

RAAK
TECHNOLOGY

BROKEN BAG DETECTOR (BBD) SOLID FLOW MONITOR (SFM)



Working principal:

When the product/powder is being dried in the dryer, product/powder losses often occurred due to ruptured filter bags. Significant product/powder losses can be occurred by the time the filter bag ruptured is detected and the dryer is stopped. The Broken Bag Detector is used along with the Dryer for preventing product/powder losses due to ruptured filter bag or broken sieves by immediately sensing the leakage and stopping the Dryer motor and shutting the damper.

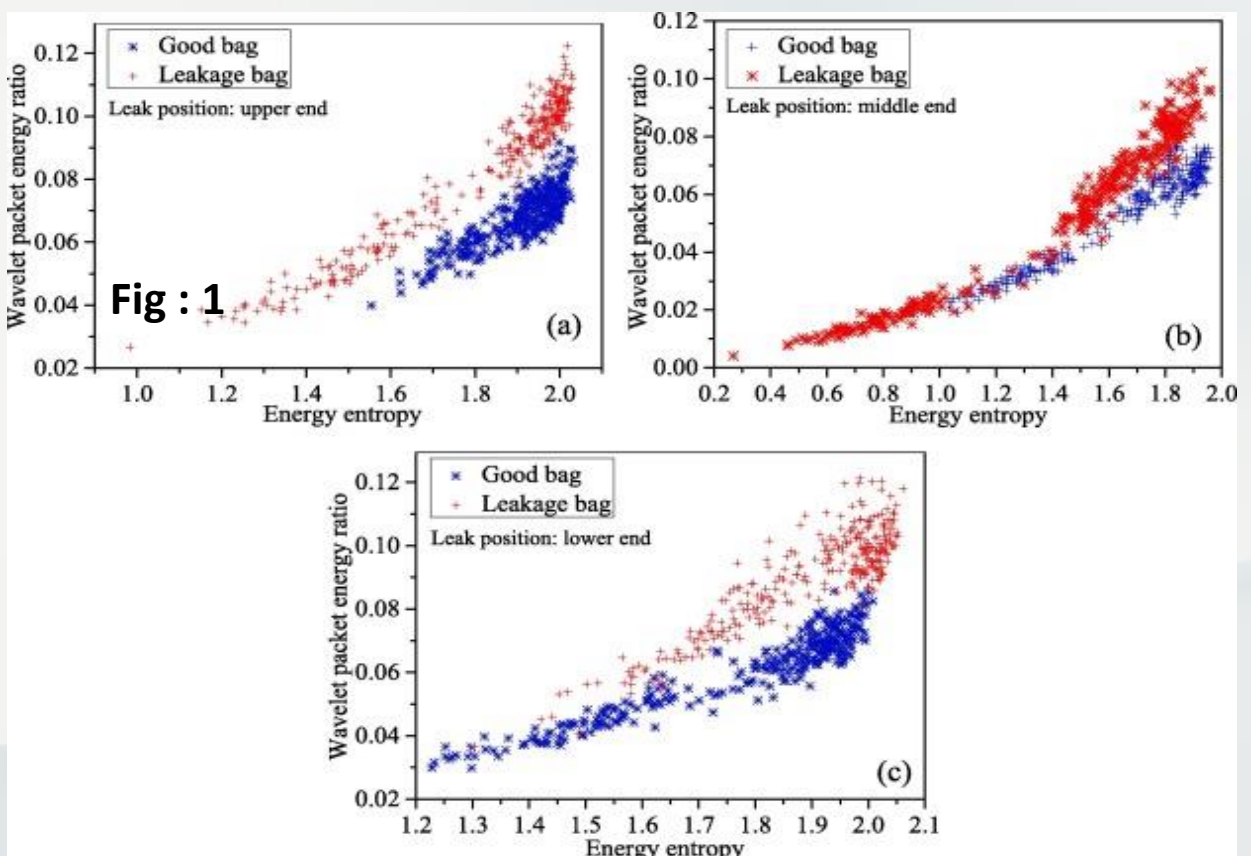
Similarly, it is used in filter bag houses where the products are being recycled or emission are being controlled. The broken bag detector is calibrated so that emissions, which occur during normal operation conditions, are taken to be as normal. When the filter bags break or tear, the emissions will be increase and this will be detected.



It has been observed that often the filter bags are replaced every two to three months to avoid the leakages and occurrence of bag tears. Broken Bag Detector can also serve as an early warning system indicating possible failure of the bag in the near future by detecting higher emission level cause due to small cracks or tear in the bags enabling the bag to be replaced in time. Chocking of filter bags can also be detecting by the instrument.



This is possible by using analog output (4-20mA output card) which would be proportional to the mass flow of solids / particulates. This analog signal can be connected to (Tower lamp / 4-20mA output card) or recorder in the control room or to the PLC of the FBD (as shown in the fig 1)



Most Effective and Advance Techniques

- Detection of a broken bag in fluid bed dryer (FBD) resulting to save of product / powder losses.
- Detection of a broken bag in filter bag houses, resulting in efficient pollution and emission monitoring.
- Monitoring the performance of coating machine and detecting leakage of coating powder.



BROKEN BAG DETECTOR requirements in Industries

- Cement industry
- Mining and minerals
- Pharmaceuticals
- Chemical Processing
- Thermal power stations and Coal fired boilers
- Petrochemical, Fertilizer and Allied industrial
- Pulp, Paper, Sugar and Similar industrial
- Ferrous and Non-Ferrous processing industries



Area of Applications and Advantages

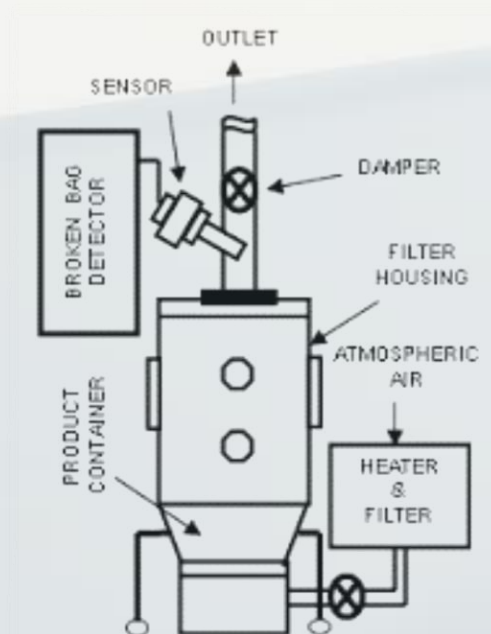
The broken bag detector is most efficient and economical instrument for:

- Detection of broken bag / Torn filter Bags
- Monitoring efficiency of all types of powder / dust filters.
- Mass flow measurement of solids in process pipe / ducts.
- Monitoring the performance of coating machine.
- Measuring and monitoring pollution level in stacks / vents / chimneys.



Technical Data –SOLID FLOW MONITORING SENSOR

Working principle	: The triboelectric effect is based on particles interacting with electrically isolated sensing probe.
Types/Material	: Telescopic sensor / 316 Stainless Steel
Diameter	: 14MM
Temperature	: 300-degree Celsius higher temp up to 1000 degrees Celsius available.
Pressure Rating	: 30 PSI Standard (higher pressure rating available)
Location	: Outlet duct of Fluid Bed Dryer FBD / Fluid Bed Processor (FBP)





Electronic Control unit

- Power Supply** : 240volt AC \pm 10%, 50 C/S \pm 3%, 1phase.
- Power Consumption** : Max. 50 VA.
- Response Time** : 1 Second (Damping feature built-in)
- Repeatability** : Better than 2% F.S.
- Housing** : 316 Stainless steel metal housing, Dust Vermin proof, designed for panel mounting
- Temperature** : -5 to 70 Degree Celsius
- Humidity Range** : 0 to 90% relative.

Output Signal

- Standard** : N.O. + N.C. potential free rated at 0.5amp 240volt.
- Optional** : 4-20mA DC, 2 wire 500 ohms Burden or 10volt DC / indication lamp.

