Preventa™ Machine Safety Products

Catalog

2014

Chapter 6

Cable Pull Switches

Schneider Electric™

Cable pull switches

Selection guide: Cable pull switches 6/6

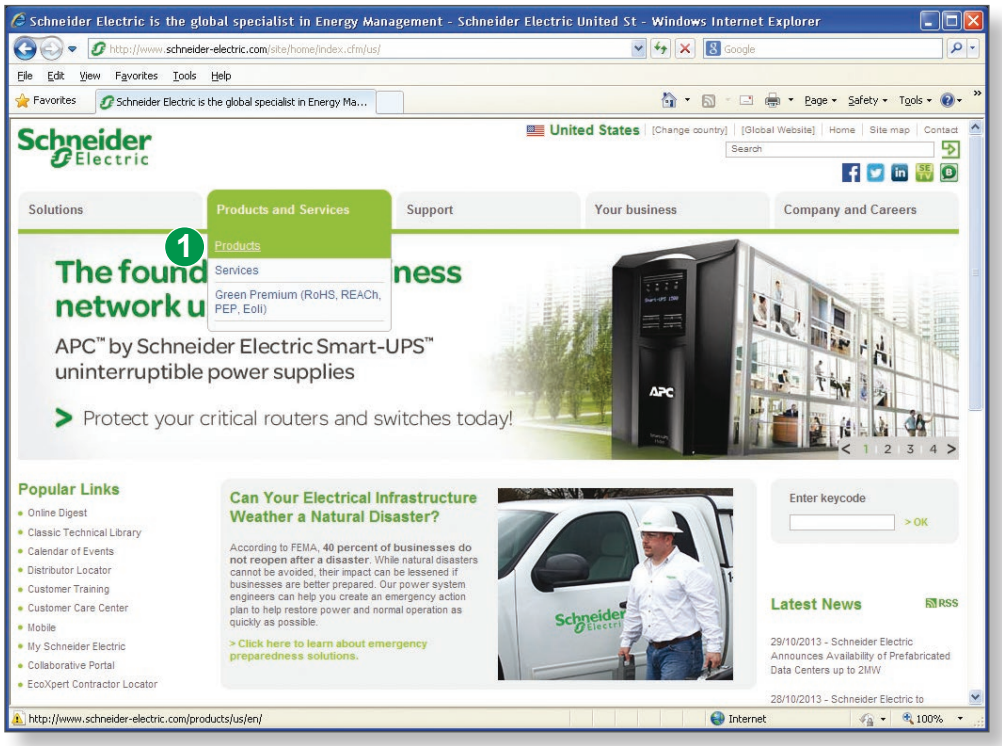
Cable pull switches, XY2

- General information. 6/7
- Specifications 6/8
- References 6/9
- Accessories. 6/12
- Dimensions 6/15
- Operating principles 6/16
- Application 6/18
- Wiring diagrams 6/20

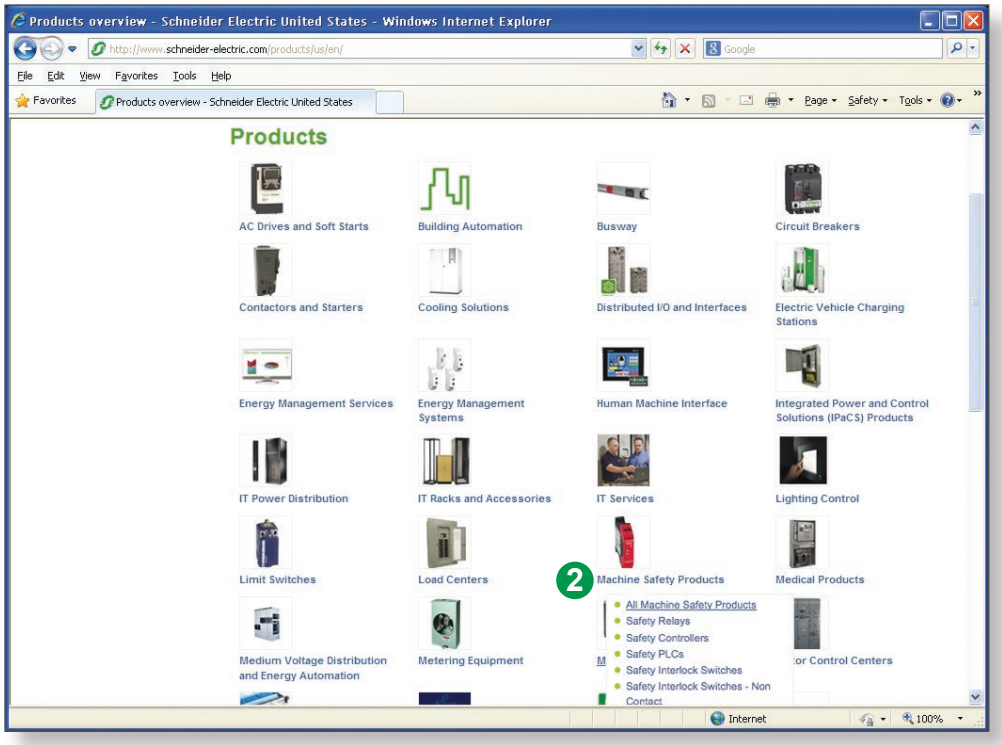
Product reference index . . . . . *inside back cover*

Go online to www.schneider-electric.com for information about Preventa™ products listed in this catalog, including:

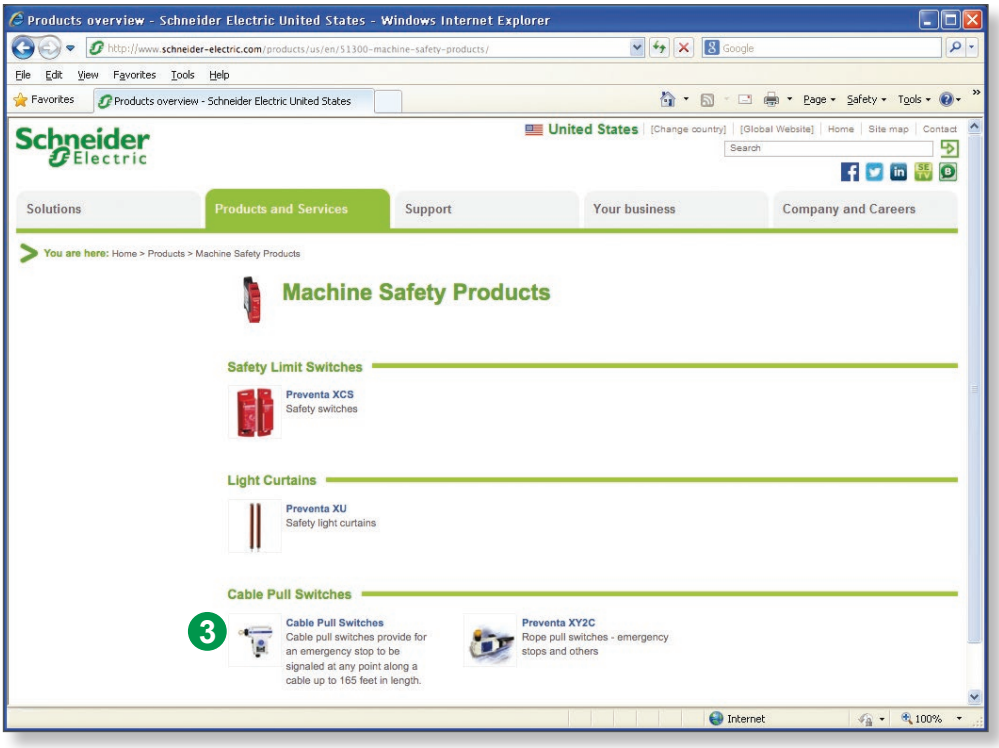
1 Go to: www.schneider-electric.com and select "Products" on the "Products and Services" tab.



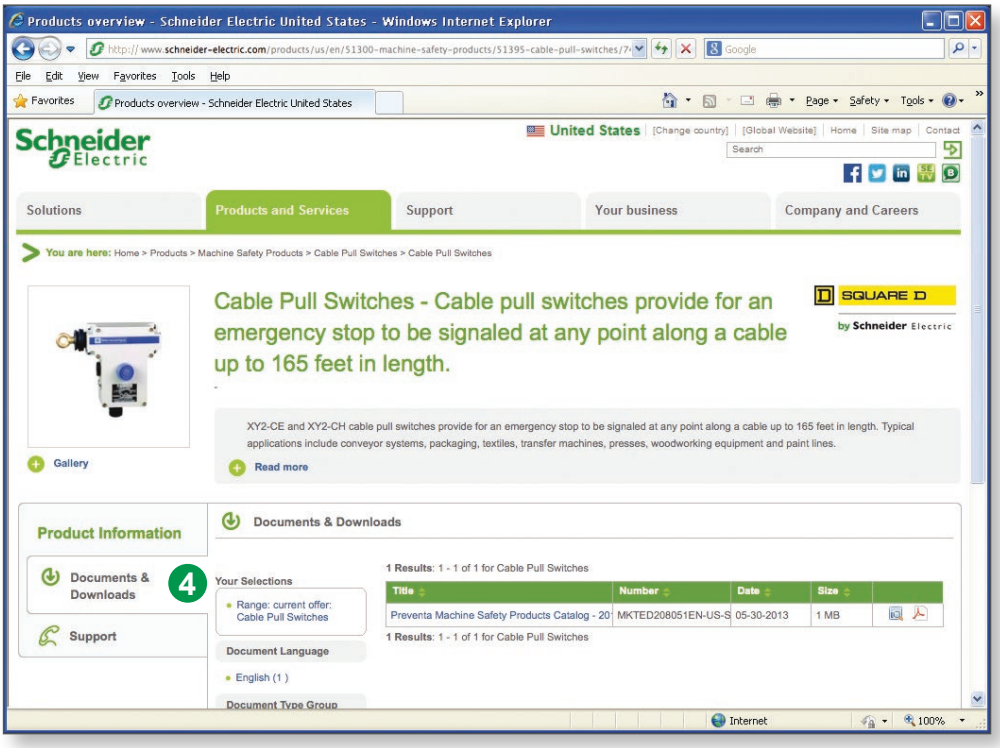
2 On the "Products" page, find the "Machine Safety Products" icon and select "All Machine Safety Products".



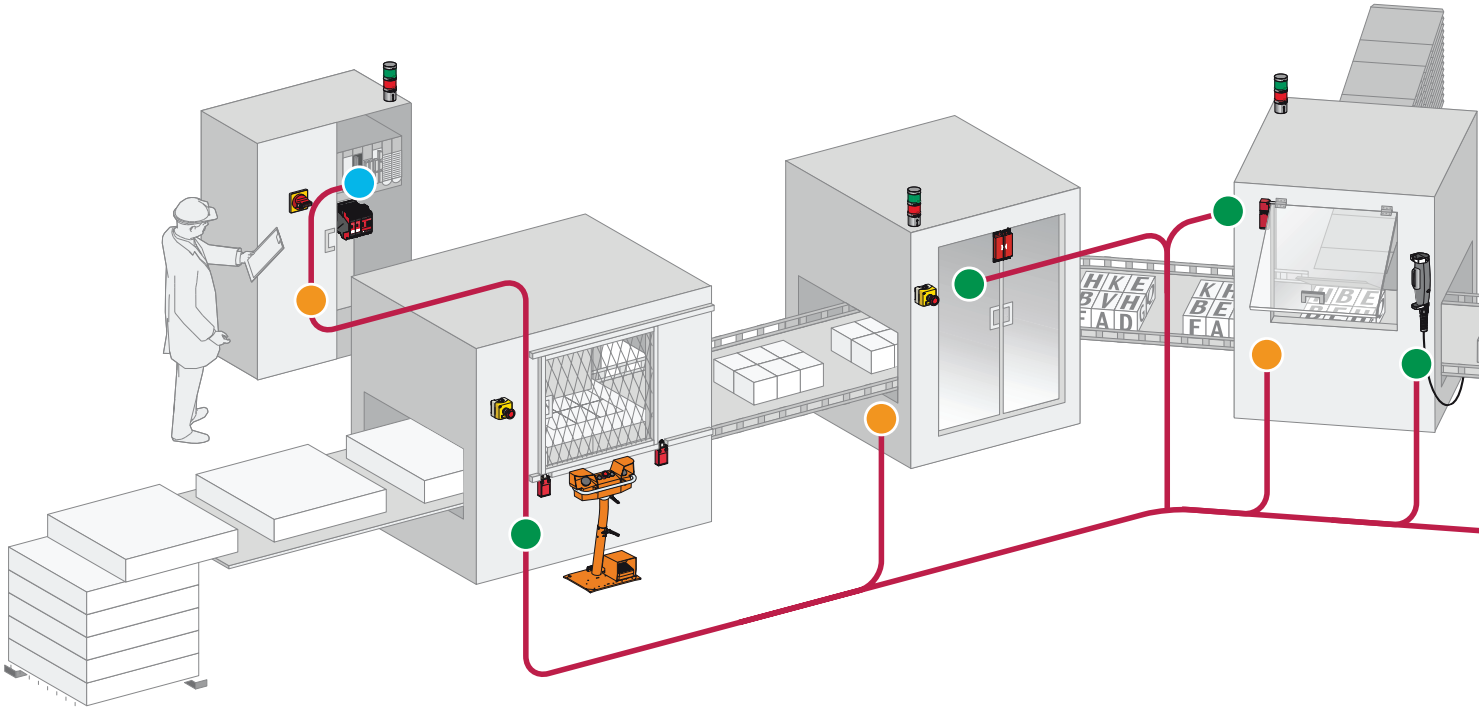
3 **On the “Machine Safety Products” page, select the product you are interested in, for example: “Cable Pull Switches - Cable Pull Switches”.**



4 **Explore the product page you have selected, including the “Product Information” tabs: “Documents & Downloads” and “Support”.**



Save time and money with our Preventa™ machine safety solutions offer



Safety-related signal transmission

Acquiring information…

- Safety interlock devices used as part of safeguarding systems to control access, under specific conditions of reduced risk.
- Light curtains to detect approach to dangerous and limited areas.
- Emergency stop buttons and cable pull switches for emergency shut down.

Monitoring and processing…

- Safety relay modules with specific safety functions – to monitor input signals from safety-related devices, and to interface with contactors and drives – by switching off output safety contacts.
- Safety Controller: configurable safety device capable of centralizing a range of safety monitoring functions.
- Safety PLCs: programmable electronic systems to carry out safety or non-safety related tasks for machinery and equipment.
- "As-interface safety at work": safety field bus network certified to work with safety-related devices to provide safety functions.

Safety interlocks

Light curtains

Emergency stop

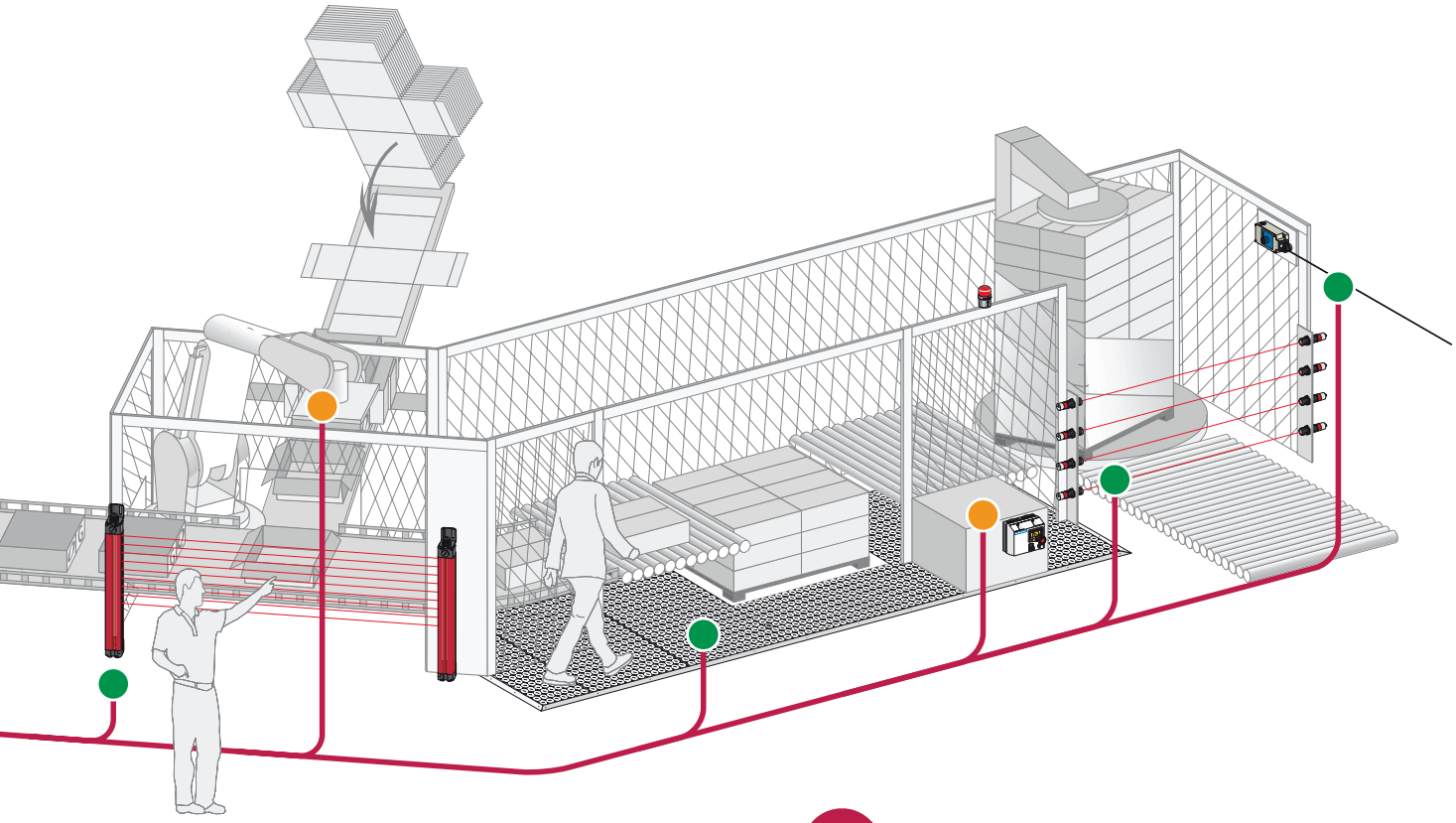
Cable pull switch

Safety relays

Safety Controller

Safety PLCs

As-interface safety at work



Stopping the machine…

- Contactors to cut-off the electrical power supply to motors – with mechanically linked or mirrored auxiliary contacts – integrated for feedback loop diagnosis of safety relay modules, safety controllers, or safety PLCs.
- Variable speed drives and servo drives with integrated safety functions…control stopping of dangerous movements.

Up to 50%
better space optimization
Compact components have smaller footprint

Save up to 30%
on installation time
Reduce installation time with quick and easy wiring

Variable speed drives

Servo drives

Contactors

Safety dialog solutions
Cable pull switches, XY2

Applications	**Cable Pull switches for:** - conveyor systems - material handling - machine tools - electrical testing stations - woodworking machinery - textile machinery		
Features	For cable lengths up to 230 ft (70 m). Can be tripped by the operator at any point in the work zone.	For cable lengths up to 98 ft (30 m). Can be tripped by the operator at any point in the work zone.	For cable lengths up to 98 ft (30 m). Can be tripped by the operator at any point in the work zone.
Conformity to standards			
Products	EN/IEC 60947-5-5, EN/ISO 13850:2006, UL 508 and CSA C22-2 n° 14 (with H7)	EN/IEC 60947-5-5, EN/ISO 13850:2006, UL 508 and CSA C22-2 n° 14 (with H7)	EN/IEC 60947-5-5, EN/ISO 13850:2006, UL 508 and CSA C22-2 n° 14 (with H7)
Machine assemblies	EN/IEC 60204-1, Machinery directive: 2006/42/EC, Work equipment directive: 89/655/EEC	EN/IEC 60204-1, Machinery directive: 2006/42/EC, Work equipment directive: 89/655/EEC	EN/IEC 60204-1, Machinery directive: 2006/42/EC, Work equipment directive: 89/655/EEC
Protective treatment	Special version, "TK" with silicone bellows	Special version, "TK" with silicone bellows	—
Ambient temperature			
Operating	–13 to +158 °F (–25 to +70 °C), Standard version –40 to +158 °F (–40 to +70 °C), "TK" version	–13 to +158 °F (–25 to +70 °C), Standard version –40 to +158 °F (–40 to +70 °C), "TK" version	–13 to +158 °F (–25 to +70 °C), Standard version
Storage	–40 to +158 °F (–40 to +70 °C)	–40 to +158 °F (–40 to +70 °C)	–40 to +158 °F (–40 to +70 °C)
Electric shock protection conforming to EN/IEC 61140	Class I	Class I	Class I
Degree of protection	**XY2CE**: IP65 conforming to EN/IEC 60529	**XY2CH**: IP65 conforming to EN/IEC 60529	**XY2CJ:** IP66 and IP67 conforming to EN/IEC 60529
Positive operation conforming to EN/IEC 60947-5-1 Section 3	N.C. contacts with positive opening operation ⊖	N.C. contacts with positive opening operation ⊖	N.C. contacts with positive opening operation ⊖
Rated insulation voltage			
2-pole contacts	Ui = 500 V degree of pollution 3 conforming to EN/IEC 60947-1, Ui = 300 V conforming to UL 508, CSA C22-2 n° 14	Ui = 500 V degree of pollution 3 conforming to EN/IEC 60947-1, Ui = 300 V conforming to UL 508, CSA C22-2 n° 14	Ui = 500 V degree of pollution 3 conforming to EN/IEC 60947-1, Ui = 300 V conforming to UL 508, CSA C22-2 n° 14
3-pole contacts	Ui = 400 V degree of pollution 3 conforming to EN/IEC 60947-1, Ui = 300 V conforming to UL 508, CSA C22-2 n° 14	Ui = 400 V degree of pollution 3 conforming to EN/IEC 60947-1, Ui = 300 V conforming to UL 508, CSA C22-2 n° 14	Ui = 400 V degree of pollution 3 conforming to EN/IEC 60947-1, Ui = 300 V conforming to UL 508, CSA C22-2 n° 14
Rated impulse withstand voltage			
2-pole contacts	Uimp = 6 kV conforming to EN/ IEC 60947-1	Uimp = 6 kV conforming to EN/ IEC 60947-1	Uimp = 6 kV conforming to EN/ IEC 60947-1
3-pole contacts	Uimp = 4 kV conforming to EN/ IEC 60947-1	Uimp = 4 kV conforming to EN/ IEC 60947-1	Uimp = 4 kV conforming to EN/ IEC 60947-1
References	**XY2CE**	**XY2CH**	**XY2CJ**
Pages	6/9	6/10	6/11

Safety dialog solutions
Cable pull switches, XY2

XY2CE1A296H7

XY2CH13250H7

XY2CJR19H7

Operating Principle

XY2 cable pull switches provide for a stop or emergency stop to be signaled at any point along a cable up to 230 feet (70 m) in length. This is many times preferred to installing many individual stop or emergency stop push button stations along a conveyor or around the machine, providing a more cost effective solution. Typical applications include conveyor systems, packaging, textiles, transfer machines, presses, woodworking equipment, paint lines, and test laboratories.

The cable pull switch is typically mounted at one end of a machine or conveyor, and the operating cable is routed along the conveyor or around the machine and secured at the other end. The operation of the XY2 is based on the taut cable principle—the cable must be tight and have appropriate tension applied to set or reset the switch. Once cable tension has been set, the device will open the N.C. control contacts if the cable is pulled or if it becomes slack due to stretching or breakage of the cable. Once the switch is tripped, it must be manually reset. The XY2C devices are for use with tensioned stranded steel cables only (refer to "Cable specifications" on page 14. The use of hemp or polymer ropes in place of multi-stranded steel cables is not permissable due to the excessive elasticity of the ropes.

Two versions are available:

- Emergency stop versions have positive opening N.C. contacts that latch upon tripping (positive opening) and must be manually reset.
- Normal stop versions are used where a momentary, non-emergency signal is required at any point along a cable. These devices have snap acting contacts and are non-latching devices.

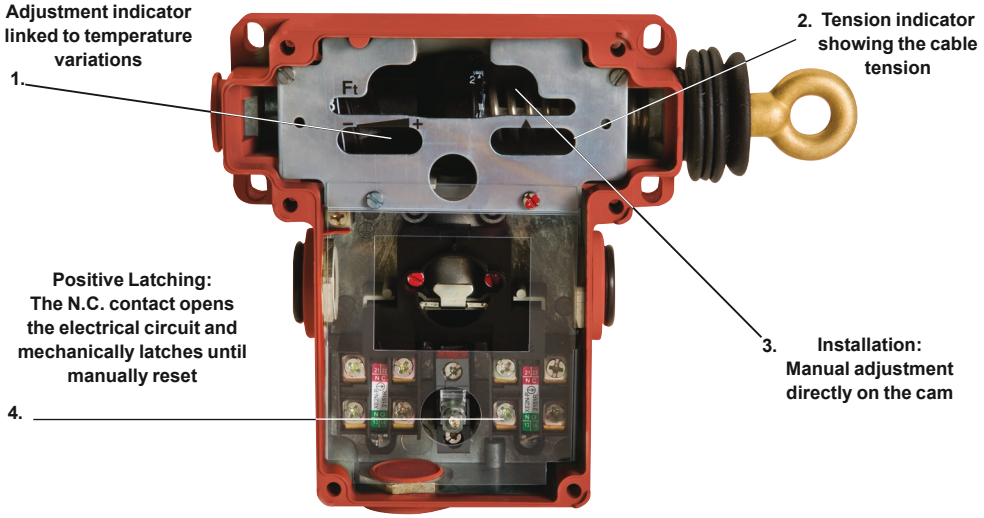
Features Include:

- 3 cable entries 1/2"-14 NPT (XY2CE and XY2CH)
- 1 cable entry 1/2"-14 NPT (XY2CJ)
- Positive latching (no teasing)
- Slow-make slow-break for emergency stop
- Snap action contacts for momentary switch
- Works properly even if spring is broken
- Padlock attachments available
- Doesn't reset if out of adjustment
- Manual tripping force adjustment (XY2CE)
- Adjustment indicator
- UL Listed and CSA certified
- XY2CH and XY2CJ for applications up to 98 feet (30 m)
- XY2CH has 2 viewing windows to aid in setting and adjusting the switch
- XY2CE for applications up to 230 feet (70 m)
- Positive opening N.C. contacts meet the IEC and EN requirements for positive opening contacts according to IEC/EN 60947-5-1 section 3, and meet NEMA ICS-5, part 6 (direct opening action).

The use of an end spring is strongly advised when using cable pull devices on continuous duty mechanical handling equipment and systems.

The following standards allow the use of cable pull (pull cord) devices in e-stop circuits:

- IEC 60204-1: 10.7 AND 10.8
- ISO 13850
- NFPA 79



Interior View of XY2CE

Note:
These devices are designed for use in tensioned cable pull applications. They are not suitable for use as slack rope pull devices.

6

Specifications

Conformity to Standards Approvals	ANSI A 17.1, EN/IEC 60947-5-5, EN/ISO 13850: 2006, Machine Directive: 2006/42/EC, NFC 79-130, NFC 63144, VDE 0660-207. **XY2CE/XY2CH/XY2CJ**: UL 508 & CSA C22-2 no 14 (H7 version), UL (NISD), CCC *(1)*
Maximum safety level *(2)*	PL e, category 4 conforming to EN/ISO 13849-1 and SIL CL3 conforming to EN/IEC 62061
Reliability data B_{10d}	**XY2CE**: 50,000 **XY2CH**: 5,000,000 **XY2CJ**: 500,000 (data values for a service life of 20 years: can be limited by contact and mechanical wear)
Ambient Temperature *(3)*	**Operation:** -13 to +158 °F (-25 to +70 °C) for standard devices; -40 to 158 °F (-40 to +70 °C) for TK versions (corrosion resistant). **Storage**: from -40 to +158 °F (-40 to +70 °C) for all devices.
Vibration Resistance	**XY2CE**: 10 gn (10–300 Hz). **XY2CH, XY2CJ**: 10 gn (10–150 Hz), conforming to EN/IEC 60068-2-6
Shock Resistance	50 gn, duration 11 ms, conforming to EN/IEC 600068-2-27
Electric Shock Protection	UL 508, 19-1, Class I conforming to IEC 61140 and NF C 20-030.
Enclosure Rating	**XY2CE, XY2CH**: IP65 conforming to IEC 60529, IP657 conforming to NF C 20-010 (IP 667 with booted push button). **XY2CJ**: IP 66 and IP 67 conforming to IEC 60529.
Mechanical Life	**XY2CE**: 10,000 operating cycles **XY2CH**: 800,000 operating cycles **XY2CJ**: 100,000 operating cycles
Cable Entry	**XY2CE**: 3 plain holes with 1/2"-14 NPT gland (H7) or ISO M20 x 1.5 gland (H29) or Pg 13.5 **XY2CH**: 3 tapped cable entries for 1/2"-14 NPT conduit (H7) or ISO M20 x 1.5 (H29) or Pg 13.5 **XY2CJ**: 1 tapped cable entry for 1/2"-14 NPT conduit (H7) or ISO M20 x 1.5 (H29) or Pg 13.5
Operating Position	All positions.
Length of Protected Area	**XY2CE**: maximum 230 ft (70 m). **XY2CH, XY2CJ**: maximum 98 ft (30 m)

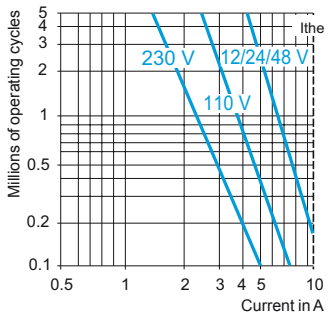
(1) Only products XY2CH without pilot light are CCC and UL-CSA approved.
(2) Using an appropriate and correctly connected control system.
(3) The minimum temperatures listed are based on the absence of freezing moisture or water. Care should be taken to avoid sub-freezing temperatures where dripping or splashing water is present and to avoid bringing a cold device into a humid atmosphere and then back into sub-freezing temperatures. The water or moisture may freeze around internal or external components and prevent it from performing as intended.

Electrical Specifications

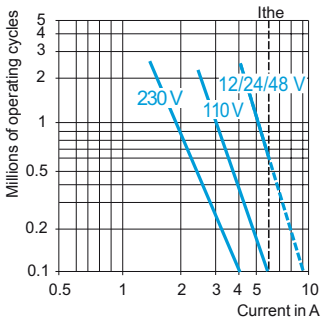
Rated operational characteristics	2-pole contact	**XY2CJ, XY2CH, XY2CE**: AC-15: A300 or Ue = 240 V, Ie = 3 A; DC-13: Q300 or Ue = 250 V, Ie = 0.27 A, conforming to EN/IEC 60947-5-1 Appendix A
	3-pole contact	**XY2CJ, XY2CH**: AC-15: B300 or Ue = 240 V, Ie = 1.5 A; DC-13: R300 or Ue = 250 V, Ie = 0.1 A, conforming to EN/IEC 60947-5-1 Appendix A
Nominal thermal current	2-pole contact	10 A
	3-pole contact	6 A
Rated insulation voltage	2-pole contact	**XY2CJ, XY2CH, XY2CE**: Ui = 500 V degree of pollution 3 conforming to EN/IEC 60947-1, Ui = 300 V conforming to UL 508, CSA C22-2 no. 14
	3-pole contact	**XY2CJ, XY2CH**: Ui = 400 V degree of pollution 3 conforming to EN/IEC 60947-1, Ui = 300 V conforming to UL 508, CSA C22-2 no. 14
Rated impulse withstand voltage	2-pole contact	**XY2CJ, XY2CH, XY2CE**: Uimp = 6 kV conforming to EN/IEC 60947-1
	3-pole contact	**XY2CJ, XY2CH**: Uimp = 4 kV conforming to EN/IEC 60947-1
Positive operation		NC contact with positive opening operation conforming to EN/IEC 60947-5-1 Section 3
Resistance across terminals		⩽ 25 mΩ conforming to NF C 93-050 method A or EN/IEC 60255-7 category 3
Terminal referencing		Conforming to CENELEC EN 50013
Short Circuit Protection *(1)*		In U.S. use fast action fuse 10 A type SC; form I Class J, H or equivalent. 10 A cylindrical fuses type g1 or N conforming to IEC 337-1B- and VDE 0660-200 (2 pole contacts)
Rated operational power (Electrical durability)		**XY2CJ, XY2CH, XY2CE** Conforming to EN/IEC 60947-5-1 Appendix C. Utilization categories AC-15 and DC-13 Frequency: 3600 operating cycles/hour. Load factor: 0.5

AC supply ∿ 50/60 Hz
Inductive circuit

2-pole contact



3-pole contact



DC supply ⎓
Power broken in W for 1 million operating cycles.
Inductive circuit

Voltage	V	**24**	**48**	**120**
	W	13	9	7

Voltage	V	**24**	**48**	**120**
	W	4	3	2

Contact connection	Screw clamp terminals **2 contacts**: clamping capacity, min. 1 wire: 20 AWG (0.5 mm²), max. 2 wires: 16 AWG (1.5 mm²). **3 contacts:** clamping capacity, min. 1 wire: 22 AWG (0.34 mm²), max. 1 wire: 18 AWG (1 mm²) or 2 wires: 20 AWG (0.75 mm²). Minimum tightening torque: 7.1 lb-in. (0.8 N.m). Maximum tightening torque: 10.6 lb-in. (1.2 N.m).

(1) The use of the recommended fuse is mandatory for emergency stop applications. Without a fuse to protect the circuit, the contacts may develop a weld significant enough that the positive opening contact mechanism may not be able to break through the weld.

The product life expressed above is based on average usage and normal operating conditions. Actual operating life will vary with conditions. The above statements are not intended to nor shall they create any express or implied warranties as to product operation or life. For information on the limited warranty offered on this product refer to the Schneider Electric Conditions of Sale found in the Digest.

Safety dialog solutions
Cable pull switches, XY2

Right Cable Mount:

XY2CE1A150H7

XY2CE1A296H7

Left Cable Mount:

XY2CE2A250H7

XY2CE2A196H7

XY2CE Cable Pull for up to 230 ft (70 m) cable length

Cable and accessories must be selected and ordered separately from pages 6/12 and 6/14.

Emergency Stop

Emergency Stop (Latching contact—reset by push button—positive opening contacts) *(3)*
Available only with slow break contacts.
The N.O. contacts close after the N.C. contacts open. They do not change state simultaneously.

*Only the N.C. contacts should be used in the safety control circuit. The N.O. contacts are provided solely for signaling—**NOT** for safety functions.*

In category 3 or 4 safety architectures, to conform with ISO 13850 and the European Union Machinery Directive, safety circuits must use emergency stop devices with 2 N.C. contacts. Using devices with 1 N.O. and 1 N.C. contact will not allow the system to meet category 3 or 4 as it would not meet the requirements for redundancy. Cable pull switches with 1 N.O. and 1 N.C. contact would be suitable for Category 1 or 2 safety architectures. XY2 cable pull switches are ideal choices for use with Preventa™ XPS safety relays.

Cable mount	Contacts	Pilot light (available only on 2 N.O.—2 N.C. devices)	Reference
Right cable mount			
Standard push button	N.O. + N.C.	No	**XY2CE1A150H7**
Booted push button *(1)*	N.O. + N.C.	No	**XY2CE1A250H7**
Standard push button	2 N.O. + 2 N.C.	No	**XY2CE1A190H7**
Standard push button	2 N.O. + 2 N.C.	Yes *(2)*	**XY2CE1A196H7**
Booted push button *(1)*	2 N.O. + 2 N.C.	No	**XY2CE1A290H7**
Booted push button *(1)*	2 N.O. + 2 N.C.	Yes *(2)*	**XY2CE1A296H7**
Left cable mount			
Standard push button	N.O. + N.C.	No	**XY2CE2A150H7**
Booted push button *(1)*	N.O. + N.C.	No	**XY2CE2A250H7**
Standard push button	2 N.O. + 2 N.C.	No	**XY2CE2A190H7**
Standard push button	2 N.O. + 2 N.C.	Yes *(2)*	**XY2CE2A196H7**
Booted push button *(1)*	2 N.O. + 2 N.C.	No	**XY2CE2A290H7**
Booted push button *(1)*	2 N.O. + 2 N.C.	Yes *(2)*	**XY2CE2A296H7**

(1) Recommended for outdoor applications where icy conditions are likely.
(2) Includes LED Module 24–120 V. For 220 V LED module, change tenth digit to 7 (for example, XY2CE1A296H7 becomes XY2CE1A297H7).
(3) Positive opening N.C. contacts meet the IEC and EN requirements for positive opening contacts according to IEC/EN 60947-5-1, and meet NEMA ICS-5, part 6 (direct opening action).

Normal Stop

Normal stop (momentary action, no reset, no positive opening contact) *(2)*
Available only with snap action contacts. Not for use in safety related circuits.

	Contacts	Pilot Light (only available on 2 N.O.–2 N.C. devices)	Reference
Right cable mount	N.O.+N.C.	No	**XY2CE3A010H7**
	2 N.O.+2 N.C.	No	**XY2CE3A020H7**
	2 N.O.+2 N.C.	Yes *(1) (3)*	**XY2CE3A026H7**
Left cable mount	N.O.+N.C.	No	**XY2CE4A010H7**
	2 N.O.+2 N.C.	No	**XY2CE4A020H7**
	2 N.O.+2 N.C.	Yes *(1) (3)*	**XY2CE4A026H7**

(1) Includes LED Module 240–120 V. For 220 V LED module, change tenth digit to 7 (for example, XY2CE3A026H7 becomes XY2CE3A027H7). See spare parts list on page 6/14.
(2) Positive opening N.C. contacts meet the IEC and EN requirements for positive opening contacts according to IEC/EN 60947-5-1, and meet NEMA ICS-5, part 6 (direct opening action).
(3) These devices or components are not UL/CSA.

Options for XY2CE

Description	Designator
Corrosion resistant (only available on devices with booted push button on Emergency Stop devices and all Normal Stop devices) Not available on key operated emergency stop reset nor mushroom head reset versions. The enclosure color is olive-blue instead of red.	Provides a silicone boot, special finish, and copper/brass eyelet. -**For non-pilot-light devices**: 1. Add suffix TK to the part number 2. Change A to C Example: XY2CE1A250H7 changes to XY2CE1C250H7TK -**For pilot light devices**: 1. Add suffix TK to the part number 2. Change A to E Example: XY2CE1A296H7 changes to XY2CE1E296H7TK
Low Temperature -40 °F (-40 °C) The minimum temperatures listed are based on the absence of freezing moisture or water.	**Non-pilot-light versions** -Change A to C: silicone boot Ex: XY2CE1A150H7 changes to XY2CE1C150H7 **Pilot light versions** -Change A to E: silicone boot Ex: XY2CE1A196H7 changes to XY2CE1E196H7
N.C. + N.C. contact	-Change the 9th digit to 7 (for emergency stop only) Ex: XY2CE1A150H7 changes to XY2CE1A170H7
Mushroom head reset (Ø 30 mm)	-Change the 8th digit to 3 Ex: XY2CE1A150H7 changes to XY2CE1A350H7
Key operated emergency stop reset (Uses Ronis key No. 421)	-Change the 8th digit to 4. Ex: XY2CE1A150H7 changes to XY2CE1A450H7

XY2CH13150H7

XY2CH13250H7

XY2CH13350H7

XY2CH13450H7

XY2CH Cable Pull for up to 98 ft (30 m) cable length

Cable and accessories must be selected and ordered separately from pages 6/12 and 6/14.

Emergency Stop

Emergency Stop (Latching contact—reset by push button—positive opening contacts) *(2)*
Available only with slow break contacts.

The N.O. contacts close after the N.C. contacts open. They do not change state simultaneously.

*Only the N.C. contacts should be used in the safety control circuit. The N.O. contacts are provided solely for signaling—**NOT** for safety functions.*

In category 3 or 4 safety architectures, to conform with ISO 13850 and the European Union Machinery Directive, safety circuits must use emergency stop devices with 2 N.C. contacts. Using devices with 1 N.O. and 1 N.C. contact will not allow the system to meet category 3 or 4 as it would not meet the requirements for redundancy. Cable pull switches with 1 N.O. and 1 N.C. contact would be suitable for Category 1 or 2 safety architectures. XY2 cable pull switches are ideal choices for use with Preventa™ XPS safety relays.

Reset	Contacts	Pilot Light	Reference
Standard push button	N.O. + N.C.	No	**XY2CH13150H7**
	1 N.O. + 2 N.C.	No	**XY2CH13190H7**
Booted push button *(1)*	N.O. + N.C.	No	**XY2CH13250H7**
	1 N.O. + 2 N.C.	No	**XY2CH13290H7**
Mushroom head push button	N.O. + N.C.	No	**XY2CH13350H7**
	1 N.O. +2 N.C.	No	**XY2CH13390H7**
Key operated emergency stop (uses Ronis Key No. 421)	N.O. + N.C.	No	**XY2CH13450H7**

Normal Stop

Normal stop *(3)* (momentary action, no reset, no positive opening contacts) *(2)*
Available only with snap action contacts. Not for use in safety related circuits.

Reset	Contacts	Pilot Light	Reference
No Reset Required	N.O. + N.C.	No	**XY2CH33010H7**

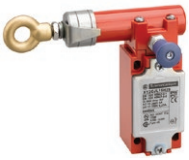
(1) Booted push button recommended for outdoor applications where icy conditions are likely.
(2) Positive opening N.C. contacts meet the IEC and EN requirements for positive opening contacts according to IEC/EN 60947-5-1, and meet NEMA ICS-5, part 6 (direct opening action).
(3) Normal stop devices are not UL/CSA.

Options for XY2CH

Description	Designator
Corrosion resistant (only available on devices with booted push button on Emergency Stop devices and all Normal Stop devices). Not available on key operated emergency stop reset or mushroom-head reset versions. The enclosure color is olive-blue instead of red.	Provides a silicone boot and special finish: 1. Add suffix TK to the reference 2. Change the seventh character to 4 Example: XY2CH13250H7 changes to XY2CH14250H7TK
Silicone bellows	- Change the 7th digit to 4 Ex: XY2CH13150H7 changes to XY2CH14150H7
N.C. + N.C. contact	- Change the 9th digit to 7 (for emergency stop only) Ex: XY2CH13150H7 changes to XY2CH13170H7
Pilot light (not UL/CSA) Bulb is included, replacement bulbs available on page 6/12	- For 24 V, change the 10th digit to 3 - For 48 V, change the 10th digit to 4 - For 120 V, change the 10th digit to 5 - For 230 V, change the 10th digit to 7 Ex: XY2CH13150H7 changes to XY2CH13153H7

XY2CJS19H7

XY2CJR19H7



XY2CJL19H7

XY2CJ Cable Pull for up to 98 ft (30 m) cable length

Cable and accessories must be selected and ordered separately from pages 6/12 and 6/14.

Emergency Stop

Emergency Stop (Latching contact—reset by push button—positive opening contacts) *(2)*
Available only with slow break contacts.

The N.O. contacts close after the N.C. contacts open. They do not change state simultaneously.

*Only the N.C. contacts should be used in the safety control circuit. The N.O. contacts are provided solely for signaling—**NOT** for safety functions.*

In category 3 or 4 safety architectures, to conform with ISO 13850 and the European Union Machinery Directive, safety circuits must use emergency stop devices with 2 N.C. contacts. Using devices with 1 N.O. and 1 N.C. contact will not allow the system to meet category 3 or 4 as it would not meet the requirements for redundancy. Cable pull switches with 1 N.O. and 1 N.C. contact would be suitable for Category 1 or 2 safety architectures. XY2 cable pull switches are ideal choices for use with Preventa™ XPS safety relays.

Type	Cable Length (max.)	Contacts	Reference
Straight	65 ft. (20 m)	2 N.C. + 1 N.O.	**XY2CJS19H7**
Right cable mount	98 ft. (30 m)	2 N.C. + 1 N.O.	**XY2CJR19H7**
Left cable mount	98 ft. (30 m)	2 N.C. + 1 N.O.	**XY2CJL19H7**

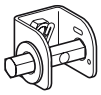
The devices listed above are threaded for 1/2"-14 NPT, and are available with metric conduit:
- *To order devices tapped for 13 mm cable connector, conforming to NFC 68-300 (DIN Pg 13.5), remove the H7 at the end of the part number. For example: XY2CJS19H7 changes to XY2CJS19.*
- *To order devices tapped for M20 x 1.5 for ISO threaded cable entry, change H7 to H29 at the end of the part number. For example: XY2CJS19H7 changes to XY2CJS19H29.*

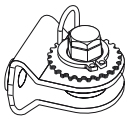
The XY2CJ devices are not available with pilot lights.

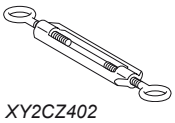
Enclosure materials:
***XY2CJS**: polyamide head, Zamak red RAL 3000 body, treated steel cover.*
***XY2CJR and XY2CJL**: Zamak red RAL 3000 head and body, treated steel cover*

6

Safety dialog solutions
Cable pull switches, XY2
Accessories and spare parts


XY2CZ203


XY2CZ210

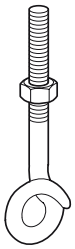

XY2CZ402

XY2CZ503

XY2CZ524

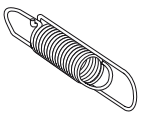
XY2CZ601

XY2CZ602


XY2CZ705

XY2CZ708

XY2CZ701


XY2CZ702

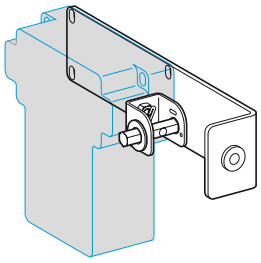
Separate components

Description	For use with	Diameter in. (mm)	Length ft (m)	Reference	Weight lb (kg)
Galvanized cables with red sheath	XY2CH, XY2CJ and XY2CE	0.13 (3.2)	34.4 (10.5)	**XY2CZ301**	0.617 (0.280)
			50.9 (15.5)	**XY2CZ3015**	0.904 (0.410)
			60.7 (18.5)	**XY2CZ3018**	1.080 (0.490)
			83.7 (25.5)	**XY2CZ302**	1.521 (0.690)
			100.1 (30.5)	**XY2CZ303**	1.829 (0.830)
			165.7 (50.5)	**XY2CZ305**	2.300 (1.360)
			329.7 (100.5)	**XY2CZ310**	5.952 (2.700)
	XY2CE	0.20 (5)	50.9 (15.5)	**XY2CZ1015**	1.874 (0.850)
			83.7 (25.5)	**XY2CZ102**	3.086 (1.400)
			165.7 (50.5)	**XY2CZ105**	6.062 (2.750)
			231.3 (70.5)	**XY2CZ107**	8.532 (3.870)
			329.7 (100.5)	**XY2CZ110**	12.125 (5.500)

Description	Type	For use with	Sold in lots of	Unit reference	Weight lb (kg)
Tensioner (included in mounting kit XY2CZ917)	–	XY2CE	1	**XY2CZ203**	0.198 (0.090)
Turnbuckles	M6 x 60 + locknut	All models *(1)*	1	**XY2CZ402**	0.132 (0.060)
	M8 x 70 + locknut	All models *(1)*	1	**XY2CZ404**	0.220 (0.100)
Tensioner for XY2CJ	–	XY2CJ	1	**XY2CZ210**	0.110 (0.510)
Cable grips	Single	Cable Ø3–5 mm	10	**XY2CZ503**	0.015 (0.007)
	Double	Cable Ø3–5 mm	10	**XY2CZ513**	0.035 (0.016)
	Clamp	Cable Ø3.2 mm	10	**XY2CZ523**	0.110 (0.050)
		Cable Ø5 mm	10	**XY2CZ524**	0.176 (0.080)
Cable supports	Fixed	All models	10	**XY2CZ601**	0.066 (0.030)
	Swiveling	All models	1	**XY2CZ602**	0.287 (0.130)
	Pulley support	All models	1	**XY2CZ705**	0.132 (0.060)
Pulley	Cable Ø5 mm max.	All models	1	**XY2CZ708**	0.004 (0.002)
Cable end protectors	–	Cable Ø3.2 mm	10	**XY2CZ701**	0.004 (0.002)
		Cable Ø5 mm	10	**XY2CZ704**	0.022 (0.010)
End springs *(2)*	–	XY2CH and XY2CJ	1	**XY2CZ703**	0.077 (0.035)
		XY2CE	1	**XY2CZ702**	0.176 (0.080)
Padlock attachment (Yellow) - Contains padlock attachment and two tamper proof cover mounting screws with special key. The padlock attachment cannot be used as a lock-out tag-out means.		XY2CH	1	**XY2CZ916**	0.202 (0.100)

(1) Emergency stop cable pull switches XY2CH13●●● and XY2CH14●●● incorporate a cable tensioner as standard. There is no need to order a turnbuckle.
(2) The use of an end spring is strongly recommended, especially when using longer lengths of cable.

Note: For the maximum cable length, we recommend using
• 3.2 mm diameter galvanized cables for the XY2CH range • 5 mm diameter galvanized cables for the XY2CE range



XY2CZ917

Mounting kits

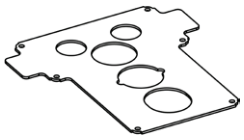
Contents	For use with	Cable diameter in. (mm)	Length of cable ft (m)	Reference	Weight lb (kg)
1 tensioner + 1 bracket	XY2CE	–	–	**XY2CZ917**	1.349 (0.612)
1 spring tensioner + 1 notched washer + 1 circlip	XY2CH	–	–	**XY2CZ918**	0.022 (0.010)
1 galvanized cable + 1 cable grip **XY2CZ523** + 1 end spring **XY2CZ703** *(1)*	XY2CH and XY2CJ	0.13 (3.2)	32.8 (10)	**XY2CZ9310**	0.915 (0.415)
			49.2 (15)	**XY2CZ9315**	1.179 (0.535)
			60.7 (18.5)	**XY2CZ9318**	1.280 (0.580)
1 galvanized cable + 4 cable grips **XY2CZ523** + 1 turnbuckle **XY2CZ404** + 1 cable support **XY2CZ601** + 3 cable end protectors **XY2CZ701** + 1 end spring **XY2CZ702** *(1)*	XY2CE, XY2CH, and XY2CJ	0.13 (3.2)	82.0 (25)	**XY2CZ9325**	2.756 (1.250)
			98.4 (30)	**XY2CZ9330**	2.866 (1.300)
	XY2CE	0.13 (3.2)	164.0 (50)	**XY2CZ9350**	4.365 (1.980)
1 galvanized cable + 4 cable grips **XY2CZ524** + 1 turnbuckle **XY2CZ404**, + 1 cable support **XY2CZ601** + 3 cable end protectors **XY2CZ704** + 1 end spring **XY2CZ702** *(1)*	XY2CE	0.20 (5)	82.0 (25)	**XY2CZ9525**	4.200 (1.905)
			164.0 (50)	**XY2CZ9550**	7.231 (3.280)
			230 (70)	**XY2CZ9570**	8.180 (4.000)

(1) The use of an end spring is strongly recommended, especially when using longer lengths of cable.

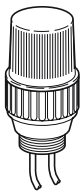
Note: For the maximum cable length, we recommend using
- *3.2 mm diameter galvanized cables for the XY2CH range*
- *5 mm diameter galvanized cables for the XY2CE range*

6

Safety dialog solutions
Cable pull switches, XY2
Accessories and spare parts



XY2CZ805



XY2CZ●●●●

Replacement parts

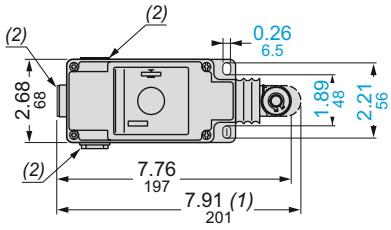
Description	For use with	Type	Reference	Weight lb (kg)
Reset push button (blue), spring return	XY2CH	Flush with “R” marked on push	**ZB5AA639**	0.066 (0.030)
		Booted	**ZB5APA6**	0.055 (0.025)
		Mushroom head, Ø30	**ZB5AC64**	0.099 (0.045)
	XY2CE	Flush with “R” marked on push	**ZB5AA639**	0.040 (0.018)
		Booted	**ZB5AP6S**	0.046 (0.021)
		Mushroom head, Ø30	**ZB5AC64**	0.060 (0.027)
Key switch	XY2CH and XY2CE	With key n° 421	**ZB5AG612R26**	0.141 (0.064)
		With key n° 455	**ZB5AG6R26**	0.141 (0.064)
Keys for reset button	All types of Emergency stop	N° 421	**ZBG421E**	0.013 (0.006)
		N° 455	**ZBG455**	0.013 (0.006)
Pilot light head assembly	XY2CE	Orange	**XY2CZ800**	0.033 (0.015)
		Red	**XY2CZ801**	0.033 (0.015)
Pilot light lens	XY2CE	Orange	**ZBV0153**	0.007 (0.003)
		Red	**ZBV0143**	0.007 (0.003)
Set of 5 cover gaskets	XY2CE	–	**XY2CZ805**	0.269 (0.122)
Mounting nut, plastic, gray	XY2CH and XY2CE	–	**ZB5AZ901**	0.004 (0.002)
Mounting nut tightening key, plastic, gray	XY2CH and XY2CE For mounting nut ZB5AZ901		**ZB5AZ905**	0.035 (0.016)

Description	For use with	Voltage ~/⎓	Sold in lots of	Unit reference	Weight lb (kg)
Pilot lights With bulb DL1AA●●● included	XY2CH Color: orange	24 V	1	**XY2CZ0024** *(1)*	0.077 (0.035)
		48 V	1	**XY2CZ0048** *(1)*	0.077 (0.035)
		130 V	1	**XY2CZ0130** *(1)*	0.077 (0.035)
		230 V	1	**XY2CZ0230** *(1)*	0.077 (0.035)
Supply on LED	XY2CE Color: red	24 V	1	**ZALVB4**	0.033 (0.015)
		130 V	1	**ZALVG4**	0.033 (0.015)
		230–240 V	1	**ZALVM4**	0.033 (0.015)
	XY2CE Color: orange	24 V	1	**ZALVB5**	0.033 (0.015)
		130 V	1	**ZALVG5**	0.033 (0.015)
		230–240 V	1	**ZALVM5**	0.033 (0.015)
Incandescent bulbs, screw base fitting	XY2CH	24 V, 6 W	10	**DL1AA024**	0.009 (0.004)
		130 V, 6 W	10	**DL1AA127**	0.009 (0.004)
		230 V, 6 W	10	**DL1AA220**	0.009 (0.004)
Packet of 5 collars	For mounting DL1AA127 and DL1AA220 bulbs in pilot lights XY2CZ●●●	–	5	**XY2CZ908**	0.040 (0.018)

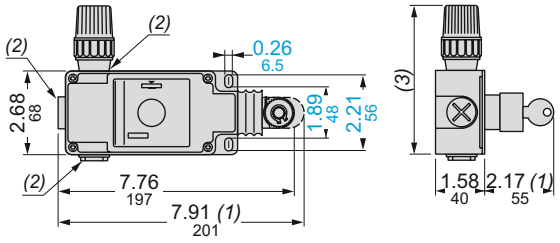
(1) Only for use as replacement parts for switches prefitted with pilot lights. CCC and UL-CSA approvals no longer apply if an XY2CZ●●● pilot light is mounted on XY2CH Emergency stops.

XY2CH

Without pilot light



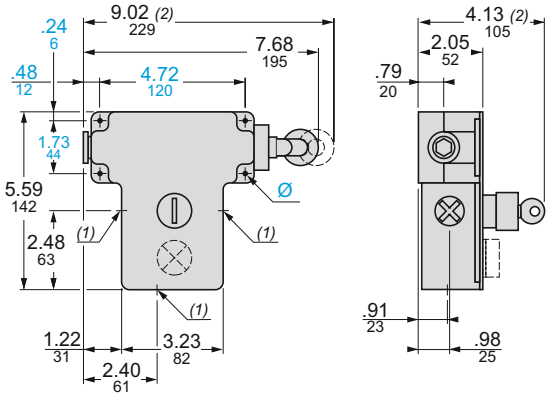
With pilot light (not CSA/UL approved)



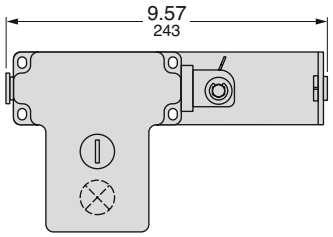
(1) Maximum extension.
(2) H7 version tapped for 1/2"-14 NPT conduit entry. For ISO M20, replace H7 with H29. For Pg 13.5, remove H7 from the part number.
(3) 4.76 in. (121 mm): 24 V and 48 V versions. 5.16 in. (131 mm): 130 V and 230 V versions.

XY2CE

XY2CE●A●●●, XY2CE●C●●●



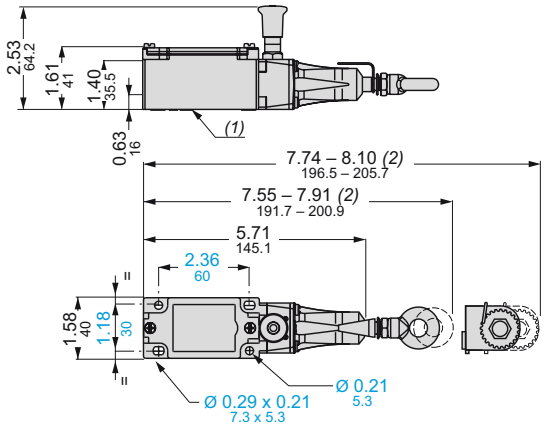
XY2CE●A●●● + XY2CZ917 (tensioner + bracket)



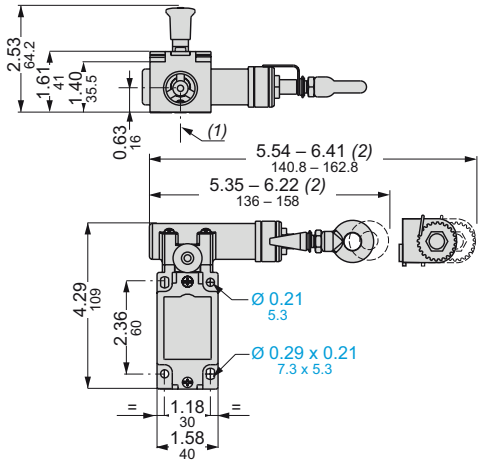
(1) H7 version comes with three plain holes and one 1/2"-14 NPT conduit adapter. For plain holes for use with M20 cable gland, replace H7 with H29. For plain holes for use with Pg 13.5 cable gland, remove H7 from the part number.
(2) Maximum extension.
Ø: 4 elongated holes Ø0.24 in. (6 mm).

XY2CJ

XY2CJS●●



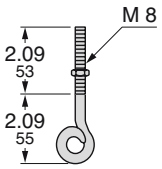
XY2CJR●● (with anchor point on RH side)



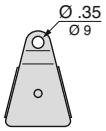
(1) H7 version tapped for 1/2" NPT. For ISO M20, replace the H7 with H29. For Pg 13.5 cable gland, remove H7 from the part number.
(2) Maximum extension.

Accessories

XY2CZ705



XY2CZ708



Dual Dimensions: Inches / Millimeters

Safety dialog solutions
Cable pull switches, XY2
Operating principles and adjustment

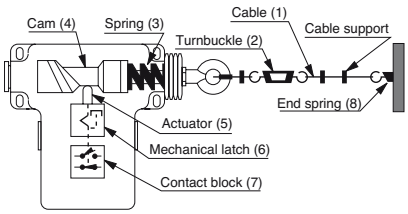
Note: An end spring (8) is recommended at the far end of the cable (1) allowing the cable to be moved right or left, especially for cables 80 ft or longer. The use of an end spring is strongly advised when using the cable pull devices on continuous duty mechanical handling equipment and systems.

XY2CE Operating Principles

Normal Position

The cable *(1)* is tightened by the turnbuckle *(2)* and held in a normal position by the spring *(3)*. As the turnbuckle is turned, the cam *(4)* moves from left to right, and allows the actuator *(5)* to be positioned according to the particulars of the desired setting (see page 14).

The mechanical latch is unlocked when the N.C. contact is in the locked position.

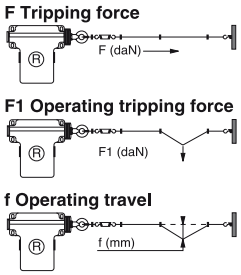


Tripping the Device

Operating or breaking the cable results in the cam shifting position.

The active part of the cam presses down the actuator *(5)*, simultaneously causing the N.C. contact *(7)* to open and the mechanical latch *(6)* to maintain it in its open position. Cable supports ensure the transmission of the cable tension into the axis of the switch cam.

Definitions



F–Tripping force: The value of the **tension** (F) **along the cable** which trips the switch.

F1–Operating tripping force: The value of the **traction force** (F1) applied by the operation **perpendicular to the cable** which trips the switch.

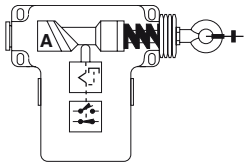
f–Operating travel: The distance (f) traveled by the operator (that is, the operator's hand), between the normal position and the tripping point.

General Purpose Adjustment Method

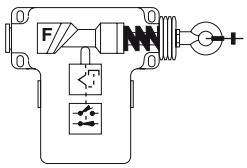
XY2CE—Cable Traction Force

Adjust either directly when mounting the cable or using a turnbuckle positioned near the switch but **after the first cable support.** For standard adjustment the **tension indicator should be in the middle of the range.**

Operating Travel



Position A



Position F

The tripping point is adjusted by the rotating cam marked by letters A to F. Position A corresponds to the minimum travel. Position F corresponds to the maximum travel.

NOTE: The switches are delivered from the factory in position A.

XY2CH

XY2CH has two viewing windows to aid in adjusting cable tension and resetting the switch. When the cable tension indicator is in mid-range in its viewing window, the reset button should be pushed to reset the device. When the device is reset, a green indicator is visible in the contact viewing window. When the switch is tripped, a yellow indicator is visible in the contact viewing window and the cable tension indicator is at the edge of its viewing window.

Standards

Preventa™ cable pull switches XY2CH, XY2CJ and XY2CE meet all the requirements of the harmonized European standard **EN/ISO 13850**, relating to Emergency stop devices. All the cable pull switches are CE marked and come with an EC declaration of conformity.

Safety dialog solutions
Cable pull switches, XY2
Operating principles and adjustment

Adjustment Values (with end spring)

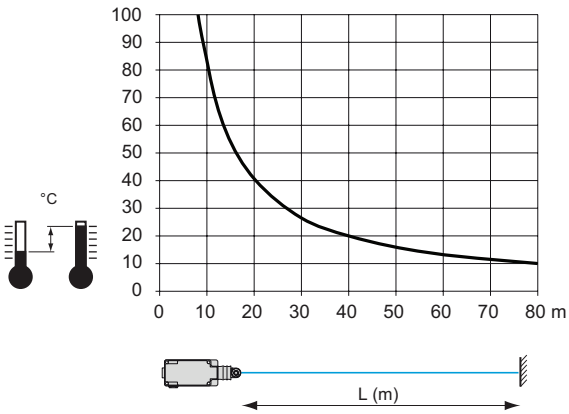
For Preventa™ XY2CE Emergency stop cable pull switches: the adjustment values depend on the positions of the cam located inside the switch. Adjustment is made by rotating the cam after the switch has been installed.

Each notched position of the cam is referenced by the letters A to F, and the selected letter is visible through a viewing port.

The use of an end spring is strongly advised. You can see the references in the table below regarding each type:

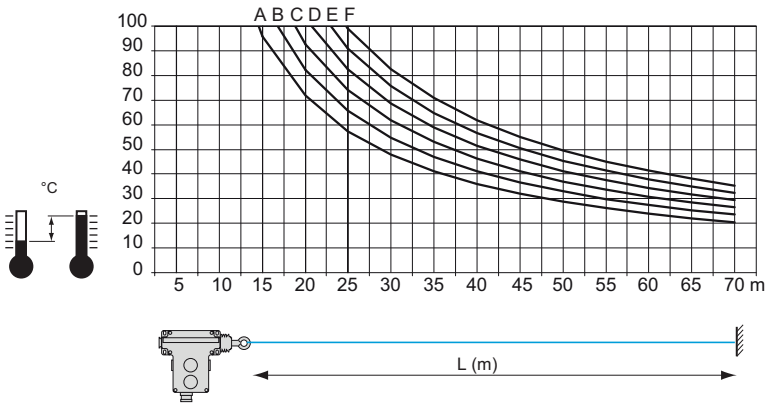
Type	Cam position	Maximum cable length: ft. (m)	End spring
XY2CJS	–	65.6 (20)	XY2CZ703
XY2CJR and XY2CJL	–	98.4 (30)	XY2CZ703
XY2CH	–	98.4 (30)	XY2CZ703
XY2CE	A, B, C, D, E, F	229.7 (70)	XY2CZ702

XY2CH



With the graph above, if we consider an ambient temperature variation of 77 °F (25 °C), for example from 32 °F to 77 °F (0 °C to + 25 °C), the table gives us a maximum cable length of 98.4 ft. (30 m).

XY2CE

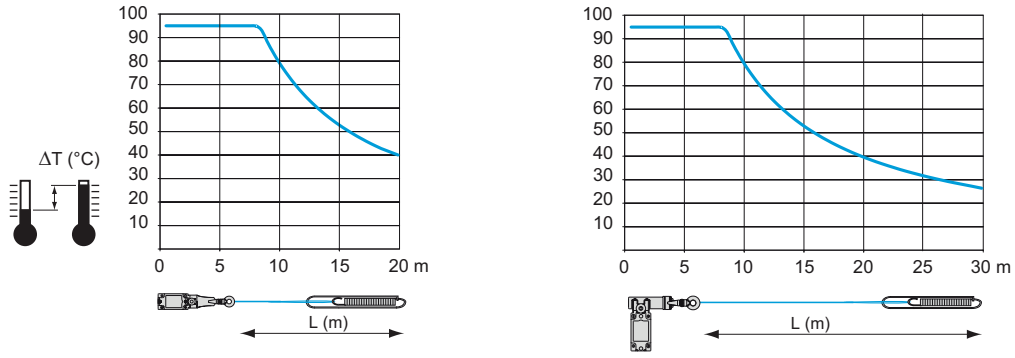


With the graph above, if we consider an ambient temperature variation of 95 °F (35° C), for example from -14 °F to 77° F (-10 °C to +25 °C), the table gives us a maximum cable length of

- 131.2 ft. (40 m) with cam A adjustments
- 229.7 ft. (70 m) with cam F adjustments

Cable specifications: length = 229.7 ft (70 m); maximum elongation of cable must be no more than 0.00834 in./ft (0.7 mm/m), equivalent to a maximum co-efficient of expansion of 0.07%, based on a 108 °F (60 °C) temperature variance.

XY2CJ

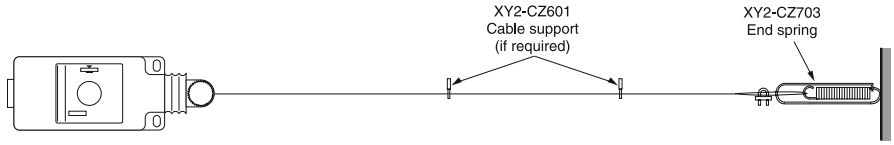


With the graphs above, if we consider an ambient temperature variation of 77 °F (25 °C), for example from 32 °F to 77 °F (0 °C to + 25 °C), the table gives us a maximum cable length of 65.6 ft. (20 m) for XY2CJS and 98.4 ft. (30 m) for XY2CJR and XY2CJL.

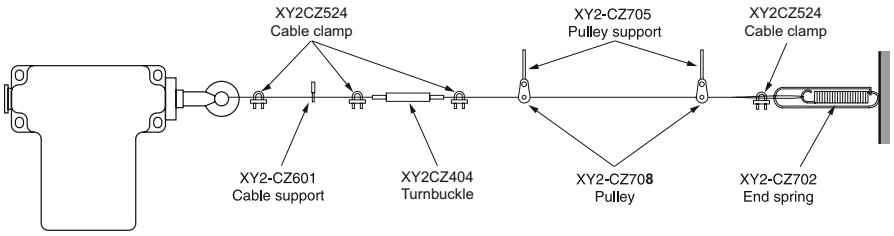
Safety dialog solutions
Cable pull switches, XY2

Setup

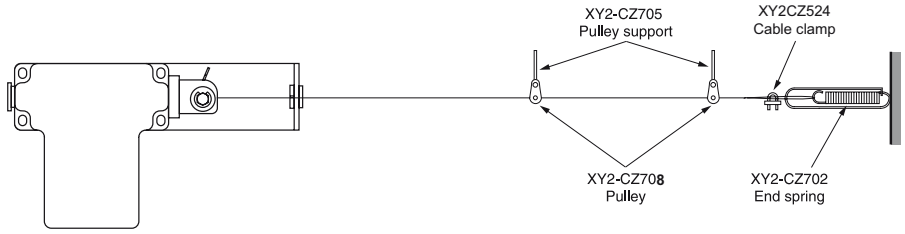
XY2CH



XY2CE



XY2CE + XY2CZ917



Recommended distance between cable supports (XY2CZ601 or XY2CZ705) is 16.4 ft. (5 m).

Application and Installation Recommendations

The XY2 cable pull switches are based on the taut cable principle, which means the cable must be tight and have a tension applied to allow the switch to be reset and work properly. This is different from slack cable switches where the cable is normally slack and is only tight when pulled. The benefit of the taut cable principle is that the operator knows that if the cable is taut, the machine can be shut down. If slack cable switches are used, the operator is not assured the cable is affixed properly at the switch and may be unsure that when the cable is pulled the machine will stop.

The distance an operator must pull the cable on a slack cable switch depends on the operator's distance from the switch and the amount of slack in the cable. An operator close to the switch needs to take up much less slack in the cable before tripping the switch than an operator at the far end of the installation. With a taut cable switch, the operating force and distance the cable needs to be pulled is the same throughout the installation. The taut cable style of device is more reliable in an emergency situation.

Effects of Friction

To operate properly, the cable must be tight with tension on it, and the cable must have a minimum of friction. Care must be taken in the machine design to ensure that the system avoids ANY friction between the cable on the machine parts or components, and moving parts on the machine or material handling system.

- The cable must be free of motion on its supports. It should not lay against the supports nor rub on them except when the cable is pulled by an operator.
- The cable must not have weights attached nor applied to it as a standard part of the application.
- The application must be designed to reduce friction as low as possible. This is accomplished by using reduced friction pulleys and guides.
- The cables should never be run through conduit or tubing.

Cornering

The operating cable should be installed so that the cable run is straight, but this cable can also be routed around corners using pulleys. If the cable deviates from a straight line, pulleys **must** be used. The effects of friction could be more noticeable if the cable is not installed correctly and with a minimum of friction.

- **Do not** allow the cable to turn corners or change direction using only cable supports.
- A pulley **must** be used when routing cable around corners, regardless of the angle. Use a pulley whenever direction is changed even slightly. The pulley must have freedom of movement on its mounting to maintain the self-alignment of the cable.
- If a fixed pulley is used, a cable support should be positioned within 4 in. (10 cm) of both sides of the pulley.
- The total sum of the angles for the cable bends or turns should be no more than 180°.
  - qty of two 90-degree angle turns is acceptable.
  - qty of three 60-degree angle turns is acceptable.
  - qty of three 90-degree angle turns is not acceptable.

Temperature

Note:
*Routing the cable through both hot and cold production areas with the same cable could require more frequent adjustment and **may** not allow proper adjustment throughout the production cycle.*

Example:
A cable pull switch on a production line where the product is cooked and then flash frozen in a short distance. Some sections of the cable could be very hot, and other sections very cold, and other sections at room temperature. Temperature variations in any of these areas could affect the overall adjustment of the cable. Where such variations occur, we recommend the use of multiple cable pulls.

Temperature variations in the area where the cable pull switch is installed can affect the adjustment of the switch. The cable expands (becomes longer) when temperature increases, and contracts (shrinks) when temperature decreases. Wide temperature variations should be avoided where possible. If temperature variations are significant, the adjustment of the cable and switch must be checked at regular intervals. If the switch is not adjusted properly during installation, temperature variations could affect cable length and trip the switch without operator intervention. If this occurs, the switch needs to be readjusted.

Temperature variances can come from any of the following:

- Seasonal temperature changes in non-climate controlled areas.
- Freezers and refrigeration equipment which are cold during production but are brought to room temperature for cleaning.
- Equipment that is used to heat treat or cook material during production but is brought to room temperature for cleaning.
- Equipment which is at room temperature (or lower temperatures) for production but is cleaned with hot water or steam.
- Equipment placed near windows and large glass areas: sunlight could cause an expansion of the cable where an overcast day may cause a contraction of the cable.

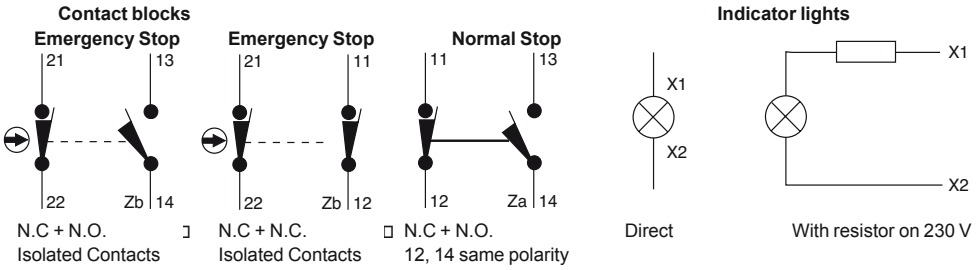
General Guidelines

- Be sure the cable remains accessible and visible to the operators for its entire length.
- The switch, cable supports, and other hardware must be rigidly mounted on the machine or application. If these mountings are not secure and rigid, the tension on the cable could be changed and the switch will trip. Mounting points must not move when the cable is pulled.
- Supports are not to be placed on moveable parts of the application.
- Cable lengths used must not exceed maximum lengths listed for the particular cable pull switch.
- The turnbuckle allows for the proper adjustment of the switch, and must be mounted close to the switch to ease and simplify adjustment of the system.
- The turnbuckle locknuts should be tightened securely.
- The first cable support should be within 4 in. (10 cm) of the switch.
- The sheath around the end of the cable must be removed when inserted into the cable clamps to assure metal-to-metal contact. Failure to remove sheathing could cause the cable to slip, thus reducing cable tension, and switches may not perform to published specifications.

Safety dialog solutions
Cable pull switches, XY2

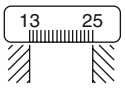
Wiring Diagrams

For the versions with two contact blocks, the left one is identified as A, and the right one is identified as B. The markings are permanently inscribed on the mounting fixture above the contact blocks. Ex. B 21-22 is the normally closed contact of the right contact block.



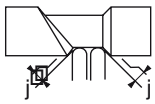
Note: When the emergency stop switch operates in conjunction with solid-state controls (for example, PLCs), the supply for the safety functions must be disconnected independently of the PLC.

Operating instructions



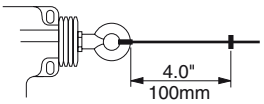
Indicator Displays

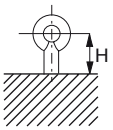
The indicators define the maximum cable tension adjustment zone. The cable tension is adjusted via the turnbuckle. **The device will not function outside this zone.**
For general purpose adjustment, the indicator should be in the middle of the window.



Adjustment Limits for Effective Operating

In a normal position, adjustments must be made so that there is play (J) between the actuator and the conical parts of the cam.





Cable Supports

It is recommended that you space supports along the entire length of the cable at 6–16 ft (2–5 m) intervals. **Cable supports ensure the transmission of the cable tension in the axis of the switch cam. The first one after the switch is mandatory for correct operation** (4.0 in., 100 mm). Also, if pulleys are used to change the direction of the cable, **cable supports at 4 in. (100 mm) before and after the pulley are mandatory**.

Use supports with 0.8 in. (20 mm) maximum height H with respect to the product mounting surface.

Cable Specifications

Recommended minimum cable diameter is 1/8 in. (3.2 mm). However, any galvanized steel cable (aircraft type) less than 9/32 in. (7 mm) diameter can be used, provided it meets the following criteria: Maximum elongation of cable to be no more than 0.00834 in. per ft. (0.7 mm/m), which is equivalent to a maximum co-efficient of expansion of 0.07%, based on a 140 °F (60 °C) temperature variance.

Temperature variations likely to be encountered in the protected area will cause the cable to expand or contract. For the maximum cable length, considering ambient temperature variations, we recommend using:

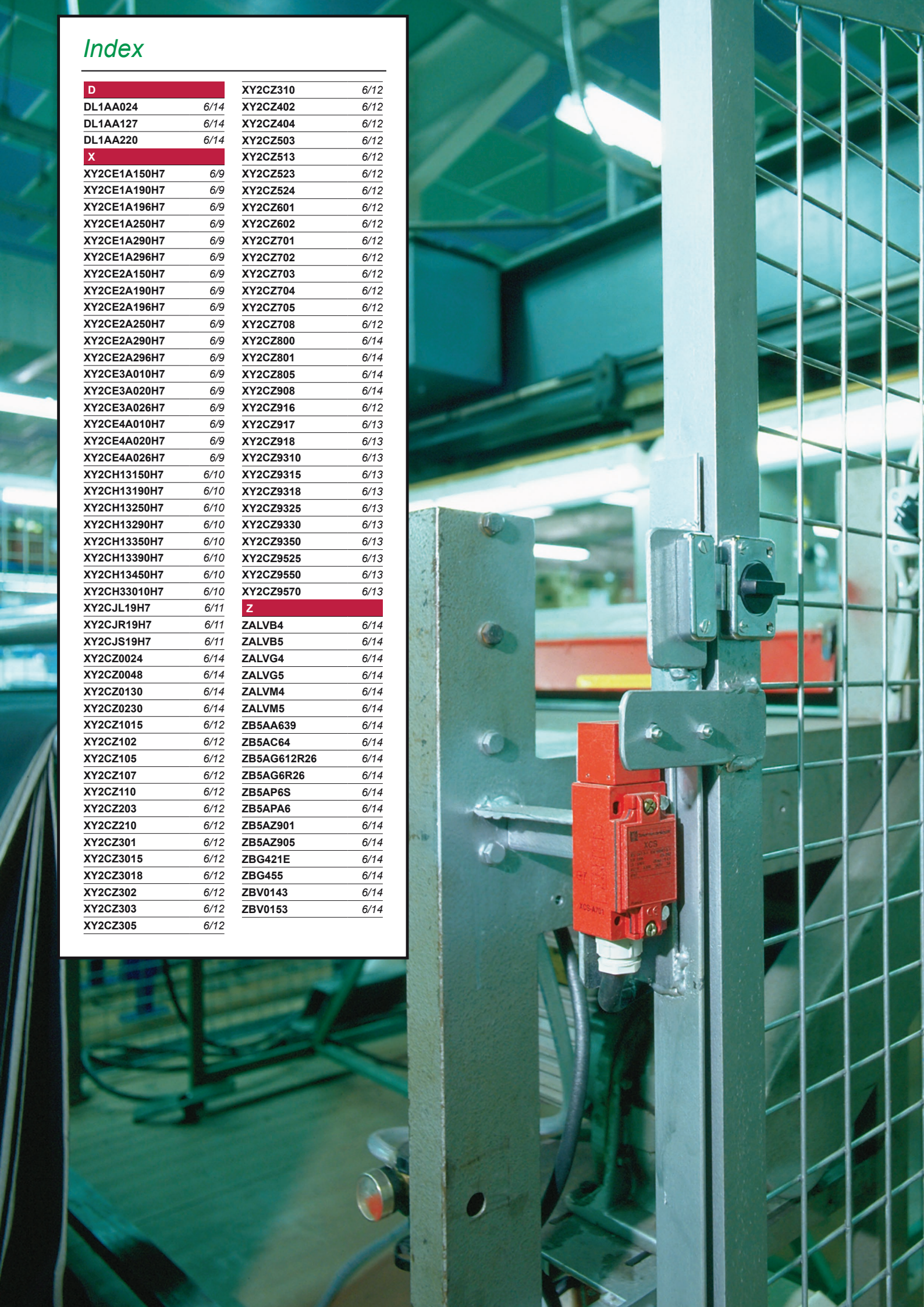
- 3.2 mm diameter galvanized cables for the XY2CH and XY2CJ ranges
- 5 mm diameter galvanized cables for the XY2CE range

The XY2C device series are for use with tensioned stranded steel cables only. The use of hemp or polymer ropes in place of multi-stranded steel cables is not permissable due to the excessive elasticity of the ropes.

Note:
These devices are designed for use in tensioned cable pull applications. They are not suitable for use as slack rope pull devices.

Index

D	
DL1AA024	6/14
DL1AA127	6/14
DL1AA220	6/14
X	
XY2CE1A150H7	6/9
XY2CE1A190H7	6/9
XY2CE1A196H7	6/9
XY2CE1A250H7	6/9
XY2CE1A290H7	6/9
XY2CE1A296H7	6/9
XY2CE2A150H7	6/9
XY2CE2A190H7	6/9
XY2CE2A196H7	6/9
XY2CE2A250H7	6/9
XY2CE2A290H7	6/9
XY2CE2A296H7	6/9
XY2CE3A010H7	6/9
XY2CE3A020H7	6/9
XY2CE3A026H7	6/9
XY2CE4A010H7	6/9
XY2CE4A020H7	6/9
XY2CE4A026H7	6/9
XY2CH13150H7	6/10
XY2CH13190H7	6/10
XY2CH13250H7	6/10
XY2CH13290H7	6/10
XY2CH13350H7	6/10
XY2CH13390H7	6/10
XY2CH13450H7	6/10
XY2CH33010H7	6/10
XY2CJL19H7	6/11
XY2CJR19H7	6/11
XY2CJS19H7	6/11
XY2CZ0024	6/14
XY2CZ0048	6/14
XY2CZ0130	6/14
XY2CZ0230	6/14
XY2CZ1015	6/12
XY2CZ102	6/12
XY2CZ105	6/12
XY2CZ107	6/12
XY2CZ110	6/12
XY2CZ203	6/12
XY2CZ210	6/12
XY2CZ301	6/12
XY2CZ3015	6/12
XY2CZ3018	6/12
XY2CZ302	6/12
XY2CZ303	6/12
XY2CZ305	6/12
XY2CZ310	6/12
XY2CZ402	6/12
XY2CZ404	6/12
XY2CZ503	6/12
XY2CZ513	6/12
XY2CZ523	6/12
XY2CZ524	6/12
XY2CZ601	6/12
XY2CZ602	6/12
XY2CZ701	6/12
XY2CZ702	6/12
XY2CZ703	6/12
XY2CZ704	6/12
XY2CZ705	6/12
XY2CZ708	6/12
XY2CZ800	6/14
XY2CZ801	6/14
XY2CZ805	6/14
XY2CZ908	6/14
XY2CZ916	6/12
XY2CZ917	6/13
XY2CZ918	6/13
XY2CZ9310	6/13
XY2CZ9315	6/13
XY2CZ9318	6/13
XY2CZ9325	6/13
XY2CZ9330	6/13
XY2CZ9350	6/13
XY2CZ9525	6/13
XY2CZ9550	6/13
XY2CZ9570	6/13
Z	
ZALVB4	6/14
ZALVB5	6/14
ZALVG4	6/14
ZALVG5	6/14
ZALVM4	6/14
ZALVM5	6/14
ZB5AA639	6/14
ZB5AC64	6/14
ZB5AG612R26	6/14
ZB5AG6R26	6/14
ZB5AP6S	6/14
ZB5APA6	6/14
ZB5AZ901	6/14
ZB5AZ905	6/14
ZBG421E	6/14
ZBG455	6/14
ZBV0143	6/14
ZBV0153	6/14



Schneider Electric USA, Inc.
8001 Knightdale Blvd.
Knightdale, NC 27545

USA Customer Care Center
Tel: 888-778-2733

Schneider Electric Canada
5985 McLaughlin Rd.
Missassauga, Ontario, Canada L5R 1B8

Canada Customer Care Center
Tel: 800-565-6699

www.schneider-electric.com

© 2009–2013 Schneider Electric. All rights reserved. Schneider Electric, Advantys, AS-Interface, Harmony, Magelis, Modbus, Momentum, Phaseo, Premium, Preventa, Transparent Ready, and "Make the most of your energy" are trademarks owned by Schneider Electric Industries SAS or its affiliated companies. All other trademarks are property of their respective owners.

Design: Schneider Electric
Photos: Schneider Electric

MKTED208051EN-US Rev. 02, Chapter 6
4/2014