



*"Setting The Standard For Supplier Excellence"*

## **DustAlarm<sup>®</sup> Broken Bag Detector**

- ▼ Know When to Replace Filters in Dust Collectors
- ▼ Protect Blowers from Damage
- ▼ Help Comply with Clean Air Act
- ▼ Economical
- ▼ Two Year Warranty





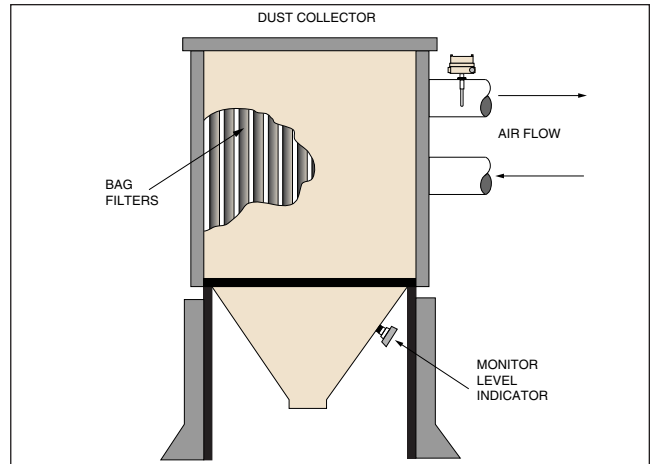
- ▼ **Field-Proven Triboelectric Measurement Ensures Reliability**
- ▼ **Adjustable Sensitivity, Alarm Level And Time Delay For Operation With A Wide Variety Of Powders And Bulk Solids**
- ▼ **Integral Assembly Of Sensor And Electronics In Rugged NEMA 4 Housing**
- ▼ **Remote Electronics/Probe Option Available**
- ▼ **316 Stainless Steel Probe With Specially Designed Insulator**
- ▼ **Multi-Colored LED Indicator Makes Setup Quick and Easy**
- ▼ **Quick-Disconnect Mounting Provides For Ease Of Installation And Maintenance**

The **DustAlarm**<sup>®</sup> Broken Bag Detector provides reliable and economical detection of leaks and filter failures in many powder and bulk solids industries. The **DustAlarm** is successfully utilized in a wide variety of applications where detection of dust levels is critical either to safety, maintenance, equipment operation, plant efficiency and/or the environment. The **DustAlarm** measures the triboelectric effect to determine when particle emissions exceed acceptable levels.

The **DustAlarm** Broken Bag Detector incorporates visual indications and a relay output to maximize its user-friendliness and automation capabilities. A reference point is set by the sensitivity control adjustment, aided by the tri-color LED. The alarm point is set by an alarm level control adjustment. The relay output can be used to activate an alarm device or can be integrated into a control system to enhance the overall operation of the dust collector.

### PRINCIPLE OF OPERATION

Triboelectric measurement has been used for broken bag detection for many years. Also known as particle impingement or frictional electrification, the triboelectric effect pertains to the resulting charge transfer when one material rubs or impacts another. The result of dust particle collision with a stainless steel probe is the generation of electrical signals, which are continuously monitored and analyzed by



Typical Baghouse Application

the electronics. When the signal exceeds a preset level, a time delay is initiated. If the signal remains above the preset level for the duration of the delay, alarm relay outputs are energized.



DustAlarm<sup>®</sup> Control Panel

### APPLICATIONS

The **DustAlarm**<sup>®</sup> Broken Bag Detector is designed specifically for broken bag detection and leaking filter detection in the exhaust ducts of baghouses, cartridge collectors, cyclones, and any other dust collector containing filters which may break or wear out.



TYPICAL APPLICATIONS INCLUDE, BUT ARE NOT LIMITED TO:

- |                           |                            |
|---------------------------|----------------------------|
| <b>Ferrous Metals</b>     | <b>Cement</b>              |
| <b>Non-Ferrous Metals</b> | <b>Foundries</b>           |
| <b>Pharmaceutical</b>     | <b>Mining and Minerals</b> |
| <b>Feed</b>               | <b>Utilities</b>           |
| <b>Food Processing</b>    | <b>Fly Ash</b>             |
|                           | <b>Chem Processing</b>     |



## FEATURES

The Monitor **DustAlarm**® Broken Bag Detector offers the following features:

### SENSITIVITY ADJUSTMENT

The tri-color SIGNAL LED guides the user through the sensitivity adjustment procedure. This LED can be yellow, green or red. While the dust collector is running efficiently and clean, the user adjusts the sensitivity until the LED is green.

### ALARM POINT ADJUSTMENT

The alarm point is adjusted by setting the Alarm LEVEL control (1 to 10 times the baseline signal level). The emission level exceeding the alarm point, is indicated by illuminating the SIG>LEVEL LED.

### TIME DELAY

The time delay feature enhances operation and control minimizing the occurrence of false signals that might occur during normal operation and cleaning cycles of the dust collector. The time delay provides a 0 to 60 second or 0 to 10 minute adjustment.

### RUGGED CONSTRUCTION

The rugged NEMA 4 housing is to be used in general purpose environments and incorporates a screw-on/off cover for easy access to the adjustments, a cover lock mechanism and convenient LEDs used during installation and setup.

### UNIQUE PROBE DESIGN

The sensing probe is 316 stainless steel with a specially designed PFA extended insulator that helps protect the unit from false signaling due to product build up.

### QUICK-DISCONNECT MOUNTING

The quick-disconnect mounting coupling provided with each unit is used to mount the **DustAlarm** to the exhaust duct or pipe and simplify the removal of the device if necessary to clean the probe.

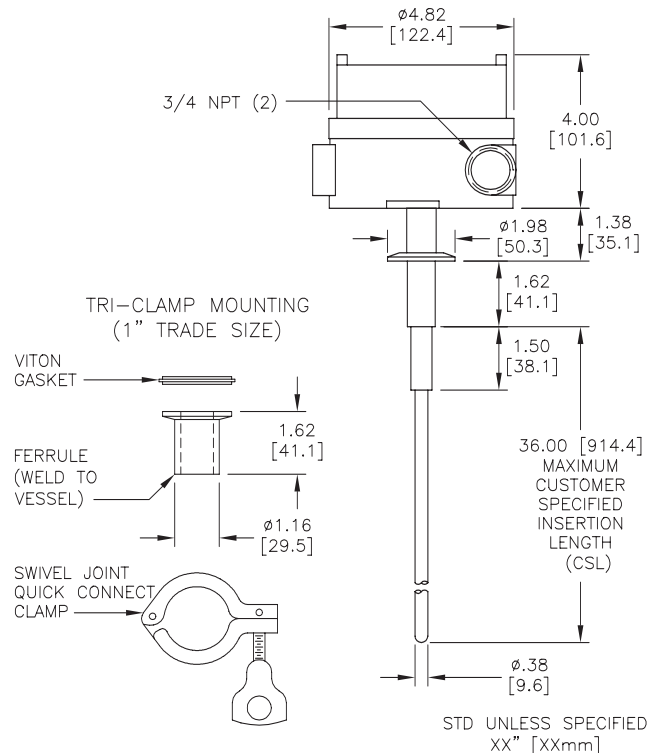
## OPTIONS

### REMOTE PROBE/ELECTRONICS

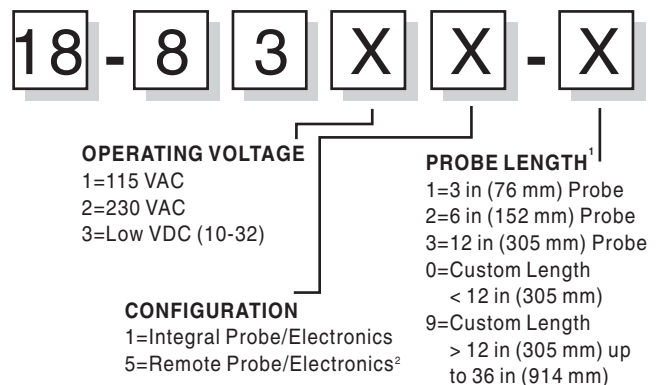
The **DustAlarm** is available in a remote electronics/remote probe configuration for high temperature applications up to 450°F (235°C).

## MECHANICALS

DIMENSIONS ARE SHOWN IN INCHES WITH MILLIMETER EQUIVALENT IN BRACKETS



## ORDERING INFORMATION



### NOTE:

- <sup>1</sup> The probe length selection signifies the overall insertion length including the insulator.
- <sup>2</sup> Coax cable for interconnecting remote probe/electronics must be ordered separately (p/n 18-3004; maximum of 300ft/91m)



## SPECIFICATIONS

<b>Power Requirements:</b>	105 to 130 VAC, 50/60Hz; 210 to 260 VAC, 50/60 Hz; 10 to 32 VDC
<b>Ambient Temperature:</b>	-20° to 150° F (-30° to 65° C)
<b>Process Temperature:</b>	up to 160° F (70° C); up to 450° F (235° C) for remote probe electronics option
<b>Output:</b>	(2) SPDT isolated relay contact sets; 5 amps @ 250VAC max or 30VDC
<b>Sensitivity Range:</b>	0.0005 grains/dscf (1 mg/m <sup>3</sup> ), typical detection at maximum sensitivity; 100 to 1 adjustable range
<b>Smoothing:</b>	Adjustable from 0.1 to 22 seconds
<b>Sensitivity Setpoint:</b>	Baseline level setting indicated by tri-color LED
<b>Alarm Threshold:</b>	Adjustable from 1 to 10 times baseline
<b>Alarm Time Delay:</b>	Adjustable range 0 to 60 seconds or 0 to 10 minutes; via range selector and single-turn control
<b>Fail-Safe:</b>	Alarm condition on power failure
<b>Electrical Connections:</b>	(2) 3/4" NPT conduit connection; (2) cable glands suitable of sealing cords with diameter of 0.25 in (6.4 mm) to 0.48 in (12.2 mm) are provided
<b>Indicators:</b>	Tri-Color LED indicating: "Low" = Yellow; "OK" = Green; "High" = Red; SIG>LEVEL = Yellow; ALARM LED = Red
<b>Housing:</b>	NEMA 4, IP65; Designed for general purpose locations
<b>Cover Lock:</b>	1/16" Allen-Wrench
<b>Probe Architecture:</b>	Integrally or remote mounted to electronics housing
<b>Mounting:</b>	Quick-Disconnect fitting with ferrule, clamp and gasket
<b>Pressure:</b>	30 psi (2 bar) maximum
<b>Insulator Material:</b>	PFA, extended length
<b>Probe Material:</b>	3/8" diameter, 316 SS
<b>Probe Length:</b>	3 in (76 mm), 6 in (152 mm), 12 in (305 mm) standard; consult factory for custom lengths
<b>Approvals:</b>	CE mark

## WARRANTY

Monitor Technologies LLC warrants each **DustAlarm**<sup>®</sup> Broken Bag Detector it manufactures to be free from defects in material and workmanship under normal use and service within two (2) years from the date of purchase. The purchaser must give notice of a defect to Monitor Technologies LLC within the warranty period, return the product intact and prepay transportation charges. The obligation of Monitor Technologies LLC under this warranty is limited to repair or replacement at its factory. This warranty shall not apply to any product which is repaired or altered outside of the Monitor Technologies LLC factory, or which has been subject to misuse, negligence, accident, incorrect wiring by others or improper installation. Monitor Technologies LLC reserves the right to change the design and/or specifications without prior notice.



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