

America's #1 Dust Collector Supplier

Flex-Kleen

A CECO Environmental Brand

The Flex-Kleen® SmartTimer™



**Reduce Dust Collector
Downtime, Save Operating
& Maintenance Manhours**

The SmartTimer™ Automatically and Intelligently Controls Pulse-jet Dust Collector Operations.

Flex-Kleen introduces the next generation in baghouse controls: The SmartTimer.

The microprocessor-based SmartTimer is much more than a traditional dust collector timer. Its integrated pulse-on-demand capabilities provide the same benefits as those offered by a standard photohelic switch/timer assembly—in an enclosure half the size of a normal pulse-on-demand system—while providing many of the same features usually found in more costly and complex control panels.

For about the same cost as a standard photohelic switch/timer assembly the SmartTimer:

- Provides three cleaning modes: Continuous operation, demand pulse, and self-adjusting
- Offers a compact, integrated alternative to separate pressure switch/timer assemblies
- Lets you monitor and adjust dust collector operating conditions from a remote location
- Provides up to three auxiliary alarms (such as high hopper levels, broken bag detection, zero speed switch, or low air header pressure)
- Identifies the specific location of a faulty solenoid
- Provides a warning when the differential pressure level reaches pre-programmed safety set points
- Provides a warning when the pre-programmed low differential set point is no longer attainable

The SmartTimer is simple to program.

The eight-character alphanumeric display has 29 messages available in three languages that provide an immediate, visual readout of the status of the dust collector allowing quick and accurate monitoring.

In short, Flex-Kleen's SmartTimer is a true advancement in the control and maintenance of dust collector operating systems. It can be easily retrofitted to any pulse-jet dust collector, including cartridge collectors. Best of all, you can have all these features, with the operational and cost-saving benefits they provide at an incredibly low price.

The SmartTimer: For more efficient and cost-effective dust collector operations.

*To Learn More About The SmartTimer, or other Flex-Kleen® Brand Products,
Contact Your Local Flex-Kleen Representative Or Call:*

1-800-621-0734.

Our fine products include standard pressure, high-pressure and high-vacuum pulse-jet dust collectors; bin vents; and high-efficiency cartridge and pleated fabric dust collectors.

The Most Economical Way to Reduce Plant Compressed Air Usage, Lower Baghouse Maintenance Costs, and Prolong the Life of Bags and Components

■ **8 CHARACTER ALPHANUMERIC DISPLAY** – 29 pre-programmed messages provide visual information about the operating condition of the dust collector and auxiliary equipment

■ **ADJUSTABLE HIGH/LOW/UNATTAINABLE PRESSURE ALARMS** – Provides alarm when pre-set safety pressure levels are reached or when low/off set point is unattainable

■ **KEY PAD** – Simplified set-up/programming to suit individual applications

■ **VACUUM FLUORESCENT DISPLAY** – Provides clear, glare-free message displays

■ **THREE SEPARATE OPERATION MODES (CONTINUOUS OPERATION, DEMAND PULSE, AND SELF ADJUSTING)** – Choose the most cost-effective operating mode for your process

■ **AUXILIARY ALARM INPUTS** – Provides up to 3 separate alarms for remote monitoring of dust collector auxiliaries (i.e., rotary valve, screw conveyor, compressed air pressure, emissions monitor, etc.)

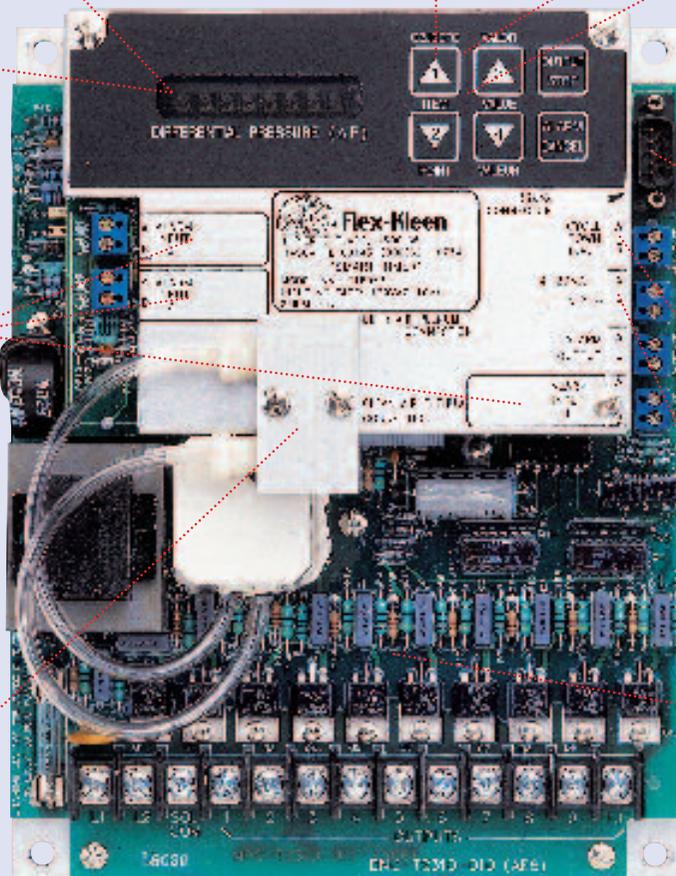
■ **REMOTE MONITORING & CONTROLS** – Monitor and adjust dust collector operating conditions from a remote computer location via the RS-232 serial port

■ **CYCLE DOWN FUNCTION** – Provides additional cleaning cycles of the dust collector after shutdown of fan

■ **INTEGRATED PRESSURE SENSOR** – Compact, low-cost alternative to a separate pressure switch and photohelic gauge

■ **4-20 MILLIAMPER TRANSMITTER** – Provides input for remote display of dust collector pressure changes

■ **MICROPROCESSOR-BASED CONTROLS** – Compact, low-cost replacement of traditional pulse-on-demand-only cleaning with multiple operational, safety and self-diagnostic features



FS SERIES DUST COLLECTOR EMISSIONS SENSORS

Connecting your microprocessor-based SmartTimer™ to Flex-Kleen's FS Series Broken Bag Detector, can provide visual information to allow detection and location of leaking filter bags.

TECHNICAL DATA

Factory Default Settings

Lo Pressure Alarm	0.5" water column
Lo Pressure	2" water column
Hi Pressure	4" water column
Hi Pressure Alarm	10" water column
Output Quantity	10
Off Time	15 seconds
On Time	0.05 seconds
Output Configuration	Manual
Units	Inches (metric optional)
Unattainable Lo Pressure	15 cycles
Display Language	English (Spanish, French optional)
Cycle Down	Not selected
Number of Cycles	2 cycles

Inputs

Voltage	105-135 VAC, 50/60 Hz
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Maximum Ratings at 135 VAC Input Voltage

Power Consumption	10 VA, without loads
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By-pass Switch Open Circuit Voltage	24 VDC
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By-pass Switch Short Circuit Current	4.3 mA
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Alarm Input Switch Open Circuit Voltage	24 VDC
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Alarm Input Switch Short Circuit Current	4.3mA
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Outputs

Maximum Solenoid Output	200VA or Watts at maximum duty cycle
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Solenoid Output Voltage	Input Voltage -2.5 VAC at 200 VA Load
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Solenoid Output Type	Solid State TRIAC
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Solenoid Output Short Circuit Protection	3AG Fast 3A/250 VAC Fuse
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Alarm Output Type	1-FORM A Relay Contact
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Alarm Output Rating	3 Amp @ 120/240 VAC
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Current Sense Monitor

Minimum Solenoid Load	5VA for auto output sense to detect load present
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Air Pressure Measurement

Sensor Type	Silicon Piezoresistive
Transducer with Dual Inlets	
Measurement Range	Typically 0.0 to 25.0 inches of water in .1 increments or .00 to 6.23 KPascals in .01 increments

Measurement Range (Continued)	Minimum 0.0 to 17.0 inches of water accuracy: 0.0 to 15.0 inches of water (.00 to 3.74 KPascals) +/- 2% of Full Scale at 77 degrees Fahrenheit, (25 degrees Celsius); +/- 6% of Full Scale over temperature and voltage range.
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Maximum Continuous Pressure	10 PSI (276.8 inches of water)
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Burst Pressure	100 PSI (2768 inches of water)
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NOTE: When changing between English and Metric measurements there may be rounding errors; all pressure settings need to be verified after changing units selection.

Timing

Solenoid On Time Range	.05 - .20 seconds
Solenoid Off Time Range	3 - 180 seconds
Timing Accuracy	-2mS, +10mS or +/-1%, whichever is greater

Solenoid On Time Synchronized to the AC Line

CDC Power Cycle Display	120 seconds +/-1 second
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Display

Type: 8 character, 16 segment vacuum fluorescent display (VFD)

Characters	.25" high; alphanumeric
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Current Loop

Type: 4-20 milliamp current loop; current is sourced by this controller; signal represents 0-25 inch differential pressure

Accuracy	+/-1% of displayed pressure
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Serial Communications

Type: RS-232

Terminal: ANSI or ANSI Terminal Emulation Program

Mode: 9600 Baud, 8-data bits, 1-start bit, 1-stop bit, no parity

Connector Type: 9-pin male HD style

Interface Cable: Null modem serial cable when interfaced to an IBM compatible computer

An ANSI-based Terminal Software Package is Required

Environmental

Operating Temperature Range	-40 to 149 degrees Fahrenheit; -40 to 65 degrees Celsius
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Warm-up Delay Temperature	Less than 50 degrees Fahrenheit; 10 degrees Celsius
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Protection	RTV Conformal coating for humidity and vibration
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Important Notice to Users: Our timers are capable of use in a wide array of devices and in various applications. Any device or system incorporating a timer should be so designed that, in the event of failure, malfunction or normal wear-out of the timer, the system will become inoperative in a manner which will prevent property damage or bodily injury.

Caution:

1. Do not mount controls in high vibration areas without shock mounts.
2. Do not mount controls in areas of high dust or corrosive atmospheres without a protective enclosure.
3. Do not use a converter or inverter for the power source.
4. Do not mount control in high transient voltage areas without an isolation transformer.
5. Do not leave control box open.
6. Do not allow a local repair shop to repair the controls, as we employ some very sophisticated components that could be further damaged. For service, call us directly at: **800-621-0734**.

Flex-Kleen offers NEMA-4 type enclosures for mounting our controls. These enclosures are made of heavy gauge steel and have a continuous hinge cover. All seams are continuously welded. The finish is gray hammer-tone enamel inside and out, over phosphatized surfaces. Viewport included.

Note: In order to keep abreast of the latest technology, Flex-Kleen reserves the right to change components and/or design of controls without notice.

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CECO ENVIRONMENTAL

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