



# Thermo Scientific Ramsey Pro-Line Conveyor Protection Switches

Thermo Scientific™ Ramsey™ Pro-Line conveyor protection switches monitor your conveyors, equipment and processes. Prevent accidents and protect equipment which leads to reduced unscheduled shutdowns - helping you keep profits and production at highest levels.

Ramsey Pro-Line conveyor protection switches are used for position information, control signals and to identify potentially hazardous situations with your process equipment. When hazardous situations occur, an alarm is activated to stop your equipment. This keeps your personnel safe and limits damages to your equipment.

## Features and Benefits:

- Modular design of the base unit for added convenience during installation and maintenance
- Rugged cast aluminum, heavy-duty design
- Protection degree IP65 for long last and many years of dependable service
- Suited for the most challenging applications
- Can be operated from any direction as microswitches allow clockwise or counterclockwise rotation of the external lever
- Cover locked by four shake-proof stainless-steel screws
- Internal terminal board allows easy connection and faster maintenance procedures
- Available with ATEX22 and ATEX21 approvals



## Thermo Scientific™ Pro-Line Belt Misalignment (Run-Off) Switch Model 60-30

The Pro-Line belt misalignment switch is used to monitor the position and track of conveyor belts. It is mounted on the conveyor's structure and adjusted so that the roller arm is at proper distance and angle from the outside edge of the belt. When a belt drifts out of alignment it contacts the roller of the 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 is activated with a 15° rotation of the actuation shaft, for a warning signal allowing operators to address the situation before it becomes a challenge.

The second micro-switch is activated with a 30° rotation of the actuation shaft for a shut-down signal in order to prevent or minimize damages to the equipment.

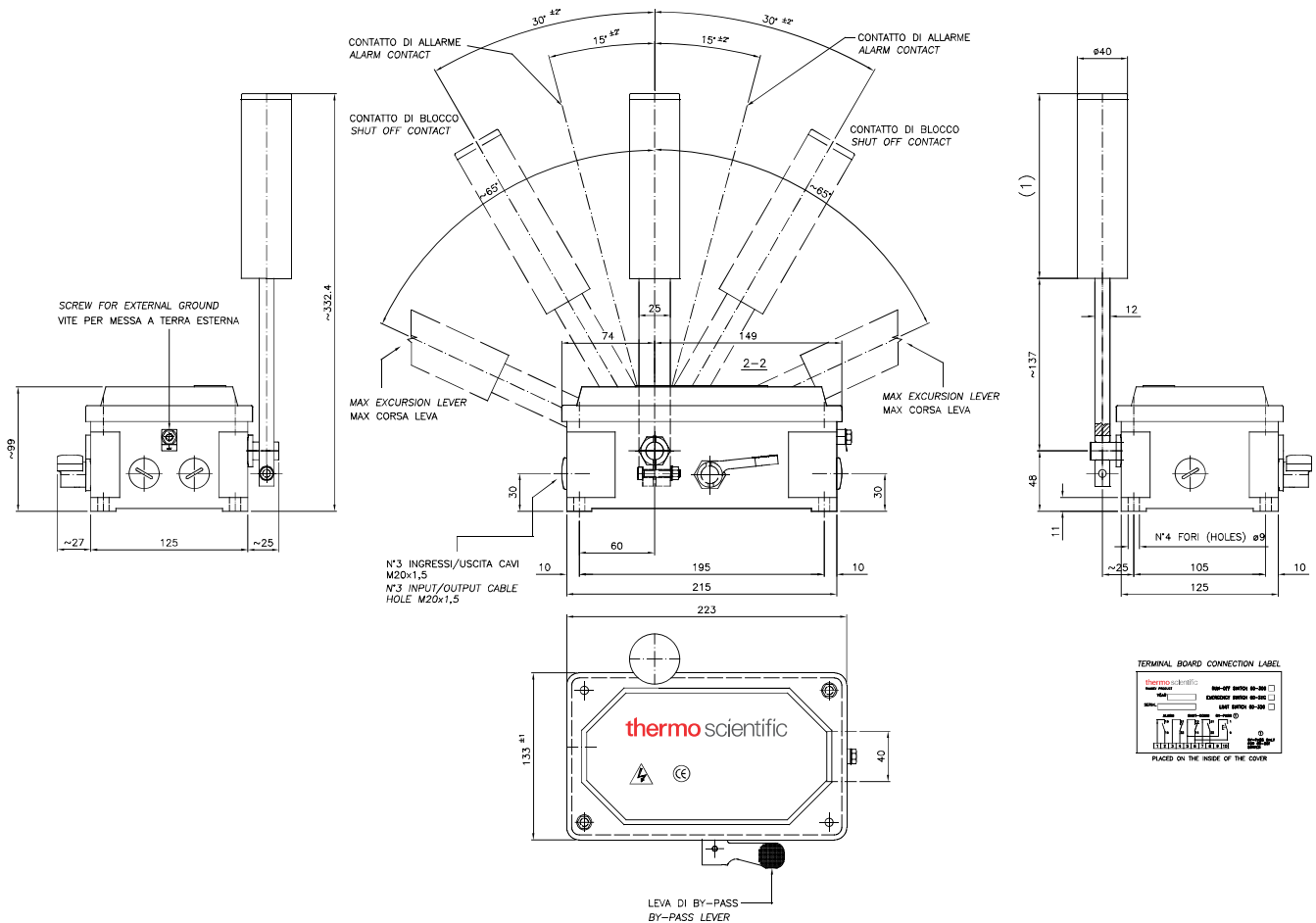
The roller is sized for a maximum speed of 4000 R.P.M., equivalent to an approximately 8 m/sec belt speed. The unit is equipped with a by-pass lever which bypasses the shut-down contact to allow the restarting of the belt.

This model has 2 NC contacts and 2 NO contacts, wired to the terminal board.

The position of the lever on the shaft can be changed as needed so that you can mount the switch on a horizontal, vertical or inclined plane.



Pro-Line belt misalignment switch, model 60-30



## Thermo Scientific™ Pro-Line Emergency Cable Pull Switch Model 60-31

The Pro-Line Model 60-31 safety pull-cord switch is used as an emergency shut-down device for conveyors or other equipment.

Emergency pull cords are attached to the actuating arm of the switch. When a force is applied to the pull-cord the actuating arm and shaft rotate, and, at a 18° rotation, the switch enters a locked tripped position.

The actuating shaft has two cams inside the housing. Each cam actuates an independent SPDT micro-switch for alarm and shut-down signals. Both cams work simultaneously, for safety reason.

Standard safety pull-cord switches include a manual reset lever that keeps the switch locked in an alarm condition until it is manually reset by the Operator. This feature makes the remote restarting impossible, thus eliminating the possibility to restart the belt conveyor when people are working locally.

This model has 2 NC contacts and 2 NO contacts, wired to the terminal board.

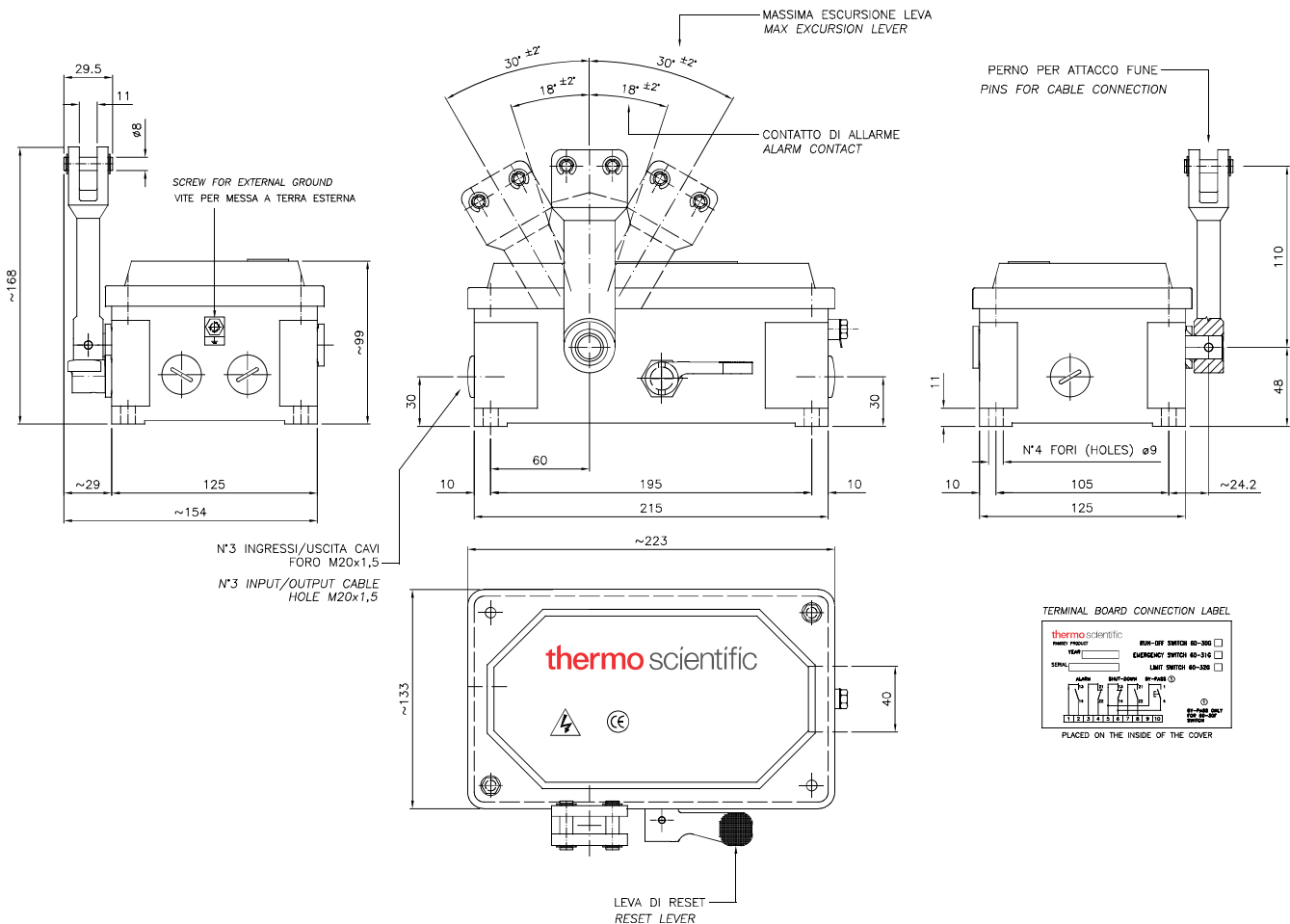
Use of one Safety Pull-Cord Switch every 50 m is recommended.

Mounting accessories are available for a correct installation:

- Safety springs
- Redances (thimbles)
- Helical nuts for fixing or supporting
- Steel cord clamps
- Steel cord



Pro-Line emergency cable pull switch, model 60-31



## Thermo Scientific™ Pro-Line Tripper Position Switch Model 60-32

The Pro-Line Model 60-32 tripper position switch is a heavy-duty limit switch 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.

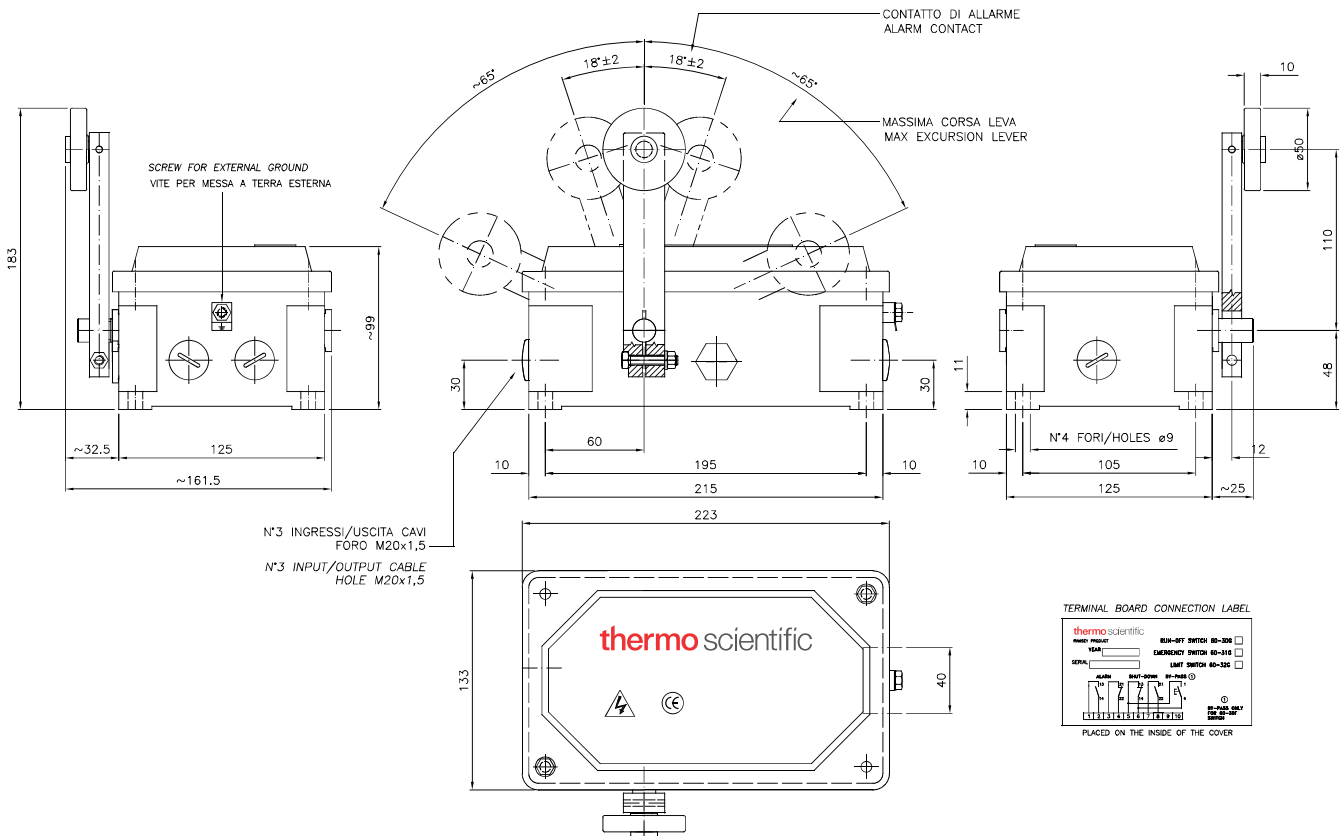
The actuating arm of the tripper position switch uses a contact wheel: when the wheel contacts a mechanical contrast the actuating arm and shaft rotates and, at a 18° rotation, the micro-switches are operated. The actuating shaft has two cams inside the housing: each cam actuates an independent SPDT micro-switch for alarm and stop signals.

Both cams work simultaneously, for safety reason. This model has 2 NC contacts and 2 NO contacts, wired to the terminal board.

The position of the lever on the shaft can be changed as needed so that you can mount the switch on a horizontal, vertical or inclined plane.



Pro-Line tripper positioning switch, model 60-32



Ramsey Pro-Line Series 60 conveyor protection switches	
<b>Contact Rating</b>	Contact configuration: 2NO + 2NC Contact rating AC15: 24V=10A, 250V=6A Contact rating DC13: 24V=8A, 48V=2A Contact elements with Positive Break Function according to IEC/EN 60947.5.1
<b>Operating Temperature Range</b>	-45 °C +85 °C
<b>Enclosure Rating</b>	IP65 (NEMA4)
<b>Cable Inlet</b>	N.3 cable inlets M20X1,5 (PG21, M25 or different available on request)
<b>Construction</b>	Rugged cast Aluminum, heavy duty design
<b>Approvals</b>	ATEX for Zone 21 and 22

**Options:**

- Special version for sea/aggressive ambients with screws, O-rings and other parts Stainless Steel AISI 316L construction;
- Belt misalignment switches with “short” lever or different actuating angle;
- Mounting kit (springs, thimbles, nuts, cord...) for Safety Pull-Cord Switches;
- Possibility for pre-installation of Dupline® tracking modules.

**Beside the above described equipment, Thermo Scientific Ramsey Pro-Line also includes:**

- Safety pull-cord switches model 60-34, for light applications or short conveyors;
- Belt Misalignment (Run-Off) Switches model 60-33, for light applications;
- Under speed switches 60-23;
- Mercury Free Tilt Sensors (for level or plugged chute detector), now certified for ATEX20, 21 and 22;
- Metal detectors Ramsey Oretronic IV.