



The Standard in Dry Bulk Level Control

Roto-Bin-Dicator®

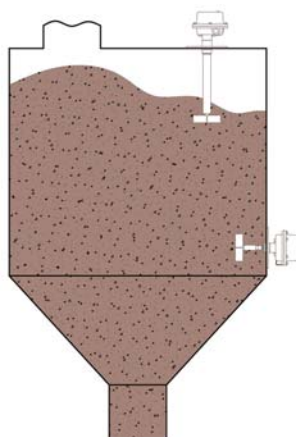
POINT LEVEL CONTROL

APPLICATIONS: The Roto-Bin-Dicator® point level control eliminates bin overflow, empty bins, clogged conveyors, choked elevators and resultant damage and waste. For chemical, food, mining, plastics, ceramic and other industries.

OPERATION: Operation centers around a low torque slow speed synchronous motor. Absence of dry material allows the motor to turn the paddle. Presence of dry material tends to stall the paddle and the motor. The resultant torque actuates a snap-action switch(es) which in turn controls audible and visual signals and/or start and stop machinery such as conveyors, elevators, feeders, etc. Mounts on top or side of bin.

1. General

- A. Material must flow freely both to and from the paddle and shaft.
- B. The paddle and shaft must be kept out of the direct flow of bulk materials while the bin is being filled. Protective shields or an offset mounting procedure may be required.



2. High Level Controls

- A. Top-of-bin mounting is recommended. The length of the shaft may be extended in the field to suit the application. Protective shaft guards are necessary on shaft extensions of 12' or more. Lengths in excess of 20' are common.

The shaft guard should be adequately braced in most installations where the shaft lengths are 2' or longer. Top mounting usually provides a more positive high-level signal on light materials, easier installation and removal, simple adjustment of shaft length, ease and economy of wiring, and minimal damage from vibration. It also permits use of multiflex paddles which are recommended for large-lump materials.

- B. The paddle must be located low enough to insure complete coverage of the paddle when the product angle of repose is at its maximum.

3. Low or Intermediate Level Controls

- A. Side-of-bin mounting is customary, but top-of-bin mounting in small and medium size bins is sometimes advantageous.
- B. Protective shields are recommended if heavy product surges are anticipated at the paddle.

Application Considerations

1. Corrosion

- A. All in-bin metal components are stainless steel.
- B. Solid stainless steel shafts may be used in place of neoprene covered flexible shafts.

powders. The high level control for very light materials (less than 30 lbs. per cu. ft.), or highly fluidized powders should make use of a vertical shaft mounting and large paddles.

2. Temperatures - High and Low

- A. Units with a neoprene flexible shaft can withstand material temperatures to 160° F (71° C).
- B. Units with solid shafts or the silicone flexible shaft can be used with material temperatures above 160° F (71° C) as long as temperatures within the switch housing do not exceed 200° F (93° C).
- C. All units are operational to -30° F (-34.4° C). Power must be maintained to the synchronous motor since the motor is a source of heat within the housing.

5. Large Lump Materials

- A. The neoprene multi-flex paddle will withstand great amounts of abuse common to applications involving large or lump materials. Multi-flex paddles are used only with a vertical shaft mounting technique, and those with neoprene belting must be located close to the bin wall.
- B. If a horizontal shaft mounting is necessary, it is recommended that the control be equipped with a flexible shaft to absorb shock loads. The exposed flexible shaft and paddle should have a field-erected, protected baffle.

3. Moisture

- A. The shaft seal will protect the internal drive shaft and bearings from moisture up to 30 psi.
- B. Moisture affects flow characteristics of materials and promotes adhesion to bin sides. Therefore, mount controls from the top of the bin, extending the paddle down to a free flowing area. Stainless steel, multi-flex paddles are recommended for many moist, non-free flowing materials.

6. Pressure / Vacuum Applications

- A. The shaft seal on the Roto-Bin-Dicator® is rated for up to 30 psi vessel pressures at 1/2 micron particle sizes to prevent material from reaching the shaft bearings. This is particularly important for pneumatic material conveying systems.
- B. For vacuum applications, the shaft seal is rated for 7.3 psi negative. Higher vacuums require the use of a conduit seal fitting and appropriate sealing compound on the cover gasket.

4. Fine Powders

Large, four vane paddles are recommended for fine

How to Order

Versatile Roto-Bin-Dicator® controls are recommended for the majority of dry material level control applications. Here is a general guide to selection:

Units with 120V Motors (50/60 cycle 4 watts)				Units with 240V Motors (50/60 cycle 4 watts)			
One switch Models		Two switch Models		One switch Models		Two switch Models	
Weather-proof	Explosion-proof	Weather-proof	Explosion-proof	Weather-proof	Explosion-proof	Weather-proof	Explosion-proof

Mounting Side of Bin with mounting plate. High, Intermediate and Low Level		Molded Neoprene flexible shaft. Large 4-vane paddle. Type 1: For most applications with temperatures below 160° F (71° C). For materials weighing less than 30 lbs./cu. ft.	R-H-1	RX-H-1	RA-H-1	RXA-H-1	RB-H-1	RXB-H-1	RC-H-1	RXC-H-1
		Molded Neoprene flexible shaft. Standard 4-vane paddle. Type 2: For most applications with temperatures below 160° F (71° C). For materials weighing less than 30 lbs./cu. ft. to 75 lbs./cu. ft.	R-H-2	RX-H-2	RA-H-2	RXA-H-2	RB-H-2	RXB-H-2	RC-H-2	RXC-H-2
		Single vane paddle. Type 3: For heavy (approx. 75 lbs./cu. ft. or more), medium-size materials (sand, gravel, etc.).	R-H-3	RX-H-3	RA-H-3	RXA-H-3	RB-H-3	RXB-H-3	RC-H-3	RXC-H-3
		Single vane paddle - insertable thru 1 1/4" mounting coupling. Type 3i: Curved 9" diameter for materials weighing over 20 lbs/cu. ft. No mounting plate included.	R-H-3i	RX-H-3i	RA-H-3i	RXA-H-3i	RB-H-3i	RXB-H-3i	RC-H-3i	RXC-H-3i
		Standard 4-vane paddle. Type 4: Common configuration for most materials, where short shaft is preferred.	R-H-4	RX-H-4	RA-H-4	RXA-H-4	RB-H-4	RXB-H-4	RC-H-4	RXC-H-4
		Large 4-vane paddle. Type 5: Same as type 4 except large paddle for materials weighing less than 30 lbs./cu. ft.	R-H-5	RX-H-5	RA-H-5	RXA-H-5	RB-H-5	RXB-H-5	RC-H-5	RXC-H-5
Mounting Top of Bin with mounting plate to receive shaft guard. (Preferred high-level mounting)		Shaft coupling to receive shaft extension. Standard 4-vane paddle. Type 6: Common configuration for most top-mounted applications.	R-H-6	RX-H-6	RA-H-6	RXA-H-6	RB-H-6	RXB-H-6	RC-H-6	RXC-H-6
		Shaft coupling to receive shaft extension. Large 4-vane paddle. Type 7: Same as type 6 except large H-371 paddle for light or aerated materials less than 30 lbs./cu. ft.	R-H-7	RX-H-7	RA-H-7	RXA-H-7	RB-H-7	RXB-H-7	RC-H-7	RXC-H-7
		Shaft coupling to receive shaft extension. Neoprene or stainless steel multiflex paddle. Type 8: For heavy, large lump materials. Control should be located so product pins paddle to bin wall. H-374 long, stainless steel multiflex paddle for heavy and/or sticky materials. Both paddles approx. 50 lbs./cu. ft. or more.	R-H-8	RX-H-8	RA-H-8	RXA-H-8	RB-H-8	RXB-H-8	RC-H-8	RXC-H-8

IMPORTANT:

Consult factory on applications where housing ambient temperature is above 200° F (93° C).

Shaft extensions and guards are available in galvanized, T-303 stainless steel, and T-316 stainless steel.

The Roto-Bin-Dicator® is also available with the Super-Safe-Plus option. Ask for brochure LAR180103 for more details.

Specify Options —

- A. Stainless steel mounting plate in place of mild steel.
- B. Addition of flexible shaft to top-of-bin types.
- C. Paddles, motor, mounting plates and flex-shafts are available individually.

Construction Specifications:

A. Housing and Cover:

Standard: Dust-tight and weatherproof (NEMA 4X,5) polyester-coated aluminum castings. Optional: Explosion-proof (NEMA 7,9) polyester-coated aluminum castings. Optional: stainless steel castings.

B. Drive Shaft Assembly:

Precision machined shaft with two shielded ball bearings.

C. Shaft Seal:

Teflon®/Viton® Lip Seal rated 1/2 Micron at 30 psi at 400° F (204° C) even though the unit itself is only rated to 200° F (93° C) (without external cooling).

D. Motor:

Continuous stalled condition will not affect this synchronous motor. Motor rating: 4 watts, 120 VAC ± 10% 50/60 Hz, 1 rpm. Heat generated by the motor's continuous running eliminates the moisture common to changing ambient temperatures and tropical climates, preventing internal corrosion and unit failure. CONDUIT CONNECTION: drilled and tapped for 3/4" NPT pipe conduit.

E. Mounting Plate:

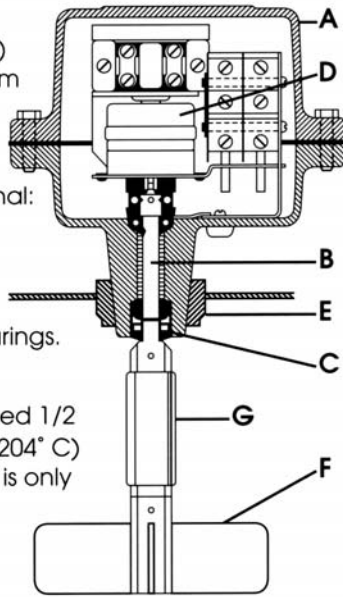
8" outside diameter with 1-1/4" NPT pipe thread coupling. Standard: painted mild steel. Optional: 302 stainless steel with custom formed coupling that shield the casting hub from exposure to the interior of the bin.

F. Rigid Shaft and Paddle:

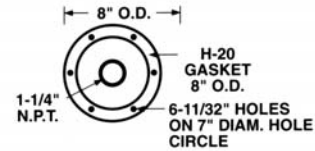
Metal parts of all designs are of 304 stainless steel. Machined, unthreaded and pre-drilled connections permit field interchangeability without need for any power tools.

G. Flex Shaft:

Strong, flexible shaft will not take permanent set due to frequent or severe flexing. The flexible shaft is available in either neoprene, 160° F (71° C) or silicone, 400° F (204° C) coatings.



Mounting Plate Dimensions:



DETAILS COMMON FOR ALL TYPES

Shipping Weight:

Aluminum Housing, 10 lbs.
Stainless Steel Housing, 16 lbs.

Electrical Specifications:

Specific applications determine the electrical requirements which are a prime consideration in the selection of models. See "How to Order" on page 2 Single-pole, double-throw; rating 20 amp. 125, 250 or 480 VAC; resistive load 1 HP @ 125 VAC. 2 HP @ 250 VAC. May be wired for single-throw operation normally open or normally closed.

Approval:

UL, CSA, ATEX

Consult factory for model code listing and rating.

All Roto-Bin-Dicator® controls are listed by Underwriter's Laboratories, Inc. and Canadian Standards Association. The weather-proof models are listed for non-hazardous atmospheres. The explosion-proof models are listed for use in hazardous atmospheres, Class 1, Groups C and D; and Class II, Groups E, F, and G.



HAZARDOUS LOCATIONS AS DEFINED BY THE NATIONAL ELECTRICAL CODE HANDBOOK . . .

The degree of hazard is normally indicated by a three-part designation: "Class-, Division-, and Group-" Class 1, Division 1, Group A denotes the most severely and continually hazardous condition.



Bindicator offers a complete range of Level and Material Handling Controls



150 Venture Boulevard ■ Spartanburg, SC 29306

Tel: (800) 778-9242 ■ (864) 574-8060

Fax: (864) 574-8063

E-mail: sales@bindicator.com

www.bindicator.com

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