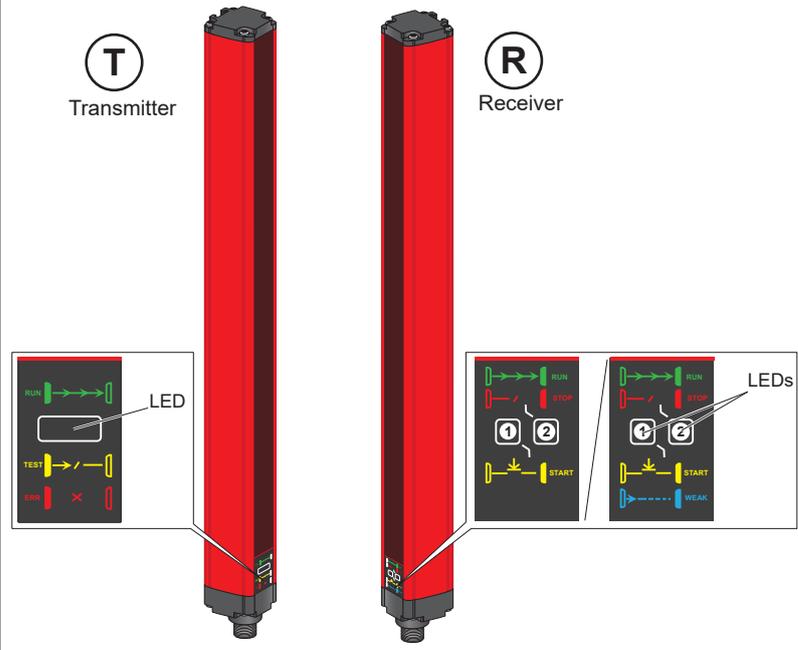


Type 2 and Type 4 Safety Light Curtains (Original instruction sheet)



Note: you can download the User Manual in different languages from our website at: www.tesensors.com



<http://qr.tesensors.com/XU0002>



- en N°: EAV6589801
- fr N°: EAV6589802
- de N°: EAV6589803
- es N°: EAV6589804
- it N°: EAV6589805
- pt N°: EAV6589806
- zh N°: EAV6589807
- ru N°: EAV6589808

Flash this Qr-code to access the complete User Manual

We welcome your comments about this document. You can reach us by e-mail at: customer-support@tesensors.com

WARNING

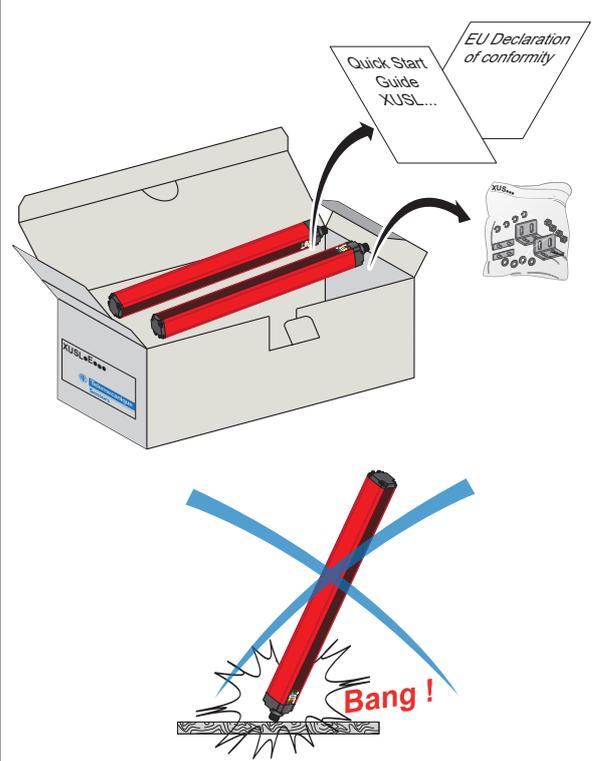
IMPROPER SETUP OR INSTALLATION

- This equipment must only be installed and serviced by qualified personnel.
- Read, understand, and follow the compliance below and the complete XUSL2E/XUSL4E User Manual before installing the XUSL2E/XUSL4E Safety light curtains.
- Do not tamper with or make alterations on the unit.
- Comply with the wiring and mounting instructions.
- Check the connections and fastening during maintenance operations.
- Disconnect all power before servicing equipments.
- The proper functioning of the XUSL2E/XUSL4E Safety light curtains and its operating line must be checked on a regular basis based on the level of security required by the application (e.g. number of operations, level of environmental pollution, etc.).

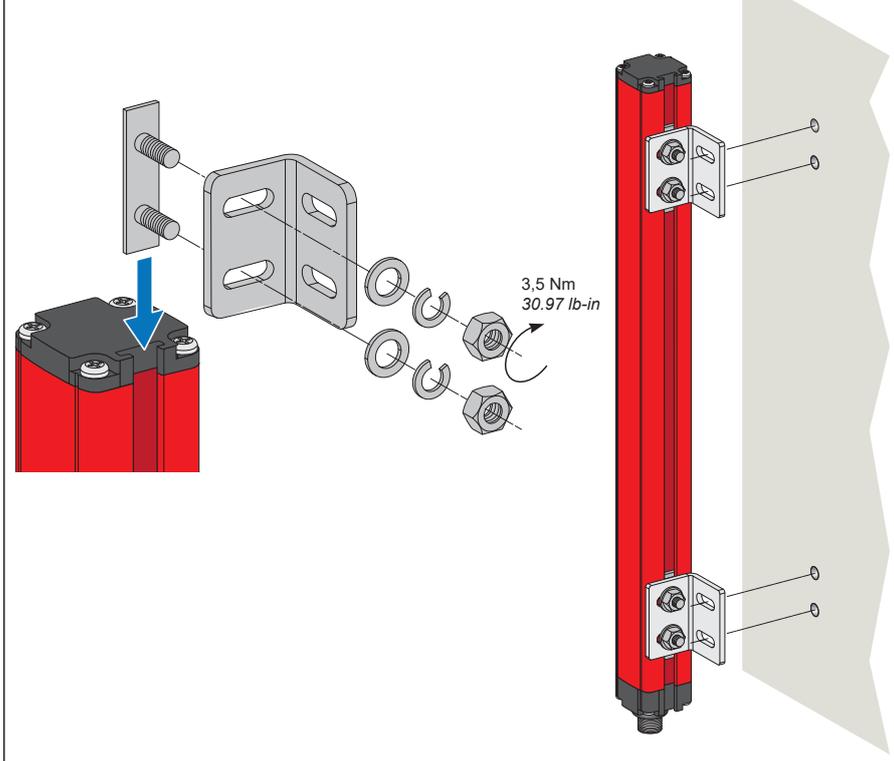
Failure to follow these instructions can result in death, serious injury, or equipment damage.

These devices have been designed to be in compliance with the standards currently in effect:
 XUSL2E: Type 2 (EN/IEC 61496-1), SIL 1 (EN/IEC 61508), SILCL 1 (EN/IEC 62061), PL-Cat.2 (EN/ISO 13849-1)
 XUSL4E: Type 4 (EN/IEC 61496-1), SIL 3 (EN/IEC 61508), SILCL 3 I (EN/IEC 62061), PL-Cat.4 (EN/ISO 13849-1)

Package Content (Example)



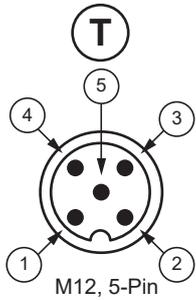
Mounting



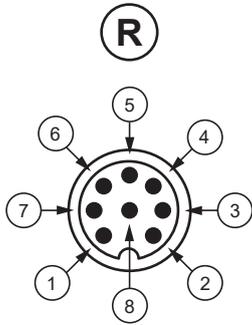
Electrical equipment should be installed, operated and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

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Connectors wiring

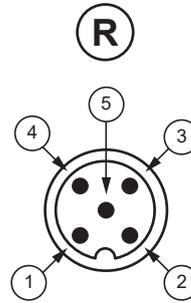


Pin Number	Description
①	+24 Vdc
②	Configuration_0 or Master/Slave_A
③	0 Vdc
④	Configuration_1 or Master/Slave_B
⑤	FE



M12, 8-PIN Single pair models (XUSL4E or XUSL2E) or Master models primary connector (XUSL4E)

Pin Number	Description
①	OSSD1
②	+24 Vdc
③	OSSD2
④	Configuration_A
⑤	K1_K2 Feedback/Restart
⑥	Configuration_B
⑦	0 Vdc
⑧	FE



M12, 5-PIN Master models secondary connector or Slave models (XUSL4E)

Pin Number	Description
①	+24 Vdc
②	Master/Slave_A
③	0 Vdc
④	Master/Slave_B
⑤	FE

Wiring diagrams

⚠ WARNING

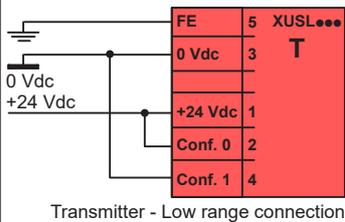
IMPROPER CONNECTION

- The XUSL2E/XUSL4E light curtain system must be powered by a safety extra low voltage (SELV) or a protected extra low voltage (PELV)
- The XUSL2E/XUSL4E light curtain system is designed for use only on a 24 Vdc negative ground electrical system.
- Never connect the XUSL2E/XUSL4E light curtain system to a positive ground system.
- Never connect the ground (here the Functional Earth FE) with the 0 Volt reference of the safety extra low voltage (SELV) power supply.
- The XUSL2E/XUSL4E safety light curtains must be connected using both safety outputs.
- A single safety output, if it fails, may not stop the machine.

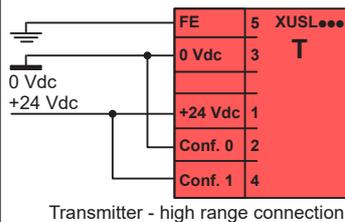
Failure to follow these instructions can result in death, serious injury, or equipment damage.

Note:

The XUSL2E/XUSL4E light curtain system operates directly from a 24 Vdc ±20% power supply. The power supply must meet the requirements of EN/IEC 60204-1 and EN/IEC 61496-1. The SELV Schneider Electric part number ABL8RPS24... is recommended.

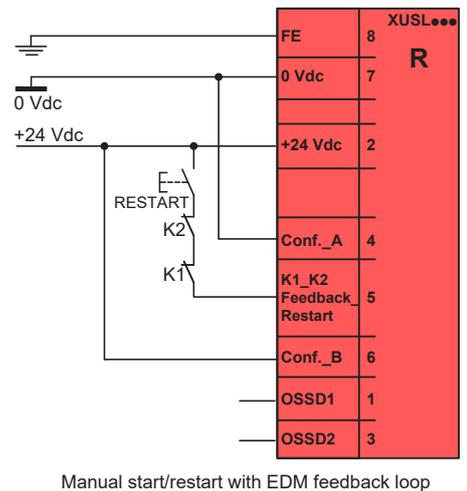
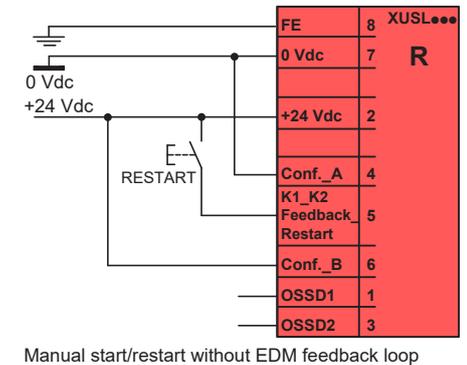
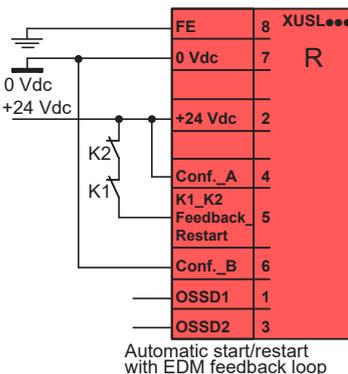
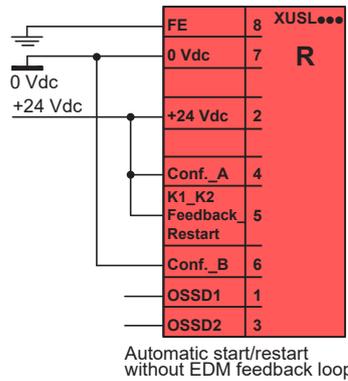


1	+24 Vdc	BN
2	Conf. 0	BK WH
3	0 Vdc	BU
4	Conf. 1	BK
5	FE	GN YE



1	OSSD1	WH
2	+24 Vdc	BN
3	OSSD2	GN
4	Conf. A	YE
5	K1_K2 Feedback Restart	GY
6	Conf. B	PK
7	0 Vdc	BU
8	FE	RD

BN = Brown
 WH = White
 BU = Blue
 BK = Black
 GY = Grey
 PK = Pink
 RD = Red
 GN = Green
 YE = Yellow
 BK/WH = Black & White
 GN/YE = Green & Yellow



Connection Schematics

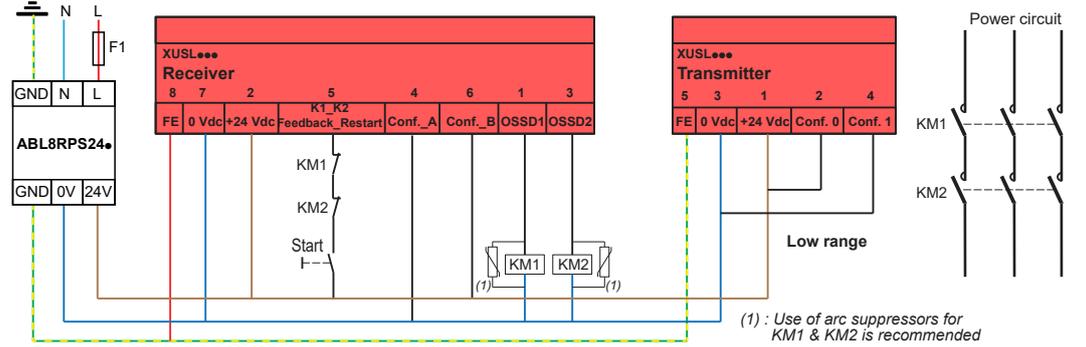
WARNING

UNINTENDED EQUIPMENT OPERATION

The external KM1 and KM2 contactors must have force-guided contacts.

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

Standalone Application



T

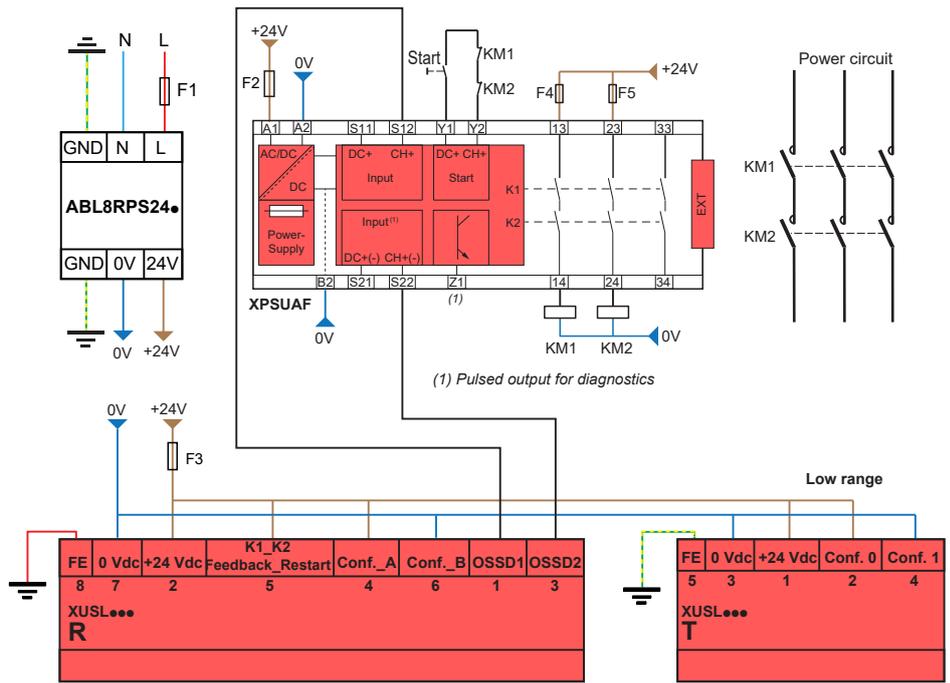
1	+24 Vdc	BN
2	Conf._0	BK
3	0 Vdc	BU
4	Conf._1	BK
5	FE	GN
		YE

R

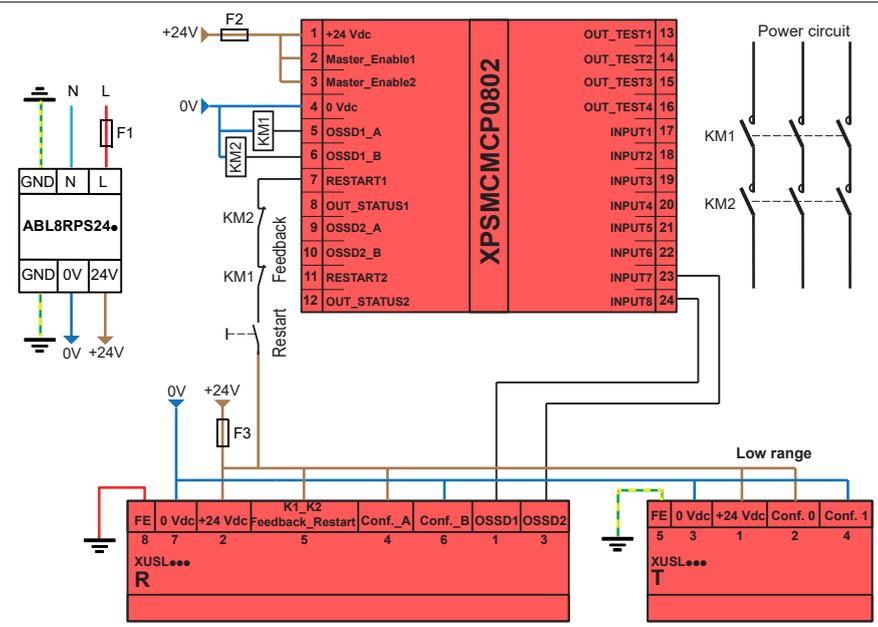
1	OSSD1	WH
2	+24 Vdc	BN
3	OSSD2	GN
4	Conf._A	YE
5	KM1_KM2 Feedback_Restart	GY
6	Conf._B	PK
7	0 Vdc	BU
8	FE	RD

BN = Brown
WH = White
BU = Blue
BK = Black
GY = Grey
PK = Pink
RD = Red
GN = Green
YE = Yellow

Connecting with a Safety Control Unit: XPSU-AF

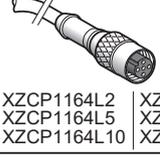


Connecting with a Safety Controller: XPSMCM

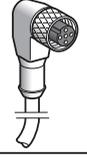


Cables

M12, 5 pins

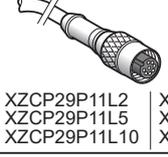


- XZCP1164L2
- XZCP1164L5
- XZCP1164L10
- XZCP1164L15
- XZCP1164L25
- XZCC12FDM50B

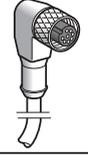


- XZCP1264L2
- XZCP1264L5
- XZCP1264L10
- XZCP1264L15
- XZCP1264L25
- XZCC12FCM50B

M12, 8 pins

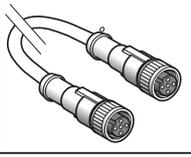


- XZCP29P11L2
- XZCP29P11L5
- XZCP29P11L10
- XZCP29P11L15
- XZCP29P11L25
- XZCC12FDM80B



- XZCP53P11L2
- XZCP53P11L5
- XZCP53P11L10
- XZCP53P11L15
- XZCP53P11L25
- XZCC12FCM80B

M12/M12 Master/Slave cables jumpers



- XZCR1111064D03
- XZCR1111064D3
- XZCR1111064D5
- XZCR1111064D10
- XZCR1111064D25

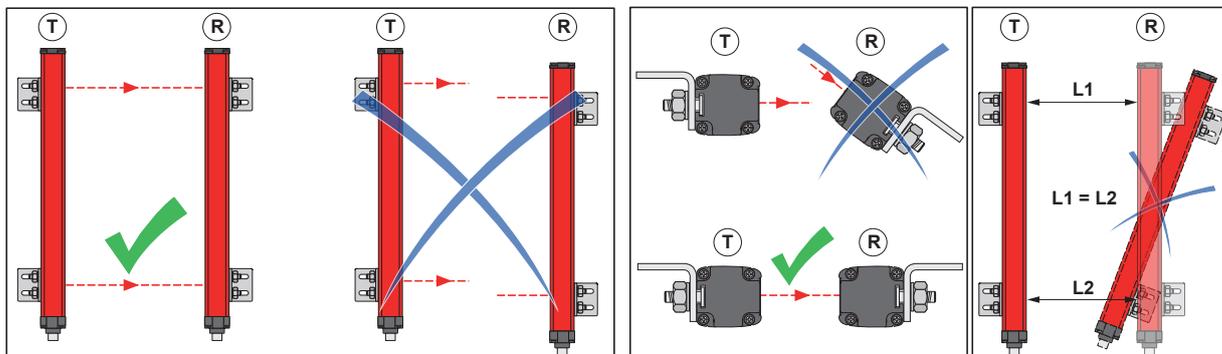
Alignment procedure

1) The transmitter and receiver must be installed with the optical surfaces face to face, connectors oriented in the same way. Perfect alignment of the transmitter and the receiver corresponding beams is mandatory for an optimum functioning, meaning that the transmitter and receiver must have the same height and be parallel. A good positioning will be facilitated by using the provided mounting accessories.

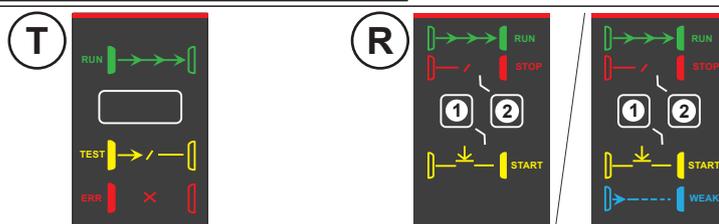
The use of LED indicators helps in proper alignment as described below:

- For an easier alignment setting, configure the safety light curtain in Automatic mode. That will avoid to restart the system during the alignment adjustments.
 - For all models align the transmitter until the green LED is lit on the receiver.
 - For finger detection and long range models, the blue LED weak signal on the receiver will be useful as well. Firstly, find the zone where the blue LED is lit, indicating an approximate alignment, then fine-tune the setting until the blue LED turns OFF and the green LED is lit.
 - It is also possible to use a laser pointer device as alignment help. (Available as accessory).
 - When using XUSLZLPE laser pointer for the alignment, start to point the middle of the safety light curtain for a first adjustment, then point the top and the bottom.
- The laser pointer must properly sit flat against the optical window during the alignment.
 - Do not forget to reconfigure the safety light curtain in Manual start mode if this operating mode is required.

2) If vibrations are to be expected in your applications, it is strongly recommended to use vibration dampers (Available as accessories).



LEDs Status



T	R				OSSD	LEDs Meaning
	1	2	1 (*)	2 (*)		
Red	Yellow	Red	Blue	Green	OFF	Power-On Initialization Test.
Green	OFF	Green	Blue	Green	ON	Normal operation.
Green	OFF	Red	Blue	Red	OFF	Detection zone interrupted.
Green	Yellow	OFF	Blue -Yellow alternate	OFF	OFF	Detection zone clear, waiting for restart.
Green	Yellow flashes	Yellow flashes	Blue -Yellow Alternate flashes	Yellow OFF Alternate	OFF	Detection zone clear, waiting for KM1_KM2 feedback.
Orange	OFF	Red			OFF	Test state (simulation of a detection zone interruption).
Green	Blue and/or Yellow (*)	Green/Yellow or Red (*)			(*)	Weak signal (low signal received) only with type 4 finger detection and long range models.
Green	Yellow flashes	Red			OFF	Master: Detection zone clear Slave: Detection zone interrupted.
Red flashes	OFF	Red flashes			OFF	Fail mode (Error state) For more information, refer to "Troubleshooting" section in the User manual.

(*): When weak signal blue display is available (Type4 finger & long range models). In case of weak signal detected.

Characteristics

Product certifications	CE, cULus, TÜV, EAC, RCM				
Ambient air temperature	Operation	XUSL●E30H●●●N (1) XUSL●E●BB●●●N (1) XUSL4E14F●●●N (1)	Type 2 and Type 4 Standard models and Type 4 cascable models Type 4 Standard models and Type 4 cascable models Type 4 Standard models	Normal sensing range Normal sensing range Long sensing range	-30°C...+55°C (- 22 °F to 131 °F) -20°C...+55°C (- 4 °F to 131 °F)
	Storage	Type2 and 4 - Standard and Long Sensing Range: - 35...70 °C (- 31 °F to 158 °F)			
Degree of protection	Conforming EN/IEC 60529: IP65, IP67				
Shock and Vibration resistance	Conforming to EN/IEC 61496-1: ● Shock: 10 g ● Impulse: 16 ms ● Vibration: 10...55 Hz ● Amplitude: 0.35 ± 0.05 mm (0.0014 ± 0.00020 inches)				
Light source	Infrared λ = 950 Nm				
Resistance to light disturbance	Conforming to EN/IEC 61496-2.				
Power Supply	24 Vdc ± 20% - 2 A The power supply must meet the requirements of EN/IEC 60204-1 relative to SELV/PELV power supply				
Maximum current consumption (no load)	Transmitter: 42 mA - Receiver: 83 mA				
Input power supply	Transmitter: 42 mA - Receiver: 900 mA (Including OSSD current)				
Resistance to interference	Level depends if the product is Type 2 or Type 4 conforming to EN/IEC 61496-1.				
Safety outputs (OSSD)	Two PNP - 400 mA per output @ 24 Vdc, drop out voltage <0.5 Vdc (Integrated arc suppressors), leakage current (OFF state) < 2 mA. Load capacity 0.82µF under 24 Vdc				
Mission Time (TM)	20 years				
PFH_D	Depends on the models. Refer to the complete User Manual				
First-up time	≤ 2 s				
OSSDs	Pulse Duration	≤ 200 µs			
	Minimum pulse period	2,5 ms (Type 4 models) and 500 ms (Type 2 models)			
Note: More characteristics in the User Manual					