

Thermo Scientific Ramsey 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.

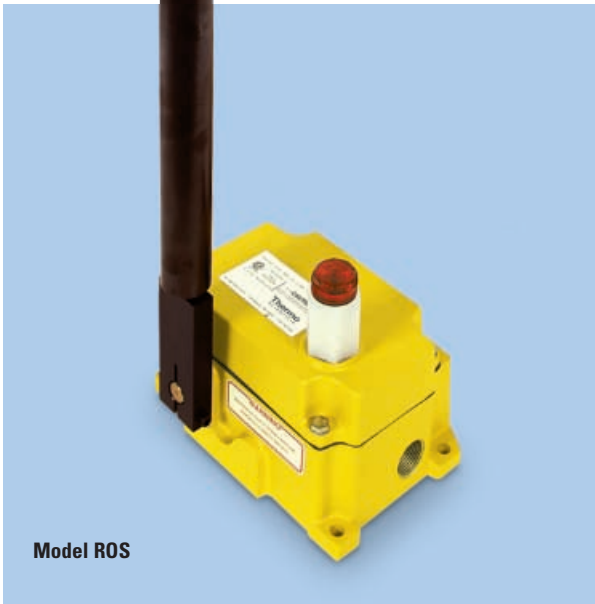
## Thermo Scientific Ramsey Conveyor Protection Switches



Thermo Scientific Ramsey conveyor protection switches 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.

These 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 the conveyor protection switches to protect your business in even the most challenging applications.



### Thermo Scientific Ramsey Belt Misalignment Switch

This 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.



### Thermo Scientific Ramsey Safety Cable Pull Switch

This 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.



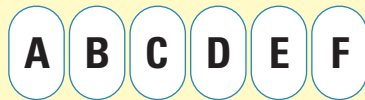
### Thermo Scientific Ramsey Tripper Position Switch

This 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 micro-switch for position or alarm signals.

The 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 counter-clockwise rotation. This allows you to identify which direction the switch is activated from.

## Nomenclature for ROS, SPS, & TPS



PRODUCT IDENTIFIER

SWITCH VERSION NUMBER

HAZARDOUS AREA APPROVALS

FINISH

NEMA RATING

OPTIONS

### Nomenclature Examples

|                    |   |
|--------------------|---|
| <i>ROS-2D</i>      | Standard Belt Misalignment Switch                               |
| <i>ROS-2D-4X</i>   | Belt Misalignment Switch, CSA approved for NEMA 4X              |
| <i>SPS-2D-3-4X</i> | Safety Pull Switch, CSA approved for Class II and NEMA 4X       |
| <i>SPS-2D-3-LT</i> | Safety Pull Switch, CSA approved for Class II, with alarm light |
| <i>TPS-2D-NP</i>   | Tripper Position Switch, nickel plated                          |

### F. OPTIONS (add all that apply)

**(blank)** Standard

**LT** Alarm Light

**RST** Manual reset lever (Standard on SPS)

**FLG** Auxilliary flag alarm

**SA** Short roller arm for tight areas (ROS only)

**MTBR** Mounting bracket

**CCW** Independent signals for CW/CCW (TPS only)

**Met** Metric threads for conduit mounting holes

### E. NEMA RATING

**(blank)** Standard NEMA 4 rating

**4X** CSA approved for NEMA 4X (Yellow finish only)

### D. FINISH

**(blank)** Standard, yellow corrosion resistant urethane enamel

**NP** Nickel plated

### C. HAZARDOUS AREA APPROVALS

**(blank)** Standard, no approvals

**3** 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

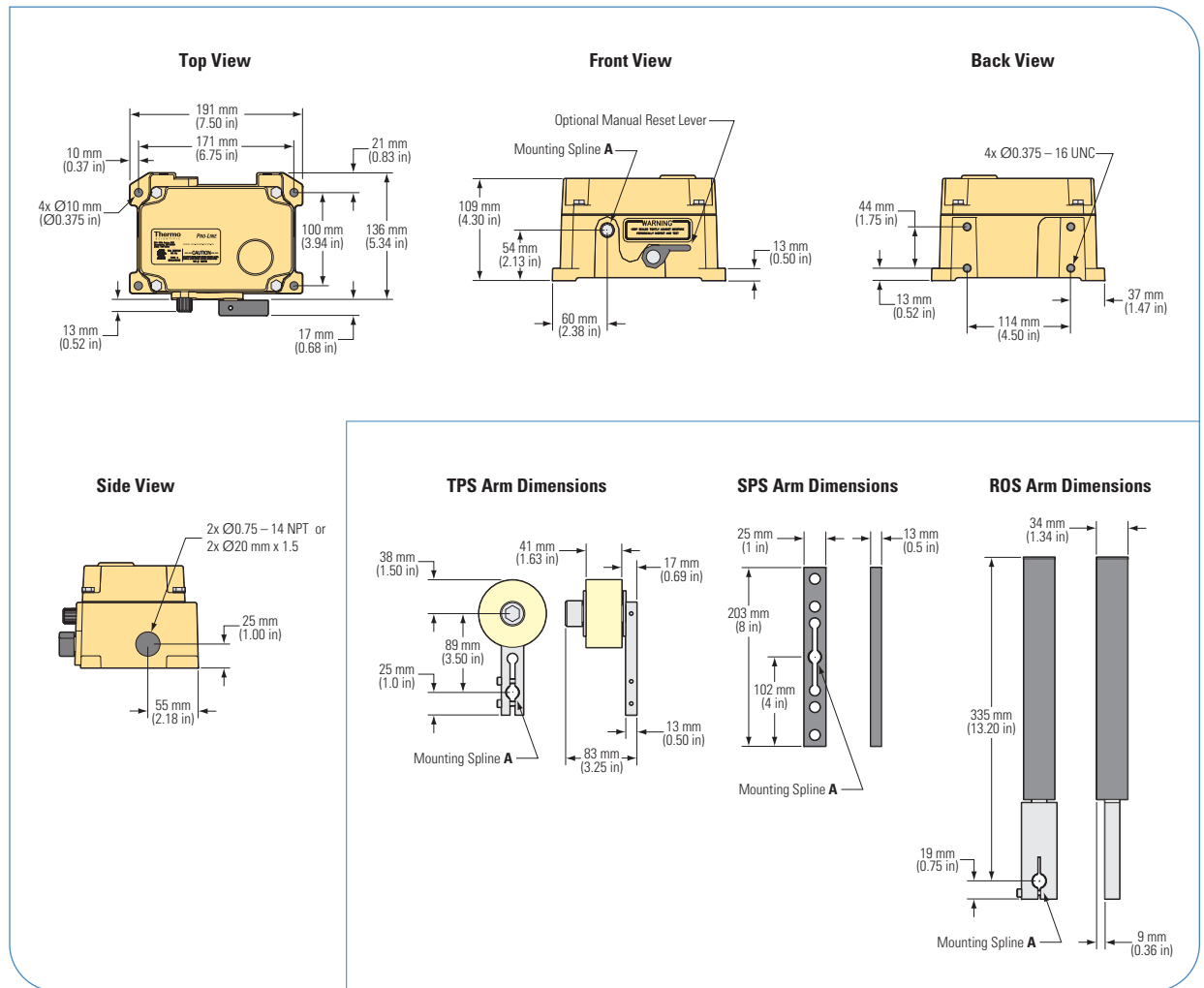
**TPS** Tripper Position Switch

## Thermo Scientific Ramsey Conveyor Protection Switches

### General Specifications

|                           |   |
|---------------------------|---|
| Outputs                   | Two SPDT contacts rated for 10A 480V  |
| Temperature               | -45°C to +80°C (-50°F to +176°F)  |
| Enclosure Rating          | NEMA 4 weatherproof (Optional NEMA 4X)  |
| Conduit Openings          | Up to three, threaded ½-14 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)   |

### Enclosure dimensions



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