



## MATERIAL CONTROL, INC

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### MODEL 16 CONVEYOR BELT ALIGNMENT CONTROL

#### WARNING:

**DEATH or SERIOUS INJURY may occur.**

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

The Model 16 conveyor belt alignment control protects valuable conveyor belts from severe damage due to belt misalignment or run-off. The Model 16 makes sure that the belts are tracking properly, preventing costly down time and unnecessary maintenance expenses. Designed especially for bulk handling conveyor applications, the Model 16 maintains a safeguard over equipment and keeps conveyor belts running.

Sometimes called a “sideslip control” or a “belt misalignment control,” the Model 16 operates on a very simple principle. Two controls are positioned close to the belt, one on each side, so that undesirable side to side motion of the belt will contact a micro switch roller. The roller “gives” just enough to actuate the control. The signal generated by the actuated control can be used to take appropriate action to re-align the conveyor belt, thus eliminating conveyor damage and serious down time.

#### CONSTRUCTION AND OPERATION:

The Model 16 belt alignment control has two basic welded steel components: the base housing and the roller housing. The roller housing contains the sensing roller and is attached to the base housing with a stainless steel pivot. The stainless steel pivot assures that movement will not be inhibited by corrosion. The roller and roller housing together are designed to pivot slightly when the roller is touched by the conveyor belt. The roller housing assembly actuates an enclosed micro switch mounted at the bottom of the base housing. It moves approximately ¼” to actuate the micro switch. A stainless steel spring is mounted with a bolt at the bottom of the roller assembly to hold it away from the micro switch except during actuation.

Micro switches are housed in either the standard weather tight or optional explosion proof enclosures. The roller has stainless steel ball bearings and nylon labyrinth seals to prevent corrosion and entry of water or dirt.

#### BREAKAWAY MOUNT:

This optional feature allows the Model 16 to give a signal, and then to get out of the way if the belt does run off, preventing serious damage to switches and belts. The breakaway mount is spring-loaded and automatically returns the Model 16 to its original position when the conveyor belt is re-aligned. It is designed so that the Model 16 assumes a horizontal position when the breakaway mounting is actuated.

The breakaway mount is available with an optional micro switch to indicate that the breakaway condition has occurred. Thus, two signals can be generated. First, a signal from the Model 16 unit that the belt has deviated, and second, a signal from the breakaway micro switch that the belt has deviated further.

#### NUMBER OF UNITS RECOMMENDED:

Not less than four alignment controls shall be furnished on each conveyor, one on each side of the belt near the head and tail pulleys. For conveyors greater than 1,500 feet (457 meters) long, and additional four alignment controls shall be provided evenly spaced, one on each side of the carrying and return belt.

#### INSTALLATION:

Model 16 units are always used in pairs with one placed on each side of the conveyor belt, usually near the head end of the pulley. They may also be placed at the tail pulley and at selected points along the conveyor.

The unit should be mounted on supports so that the roller is positioned in a vertical direction to intercept the conveyor belt at its mid-point. The roller is 3 ½” high. The point of interception should be at the 1 ¾” point. Units should not be mounted too close to the belt because false signals would result. In most applications, the units should be mounted about 1” from the belt, eliminating false signals but protecting the belt against wide deviations.

The micro switch can be wired to give warning signals or it can be connected directly into the motor starter circuit to stop a conveyor. The roller moves approximately ¼” to actuate the micro switch.

#### MICRO SWITCH ELECTRICAL RATINGS:

1. 20 amp @ 125, 250 or 480 VAC; 10 amp @ 125 VAC “L”; 1 HP @ 125 VAC; 2 HP @ 250 VAC; ½ amp @ 125 VDC; ¼ amp @ 250 VDC
2. 10 amp @ 125 or 250 VAC; 0.3 amp @ 125 VDC; 0.15 amp @ 250 VDC
3. 10 amp @ 125, 250 or 480 VAC; ½ amp @ 125 VDC; ¼ amp @ 250 VDC

#### MODELS:

Model	Micro Switch Description	Electrical Rating (See Above)	Micro Switch Enclosure Listing Classifications: UL & CSA
16-1	SP/DT, 20 amp, dust & weather tight	1	NEMA 1, 3, 4, 13
16-2	DP/DT, 10 amp, dust & weather tight	2	NEMA 1, 3, 4, 13
16-1X	SP/DT, 10 amp, explosion proof	3	NEMA 7: Class I, Groups C & D NEMA 9: Class II, Groups E, F & G
16-2X	DP/DT, 10 amp, explosion proof	2	NEMA 7: Class I, Groups B, C & D NEMA 9: Class II, Groups E, F & G

#### OPTIONAL BREAKAWAY MOUNTING:

Model	Description
16-5	Standard Break Away – No Micro Switch
16-55	SP/DT Micro Switch, 10 amp, NEMA 1, 3, 4, 6, 13
16-55X	SP/DT Micro Switch, 10 amp, Explosion Proof; NEMA 7 & 9, Also NEMA 1, 3, 4, 6, 13

Figure 1: Micro Switch Contacts

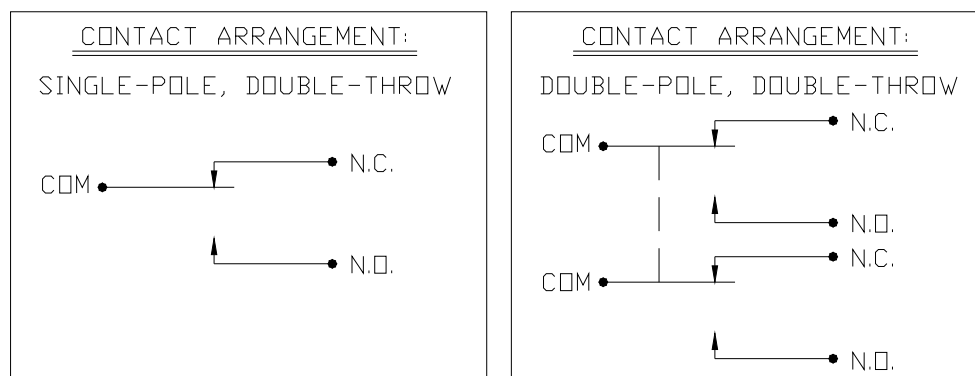


Figure 2: Dimensions

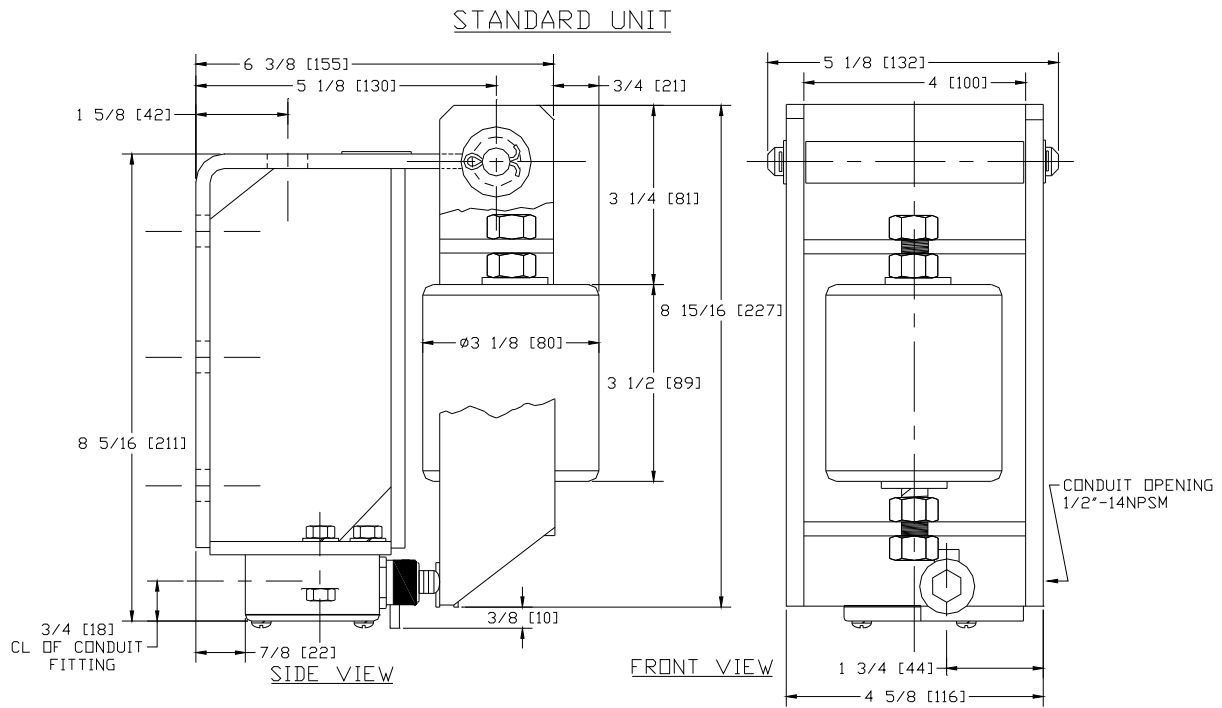


Figure 3: Mounting Dimensions

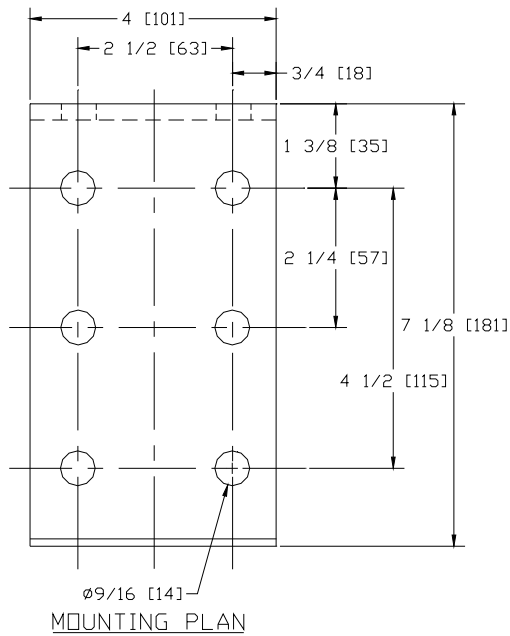


Figure 4: Breakaway Dimensions

