

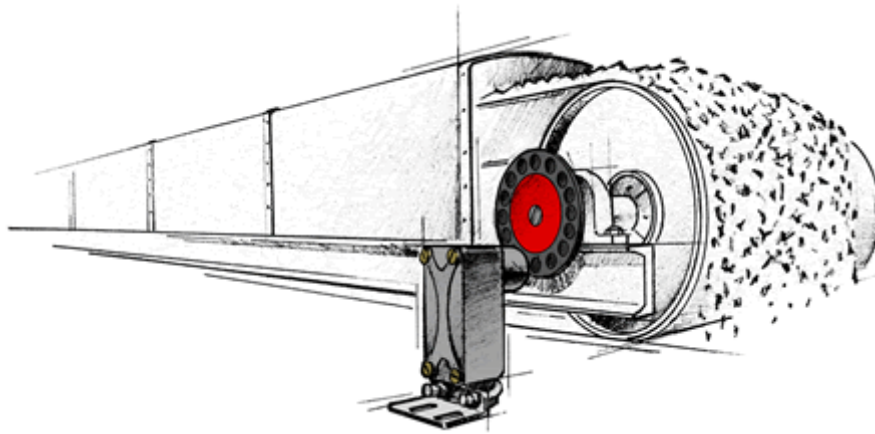
# Industrial Speed and Vibration Monitoring Solutions

## Typical Applications

### **Belt Conveyors**

**Belt Conveyors** have numerous applications in bulk raw materials handling ranging from mining to grain processing. They usually comprise of a continuous woven flat bed (belt) moving over a flat metal surface or metal rollers.

**Electro-Sensors' Speed Switches** are used on **Belt Conveyors** to monitor critical speed, and guard against belt slippage or breakage that can result in costly process downtime, machine damage, and material waste.



The following Speed Switches are commonly used in this type of application:

- **M100/M5000 - Self contained rotation monitoring system**
- **PVC100/PVC5000 - Corrosion resistant rotation monitoring**
- **SCP-Series - Pre-settable machine speed switch**
- **DR1000 - Precision digital speed switch system**
- **LRB-Series - DIN rail mount or stand alone speed switch**

Ratemeters and Tachometers are also used to monitor Belt Conveyors to display the RPM of the conveyor.

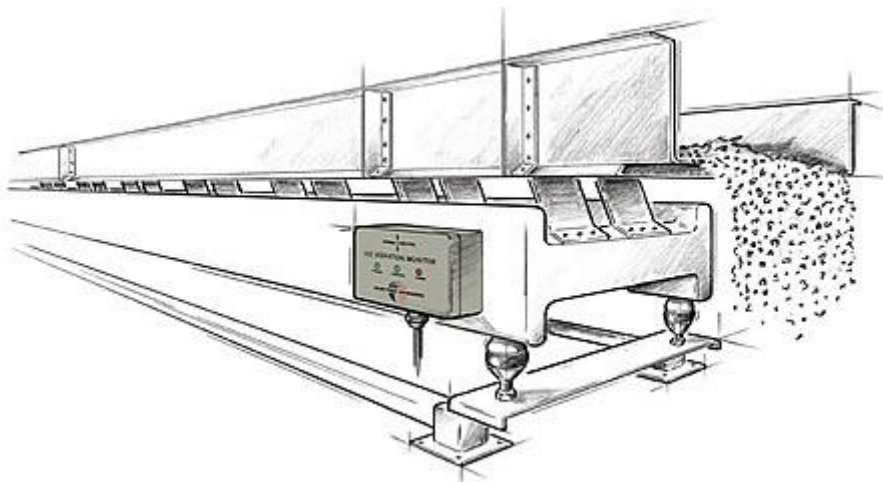
The following Ratemeters and Tachometers are commonly used in this type of application:

- **AP1000 - Digital tachometer, panel mount or stand alone**
- **TR400 - Speed and direction indicator, panel mount or stand alone**

## **Vibratory Conveyors**

**Vibratory (Oscillating) conveyors** provide an efficient and economical method of conveying or processing fragile bulk materials with gentle handling. They convey a world of products gently and safely; inspect and sort moving objects by color, shape and size; remove flaws while retaining good material; and prepare raw foods for processing.

**Electro-Sensors' Speed Switches and Vibration Monitors are used on Vibratory Conveyors to monitor critical speed and vibration levels, and guard against slowdown or stoppage that can result in costly process downtime, machine damage, and material waste.**



The following Speed Switches are commonly used in this type of application:

- **M100/M5000 - Self contained rotation monitoring system**
- **PVC100/PVC5000 - Corrosion resistant rotation monitoring**
- **SCP-Series - Pre-settable machine speed switch**
- **DR1000 - Precision digital speed switch system**

The following Ratemeter is commonly used in this type of application to display the RPM of the conveyor:

- **TR400 - Speed and direction indicator, panel mount or stand alone**

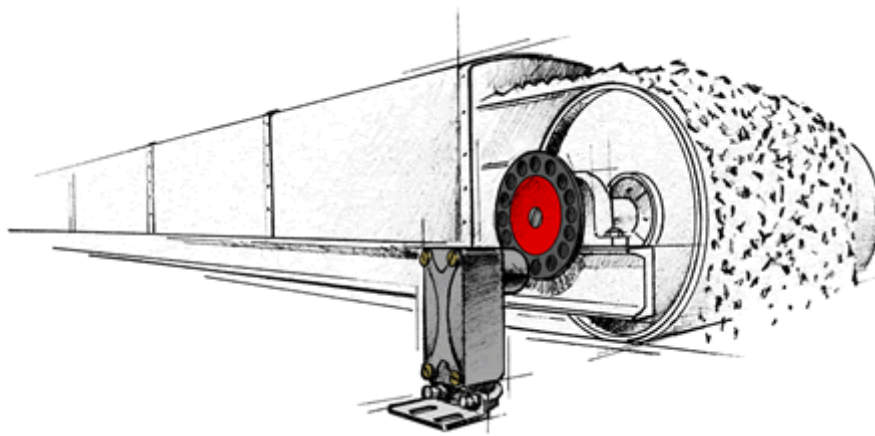
The following Vibration Monitor is commonly used in this type of application to guard against unwanted vibration levels:

- **VS2 - Compact and rugged stand alone vibration monitor**

## **Drag Conveyors**

**Drag conveyors** are used in a wide variety of applications including mining, agriculture, or any applications where the product is fragile, easily segregated or high in moisture content. Drag conveyors can be installed to run horizontally, inclined or a combination of both. Bulk materials are conveyed between the flights at virtually any angle with little or no product segregation or degradation, assuring positive movement during operation.

**Electro-Sensors' Speed Switches** are used on Drag Conveyors to monitor critical speed, and guard against slowdown or stoppage that can result in costly process downtime, machine damage, and material waste.



The following Speed Switches are commonly used in this type of application:

- **M100/M5000 - Self contained rotation monitoring system**
- **PVC100/PVC5000 - Corrosion resistant rotation monitoring**
- **SCP-Series - Pre-settable machine speed switch**
- **DR1000 - Precision digital speed switch system**

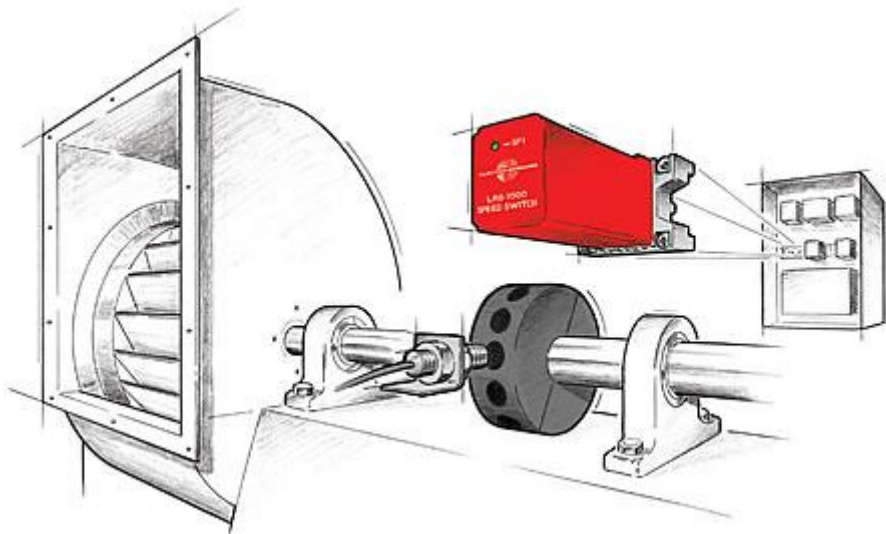
The following Ratemeters and Tachometers are commonly used in this type of application to display the RPM of the conveyor:

- **AP1000 - Digital tachometer, panel mount or stand alone**
- **TR400 - Speed and direction indicator, panel mount or stand alone**

## Fans & Blowers

**Fans & Blowers** can be critical to plant operations and the comfort and security of personnel. Speed Switches can assure positive fan operation and indicate a slowdown or stoppage due to belt slippage, clogged air filters or other mechanical problems.

**Electro-Sensors' Speed Switches** are used on Fans & Blowers to monitor critical speed, and guard against slowdown or stoppage that can result in costly process downtime, machine damage, and material waste.



The following Speed Switches are commonly used in this type of application:

- **M100/M5000** - Self contained rotation monitoring system
- **PVC100/PVC5000** - Corrosion resistant rotation monitoring
- **SCP-Series** - Pre-settable machine speed switch
- **DR1000** - Precision digital speed switch system
- **LRB-Series** - DIN rail mount or stand alone speed switch

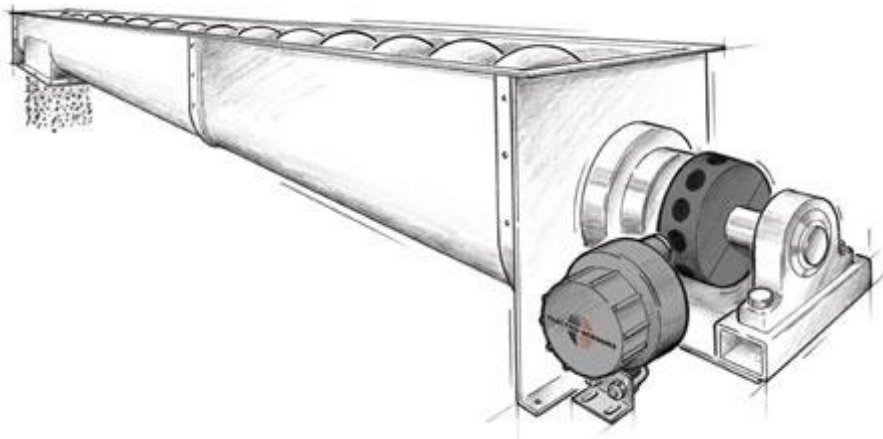
The following Ratemeters and Tachometers are commonly used in this type of application to display the RPM of the Fan:

- **AP1000** - Digital tachometer, panel mount or stand alone
- **TR400** - Speed and direction indicator, panel mount or stand alone

## **Screw Conveyors**

**Screw conveyors** are used to convey materials such as bulk solids or sludge both on horizontal and high inclination, and are designed to provide an enclosed method of transferring materials from one point to another.

**Electro-Sensors' Speed Switches are used on Screw Conveyors to monitor critical speed, and guard against slowdown or stoppage that can result in costly process downtime, machine damage, and material waste.**



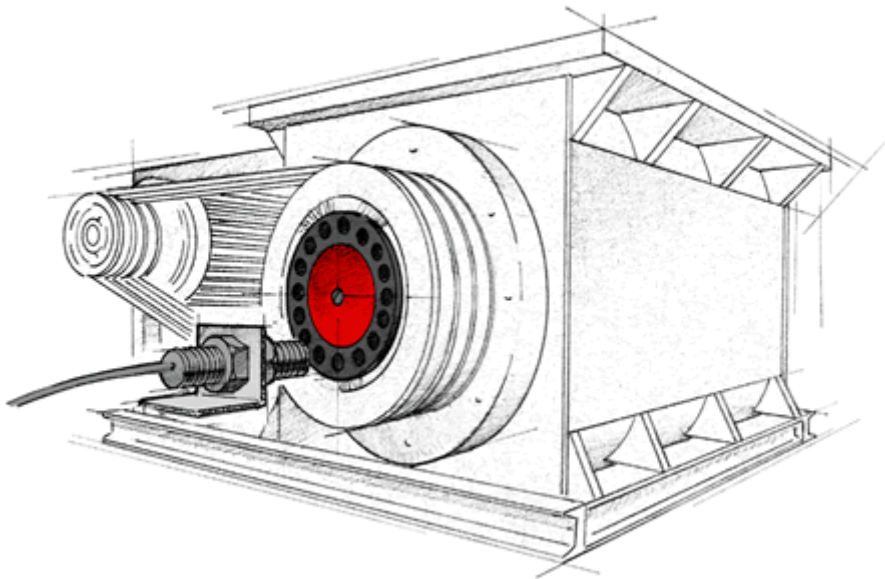
The following Speed Switches are commonly used in this type of application:

- **M100/M5000 - Self contained rotation monitoring system**
- **PVC100/PVC5000 - Corrosion resistant rotation monitoring**
- **SCP-Series - Pre-settable machine speed switch**
- **DR1000 - Precision digital speed switch system**
- **LRB-Series - DIN rail mount or stand alone speed switch**

## Rotary Airlocks

**Rotary Airlocks** usually serve as part of a pneumatic conveying system. On the input side, vanes inside the airlock spin and receive bulk raw materials while discharging air from the pressurized side of the system. As they spin around, they then discharge the bulk raw materials into the conveying system with a minimum of air pressure lost.

**Electro-Sensors' Speed Switches** are used on Rotary Airlocks to monitor critical speed, and guard against slowdown or stoppage that can result in costly process downtime, machine damage, and material waste.



The following Speed Switches are commonly used in this type of application:

- **M100/M5000 - Self contained rotation monitoring system**
- **PVC100/PVC5000 - Corrosion resistant rotation monitoring**
- **SCP-Series - Pre-settable machine speed switch**
- **DR1000 - Precision digital speed switch system**
- **LRB-Series - DIN rail mount or stand alone speed switch**

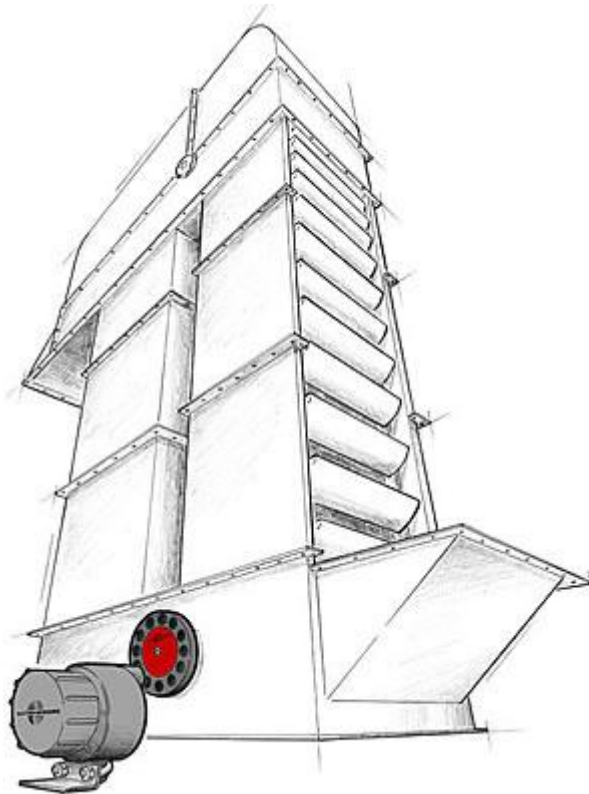
The following Ratemeters and Tachometers are commonly used in this type of application to display the RPM of the Conveyor:

- **AP1000 - Digital tachometer, panel mount or stand alone**
- **TR400 - Speed and direction indicator, panel mount or stand alone**

## Bucket Elevators

**Bucket Elevators** are an economical means of elevating bulk raw materials, typically straight up at 90 degrees before discharging the material at the head of the elevator.

**Electro-Sensors' Speed Switches are used on Bucket Elevators to monitor critical speed, and guard against slowdown or stoppage, or belt breakage that can result in costly process downtime, machine damage, and material waste.**



The following Speed Switches are commonly used in this type of application:

- **M100/M5000 - Self contained rotation monitoring system**
- **PVC100/PVC5000 - Corrosion resistant rotation monitoring**
- **SCP-Series - Pre-settable machine speed switch**
- **DR1000 - Precision digital speed switch system**

The following Ratemeters and Tachometers are commonly used in this type of application to display the RPM of the Conveyor:

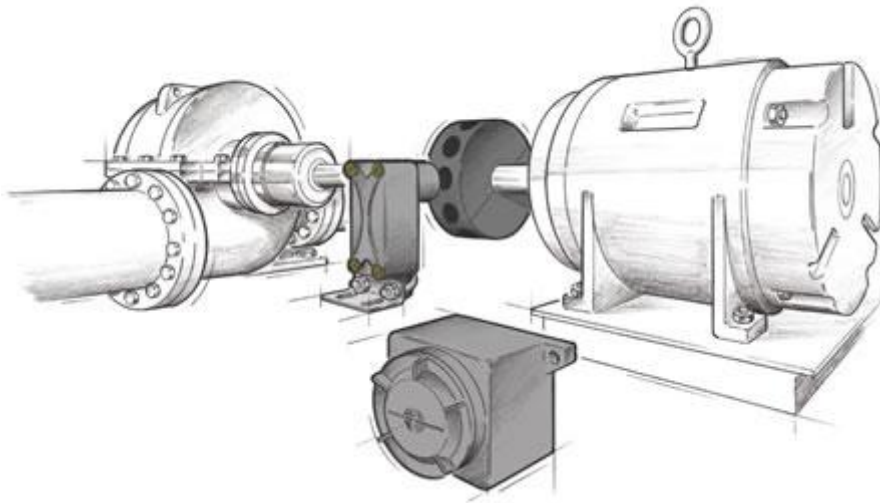
- **AP1000 - Digital tachometer, panel mount or stand alone**
- **TR400 - Speed and direction indicator, panel mount or stand alone**



## Pumps

**Pumps** usually used to convey fluids in a closed system. They are usually powered by an electric motor, which spins an impeller inside the pump body conveying the fluid inside the system.

**Electro-Sensors' Speed Switches are used on Pumps to monitor critical speed, and guard against slowdown, stoppage, or reverse rotation that can result in costly process downtime, catastrophic machine damage, and material waste.**



The following Speed Switches are commonly used in this type of application:

- **M100/M5000 - Self contained rotation monitoring system**
- **PVC100/PVC5000 - Corrosion resistant rotation monitoring**
- **SCP-Series - Pre-settable machine speed switch**
- **DR1000 - Precision digital speed switch system**
- **LRB-Series - DIN rail mount or stand alone speed switch**

The following Ratemeters and Tachometers are commonly used in this type of application to display the RPM of the pump:

- **AP1000 - Digital tachometer, panel mount or stand alone**
- **TR400 - Speed and direction indicator, panel mount or stand alone**

The following Reverse Rotation Detector is commonly used on pumps:

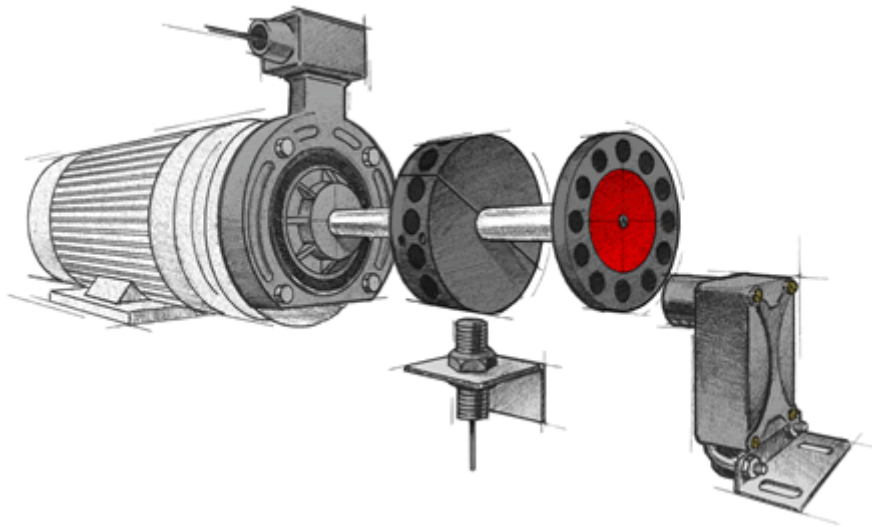
- **UDS1000 - Reverse Rotation Detector**



## Turbines and Generators

**Turbines and generators** are at the heart of all electric power plants. Boilers typically feed steam to the turbine causing it to rotate at high speeds. The turbine is mechanically coupled to the generator that produces the AC power.

**Electro-Sensors' Speed Switches and Vibration Monitors are used on Turbines and Generators to monitor critical speed and vibration levels, and guard against slowdown or stoppage that can result in costly process downtime, machine damage, and material waste.**



The following Speed Switches are commonly used in this type of application:

- **M100/M5000 - Self contained rotation monitoring system**
- **SCP-Series - Pre-settable machine speed switch**
- **DR1000 - Precision digital speed switch system**
- **LRB-Series - DIN rail mount or stand alone speed switch**

The following Ratemeters and Tachometers are commonly used in this type of application to display the RPM of the pump:

- **AP1000 - Digital tachometer, panel mount or stand alone**
- **TR400 - Speed and direction indicator, panel mount or stand alone**

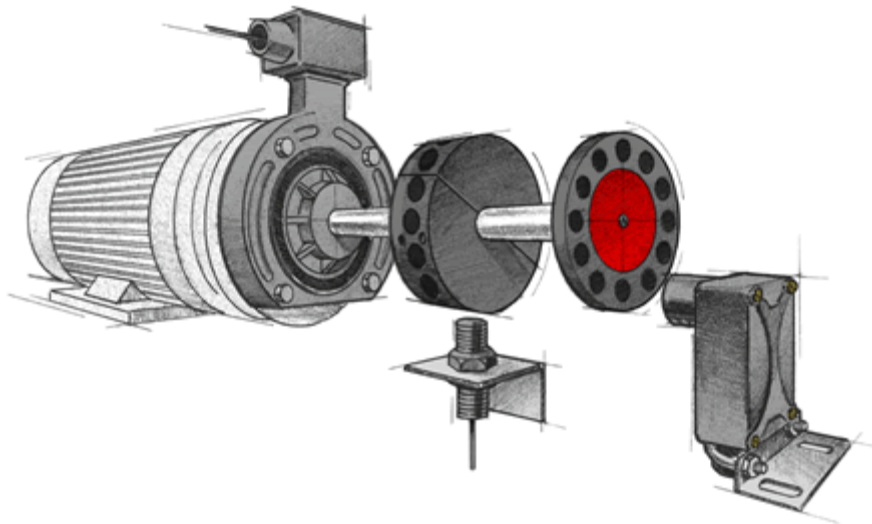
The following Vibration Monitors are commonly used in this type of application to guard against unwanted vibration:

- **VS1 - Compact and rugged stand alone vibration monitor**
- **VS2 - Compact and rugged stand alone vibration monitor**

## Centrifuges

**Centrifuges** effectively substitute a similar, stronger force for that of gravity to separate materials. Every centrifuge contains a spinning vessel; there are many configurations, depending on use. A revolving object exerts a force away from the center of rotation causing separation. Most centrifuges rotate at very high speeds.

**Electro-Sensors' Speed Switches and Vibration Monitors are used on Centrifuges to monitor critical speed and vibration levels, and guard against slowdown or stoppage that can result in costly process downtime, machine damage, and material waste.**



The following Speed Switches are commonly used in this type of application:

- **M5000 - Self contained rotation monitoring system**
- **SCP-Series - Pre-settable machine speed switch**
- **DR1000 - Precision digital speed switch system**

The following Ratemeter is commonly used in this type of application to display the RPM of the conveyor:

- **TR400 - Speed and direction indicator, panel mount or stand alone**

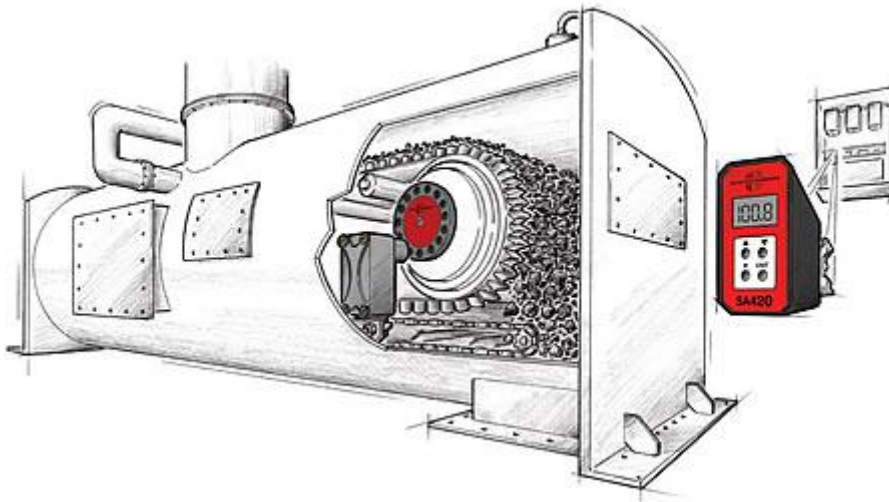
The following Vibration Monitors are commonly used in this type of application to guard against unwanted vibration:

- **VS1 - Compact and rugged stand alone vibration monitor**
- **VS2 - Compact and rugged stand alone vibration monitor**

## Coal Feeders

**Coal Feeders** convey a uniform feed rate of crushed coal to pulverizers that then reduce the fuel to powdered form before it is blown into boiler furnaces. Coal Feeders are commonly used in the power generation industry.

**Electro-Sensors' Speed Switches** are used on Coal Feeders to monitor critical speed, and guard against slowdown or stoppage that can result in costly process downtime, machine damage, and material waste.



The following Speed Switches are commonly used in this type of application:

- **M100/M5000 - Self contained rotation monitoring system**
- **SCP-Series - Pre-settable machine speed switch**
- **DR1000 - Precision digital speed switch system**

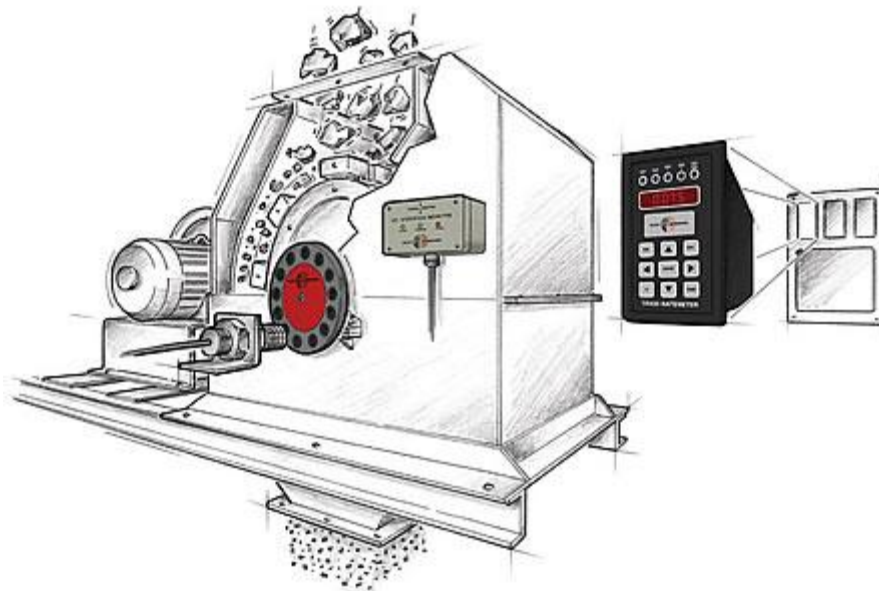
The following Signal Conditioner is commonly used in this type of application to provide a 4-20mA output:

- **SA420 - DIN rail mount or stand alone digital signal conditioner**

## Hammermills

**Hammermills** are used to reduce a wide range of bulk raw materials down to a smaller, spherical uniform size. Reduction is accomplished by very rapidly moving hammers impacting the particles inside the Hammermill chamber; these hammers often spin at very high RPMs.

**Electro-Sensors' Vibration Monitors and Speed Switches are used on Hammermills to monitor critical vibration levels, and shaft speed. They guard against catastrophic damage and product waste caused by unbalanced machinery, hammer breakage, or undesirable speed conditions.**



The following Speed Switches are commonly used in this type of application:

- **M100/M5000 - Self contained rotation monitoring system**
- **SCP-Series - Pre-settable machine speed switch**

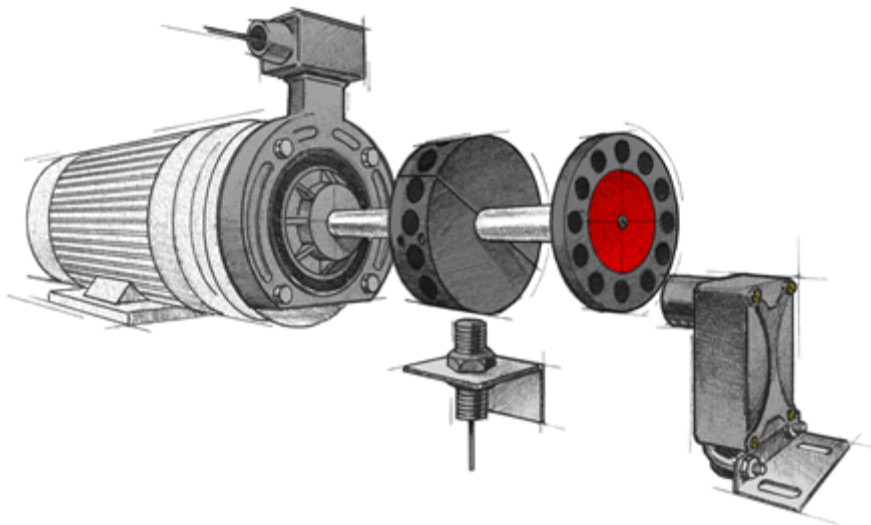
The following Vibration Monitor is commonly used in this type of application to protect against excessive vibration:

- **VS1 - Compact and rugged stand alone vibration monitor**

## Mixers

**Mixers** are used in the mining and minerals processing, and other processing industries. Generally mixers are used to combine large quantities of different substances in precise ratios to create products for market.

**Electro-Sensors' Speed Switches** are used on Mixers to monitor critical speed, and guard against slowdown or stoppage that can result in costly process downtime, machine damage, and material waste.



The following Speed Switches are commonly used in this type of application:

- **M100/M5000 - Self contained rotation monitoring system**
- **PVC100/PVC5000 - Corrosion resistant rotation monitoring**
- **SCP-Series - Pre-settable machine speed switch**
- **DR1000 - Precision digital speed switch system**
- **LRB-Series - DIN rail mount or stand alone speed switch**

The following Signal Conditioner is commonly used in this type of application to provide a 4-20mA output:

- **SA420 - DIN rail mount or stand alone digital signal conditioner**

