



# Flo-Guard™

FLOW SWITCH

*Broken Bag Detector and Flow/No-Flow Switch*

# Digital Tribo-Electric Technology

## Why it works better.



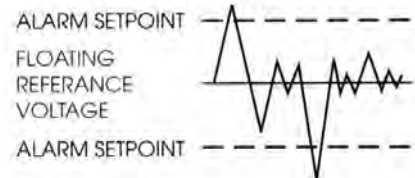
Other flow switches rely on an unstable capacitance principle or use an old *analog* triboelectric (charge transfer) circuit to detect dust or flow. This makes them unstable with temperature changes and difficult (or impossible) to calibrate. The Flo-Guard™ uses a patented *floating alarm point reference* and a *digital triboelectric micro-controller* system to eliminate instability. To prove system reliability, the Flo-Guard's™ externally driven function test and indicating lights allow visual verification of readiness. The result, the best broken bag and dry flow switch available...we guarantee it!

## A "Dust" Monitor and Flow Switch

The Bindicator Flo-Guard™ offers two modes of operation. It is a stable and reliable Broken Bag Detector for Bag House applications **and** a Flow/No-Flow Switch for dry powdered and granular material. Whether you use it for detection of bag rupture in your bag house or to sense the presence or absence of flow, the Flo-Guard™ will give you better performance than any flow switch you have used in the past.

## Temperature Stability

Dry flow switches must detect very small electrical signals to sense the flow of dust. The Flo-Guard™ uses a micro-controller and a patented floating reference to detect these small signal levels. As temperature changes, the setpoint of the unit changes with it; constantly readjusting to prevent false alarms. Only the electrical charge caused by flowing material can alarm the Flo-Guard™ with this unique system.

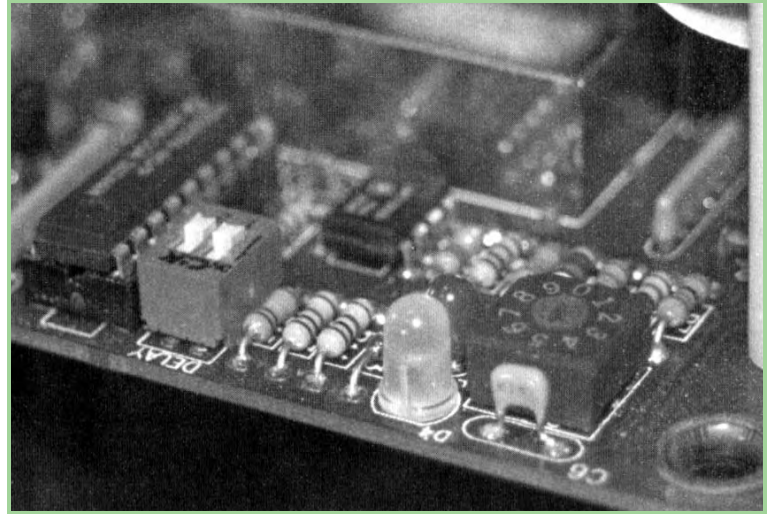


The alarm point always follows the floating reference. Only "Peaks" caused by material flow are detected.

# Fast, Easy Set-up

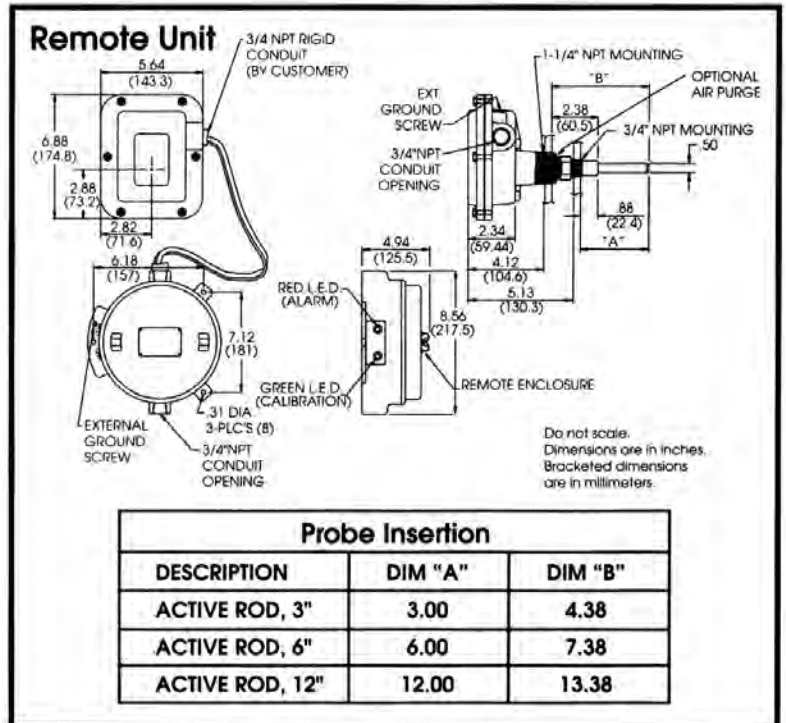
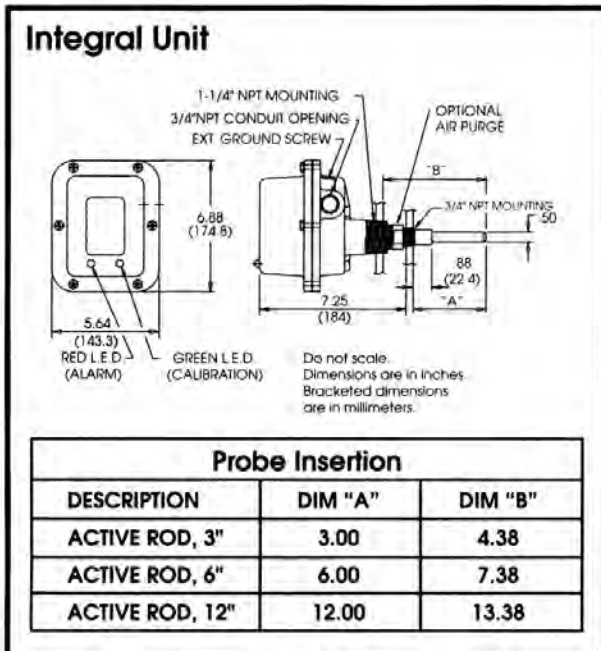
## Plug-and-Play

The digital micro-controller of the Flo-Guard™ provides the ultimate in plug-and-play operation. Power the Flo-Guard™ in "clean" air and turn the Digital Switch until the yellow sensitivity light is off - your alarm point is set. With our system, no calibration is necessary with ambient temperature changes.



Digital Sensitivity, adjustable fail-safe and time delay

## Dimensional Drawings



# Specifications and Ordering Information

|                           |                                                                  |                      |                                                                         |
|---------------------------|------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------|
| Enclosure Ratings:        | General purpose NEMA 4X,5<br>Explosion-proof NEMA 7/9            | Mounting:            | 1-1/4" NPT aluminum<br>or 3/4" NPT S.S.                                 |
| Enclosure Material:       | Polyester coated aluminum                                        | Air Purge:           | 1/8" NPT S.S                                                            |
| Output Relay:             | DP/DT, 5A @ 250 VAC or<br>28 VDC                                 | Probe Material:      | 316 S.S                                                                 |
| Temperature Range:        | -40°F to 180°F (-40°C to<br>80°C)                                | Insulation Material: | Teflon®                                                                 |
| Probe Temperature:        | 325°F (162°C) maximum                                            | Time Delay:          | 0, 5, 10 or 15 seconds<br>field selectable for "on"<br>or "off"         |
| Pressure:                 | 30 psi (211 kg/cm <sup>2</sup> )<br>1-1/4" NPT aluminum<br>mount | Failsafe:            | Field adjustable to alarm<br>at presence or absence<br>of material flow |
|                           | 50 psi (3.5 kg/cm <sup>2</sup> )<br>3/4" NPT S.S. mount          | Air Purged:          | Maximum 1 psi<br>recommended                                            |
| Senses Dust<br>at bottom: | 0.00028 grams/ft <sup>3</sup>                                    |                      |                                                                         |

**Integral Model Selection:**

PD1 - - - - -

**Assembly Configuration**  
 A = 3/4" NPT SS or  
 1-1/4" NPT aluminum  
 P = 3/4" NPT SS, Air Purged

**Voltage**  
 1 = 120 VAC  
 2 = 240 VAC

**Enclosure Type**  
 G = General Purpose NEMA 4X,5  
 X = Explosion-proof NEMA 7/9 UL  
 Listed/C-UL Listed\*

**Probe Insertion Length (3/4" NPT mount) (See Note 1)**  
 L03 = 3" (76.2mm) from 3/4" NPT  
 L06 = 6" (152.4mm) from 3/4" NPT  
 L12 = 12" (304mm) from 3/4" NPT  
 L(xx) = Special (specify in inches)  
 See Note 2

**Probe Type**  
 0 = Standard

**Electronics**  
 A = Standard sensitivity with function test (See Note 3)

**Integral Particle Flow Detector**

**NOTES:**  
**Note 1:** For insertion length on 1-1/4" NPT mounting, add 1.25" (31.75mm)  
**Note 2:** When ordering this option please specify the probe insertion length  
 in inches (within parenthesis) after special option, i.e., L(18")  
**Note 3:** Order the external test fob separately, Part Number LPD 130004  
 \*UL approved to CSA standards.

## Application Considerations

- Probe should penetrate 50% of the pipe or duct diameter. For ducts over 36 inches (.92 meters), use an 18 inch (.46 meter) probe. Probes can be field shortened.
- Install the Flo-Guard™ a minimum of 2 pipe diameters from any bend or obstruction.
- Contact the factory for special instructions before installing the Flo-Guard™ in nonmetallic piping.
- Remote installation requires a dedicated conduit for each Remote Cable Assembly.
- Use a remote configuration on hot or vibrating equipment.
- The Flo-Guard™ can be used to sense flow or presence of dust of almost all dry powdered and granular materials. For application assistance, call your factory representative or Bindicator Application Engineering for guidance.

# The Features You Demand

## Environmental Protection

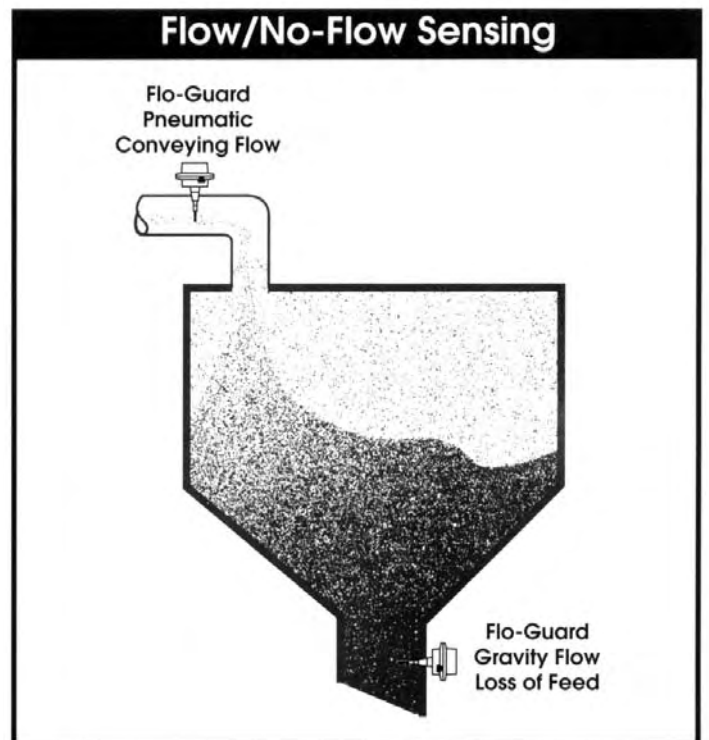
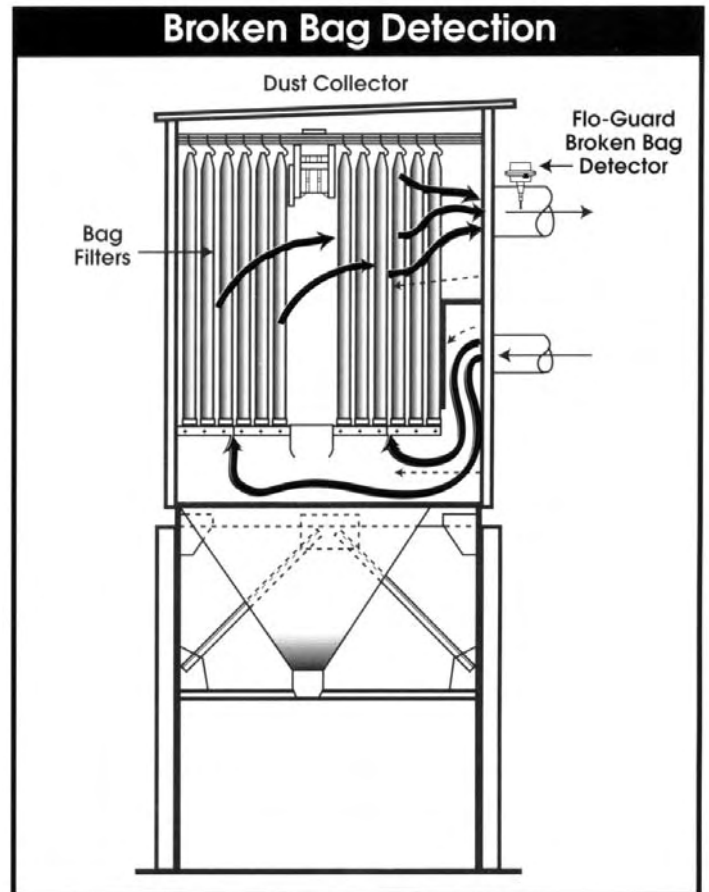
What would happen if you discharged a caustic, carcinogenic, or filthy dust over the neighborhood where your plant is located? Wouldn't it be environmentally irresponsible and potentially dangerous to both your employees and your neighbors? Many areas have instituted laws requiring the monitoring of dust emissions. Play it safe by monitoring and controlling your plant emissions. The Flo-Guard™ is *the best available technology for Broken Bag Detection*.

- **UL (C-UL) Listed**  
Use in explosive areas
- **FOB Functions Test**  
Tests operation without cover removal
- **Lexan™ Light Guides**  
Verify operation quickly
- **Simple/ Fast Set-Up**  
No lengthy calibration procedure
- **Easier to Stock**  
Flow switching and dust detection in one unit
- **Failsafe**  
Alarms on presence or absence of Flow

A leading Dust Collector manufacturer tested the Flo-Guard™ against an analog triboelectric sensing device. The Flo-Guard™ sensed the flow of dust down to an incredible .00028 grams/ ft<sup>3</sup>. The competition was 5 times less sensitive and drifted constantly.

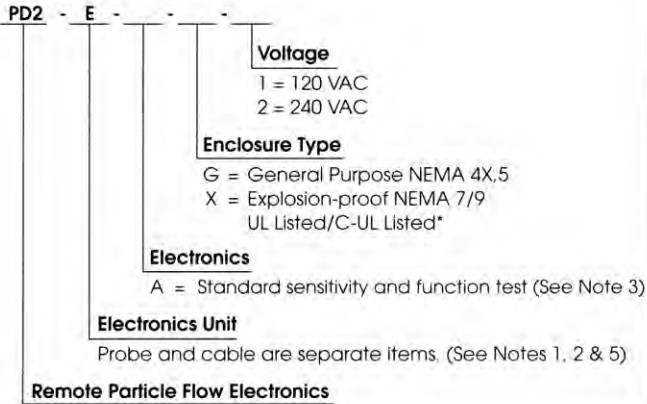


*The most sensitive system available*

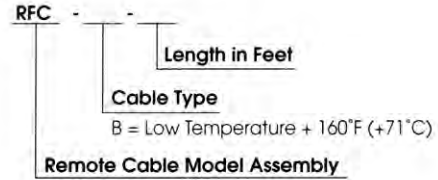


# Remote Unit Ordering Information

## Remote Electronics Model Selections:



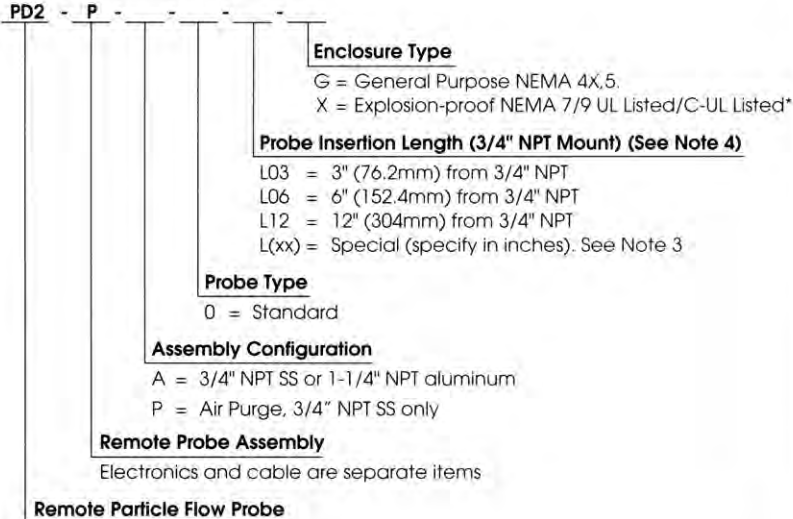
## Remote Cable Assembly:



Exact length required because cable is factory terminated.

**Special Note:** Individual conduit is required for each cable. DO NOT INSTALL MORE THAN ONE CABLE in a conduit or raceway or along with other conductors.

## Remote Probe



**Note 1:** The total length of cable is not to exceed 250 feet (76.2m) from electronics.

**Note 2:** Order remote cable assembly as a separate item.

**Note 3:** When ordering this option please specify the probe insertion length in inches (within parenthesis) after special option, i.e., L(18").

**Note 4:** For insertion length on 1-1/4" NPT mounting, add 1.25" (31.75mm).

**Note 5:** Order the external test fob separately, Part No. LPD130005.

\*UL approved to CSA standards.



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