The Insider



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

SmartBob Weathers Brine or Heat

SmartBob SS Measures Submersed Solids Under Water

Part of the SmartBob inventory measurement system is the SmartBob2 SS sensor option, which is a proven solution for brine interface applications, when the requirement is to measure the level of solid material below a liquid surface, such as measuring the level of settled salt under water. An excellent alternative to relying on sight tubes, the SmartBob SS can be used in any application where solid material needs to be measured under liquid. Examples include water treatment, wastewater facilities, food processing, petroleum refining, chemical processing, and salt and metal mining.

The weighted Bob drops through the liquid and when it comes into contact with solid settled material, it retracts and sends a measurement to a SmartBob control console or a PC loaded with eBob software. The SmartBob SS sensor's special design comes configured with a 3-inch pipe extension to keep the bob even with the surface of the roof, and from retracting up into the standpipe. Also standard are a stainless steel, Teflon-jacketed cable that stands up to corrosive materials, and a SureDrop cap that prevents the weight from being retracted into the pipe and protects the device from unwanted material entering through the standpipe.

SmartBob HT and SHT take the Heat

SmartBob2 sensors are also designed for extremely hot temperatures. The two models built for extreme conditions are the High Temp or SmartBob HT for temperatures up to 500°F and the Super High Temp or SmartBob SHT for temperatures up to 900°F. The HT is for applications where the process temperature is over 240°F and under 500°F. The SHT can handle temperatures up to 900°F and has been used in coke-oven batteries that experience brief temperature bursts of up to 1685°F.

Like the standard SmartBob2 sensor the HT and SHT high temperature models can be combined with the Windows-based eBob software program and a C-100 control console with analog output to provide a complete inventory management system for a variety of high temperature applications including the manufacture of steel or foundries processing ferrous and non-ferrous alloys.

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What's Inside

BINMASTER

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Got big bins? Here's how to measure them.

There is increasing demand for more storage to feed and support a growing world population and emerging economies … to say nothing of the record harvests which are leaving farmers searching for ways to store vast quantities of grain. As a result, bins just keep getting bigger – 90' to 105' and now 130' bins are becoming popular. Construction of large bins is challenging enough, but once in use – how can you measure and optimize storage of what is in them?

Big bin measurement starts with setting priorities. What is yours?

- **High level detection.** I do not want to overfill my bin.
- **High, mid and low level detection.** I need an idea of where I am and if I need to refill soon.
- **Inventory Control.** I want a percentage full or headroom measurement on demand when I need one.
- **Volume Estimate.** I need a good idea of material volume or how many bushels I have in my bin.
- **Process Control.** My big bin is used in manufacturing and I need to monitor inventory periodically during the fill and empty cycles.

3DLevelScanner

For highly accurate volume estimates and process control, the 3DLevelScanner offers several advanced benefits over ultrasonic and radar devices. It takes measurements from multiple locations in the bin and therefore, can provide a more accurate estimate of the volume of the contents. The M and MV versions of the 3DLevelScanner sample measurements from a 70 degree wide angle and then calculate material volume or bushels based upon measurements from multiple locations in the bin.

For extremely wide bins or dome structures, two 3DLevelScanners can be used in the same bin to cover an even larger surface area. Using two 3DLevel Scanners allows for coverage of more of the material surface. When visual mapping is needed, the MV version offers advanced mapping software which provides a simulation of the material surface. If the M and MV are just "too much information," operators seeking improvement over ultrasonic or radar can employ the S version, which provides economic, dust-penetrating

accuracy for a single measurement point in the bin. All versions of the 3DLevelScanner feature non-contact, dust-penetrating technology which eliminates the threat of buried cables. This a huge advantage in very large bins as broken equipment in bin material is almost impossible to find and could cause significant harm to sweepers or conveyors in the bottom of bins.

SmartBob Inventory Management

When it comes to inventory control there are several options – both 3DLevelScanner and SmartBob – based upon your application and budget. The SmartBob2 weight and cable inventory system provides highly accurate, single point measurement even in the dustiest environments. A cable drops and when the weight comes into contact with solid material, the cable retracts and sends a measurement to a control console or to eBob software loaded on a local personal computer. From one up to 120 bins can be monitored from a single console. The eBob software accommodates viewing up to 16 bins at one time.

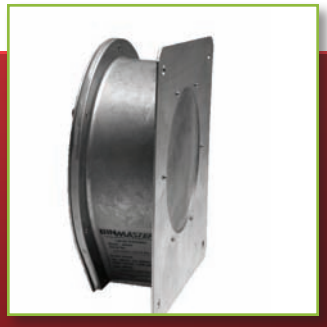
In most cases, a single SmartBob2 sensor mounted at the proper location based upon the angle of repose – generally about one-sixth in from the side of the bin – is all that is needed for an accurate level estimate. For very large bins, some operators choose to put multiple SmartBob sensors in a bin. This occurs when a large bin has multiple filling and emptying sites and the level of material can vary quite a bit in different locations in the bin.

For high, mid and low level point level detection rotaries, pressure switches, vibrating rods and capacitance probes will get the job done when bins are filling or emptying. Combined with a point level alarm panel and optional horn or light, these devices will send an alert when material reaches a certain level in the bin. Inexpensive and highly reliable, most of these devices are available with hazardous location or explosion-proof certifications, are easy to install and need very little maintenance.

Rotary

Capacitance Probe

Diaphragm Switch



Vibrating Rod

SmartBob HT and SHT *continued from page 1*

The SmartBob SHT (pictured) is mounted on a 36" steel standpipe, used to extend the remote up and away from the heat source. A steel pipe extension fitted with a brass cable guide keeps the sensor probe from going up into the standpipe and level with the top of the bin. A standard air purge nipple allows a small amount of air to circulate through the mechanical cavity of the remote, helping it maintain an acceptable operating temperature. SmartBob HT and SHT sensors are extremely rugged, featuring a durable, bare stainless steel aircraft cable and long-lasting motor design which is completely sealed in a strong, lightweight molded polycarbonate enclosure that is explosion proof and rated for Class II, Groups E, F & G certifications.

We're Flexible…and so are our Capacitance Probes!

The PROCAP capacitance probe with a flexible cable was designed for high, mid or low level detection when the capacitance probe must be mounted on the top of the bin. A flexible probe is ideal for use with any lump material that might bend, damage or break a rigid probe. Also, a flexible probe is warranted if there is a small bin and it is impractical to put a hole in the side, but a low level indicator is needed. BinMaster's flexible probes are proven in tough applications such as six-inch rock as well as coal, cement, aggregates and all types of grains.

BinMaster recommends using a flexible probe any time a probe needs to be extended more than four feet and is often used as a head room alarm. It is configured so the first 10 inches of the probe are rigid and the rest of the probe is flexible. The ¼-inch diameter cable can be any desired length up to a 35-foot maximum extension, which is sensitive to the end of the cable when uncovered. For convenience and ease of installation, the cable can be cut to the desired length in the field. BinMaster offers a stainless steel flexible cable option for food and other sanitary applications.

Like all BinMaster capacitance probes, the flexible probe operates below the RF range and won't interfere or be affected by other electronic equipment. A visual LED on the top of the unit indicates sensor status of covered, uncovered or a failed condition. Hazardous location approval is standard, so it is appropriate for a wide range of applications. "Quick-Set" calibration makes these probes easy to set up. When used with BinMaster's point level alarm panel, up to 24 probes can be monitored from a single location.

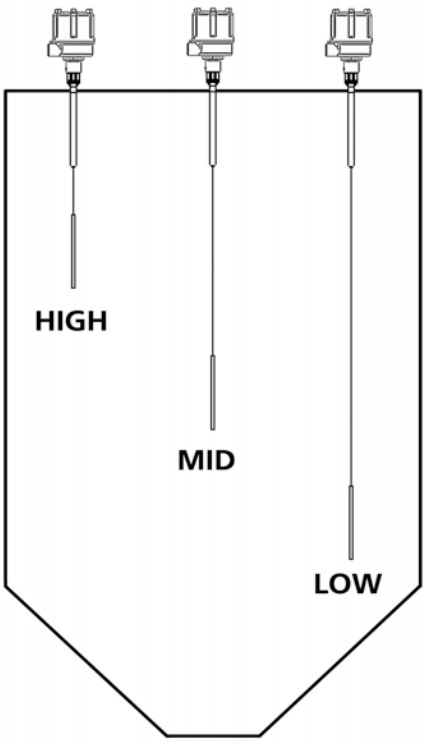
Calendar

See BinMaster® at these upcoming events.

International Feed Expo
January 27 to 29, 2010
Booth 865
Georgia World Congress Center
Atlanta, GA USA

GEAPS Exchange 2010
February 20 to 23, 2010
Booth 247A
Wichita Convention Center
Wichita, KS USA

PTXi, PBS, Chem Pharm & Pack 2
May 4 to 6, 2010
Booth 2243
Donald E. Stephens Convention Center
Rosement, IL USA



Flexible capacitance probes—custom lengths up to 35 feet.

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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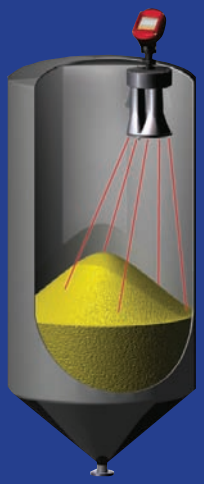
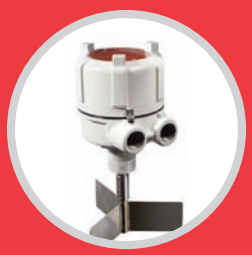
- 3DLevelScanner
- SmartBob2 Inventory Management
- Rotaries
- Diaphragm Switches
- Vibrating Rods
- Capacitance Probes
- Tilt Switches
- Ultrasonics/Radar
- Aeration
- Dust Detection
- Flow Detection





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