duct balance and improve health and safety.

Together to a more sustainable future

Nederman SAVE supports sustainability initiatives by minimizing the energy necessary to operate industrial filtration systems. SAVE also extends component life including filters, decreasing waste. All of which contribute to a more sustainable operation.

Smarter, more efficient filtration

Nederman SAVE offers a range of benefits that enhance the performance of the dust collector, such as energy efficiency, improved extraction, increased machine reliability, access to productivity data, enhanced operational safety, and reduced maintenance time.

- Energy reduction. The pressure and flow requirements of the dust collection system are constantly changing during operation. By synchronizing the fan performance with the real-time needs, the amount of energy needed to run the system can be significantly reduced.
- Productivity data. In order to optimize the airflow, SAVE monitors machine activity allowing it to capture machine utilisation data that can help manage operations.
- Increased capacity. Typical dust collection systems are designed for machines operating 100% of the time where in reality, most operate significantly less. SAVE adjusts fan operation based on actual airflow requirements freeing up capacity within existing systems and reducing the size, footprint and installation cost on new systems.
- Reduced maintenance. SAVE manages airflow to provide consistent and effective extraction that increases tool and filter life and extends maintenance intervals to reduce downtime.

Energy Consumption

- HVAC savings. By extracting less air, the load on heating and cooling systems is reduced saving additional energy and reducing wear and tear on those systems.
- Quieter operation. Lower fan speeds and less filter cleaning are the result of reduced exhaust air, leading to a reduction in noise levels within the factory and during dust collector operation.

Improving safety and reliability

In today's manufacturing environment, compliance with regulations is critical to reduce employee hazards related to airborne exposure and combustible dust risks. Nederman SAVE offers airflow monitoring and control to enhance air quality and ensure regulatory compliance with NFPA and ATEX standards.

- Algorithms manage damper operation to ensure proper dust extraction and maintain minimum conveying velocity in compliance with regulatory requirements.
- Regular system flushes of the complete duct system are scheduled on a regular basis promoting safety, optimal performance and longevity.
- By prioritizing employee safety and regulatory compliance , Nederman SAVE helps reduce employee exposure to hazardous airborne particles and ensures a safer and more productive workplace.

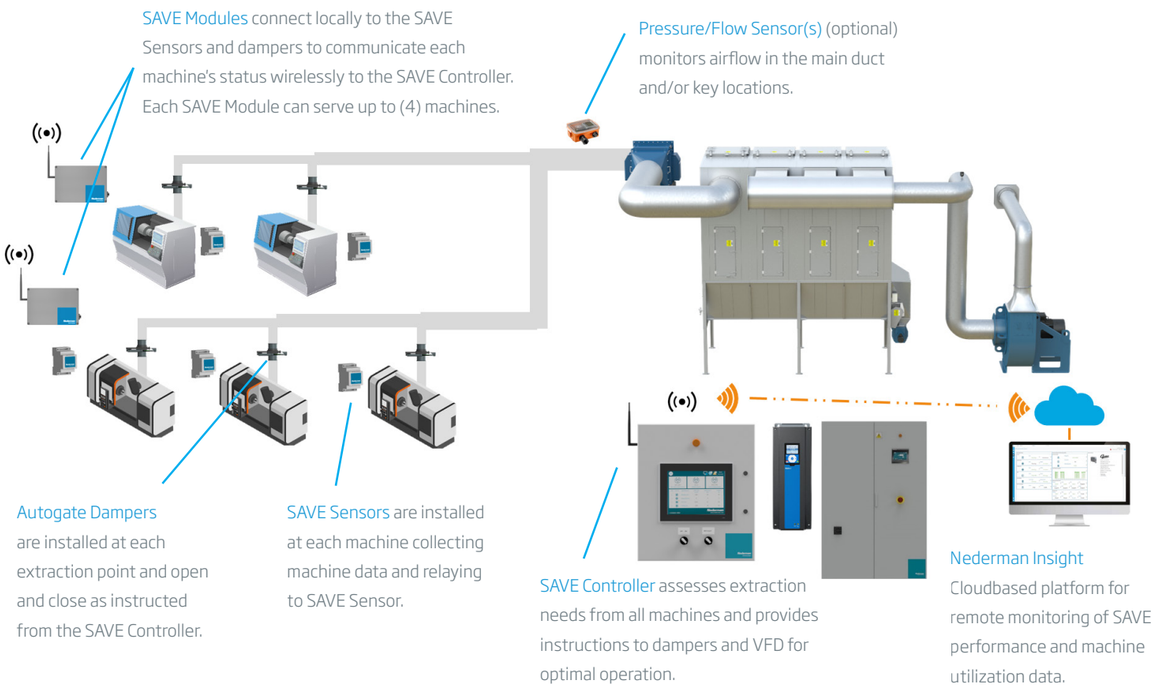
NFPA®

Ex

Clean Air Optimized

How does SAVE technology work?

The dust collection process initiates with sensors installed on the machines or processes, which detect their operational status and indicate the need for extraction. These sensor readings are gathered by the SAVE Modules and transmitted wirelessly to the central SAVE Controller, where the system requirements are compiled and analyzed comprehensively. Based on the analysis, instructions are sent to the variable frequency drive(s) that control each fan and to the dampers on each machine, in order to optimize airflow and pressure for the current operational system. The system incorporates airflow sensors at critical points to monitor and ensure proper operation. SAVE also records valuable data on energy consumption, process parameters, and machine operations, which can be accessed for cloud monitoring through the Nederman Insight platform.



Retrofit existing installations

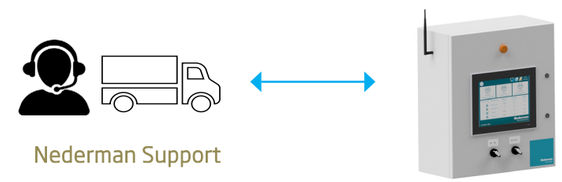
SAVE is a flexible technology that is adaptable to most existing dust collection systems including baghouses (reverse air or pulse jet), cartridge collectors, systems with multiple / cascading fans and more. In addition to energy saving, retrofits can breathe new life into underperforming systems or create room for machine expansion.

Optimize new dust collections systems

Including SAVE in the design of your new dust collection allows the system to be optimized from day one. SAVE may allow for reduced sizing of the dust collector and duct reducing capital expense, system footprint and allow room for expansion. With the energy savings and IoT ready technology, you are future proofing your factory and your profits.

Remote support and adjustment

Nederman SAVE technology allows for remote expert support and commissioning, adjustments to be made from anywhere in the world, enabling time-saving commissioning of the SAVE technology and reducing downtime of system operation.



- Enabling remote expert support
- Streamline commissioning
- Does not require in-person service to site to make adjustments

Monitor operation, energy savings and productivity

Dust collectors equipped with Nederman Insight maximizes the value of SAVE technology giving you critical operational data including energy consumption and machine / process information. Insight is an optional cloud-based IIoT platform that provides real time monitoring, visualization and tracking of system performance, including customized dashboards, alarms and reports. Live data is accessible via the web and mobile devices and stored in the cloud for trending and performance analytics.

- **Monitoring.** Monitor system status, energy savings and machine operation data within a user-friendly dashboard developed specifically for industrial ventilation applications.
- **Process Data.** View live utilization data for each machine connected to the SAVE system. Access to historical and trending data allows you to analyze and improve operational productivity.
- **Energy Tracking.** Receive regular energy saving reports directly to your Inbox or export data on-demand to help justify grants or document sustainability activities.
- **Alarm Notifications.** Alarm logs and service tracking features enables efficient planning and troubleshooting to avoid costly downtime.

Solutions that fits your needs

Dust collection systems are highly variable in design, application, number of extraction points, style of equipment. Thus, Nederman SAVE was developed as a scalable technology that offers benefits for small- or large-scale manufacturers, simple or complex duct arrangements and can adapt to most types of baghouses or cartridge dust collector arrangements. Nederman offers SAVE Standard for basic systems and SAVE Premium for complex systems or for customer's who want to maximize energy savings and safety.

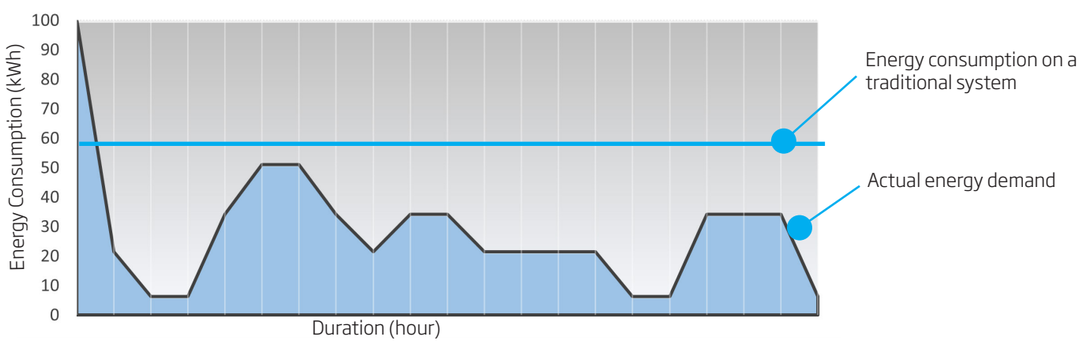
Product Features	Standard	Premium
Extraction and minimum airflow management	✓	✓
Main duct airflow monitoring	✓	✓
Branch air flow monitoring		✓
Regular system flush	✓	✓
Enhanced airflow, fan control and energy management algorithm		✓
Enhanced consumption and savings tracking	✓	✓
Fail safe damper option	✓	✓
Wireless data communication (SAVE modules to SAVE controller)	✓	✓
System alarm notifications	✓	✓
Remote support through LAN connection	✓	✓
Remote support thrugh cellular connection	optional	optional
Machine and process utilization data on Insight IIoT platform	optional	optional
CE, UKCA, UL508 Markings (regional)	✓	✓
IP65, NEMA 4, UL Type 4 enclosure ratings	✓	✓

Real world energy results

Nederman SAVE is designed to minimize energy consumption and maximize savings. As the chart below illustrates, the airflow and associated energy demand of the filtration system fluctuates throughout the day as the processes cycle on and off. By sensing the changes in operation and adjusting the fan performance you reduce the energy consumed. Depending on the type of application, savings and investment costs vary. Most installations typically experience an 18-24 months of return of investment (ROI). Nederman can assess the current operation of your system and even perform an on-site audit to estimate potential energy savings for specific operation.

Fan Speed and Power Consumption Explained

The power consumption of a fan is directly proportional to its rotational speed, indicating that higher speeds demand more energy. This relationship between fan speed and power consumption is cubic, implying that even slight adjustments in fan speed can cause substantial variations in power consumption.

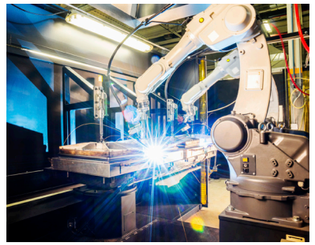


Energy investement grants

With the energy savings available with Nederman SAVE, many manufacturers will quality for grants or incentives from the power company or government organizations that will help fund the investment. With Nederman SAVE and the Insight monitoring platform, you will be able to track, document and report on the actual savings.

Solutions for today's manufacturing challenges

Nederman SAVE is a versatile technology that can optimize filtration systems across of a wide range of processes including wood manufacturing, welding and dry dust applications. Many industries are undergoing transformation through investments in automation, digitalization and Industry 4.0 solutions and Nederman SAVE supports these efforts through energy management, compliance, health and safety and process data tracking.



The global leader in complete air filtration solutions

For over 80 years, Nederman has developed products and solutions to reduce the strain on the environment and protect people from the harmful effects of indoor air pollution including dust, smoke, oil mist and gases. We have extensive experience in creating safe working environments, handling combustible dusts, managing turn-key projects and servicing dust collectors. Our innovative, smart solutions including Insight have further strengthened our ability to deliver clean air to our customers throughout the world.

Worldwide presence

Nederman has a strong global presence in both sales and production. We have our own sales companies in 25 countries and distributors in more than 50 countries. Production is performed in 13 countries on five continents. In many countries, we also have a well-established service organisation. By offering advanced service with high availability, Nederman helps customers to secure continuous, optimised production.

The Clean Air Company

Nederman is an environmental technology company and a global leader in industrial air filtration dedicated to extracting, transporting and cleaning air to make industrial production more efficient, safe and sustainable. Based on industry leading products, solutions and services in combination with innovative IoT technology, we monitor and optimize performance and validate emissions compliance to protect people, planet and production.

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