

# **ROTARY**

## Point Level Measurement for Inventory Control



Detect high and low levels while protecting valuable inventory with tried-and-true rotary level indicators from BinMaster. Made in Lincoln, Nebraska, USA, following ISO-9001:2015 quality processes, BinMaster offers the widest variety of custom extensions, paddles, and mounting options available. Select from the fail-safe MAXIMA+, reliable BMRX, or compact mini rotary – shipped fast and built to last.

# Models for Every Mission



## MAXIMA+

Fail-safe operation, self-diagnostics, and immediate and corrective response to failures distinguish the MAXIMA+ as the best rotary for process control. Its red LED light visually alerts to fault, covered, or rotating status conditions.

## BMRX

From its explosion-proof housing, to de-energized motor operation, a bi-directional slip clutch, and a four-bearing drive shaft – the BMRX is a rugged workhorse built for efficiency and longevity.



## MINI

Compact design for top or side mounting on small bins or hoppers and in tight spaces.

Four-vane or bayonet style paddle options, adjustable sensitivity, and simple  $\frac{3}{4}$ " installation for affordable level alerts and detection.



	MAXIMA+	BMRX	MINI
De-Energized Motor	X	X	
Fail-Safe	X	X	
Status Light	X		
Time Delays	X		
Auto Sensing	X	X	X
Built-In Slip Clutch	X	X	X
Screw-Off Cap	X	X	
Tight Spaces			X



# Seven Steps to a Better Rotary

1

## De-energized Motor

Automatically goes into a resting state when paddle is covered to extend motor life

2

## Fail-Safe

Confident process control for immediate status notification and visual status notification for mechanical failure or loss of power

3

## Status Light

Solid for covered paddle, blinking for an uncovered turning paddle, and unlit for failed condition

4

## Time Delays

Set 5 to 25 second delays in the alarm relay for covered or uncovered conditions to reduce false positives

5

## Auto Sensing

No sensitivity setting or calibration required regardless of material density

6

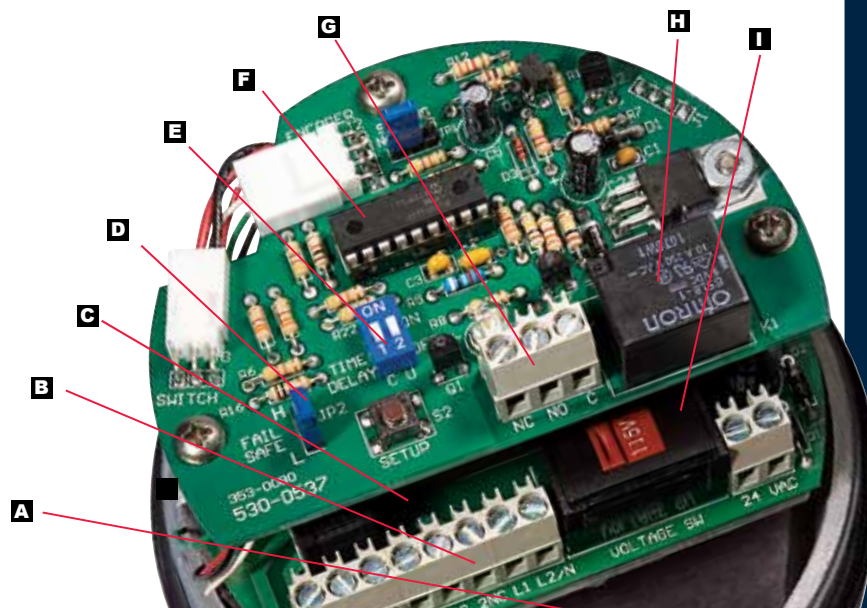
## Built-in Slip Clutch

Protects the gear assembly from damage due to over rotation

7

## Screw-off Cap

USA-made housing with simple access to internal components. No screws to lose!



- A** Easy access to motor
- B** Wire terminals simplify wiring
- C** DPDT 10 Amp relay
- D** Switch selectable high/low fail-safe switch
- E** Time delay for covered & uncovered conditions
- F** Microcontroller-based electronics ensure reliable operation
- G** LED light for local visual indication (MAXIMA+ only)
- H** Supervisory and pulse status relay
- I** Motor voltages include 115 VAC, 230 VAC, 24 VAC, 24 VDC, & 12 VDC



# Models for Every Mission

## Custom Options for MAXIMA+ or BMRX



### HORIZONTAL EXTENSIONS

Side mount through thick concrete walls using a 6", 8", 10" or 12" extended drive shaft and protective shaft guard with a sealed bearing end to prevent packing

### VERTICAL EXTENSIONS

Get high level alerts and specify headroom with a top mounted rotary with a custom extension up to 144"



### FLEXIBLE EXTENSIONS

A flexible 8 mm steel cable from 4" to 14' long detects the level of heavy falling material when attached to a top mounted rotary



### SEALED EXTENSIONS

Protective bearings form a seal between the shaft and shaft guard to prevent false alarms caused by material packing



## STAINLESS STEEL PROCESS CONNECTION



1-1/4" or 1-1/2" stainless steel process connections stand up in corrosive or food processing applications



## TRI-CLOVER

Stainless steel mounts, connections, and clean-in-place features for food, feed, and pharmaceutical use



*"We just love the Binmaster rotaries. They are reliable and offer all the options our customers need."*  
– Ronnie Shappley, Airdusco Inc.

## ADJUSTABLE COUPLING

Vary the depth of a top mounted rotary from 6" to 72" without entering the vessel using a sliding extension

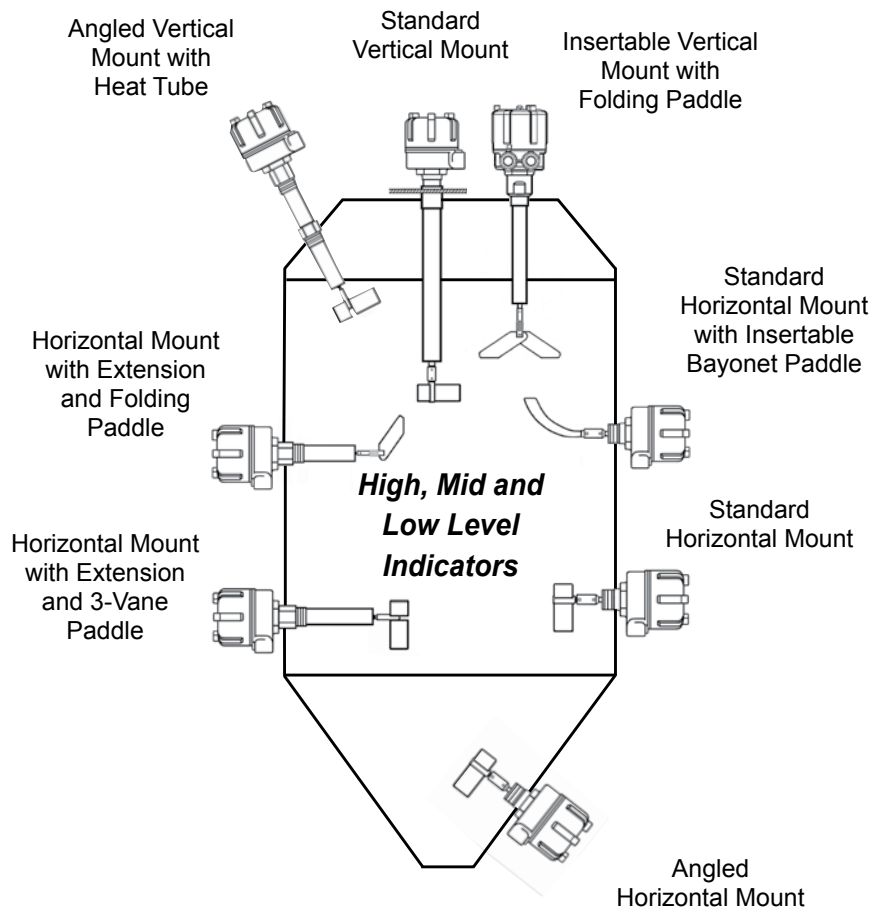


## HEAT TUBES

Distance the electronics from the heat source when external temperatures exceed 140° F (60°C) with 6", 8", or 12" aluminum or stainless-steel extensions that can be side or top mounted



# Rotary Mounting Options



## Mounting Plate Selector

Side or horizontal mounting uses a solid shaft coupler and a half coupling mounting plate available in carbon steel or stainless steel.

Top mounting plates in 0°, 10°, 20°, and 30° angles use a flexible shaft coupler to absorb impact when loading and a full coupling mounting plate.



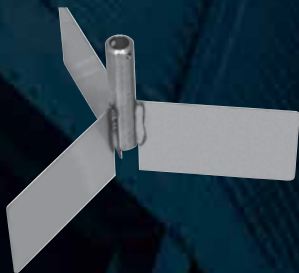
MODEL	MOUNT	ANGLE	COUPLING	CONSTRUCTION	FINISH	GASKET
GRMP-1	Side	0°	Half - 1.25"	Carbon Steel	White Powder Coat	Black Neoprene
GRMP-3	Side	0°	Half - 1.25"	Stainless Steel	Bare	Black Neoprene
GMRP-14	Side	0°	Half - 1.25"	Carbon Steel	Bare	White Silicone
GRMP-2	Top	0°	Full - 1.25"	Carbon Steel	White Powder Coat	Black Neoprene
GRMP-4	Top	0°	Full - 1.25"	Stainless Steel	Bare	Black Neoprene
GRMP-15	Top	0°	Full - 1.25"	Stainless Steel	Bare	White Silicone
GRMP-9	Top	10°	Full - 1.25"	Carbon Steel	White Powder Coat	Black Neoprene
GRMP-16	Top	20°	Full - 1.25"	Carbon Steel	White Powder Coat	Black Neoprene
GRMP-13	Top	30°	Full - 1.25"	Carbon Steel	White Powder Coat	Black Neoprene



# Paddles

BinMaster offers a wide selection of paddles for very light to heavy materials. Select paddles will collapse to fit through a 1-1/4" or 1-1/2" opening allowing installation without entering the vessel. For some applications, a direct connect paddle option will not require a coupler.

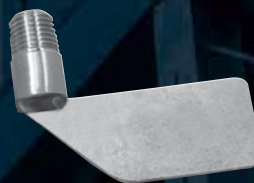
MODEL	TYPE	CONSTRUCTION	TURNING DIAMETER	INSERTION DEPTH	BLADE HEIGHT	CONNECTION	MATERIAL DENSITY
GRP-1	3-VANE	STAINLESS STEEL	7.0"	2.7"	2.0"	COUPLER	LIGHT
GRP-2	3-VANE	STAINLESS STEEL	5"	2.2"	1.5"	COUPLER	MEDIUM
GRP-3	SINGLE VANE INSERTABLE	STAINLESS STEEL	4-7/16"	2.0"	1.0"	COUPLER	HEAVY
GRP-11	3-VANE	NYLON	7.0"	2.6"	1-15/16"	COUPLER	LIGHT
GRP-12	3-VANE	NYLON	5.0"	2.1"	1-7/16"	COUPLER	MEDIUM
GRP-22	3-VANE	STAINLESS STEEL	5.0"	2.2"	1.0"	COUPLER	HEAVY
GRP-23	BAYONET	STAINLESS STEEL	6.4"	6.2"	1.2"	COUPLER	MEDIUM
GRP-24	BELT	BELTING	1.5"	13.2"	12.0"	COUPLER	HEAVY WITH LARGE PARTICLE SIZE
GRP-25	3-VANE	STAINLESS STEEL	5.4"	5.7"	5.0"	COUPLER	VERY LIGHT
GRP-26	3-VANE	STAINLESS STEEL	7.0"	3.5"	2.0"	DIRECT	LIGHT
GRP-27	BAYONET	STAINLESS STEEL	6.4"	8.0"	1.2"	DIRECT	MEDIUM
GRP-28	3-VANE	STAINLESS STEEL	7.0"	5.7"	5.0"	COUPLER	VERY LIGHT
GRP-29	3-VANE	STAINLESS STEEL	5-7/16"	5.7"	5.0"	DIRECT	VERY LIGHT
GRP-30	3-VANE	STAINLESS STEEL	5.0"	4.0"	1.5"	DIRECT	MEDIUM
GRP-31	SINGLE VANE	STAINLESS STEEL	7"	2.25"	1-5/8"	COUPLER	HEAVY
GRP-34	SINGLE VANE	STAINLESS STEEL	8"	4.7"	1-3/8"	DIRECT	MEDIUM TO HEAVY
COLLAPSIBLE TO 1.5" NPT							
GRP-35	DOUBLE VANE	STAINLESS STEEL COLLAPSIBLE TO 1.5" NPT	8"	4.8"	1-3/8"	DIRECT	MEDIUM TO HEAVY
GRP-36	SINGLE VANE	STAINLESS STEEL COLLAPSIBLE TO 1.5" NPT	8"	4.8"	1-3/8"	COUPLER	MEDIUM TO HEAVY
GRP-37	DOUBLE VANE	STAINLESS STEEL COLLAPSIBLE TO 1.5" NPT	8"	4.8"	1-3/8"	COUPLER	MEDIUM TO HEAVY



3-vane paddle



Bayonet paddle



Single vane paddle



Nylon paddle

# Principle of Operation

## High Level Control During Filling

The paddle continually rotates until material reaches it. Sensing resistance, the motor rotates an actuator arm activating a switch wired to an alarm or process equipment to prevent overfilling.

## Low Level Control When Emptying

When covered, the paddle is de-energized and not rotating. As material drops below the paddle, the actuator arm springs back, the motor re-energizes, and the paddle rotates, sending an alarm or starting up a process system.

## Many Materials and Applications

Point level detection in powders and bulk solids with a bulk density of 2 pounds to over 100 pounds per cubic foot. Used in bins, silos, chutes, and conveyors storing or processing powders, pellets, and granular materials.



	MAXIMA+	BMRX	Mini
<b>Power Requirements</b>	24/115/230 VAC 50/60 Hz; 8VA 24/12 VDC, 60/35 mA, 4V4	24/115/230 VAC 50/60 Hz; 5.5VA 24/12 VDC, 1W	115/230 VAC, 50/60 Hz
<b>Output Contacts</b>	DPDT 10 Amp 250 VAC	DPDT 10 Amp 250 VAC	5A @ 250 VAC
<b>Status Indicator Relay</b>	Standard: SPDT 10 Amp 250 VAC, Optional: DC Solid State Relay 1A 60 VDC Optional: AC Solid State Relay 1A 250 VAC		
<b>Operating Temperature</b>	-40°F to +185°F (-40°C to +85°C) ATEX -4°F to +185°F (-20°C to +85°C)	-40°F to +185°F (-40°C to +85°C) ATEX -4°F to +185°F (-20°C to +85°C)	-40°F to +185°F (-40°C to +85°C)
<b>Process Temperature</b>	to +400°F (to +204°C)	to +400°F (to +204°C)	
<b>Pressure</b>	1/2 micron, 30 PSI	1/2 micron, 30 PSI	
<b>Approvals &amp; Certifications CSA / US</b>	Class II Groups E, F & G Hazardous Locations. Enclosure Type NEMA 4X, 5, 9, & 12 IP66	Class I, Groups C & D and Class II, Groups E, F & G Hazardous Locations. Enclosure Type NEMA 4X, 5, 7, 9, & 12 IP66	
<b>ATEX</b>	Please see <a href="http://www.binmaster.com">www.binmaster.com</a> for latest ATEX certifications		
<b>Fail-Safe Mode</b>	Switch selectable between high & low	Switch selectable between high & low	
<b>Time Delay</b>	Dual Independent Time Delay Selectable 5 seconds; Programmable to 25 seconds		
<b>Enclosure</b>	Die cast aluminum, FDA recognized powder coat finish	Die cast aluminum, FDA recognized powder coat finish	Polycarbonate, NEMA 1
<b>Mounting</b>	1-1/4" NPT	1-1/4" NPT	3/4" PF (pipe fitting)
<b>Conduit Connections</b>	3/4" NPT	3/4" NPT	
<b>Shaft and Components</b>	Stainless Steel	Stainless Steel	



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