Conveyor Components Company, established in 1965, is world renowned for quality engineered products and unrivaled durability. Bulk material handling customers and processing industries have come to depend on Conveyor Components Company as a premier manufacturer of conveyor controls, motion controls, level controls, bin aerators, and conveyor belt cleaners.

As a manufacturer of quality engineered products for the bulk handling industry throughout the world, Conveyor Components Company prides itself as a leading supplier in both foreign and domestic markets by maintaining and expanding market share and pursuing new product opportunities. The scope of the Conveyor Components Company Quality Management System covers conveyor safety controls, motion controls, level controls, bin aerators, skirtboard clamps, and conveyor belt cleaners, as certified by NQA Global for ISO 9001:2015.

TO MAINTAIN THIS LEADING ROLE WE:

• Provide a quality product to the market that meet customers expressed requirements.
• Maintain good communication with customers
• Maintain the shortest possible lead time while pricing products competitively.
• Continually improve designs, service, and products.
• Comply with applicable standards, legislation, and regulations.
• Focus on occupational, health & safety standards.
• Invest in our future for continued growth.
• Provision of needed resources and infrastructure.

Conveyor Components Company strives to maintain to highest standards of integrity. By strictly following and enforcing a high code of ethics we make our company a better place to work and our community a better place to live.

Conveyor Components Company ensures that we meet the needs of our internal and external customers by training our employees to understand and support the requirements of our Management System. By focusing on continual improvement of our Management System, we will ensure meeting the future needs of Conveyor Components Company customers.

Warranty Policy

Equipment is guaranteed against defects in material and workmanship for eighteen (18) months after shipment or twelve (12) months after operational start-up, whichever is sooner.
**DETERMINATION OF NUMBER OF UNITS REQUIRED**

The Model RS control is designed so that a maximum of 100 feet (30m) of cable can be used on each side of the unit. A single control can therefore cover a maximum of 200 feet of conveyor belt or other machinery. If necessary, cable can be extended in both directions from the actuating arm. The actuation force is easily adjusted in the field by changing the position of the cable in holes provided in the actuating arm. One of our units will handle as much cable length as a double ended control and there is no longer a need to specify actuating force or right or left handed units.

1. The standard construction of the unit is a corrosion resistant aluminum housing complete with stainless steel hardware and red powder coated actuation handle. The actuation shaft is constructed of stainless steel. Epoxy coating is also available if required.

2. The Model RS controls are UL Listed and CSA Certified. The general purpose models are listed for non-hazardous atmospheres. Explosion proof models are listed for use in hazardous atmospheres as defined by the National Electric Code handbook and the National Electrical Manufacturers Association standards for NEMA type 7 and 9 hazardous locations. Specifically, they are listed for Class I, Div. 1, Groups C and D; and Class II, Div. 1, Groups E, F and G. The possibility of a light to aid in identification of actuated units should be considered.

3. Our galvanized aircraft cable with either vinyl or nylon coating is also available if required.


**A MUST FOR EMPLOYEE PROTECTION.**

The Model RS is actuated by a cable pulled by endangered personnel. The output contacts of the Model RS can control up to two separate circuits, one for machinery shutdown and one for alarm. Safety minded operators of conveyors, production lines, elevator equipment, assembly lines, material handling systems, cranes, etc. consider it a must for employee protection. Most states have safety statutes that require these controls on conveyors and related equipment.

5. The RS-2L control is designed so that a maximum of 100 feet (30m) of cable can be used on each side of the unit. A single control can therefore cover a maximum of 200 feet of conveyor belt or other machinery. If necessary, cable can be extended in both directions from the actuating arm. The actuation shaft is constructed of stainless steel. Epoxy coating is also available if required.

6. The unit is available with a warning light that may be wired to indicate actuation. This permits easy identification of actuated units in areas where visual identification is difficult.

**MODEL RS DIMENSIONAL INFORMATION**

- **Available Models**
  - RS-2: 2 Single Pole Double Throw (SP/DT) Microswitches
  - RS-5: 2 Double Pole Double Throw (DP/DT) Microswitches
  - RS-2L: 2 Single Pole Double Throw (SP/DT) Microswitches
  - RS-5L: 2 Double Pole Double Throw (DP/DT) Microswitches
  - RS-2XL: 2 Double Pole Double Throw (DP/DT) Microswitches
  - RS-5XL: 2 Double Pole Double Throw (DP/DT) Microswitches
  - RS-2D: 2 Double Pole Double Throw (DP/DT) Microswitches
  - RS-5D: 2 Double Pole Double Throw (DP/DT) Microswitches

- **Technical Specifications**
  - Standard Construction - Rubber gaskets seal unit for outside applications. Listed by UL for NEMA 4/4X dust-tight and rain tight construction, applies to general purpose units. Housing - Cast aluminum. Epoxy coating available.
  - Conduit Opening - 3/4” NPT standard. 1” NPT optional (non UL). All RS units have three conduit openings.
  - Actuating Arm - Red powder-coated steel handle with stainless steel shaft.
  - Internal Cam and Wear Plate - Hardened steel.
  - External Hardware - Stainless steel.
  - Switches - SP/DT microswitches. Rated 20A @ 120 VAC, 240VAC, and 480 VAC; 1/2 amp at 125 VDC and 1/4 amp at 250 VDC. Switches may be wired for single throw operation, either normally open or normally closed as required. DP/DT (15A) microswitches also available.
  - All models are rated ambient -13°F to 104°F (-25° to 40°C).

**Available Accessories**

- BRACKET for mounting the Model RS actuation switch to the conveyer stringer at an angle. Item # RS-25
- 3/4” NPT standard. 1” NPT optional.
- CONDUIT PLUG 3/4” metal, pressed-in conduit plug. Item # RS-29 or RS-28
- SAFETY CABLE 3/32” x 7x7 preformed, 3/32” x 7x7[$^\text{1}]$. Protective coating in either orange coated vinyl or nylon, 3/32” O.D.
- Item # RS-26 (nylon)
- Item # RS-27 (vinyl)
- CABLE END FITTING Secures protective cable to switch hand and supports. Item # RS-28
- DOUBLE-END CABLE SUPPORT EYE BOLT Drilling is not required to install this cable support. Item # RS-29
- Item # RS-25 (vinyl)
- PISTOL-STYLE CABLE SUPPORT EYE BOLT 1/2” x 4” Plated, with hex nuts and (3) lock washers. Item # RS-29
- Item # RS-27 (nylon)
- Item # RS-27 (vinyl)

**Switch Actuating Arm**

As shown in the chart above, the actuation force can be varied by attaching the cable at any one of the three positions.

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[1] When the cable of a Model RS unit is actuated, the actuation arm must be manually pushed in and turned. Reset is quick, to restart. In order to reset the control, the actuation arm must be able to move a distance of at least 1/8” from its actuated position to its neutral position. This permits easy identification of actuated units in areas where visual identification is difficult. **EXCLUSIVE FEATURES**

1. **Installed with cables extending in both directions from the actuating arm. There is one electrical connection inside. This eliminates the double electrical connections required in two ended units employing a separate microswitch for cable in each direction.**

2. **The actuation force is easily adjusted in the field by a change in the position of the cable in holes provided in the actuation arm. One of our units will handle as much cable length as a double ended control and there is no longer a need to specify actuating force or right or left handed units.**

3. **The actuation shaft is constructed of stainless steel. Epoxy coating is also available if required.**

4. **The Model RS controls are UL Listed and CSA Certified. The general purpose models are listed for non-hazardous atmospheres. Explosion proof models are listed for use in hazardous atmospheres as defined by the National Electric Code handbook and the National Electrical Manufacturers Association standards for NEMA type 7 and 9 hazardous locations. Specifically, they are listed for Class I, Div. 1, Groups C and D; and Class II, Div. 1, Groups E, F and G.**


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**MODEL RS**

**CABLE OPERATED SAFETY STOP**

**CONTROL FOR CONVEYORS**

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**5. **The unit is available with a warning light that may be wired to indicate actuation. This permits easy identification of actuated units in areas where visual identification is difficult.**

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**A MUST FOR EMPLOYEE PROTECTION.**

The Model RS is actuated by a cable pulled by endangered personnel. The output contacts of the Model RS can control up to two separate circuits, one for machinery shutdown and one for alarm. Safety minded operators of conveyors, production lines, elevator equipment, assembly lines, material handling systems, cranes, etc. consider it a must for employee protection. Most states have safety statutes that require these controls on conveyors and related equipment. American National Standard Institute recommends their use (ANSI Standard No. ASME B20.1).

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**Determination of Number of Units Required**

The Model RS control is designed so that a maximum of 100 feet (30m) of cable can be used on each side of the unit. A single control can therefore cover a maximum of 200 feet of conveyor belt or other machinery. If necessary, cable can be extended in both directions from the actuating arm. The actuation force is easily adjusted in the field by changing the position of the cable in holes provided in the actuation arm. One of our units will handle as much cable length as a double ended control and there is no longer a need to specify actuating force or right or left handed units.

1. Equipped with a positive safety lock, once actuated, it cannot be accidentally reset causing dangerous equipment to restart. In order to reset the control, the actuation arm must be manually pushed in and turned. Reset is quick, and makes this a true “safety” control.

2. **Installed with cables extending in both directions from the actuating arm. There is one electrical connection inside. This eliminates the double electrical connections required in two ended units employing a separate microswitch for cable in each direction.**

3. **The actuation force is easily adjusted in the field by a change in the position of the cable in holes provided in the actuation arm. One of our units will handle as much cable length as a double ended control and there is no longer a need to specify actuating force or right or left handed units.**

4. **The actuation shaft is constructed of stainless steel. Epoxy coating is also available if required.**

5. **The Model RS controls are UL Listed and CSA Certified. The general purpose models are listed for non-hazardous atmospheres. Explosion proof models are listed for use in hazardous atmospheres as defined by the National Electric Code handbook and the National Electrical Manufacturers Association standards for NEMA type 7 and 9 hazardous locations. Specifically, they are listed for Class I, Div. 1, Groups C and D; and Class II, Div. 1, Groups E, F and G.**

6. **The unit is available with a warning light that may be wired to indicate actuation. This permits easy identification of actuated units in areas where visual identification is difficult.**
MODEL PC CABLE OPERATED SAFETY STOP SWITCH

Rugged Construction withstands the harshest usage, in the harshest environments.

EXCLUSIVE FEATURES

1. The housing is cast aluminum, with optional epoxy coating available (for additional corrosion resistance).
2. Single ended units are actuated via a cable pull from one direction, while double-ended units can be actuated from either or both directions. The Model PC units come standard with a 16 lb. pull force, however units can be manufactured with a 25 lb. pull force. Add "-25" to the end of the model number.
3. The unit is mounted on the conveyor by drilling (4) 13/32" diameter holes.
4. General purpose (weatherproof) units and explosion proof units with "T" type microswitches (Two-Circuit Double Break) may require immediate, positive shutdown. The units with "S" type microswitches (SP/DT) have dry, unpowdered microswitches rated for 15A @ 120 VAC, 240 VAC, and 480 VAC. The units with "T" type microswitches (Two-Circuit Double Break) Microswitches per end** 12

DETERMINATION OF NUMBER OF UNITS REQUIRED

The Model PC control is designed so that a maximum of 100 feet (30m) of cable can be used. The electrical characteristics of the application will determine the type of microswitches to be specified in the unit. The environmental considerations will determine whether or not the unit is to be explosion proof or require available epoxy coating. The possibility of a light to aid in identification of actuated units should be considered.

Our galvanized aircraft cable with either vinyl or nylon coating should be used with the control to assure proper actuation with no stretching. The cable should be supported by eyebolts every 8-10 feet (3m). These supports ensure that the weight of the cable alone will not actuate the control. For ease of installation, we offer a kit (PCD-K and PCLR-K) that includes all components and correct quantities for the proper installation of one unit.

AVAILABLE MODELS

<table>
<thead>
<tr>
<th>MODEL</th>
<th>DESCRIPTION</th>
<th>SHIP WT.</th>
<th>LS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCL-2S</td>
<td>Left Ended unit with 2 Single Pole Double Throw (SP/DT) Microswitches*</td>
<td>12</td>
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<tr>
<td>PCR-2S</td>
<td>Right Ended unit with 2 Single Pole Double Throw (SP/DT) Microswitches</td>
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<tr>
<td>PCD-4S</td>
<td>Dual Ended unit with 2 Single Pole Double Throw (SP/DT) Microswitches</td>
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<tr>
<td>PCD-4T</td>
<td>Dual Ended unit with 2 Two Circuit Double Break (TC/DB) Microswitches*</td>
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<tr>
<td>PCD-4X</td>
<td>Dual Ended unit with 2 Single Pole Double Throw (SP/DT) Microswitches**</td>
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<tr>
<td>PCR-2T</td>
<td>Right Ended unit with 2 Two Circuit Double Break (TC/DB) Microswitches**</td>
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<td>PCD-2T</td>
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<td>PCL-2X</td>
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<td>PCL-2X</td>
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<td>PCD-4X</td>
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<tr>
<td>PCD-4T</td>
<td>Dual Ended unit with 2 Two Circuit Double Break (TC/DB) Microswitches**</td>
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<tr>
<td>PCD-4D</td>
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<td>PCD-4D</td>
<td>Dual Ended unit with 2 Two Circuit Double Break (TC/DB) Microswitches**</td>
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<tr>
<td>PCD-4S</td>
<td>Dual Ended unit with 2 Single Pole Double Throw (SP/DT) Microswitches*</td>
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<tr>
<td>PCD-4T</td>
<td>Dual Ended unit with 2 Two Circuit Double Break (TC/DB) Microswitches*</td>
<td>16</td>
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</tbody>
</table>

ACCESSORIES

- CABLE SUPPORT EYE BOLT 1/8" x 6" zinc plated. Includes two nuts and one lock washer. Item # RS-27
- DOUBLE-ENDED CABLE SUPPORT EYE BOLT Drilling is not required to install the cable support. Item # RS-27
- SAFETY CABLE 3/16" x 1/4" galvanized. Available with either orange vinyl or orange nylon protective coating. Item # RS-27
- PIGTAIL-STYLE CABLE SUPPORT EYE BOLT 3/16" x 1 1/2" Plated with (2) hex nuts and (1) lock washer. Item # RS-27P
- CONDUIT PLUG 1" metal, socket head conduit plug. Item # RS-27
- PC MOUNTING BRACKET Single-ended (PCL & PCR units) accessory mounting bracket PC-29, 1/2" x 6" bolts (PC-25), (2) hex nuts and (1) lock washer. Item # RS-27P
- PCLR-K Single-ended (PCL & PCR units) accessory mounting bracket PCLR-K, 1/2" x 6" bolts (PC-25), (2) hex nuts and (1) lock washer. Item # RS-27P

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6

CONVEYOR COMPONENTS
The Model RSB is a heavy-duty safety control that provides a positive shut off of dangerous equipment in an emergency. A cable pulled by endangered personnel actuates it. The output contacts of the Model RSB can control up to two separate circuits, one for machinery shutdown and one for an alarm. The Model RSB has the built-in advantage of cable break detection.

**EXCLUSIVE FEATURES**

1. The housing is cast aluminum, with optional epoxy coatings available.

2. The unit can be actuated via a pull cable from either direction, in either words, the unit is a “double-ended”. Pull cable is required on each side of RSB unit (+/- 5 feet).

3. The unit is mounted on the conveyor by drilling (3) 13/32” diameter holes.

4. All units have (3) 3/4” NPT conduit openings.

5. The standard units have dry, unpowdered SP/DT microswitches rated for 20A @ 120 VAC, 240 VAC, and 480 VAC; 1/2 amp at 125 VDC and 1/4 amp at 250 VDC.

6. Special spring tensioning kits included with each RSB unit provide stability due to temperature fluctuations, and ease of cable adjustment.

7. All models are rated ambient -13º to 104ºF (-25º to 40ºC).

8. The general purpose units are rated NEMA type 4/4X weatherproof and corrosion-resistant. Explosion proof units are rated NEMA type 7/9 for dust ignition proof, and NEMA type 9 dust ignition proof. Specifically, they are listed for Class II, Div. 1, Groups C and D; Class II, Div. 1, Groups E, F & G. Class II, Div. 1, Groups C & D; Type 9: Class II, Div. 1, Groups E, F & G. ***DUAL RATED NEMA TYPE 3, 4, 4X; Type 9: Class II (Div. 1 & 2), Groups E, F & G

9. The general purpose controls meet or exceed IP65.

10. UL Listed and CSA Certified.

**DETERMINATION OF NUMBER OF UNITS REQUIRED**

The Model RSB control is designed so that a maximum of 100 feet (30m) of cable can be used on each side of the unit. A single control can therefore cover a maximum of 200 feet of conveyor belt or other machinery. The electrical characteristics of the application will determine the type of microswitches to be specified in the unit. The environmental considerations will determine whether or not the unit is to be explosion proof or require available epoxy coating. The possibility of a light to aid in identification of actuated units should be considered.

Our galvanized aircraft cable with either vinyl or nylon coating should be used with the control to assure proper actuation.

- **SAFETY CABLE**
  - 3/32” x .017” per foot, galvanized aircraft cable, stainless steel or black oxide coated vinyl or nylon.
  - Item # RS-26 (nylon), Item # RS-26 (nylon).

- **CABLE SUPPORT EYE BOLT**
  - 1/4” x 4” plated 12-24 long.
  - B.C. thread, 1” eye, two nuts and one lock washer.
  - Item # RS-27.

- **PISTOL-STYLE CABLE SUPPORT EYE BOLT**
  - 1/8” x 6” Plated, with (2) hex nuts and (1) lock washer.
  - Item # RS-27P.

- **CONDUIT PLUG**
  - 3/4” metal, socket head conduit plug.
  - Item # RS-28 or # RS-28K.

- **SAFETY STOP CONTROL**
  - Item # RS-23.

- **DOUBLE-ENDED CABLE SUPPORT EYE BOLT**
  - Drilling is not required to install this cable support. Simply install it over idler bolt.
  - Item # RS-23.

- **DOUBLE-ENDED CABLE SUPPORT EYE BOLT**
  - Item # RS-26.

- **CABLE END FITTING**
  - Secures protective cable to switch hand and supports.
  - Item # RS-26.

- **MODEL RSB-2**
  - Pull Cord Safety Stop Switch.
  - Includes everything you need to properly install the CCC MODEL RS Pull Cord Safety Stop Switch.
  - Item # RS-26.

- **MOUNTING KIT**
  - Includes everything you need to properly install the CCC MODEL RS Pull Cord Safety Stop Switch.
  - Item # RS-26.

- **PISTOL-STYLE CABLE SUPPORT EYE BOLT**
  - Item # RS-23.

- **CABLE END FITTING**
  - Secures protective cable to switch hand and supports.
  - Item # RS-26.
**Belt Alignment Control**

The model TA Conveyor Belt Alignment Control protects conveyor belts from damage due to belt misalignment or runoff. These controls are used in pairs with the control placed on each side of the conveyor belt. Each unit can be equipped with two microswitches to produce signals indicating belt misalignment at two deviation points. The first signal point could indicate a small belt deviation by sounding an alarm. The second signal point could guard against extreme belt runoff by shutting down the conveyor.

Each control consists of an aluminum housing with a red powder-coated roller. The roller is adjustable up to 90° in both directions and is positioned approximately 1” from the conveyor belt. The control actuation points are adjustable from 0° to 45° by a simple change of the actuating cam(s). The model TA can be furnished with general purpose or explosion proof construction. Epoxy coated cast aluminum housing model TA can be furnished with general purpose or explosion proof construction. Epoxy coating cast aluminum housing available upon request.

### AVAILABLE MODELS

<table>
<thead>
<tr>
<th>MODEL</th>
<th>DESCRIPTION</th>
<th>SNPL, WT.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA-2</td>
<td>2 Single Pole Double Throw (SP/DT) Microswitches*</td>
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<tr>
<td>TA-5</td>
<td>2 Double Pole Double Throw (DP/DT) Microswitches*</td>
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<tr>
<td>TA-2X</td>
<td>2 Single Pole Double Throw (SP/DT) Microswitches**</td>
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<tr>
<td>TA-5X</td>
<td>2 Double Pole Double Throw (DP/DT) Microswitches**</td>
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<tr>
<td>TA-2D</td>
<td>2 Single Pole Double Throw (SP/DT) Microswitches***</td>
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</tr>
<tr>
<td>TA-5D</td>
<td>2 Double Pole Double Throw (DP/DT) Microswitches***</td>
<td>11</td>
</tr>
</tbody>
</table>

*GENERAL PURPOSE NEMA TYPE 3S, 4, 4X, 5
**EXPLOSION PROOF NEMA TYPE 7: Class I, Groups C & D; Class II, Groups E, F & G
***DUAL RATED NEMA TYPE 3S, 4, 4X, 5: Type II (Div. 1 & 2), Groups E, F & G

### Place of Uses

- Two Microswitches Individual Adjustment, Rated 30 amp at 125, 250, or 480 VAC, 1/2 Amp 125 VDC; 1/4 Amp 250 VDC.
- Microswitches Individual Adjustment, Rated 15 amp at 125, 250 VAC.
- Switches may be wired for single throw operation, either normally open or normally closed as required.
- Standard Construction: Rubber gaskets seal units against dust and rain for NEMA 4, 4X outdoor applications. Applies to weatherproof units only.
- HOUSING: Aluminum, Epoxy coating available.
- CONDUIT OPENING: One 3/4" NPT conduit opening.

### External Hardware

- EXPANDED VIEW: Stainless steel.
- ACTUATING ARM: Red powder-coated steel roller with stainless steel shaft.
- EXTERNAL HARDWARE: Stainless steel.

### Unit Specifications

- All models are rated ambient -13º to 104ºF [-25º to 40ºC].
- TA-2X, TA-4X, TA-5X: C-UL-US for Class I, Groups C & D; Class II, Groups E, F & G; Class III Hazardous Locations.
- TA-2D, TA-4D, TA-5D: C-UL-US Types 3S, 4, 4X & 5; Class II, Groups E, F & G; Class III Hazardous Locations.
- CERTIFICATION: cULus Listed.
- Special roller with ball bearing ends available. Roller ball bearings denoted by -RBB. Note: Standard roller has white polymer plain bearings. Add “-RBB” to end of model number.

### Alternate Roller Lengths

- Special Roller with Ball Bearing Ends available, add “-RBB” to end of model number.
- Other alternate roller lengths available (5” minimum to 12” maximum, standard style roller only, not ball bearing style). Add “-RBB-R5” to end of model number.
- Special 304 stainless steel roller (with red polyester powder coating) available, add “SS” to end of model number and $ to the price. Currently not available in ball bearing version.
- Special roller with ball bearing ends available, add “-RBB” to end of model number and $5 each or $82.00 to the price. The “-RBB” roller is 9-3/4” inches in length, same length as the standard roller. Shorter “-RBB-R5” lengths possible, such as 5” (-RBB-R5), 6” (-RBB-R6), 7” (-RBB-R7), 8” (-RBB-R8) or 9” (-RBB-R9).

### Dimensions

- **Roller Arm Moves 90° In Both Directions:**
  - Top View with Cover Removed
  - MOUNTING FEET DIMENSIONS
  - CENTER LINE OF ROLLER: 3-1/4” [82 mm]
  - ALTERNATE ROLLER LENGTHS AVAILABLE: 6” [152 mm]
  - ROLLER ARM: 2-1/2” [64 mm]
  - OPENING: One 3/4” NPT conduit opening

### Model Interchangeability

- TA MOUNTING BRACKET Fits all TA Models. Add “-30” to end of model number.

### Exclusivity Features

1. MANUAL RESET: A positive lock-out model with manual reset is available. Available only on General Purpose units.
2. SP/DT microswitches individually adjustable. Rated 30 amp at 125, 250, or 480 VAC, 1/2 Amp 125 VDC; 1/4 Amp 250 VDC.
3. DP/DT microswitches individually adjustable. Rated 15 amp at 125, 250 VAC.
4. Switches may be wired for single throw operation, either normally open or normally closed as required.
5. STANDARD CONSTRUCTION: Rubber gaskets seal units against dust and rain for NEMA 4, 4X outdoor applications. Applies to weatherproof units only.
7. CONDUIT OPENING: One 3/4” NPT conduit opening.
8. ACTUATING ARM: Red powder-coated steel roller with stainless steel shaft.
10. All models are rated ambient -13º to 104ºF [-25º to 40ºC].
12. Special 5” (shortest) roller length available, add “-5” to end of model number. Other alternate roller lengths available (5” minimum to 12” maximum, standard style roller only, not ball bearing style). Add “-5-RBB” to end of model number.
13. Special 304 stainless steel roller (with red polyester powder coating) available, add “SS” to end of model number and $ to the price. Currently not available in ball bearing version.
14. Special roller with ball bearing ends available, add “-RBB” to end of model number and $ to the price. The “-RBB” roller is 9-3/4” inches in length, same length as the standard roller. Shorter “-RBB-R5” lengths possible, such as 5” (-RBB-R5), 6” (-RBB-R6), 7” (-RBB-R7), 8” (-RBB-R8) or 9” (-RBB-R9).
15. Special 5” (shortest) roller length available, add “-5RBB-R5” to end of model number. Other alternate roller lengths available (5” minimum to 12” maximum, standard style roller only, not ball bearing style). Add “-5-RBB-R5” to end of model number.
16. Special 304 stainless steel roller (with red polyester powder coating) available, add “SS” to end of model number and $ to the price. Currently not available in ball bearing version.
17. Special roller with ball bearing ends available, add “-RBB” to end of model number and $ to the price. The “-RBB” roller is 9-3/4” inches in length, same length as the standard roller. Shorter “-RBB-R5” lengths possible, such as 5” (-RBB-R5), 6” (-RBB-R6), 7” (-RBB-R7), 8” (-RBB-R8) or 9” (-RBB-R9).
MODEL BA
HEAVY DUTY BELT ALIGNMENT CONTROL PREVENTS CONVEYOR BELT RUN-OFF

PROTECTS
VALUABLE CONVEYOR
BELTS FROM SEVERE DAMAGE

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

Sometimes called a “side slip switch” or a “belt misalignment switch,” the Model BA operates on a very simple principal. 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 switch roller. The roller “gives” just enough to actuate the switch. The signal generated by the actuated switch 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 BA 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 switch mounted at the bottom of the base housing, it moves approximately 1/4” to actuate the switch. A stainless steel spring is mounted with a bolt at the bottom of the roller assembly to hold it away from the control except during actuation.

Microswitches are housed in either the standard weather-tight, or optional explosion proof enclosures.

Optional Breakaway Mount

This optional feature allows the Model BA 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 BA to its original position when the conveyor belt is realigned. It is designed so that the Model BA roller assumes a horizontal position when the breakaway mounting is actuated.

Breakaway mount is available with an optional microswitch to indicate the breakaway condition has occurred. Thus, two signals can be generated: First, a signal from the Model BA unit that the belt has deviated. Second, a signal from the breakaway switch that the belt has deviated further.

NUMBER OF UNITS RECOMMENDED

No less than four alignment controls should be installed on each conveyor, one on each side of the belt near the head and tail pulleys. For longer conveyors, we recommend an additional pair every 250 to 500 feet.

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MODEL BA - ACCESSORIES

No less than four alignment controls should be installed on each conveyor, one on each side of the belt near the head and tail pulleys. For longer conveyors, we recommend an additional pair every 250 to 500 feet.
THE MOST ECONOMICAL METHOD OF MEETING OSHA REQUIREMENTS

This 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 belt.

HOW IT OPERATES

The control has double pole/double throw circuitry. The four bar linkage connects the roller’s pivot shaft to the switch actuator. The roller is held into position by roll pins and set screws. When the roller is displaced 15°, the first pole of the switch is triggered. This pole can be wired to sound a warning alarm, illuminate an indicator light, or stop the conveyor. The second pole is triggered when the roller is displaced an additional 10°. This pole could also be wired to stop the conveyor motor. Drawing “A” shows a range of roller orientations and the allowable travel for each stage.

DRAWING “A”

CAST ALUMINUM HOUSING
(Epoxy coating available)

FIELD ADJUSTMENT SCREWS

BELT CONTACT TO FLANGE GASKET

MOUNTING FLANGE AND GASKET

1/4” NPT CONDUIT OPENING

CAST ALUMINUM HOUSING
(EXPERT COATING AVAILABLE)

ENSURES THAT YOUR BELT IS TRACKING PROPERLY

Protect your valuable conveyor belt from severe damage caused by belt misalignment, prevent costly downtime and increase production with Conveyor Components Company’s Model VA belt alignment control. Designed for use on bucket elevators, the Model VA ensures that your belt is tracking properly. Normally installed in pairs on each side of the conveyor belt near the head pulley and/or the tail pulley, these heavy-duty controls consist of a conveyor roller with sealed bearings, four bar linkage and a double pole/double throw microswitch. The roller detects any belt run-off and will trigger the first pole of the microswitch to sound a warning alarm, illuminate an indicator light, or stop the conveyor completely when the vertical belt strays beyond 15° from horizontal. The second pole is triggered when the belt strays 25° from horizontal and can be wired to stop the conveyor motor. To eliminate false signals the controls should be mounted about one inch away from the belt.

NEW & IMPROVED!

MODEL VA
BELT ALIGNMENT CONTROL
FOR VERTICAL BELTS

MODEL VA TECHNICAL INFORMATION

CONFIRMATION OF UNITS

The Belt Alignment Controls 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 Drawing “B” 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. Project this point onto the chute walls.
3. Use the supplied template to mark off all 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” from conveyor belt edge.
3. With the housing gasket in place, line up the control’s holes with the holes on the chute.
4. Place the 1/4” - 20 bolts through the holes and tighten with wrench.
5. Wire according to schematic.

DRAWING “B”

CROSS SECTION OF BELT

MODEL DESCRIPTION SHIP. WT. LBS.

VA
1 sequential double break Microswitch* 10

VA-X
1 sequential double break Microswitch ** 10

GENERAL PURPOSE NEMA TYPE 3, 4, 4X, 6P & 13

EXPLOSION PROOF NEMA TYPE 1, 3, 4, 6, 13; Type 7: Class I (Div. 1 & 2), Groups B, C & D; Type 9: Class II (Div. 1 & 2), Groups E, F and G

UL Listed and CSA Certified

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, 6P, and 13

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” NPT

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**EXCLUSIVE FEATURES**

1. The housing is cast aluminum, with optional epoxy coating available. The roller is a heavy duty white acetal material of 3” diameter.
2. The unit is mounted on the conveyor by drilling (3) 13/32” diameter holes.
3. General purpose (weatherproof) units and explosion proof units have (1) 3/4” NPT conduit opening.
4. SP/DT microswitches: Individually adjustable. Rated 20 amp at 125, 250, or 480 VAC, 1/2 Amp 125 VDC; 1/4 Amp 250 VDC.
5. DP/DT microswitches: Individually adjustable. Rated 15 amp at 125, 250 VAC.
6. The roller arm can move up to 90 degrees in either direction. Roller is spring loaded to automatically reset itself.
7. All models are rated ambient -13º to 104ºF (-25º to 40ºC).
8. The general purpose controls are IP65 compliant.

**AVAILABLE MODELS**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>DESCRIPTION</th>
<th>SHPL, WT. LBS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA-2-TPS</td>
<td>2 Single Pole Double Throw (SP/DT) Microswitches*</td>
<td>9</td>
</tr>
<tr>
<td>TA-5-TPS</td>
<td>2 Double Pole Double Throw (DP/DT) Microswitches*</td>
<td>9</td>
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<tr>
<td>TA-2X-TPS</td>
<td>2 Single Pole Double Throw (SP/DT) Microswitches**</td>
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<tr>
<td>TA-5X-TPS</td>
<td>2 Double Pole Double Throw (DP/DT) Microswitches**</td>
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<tr>
<td>TA-2D-TPS</td>
<td>2 Single Pole Double Throw (SP/DT) Microswitches***</td>
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<tr>
<td>TA-5D-TPS</td>
<td>2 Double Pole Double Throw (DP/DT) Microswitches***</td>
<td>9</td>
</tr>
</tbody>
</table>

*GENERAL PURPOSE NEMA TYPE 3S, 4, 4X, & 5
**EXPLOSION PROOF NEMA TYPE 7: Class I, Div. 1 & 2, Groups C & D; Class II, Div. 1 & 2, Groups E, F & G
***DUAL RATED NEMA TYPE 3S, 4, 4X, 5; Type II: Class I, Div. 1 & 2, Groups E, F & G

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**HEAVY DUTY LIMIT SWITCH**

The Model TA-TPS is a tripper position switch, which is a heavy duty limit switch commonly used to aid in positioning of the “tripper” on a conveyor with multiple discharge points or discharge chutes. The output contacts of the Model TA-TPS can control up to two separate circuits, one for machinery shutdown and one for an alarm. The Model TA-TPS is relatively inexpensive protection that provides benefit by saving time, money, and labor associated with bulk material transfer.

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**MODEL FS FLOW SWITCH FOR BULK MATERIAL**

The Model FS Flow Switch is designed to produce a signal if the flow of material at any critical point is interrupted. This signal can then be used to correct the difficulty and/or warn the operator. Several switches can be used, each one placed at critical points along the conveying system. A continuous flow of material past the switch holds the paddle-shaft-counter-weight assembly out of the actuated position. If flow stops, the paddle is allowed to pivot and actuate the switch.

Fully adjustable, the paddle and counterweight assemblies can be positioned at various points along the shaft and rotated to any angular position. The shaft itself will adjust laterally. Inside, the actuating cams can be rotated so that switch actuation will occur at pre-determined points.

This versatile switch can be mounted on all types of conveyors and feeders: in discharge openings of bins, bunkers, or hoppers; in angled and vertical chutes; or in discharge chutes of any configuration. It is available with aluminum housing, and in standard or explosion proof models. The paddle and shaft are both stainless steel.

The Model FS is versatile enough to be used in a variety of applications; it can provide proof that material is actually flowing from a chute onto a conveyor belt, or it can be used to actuate a misting system to reduce dust only when material is present.
CONTROLS

MODEL DB
DAMAGED BELT DETECTOR

AN EARLY WARNING SYSTEM FOR DAMAGED BELTS

Economical and easy to install, they warn supervisory personnel of impending belt failures due to rips, punctures, splices failures, or sharp objects protruding through the belt fabric.

Damaged Belt Detectors mount in pairs positioned on either side of the belt. The units are connected by two spans of vinyl coated aircraft cable. One end of the cable mounts permanently to a support bracket and the other connects to a spring-loaded ball located in the unit. The cables loop underneath the belt from each side crossing at the midpoint. A belt problem is detected when an object or a piece of damaged belt hangs below the belt’s surface and sweeps away one or both cables. As the cable is detached, it pulls a spring-loaded ball out of a socket, causing two microswitches to sound an alarm or to shut down the conveyor. One end of each cable is permanently affixed to the bracket preventing the loss of the cable.

The Damaged Belt Detector operates using a spring-loaded ball and socket connected to two plunger type microswitches. As an object hanging below the belt sweeps away the cable, it pulls the ball connector from its socket (only 4 lbs. of force required). When this happens, a spring-loaded shaft is released causing the plungers of the two microswitches to ride down cam surfaces machined on the shaft. This deactuates the switches causing them to sound an alarm, turn on a warning light, or shut down the system. To reactivate the detectors, all that’s required is to snap the ball connector and cable back into its socket.

CROSS-SECTION OF CONVEYOR BELT SHOWING INSTALLATION OF UNITS AND CABLE

EASY TO MAINTAIN

Damaged Belt Detectors are virtually maintenance free — thanks to their simple, yet tough construction. The units can be wired normally open or normally closed. Everything you need to install your system is included, and accessory or replacement items are always available.

COST EFFECTIVE

When you consider the cost of the average replacement belt, or the cost of repairing the mechanical damage from a torn belt, a damaged belt detection system is very inexpensive by comparison. Other than internally wired belts (tears are electronically indicated).

Model BA dimensional information

Models

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>SMPC. Wt.</th>
<th>LBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DB-100</td>
<td>2 Single Pole Double Throw (SP/DT) Microswitch, 4 lbs of pull force</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>DB-500</td>
<td>2 Double Pole Double Throw (DP/DT) Microswitch, 4 lbs of pull force***</td>
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<tr>
<td>DBX-100</td>
<td>2 Single Pole Double Throw (SP/DT) Microswitch, 4 lbs of pull force</td>
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<tr>
<td>DBX-500</td>
<td>2 Double Pole Double Throw (DP/DT) Microswitch, 4 lbs of pull force***</td>
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<tr>
<td>DBD-100</td>
<td>2 Single Pole Double Throw (SP/DT) Microswitch, 4 lbs of pull force</td>
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<tr>
<td>DBD-500</td>
<td>2 Double Pole Double Throw (DP/DT) Microswitch, 4 lbs of pull force***</td>
<td>11</td>
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</tbody>
</table>

Accessories

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>SMPC. Wt.</th>
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</thead>
<tbody>
<tr>
<td>DB-28</td>
<td>Cable End Fitting</td>
<td>1 oz</td>
</tr>
<tr>
<td>DB-29</td>
<td>Conduit Plug, 1&quot; NPT</td>
<td>6 oz</td>
</tr>
<tr>
<td>20340008</td>
<td>DB Ball &amp; 10 foot cable assembly with protective rubber boot</td>
<td>0.75</td>
</tr>
</tbody>
</table>

Housing: Aluminum (Standard). Epoxy coating available.
Conduit Opening: Two 1" NPT. Standard units and explosion proof models have two conduit openings.
External Hardware: Stainless Steel
Switches: DP/DT microswitch. Rated 30 amps at 125, 250 or 480 VAC, 1/2 Amp, 120 VDC 1-1/4 Amp, 230 VDC. Contacts may be wired for single throw operation, either normally open or normally closed as required. DP/DT microswitches also available.

Standard unit “100” is 4 lb. pull force. For optional 8 lb. or 16 lb. pull force retaining ring, add $ USD to price, and change “100” to either “108” or “116”.

** general purpose NEMA TYPE 4 & 4X
*** explosion proof NEMA TYPE 7; Class I (Div. 1 & 2), Groups C & D; Type 9; Class II (Div. 1 & 2), Groups E, F & G
**** dual rated NEMA TYPE 4, 4X; Type 9; Class II (Div. 1 & 2), Groups E, F & G

**EASY MEASURE OF PROTECTION**

EXTRA
**RUGGED LEVEL CONTROLS**

Designed for dry bulk material level indication and control applications. These cULus listed control units are enclosed in a rugged cast aluminum housing with LED indicator lights to alert the operator of either the presence or absence of material. Equipped with a surface mount PC board the unit now allows for a maximum of 5,000 feet of cable between the control unit and probe permitting the placement of the control unit in an easily accessible area.

Most models are equipped with intrinsically safe electronics, permitting the probe to be used in environments requiring explosion proof equipment. The control units are available in three different models for use in different environments. The Model CT-105 control unit is NEMA Type 4, 4X for use in general purpose outdoor applications and is dust proof and weather tight. The Model CT-106 control unit is NEMA Type 4, 4X and NEMA Type 9 dust ignition proof construction permitting the probe to be used in environments requiring explosion proof equipment. The Model CT-107 control unit is NEMA Type 7 explosion proof and NEMA Type 9 dust ignition proof construction for use in hazardous locations.

**FEATURES:**

- Durable cast Aluminum NEMA Type housing with optional epoxy coating for corrosive environments.
- Explosion proof control units for use in hazardous locations: Model CT-105 and Model CT-107.
- Bright, energy efficient LED indicator lights.
- Up to 5,000 feet of cable length allows for control unit installation in easily accessible areas.
- Surface mount PC board resistant to shock and vibration.

**ADVANTAGES:**

- Optional stainless steel probes to safeguard against corrosion.
- Hanger fittings and mounting brackets available to permit easy suspension of probes from fixed supports.
- Our tilt probes are intrinsically safe and cULus listed when used in conjunction with the new CT Control Units: Models CT-105, CT-106 and CT-107.
- Heavy duty steel probes for abrasion resistance.
- Fail-Safe logic design defaults to safe condition when there is a loss of power.
- Adjustable time delay to prevent false signals.
- Low 12V DC probe for safety.
- Easy installation and low maintenance.
- Compact probes for use where space is limited.
- Probes are purchased separately. When not connected to our control unit they are not cULus listed.

**CONSTRUCTION DETAILS**

The Model CT Control Unit is enclosed in a rugged cast aluminum housing with LED indicator lights labeled “Normal” and “Alarm” to indicate detection status. Within the housing a surface mount PC board has a logic selector switch and adjustable time delay to prevent false signals. There are three terminal contacts for connection to the Probe; three for the input power; and two sets of output contacts, each with one normally open, one normally closed, and one common. Signal lights, relay, and transformer are all accessible with the housing open.

The Model CT Control Unit has a user configurable output relay (using normally closed contacts, normally open contacts or both) which is actuated by either the presence or absence of material. The relay provides a change in conditions as the Probe moves from horizontal to tilt and vice versa. The time delay is adjustable from 0.1 to 35 seconds. This adjustment will delay output relay action. The relay switches to the de-energized position upon reaching the end of the delay period, as well as upon failure of power to the Control Unit.

When used in conjunction with the new Control Units: Models CT-105, CT-106 and CT-107, the Probes are cULus Listed and intrinsically safe. Two Probe sizes are available.

The CT-200G is a compact 6 inch Probe for use on small bins and hoppers where space is limited. The CT-201G is our standard 9 inch, heavy duty Probe for applications where an abrasion resistant Probe is necessary. Both Probes are available in stainless steel for corrosive environments and optional fittings are available to permit easy suspension from fixed supports. Probe options are available for use on moving materials as a flow indicator. Probes are air tight, dust tight, waterproof and come standard with 25 feet of three conductor 16-3 SO cable. Factory installed cable can be ordered up to 5,000 feet.

**TYPICAL APPLICATIONS**

- High level control on hoppers and silos
- Level detection under conveyor stackers
- Indicate back-up at conveyor transfer points
- High level detection in crusher outlets
- Detect high level in tripers
- Indicate plugged conditions in chutes
- Detect flow of material on conveyors
- High level indicator for loading rail cars or trucks

**CONSTRUCT DETAILED**

Consisting of a Control Unit and a Tilt Probe, the Model CT senses the presence or absence of material. When suspended from a fixed support, the Probe indicates presence of material when it is tilted 15° for the mercury version or 25° for the non-mercury version. The circuit within the Probe is normally closed when vertical.
**CONTROL UNIT SPECIFICATIONS**

- **CT-105/CT-105B:** NEMA Type 4, 4X
- **CT-106/CT-106B:** NEMA Type 4, 4X
- **CT-107/CT-107B:** NEMA Type 4, 4X

- **MODEL DESCRIPTION**
  - Probe signal voltage: 12 VDC when used with CCC controller
  - Probe action: Normally closed contact. Stainless steel, powered, epoxy coating and threaded coupling options are available

- **Control Unit**
  - Relay energizes when Probe is in the tilted position.
  - Null: Middle position with no contact
  - Power Failure is indicated if neither light is illuminated.

- **Input Supply Voltage**: Standard 120 VAC @ 50/60 Hz; or available 240 VAC @ 50/60 Hz (add suffix B to Model number)
- **Power Consumption**: 10 Watts @ 50/60 Hz (add suffix B to Model number)
- **Probe Voltage Output**: 12 VDC
- **Relay Action**: Normally closed contact. Stainless steel, powered, epoxy coating and threaded coupling options are available

- **Probe Signal Voltage**: 12 VDC
- **Relay Ratings**: 0.25 A max., 60 V max

- **Probe Models**
  - CT-200G: Compact 6” probe with 25 feet of cable
  - CT-200GC: Compact 6” probe with 25 feet of 16-3 SO cable included, 3/4” NPT coupling welded to probe
  - CT-200GP: Compact 6” probe with 25 feet of 16-3 SO cable included. With welded-on paddle.

- **COUPLING OPTIONS**
  - 3/4” NPT coupling options are available
  - 1-1/4” NPT coupling options are available

- **MODEL CT - PROBES COMPACT 6”**

- **MODEL CT - PROBES STANDARD 9”**

- **MODEL CT - ACCESSORIES**
  - **CT-300G:** 16-3 SO Probe Cable
  - **CT-400:** Probe Mounting Bracket
  - **CT-500:** S-Hook
  - **CT-600S:** Stainless Steel 6” Diameter Float Ball
  - **CT-700:** Paddle Attachment Adapter
  - **CR-61:** 4-Valve Stainless Steel Paddle
  - **CR-64:** Rubber Flexible Paddle
  - **CR-65:** Stainless Steel Flexible Paddle

- **MODEL CT - CONTROL UNIT**

- **MODEL CT - PROBES**
  - **CT-200G:** Compact 6” probe with 25 feet of cable
  - **CT-200GC:** Compact 6” probe with 25 feet of 16-3 SO cable included, 3/4” NPT coupling welded to probe
  - **CT-200GN:** Compact 6” probe with 25 feet of 16-3 SO cable included. Non-mercury (mercury free), 3/4” NPT coupling welded to probe.
  - **CT-200GNC:** Compact 6” probe with 25 feet of 16-3 SO cable included. Non-mercury (mercury free), 3/4” NPT coupling welded to probe.
  - **CT-200GP:** Compact 6” probe with 25 feet of 16-3 SO cable included. With welded-on paddle.
  - **CT-201G:** Standard 9” tilt probe with 25 feet of 16-3 SO cable included.
  - **CT-201GC:** Standard 9” tilt probe with 25 feet of 16-3 SO cable included. 1-1/4” NPT coupling welded to probe.
  - **CT-201GNC:** Standard 9” tilt probe with 25 feet of 16-3 SO cable included. 1-1/4” NPT coupling welded to probe.
Operation of the Model CR is surprisingly simple. A paddle sensor is connected to a low torque, 5 watt synchronous motor. This sensor rotates continuously inside the bin at a slow 1 RPM. When the paddle meets the resistance of accumulated material it transfers its torque to actuate one or more microswitches. Now actuated, these switches can be used to control the start-stop operations of conveyors, elevators, or feeders, and provide audible or visual warning signals. Actuation continues as long as the paddle motion is restricted. There's no harm to the monitoring unit or its motor while in this stalled condition. As soon as bin material moves away, the paddle turns freely once more and the switches are de-actuated. Model CR units mount at the top or side levels of the bin, or in both positions simultaneously to automatically control material level.

TOTAL RELIABILITY, DURABLE CONSTRUCTION AND ECONOMICAL PROTECTION
You get them all with the ROTO-LEVEL CONTROL™ from Conveyor Components Company. Evolved from over 35 years of experience with level controls, it's the finest electro-mechanical indicator available.

The Model CR is designed for use in the aggregate, mining, chemical, plastics and other bulk-handling industries. It functions as a perpetual sentinel, monitoring storage bins and eliminating such nagging problems as material overflow, empty bins, abnormally high or low levels, plugged chutes, jammed conveyors and damaged equipment.

OPERATION
Operation of the Model CR is surprisingly simple. A paddle sensor is connected to a low torque, 5 watt synchronous motor. This sensor rotates continuously inside the bin at a slow 1 RPM. When the paddle meets the resistance of accumulated material it transfers its torque to actuate one or more microswitches. Now actuated, these switches can be used to control the start-stop operations of conveyors, elevators, or feeders, and provide audible or visual warning signals. Actuation continues as long as the paddle motion is restricted. There’s no harm to the monitoring unit or its motor while in this stalled condition. As soon as bin material moves away, the paddle turns freely once more and the switches are de-actuated. Model CR units mount at the top or side levels of the bin, or in both positions simultaneously to automatically control material level.

CONSTRUCTION FEATURES COMMON TO ALL CR MODELS
1. COVER — Cast aluminum used for both NEMA Type 4, 4X general purpose models and NEMA Type 7: Class I, Groups C and D; NEMA Type 9: Class II, Groups E, F and G explosion proof models. Optional epoxy coating is available.
2. BASE — Cast aluminum standard with 1 ½” NPT thread on neck for installation in ½ coupling or standard mounting plate. Conduit connection is ¼” NPT thread.
3. MOTOR — Power: 5 Watts; Frequency: 50/60 Hertz, Speed: 1 RPM, Voltage: 120V or 240V. Other Voltages available.
4. MICROSWITCHES — SP/DT, rated at 20 amps. Unit can be furnished with 1, 2 or 3 switches. All microswitches can be wired for single throw operation, either normally open or normally closed as required.
5. SENSITIVITY ADJUSTMENT —春 spring tension is adjustable to product density.
6. TIME DELAY ADJUSTMENT — Variable to prevent false signals.
7. TERMINAL BLOCK — For CR motor 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 ½ micron dust at 30 P.S.I.
11. MOUNTING PLATE — 8” diameter with 1 ½” welded pipe coupling. Powder coated steel is standard. Stainless steel is optional. Flexible to conform to curved bins.
12. COVER GASKET — 1/16” thick neoprene.
13. MOUNTING GASKET — 1/16” thick fiber.
14. SHAFT — Optional flexible or solid with all metal parts made of stainless steel.
15. PADDLE — All metal parts made of stainless steel. Various types interchangeable in field.
16. DRIVE SHAFT — Precision machined stainless steel. Impervious to moisture and corrosion build-up.

MODELS

<table>
<thead>
<tr>
<th>MODEL</th>
<th>HOUSING CONSTRUCTION</th>
<th>SUP. WT. LBS</th>
</tr>
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<tbody>
<tr>
<td>CR-2A</td>
<td>2 Single Pole Double Throw (SP/DT) Microswitches for 120VAC*</td>
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<tr>
<td>CR-3A</td>
<td>3 Single Pole Double Throw (SP/DT) Microswitches for 120VAC*</td>
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<tr>
<td>CR-3B</td>
<td>3 Single Pole Double Throw (SP/DT) Microswitches for 240VAC*</td>
<td>9</td>
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<tr>
<td>CR-2C</td>
<td>2 Single Pole Double Throw (SP/DT) Microswitches for 24 VAC/VDC*</td>
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<tr>
<td>CRX-2A</td>
<td>2 Single Pole Double Throw (SP/DT) Microswitches for 120VAC**</td>
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<tr>
<td>CRX-3A</td>
<td>3 Single Pole Double Throw (SP/DT) Microswitches for 120VAC**</td>
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<tr>
<td>CRX-2B</td>
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</tr>
<tr>
<td>CRX-3B</td>
<td>3 Single Pole Double Throw (SP/DT) Microswitches for 240VAC**</td>
<td>9</td>
</tr>
<tr>
<td>CRD-2A</td>
<td>2 Single Pole Double Throw (SP/DT) Microswitches for 120VAC***</td>
<td>9</td>
</tr>
<tr>
<td>CRD-3A</td>
<td>3 Single Pole Double Throw (SP/DT) Microswitches for 120VAC***</td>
<td>9</td>
</tr>
</tbody>
</table>

*GENERAL PURPOSE NEMA TYPE 4 & 4X
** EXPLOSION PROOF NEMA TYPE 7: Class I, Groups C & D; Type 9: Class II, Groups E, F & G
***DUAL RATED NEMA TYPE 4, 4X & 9
Selection of the proper Model CR Roto-Level Control™ should begin with the electrical requirements. Use the chart below to select the model number that will give the motor voltage, number of microswitches, and type of housing construction required.

### FOLLOW THESE 5 STEPS TO DETERMINE THE PROPER ROTO-LEVEL CONTROL™ FOR YOUR APPLICATION:

1. **SELECT PROPER MODEL**
   - The paddle and shaft must be at a point on the bin where the material will flow freely both to and away from them. 
   - The paddle and shaft must be away from the direct flow of incoming material.
   - It must be decided whether the unit is to be mounted on the top or the side of the bin and which mounting plate is to be used.
   - It is sometimes necessary to install protective baffles over the paddles at the low level to protect paddle and shaft from surges in the product.
   - Bin pressure should not exceed 30 P.S.I. Check with factory when this is a problem.

2. **DETERMINE MOUNTING PLATE**
   - Top mounting is recommended. It simplifies installation, accessibility and wiring. Top mounting is suggested for:
     - High level control:
       - Top mounting is recommended. It simplifies installation, accessibility and wiring. Top mounting is suggested for:
     - High level control:
   - Bin temperature limit is raised to 350°F.
   - The paddle and shaft must be at a point on the bin where the material will flow freely both to and away from them.
   - The paddle and shaft must be away from the direct flow of incoming material.

3. **CHOOSE CORRECT PADDLE**
   - PART NUMBER: CR-61 Stainless Steel paddle. Extends 1-1/4" in to bin. For materials over 75 lbs./cu. ft. and/or sticky materials.
   - PART NUMBER: CR-62 Stainless Steel Flexible Paddle. 1/2" wide, 24" long. For materials up to 50 lbs./cu. ft. located so product pins paddle to bin wall.
   - PART NUMBER: CR-63 Stainless Steel Flexible Paddle. 1-1/4" wide, 24" long. For materials over 75 lbs./cu. ft. and/or sticky materials.
   - PART NUMBER: CR-64 Stainless Steel Flexible Paddle. 1-1/4" wide, 24" long. For materials over 75 lbs./cu. ft. and/or sticky materials.

4. **PICK SHAFT COMPONENTS**
   - PART NUMBER: CR-100 Stainless steel; flexible; top mounted. For materials up to 50 lbs. long. For materials up to 50 lbs./cu. ft. and/or sticky materials.
   - PART NUMBER: CR-101 Stainless Steel Flexible Shaft. Adds 3" to overall shaft and paddle assembly. Withstands bin temperature to 300°F.

5. **CHECK THE FOLLOWING**
   - The paddle and shaft must be at a point on the bin where the material will flow freely both to and away from them. 
   - The paddle and shaft must be away from the direct flow of incoming material.
   - Units should be side mounted at both high and low levels where high temperatures are encountered. Temperature in housing is UL and cUL rated for up to 104°F.
   - Bin pressure should not exceed 30 P.S.I. Check with factory when this is a problem.
   - Mount unit on bin where there is a minimum vibration. Use rubber washers or a soft rubber mounting gasket when vibration is severe.
The Model DLC is a flush-mount, pressure-activated, diaphragm style level control and plugged chute detector. The Model DLC has 2 dry (unpowered) microswitches that activate when material within the bin or chute presses upon the diaphragm face. The unit should be mounted on the vertical side wall of the bin, hopper or chute. The unit may also be mounted on the sloped portion of the chute (as long as material flows freely and does not “bridge”). The Model DLC is also used as a high level limit in a screw conveyor, transfer point or auger box.

The Model DLC can be used as a high-level switch, a low-level switch, or a plugged chute detector. Additionally, the Model DLC may also operate as a material presence control on a conveyor belt, and a high level indicator in a crusher box. The Model DLC is commonly used when intrusion into the bin is not acceptable, not possible or not allowed. The Model DLC does not intrude on the material flow stream.

**DLC MODELS AVAILABLE**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>DESCRIPTION</th>
<th>SHIP WT.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DLC-2R</td>
<td>2 Single Pole Double Throw (SP/DT) Microswitches and neoprene rubber diaphragm*</td>
<td>8 lbs.</td>
</tr>
<tr>
<td>DLC-2S</td>
<td>2 Single Pole Double Throw (SP/DT) Microswitches and stainless steel diaphragm*</td>
<td>8 lbs.</td>
</tr>
</tbody>
</table>

*GENERAL PURPOSE NEMA TYPE 4X

**DLC REPLACEMENT PARTS**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>DESCRIPTION</th>
<th>SHIP WT.</th>
</tr>
</thead>
<tbody>
<tr>
<td>20250005</td>
<td>Replacement neoprene rubber diaphragm</td>
<td>1 lb.</td>
</tr>
<tr>
<td>20250004</td>
<td>Replacement 302 stainless steel diaphragm</td>
<td>2 lbs.</td>
</tr>
</tbody>
</table>

**TECHNICAL SPECIFICATIONS**

- The diaphragm material is neoprene rubber (50 durometer, 0.031” thick) or grade 302 stainless steel.
- Diaphragm requires a material density of 25 pcf or higher for proper activation. Contact factory for use on lower density materials.
- The temperature range is 32ºF to 104ºF (0ºC to 40ºC).
- The control has two dry, unpowered microswitches rated for 15A @ 120 VAC, 240 VAC, and 480 VAC; 1/2 amp @ 125 VDC and 1/4 amp @ 250 VDC.
- Each microswitch has a COMMON, NORMALLY OPEN and NORMALLY CLOSED contact.
- General purpose (weatherproof) units have (1) 3/4” NPT conduit opening.
- The general-purpose controls are designed to meet NEMA Type 4X weatherproof and dust-tight environments.
- Bronze air vent allows equal pressurization of both sides of the diaphragm.
- Threaded screw-on cast aluminum cover with spanner wrench bosses and rubber o-ring gasket.
- The mounting flange dimension matches the Roto-Level Control mounting plate bolt and hole pattern so it can be interchangeable with the Model CR unit. Fiber mounting gasket included.
- Optional black epoxy coating available, add “E” to suffix of model number.
- Indication level may vary with material flow, material density and bin design.

**LEVEL CONTROLS**

**PRESSURE ACTIVATED PLUGGED CHUTE DETECTOR**

The Model DLC is a flush-mount, pressure-activated, diaphragm style level control and plugged chute detector. The Model DLC has 2 dry (unpowered) microswitches that activate when material within the bin or chute presses upon the diaphragm face. The unit should be mounted on the vertical side wall of the bin, hopper or chute. The unit may also be mounted on the sloped portion of the chute (as long as material flows freely and does not “bridge”). The Model DLC is also used as a high level limit in a screw conveyor, transfer point or auger box.

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<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>DLC-2R</td>
<td>2 Single Pole Double Throw (SP/DT) Microswitches and neoprene rubber diaphragm*</td>
<td>8 lbs.</td>
</tr>
<tr>
<td>DLC-2S</td>
<td>2 Single Pole Double Throw (SP/DT) Microswitches and stainless steel diaphragm*</td>
<td>8 lbs.</td>
</tr>
</tbody>
</table>

*GENERAL PURPOSE NEMA TYPE 4X

**DLC REPLACEMENT PARTS**

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<td>1 lb.</td>
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- The control has two dry, unpowered microswitches rated for 15A @ 120 VAC, 240 VAC, and 480 VAC; 1/2 amp @ 125 VDC and 1/4 amp @ 250 VDC.
- Each microswitch has a COMMON, NORMALLY OPEN and NORMALLY CLOSED contact.
- General purpose (weatherproof) units have (1) 3/4” NPT conduit opening.
- The general-purpose controls are designed to meet NEMA Type 4X weatherproof and dust-tight environments.
- Bronze air vent allows equal pressurization of both sides of the diaphragm.
- Threaded screw-on cast aluminum cover with spanner wrench bosses and rubber o-ring gasket.
- The mounting flange dimension matches the Roto-Level Control mounting plate bolt and hole pattern so it can be interchangeable with the Model CR unit. Fiber mounting gasket included.
- Optional black epoxy coating available, add “E” to suffix of model number.
- Indication level may vary with material flow, material density and bin design.

**LEVEL CONTROLS**

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<td>DLC-2R</td>
<td>2 Single Pole Double Throw (SP/DT) Microswitches and neoprene rubber diaphragm*</td>
<td>8 lbs.</td>
</tr>
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<td>DLC-2S</td>
<td>2 Single Pole Double Throw (SP/DT) Microswitches and stainless steel diaphragm*</td>
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*GENERAL PURPOSE NEMA TYPE 4X

**DLC REPLACEMENT PARTS**

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- General purpose (weatherproof) units have (1) 3/4” NPT conduit opening.
- The general-purpose controls are designed to meet NEMA Type 4X weatherproof and dust-tight environments.
- Bronze air vent allows equal pressurization of both sides of the diaphragm.
- Threaded screw-on cast aluminum cover with spanner wrench bosses and rubber o-ring gasket.
- The mounting flange dimension matches the Roto-Level Control mounting plate bolt and hole pattern so it can be interchangeable with the Model CR unit. Fiber mounting gasket included.
- Optional black epoxy coating available, add “E” to suffix of model number.
- Indication level may vary with material flow, material density and bin design.
MATERIALS RESPONDING TO AERATION

Specific materials that respond well to aeration are as follows:
- Flour, Soda Ash, Gypsum, Fly Ash, Pigments, Soap Powders, Lime, Portland Cement, Carbon Black, Diatomaceous Earth,
- Materials that respond well to aeration are as follows:
- Aeration gives the best results on materials with a 60 mesh size or smaller and with a 3% or less moisture content.

ADVANTAGES OF AERATION

- Positive, uniform and easily controlled flow
- Eliminates Bridging and Rat-holing
- Quiet operation
- Low power requirements
- First in / first out flow
- Adapts to any bin configuration
- Low-Cost, Easy to Install, Maintenance Free

AERATION

Bin and Outlet Chute
Aeration of Typical Bin and Outlet Chute

MODEL AD AERATOR SPECIFICATIONS

MODEL AD AERATOR SPCL KIT (SOLD SEPARATELY)

AERATOR SELECTION GUIDE:

For best results, locate lower aerators as close to the discharge outlet as possible. If material is held in the bin for long periods and/or compacted in transport, we recommend aerators be installed on 12” centers.

AERATOR KIT IN PLACE ON BIN

AERATION

END FLOW PROBLEMS FOREVER!

Model AD Aerators provide positive flow of dry, finely ground materials from any bin using the proven principle of aeration. Low pressure air is introduced into the product, restoring its natural ability to flow. In this way congestion, bridging and rat-holing are overcome without resorting to brute force. Almost all flow problems inherent to dry, fine materials are caused by compaction. When low pressure air is introduced to a finely ground material it will flow like water, uniformly and quickly.

Model AD Aerators are non-clogging and provide equal distribution and consumption of air. They feature simple and quick installation. Simply drill a 7/16” hole in bin wall insert, special tank, nipple through hole and secure with lock nut.

ADVANCED ADVANTAGES OF AERATION

Heavy-Duty construction features stiffeners to prevent crushing of air compartment. These stiffeners eliminate the possibility of the Aerator being crushed by weight of material or by personnel stepping on it when cleaning the bin. The stiffeners do not obstruct the diffusion of air.

EXCLUSIVE

Sturdy Steel Body

Heavy Duty Steel Mesh Support

Diffuser (Cotton or Fiberglass)

Aerators

Air Supply Piping

Aeration of Typical Bin and Outlet Chute

MATERIALS RESPONDING TO AERATION

Aeration gives the best results on materials with a 60 mesh size or smaller and with a 3% or less moisture content. Specific materials that respond well to aeration are as follows:
- Lime, Portland Cement, Carbon Black, Diatomaceous Earth, Flour, Soda Ash, Gypsum, Fly Ash, Pigments, Soap Powders, Bentonite, Bran, Clay, Cereals, Fullers Earth, Detergents and many others. For questionable materials please contact our sales department.

Air supply must be clean and dry. We recommend positive displacement, low pressure blowers. Plant air can be used but the pressure must be reduced to 3 to 5 P.S.I. and a filter or moisture trap used on the low pressure side. The volume of air needed is a limiting factor on the use of plant air.

Air Consumption Guide Per Aerator

<table>
<thead>
<tr>
<th>Piping Size</th>
<th>Number of Aerators in a Row</th>
<th>Air Pressure PSI</th>
<th>Cubic Feet Per Minute</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4”</td>
<td>2</td>
<td>1</td>
<td>4.2</td>
</tr>
<tr>
<td>1”</td>
<td>3</td>
<td>5</td>
<td>5.7</td>
</tr>
<tr>
<td>1-1/4”</td>
<td>4</td>
<td>4</td>
<td>6.5</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>5</td>
<td>7.1</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>6</td>
<td>7.6</td>
</tr>
</tbody>
</table>

Air pressure of 3 to 5 P.S.I. is recommended for most applications.
EASY QUICK INSTALLATION

Designed for easy installation, the Mag-Neat-O™ is a magnetically coupled motion sensor that when paired with Conveyor Components Company controller MSD, it can be programmed as an over speed, under speed or zero speed device. The Mag-Neat-O™ is a speed switch that uses a uniquely designed magnetic coupler to attach the unit to a roller shaft on your conveyor. This coupler is connected to a target that rotates in unison with the roller shaft of a conveyor. A target is then read by a proximity sensor that communicates pulse into the optional MSD controller which has a relay to control up to two circuits.

ADVANTAGE

The Mag-Neat-O™ features a simple robust Magnetic Coupler for easy, rapid field installation. The coupler of the Mag-Neat-O™ is magnetically attached to the shaft of a conveyor roller or other rotating piece of equipment that you want to monitor for motion.

MAG-NEAT-O MODELS AVAILABLE

<table>
<thead>
<tr>
<th>MODEL</th>
<th>DESCRIPTION</th>
<th>SHIP WT.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCM-2S</td>
<td>Sensor magnetically coupled motion control with 12mm 2-wire (RMS-12S) inductive sensor and MCC-1 magnetic coupling connector.</td>
<td>2 lbs.</td>
</tr>
<tr>
<td>MCM-3S</td>
<td>Sensor magnetically coupled motion control with 12mm 3-wire (MSD-12S3) inductive sensor and MCC-1 magnetic coupling connector. Does not include optional MSD-800 controller.</td>
<td>2 lbs.</td>
</tr>
</tbody>
</table>

ACCESSORIES / SPARE PARTS

<table>
<thead>
<tr>
<th>MODEL</th>
<th>DESCRIPTION</th>
<th>SHIP WT.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCC-1</td>
<td>Magnetic Coupling Connector for Models MCM-2S &amp; MCM-3S</td>
<td>1 lb.</td>
</tr>
</tbody>
</table>

TECHNICAL SPECIFICATIONS

- The sensor can be used in outdoor environments and is connected to the controller(s) with Belden 8442 or 9760 or similar.
- The maximum separation distance between controller and sensor is 200 feet.
- No drilling or tapping of the tail pulley shaft is necessary. The unit connects magnetically to the pulley shaft.

MAG-NEAT-O DIMENSIONAL INFORMATION
The Model BSD is a traction action™ motion control that indicates when a conveyor belt has slowed or quit moving altogether. It can be used as an overspeed, underspeed, or zero speed control. For maximized control the Model BSD should be wired into our optional RMS controllers or MSD controllers which can be set to shutdown machinery or activate an alarm. These controllers allow the BSD to indicate either Over-Speed, Under-Speed or Zero-Speed.

The Model BSD can shut down rotating equipment before damage is encountered. It provides protection for interlocked conveyor belts, especially if one of the belts fails due to overloading or quits due to tearing. Also prevents material backup or plugged chute.

No drilling or tapping of tail pulley shaft required. Unit is shielded between top and bottom of conveyor belt, and can be placed anywhere on the conveyor belt.

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No drilling or tapping of tail pulley shaft required. Unit is shielded between top and bottom of conveyor belt, and the unit can be placed anywhere on the conveyor belt.

TECHNICAL SPECIFICATIONS

- The BSD-2S (2 wire sensor) works with the RMS-G series controller, while the BSD-3S (3 wire sensor) works with the MSD-800 series controller.
- The RMS-G controller is available in a NEMA Type 4 polycarbonate housing, while the MSD-800 controller is a panel-mount plastic housing with display.
- Both controllers are available in either a 120 VAC, 240 VAC, or 24V AC/DC power input. Specify input voltage upon ordering.
- The sensor can be used in outdoor environments and is connected to the controller(s) with Belden 8442 or 8760 or similar.
- Each inductive sensor is supplied with 6 feet of electrical cable. Field splice for longer lengths.
- The maximum separation distance between controller and sensor is 200 feet.
- Each controller has a dry, unpowered relay rated for 5A @ 120 VAC, 240 VAC.
- 6 targets are built into the wheel assembly. The wheel is replaceable if necessary.
- The operating temperature range is -4°F to 158°F (-20°C to 70°C).

MODELS

<table>
<thead>
<tr>
<th>MODEL</th>
<th>DESCRIPTION</th>
<th>SHIP WT.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSD-2S</td>
<td>Wheel (traction action™) motion control, includes 12mm 2-wire (RMS-12S) inductive sensor and wheel target. Does not include optional RMS-G controller.</td>
<td>18 lbs.</td>
</tr>
<tr>
<td>BSD-3S</td>
<td>Wheel (traction action™) motion control, includes (MSD-12S3) 12mm 3-wire inductive sensor and wheel target. Does not include optional MSD-800 controller.</td>
<td>18 lbs.</td>
</tr>
<tr>
<td>BSD-0S</td>
<td>Wheel (traction action™) motion control, sensor not included. Does not include optional controller.</td>
<td>18 lbs.</td>
</tr>
</tbody>
</table>

ACCESSORIES / SPARE PARTS

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<tr>
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<th>DESCRIPTION</th>
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</tr>
</thead>
<tbody>
<tr>
<td>RMS-12S</td>
<td>12mm (2 wire) inductive proximity sensor for use with RMS-G series controller.</td>
<td>1 lb.</td>
</tr>
<tr>
<td>MSD-12S3</td>
<td>12mm (3 wire) inductive proximity sensor for use with MSD-800 or MSD-800-24 controller.</td>
<td>1 lb.</td>
</tr>
<tr>
<td>21310007</td>
<td>Nylon wheel assembly with 6 targets.</td>
<td>2 lbs.</td>
</tr>
<tr>
<td>21310016</td>
<td>Safety chain &amp; hardware kit, 2 pieces at 4 feet each.</td>
<td>5 lbs.</td>
</tr>
<tr>
<td>21310015</td>
<td>Safety cable, 1 piece at 2 feet each (2 required).</td>
<td>1 lb.</td>
</tr>
<tr>
<td>MSD-14</td>
<td>Two conductor electrical cable (Belden 8442 or 6760).</td>
<td>.02 lbs/ft</td>
</tr>
</tbody>
</table>
NEW! MODEL BSDC
COMPACT BELT SPEED DETECTOR

The Model BSDC is a compact (reduced-size) version of our heavy duty "traction action" motion control that indicates when a conveyor belt has slowed or quit moving altogether. The unit can be adjusted as an overspeed, underspeed, or zero speed control. The output of the Model BSDC can be wired into a PLC or DCS, or to the optional RMS controller (or MSD controller) which has a DP/DT relay to control up to two separate circuits, one for machinery shutdown and one for an alarm.

The Model BSDC can shut down rotating equipment before damage is encountered. It provides protection for interlocked conveyor belts, especially if one of the belts fails due to overloading or quits due to tearing.

**COMPATIBLE CONTROLLERS FOR BSD / BSDC**

**MSD-800 CONTROLLERS**
- **Model**: MSD-800
  - Panel mount style, indicates two under-speed or two over-speed points, or one each. 100-240 VAC power input. Digital RPM tachometer display.
  - **Weight**: 1.5 lbs.

**RMS MOTION CONTROLLERS**
- **Model**: RMS-1G
  - Non-contact motion control, includes: 120 VAC electronics.
  - **Weight**: 1.5 lbs.

- **Model**: RMS-2G
  - Non-contact motion control, includes: 240 VAC electronics.
  - **Weight**: 1.5 lbs.

- **Model**: RMS-3G
  - Non-contact motion control, includes: 24 VAC/ VDC electronics.
  - **Weight**: 1.5 lbs.

**NEW! MODEL BSDC**

SIMPLE DESIGN AND INSTALLATION. NO DRILLING OR TAPPING OF TAIL PULLEY SHAFT REQUIRED. UNIT IS SHIELDED BETWEEN TOP AND BOTTOM OF CONVEYOR BELT, AND THE UNIT CAN BE PLACED ANYWHERE ON THE CONVEYOR BELT.

**PROTECTS VALUABLE ROTATING EQUIPMENT**

The Model RMS non-contact motion control will provide accurate and reliable speed sensing of rotating shafts and machinery. Choose a NEMA 4 polycarbonate enclosed controller, then choose a sensor, and a matching mounting bracket and target disk. Each sensor comes with 6 feet of cable, will need to field splice for longer lengths. It will produce an output signal at a predetermined speed which may be either underspeed or overspeed. Solid state electronics and analog technology make this one of the most advanced and versatile motion detectors available. The Model RMS protects all valuable rotating equipment including belt conveyors, bucket elevators, rotary feeders, or screw conveyors. The Model RMS uses a remote mounted inductive sensor to monitor speed. Motion is sensed by means of induced measurable pulses produced by a ferrous metal target rotating past the sensor. Sensors and Targets are paired for optimal pulse ranges and are available for purchase separately. If a distinctive metal target is available, sensors can be used without RMS Target. The produced pulses are converted into a digital electronic signal. Solid state circuitry within the DIN rail mount box then analyzes the digital signal and activates or deactivates the output relay at the pre-set speed point.

**CONTROLLER SPECIFICATIONS**

ENCLOSURE: Polycarbonate
MEETS: NEMA 1
WEIGHT: 2 lbs.
SIZE: 3" x 2½" x 4½"*

**INPUT VOLTAGE:**
- RMS-3G; 24V AC/DC
- RMS-2G; 105-200 volts A.C., 50-60 Hz.
- RMS-2G; 210-250 volts A.C., 50/60 Hz.
- RMS-3G; 210-250 volts A.C., 50/60 Hz.

**OUTPUT:**
- DPDT relay 5 Amp. Resistive at 200 volts A.C. 105-135 volts A.C., 50/60 Hz.
- DPDT relay 5 Amp. Resistive at 120 volts A.C. 210-250 volts A.C., 50/60 Hz.

**AMBIENT TEMP. REPEATABILITY:**
- +2% maximum at constant voltage and temperature

**POWER CONSUMPTION:**
- 3 watts maximum

**SPEED RANGES:**
- Input ranges at which relay will energize:
  - LOW: 2 to 150 RPM
  - MED: 20 to 1200 RPM (use RMS-12S or RMS-30S)
  - HIGH: 200 to 12,000 RPM (use RMS-3G or RMS-12G)

**SIGNAL POINT:**
- Speed at with relay will de-energize for
  - Underspeed, or energize for Overspeed. Recommended to be 15-20% lower or higher than running speed. This will eliminate nuisance shutdowns. Adjustable up to 45 seconds

**START UP DELAY:**
- Adjustable up to 45 seconds

**SENSOR SPECIFICATIONS:**

- **Model Number**: RMS-12S, RMS-30S and RMS-50M
  - **Mounting Brackets Sold Separately.**

The output of the model RMS-G is a DPDT relay. There are two sets of relay contacts, each set includes normally open, normally closed, and common. As a result, the unit can be used to control two separate circuits such as a motor starter and a signal light.

**CONTROLLER SPECIFICATIONS**

ENCLOSURE: Polycarbonate
MEETS: NEMA 1
WEIGHT: 2 lbs.
SIZE: 3" x 2½" x 4½"*

**INPUT VOLTAGE:**
- RMS-3G; 24V AC/DC
- RMS-2G; 105-135 volts A.C., 50/60 Hz.
- RMS-2G; 210-250 volts A.C., 50/60 Hz.

**OUTPUT:**
- DPDT relay 5 Amp. Resistive at 200 volts A.C. 105-135 volts A.C., 50/60 Hz.
- DPDT relay 5 Amp. Resistive at 120 volts A.C. 210-250 volts A.C., 50/60 Hz.

**AMBIENT TEMP. REPEATABILITY:**
- +2% maximum at constant voltage and temperature

**POWER CONSUMPTION:**
- 3 watts maximum

**SPEED RANGES:**
- Input ranges at which relay will energize:
  - LOW: 2 to 150 RPM
  - MED: 20 to 1200 RPM
  - HIGH: 200 to 12,000 RPM

**SIGNAL POINT:**
- Speed at with relay will de-energize for
  - Underspeed, or energize for Overspeed. Recommended to be 15-20% lower or higher than running speed. This will eliminate nuisance shutdowns. Adjustable up to 45 seconds

**START UP DELAY:**
- Adjustable up to 45 seconds

**SENSOR SPECIFICATIONS:**

- **Model Number**: RMS-12S, RMS-30S and RMS-50M
  - **Mounting Brackets Sold Separately.**

The output of the model RMS-G is a DPDT relay. There are two sets of relay contacts, each set includes normally open, normally closed, and common. As a result, the unit can be used to control two separate circuits such as a motor starter and a signal light.
The Model MSD-800 series motion sensing controls offer affordable and reliable protection of indoor and outdoor rotating equipment such as screw conveyors, belt conveyor pulleys, rotary feeders and bucket elevators from costly damage by continuously monitoring rotary speed. The Model MSD-800 control unit is designed to permit two under-speed or two over-speed points, or one of each. 24 V DC power input, 110-240 V AC power input.

**CONTROL UNIT DIMENSIONS**

<table>
<thead>
<tr>
<th>MODEL MSD-800 CONTROL UNIT:</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Input:</td>
<td>100 - 240 VAC, 50/60 Hz</td>
<td><strong>YES</strong></td>
</tr>
<tr>
<td>Optional:</td>
<td>24 VDC (MSD-800-24)</td>
<td><strong>YES</strong></td>
</tr>
<tr>
<td>Power Consumption:</td>
<td>Less than 10 VA (AC input), less than 5 W (DC input)</td>
<td><strong>YES</strong></td>
</tr>
<tr>
<td>Output Power to Sensor:</td>
<td>12 VDC square-wave, NPN or PNP</td>
<td><strong>YES</strong></td>
</tr>
<tr>
<td>Power Input From Sensor:</td>
<td>12 VDC</td>
<td><strong>YES</strong></td>
</tr>
<tr>
<td>Ambient Temperature:</td>
<td>-22°F to 122°F (-5°C to 50°C)</td>
<td><strong>YES</strong></td>
</tr>
<tr>
<td>Storage Temperature:</td>
<td>-4°F to 149°F (-20° to 65°C)</td>
<td><strong>YES</strong></td>
</tr>
<tr>
<td>Reading Accuracy:</td>
<td>± 1 RPM</td>
<td><strong>YES</strong></td>
</tr>
<tr>
<td>Alarm Set Accuracy:</td>
<td>±0.1 to 1 RPM</td>
<td><strong>YES</strong></td>
</tr>
<tr>
<td>Mounting:</td>
<td>1/16 DIN panel mount (45 mm × 45 mm cutout)</td>
<td><strong>YES</strong></td>
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<tr>
<td>Certifications:</td>
<td>UL, CE</td>
<td><strong>YES</strong></td>
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</table>

**MODEL MSD ACCESSORIES**

<table>
<thead>
<tr>
<th>PART</th>
<th>DESCRIPTION</th>
<th>SHIP. WT.</th>
<th>LBS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>303</td>
<td>Stick-Off, 5/16&quot; diameter</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>304</td>
<td>Pole Drive, S5 x S5</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>305</td>
<td>Coupling Guard</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>310</td>
<td>Guard Mounting Bracket</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>311</td>
<td>Bearing Bracket Small</td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td>312</td>
<td>Bearing Bracket Large</td>
<td>5.0</td>
<td></td>
</tr>
<tr>
<td>313</td>
<td>Bearing Bracket, L type</td>
<td>10.0</td>
<td></td>
</tr>
<tr>
<td>MSD-14</td>
<td>Sensor cable to connector control unit and sensor (Belden 8760)</td>
<td>0.02</td>
<td></td>
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</table>

**MSD BEARING BRACKETS AND SHIM PLATES**

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>PART DESCRIPTION</th>
<th>INCHES</th>
<th>LBS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>315</td>
<td>3/8&quot; (9.5 mm)</td>
<td>3/8&quot;</td>
<td>0.25</td>
</tr>
<tr>
<td>316</td>
<td>1/2&quot; (12.7 mm)</td>
<td>1/2&quot;</td>
<td>0.65</td>
</tr>
<tr>
<td>317</td>
<td>3/4&quot; (19.05 mm)</td>
<td>3/4&quot;</td>
<td>1.25</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>PART DESCRIPTION</th>
<th>MM</th>
<th>LBS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>315</td>
<td>3/8&quot; (9.5 mm)</td>
<td>9.5</td>
<td>0.025</td>
</tr>
<tr>
<td>316</td>
<td>1/2&quot; (12.7 mm)</td>
<td>12.7</td>
<td>0.065</td>
</tr>
<tr>
<td>317</td>
<td>3/4&quot; (19.05 mm)</td>
<td>19.05</td>
<td>0.125</td>
</tr>
</tbody>
</table>

**OPERATION**

The Model MSD-1 sensor detects motion by means of a precision metal disc with slots on its periphery generating electronic pulses as the disc rotates past an infra-red light source. These pulses are transmitted to the MSD-800 control unit where the signal is analyzed and the relays are activated or deactivated at preset signal speeds. The MSD-800 control unit is designed to permit two signal set points. Field adjustment of the signal set points is easily accomplished through the buttons on the face of the control unit.
RUGGED, HEAVY DUTY DETECTION

The Model CMS Motion Sensing Control is a compact unit designed to include all mechanical and electronic components in one housing. It will produce an output signal at a predetermined speed which may be either underspeed or overspeed. Rugged, heavy duty construction combined with solid state electronics and photo-electric technology, make this one of the most advanced detectors available.

The Model CMS protects all valuable rotating equipment including belt conveyors, bucket elevators, rotary feeders, or screw conveyors. It operates in either a clockwise or counterclockwise direction and mounts in any position.

The control can be mounted in any position, but the mounting surface should be flat and smooth. The bearing brackets and shim plates shown in the chart can be used to mount the unit directly to the pillow block supporting a shaft. Normally, only 1/4” mounting bolts and lock washers are required. If vibration is extreme two supporting a shaft. Normally, only 1/4” mounting bolts

The shaft of the device should be mounted in line with or parallel to the driving shaft. Model CMS can be driven by a flexible coupling, V-belt drive, chain drive, or gear drive.

TECHNICAL SPECIFICATIONS

The Model CMS senses motion by means of a precision metal disc mounted on the input shaft. This disc generates measurable light pulses at a series of slots on its periphery rotate past an infra-red light source. A photo-electric sensor monitors the series of light pulses and converts them to a digital electronic signal. Solid state circuitry then analyzes the digital signal and activates or deactivates the output relay at the pre-set signal speed. The Model CMS has an adjustable built-in time delay eliminating the need for a separate start-up time delay.

The Model CMS will sense underspeed or overspeed conditions. Three signal speed ranges are available with each unit. The low signal speed range is from 0.1 to 10 RPM. The medium signal speed range is 1 to 100 RPM, and the high speed range is 10 to 1000 RPM.

Field adjustment of the signal set point is easily accomplished by means of an adjustment screw. The signal speed ranges are selected by a three position toggle switch on the printed circuit board. For UNDERSPEED sensing, the signal point is set below the normal operating speed of the unit. The output relay will then de-energize if the speed drops below the signal set point. For OVERSPEED sensing the signal set point is set above the normal operating speed. The output relay will energize if the speed exceeds the signal set point. The output relay can be wired either normally open or normally closed.

Zero speed sensing can be accomplished by locking the signal set point adjustment screw at its lowest setting of 0.1 RPM. The output relay will then de-energize when the shaft speed of the unit approaches zero.

MODEL CMS TECHNICAL INFORMATION

The output of the Model CMS is a DPDT relay connected to the terminal block at the rear of the unit. There are two sets of output contacts. Each set includes normally open, normally closed, and common. As a result, the unit can be used to control two separate circuits such as a motor starter and a pilot light. Input power is connected from the source to contacts L1 or L2 and a ground connection is also furnished.
### MECHANICAL SPECIFICATIONS

- **Radial Load on Input Shaft:** 125 lb. max.
- **End Thrust on Input Shaft:** 100 lb. max.
- **Rotation:** Either clockwise or counterclockwise
- **Driving Torque:** 1 inch-pound maximum
- **Shaft:** 5/8" diameter with 3/16" x 1" square key

#### ENCLOSURE
- **Material:** Aluminum with screw on cover. Optional epoxy coating available.
- **Classification:** NEMA Type 9: Class I, Groups C & D; NEMA Type 7: Class II, Groups F & G

#### BEARINGS
- Ball Bearings, permanently lubricated and sealed for life
- **Shaft Seal:** Carbon Type 6 with 1/16" space between shaft and seal
- **Shaft Diameter:** 1/2"  
- **Shaft Diameter:** 7/16"  
- **Shaft Diameter:** 3/4" NPT pipe tap (both sides)
- **Shaft Length:** 5/8" [16 mm]  
- **Shaft Length:** 1-1/4" [32 mm]  
- **Shaft Length:** 2"  
- **Shaft Length:** 3/4" [10 mm]

#### MEETS
- **CMS-1G-DSPO:** NEMA Types 3S, 4 & 4X
- **CMS-1X-DSPO:** NEMA Type 7: Class I Groups C & D
- **CMS-2G-DSPO:** NEMA Type 3S, 4 & 4X
- **CMS-2X-DSPO:** NEMA Type 7: Class I Groups C & D

#### OUTPUT (RELAYS):**
- **1/10 Horsepower at 240 volts AC**
- **1/10 Horsepower at 120 volts AC**

#### OUTPUT (PULSES):
- **24 volts AC/DC, 50/60 Hz. (Special Order)**
- **210-250 volts Ac, 50/60 Hz. (Special Order)**

#### INPUT VOLTAGE:
- **105-135 volts AC, 50/60 Hz.**
- **210-250 volts AC, 50/60 Hz. (Special Order)**

#### ELECTRICAL SPECIFICATIONS

**Electrical Input:** 105-235 volts AC, 50/60 Hz. **Power Consumption:** 3 Watts maximum

#### SIGNAL POINT:
- **Medium:** 1 to 100 RPM
- **Low:** 0.1 to 10 RPM
- **Normal:** 0.1 to 10 RPM
- **High:** 1/10 Horsepower at 240 volts AC

#### SPEED RANGE:
- **Low:** 0.1 to 10 RPM
- **Medium:** 1 to 100 RPM
- **High:** 1/10 Horsepower at 240 volts AC

#### AMBIENT TEMPERATURE:
- **14°F to +131°F (-10°C to 55°C)
- **MAX. OPERATING TEMP. (CMS-1X-DSPO):** 125°F (52°C)

#### MEASUREMENTS

- **Size:** 5" high x 5" wide x 8½" long
- **Weight:** 6 lb.

### MODEL SC-4

- **Model:** SKIRTBOARD CLAMP
- **Reduces:** Material spillage off the sides of the conveyor belt
- **Material:** Steel for strength and durability

#### DIMENSIONS

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>DESCRIPTION</th>
<th>THICKNESS</th>
<th>WIDTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC-4</td>
<td>Skirtboard Clamp</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

### MODEL BK

- **Model:** RUBBER BELT-KLEEN
- **Protects:** Valuable conveyor belts
- **Material:** 80 durometer solid rubber

#### PART NO.

<table>
<thead>
<tr>
<th>THICKNESS</th>
<th>WIDTH</th>
<th>SHIPPING WEIGHT (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BK-12</td>
<td>1/8&quot;</td>
<td>4</td>
</tr>
<tr>
<td>BK-14</td>
<td>1/8&quot;</td>
<td>4</td>
</tr>
<tr>
<td>BK-16</td>
<td>1/8&quot;</td>
<td>6</td>
</tr>
<tr>
<td>BK-18</td>
<td>1/8&quot;</td>
<td>6</td>
</tr>
</tbody>
</table>

### MODEL BK KIT

- **Part:** 303, 304, 310, 311, 312, 313, CMS-K
- **Quantity:** 1 kit

### MODEL DSPO

- **Model:** COMPACT MOTION SWITCH
- **Dual Setpoint & Pulse Output:**
- **Voltage:** 12V DC NPN; 12 pulses per rev.
- **Current:** 3 Amps
- **Frequency:** 50/60 Hz

#### MODEL DESCRIPTION

<table>
<thead>
<tr>
<th>MODEL</th>
<th>DESCRIPTION</th>
<th>SHPG. WT. LBS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMS-1G-DSPO</td>
<td>Dual Setpoint &amp; Pulse Output with 2 Double Pole IDETs (DPDT) relays for 120 VAC</td>
<td>7</td>
</tr>
<tr>
<td>CMS-1X-DSPO</td>
<td>Dual Setpoint &amp; Pulse Output with 2 Double Pole IDETs (DPDT) relays for 120 VAC</td>
<td>7</td>
</tr>
<tr>
<td>CMS-2G-DSPO</td>
<td>Dual Setpoint &amp; Pulse Output with 2 Double Pole IDETs (DPDT) relays for 240 VAC**</td>
<td>7</td>
</tr>
<tr>
<td>CMS-2X-DSPO</td>
<td>Dual Setpoint &amp; Pulse Output with 2 Double Pole IDETs (DPDT) relays for 240 VAC**</td>
<td>7</td>
</tr>
<tr>
<td>CMS-3G-DSPO</td>
<td>Dual Setpoint &amp; Pulse Output with 2 Double Pole IDETs (DPDT) relays for 240 VAC**</td>
<td>7</td>
</tr>
<tr>
<td>CMS-3X-DSPO</td>
<td>Dual Setpoint &amp; Pulse Output with 2 Double Pole IDETs (DPDT) relays for 240 VAC**</td>
<td>7</td>
</tr>
</tbody>
</table>

### MODEL CMS ACCESSORY MOUNTING KIT INCLUDES:

- **Stub Shaft**
- **Flexible Coupling**
- **Bearing Bracket**
- **Mounting Bracket**

---

**The Model BK (BELT-KLEEN) is an 80 durometer solid rubber made especially for belt cleaning applications. It has the proper attenuation for belt cleaning and is abrasion resistant. Available in four different sizes.**

**The Model SC-4 skirtboard clamp forms the basis for a dust containing system that doesn’t allow material to leave the edges of the conveyor belt.**

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**BELT CLEANERS**

**MODEL SC SKIRTBOARD CLAMP**

**REDUCES:** Material spillage off the sides of the conveyor belt

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**CONVEYOR COMPONENTS.COM**

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**CONVEYOR COMPONENTS.COM**
The Model BR is a motorized brush style conveyor belt cleaner for use in heavy-duty quarry and mining applications to reduce the carryback of material. The Model BR will work in wet or dry applications, as well as on a variety of organic materials and metal fines. The powered brush turns in the opposite direction of the belt in order to throw the dislodged material back into the discharge stream. The MODEL BR uses a totally enclosed, fan cooled, 3 phase, 60 Hz, 230/460 volt, 1150 RPM electric motor to drive a helically shaped open face brush. The brush is self-cleaning and will not load. Standard bristles are long lasting nylon. Oil tempered wire, and polypropylene bristles are also available. Replacement bristle sets are inexpensive and very easy to install.

Brushing engagement is easily regulated by a threaded rod assembly and a special sheave arrangement allows for field adjustment of rotation speed. The brush frame is rigidly constructed to ensure even brush/belt pressure and contact. Entire assembly adjusts both in height and width to fit any size conveyor frame.

**IDENTIFYING YOUR MODEL BR**

Selecting the correct Model BR is easy!

Identify width of your conveyor belt in inches.

Refer to page 53 to determine the best bristle type and diameter for your application.

Once bristle type, diameter and conveyor belt width is determined, use the color-coded chart to the right to create your Model Number.

**BR XXX X XX**

**BRISTLE DIAMETER** | **BRISTLE MATERIAL** | **BELT WIDTH**
--- | --- | ---
0.010” | NYLON | 6” to 108”
0.014” | POLYPROPYLENE | 6” to 108”
0.028” | OIL-TEMPERED WIRE | 6” to 108”
0.040” |  | 6” to 108”

**Examples:**

BR010014 6” to 108”

The Model BR comes complete and ready to install. Simply bolt or weld to conveyor frame and hook up to power source.

**COMPLETE AND READY TO INSTALL.**

The MODEL BR cleaner comes complete and ready to install. Simply bolt or weld to conveyor frame and hook up to power source.

**FITS ANY SIZE CONVEYOR FRAME**

The shaft length furnished equals brush width plus 29”. The motor is mounted on the frame and the frame can be mounted so motor, pulleys, and guard are on the side easiest for servicing and maintenance. Other end is pre-drilled at intervals for easy field assembly. Excess cross member assembly is cut off in field.

**Shaft Length furnished = Brush Width + 29”**

shorten in field to suit

**Brush Width = Belt Width**

- **Standard Brush Diameter 15”**

**Example:**

BR010014 6” to 108”
The Model SBR is a “small-sized” motorized brush style conveyor belt cleaner, based upon our larger, proven MODEL BR. For use in heavy-duty quarry and mining applications, where mounting space is limited, to reduce the carry-back of material. The Model SBR will work in wet or dry applications, as well as on a variety of organic materials and metal fines. The powered brush turns in the opposite direction of the belt in order to throw the dislodged material back into the discharge stream.

The Model SBR is a good choice for use as a stand-alone belt cleaner, and makes an excellent secondary belt cleaner when used behind one of our bladed primary cleaners in more aggressive applications.

The standard model SBR brush is driven with the supplied motor. Optionally, the brush can be driven by the conveyor head pulley when modified with a customer supplied sheave and belt drive. The ratio of pulleys should drive the brush at a 3:1 or 2:1 ratio for effective cleaning purposes. Alternate sheaves, bushings and drive belts can be purchased from most industrial supply companies.

Identification of your Model SBR

Selecting the correct Model SBR is easy!

Identify the width of your conveyor belt in inches. Refer to page 53 to determine the best bristle type and diameter for your application. Once bristle type, diameter and conveyor belt width is determined, use the color-coded chart to the right to create your Model Number.

The brush shaft can also be mounted on the top or bottom side of the frame for additional convenience.

Alternate Drive Method

The standard model SBR brush is driven with the supplied motor. Optionally, the brush can be driven by the conveyor head pulley when modified with a customer supplied sheave and belt drive. The ratio of pulleys should drive the brush at a 3:1 or 2:1 ratio for effective cleaning purposes. Alternate sheaves, bushings and drive belts can be purchased from most industrial supply companies.

Versatility

The motor can be mounted on the right side or left side depending on space constraints. The motor may also be mounted beneath the H-Frame. The brush bearings may also be mounted on the outside of the side frames. The hanger bar and H-Frame have a series of mounting holes to fit different sized applications.

Technical Specifications

- The Model SBR includes the brush, framework, mounting bracket, brush adjustments, and drive mechanism. The Model SBR drive and guard assembly is smaller than the (standard) Model BR to allow a fit into tight spaces.
- The bristle strip material is either nylon, polypropylene, or oil tempered wire. Other special materials available upon request.
- Nylon and polypropylene bristles are available in 0.040", 0.028", or 0.014” bristle diameters. Pricing varies. Oil tempered wire available in 0.010“ bristle diameter.
- The unit is mounted on the conveyor by 4 mounting brackets, 2 for pivoting and 2 for tensioning.
- The standard motor is 230/460 VAC, 60 Hz, 3 phase, reversible, 1150 rpm, TEFC.
- Brush should be adjusted with a “feather-touch” against the belt to allow it to “flick” material into the discharge.
- The operating temperature range is -40ºF to 104ºF (-40ºC to 40ºC).
- Explosion proof motors are available upon request.
- Shaft and H-Frame are oversized by 28" to allow field customization for proper conveyor fit.
- Shaft diameter is 1-7/16”.
- Maximum allowed brush width is 42”. For wider conveyor belt widths, refer to our MODEL BR Brush Style Belt Cleaner.

Figure 1: SBR configured with the motor mounted on top of the frame and the brush bearings mounted to the inside of the side frame

Figure 2: SBR configured with the motor mounted beneath the frame and the brush bearings mounted to the outside of the side frame
DETERMINING BRISTLE TYPE

Our standard bristle is long wearing, crimped, black nylon with a plated steel backing. This bristle has a 3° trim length. We recommend the nylon bristle unless the chemical composition of the material carried on the belt would break down the nylon. The most common material with a detrimental effect on nylon is a solvent with an alcohol base.

Optional fill materials are crimped black polypropylene and crimped oil tempered wire. The polypropylene bristle has a trim length of 3° and the wire bristle a trim length of 3°. Polypropylene is more universally resistant to various chemicals, such as solvents with an alcohol base, but does not have nylon’s abrasion resistance. Oil tempered wire is recommended where on-belt temperatures can exceed 200°F.

DETERMINING BRISTLE SIZE

Our standard nylon bristle is available in 0.014”, 0.028” and 0.040” diameters. Polypropylene bristles are available in the same diameters. The crimped oil tempered wire bristle is available in 0.010” diameter only.

To determine the proper bristle size for your application, two factors must be considered:

1. Carryover weight - heavy, medium or light
2. Carryover condition - wet, tacky or dry

The larger bristle sizes are used on heavy carryovers and on wet or tacky carryovers. Light, dry carryovers require the smaller diameter bristles. If in your application the carryover is between these two extremes, specify the larger diameter bristle. The following Application Guide will aid in selection of proper bristle size.

APPLICATION GUIDE

<table>
<thead>
<tr>
<th>MODEL</th>
<th>CARRY OVER</th>
<th>BRISTLE TYPE</th>
<th>WEIGHT</th>
<th>CONDITION</th>
<th>NYLON</th>
<th>POLYPROPYLENE</th>
<th>OIL TEMPERED WIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate</td>
<td>Heavy</td>
<td>Aggregate</td>
<td>0.040</td>
<td>Wet or Dry</td>
<td>0.040</td>
<td>0.10</td>
<td></td>
</tr>
<tr>
<td>Cement - Raw Material</td>
<td>Heavy</td>
<td>Cement - Raw Material</td>
<td>0.040</td>
<td>Wet</td>
<td>0.040</td>
<td>0.10</td>
<td></td>
</tr>
<tr>
<td>Cement - Dust</td>
<td>Light</td>
<td>Cement - Dust</td>
<td>0.028</td>
<td>Dry</td>
<td>0.028</td>
<td>0.10</td>
<td></td>
</tr>
<tr>
<td>Cereal</td>
<td>Light</td>
<td>Cereal</td>
<td>0.014</td>
<td>Dry</td>
<td>0.014</td>
<td>0.10</td>
<td></td>
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<td>Coal</td>
<td>Medium</td>
<td>Coal</td>
<td>0.040</td>
<td>Wet or Dry</td>
<td>0.040</td>
<td>0.10</td>
<td></td>
</tr>
<tr>
<td>Copper Ore</td>
<td>Heavy</td>
<td>Copper Ore</td>
<td>0.040</td>
<td>Wet or Dry</td>
<td>0.040</td>
<td>0.10</td>
<td></td>
</tr>
<tr>
<td>Fertilizer</td>
<td>Medium</td>
<td>Fertilizer</td>
<td>0.028</td>
<td>Dry</td>
<td>0.028</td>
<td>0.10</td>
<td></td>
</tr>
<tr>
<td>Iron Ore</td>
<td>Heavy</td>
<td>Iron Ore</td>
<td>0.040</td>
<td>Wet or Dry</td>
<td>0.040</td>
<td>0.10</td>
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<tr>
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<td>Lead Ore</td>
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<td>Wet or Dry</td>
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<td>0.040</td>
<td>0.10</td>
<td></td>
</tr>
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</table>

IDENTIFYING YOUR MODEL HS OR HB

Selecting the correct Model HS or HB is easy! Identify the width of your conveyor belt in inches.

Use the above APPLICATION GUIDE to determine which bristle diameter and material is needed.

Once bristle type, diameter and conveyor belt width is determined, use the color-coded chart to the right to create your Model Number.

MODEL HS designates one complete set of 12 replacement bristle strips for MODEL HS or MODELS BR, SBR or BRC.

MODEL HB designates brush only.

MODEL HB designates one complete set of 12 replacement bristle strips for MODEL HS or MODELS BR, SBR or BRC.

THE FINEST BRUSH AVAILABLE

Twelve helically shaped brush strips are held securely by wedge blocks mounted on hubs.

HUBS

The number of hubs furnished is determined by the width of the brush ordered since they are to be spaced equally on a shaft not more than 8” apart. For example, a 24” brush has four hubs.

The hubs are powder coated gray cast iron with a 4” O.D. Standard bores available are 1⅞” and 1⅜”.

Other bore sizes are available on special order. Each hub affixes to the shaft by two set screws eliminating the need for keys to hold brush.

BRISTLE STRIPS

For standard brushes, twelve bristle strips with a 3” bristle length are furnished. The strips are easily and quickly attached to the hubs with wedge blocks forming a brush with an O.D. of 10”.

The strips are prehelicized at 30° per foot. The helix automatically forms a brush with an O.D. of 10”.

The strips are easily and quickly attached to the hubs with wedge blocks mounted on hubs.

• Even the toughest materials will not load due to open face construction.
• Helical shape ensures smooth brush/belt contact. Noisy and irritating beating action is eliminated.
• Brush replacement costs are the lowest in the industry since only the bristle strips need to be replaced.
• Two set screws in each hub lock brush to shaft, eliminates need for keyways.

MODEL HS designates brush only.

MODEL HS designates one complete set of 12 replacement bristle strips for MODEL HS or MODELS BR, SBR or BRC.

Used as the standard brush on our BRUSH STYLE CLEANERS. Also used on wire mesh and rod conveyors. Scrap removal, plywood dusting, cleaning castings and forgings, steel plate cleaning and many more special applications.

APPLICATION GUIDE

1. Carryover weight - heavy, medium or light
2. Carryover condition - wet, tacky or dry

To determine the proper bristle size for your application, two factors must be considered:

To determine the proper bristle size for your application, two factors must be considered:

- Carryover weight - heavy, medium or light
- Carryover condition - wet, tacky or dry

The larger bristle sizes are used on heavy carryovers and on wet or tacky carryovers. Light, dry carryovers require the smaller diameter bristles. If in your application the carryover is between these two extremes, specify the larger diameter bristle. The following Application Guide will aid in selection of proper bristle size.

APPLICATION GUIDE

<table>
<thead>
<tr>
<th>MODEL</th>
<th>BRISTLE TYPE</th>
<th>WEIGHT</th>
<th>CONDITION</th>
<th>NYLON</th>
<th>POLYPROPYLENE</th>
<th>OIL TEMPERED WIRE</th>
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<td>Cement - Raw Material</td>
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<td>Cement - Dust</td>
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<tr>
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 identifying your model hs or hb

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MODEL HS designates one complete set of 12 replacement bristle strips for MODEL HS or MODELS BR, SBR or BRC.

MODEL HB designates brush only.
**Belt Cleaners**

**Model LP Belt Cleaner**

- Belt can be reversed without injury to belt or cleaner and without loss of cleaning effectiveness.
- Guards against “roll-back” damage when spill conveyors are stopped.
- Compact - for use where space is limited.
- Easy to install and maintain.
- Vise-grip option simplifies rubber wiper replacement.
- Adjusts to fit any conveyor frame.

**Premium Blade Belt Cleaner**

The MODEL LP is a heavy-duty, spring-loaded, rubber wiper type cleaner. For use on all types of materials, it employs 80 durometer rubber specifically designed for maximum cleaning effectiveness. And it’s compact size makes it perfect for areas where installation space is critical... inside or outside chutes and hoods.

Blades on the MODEL LP-S are automatically adjusted to wear. The blade assembly is merely tensioned into place using the standard adjusting hex nut, or the optional ratchet tensioner. Spring system then keeps proper cleaner belt contact for positive clearing pressure. Adjustable stops keep framework from contacting the belt.

**Makes cleaner/belt adjustment quick, easy and positive. No guesswork.**

Just ratchet each end of the cleaner into place and the system takes over from there. Maintains proper contact for maximum cleaning effectiveness.

**Optional Ratchet Tensioner (Model LP-R)**

Makes cleaner/belt adjustment quick, easy and positive. No guesswork. Just ratchet each end of the cleaner into place and the system takes over from there. Maintains proper contact for maximum cleaning effectiveness.

**Special Versions of Model LP are Available**

1. A modified MODEL LP can be furnished to clean conveyor pulleys. It has a steel cleaning blade and simplified construction for mounting near conveyor pulleys.
2. A special MODEL LP can be supplied with two (2) wiper blades for heavy-duty belt cleaning. The rubber blade arrangement is similar to our Model CWD.
3. The MODEL LP is available in a compact design with an overall height of 13⅛” for use in areas where space is restricted. (Standard unit has an overall height of 18⅛”.)

**Designed for reversible belts, where installation space is critical or for use in chutes and hoods.**

**Model LP**

**“Quick Change” Vise-Grip Blade Feature**

Takes the work out of feeding or changing wiper blades. All drilling and bolting is eliminated. Simply loosen the vise assembly wing nuts, replace or readjust the rubber blade, and then tighten. Any gauge rubber from ½” to 1-1/2” can be used. Our cleaners are equipped with 1” gauge x 6” wide BELT-KLEEN rubber as standard material. Model LP-V.

**Replacement Blades Available (Model WB)**

**Specifications**

- A: Width adjusts to fit conveyor frames up to 24” wider than belt size
- B: Center line of head pulley
- C: ⅛” dia. mounting hole (6 places)
- D: Internal protected spring
- E: Note all angles are 25° x 25° x 25°

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51 Conveyorcomponents.com
The model FA cleaner is designed to permit easy servicing of the wiper blade assembly, even while the conveyor is running! Just remove the locking handle, lower the blade assembly, and slide it off the support pipe. The wiper blades can then be serviced and the whole assembly easily reinstalled.

**FLOAT ACTION** SPRING ARM CLEANER

The MODEL FA cleaner effectively cleans any type of material, wet, dry or sticky from conveyor belts. Spring and blade life are greatly increased by the exclusive "Float Action" spring design. Thus, the cleaner pays for itself many times over by reducing clean-up and cleaner maintenance expenses, idler build-up and belt misalignment are also eliminated. Cleaners are shipped partially-assembled and will adjust easily to fit any size conveyor frame.

The MODEL FA will not harm metal belt splices. It’s designed for use on belts with either mechanical or vulcanized splices!

**QUICK-CHANGE ACTION**

The design of the MODEL FA cleaner is such that maintenance can be performed quickly and with very little effort. The entire blade arm and angle assembly, together with the adjusting handle, can be withdrawn from underneath the belt or through a door in the chute for quick maintenance to arm and blade assembly. This is accomplished by loosening the locking handle which permits the entire assembly to slide off the support pipe.

**SAVE ON CLEAN-UP EXPENSE.**

**NEW Spring Design greatly increases Spring and Blade life.**

**Stops Belt Run-Off.**

**Eliminates build-up on Return Idlers.**

**Easy to install.**

**Available for any size Belt.**

**Extends Belt life.**

**Removes Wet, Dry or Sticky Materials.**

**HOW “FLOAT ACTION” WORKS**

A “sandwich” is constructed from two pads of high quality rubber. Our spring arm is then allowed to “float” between them. Two bolts through the rubber and arm clamp the assembly securely to the spring support angle. The rubber then absorbs the majority of the spring’s flexing thereby increasing its life. Spring arm construction is of the highest quality, specially processed spring steel.

**TECHNICAL SPECIFICATIONS**

Simply specify the belt size and the blade style desired. The cleaner is then supplied with the proper number of blades and springs to clean the specified belt width. The spring support angle and the tube are supplied extra long and will need to be cut in field by the customer to suit the conveyor frame. The cleaner will adjust to fit frames up to 24” wider than the belt width ordered. Refer to blade styles shown on right.
**Prevents Belt Mis-alignment**

Prevents materials from being caught between tail pulley and belt. Material droppings and foreign objects are diverted from belt before reaching the tail pulley. V-Type design of plow prevents belt mis-alignment and is compact in size.

The MODEL PT Cleaner permits field adjustment of wiper blade pressure. Adjustable compression springs hold the blade in continuous firm contact with the belt.

Our own long wearing BK blades are used as standard wiper material. Comes equipped with 1/2" by 4" wide BK blades.

Also available is the Heavy Duty MODEL HPT. With 1" x 6" 80 durometer rubber and enhanced structural components. Especially useful for rugged mining applications and constant use of conveyors.

**Safety Chains** are furnished on all plow type cleaners. This convenient feature secures the unit to the conveyor frame insuring it will not be ripped away and carried into the tail pulley.

**Belts Width**

<table>
<thead>
<tr>
<th>Width (inches)</th>
<th>Shipping Weight (lbs)</th>
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<tbody>
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<td>36</td>
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</table>

**PT Model Number:** PT-XX

Model above 60" are special units. Other sizes may be available.

**HPT Model Number:** HPT-XX

With 80 Durometer 1/2" x 4" Rubber Plow

<table>
<thead>
<tr>
<th>Belt Width (inches)</th>
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**Dimensions - Model PT**

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<th>Belt Width</th>
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<th>B</th>
<th>C</th>
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<tbody>
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**Dimensions - Model HPT**

<table>
<thead>
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<th>Belt Width</th>
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</tr>
</tbody>
</table>

**CCC Products Stand the Test of Time in Harsh Environments**

Through thorough attention to detail and rigorous testing processes we are durability, reliability, and quality.
MADE IN THE USA
READY GATE™

FOR USE WITH OSHA COMPLIANT 42” GUARDRAIL SYSTEMS.
READY GATE™ ADJUSTABLE

READY GATE™ ADVANTAGES
- Versatile, can be mounted to round or square guardrail up to 2”, or a firm reinforced wall surface.
- Stainless steel spring closes the gate after each pass thru.
- Gate width is available in two adjustable size ranges to fit openings of 16” to 26” or 24” to 40”. Gate width is adjustable in 2” increments.
- Available in red or safety yellow powder coated finish for safety, with zinc rich powder coat primer for corrosion resistance.

MODELS AVAILABLE:
- RED - RGC-26-ZC15
  SAFETY YELLOW - RGC-26-ZC16
  FITS CLEAR OPENINGS OF 16” TO 26” ADJUSTABLE IN 2” INCREMENTS
- RED - RGC-40-ZC15
  SAFETY YELLOW - RGC-40-ZC16
  FITS CLEAR OPENINGS OF 24” TO 40” ADJUSTABLE IN 2” INCREMENTS

MEETS OR EXCEEDS THE FOLLOWING STANDARDS:
OSHA 1910.29 Fall protection systems and falling object protection criteria and practices.
Guardrail systems are capable of withstanding, without failure, a force of at least 200 pounds downward or outward without deflecting to a height of less than 39 inches above the walking-working surface.

ANSI/ASSP A1264.1 – 2017
Gates must meet the guardrail requirements of 200 lbs. applied in any direction with a maximum allowable deflection of 3 inches under load.

OSHA/ANSI
OSHA & ANSI Standards require any surface above 4 feet to be guarded by guardrail systems. Any openings in the guardrail system must be protected by an offset guardrail or self-closing safety gate.

ADJUSTABLE
Two models cover openings from 16” to 40”. Either model can be mounted to allow for left or right opening. Will mount to round or square guardrail systems or to any reinforced flat mounting surface, by easy bolt-on attachment.

SELF-CLOSING
Comprehensively tested to over 1,000,000 cycles without spring failure.

CORROSION RESISTANT
Two-part powder-coat finish, zinc rich primer with UV resistant polyester top coat.

EASY TO INSTALL!
MADE IN THE USA
READY GATE™

2” incremental adjustment
Strike Plate adds additional strength to the gate. Noise dampening foam rubber pad reduces loud noise when gate closes.

Stainless steel spring resists rust while ensuring gate closes automatically. Tested to over 1,000,000 cycles without spring failure.

Friction reducing bushings eliminate metal to metal contact.

For use with OSHA compliant 42” guardrail systems.

Adaptable to round or square guardrail.

Stainless steel spring resists rust while ensuring gate closes automatically. Tested to over 1,000,000 cycles without spring failure.

2” incremental adjustment
Strike Plate adds additional strength to the gate. Noise dampening foam rubber pad reduces loud noise when gate closes.

For use with OSHA compliant 42” guardrail systems.
The READY STEP mounts easily and allows a quick step up almost anywhere. Easily folds into a vertical position when not in use. Includes two 9/16” mounting holes.

**MODELS AVAILABLE**

- **MANUAL FOLD**
  - RSM-15X4-C1
- **SPRING LOADED FOLD**
  - RSS-15X4-C1

**TECHNICAL SPECIFICATIONS**

- 10” x 15” tread surface
- Spring-loaded for ease of folding
- 350 lb. load rating
- Gray Powder-coated finish

**MADE IN THE USA**

- **RIBBED RUBBER**
  - RT5-R-7X15
- **ABRASIVE**
  - RT5-A-2.75X13.75

Did you know?

Conveyor Components Company offers a wide selection of color options on all our Safety Products? Whether equipment is required to be a specific color, or it’s just a preference, Conveyor Components Company has the color to suit YOUR needs!