# ROTO-BIN-DICATOR® FAIL-SAFE “PLUS” MODELS

## Housing Parts List

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>DESCRIPTION</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAR110940</td>
<td>Frame Assembly Aluminum Includes shaft seal, clutch, drive shaft, bearings and stub shaft.</td>
<td>1</td>
</tr>
<tr>
<td>LAR110915</td>
<td>Cover Aluminum, with Lenses</td>
<td>1</td>
</tr>
<tr>
<td>LAR111054</td>
<td>(120V) Motor Assembly - Includes Bracket. (240V) Micro Switch and Wiring Harness.</td>
<td>1</td>
</tr>
<tr>
<td>LAR111061</td>
<td>(120V) Printed circuit assembly includes control relay, display board.</td>
<td>1</td>
</tr>
<tr>
<td>LAM930003</td>
<td>Mounting Spring</td>
<td>1</td>
</tr>
<tr>
<td>LAR131305</td>
<td>Return Spring</td>
<td>1</td>
</tr>
<tr>
<td>LAR122139</td>
<td>Motor Support Bracket</td>
<td>1</td>
</tr>
<tr>
<td>LAR131229</td>
<td>Cover Gasket</td>
<td>1</td>
</tr>
</tbody>
</table>

**NOTE:** 304 Stainless Steel is standard for metal parts of all Shafts and Paddles

## Side of Bin Mounting

### Type 1
- Flexible Shaft
- And Four Vane Paddle
- Mounting Plate
- H-19
- H-19SS
- Paddle H-371 2" x 7"
- 6-5/8" 5-7/8" 3/4" 5-7/8"

### Type 2
- Flexible Shaft
- And Four Vane Paddle
- Mounting Plate
- H-19
- H-19SS
- Paddle H-370 1/2" x 5"
- 6-5/8" 5-7/8" 3-3/4" 5-7/8" 1-1/4"

### Type 3
- Flexible Shaft
- And Four Vane Paddle
- Mounting Plate
- H-19
- H-19SS
- Paddle H-370 1/2" x 2 1/4"
- 3-3/4" 5-7/8" 1 1/4"

### Type 3i
- Flexible Shaft
- And Four Vane Paddle
- Mounting Plate
- H-19
- H-19SS
- Paddle H-379 5/8"
- 8-1/4" 5-7/8"

### Type 4
- Flexible Shaft
- And Four Vane Paddle
- Mounting Plate
- H-19
- H-19SS
- Paddle H-370 1/2" x 5"
- 3-3/4" 5-7/8" 1 1/4" 5-7/8" 1-1/2"

### Type 5
- Flexible Shaft
- And Four Vane Paddle
- Mounting Plate
- H-19
- H-19SS
- Paddle H-371 2" x 7"
- 3-3/4" 5-7/8" 1 1/4"

### Type 6
- Flexible Shaft
- H-36 (Optional)
- Coupling H-38
- Shaft Extension
- Galv. or S.S.
- Shaft Guard
- Galv. or S.S.
- Overall Shaft Length
- 20 Lengths Not Uncommon

### Type 7
- Flexible Shaft
- H-36 (Optional)
- Coupling H-38
- Shaft Extension
- Galv. or S.S.
- Shaft Guard
- Galv. or S.S.
- Overall Shaft Length
- 20 Lengths Not Uncommon

### Type 8
- Flexible Shaft
- H-36 (Optional)
- Coupling H-38
- Shaft Extension
- Galv. or S.S.
- Shaft Guard
- Galv. or S.S.
- Multi-Flex
- Paddle (DIM X)
- H-373 Neoprene - 24"
- H-374 Stainless Steel - 17"

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**Details Common for All Types**

**Model “RAF+”**
- WEA. PRF. 110vac

**Model “RCF+”**
- WEA. PRF. 220vac
OPERATION—INSTALLATION & WIRING INSTRUCTIONS

Normal Operation: During normal operation (no material present) a synchronous motor rotates the paddle at 1 RPM. When this paddle rotation is impeded by material surrounding the paddle, the motor will stall and cause the 20 AMP relay to change state indicating an alarm.

In the event of electrical failure (power loss, open or shorted motor circuit, or failure of a protected component), the FAIL-SAFE feature will generate the desired control response from the relay and provide notification of the failure. The solid state electronics will allow you to set the fail-safe condition for either fail-safe high or fail-safe low. The status light can be located remotely in addition to the built-in "Green LED".

The Roto-Bin-Dicator™ Plus has two LEDs located on the cover which is visible up to 30 feet away. The GREEN LED, if illuminated, tells the operator that: 1) the motor is running, 2) power is at the sensor, and 3) nothing has failed. The RED LED also located on the cover tells the operator that the unit is in the level alarm condition when the LED is illuminated.

Mounting Location: There must be free flow of material both to and away from the paddle and shaft. Keep the paddle and shaft out of the direct flow of material. Protective baffles or offset mounting may be required.

Mounting Surface Preparation:

A. On a 7" bolt circle, drill and tap or drill 6 equally spaced holes in bin wall for 7/16" bolts or cap screws. Bolt heads should be tack welded to bin inner wall.
B. Cut 5" diameter hole to pass paddle.
C. If required, fabricate & weld or bolt protective baffle to inner wall.

Mounting on Side of Bin:

A. Conduit opening must be down or to the left.

NORMAL MODE

<table>
<thead>
<tr>
<th>NON-ALARM STATE</th>
<th>RELAY ENERGIZED</th>
<th>RED LED OFF</th>
<th>GREEN LED ON</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO2 9</td>
<td>C2</td>
<td>C1</td>
<td>NC1</td>
</tr>
<tr>
<td>C2 7</td>
<td>NO1</td>
<td>C1</td>
<td>NC1</td>
</tr>
<tr>
<td>NO2 8</td>
<td>NO1</td>
<td>C1</td>
<td>NC1</td>
</tr>
<tr>
<td>NO1 5</td>
<td>NO2</td>
<td>C1</td>
<td>NC1</td>
</tr>
<tr>
<td>C2 7</td>
<td>NO2</td>
<td>C1</td>
<td>NC1</td>
</tr>
<tr>
<td>C1 4</td>
<td>NO2</td>
<td>C1</td>
<td>NC1</td>
</tr>
<tr>
<td>NC1 6</td>
<td>NO2</td>
<td>C1</td>
<td>NC1</td>
</tr>
</tbody>
</table>

HIGH LEVEL FAILSAFE | LOW LEVEL FAILSAFE

FAIL MODE

<table>
<thead>
<tr>
<th>ALARM STATE</th>
<th>RELAY NOT ENERGIZED</th>
<th>RED LED OFF</th>
<th>GREEN LED ON</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO2</td>
<td>C2</td>
<td>C1</td>
<td>NC1</td>
</tr>
<tr>
<td>C2 7</td>
<td>NO1</td>
<td>C1</td>
<td>NC1</td>
</tr>
<tr>
<td>NO2 8</td>
<td>NO1</td>
<td>C1</td>
<td>NC1</td>
</tr>
<tr>
<td>NO1 5</td>
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<tr>
<td>C2 7</td>
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<td>C1 4</td>
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<tr>
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<td>C1</td>
<td>NC1</td>
</tr>
</tbody>
</table>

HIGH LEVEL FAILSAFE | LOW LEVEL FAILSAFE

Wiring Instructions:

In order to insure proper fail-safe operation, the power source to the Roto-Bin-Dicator must be independent of the source to the equipment being controlled.

A. Connect power and "FAIL-SAFE" light to terminals 1-3 per wiring diagram.
B. Connect alarm contacts (terminals 4-9) per contact position chart.
C. Apply power to Roto-Bin-Dicator, observing paddle for proper rotation.
D. Fasten housing cover securely to prevent damage from dust and moisture.

Fail-Safe Selection:

Failure to program the desired fail-safe mode will result in improper control operation. Therefore, the fail-safe mode must be selected as follows:

A. High Level Fail-Safe
   To select high level fail-safe, clip the wire link labeled "LO" from the printed circuit board, leaving the link labeled "HI" in place. The fail-safe links are located in the upper right hand corner of the circuit board.

B. Low Level Fail-Safe
   To select low level fail-safe, clip the wire link labeled "HI" from the printed circuit board, leaving the link labeled "LO" in place. The fail-safe links are located in the upper right hand corner of the circuit board.