



CONVEYOR COMPONENTS COMPANY

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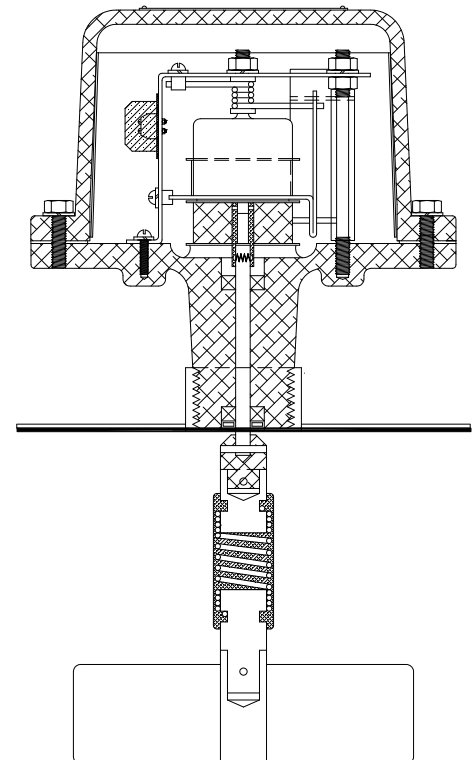
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MODEL CR: ROTO-LEVEL CONTROL

1. **Cover** - Cast aluminum.
2. **Base** - Cast aluminum standard with 1 1/4" NPT mounting thread. Single conduit connection is 3/4" NPT.
3. **Motor**- Voltage: 24VAC (non-UL), 120 or 240 VAC
Frequency: 50/60 Hertz, Single Phase
Power: 5 Watts
Speed: 1 RPM
4. **Microswitches** - SPDT, rated at 20 amps resistive load (10 amps inductive load):
20 A, 125/250/480 VAC
1 HP, 125 VAC
2 HP, 250 VAC
1/2 A, 125 VDC
1/4 A, 250 VDC

Unit can be furnished with 1, 2, or 3 switches (see page 2). All switches can be wired for single throw operation, either normally open or normally closed as required.

FIGURE 1:



5. **Sensitivity Adjustment** - Spring tension is adjustable to product density.
6. **Time Delay Adjustment** - Variable to prevent false signals.
7. **Terminal Block** - For CR motor supply voltage.
8. **Clutch** - Slips to prevent damage to motor gears.
9. **Bearings** - Sealed, permanently lubricated precision ball bearings.
10. **Shaft Seal** - Dust and moisture-tight. Rated 1/2 micron at 30 PSI [2 bar].
11. **Mounting Plate** - 8" [203 mm] diameter with 1-1/4" NPT welded pipe coupling. Powder coated is standard. Stainless steel is optional. Flexible to conform to curved bins.

12. **Cover Gasket** - 1/16" [1,6 mm] thick neoprene.

13. **Mounting Gasket** - 1/16" [1,6 mm] thick fiber.

14. **Shaft** - Optional flexible and/or solid with all metal parts made of stainless steel.

15. **Paddle** - All metal parts made of stainless steel. Various types interchangeable in field. See sales literature for options.

16. **Drive Shaft** - Precision machined stainless steel. Impervious to moisture and corrosion build-up.

17. Enclosure:

a. General Purpose - cULus Listed Type 4/4X Enclosure. Cast aluminum base and cover.

b. Explosion Proof - cULus Listed for Hazardous Locations Type 7 Enclosure - Class I, Groups C and D; and Type 9 Enclosure - Class II, Groups E, F, and G. Cast aluminum base and cover.

18. Location:

The Roto-Level control should be mounted where there is a free flow of material to and away from the paddle. The unit should be out of the direct flow of incoming material.

Enclosure	Number of 20 Amp SPDT Micro-Switches	Model No.		
		120 VAC Motor	240 VAC Motor	24 VAC (non-UL) Motor
Type 4 cULUS Listed	One	CR-1A	CR-1B	CR-1C
	Two	CR-2A	CR-2B	CR-2C
	Three	CR-3A	CR-3B	CR-3C
Explosion-Proof Type 7&9 cULUS Listed	One	CRX-1A	CRX-1B	CRX-1C
	Two	CRX-2A	CRX-2B	CRX-2C
	Three	CRX-3A	CRX-3B	CRX-3C

19. Mounting Plate or Coupling: See Figure 3 for mounting pattern.

If a mounting plate is used at either the top or side mounting positions, it will be necessary to lay out a 7" [178 mm] bolt circle, drill and tap or drill six (6) equally spaced holes in the bin wall for 1/4" [6 mm] bolts or cap screws. A 5" [127 mm] diameter hole should be cut to allow the paddle to pass through the bin. Please see the template that came with the mounting plate for proper layout (drawing # A0010092). A protective baffle may be required to protect the shaft and paddle from the flow of incoming materials.

If instead of the mounting plate a pipe coupling is used to mount the unit to the bin, the 1 - 1/4" NPT coupling should be welded so that only half of the coupling protrudes inside of the bin. A half coupling should be used for side mounting and a full coupling used for top mounting.

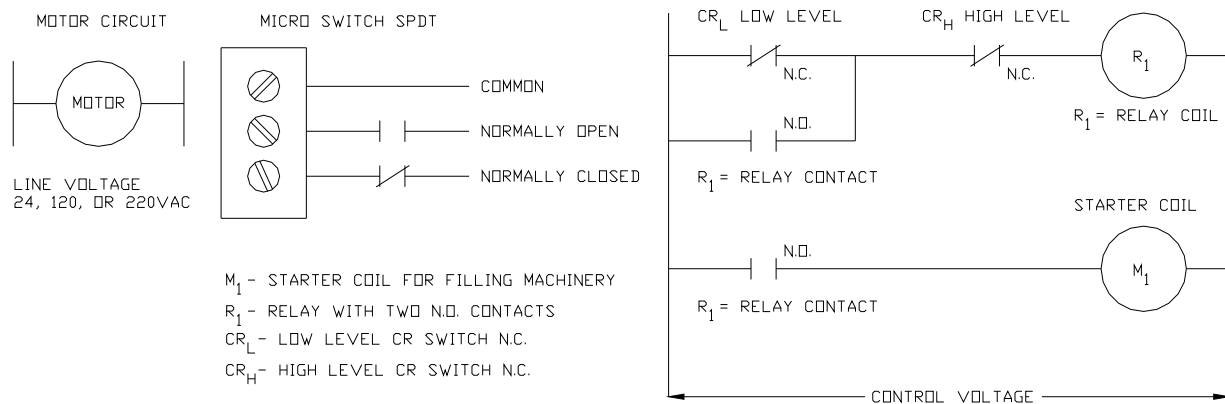
- a. **SIDE MOUNTING:** Install the unit so that the conduit opening is pointing down. Mount the unit on the bin so that the gasket is between the mounting plate and the bin wall. Use steel washers under the mounting bolts.
- b. **TOP MOUNTING:** The mounting plate should be installed with steel washers on top of the mounting plate. When cutting the 1/8" pipe shaft extension, be sure to include the length of the paddle and the optional CR-71 flexible shaft (if used). A 1/8" [3 mm] hole should be drilled through the pipe extension, 7/16" [11,1 mm] from each end. The extension is then assembled to the unit or flexible shaft using CR-72 coupling and 1/8" x 5/8" roll pins.

The 1-1/4" pipe guard should be cut on the non-threaded end, 5" [127 mm] shorter than the overall length of the shaft and paddle assembly. The guard is then screwed securely into the mounting plate over the shaft extension.

After the pipe guard is attached (if used), the paddle can be attached. If the extension is long, brace the pipe guard to the bin wall at 6-foot [1,8 m] intervals.

20. Wiring:

FIGURE 2:



- a. Note: TWIST WIRES TOGETHER BEFORE INSERTING IN TERMINAL (ENROULEZ LES FILS ENSEMBLE AVANT LES INTRODUIRE DANS LA BORNE.).
- b. In applications where there is a different power voltage level/type on the motor than through the microswitches, there must be a secure separation between these voltages within the control.
- c. Connect the correct power source directly to the motor terminal block. An uninterrupted continuous power supply must be used.
- d. Wiring of the control circuit to the microswitch is done separately from the motor - **Do not tap off of the motor source.** Connect the leads to the common and either the Normally Open or Normally Closed terminals, depending on type of control circuit to be wired.

e. Operation of the unit should be checked, both with regard to the motor and the switch(es) before either cover is installed.

21. Operating Temperature:

	Min.	Max.
CR Control, Type 4/4X (ambient)	-40°C (-40°F)	40°C (104°F)
CRX Control for Hazardous Locations (operating)		T6 ($\leq 85^{\circ}\text{C}$ / 185°F)
Process/Paddle Temp. (ambient maintained on control side of mounting surface)		
• with Flexible shaft (CR-71)		160°C (71°F)
• with Neoprene paddle (CR-64)	-20°C (-4°F)	180°C (82°F)
• with Stainless steel shaft and paddle		177°C (350°F)

Please note that at extreme temperatures, possible thermal influences on loose bulk materials must be considered.

22. Conduit Connection:

In order to maintain a dust tight and watertight (IEC 144, IP 65 / NEMA TYPE 4/4X) enclosure, the conduit connector and conduit must be rated for IEC 144, IP 65, NEMA TYPE 4/4X.

23. Earth / Ground Connection:

To ensure a proper earth connection, leads must be attached to the earth/ground screw placing the lead between the brass cup washer and the screw head.

FIGURE 3:

