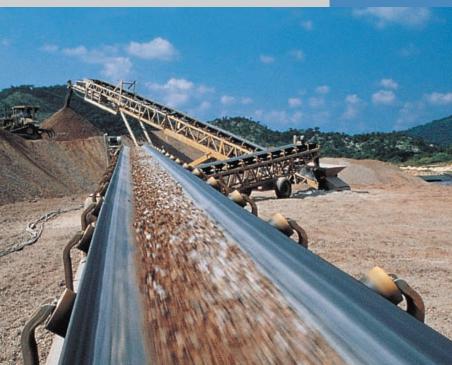
Ramsey Pro-Line conveyor protection switches monitor your conveyors, equipment, and processes. Using our conveyor protection switches to prevent accidents, protect equipment, and reduce unscheduled shutdowns helps to keep your profits and production at their highest levels.

# **Ramsey Pro-Line**

**Conveyor Protection Switches** 





Ramsey Pro-Line switches from Thermo Electron Corporation are used for position information, control signals, and to identify potentially hazardous situations with your process equipment. When hazardous situations occur they activate alarms to stop your equipment. This keeps your personnel safe and limits damage to your equipment.

The Pro-Line conveyor protection switches utilize a rugged heavy duty design. They are built to last, providing many years of dependable service. The modular design of the base unit provides added convenience for installation and maintenance.

Numerous options allow you to pick the right switch to fit your applications.

Use Ramsey Pro-Line conveyor protection switches to protect your business in even the most challenging applications.





### **Pro-Line Belt Misalignment Switch**

The Pro-Line Belt Misalignment Switch is used to monitor the position and tracking of conveyor belts. It is mounted on the conveyor structure and adjusted so the roller arm is the proper distance and angle from the outside edge of the belt. When a belt drifts out of alignment it contacts the roller actuator arm which rotates the actuation shaft, causing the Belt Misalignment Switch to send an alarm signal.

The actuation shaft has two cams inside the housing. Each cam actuates an independent SPDT micro-switch for alarm signals. The first micro-switch actuates with a 10° rotation of the actuation shaft for a warning alarm signal, allowing operators to address the situation before it becomes a problem. The second micro-switch actuates with a 20° rotation of the actuation shaft for a shut down alarm signal in order to prevent or minimize equipment damage. The roller arm has internal stainless steel bearings. This allows the switch to be used on conveyors with belt speeds up to 1250 feet per minute with outstanding service life.



#### **Pro-Line Safety Cable Pull Switch**

The Pro-Line Safety Cable Pull Switch is used as an emergency shutdown device for conveyors or other equipment. They meet OSHA and MSHA requirements for safety shutdown devices.

Safety pull cables are attached to the actuating arm of the switch. When force is applied to the pull cable it rotates the actuating arm and actuating shaft. At a 20° rotation the switch enters a tripped and locked position. The actuating shaft has two cams inside the housing. Each cam simultaneously actuates an independent SPDT micro-switch for shutdown and alarm signals.

The Safety Cable Pull Switch has one housing layout that may be used interchangeably in mid-run or end-run positions of the safety pull cables.

Standard Safety Cable Pull Switches include a manual reset lever. This lever keeps the switch locked in an alarm condition until it is manually reset by an operator.



### **Pro-Line Tripper Position Switch**

The Pro-Line Tripper Position Switch is a heavy duty limit switch. It is often used to indicate the position of a tripper on a conveyor with multiple discharge points. However, it can be used anywhere you need an extremely heavy duty limit switch with physical activation.

The actuating arm of the Tripper Position Switch uses a large Acetal contact roller, 3 in diameter by 1.75 in wide. When the roller makes contact it rotates the actuation shaft which has two cams inside the housing. Each cam actuates an independent SPDT microswitch for position or alarm signals.

The Tripper Position Switch can be ordered with an option where one of the SPDT switches is actuated with clockwise rotation and the other SPDT switch is actuated with counterclockwise rotation. This allows you to identify which direction the switch is activated from.

## Nomenclature for ROS, SPS, & TPS C B D Ε Nomenclature Examples **HAZARDOUS AREA APPROVALS** ROS-2D Standard Belt Misalignment Switch ROS-2D-4X Belt Misalignment Switch, CSA approved for NEMA 4X **SWITCH VERSION NUMBER** SPS-2D-3-4X Safety Pull Switch, CSA approved for Class II and NEMA 4X SPS-2D-3-LT Safety Pull Switch, CSA approved for Class II, with alarm light **PRODUCT IDENTIFIEF** TPS-2D-NP Tripper Position Switch, nickel plated **NEMA RATING OPTIONS** FINISH F. OPTIONS (add all that apply) (blank) Standard LT Alarm Light (non CSA versions) Manual reset lever (Standard on SPS) RST FLG Auxilliary flag alarm SA Short roller arm for tight areas (ROS only) MTBR Mounting bracket **CCW** Independent signals for CW/CCW (TPS only) Metric threads for conduit mounting holes **E. NEMA RATING** (blank) Standard NEMA 4 rating CSA approved for NEMA 4X (Yellow finish only) 4X D. FINISH (blank) Standard, yellow corrosion resistant urethane enamel NP Nickel plated **C. HAZARDOUS AREA APPROVALS** (blank) Standard, no approvals CSA approved for Class II, Div 1 & 2, Groups E,F, and G **B. SWITCH VERSION NUMBER 2D** 2 SPDT contacts

### A. PRODUCT IDENTIFIER

**ROS** Belt Misalignment Switch

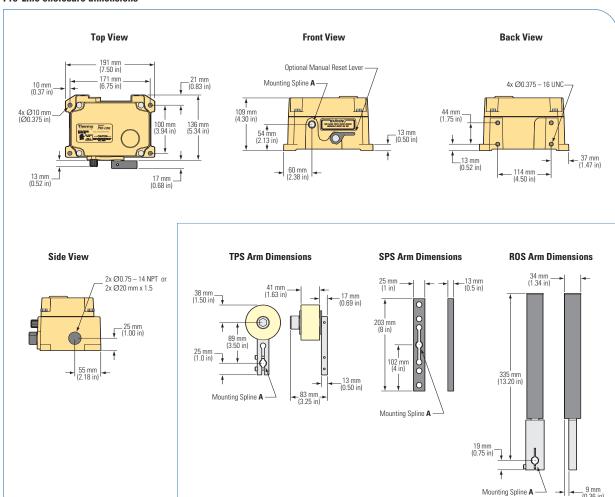
**SPS** Safety Pull Switch

**TPS** Tripper Position Switch

# **Ramsey Pro-Line Conveyor Protection Switches**

	Specification
Outputs	Two SPDT contacts rated for 10A 480V
Temperature	-50°F to +176°F (-45°C to +80°C)
Enclosure Rating	NEMA 4 weatherproof (Optional NEMA 4X)
Conduit Openings	Up to three, threaded 3/4-14 NPT (optional Ø20 mm x 1.5 metric threads)
Actuating Arm Adjustments	22.5° increments from vertical
Agency Approvals	Models with CSA approval for Class II, Division 1 & 2, Groups E, F, & G are available
Actuating Force (ROS)	2.27 kg (5 lb)
Spacing (SPS)	Recommended 30 m (100 ft) switch spacing and cable supports every 3 m (10 ft);
	maximum spacing of 60 m (200 ft) on horizontal conveyors and 45 m (150 ft) on inclined conveyors
Pull Force Rating (SPS)	3.63 kg (8 lb) to 8.16 kg (18 lb)

#### **Pro-Line enclosure dimensions**



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