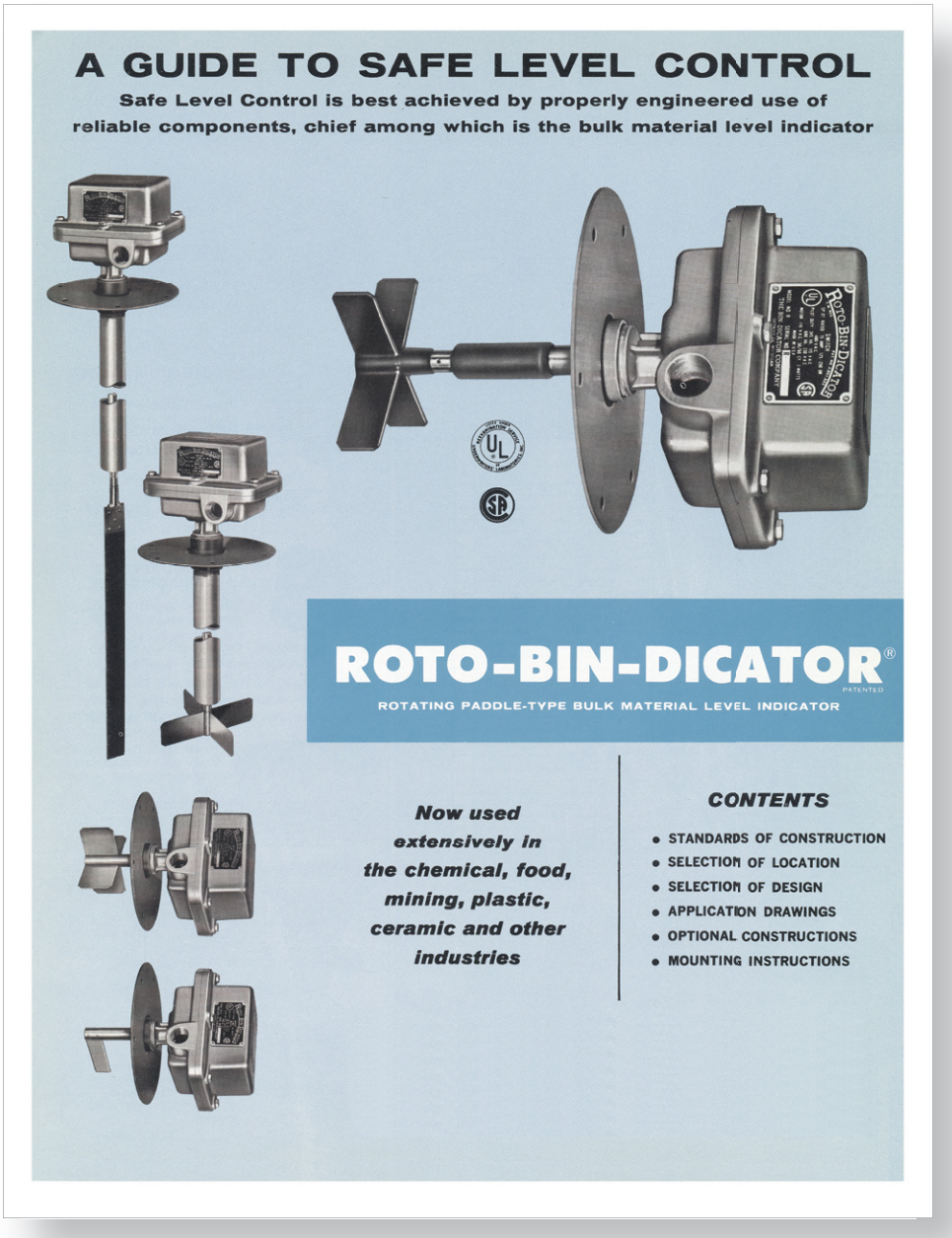
genuine BINDICATOR®

THE ORIGINAL

DRY BULK LEVEL MEASUREMENT & CONTROL



This catalog was published in 1964, nearly 30 years after Bindicator® began serving the industry.

THE ORIGINAL

Since 1936, Bindicator® has manufactured level devices to solve the toughest bulk material handling challenges. Bindicator has a long history and extensive experience in dry bulk level measurement with over one million level instruments at work every day around the world.

RELIABLE, DURABLE, HIGH-PERFORMANCE

The heavy-duty, rugged design of Bindicator® products allows them to withstand rough treatment and extreme environmental conditions. Bindicator products are built in an *ISO-9001* factory and are endorsed by leading approval agencies including UL, FM, CSA, ATEX and IEC.

TRUSTED APPLICATION EXPERTISE

Bindicator® is well known for application engineering expertise and after sales service support. Bindicator application engineers and service technicians understand the many variations of bulk materials and the vessels in which they are stored and processed. Application experts take sincere interest and responsibility in ensuring the right product is applied in each application.

STABILITY AND LONGEVITY

Bindicator® has been a leader in the dry bulk material handling industry for over eight decades by delivering value through rugged and reliable products and service. Bindicator stands behind its products and will continue to do so for decades to come.

ROTO-BIN-DICATOR®

Rotary Paddle Level Switch

The Roto-Bin-Dicator® is the most universal of all level sensing technologies and is the most popular level switch used in dry bulk materials. The Roto-Bin-Dicator is a rotating paddle-type bulk material level sensor. It offers a wide variety of paddle options for unequaled application versatility. It is easy to install and requires no special tools or calibration.

Super Safe Roto-Bin-Dicator®

Easy to Install

- No calibration required
- Simple mechanical device
- Test in place with magnetic key FOB (SuperSafe versions)

Flexible

- Wide variety of paddle options
- Custom process fittings available
- Custom shaft extensions
- Mount in any orientation

Unique Design

- Few moving parts
- Motor heats cavity, reducing moisture build-up
- High and low level fail-safe protection
- Red and green lights indicate power and alarm status (SuperSafe versions)

Operating Principle

A mechanical motor turns the Roto-Bin-Dicator® paddle when bulk material is not present. When bulk material comes into contact with the paddle, the resistance to movement is sensed, causing the relay to change state. Unique to the Bindicator model, the motor continues to run when the paddle rotation stops, providing moisture and seize protection. The switch remains engaged until the paddle is free to turn again.

Multiple Configurations

Large 4-Vane Paddle

Standard 4-Vane Paddle

Collapsible Paddle

Single Vane Paddle 45° Cut

4-Vane Paddle with Flexible Silicone Shaft

Additional paddles and accessories available.

Quick Specs		
	Power Requirements	24/120/240 VAC, 24 VDC
	Fail-Safe Operation	Low and High depending on model
	Process Temperature	-40° to 200° F (-40° to 194° C) Standard Higher temps achieved with optional Extension
	Switch or Relay Output	SPDT up to 10 amps dependent on version
	Approvals	

VRF®II SERIES

Variable Radio Frequency Level Switch

The VRF® II Series point level sensor detects dry bulk materials, liquids or slurries in a silo, bin or other vessel. The durability of the VRF II makes it well suited for challenging applications involving high temperature, high pressure or corrosive materials. The VRF II is also a highly sensitive device, making it ideal for detecting a wide range of materials including low dielectric fly ash or plastics.

Advanced VRF® II Series

Sensitivity and Control

- Adjustable sensitivity to detect a wide range of materials from grains to plastics
- Adjustable time delay
- Ignores non-conductive build-up on the probe
- Field selectable fail-safe

Flexible Design

- Universal Power: connect to AC or DC without adjustment
- Customized process fittings available
- Wide variety of probe options including cable probe and probe extensions
- Remote electronics, up to 100 ft (30 m)

Easy to Install and Calibrate

- Test in place and calibrate with magnetic key FOB
- Red and green lights indicate proper calibration and signal alarm
- Automatic calibration – no potentiometers involved

Operating Principle

The VRF® II continuously monitors the probe's impedance (capacitance, resistance and inductance) with respect to ground. When there is a change in the impedance, the digital signal processor changes the status of the output relay to indicate the presence or absence of material. Unique to Bindicator is the wide range of materials this technology can detect. Low dielectric materials such as fly ash and plastics are not a problem for this highly sensitive device.

Multiple Configurations

Standard Probe

Fly Ash Probe

Armored Food Grade

Heavy Duty Food Grade Polysulfone Probe

Dome Flush Probe

Ceramic Probe

Quick Specs		
	Power Requirements	Universal 110-240 VAC, 50/60 Hz; 24-48 VDC
	Temperature	Electronics: -40° to 158° F (-40° to 70° C) Probe: -40° to 993° F (-40° to 534° C) depending on probe * Lagging and/or remote electronics available for higher temperature applications
	Output	DPDT 8A resistive @ 240 VAC or 30 VDC Auxiliary relay available
	Pressure Rating	Up to 150 psi (10 bar)
	Sensitivity	Materials with dielectric constants down to 1.2
	Remote Electronics Distance	Up to 100 ft (30 m)
	Approvals	

PULSE POINT™ II SERIES

Vibrating Level Switch

Pulse Point™ II is designed for light weight solids such as sawdust, tobacco and dry cereals. The proven, highly sensitive technology and versatile design of Pulse Point II makes it the ideal solution for bulk level measurement in tanks and silos.

Advanced Pulse Point™ II

Flexible Design

- Universal Power: connect to AC or DC without adjustment
- Customized process fittings available
- Extended assemblies to 15 feet
- Remote electronics available

Versatile

- Liquid/solid interface for detection of solids in liquid
- Adjustable time delay
- Adjustable sensitivity settings detect material densities as low as 0.5 lbs/ft^3 (8 kg/m^3)
- Build-up detection

Ease of Use

- Test in place with magnetic key FOB
- Red and green lights indicate power and signal alarm
- No calibration required

Operating Principle

When electrical voltage is applied to the Pulse Point II, piezoelectric crystals at the base of the fork begin to oscillate at a fixed frequency. When material contacts the fork, the oscillation diminishes. This change in oscillation frequency causes the crystals to send a signal to the electronics which then change the state of the output relay.

EXTENDED VERSION:
Extends the unit further into material or through a vessel wall

90° EXTENSION:
For horizontal mounting

Quick Specs		
	Power Requirements	Universal 110-240 VAC 50/60 Hz; 24-48 VDC
	Temperature	Electronics: -40° to 158° F (-40° to 70° C) Fork: -55° to 302° F (-48° to 150° C) depending on fork * Lagging and/or remote electronics available for higher temperature applications
	Output	DPDT 8A resistive @ 277 VAC or 30 VDC Auxiliary relay available
	Pressure Rating	Up to 150 psi (10 bar)
	Sensitivity	Adjustable; bulk density down to 0.5 lbs/ft^3 (8 kg/m^3)
	Maximum Particle Size	$^3/_8$ in. (9.5 mm)
	Remote Electronics Distance	Up to 100 ft (30 m)
	Approvals	

BIN-DICATOR®

Diaphragm Level Switch

Bin-Dicator® diaphragm-type level switches were the original electromechanical point level devices in the industry. With their flush mount, easy to install design, they remain the go-to solution for applications where clearance is limited or where protrusions into a vessel are not acceptable. All installation and servicing can be done from outside the vessel. No power is required to operate the switch which is actuated by the pressure applied when material comes into contact with the diaphragm.

Bantam™

- 5¾ in. diameter
- Light duty
- Teflon® or Neoprene diaphragms available

Auto-Bin-Dicator®

- 8 in. diameter
- Explosion proof model available
- Neoprene or stainless steel diaphragm material

Model A

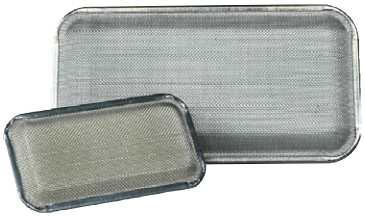
- 10¼ in. diameter
- Explosion proof model available
- Several diaphragm material options

Quick Specs		
	Switch	SPDT up to 20 amp resistive @ 250 VAC
	Temperature	Up to 1000° F (538° C)
	Diaphragm Material Options	Neoprene Rubber, Canvas, Fiberglass, T-302 Stainless Steel, Silicone Rubber, Teflon® Coated Fiberglass

BIN-FLO®

A Simple & Efficient Aerator

The Bin-Flo® aerator is a simple and efficient means of introducing air into finely ground material and is widely used in the management of dry bulk materials. Bin-Flo aerators can be mounted from inside and outside a silo with various mounting kits available.



Bin-Flo® Aerators

Quick Specs	
Diffuser	Cotton (Canvas): Up to 180° F (82° C); Fiberglass: Up to 600° F (316° C)
Diffuser Frame	Galvanized Steel 16 mesh or 316 Stainless Steel mesh
Body	Zinc plated steel or stainless steel
Dimensions	L Series: 3.75 x 7.5 in. (9.5 x 19 cm); LL Series: 6 x 12 in. (15 x 30 cm)

FLO-GUARD™

Super Sensitive Flow Switch for Dust Detection

Flo-Guard™ provides reliable detection of leaks, broken bags and filter failures in powder and bulk solid applications. Flo-Guard detects the flow of dust and granular materials by using a floating reference point and a digital triboelectric microcontroller. This technique of measuring the flow of dry materials eliminates instability common in other flow switches.

Quick Specs	
Probe	Available in lengths from 3 in. to 5 ft (7.6 to 152 cm)
Pressure	50 psi (3.5 bar)
Output	5A DPDT relay Field adjustable fail-safe
Dust Concentration	Minimum 0.00028 gram/ft^3
Enclosure Ratings	General purpose NEMA 4X; Explosion-proof NEMA 7/9
Approvals	Hazardous Location: UL (US and Canada) Class 1, Groups C&D, Class II, Groups E, F, G

YO-YO™ SERIES

Weight and Cable Level Indicator

The Bindicator Yo-Yo™ provides reliable, continuous weight and cable level measurement specifically for inventory management of dry bulk materials.

Features

- Silo heights up to 200 ft with Mark-4
- Accurate readings with 1 cm resolution
- Isolated 4-20 mA output for connection to PLC or DCS
- MODBUS RS-485 communication
- ORB™ Compatible
- Angled roof mount kits available
- Unique inhibit feature to prevent Yo-Yo from taking measurement during fill process

Operating Principle

The Yo-Yo™ is a continuous level device that automates the mechanical drop-line technique. At programmed time intervals or on demand, a weight drops into the vessel, stops when it comes into contact with material and then returns to the top of the bin. The distance the weight has traveled is recorded and converted to a level measurement.

Quick Specs	
Power Requirements	115/230 VAC
Output	MODBUS, Analog 4-20 mA optically isolated (user sourced) into 600 ohms max
Mounting	3" NPT, ANSI flange available
Enclosure Rating	GP-4: NEMA 4; Mark-4: NEMA 4/7/9

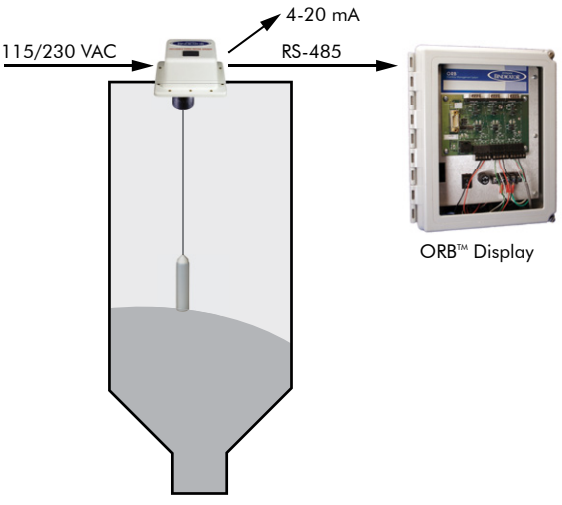
Yo-Yo™ Display

The Yo-Yo™ display programmer allows for configuration of either a single sensor or a whole system. An adjustable autotimer sets automatic measurement cycles ranging from 2 minutes to 1 week. While in operating mode, the display will show the sensor address, sensor name, measurement in the specified units, percentage and the status of the current device.

Yo-Yo™ Display

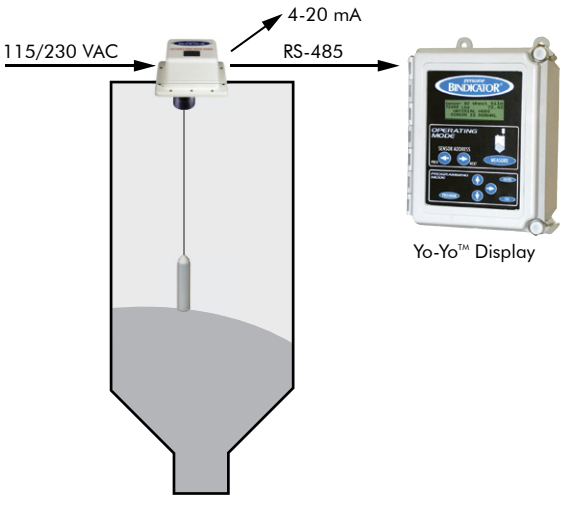
Features and Benefits

- Remote sensor set-up and configuration
- Easy to read LCD display
- Measurement on demand
- Enable/Disable Yo-Yo sensor
- Monitors up to 99 Yo-Yo sensors
- Optional heater for environments below -4° F (-20° C)
- Up to 4000 ft wired distance



ORB™ Display

Yo-Yo™ Wiring for ORB™



Yo-Yo™ Display

Yo-Yo™ Display Wiring

MP SERIES RADAR

Through Air Radar Level Transmitter

The MP Series radar transmitter is used for non-contact level measurement of dry bulk materials. The high 26 GHz pulse frequency allows the MP Series radar to maintain its accuracy and reliability in challenging environments such as dust or steam applications.

MP Series

Display

Features & Benefits

- Easy to read, liquid crystal display
- 26 GHz transmitting frequency ensures high accuracy and reliability in difficult environments
- Swivel flange allows for optimal beam positioning
- Cover or Air Purge prevents material buildup inside the antenna
- ORB™ compatible for a comprehensive inventory management system

Operating Principle

The MP Series radar measures the level of material in a bin or silo by monitoring the time it takes for an emitted microwave pulse to travel from the level meter to the surface of the material being measured and back to the meter. This time is calculated into distance which is then translated into a level measurement.

Quick Specs	
Power Requirements	20-32 VDC
Output	2-wire, 4-20 mA, HART communication
Maximum Measuring Distance	230 ft (70 m)
Transmitting Frequency	26 GHz
Beam Angle	Approximately 8 Degrees
Operating Temperature	Housing: -40° to 140° F (-40° to 60° C) Antenna: -40° to 302° F (-40° to 150° C)

SONO-TRACKER™

Ultrasonic Level System

The SonoTracker™ Ultrasonic System can monitor up to 16 transducers of various frequencies to measure level, flow and differential level of bulk materials. The SonoTracker controller has an integral keyboard and display providing easy access for programming and is available in AC or DC powered versions. Bindicator can help design a system solution to include the appropriate transducer for specific applications and environments.

Features & Benefits

- Robust, NEMA-4X Enclosure
- Non-contact sensors
- Built-in Optically Isolated Serial Port for reliable and flexible interfacing
- Quick, menu-driven set up, no special software required
- ORB-enabled for remote inventory communication
- Combine level, flow and differential level functions in one system
- Multiple transducers available to suit a variety of materials and distances

Quick Specs		
	Power Requirements	110/240 VAC or 24 VDC
	Measuring Distance	Up to 100 ft (30 m) depending on sensor
	Output	SPDT up to 10 A; plug-in modules of 2, 4, 5 and 8 relays each
		4-20 mA; plug-in modules of 2, 4 and 8 outputs with common isolation
		RS-422 for digital interface with ORB™
	PLC Interface Option	32 channel block transfer, 6 channel discreet transfers, Profibus-DP Slave
	Enclosures	NEMA 4X fiberglass reinforced polyester
	Temperature	Up to 230° F (110° C) depending on transducer

TDR-2000

Continuous Level Sensor

The TDR-2000 provides continuous level measurement utilizing guided wave radar technology. For many applications, the TDR-2000 is an economical and superior alternative to capacitance, ultrasonic or plumb bob technologies.

TDR-2000

Reliable in Dynamic Process Conditions

- Insensitive to changes in dielectric, pressure, conductivity, vacuum, humidity, dust, viscosity, vapor, bulk density, temperature or turbulence
- Ideal for dirty service applications

Easy Installation

- Simple to install in new tanks or retrofit in existing tanks.
- Can be installed while tank is in service
- Suitable for a broad range of tank sizes and geometries
- Factory calibrated and configured

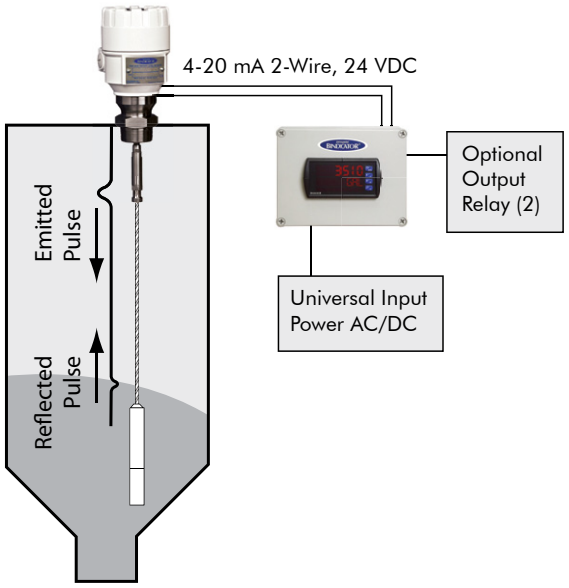
PRD1000 in NEMA 4X Enclosure

Power Supply and Local Display

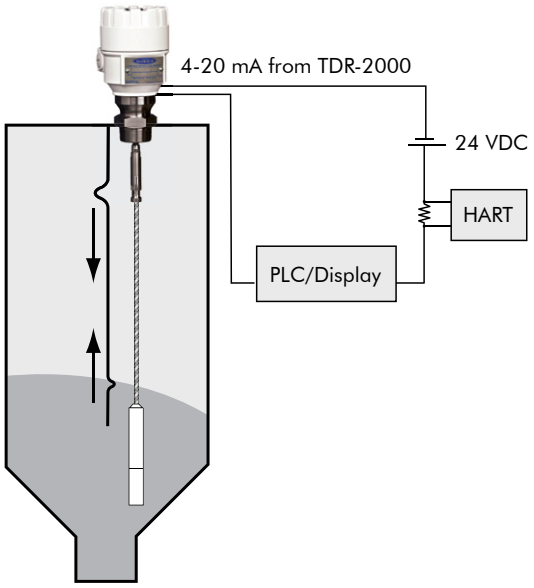
The PRD1000 is a power supply and local display meter for use with the TDR-2000. It is available in 85-265 VAC or 12-24 VDC with up to two relays. Optional features include a NEMA 4X enclosure and RS-485 serial adapter.

Operating Principle

The TDR-2000 uses a cable to guide a microwave signal to the material surface and back up to the sensor. Guided wave radar is a consistent and reliable technology that is not affected by dust or material characteristics such as dielectric constants.



TDR-2000 with PRD1000 24 VDC Power Supply



HART Enabled TDR-2000

Quick Specs	
Power Requirements	24 VDC (18 to 35 VDC)
Operating Pressure	232 psi (16 bar)
Output	2-wire, 4-20 mA, HART Communication Relay optional with PRD1000
Measuring Range	Flexible Probe: Max of 79 ft (24 m)
Process Connection	1½" NPT
Probe Materials	Flexible 316 SS Cable
Temperature	-22° to 194° F (-30° to 90° C)

ORB™

Inventory Management System

The ORB™ Remote Inventory Management System transforms inventory and process data into valuable information that can increase productivity and reduce supply chain costs. Connecting to instrumentation via serial and 4-20 mA dedicated interfaces, the ORB becomes a gateway between process instruments and the Internet. The ORB contains a database and an integrated web server which provide reliable means of gathering, storing and transmitting real-time inventory data via a LAN or the Internet. High volumes of data can be managed by users within the plant or remotely from any device that has internet connectivity.

ORB™ Iniput Box

Inventory Data Management

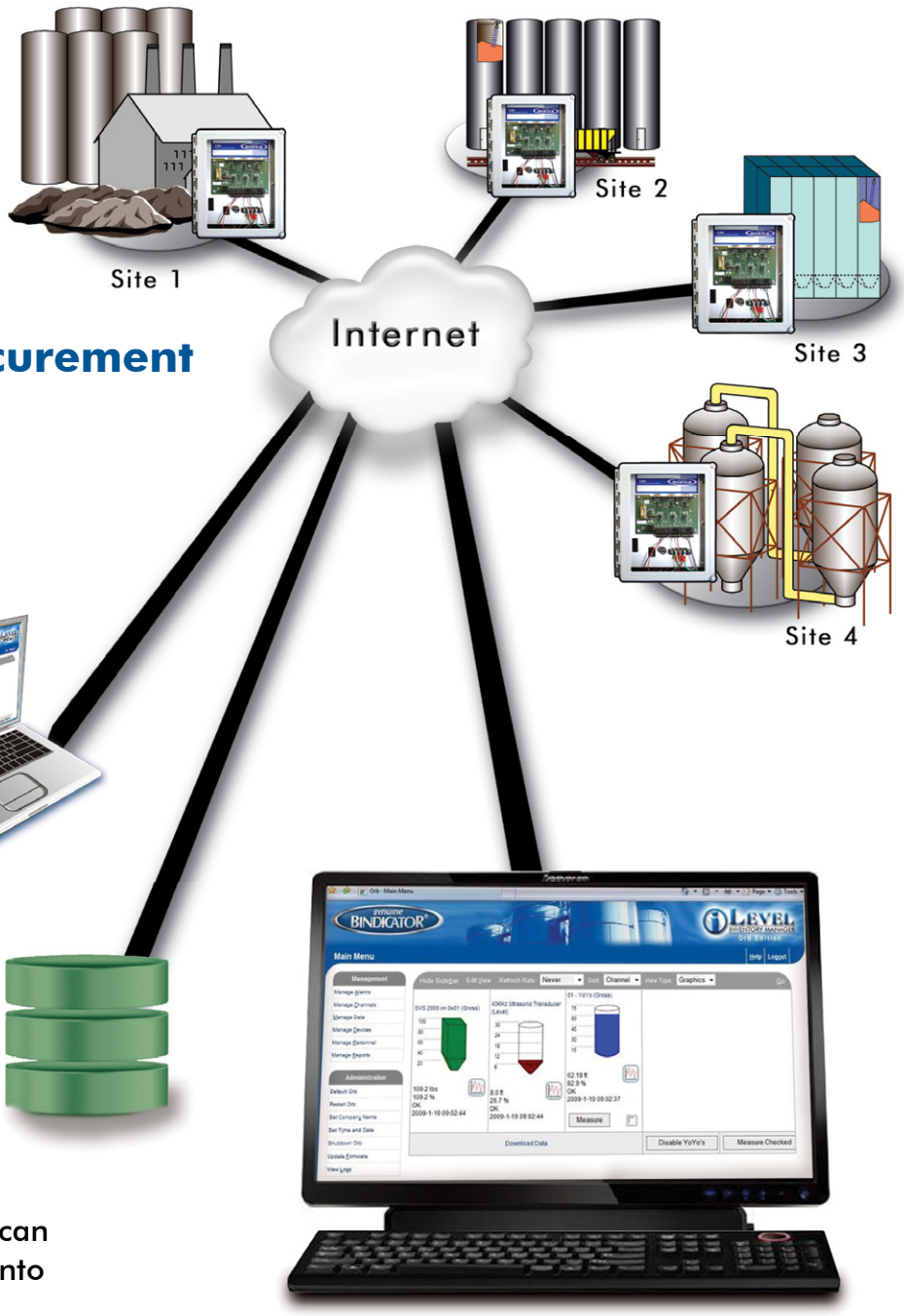
- Access inventory information and stored data from a remote location via the Internet
- Manage multiple sites with multiple vessels
- Set notifications/alarms to automatically send alerts via email
- Integrate or import data to the ERP System
- Store historical data
- Run reports for tracking trends or other statistical measures

Supply Chain Management

- Automate re-order process with suppliers
- Grant individual permissions for remote supplier communication
- Improve efficiencies with real-time accessibility to inventory levels and working capital utilization
- Facilitates multi-site inventory strategy and just-in-time replenishment

Site Maintenance Efficiency

- Store and replicate calibration settings for all vessels remotely
- Maintain instruments remotely
- Eliminate routine and manual inventory reporting



Operations/Procurement

- Ordering inventory
- Scheduling deliveries
- Balancing production
- Remote maintenance
- Email alerts

ERP Database

Real-time inventory data can be moved automatically into ERP systems.

Headquarters/Accounting

- Real-time inventory
- Usage trends
- Vendor managed inventory
- MS Excel compatible

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