Mounting instructions

Fig. 1A : Centered Product

\[ L_1 = L_2 \]

70...200 m / 230...656 ft. Max.

Fig. 1B : Off-center product

\[ \Delta L = \frac{L_1 - L_2}{2} \]

70...200 m / 230...656 ft. Max.

\[ \Delta L_{\text{max}} = 10\% \times \frac{L_1 + L_2}{2} \]

L1 + L2 = 70 m / 230 ft.  \( \Rightarrow \) \( \Delta L = 3.5 \text{ m} / 11.5 \text{ ft.} \) Max.
L1 + L2 = 140 m / 459 ft.  \( \Rightarrow \) \( \Delta L = 7 \text{ m} / 23 \text{ ft.} \) Max.
L1 + L2 = 200 m / 656 ft.  \( \Rightarrow \) \( \Delta L = 10 \text{ m} / 32.8 \text{ ft.} \) Max.

Fig. 2

\[ \Delta T = f(L) \]

Prohibited area

Recommendations:
Recommended cable Ref. XY2CZ (105 / 107 / 110) - Ø 5 mm - Galvanised steel type with red sleeve
Expansion coefficient \( \Delta L = 0.7 \text{ mm} / \text{ m} \) 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 XY2CZ712

1.1 ± 0.074 lb.ft

L1 + L2

Y

L1 + L2

u

L1 + L2

max

70...200 m / 230...656 ft. Max.

3m ≤ X ≤ 5m
9.84 ft ≤ X ≤ 16.4 ft.

0.15 ± 0.05 m
5.9 ± 1.96 in.

3m ≤ Y ≤ 5m
9.84 ft ≤ Y ≤ 16.4 ft.

0.15 ± 0.05 m
5.9 ± 1.96 in.

XY2CZ704

3m
9.84 ft

5m
16.4 ft.
Fig. 4

Dimensions

106 4.17 82 3.23 52 2.05 20 0.79

163.7 6.44

285 11.22

163.7 6.44

41.5 1.63

285 11.22

167.8 6.61

3 untapped holes for inserting cables in the ATEX certified ISO M20 cable gland

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

3): XY2CEDa390EX

3 tapped holes 1/2 NPT for Hazardous Location certified cable-gland or plug (EX Ts III C T85°C Db IP65)
Fig. 5

Setting with the cable tensioner

Fig. 6

Example

<table>
<thead>
<tr>
<th>D = 3 m / 9.84 ft</th>
<th>2 x L (m / ft)</th>
<th>F1 (N)</th>
<th>f (mm / in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 x 70</td>
<td>176</td>
<td>290 / 11.42</td>
</tr>
<tr>
<td></td>
<td>2 x 230</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 x 100</td>
<td>190</td>
<td>300 / 11.81</td>
</tr>
<tr>
<td></td>
<td>2 x 328</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

D = 5 m / 16.4 ft

<table>
<thead>
<tr>
<th></th>
<th>2 x L (m / ft)</th>
<th>F1 (N)</th>
<th>f (mm / in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 x 70</td>
<td>125</td>
<td>370 / 14.57</td>
</tr>
<tr>
<td></td>
<td>2 x 230</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 x 100</td>
<td>126</td>
<td>385 / 15.16</td>
</tr>
<tr>
<td></td>
<td>2 x 328</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Device installation, operation and maintenance must be carried out by approved, qualified staff.

- Regulations governing setup of the zone or zones for which the devices were designed.
- Standard EN ISO 13850 (Safety of machinery - Emergency Stop - Principles for design) Date 2015/10.
- CSA C22.2 No. 60079-0:15, Explosive atmospheres - Part 0: Equipment - General requirements – Edition 3 – Issue Date 2015/10
- UL 60079-0, 6th Edition, Explosive atmospheres - Part 0: Equipment - General requirements - Revision Date 2017/10/20
- Standard EN 60079-17 (Explosive atmospheres), part 17 (Electrical installations inspection and maintenance).

These devices must be installed, used and maintained in accordance with:

- Maximum safety level of use
- Rated electric characteristics according to IEC 60529
- Mechanical durability
- Short-circuit protection
- Ambient air temperature
- Operations over cycles
- EMI/RFI immunity (EN 61000-6-4)

EMERGENCY STOP ROPE PULL SWITCHES

Use of this device must be solely limited to making emergency stops using a trip wire.

- Standard EN 60797-17 (Explosive atmospheres), part 17 (Electrical installations inspection and maintenance).
- Standard EN 60797-31 (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
- CSA C22.2 No. 60079-0:15, Explosive atmospheres - Part 0: Equipment - General requirements – Edition 3 – 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.

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 XY2C2712 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.

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 AllenBradley IP 65 cable glands.
- Protect the installation against power surges.

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

RISK OF PHYSICAL INJURY

- Secure the cable traction zone.
- Do not pull on the cable while adjusting cable tightness.
- Check that the tightness of parts such as bellow, 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.
- The resistance of the product is the same 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 - IPxEx: 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 exceed 70 m (230 ft) (fig.1).

The decentering of product ΔL must not exceed: $L_{max.} = 10\% \times L_1 + L_2$

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 XY2CZ701 (pulleys XY2CZ708 also possible)
- 2 x L = 140...200 m (459...656 ft) – Pulleys XY2CZ708 (mandatory)

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel.

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Dismantle the cable and before the XY2CED.

- Remove the shim
- Trip the device by pulling on the cable
- Tighten the cables and until the springs and reach the setting point
- Securely fasten the cable guides to rigid elements in compliance with the specified distance.
- Cut the cable at the center axis of the device
- Strip the cable 200 mm / 800 mm
- Mount the cable gland by respecting its mounting instructions.
- Carefully put back in place the protective sheet depending on the desired point of entry.
- Lift the protective sheet without damaging it.
- Connect the cables and to the end springs and using a cable clamp.

**Temperature effect on the product.**

When the forces are balanced, the shim can be removed.

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°C…+60°C), the condition and operation of the cable and cam.

NOTE: The list of accessories and springs can be found in the Telmecanique 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 and until the springs and reach the setting point (fig. 7A). When the forces are balanced, the shim can be removed.
  2. Cut the cable at the center axis of the device (fig. 6B).
  3. Strip the cable 200 mm / 800 mm and pass it into the tensioner (fig. 6C).
  4. Tighten the cables and by turning the tensioner (fig. 6D).
  5. If necessary, tighten the cables (fig. 6E).

**Setting the 1st side:**

1. Trip the device by pulling on the cable (fig. 5).
2. Check that the cam remains centered relative to the actuator (fig. 4A).
3. Arm the device by pressing the lock, you will hear a “click” sound (fig. 4).
4. If necessary, repeat steps 1, 3, 4 and 5 until the installation is stable.

**Setting the second side:**

1. Trip the device by pulling on the cable (fig. 5).
2. Check that the cam remains centered relative to the actuator (fig. 4A).
3. If necessary, repeat steps 1, 3, 7 and 8 until the installation is stable.
4. Mount the cover onto the device (fig. 6A) using the six screws (fig. 9) or move to the wiring step. Before closing the cover, ensure that the seal 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**

1. Remove the cover from the device (fig. 6A) by unscrewing the 6 screws.
2. If the pre-mounted cable gland is not at the right place for the application, unscrew the blanking plug depending on the desired point of entry.
3. Mount the cable gland by respecting its mounting instructions.
4. Re-mount the blanking plug and its nut into the empty hole (tightening torque = 1±0.2 Nm / 1±0.07 lb.ft).
5. Lift the protective sheet without damaging it.
6. Connect the electrical cables to the yoke screw terminals (fig. 10).
7. Check that there are no cables passing through the reset switch area.
8. Carefully put back in place the protective sheet.
9. Mount the cover onto the device (fig. 6B) using the six screws (fig. 9). Before closing the cover, ensure that the seal is in good condition and in the correct position.

**NOTE:**

- - For external unit's earth connection and for internal unit's earth connection, see fig. 13.
- - Version XY2CED: 34 ft (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 operators, 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.
- - Cars shall be taken not to install the equipment where propagating brush discharge may occur.
- - Device shall be cleaned using a damp cloth, compressed 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.
- - 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.

**NOTE:** During regular maintenance, you must check the following:

- - The tightening torque of the screws and XY2CED components as well as the other accessories.
- - The good condition of the cable and related components.
- - 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 and before the XY2CED.

**NOTE:** The internal mechanism and electrical contact blocks are fitted with springs that may generate flying parts.