



Smart sensors flip a switch

OPERATIONAL TECHNOLOGY

Sensors and switches have transformed industries that store bulk materials in bins, silos, and tanks. Simply detecting the presence of material opens automation like turning conveyors on and off, and alerting employees to possible overfills or empty vessels.

Operational Technology--the practice of using hardware and software to control industrial equipment--continues to grow. Data from level, dust, or flow sensors can interact with the physical world with processing equipment, programmable logic controllers, distributed control systems, as well as supervisory control and data acquisition systems. OT helps reduce inefficiencies, prevent errors, and enables plants to do more work with fewer people

"We're providing, 'the switch' for many industries like agriculture, energy, manufacturing and construction," said Matt Virgillito, International Sales. "With so many different types of bulk material properties, BinMaster adapts and applies technology to perform reliably in diverse environments. We can offer capacitance probes for certain types of plastics or rotaries for more common agricultural grains."

Virgillito said customers looking for level measurements aren't always aware that entire processes can be automatically controlled to avoid overfilling or running out of product. Conveyors, slide gates, hoppers, batch plants, flour silos, rotary valves and more can be wired to be turned on or off by BinMaster point level sensors.

IoT and OT CONVERGE

[Cloud-based data and measurement](#) are staples of Industry 4.0. It's called Internet of Things. BinMaster embraces IoT as well as operation technology solutions (aka hybrid cloud systems).

Some companies, for example, rely on an [NCR-80](#) radar to continuously measure their silos and bins. This allows operators to anticipate material ordering days or weeks ahead, providing strategic savings on everything from labor to trucking to reducing safety stock and carrying costs. Those same bins might have a [diaphragm](#) switch installed as a fail-safe system to prevent overflows or detect empty vessels during particularly busy seasons.

CONSIDERING YOUR SYSTEM

[BinMaster technology and sales professionals](#) consult with customers to determine need. Customers can help by imagining automation. For OT (interacting with physical systems) BinMaster will typically suggest [point level sensors](#) like rotaries, probes, and vibrating rods. IoT level detection (providing data via the cloud to your team), usually involves [non-contact continuous level sensors](#) with radar or acoustic technology combined with [BinCloud](#) inventory management software.

Remember, imagine automation and ask [BinMaster](#).

Industry	Bulk Material	Sensors	Software	Applications
 <p>Agriculture Farming Livestock</p>	Grain Flour Beans Fertilizer Seed Liquids Bins, silos, tanks, piles, domes	Rotary level indicator Capacitance probe Vibrating rods Diaphragm switch Tilt switch Radar SmartBob 3D sensors Ultrasonic Flow detector	BinCloud BinView AgriView Binventory FeedView 3D Multivision	Prevent overflows Process control Inventory management Remote monitoring Monitor piles Flow detection Bin aeration Dust detection Aeration Ag Chemical Storage
 <p>Bioenergy</p>	Corn DDG Biomass Wood pellets Wood fiber Forest residue Bins, silos, tanks, piles, domes	Rotary level indicator Capacitance probe Vibrating rods Diaphragm switch Tilt switch Radar SmartBob 3D level scanner Ultrasonic Flow detector	BinCloud BinView Binventory 3D Multivision ResinView	Prevent overflows and outages Process control Inventory management Remote monitoring Flow detection Slurry tank detection Measure DDGS
 <p>Cement</p>	Sand Gravel Clinker Rock Powder Bins, clinker silos, tanks, piles, domes, chutes, crushers	Rotary level indicator Capacitance probe Vibrating rods Diaphragm switch Tilt switch Radar SmartBob 3D level scanner Ultrasonic sensor Flow detector Plugged chute detector Airbrator Diffuser air pad	BinCloud BinView Binventory 3D Multivision CementView	Prevent overflows and outages Process control Inventory management Remote monitoring Monitor piles and bunkers Inventory domes Plugged chutes Measure crusher levels ESPs or clinker silos Prevent conveyor overloads Silo aeration
 <p>Food processing</p>	Brewing Foodstuffs Solids Slurries So much more... Silos, mixers, batching tanks, conveyors, pipelines	Rotary level indicator Capacitance probe Vibrating rods Diaphragm switch Tilt switch Radar SmartBob 3D level scanner Ultrasonic sensor Flow detector Airbrator Diffuser air pad	BinCloud BinView AgriView Binventory 3D Multivision	Prevent overflows Inventory management Remote monitoring and VMI Process control Sanitary level measurement Detect levels in mix or slurry tank Detect levels on conveyors Flow detection Silo aeration
 <p>Mining</p>	Lump coal Ores Aggregates Fine alumina powder Silos, crushers, conveyors, domes	Rotary level indicator Capacitance probe Vibrating rods Diaphragm switch Tilt switch Radar SmartBob 3D level scanner Ultrasonic sensor Flow detector Airbrator Diffuser air pad	BinCloud BinView Binventory 3D Multivision CementView	Inventory management Monitor piles Prevent overfills or outages Detecting plugged chutes Measuring inventory in domes Level measure in crushers or bins Prevent overloading Process tanks Remote monitoring Silo aeration Dust detection
 <p>Plastics</p>	Resins Flakes Powders Granules Regrind Silos, bins, containers, hoppers, tanks	Rotary level indicator Capacitance probe Vibrating rods Diaphragm switch Tilt switch Radar SmartBob 3D level scanner Ultrasonic sensor Flow detector Airbrator Diffuser air pad	BinCloud BinView ResinView Binventory 3D Multivision	Prevent silo overfill Eliminate outages Inventory management Remote monitoring Vendor managed inventory Flow detection Bin Aeration Dust Detection