The Insider

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...because it's what's inside that counts

Got Flow? Now You'll Know!

New FD-2000 Solids Flow/No Flow Detector

If you're looking for affordable, reliable and easy-to-use flow or no flow notification, the new BinMaster FD-2000 might just be the solution you're looking for. This non-contact, non-intrusive instrument is used to detect solids flow in a wide range of applications … in just about any industry where bulk solids materials are handled.

This microwave-based sensor is used to detect flow or no flow conditions of solids and powders in gravity chutes, feeders, pipelines, ducts, conveyor belts, or bucket elevators. It prevents downtime caused by blockages, conveyors running empty, no material flow to-and-from a process, or loose slide gates that can cause downtime, production loss and equipment failure. Plus, you'll waste less raw material and reduce the amount of end product that cannot be used due to improper portioning.

Just a few examples of how the FD-2000 is applied include:

- In the mixing of additives while milling feed
- Adding various ingredients into a food manufacturing process
- Monitoring the flow from coal hoppers in a power plant
- Assuring proper proportions in the mixing of cement or concrete
- Mixing additives into gypsum in the manufacture of drywall
- Applying mineral granules to roofing materials
- Assuring the flow of ingredients into mixers or extruders

The FD-2000 uses microwave Doppler technology for highly sensitive motion detection. The high frequency, low power microwaves are able to pass through non-metallic materials. This enables the FD-2000 to "see through" a plastic pipe, a glass process seal, or the wall of a wooden chute to detect the material inside. A switchable filter incorporated into the signal path of the microwave output reduces the effect of vibration that could cause a false signal. This filter also ensures the detection of moderate and fast-flowing materials.

The FD-2000 contains the sensing element, power and output connections, and user adjustment controls in a compact NEMA 4X enclosure. Both normally open (NO) and normally closed (NC) contacts are available. Indicators and controls for the

What's Inside

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Detecting flow/no flow condition is essential to avoiding cross contamination, such as in the milling of feed.

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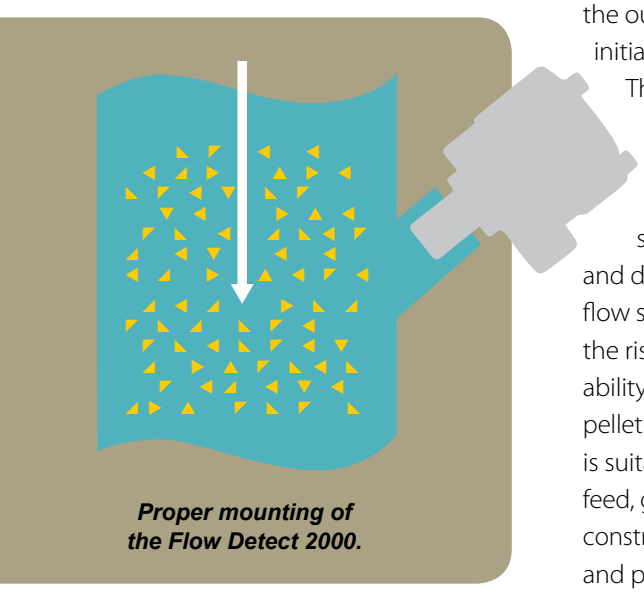
initial calibration and set up are accessed easily by simply unscrewing the lid of the device. Under the lid, LED indicator lights for power, flow/no flow and fault conditions show the status of the device. Controls for adjusting sensitivity and the output delays are used during the initial setup.



Proper mounting of the Flow Detect 2000.

The sensor is easy to install through a 1-1/4" NPT opening and threaded onto a compatible internal half connector. The FD-2000 mounts so that it is completely non-invasive and does not come into contact with the flow stream. This eliminates buildup and the risk of wear to assure long life and reliability. It is appropriate for solids, granules, pellets, meals and powdered materials and is suitable for most any industry including feed, grain, milling, food, cement, concrete, construction, pellet making, mining, power and plastics.

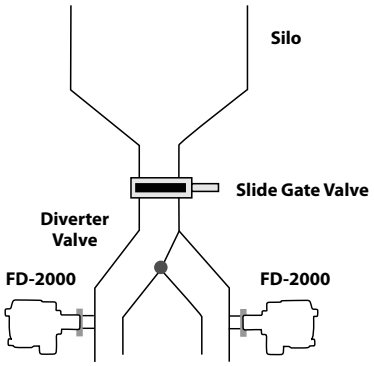
The FD-2000 provides an analog output to communicate flow or no flow status to a PLC, SCADA or other type of reporting device. You also might want to use the FD-2000 to prevent cross contamination of ingredients by ensuring flow has stopped before you introduce a new material into the flow stream.

The FD-2000 can also be used for turning on and shutting off process equipment, by using the sensor to detect when material begins to enter a process or stops entering a process. Automating the switching process helps prevent wear and tear on equipment and reduces energy consumption. It also can prevent contamination by ensuring there is no material flow before a new process is started.

Sample Flow Detect 2000 Applications

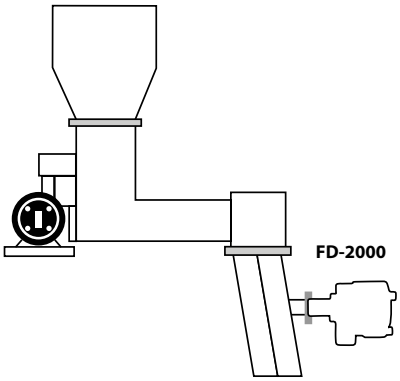
Silo Discharge

Detects no-flow conditions due to bridging or rat holing. Monitor the correct functioning of gates and valves to reduce material loss or accidental use of incorrect material.



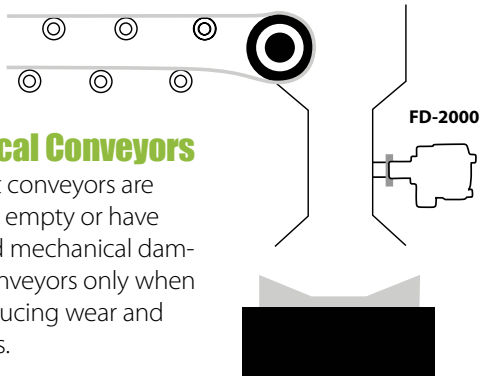
Blending System

Detect blockages and empty hoppers preventing variations in end products due to improper dosing or batching of ingredients.



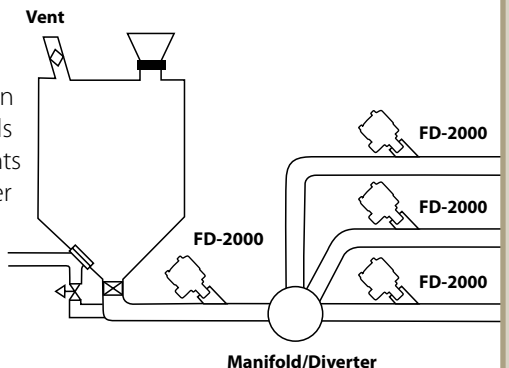
Mechanical Conveyors

Ensures that conveyors are not running empty or have experienced mechanical damage. Run conveyors only when needed, reducing wear and energy costs.



Pneumatic Conveyors

Monitor addition of solid materials at multiple points to ensure proper end material characteristics. Detects malfunctions and blockages.



To find out more about the Flow Detect 2000, please visit www.binmaster.com and click on Flow Detect under Products.
To discuss your application, call one of our specialists at 402-434-9102 or email us at info@binmaster.com.

3D Measures Volume of the Toughest Materials

These 3D profiles are just a few examples of how industries are using 3DLevelScanner technology to solve some of their toughest inventory management challenges. For more on these applications and many others, visit http://www.binmaster.com/newsroom/case-studies. Contact Mike Mossage directly at mmossage@binmaster.com to discuss your challenging application.

TALC PRODUCTION

Milled Ore and Talc Powder Storage
Concentrated slurry sticks to bin walls creating buildup. 3D image shows buildup and calculates true volume. Talc powder generates dust during the filling and emptying processes. 3D penetrates dust for reliable, real-time volume measurement.

WOOD BIOMASS

Wood Chips/ Wood Pellets/Saw Dust Storage
Wood chips, wood pellets, and saw dust stick together creating an irregular settling of the material. The 3D MVL Multi-Scanner system provides accurate volume regardless of irregular material distribution.

SODA ASH (BRINE) PRODUCTION

Soda Ash Storage
Soda ash generates dust during filling and emptying processes. Coke adheres to silo walls and creates buildup. 3D dust-penetrating technology delivers accurate real-time measurements of stored coke volume. 3D also provides a 3D image showing buildup.

POTASH PRODUCTION

Granular and Standard Potash
Granular and standard-grade potash is stored in large domes that can reach 150 feet in diameter. 3D MVL Multi-Scanner system measures and maps material stored inside the domes, calculating volume in very large vessel.

PLASTIC PRODUCTION – PP, PE

PP/PE Storage Silos
PP and PE pellets have a low dielectric constant preventing radar-based devices from working reliably. Dust generated during filling made accurate measurement difficult. 3D dust-penetrating technology now delivers accurate and reliable measurement in harsh conditions.

LIME PRODUCTION PROCESS

Limestone Silo
Lime, quicklime and slack lime generate dust during filling and emptying. They become sticky and create sidewall buildup. 3D penetrates dust and accurately maps the material surface. Now, timely maintenance inside the silos prevents disruptions of delivery schedules.

GLASS PRODUCTION

Raw Materials Storage
Sand, dolomite, soda ash, calamite, broken glass, and manganese oxide used in glass production are stored in silos. Sufficient inventory is needed to avoid unnecessary work stoppages. 3D provides accurate, real-time measurement of each material using MultiVision software.

FLOUR PRODUCTION

Wheat Storage
Wheat stored in large silos generates extreme dust during filling. Irregular formations and buildup occur due to large vessel size. Multiple emptying points add complexity. 3D dust-penetrating technology delivers volume accuracy of stored wheat and wheat by-products.

COAL FIRED POWER PLANT

Coal Storage/ ESP Hoppers
3D conquers extremely dusty conditions in coal silos. Monitor the volume of fly ash inside an ESP hopper using 3D visualization and detecting buildup as it occurs, protecting against damage to the ESP plates.

COAL MINING PROCESS

Coal Silo
Accurate measurement is required to accommodate raw coal coming into the silos and preparing shipments for trucks and trains. 3D accurately measures the coal in silos providing real-time inventory of raw coal using unique surface mapping technology.

CALCIUM CARBONATE PRODUCTION

Calcium Carbonate and Crushed Limestone Storage
Calcium carbonate and crushed limestone create excessive dust that sticks to silo walls. Dust-penetrating technology assures real-time volume measurement, while 3D surface mapping technology accounts for buildup.

BEER PRODUCTION

Grain Storage
Malted grains and distiller's rice create dust during the filling process. Humid conditions of cooked grains during the malting process cause the formation of buildup on silo walls. 3D dust-penetrating technology and 3D surface mapping ensure inventory accuracy.

BINMASTER

Bin Level Sensor

RL for Reliable Levels

New! BinMaster RL for Reliable Level Measurement in Dusty Environments

- Dust-penetrating, non-contact technology performs reliably and consistently over time
- Acoustics-based, accurate level measurement in tough environments where other sensors fail
- Works in powdered and solid materials of all types, including low dielectric materials
- Self-cleaning, minimal-maintenance sensor doesn't require air purge for cleaning

BINMASTER LEVEL CONTROLS

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BINMASTER

Got flow?

Now you'll know!

Single-Piece Flow/No Flow Sensor for Solids

- Compact, single-piece design eliminates separate controller
- Detects flow of solids, granules, pellets, meals & powders
- Affordable sensor uses reliable microwave Doppler technology
- For pneumatic chutes, feeders, pipelines, conveyor belts & bucket elevators
- Prevents cross contamination of ingredients

BINMASTER LEVEL CONTROLS

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