

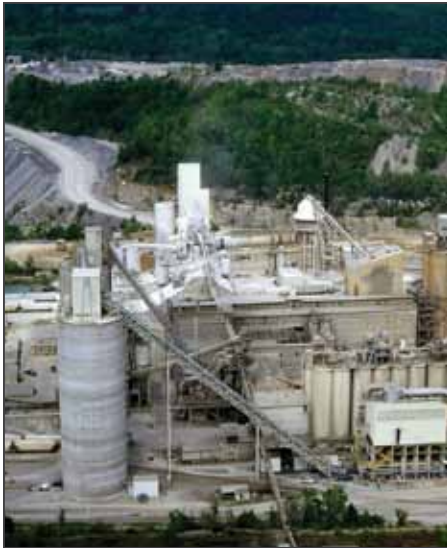
The Insider

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



3DLevelScanner for Rock Solid Safety



Safety first at this high efficiency cement plant.

Improving the safety of valuable personnel was a top priority at this large cement plant. To check the level of clinker in this 70' diameter by 115' tall cement silo required either climbing a straight ladder or using a man lift, which could not be used when winds exceeded 15 miles per hour. Once on the roof, manual measurements were being taken through five different hand tape measurement ports located in various locations across the silo. Due to the uneven surface of the clinker stored in the silo, a single measurement point did not provide adequate level information for this wide, tall structure.

To eliminate the need to climb the bin to get measurements, a BinMaster 3DLevelScanner was installed in an existing portal on the roof of the silo. BinMaster technical services manager, Mike Kunce, worked with the customer to adapt the mounting of the 8" scanner mounting flange to the existing 11" opening. The opening had been home to an older open air radar device that had never worked properly, making the customer rely on taped measurements for level information until the installation of the 3DLevelScanner was complete. The customer also installed

a 3DLinkPro communications device that provides a remote link with BinMaster's engineering laboratory during the initial installation period, allowing bin parameters to be loaded in the software and fine tuned for optimum performance.

Due to the uneven material surface in the bin, the customer selected the MV model of the 3DLevelScanner, which has a feature that provides a graphical visualization of the topography in the bin. In addition to the mapping, the 3DLevelScanner also provides a wealth of information such as minimum, maximum and average distances to material which can be helpful in detecting silo conditions such as sidewall buildup or bridging, or cone up or cone down. As the scanner surveys the silo contents and takes multiple measurements, the customer could do away with scaling this tall bin and taking manual measurements, improving the safety of their people and providing data to a personal computer conveniently located in their office.



What's Inside



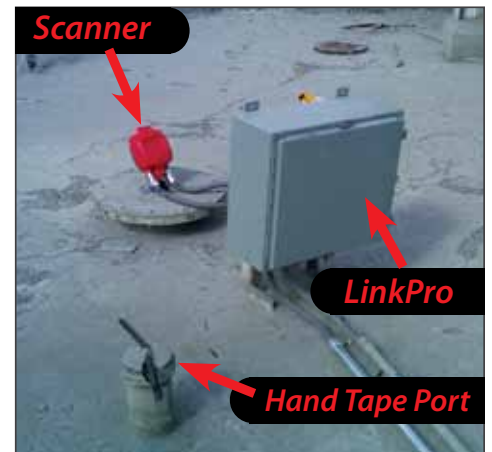
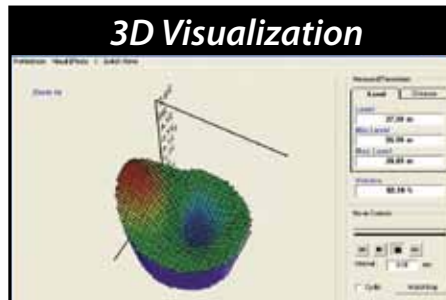
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Capacitance Probes: The long, the short and the bendable!

When it comes to capacitance probes, BinMaster offers the ultimate in flexibility for your toughest applications. Hazardous location approvals. 3-A and USDA recognized. Remote electronics. Flush mounts. Extended probes. Flexible cables. BinMaster has them all. If you don't see what you need, call us anyway. With our in-house machine shop and engineering staff, we will help you solve your level control dilemmas. Here are highlights on just a few of BinMaster's capacitance probes.



Flexible, Extended Capacitance Probe

The PROCAP capacitance probe with a flexible, extendable cable is designed for high, mid or low level detection when the capacitance probe must be mounted on the top of the bin. BinMaster's flexible probe is ideal for applications where a probe is used as a high level alarm or needs to be extended more than four feet. The probe is used for point level detection and process control for various solid, liquid and slurry materials. This flexible probe is ideal for use in grain, plastic pellets, cement, coal, aggregates, or any lump material that might bend, damage or break a rigid probe. The flexible probe can also be used in situations where the bin is small and it is impractical to put a hole in

the side of the bin, but a low level indicator is needed.

The flexible capacitance probe is configured so the first 10 inches of the probe are rigid and the rest of the probe is flexible. The flexible ¼-inch diameter cable can be made any desired length up to a 35-foot maximum extension, which is sensitive to the end of cable when uncovered. For convenience and ease of installation, the cable can be cut to the desired length in the field. This flexible cable extension probe features "PRO-Shield" protection against false readings due to coating or buildup. The shielded probe also allows you to mount the probe in a standoff pipe or nozzle. BinMaster also offers a stainless steel flexible cable option for food and other sanitary applications.



Flush Mount Capacitance Probe

The BinMaster PROCAP FL flush mount probe was designed for space constrained areas or applications where material flow or bridging might damage a standard probe. It is often used in materials such as coal, aggregates, gravel, or other heavy or chunky

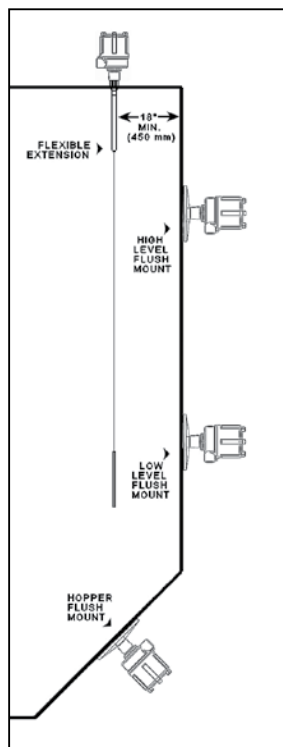
materials. The probe mounts flush on a vessel wall, conveyor housing or chute, so there is no equipment protruding into the tank. The flush mount probe detects the presence of material or level of material without the risk of damaging a standard probe that may bend or break when material is loaded into, or shifts in the tank.

The standard polyethylene flush mount probe has a maximum temperature of 150°F (65°C), with the high temperature Teflon® probe handling the heat at temperatures up to 450°F (232°C). The flush mount probe is available in a hazardous location approved model that is listed for C/US Class II, Groups E, F & G. A special bin wall adapter is available when working with thick walls or angled hoppers to move the face of the probe flush or slightly protruding inside the vessel wall, eliminating false signals due to excessive buildup on the probe surface.



Bendable Probe

This probe is for use in small hoppers and is typically used in the food industry in processing and filling systems as a high level indicator. What makes it unique is the probe can be bent to avoid obstructions in the vessel while still allowing adequate probe surface area to detect presence or absence of material. The bendable probe can be used in many solid materials; one popular use is in smaller mixers or containers for food processing applications, such as dehydrated food ingredients with a low dielectric constant.



All models of PROCAP capacitance probes feature a convenient screw on/off, powder-coated cover for easy access to all internal components. BinMaster probes are interference-free, because they operate below the RF level, unlike competitive probes whose performance may be impacted by RF in the plant. "Quick-Set" calibration using two single-turn potentiometers allows the probe to be simply set to the desired sensitivity. Other features include a LED status light and handy, dual conduit entrances for improved wiring access. BinMaster's unique design also features flexible time delays allowing the user to set the timer differently for covered and uncovered conditions.



Get Alerted to Plugged Chutes!

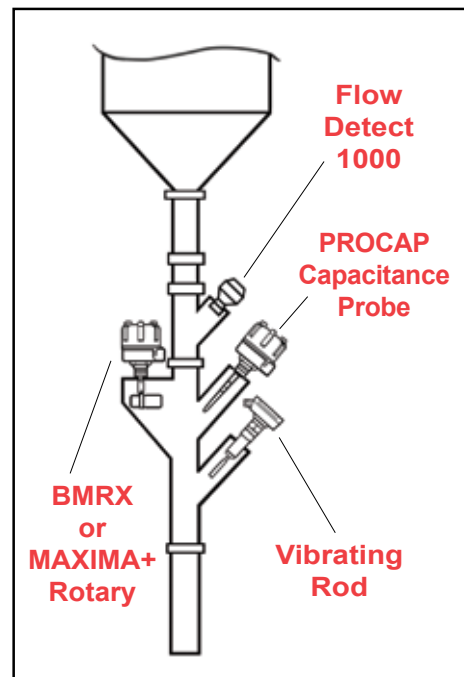
Plugged chutes can be a hassle, interrupting operations, and if not detected quickly ... can make quite a mess. For example, a plugged chute in a feed mill can prevent the proper portion of ingredients going into a formulation. Or, if the chute is feeding material onto a moving conveyor, you only want to spray the material if it is moving. Knowing when a chute is plugged can prevent shutdowns, such as ensuring coal is being fed into a furnace at a power plant consistently to keep the fire burning.

BinMaster offers several devices that can be used to detect plugged chutes in a process operation or production environment. A non-intrusive, flow detection sensor can be installed on the chute to detect a flow

or no flow condition. The BinMaster Flow Detect 1000 can detect if there is an alert condition, flow status has changed, power has been lost, or communication between the sensor and the control console has been interrupted. The BinMaster flow detect system consists of two components – the FDS 1000 Remote Sensor Probe which is mounted in the chute or feeder – and the FDC 1000 Control Console which is mounted in an area accessible for users to read the console during operations.

Point level devices can also be used to detect plugged chutes when properly installed in an application. The device must be mounted away from the flow stream and in a manner that it will detect the presence of material only during a plugged condition. This can

be achieved by installing a pipe Y and then mounting the device in the leg of the Y. A diaphragm switch, rotary level sensor, capacitance probe, or vibrating rod can be used to detect when the chute is clogged. These devices can send



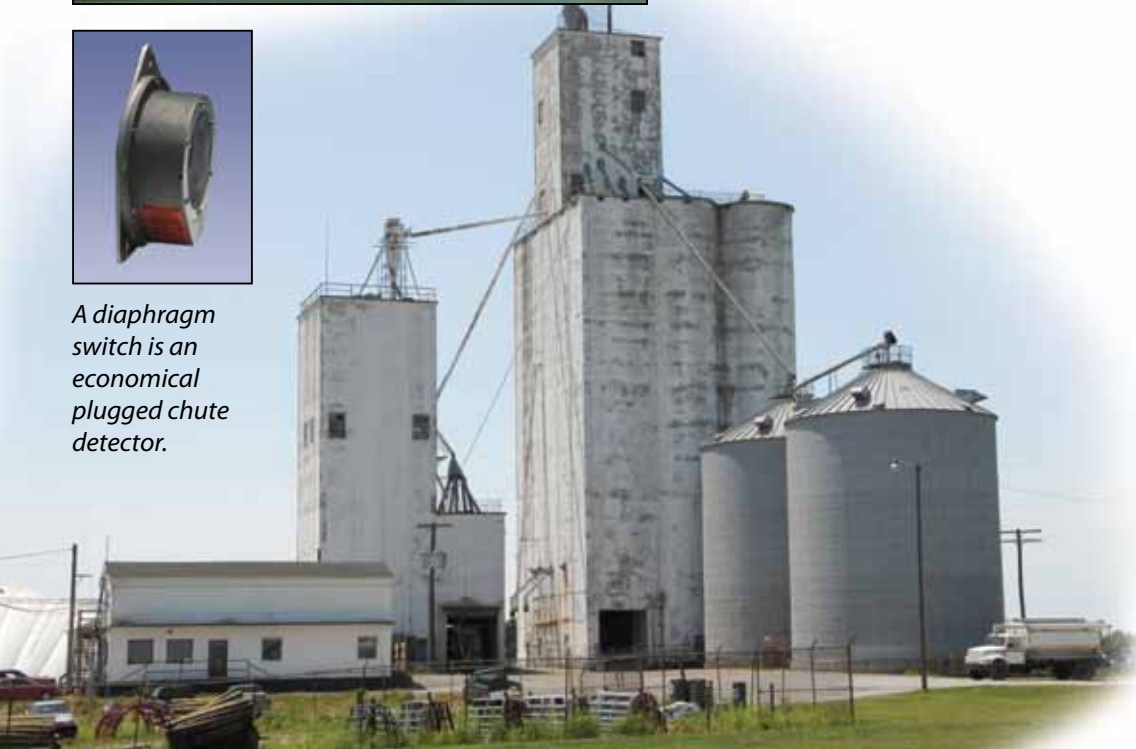
an alert when the flow stops and material backs up into the Y detecting a no flow condition. Once the plugged chute condition is corrected, material falls away from the device and there is no longer an alarm condition.



Coal chutes and feed mills are common applications for plugged chute detection.



A diaphragm switch is an economical plugged chute detector.



Calendar

See BinMaster® at these upcoming events.

International BioMass Conference & Expo

May 2 to 5, 2011

Booth 236

America's Center

St. Louis, MO USA

FEW (Fuel Ethanol Workshop) View

June 27 to 30, 2011

Booth 428

Indianapolis Convention Center

Indianapolis, IN USA

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Diaphragm Switches

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