B-PAC™ Controls

Baghouse Performance Analysis & Control

Control and monitoring systems for all types of baghouses and cartridge dust collectors provide optimized filtration and highly beneficial preventive diagnostics.

Models:

B-PAC™ G3 PRO

B-PAC™ G3

TES Thomson Environmental Systems

Auburn FilterSense

B-PAC™ Controls

Baghouse Performance Analysis & Control

Typical 1–2 year ROI

Auburn FilterSense pioneered intelligent filter cleaning and diagnostics and is the industry leader. B-PACs™ ensure filters run smoothly with the proper differential pressure (DP) and low emissions.

B-PACs™ reduce energy use and lower costs by providing equipment condition monitoring and actionable diagnostics that reduce maintenance rounds, automate regulatory O&M inspection requirements, and prevent unforeseen downtime. They enable assessing OEM filter life and performance warranties. The initial capital expense of baghouses and dust collection systems is far lower than its long-term total cost of ownership (TCO). B-PACs™ significantly reduce TCO.

For pulse-jet filters B-PACs™ integrate cleaning control (control of solenoids and diaphragms) with measurement and analysis of differential pressure, particulate, header pressure, pulse counts, and running hours. Airflow, fan amps, temperature, level, and other inputs and control functions (dampers, VFDs, airlocks, etc.) can be added for further enhancements.

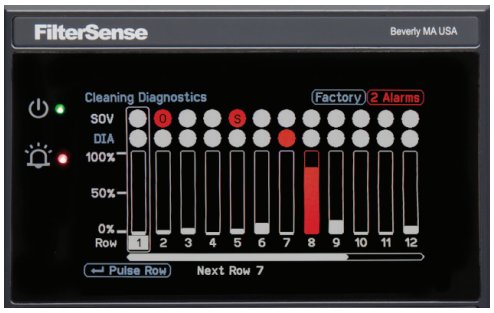
IntelliPULSE™ Intelligent DP Control

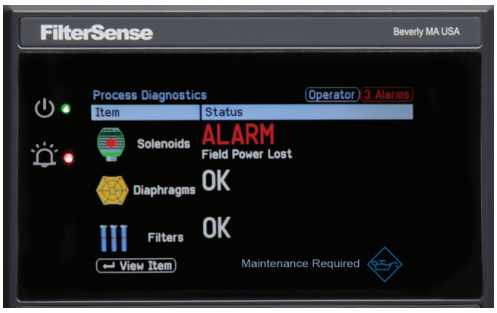
- **Maintain differential pressure within 0.1 InWC with minimum pulsing**
- **Lower emissions and extend filter life with less pulsing**
- **Ensure consistent airflow to maintain production, ventilation, and dust recovery**
- **Reduce compressed air use by 15–40% over standard on-demand cleaning, and up to 90% over continuous cleaning**

In addition to IntelliPULSE™ DP/cleaning control and diagnostics, B-PACs™ provide extensive general functionality including easily selectable pulsing patterns and a full range of basic timing modes (continuous, hi/lo, single cycle, cycle down, etc.).

B-PAC™ Controls

Actionable Diagnostics





- **Locate filter leaks (by row) weeks before visible emissions**
- **Detect/locate open and shorted solenoids that lead to plugged filters and cascading failures**
- **Detect and locate ruptured, frozen, and lazy pulse diaphragms**
  - One rupture can cost $1,000/week in compressed air and cause filters to blind
  - Eliminate other problems caused by air loss

EPA,Health & Safety

With integrated particulate monitors and differential pressure sensors, B-PACs™ are best practice for baghouse EPA compliance. They are also ideal for industrial ventilation dust collectors to ensure dust extraction and to help meet OSHA and NFPA regulations.

For safety, B-PACs™ reduce exposure to confined spaces, hazardous pollutants, and emergency maintenance - when most injuries occur.

- **Best practice solution for EPA/OSHA/NFPA**
- **Automate DP control and record keeping**
- **Fully integrated particulate monitoring**
- **Eliminate manual inspection of filter mechanicals as required by most permits**

Higher Function & Performance than PLCs

Application-specific electronics, combined with diagnostic and control algorithms that have been refined over 10 years, provide performance and capability that cannot be achieved by PLCs. B-PACs™ are turn-key solutions with no need for programming.

A full range of fieldbus options is available to integrate with PLC, DCS, HMI, and SCADA systems. B-PACs™ also offer discrete control modes.

Configurable for All Sizes & Types of Filters

MICS™ platform modularity enables a range of configurations from small cartridge collectors to large multi-compartment baghouses. PRO and basic models offer a wide range of features to suit application and budget needs.

Auburn FilterSense

B-PAC™ Series

Baghouse Performance Analyzers & Controllers

B-PAC™ G3 PRO

- Top Performance & Heavy-Duty Construction
- Widest Range of Features & Configurations

The B-PAC™ G3 PRO provides a fast return on investment for any baghouse/dust collector. It provides innovative technology for optimum control and EPA/OSHA compliance via its advanced processor/display and the MICS™ platform.

B-PAC™ G3

- Essential Features & Functions
- Lower Price with High Quality

The B-PAC™ G3 provides IntelliPULSE™ pulse-jet DP/cleaning control, particulate monitoring, basic diagnostics, and a solid range of features, functions, and I/O via the MICS™ platform for general improved operation and maintenance planning.

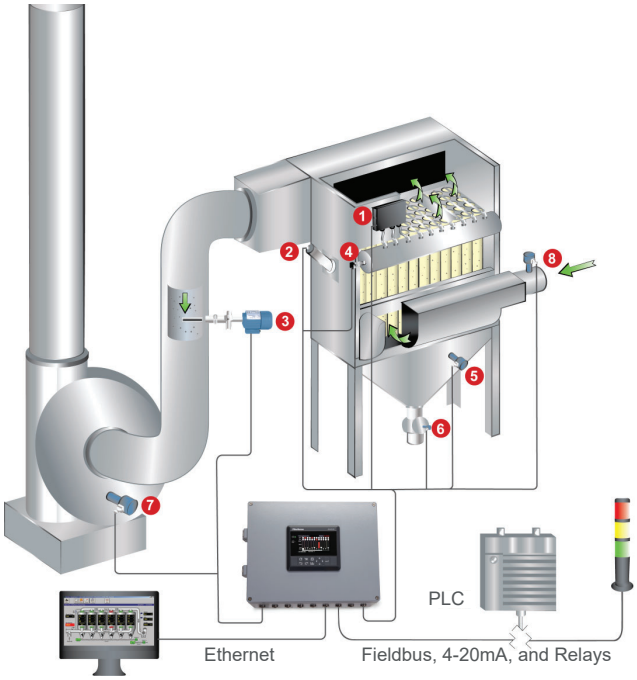
- **Intelligent and Comprehensive DP Control**
  - Easily set/adjust cleaning modes and patterns
- **Integrated DynaCHARGE** (ref PM 100 PRO)
  - All precisions (measure mg/m^3, monitor, detect)
- **Real time, Historical and Comparative Trending**
  - For quick set up, understanding, decision making
- **On-Screen Equipment Diagnostics**
  - Instantly view condition of filters, solenoids, valves
- **Device and Process Diagnostics (to NAMUR 107)**
  - Ensure installation and gain time saving insights
- **Alarm Management System**
  - Set logic, groups, acknowledgment, security
- **Data Historian**
  - Extensive data and event recording
- **Choice of Certified Fieldbus, SD card**

Primary I/O

1. Solenoids/Valves
2. DP
3. Particulate
4. Header Pressure

Additional (example)

5. Hopper Level
6. Air Locks
7. Fan Amps
8. Temperature



B-PAC™
Model Comparison

Key Features [1]	B-PAC™ G3 PRO	B-PAC™ G3	B-PAC™ PRO ES
Expandable Modular Platform (MICS™)	✓	✓	✓
Distributed Enclosures	✓	Single Enclosure Only	✓
Filter Type	All	Pulse Jet Only	All
Max. # of Compartments	8	2	No Limit
Max. # of Filter Rows	256	96	No Limit
Max # of Header Tanks	8	4	No Limit
IntelliPULSE™ DP Control	✓	✓	✓
Filter Leakage by Row	✓	✓	✓
Solenoid Condition by Row	✓	✓	✓
Diaphragm Condition by Row	✓	✓	✓
On-line Cleaning	✓	✓	✓
Off-line Cleaning			✓
DP Control (flange to flange)	✓	✓	✓
DP Control (by compartment)			✓
On-Screen Trending	✓		✓
Alarm Capabilities	●	◐	●
Data Logging	●	○	●
Device Health Diagnostics	✓		✓
Aux. Monitoring (temperature, flow, level, etc.)	●	○	●
Aux. Control (dampers, screw conveyors, fans, etc.)	◐		●
Application			
Single-Compartment Baghouses	●	◐	●
Mutli-Compartment Baghouses	◐		●
Nuisance Dust Collector(s)	●	●	
EPA Compliance	●	○	●
Technical Data			
Power Supply	100-240 VAC (or) 24 VDC	100-240 VAC (or) 24 VDC	100-240 VAC (or) 24 VDC
Processor/Display	Advanced/Color Graphic	Basic/Monochrome	Advanced/Color Graphic
Analog & Discrete I/O	Up to 16	Up to 4	No Limit
Communication	Fieldbus [2]	Fieldbus [2]	Fieldbus [2]
Ambient Temperature	-40 °F to 158 °F (-40 °C to 70 °C)	-13 °F to 140 °F (-25 °C to 60 °C)	-40 °F to 158 °F (-40 °C to 70 °C)
Enclosure Rating (explosion proof available)	NEMA 4X/IP66	NEMA 4/IP65	NEMA/IP as Requested
Hazardous Area Rating	Class I Div. I (Zone 0/20)	Class II Div. II (Zone 22)	Class I Div. I (Zone 0/20)

Note [2]: Certified Fieldbus: EtherNet/IP, Modbus (TCP, RTU), PROFINET IO, PROFIBUS (DPV1, VO), DeviceNet, ControlNet, CanOpen, EtherCAT
Note [1]: Features may be optional

● = Best ◐ = Good ○ = Basic

Auburn FilterSense

Particulate Sensors
PS Series

Auburn FilterSense PS Series particulate sensors are unique, robust, passive sensors that connect to DynaCHARGE™ and B-PAC™ control units. These sensors are free of electronics. Heat and vibration do not reduce accuracy or life of the sensor. They enable intrinsic safety for line powered control units and make for more accessible installations since many filtration monitoring points are difficult to access. The PS 10-HP has proven to be the most reliable and durable sensor available.

Key Features	Basic PS 10 - S	High Performance PS10 - HP	Extreme Duty PS 10 - XD
Fully-Insulated/Isolated Probe	Coating	Layer	Layer
Heavy Duty Construction		✓	✓
Modular Design		✓	
Rotatable Housing		✓	✓
Field Serviceable parts		✓	
Application			
Aggressive/Corrosive Media		●	●
Moist/Conductive Media	◐	●	◐
General Technical			
Process Connection	NPT, Quick Clamp	NPT, Quick Clamp, Flange	Flange
Wetted Materials	316 L Teflon -	316 L Hastelloy C Teflon	316 L Hastelloy C Teflon
Max. Process Temperature	450 °F (232 °C)	500 °F (260 °C)	1650 °F (898 °C)
Max. Process Pressure	10 PSI (0.69 bar)	100 PSI (6.9 bar)	1000 PSI (69 bar)
Max. Probe Length	36 in (914 mm)	72 in (1828 mm)	36 in (914 mm)
Enclosure Rating (explosion proof available)	NEMA 4X/IP66	NEMA 4X/IP66	NEMA 4X/IP66
Hazardous Area Rating	Class II Div. II (Zone 22)	Class I Div. I (Zone 0/22)	Class I Div. I (Zone 0/22)

● = Best ◐ = Good ○ = Basic

Pressure Transmitters

Differential and Static Pressure Transmitters

The DP 20T (differential pressure) and SP 20T (static pressure) transmitters are designed for monitoring filters and any particulate laden process. They prevent the clogging that occurs with gauges and transmitters that use a small tube to the dirty side of the process.

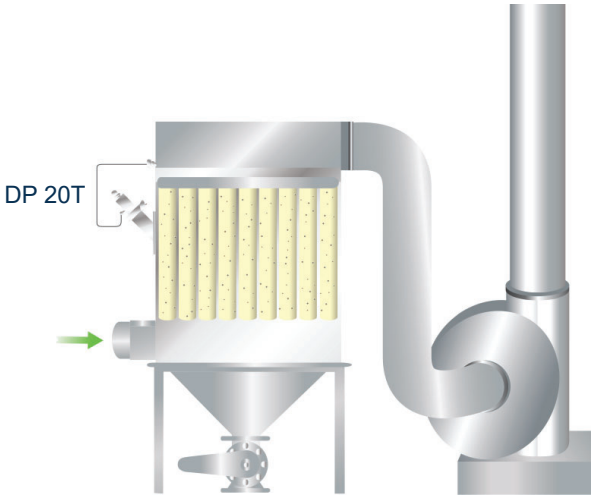
A rugged ceramic sensing element provides accurate measurements in the 0–10 InWC (0-25 mbar) range.

DP 20T & SP 20T

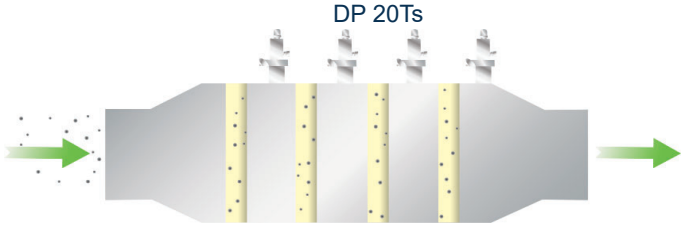
- Non-Clogging, Rugged, and Accurate
- 2-Wire Loop Power, 4-20mA

For differential measurements (DP 20T), the durable ceramic diaphragm is mounted to the dirty side of a process, such as below the tube sheet on a baghouse or on the dirty side of a wet scrubber. The reference port is routed to the clean side. The static version (SP 20T) is for measuring static pressure or vacuum.

A remote control unit is available for local display, PID loop control, relay alarming, and fieldbus communications. The DP 20T and SP 20T are commonly ordered with B-PACs™ and IntelliPULSE™ timers.



- **State-of-the-art capacitive sensing element**
- **0–10 InWC (0-25 mbar) and higher ranges (also bi-directional ranges)**
- **Temperature compensation for accurate measurement**
- **All 316L stainless steel body**
- **Convenient tri-clamp mounting**



IntelliPULSE™
Timers

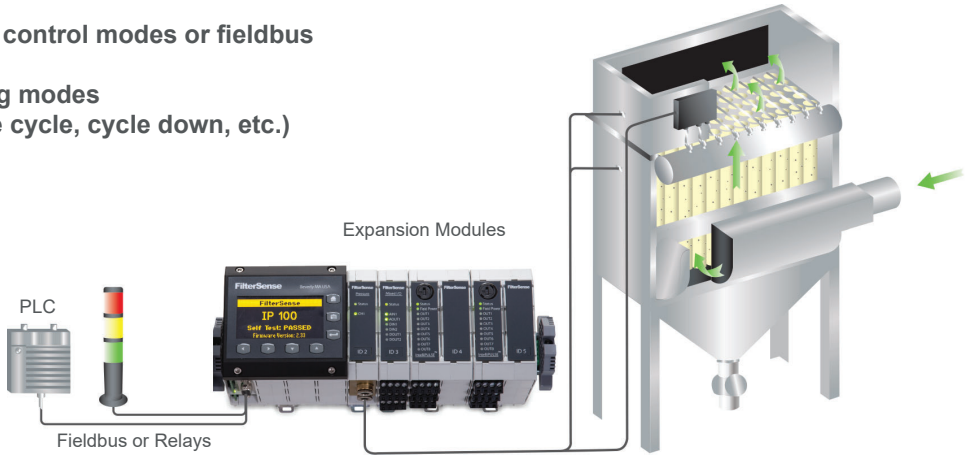
Pulse-Jet Filter Timers

IntelliPULSE™ pulse-jet timers for baghouses and cartridge dust collectors, compared to basic timer boards, provide intelligent pressure control, energy savings, numerous additional general functions, and higher long-term reliability. For baghouse diagnostics, additional I/O, and advanced features, refer to B-PAC™ controls.

IP 100

- Simple-to-Set Intelligent Filter Cleaning
- Precise Differential Pressure Control (±0.1 InWC)

- **Easily set cleaning parameters, pulsing sequence, and patterns**
- **Multiple remote discrete control modes or fieldbus**
- **Full range of basic timing modes (continuous, hi/lo, single cycle, cycle down, etc.)**



	IP 100	Traditional Timer Board
Architecture	DIN Modules (MICS™ Platform)	Mostly Bare Circuit Boards
User Interface	Graphic Display & Keypad	Switches or Minimal Display
Dedicated Pulse Outputs	Modular Up to 64 (For Higher, Refer to B-PAC™)	Typically Less Than 32
Pressure Sensor	Modular for Easy Calibration (or Remote Non-Clogging)	Typically Low Quality Fixed to Circuit Board
Fieldbus Communications	Yes (All Major Protocols)	No
Discrete Input Control	Multiple Function	Single Function
Construction	Industrial Duty	Light Duty

TES Thomson Environmental Systems