



BROKEN BAG DETECTOR (POWDER FLOW SENSOR)



- Broken Bag Detector provides reliable and economical detection of filter failures in exhaust ducts of any kind of dust collection equipment.
- Detects Broken Bag in Fluid Bed Dryer [FBD], Processor [FBP], Vacuum dryer, Filter Bag House which results in reduced product loss and preventing damage to downstream equipment.
- Broken Bag Detector is being extensively used in various industries viz. Pharmaceutical, Chemical, Fertilizer and Cement.
- In process industries where filter Bags are used, frequent problems are encountered due to bag breakages. Some of them are :-
 - Product losses due to broken bags.
 - Emission of solids at levels higher than that permitted by pollution control / environment / health and safety standard.
 - Damage to downstream equipment like Fans / Blower / Pumps etc.
 - Increased production & process down-times.
 - Inefficient operation of FBD / FBP / Filter Bag House.



TECHNICAL SPECIFICATIONS – CONTROL UNIT

- ◆ Power Supply Range : 200 VAC – 230 VAC
- ◆ Power Consumption : Max 50 VA
- ◆ Response Time : 1 Sec. [Timing adjustable upto 16 sec. by DIP switch]
- ◆ Housing : PVC Dust proof, Panel Mounted
- ◆ Temperature : 0° to 60° C
- ◆ Output : 1 NO/NC Potential free Contact output
- ◆ Physical Dimension : 96 * 96 * 110 mm

TECHNICAL SPECIFICATIONS – SENSOR

- ◆ Material of Construction : Stainless Steel
- ◆ Sensor Diameter : 10 mm
- ◆ Sensor Length : 250 mm
- ◆ Temperature : 350° C
- ◆ Humidity : 0 to 80 % relative
- ◆ Communication Cable : special Co-Axial cable 10 meter.

FEATURES

- ◆ Detection of Broken / Torn / choking of Filter & Bags.
- ◆ It indicates change in filter conditions.
- ◆ It includes protecting blowers / fans / vacuum pumps from damages, knowing when to replace dust collector filters, eliminating unscheduled downtime to replace filter bags and reclaiming expensive dust before they are released into the atmosphere.
- ◆ Extending working life of filter bags which are fairly expensive as in case of FBD in Pharmaceutical / Chemicals manufacturing units.



Principal of Operation

When the product is being dried in the dryer, process losses often occur due to ruptured filter bag. Significant product losses can occur by the time the filter bag rupture is detected & the dryer stopped. The Broken Bag Detector is used along with the dryer for preventing product losses due to ruptured filter bags by immediately sensing the leakage & stopping the Dryer motor and shutting the damper.

Similarly if used in Filter Bag House where products are being recycled or emissions are being controlled, Broken Bag Detector is calibrated so that the emission, which occurs during normal operating conditions, is taken to be as normal. When Filter Bag breaks or tears, the emission will increase and this will be detected.

It has been observed that often the filter bags are replaced every two or three months to avoid leakage's. Broken Bag Detector can also serve as an early warning indication for possible failure of filter bag.

The Broken Bag Detector is highly sensitive and reliable. It consists of a sensor with shielded cable and an Electronics control unit. When leakage of the product takes place through the ruptured filter (Broken) bags, the product strikes the sensor. This results in the generation of signal which is directly proportional to the mass of flow of colliding solid particles. This signal is conditioned, amplified & processed through sophisticated electronic circuit.