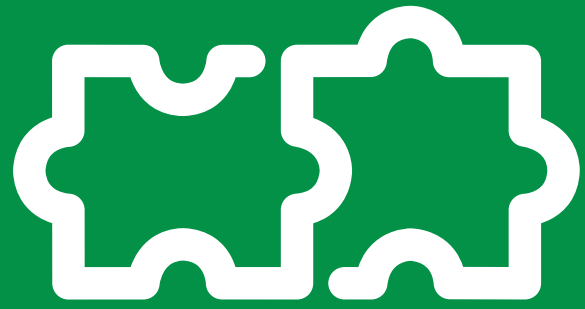


Machine Safety Guide



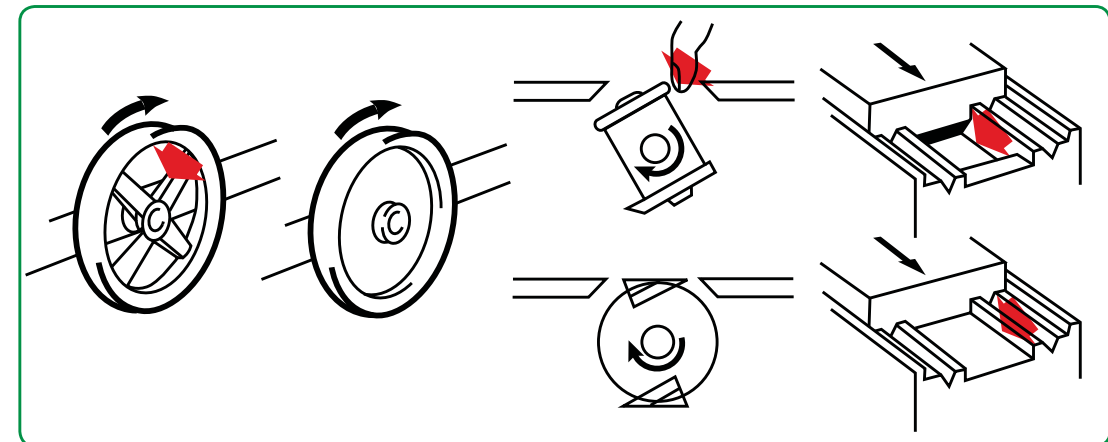
Safe design & safe-guarding



Inherently safe design measures (as per EN ISO 12100 sub clause 6.2)

- > Some risks can be avoided by simple measures; can the task that results in the risk be eliminated? Elimination can sometimes be achieved by automation of some tasks such as machine loading. Can the hazard be removed? For example, the use of a non-flammable solvent for cleaning tasks can remove the fire hazard associated with flammable solvents. This stage is known as **inherently safe design**, and is the only way of **reducing a risk to zero**.

Removing the drive from the end roller of a roller conveyor will reduce the possibility of someone being caught up by the roller. Replacing spoked pulleys with smooth discs can reduce shearing hazards. Avoidance of sharp edges, corners and protusions can help to avoid cuts and bruises. Increasing minimum gaps can help to avoid body parts getting crushed, reducing maximum gaps can eliminate the possibility of body parts entering. Reduced forces, speeds and pressures can reduce the risk of injury.



Removal of shear traps by inherently safe design measures Source: BS PD 5304

- > Take care to avoid substituting one hazard for another. For example air-powered tools avoid the hazards associated with electricity, but can introduce other hazards from the use of compressed air, such as injection of air into the body and compressor noise.



Standards and legislation express a distinct hierarchy for controls. The elimination of hazards or reduction of risks to a tolerable level, by inherently safe design measures is the first priority.

Safeguarding & complementary protective measures (as per EN ISO 12100 sub clause 6.3)

- Where inherently safe design is not practicable, the next step is **safeguarding**. This measure can include, for example, fixed guarding, interlocked guarding, presence sensing to prevent unexpected start-up, etc.

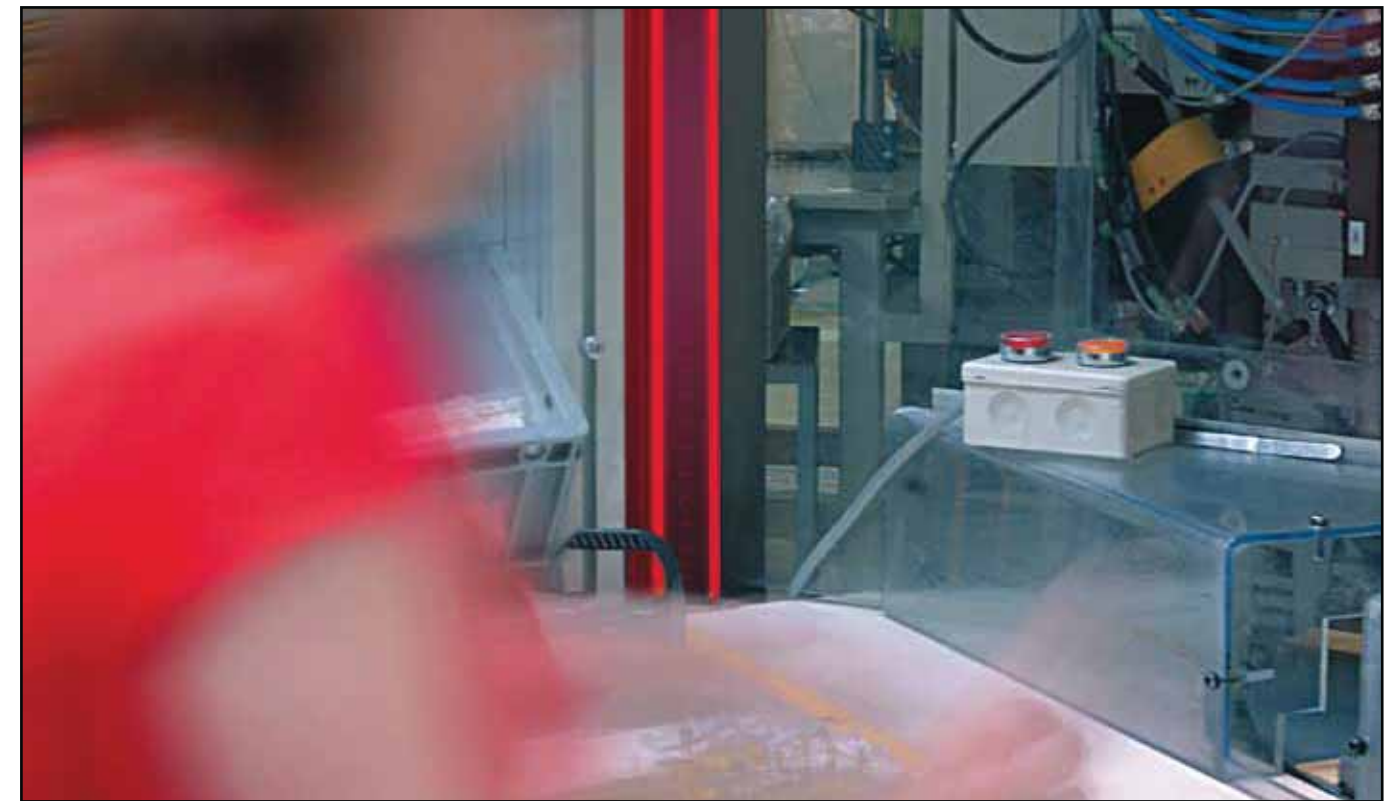
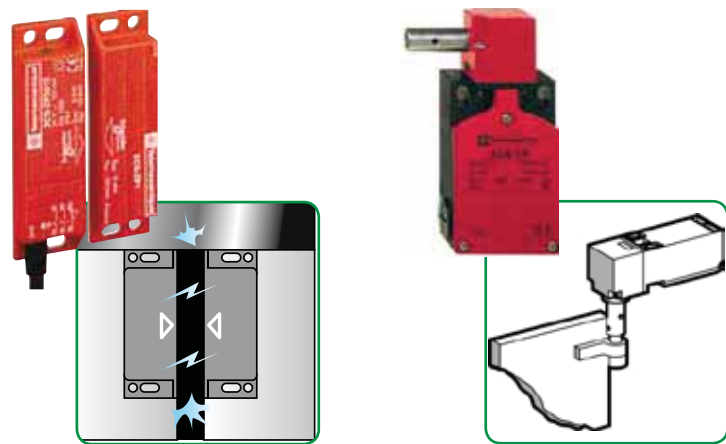
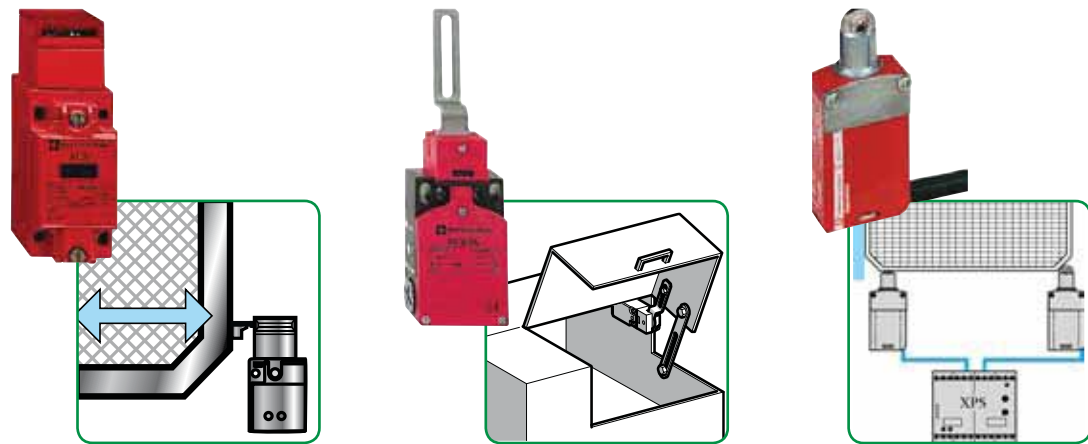
Safeguarding should prevent persons from coming into contact with hazards, or reduce hazards to a safe state, before a person can come into contact with them.

Guards themselves can be fixed to enclose or distance a hazard, or movable such that they are either self-closing, power-operated or interlocked.

Typical protective devices used as part of safeguarding systems include:

- Interlock switches to detect the position of movable guards for control interlocking, usually to permit tasks such as loading/unloading, cleaning, setting, adjustment etc.

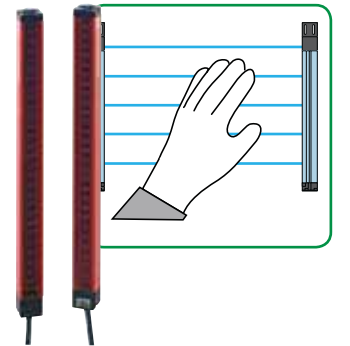
Protection of operators is provided by stopping the machine when the actuator is withdrawn from the head of the switch, when the lever or plunger is actuated, when the guard is opened or the guard hinge rotates through 5° – generally on machines with low inertia (i.e. quick stopping times)



Light curtains to detect approach to dangerous areas

- By finger, hand or body (upto 14mm, upto 30mm and above 30mm resolution)

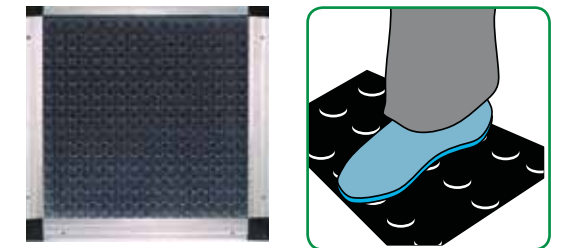
Light curtains are typically used in material handling, packaging, conveyor, warehousing and other applications. They are designed for the protection of persons operating or working in the vicinity of machinery, by the stopping of dangerous movement of parts as soon as one of the light beams is broken. They make it possible to protect personnel whilst allowing free access to machines. The absence of a door or guard reduces the time taken required for loading, inspection or adjustment operations as well as making access easier.



Safety mats to detect persons

- Approaching, standing in or climbing into the danger area

Safety foot mats are typically used in front of or around potentially dangerous machines or robots. They provide a protection zone between the machine operators and any dangerous movements. They are mainly designed to ensure the safety of personnel, and supplement safety products such as light curtains to enable free access for the loading or unloading of machines. They work by detecting persons stepping onto the mat and instigating the stopping of the dangerous movement.

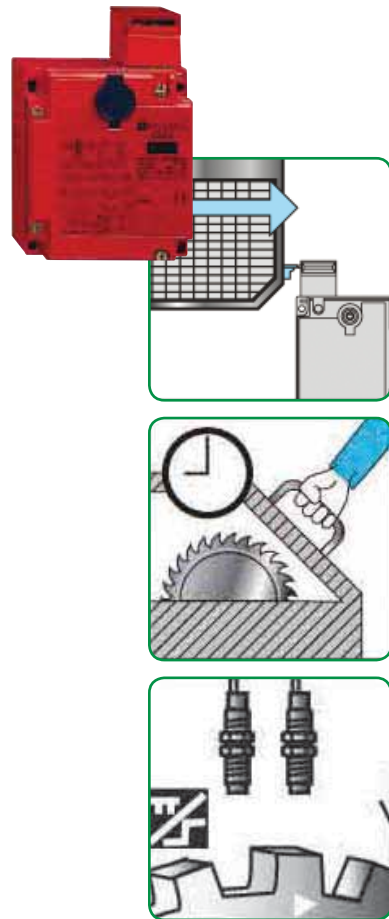


Solenoid interlocks to prevent opening of guards

➤ During dangerous phases of operation. Unlike non-solenoid interlocks, they are used on loads with high inertia i.e. where the stopping time is long and it is preferable to permit access only when the dangerous movement has stopped. These are often used with either a time delay circuit (where machine stopping time is defined and known) or actual detection of zero speed (where stopping times can vary) to permit access only when safe conditions are met.

Interlocking devices should be selected and installed with regard to minimising the possibility of defeat and failure, and the overall safeguard should not unnecessarily impede production tasks. Steps to achieve this include:

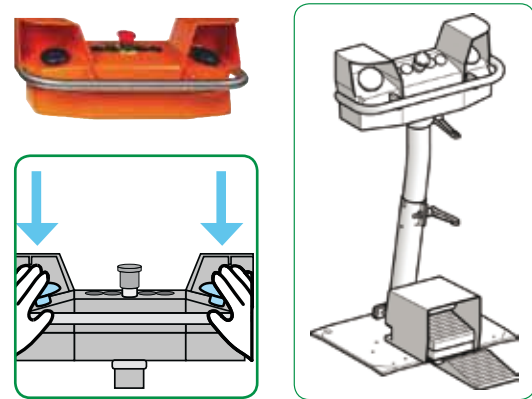
- devices fastened securely in a (fixed) place and requiring a tool to remove or adjust;
- coded devices or systems, e.g. mechanically, electrically, magnetically or optically;
- physical obstruction or shielding to prevent access to the interlocking device when the guard is open;
- the support for devices shall be sufficiently rigid to maintain correct operation



Two hand control stations and footswitches

➤ Used to ensure the operator is standing away from the danger area when causing dangerous movements (e.g. down stroke in press applications)

They provide protection primarily to the machine operator. Supplementary protection to other personnel can be provided through other measures, such as the positioning of light curtains.



Enabling switches to permit access under specific conditions of reduced risk

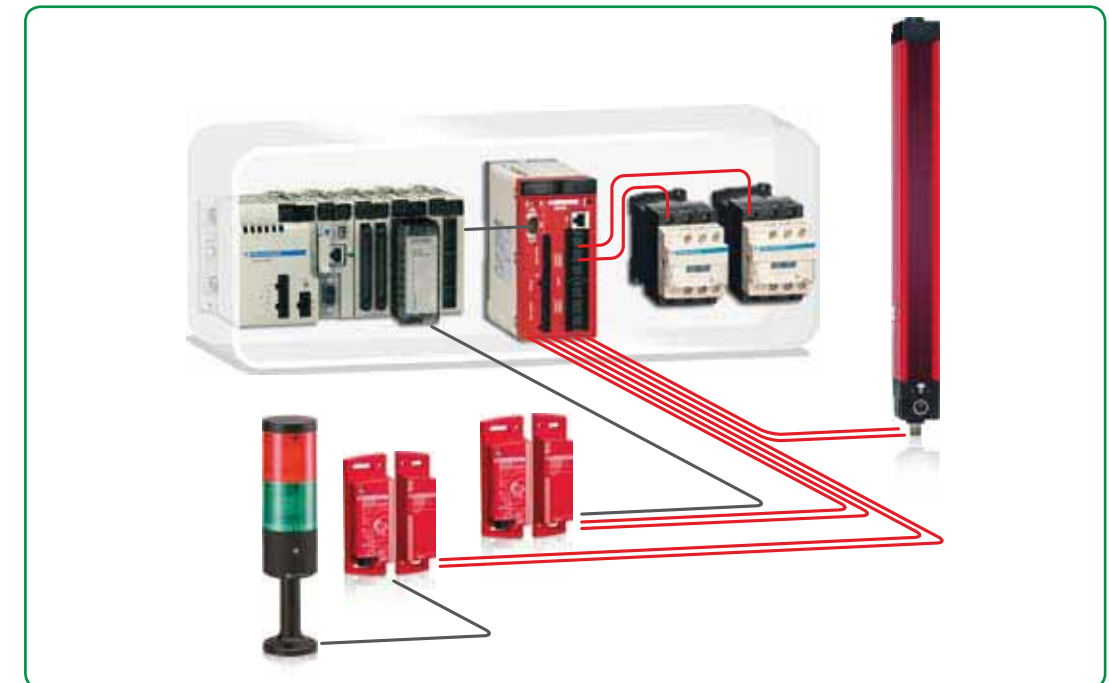
➤ To areas for fault-finding, commissioning etc (e.g. jogging and inching), with a central position and 2 “off” positions (fully released or clenched).



Monitoring of safety signals – control systems

➤ The signals from safeguarding components are typically monitored using safety relays, safety controllers or safety PLCs (collectively referred to as “safety logic solvers”), which in turn are used to drive (and sometimes monitor) output devices such as contactors.

The choice of logic solver will depend upon many factors including the number of safety inputs to process, cost, complexity of the safety functions themselves, the need to reduce cabling through decentralisation using a fieldbus such as AS-Interface Safety at Work or SafeEthernet, or even the need to send safety signals/data over long distances across large machines or between machines on large sites. The now common use of complex electronics and software in safety controllers and safety PLCs has, in part, driven the evolution of the standards relating to safety related electrical control systems.



Two such standards available at time of writing include EN ISO 13849-1 (replacing EN 954-1) and EN 62061.



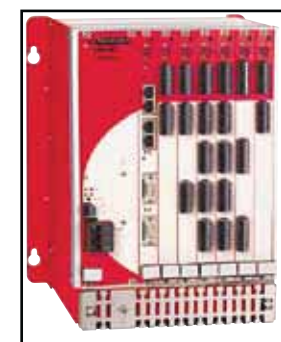
Safety relay



Safety controller



Compact safety PLC



Modular safety PLC

➤ Safeguarding will usually involve the use of some kind of control system, and the Machinery Directive gives various requirements for the performance of the control system. In particular it states “Control systems must be designed and constructed in such a way as to prevent hazardous situations from arising”. The Machinery Directive does not specify the use of any particular standard, but the use of a control system meeting the requirements of harmonised standard(s) is one means of demonstrating compliance with this requirement of the Machinery Directive. Two such standards available at the time of writing are EN ISO 13849-1 (replacing EN 954-1) and EN 62061.

Complementary protective measures - Emergency stop

➤ Although emergency stops are required for all machines (the Machinery Directive allows two very specific exemptions) they are not considered to be a primary means of risk reduction. Instead they are referred to as a “complementary protective measure”. They are provided as a **backup for use in an emergency only**. They need to be robust, dependable, and available at all positions where it might be necessary to operate them.

EN 60204-1 defines the following three categories of stop functions as follows:

- Stop category 0: stopping by immediate removal of power to the machine actuators (uncontrolled stop);
- Stop category 1: a controlled stop with power available to the machine actuators to achieve the stop and then removal of power when the stop is achieved;
- Stop category 2: a controlled stop with power left available to the machine actuators.

However stop category 2 is not usually considered suitable for emergency stops.

Emergency stops on machinery must be “trigger action”. This means that their design ensures that however slowly the button is pressed, or cable pulled, if the normally-closed contact opens the mechanism must latch. This prevents “teasing”, which can cause dangerous situations. The converse must also be true, i.e. latching must not take place unless the NC contact opens. Emergency stop devices should comply with EN 60947-5-5.



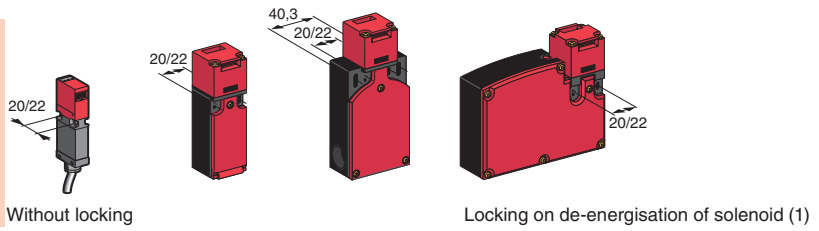
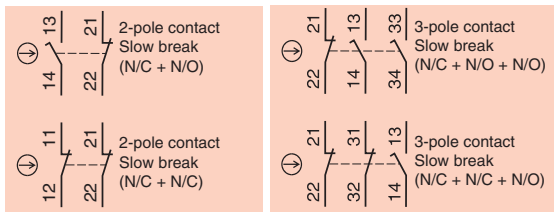
Residual risks

➤ After risks have been reduced as far as possible by design, and then by safeguarding, the risk assessment process should be repeated to check that no new risks have been introduced (e.g. powered guards can introduce trapping hazards) and to estimate whether each risk has been reduced to a tolerable level. Even after some iterations of the risk assessment/risk reduction procedure, it is likely that there will be some residual risks.

Except for machines built to a specific harmonised standard (C Standard) it is for the designer to judge whether the residual risk is tolerable or whether further measures need to be taken, and to provide information about those residual risks, in the form of warning labels, instructions for use, etc. The instructions might also specify measures such as the need for personal protective equipment (PPE) or special working procedures, but these are not as dependable as measures implemented by the designer.

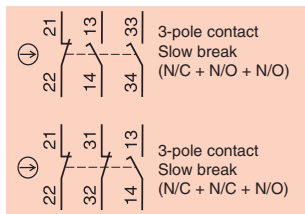


ISO entry (to EN 50262)

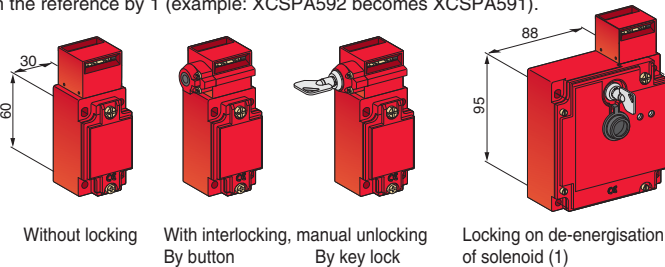


Plastic, double insulated switches	Type XCSMP pre-cabled, L = 2 m	Type XCSPA and TA 1xISO M16 etry. (2) 2xISO M16 entr. (2)		Type XCSTE 1 x ISO M16 cable entry (2)		
Actuation speed (min → max)	0.05 m/s → 1.5 m/s	0.1 m/s → 0.5 m/s		0.1 m/s → 0.5 m/s		
Degree of protection	IP 67	IP 67		IP 67		
Rated operational characteristics (conforming to IEC/EN 60947-5-1)	AC 15, C 300 DC 13, Q 300	AC 15, A 300 DC 13, Q 300		AC 15, B 300 DC 13, Q 300		
Dimensions (body + head) W x D x H	30 x 15 x 87 mm	30 x 30 x 93.5 mm	52 x 30 x 114.5 mm	110 x 33 x 93.5 mm		
Solenoid supply voltage	—	—	—	24 VAC/DC	120 VAC/DC	230 VAC/DC
Complete switch N/C+N/O stag. (XCSMP/PA/TE) N/C+N/O+N/O (XCSTA)	XCSMP59L2 (3) →	XCSPA592 →	XCSTA592 →	XCSTE5312 →	XCSTE5332 →	XCSTE5342 →
N/C+N/C (XCSMP/PA/TE) N/C+N/C+N/O (XCSTA)	XCSMP79L2 (3) →	XCSPA792 →	XCSTA792 →	XCSTE7312 →	XCSTE7332 →	XCSTE7342 →

- (1) For locking on energisation of solenoid, please refer to www.Telemechanique.com.
 (2) With entry for n° 11 (Pg 11) cable gland, replace the last digit in the reference by 1 (example: XCSPA592 becomes XCSPA591).
 (3) For other models, please refer to www.Telemechanique.com.



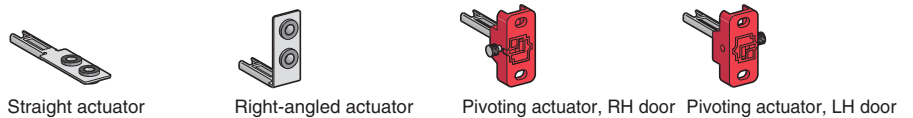
ISO entry (to EN 50262)



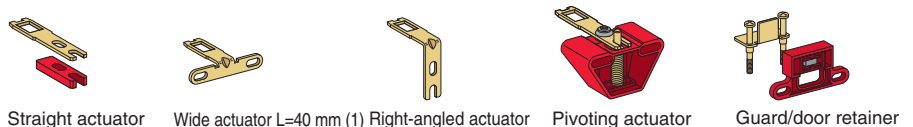
Metal switches	Type XCSA/B/C 1 x ISO M20 cable entry (2)			Type XCSE 2 x ISO M20 cable entries (2)		
Actuation speed (min → max)	0.1 m/s → 0.5 m/s			0.1 m/s → 0.5 m/s		
Degree of protection	IP 67			IP 67		
Rated operational characteristics (conforming to IEC/EN 60947-5-1)	AC 15, A 300 DC 13, Q 300			AC 15, B 300 DC 13, Q 300		
Dimensions (body + head) W x D x H	40 x 44 x 113.5 mm	52 x 44 x 113.5 mm	52 x 44 x 113.5 mm	98 x 44 x 146 mm		
Solenoid supply voltage	—	—	—	24 VAC/DC	110/120 VAC/DC	220/240 VAC/DC
Complete switch N/C + N/O + N/O	XCSA502 →	XCSB502 →	XCSC502 →	XCSE5312 →	XCSE5332 →	XCSE5342 →
N/C + N/C + N/O	XCSA702 →	XCSB702 →	XCSC702 →	XCSE7312 →	XCSE7332 →	XCSE7342 →

- (1) For locking on energisation of solenoid, please refer to www.Telemechanique.com.
 (2) With entry for n° 13 (Pg 13.5) cable gland, replace the last digit in the reference by 1 (example: XCSA502 becomes XCSA501).

Accessories

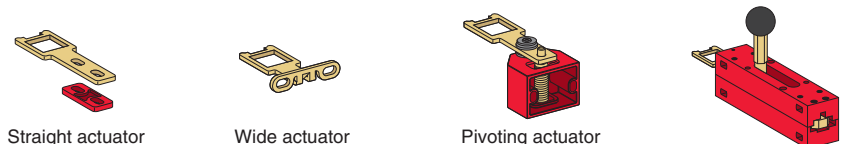


For safety switches XCSMP	Actuators			
References	XCSZ81	XCSZ84	XCSZ83	XCSZ85



For safety switches XCSPA/TA/TE	Actuators				Retaining device
References	XCSZ11	XCSZ12	XCSZ14	XCSZ13	XCSZ21

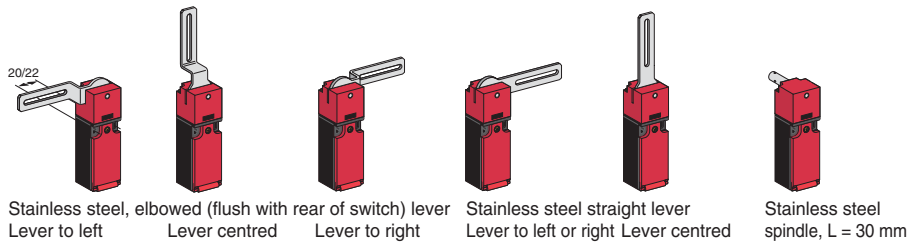
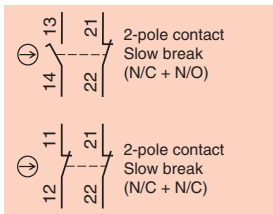
- (1) For L = 29 mm, reference = XCSZ15.



For safety switches XCSA/B/C/E	Actuators			Door lock
References	XCSZ01	XCSZ02	XCSZ03	XCSZ05

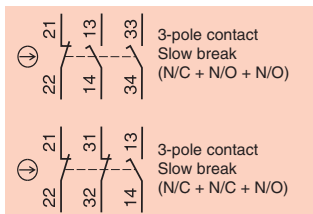
Safety switches with rotary lever or spindle

ISO entry
(to EN 50262)

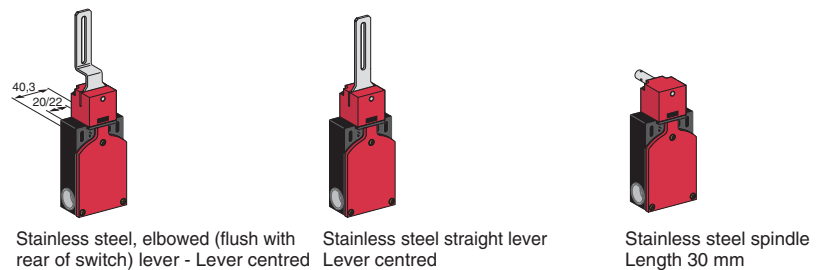


Plastic switches		Type XCSPL with rotary lever or XCSPR with spindle 1 x ISO M16 cable entry (1)					
Minimum torque (actuation / positive opening)		0.1 / 0.25 N.m	0.1 / 0.25 N.m	0.1 / 0.25 N.m	0.1 / 0.25 N.m	0.1 / 0.25 N.m	0.1 / 0.25 N.m
Degree of protection		IP 67	IP 67	IP 67	IP 67	IP 67	IP 67
Rated operational characteristics		AC 15, A 300 / DC 13, Q 300 (conforming to IEC/EN 60947-5-1)					
Dimensions (body + head) W x D x H		30 x 30 x 160 mm	30 x 30 x 160 mm	30 x 30 x 160 mm	30 x 30 x 160 mm	30 x 30 x 160 mm	30 x 30 x 96 mm
Tripping angle		5°	5°	5°	5°	5°	5°
Complete switch	N/C + N/O, break before make	XCSPL592	XCSPL582	XCSPL572	XCSPL562	XCSPL552	XCSPR552
	N/C + N/C	XCSPL792	XCSPL782	XCSPL772	XCSPL762	XCSPL752	XCSPR752

(1) With entry for n° 11 (Pg 11) cable gland, replace the last digit in the reference by 1 (example: XCSPL592 becomes XCSPL591).

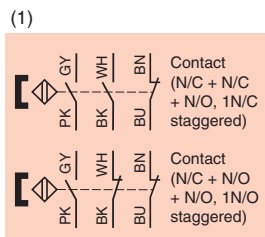
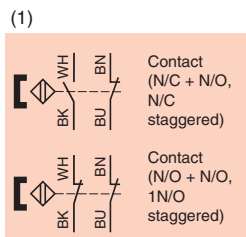


ISO entry
(to EN 50262)

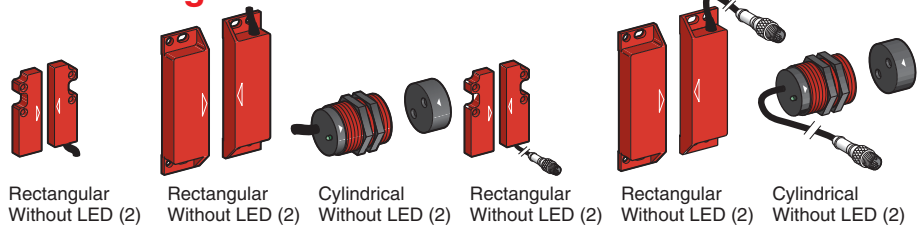


Plastic switches		Type XCSTL with rotary lever or XCSTR with spindle 2 x ISO M16 cable entries (1)		
Minimum torque (actuation / positive opening)		0.1 / 0.45 N.m	0.1 / 0.45 N.m	0.1 / 0.45 N.m
Degree of protection		IP 67	IP 67	IP 67
Rated operational characteristics		AC 15, A 300 / DC 13, Q 300 (conforming to IEC/EN 60947-5-1)		
Dimensions (body + head) W x P x H		52 x 30 x 180 mm	52 x 30 x 180 mm	52 x 30 x 117 mm
Tripping angle		5°	5°	5°
Complete switch	N/C + N/O + N/O, 2 N/O staggered	XCSTL582	XCSTL552	XCSTR552
	N/C + N/C + N/O, N/O staggered	XCSTL782	XCSTL752	XCSTR752

(1) With entry for n° 11 (Pg 11) cable gland, replace the last digit in the reference by 1 (example: XCSTL582 becomes XCSTL581).



Coded magnetic



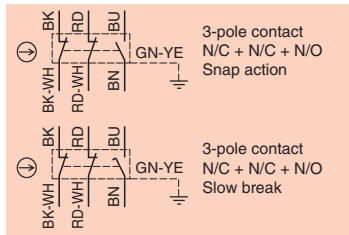
Plastic switches		Type XCSDM coded magnetic					
		Pre-cabled, L = 2 m			Connector on flying lead, L = 10 cm (3)		
Switches for actuation		Face to face, face to side, side to side	Face to face	Face to face, face to side, side to side	Face to face		
Degree of protection		IP 66 + IP 67			IP 66 + IP 67		
Type of contact		REED			REED		
Rated operational characteristics		Ue = 24 VDC, Ie = 100 mA			Ue = 24 VDC, Ie = 100 mA		
Dimensions W x D x H		16 x 7 x 51 mm	25 x 13 x 88 mm	M30 x 38,5 mm	16 x 7 x 51 mm	25 x 13 x 88 mm	M30 x 38.5 mm
Operating zone (4)		Sao = 5 / Sar = 15		Sao = 8 / Sar = 20	Sao = 5 / Sar = 15		Sao = 8 / Sar = 20
Switch with coded magnet	N/C + N/O, N/C staggered	XCSDMC5902	XCSDMP5902	XCSDMR5902	XCSDMC590L01M8	XCSDMP590L01M12	XCSDMR590L01M12
	N/O + N/O, 1N/O staggered	XCSDMC7902	XCSDMP7902	XCSDMR7902	XCSDMC790L01M8	XCSDMP790L01M12	XCSDMR790L01M12
	N/C + N/C + N/O, 1N/C staggered	–	XCSDMP5002	–	–	XCSDMP500L01M12	–
	N/C + N/O + N/O, 1N/O staggered	–	XCSDMP7002	–	–	XCSDMP700L01M12	–

(1) NB. Contact states shown are with the magnet present.

(2) For version with LED indicator, replace the last 0 in the reference by 1 (example: XCSDMC5902 becomes XCSDMC5912).

(3) For associated pre-wired female connectors, please refer to the "Safety solution" catalogue.

(4) Sao: assured operating distance. Sar: assured release distance.



Metal end plunger



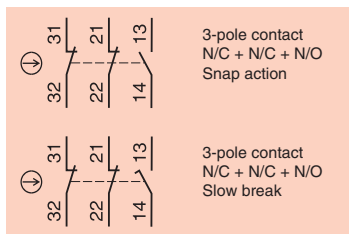
Roller plunger



Thermoplastic roller lever

Miniature switches	Type XCSM, metal pre-cabled, L = 1 m (1)		
Maximum actuation speed	0.5 m/s	0.5 m/s	1.5 m/s
Minimum force or torque (actuation / positive opening)	8.5 N / 42.5 N	7 N / 35 N	0.5 N.m / 0.1 N.m
Degree of protection	IP 66 + IP 67 + IP 68	IP 66 + IP 67 + IP 68	IP 66 + IP 67 + IP 68
Dimensions (body + head) W x D x H	30 x 16 x 60 mm	30 x 16 x 70.5 mm	30 x 32 x 92.5 mm
Complete switch	N/C + N/C + N/O snap action	XCSM3910L1 →	XCSM3902L1 →
	N/C + N/C + N/O slow break	XCSM3710L1 →	XCSM3702L1 →
			XCSM3915L1 →
			XCSM3715L1 →

(1) For a 2 m long cable, replace the last digit of the reference by 2 (example: XCSM3910L1 becomes XCSM3910L2).
For a 5 m long cable, replace the last digit of the reference by 5 (example: XCSM3910L1 becomes XCSM3910L5).



Metal end plunger



Roller plunger



Thermoplastic roller lever



Metal end plunger



Roller plunger

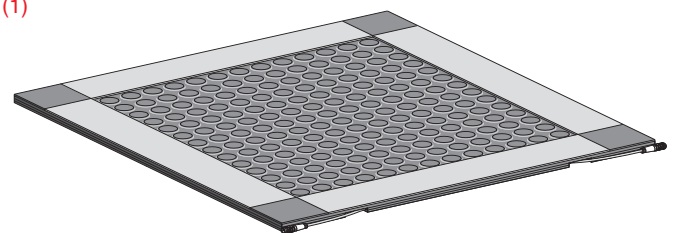


Thermoplastic roller lever

Compact switches	Type XCSD, metal 1 x ISO M20 x 1.5 cable entry (2)			Type XCSP, plastic 1 x ISO M20 x 1.5 cable entry (2)		
	Maximum actuation speed	0.5 m/s			1.5 m/s	
Minimum force or torque (actuation / positive opening)	15 N / 45 N	12 N / 36 N	10 N.m / 0.1 N.m	15 N / 45 N	12 N / 36 N	10 N.m / 0.1 N.m
Degree of protection	IP 66 + IP 67			IP 66 + IP 67		
Dimensions (body + head) W x D x H	34 x 34.5 x 89 mm	34 x 34.5 x 99.5 mm	34 x 43 x 121.5 mm	34 x 34.5 x 89 mm	34 x 34.5 x 99.5 mm	34 x 43 x 121.5 mm
Complete switch	N/C + N/C + N/O snap action	XCSD3910P20	XCSD3902P20	XCSD3918P20	XCSP3910P20	XCSP3902P20
	N/C + N/C + N/O slow break	XCSD3710P20	XCSD3702P20	XCSD3718P20	XCSP3710P20	XCSP3702P20
						XCSP3918P20
						XCSP3718P20

(2) For Pg 13.5 and 1/2" NPT cable entries, refer to www.Telemecanique.com.

Safety mats (1)



(1) For simplification of installation, see the "Protect Area design" software configuration tool. Reference: SISCD104200

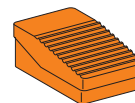
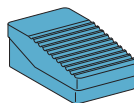
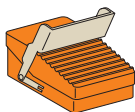
Maximum category usage (EN 954-1)	Category 3			
Degree of protection	IP 67			
Response time (s)	Mat itself: 20 ms, with module: XPSAK ≤ 40 ms, XPSMP < 30 ms			
Sensitivity	Single mat > 20 kg / Group of mats > 35 kg			
Maximum load	2000 N/cm²			
Connection (2)	By M8 jumper cable (1 male / 1 female), L = 100 mm			
Dimensions W x D x H	500 x 500 x 11 mm	500 x 750 x 11 mm	750 x 750 x 11 mm	750 x 1250 x 11 mm
References	XY2TP1	XY2TP2	XY2TP3	XY2TP4

(2) For associated jumper cable and pre-wired connector, please refer to www.Telemecanique.com.

		Accessories								
Rails (set of 2)	Length	194 mm	394 mm	444 mm	494 mm	644 mm	694 mm	744 mm	1194 mm	1244 mm
References		XY2TZ10	XY2TZ20	XY2TZ30	XY2TZ40	XY2TZ50	XY2TZ60	XY2TZ70	XY2TZ80	XY2TZ90

Corners and rail connectors	External corners (set of 4)	Internal corner + external corner	Rail connectors, L = 56 mm with outlet for cable (set of 2)	Rail connectors, L = 6 mm (set of 2)
References	XY2TZ4	XY2TZ5	XY2TZ1	XY2TZ2

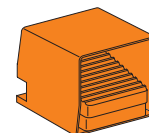
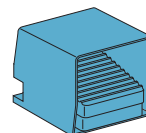
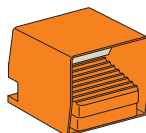
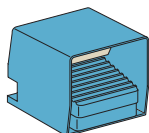
ISO entry
(to EN 50262)



Type		Foot switches without protective cover 2 cable entries for n° 16 (Pg 16) cable gland (1)			
Trigger mechanism		With (positive operating action reqd.)		Without	
Colour		Orange		Blue Orange	
Mechanical life (millions of operating cycles)		15			
Degree of protection		IP 66			
Rated operational characteristics		AC 15, A 300 / DC 13, Q 300 (conforming to IEC/EN 60947-5-1)			
Dimensions W x D x H		104 x 172 x 59 mm			
Contact operation	1 step	1 N/C + N/O	XPER810	XPEM110	XPER110
		2 N/C + N/O	–	XPEM111	XPER111
	2 step	2 N/C + N/O	XPER911	XPEM211	XPER211
		Analogue output	2 N/C + N/O	XPER929	–

(1) For entry for ISO M20 cable gland, also order adaptor DE9RA1620 (sold in lots of 5).

ISO entry
(to EN 50262)

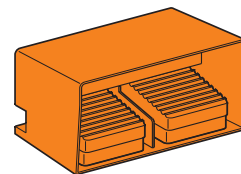
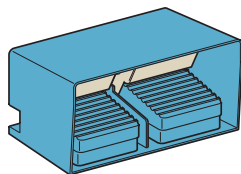


Type		Foot switches with protective cover 2 cable entries for n° 16 (Pg 16) cable gland (1)			
Trigger mechanism		With (positive operating action reqd.)		Without	
Colour		Blue Orange		Blue Orange	
Mechanical life (millions of operating cycles)		15			
Degree of protection		IP 66			
Rated operational characteristics		AC 15, A 300 / DC 13, Q 300 (conforming to IEC/EN 60947-5-1)			
Dimensions W x D x H		160 x 186 x 152 mm			
Contact operation	1 step	1 N/C + N/O	XPEM510	XPER510	XPEM310 XPER310
		2 N/C + N/O	XPEM511	XPER511	XPEM311 XPER311
	1 step latching	1 N/C + N/O	–	–	XPEM410 XPER410
	2 step	2 N/C + N/O	XPER711	XPER711	XPEM611 XPER611
		Analogue output	2 N/C + N/O	XPEM529	XPER529

(1) For entry for ISO M20 cable gland, also order adaptor DE9RA1620 (sold in lots of 5).

Double pedal switches

ISO entry
(to EN 50262)



Type		Foot switches with protective cover 2 cable entries for n° 16 (Pg 16) cable gland (1)			
Trigger mechanism		With (positive operating action reqd.)		Without	
Colour		Blue Orange		Blue Orange	
Mechanical life (millions of operating cycles)		15			
Degree of protection		IP 66			
Rated operational characteristics		AC 15, A 300 / DC 13, Q 300 (conforming to IEC/EN 60947-5-1)			
Dimensions W x D x H		295 x 190 x 155 mm			
Contact operation	1 step	2 x 1 N/C + N/O	XPEM5100D	XPER5100D	XPEM3100D XPER3100D
		2 x 2 N/C + N/O	XPEM5110D	XPER5110D	XPEM3110D XPER3110D

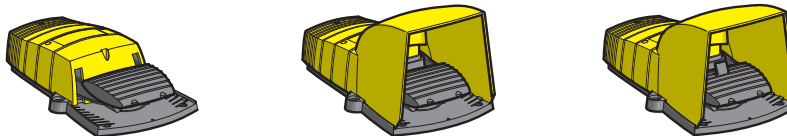
(1) For entry for ISO M20 cable gland, also order adaptor DE9RA1620 (sold in lots of 5).



Foot switches - plastic

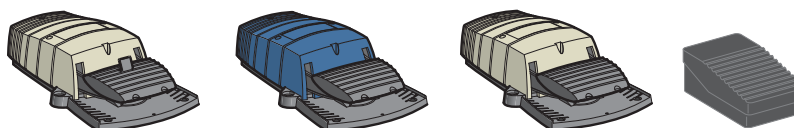
Single pedal switches

ISO entry
(to EN 50262)



Optimum series			Without protective cover		With protective cover	
			2 cable entries for ISO M20 cable gland			
Trigger mechanism			Without		With (positive operating action reqd.)	
Colour			Yellow		Yellow	
Mechanical life (millions of operating cycles)			5			
Degree of protection			IP 55			
Rated operational characteristics			AC 15, A 300 / DC 13, Q 300 (conforming to IEC/EN 60947-5-1)			
Dimensions W x D x H			160 x 280 x 70 mm		160 x 280 x 162 mm	
Contact operation	1 step	1 N/C + N/O	XPEY110	XPEY310	XPEY510	
		2 N/C + N/O	–	XPEY311	XPEY511	
	2 step	2 N/C + N/O	XPEY211	XPEY611	XPEY711	

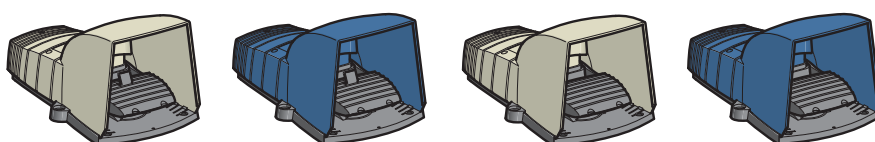
ISO entry
(to EN 50262)



Universal series (conforming to NF E 09031)			Foot switches without protective cover			1 entry (1)
			2 cable entries for ISO M20 cable gland			
Trigger mechanism			With (positive operating action reqd.)		Without	
Colour			Grey		Blue	
Mechanical life (millions of operating cycles)			10		2	
Degree of protection			IP 66		IP 43	
Rated operational characteristics			AC 15, A 300 / DC 13, Q 300 (conforming to IEC/EN 60947-5-1)			
Dimensions W x D x H			160 x 280 x 70 mm			94 x 161 x 54 mm
Contact operation	1 step	1 N/C + N/O	XPEG810	XPEB110	XPEG110	XPEA110
		2 N/C + N/O	–	XPEB111	XPEG111	XPEA111
	2 step	2 N/C + N/O	XPEG911	XPEB211	XPEG211	–

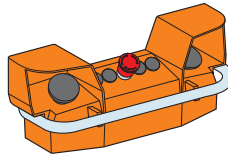
(1) Cable entry for ISO M16 or n° 9 (Pg 9) cable gland and for ISO M20 or n° 13 (Pg 13.5) cable gland.

ISO entry
(to EN 50262)

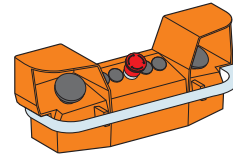


Universal series (conforming to NF E 09031)			Foot switches with protective cover			
			2 cable entries for ISO M20 cable gland			
Trigger mechanism			With (positive operating action reqd.)		Without	
Colour			Grey		Blue	
Mechanical life (millions of operating cycles)			10			
Degree of protection			IP 66			
Rated operational characteristics			AC 15, A 300 / DC 13, Q 300 (conforming to IEC/EN 60947-5-1)			
Dimensions W x D x H			160 x 280 x 162 mm			
Contact operation	1 step	1 N/C + N/O	XPEG510	XPEB510	XPEG310	XPEB310
		2 N/C + N/O	XPEG511	XPEB511	XPEG311	XPEB311
	2 step	2 N/C + N/O	XPEG711	XPEB711	XPEG611	XPEB611

ISO entry
(to EN 50262)



2 control pushbuttons and 1 mushroom head
Emergency stop or Lock out pushbutton



2 control pushbuttons and 1 mushroom head Emergency
stop or Lock out pushbutton, with pre-wired terminal block

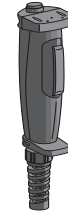
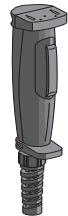
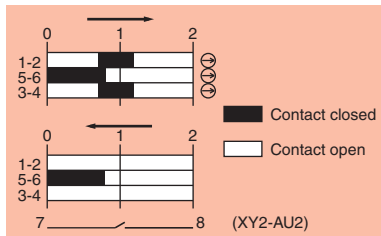
Type	Two-hand control stations	
	2 cable entries for ISO M20 or n° 13 (Pg 13.5) cable gland, 1 cable entry for n° 21 (Pg 21) cable gland (2)	
Mechanical life (millions of operating cycles)	1	1
Degree of protection	IP 65	IP 65
Rated operational characteristics	AC 15, A 600 / DC 13, Q 600 (conforming to IEC/EN 60947-5-1)	
Dimensions W x D x H	455 x 170 x 188.5 mm	
Red emergency stop (N/C + N/C slow break)	XY2SB71 (1)	XY2SB72 (1)
Yellow lock out (N/C + N/O break before make)	XY2SB75	XY2SB76

(1) To order a two-hand control station with pedestal XY2SB90, add 4 to the end of the reference (example: XY2SB71 becomes XY2SB714).

(2) For entry for ISO M25 cable gland, also order adaptor DE9RA2125 + fixing nut DE9EC21 (sold in lots of 5).

Enabling switch

Contact states



Type	Plastic grip	
	Entry for Ø 7 to 13 mm cable	
Number of contacts	3	3
Type of contacts	2 enabling, 3 positions + 1 N/C	2 enabling, 3 positions + 1 N/C + additional 1 N/O contact
Description	Without button	With button for N/O contact (auxiliary)
Shock / vibration resistance	10 gn / 6 gn	
Degree of protection	IP 66	IP 65
Rated operational characteristics	AC 15, C300 / DC 13, R300 (conforming to IEC/EN 60947-5-1)	
Dimensions W x D x H	46 x 58 x 261 mm	46 x 58 x 269 mm
References	XY2AU1	XY2AU2

For fixing accessories, please refer to www.Telemecanique.com.

Safety detection solutions

Emergency stop rope pull switches

Preventa XY2C

Presentation

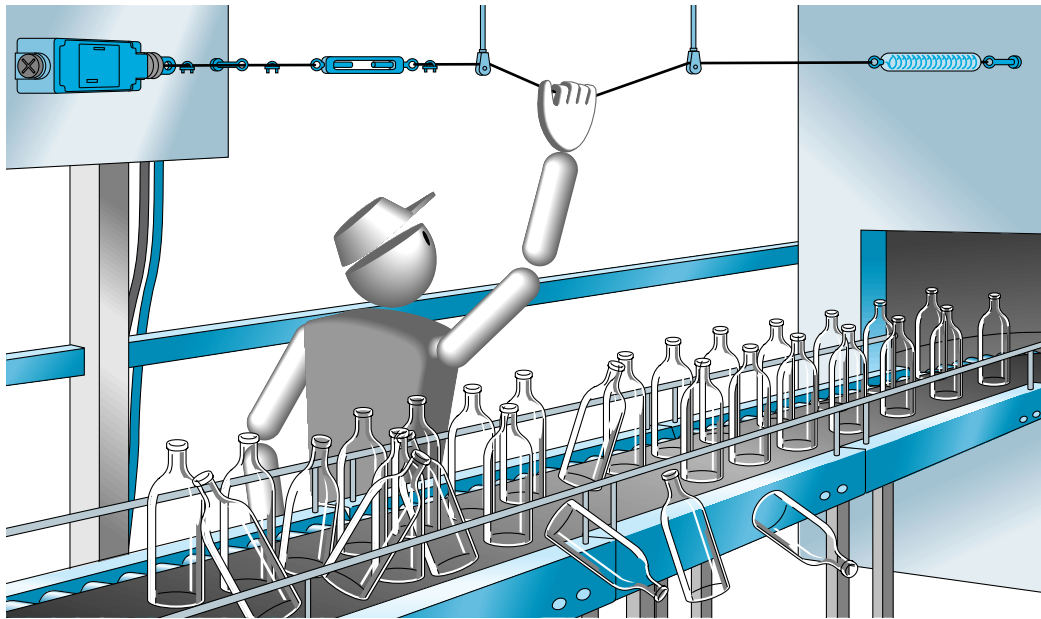
Emergency stop rope pull switches

Emergency stop rope pull switches are designed to:

- avert hazards (dangerous phenomena) at the earliest possible moment, or to reduce risks which could cause injury to persons or damage either to machines or work in progress
- be tripped by a single human action when a normal emergency stop function is not available
- trip in the event of the rope pull breaking

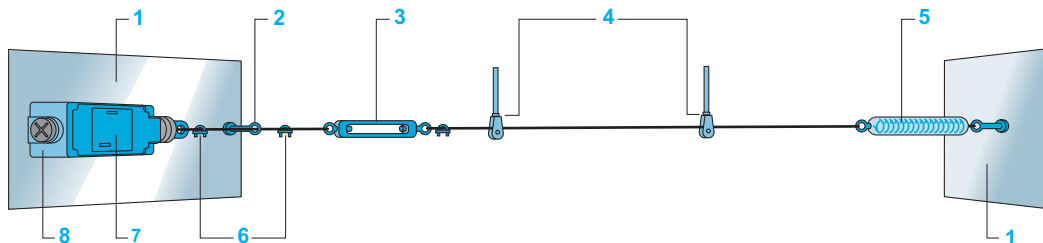
Emergency stop rope pull switches are essential in premises and on machines that are potentially dangerous when operating. The operator must be able to trigger the stop instruction at any point within their working area.

Application examples: woodworking machines, shears, conveyor systems, printing machines, textile machines, rolling mills, test laboratories, paint shops, surface treatment works.



Installation

Typical installation

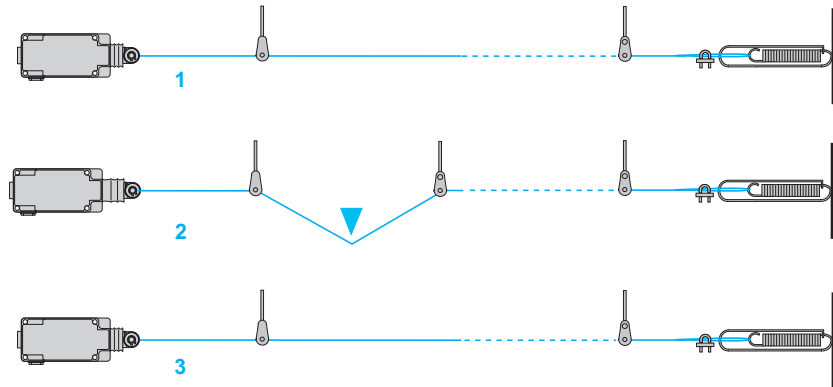


- | | | |
|-----------------------|-------------------------------|---------------------|
| 1 Fixing support | 4 Pulley supports and pulleys | 7 Switch adjustment |
| 2 First cable support | 5 End spring | 8 Emergency stop |
| 3 Turnbuckle | 6 Cable grips | |

Notes regarding installation

- All XY2CJ, XY2CH and XY2CE emergency stop rope pull switches can be fitted with trip indicators (mechanical indicators for XY2CJ, pilot lights for XY2CH and XY2CE).
- Cable tension adjustment can be performed using:
 - a turnbuckle to be ordered separately (see page 8)
 - a tensioner integrated in XY2CH emergency stop rope pull switches and optional for XY2CJ emergency stop rope pull switches
- This adjustment is simplified by:
 - a cable tension indicator that is available on all XY2CJ, XY2CH and XY2CE models. XY2CE emergency stop rope pull switches incorporate a cable tension indicator, visible with the cover open. There is also an optional version with a window for viewing the cable tension, for adjustment whilst the cover is closed.
- The use of an end spring is mandatory for conveyor system applications to ensure operation of the emergency stop in the event of the cable being pulled towards the switch.
- It is essential that pulleys be used with cables that deviate from a straight run.

Main features

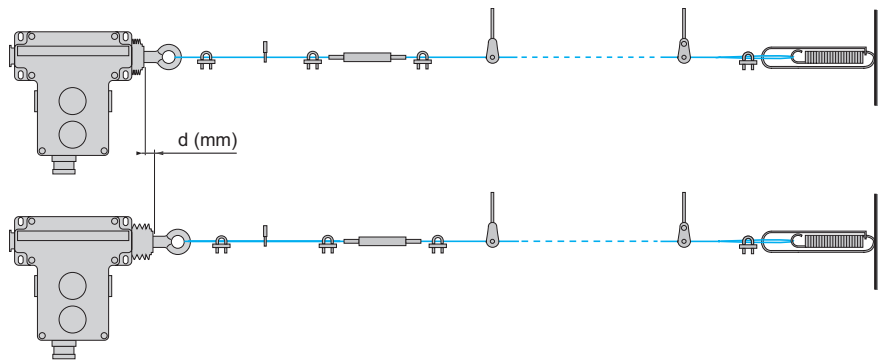


Positive operation: running condition	1	The switches incorporate positive opening operation contacts, the tripping of the switch being made with positive action.
Latching: stop instruction given (tripped)	2	The switch latches in the tripped position (NC safety contact(s) open). The function of the NO contact is purely for signalling.
Resetting: stop condition (awaiting reset/restart)	3	The switches incorporate a reset button, which re-closes the safety contact. Restarting of the machine must only be achieved by manual operation of a control device within the machine start circuit, remote to the emergency stop.

Rope pull expansion and contraction: d

Temperature variations encountered on site are mainly responsible for these variations in length.

To enable instant verification that the rope pull is at its correct tension (and make any necessary adjustments), XY2CH and XY2CE emergency stop rope pull switches incorporate a cable tension indicator. XY2CE emergency stop rope pull switches incorporate a cable tension indicator, visible with the cover open. To enable instant verification that the rope pull is at its correct tension (and make any necessary adjustments), they are also available with a window for viewing the cable tension.



Standards

The XY2CJ, XY2CH and XY2CE switches meet all the requirements of the harmonised European standard **EN/ISO 13850**, relating to "Emergency stop devices". The switches are **CE** marked and supplied with an EC declaration of conformity.

Cable diameter

In order to achieve the maximum cable length, according to ambient temperature variation, we recommend use of:

- galvanised cables with red sheath, diameter 3.2 mm for XY2CJ and XY2CH ranges
- galvanised cables with red sheath, diameter 5 mm for XY2CE range (see page 8)

Safety detection solutions

Emergency stop rope pull switches

Preventa XY2C

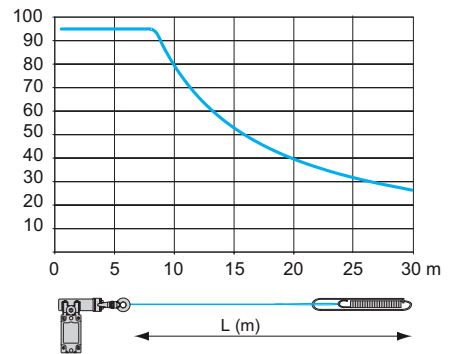
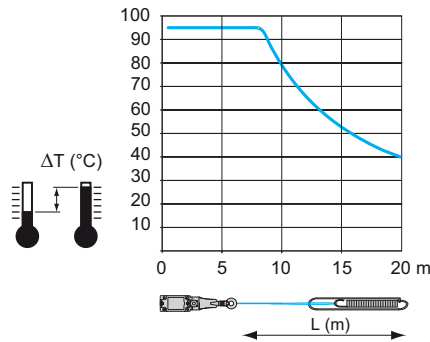
Adjustment values (with end spring)

For Preventa XY2CE emergency stop rope pull switches, the adjustment values depend on the positions of the cam located inside the switch. The adjustment is made by rotating the cam after the switch has been installed. Each notched cam position 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:

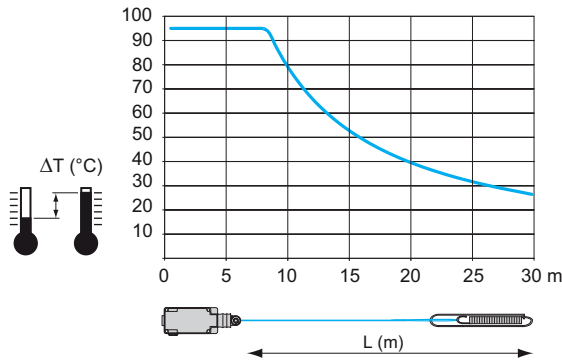
Type	Cam position	Maximum cable length	End spring
XY2CJS	–	20 m	XY2CZ703
XY2CJR and XY2CJL	–	30 m	XY2CZ703
XY2CH	–	30 m	XY2CZ703
XY2CE	A, B, C, D, E, F	70 m	XY2CZ702

XY2CJ



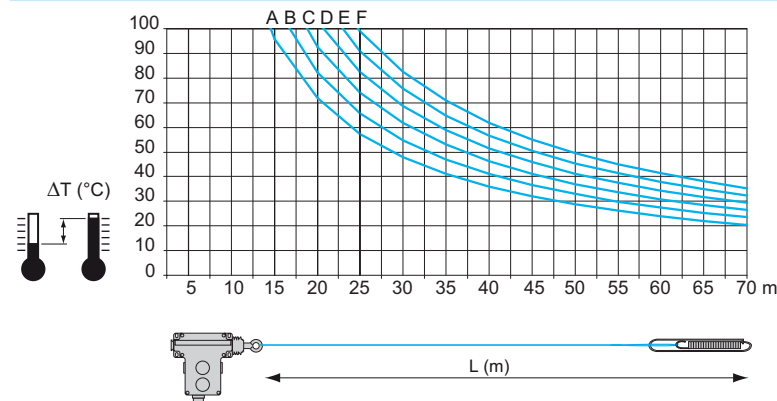
With the graphs above, if we consider an ambient temperature variation of 25°C, for example from 0°C to +25°C, the table gives us a maximum cable length of 20 metres for XY2CJS and 30 metres for XY2CJR and XY2CJL.

XY2CH



With the graph above, if we consider an ambient temperature variation of 25°C, for example from 0°C to +25°C, the table gives us a maximum cable length of 30 metres.

XY2CE



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

- 40 metres, with cam A adjustments
- 70 metres, with cam F adjustments

Environment																		
Conformity to standards	Products	XY2CJ, XY2CH, XY2CE: EN/IEC 60947-5-5, EN/ISO 13850, UL 508 and CSA C 22-2 no. 14																
	Machine assemblies	XY2CJ, XY2CH, XY2CE: EN/IEC 60204-1, Machinery directive: 2006/42/EC, Work equipment directive: 2009/104/EC																
Product certifications		XY2CJ: UL (NISD) - CSA, CCC. XY2CH, XY2CE: UL (NISD) - CSA (with suffix H7), 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}		XY2CJ: 500,000. XY2CH: 4,000,000. XY2CE: 50,000 (values given for a service life of 20 years but may be limited by contact and mechanical wear)																
Protective treatment		Standard version: "TC". Special version: "TH"																
Ambient air temperature		For operation: - 25... + 70°C. For storage: - 40... + 70°C																
Vibration resistance		XY2CJ, XY2CH: 10 gn (10...150 Hz) XY2CE: 10 gn (10...300 Hz) conforming to EN/IEC 60068-2-6																
Shock resistance		XY2CJ, XY2CH, XY2CE: 50 gn (duration 11 ms) conforming to EN/IEC 60068-2-27																
Electric shock protection		Class I conforming to IEC 61140																
Degree of protection		XY2CJ: IP 66 and IP 67 conforming to IEC 60529. XY2CH, XY2CE: IP 65 conforming to IEC 60529 (IP 66 for XY2CE●A1●● , XY2CE●A2●● and XY2CE●A3●●)																
Materials		XY2CJS: Zamak body, polyamide head, zinc-plated steel cover XY2CJL, XY2CJR: Zamak body and head, zinc-plated steel cover XY2CH, XY2CE: Zamak body, stainless steel cover																
Mechanical life (no. of operating cycles)		XY2CJ: 100,000. XY2CH: 800,000. XY2CE: 10,000																
Length of protected zone (rope pull)		XY2CJS: ≤ 20 m. XY2CJR and XY2CJL: ≤ 30 m. XY2CH: ≤ 30 m. XY2CE: ≤ 70 m																
Distance between cable supports		5 m																
Cable entries		XY2CJ, XY2CH: tapped entries for Pg 13.5, ISO M20 cable gland or 1/2" NPT. XY2CE: plain holes for Pg 13.5, ISO M20 cable gland or 1/2" NPT See dimensions on page 11																
Contact block characteristics																		
Rated operational characteristics	2-pole contact block	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 block	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 block	10 A																
	3-pole contact block	6 A																
Rated insulation voltage	2-pole contact block	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 block	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 block	XY2CJ, XY2CH, XY2CE: Uimp = 6 kV conforming to EN/IEC 60947-1																
	3-pole contact block	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	2-pole contact block	XY2CJ, XY2CH, XY2CE: 10 A cartridge fuse type gG (gl) conforming to EN/IEC 60269																
	3-pole contact block	XY2CJ, XY2CH: 6 A cartridge fuse type gG (gl) conforming to EN/IEC 60269																
Rated operational power (Electrical durability)		XY2CJ, XY2CH, XY2CE 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 supply ~ 50/60 Hz mm Inductive circuit	2-pole contact block																	
	3-pole contact block																	
DC supply --- Power broken in W for 1 million operating cycles. mm Inductive circuit		<table border="1"> <thead> <tr> <th>Voltage V</th> <th>24</th> <th>48</th> <th>120</th> <th>Voltage V</th> <th>24</th> <th>48</th> <th>120</th> </tr> </thead> <tbody> <tr> <td>mm W</td> <td>13</td> <td>9</td> <td>7</td> <td>mm W</td> <td>4</td> <td>3</td> <td>2</td> </tr> </tbody> </table>	Voltage V	24	48	120	Voltage V	24	48	120	mm W	13	9	7	mm W	4	3	2
	Voltage V	24	48	120	Voltage V	24	48	120										
mm W	13	9	7	mm W	4	3	2											
Contact connection		Screw clamp terminals 2 contacts: clamping capacity, min. 1 x 0.5 mm ² /AWG 20, max. 2 x 1.5 mm ² /AWG 16. 3 contacts: clamping capacity, min. 1 x 0.34 mm ² /AWG 22, max. 1 x 1 mm ² /AWG 18 or 2 x 0.75 mm ² /AWG 20. Minimum tightening torque: 0.8 N.m/7.1 lb-in. Maximum tightening torque: 1.2 N.m/10.6 lb-in.																

(1) Only products XY2CH without pilot light are CCC and UL-CSA approved.
(2) Using an appropriate and correctly connected control system.

Safety detection solutions

Emergency stop rope pull switches

Preventa XY2C

Latching emergency stops

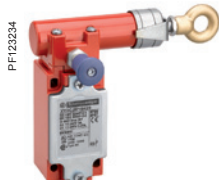
Pg 13.5, ISO M20 and 1/2" NPT. Cable and end spring to be ordered separately (1)

Without pilot light

Cable length	Colours and materials	Reset	Supply voltage	Contact type	Cable anchor point	Reference	Weight kg	
≤ 20 m	Polyamide head. Zamak red RAL 3000 body. Treated steel cover.	By pull button	–	1 1	NC + NO slow break	RH side or LH side	XY2CJS15 (2)	0.455
				2 –	NC + NC slow break	RH side or LH side	XY2CJS17 (2)	0.455
				2 1	2 NC + 1 NO slow break	RH side or LH side	XY2CJS19 (2) (3)	0.455
≤ 30 m	Zamak Red RAL 3000 head and body. Treated steel cover.	By pull button	–	1 1	NC + NO slow break	RH side	XY2CJR15 (2)	0.669
				2 –	NC + NC slow break	RH side	XY2CJR17 (2)	0.669
				2 1	2 NC + 1 NO slow break	RH side	XY2CJR19 (2) (3)	0.669
				1 1	NC + NO slow break	LH side	XY2CJL15 (2)	0.669
				2 –	NC + NC slow break	LH side	XY2CJL17 (2)	0.669
				2 1	2 NC + 1 NO slow break	LH side	XY2CJL19 (2) (3)	0.669



XY2CJS15



XY2CJR15



XY2CJL15

(1) See separate components on page 8.

(2) For ISO M20 threaded cable entry version, add H29 to the end of the reference selected.

Example: **XY2CJS15** becomes **XY2CJS15H29**.

(3) For 1/2" NPT threaded cable entry version, add H7 to the end of the reference selected.

Example: **XY2CJS19** becomes **XY2CJS19H7**.

Safety detection solutions

Emergency stop rope pull switches

Preventa XY2C



XY2CH13250

Latching emergency stops

Pg 13.5 and ISO M20 with integral tensioner. Cable and end spring to be ordered separately (1)

Without pilot light

Cable length	Colours and materials	Reset	Supply voltage	Contact type	Cable anchor point	Reference	Weight kg	
≤ 30 m	Zamak red RAL 3000 body. Stainless steel cover.	By booted pushbutton	–	1 1	NC + NO slow break	RH side or LH side	XY2CH13250 (3)	0.865
		By mushroom head pushbutton	–	1 1			XY2CH13350 (3)	0.900
		By key-operated pushbutton (key no. 421) (2)	–	1 1			XY2CH13450 (3)	0.910
	By flush pushbutton	–	2 –	NC + NC slow break	RH side or LH side	XY2CH13170 (3)	0.865	
	By booted pushbutton	–	2 –			XY2CH13270 (3)	0.865	
	By mushroom head pushbutton	–	2 –			XY2CH13370 (3)	0.865	
	By key-operated pushbutton (key no. 421) (2)	–	2 –			XY2CH13470 (3)	0.910	
	By flush pushbutton	–	2 1	2 NC + 1 NO slow break	RH side or LH side	XY2CH13190 (3)	0.865	
	By booted pushbutton	–	2 1			XY2CH13290 (3)	0.865	
	By mushroom head pushbutton	–	2 1			XY2CH13390 (3)	0.865	

With orange pilot light (direct supply)

≤ 30 m	Red RAL 3000 body. Stainless steel cover.	By booted pushbutton	24 V ~/–	1 1	NC + NO slow break	RH side or LH side	XY2CH13253	0.900
				2 –	NC + NC slow break		XY2CH13273	0.900
				2 1	2 NC + 1 NO slow break		XY2CH13293 (3)	0.950

Latching emergency stops

Pg 13.5 and 1/2" NPT. Turnbuckle, cable and end spring to be ordered separately (1)

Without pilot light

≤ 70 m	Zamak red RAL 3000 body. Stainless steel cover.	By booted pushbutton	–	1 1	NC + NO slow break	RH side	XY2CE1A250 (4)	1.450
					LH side	XY2CE2A250 (4)	1.450	
		By key switch (key no. 421)		2 –	NC + NC slow break	RH side	XY2CE1A270 (4)	1.450
					LH side	XY2CE2A270 (4)	1.450	
		1 1		NC + NO slow break	RH side	XY2CE1A450	1.465	
				LH side	XY2CE2A450	1.465		
2 –	NC + NC slow break	RH side	XY2CE1A470	1.470				
	LH side	XY2CE2A470	1.470					

With yellow LED pilot light (direct supply)

≤ 70 m	Zamak red RAL 3000 body. Stainless steel cover.	By booted pushbutton	24 to 130 V ~/–	2 2	NC + NO slow break	RH side	XY2CE1A296 (4)	1.470
					LH side	XY2CE2A296 (4)	1.470	
				2 2	NC + NO slow break	RH side	XY2CE1A297 (4)	1.470
					LH side	XY2CE2A297 (4)	1.470	

Other versions

XY2CE with reset by Ø 30 mm mushroom head pushbutton.

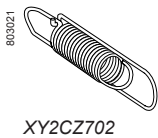
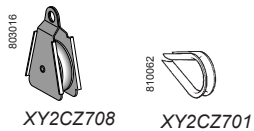
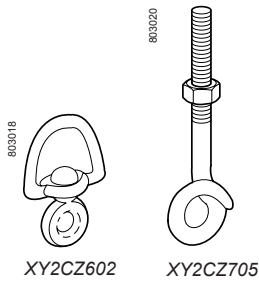
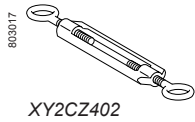
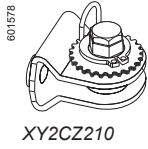
XY2CE with window for viewing the cable tension, for adjustment whilst the cover is closed. Please consult our Customer Care Centre.

(1) See separate components on page 8.

(2) Ø 30 spring return key-operated mushroom head pushbutton.

(3) For ISO M20 threaded cable entry version, add H29 to the end of the reference selected. Example: XY2CH13250 becomes XY2CH13250H29.

(4) For 1/2" NPT threaded cable entry version, add H7 to the end of the reference selected. Example: XY2CE1A250 becomes XY2CE1A250H7.



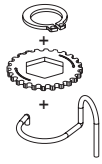
Separate components

Description	For use with	Diameter mm	Length m	Reference	Weight kg
Galvanised cables with red sheath	XY2CJ and XY2CH	3.2	10.5	XY2CZ301	0.280
			15.5	XY2CZ3015	0.410
			20.5	XY2CZ3020	0.550
			25.5	XY2CZ302	0.690
			30.5	XY2CZ303	0.830
	XY2CE	5	15.5	XY2CZ1015	0.850
			25.5	XY2CZ102	1.400
			50.5	XY2CZ105	2.750
			70.5	XY2CZ107	3.870

Description	Type	For use with	Sold in lots of	Unit reference	Weight kg
Tensioner	–	XY2CJ	1	XY2CZ210	0.051
Turnbuckles	M6 x 60 + locknut	All models (1)	1	XY2CZ402	0.060
	M8 x 70 + locknut	All models (1)	1	XY2CZ404	0.100
Cable grips	Single	Cable Ø 3 to 5 mm	10	XY2CZ503	0.007
	Double	Cable Ø 3 to 5 mm	10	XY2CZ513	0.016
	Clamp	Cable Ø 3.2 mm	10	XY2CZ523	0.050
		Cable Ø 5 mm	10	XY2CZ524	0.080
Cable supports	Fixed	All models	10	XY2CZ601	0.030
	Swivelling	All models	1	XY2CZ602	0.130
	Pulley support	All models	1	XY2CZ705	0.060
Pulley	Cable Ø 5 mm max.	All models	1	XY2CZ708	0.056
Cable end protectors	–	Cable Ø 3.2 mm	10	XY2CZ701	0.002
		Cable Ø 5 mm	10	XY2CZ704	0.010
End springs	–	XY2CJ and XY2CH	1	XY2CZ703	0.035
		XY2CE	1	XY2CZ702	0.080

(1) XY2CH13●●● and XY2CH14●●● emergency stop rope pull switches incorporate a cable tensioner as standard. Therefore, there is no need to order a turnbuckle.

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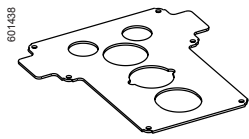


XY2CZ918

Kits and mounting accessories					
Kit contents	For use with	Cable diameter	Cable length	Reference	Weight
		mm	m		kg
1 spring + 1 notched washer + 1 circlip	XY2CH	–	–	XY2CZ918	0.010
1 galvanised cable + 1 cable grip XY2CZ523 + 1 end spring XY2CZ703	XY2CJ and XY2CH	3.2	10.5	XY2CZ9310	0.444
			15.5	XY2CZ9315	0.581
			20.5	XY2CZ9320	0.635
			30.5	XY2CZ9330	1.055
1 galvanised cable + 1 cable grip XY2CZ523 + 1 tensioner XY2CZ210 + 1 cable support XY2CZ601 + 1 cable end protector XY2CZ701 + 1 end spring XY2CZ703	XY2CJ	3.2	30.5	XY2CZ9425	2.045
1 galvanised cable + 4 cable grips XY2CZ524 + 1 turnbuckle XY2CZ404 + 1 cable support XY2CZ601 + 3 cable end protectors XY2CZ704 + 1 end spring XY2CZ702	XY2CE	5	25.5	XY2CZ9525	1.853
			50.5	XY2CZ9550	3.240
1 galvanised cable + 4 cable grips XY2CZ524 + 1 turnbuckle XY2CZ404 + 2 cable supports XY2CZ601 + 3 cable end protectors XY2CZ704 + 1 end spring XY2CZ702	XY2CE	5	70.5	XY2CZ9570	4.426

Replacement parts

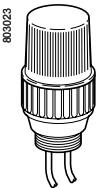
Description	For use with	Type	Reference	Weight kg
Reset pushbutton (blue), spring return	XY2CE	Flush with "R" marked on push	ZB5AA639	0.018
		Booted	ZB5AP6S	0.019
		Mushroom head, Ø 30	ZB5AC64	0.027
Key switch	XY2CE	With key no. 421	ZB5AG612R26	0.064
		With key no. 455	ZB5AG6R26	0.064
Key for reset button	XY2CH and XY2CE	No. 421	Q99900911	0.006
		No. 455	Q99900901	0.006
Pilot light head assembly	XY2CE	Red	XY2CZ800	0.015
		Orange	XY2CZ801	0.015
Set of 5 cover gaskets	XY2CE	–	XY2CZ805	0.122
Fixing nut, plastic, grey	XY2CE	–	ZB5AZ901	0.002
Fixing nut tightening key, plastic, grey	XY2CE For fixing nut ZB5AZ901	–	ZB5AZ905	0.016



XY2CZ805

Description	For use with	Voltage	Sold in lots of	Unit reference	Weight kg
Pilot lights With bulb DL1AA●●● included	XY2CH Colour: orange	24 V ~/-	1	XY2CZ0024 (1)	0.035
		130 V ~/-	1	XY2CZ0130 (1)	0.035
		230 V ~/-	1	XY2CZ0230 (1)	0.035
Supply on LED	XY2CE Colour: red	24 V ~/-	5	ZALVB4	0.015
		48 to 120 V ~	5	ZALVG4	0.015
		230 to 240 V ~	5	ZALVM4	0.015
	XY2CE Colour: yellow	24 V ~/-	5	ZALVB5	0.015
		48 to 120 V ~	5	ZALVG5	0.015
		230 to 240 V ~	5	ZALVM5	0.015
Incandescent bulbs, screw base fitting	XY2CH	24 V - 6 W	10	DL1AA024	0.004
		130 V - 6 W	10	DL1AA127	0.004
		230 V - 6 W	10	DL1AA220	0.004
Set of 5 collars	For mounting bulbs DL1AA127 and DL1AA220 in pilot lights XY2CZ●●●	–	5	XY2CZ908	0.018

(1) Only for use as replacement parts on switches pre-fitted with pilot lights. CCC and UL-CSA approvals no longer apply if an XY2CZ●●● pilot light is mounted on XY2 CH emergency stops.



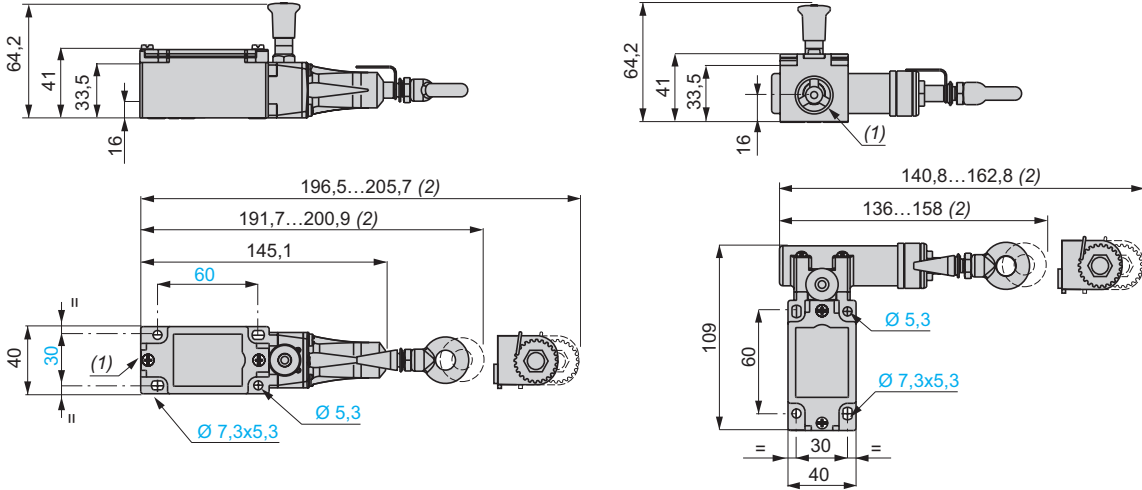
XY2CZ●●●

Emergency stop rope pull switches

XY2CJ

XY2CJS●●

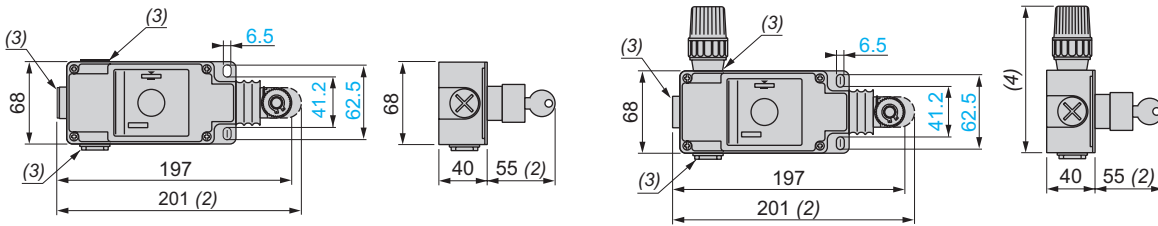
XY2CJR●● and XY2CJL●● (same dimensions with anchor point on RH side or LH side)



XY2CH

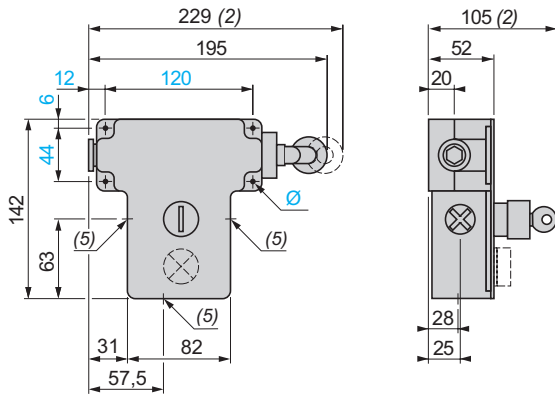
Without pilot light

With pilot light



XY2CE

XY2CE1A●●● and XY2CE2A●●● (same dimensions with anchor point on RH side or LH side)

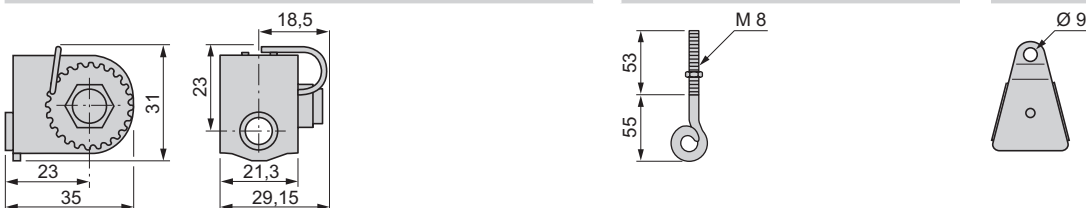


Accessories

XY2CZ210

XY2CZ705

XY2CZ708



(1) Tapped entries for no. 13 cable gland (Pg 13.5). For ISO M20, the reference becomes XY2CJ●●●H29. For 1/2" NPT, the reference becomes XY2CJ●●●H7.

(2) Maximum extension.

(3) Tapped entries for no. 13 cable gland (Pg 13.5). For ISO M20, the reference becomes XY2CH●●●H29.

(4) 121 mm: 24 V and 48 V versions. 131 mm: 130 V and 230 V versions.

(5) 3 plain holes for no. 13 (Pg 13.5) or ISO M20 cable gland.

Ø: 4 elongated holes Ø 6 mm.

General:
pages 2 to 4

Characteristics:
page 5

References:
pages 6 to 10