

MINI-ROTO™

Miniature Paddle Wheel Level Switch
a product of BINDICATOR

THEORY OF OPERATION

Mini-Roto™ utilizes a low torque, slow speed permanent magnet synchronous motor and two MicroSwitches®.

During normal operation (no material present) the synchronous motor rotates the paddle at 1 RPM. When the paddle rotation is impeded by material surrounding it, the motor rotates and activates two Micro-Switches. One switch is used to control the customer's equipment. The second switch will shut off the motor, illuminate the red "Alarm" LED and turn on the heater.

SPECIAL FEATURE

The inside lower frame houses a tension spring for torque adjustment. The units are shipped to our customers in high sensitivity for low bulk density materials. The spring should be moved to the next peg (peg furthest away from the motor assembly) for high bulk density material applications.

CAUTION: If the spring is moved, ensure it is directed towards the outside of the pegs. This will prevent the spring from impeding on the pivot of the motor.

LOCATION AND INSTALLATION

The paddle and shaft are to be kept out of the direct flow of material. If the Mini-Roto-Bin-Dicator is installed and contacts the flow stream, then we recommend a protective baffle be installed on the inner wall.

CAUTION: When side mounting, the conduit opening should be placed down to eliminate moisture from entering the unit from the conduit.

MOUNTING SURFACE PREPARATION

On a 4.75" (120.65mm) bolt circle, drill and tap (or drill) 6 equally spaced holes in the bin wall for 3/16" bolts or cap screws. Bolt heads should be tack welded to bin inner wall. Insert gasket between mounting plate and bin wall. Cut 3-4" diameter hole in order to insert 4-vane paddle. An "Insertable" paddle will pass through a 3/4" coupling at the bin wall.

WIRING

Field wiring should conform to the requirements of the National Electrical Code and any other agency or authority having jurisdiction over the installation.

- Check nameplate for proper operating voltage
- Connect power wires to terminal block (TB-1) located on circuit board (See Figure 1)

Figure 1 AC Circuit Board

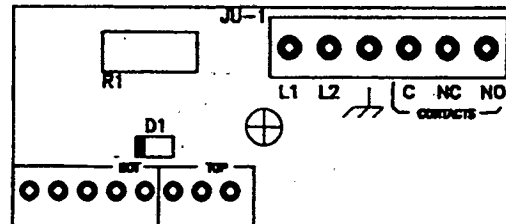
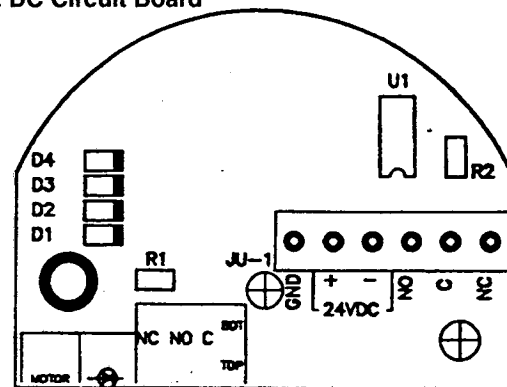


Figure 2 DC Circuit Board



- Connect wiring for alarm output to terminal block.

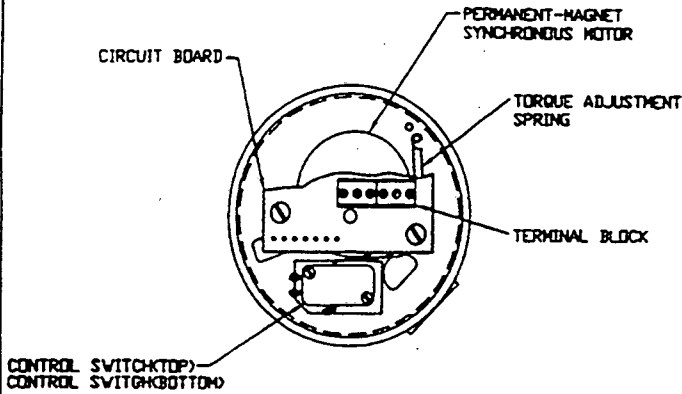
(Diagram is also located in housing cover for position of terminal contacts)

CAUTION: After wiring connections are complete, verify that the wires at conduit entry are not impeding the switches from actuating.

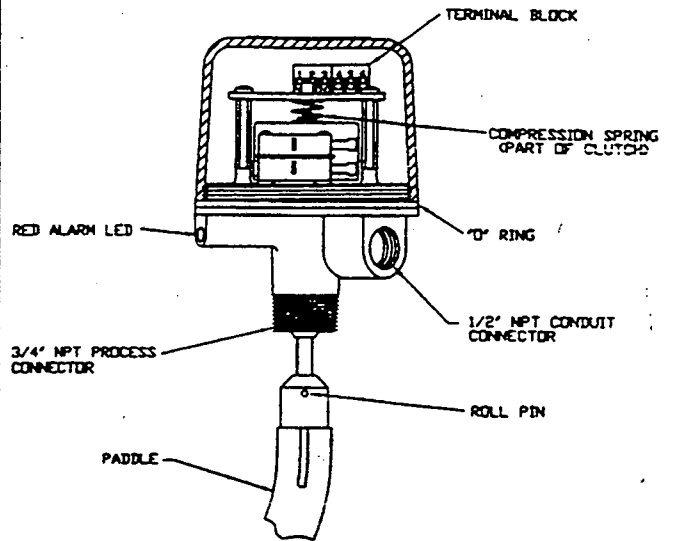
IMPORTANT!

Do not dispose of the carton or packing until the unit has been inspected for damage. If the unit is received damaged, notify the carrier or the factory for instructions. Failure to do so may void your warranty. Thank you!

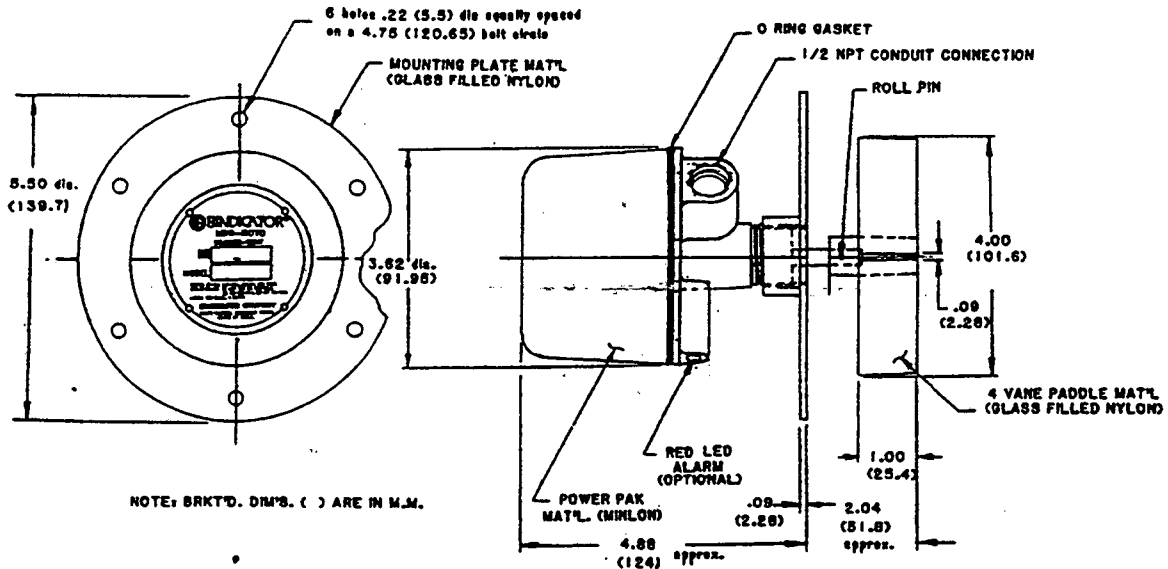
TOP VIEW OF MINI-ROTO



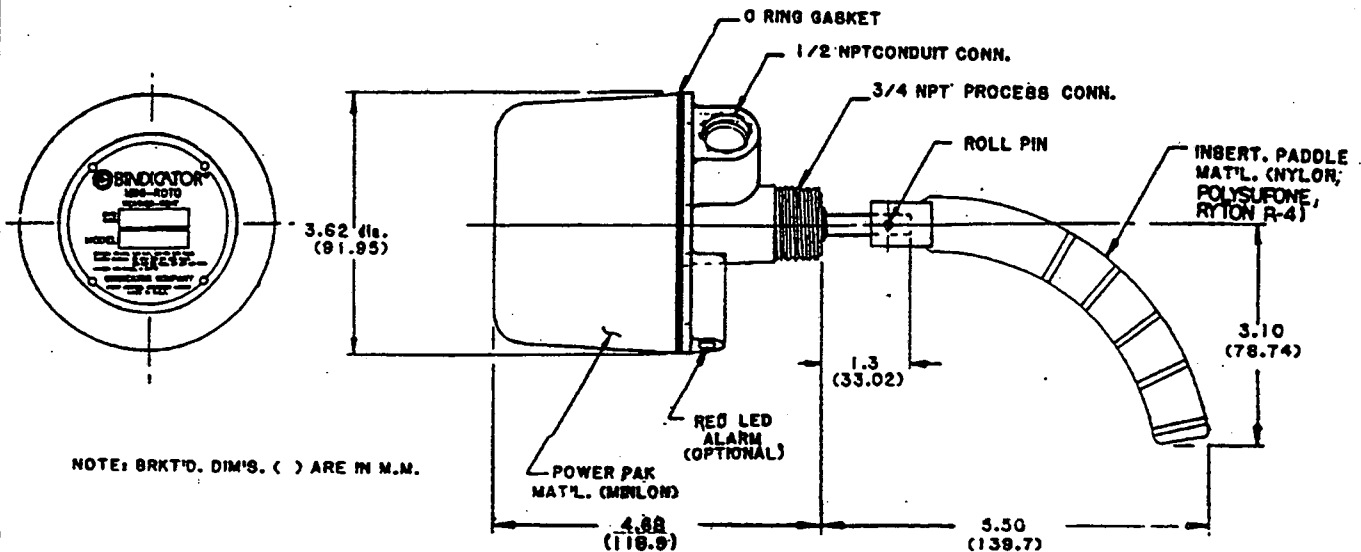
SIDE "CUT-AWAY" VIEW OF MINI-ROTO



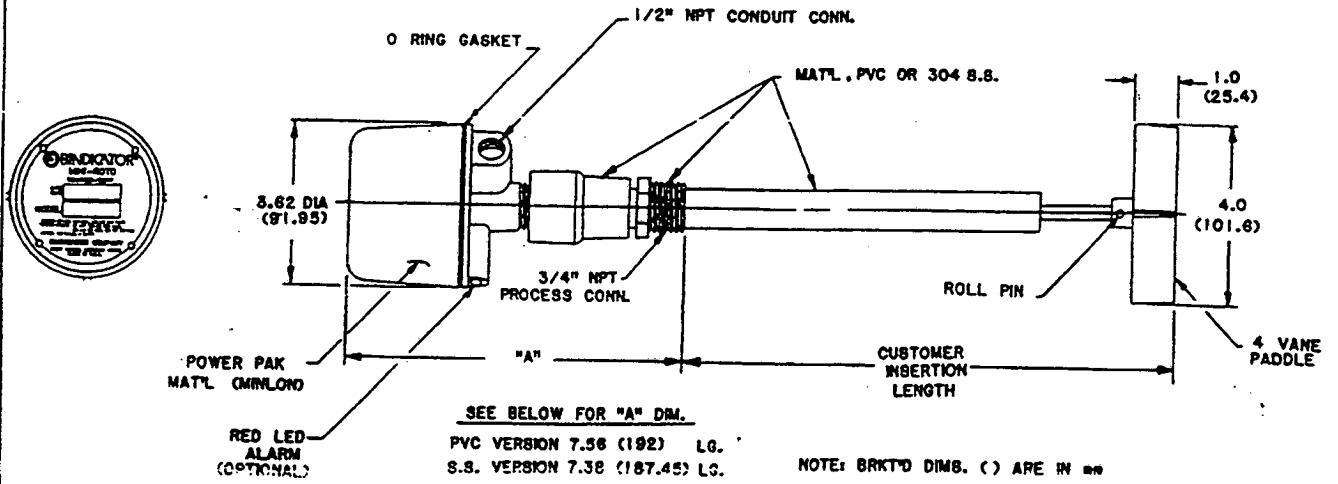
OUTLINE DWG. - MINI-ROTO: MOUNTING PLATE & 4 VANE PADDLE



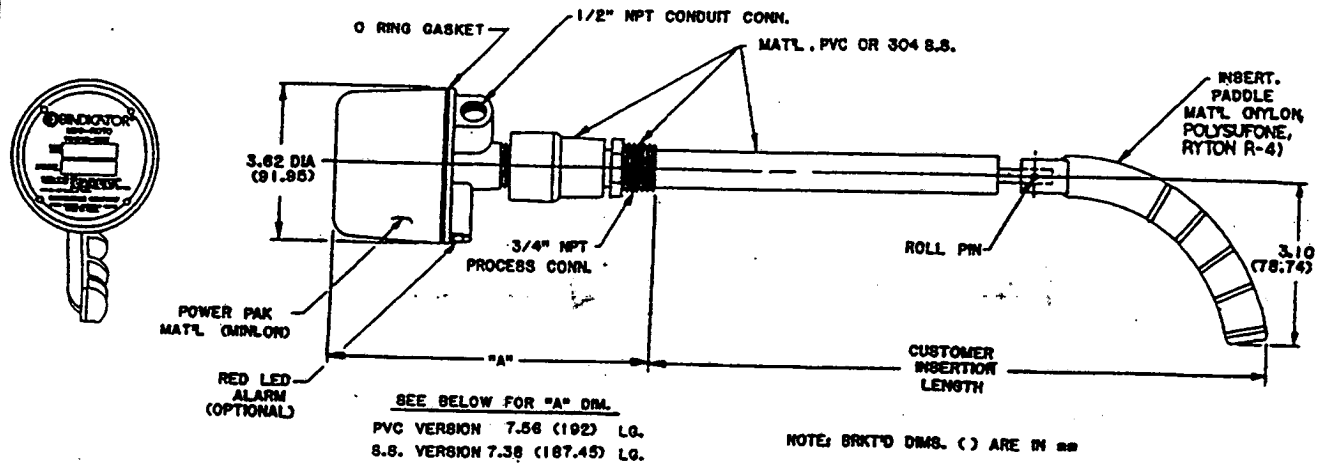
OUTLINE DWG. - MINI-ROTO: INSERTABLE PADDLE



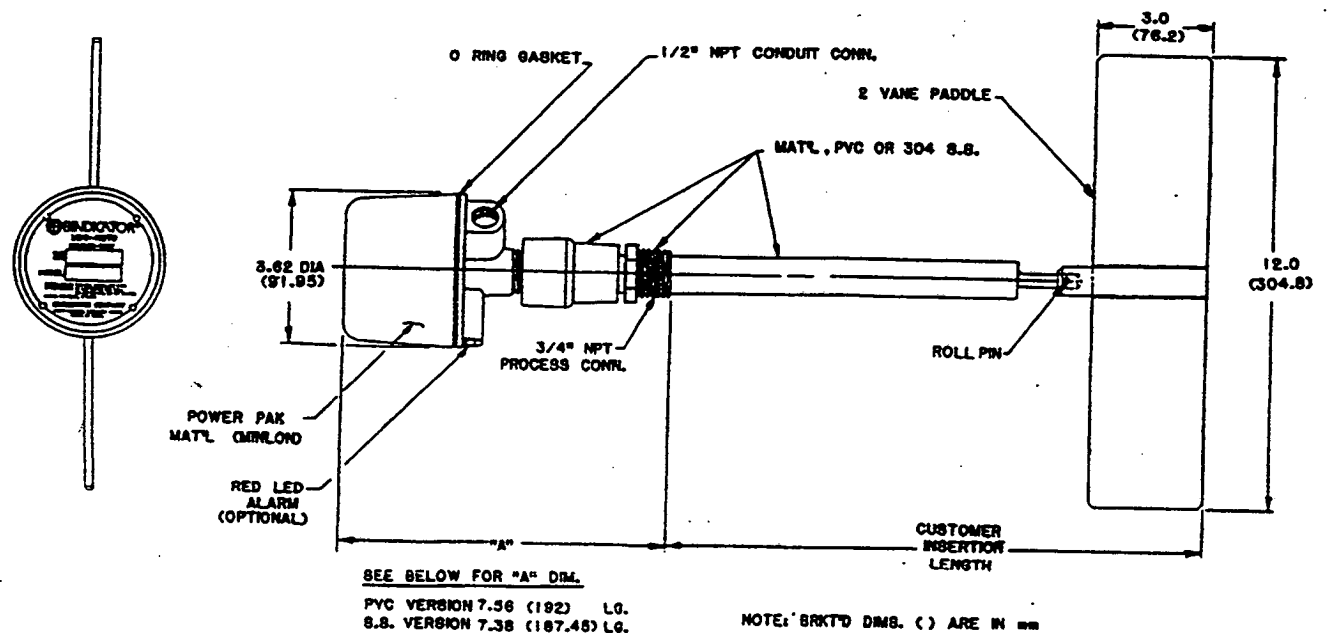
OUTLINE DWG. - MIN-ROTO: 4 VANE PADDLE WITH SHAFT & GUARD EXTENSION



OUTLINE DWG. - MINI-ROTO: INSERTABLE PADDLE WITH SHAFT & GUARD EXTENSION



OUTLINE DWG. - MINI-ROTO: 2 VANE PADDLE WITH SHAFT & GUARD EXTENSION



SPECIFICATIONS

Motor: Permanent-Magnet Synchronous, 2 watts, 24/120/240 VAC +/- 10%

Voltage: 120/240 VAC +/- 10%, 24 VDC +/- 10%

Switch Rating: SPDT 10 A 125 VAC; 10A 250VAC; 1/2 A 125VDC; 1/4 A 250VDC

Enclosure: Dust-tight, Corrosion Resistant, Weatherproof (Nema 4,4X,5)

Enclosure Material: Housing and Cover; Injection Molded Minlon

Shaft Seal: Teflon/Viton Lipseal rated 1/2 micron @ 30 psi (2.1 kg/cm²) @ 400° F (204° C)

Mounting: 3/4" NPT

Clutch: Prevents damage to motor gear train

Conduit Opening: 1/2 " NPT

Drive Shaft Assembly: Precision Shaft with 2 Delrin AF (Teflon) Bearings

Circuitry: Designed to shut motor off during presence of material; turn on Red LED, 1 watt heater to eliminate moisture.

Paddle: Nylon, Ryton, or Food Grade "Insertable or "4 vane". Also available, "2 vane" PVC only

Screw Terminals: For Power and Switch Wiring

ORDERING INFORMATION

How To Order:

MR

	Enclosure	
	1 - Standard 4X Minlon	
	LED	
	Y - Yes	
	Voltage	
	1 - 120 VAC	
	2 - 240 VAC	
	3 - 24 VDC	
Mini-Roto		

MINI-ROTO ACCESSORIES:

PART #	DESCRIPTION
LMR110006	2 Vane (3" x 12") PVC Paddle
LMR110007	PVC Extension & Guard Assembly*
LMR110008	304 S.S. Extension & Guard Assy.*
LMR120003	Insertable Paddle, Nylon
LMR120006	4 Vane Paddle, Nylon
LMR120024	4 Vane Paddle, Ryton
LMR120025	4 Vane Paddle, Food Grade
LMR120026	Paddle, Insertable - Ryton
LMR120027	Paddle, Insertable - Food Grade
LMR130025	Mounting Plate, Nylon
LMR130026	Mounting Plate Gasket

*Order the above assemblies in inches for customers required insertion length.

Level and Material Handling Instrumentation & Controls

Electro-Mechanical Point Level Controls	RF Capacitance Point Level Controls	Continuous Level Controls	Material Handling	Ultrasonic Level Monitor	GENELCO Liquid Level Controls
Roto-Bin-Dicator [®]	RF-6000	GP Yo-Yo [®]	Bin-Flo [®]	Micro-Sonic [™]	Mach One [®]
Fail-Safe Roto-Bin-Dicator [®]	RF-8000	GP II Yo-Yo [®]	Flo-Guard [™]		Leveldata
Super-Safe Roto-Bin-Dicator [®]	RF-9000	Mark III Yo-Yo [®]			Eagle [®]
Mini-Roto-Bin-Dicator [®]	RF-9100	Cap Level [®] II			Tracker [®]
Model A Bin-Dicator [®]	RF-9200	Cap Level [®] IIA			
Auto Bin-Dicator [®]	RF-10000	BOSS [®] II			
Bantam Bin-Dicator [®]	RF-11000	AR-1000 [®]			
Liquid Level Bin-Dicator [®]	RF-12000	Phase Tracking			
Pulse Point [™]					

For information, specifications or engineering help on any Bindicator Company product, contact your local representative.

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