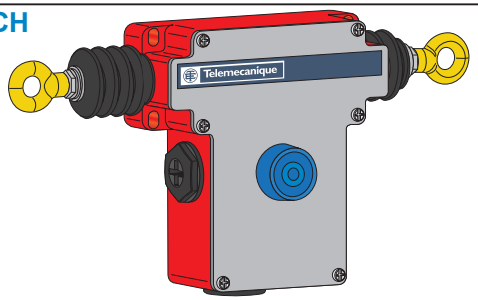
EMERGENCY STOP ROPE PULL SWITCH



Note: you can download this Instruction Sheet in different languages from our website at: **www.tesensors.com**

en N°: NVE25128_EN
es N°: NVE25128_ES
fr N°: NVE25128_FR
it N°: NVE25128_IT
de N°: NVE25128_DE
zh N°: NVE25128_ZH

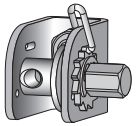
We welcome your comments about this document. You can reach us through the customer support page on your local website.

Scan the Code to access Instruction Sheets in different languages

http://qr.tesensors.com/XY0011

Accessories


XY2CZ (105 / 107 / 110)

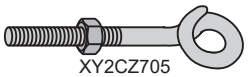

XY2CZ213

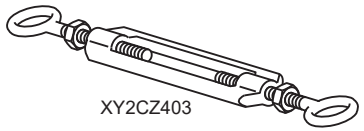

XY2CZ601

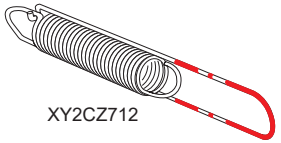

XY2CZ708


XY2CZ704


XY2CZ524


XY2CZ705


XY2CZ403


XY2CZ712

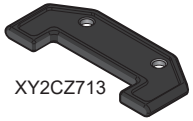

XY2CZ713

Fig.1 Mounting instructions

Fig.1A : Centered Product

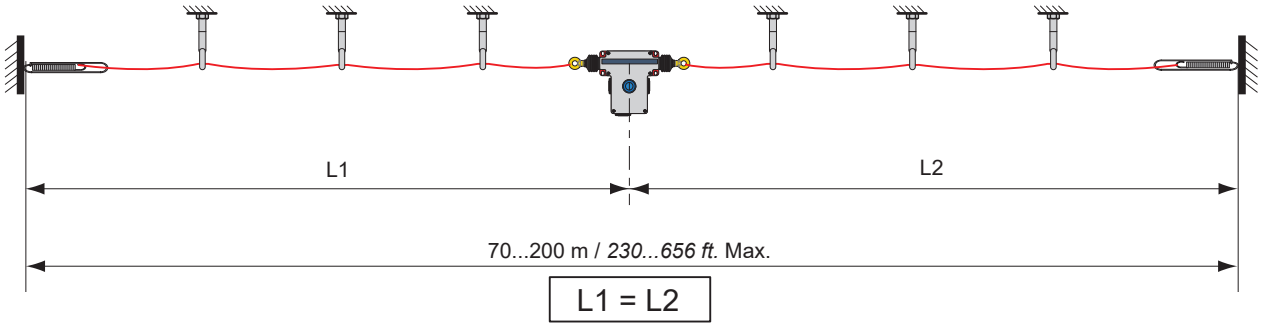
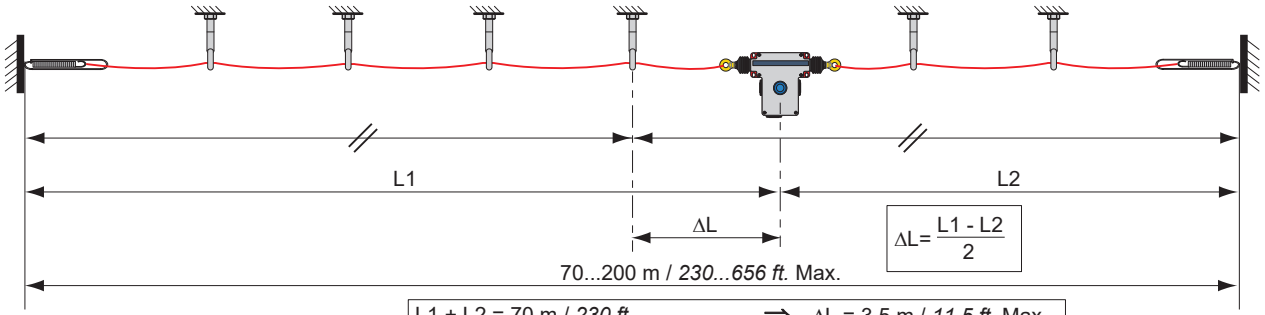


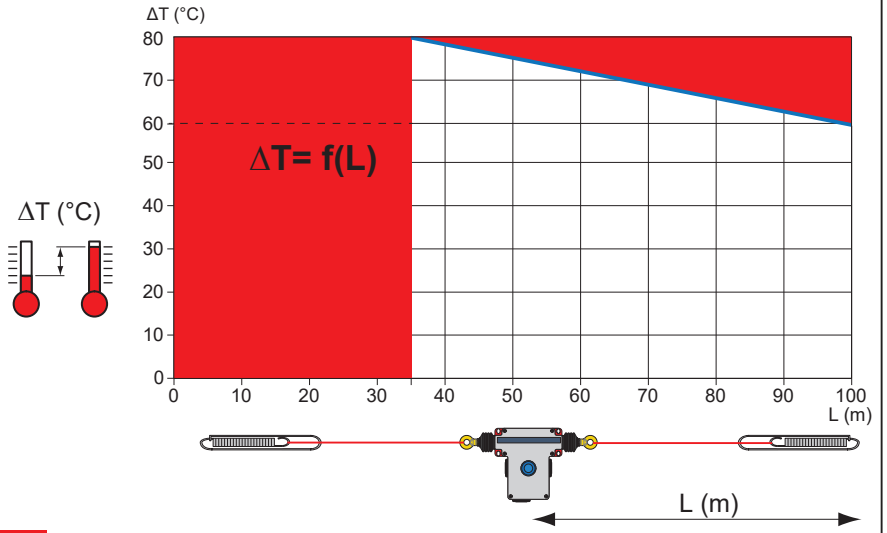
Fig.1B : Off-center product



$\Delta L_{max.} = 10\% \times \frac{L1 + L2}{2}$

L1 + L2 = 70 m / *230 ft.*	⇒	ΔL = 3,5 m / *11.5 ft.* Max.
L1 + L2 = 140 m / *459 ft.*	⇒	ΔL = 7 m / *23 ft.* Max.
L1 + L2 = 200 m / *656 ft.*	⇒	ΔL = 10 m / *32.8 ft.* Max.

Fig.2



Prohibited area

Recommendations:
Recommended cable Ref. XY2CZ (105 / 107 / 110) - Ø 5 mm - Galvanised steel type with red sleeve
Expansion coefficient ΔL = 0.7 mm / m for a temperature variation of 60° C.

Fig.3 Installation

L1 + L2 ≤ 140 m / *459 ft.* ⇒ ⑤ = XY2CZ601

L1 + L2 ≥ 140 m (...200 m Max.) / *459 ft. (... 656 ft. Max.)* ⇒ ⑤ = XY2CZ708 + XY2CZ705 → 4,0 ± 0,5 N.m / *2.95 ± 0.369 lb.ft*

⑥ XY2CZ524 → 1,5 ± 0,1 N.m / *1.1 ± 0.074 lb.ft*

③ XY2CZ10••

④ XY2CZ712

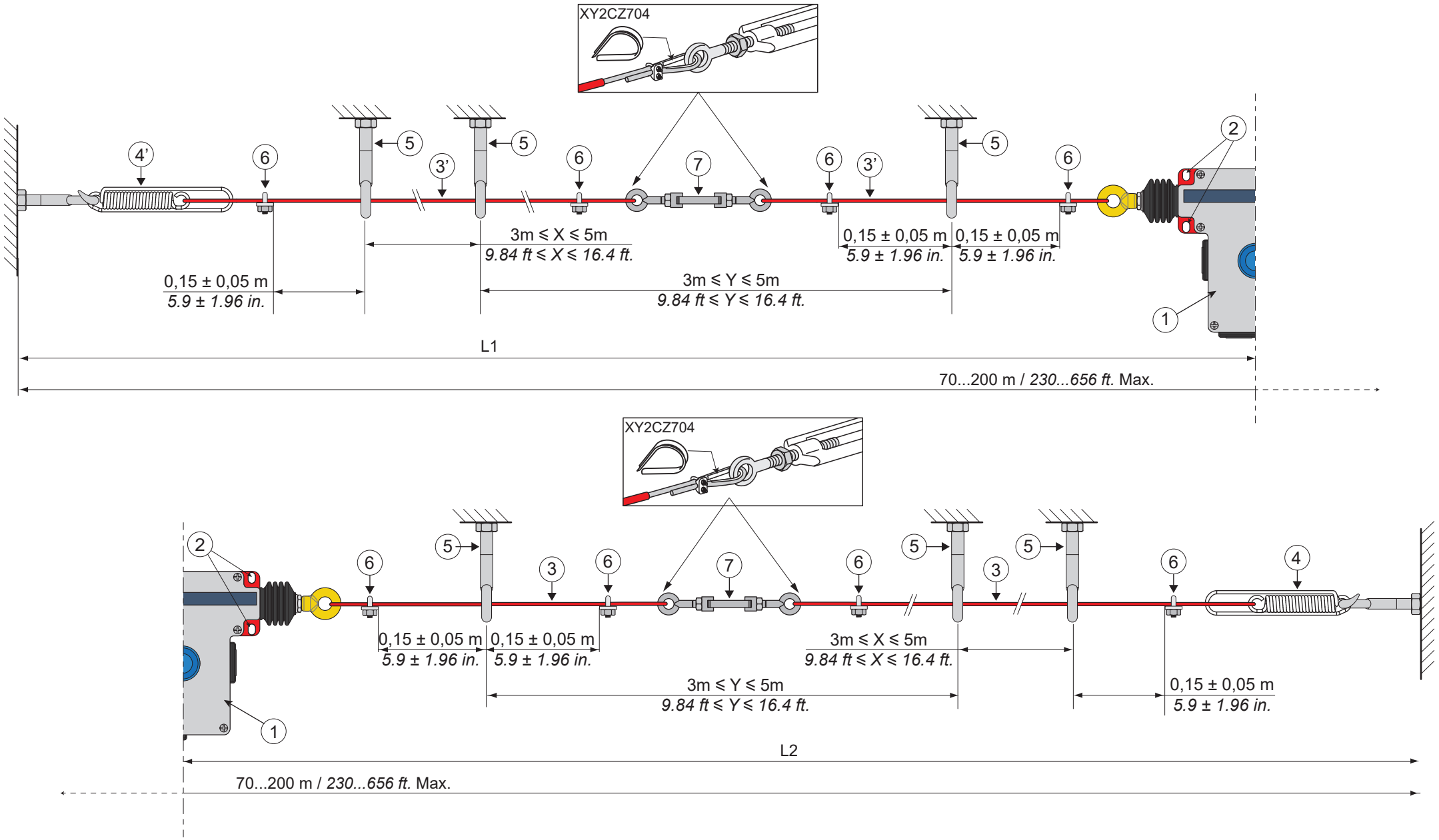


Fig.4

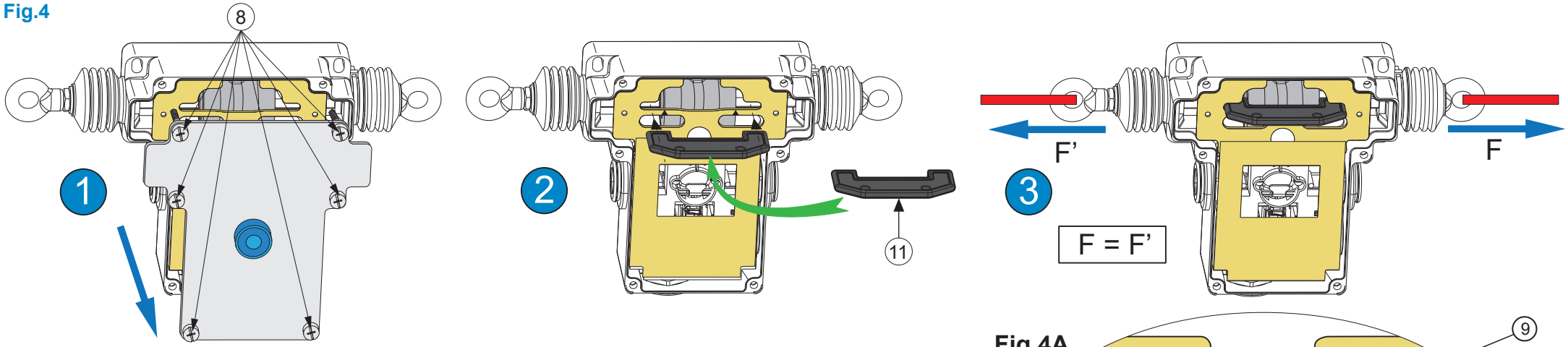
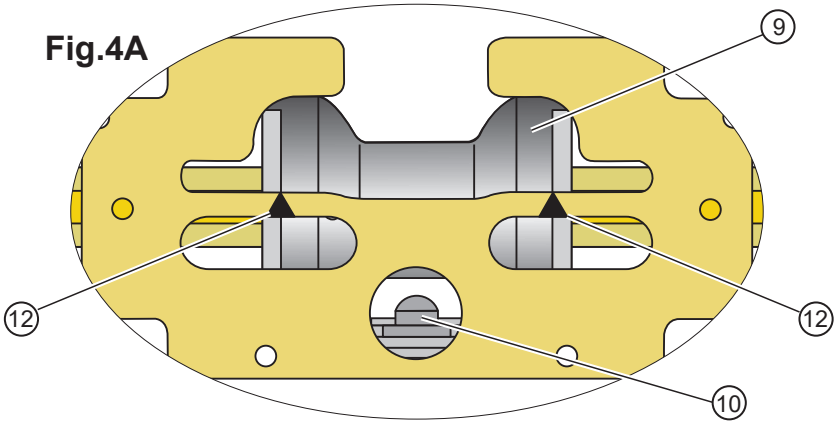
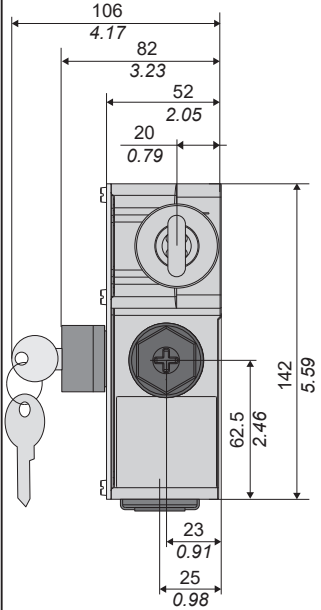


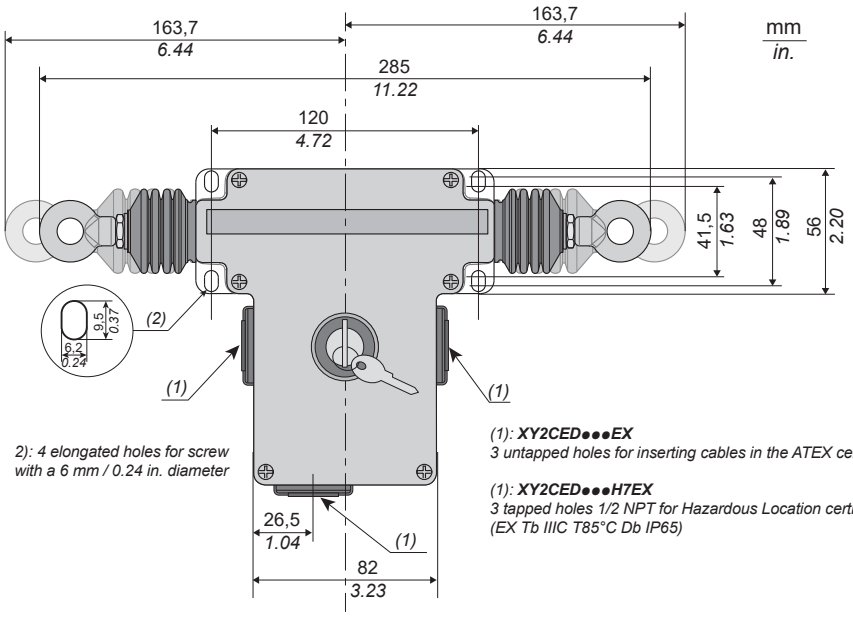
Fig.4A



Dimensions

mm
in.





2): 4 elongated holes for screw with a 6 mm / 0.24 in. diameter

(1): **XY2CED●●●EX**
3 untapped holes for inserting cables in the ATEX certified ISO M20 cable gland

(1): **XY2CED●●●H7EX**
3 tapped holes 1/2 NPT for Hazardous Location certified cable-gland or plug
(EX Tb IIIC T85°C Db IP65)

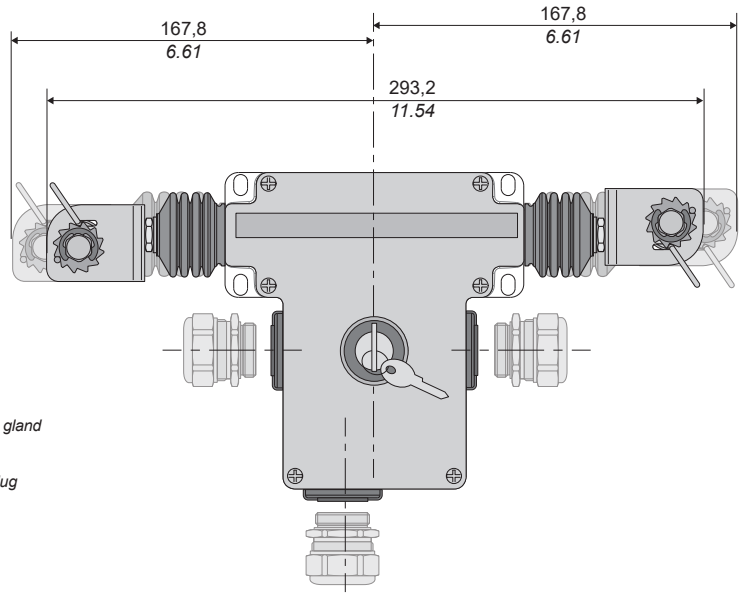


Fig.5

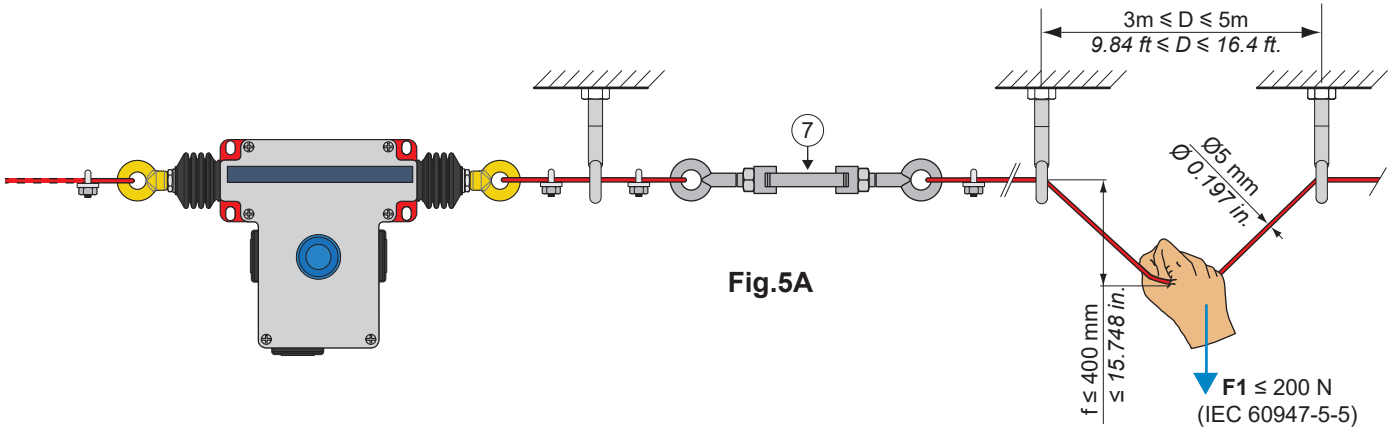


Fig.5A

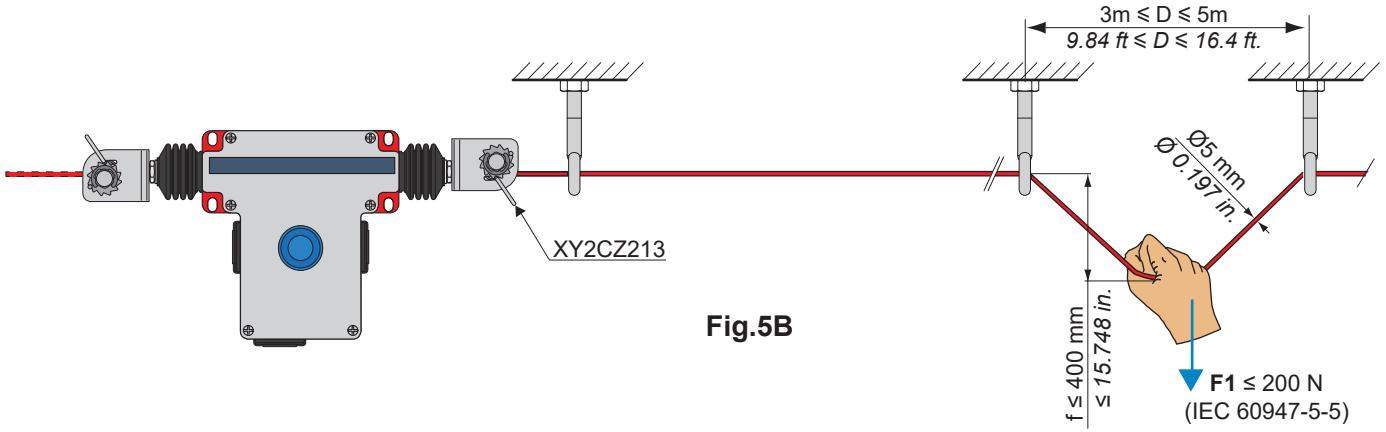
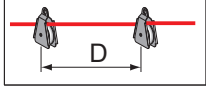


Fig.5B

Example

D = 3 m / *9.84 ft*	**2 x L** (m / *ft*)	**F1** (N)	**f** (mm / *in.*)
	2 x 70 *2 x 230*	176	290/ *11.42*
	2 x 100 *2 x 328*	190	300 / *11.81*

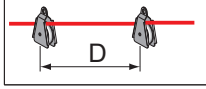
D = 5 m / *16.4 ft*	**2 x L** (m / *ft*)	**F1** (N)	**f** (mm / *in.*)
	2 x 70 *2 x 230*	125	370 / *14.57*
	2 x 100 *2 x 328*	126	385 / *15.16*

Fig.6 Setting with the cable tensioner

Fig.6A

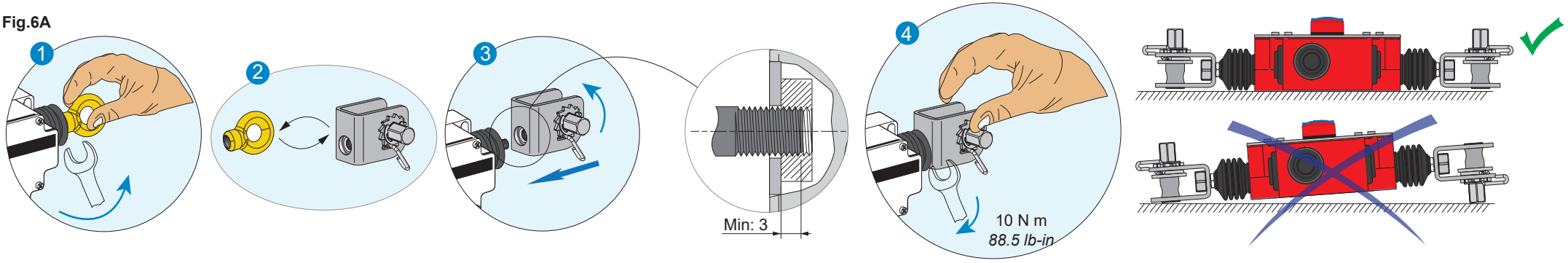


Fig.6B

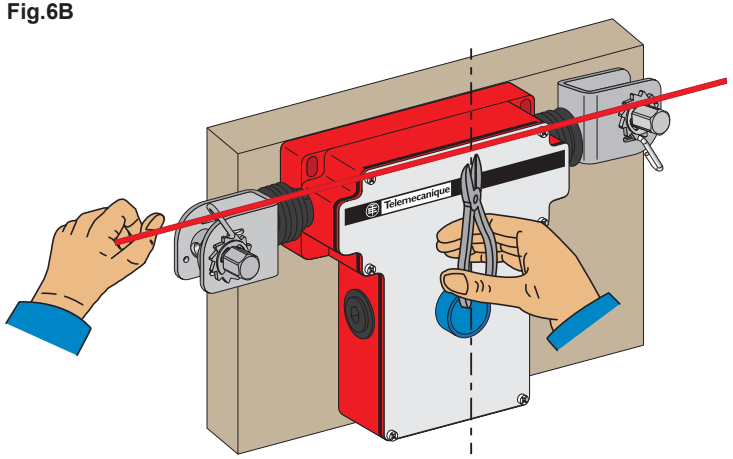


Fig.6C

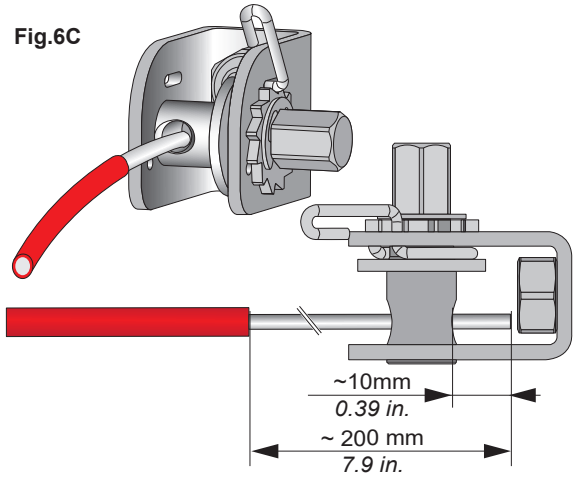


Fig.6D

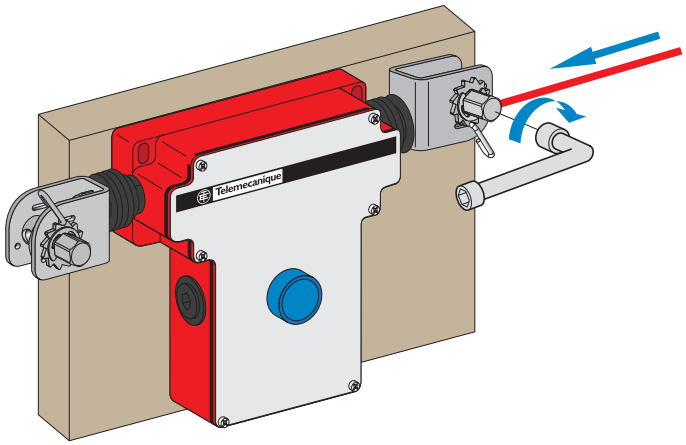


Fig.6E

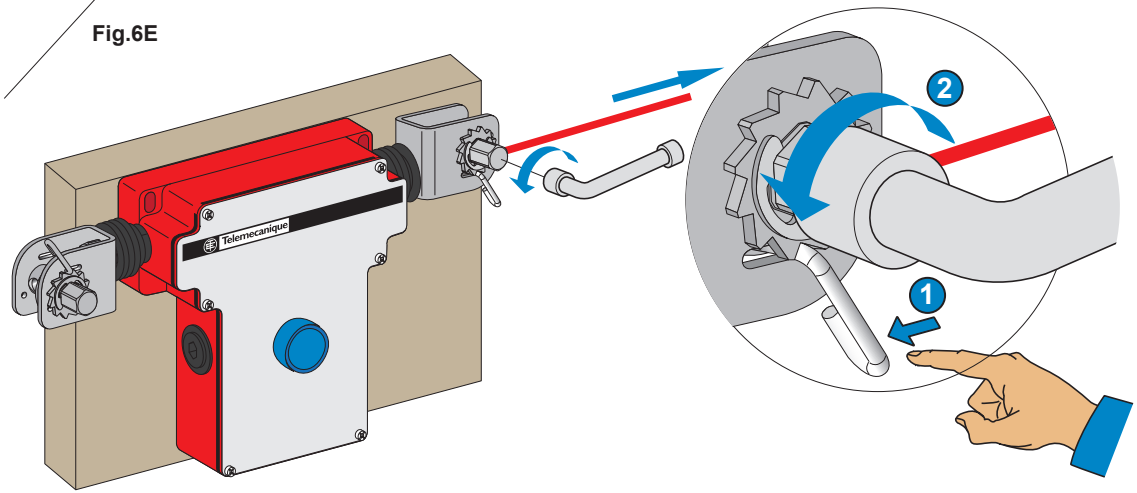
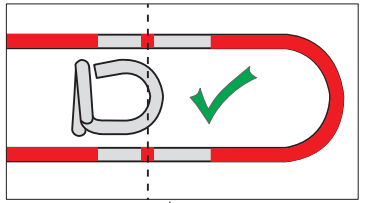
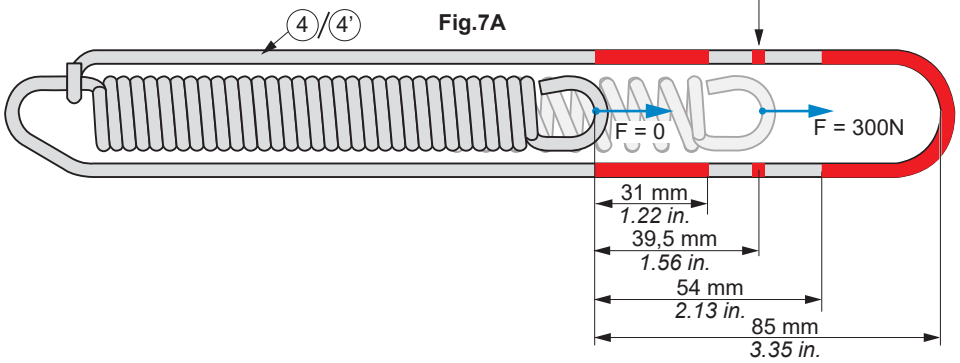


Fig.7



Setting point

Fig.7A



Operating zone

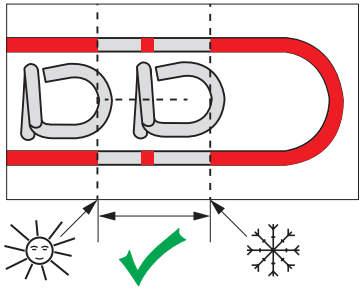


Fig.7B

Forbidden zone

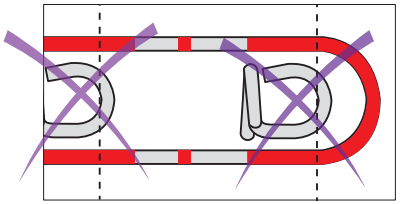


Fig.8

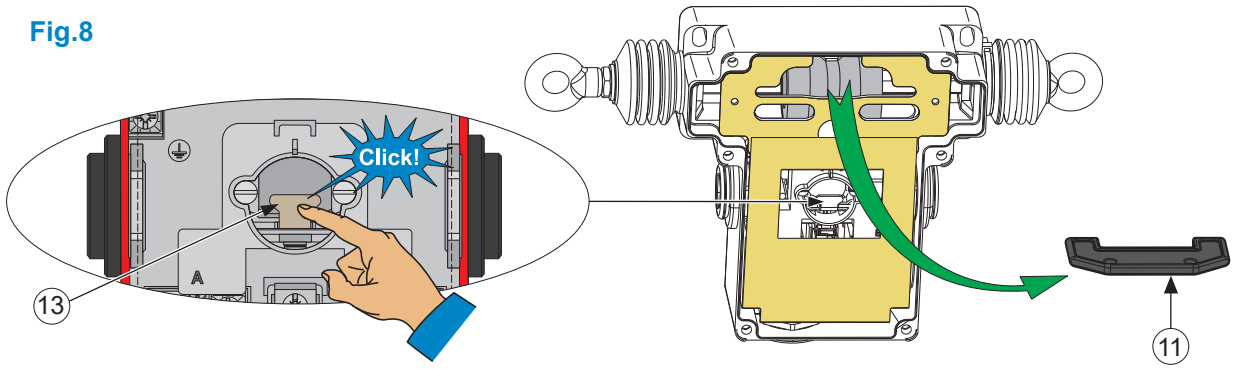


Fig.9

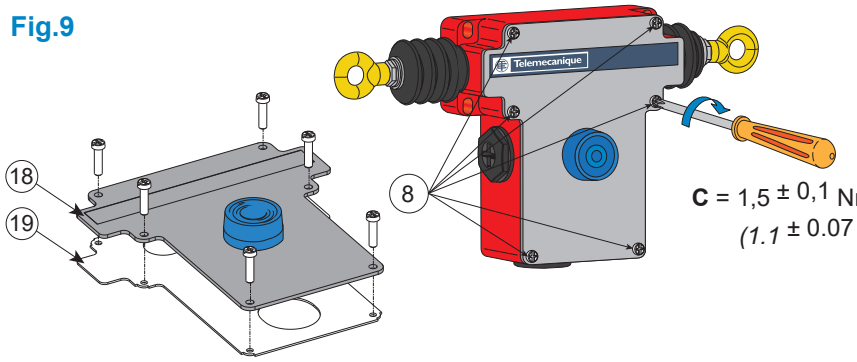


Fig.10

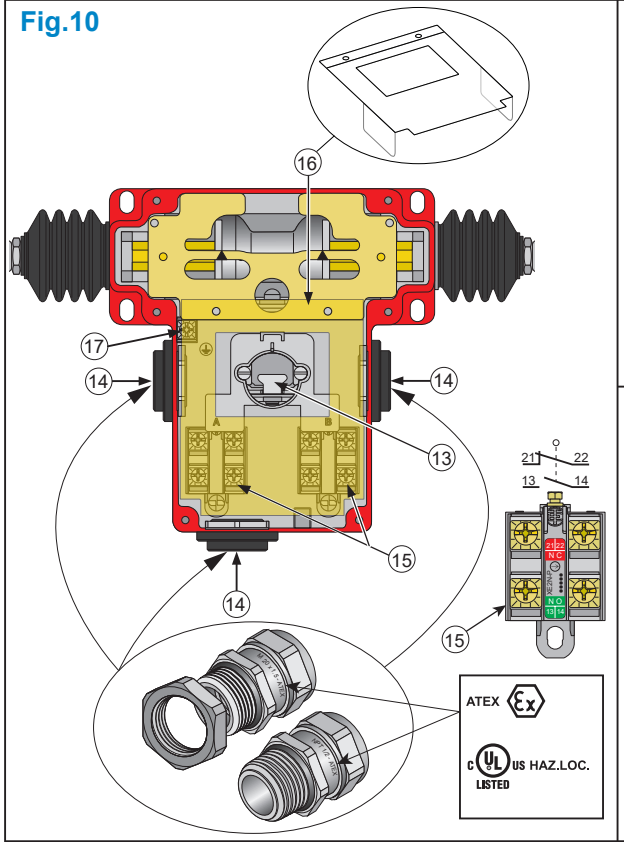


Fig.11

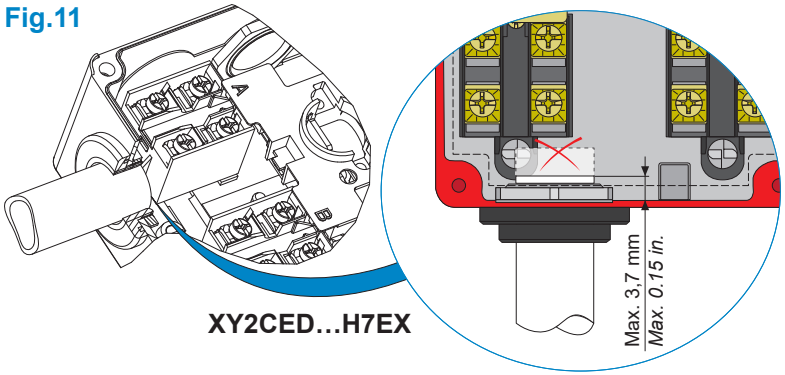
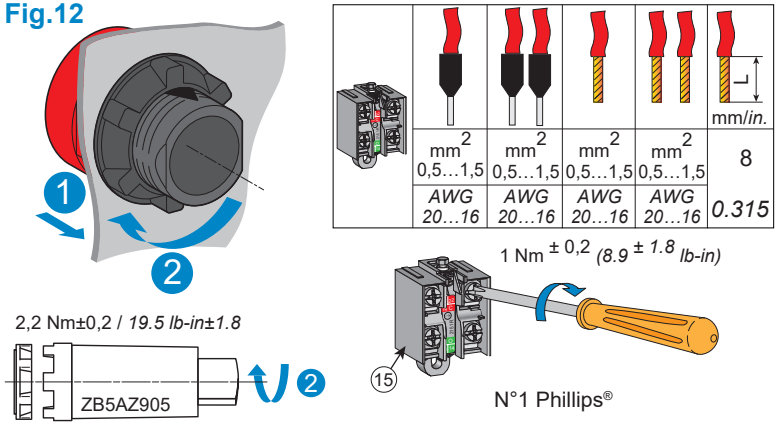


Fig.12



Rated operating power (Electrical durability)

Conforming to EN/IEC 60947-5-1 Appendix C. Utilisation categories AC-15 and DC-13
Frequency: 3600 operating cycles/hour. Load factor: 0.5

AC power supply ∿ 50/60 Hz
Inductive circuit

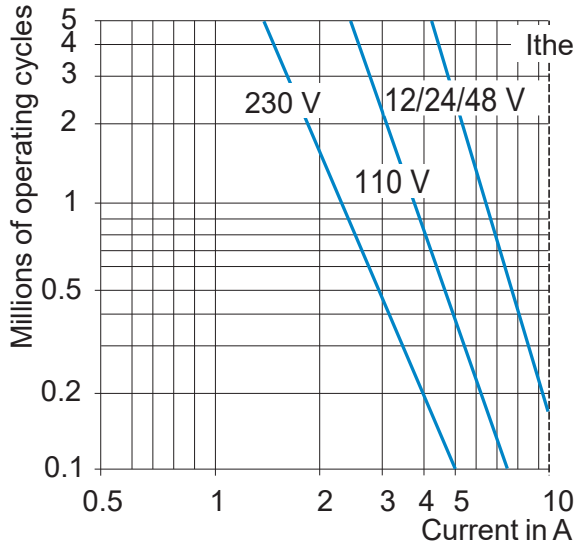
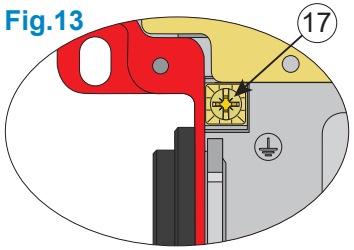
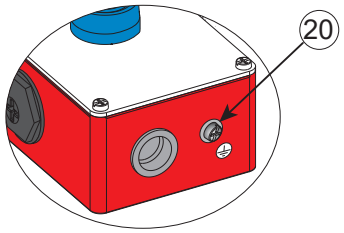


Fig.13



17 : Internal Unit's earth connection

≤ 2,5 mm² / AWG14



20 : External Unit's earth connection

≤ 2,5 mm² / AWG14 +

DC power supply ⎓
Switching capacity in W
for 1 million operating cycles.
Inductive circuit

Voltage	V	24	48	120
	W	13	9	7

Zone 21 - 22
II 2 D – Ex tb IIIC T85°C Db IP65

EC type examination certificate:
INERIS 04ATEX0015X - IECEx INE 16.0001X

EN/IEC 60079-0
EN/IEC 60079-31
UL 60079-0
UL 60079-31
CSA C22.2 N°60079-0:15
CSA C22.2 N°60079-31:15

c UL us LISTED E501196

Ind. Cont. Eq. for Use in HAZ. LOC.
Zn21 AEx tb IIIC T85°C
Zn21 Ex tb IIIC T85°C Db

EMERGENCY STOP ROPE PULL SWITCHES

Use of this device must be solely limited to making emergency stops using a trip wire.
These devices must be installed, used and maintained in accordance with:
- Standard EN 60079-14 (Explosive atmospheres), part 14 (Electrical installations design, selection and erection).
- Standard EN 60079-17 (Explosive atmospheres), part 17 (Electrical installations inspection and maintenance).
- Standard EN 60079-31 (Explosive atmospheres), part 31 (Equipment dust ignition protection by enclosure 't").
- Standard NF C 15 100 (Low voltage electrical installations) – European equivalent: IEC 60364.
- UL 60079-0, 6th Edition, Explosive atmospheres - Part 0: Equipment - General requirements - Revision Date 2017/10/20
- UL 60079-31, 2nd Edition, Explosive Atmospheres – Part 31: Equipment Dust Ignition Protection by Enclosure "t" – Issue Date 2015/06/12
- CSA C22.2 No. 60079-0:15, Explosive atmospheres - Part 0: Equipment - General requirements – Edition 3 – Issue Date 2015/10
- CSA C22.2 No. 60079-31:15, Explosive Atmospheres - Part 31: Equipment Dust Ignition Protection by Enclosure "t" – Edition 2 – Issue Date 2015/10.
- Standard EN ISO 13850 (Safety of machinery -Emergency Stop - Principles for design)
- Regulations governing setup of the zone or zones for which the devices were designed.

We cannot accept any responsibility for failure to observe these regulations.
Device installation, operation and maintenance must be carried out by approved, qualified staff.

Liability for manufacturer traceability (serial number specified on the certification label) is ensured at the first known delivery destination.

• Charactéristics

Mechanical durability		60000 operation cycles	
Maximum safety level *(1)*		PL=e, category 4 conforming to EN/ISO 13849-1 and SIL 3 conforming to EN/IEC 61508	
Reliability data B10d		300.000 (data value for a service life of 20 years can be limited by contact and mechanical wear)	
Ambient air temperature		Operation: - 20…+ 60 C° / *- 4...140 F°* - Storage : - 40…+ 70 C° / *- 40...158 F°* (Store products in their original packaging, in a dry place)	
Degree of protection according to IEC 60529		IP 65	
Rated electric characteristics of use		AC15 ; A300 (Ue=240V, Ie=3A) DC13 ; Q300 (Ue=250V, Ie=0,27A)	
Short-circuit protection		10A gG (gl) cartridge fuse installed out of the ATEX area	
Connection		Screw clamp terminal - 3 cable entries for ISO M20 cable gland	
Clamping capacity		min 1 x 0,5 mm² - max 1 x 2,5 mm² or 2 x 1,5 mm²	
Cable length		See **Fig. 3**	
Reset		Booted pushbutton	Key release mushroom head pushbutton (key no. 421)
Slow-break action	2x(NO + NC) 	**XY2CEDA290EX** *(2)*	**XY2CEDA490EX** *(2)*

(1): Using an appropriate and correctly connected control system.
(2): For 1.2"NPT cable entry models, the reference is ending with "H7EX"

⚠ DANGER
RISK OF PHYSICAL INJURY
- Inspect the cable in its entirety to identify the reason for the emergency stop order before restarting.
- Use only Telemecanique Sensors accessories and Telemecanique Sensors Ø 5mm cable.
- Mount the product to its support using 4 screws.
- Mount the product in compliance with the centering constraints mentioned in fig.1
- Use only NC contacts for the emergency stop safety function
- The use of 2 end-springs XY2CZ712 is mandatory.
- Place the cable guides or pulleys no less than 3 meters (*9.84 ft.*) and no more than 5 meters (*16.4 ft.*) apart from each other.
- Remove all objects placed on or masking the cable.
- Ensure that the cable is free to move.
- Ensure that the cable is accessible along the entire traction zone.
- Check that none of the device components is deformed by an electrical cable once the cover is closed.
- Check that the cover is securely closed.
- Check that the device, cable and accessories are securely mounted in place.
- Check the product installation, setting and functioning based on the information provided in this instruction manual.
- Check the proper working of the XY2CED, cables and accessories after installation and after any work is done on the installation.

Failure to follow these instructions will result in death or serious injury.

⚠⚠ DANGER
RISK OF ELECTRICAL SHOCK, EXPLOSION OR ARC FLASH
- Before any intervention, switch off the power supply of the equipment acting as the support.
- Before any work is done, switch off the power supply of the device.
- Take care not to damage the parts of the support that are normally powered.
- Visually inspect the good condition of the product.
- Use appropriate personal protective equipment (PPE) and follow the recommended instructions for electrical environments. (see NFPA 70E).
- Always use an appropriate electrical measuring device to confirm that the entire installation is powered down.
- Use Atex/IECEx IP 65 cable glands.
- Protect the installation against power surges.

Failure to follow these instructions will result in death or serious injury.

⚠ WARNING
RISK OF PHYSICAL INJURY
- Secure the cable traction zone.
- Do not pull on the cable while adjusting cable tightness.
- Check the tightness of parts such as bellows, gaskets, push button, etc.
- The bellow of the steel pusher and the push-button have to be protected from light.
- Ensure that the product is anchored along the same axis as the cable.
- Configure the device based on the ambient temperature.
- Ensure that the reset button zone remains accessible.
- Remove the cable before dismantling the XY2CED.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

• Installation constraints

Do not use a device if it is damaged
Check that the product's labeling specifications are compatible with the conditions permitted for the Ex zone at the site where it is being used: (**Group II**: Surface industries - **Category 2**: high protection level - **D**: Dust - **IPxx**: degree of protection (protection against solids and liquids) - **T85°C**: max.surface temperature)
The installation must be horizontal and rectilinear.
The entire cable length must be visible from the emergency stop device (ISO 13850)
The maximum length of the installation must not exceed 200 m (*656 ft.*) **(fig.1).**
The minimum length of the installation must exceed 70 m (*230 ft.*) **(fig.1).**

The decentering of product ΔL must not exceed: $\Delta L_{max.}=10\% \times \frac{L1 + L2}{2}$

The installation must be performed with an ambient temperature corresponding to the average of the operating temperature range.
The maximum cable length must be compatible with acceptable temperature differences **(Fig. 2).**
Depending on the length of the installation, use the following equipment for guiding the cable:
- 2 x L = 70...140 m (*230...459 ft.*) → Rings XY2CZ601 (pulleys XY2CZ708 : also possible)
- 2 x L = 140...200 m (*459...656 ft.*) → Pulleys XY2CZ708 (mandatory)

Zone / Zone / Bereich 21 - 22
II 2 D – Ex tb IIIC T85°C Db IP65

EC type examination certificate:
INERIS 04ATEX0015X - IECEx INE 16.0001X

EN/IEC 60079-0
EN/IEC 60079-31
UL 60079-0
UL 60079-31
CSA C22.2 N°60079-0:15
CSA C22.2 N°60079-31:15

c UL us LISTED E501196

Ind. Cont. Eq. for Use in HAZ. LOC.
Zn21 AEx tb IIIC T85°C
Zn21 Ex tb IIIC T85°C Db

● **Installation (fig. 3)**

1- Mount the device ① to a rigid support using 4 M6 cylindrical head screws through holes ② (tightening torque = $4^{\pm 0,5}$ N.m / $2.95^{\pm 0.37}$ *lb.ft*).
2- Securely fasten the cable guides ⑤ to rigid elements in compliance with the specified distance.
3- Attach the end springs ④ and ④ to a rigid element.
4- Remove the cover from the device ① by unscrewing the 6 screws ⑧ **(fig. 4).**
5- Maintain the cam ⑨ centered relative to the actuator ⑩ thanks to the adjusting shim ⑪ **(fig.4).**
6- Connect the cables ③ and ③ to the end springs ④ and ④ using a cable clamp ⑥ .
7- Pass the cables ③ and ③ through all the cable guides ⑤ .
8- Connect the cables ③ and ③ to the product ① .

8a- Turnbuckle use **(fig. 3 and 5A)**
1- Connect the cables ③and ③to the turnbuckles ⑦using a cable clamp ⑥.
2- Connect the 2 turnbuckles ⑦to the device ①with a portion of cable ③and ③by passing through the cable guides ⑤ and using cable clamps ⑥.
3- Tighten the cables ③and ③by turning the turnbuckles ⑦

8b- Tensioner use **(fig. 5B and 6)**
1- Unscrew the front rings XY2CZ501 and replace them with the tensioners XY2CZ213 **(fig. 6A).**
2- Cut the cable at the center axis of the device **(fig. 6B).**
3- Strip the cable 200 mm / *7.87 in.* and pass it into the tensioner **(fig. 6C).**
4- Tighten the cables ③and ③by turning the tensioner **(fig. 6D).**
5- If necessary, untighten the cables **(fig. 6E).**

NOTE : The list of accessories and springs can be found in the Telemecanique Sensors catalog. A support or element may be described as "rigid" if it is capable of supporting a load of 2,000 N in all directions of stress.

● **Setting**

1- Tighten the cables ③ and ③ until the springs ④ and ④ reach the setting point **(fig. 7A).** When the forces are balanced, the shim can be removed
2- Remove the shim ⑪ **(fig. 8)** and ensure that the cam ⑨ remains centered relative to the actuator ⑩ using the markers ⑫ **(fig. 4A)**
3- Arm the device by pressing the lock ⑬, you will hear a "click" sound **(fig. 8)**.

⋆ Setting the 1st side:
4- Trip the device by pulling on the cable ③ **(fig. 5)**.
5- Check that the cam ⑨ remains centered relative to the actuator ⑩ using the markers ⑫ **(fig. 4A)**.
6- If necessary, repeat steps 1, 3, 4 and 5 until the installation is stable.

⋆ Setting the second side:
7- Trip the device by pulling on the cable ③ **(fig. 5)**.
8- Check that the cam ⑨ remains centered relative to the actuator ⑩ using the markers ⑫ **(fig. 4A)**.
9- If necessary, repeat steps1, 3, 7 and 8 until the installation is stable.
10- Mount the cover ⑱ onto the device ① using the six screws ⑧ (tightening torque = $1,5^{\pm 0,1}$ Nm / $1.1^{\pm 0.07}$ *lb.ft*) **(fig. 9)** or move to the wiring step. Before closing the cover ⑱, ensure that the seal ⑲ is in good condition and in the correct position.

⋆ Temperature effect on the product.
A variation of temperature causes cables to dilate.
Spring buckles must move within the operating zone **(fig. 7B)**. and must never be found within the forbidden zone (red zone) **(fig. 7C)**.

● **Wiring (fig. 10)**

1- Remove the cover ⑱ from the device ① by unscrewing the 6 screws ⑧.
2- If the pre-mounted cable gland is not at the right place for the application, unscrew the blanking plug ⑭ depending on the desired point of entry.
3- Mount the cable gland by respecting its mounting instructions.
4- Re-mount the blanking plug ⑭ and its nut into the empty hole (tightening torque = $1^{\pm 0,1}$ Nm / $0.73^{\pm 0.07}$ *lb.ft*).
5- Lift the protective sheet ⑯ without damaging it.
6- Connect the electrical cables to the yoke screw terminals ⑮ (tightening torque = $1^{\pm 0,2}$ Nm / $0.73^{\pm 0.15}$ *lb.ft*).
7- Check that there are no cables passing through the reset switch area ⑬.
8- Carefully put back in place the protective sheet ⑯.
9- Mount the cover ⑱ onto the device ① using the six screws ⑧ (tightening torque = $1,5^{\pm 0,1}$ Nm / $1.1^{\pm 0.07}$ *lb.ft*) **(fig. 9).** Before closing the cover ⑱, ensure that the seal ⑲ is in good condition and in the correct position.

NOTE:
- For external unit's earth connection ⑳ and for internal unit's earth connection ⑰, see **fig.13.**
- Version XY2CED...H7 (rigid tube connection): see **fig. 11**.
- Use suitable cables and cable-glands to a minimum temperature of 65 °C for an ambient temperature of 60 °C

● **Servicing and maintenance**

The intervals for carrying out servicing and maintenance must be set according to the environment and climatic variations.
- The proper functioning of the XY2CED and its operating line must be checked on a regular basis based on the level of security required by the application (e.g. number of operations, level of environmental pollution, etc.).
- The temperature variations must never move the loops of the springs outside of the working area (**see Fig. 7A and 7B**)
- Ensure that the device does not become covered in layers of dust: please vacuum regularly.
- Do not open when the device is on.
- Check the condition of the fixing supports.
- The bellow and pushbutton shall be protected from light.
- Provision shall be made to prohibit the product from being exposed to mechanical impacts while in use.
- Care shall be taken not to install the equipment where propagating brush discharge may occur.
- Device shall be cleaned using a damp cloth, compresed air must not be used.
- The following items must be checked at least once a year or following a lengthy stoppage period:
- All external parts must be undamaged.
- the condition and operation of the cable and cam.
- if the product or one of its accessories (cable, turnbuckle, etc.) is damaged it must be replaced by identical equipment/parts.
- all the screws and cable glands are properly tightened.

If any of the items checked is defective, it must be replaced immediately. If the devices are used at the limits of the temperature (- 20…+ 60 C° / *- 4...140 F°*) and humidity (50 to 95 %) ranges, check the integrity of the connecting devices at regular intervals.

NOTE: During regular maintenance, you must check the following:
- The tightening torque of the screws and XY2CED components as well as the other accessories (turnbuckle, cable clamp, cable guide, etc.).
- The good condition of the cable and related components (turnbuckle, cable clamp, cable guide, etc.).

The cable sheath can show signs of fair wear and tear but this must not block the moving of the cable in its accessories. If the cable sheath is damaged, change the cable.
- The good condition of the XY2CED bellows. No holes or cracks must be present. If the bellows are worn out, change the XY2CED.
- Spring tension: Spring buckles must be found within the operating zone **(fig.7B)**
- Product rearming: Pull the cable, check that the installation is stopped and rearm the product.

● **Dismantling / Recycling**

Dismantle the cable ③ and ③ before the XY2CED.
NOTE : The internal mechanism and electrical contact blocks are fitted with springs that may generate flying parts.

CE
Manufacturer :
Schneider Electric Industries SAS
35 rue Joseph Monier
92500 Rueil Malmaison
France

UK CA
UK Representative :
Schneider Electric Limited
Stafford Park 5
Telford, TF3 3BL
United Kingdom