



CONVEYOR COMPONENTS COMPANY

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MODEL VA & VA-X: BUCKET ELEVATOR CONTROL INSTALLATION INSTRUCTIONS

WARNING:

DEATH or SERIOUS INJURY may occur.

Before installing or adjusting, shut down and physically lock-out the conveyor system.

To prevent ignition in hazardous atmospheres, disconnect power before servicing.

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A. INTRODUCTION

The VA Belt Alignment Control is designed to protect elevator legs from the severe damage that results from misalignment of vertical conveyor belts. When used in pairs, these controls can be wired to give signals such as turning on a warning device and/or can be connected directly into the starter motor circuit to stop the conveyor unit.

B. OPERATION

The VA Bucket Elevator Belt Alignment Control's main components are a conveyor roller with sealed bearings, a four bar linkage, and a microswitch. The four bar linkage connects the roller's pivot shaft to the switch actuator. The roller is held into a set position by roll pins and set screws.

The microswitch has double-pole/double-throw, sequential, snap-action, double break contacts. When the roller is displaced 15°, the first pole of the microswitch is triggered. This pole can be wired to sound a warning alarm, light an indicator light, or stop the conveyor. The second pole is triggered after the roller is displaced an additional 10°. This pole could also be wired to stop the conveyor motor. **Figure 2: Allowable Roller Travel** shows a range of roller orientations and the allowable travel for each stage.

C. SPECIFICATIONS

Electrical Output:

- Double Pole/ Double Throw
- 10 Amp - 120, 240, 480 VAC
- 0.8 Amp - 120 VDC
- 0.4 Amp - 240 VDC
- Conduit Connection: 3/4 inch NPT
- Operating Temperature: 14 to 179° F [-10 to 82°C]

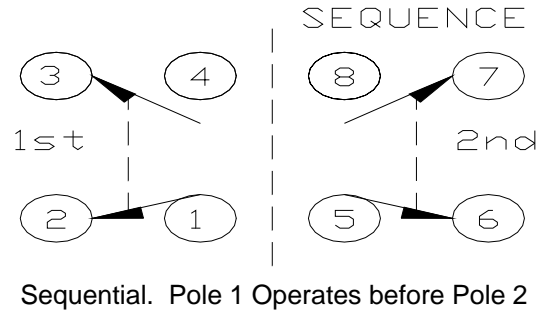
General Purpose Microswitch

- Meets NEMA Standards: 1, 3, 4, 4X, 6P and 13
- UL Listed and CSA Certified

Explosion Proof Microswitch

- Meets NEMA Standards: 1, 3, 4, 6, 7, 9, and 13
- Class I, Div. 1, Groups B, C, and D
- Class II, Div. 1, Groups E, F, and G
- UL Listed and CSA Certified

Wiring Schematic:



D. INSTALLATION

The VA Belt Alignment Control units should be mounted in a location that allows them to be directly across from each other. This will give the most accurate alignment reading. See **Figure 4: Installation** for an illustration.

Preparing the Chute:

1. The Vertical Bucket Elevator Control is mounted directly onto the chute.
2. Locate the Centerline of the Conveyor belt on the Return Side of the Conveyor System. Transfer this Centerline onto the chute walls.
3. Using the projected Centerline and **Figure 1: Mounting Dimensions**, mark all of the hole locations.

Mounting the Unit:

1. Measure Distance between Chute and Conveyor Belt Edge.
2. Adjust Conveyor Roller to rest about 1/4 - 1/2 inch from Conveyor Belt Edge.
3. With the Housing Gasket in place, line up the control unit flange mounting holes with the holes on the chute.
4. Place the 1/4-20 bolts through the mounting holes with lock washers and nuts, and tighten the nuts with wrench.
5. Wire as appropriate according to Schematic on previous page. Field wiring must meet or exceed the requirements of the National Electrical Code and any other agency or authority having jurisdiction over the installation.

Figure 1: Mounting Dimensions

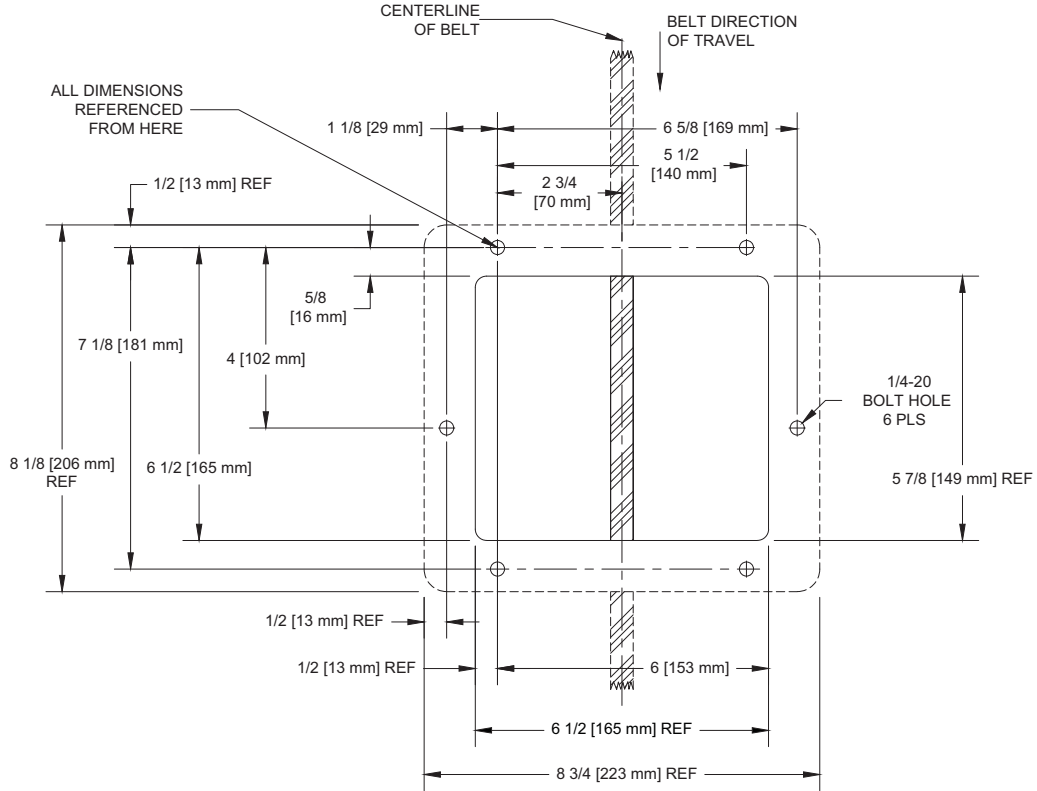
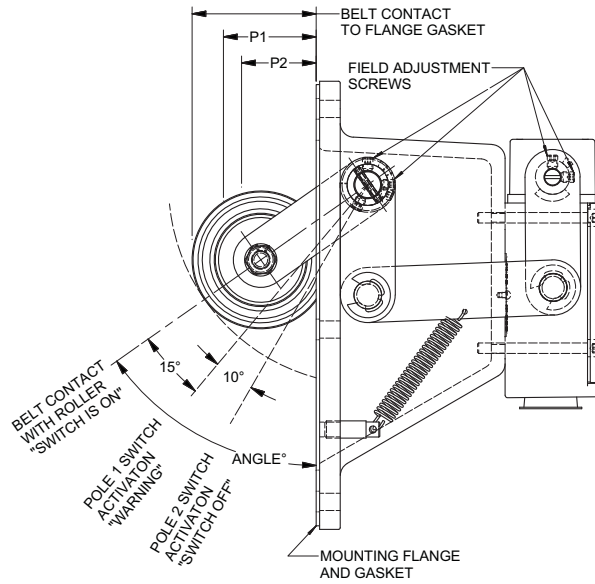


Figure 2: Allowable Roller Travel



ANGLE	BELT CONTACT	P1	P2
ANGLE FROM ROLLER ARM TO MOUNTING SURFACE	MOUNTING SURFACE TO BELT CONTACT WITH ROLLER	DISTANCE FROM BELT CONTACT TO POLE 1 SWITCH ACTIVATION	DISTANCE FROM BELT CONTACT TO POLE 2 SWITCH ACTIVATION
80°	2 5/8" [67 mm]	3/16" [5 mm]	3/8" [10 mm]
70°	2 9/16" [65 mm]	1/4" [6 mm]	9/16" [14 mm]
60°	2 3/8" [60 mm]	3/8" [10 mm]	11/16" [17 mm]
50°	2 1/8" [54 mm]	7/16" [11 mm]	13/16" [21 mm]
40°	1 13/16" [46 mm]	1/2" [13 mm]	15/16" [24 mm]
30°	1 1/2" [38 mm]	9/16" [14 mm]	1" [26 mm]
20°	1 1/8" [29 mm]	5/8" [16 mm]	1" [26 mm]
10°	3/4" [19 mm]	5/8" [16 mm]	N/A

Figure 3: Assembly Dimensions

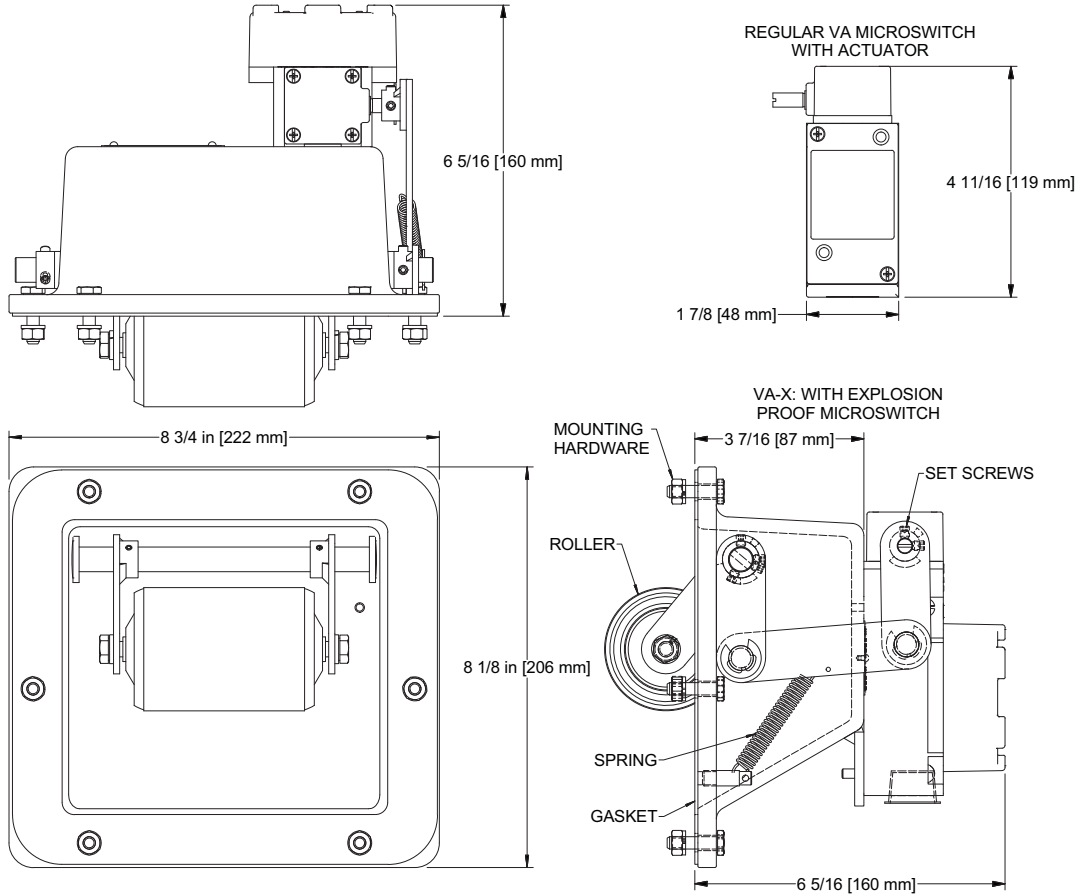


Figure 4: Installation of VA and VA-X Shown

