

The Insider

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

Maxima+ Genuine Fail-Safe Rotary

Rotaries level indicators have been around for more than 50 years and are perhaps the most frequently used point level device for bins, tanks and silos. However, not all rotaries are created equal. One of the most valuable advancements in rotaries from BinMaster is advanced fail-safe protection and status notification. The distinguishing feature of the Maxima+ is its ability to continuously self diagnose, and in the event of a failure, give an immediate warning and corrective response. Knowing when there is a problem saves you both time and money. The next time you need a new rotary, consider fail-safe protection. It's a valuable feature not offered by every rotary manufacturer.



The MAXIMA+ is BinMaster's most advanced rotary level indicator featuring a complete fail-safe system that makes it the best choice for applications where it is essential that the rotary operate continuously and the user be knowledgeable of the unit status. If a rotary should fail during operations, "very bad things can happen." The bin can overfill and valuable inventory can dump on the ground. Material will need to be cleaned up and likely will need to be disposed. Overloading can cause a chain to break in a conveyor, shutting down operations until the conveyor is repaired and also making another mess to clean up. Or, the bucket elevator can become plugged up, which has the potential for disaster. A slipping belt can create excessive heat which under extreme conditions can cause a fire and lead to an explosion.

The cost of a rotary with fail-safe protection is about \$200 more than one without. That is

just pennies a day over the life of a rotary. In addition to the cost of the rotary itself, it is also important to weigh in the inconvenience of shut downs, the value of materials that may need to be discarded, replacing a rotary before it is truly worn out, and most important – the safety of employees. Having a fail-safe on a rotary is like having an air bag in your car. You hope you never need it, but sure are glad you have it when you do.

Appropriate for wide variety of bulk solids including powders, pellets or granular materials, the MAXIMA+ alerts the user to bin status via an audible horn or a light panel wired to the unit. A red LED indicator light on the top of the unit indicates the rotary status, providing for quick visual monitoring of the unit. There are two types of alerts. In the event of a failure of the motor or if electricity is shut off to the rotary, an immediate alert is sent. It also provides a status notification when the paddle stops rotating and is in a covered condition; it alerts again when the paddle begins to rotate as the bin is emptied and the paddle is uncovered.

It all boils down to how important is it that you know when your rotary fails.

The MAXIMA+ can be mounted on either the side of the bin or at the top of a bin using a shaft extension. BinMaster offers a variety of stainless steel and polyethylene paddles in single, three-vane and collapsible designs to accommodate a wide range of industries and applications.



What's Inside



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BINMASTER

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3DLevelScanner Non-Contact Measurement

Increasing Volume Accuracy at an Ethanol Plant

The BinMaster 3DLevelScanner has been of great interest to the biofuels and ethanol industry. While every industry faces its unique challenges, BinMaster heard about several concerns common to most all ethanol plants. After hearing from many facilities, we found ethanol plants faced similar issues including:

- a high turnover of materials
- constant filling and emptying of bins
- very dusty, explosive environments
- just a few people to run an entire facility

The ethanol plant profiled in this article is a lot like many ethanol plants. It faced three different types of challenges – dust, accuracy and reliability. There were extreme amounts of dust, especially during fill rates of up to 580 tons per hour which made it extremely difficult to track the filling and emptying processes. They had been using guided wave radar – a single point measurement technology – in a very large bin of uneven topography. Using a single measurement device was not providing an adequate level of accuracy, as the level of material varied significantly in different areas of the bin. Also, the sensing cables on the guided wave radar were breaking, which made taking measurements impossible and caused

operations to shut down until the cable could be recovered from the material contents and then replaced.

3D Penetrates the Dust during Filling

The MV model of the 3DLevelScanner was mounted on a 150' tall, 75' diameter, concrete silo containing whole corn. The silo is offset fill, with multiple discharge sites in a very dusty and noisy application. Using the advanced parameters of the 3DLevel Manager software, the device was optimized to track during a rapid and extremely dusty filling cycle. With multiple discharge sites and empty rates of up to 150 tons per hour, the 3DLevelScanner was able to provide a far more accurate volume than the previously installed, single-point guided wave radar device. After the success of the first unit, the customer purchased three additional units for its other large silos.



Multiple Point Measurement across a 70° Angle

The 3DLevelScanner was able to meet the challenge of a dusty environment and was optimized to track during the filling and emptying processes. The low frequency, acoustic waves are able to penetrate the dust generated during fill, unlike radar which works at a higher

Scanner was mounted into an existing opening.



Top of silo with gravity on conveyor fill.



3DLevelScanner is now installed on all four large silos.



Calendar

See BinMaster® at these upcoming events.

PTXi, PBS, Chem Pharm & Pack 2

May 4 to 6, 2010

Booth 2243

**Donald E. Stephens Convention Center
Chicago (Rosemont), IL USA**

Biomass Conference

May 4 to 6, 2010

Booth 133

**Minneapolis Convention Center
Minneapolis, MN USA**


Fuel Ethanol Workshop (FEW)

June 14 to 17, 2010

Booth 341

**America's Center
St. Louis, MO USA**

frequency. Using the MV model which takes multiple measurements within a 70° beam angle the inventory accuracy was improved significantly, enabling the plant to optimize its filling and emptying schedules and railcar traffic. The non-contact device eliminated the risk of breaking cables, preventing work stoppages while providing plant personnel inventory measurement data when it was needed.

	APPLICATION HIGHLIGHTS	
	Material	Corn
	Bin Type	Concrete silo with flat top and bottom
	Bin Size	150' tall x 75' diameter
	Classification	Class 2, Div 1 inside and outside silo
	Model	MV

Protecting SmartBob When Lightning Strikes

Tall silos are lightning rods on nature's landscape. Each year during the spring and summer storm seasons BinMaster is called with reports of SmartBob equipment being damaged by lightning strikes. While nothing can protect equipment from a direct strike, BinMaster builds protection from indirect lightning strikes into each SmartBob2 sensor. For customers with older models, there are two options for the SmartBob2 that can help save equipment from power surges that can occur with indirect lightning strikes.

The RS-485 Surge Suppressor Accessory is an optional add-on to the printed circuit board (PCB) installed in the SmartBob2 sensor. It enhances the protection of the RS-485 communication circuits against power surges and electrical transients. It is ideal for outdoor SmartBob installations in lightning-prone areas or can be used in any installation that is susceptible to power surges or electrical transients being introduced into the RS-485 communications. It is inexpensive, and installation is easy – it simply plugs into the PCB.

The SmartBob RS-485 Surge Protection Kit is recommended for lightning protection for the outdoor RS-485 communications cable. It includes a three-stage suppressor in a NEMA4 enclosure. It can provide valuable protection and eliminate the hassle of repair or replacement of components of a SmartBob inventory management system.



Call to Order SmartBob RS-485 Lightning Surge Protection		
Item	Model	Part Number
RS-485 Surge Suppressor Kit	LSP-RS485	530-0579
RS-485 Surge Suppressor Accessory	SS-RS485	530-0601

BINMASTER

Established in 1953, Garner Industries is home to the BinMaster® level control business. Additionally, our state-of-the-art ISO 9001:2000 certified facility in Lincoln, Nebraska USA offers jobshop and precision tooling services for a wide variety of industries including automotive, refining, electronics, aerospace, and telecommunications ... to name but a few. Visit www.garnerindustries.com to find out about our full suite of services.



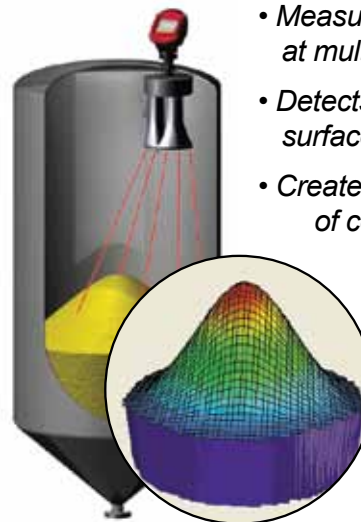
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3DLevelScanner

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Fuel Ethanol
Workshop
June 14-17



Non-Contact, Dust-Penetrating Bin Volume Measurement



- Measures bin material at multiple points
- Detects and maps uneven surfaces
- Creates visual representation of contents
- Works in dust where radar and sonics fail
- Monitor inventory from a PC, PLC or DCS
- Maintenance-free, self-cleaning

BINMASTER

LEVEL CONTROLS

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