



# ThermoFisher

## SCIENTIFIC

Thermo Ramsey Italia S.r.l.

### PROTECTION DEVICE

### Series PRO-LINE



### Operating and Service Manual

The manual includes ATEX  safety informations for applications in potentially explosive atmospheres classified as Zone 22

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# 1. GUIDE TO THE MANUAL USE.

## 1.1 Introduction.

This manual contains all the information necessary in order to guarantee a safety and correct use of the devices.

The information contained in the manual is intended for specialised technical personnel.

Observance of the instructions in the manual will guarantee the safety of both man and machine, operating economy and a long working life for the feeder.

The manufacturer has a policy of constantly developing and upgrading its products and hence may make changes without prior notice

## 1.2 Consulting the Manual.

The consultation of the manual is facilitated by a general index that allows rapid positioning of the subject of interest.

The indications more important are highlighted in bold type and preceded by symbols illustrated and defined below.



### **DANGER**

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Possible **dangers** and important requirements for the protection of operators safety ; non compliance or observation may involve risks to the safety of the operators and / or damages goods and things.



### **WARNING**

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**Requirements of obligations** related to the behavior of operators in order to safeguard the security of persons and property ; non compliance or observation may involve risks to the safety of the operators and / or damages goods and things.



### **INFORMATIONS**

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Information / Prescriptions important as regards the functioning of devices and further information regarding the current operation .

### 1.3 Standards applied and Technical Specifications.

The product has been made in compliance with the set of EU standards regarding the free circulation of industrial products in EU countries (see Machines Directive, 2006/42/CE). The product is supplied complete with all the documentation required by these standards. The installation, use and maintenance manual is an integral part of this documentation and contains all the information needed to ensure the efficient operation of the unit, with particular regard to personnel safety.

The following standards have been referred to in the design of the unit:

2006/42/CE	MACHINE SAFETY DIRECTIVE
2014/35/CE	LOW VOLTAGE (LVD) DIRECTIVE
2004/108/CE	EMC DIRECTIVE

#### STANDARDS

IEC 60529+A1+A2:2013      EN 60947-5-1:2005      EN 60947-5-5:1998 +A1:2006

The following standards have been referred for products with ATEX applications:

2014/34/UE	ATEX DIRECTIVE
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#### STANDARDS

EN 60079-0:2012    EN 60079-3:2009

## 2. SAFETY RULES.

### 2.1 General Considerations.

The manufacturer is deemed absolved of all liability in the following circumstances:

- *if the products is used improperly;*
- *if the product has not been installed in accordance with the instructions in this manual*
- *if the product has been installed in an environment that does not comply with the conditions set by the manufacturer*
- *if the product has been altered by the customer in any way without the express written authorisation of the manufacturer*
- *If the user has not followed the instructions given in this manual*
- *if the product has suffered the consequences of exceptional events such as floods, earthquakes, etc. and has been put back into operation without the necessary checks being made.*

### 2.2 Safety in Use.

Once the products has been installed before starting work check:

- for **visible defects** on the safety devices;
- for **correct operation** of the device;

### 2.3 Safety in Maintenance.

Before carrying out any maintenance operation on the products it is mandatory:

- **Read** this instruction manual;
- **Use** the correct tools for the maintenance operations that have to be done;
- **Do not clean** the electrical parts of the feeder with water or other fluid;
- **On completing the repair work**, check that all the tools have been collected up



#### **WARNING**

- **Only qualified personnel are allowed to carry out maintenance work.**
- **Maintenance staff must wear working clothes (with tight sleeves) and individual protective equipment (gloves, safety glasses, etc.) in conformity with safety legislation and binding safety standards.**
- **Any alteration to the product or replacement of any parts made without the manufacturer's authorisation may cause an accident hazard and absolves the manufacturer from all civil and criminal liability.**
- **If an emergency situation arises because of a fire, it is forbidden to use water to put the fire out; always use powder-type extinguishers.**

## 2.4 ATEX: Safety informations for use in Explosive Atmospheres.

The safety instruction of this manual are referred to installation, use and maintenance of the devices for the use in a classified Area according to the 2014/34/UE ATEX directive , as per indication below

Zone 22, with potential explosive atmosphere for presence of combustible dust.

The fig. below shows the label affixed to certified units.



fig. 2-4

To understand the markings, see drawing: TG-0PL603X-E001D attached to chapter 8.



### DANGER

**For applications in explosion hazardous areas classified ATEX Zone 22, must be strictly followed the instructions given in paragraphs 4.5 and 6.3**



### WARNING

**THERMO RAMSEY will not be held liable for applications in explosion-risk areas that do not conform to the specifications in the above paragraphs.**



### INFORMATIONS

THERMO RAMSEY may provide “ProLine” series suitable for applications in explosion hazardous areas classified ATEX Zone 21.

### 3. DEVICE DESCRIPTION.

#### 3.1 Technical Data.

The Table below shown the main data of the product.

<b>GENERAL TECHNICAL DATA</b>			
<b>Description</b>	<b>Value</b>	<b>Unit of meas.</b>	<b>Notes</b>
Overall Dimensions	High: ~105 Width: ~235 Depth: ~155	mm	Approximate measurements of different devices without external lever
Weight	~ 4	Kg	
Degree of Protection IP	IP 65		
Operating Temperature	-45° ÷ +85°	°C	Without ice formation
Stocking Temperature	-45° ÷ + 85°	°C	
Relative Humidity	95	%	Without Condensing
Location	Internal / External Use		
Material Housing	Cast Aluminium		
Color Housing	RAL 1018		
Color External Lever	RAL 3020		
Impact Resistance	50g → 11ms		
Vibrations withstanding according to IEC 60068-2-27	10g – 10 to 500Hz		
Microswitches: Electrical Rigidity	- Between open contacts in a given circuit : > 1500V - Between contacts connected together and exposed conductive parts : > 2000v		
Microswitches: Rated Insulation Voltage Ui: 400V (IEC/EN 6947-1)	- Impulse withstand voltage U imp : 4KW - Insulation voltage Ui : 400V		
Microswitches: Thermal Current	Ithe:10A		
Low Energy load switching	Min Voltage : 10V    Min Current : 40Ma		
Microswitches: Rated Contacts	AC15 : 24V = 10A, 250V = 6A DC13 : 24V = 8A, 48V = 6A		
Microswitches: Short Circuit Protection	Fuse type gG 3A		
Rated with Field Bus	Vmax:24VCC		
Options Installed	Imax:20mA		
Cable Input	N° 3 with thread metric M20x1,5		

**Tab. 3-1**



### 3.2 General.

The Protection Devices Thermo Ramsey, series PRO-LINE are made with a metallic enclosure in aluminium, common for the three models, containing the microswitches operated through cams by an external lever.

The units may operated from any direction as the microswitches are operated both for clockwise or counterclockwise rotation of the external lever.

For electrical connection are provided N°3 cable inputs.

The cover of the housing is locked by four stainless steel shake-proof screws. Internal spring are made with corrosion resistant material.

The enclosure is painted in RAL 1018 yellow color, while the external lever is painted in RAL3020 red colour.

### 3.3 Belt Run-Off Switch Mod. 60-30G.

It ' consists of a external lever equipped with a roller which, on normal operating condition, is not in contact with the belt and thus keeps its vertical position.

When the belt runs-off, it touches the roller, tilts it and thus operates the inside microswitches.



Fig. 3-3-1

The position of the external lever on the shaft may be changed as required, thus allowing the mounting of the housing on an horizontal, vertical or any inclined plate, but never inverted.

The roller is sized for a maximum speed of 4000 R.P.M. equivalent to approximately 8 m/sec belt speed.

It contains one alarm microswitch that is activated when the external lever inclination is  $15^{\circ} \pm 2^{\circ}$ , and one shut-down microswitch that is activated when the external lever inclination is  $30^{\circ} \pm 2^{\circ}$  on both side. The max lever inclination is  $\sim 65^{\circ}$ . Each microswitch is provide of: N°1 (NC) contact + N°1 (NO) contact.

The unit is equipped with a terminal strip for microswitches electrical wiring and with a bypass lever which by-passes the shut-down contact to allow the restarting of the belt.

### 3.4 Rope Emergency Switch Mod. 60-31G.

It ' consists of a external lever equipped with two pins to connect steel cords for remote operation of the switch from both sides.



Fig. 3-4-1

When steel cords (on both sides) is pulled, the lever has a mechanical lock, manually resettable, by the external reset lever. This feature makes remote restarting impossible, thus eliminating the possibility of restarting the belt when people are locally working on the conveyor.

The unit is equipped with N°2 microswitches operate at a  $18^{\circ} \pm 2^{\circ}$  inclination of the external lever.

Each microswitch is provide of: N°1 (NC) contact + N°1 (NO) contact.

This devices is used for the safety of the operators on belt conveyors.

### 3.5 Limit Switch Mod. 60-32G.

It ' consists of a external lever equipped with one contact wheel to be operate by the controlled machine.



Fig. 3-5-1

The position of external lever on the shaft may be changed as required, thus allowing the mounting of the housing on an horizontal, vertical or any inclined plate.

The unit is equipped with N°2 microswitches operate at a  $18^{\circ} \pm 2^{\circ}$  inclination of the external lever.

Each microswitch is provide of: N°1 (NC) contact + N°1 (NO) contact.

## 4. INSTALLATION AND ELECTRICAL CONNECTION

### 4.1 General.

The user must, at his/her expense, prepare the installation site and all necessary for the operation of the product; this involves:

- Make available the equipment for the installation of the product;
- Make available the power supply necessary for the use of product;
- Make available the safety devices upstream on the power supply lines (such as switches, circuit-breakers, ground connections, etc.) in accordance with binding legislation
- Make available the auxiliary services required by the unit
- During the installation steps , never leave the enclosures of devices , without cover or plug for input / output cables.

### 4.2 Transport and Unpacking.

Transport and handling devices must be made with due care in order not to damage them and / or damage to persons or property.

Upon receipt of the device , make sure that this has not been damaged during transport and that the packaging is intact and has not been tampered with.

If damage is detected by the transport needs to be taken, within 7 days of receipt of goods, the steps needed to cover the damage under the provisions of supply contract.



#### INFORMATIONS

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**In the case of storage waiting for the final positioning , the product with its packaging, should be placed in a sheltered and safe, in order to avoid damage due to weather or impact.**

The disposal of packaging must be in compliance with the requirements regulated by local legislation regarding disposal of waste.

- **Wood** : natural material non-polluting , reusable, easily recyclable, disposal must be made using the correct methods.
- **Plastic**: pollutant must not be burned ( toxic fumes ), Do not pollute the environment , the disposal must be made using the correct methods in accordance with local laws.

## 4.3 Positioning and Installation .



### INFORMATIONS

The protective devices of the series PROLINE being relatively simple products , are delivered ready for use , after proper installation. It is however advisable to carry out the placement , installation and electrical connection to qualified personnel.

The equipment, mechanical and electrical , needed for placement and installation are as follows :

- Spirit level
- Keys Traditional
- Common tools
- Multimeter

### 4.3.1 Belt Run-Off Switch Mod. 60-30G.

The Belt Run-off Switch is normally installed on both sides of the belt near the drum head and tail. For belts of particular extension , there should be of flags even along the ribbon , each 200 meters about, and immediately after the loading points . The unit must be installed at a distance from the belt such that the roller lever is angled 30 degrees when the belt is in the position required for the block. In normal condition the belt should not touch the roller lever.

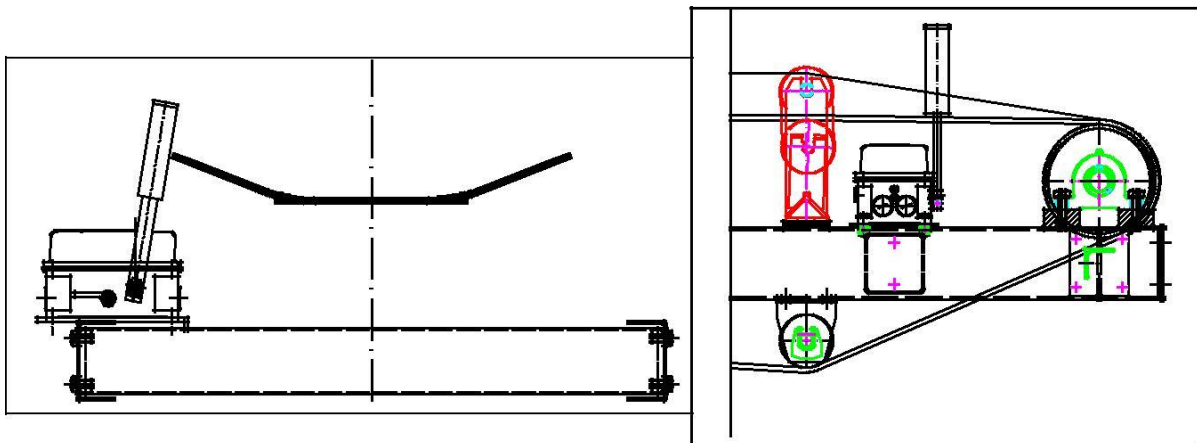


Fig. 4-3-1



### WARNING

The device should never be installed with the roller lever upside down, as the weather and dirt can damage the bearings.

### 4.3.2 Rope Emergency Switch Mod. 60-31G.

The Rope Emergency Switch are mainly used in applications where it is necessary to protect personnel from dangerous devices , such as machines , conveyors and so on. They must be installed at all points accessible by the operator, usually on both sides along the entire tape, with a maximum distance of 50 meters between two subsequent switches, or 25 meters between a switch and a fixed point.

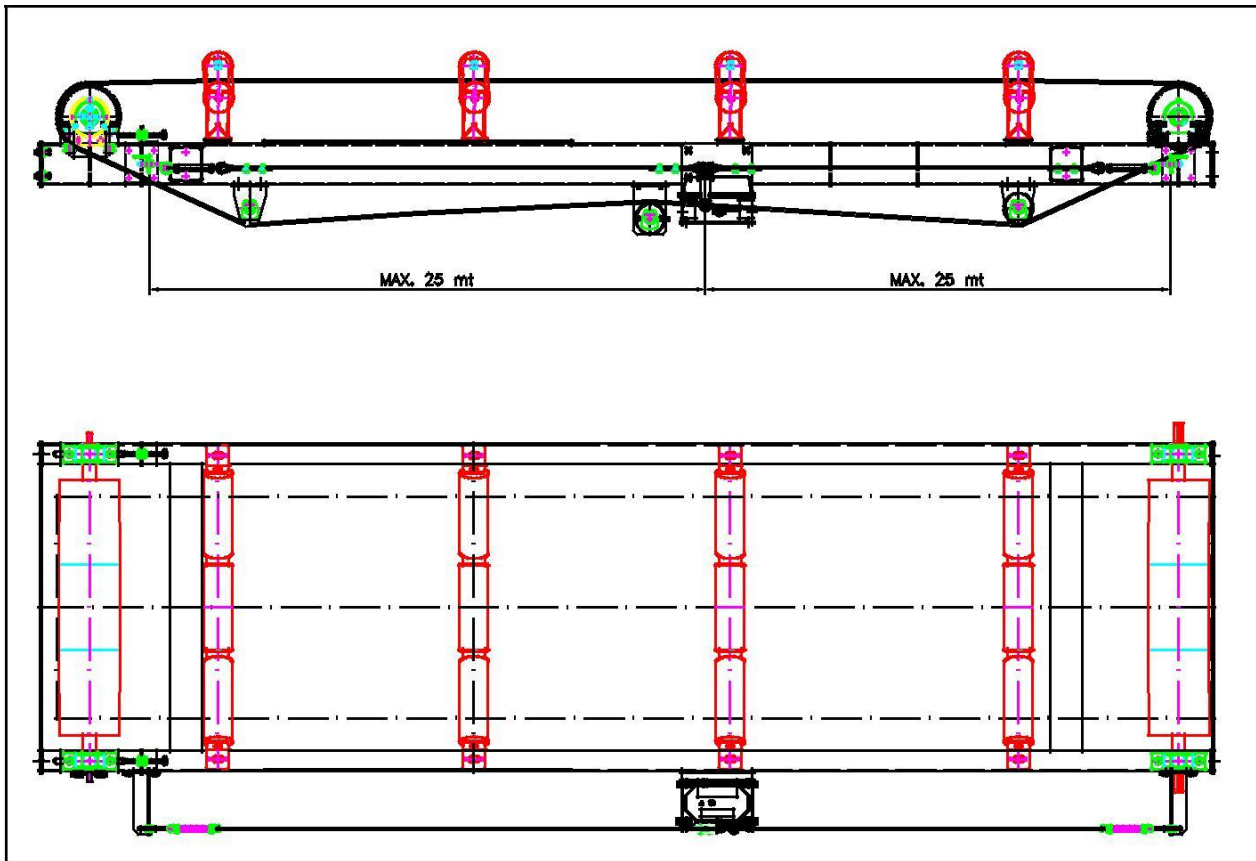


Fig. 4-3-2



**DANGER**

The Rope Emergency Switch can only be used in control circuits.



**WARNING**

For the correct operation of the emergency switches, use only accessories (steel cord, springs, helicoidal nut, etc..) original THERMO RAMSEY. The use of accessories other than releases the manufacturer from any liability.

#### 4.3.2.1. Steel Cord Installation: mechanical mounting



#### WARNING

The correct installation of the steel cord, according to the directions set out below,"  
La corretta installazione della fune, in accordo con le indicazioni specificate di seguito, is a primary condition to ensure the proper functioning of the protection device.

The installation of the steel rope is by using a set of accessories described and listed below :

- *Safety Spring (1)*: installed at the ends, are used to maintain tension in the steel rope, in step d'installation must be properly tensioned, to ensure that in case of breakage, the switch is pressed by the spring installed on the opposite side.
- *Redance (2)*: installed near the springs of security needed to create the terminal loop of the rope, and allows the fixing of the rope by the steel cord clampe.
- *Steel Cord Clamp (3)*: installed after the redance allow you to set the end of the rope made up the ring back.
- *Helicoidal Nut (4)*: installed on the fixed points has the function to end support, installed at intervals of max. 3 mt. along the rope, serves to support the rope to avoid that the same goes slack.
- *Red Steel Cord (5)*: The steel cord is flexible plastic, which is the element to operate the lever switch.

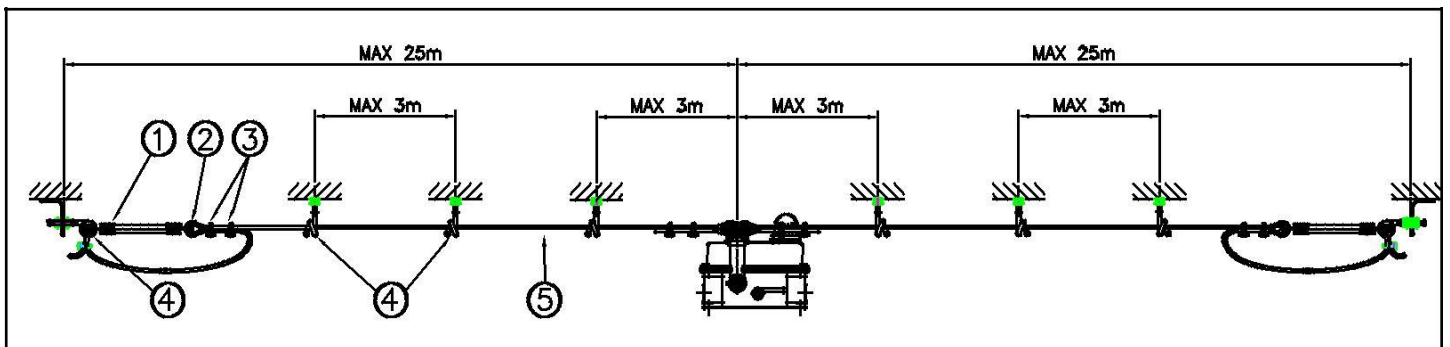


Fig. 4-3-2-1

Referring to the drawing figure 4-3-3, install the device and its accessories as described:

- a) Fix the Rope Emergency Switch to the frame of the conveyor belt, through the holes provided on the basis of housing.

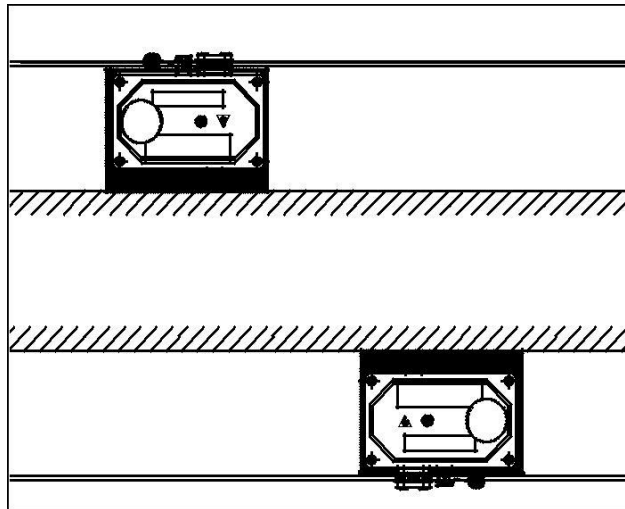


Fig. 4-3-2-2

- b) Instal the helicoidal nut (4) on a fixed support, the ends of the belt to be protected; this support can be constituted either by the frame of the conveyor belt is still installed by an external frame near the belt.

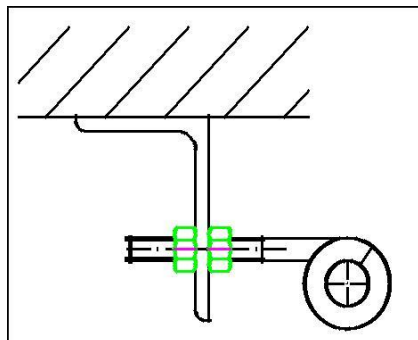


Fig. 4-3-2-3

- c) Engage the safety springs (1), places to tie the ends of the belt.

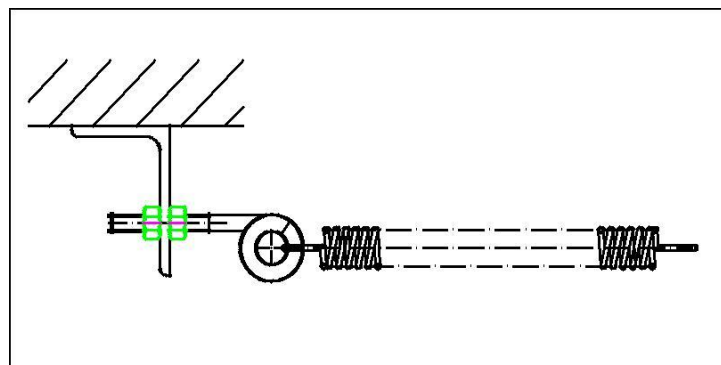


Fig. 4-3-2-4

- d) Instal the helicoidal nuts (4) at a maximum distance of 3 meters apart along the entire perimeter of the belt to be protected; Fixing can be done either by using the chassis of the belt (shoulder) or through external frame still installed at the perimeter of the belt.

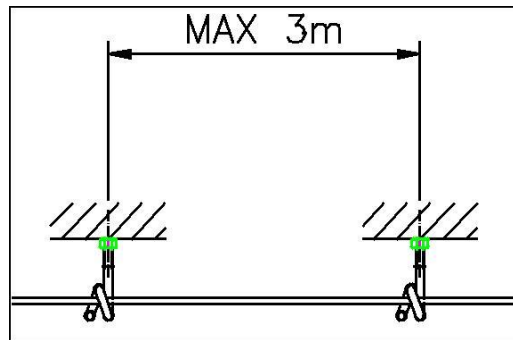


Fig. 4-3-2-5

- e) Take one end of the rope (5), and wrap on the redance (2), in order to create a kind of thin thread;

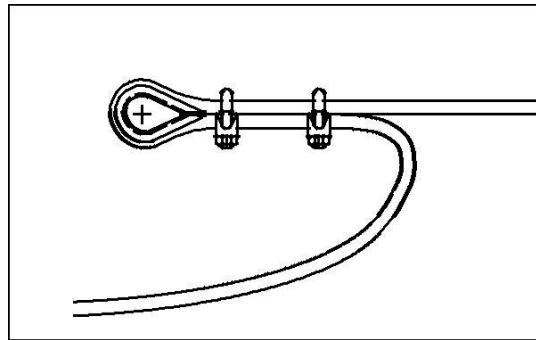


Fig. 4-3-2-6

- f) Connect the two cables that were created together by clamps and tighten (3); during this leave about 280-300 mm of rope free that will be used later to limit the stretching of the safety spring (1)

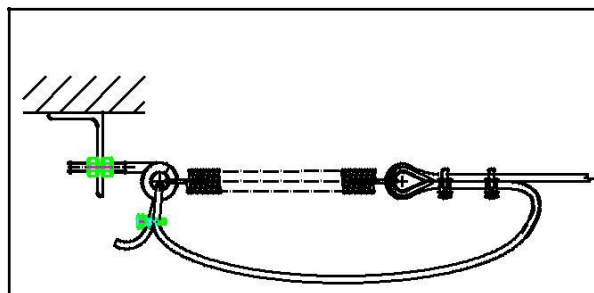


Fig. 4-3-2-5

- g) Attach the redance, one of the two safety springs (1) Attach the redance, placed at the ends of the belt.



- h) Lay out the rope (5) to reach the switch; during this attach the rope to the helicoidal nuts arranged as shown in d), so as to support the rope.
- i) Once you reach the switch, wrap the rope (5) around one of these two pins on the control lever.
- j) Tighten the rope, and tighten with a clamp (3).

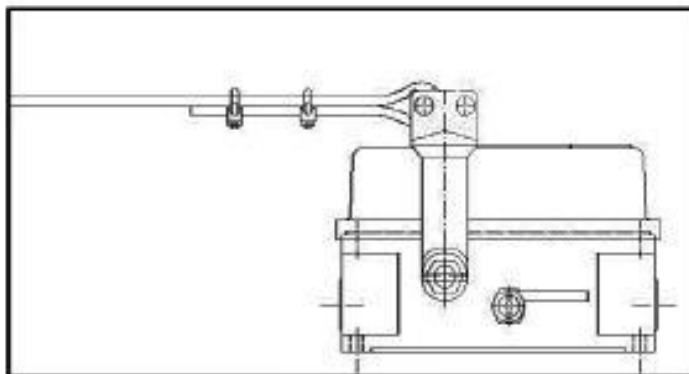


Fig. 4-3-2-6

- k) Ensure that the rope is properly tensioned and visible, and limit the elongation of the spring, as shown in figure 4-3-2-5, to a maximum length of 180 mm.
- l) l) If the switch is placed in central position to the perimeter to be protected, repeat all the steps indicated from the point e) for the second half of the perimeter.



**INFORMATIONS**

For installations with ropes lengths greater than 10-15 meters, in order to facilitate the operations of tension, it is suggested to fit a stretcher as shown in Figure 4-3-2-7.

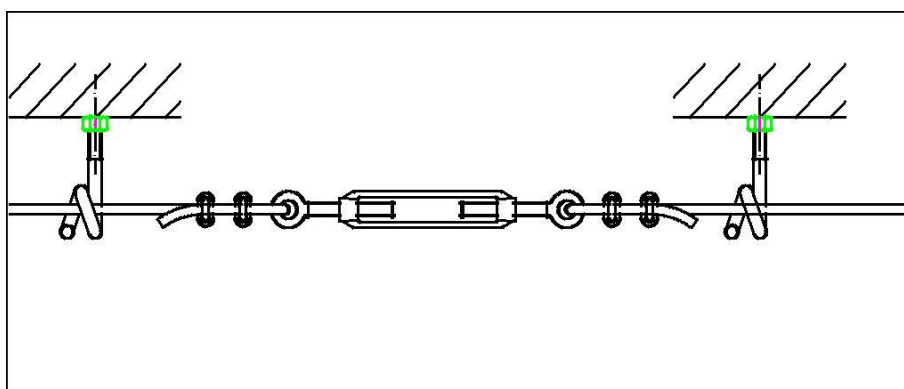


Fig. 4-3-2-7



**DANGER**

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- The tension of the rope along the equipment to be protected, must be designed so that the rope is visible.
- In applications where the switch is installed in a central position to the perimeter to be protected, tension must be adjusted so that in case of breakage rope/ spring on one side the switch must be actuated by the spring on the opposite side.
- Any spillage of material from the transport device should not affect the operation of the emergency stop rope.
- Springs are elastic elements that allow an extension of up to 200 mm (approximately 12 kg). Strictly follow the installation instructions, as by lengthening the upper, are no longer guaranteed the characteristics of elasticity, and then operating the device.
- The length of the rope should not be above 25 meters per stroke.

#### 4.3.3 Limit Switch Mod. 60-32G.

The Limit Switch must be positioned properly in order to detect any movement (horizontal or vertical) of the equipment that must be checked.

#### 4.4. Electrical Wirings

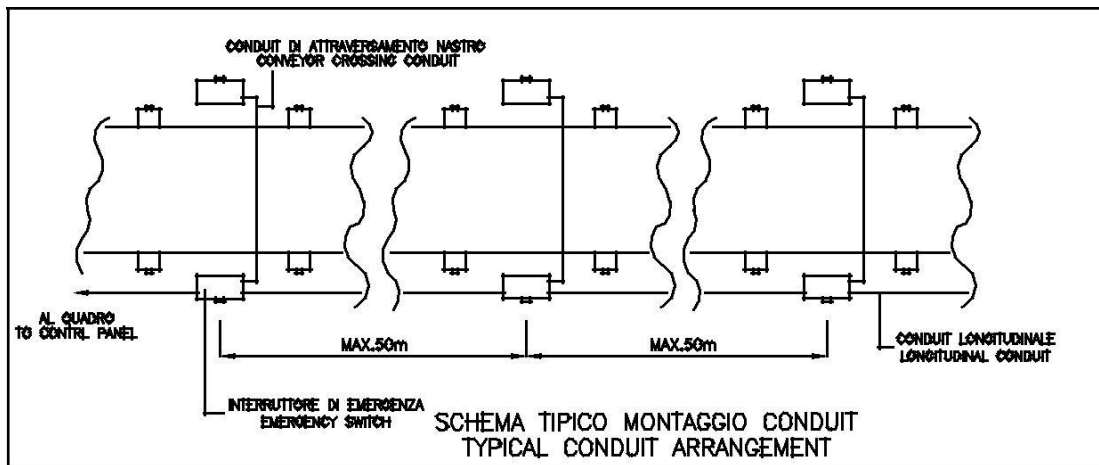


**DANGER**

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- Do not oper under voltage. !
- The work on the devices can be performed only by qualified personnell.
- Be sure to disconnect power supply before performing any operation on the devices.

The figure below shows a typical pattern of electrical wiring devices protection belt.



Electrical connections must be executed by conduit or flexible, through cable gland installed on the device frame. To keep the original degree of protection, the cable gland should have the following features:

- Degree of protection IP65 minimum;
- Cable gland gasketed;
- Thread as indicated in Tab. 3-1.

For details of electrical connections, refer to Annexes who are in the back of the manual; ensure that once installed, the cable glands are locked firmly on the housing. In accordance with current legislation, the housing must be grounded through ground wire to appropriate section.

#### 4.5 ATEX: Safety informations for use in Explosive Atmospheres.

European directives (ATEX 2014/34/UE) for equipment and 1999/92/CE for the workplace (plant), establishing the essential safety requirements against the risk of explosion in hazardous areas; refer to these guidelines for more details on 'use and installation.



#### WARNING

**Before installation in hazardous areas classified according to directives ATEX, you must verify that the product is appropriate for the zone classification and characteristics of flammable substances.**

For the use of devices in classified areas **we recommend that you carefully follow the instructions in this chapter.**

- Use cable glands with type of protection "EEx e" certified ATEX, able to guarantee **a degree or more IP protection level** of the original IP (IP65) devices on which must be installed.
- **To protect the cables** with rigid or flexible tubing to provide mechanical protection; if this is not possible the cables should be installed at a height of at least 2.5 meters. the work plan.
- Only use devices designed cable entries; **is not permitted** to run drilling or **create new cable entries**. The Unused cable entries must be closed with caps conforming to EN 60079-0;
- Use flame-retardant cables according to EN 60332-1-1;
- There shall be no more cables to pass within the same gland, possibly using multi-core cables;
- It must be ensured **the connection of equipotential**, by loosening and rotation devices, at the connections provided both inside and outside of the devices;
- The location of the devices must be chosen, taking into account the accessibility for maintenance and cleaning;
- The devices must be **protected from external influences** (eg mechanical efforts and / or thermal) which can be submitted, and these additional measures shall not adversely affect the normal heat dissipation and system integrity protection provided;
- If the devices are subjected to dust, must be given appropriate instructions to the maintenance staff to perform periodic cleaning of the same;
- Special precautions must be taken **to prevent the accumulation of electrostatic charges** on the surface of the devices;
- Maintain clean equipment by **dust than 5 mm**.



**WARNING**

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**THERMO RAMSEY not be responsible for installation in areas at risk of explosion not comply with the instructions in this section (section 4.3).**

## **5. USE OF PRODUCTS**

### **5.1 General**

Devices Pro-Line series are units designed to control applications for conveyors, material handling systems, bucket elevators, packaging lines packaging etc..

The main areas of use are material extraction industries and manufacturing industries.

### **5.2 Uses not permitted**

The product should only be used for the purposes intended by the project as per the instructions given in paragraphs 3.3, 3.4 and 3.5; for any purpose other than refer to the company Thermo Ramsey Italian S.r.l.

## 6. MAINTENANCE.

### 6.1 Warranty.

*Thermo Ramsey* warranty is given for a period of twelve months from the start –up, but no longer than eighteen months from delivery, the good operation of the delivered devices. *Thermo Ramsey's* obligation under warranty is conditioned upon the return of the defective equipment within eight days from discovery, transportation charges prepaid to *Thermo Ramsey's* workshop, with a detailed description of the defects. *Thermo Ramsey's* obligation is relevant only to repairs and/or replacements that *Thermo Ramsey* considers to be suitable for the good operation of the device according to normal use and required as a consequence of a fact of its own. If not specifically and expressly defined with a written act, it will be excluded every obligation for *Thermo Ramsey* on repairs or replacements and/or other service outside its workshop.



### INFORMATIONS

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**It is excluded from any liability by the manufacturer for any reason, even indirectly or damage to persons or property, due to a bad, inappropriate or negligent use of the product, as well as inexperience and careless handling and / or maintenance of the product.**

### 6.2 Maintenance indications.

In general, the product does not require special maintenance, yet it recommends a periodic functional check, as indicated below  
Remains the sole responsibility of the user to determine the frequency of controls over time, characterized as the environment and the place of installation of the equipment.

#### 6.2.1 Belt Run-Off Switch Mod. 60-30G.

- Check gasket integrity
- Check operation of switches
- Check rotation roller lever

#### 6.2.2 Rope Emergency Switch Mod. 60-31G.

- Check gasket integrity
- Check operation of switches
- Check the tension of the spring (170 mm standard length)
- Make sure the rope sling hook is perpendicular to the instrument
- Check the intervention of emergency, freeing up one side of the safety spring from the fixed support; then repeat the test on the opposite side.

If a control does not yield positive results, analyze the following guidelines to determine the cause of any anomalies.

- Incorrect adjustment of safety springs.
- Mechanical failure inside the instrument.
- Safety spring inefficient.

### 6.2.3 I Limit Switch Mod. 60-32G.

- Check gasket integrity
- Check operation of switches
- Check wheel rotation of contact

### 6.3 ATEX: Additional information for maintenance

The maintenance of installed products in hazardous areas with danger of explosion requires special attention, especially those aspects that could affect the proper functioning of the machine or be due to source of ignition is not provided.

In addition to the general guidelines below, please follow the information contained in the standard "*Verification and maintenance of electrical installations in hazardous areas with explosion*" IEC 60079-17.



**WARNING**

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To verify every 6 months integrity of the gasket of the cover, and if is necessary to replace it.



**WARNING**

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Check monthly the connection of the ground conductor.



**WARNING**

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Check monthly the operation of the operating arm, ensuring with repeated movements in both directions, that the movement is free and that not block marks or seizure.



**WARNING**

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Keep clean the devices from dust accumulations especially if more than 5mm.



**WARNING**

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**IT IS MANDATORY TO CLEAN THE SURFACES USING SUCTION and not by blowing, in order to avoid creating clouds of dust.**



**WARNING**

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**For the maintenance operation DO NOT USE TOOLS THAT GENERATE ARCS and / or SPARKS.**

## 7. DECOMMISSIONING AND DISMANTLING.

### 7.1 Decommissioning of the product.

If the device is unused for a relatively long period of time you should apply the following measures:

- Disconnect the device from the circuit.
- Take the device outside of work area, clean with compressed air on all sides, so as to remove dust or other foreign objects.
- Cover the device with nylon sheeting to protect against dust during storage.
- Ensure that the ambient temperature in which the device will be stored, is in accordance with the specifications in the technical data table.

### 7.2 Dismantling the unit.

The dismantling activities is the decommissioning and disposal of the device in the order shown below:

- Disconnect the device from the circuit.
- The waste products (waste) produced by this activity must be disposed of in accordance with the laws of the country in which you installed the system.
- Proceed to the destruction in accordance with the laws of the country where the machine is installed.



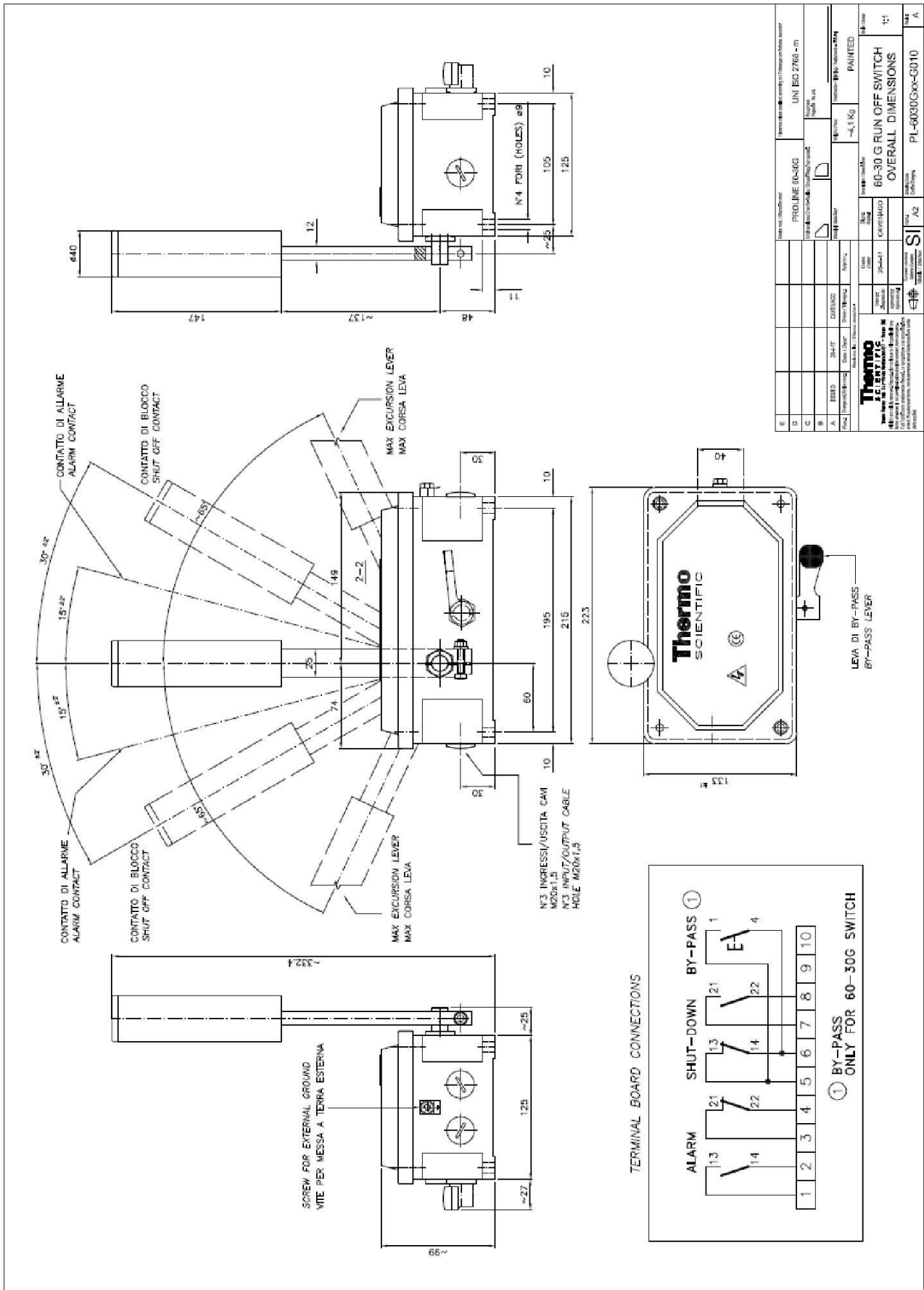
**WARNING**

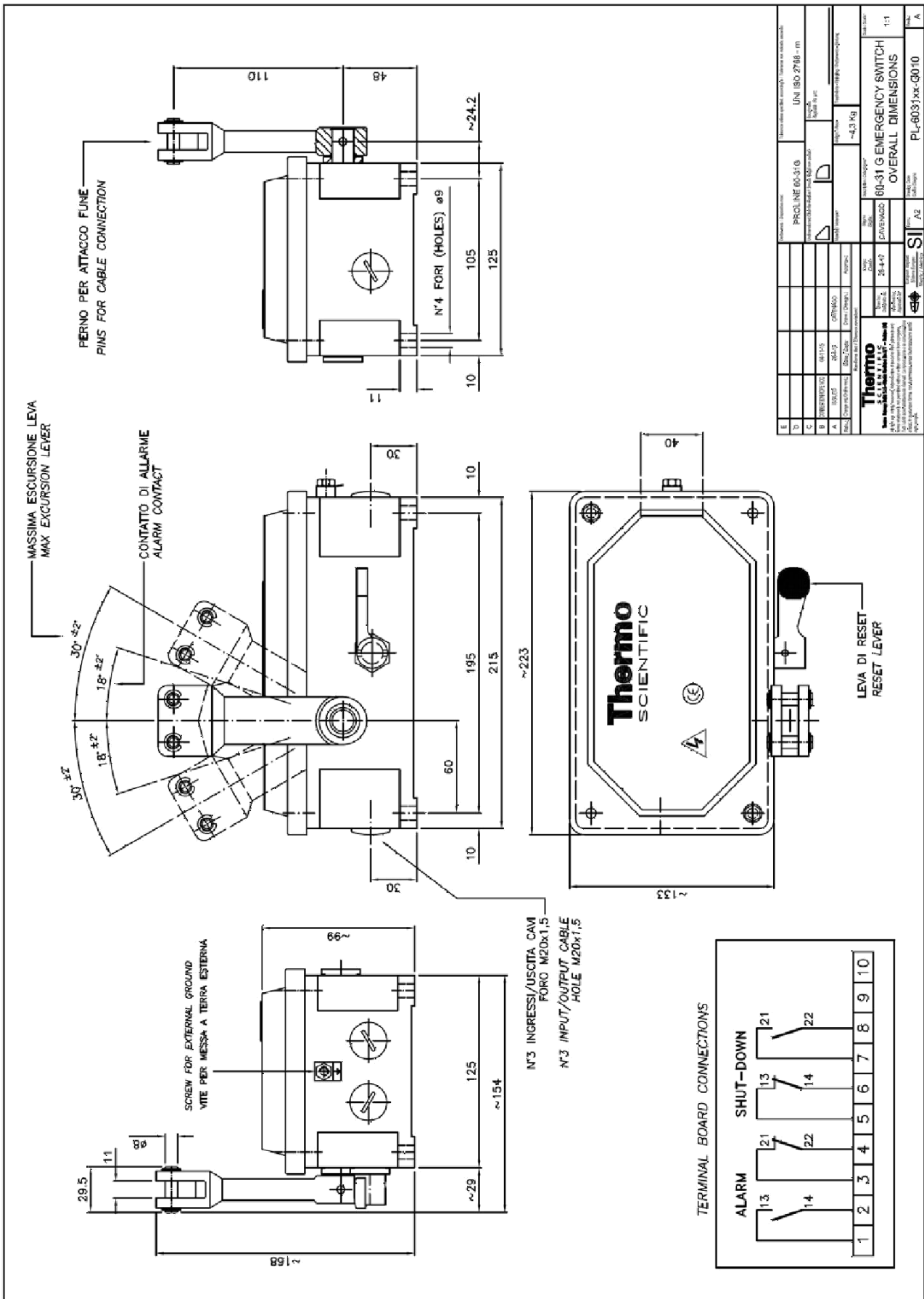
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**Watch carefully during disassembly, precautions for safety of operators.**



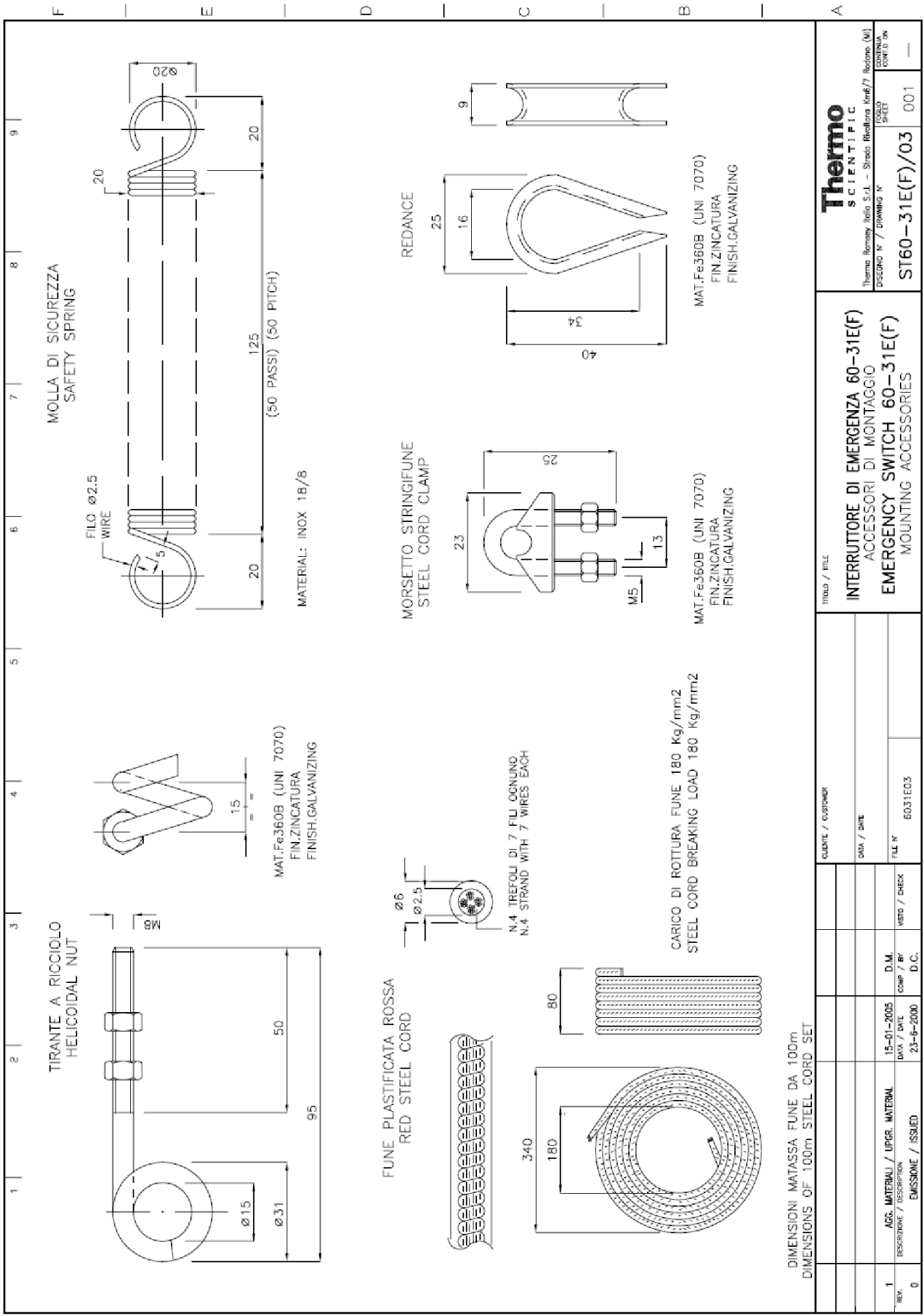
# 8. ANNEX





<b>Thermo SCIENTIFIC</b> Thermo Scientific is a registered trademark of ThermoFisher Scientific Inc. All other trademarks are the property of their respective owners.		<b>60-31 G EMERGENCY SWITCH</b> OVERALL DIMENSIONS	1:1
<b>PROLINE 60-31 G</b> UNI ISO 2768 - m	~4.3 Kg	SI / A2	PL-6031xrc-G010
MODEL: 60-31 G PART NUMBER: 60-31 G DATE: 28-4-17	DRAWING: 60-31 G DATE: 28-4-17	SCALE: 1:1	SHEET: 1/1



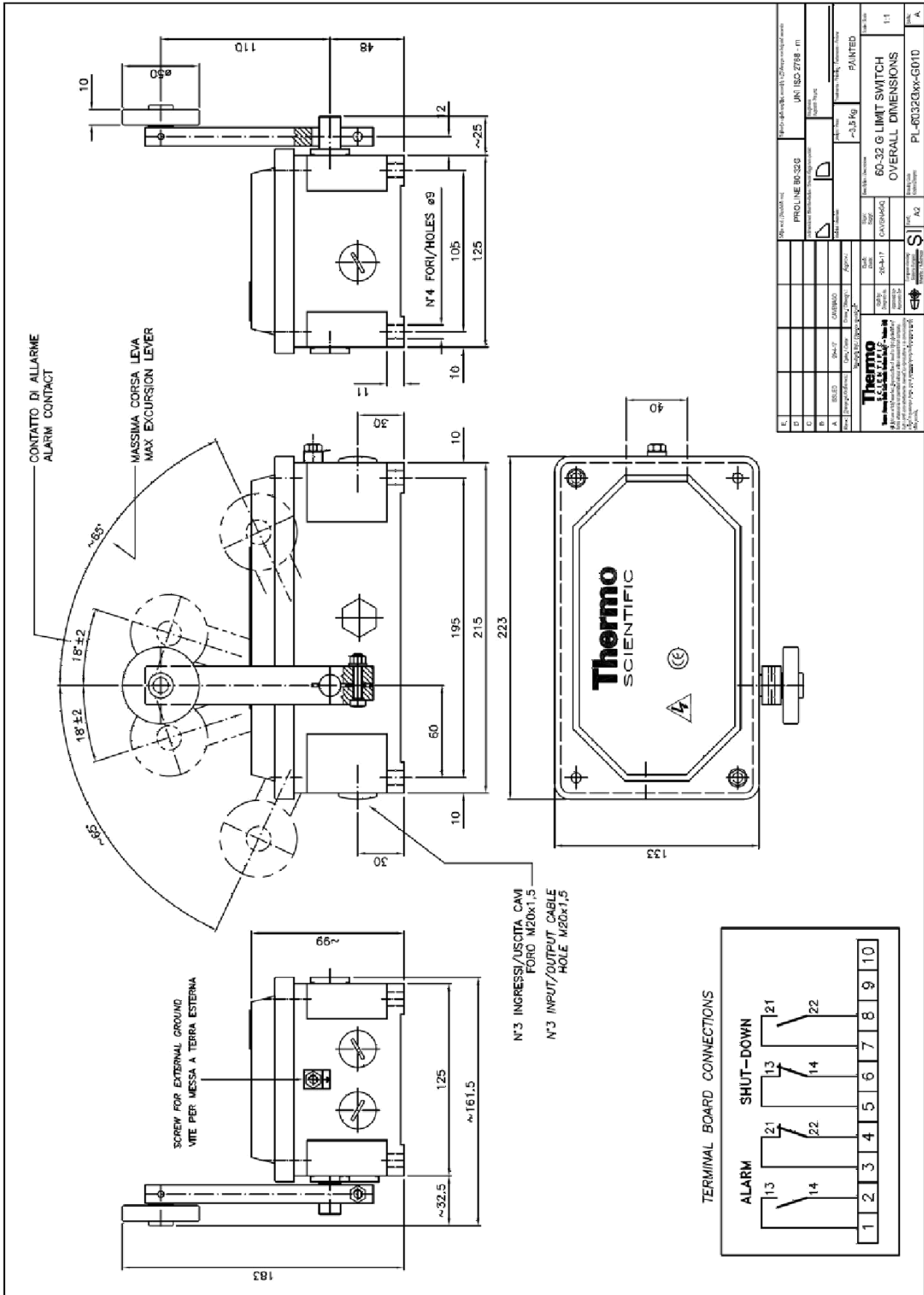


1		2		3		4		5		6		7		8		9	
REV.		AGG. MATERIAL / UPRG. MATERIAL		DATA / DATE		D.M. COMP / BY		VISTO / CHECK		FILE N°		CNDT / CUSTOMER		TRG / FILE		ST60-31E(F)/03	
0		15-01-2005		23-6-2000		D.C.		6031E03		INTERRUTTORE DI EMERGENZA 60-31E(F)		ACCESSORI DI MONTAGGIO		EMERGENCY SWITCH 60-31E(F)		MOUNTING ACCESSORIES	
1		15-01-2005		23-6-2000		D.C.		6031E03		INTERRUTTORE DI EMERGENZA 60-31E(F)		ACCESSORI DI MONTAGGIO		EMERGENCY SWITCH 60-31E(F)		MOUNTING ACCESSORIES	
0		15-01-2005		23-6-2000		D.C.		6031E03		INTERRUTTORE DI EMERGENZA 60-31E(F)		ACCESSORI DI MONTAGGIO		EMERGENCY SWITCH 60-31E(F)		MOUNTING ACCESSORIES	

**Thermo SCIENTIFIC**  
Thermo Romsey Italia S.r.l. - Strada Biscellina Km6/7 Roccone (MI)  
DESCRIZIONE / DRAWING N°

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DESCRIZIONE / DRAWING N°

**ST60-31E(F)/03**



E	Modello/Description	PROLINE 60-32G	UNI ISO 2788 - m	Materiali/Construction	PAINTED
D	Accessori/Accessories				
C	Dimensioni/Dimensions				
B	Materiali/Construction				
A	Caratteristiche/Characteristics				
<b>Thermo SCIENTIFIC</b> The Thermo Scientific logo is a registered trademark of ThermoFisher Scientific Inc. All other trademarks are the property of their respective owners.		60-32 G LIMIT SWITCH OVERALL DIMENSIONS		Scale 1:1 Part No. PL-6032GX-G010	

D1	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19										
<div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 80%;"> <p style="text-align: center;"><b>Thermo</b> S C I E N T I F I C</p> <p style="text-align: center; font-size: small;">THERMO RAMSEY Strada Rivoltana km. 6/7 - 20090 Rodano (MI)</p> <p style="text-align: center;"><b>PRO-LINE Mod.60-3xG</b></p> <p style="text-align: center;"><b>CE II 3D Ex tb IIIC T85°C Db</b> -25°C ≤ Ta ≤ +75°C</p> <p style="text-align: center;">Vmax, Imax, Pmax: See Installation Manual</p> <p style="text-align: center; border: 1px solid black; padding: 2px;"><b>WARNING / ATTENZIONE</b></p> <p style="text-align: center; font-size: x-small;">DO NOT OPEN UNDER VOLTAGE - USE CABLE SUITABLE FOR 90°C AT LEAST NON APRIRE SOTTO TENSIONE - USARE CAVO CON RANGE DI TEMPERATURA = 90°C</p> </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="text-align: center;"> <p>Parametri elettrici massimi Max electrical parameters</p> </div> <div style="text-align: center;"> <p>Avvertenze Warning indic.</p> </div> <div style="text-align: center;"> <p>Marchatura CE CE Marking</p> </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="text-align: center;"> <p>Apparecchiatura per uso in Atmosfera Esplosiva Apparatus for use in Potentially Explosive Atmospheres</p> </div> <div style="text-align: center;"> <p>Apparecchiatura per installazione in superficie Apparatus for surface installation</p> </div> <div style="text-align: center;"> <p>Categoria apparecchiatura (3 polveri) Apparatus Category (3 Dust)</p> </div> </div> <div style="text-align: center; margin-top: 20px;"> <p><b>CE II 3D Ex tb IIIC T85°C Db</b></p> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 30%;"> <p>Livello Protezione Apparecchiatura Equipment Protection Level</p> <p>Classe di temperatura (85 °C Max) Temperature Class (85° C Max)</p> <p>Gruppo Polveri Dust Group</p> <p>Modo di protezione (Mediante custodia) Type of Protection (By Enclosure)</p> </div> <div style="width: 30%; border-left: 1px solid black; padding-left: 10px;"> <p>PRO-LINE TARGA ATEX</p> </div> <div style="width: 30%; border-left: 1px solid black; padding-left: 10px;"> <p>PRO LINE ATEX LABEL</p> </div> </div> <div style="margin-top: 20px;"> <p><b>NOTE/REMARK</b></p> <p>Per le caratteristiche della targhetta vedi il documento tecnico For the characteristics of the label see the technical document</p> </div>																												
D	AGGIORNAMENTO	04-16	D.C.	CLIENTE / CUSTOMER		—		TITOLIO / TITLE		PRO LINE TARGA ATEX									Thermo S C I E N T I F I C		Thermo Ramsey Italia S.p.A. - Strada Rivoltana, km.6/7 - Rodano (MI)		DISEGNO N. / DRAWING N.		T85°C IIIC 3D Ex tb IIIC T85°C Db		—	
C	AGGIORNAMENTO TEMPERATURA	03-15	D.C.	DATA / DATE		10-03		FILE N°		PRO LINE ATEX LABEL									Thermo Ramsey Italia S.p.A. - Strada Rivoltana, km.6/7 - Rodano (MI)		DISEGNO N. / DRAWING N.		T85°C IIIC 3D Ex tb IIIC T85°C Db		—			
B	AGGIORNAMENTO ETICHETTA/LABEL UPDT.	04-08	D.M.	RIS. / RES.		—		FILE N°		PRO LINE ATEX LABEL									Thermo Ramsey Italia S.p.A. - Strada Rivoltana, km.6/7 - Rodano (MI)		DISEGNO N. / DRAWING N.		T85°C IIIC 3D Ex tb IIIC T85°C Db		—			
EX.	ESPOSIZIONE / EXPOSURE	04-03	D.M.	RIS. / RES.		—		FILE N°		PRO LINE ATEX LABEL									Thermo Ramsey Italia S.p.A. - Strada Rivoltana, km.6/7 - Rodano (MI)		DISEGNO N. / DRAWING N.		T85°C IIIC 3D Ex tb IIIC T85°C Db		—			
A	EMISSIONE / EMISSION	10-03	D.M.	RIS. / RES.		—		FILE N°		PRO LINE ATEX LABEL									Thermo Ramsey Italia S.p.A. - Strada Rivoltana, km.6/7 - Rodano (MI)		DISEGNO N. / DRAWING N.		T85°C IIIC 3D Ex tb IIIC T85°C Db		—			