Safety light curtains Preventa XUSL

Catalogue

Telemecanique Sensors

Contents

Safety light curtains
Preventa XUSL

Safety detection solutions
Safety light curtains

Presentation

Protection of personnel

Safety light curtains are electro-sensitive protection equipment (ESPE) designed for the protection of persons operating or working in the vicinity of machinery, by stopping the dangerous movement of parts as soon as one of the light beams is broken.
In particular, they provide protection to ensure the **safety of personnel** operating dangerous machinery (annex IV of 98/37/EC) but they are equally suitable for use with many other types of machines. They make it possible to protect personnel whilst allowing free access to machines.

The absence of a door or guard reduces the time required for loading, inspection or adjustment operations as well as making access easier.

Directives and standards

Conformity to standards

These light curtains conform to:
- European Machinery Safety Directive 98/37/EC and European Work Equipment Directive 89/655/EEC,
- Low Voltage Directives 73/23/EEC and 93/68/EEC and also, the Electromagnetic Compatibility Directive 89/336/EEC,
- Standard EN/IEC 61496-1, EN/IEC 61496-2 and IEC 61508 (only XUSLB, XUSLDM and XUSLDS) (electro-sensitive protection equipment: ESPE),
- Standard EN 60825 (emission power),
- Standard EN 999/ISO 13855 (installation positioning).

These light curtains are UL, CSA and TÜV certified.

Application sectors

Main applications

- Application sectors for type 2 products:
  - assembly and packaging lines,
  - conveying and handling lines,
  - warehousing and storage systems,
  - waste disposal skips.

- Types of machine requiring the use of type 4 products:
  - presses (all types), shears and trimmers,
  - hoisting equipment,
  - saws (all types),
  - machine tools (lathes, milling machines, machining centres),
  - woodworking machines (planing machines, lathes, spindle moulding machines, side and face milling cutters),
  - textile machinery (carding machines, weaving looms, steam rooms),
  - assembly machines,
  - assembly robots.

Safety rules

Detection of failures

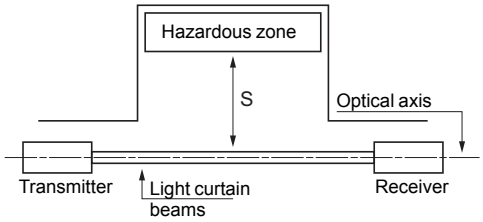
Detection of failures liable to compromise safety and stopping of the machine

The design of the machine and its control system must be to the same level of safety as that of the safety light curtain in order to ensure the immediate stopping of the machines dangerous movement as soon as the hazardous zone, protected by the light curtain, is entered.

It must not be possible to enter the protected zone without breaking the protective light beams. The safety light curtain must therefore be installed in such a manner that the light beams cannot be avoided.
The machine can only be restarted if no danger exists and no personnel are present in the hazardous zone. The risk that persons might be inside the protected zone but out of the protective light beams must be addressed.

Safety detection solutions
Safety light curtains

Installation rules



These are defined in standard EN 999/ISO 13855. In particular:
- the safety distance between the light curtain and the hazardous zone,
- the body approach speed,
- multiple single-beam devices,
- multi-beam light curtains.

Calculation of minimum safety distance S between the light curtain and the hazardous zone

S = K (t1 + t2) + C (general formula)

S = minimum distance in mm
K = body approach speed (or of part of the body) in mm/s
t1 = response time of protection device in s
t2 = stopping time of machine (dangerous movements) in s
C = additional distance in mm

■ For single-beam light curtains:
K = 1600 mm/s
C = 1200 mm for a single beam
C = 850 mm for several beams

The heights protected are as follows:

Number of beams	Heights protected (mm)
4	300, 600, 900, 1200
3	300, 700, 1100
2	400, 900
1	750

■ For multi-beam light curtains:
K = 2000 mm/s
C = 8 (d - 14) where **d** = detection capacity of the light curtain

Special rules for presses

The use of safety light curtains and mechanical protectors on metal working presses is governed by specific standards and rules.
The standards specify that only safety light curtains or mechanical protectors must be used as safety devices so that, if a person enters the protective field whilst the dangerous movement is in progress, the machine stops as quickly as possible. “Quick stopping” means stopping of the ram before the operator can reach the hazardous zone, taking into account their speed of movement.

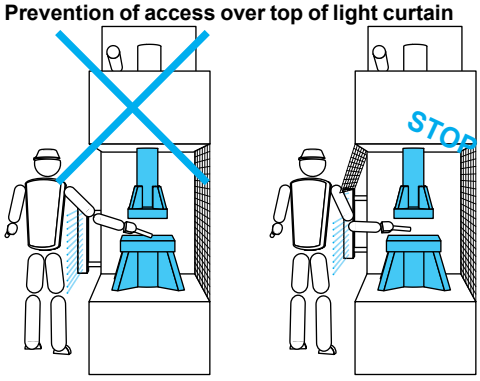
The continuous self-monitoring function of safety light curtains is essential for metal working press applications. If a fault occurs in the safety device, the potentially dangerous machine must be stopped automatically.

Once the protected zone is clear, the movement which was started and then interrupted by entry into the zone must not resume its normal travel, even after a Reset button has been pressed. Resetting must restart the movement from the beginning of the cycle. **The safety light curtain must only allow starting of a dangerous movement if its correct operation has been proved** (by pushing a test rod into the hazardous zone, or by means of an automatic device) and if a Reset button (start interlock) has been reactivated.

The safety distance S is calculated in a special way for:
- mechanical presses: refer to **EN 692**,
- hydraulic presses, pneumatic folding machines, shears, bending and shaping machines: refer to **prEN 693**.

Safety detection solutions
Safety light curtains

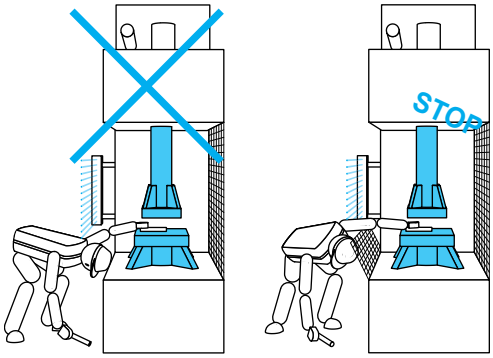
Prevention of access over top of light curtain



Without additional safety device: insufficient degree of protection

With additional safety device: light beam(s) broken, the machine stops

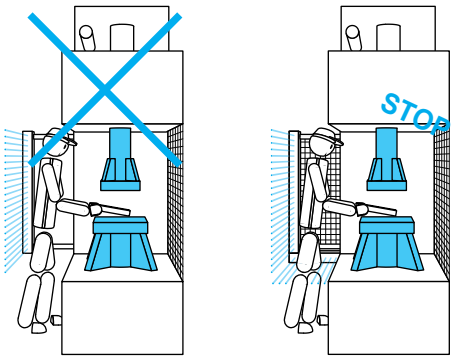
Prevention of access from beneath the light curtain



Without additional safety device: insufficient degree of protection

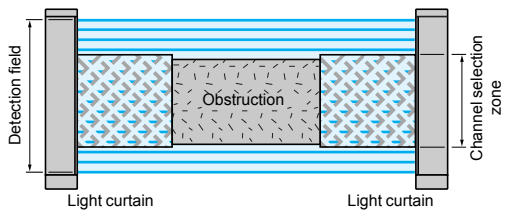
With additional safety device: light beam(s) broken, the machine stops

Prevention of access from rear of light curtain



Without additional safety device: insufficient degree of protection

With additional safety device: light beam(s) broken, the machine stops



Addition of solid protection to the light curtain when using channel selection

Additional safety devices

Safety light curtains can only be used on machines on which the movement of working components can be **stopped at any time during a hazardous phase**.

These light curtains provide a stop signal, not a control instruction. This stop signal must be stored.

Clearing of the light curtain must not result in restarting of moving parts.

Subsequent restarting must only be possible by means of deliberate operation of the appropriate control device, after having checked that there is no longer any danger.

Electrical interfacing between the light curtain and the machine circuits must correspond to the machine standard specifications.

Where safety light curtains do not provide an adequate degree of protection due to their location, additional suitable safety devices or additional light curtains must be used in order to prevent operators from entering the protective light curtain and reaching the hazardous zone (EN 294/ISO 13852, EN 811/ISO 13853), or from remaining in the area between the hazardous zone and the safety light curtain (EN 999/ISO 13855).

The position and size of these additional safety devices must be such that it is **impossible for operators to reach the hazardous zone** in any way whatsoever (over the top, from beneath, from behind or from the side) **without breaking the beams of the light curtain**.

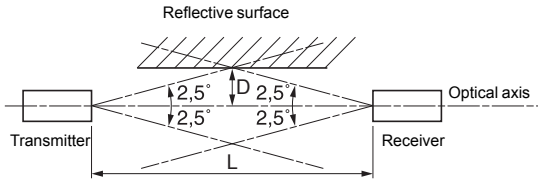
These additional safety devices must be:
- either fixed
(if possible, screwed or welded to the machine),
- or moving
(with continuous monitoring of their position if they have to open).

It must be impossible for operators to disconnect or cut-out the switching circuits for these additional safety devices.

Protection for Blanking, Floating blanking or Monitored blanking functions

The Blanking (inhibition of light beams), Floating blanking (floating inhibition of light beams) or Monitored blanking (fixed and floating inhibition/disinhibition of light beams) functions create non protected areas in the detection field. These non protected areas are required for some applications. If an obstruction does not completely fill these unprotected areas, one of two actions must be implemented:
- an increase of safety distance to take into account a larger opening in the light curtain,
- the area not filled by an obstruction must be guarded by a solid protection method (mechanical barrier: metal plate or unfolded structure).

Installation precautions



Reflective surface

The devices must be installed such that the transmitter and associated receiver are mounted facing each other and correctly aligned for both height and angle.

The aperture angle of the optics and transmitter/receiver alignment tolerance are ± 2.5°.

Reflective surfaces located alongside the optical axis could result in stray reflections interfering with the beams which are the furthest away from the axis and, in consequence, prevent detection of an object entering the hazardous zone. The direct beam could then be joined by a stray reflected beam and this latter beam would not be broken when the object is in the axis.

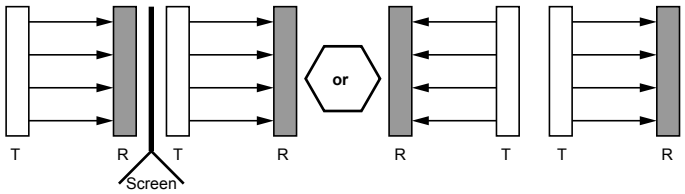
For this reason, prEN 50100-1 and 2 and EN/IEC 61496-1 specify a minimum distance **D** whereby:
- for 0 < **L** < 3 m, **D = 131 mm**,
- for **L** > 3 m, **D = (0.035 x L) + 5** (with a minimum limit value of 131 mm).

D = minimum distance between the light curtain and reflective surface in mm
L = sensing distance of the light curtain in mm

Mutual interference

Certain installation configurations may require the installation of 2 (or more) safety light curtains side by side.

In cases where the products used do not have a light beam coding system it is recommended that their installation is as indicated below.



Environments subject to interference

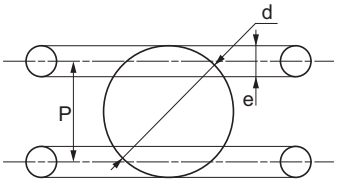
Industrial applications sometimes place products in extreme operating conditions, mainly due to:

■ **Electromagnetic interference** generated by the proximity of variable speed drives, welding machines or walkie-talkies.
The products in the XUSL range are designed to be immune to such interference. They conform to:
- level 3 according to EN/IEC 61496-1,
- resistance to interference caused by variable speed drives.

■ **Light interference** (conformity to standard EN/IEC 61496-2).

Safety detection solutions
Safety light curtains

Definitions



Detection capacity (d)

This is the smallest diameter (object) that a type 4 safety light curtain is capable of detecting with absolute certainty.

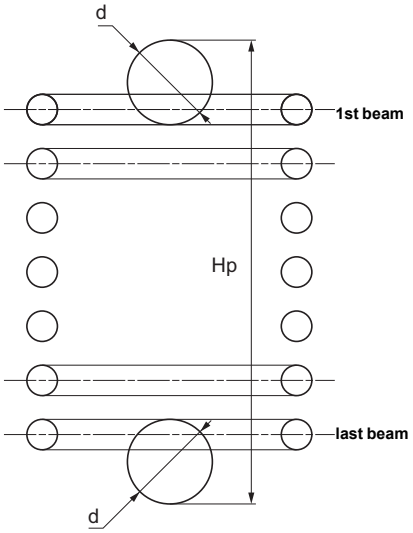
d = P + e

P: distance between the axis of 2 adjacent beams
e: diameter of the beams

XUSL range	P (mm)	e (mm)	d (mm)
XUSL● Finger protection	10	3.3	14
XUSL● Hand protection	20	9	30

Protected height (Hp)

According to prEN 50100-2, this is the zone (or height) within which an object of equal diameter to the detection capacity **d** is detected with absolute certainty.



Response time

European standard EN 999/ISO 13855 fully incorporates the various aspects of “response time” in the formula for calculating the minimum safety distance (see page 3):

S = K (t1 + t2) + C

with, in particular:

- **t1**: response time of the protection device (in s). This is the time indicated for the XPSCE and XUSL ranges. It is the total time between detection by the device and switching of the output component.

- **t2**: stopping time of the machine and, in particular, of its dangerous movements (in s). This information is supplied by the machine manufacturer. It is the time between the stop instruction and the actual stop of the dangerous mechanical components.

Functions

Protection mode

AUTO/MAN (automatic/manual): this is what standard EN/IEC 61496 calls start (or restart) interlock of the safety light curtain:
■ in AUTO mode: on power-up or after the beams have been cleared, the light curtain resets itself automatically (closing of the OSSD output safety circuits),
■ in MANUAL mode: on power-up or after the beams have been cleared, the light curtain keeps its output safety circuits in the "open" position. Pressing (and releasing) the reset button will cause actual resetting of the light curtain (and closing of its OSSD output safety circuits).

Note: in all cases, a general start instruction for the machine will trigger its actual start-up.

Monitoring of external switching devices

Also called EDM (External Device Monitoring) by standard EN/IEC 61496, this consists of monitoring the function (open or closed), together with the time taken to reach that condition, of the machines power switching components.

Auxiliary output

This is a low power solid-state output for signalling, when configurable (XUSLP/XUSLB/XUSLDM), to the automation system. This output closes when the light curtain switches to run mode.

Alarm

This is a low power solid-state output for signalling to the automation system. This output closes when the light curtain switches to alarm mode.

Signalling

LED display of operating modes and alarm.

Alignment aid

Display by visible infrared LED of each beam broken.

Muting (inhibition)

When activated, the "muting" function inhibits the detection function of the light curtain.
Activation (or deactivation) is achieved by means of standard sensors (photo-electric or other). When activated, a signal is sent to the automation system. This function is used to allow objects to access the hazardous zone during the process.
Signalling informs the operator or operators that they are not protected.

Reduction of resolution

This function enables the resolution of the light curtain to be reduced by inhibiting 1 or 2 adjacent light beams, anywhere within the protected height. This function is mainly used for ignoring metal plate guide rails and metal plates of varying thickness on folding or cutting presses.

Blanking

This function makes it possible to inhibit detection by a selected group of light beams in the light curtain (and not all the beams as with muting). This function (adapted to the size of the objects) allows the presence of objects during process operations. Caution when using: the detection capacity changes. This imposes a greater safety distance. In addition, the use of additional protection each side of the object present must be included, in order to prevent any intrusion into the free areas.

Floating blanking

This function makes it possible to inhibit one or two light beams (adjacent or otherwise), anywhere in the light curtain. This configuration is used, for example, for metal plate feeding applications on folding presses or shears.

Monitored blanking

This function makes it possible to inhibit a group of light beams when a predetermined object enters the light curtain and disinhibit the same group of light beams after completing its movement and exiting the light curtain, without switching it to the stop mode and halting the dangerous movement of the machine.

Blanking plus floating blanking and Monitored blanking plus floating blanking

The Blanking (fixed inhibition of light beams) and Floating blanking (moving inhibition of one or two light beams) functions can be combined as can the Monitored blanking and Floating blanking functions.
Caution, these applications require complementary safety measures.

Multi-Segments

The "multi-segments" enable the protection of zones using a single connection. Only the first segment (XUSLDM…), also called the ''master'', has to be connected to the enclosure or control cabinet. This first segment, which can either be for finger or hand detection, can support up to 3 other segments, also called intermediate segments or ''slaves'', which are connected by jumper cables to the M12 connectors located on its top surface. The intermediate segments can be of different detection capacities and heights protected than that of the ''Master''. They are fully dependent on the functions configured in the first segment. Caution: the multi-segment system developed can not exceed 256 light beams in total and each intermediate segment must not exceed 128 light beams nor have a jumper cable longer than 10 m between them.

Adjustment of response time (only available on light curtains XUSLD)

This function enables the user to reduce the scanning frequency of the safety light curtain in order to improve its immunity to interference associated to the environment. When low frequency is activated, an additional 9 ms to 40 ms (16 light beams to 256 light beams) is added to the normal response time. This function can be used in difficult environmental conditions where electrical interference, smoke/fumes, dust or other particles can disrupt the operation of the safety light curtain.

WARNING: The activation of this function requires recalculation of the safety distance to compensate for the added response time. The safety distance must be increased. Ignoring this essential requirement could lead to serious injury, death or damage to material.

Safety detection solutions Preventa

Safety light curtains, type 4

Light curtains basic XUSLB and advanced XUSLDM with solid-state output

Light curtain type			XUSLBQ6A●●●● XUSLDMQ6A●●●● (14 mm)	XUSLBR5A●●●● (30 mm)	XUSLDMY5A●●●●● (30 mm)
Environment characteristics					
Conformity to standards			ANSI/RIA R15.06, ANSI B11:19-1990, OSHA 1910.217(C), OSHA 1910.212, EN/IEC 61496-1 and EN/IEC 61496-2 and IEC 61508-1, 2 (Type 4 ESPE)		
Certifications			CE, TUV, UL, CSA		
European directives			Machinery directive 98/37/EC, Work equipment directive 89/655/EEC and EMC directive 89/336 EEC ROHS directive 2002/95/EC		
Maximum safety level *(1)*			PL = e/category 4 conforming to EN/ISO 13849-1		
Reliability data			SIL 3 conforming to EN/IEC 61508		
			PFH_d = 4.9E^{-8} 1/h conforming to EN/IEC 61508		
Ambient air temperature	Operating	**°C**	- 10…+ 55		
	For storage	**°C**	- 25…+ 75		
Relative humidity			95% maximum, without condensation		
Degree of protection			IP 65		
Shock and vibration resistance	Conforming to IEC 61496-1		Shock resistance: 10 gn, impulse 16 ms Vibration resistance: 10…55 Hz, amplitude: 0.35 ± 0.05 mm		
Materials			Casing: aluminium with electrostatically applied red (RAL 3000) polyester paint finish; end caps: 20% fibreglass impregnated polycarbonate.		
Fixings			End brackets (included)		
Optical characteristics					
Minimum detection capacity		**mm**	14 (finger)	30 (hand)	
Nominal sensing distance (Sn)		**m**	0.3…7 or 3 m with PDM *(2)*	0.3…20 or 8 m with PDM *(2)*	
Height protected		**mm**	280…1360	320…2120	
Effective aperture angle (EAA)			2.5° at 3 m (3° when used with IP 67 protection tube)		
Light source			GaAlAs LED, 880 nm		
Immunity to ambient light			Conforming to IEC/EN 61496-2		
Electrical characteristics					
Response time		**ms**	23…41	23…32	
Power supply			⎓ 24 V ± 20% 2 A conforming to EN/IEC 61496 and EN/IEC 60204-1		
	Transmitter	**mA**	285 (SELV: Safety Extra Low Voltage)		
	Receiver	**A**	1.8 (with maximum load)		
Maximum current consumption (no-load)	Transmitter	**mA**	285		
	Receiver	**mA**	450		
Immunity to interference			Conforming to EN 61496-1		
Safety outputs OSSD (Output Signal Switching Devices)			2 solid-state PNP (N/O) outputs ≤ 625 mA, ⎓ 24 V (Short-circuit protected)		
Auxiliary output			1 solid-state output 100 mA, ⎓ 24 V, PNP or NPN (depending on model)		
Monitoring activation of output switching devices (MPCE/EDM)			50 mA, ⎓ 24 V and start/restart 10 mA		
Signalling	Transmitter		1 LED (power supply)		
	Receiver		4 LEDs (stop, run, interlock, ECS/B Blanking or FB Floating Blanking)		
Connections *(3)*					
Light curtains	Transmitter		M12, 5-pin, female connector		
	Receiver		M12, 8-pin, female connector		
Segments XUSLDS	Transmitter-receiver		M12, 4-pin, female connector on flying lead		
Connection box XPSLCM1	Receiver		M12, 4-pin, female connector		
Pre-wired connectors c.s.a.	Transmitter-receiver	**mm²**	0.32 conductors with M12, 5-pin, male connector		
	Receiver	**mm²**	0.32 conductors with M12, 8-pin, male connector		
Jumper cables c.s.a.	Transmitter-receiver	**mm²**	0.32 conductors with M12, 4-pin, male/female connectors		
Cable resistance of pre-wired connectors	Transmitter-receiver	Ω	0.055 per metre for 0.32 mm² conductors		
Cable lengths		**m**	Pre-wired connectors with cable lengths of 5, 10, 15 and 30 m are available separately. The maximum cable length is 60 m, depending on the load current and power supply.		

(1) Using an appropriate and correctly connected control system.
(2) PDM: Programming and Diagnostic Module, available as option, see page 14.
(3) Pre-wired connectors to be ordered separately, see page 14.

Light curtain type			XUSLB●●●●●●	XUSLDM●●●●●
Functions				
Functions	Accessible by cabling alone *(1)*		□ Automatic start □ Auxiliary output (PNP, status signalling) □ Test (MTS: Monitoring Test Signal) □ Alignment aid by display of each light beam broken □ LED display of operating modes and faults	
	Accessible via programming and diagnostic module		□ Auto/Manual □ Monitoring of external switching devices (EDM: External Device Monitoring) □ Light beam coding (A or B) □ Sensing distance (short, long) □ Programming and downloading of configuration settings, via programming and diagnostic module (PDM) □ Display of operating modes and faults by LED and/or PDM *(2)*	□ Auto/Manual, manual 1st cycle □ Monitoring of external switching devices (EDM: External Device Monitoring) □ Blanking (ECS/B) □ Monitored Blanking □ Floating Blanking (FB) □ Reduction of resolution □ Response time (normal, slow) □ Light beam coding (A or B) □ Sensing distance (short, long) □ Auxiliary output (alarm or status signalling, PNP or NPN) □ Start button (N/O or N/C, 0 V or 24 V) □ Muting (see page 22) □ Cascadable versions with up to 4 segments total (256 light beams max., modular finger/hand) using segments XUSLDS □ Programming and downloading of configuration settings, via programming and diagnostic module (PDM) □ Display of operating modes and faults by LED and/or PDM *(2)*
Monitoring of external switching devices (EDM = External Device Monitoring)			Monitoring of the function (open or closed) as well as the response time of the power components.	
"Test" function			Instigates the stop instruction of the light curtain by opening the contact (simulated intrusion)	
"Muting" function (inhibition)			□ With external module XPSLCM1150	□ Integrated when using connection box XPSLCM1 for connecting sensors and "muting" indicator light □ or with module XPSLCM1150

(1) Not requiring use of PDM.
(2) PDM: Programming and Diagnostic Module, available as option, see page 14.

Safety detection solutions
Preventa
Safety light curtains, type 4
Basic light curtains XUSLB with solid-state output

XUSLBQ6A●●●●

Transmitter-receiver pairs for finger protection *(1)*

Detection capacity 14 mm. Sensing distance 0.3 to 7 m (or 3 m with PDM).

■ 2 PNP safety outputs

Height protected	Response time	Number of light beams	Auxiliary output	Reference *(2)*	Weight
mm	ms				kg
280	23	24	PNP	**XUSLBQ6A0280** ★	1.790
320	23	32	PNP	**XUSLBQ6A0320**	1.970
360	23	36	PNP	**XUSLBQ6A0360** ★	2.150
440	23	44	PNP	**XUSLBQ6A0440** ★	2.500
520	23	52	PNP	**XUSLBQ6A0520** ★	2.870
600	23	60	PNP	**XUSLBQ6A0600** ★	3.220
720	32	72	PNP	**XUSLBQ6A0720** ★	3.760
760	32	76	PNP	**XUSLBQ6A0760**	3.940
880	32	88	PNP	**XUSLBQ6A0880** ★	4.470
920	32	92	PNP	**XUSLBQ6A0920**	4.650
960	32	96	PNP	**XUSLBQ6A0960**	4.830
1040	32	104	PNP	**XUSLBQ6A1040**	5.190
1120	32	112	PNP	**XUSLBQ6A1120**	5.540
1200	32	120	PNP	**XUSLBQ6A1200**	5.900
1360	41	136	PNP	**XUSLBQ6A1360**	6.180

XUSLBR5A●●●●

Transmitter-receiver pairs for hand protection *(1)*

Detection capacity 30 mm. Sensing distance 0.3 to 8 m (or 20 m with PDM).

■ 2 PNP safety outputs

Height protected	Response time	Number of light beams	Auxiliary output	Reference *(2)*	Weight
mm	ms				kg
320	23	16	PNP	**XUSLBR5A0320**	1.970
360	23	18	PNP	**XUSLBR5A0360** ★	2.150
440	23	22	PNP	**XUSLBR5A0440**	2.500
520	23	26	PNP	**XUSLBR5A0520** ★	2.870
600	23	30	PNP	**XUSLBR5A0600**	3.220
680	23	34	PNP	**XUSLBR5A0680** ★	3.580
760	23	38	PNP	**XUSLBR5A0760**	3.940
880	23	44	PNP	**XUSLBR5A0880** ★	4.470
920	23	46	PNP	**XUSLBR5A0920**	4.650
1040	23	52	PNP	**XUSLBR5A1040** ★	5.190
1200	23	60	PNP	**XUSLBR5A1200** ★	5.900
1360	23	68	PNP	**XUSLBR5A1360**	6.620
1400	23	70	PNP	**XUSLBR5A1400** ★	6.800
1520	32	76	PNP	**XUSLBR5A1520**	7.330
1560	32	78	PNP	**XUSLBR5A1560** ★	7.500
1640	32	82	PNP	**XUSLBR5A1640**	7.870
1720	32	86	PNP	**XUSLBR5A1720**	8.230
1800	32	88	PNP	**XUSLBR5A1800**	8.590
1920	32	96	PNP	**XUSLBR5A1920**	9.120
2120	32	106	PNP	**XUSLBR5A2120**	10.020

★ **Products available in stock**

(1) Supplied with a test rod, 2 sets of 2 brackets with fixings, user guide with certificate of conformity on CD-ROM and 1 arc suppressor set.
Programming and Diagnostic Module (if required) and pre-wired connectors to be ordered separately, see page 14.

*(2) To order a receiver only, add the letter **R** to the end of the reference for the corresponding transmitter-receiver pair.*
*Example: reference XUSLBR5A0320 becomes **XUSLBR5A0320R** for the receiver only.*
*To order a transmitter only, add the letter **T** to the end of the reference for the corresponding transmitter-receiver pair.*
*Example: reference XUSLBR5A0320 becomes **XUSLBR5A0320T** for the transmitter only.*

Other versions

Combining type 4 safety light curtains with external module for muting function.
See pages 56 to 63.

Safety detection solutions Preventa

Safety light curtains, type 4

Advanced light curtains XUSLDM with solid-state output

XUSLDMQ●●●●

XUSLDMY●●●●

★ **Products available in stock**

Transmitter-receiver pairs for finger protection *(1)*

Detection capacity 14 mm. Sensing distance 0.3 to 7 m (or 3 m with PDM).

■ 2 PNP safety outputs

Height protected	Response time		Number of light beams	Auxiliary output	Reference *(2)*	Weight
	Normal	Slow				
mm	ms	ms				kg
280	23	38	24	PNP/NPN	**XUSLDMQ6A0280** ★	1.790
320	23	38	32	PNP/NPN	**XUSLDMQ6A0320** ★	1.970
360	23	38	36	PNP/NPN	**XUSLDMQ6A0360**	2.150
440	23	38	44	PNP/NPN	**XUSLDMQ6A0440** ★	2.500
520	23	38	52	PNP/NPN	**XUSLDMQ6A0520** ★	2.900
600	23	38	60	PNP/NPN	**XUSLDMQ6A0600**	3.220
720	32	53	72	PNP/NPN	**XUSLDMQ6A0720** ★	3.760
760	32	53	76	PNP/NPN	**XUSLDMQ6A0760**	3.940
880	32	53	88	PNP/NPN	**XUSLDMQ6A0880** ★	4.470
920	32	53	92	PNP/NPN	**XUSLDMQ6A0920**	4.650
960	32	53	96	PNP/NPN	**XUSLDMQ6A0960**	4.830
1040	32	53	104	PNP/NPN	**XUSLDMQ6A1040**	5.190
1120	32	53	112	PNP/NPN	**XUSLDMQ6A1120**	5.540
1200	32	53	120	PNP/NPN	**XUSLDMQ6A1200**	5.900
1360	41	68	136	PNP/NPN	**XUSLDMQ6A1360**	6.620

Transmitter-receiver pairs for hand protection *(1)*

Detection capacity 30 mm. Sensing distance 0.3 to 20 m (or 8 m with PDM).

■ 2 PNP safety outputs

Height protected	Response time		Number of light beams	Auxiliary output	Reference *(2)*	Weight
	Normal	Slow				
mm	ms					kg
320	23	38	16	PNP/NPN	**XUSLDMY5A0320**	1.970
360	23	38	18	PNP/NPN	**XUSLDMY5A0360** ★	2.150
440	23	38	22	PNP/NPN	**XUSLDMY5A0440**	2.500
520	23	38	26	PNP/NPN	**XUSLDMY5A0520** ★	2.870
600	23	38	30	PNP/NPN	**XUSLDMY5A0600**	3.220
680	23	38	34	PNP/NPN	**XUSLDMY5A0680** ★	3.580
760	23	38	38	PNP/NPN	**XUSLDMY5A0760**	3.940
880	23	38	44	PNP/NPN	**XUSLDMY5A0880** ★	4.470
920	23	38	46	PNP/NPN	**XUSLDMY5A0920**	4.650
1040	23	38	52	PNP/NPN	**XUSLDMY5A1040** ★	5.190
1200	23	38	60	PNP/NPN	**XUSLDMY5A1200**	5.900
1360	23	38	68	PNP/NPN	**XUSLDMY5A1360**	6.620
1400	23	38	70	PNP/NPN	**XUSLDMY5A1400** ★	6.800
1520	32	53	76	PNP/NPN	**XUSLDMY5A1520**	7.330
1560	32	53	78	PNP/NPN	**XUSLDMY5A1560**	7.500
1640	32	53	82	PNP/NPN	**XUSLDMY5A1640**	7.870
1720	32	53	86	PNP/NPN	**XUSLDMY5A1720**	8.230
1800	32	53	88	PNP/NPN	**XUSLDMY5A1800**	8.590
1920	32	53	96	PNP/NPN	**XUSLDMY5A1920**	9.120
2120	32	53	106	PNP/NPN	**XUSLDMY5A2120**	10.020

(1) Supplied with a test rod, 2 sets of 2 brackets with fixings, user guide with certificate of conformity on CD-ROM and 1 arc suppressor set.
Programming and Diagnostic Module (if required) and pre-wired connectors to be ordered separately, see page 14.

*(2) To order a receiver only, add the letter **R** to the end of the reference for the corresponding transmitter-receiver pair.*
*Example: reference XUSLDMY5A0320 becomes **XUSLDMY5A0320R** for the receiver only.*
*To order a transmitter only, add the letter **T** to the end of the reference for the corresponding transmitter-receiver pair.*
*Example: reference XUSLDMY5A0320 becomes **XUSLDMY5A0320T** for the transmitter only.*

Other versions

Combining type 4 safety light curtains with external module for muting function.
See pages 56 to 63.

Safety detection solutions Preventa

Safety light curtains, type 4
Segments XUSLDS
for advanced light curtains XUSLDM

XUSLDM + XUSLDS

Universal XUSLDM light curtains, cascadable versions

Cascadable versions with up to 4 segments total (256 light beams max., modular finger/hand) using segments XUSLDS

Configuration of segments XUSLDS

Two segments

Number of light beams	Response time
	ms
0 to 65	23
66 to 120	32
121 to 174	41
175 to 229	50
230 to 256	59

Three segments

Number of light beams	Response time
	ms
0 to 59	23
60 to 114	32
115 to 168	41
169 to 223	50
224 to 256	59

Four segments

Number of light beams	Response time
	ms
0 to 53	23
54 to 108	32
109 to 162	41
163 to 217	50
218 to 256	59

General: pages 2 to 7
References: page 13
Dimensions: page 17

Safety detection solutions
Preventa
Safety light curtains, type 4
Segments XUSLDS
for advanced light curtains XUSLDM

XUSLDSQ6A●●●●

XUSLDSY5A●●●●

★ **Products available in stock**

Transmitter-receiver pairs for finger protection *(1)*

Detection capacity 14 mm. Sensing distance depending on XUSLDM light curtain used

■ Segments for cascadable Universal light curtains *(2)*

Height protected	Number of light beams	Reference *(3)*	Weight
mm			kg
280	24	**XUSLDSQ6A0280**	1.790
320	32	**XUSLDSQ6A0320**	1.970
360	36	**XUSLDSQ6A0360**	2.150
440	44	**XUSLDSQ6A0440**	2.500
520	52	**XUSLDSQ6A0520**	2.870
600	60	**XUSLDSQ6A0600**	3.220
720	72	**XUSLDSQ6A0720**	3.760
760	76	**XUSLDSQ6A0760**	3.940
880	88	**XUSLDSQ6A0880**	4.470
920	92	**XUSLDSQ6A0920**	4.650
960	96	**XUSLDSQ6A0960**	4.830
1040	104	**XUSLDSQ6A1040**	5.190
1120	112	**XUSLDSQ6A1120**	5.540
1200	120	**XUSLDSQ6A1200**	5.900

Transmitter-receiver pairs for hand protection *(1)*

Detection capacity 30 mm. Sensing distance depending on XUSLDM light curtain used

■ Segments for cascadable Universal light curtains *(2)*

Height protected	Number of light beams	Reference *(3)*	Weight
mm			kg
320	16	**XUSLDSY5A0320**	1.970
360	18	**XUSLDSY5A0360** ★	2.150
440	22	**XUSLDSY5A0440**	2.500
520	26	**XUSLDSY5A0520**	2.870
600	30	**XUSLDSY5A0600**	3.220
680	34	**XUSLDSY5A0680** ★	3.580
760	38	**XUSLDSY5A0760**	3.940
880	44	**XUSLDSY5A0880**	4.470
920	46	**XUSLDSY5A0920**	4.650
1040	52	**XUSLDSY5A1040** ★	5.190
1200	60	**XUSLDSY5A1200**	5.900
1360	68	**XUSLDSY5A1360**	6.620
1400	70	**XUSLDSY5A1400**	6.800
1520	76	**XUSLDSY5A1520**	7.330
1560	78	**XUSLDSY5A1560**	7.500
1640	82	**XUSLDSY5A1640**	7.870
1720	86	**XUSLDSY5A1720**	8.230
1800	88	**XUSLDSY5A1800**	8.590
1920	96	**XUSLDSY5A1920**	9.120
2120	106	**XUSLDSY5A2120**	10.020

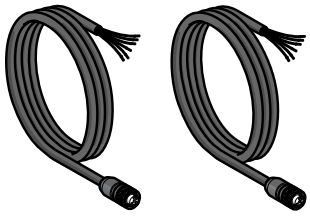
(1) Supplied with 2 sets of 2 brackets and fixings.
Jumper cables to be ordered separately, see page 14.
(2) The segments are to be connected to the M12 4-pin connector on top of the XUSLDM light curtains.
*(3) To order a receiver only, add the letter **R** to the end of the reference for the corresponding transmitter-receiver pair.*
*Example: reference XUSLDSY5A0320 becomes **XUSLDSY5A0320R** for the receiver only.*
*To order a transmitter only, add the letter **T** to the end of the reference for the corresponding transmitter-receiver pair.*
*Example: reference XUSLDSY5A0320 becomes **XUSLDSY5A0320T** for the transmitter only.*

Safety detection solutions Preventa

Safety light curtains, type 4

Light curtains basic XUSLB and advanced XUSLDM/LDS with solid-state output

XUSLPDM



563528

XSZBCT●● XSZBCR●●

★ **Products available in stock**

Separate components

Power supplies, 90° mirror adaptors, protective covers, anti-vibration kit, fixing bases, laser alignment tool

See pages 40 to 47.

Accessories

Description	For use with	Length m	Reference	Weight kg
Programming and Diagnostic Module (PDM)	Light curtains XUSLB/LDM	–	**XUSLPDM** ★	0.280
Holder fixing	Programming and diagnostic module XUSLPDM	–	**XUSLZPDM** ★	0.040
Pre-wired connectors for light curtains XUSLB/XUSLDM	Transmitter type	5	**XSZBCT05** ★	0.390
		10	**XSZBCT10** ★	0.690
		15	**XSZBCT15** ★	1.030
		30	**XSZBCT30** ★	1.930
	Receiver type	5	**XSZBCR05** ★	0.450
		10	**XSZBCR10** ★	0.780
		15	**XSZBCR15** ★	1.100
		30	**XSZBCR30** ★	2.280
Jumper cables for segments XUSLDS M12 male/female, 4-pin, straight	Transmitter type	0.3	**XSZDCT003** ★	0.050
		0.5	**XSZDCT005** ★	0.070
		1	**XSZDCT010** ★	0.110
		2	**XSZDCT020**	0.210
		3	**XSZDCT030**	0.300
		5	**XSZDCT050**	0.490
		10	**XSZDCT100**	0.950
	Receiver type	0.3	**XSZDCR003** ★	0.050
		0.5	**XSZDCR005** ★	0.070
		1	**XSZDCR010** ★	0.110
		2	**XSZDCR020**	0.210
		3	**XSZDCR030**	0.300
		5	**XSZDCR050**	0.490
		10	**XSZDCR100**	0.960
Jumpers for replacement of light curtains XUSLT by XUSLB or XUSLDM	Transmitter type Male/Female 5 pins	0,3	**XSZTBDMCT003** ★	0.060
	Receiver type Male/Female 8 pins	0,3	**XSZTBDMCR003** ★	0.060

Description	For use with	Unit reference	Weight kg
Replacement caps for M12 connector (Sold in lots of 10)	Light curtains XUSLDM and segments XUSLDS	**XUSLZ600** ★	0.001
Replacement caps for M8 connector (programming and diagnostic module XUSLPDM connection to light curtains) (Sold in lots of 10)	Light curtains XUSLB/LDM and segments XUSLDS	**XUSLZ610** ★	0.010
Fixings kit (2 brackets)	Light curtains XUSLB/LDM and segments XUSLDS	**XUSLZ228** ★	0.100
Sliding nuts (4 nuts) for rear or side fixing with XUSLZ228	Light curtains XUSLB/LDM	**XUSLZ330** ★	0,040
Arc suppressor (pair)	All types of light curtain	**XUSLZ500** ★	0.020
IP 67 protection tube (see page 15)			–
User guide on CD-ROM	All types of light curtain	**XUSLZ450**	0.020
Connection box for sensors and Muting indicator light (see page 22)	Light curtains XUSLDM	**XPSLCM1** ★	0.190

General: pages 2 to 7

Safety detection solutions Preventa

Safety light curtains, type 4

Protection tubes for light curtains with solid-state output XUSLB/XUSLDM and segments XUSLDS

IP 67 protection tubes for light curtains XUSLB/XUSLDM and segments XUSLDS			XUSLZD7●●●●
Environment characteristics			
Air temperature	For operation	**°C**	0...+ 40
	For storage	**°C**	- 25...+ 70
Degree of protection			IP 67 conforming to IEC 60529
Material			Acrylic
Sensing distance (Sn) **reduction coefficient**			0.90
Environmental chemicals			
Chemical resistance	Aliphatic hydrocarbons		Resistant
	Alkalis		
	Aqueous solutions		
	Detergents and cleaners		
	Inorganic diluted acids		
	Chlorinated or aromatic hydrocarbons		Limited resistance
	Esters		
	Ketones		
Environmental resistance	Adverse weather, sunlight (UV)		Resistant
	Humidity		
	Immersion in water		

References of IP 67 protection tubes

108048

XUSLZD7●●●

Description	For use with	Height mm	Reference	Weight kg
IP 67 protection tubes for XUSLB/LDM transmitter-receiver pair and segments XUSLDS●●● (0.90 Sn) *(1)* (Sold in lots of 2)	XUSL●●6A0280	284.4	**XUSLZD70280**	2.650
	XUSL●●●A0320	324.8	**XUSLZD70320**	2.810
	XUSL●●●A0360	364.5	**XUSLZD70360**	2.960
	XUSL●●●A0440	443.9	**XUSLZD70440**	3.270
	XUSL●●●A0520	523.4	**XUSLZD70520**	3.580
	XUSL●●●A0600	604.1	**XUSLZD70600**	3.890
	XUSL●●5A0680	683.6	**XUSLZD70680**	4.190
	XUSL●●6A0720	724	**XUSLZD70720**	4.350
	XUSL●●●A0760	763	**XUSLZD70760**	4.500
	XUSL●●●A0880	882.8	**XUSLZD70880**	4.960
	XUSL●●●A0920	922.5	**XUSLZD70920**	5.120
	XUSL●●6A0960	963.6	**XUSLZD70960**	5.270
	XUSL●●●A1040	1042.9	**XUSLZD71040**	5.580
	XUSL●●6A1120	1122.3	**XUSLZD71120**	5.890
	XUSL●●●A1200	1203.8	**XUSLZD71200**	6.200
	XUSL●●●A1360	1362	**XUSLZD71360**	6.810
	XUSL●●5A1400	1401.7	**XUSLZD71400**	6.970
	XUSL●●5A1520	1521.5	**XUSLZD71520**	7.430
	XUSL●●5A1560	1563.3	**XUSLZD71560**	7.580
	XUSL●●5A1640	1641.3	**XUSLZD71640**	7.890
	XUSL●●5A1720	1720.8	**XUSLZD71720**	8.200
	XUSL●●5A1800	1802.9	**XUSLZD71800**	8.510
	XUSL●●5A1920	1922.8	**XUSLZD71920**	8.970
	XUSL●●5A2120	2120.7	**XUSLZD72120**	9.740

(1) Sensing distance reduction coefficient to be taken into account for each pair of IP 67 protection tubes used.

Dimensions:
page 17

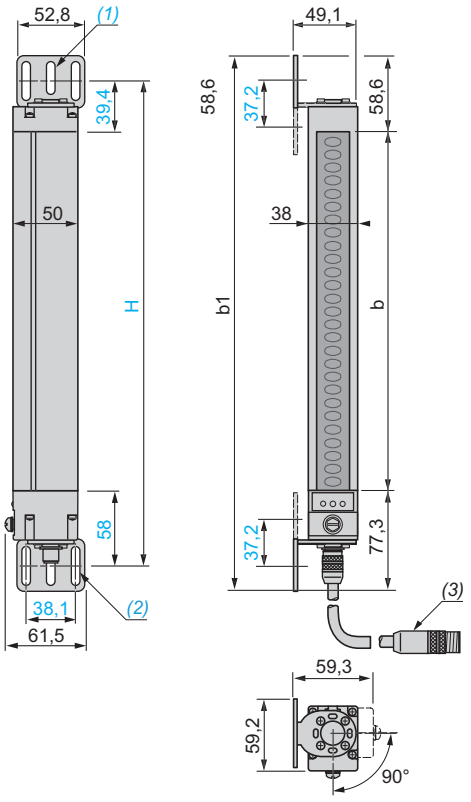
Safety detection solutions
Preventa

Safety light curtains, type 4

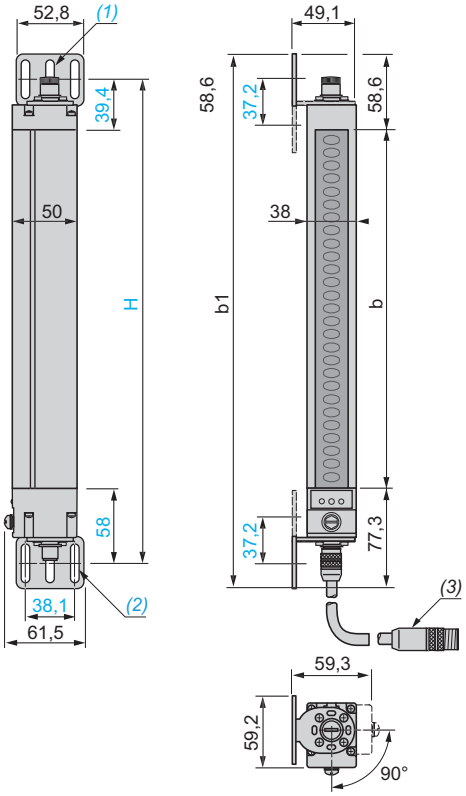
Light curtains basic XUSLB and
advanced XUSLDM with solid-state output

Light curtains

XUSLB

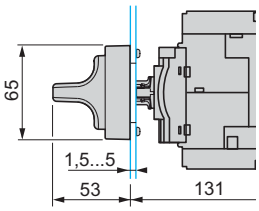


XUSLDM



Programming and diagnostic module

XUSLPDM



XUS	b	b1	H	Height protected
LB●●●0280	284.4	420.4	381.7	280
LB●●●0320	324.8	460.8	422.1	320
LB●●●0360	364.5	500.5	461.8	360
LB●●●0440	443.9	579.9	541.2	440
LB●●●0520	523.4	659.4	620.7	520
LB●●●0600	604.1	740.1	701.4	600
LB●●●0680	683.6	819.6	780.9	680
LB●●●0720	724	860	821.3	720
LB●●●0760	763	899	860.3	760
LB●●●0880	882.8	1018.8	980.1	880
LB●●●0920	922.5	1058.5	1019.8	920
LB●●●0960	963.6	1099.6	1060.9	960
LB●●●1040	1042.9	1178.9	1140.2	1040
LB●●●1120	1122.3	1258.3	1219.6	1120
LB●●●1200	1203.8	1339.8	1301.1	1200
LB●●●1360	1362	1498	1459.3	1360
LB●●●1400	1401.7	1537.7	1499	1400
LB●●●1520	1521.5	1657.5	1618.8	1520
LB●●●1560	1563.3	1699.3	1660.6	1560
LB●●●1640	1641.3	1777.3	1738.6	1640
LB●●●1720	1720.8	1856.8	1818.1	1720
LB●●●1800	1802.9	1938.9	1900.2	1800
LB●●●1920	1922.8	2058.8	2020.1	1920
LB●●●2120	2120.7	2256.7	2217.3	2120

XUS	b	b1	H	Height protected
LDM●●0280	284.4	420.4	381.7	280
LDM●●0320	324.8	460.8	422.1	320
LDM●●0360	364.5	500.5	461.8	360
LDM●●0440	443.9	579.9	541.2	440
LDM●●0520	523.4	659.4	620.7	520
LDM●●0600	604.1	740.1	701.4	600
LDM●●0680	683.6	819.6	780.9	680
LDM●●0720	724	860	821.3	720
LDM●●0760	763	899	860.3	760
LDM●●0880	882.8	1018.8	980.1	880
LDM●●0920	922.5	1058.5	1019.8	920
LDM●●0960	963.6	1099.6	1060.9	960
LDM●●1040	1042.9	1178.9	1140.2	1040
LDM●●1120	1122.3	1258.3	1219.6	1120
LDM●●1200	1203.8	1339.8	1301.1	1200
LDM●●1360	1362	1498	1459.3	1360
LDM●●1400	1401.7	1537.7	1499	1400
LDM●●1520	1521.5	1657.5	1618.8	1520
LDM●●1560	1563.3	1699.3	1660.6	1560
LDM●●1640	1641.3	1777.3	1738.6	1640
LDM●●1720	1720.8	1856.8	1818.1	1720
LDM●●1800	1802.9	1938.9	1900.2	1800
LDM●●1920	1922.8	2058.8	2020.1	1920
LDM●●2120	2120.7	2256.7	2217.3	2120

(1) 2 elongated holes 18.5 x 6.8 mm.
(2) 4 elongated holes 23.2 x 6.8 mm.
(3) M12 male connector on 0.27 m flying lead.

General: pages 2 to 7
Characteristics: pages 8 and 9
References: pages 10 and 11
Connections: page 18

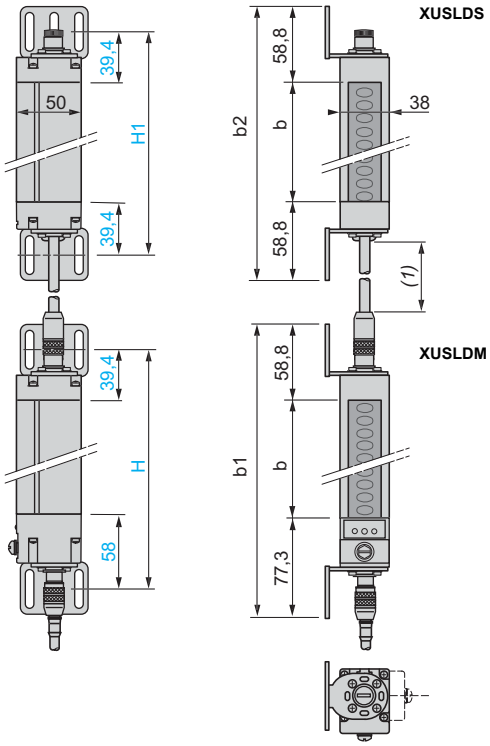
Safety detection solutions
Preventa

Safety light curtains, type 4

Segments XUSLDS for advanced XUSLDM light curtains.
Protection tube

Cascadable segments

XUSLDS

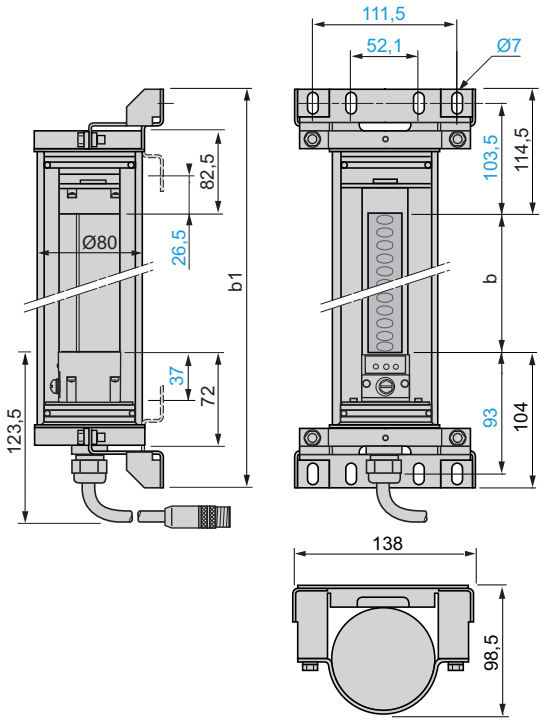


XUS	b	b1	b2	H	H1	Height protected
LDS●●●0280	284.4	420.4	401.5	381.7	363.1	280
LDS●●●0320	324.8	460.8	442.3	422.1	403.5	320
LDS●●●0360	364.5	500.5	482	461.8	443.2	360
LDS●●●0440	443.9	579.9	561.4	541.2	522.6	440
LDS●●●0520	523.4	659.4	640.9	620.7	602.1	520
LDS●●●0600	604.1	740.1	721.6	701.4	682.8	600
LDS●●●0680	683.6	819.6	801.1	780.9	762.3	680
LDS●●●0720	724	860	841.5	821.3	802.7	720
LDS●●●0760	763	899	880.5	860.3	841.7	760
LDS●●●0880	882.8	1018.8	1000.3	980.1	961.5	880
LDS●●●0920	922.5	1058.5	1040	1019.8	1001.2	920
LDS●●●0960	963.6	1099.6	1081.1	1060.9	1042.3	960
LDS●●●1040	1042.9	1178.9	1160.4	1140.2	1121.6	1040
LDS●●●1120	1122.3	1258.3	1239.8	1219.6	1201	1120
LDS●●●1200	1203.8	1339.8	1321.3	1301.1	1282.5	1200
LDS●●●1360	1362	1498	1479.5	1459.3	1440.7	1360
LDS●●●1400	1401.7	1537.7	1519.2	1499	1480.4	1400
LDS●●●1520	1521.5	1657.5	1639	1618.8	1600.2	1520
LDS●●●1560	1563.3	1699.3	1680.8	1660.6	1679.2	1560
LDS●●●1640	1641.3	1777.3	1758.8	1738.6	1720	1640
LDS●●●1720	1720.8	1856.8	1838.3	1818.1	1799.5	1720
LDS●●●1800	1802.9	1938.9	1920.4	1900.2	1881.6	1800
LDS●●●1920	1922.8	2058.8	2040.3	2020.1	2001.5	1920
LDS●●●2120	2120.7	2256.7	2237.5	2217.3	2198.7	2120

(1) Flexible 0.11 m long cable.

Protection tube for light curtains XUSLB/XUSLDM and segments XUSLDS

XUSLZD7●●●●

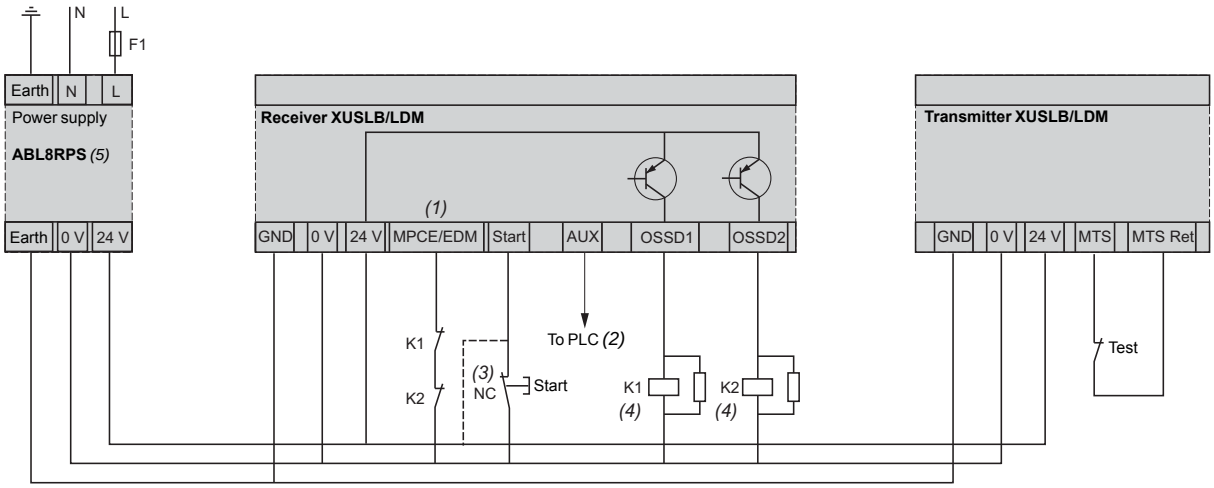


XUS	b	b1
LZD70280	284.4	502.8
LZD70320	324.8	543.2
LZD70360	364.5	582.9
LZD70440	443.9	662.3
LZD70520	523.4	741.8
LZD70600	604.1	822.5
LZD70680	683.6	902
LZD70720	724	942.4
LZD70760	763	981.4
LZD70880	882.8	1101.2
LZD70920	922.5	1140.9
LZD70960	963.6	1182

XUS	b	b1
LZD71040	1042.9	1261.3
LZD71120	1122.3	1340.7
LZD71200	1203.8	1422.2
LZD71360	1362	1580.4
LZD71400	1401.7	1620.1
LZD71520	1521.5	1739.9
LZD71560	1563.3	1781.7
LZD71640	1641.3	1859.2
LZD71720	1720.8	1939.2
LZD71800	1802.9	2021.2
LZD71920	1922.8	2141.2
LZD72120	2120.7	2338.4

Safety detection solutions
Preventa
Safety light curtains, type 4
Light curtains basic XUSLB and advanced XUSLDM with solid-state output

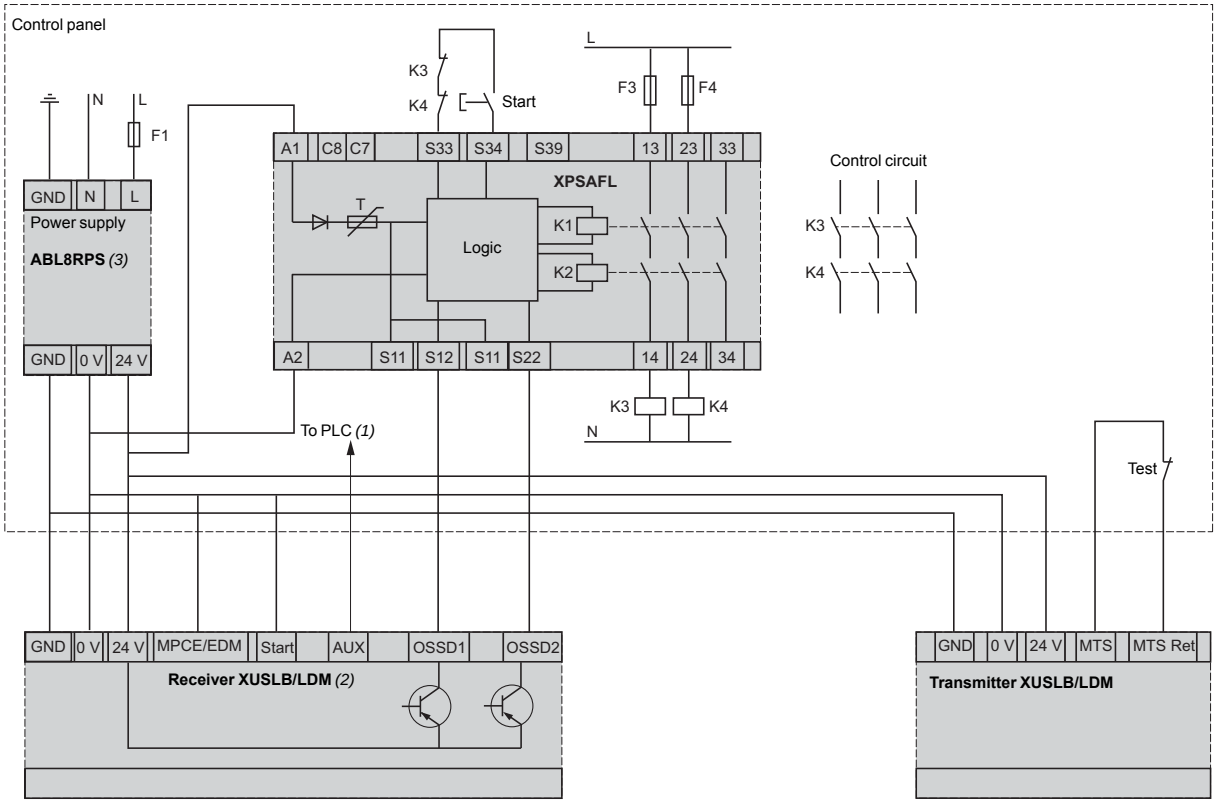
Direct connection with XUSLB/LDM●●●



(1) For testing prior to installation, the user can select MPCE/EDM OFF (default factory setting). In this case, the MPCE/EDM line must be connected to the 0 V line of the system.
(2) The auxiliary output connects to a PLC (optional).
(3) If remote start is not used, connect the start line to the 0 V line.
(4) The K1 and K2 coils must be protected using the arc suppressors included in the mounting kit.
(5) The power supply must conform to EN/IEC 61496 and EN/IEC 60204-1 standards.

Note: *Relays K1 and K2 must have mechanically linked contacts.*

Connection via a Preventa XPSAFL module



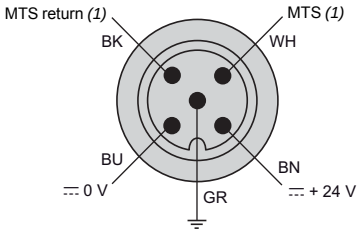
(1) The auxiliary output connects to a PLC (optional).
(2) The light curtain must be configured with MPCE/EDM OFF and with automatic start.
(3) The power supply must conform to EN/IEC 61496 and EN/IEC 60204-1 standards.

Note: *Relays K1 and K2 must have mechanically linked contacts.*

Safety detection solutions
Preventa
Safety light curtains, type 4
Light curtains basic XUSLB and advanced XUSLDM with solid-state output

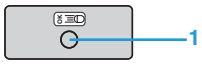
Transmitter

Transmitter connector



(1) Light curtain test input.

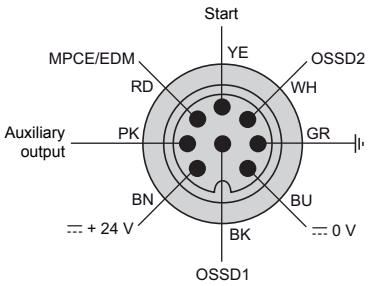
Transmitter status indicator



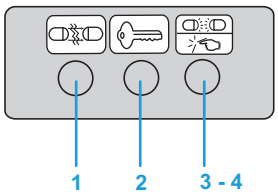
1 Yellow LED

Receiver

Receiver connector



Receiver status indicator

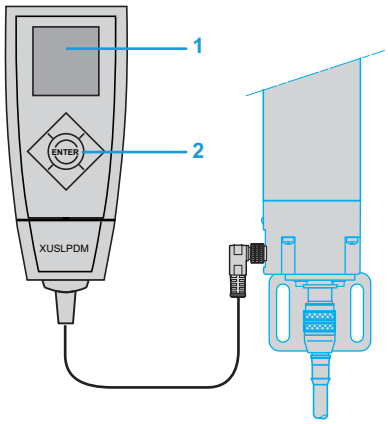


1 Blanking: Orange LED
2 Interlock or Alarm: Yellow LED
3 - 4 Machine run: Green LED
Machine stop: Red LED

Programming and diagnostic module

Description and connection to light curtains XUSLB/LDM

XUSLPDM



1 Screen
2 Navigation button for displaying menus and selecting functions

Basic light curtains

Detection capacity 14 mm

Old light curtain	**New light curtain**
XUSLTQ6A0260, XUSLTQ6B0260	**XUSLBQ6A0280**
XUSLTQ6A0350, XUSLTQ6B0350	**XUSLBQ6A0320, XUSLBQ6A0360**
XUSLTQ6A0435, XUSLTQ6B0435	**XUSLBQ6A0440**
XUSLTQ6A0520, XUSLTQ6B0520	**XUSLBQ6A0520**
XUSLTQ6A0610, XUSLTQ6B0610	**XUSLBQ6A0600**
XUSLTQ6A0700, XUSLTQ6B0700	**XUSLBQ6A0720**
XUSLTQ6A0785, XUSLTQ6B0785	**XUSLBQ6A0760**
XUSLTQ6A0870, XUSLTQ6B0870	**XUSLBQ6A0880, XUSLBQ6A0920**
XUSLTQ6A0955, XUSLTQ6B0955	**XUSLBQ6A0960**
XUSLTQ6A1045, XUSLTQ6B1045	**XUSLBQ6A1040**
XUSLTQ6A1130, XUSLTQ6B1130	**XUSLBQ6A1120**
XUSLTQ6A1215, XUSLTQ6B1215	**XUSLBQ6A1200**
XUSLTQ6A1305, XUSLTQ6B1390, XUSLTQ6A1390, XUSLTQ6B1390	**XUSLBQ6A1360**

Detection capacity 30 mm

Old light curtain	**New light curtain**
XUSLTR5A0350, XUSLTR5B0350	**XUSLBR5A0320, XUSLBR5A0360, XUSLBR5A0440**
XUSLTR5A0520, XUSLTR5B0520	**XUSLBR5A0520, XUSLBR5A0600**
XUSLTR5A0700, XUSLTR5B0700	**XUSLBR5A0680, XUSLBR5A0760**
XUSLTR5A0870, XUSLTR5A0870,	**XUSLBR5A0880, XUSLBR5A0920**
XUSLTR5A1045, XUSLTR5B1045	**XUSLBR5A1040**
XUSLTR5A1215, XUSLTR5B1215	**XUSLBR5A1200, XUSLBR5A1360**
XUSLTR5A1390, XUSLTR5B1390	**XUSLBR5A1400, XUSLBR5A1520**
XUSLTR5A1570, XUSLTR5B1570	**XUSLBR5A1560, XUSLBR5A1640**
XUSLTR5A1745, XUSLTR5B1745	**XUSLBR5A1720, XUSLBR5A1800**
XUSLTR5A1920, XUSLTR5B1920	**XUSLBR5A1920**
XUSLTR5A2095, XUSLTR5B2095	**XUSLBR5A2120**

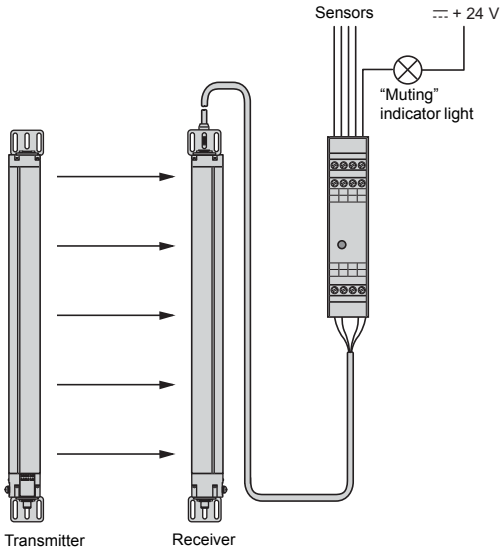
***Note**: Caution, the characteristics of the ranges (optics, connections, dimensions, fixings, functions, etc.) are not exactly the same.*
Please refer to the detailed characteristics of the XUSLB●●●●●●● and XUSLD●●●●●●● ranges and associated accessories when replacing a light curtain from the XUSLT●●●●●●● range.

Advanced light curtains	
Detection capacity 30 mm	
Old light curtain	**New light curtain**
XUSLTY5A0350, XUSLTY5B0350	**XUSLDMY5A0320, XUSLDMY5A0360, XUSLDMY5A0440**
XUSLTY5A0520, XUSLTY5B0520	**XUSLDMY5A0520, XUSLDMY5A0600**
XUSLTY5A0700, XUSLTY5B0700	**XUSLDMY5A0680, XUSLDMY5A0760**
XUSLTY5A0870, XUSLTY5B0870	**XUSLDMY5A0880, XUSLDMY5A0920**
XUSLTY5A1045, XUSLTY5B1045	**XUSLDMY5A1040**
XUSLTY5A1215, XUSLTY5B1215	**XUSLDMY5A1200, XUSLDMY5A1360**
XUSLTY5A1390, XUSLTY5B1390	**XUSLDMY5A1400, XUSLDMY5A1520**
XUSLTY5A1570, XUSLTY5B1570	**XUSLDMY5A1560, XUSLDMY5A1640**
XUSLTY5A1745, XUSLTY5B1745	**XUSLDMY5A1720, XUSLDMY5A1800**
XUSLTY5A1920, XUSLTY5B1920	**XUSLDMY5A1920**
XUSLTY5A2095, XUSLTY5B2095	**XUSLDMY5A2120**

***Note**: Caution, the characteristics of the ranges (optics, connections, dimensions, fixings, functions, etc.) are not exactly the same.*
Please refer to the detailed characteristics of the XUSLB●●●●●●● and XUSLD●●●●●●● ranges and associated accessories when replacing a light curtain from the XUSLT●●●●●●● range.

Safety detection solutions

Connection box Preventa XPSLCM1
For “muting” function on light curtains type XUSLDM



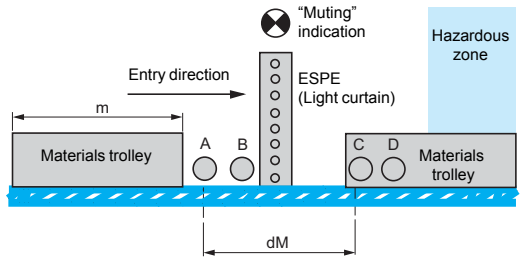
Operating principle

Universal XUSLDM light curtains have an integrated “muting” function that is configurable using the programming and diagnostic module XUSLPDM. This function enables the automatic passage of parts for machining or loaded pallets, without interrupting the transportation movement within the zone protected by the electro-sensitive protection equipment (ESPE) system. In addition to the safety light curtain, a connection box XPSLCM1, which is connected directly to the top of the light curtain receiver, enables the cabling of 2 to 4 “muting” sensors as well as an indicator light. In the event of a sequence error the “muting” indicator light flashes (1 second interval) and turning the Start key switch off and back on restarts the system.

When the system is switched on by the start command and the light curtain protection not interrupted, the main circuit is closed by the safety outputs of the XUSLDM light curtain (solid-state safety outputs). In addition to the safety outputs, the light curtain incorporates signalling LEDs and an auxiliary output (alarm or status signalling) for sending system status information to the PLC. Four LEDs on the light curtain and one on the front face of connection box XPSLCM1 provide information on the safety circuit status.

An interruption of the protection field monitored by the electro-sensitive protection equipment causes instantaneous opening of the safety outputs; the process PLC receives a stop command and the LED display mounted on the front face indicates the change of state of the safety circuits. The “open” state is maintained until the light beams are unobstructed and, if included in the light curtain configuration, the Start key switch operated.

The “muting” function cannot be activated by supplying the “muting” sensors unless the safety outputs have been closed beforehand. To trigger the “muting” function, the “muting” devices must be activated within the configurable time interval (50 milliseconds to 5 seconds in increments of 50 milliseconds). During the activated “muting” phase, materials can be transported through the protection field without deactivating the safety outputs. In the event of intrusion into the hazardous zone, a person cannot activate the “muting” sensors in the same way and the system stops. Whilst the “muting” function is activated, a “muting” status indicator light is controlled by the connection box XPSLCM1. A fault at indicator light level (short-circuit, open circuit) is immediately recognised and deactivates the “muting” function. The indicator light only illuminates when a “muting” signal is generated and indicates the inhibition of the protection function.



ESPE: electro-sensitive protection equipment (light curtain).
A, B, D, C: “muting” sensors.
m: trolley length and dM = distance between A, B and D, C.

Conditions to be observed for the “Muting” function

- The “muting” sensors must either be
  - thru-beam: XUK0ARCTL2 (sensing distance 30 m) + XUK0ARCTL2T
  - polarised reflex: XUK0ARCTL2 (sensing distance 5 m) + reflector XUZC50

  or mechanical limit switches with contacts.
- dM ⩽ m to obtain continuous validation of the “muting” function.
- Avoid the intrusion of persons during the “muting” phase. This phase is indicated by the indicator light connected to the “muting” indicator output of connection box XPSLCM1.
- A materials trolley must provide the “muting” signal before entering the protection field and cease it once it has cleared all the sensors of the protection field on exiting.

Safety detection solutions
Connection box Preventa XPSLCM1
For “muting” function on light curtains type XUSLDM

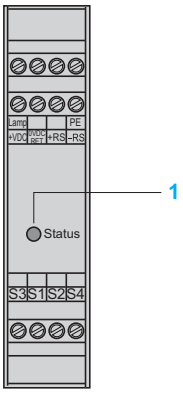
Characteristics

Connection box type			XPSLCM1
Certifications			CE, TÜV, CSA, UL
Product designed for max. use in safety related parts of control systems	Conforming to EN 954-1/ISO 13849-1		Category 4
Ambient air temperature	For operation	**°C**	0…+ 55
	For storage	**°C**	- 25…+ 75
Degree of protection conforming to IEC 60529	Terminals		IP 20
	Enclosure		IP 20
Power supply by light curtain XUSLDM	Voltage	**V**	⎓ 24 (- 20…+ 20**%**)
	Maximum current	**mA**	30
Maximum consumption		**W**	0.7
Rated insulation voltage (Ui)		**V**	500
Rated impulse withstand voltage (Uimp)		**kV**	1.1
Shock resistance	Conforming to IEC 60068-2-6	**gn**	6 (10...55 Hz)
Vibration resistance	Conforming to IEC 60068-2-29	**gn**	10 (16 ms)
Number of light curtains that can be connected			1 transmitter-receiver pair
Inputs for “muting” sensors - number of inputs to be monitored			2 to 4 per “muting” function
- supply voltage of sensors		**V**	⎓ 24
- output current of each sensor		**mA**	< 20
Type of “muting” sensors			Thru-beam, polarised reflex or sensors with volt-free contacts
Synchronisation time of “muting” sensors		**ms**	50 to 500 (configurable in light curtain XUSLDM in increments of 50 ms)
Maximum “muting” time		**min**	2 or unlimited
Safety outputs - number and type			2 PNP (terminals 1 and 2)
- breaking capacity of outputs		**mA**	30 V/100
“Muting” indicator light output			1 NPN
“Muting” indicator light power		**W**	1 to 7 max.
“Muting” indicator light type			LED or filament bulb
Signalling			1 LED
Connection	Type		Captive screw clamp terminals, non removable
1-wire connection	Without cable end		Solid or flexible cable: 0.14..0.2.5 mm^2
	With cable end		Without bezel, flexible cable: 0.25...2.5 mm^2
	With cable end		With bezel, flexible cable: 0.25…1.5 mm^2
2-wire connection	Without cable end		Without bezel, flexible cable: 0.25...1 mm^2
	Without cable end		Double, with bezel, flexible cable: 0.5...1.5 mm^2

Presentation: page 22 | References: page 24 | Dimensions: pages 24 | Connections: pages 25 to 27

Safety detection solutions

Connection box Preventa XPSLCM1
For “muting” function on light curtains type XUSLDM



Description

XPSLCM1

To aid diagnostics, the connection box has 1 LED on the front face 1.

References

Connection box

Description	Type of terminal block connection	“Muting” indicator light output	Supply	Reference	Weight kg
Connection box for “muting” function	Non removable	1 NPN	⎓ 24 V	**XPSLCM1**	0.190

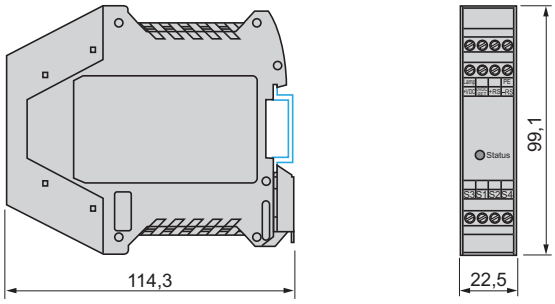
Connection cables

Description	Length m	Reference	Weight kg
Pre-wired connectors for connection between the XPSLCM1 module and the XUSLD receiver	10	**XSZDCRM10**	0.690
	15	**XSZDCRM15**	1.030
	30	**XSZDCRM30**	1.930

Dimensions

XPSLCM1

Mounting on 35 mm rail

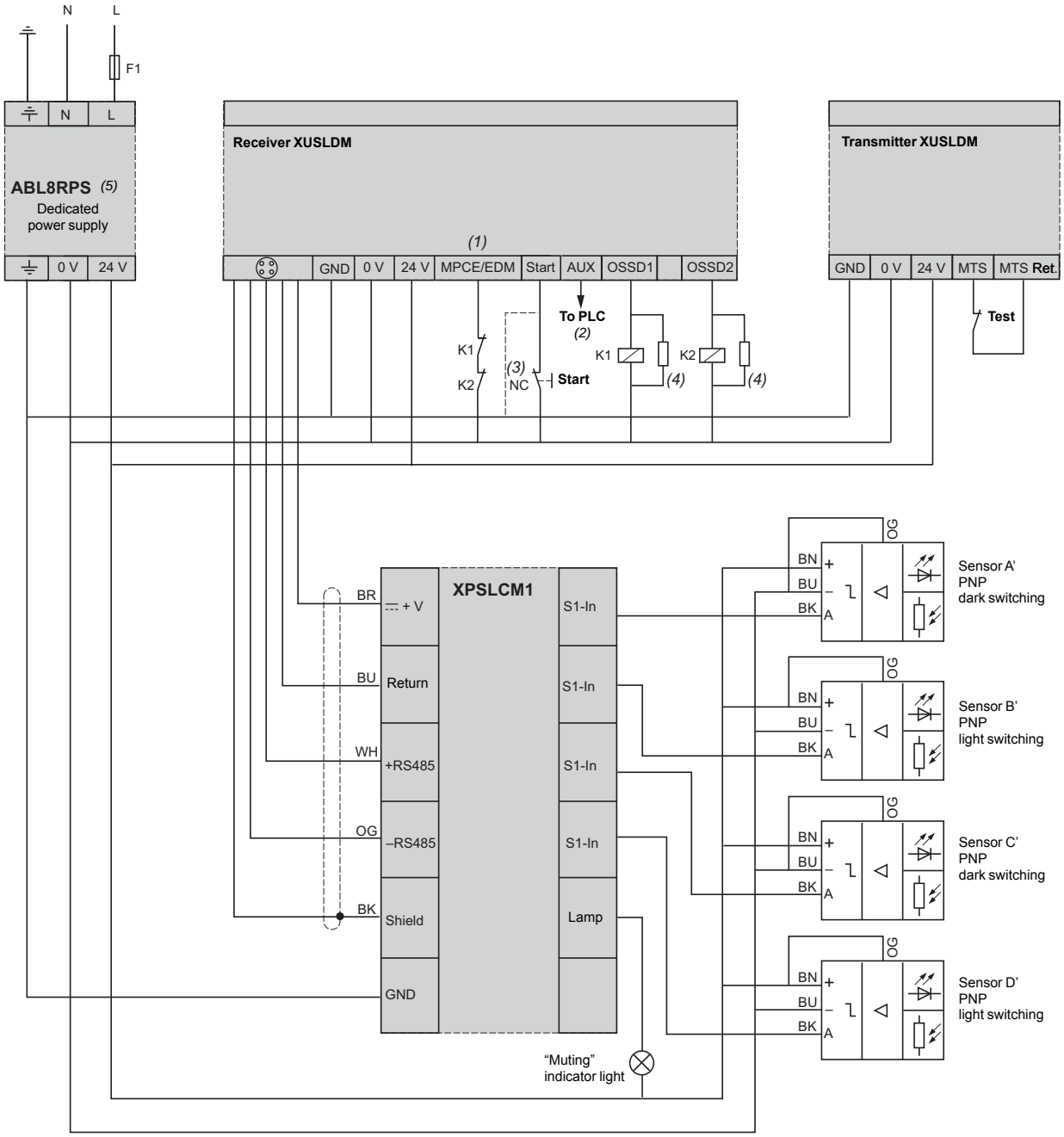


Presentation: page 22
Characteristics: page 23
Connections: pages 25 to 27

Safety detection solutions
Connection box Preventa XPSLCM1
For “muting” function on light curtains type XUSLDM

Connection of light curtains XUSLDM with connection box XPSLCM1

Example: configuration with light curtains XUSLDM

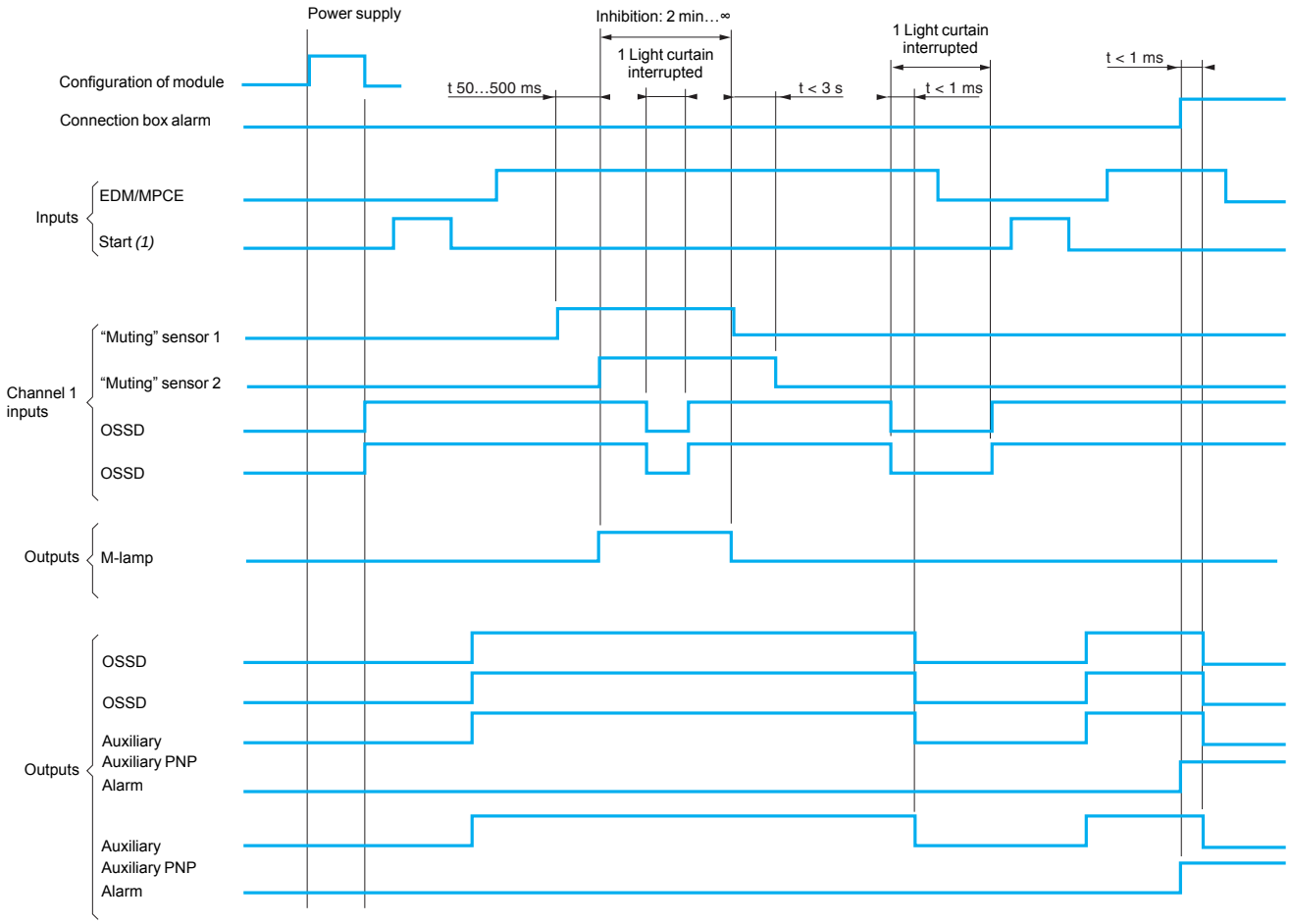


(1) For testing prior to installation, the user can select MPCE/EDM OFF (default factory setting). In this case, the MPCE/EDM line must be connected to the 0 V line of the system.
(2) The auxiliary output connects to a PLC (optional).
(3) If remote start is not used, connect the start line to the 0 V line.
(4) The K1 and K2 coils must be protected using the arc suppressors included in the mounting kit.
(5) The power supply must conform to EN/IEC 61496 and EN/IEC 60204-1 standards.

Safety detection solutions
Connection box Preventa XPSLCM1
For “muting” function on light curtains type XUSLDM

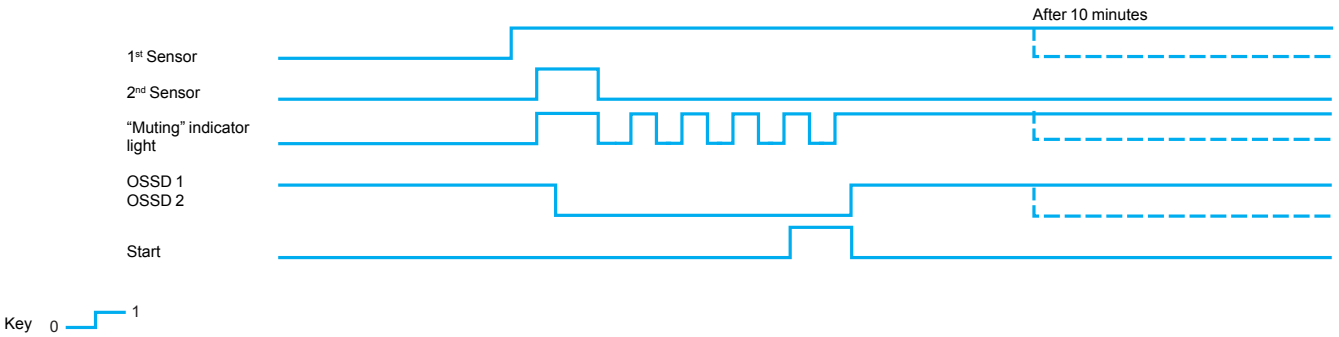
Functional diagram of light curtain XUSLDM with connection box XPSLCM1

“Start/restart interlock” mode with 2 sensors



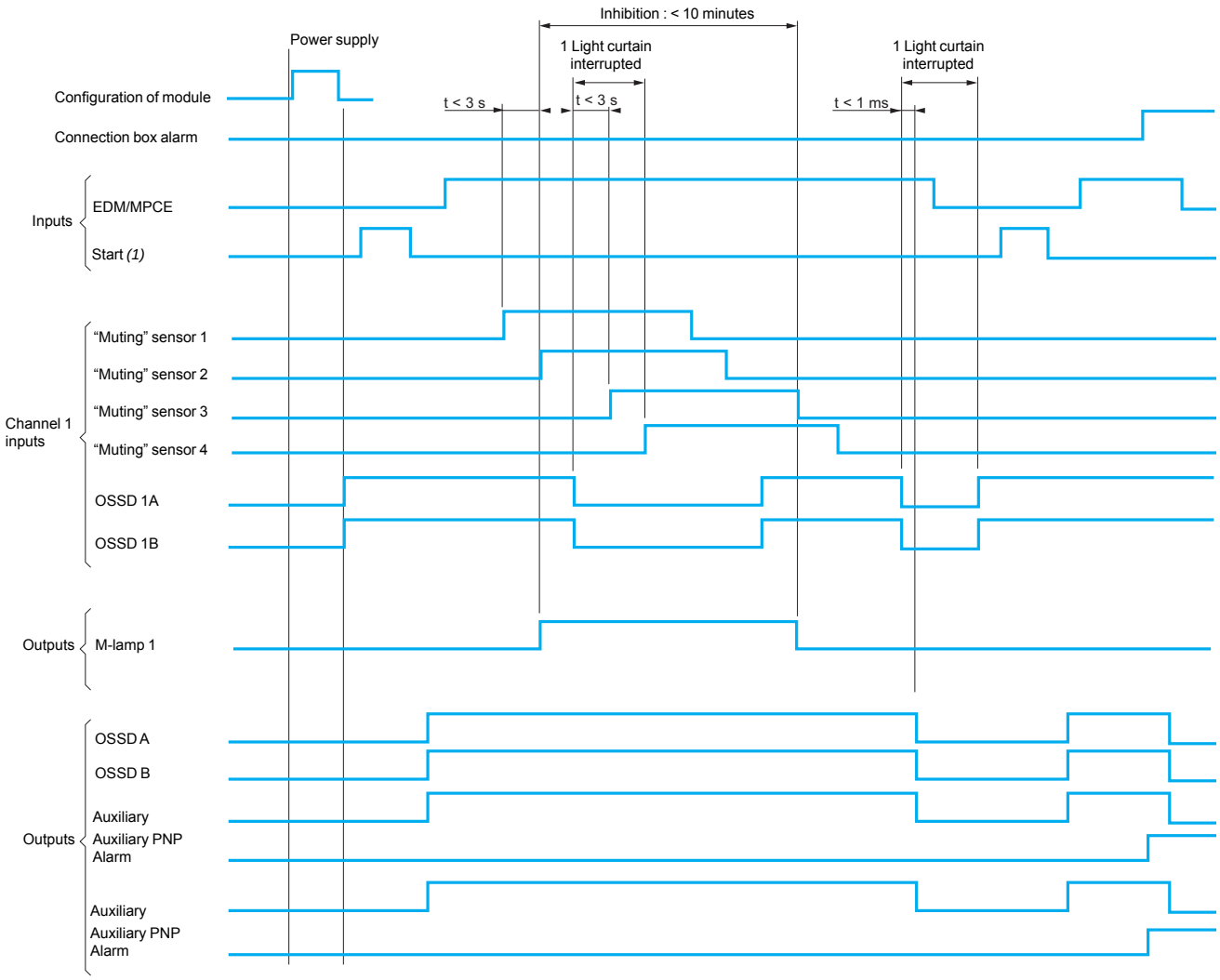
(1) Press Start button.

Override function



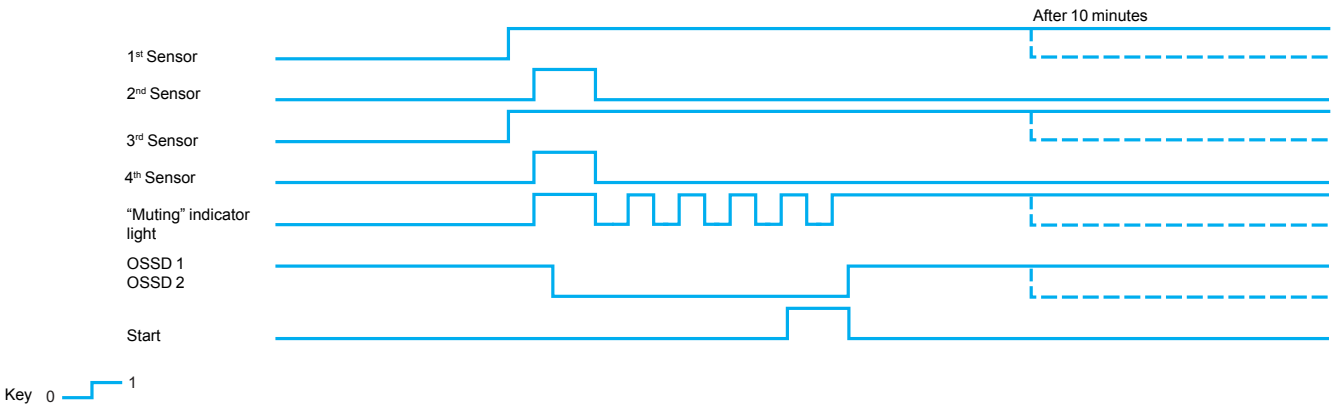
Safety detection solutions
Connection box Preventa XPSLCM1
For “muting” function on light curtains type XUSLDM

Functional diagram of light curtain XUSLDM with connection box XPSLCM1
“Start/restart interlock” mode with 4 sensors



(1) Press Start button.

Override function



Safety detection solutions Preventa

Safety light curtains, type 4

Compact light curtains XUSLP with solid-state output

Light curtain type			XUSLP●●●●
Environmental characteristics			
Conformity to standards			ANSI/RIA R15.06, ANSI B11:19-1990, OSHA 1910.217(C), OSHA 1910.212, EN/IEC 61496-1-2 for type 4 ESPE
Certifications			CE, TUV, UL, CSA
European directives			Machinery directive 98/37/EC, Work equipment directive 89/655/EEC and EMC directive 89/336 EEC
Maximum safety level *(1)*			PL = e/category 4 conforming to EN/ISO 13849-1 SIL 3 conforming to EN/IEC 61508
Reliability data			PFH_d = 2.7E^{-9} 1/h conforming to EN/IEC 61508
Ambient air temperature	Operating	**°C**	0…+ 55
	For storage	**°C**	- 25…+ 75
Relative humidity			95% maximum, without condensation
Degree of protection			IP 65 and IP 67
Shock and vibration resistance	Conforming to IEC 61496-1		Shock resistance: 10 gn, impulse 16 ms, Vibration resistance: 10…55 Hz, amplitude: 0.35 ± 0.05 mm
Materials			Casing: aluminium with electrostatically applied red (RAL 3000) polyester paint finish; end caps: 20% fibreglass impregnated polycarbonate. Front face: acrylic.
Fixings			End brackets (included)
Optical characteristics			
Minimum detection capacity		**mm**	300, 400, 500, 600 and single beam (Body protection)
Nominal sensing distance (Sn)		**m**	0.8 to 20 or 0.8 to 70 depending on configuration and 0.8 to 8 m for light curtains with passive receiver
Height protected			Depending on number of light beams, see table on page 3
Effective aperture angle (EAA)			2.5° at 3 m
Light source			GaAlAs LED, 850 nm
Immunity to ambient light			Conforming to EN/IEC 61496-2
Electrical characteristics			
Response time		**ms**	< 16…< 24 depending on light beam coding selected
Power supply			⎓ 24 V ± 20% 2 A conforming to EN/IEC 61496 and EN/IEC 60204-1
	Transmitter	**mA**	100 (SELV: Safety Extra Low Voltage)
	Receiver	**A**	1.6 (with maximum load)
Maximum current consumption (no-load)	Transmitter	**mA**	100
	Receiver	**mA**	300
Immunity to interference			Conforming to EN/IEC 61496-1
Safety outputs OSSD (Output Signal Switching Devices)			2 solid-state PNP (N/O) outputs ≤ 650 mA, ⎓ 24 V (Short-circuit protected)
Auxiliary output			1 solid-state output 100 mA, ⎓ 24 V, PNP
Monitoring activation of output switching devices (MPCE/EDM)			50 mA, ⎓ 24 V
Signalling	Transmitter		1 LED (power supply)
	Receiver		3 LEDs (stop, run, interlock) and a 2-digit display for diagnostics
Connections *(2)*	Transmitter		M12, 5-pin, male connector or terminal block
	Receiver		M12, 8-pin, male connector or terminal block
Conductor c.s.a.	Transmitter-receiver pre-wired connector	**mm²**	0.35. Tinned wires.
Cable resistance	Transmitter-receiver	Ω	0.055 per metre for 0.35 mm² c.s.a. cable
Cable lengths		**m**	Pre-wired connectors with cable lengths of 5, 10, 15 and 30 m are available separately. The maximum cable length is 120 m, depending on the load current and power supply.
Functions			
Functions			Start: - Auto/Manual, manual 1st cycle, - Monitoring of external switching devices (EDM: External Devices Monitoring), - Test (MTS: Monitoring Test Signal) for XUSLPZ only, - Alignment aid by display of each light beam broken, - Display of operating modes and alarm by LEDs and 2-digit display. Selection of Auto/Manual, relay monitoring, alarm or auxiliary output functions, light beam coding and selection of sensing distance using configuration switches.
Monitoring of external switching devices (EDM = External Devices Monitoring)			Monitoring of the function (open or closed) as well as the response time of the power components. Parameterable using configuration switches.
"Test" function			Instigates the stop instruction of the light curtain by opening the contact (simulated intrusion)
"Muting" function (inhibition)			Possible with external module **XPSLCM1150**

(1) Using an appropriate and correctly connected control system.

(2) Pre-wired female connectors to be ordered separately, see page 31.

General: pages 2 to 7 | References: pages 29 and 30 | Dimensions: pages 32 and 33 | Connections: pages 34 and 35

Safety detection solutions Preventa

Safety light curtains, type 4

Compact light curtains XUSLP with solid-state output, with connector

105561

XUSLPZ1AM

105558

XUSLPZ3A●●●●M

Transmitter-receiver pairs for body protection *(1)*

Detection capacity 300, 400, 500, 600 mm and single beam.
Sensing distance 0.8 to 20 m and 0.8 to 70 m (depending on configuration)

■ 2 PNP safety outputs

Detection capacity	Response time Light beam coding			Number of light beams	Auxiliary output	Reference *(2)*	Weight
	A	B	C				
mm	ms	ms	ms				kg
–	< 24	< 20	< 16	1	PNP	**XUSLPZ1AM**	4.500
500	< 24	< 20	< 16	2	PNP	**XUSLPZ2A0500M**	6.300
600	< 24	< 20	< 16	2	PNP	**XUSLPZ2A0600M**	6.700
400	< 24	< 20	< 16	3	PNP	**XUSLPZ3A0400M**	7.200
500	< 24	< 20	< 16	3	PNP	**XUSLPZ3A0500M**	8.600
300	< 24	< 20	< 16	4	PNP	**XUSLPZ4A0300M**	8.200
300	< 24	< 20	< 16	5	PNP	**XUSLPZ5A0300M**	9.500
300	< 24	< 20	< 16	6	PNP	**XUSLPZ6A0300M**	10.400

(1) Supplied with 2 sets of 2 brackets with fixings and a user guide with certificate of conformity.
Pre-wired female connectors to be ordered separately, see page 31.
*(2) To order a receiver only, add the letter **R** to the end of the reference for the corresponding transmitter-receiver pair.*
*Example: reference XUSLPZ2A0600M becomes **XUSLPZ2A0600MR** for the receiver only.*
*To order a transmitter only, add the letter **T** to the end of the reference for the corresponding transmitter-receiver pair.*
*Example: reference XUSLPZ2A0600M becomes **XUSLPZ2A0600MT** for the transmitter only.*

Transmitter-receiver pairs for body protection, with passive receiver *(1)*

Detection capacity 500 and 600 mm. Sensing distance 0.8 to 8 m

■ 2 PNP safety outputs

105559

XUSLPB2●●

Detection capacity	Response time Light beam coding			Number of light beams	Auxiliary output	Reference *(2)*	Weight
	A	B	C				
mm	ms	ms	ms				kg
500	< 24	< 20	< 16	2	PNP	**XUSLPB2A500M**	6.300
600	< 24	< 20	< 16	2	PNP	**XUSLPB2A600M**	6.700

(1) Supplied with 2 sets of 2 brackets with fixings and a user guide with certificate of conformity.
Pre-wired female connectors to be ordered separately, see page 31.
*(2) To order a passive receiver, replace the letter **M** by the letter **P** to the end of the reference for the corresponding transmitter-receiver pair.*
*Example: reference XUSLPB2A500M becomes **XUSLPB2A500P** for the passive receiver.*
*To order a transmitter only, add the letter **R** to the end of the reference for the corresponding transmitter-receiver pair.*
*Example: reference XUSLPB2A600M becomes **XUSLPB2A600MR** for the transmitter only.*

Other versions

Combining type 4 safety light curtains with external module for muting function.
See pages 56 to 63.

Safety detection solutions Preventa

Safety light curtains, type 4

Compact light curtains XUSLP with solid-state output, with terminal block

105561

XUSLPZ1AB

105558

XUSLPZ3A●●●●B

Transmitter-receiver pairs for body protection *(1)*

Detection capacity 300, 400, 500, 600 mm and single beam.
Sensing distance 0.8 to 20 m and 0.8 to 70 m (depending on configuration)

■ 2 PNP safety outputs

Detection capacity	Response time Light beam coding			Number of light beams	Auxiliary output	Reference *(2)*	Weight
	A	B	C				
mm	ms	ms	ms				kg
–	< 24	< 20	< 16	1	PNP	**XUSLPZ1AB**	4.500
500	< 24	< 20	< 16	2	PNP	**XUSLPZ2A0500B**	6.300
600	< 24	< 20	< 16	2	PNP	**XUSLPZ2A0600B**	6.700
400	< 24	< 20	< 16	3	PNP	**XUSLPZ3A0400B**	7.200
500	< 24	< 20	< 16	3	PNP	**XUSLPZ3A0500B**	8.600
300	< 24	< 20	< 16	4	PNP	**XUSLPZ4A0300B**	8.200
300	< 24	< 20	< 16	5	PNP	**XUSLPZ5A0300B**	9.500
300	< 24	< 20	< 16	6	PNP	**XUSLPZ6A0300B**	10.400

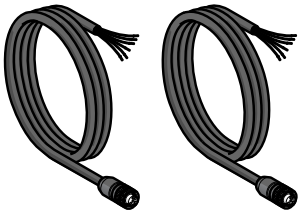
(1) Supplied with 2 sets of 2 brackets with fixings and a user guide with certificate of conformity.
*(2) To order a receiver only, add the letter **R** to the end of the reference for the corresponding transmitter-receiver pair.*
*Example: reference XUSLPZ2A0600B becomes **XUSLPZ2A0600BR** for the receiver only.*
*To order a transmitter only, add the letter **T** to the end of the reference for the corresponding transmitter-receiver pair.*
*Example: reference XUSLPZ2A0600B becomes **XUSLPZ2A0600BT** for the transmitter only.*

Other versions

Combining type 4 safety light curtains with external module for muting function.
See pages 56 à 63.

Safety detection solutions
Preventa
Safety light curtains, type 4
Accessories for compact light curtains XUSLP

563528



XSZPCT●● XSZPCR●●

Separate components

Power supplies, 90° mirror adaptors, protective covers, anti-vibration kit, fixing bases

See pages 40 to 47.

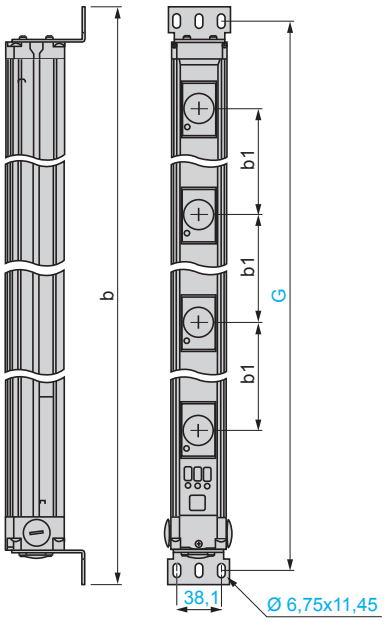
Accessories

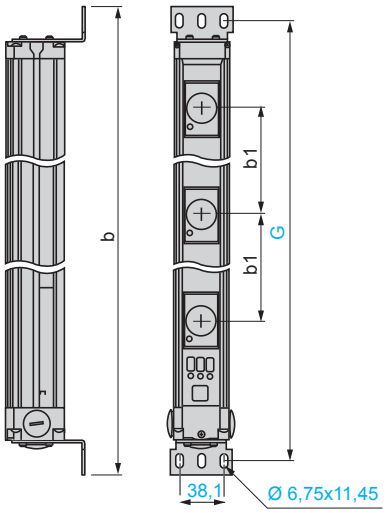
Description	Usage	Length m	Reference	Weight kg
Fixing kit (2 brackets)	For light curtains XUSLP	–	**XUSLZ219**	0.450
Pre-wired female connectors	Transmitter type	5	**XSZPCT05**	0.350
		10	**XSZPCT10**	0.700
		15	**XSZPCT15**	1.020
		30	**XSZPCT30**	2.020
	Receiver type	5	**XSZPCR05**	0.350
		10	**XSZPCR10**	0.700
		15	**XSZPCR15**	1.020
		30	**XSZPCR30**	2.020
Sliding nuts for side fixing (4 nuts)	–	–	**XUSLZ320**	0.450
User guide on CD-ROM	All types of light curtain	–	**XUSLZ450**	0.020
Arc suppressor (pair)	All types of light curtain	–	**XUSLZ500**	0.020

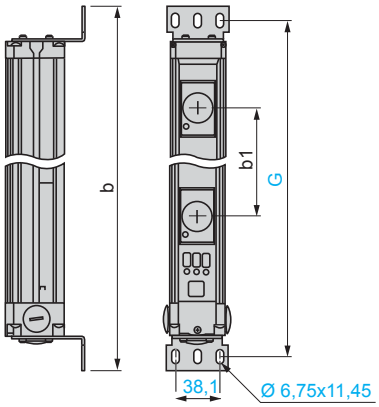
Safety detection solutions
Preventa
Safety light curtains, type 4
Compact light curtains XUSLP with solid-state output

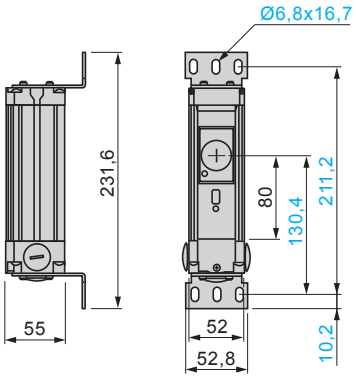
Light curtains

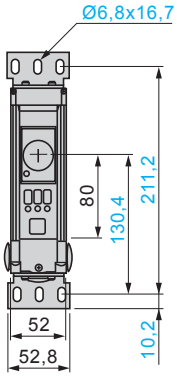
XUSLPZ●●●





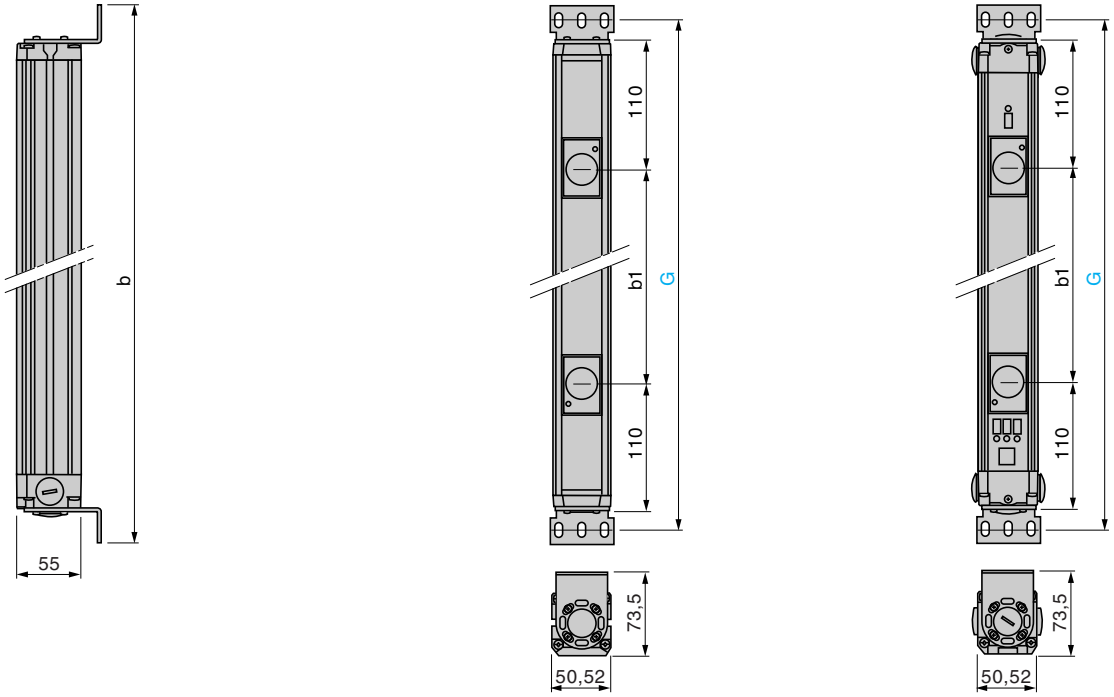






XUS	b	b1	G
LPZ1A●	231,6	–	220.7
LPZ2A0500●	731,6	500	720.7
LPZ2A0600●	831,6	600	820.7
LPZ3A0400●	1031,6	400	1020.7
LPZ3A0500●	1231,6	500	1220.7
LPZ4A0300●	1141,1	300	1120.7
LPZ5A0300●	1431,6	300	1411.2
LPZ6A0300●	1731,6	300	1711.2

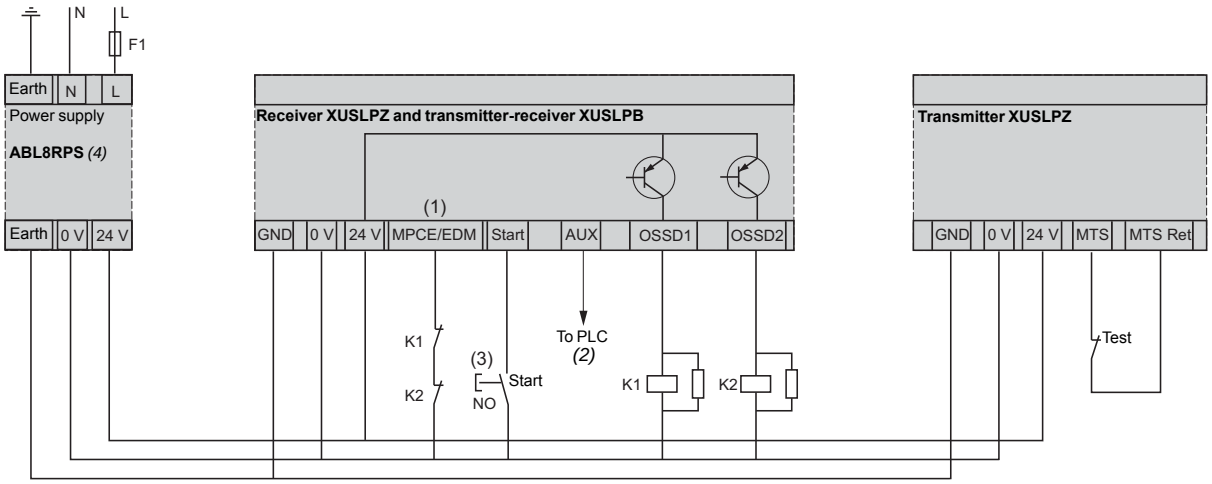
Light curtains
XUSLPB●●●



XUS	b	b1	G
LPB2A500M	781.1	500	760.7
LPB2A600M	881.1	600	860.7

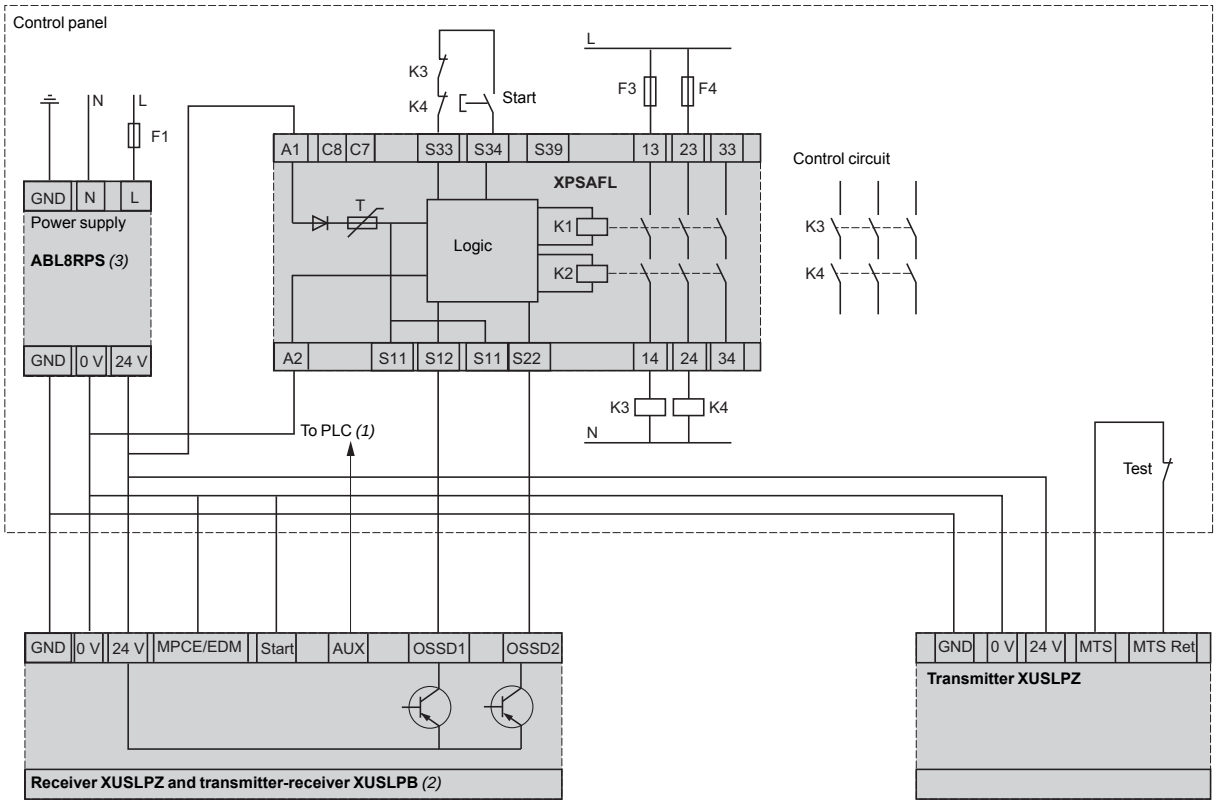
Safety detection solutions
Preventa
Safety light curtains, type 4
Compact light curtains XUSLP with solid-state output

Direct connection with XUSLP●●●



(1) For testing prior to installation, the user can select MPCE/EDM OFF (default factory setting). In this case, the MPCE/EDM line must be connected to the 0 V line of the system.
(2) The auxiliary output connects to a PLC (optional).
(3) If remote start is not used, connect the start line to the 0 V line.
(4) The power supply must conform to EN/IEC 61496 and EN/IEC 60204-1 standards.

Connection via a Preventa XPSAFL module



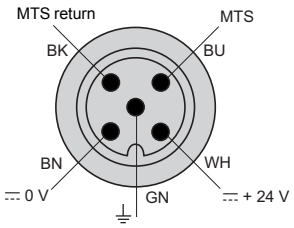
(1) The auxiliary output connects to a PLC (optional).
(2) The light curtain must be configured with MPCE/EDM OFF and with automatic start.
(3) The power supply must conform to EN/IEC 61496 and EN/IEC 60204-1 standards.

Safety detection solutions
Preventa
Safety light curtains, type 4
Compact light curtains XUSLP with solid-state output

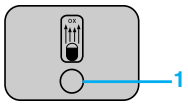
XUSLPZ/LPB●

Transmitter

Pre-wired connector of transmitter (XUSLPZ)

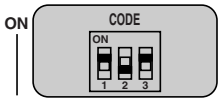


Transmitter status indicator

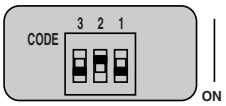


1 Yellow LED

Configuration indicator XUSLPZ

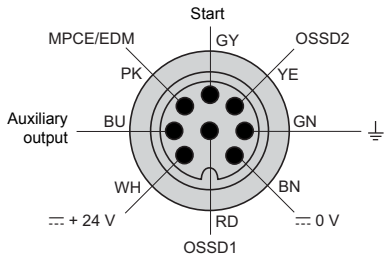


Configuration indicator XUSLPB

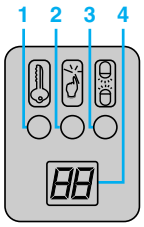


Receiver

Pre-wired connector of receiver (XUSLPZ) and pre-wired connector of transmitter-receiver (XUSLPB)

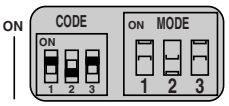


Receiver status indicator

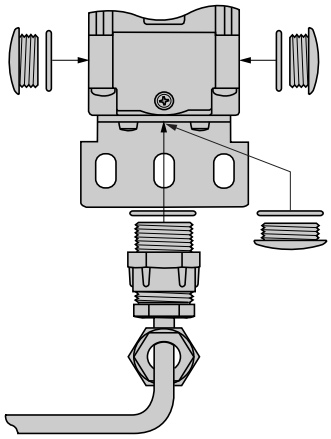


1 Interlock or Alarm yellow LED
2 Machine stop red LED
3 Machine run green LED
4 2-digit display

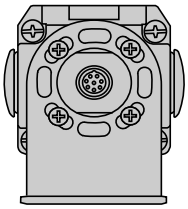
Configuration indicator XUSLPZ and XUSLPB

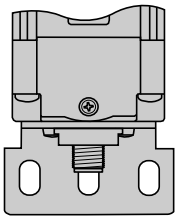


Connection to terminal block



Connection to M12 connector





Safety detection solutions Preventa

Safety light curtains, type 2

Slim, compact light curtains XUSLN with solid-state output

Light curtain type			XUSLNG●●●● (30 mm)
Environmental characteristics			
Conformity to standards			IEC 61496-1 and IEC 61496-2 (Type 2 ESPE)
Certifications			CE, TUV, UL, CSA
European directives			Machinery directive 98/37/EC, Work equipment directive 89/655/EEC and EMC directive 89/336 EEC
Maximum safety level *(1)*			PL = c/category 2 conforming to EN/ISO 13849-1 SIL 2 conforming to EN/IEC 61508
Reliability data			PFH_d = 2.29E^{-7} 1/h conforming to EN/IEC 61508
Ambient air temperature	Operating	**°C**	0…+ 55
	For storage	**°C**	- 25…+ 75
Relative humidity			95% maximum, without condensation
Degree of protection			IP 65
Shock and vibration resistance	Conforming to IEC 61496-1		Shock resistance: 10 gn, impulse 16 ms, Vibration resistance: 10…55 Hz, amplitude: 0.35 ± 0.05 mm
Materials			Casing: aluminium with electrostatically applied red (RAL 3000) polyester paint finish; end caps: 30% fibreglass impregnated nylon; front face: acrylic.
Fixings			End brackets (included)
Optical characteristics			
Minimum detection capacity		**mm**	30 (Hand)
Nominal sensing distance (Sn)		**m**	0.3…15
Height protected		**mm**	150…1500
Effective aperture angle (EAA)			5° at 3 m conforming to IEC 61496-1 and IEC 61496-2 (Type 2 ESPE)
Light source			GaAlAs LED, 880 nm
Immunity to ambient light			Conforming to IEC/EN 61496-2
Electrical characteristics			
Response time		**ms**	14…24
Power supply			⎓ 24 V ± 20% 2 A conforming to IEC 61496 and IEC 60204-1 (- 10% using the EDM function)
	Transmitter	**mA**	50 (SELV: Safety Extra Low Voltage)
	Receiver	**A**	1.09 (with maximum load)
Maximum current consumption (no-load)	Transmitter	**mA**	50
	Receiver	**mA**	90
Immunity to interference			Conforming to EN 61496-1 and EN 61496-2
Safety outputs OSSD (Output Signal Switching Devices)			2 solid-state PNP (N/O) outputs ≤ 500 mA, ⎓ 24 V (Short-circuit protection)
Signalling	Transmitter		2 LEDs (power supply and diagnostic)
	Receiver		4 LEDs (stop, run, top alignment and bottom alignment)
Connections *(2)*	Transmitter		M12, 4-pin, male connector
	Receiver		M12, 5-pin, male connector
Pre-wired connectors c.s.a.	Transmitter-receiver	**mm²**	0.25. Tinned wires.
Cable resistance	Transmitter-receiver	Ω	0.093 per metre for 0.25 mm² c.s.a. cable
Cable lengths		**m**	Pre-wired connectors with cable lengths of 3, 10 and 30 m are available separately. The maximum cable length is 50 m, depending on the load current and power supply.
Functions			
Functions			■ Start: □ Automatic: model **XUSLNG5C** □ Manual: model **XUSLNG5D** ■ Alignment aid using 2 LEDs ■ LED display of operating modes ■ Monitoring of external switching devices EDM/MPCE
"Muting" function (inhibition)			Possible with external module **XPSLCM1150**

(1) Using an appropriate and correctly connected control system.

(2) Pre-wired female connectors to be ordered separately, see page 37.

References: page 37 | Dimensions: page 38 | Connections: pages 38 and 39

Safety detection solutions
Preventa
Safety light curtains, type 2
Slim, compact light curtains XUSLN with solid-state output

105568

XUSLNG5●●●●●

Transmitter-receiver system for hand protection *(1)*

Detection capacity 30 mm. Sensing distance 0.3 to 15 m.

■ 2 PNP safety outputs - Automatic start

Height protected	Response time	Number of light beams	Alarm output	Reference *(2)*	Weight
mm	ms				kg
150	14	7	PNP	**XUSLNG5C0150**	2.700
300	15	14	PNP	**XUSLNG5C0300**	2.900
450	16	21	PNP	**XUSLNG5C0450**	3.200
600	17	28	PNP	**XUSLNG5C0600**	3.400
750	18	35	PNP	**XUSLNG5C0750**	3.600
900	19	42	PNP	**XUSLNG5C0900**	3.900
1050	20	49	PNP	**XUSLNG5C1050**	4.100
1200	21	56	PNP	**XUSLNG5C1200**	4.300
1350	22	63	PNP	**XUSLNG5C1350**	4.500
1500	23	70	PNP	**XUSLNG5C1500**	4.800

■ 2 PNP safety outputs - Manual start

Height protected	Response time	Number of light beams	Alarm output	Reference *(2)*	Weight
mm	ms				kg
150	14	7	PNP	**XUSLNG5D0150**	2.700
300	15	14	PNP	**XUSLNG5D0300**	2.900
450	16	21	PNP	**XUSLNG5D0450**	3.200
600	17	28	PNP	**XUSLNG5D0600**	3.400
750	18	35	PNP	**XUSLNG5D0750**	3.600
900	19	42	PNP	**XUSLNG5D0900**	3.900
1050	20	49	PNP	**XUSLNG5D1050**	4.100
1200	21	56	PNP	**XUSLNG5D1200**	4.300
1350	22	63	PNP	**XUSLNG5D1350**	4.500
1500	23	70	PNP	**XUSLNG5D1500**	4.800

(1) Supplied with a test rod, 2 sets of 2 brackets with fixings and a user guide with certificate of conformity and 1 arc suppressor set.
***Pre-wired female connectors to be ordered separately**, see below.*

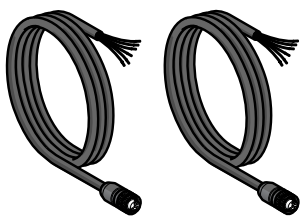
*(2) To order a transmitter only, replace the letter C or D by **E** and add the letter **T** to the end of the reference for the corresponding transmitter-receiver pair.*
*Example: reference XUSLNG5C0150 becomes **XUSLNG5E0150T** for the transmitter only.*
*To order a receiver only, add the letter **R** to the end of the reference for the corresponding transmitter-receiver pair.*
*Example: reference XUSLNG5C0150 becomes **XUSLNG5C0150R** for the receiver only.*

Other versions
Combining type 2 safety light curtains with external module for muting function and monitoring 2 to 4 light curtains. See pages 56 to 63.

Accessories

Description		For use with	Length m	Reference	Weight kg
Fixings kit (2 brackets)		Light curtains XUSLN	–	**XUSLZ218**	0.450
Pre-wired female connectors	Transmitter type	Light curtains XUSLN	3	**XSZNCT03**	0.680
			10	**XSZNCT10**	0.910
			30	**XSZNCT30**	1.360
	Receiver type	Light curtains XUSLN	3	**XSZNCR03**	0.680
			10	**XSZNCR10**	0.910
			30	**XSZNCR30**	1.360
Arc suppressor (pair)		All types of light curtain	–	**XUSLZ500**	0.020
User guide on CD-ROM		All types of light curtains and accessories	–	**XUSLZ450**	0.020

563528



XSZNCT●● *XSZNCR●●*

Separate components

Power supplies, 90° mirror adaptors, anti-vibration kit and fixing bases

See pages 40 to 47.

Safety detection solutions Preventa

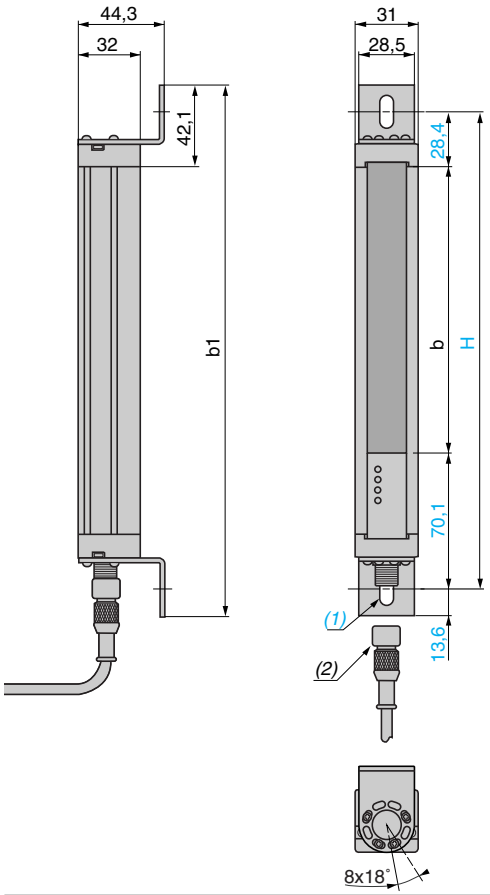
Safety light curtains, type 2

Slim, compact light curtains XUSLN with solid-state output

Dimensions

Slim, compact light curtains

XUSLN●●●



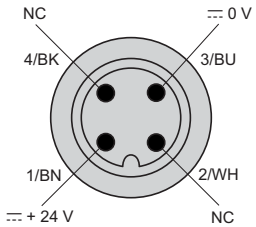
XUS	b	b1	H	Height protected
LN●●●0150	147	272	245.6	150
LN●●●0300	294	419	392.6	300
LN●●●0450	441	566	539.5	450
LN●●●0600	588	713	686.6	600
LN●●●0750	735	860	833.6	750
LN●●●0900	882	1007	980.6	900
LN●●●1050	1029	1154	1127.6	1050
LN●●●1200	1176	1301	1274.6	1200
LN●●●1350	1323	1448	1421.6	1350
LN●●●1500	1470	1595	1568.6	1500

(1) 1 elongated hole Ø 6.75 x 16.75 mm.
(2) M12 male connector.

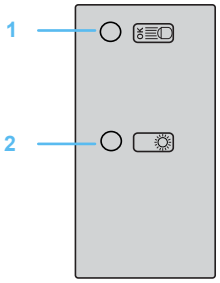
Connections

Transmitter

Pre-wired connector of transmitter XSZNCT



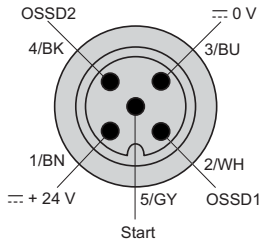
Transmitter status indicator



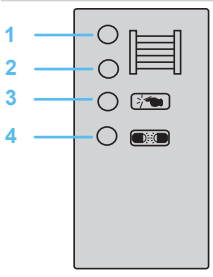
1 Interlock or Alarm
yellow LED
2 Switch-on/Machine run
green LED

Receiver

Pre-wired connector of receiver XSZNCR



Receiver status indicator

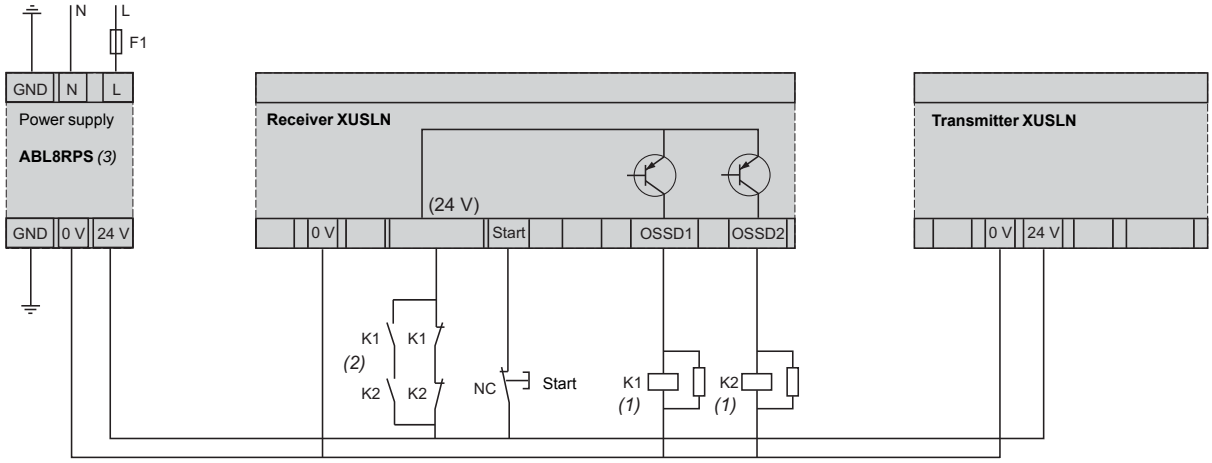


1 Top alignment
yellow LED
2 Bottom alignment
yellow LED
3 Stop
red LED
4 Run
green LED

Characteristics: page 36
References: page 37

Connections (continued)

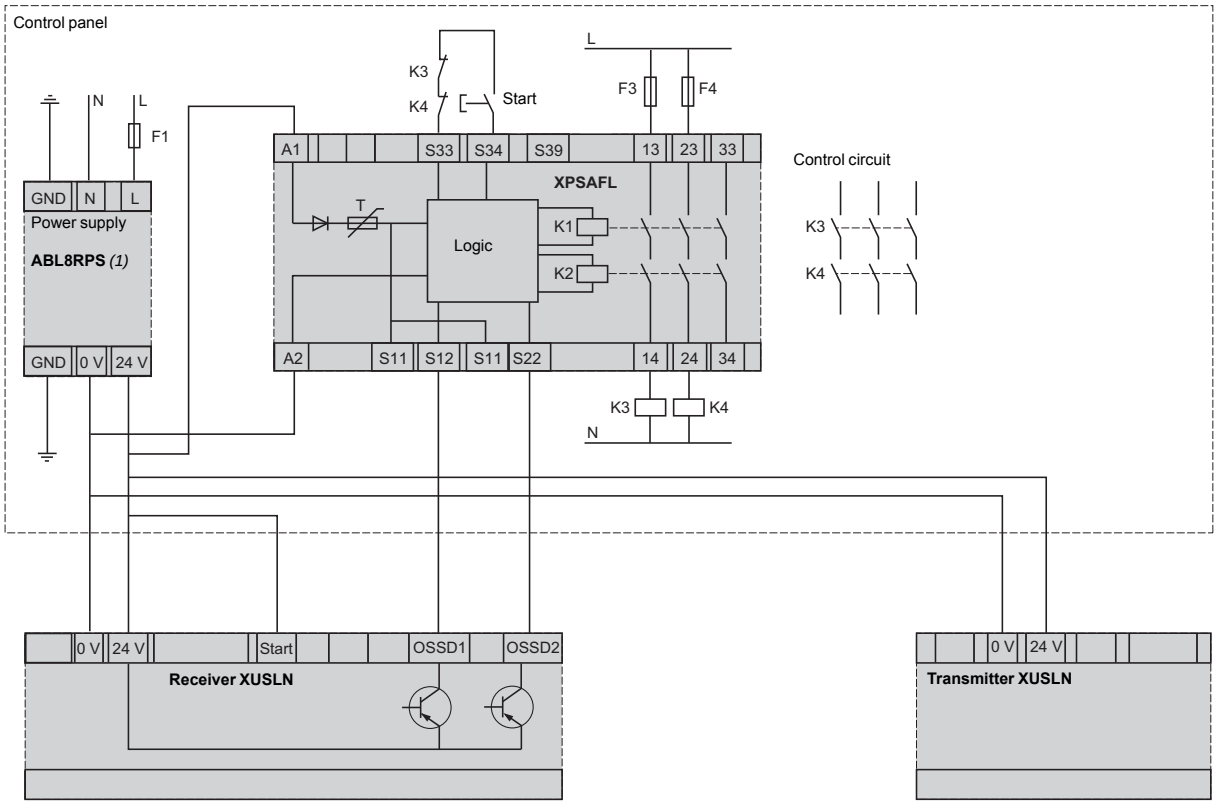
Direct connection with XUSLNG5D●●●



(1) The K1 and K2 coils must be protected using the arc suppressors included in the mounting kit.
(2) For the EDM function, contactors LC1D●●BD and control relays CAD●●BD, CA4KN●●BW3 and CA3KN●●BD are recommended (for more information on contactors and control relays, please refer to our "Motor starter solutions" catalogue).
(3) The power supply must conform to EN/IEC 61496 and EN/IEC 60204-1 standards.

Note: *Never connect the 0 V dc to earth ground.*

Connection of light curtain XUSLN5C●●● via a Preventa XPSAFL module

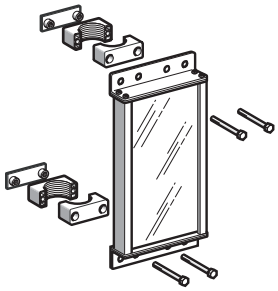


(1) The power supply must conform to EN/IEC 61496 and EN/IEC 60204-1 standards.

Note: *Never connect the 0 V dc to earth ground.*

Safety detection solutions
Preventa
Accessories for safety light curtains types 2 and 4

537571



XUSZM/ZA●●●●

90° mirror adaptor for light curtains

Glass mirror (0.88 Sn) *(1)*

Description	For use with light curtains			Height *(2)*	Reference	Weight
	XUSLB/LDM	XUSLP	XUSLN	mm		kg
90° mirror adaptor with rotatable fixings	–	XUSLPZ1A●	–	140	**XUSZM0102**	1.040
	–	–	–	191	**XUSZM0152**	1.300
	XUSLB/LDM0280	–	XUSLN●●●0150	343	**XUSZM0305**	1.900
	XUSLB/LDM0320 XUSLB/LDM0360	–	XUSLN●●●0300	495	**XUSZM0457**	2.500
	XUSLB/LDM0440	–	XUSLN●●●0450	546	**XUSZM0508**	2.800
	XUSLB/LDM0520	XUSLP●2A500●	–	648	**XUSZM0610**	3.200
	XUSLB/LDM0600/0680	XUSLP●2A0600●	XUSLN●●●0600	749	**XUSZM0711**	3.700
	XUSLB/LDM0720	–	–	800	**XUSZM0762**	3.800
	XUSLB/LDM0760	–	XUSLN●●●0750	851	**XUSZM0813**	4.000
	XUSLB/LDM0880	XUSLPZ3A0400●	–	953	**XUSZM0914**	4.500
	XUSLB/LDM0920/0960		XUSLN●●●0900	1054	**XUSZM1016**	5.000
	XUSLB/LDM1040	XUSLPZ3A0500●	–	1105	**XUSZM1067**	5.200
	XUSLB/LDM1120	XUSLPZ4A0300●	XUSLN●●●1050	1257	**XUSZM1219**	5.900
	XUSLB/LDM1200	XUSLPZ5A0300●	XUSLN●●●1200	1359	**XUSZM1321**	6.300
	XUSLB/LDM1360	–	XUSLN●●●1350	1410	**XUSZM1372**	6.500
	XUSLB/LDM1400	–	–	1461	**XUSZM1422**	6.700
	XUSLB/LDM1520	–	XUSLN●●●1500	1562	**XUSZM1524**	7.200
	XUSLB/LDM1560	XUSLPZ6A0300●	–	1664	**XUSZM1626**	7.600
	XUSLB/LDM1640/1720	–	–	1867	**XUSZM1830**	8.500
	XUSLB/LDM1800	–	–	1867	**XUSZM1830**	8.500
	XUSLB/LDM1920/2120	–	–	2172	**XUSZM2134**	9.800

Stainless steel mirror (0.82 Sn) *(1)*

Description	For use with light curtains			Height *(2)*	Reference	Weight
	XUSLB/LDM	XUSLP	XUSLN	mm		kg
90° mirror adaptor with rotatable fixings	–	XUSLPZ1A●	–	140	**XUSZA0102**	1.090
	–	–	–	191	**XUSZA0152**	1.300
	XUSLB/LDM0280	–	XUSLN●●●0150	343	**XUSZA0305**	2.000
	XUSLB/LDM0320 XUSLB/LDM0360	–	XUSLN●●●0300	495	**XUSZA0457**	2.700
	XUSLB/LDM0440	–	XUSLN●●●0450	546	**XUSZA0508**	3.000
	XUSLB/LDM0520	XUSLP●2A500●	–	648	**XUSZA0610**	3.500
	XUSLB/LDM0600/0680	XUSLP●2A0600●	XUSLN●●●0600	749	**XUSZA0711**	3.900
	XUSLB/LDM0720	–	–	800	**XUSZA0762**	4.200
	XUSLB/LDM0760	–	XUSLN●●●0750	851	**XUSZA0813**	4.400
	XUSLB/LDM0880	XUSLPZ3A0400●	–	953	**XUSZA0914**	4.500
	XUSLB/LDM0920/0960		XUSLN●●●0900	1054	**XUSZA1016**	5.400
	XUSLB/LDM1040	XUSLPZ3A0500●	–	1105	**XUSZA1067**	5.600
	XUSLB/LDM1120	XUSLPZ4A0300●	XUSLN●●●1050	1257	**XUSZA1219**	6.400
	XUSLB/DM1200	XUSLPZ5A0300●	XUSLN●●●1200	1359	**XUSZA1321**	6.800
	XUSLB/LDM1360	–	XUSLN●●●1350	1410	**XUSZA1372**	7.000
	XUSLB/LDM1400	–	–	1461	**XUSZA1422**	7.300
	XUSLB/LDM1520	–	XUSLN●●●1500	1562	**XUSZA1524**	7.800
	XUSLB/LDM1560	XUSLPZ6A0300●	–	1664	**XUSZA1626**	8.300
	XUSLB/LDM1640/1720	–	–	1867	**XUSZA1830**	9.200
	XUSLB/LDM1800	–	–	1867	**XUSZA1830**	9.200
	XUSLB/LDM1920/2120	–	–	2172	**XUSZA2134**	10.600

Accessories

Description	Usage	Reference	Weight kg
Laser alignment tool	All types of light curtain	**XUSLAT1**	0.340

PF106349SE

ABL8RPS24050

Power supplies for light curtains XUSL● *(3)*

Input voltage	Secondary			Reset	Conforming to standard EN 61000-3-2	Reference	Weight kg
	Output voltage	Nominal power	Nominal current				
Single phase (N-L1) or 2-phase (L1-L2) connection							
∿ 100…120 V - 200...500 V - 15 %,+ 10 % 50/60 Hz	⎓ 24...28,8 V	72 W	3 A	Auto/manu	Yes	**ABL8RPS24030**	0.300
		120 W	5 A	Auto/manu	Yes	**ABL8RPS24050**	0.700
		240 W	10 A	Auto/manu	Yes	**ABL8RPS24100**	1.000

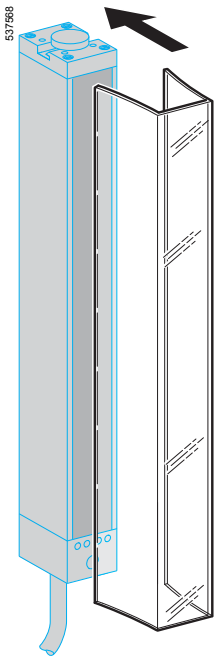
(1) Sensing distance reduction coefficient to be taken into account for each 90° mirror adaptor used.
(2) Usable reflective height.
(3) For full information, please refer to www.tesensors.com.

Safety detection solutions Preventa

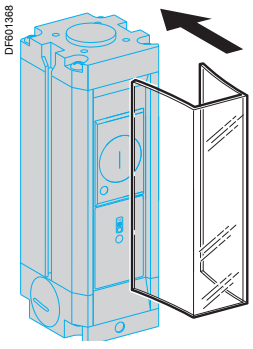
Accessories for safety light curtains types 2 and 4

Protective covers for light curtains XUSLB/XUSLDM/XUSLP			XUSZWS●●●●
Environmental characteristics			
Air temperature	For operation	°C	0...+ 55
	For storage	°C	- 25... + 70
Material			Lexan
Sensing distance (Sn) **reduction coefficient**			0.91 *(1)*
Environmental chemicals			
Chemical resistance	Acids, aliphatic hydrocarbons		Resistant
	Alcohols, Alkalis		Limited resistance
	Detergents and cleaners		
	Greases and oils		
	Silicone oils and greases not containing alkaline products		
	Amines		Not resistant
	Aromatic hydrocarbons		
	Detergents and cleaners containing alkaline		
	Esters		
	Halogenated hydrocarbons		
	Ketones		
	Silicone oils and greases containing alkaline products		

References of protective covers



XUSLZWB●●●●



XUSZWSP

Description	For use with	Height mm	Reference	Weight kg
Lexan protective covers for transmitter-receiver pair (0.91 Sn) *(1)* (Sold in sets of 2)	XUSLB/DM280	310	**XUSLZWB0280**	0.282
	XUSLB/DM320	350	**XUSLZWB0320**	0.318
	XUSLB/DM360	390	**XUSLZWB0360**	0.354
	XUSLB/DM440	470	**XUSLZWB0440**	0.426
	XUSLB/DM520	550	**XUSLZWB0520**	0.497
	XUSLB/DM600	630	**XUSLZWB0600**	0.569
	XUSLB/DM680	710	**XUSLZWB0680**	0.641
	XUSLB/DM720	750	**XUSLZWB0720**	0.677
	XUSLB/DM760	790	**XUSLZWB0760**	0.713
	XUSLB/DM880	910	**XUSLZWB0880**	0.821
	XUSLB/DM920	950	**XUSLZWB0920**	0.857
	XUSLB/DM960	990	**XUSLZWB0960**	0.893
	XUSLB/DM1040	1070	**XUSLZWB1040**	0.965
	XUSLB/DM1120	1150	**XUSLZWB1120**	1.037
	XUSLB/DM1200	1230	**XUSLZWB1200**	1.108
	XUSLB/DM1360	1390	**XUSLZWB1360**	1.252
	XUSLB/DM1400	1430	**XUSLZWB1400**	1.288
	XUSLB/DM1520	1550	**XUSLZWB1520**	1.396
	XUSLB/DM1560	1590	**XUSLZWB1560**	1.432
	XUSLB/DM1640	1670	**XUSLZWB1640**	1.504
	XUSLB/DM1720	1750	**XUSLZWB1720**	1.576
	XUSLB/DM1800	1830	**XUSLZWB1800**	1.648
	XUSLB/DM1920	1950	**XUSLZWB1920**	1.756
	XUSLB/DM2120	2150	**XUSLZWB2120**	1.935

Description	For use with	Height mm	Reference	Weight kg
Lexan protective covers for single beam device (0.91 Sn) *(1)* (Sold in sets of 2)	XUSLP	135	**XUSZWSP**	0.100

(1) Sensing distance reduction coefficient to be taken into account for each pair of Lexan protective covers used.

Dimensions : page 44

Safety detection solutions
Preventa
Accessories for safety light curtains types

Anti-vibration kits

Selection according to weight and application

Weight classes

Light curtain type	Height mm	Weight class 1	2	3	4
XUSLN	150...600	●			
	750...1500		●		
XUSLB/LDMQ/LDSQ	280…1040		●		
	1120…1360			●	
XUSLBR/LDMY/LDSY	320…1040		●		
	1120…2120			●	
XUSLPZ1A	–			●	
XUSLPZ2A0500 et XUSLPZ2A0600	–			●	
XUSLPZ3A0400	–			●	
XUSLPZ3A0500	–				●
XUSLPZ4A0300	–			●	
XUSLPZ5A0300 et XULLPZ6A0300	–				●
XUSLPB2A500 et XUSLPB2A600	–			●	

Type of mirror adaptors	Height mm	Weight class 1	2	3	4
XUSZM *(1)*	102	●			
	305...457		●		
	508…711			●	
	813…1016				●
XUSZA	102	●			
	305…1067		●		
	1219…1626			●	
	1830…2134				●

(1) Use of the anti-vibration kit is not recommended for mirror adaptors greater than 1016 mm in height.

Applications

Weight class	Anti-shock applications *(1)* Shear mounted: Number of fixings per head *(3)*	Reference	Anti-shock applications *(1)* Compression mounted: Number of fixings per head *(3)*	Reference	Anti-vibration applications *(2)* Shear mounted: Number of fixings per head *(3)*	Reference	Anti-vibration applications *(2)* Compression mounted: Number of fixings per head *(3)*	Reference
1	2	XSZSMK	Not recommended		2 or 4	XSZSMK	2	XSZSMK1
	2	XSZSMK1			2 or 4	XSZSMK1		
2	2 or 4	XSZSMK	2	XSZSMK1	2 or 4	XSZSMK	2	XSZSMK
	2 or 4	XSZSMK1			2 or 4	XSZSMK1	2 or 4	XSZSMK1
					2	XSZSMK2		
3	4	XSZSMK	2	XSZSMK	2 or 4	XSZSMK	2 or 4	XSZSMK
	4	XSZSMK1	2 or 4	XSZSMK1	4	XSZSMK1	4	XSZSMK1
	2 or 4	XSZSMK2			2 or 4	XSZSMK2		
4	4	XSZSMK	2	XSZSMK	4	XSZSMK	2	XSZSMK
	4	XSZSMK1	4	XSZSMK1	4	XSZSMK1	4	XSZSMK1
	2	XSZSMK2			2 or 4	XSZSMK2		

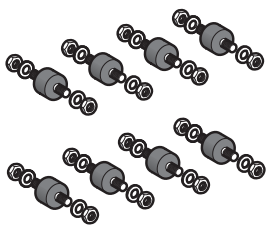
(1) Low frequency, high amplitude applications, such as punching presses where a powerful shock can exist.
(2) High frequency, low amplitude applications, such as offset printing machines where constant vibration can exist.
(3) Head: transmitter, receiver or mirror.

Shock absorber characteristics

Characteristics per shock absorber		Compression mounted: Maximum load	Torque	Natural frequency	Shear mounted: Maximum load	Torque	Natural frequency
		kg	Nm	Hz	kg	Nm	Hz
Pour kit antivibrations	**XSZSMK**	8.16	25.16	11	1.36	3.13	9.5
	XSZSMK1	2.177	10.86	14	1.13	2.34	9
	XSZSMK2	24.94	107.39	13	10.43	14.94	7.5

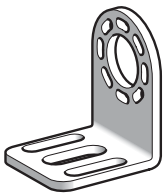
References of anti-vibration kits

537583



XSZSMK●

537570



XUSLZ227

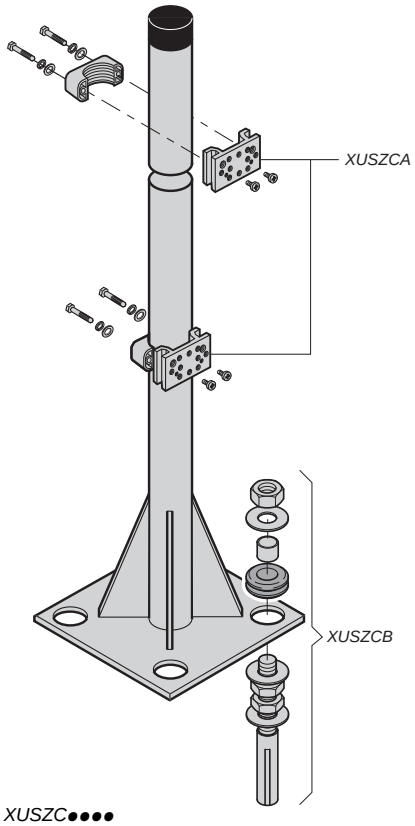
Description	For use with	Reference	Weight kg
Anti-vibration kit comprising 8 shock absorbers, stud fixing. 16 washers and 16 nuts included with kit.	All types of light curtain and 90° mirror adaptors (see tables above)	**XSZSMK**	0.030
		XSZSMK1	0.020
		XSZSMK2	0.045
Fixing kit for XUSLN (2 brackets)	Anti-vibration kit	**XUSLZ227**	0.450

Dimensions : page 45

Safety detection solutions
Preventa
Accessories for safety light curtains types 2 and 4

Fixing bases for light curtains and mirrors			XUSZC●●●●
Environmental characteristics			
Ambient air temperature	Operating	°C	- 25…+ 70
	For storage	°C	- 25…+ 70
Materials			Fixing base: steel End protection: black polycarbonate, 20% fibreglass

References



XUSZC●●●●

Fixing bases

Description	For use with			Height protected	Reference	Weight
	Light curtains Height	Mirrors Height	IP 67 tube Height			
	mm	mm	mm	mm		kg
Fixing base XUSZC●●●●	150…900	182…894	503…981	1200	**XUSZC1200**	11.340
	920…1500	995…1503	1102…1620	1800	**XUSZC1800**	15.880
	1520…1800	1605…1706	1740…1939	2100	**XUSZC2100**	20.410
	1920…2095	1910	2021…2141	2400	**XUSZC2400**	27.220
	–	2240	2336	3100	**XUSZC3100**	29.940

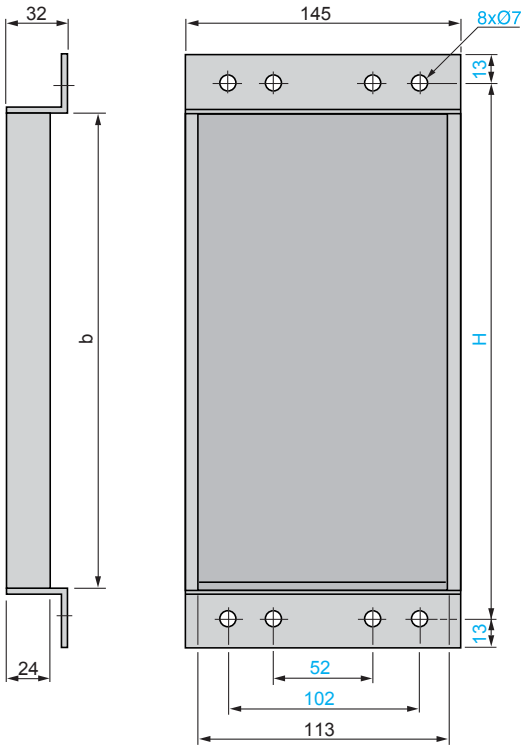
Accessories

Description	For use with	Reference	Weight kg
Fixing kit (sold in lots of 2)	Fixing base XUSZC●●●●	**XUSZCA**	0.450
Floor fixing kit comprising: 4 bolts, 4 rawplugs, 12 washers, 8 standard nuts, 4 lock nuts, 4 rubber insulators, 4 spacers (tube)	Fixing base XUSZC●●●●	**XUSZCB**	0.450

Safety detection solutions
Preventa
Accessories for safety light curtains types 2 and 4

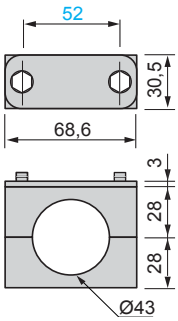
90° mirror adaptors + fixing clamps

XUSZM●●●●/XUSZA●●●●



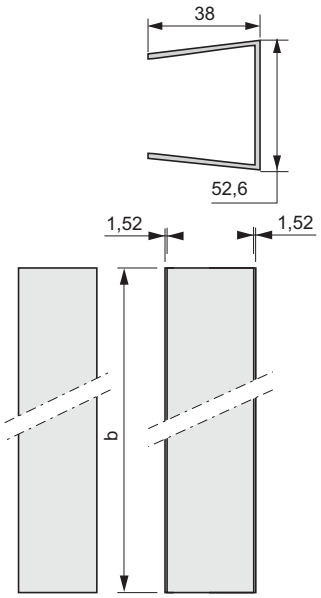
XUS			
Glass	Stainless steel	b	H
ZM0102	ZA102	140	182
ZM0152	ZA152	191	233
ZM0305	ZA0305	343	386
ZM0457	ZA0457	495	538
ZM0508	ZA0508	546	589
ZM0610	ZA0610	648	690
ZM0711	ZA0711	749	792
ZM0762	ZA0762	800	843
ZM0813	ZA0813	851	894
ZM0914	ZA0914	953	995
ZM1016	ZA1016	1054	1097
ZM1067	ZA1067	1105	1148
ZM1219	ZA1219	1257	1300
ZM1321	ZA1321	1359	1402
ZM1372	ZA1372	1410	1452
ZM1422	ZA1422	1461	1503
ZM1524	ZA1524	1562	1605
ZM1626	ZA1626	1664	1706
ZM1830	ZA1830	1867	1910
ZM2134	ZA2134	2172	2214

Fixing clamps (quantity 2)



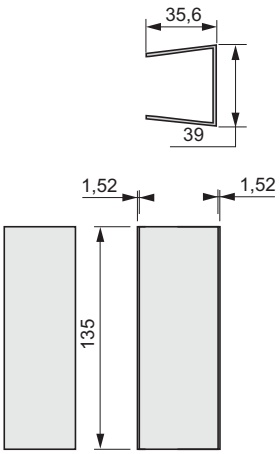
Protective covers

XUSLZW●●● for XULB/D



XUS	b
LZWB0280	310
LZWB0320	350
LZWB0360	390
LZWB0440	470
LZWB0520	550
LZWB0600	630
LZWB0680	710
LZWB0720	750
LZWB0760	790
LZWB0880	910
LZWB0920	950
LZWB0960	990
LZWB1040	1070
LZWB1120	1150
LZWB1200	1230
LZWB1360	1390
LZWB1400	1430
LZWB1520	1550
LZWB1560	1590
LZWB1640	1670
LZWB1720	1750
LZWB1800	1830
LZWB1920	1950
LZWB2120	2150

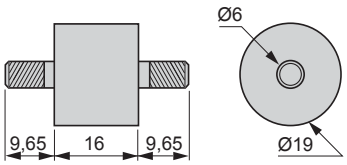
XUSZWSP for XUSLP



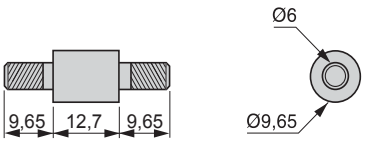
References :
pages 40 and 41

Anti-vibration kits *(1)*

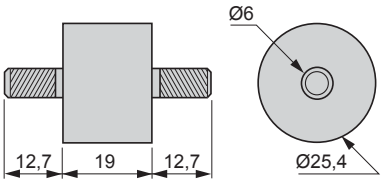
XSZSMK



XSZSMK1



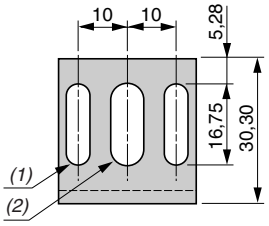
XSZSMK2

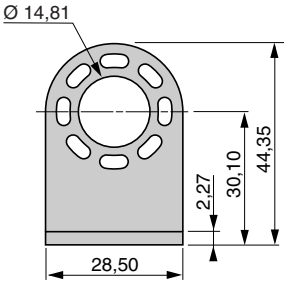


(1) The anti-vibration kit comprises 8 shock absorbers, 16 washers and 16 nuts.

Fixing brackets for anti-vibration kits

XUSLZ227 pour XUSLN

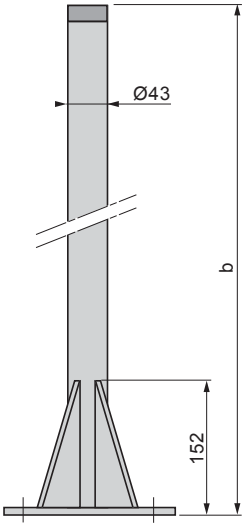


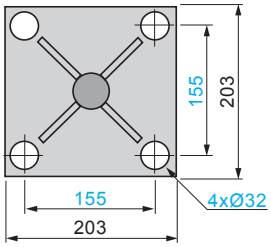


(1) 2 elongated holes Ø 5.10 x 16.75 mm.
(2) 1 elongated hole Ø 6.75 x 16.75 mm.

Characteristics : page 42
References : page 42

Fixing base
XUSZC●●●●

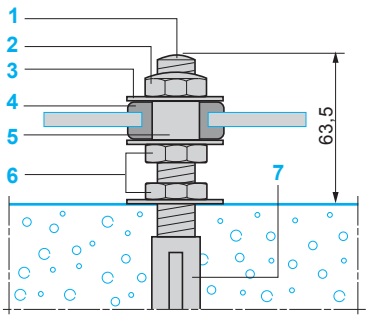




XUS	b
ZC1200	1200
ZC1800	1800
ZC2100	2100
ZC2400	2400
ZC3100	3100

Floor fixing kit (quantity 4) for fixing base XUSZC●●●●
XUSZCB

Echelle 2,5

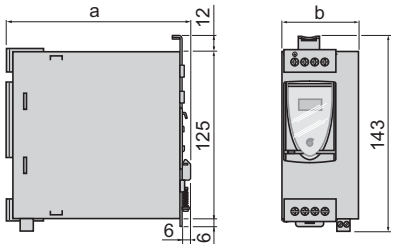


1 Bolt,
2 1 lock nut,
3 3 washers,
4 Rubber insulator,
5 Spacer (tube),
6 2 standard nuts,
7 Rawplug.

Characteristics : page 43
References : page 43

Dimensions

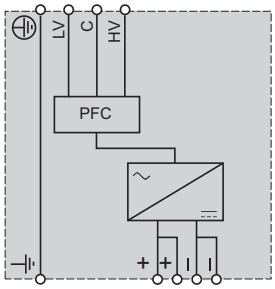
ABL8RPS24●●●



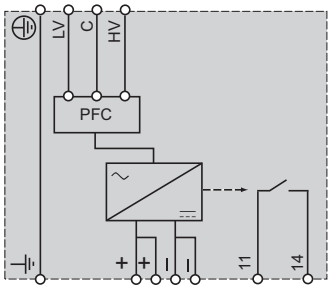
ABL8	a	b
RPS24030	120	44
RPS24050	120	56
RPS24100	140	85

Internal schemes

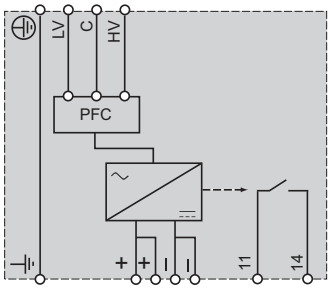
ABL8RPS24030



ABL8RPS24050



ABL8RPS24100



Safety detection solutions

Preventa safety modules and single-beam photo-electric sensors

With a test input associated with a built-in "muting" function

Operating principle

XPSCM safety modules used in conjunction with XU2S single-beam photo-electric sensors (periodically tested), establish a category 2 light curtain conforming to IEC/EN 61496 parts 1 and 2.
The connection of 1 to 4 pairs of XU2S photo-electric sensors makes it possible to create a protected zone up to 1200 mm high conforming to EN 999/ISO 13855 and 8 m long.

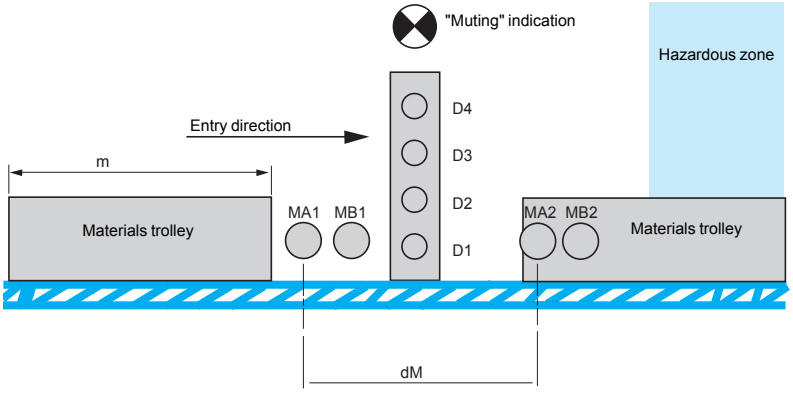
The built-in "muting" function allows the automatic passage of parts to be machined, or loaded pallets, without interrupting the transportation movement.
When the system is switched on by the start command (in series with the main circuit feedback loop) and the light protection is not interrupted, the main circuit is closed by the two safety relays of the XPSCM module.

An interruption of the protection field causes the safety outputs to open instantaneously, and the process PLC receives a stop command. The LED on the XPSCM front panel changes from green to red. The "open" state is maintained until the module is restarted using the start button.

The "muting" function allows the light curtain protection to be inhibited. This can be used to authorise the passage a materials trolley through the light curtain without tripping the main circuit. The "muting" function cannot be activated by supplying the inhibition sensors unless the safety outputs have been switched on beforehand.

To trigger the "muting" function, the inhibition devices must be activated within the 3 second time interval. This synchronisation time for the two inhibition inputs can be deactivated by connecting two configuration terminals. The "muting" cycle has a maximum duration of 60 seconds. During this period, materials can be transported through the protection field without deactivating the safety outputs. The 60 second limit value of the "muting" cycle may be made infinite by connecting two configuration terminals.

During the "muting" process, a light indicating the "muting" status is controlled by the XPSCM module. An fault at indicator light level (short-circuit, open circuit) will be immediately recognised and deactivate the "muting" function. The indicator light comes on when a "muting" signal is generated and indicates the inhibition of the protection function.



D1, D2, D3, D4: monitoring photo-electric sensors.
MA1, MB1, MA2, MB2: "muting" photo-electric sensors.
m = trolley length (including material)
dM = distance between MA1, MB1 and MA2, MB2.

Conditions to be observed for the "muting" function

- The "muting" sensors must either be thru-beam type XU2M18PP340, polarised reflex type XU9M18PP340 or mechanical limit switches with contacts.
- dM ≤ m to obtain continuous validation of the "muting" function.
- Avoid the intrusion of persons during the "muting" phase. This phase is indicated by the indicator light connected to the "muting" indicator output of the XPSCM module.
- A materials trolley must provide the "muting" signal before entering the protection field and cease it once it has cleared all the sensors of the protection field on exiting.

Characteristics: page 49
References: pages 50 and 51
Functional diagrams, connections: pages 52 to 55

Safety detection solutions

Preventa safety modules and single-beam photo-electric sensors

With a test input associated with a built-in "muting" function

Characteristics of safety modules

Module type			XPSCM1144	XPSCM1144P
Maximum achievable safety level *(1)*			PL c/Category 2 conforming to EN/ISO 13849-1, SILCL 1 conforming to EN/ IEC 62061	
Reliability data	Mean Time To dangerous Failure ($MTTF_d$)	**Years**	16.6	
	Diagnostic Coverage (DC)	**%**	95.5	
	Probability of dangerous Failure per Hour (PFH_d)	**1/h**	3.12×10^{-7}	
Conformity to standards			EN/IEC 61496-1, EN/IEC 61496-2, EN/IEC 60204-1, EN/IEC 60947-1, EN/IEC 60947-5-1	
Product certifications			UL, CSA, IFA	
Ambient air temperature		**°C**	For operation: - 10…+ 55, for storage: - 25… + 85	
Degree of protection conforming to IEC 60529			Terminals: IP 20 Enclosure: IP 40	
Supply	Voltage	**V**	24 ⎓, voltage limits: - 20… + 20%	
Maximum consumption		**W**	< 15, with thru-beam photo-electric sensors and "muting" signalling	
Module fuse protection			Internal, electronic	
Rated insulation voltage (Ui)		**V**	300 (degree of pollution 2 conforming to EN/IEC 60947-5-1, DIN VDE 0110 parts 1 and 2)	
Rated impulse withstand voltage (Uimp)		**kV**	4 (overvoltage category III, conforming to IEN/IEC 60947-5-1, DIN VDE 0110 parts 1 and 2)	
Inputs for sensors				
- number of inputs to be monitored			4 (terminals Z1, Z2, Z3, Z4)	
- input voltage		**V**	24 ⎓	
- supply voltage of sensors		**V**	24 ⎓ (terminal U+/U-)	
- supply current of sensors		**mA**	< 200	
Inputs for "muting" function	Number of "muting" inputs		2 (terminals MA, MB)	
	Input voltage	**V**	24 ⎓ (terminal U+/U-)	
	Maximum current	**mA**	< 200	
	Synchronisation time	**s**	3 (+/- 20 %) for activation of the MA/MB "muting" signal	
	Maximum "muting" time	**s**	60 (- 10…+ 30%)	
Single-beam thru-beam photo-electric sensors authorised for monitoring inputs Z1-Z2-Z3-Z4				
- sensors authorised for the protection field (4 max.)			XU2S18PP340●●● (infrared)	
- "muting" sensors			XU2M18PP340●●● or XU9M18PP340●●● photo-electric sensors or XC limit switches	
Sensor supply resistivity		Ω	10 max.	
Safety outputs				
- number and type			2 NO (terminals 13-14, 23-24), volt-free	
- breaking capacity of solid-state outputs			4 NO 24 V/20 mA, (Y33-Y34, Y33-Y44, Y33-Y54, Y33-Y64)	
- breaking capacity in AC-15		**VA**	C300: inrush 1800, maintained 180	
- breaking capacity in DC-13			24 V/1.5 A, L/R = 50 ms	
- maximum thermal current (Ithe)		**A**	5.6	
- sum of maximum thermal current		**A**	11	
- minimum current (volt-free contact)		**mA**	10	
- minimum voltage (volt-free contact)		**V**	17	
- short-circuit protection		**A**	4 gG or 6 fast acting cartridge fuse, conforming to EN/IEC 60947-5-1 and DIN VDE 0660 part 200	
"Muting" signalling sensors for incandescent lamp			Number: 1 (terminal H1), maximum power: 6.5 W/24 V ⎓, minimum power: 4 W/24 V ⎓	
Response time on input change of state		**ms**	< 25	
Electrical durability			See our catalogue Safety functions and solutions using Preventa	
Display			4 LEDs	
Connection	Type		Captive screw clamp terminals	Captive screw clamp terminals, removable terminal block
- 1-wire connection	Without cable end		Solid or flexible cable: 0.14…2.5 mm^2	Solid or flexible cable: 0.2…2.5 mm^2
	With cable end		Without bezel, flexible cable: 0.25…2.5 mm^2	Without bezel, flexible cable: 0.25…2.5 mm^2
	With cable end		With bezel, flexible cable: 0.25…1.5 mm^2	With bezel, flexible cable: 0.25…2.5 mm^2
- 2-wire connection	Without cable end		Solid or flexible cable: 0.14…0.75 mm^2	Solid cable: 0.2…1 mm^2, flexible cable: 0.2…1.5 mm^2
	With cable end		Without bezel, flexible cable: 0.25…1 mm^2	Without bezel, flexible cable: 0.25…1 mm^2
	With cable end		Double, with bezel, flexible cable: 0.5…1.5 mm^2	Double, with bezel, flexible cable: 0.5…1.5 mm^2

(1) Using an appropriate and correctly connected control system, associated with the safety module ***XPSCM1144●***

Safety detection solutions

Preventa safety modules and single-beam photo-electric sensors

With a test input associated with a built-in "muting" function

Characteristics of photo-electric sensors

Conformity to standards			IEC 61496-1 and IEC 61496-2 (Type 2 ESPE)
Maximum safety level *(1)*			PL = c/category 2 conforming to EN/ISO 13849-1
Reliability data	Probability of dangerous Failure per Hour (PFH_d)	**1/h**	$PFH_d = 4.6E^{-7}$ conforming to EN/IEC 61508 $PFH_d = 5.5E^{-7}$ conforming to EN/IEC 61508, with “muting” function
Ambient air temperature	For operation	**°C**	- 25…+ 55 (infrared transmission sensors)
	For storage	**°C**	- 40…+ 70
Vibration resistance			7 gn (f = 10…55 Hz), conforming to EN/IEC 60068-2-6
Shock resistance			30 gn, 3 axes: 3 times, conforming to EN/IEC 60068-2-27
Degree of protection			IP 67 conforming to IEC/EN 60529
Connection	Pre-cabled		PVC cable, diameter 5 mm, length 5 m, wire c.s.a: 4 x 0.34 mm² (3 x 0.34 mm² for thru-beam transmitter)
	Connector		M12, 4-pin male connector (suitable 4-pin female connectors, including pre-wired versions)
Materials			Case: nickel plated brass (infrared transmission sensors). Lenses: PMMA
Nominal sensing distance		**m**	8 (infrared transmission sensors)
Rated supply voltage		**V**	12…24 ⎓ (with protection against reverse polarity)
Voltage limits		**V**	10…30 ⎓ (including ripple)
Switching capacity (sealed)		**mA**	≤ 100 (with overload and short-circuit protection)
Voltage drop, closed state		**V**	≤ 1.5
Current consumption, no-load		**mA**	≤ 35
Maximum switching frequency		**Hz**	500
Delays		**ms**	Response: ≤ 1 Recovery: ≤ 1

*(1) Using an appropriate and correctly connected control system, associated with the safety module **XPSCM1144●**.*

Safety modules

XPSCM1144●

Description	Type of terminal block connection	Number of safety circuits	Additional outputs	Supply	Reference	Weight kg
Safety modules for monitoring single-beam photo-electric sensors, with a built-in "muting" function	Integrated in module	2	4	24 V ⎓	**XPSCM1144**	0.350
	Removable from module	2	4	24 V ⎓	**XPSCM1144P**	0.350

Operating principle: page 48 | Characteristics: page 49 | Functional diagrams, connections: pages 52 to 55

Safety detection solutions

Preventa safety modules and single-beam photo-electric sensors

With a test input associated with a built-in "muting" function

XU2S18●P340L5

XU2S18●P340WL5

XU2S18KP340L5T

XU2S18PP340DR

XU2S18PP340WL5R

Single-beam photo-electric sensors with test input

Description	Transmission type	Line of sight	Connection	Reference	Weight kg
PNP thru-beam pair (transmitter + receiver) Light or dark programmable switching	Infrared Sensing distance: 8 m	Along case axis	Pre-cabled, L = 5 m	**XU2S18PP340L5**	0.485
			M12 connector	**XU2S18PP340D**	0.155
		90° to case axis	Pre-cabled, L = 5 m	**XU2S18PP340WL5**	0.485
			M12 connector	**XU2S18PP340WD**	0.155
Thru-beam transmitter only (for XPSCM1144●)	Infrared	Along case axis	Pre-cabled, L = 5 m	**XU2S18KP340L5T**	0.235
			M12 connector	**XU2S18KP340DT**	0.075
		90° to case axis	Pre-cabled, L = 5 m	**XU2S18KP340WL5T**	0.235
			M12 connector	**XU2S18KP340WDT**	0.155
PNP thru-beam, receiver only (for XPSCM1144●)	Infrared	Along case axis	Pre-cabled, L = 5 m	**XU2S18PP340L5R**	0.250
			M12 connector	**XU2S18PP340DR**	0.080
		90° to case axis	Pre-cabled, L = 5 m	**XU2S18PP340WL5R**	0.250
			M12 connector	**XU2S18PP340WDR**	0.080
Other versions		Pre-cable sensors with other cable lengths. Please consult our Customer Care Centre.			

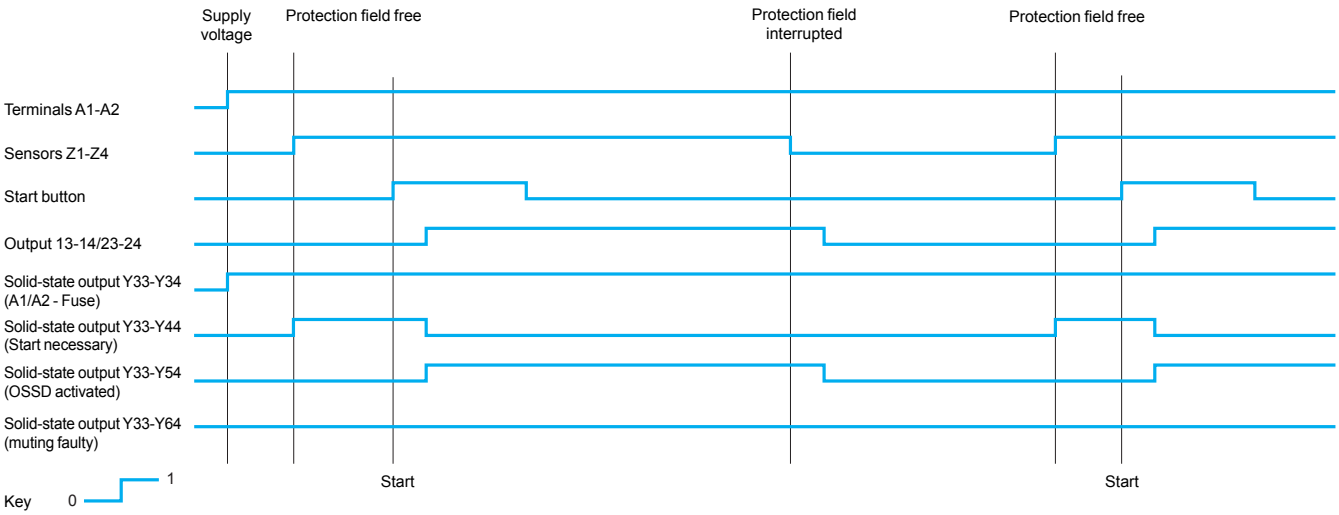
Safety detection solutions

Preventa safety modules and single-beam photo-electric sensors

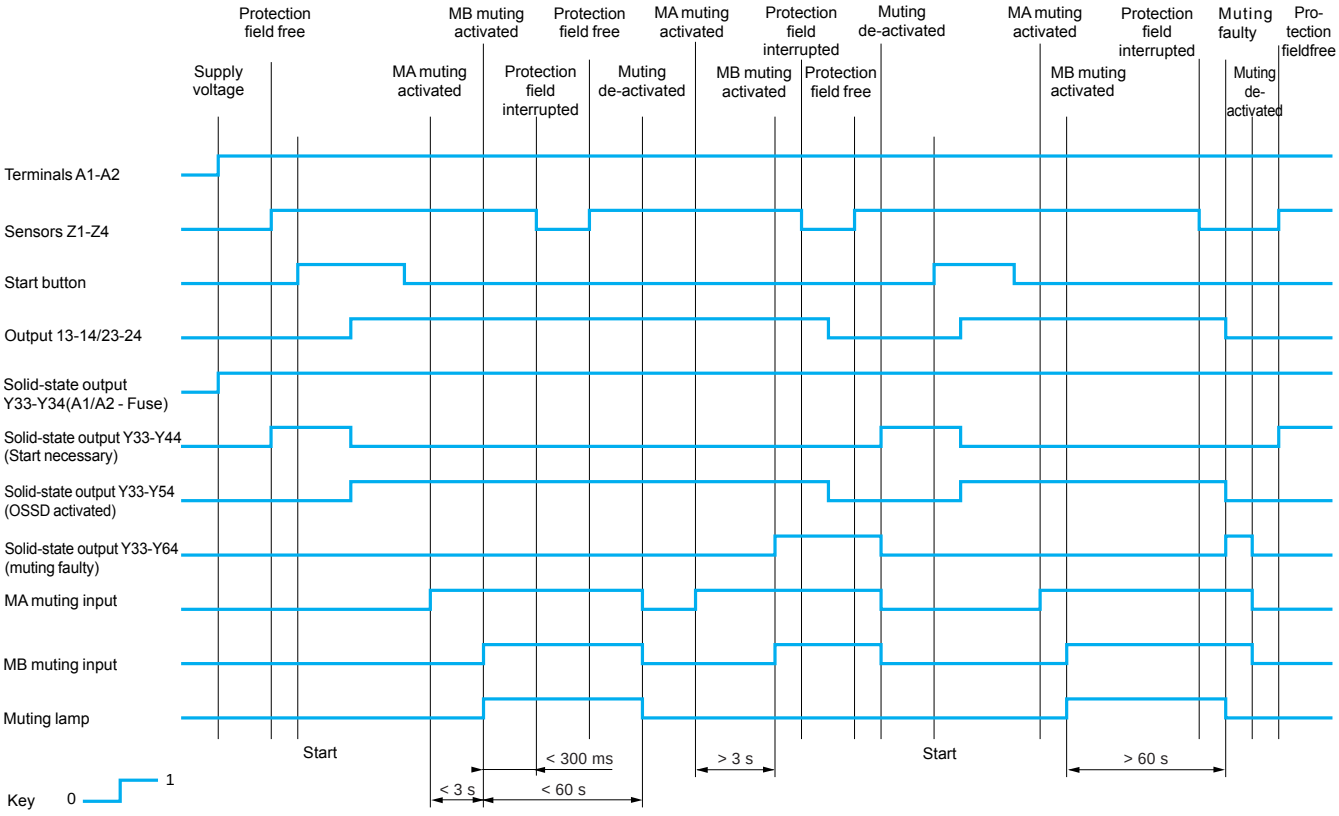
With a test input associated with a built-in "muting" function

Functional diagrams

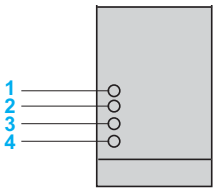
Functional diagram of module XPSCM



Functional diagram of module XPSCM with "muting" function



Key to LEDs



1 Supply voltage A1-A2, internal electronic fuse status
2 Signalling for restarting
3 Safety output closed
4 Safety output open

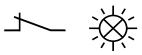
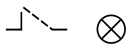
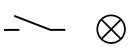
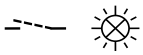
Operating principle: page 48
Characteristics: page 49
References: pages 50 and 51
Functional diagrams, connections: pages 52 to 55

Safety detection solutions

Preventa safety modules and single-beam photo-electric sensors

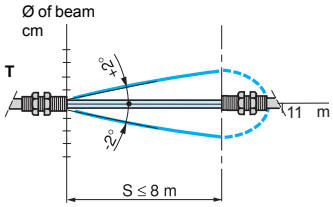
With a test input associated with a built-in "muting" function

Operation

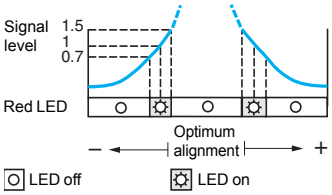
Output state (PNP) indicator: yellow LED (illuminated when sensor output is ON)	Light switching		Dark switching	
	No object present in the beam	Object present in the beam	No object present in the beam	Object present in the beam
				

Curves

Infrared detection curve

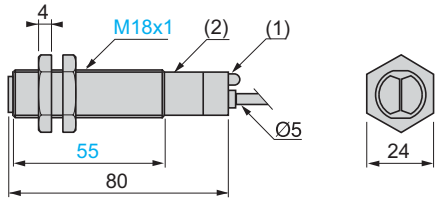


Verification of correct operation



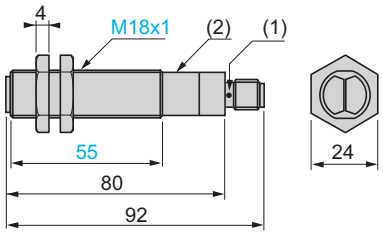
Dimensions

XU2S18PP340L5, XU2S18PP340L5L



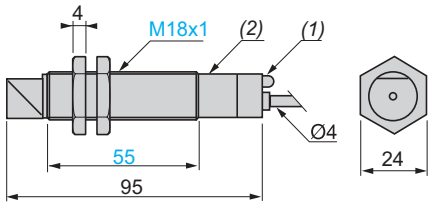
(1) LED
(2) Potentiometer

XU2S18PP340D



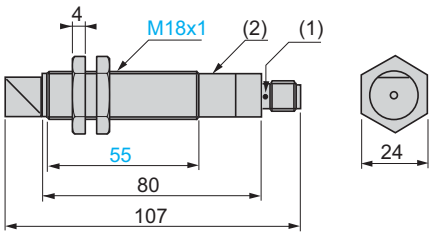
Fixing nut tightening torque: 24 N.m
Connector tightening torque: 2 N.m

XU2S18PP340WL5



(1) LED
(2) Potentiometer

XU2S18PP340WD

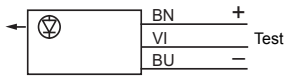


Fixing nut tightening torque: 24 N.m
Connector tightening torque: 2 N.m

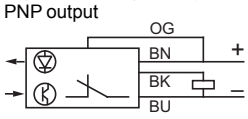
Wiring schemes (3-wire ⎓)

Pre-cabled version

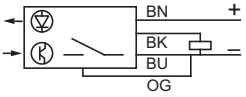
Transmitter



Receiver
Light switching (no object present).
PNP output

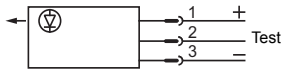


Receiver
Dark switching (no object present). PNP output

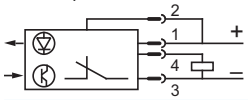


Connector version

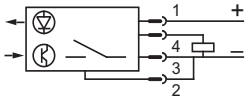
Transmitter



Receiver
Light switching (no object present).
PNP output



Receiver
Dark switching (no object present). PNP output



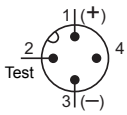
Cable connections

(–)	BU	(Blue)
(+)	BN	(Brown)
(OUT)	BK	(Black) (receiver)
(Prog.)	OG	(Orange) (receiver)
(Test)	VI	(Violet) (transmitter)

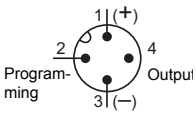
Connector schemes

Sensor connector pin view

Transmitter

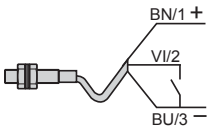


Receiver

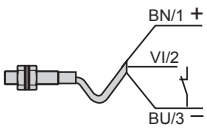


Beam break test (for transmitter only)

Beam made



Beam broken



Safety detection solutions

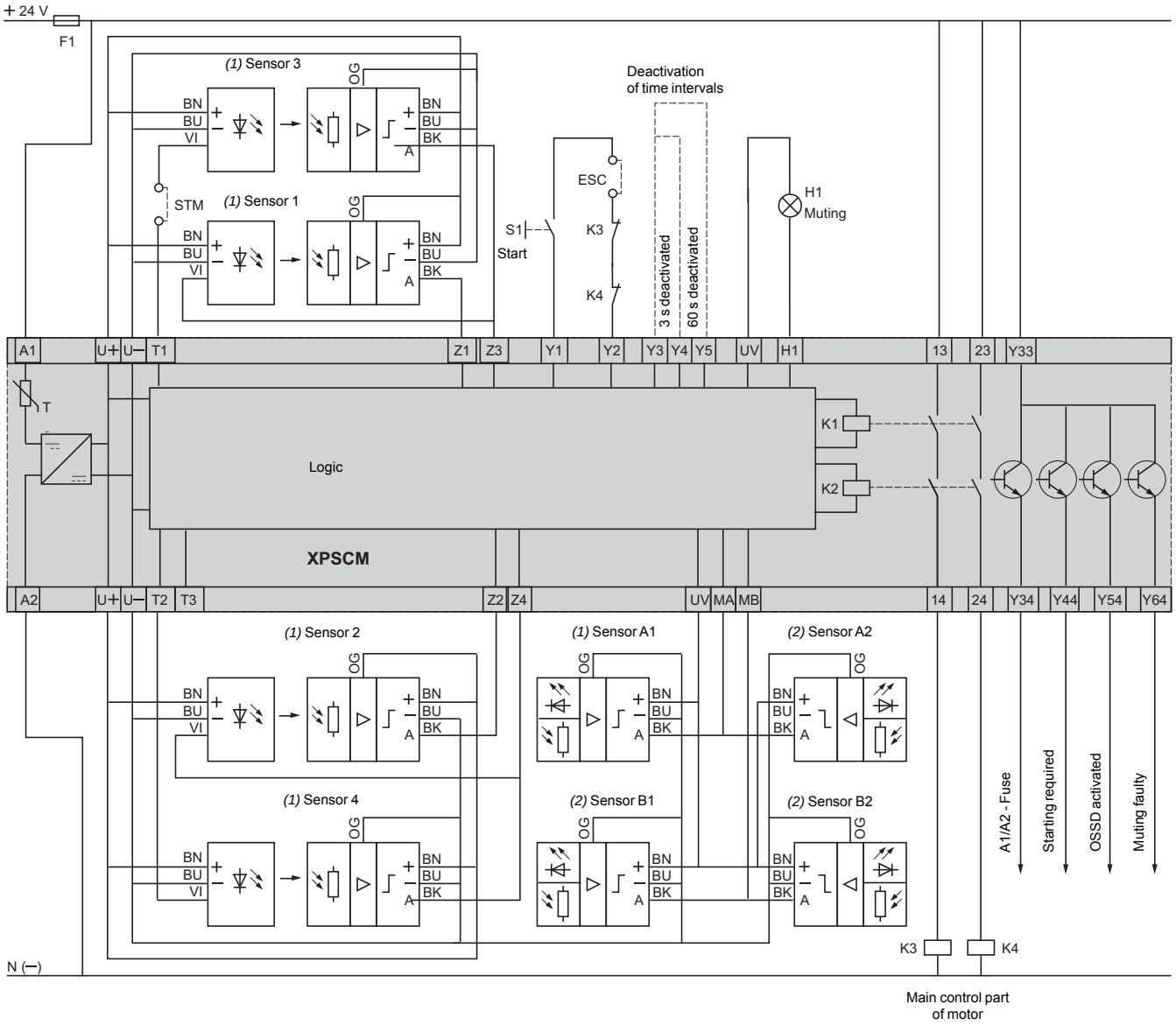
Preventa safety modules and single-beam photo-electric sensors

With a test input associated with a built-in "muting" function

Connections

Connection of module XPSCM with 4 pairs of XU2S single-beam sensors

(Connection of 1 to 4 pairs of XU2S single-beam sensors to XPSCM, see page 55)



XU2 S sensors can be programmed for light switching or dark switching (for example: dark switching with sensors 1 and 3 and light switching with sensors 2 and 4).
ESC: external start conditions.
Y1-Y2: feedback loop.
STM: For stopping time measurement.
(1) Protection field sensors.
(2) Muting sensors.

Safety detection solutions

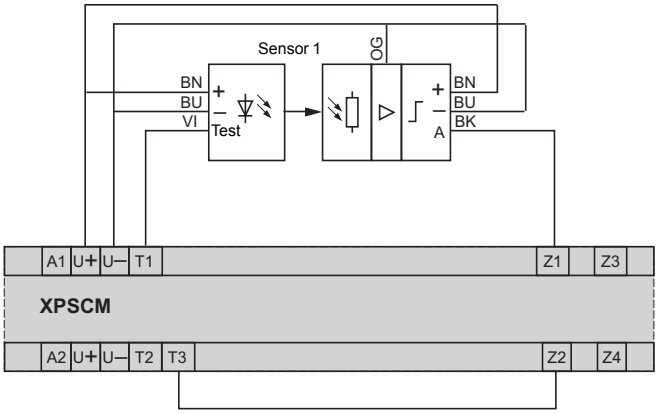
Preventa safety modules and single-beam photo-electric sensors

With a test input associated with a built-in "muting" function

Connections (continued)

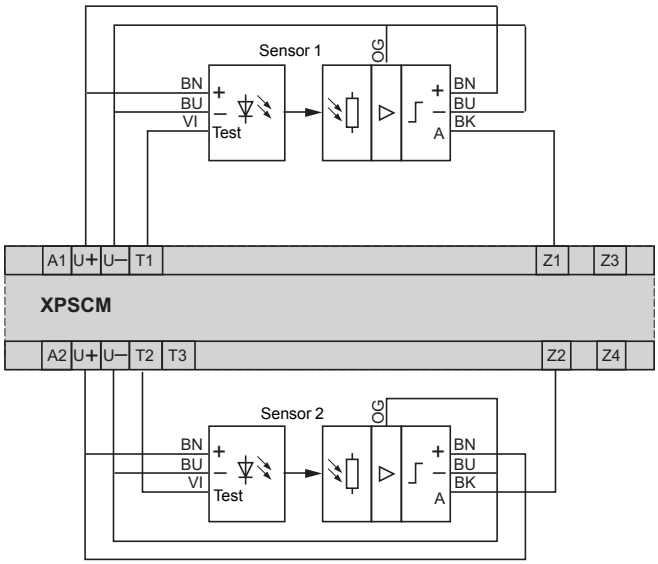
Connection of module XPSCM with 1 pair of XU2S sensors

(dark switching)



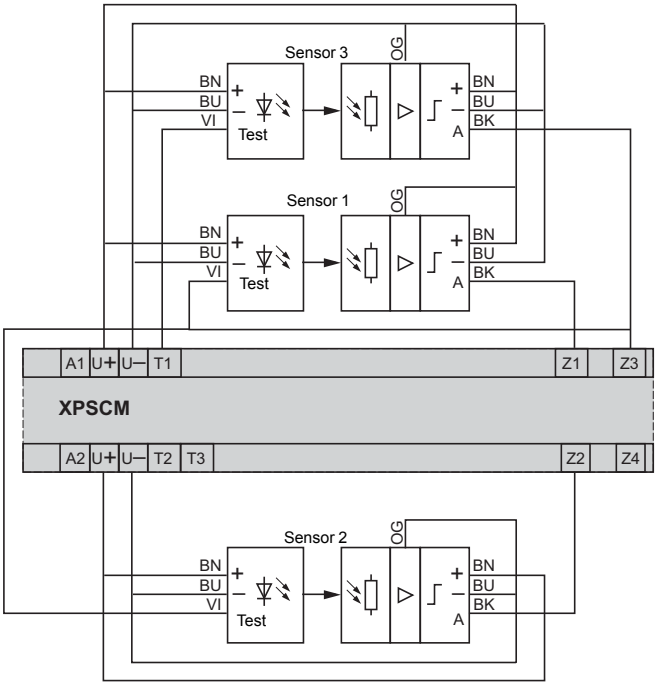
Connection of module XPSCM with 2 pairs of XU2S sensors

(dark switching)



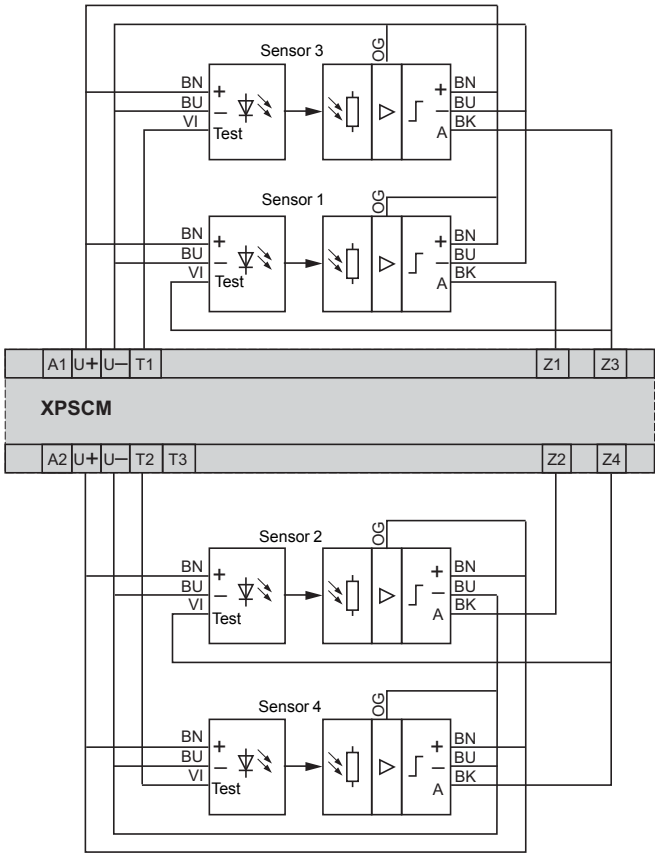
Connection of module XPSCM with 3 pairs of XU2S single-beam sensors

(2 for dark switching, 1 for light switching)



Connection of module XPSCM with 4 pairs of XU2S single-beam sensors

(2 for dark switching, 2 for light switching)



Safety automation solutions

Safety monitoring module
Preventa XPSLCM
for the "muting" function of type 2 and type 4 safety light curtains

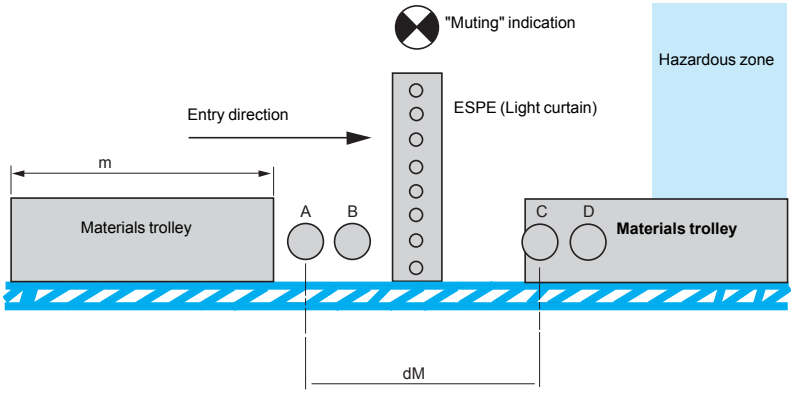
Operating principle

XPSLCM safety modules are used with type 4 light curtains conforming to EN/IEC 61496-1 to provide a system inhibiting the light curtain protection, i.e. "muting". This function enables the automatic passage of parts for machining or loaded pallets, without interrupting the transportation movement within the zone protected by the electro-sensitive protection equipment (ESPE) system. In addition to the electro-sensitive protection and XPSLCM safety modules, the system comprises 4 to 8 inhibition sensors, 2 indicator lights and a key switch to reset the system to the initial state in the event of a sequence error.

When the system is switched on by the start command and the light curtain protection not interrupted, the main circuit is closed by the safety outputs of the XPSLCM modules (solid-state safety outputs). In addition to safety outputs, the modules incorporate signalling outputs for sending system status information to the PLC. Either 5 or 14 LEDs and a 2-digit display, mounted on the front face of the module, provide information on the safety circuit status.

An interruption of the protection field monitored by the electro-sensitive protection equipment causes instantaneous opening of the safety outputs; the process PLC receives a stop command and the LED display mounted on the front face indicates the change of state of the safety circuits. The "open" state is maintained until the module is restarted using the Start button.

The "muting" function cannot be activated by supplying the inhibition sensors unless the safety outputs have been switched on beforehand. To trigger the "muting" function, the inhibition devices must be activated within the 3 second time interval. During the activated "muting" phase, materials can be transported through the protection field without deactivating the safety outputs. In the event of intrusion into the hazardous zone, a person cannot activate the inhibition sensors in the same way and the system stops.
Whilst the "muting" function is activated, a "muting" status indicator light is controlled by the XPSLCM module. A fault at indicator light level (short-circuit, open circuit) is immediately recognised and deactivates the "muting" function. The indicator light only illuminates when a "muting" signal is generated and indicates the inhibition of the protection function.



ESPE: electro-sensitive protection equipment (light curtain).
A, B, D, C: "muting" sensors.
m: trolley length and dM = distance between A, B and D, C.

Conditions to be observed for the "muting" function

- The "muting" sensors must either be thru-beam type XUB0BPSNL2 + XUB0BKSNL2T, polarised reflex type XUB0BPSNL2 + XUCZ50 or mechanical limit switches with contacts.
- dM ≤ m to obtain continuous validation of the "muting" function.
- Avoid the intrusion of persons during the "muting" phase. This phase is indicated by the indicator light connected to the "muting" indicator output of the XPSLCM module.
- A materials trolley must provide the "muting" signal before entering the protection field and cease it once it has cleared all the sensors of the protection field on exiting.

Characteristics: page 57 | References: page 58 | Dimensions: pages 59 | Schemes: pages 60 to 63

Safety automation solutions

Safety monitoring module
Preventa XPSLCM
for the "muting" function of type 2 and type 4 safety light curtains

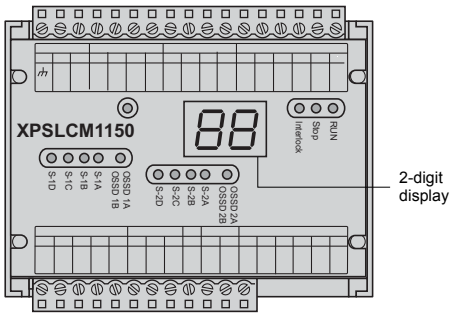
Characteristics

Module type			XPSLCM1150
Maximum achievable safety level *(1)*			PL e/Category 4 conforming to EN/ISO 13849-1, SILCL 3 conforming to EN/IEC 62061
Conformity to standards			EN/IEC 61496-1, EN/IEC 61496-2, EN/IEC 60204-1, EN/IEC 60947-1, EN/IEC 60947-5-1
Product certifications			UL, CSA, TÜV
Ambient air temperature	For operation	**°C**	0…+ 55
	For storage	**°C**	- 25…+ 75
Degree of protection conforming to IEC 60529	Terminals		IP 20
	Enclosure		IP 20
Power supply	Voltage	**V**	24 ⎓
	Voltage limits		- 10…+ 10**%**
Maximum consumption		**W**	< 150
Rated insulation voltage (Ui)		**V**	300 (degree of pollution 2 conforming to IEC/EN 60947-5-1, DIN VDE 0110 parts 1 and 2)
Rated impulse withstand voltage (Uimp)		**kV**	4 (overvoltage category III, conforming to IEC/EN 60947-5-1, DIN VDE 0110 parts 1 and 2)
Number of light curtains monitored			1 or 2 transmitter-receiver pairs
Inputs for "muting" sensors - number of inputs to be monitored			2 to 4 per "muting" function
- supply voltage of sensors		**V**	24
- output current of each sensor		**mA**	< 20
Type of "muting" sensors			Thru-beam, polarised reflex or sensors with volt-free contacts
Synchronisation time of "muting" sensors		**s**	3 or unlimited
Maximum "muting" time		**min**	2 or unlimited
Safety outputs - number and type			2 PNP (terminals 1 and 2), 0.625 A at 24 V
- max. thermal current (Ithe)	1 output	**A**	–
	2 outputs	**A**	2 x 0.108
	3 outputs	**A**	–
	3 contacts	**A**	–
Auxiliary outputs			1 PNP (terminal 5) + 1 NPN (terminal 6)
- breaking capacity of solid-state PNP outputs		**mA**	24 V/500
- breaking capacity of solid-state NPN outputs		**mA**	24 V/100
"Muting" indicator light power		**W**	1 to 7 max.
Response time on input change of state		**ms**	1
Signalling			14 LEDs plus 2-digit display
Connection	Type		Captive screw clamp terminals, removable terminal block
1-wire connection	Without cable end		Solid cable: 4 mm^2
	Without cable end		Flexible cable: 0.14...1.5 mm^2
	With cable end		Without bezel, flexible cable: 0.14…1.5 mm^2
2-wire connection	Without cable end		Solid cable: 0.14...1.5 mm^2
	Without cable end		Flexible cable: 0.14..0.7.5 mm^2

(1) Using an appropriate and correctly connected control system.

Safety automation solutions

Safety monitoring module
Preventa XPSLCM
for the "muting" function of type 2 and type 4 safety light curtains



Description

XPSLCM1150

To aid diagnostics, the safety monitoring module has 14 LEDs and a 2-digit display on the front face which provide information on the monitoring circuit status.

XPSLCM1150

References

Safety module

Description	Type of terminal block connection	Number of safety circuits	Auxiliary outputs	Supply	Reference	Weight kg
Safety module for "muting" function	Removable from module	2 PNP	1 PNP + 1 NPN	24 V ⎓	**XPSLCM1150**	0.660

Spare parts

Description	Power W	Reference	Weight kg
"Muting" indicator light kit	5	**XSZCM01**	0.012
Replacement bulbs for "muting" indicator light kit comprising one lot of 10 replacement bulbs and 1 removal/insertion tool XBFX13	1 to 7	**XSZCM02**	0.016

Presentation: page 56 | Characteristics: page 57 | Dimensions: page 59 | Schemes: pages 60 to 63

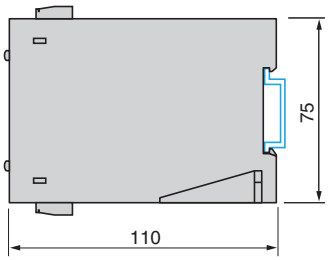
Safety automation solutions

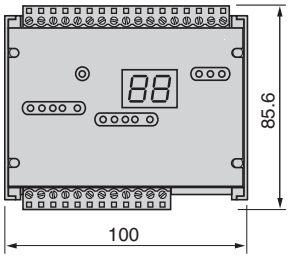
Safety monitoring module
Preventa XPSLCM
for the "muting" function of type 2 and type 4 safety light curtains

Dimensions

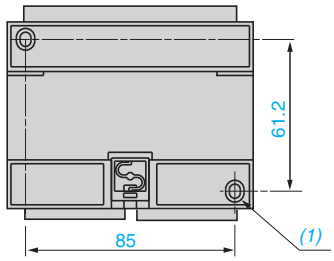
XPSLCM1150

Mounting on 35 mm rail



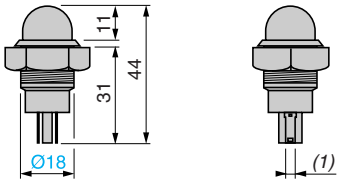


Rear view



(1) 2 elongated holes Ø 4 x 5.7.

"Muting" indicator light kit XSZCM01



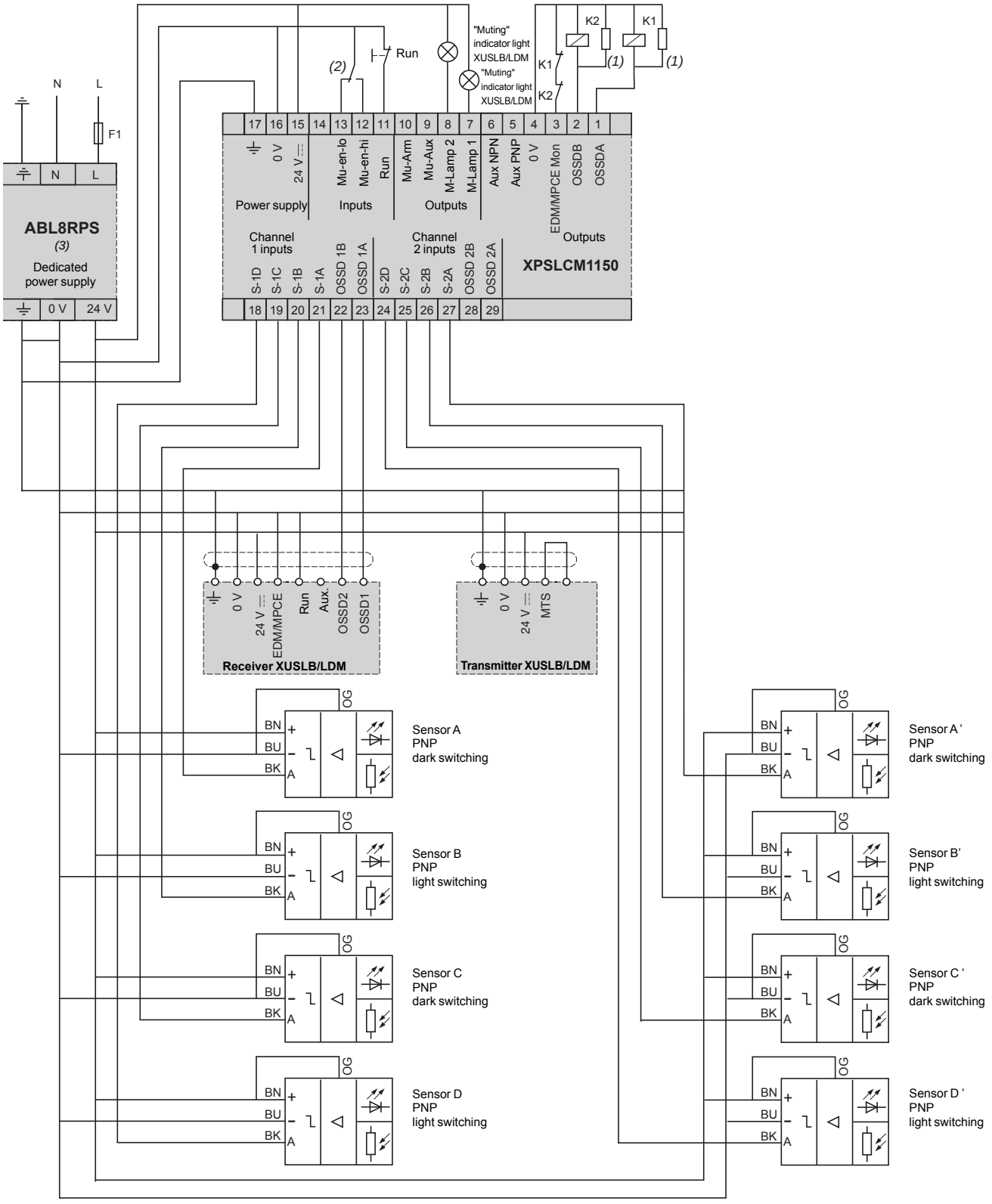
(1) Faston connector 4.7.

Safety automation solutions

Safety monitoring module
Preventa XPSLCM
for the "muting" function of type 2 and type 4 safety light curtains

Connection via the safety monitoring module XPSLCM1150

Example: configuration with light curtains XUSLB/LDM



(1) Arc suppressor.
(2) Muting activation/deactivation key switch.
(3) The power supply must conform to EN/IEC 61496 and EN/IEC 60204-1 standards.

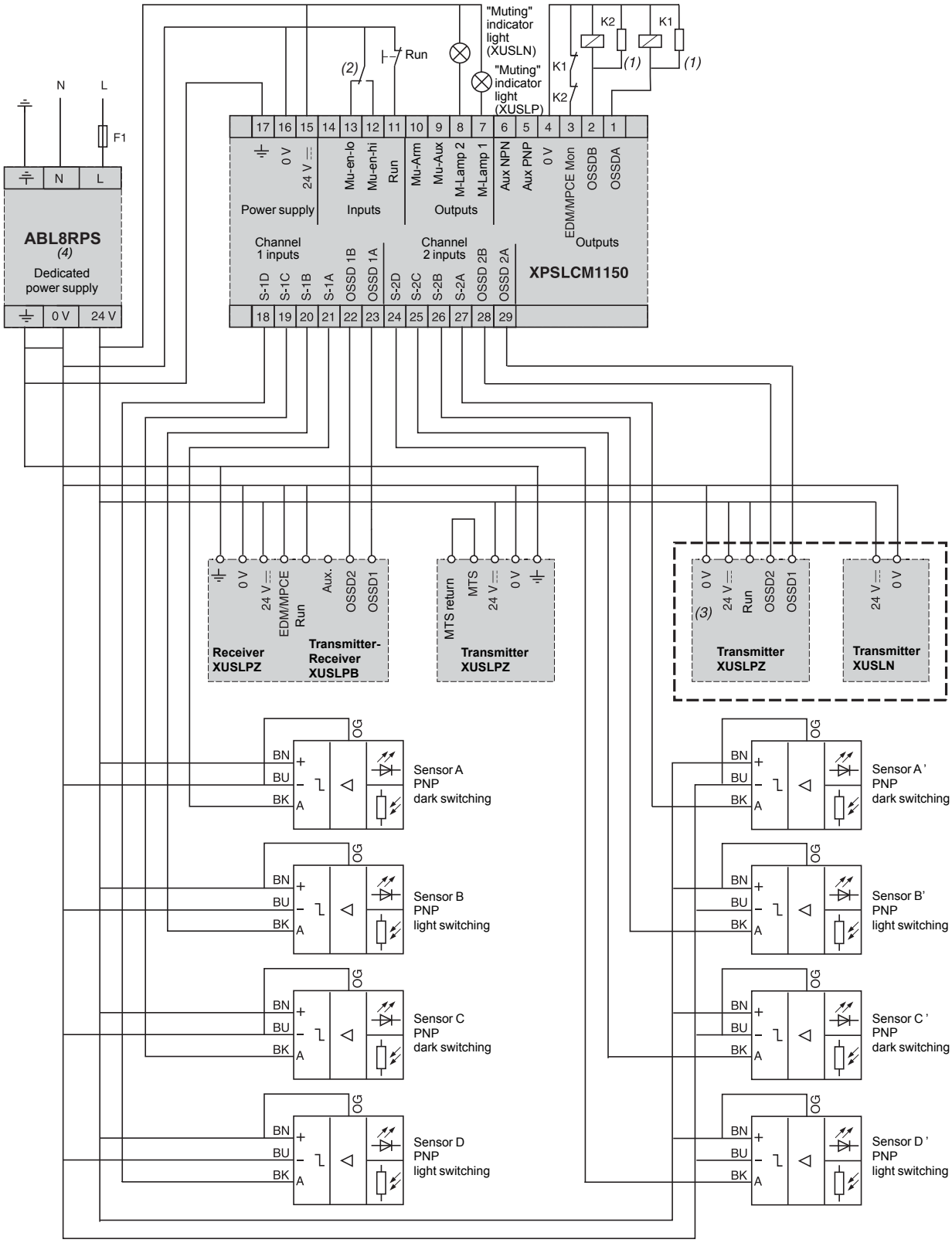
Presentation: page 56 | Characteristics: page 57 | References: page 58 | Dimensions: page 59

Safety automation solutions

Safety monitoring module
Preventa XPSLCM
for the "muting" function of type 2 and type 4 safety light curtains

Connection via the safety monitoring module XPSLCM1150

Example: configuration with 2 light curtains XUSLP and XUSLN



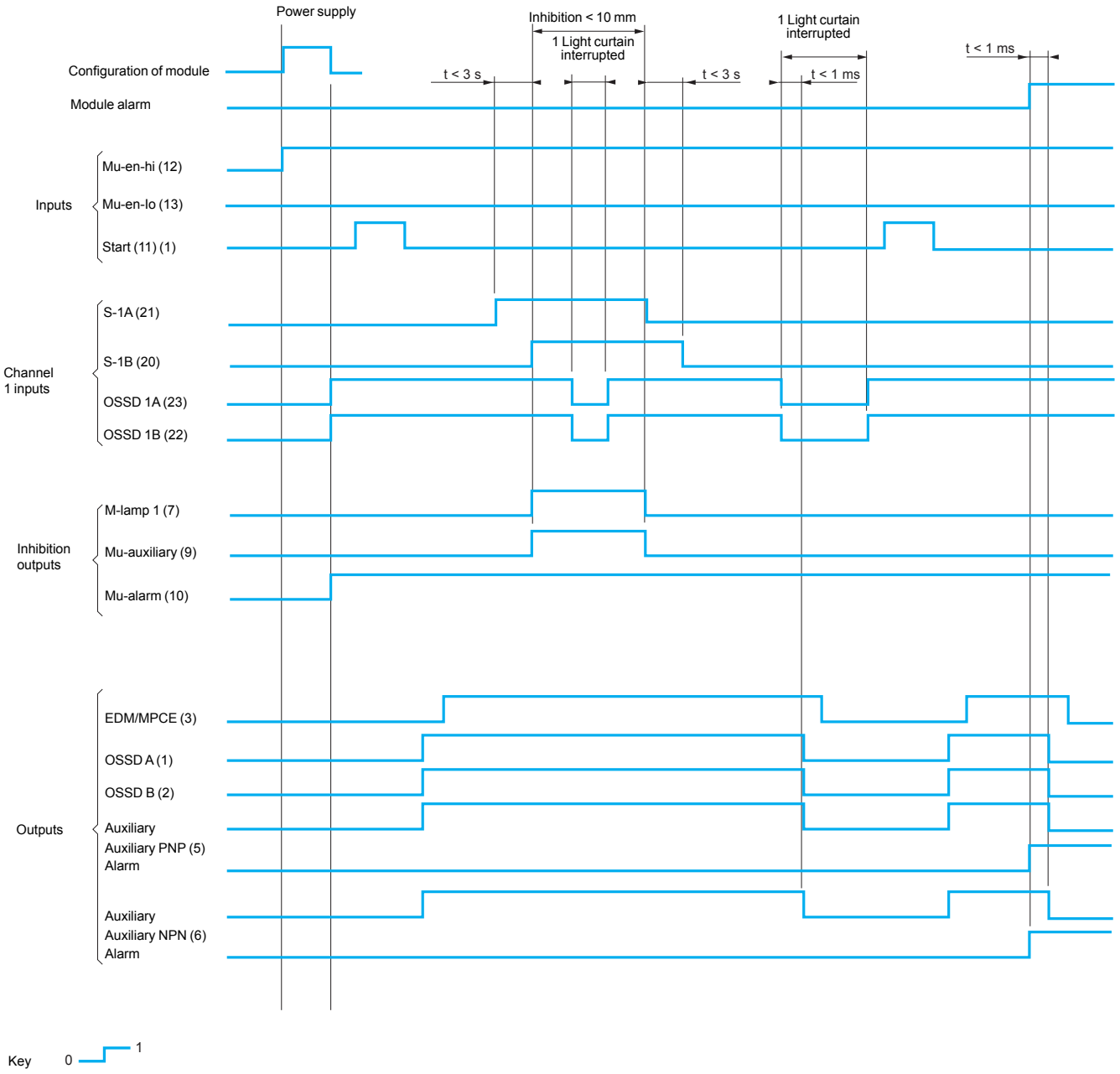
(1) Arc suppressor.
(2) Muting activation/deactivation key switch.
(3) When module XPSLCM1150 is used with a type 2 light curtain (example: XUSLN), the entire protection system is downgraded to category 2.
(4) The power supply must conform to EN/IEC 61496 and EN/IEC 60204-1 standards.

Safety automation solutions

Safety monitoring module
Preventa XPSLCM
for the "muting" function of type 2 and type 4 safety light curtains

Functional diagram of safety monitoring module XPSLCM1150

"Start/restart interlock" mode with 2 sensors

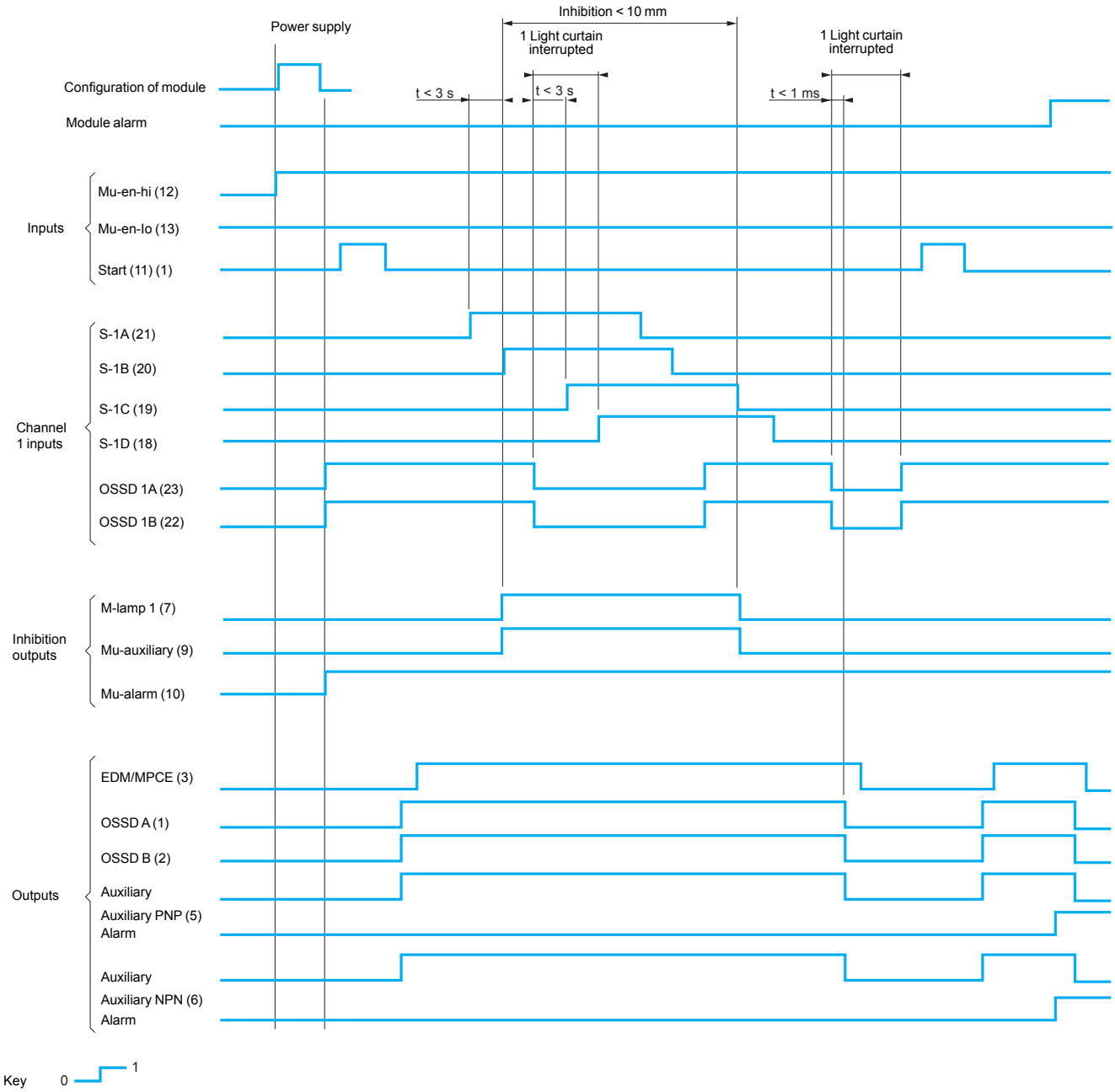


(1) Press Start button.

Safety automation solutions
Safety monitoring module
Preventa XPSLCM
for the "muting" function of type 2 and type 4 safety light curtains

Functional diagram of safety monitoring module XPSLCM1150

"Start/restart interlock" mode with 4 sensors



(1) Press Start button.

Product reference index

Schneider Electric Industries SAS

Head Office
35, rue Joseph Monier
F-92500 Rueil-Malmaison
France

www.tesensors.com

Design: Schneider Electric
Photos: Schneider Electric