



Inventory Management System

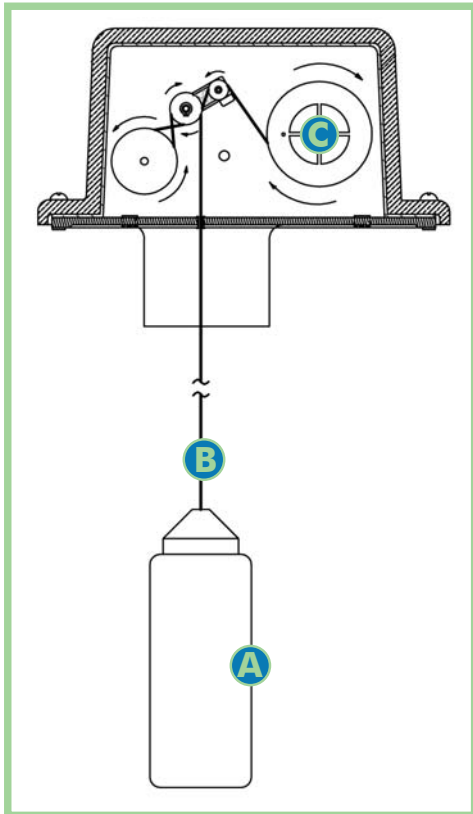
# GP-4 YO-YO®





## GP-4 YO-YO®

The Bindicator® Yo-Yo® is a reliable continuous weight and cable level measurement system designed especially for dry bulk materials.



### Features

- Resolution: 1cm (0.39 inches)
- Silos up to 100 ft
- Isolated 4-20mA output (reversible) with adjustable span
- Distance measurement or volumetric conversion for coned or flat bottom silos
- Remote NEMA 4X display with keypad
  - 4-line x 20 character backlit LCD
  - Programmable sensor names and ranges
  - Enable/disable network addresses
- RS-485 (MODBUS) communication
- Up to 99 sensors connected to a single display and/or local computer
- Optional integral telephone modem available on sensor or Remote Display
- Adjustable measurement cycle from 2 minutes to 1 week
- Assorted sensing weights for solids, liquids or liquid/solid interface
- External contact closure prevents sensor from being cycled on demand

### How the Yo-Yo® Works

- The Bindicator® Yo-Yo® is an electromechanical sensor which is mounted on top of a vessel.
- The sensor contains a weight (A) suspended by a cable (B) with movement provided by a motor drive (C) and controlled by associated electronics.
- The measurement cycle is initiated either on demand or on a timed interval and causes the sensor to lower the weight to the material level. As the weight is being lowered, the length of cable dispensed is measured in 1cm (0.39 in) increments.
- When the weight reaches the material level, the unit reverses and the weight is drawn into the stored position in the sensor. The distance measurement can then be transmitted via 4-20mA to a PLC, DCS, or other device and/or via RS-485 MODBUS network to the Remote Display.



## Applications

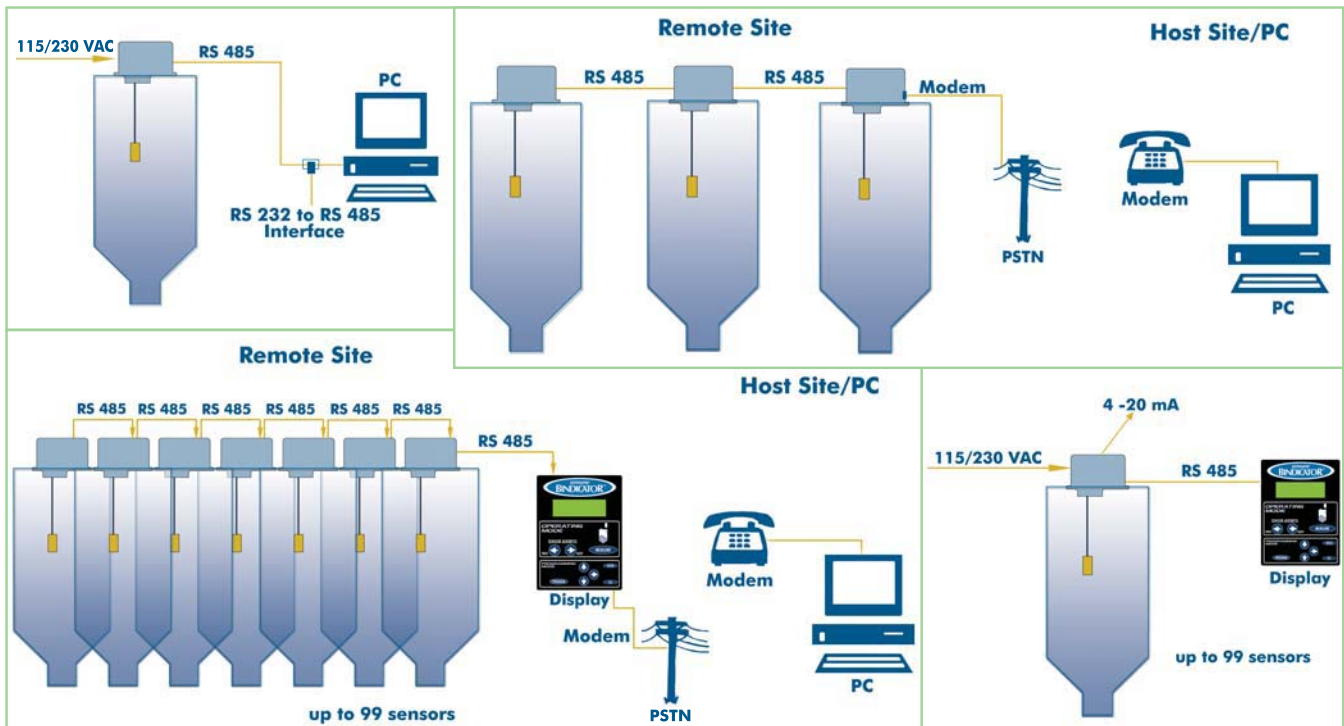
- Vessels and silos at atmospheric pressure
- Liquids and liquid/solid interfaces
- Aggregates
- Plastics
- Grains
- Feeds
- Food
- Chemicals
- Wood products

## Remote Display Features

- Remote sensor set-up and configuration
- Remote measurement request and display
- 4-line x 20 character backlit LCD display
- Up to 99 sensors connected to a single display and/or local computer
- Enables/disables network addresses
- RS-485 (MODBUS) communication
- Optional integral telephone modem
- Optional heater for temperatures below -4°F (-20°C)
- Distance measurement or volumetric conversion for coned or flat bottom silos



## System Configurations





## GP-4 YO-YO®

### Specifications

#### GP-4 Sensor

<b>Power Requirements</b>	115 VAC or 230 VAC
<b>Power Consumption</b>	Quiescent: 115 VAC, $\pm$ 10%, 50/60 Hz, 4 Watts (with power to remote display) Operating: 115VAC, $\pm$ 10%, 50/60 Hz, 32 Watts (with heater, add 10 Watts to above)
<b>Operating Temperature</b>	32° F to 120° F (0° C to 49° C); with heater: -40° F to 120° F (-40° C to 49° C)
<b>Measurement Span</b>	up to 100 ft standard
<b>Repeatability</b>	2cm (0.8 in)
<b>Resolution</b>	1 cm (0.39 in or 0.033 ft)
<b>Outputs/Communication</b>	Analog: Isolated 4-20mA (reversible) with adjustable span Communications: RS-485 (MODBUS) Optional integral modem
<b>Enclosure Material</b>	Frame: Minlon Cover: Low density polyethylene
<b>Enclosure Rating</b>	NEMA 4
<b>Mounting</b>	3" NPT
<b>Conduit Entry</b>	3/4" NPT
<b>Weight</b>	13 lbs
<b>Air Purge Connection</b>	1/4" NPT
<b>Cable</b>	Polyester; Monofilament (liquid/solid interface)
<b>Automatic Timer</b>	From 2 minutes to 1 week

#### Remote Display

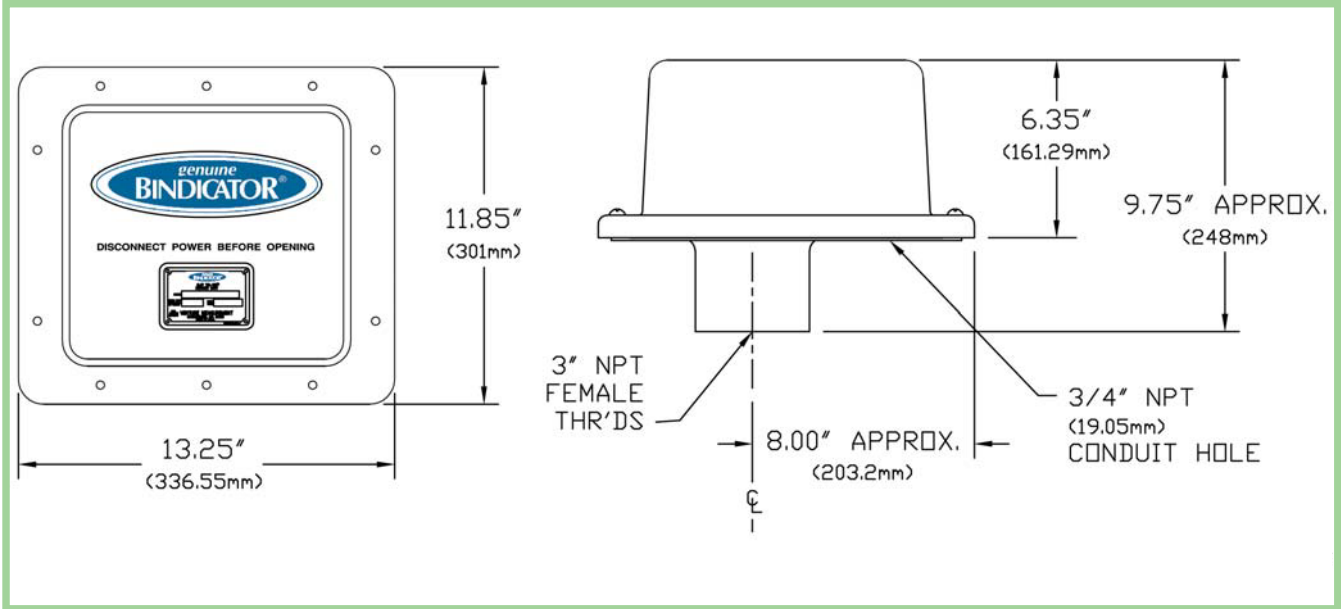
<b>Power Requirements</b>	24VDC powered from Yo-Yo sensor; with optional heater: additional 115/230 VAC
<b>Operating Temperature</b>	-4° F to 158° F (-20° C to +70° C); with heater: -40°F to 120°F (-40°C to 49°C)
<b>Communication</b>	RS-485 MODBUS Optional integral modem
<b>Sensors</b>	up to 99
<b>Display</b>	4 lines by 20 characters backlit LCD display
<b>Keypad</b>	NEMA 4X soft-touch
<b>Enclosure</b>	NEMA 4X molded fiberglass polyester

#### Communications Network

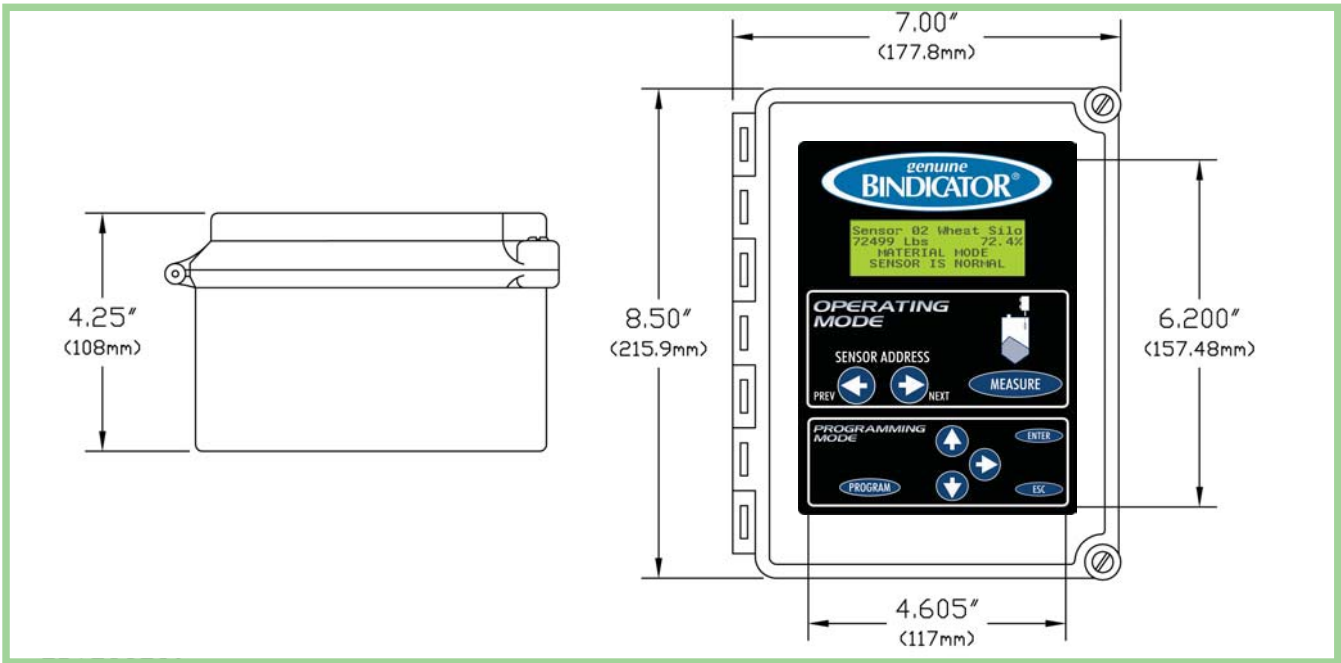
<b>Wiring Requirements</b>	Belden 9842, 4-wire, shielded cable recommended
<b>Wiring Distance</b>	4000 ft maximum
<b>Speed</b>	115 Kbps
<b>Protocol</b>	MODBUS
<b>Interface</b>	RS-485
<b>Internal Modem</b>	Optional 56K Modem

# Dimensions

## Sensor



## Display

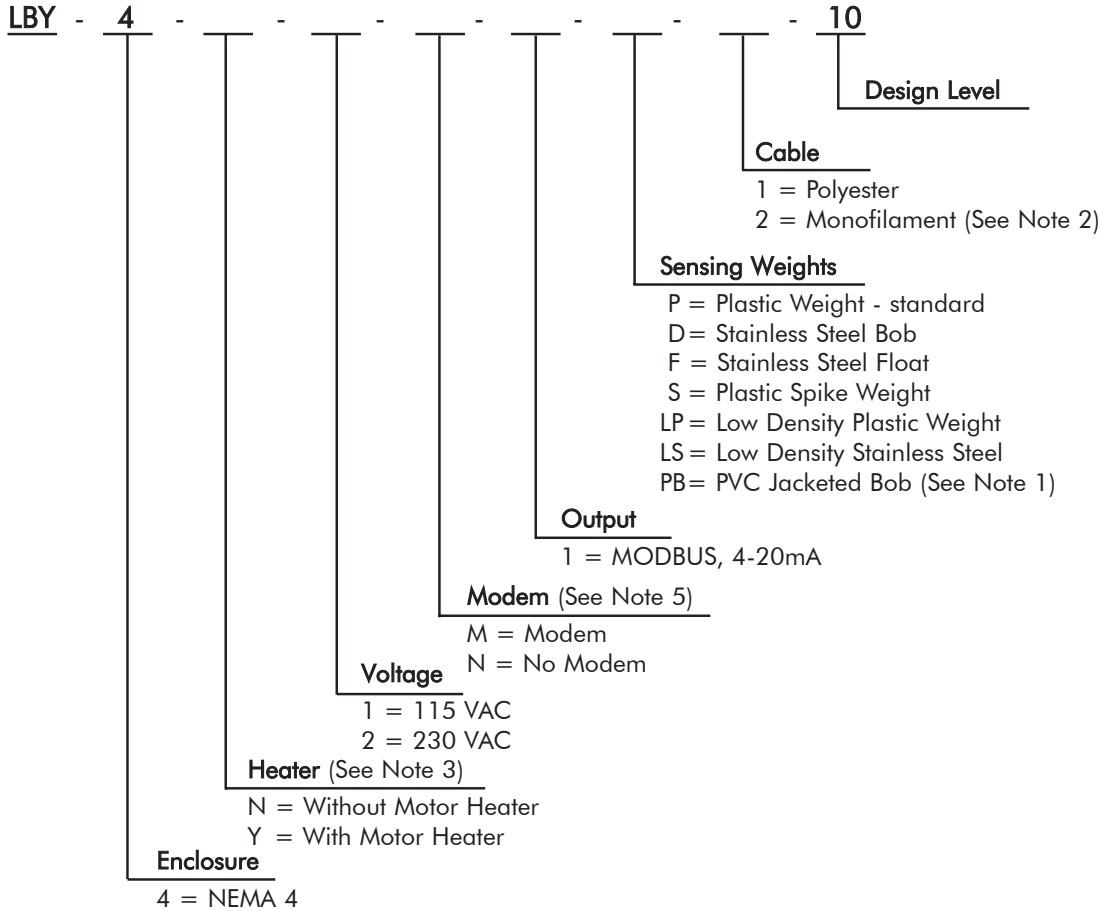




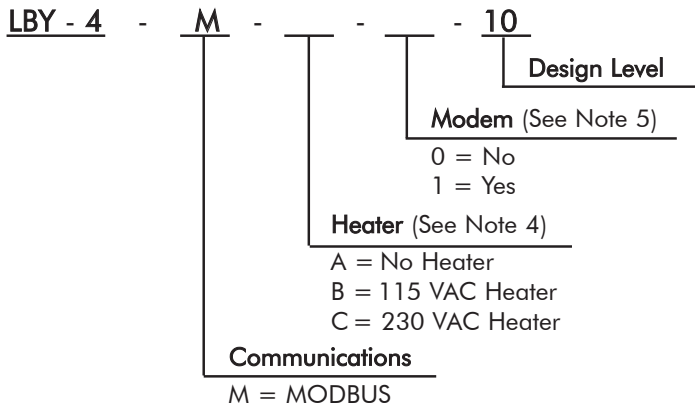
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## Ordering Information

### Sensor



### Display



- Note 1:** Specify monofilament cable
- Note 2:** Maximum length 40 ft (12.19m)
- Note 3:** For operation below 32°F (0° C)
- Note 4:** For operation below -4°F (-20° C)
- Note 5:** Maximum one modem allowed per system



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