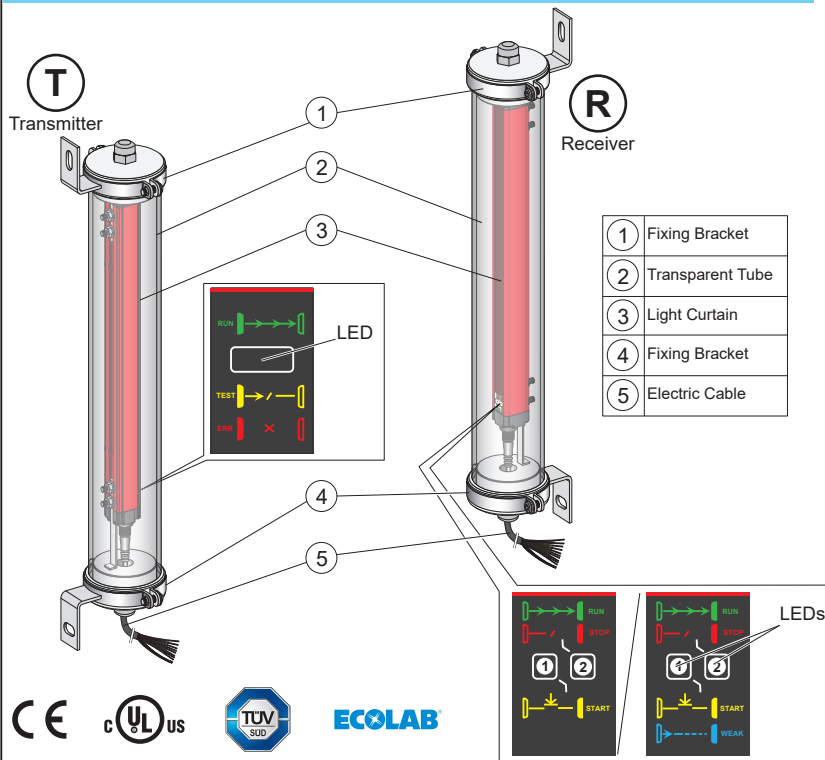


Type 2 and Type 4 Safety Light Curtains (Original instruction sheet)



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

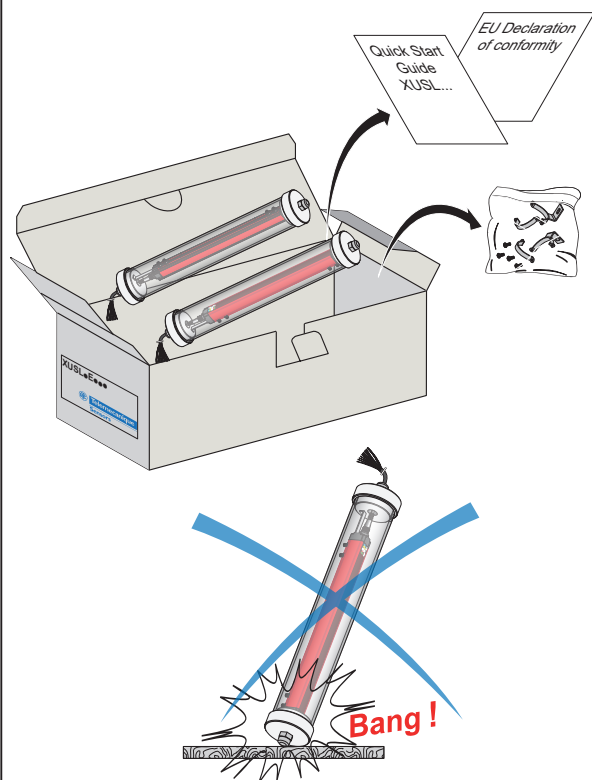
IMPROPER SETUP OR INSTALLATION

- 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.).

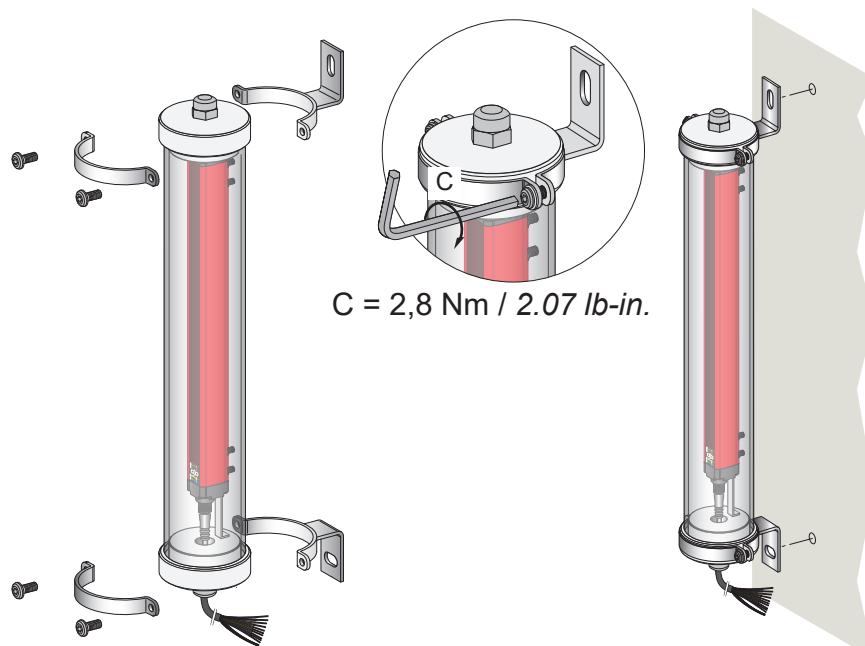
Failure to follow these instructions can result in death, serious injury, or equipment damage.

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), PLc-Cat.2 (EN/ISO 13849-1)
 XUSL4E: Type 4 (EN/IEC 61496-1), SIL 3 (EN/IEC 61508), SILCL 3 I(EN/IEC 62061), PLe-Cat.4 (EN/ISO 13849-1)

Package Content (Example)



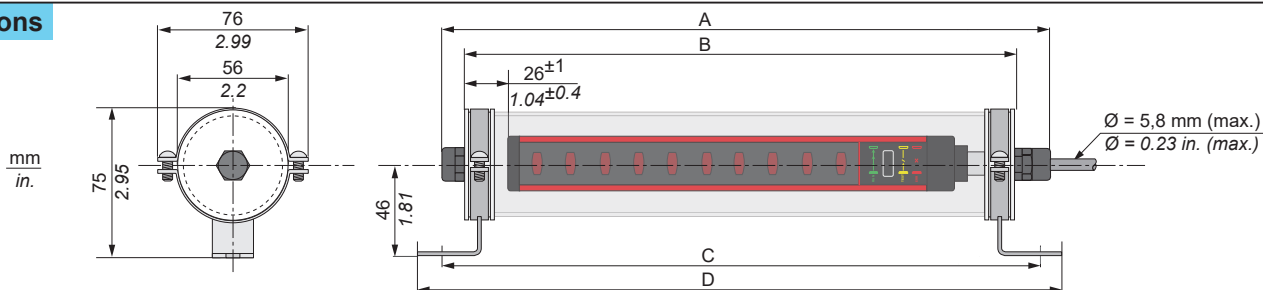
Mounting



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.

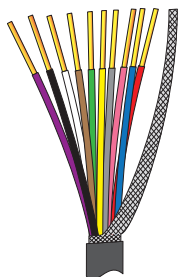
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Dimensions



XUSL _E	...016	...031	...046	...061	...076	...091	...106	...121	...136	...151	...166	...181	2B	3B	4B
A	320 12.60	470 18.50	620 24.41	770 30.31	920 36.22	1070 42.13	1220 48.03	1370 53.94	1520 59.84	1670 65.75	1820 71.65	1970 77.56	760 29.92	1060 41.73	1160 45.67
B	290 11.42	440 17.32	590 23.23	740 29.13	890 35.04	1040 40.94	1190 46.85	1340 52.76	1490 58.66	1640 64.57	1790 70.47	1940 76.38	28.74 28.74	40.55 40.55	1130 44.49
C (± 3 mm)	315 12.4	465 18.31	615 24.21	765 30.12	915 36.02	1065 41.93	1215 47.83	1365 53.74	1515 59.65	1665 65.55	1815 71.46	1965 77.36	755 29.72	1055 41.53	1155 45.47
D	337 13.27	487 19.17	637 25.08	787 30.98	937 36.89	1087 42.8	1237 48.7	1387 54.61	1537 60.51	1687 66.41	1837 72.32	1987 78.23	30.59 30.59	42.4 42.4	46.34 46.34

Wiring diagrams



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

T

Wire color		Description
without heating system	with heating system	
BN	BN	+ 24 Vdc
WH	WH	Configuration_0
BU	BU	0 Vdc
BK	GN	Configuration_1
GY	GY	FE
	YE	0 V (heating system)
	RD	24 V ~ / ∞ (heating system)
	PK	-

R

Wire color		Description
without heating system	with heating system	
WH	WH	OSSD1
BN	BN	+ 24 Vdc
GN	GN	OSSD2
YE	YE	Configuration_A
GY	GY	K1 K2 Feedback/Restart
PK	PK	Configuration_B
BU	BU	0 Vdc
RD	RD	FE
	BK	0 V (heating system)
	VT	24 V ~ / ∞ (heating system)

WARNING

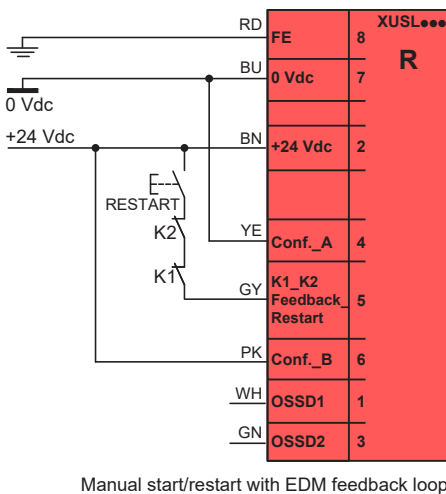
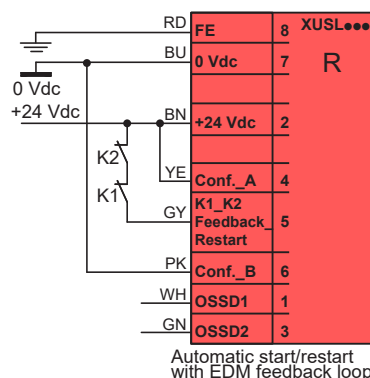
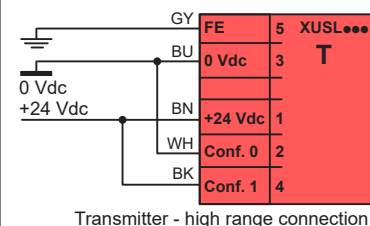
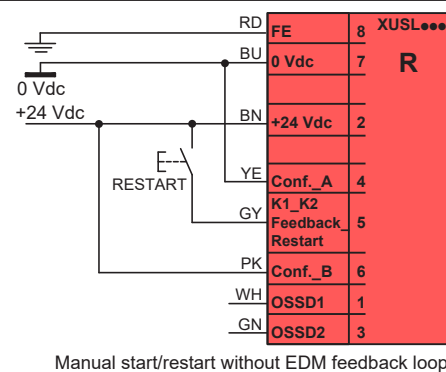
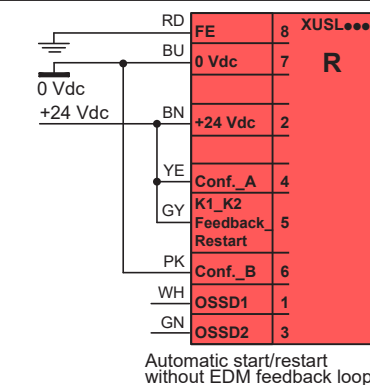
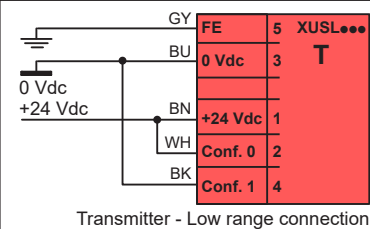
IMPROPER CONNECTION

- 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.



Connection Schematics

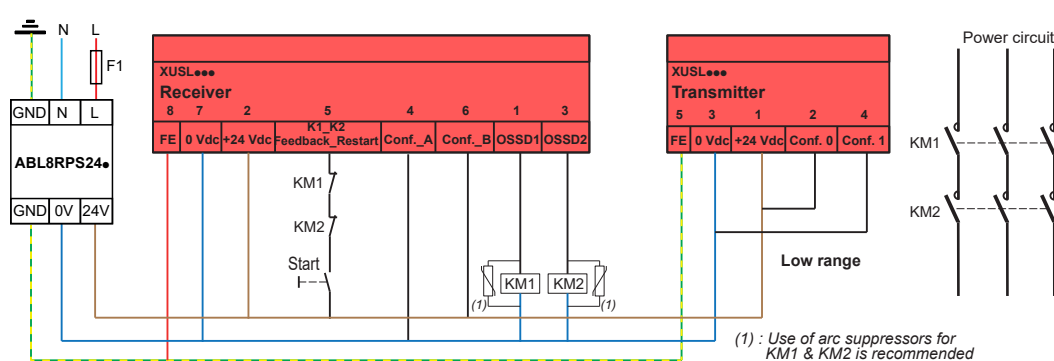
WARNING

UNINTENDED EQUIPMENT OPERATION

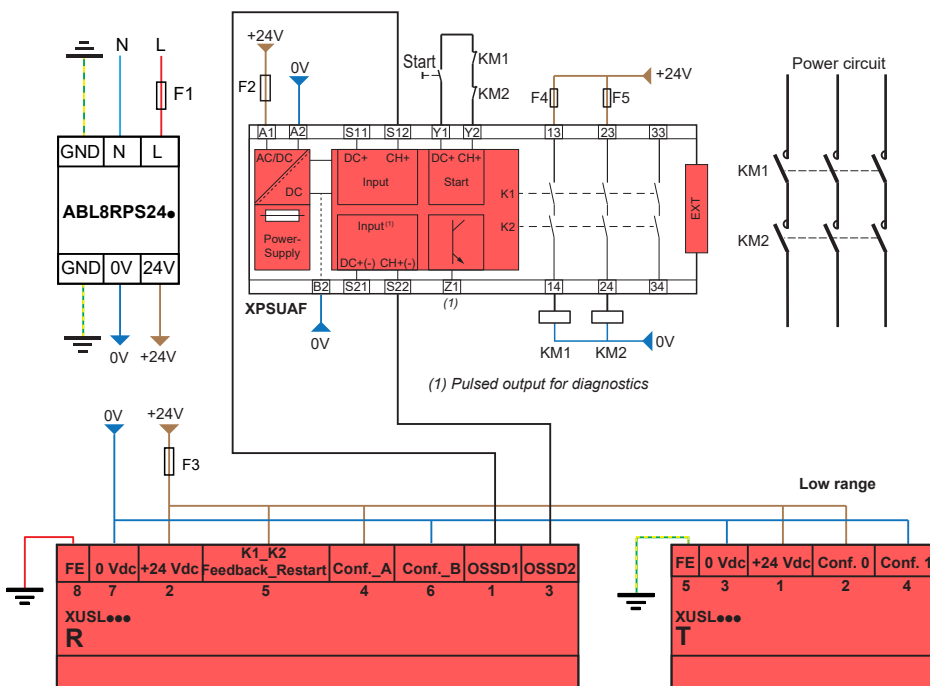
The external KM1 and KM2 contactors must have force-guided contacts.

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

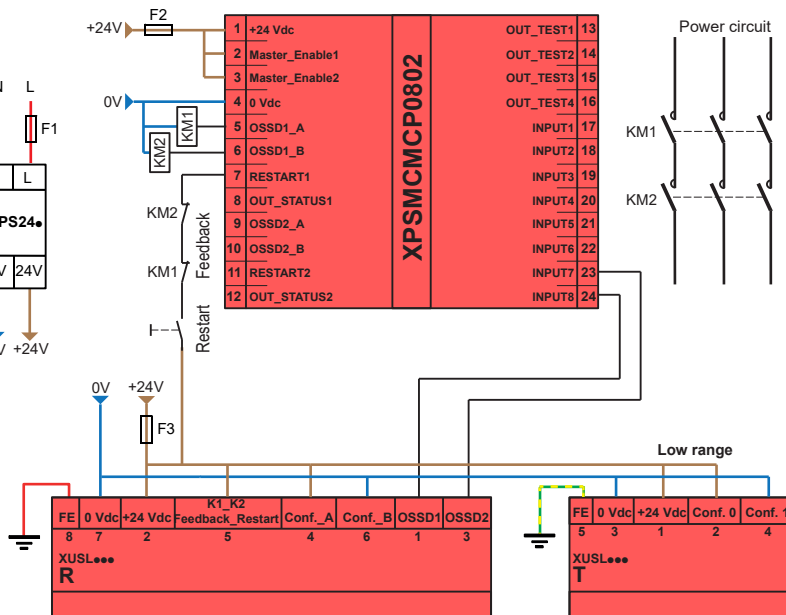
Standalone Application



Connecting with a Safety Control Unit: XPSU-AF



Connecting with a Safety Controller: XPSMCM



T	BN	+ 24 Vdc
	WH	Configuration_0
	BU	0 Vdc
	BK or GN	Configuration_1
	GY	FE
	YE	0 V (with heating system)
	RD	24 V ~ / ∞ (with heating system)
	PK	-
R	WH	OSSD1
	BN	+ 24 Vdc
	GN	OSSD2
	YE	Configuration_A
	GY	KM1_KM2 Feedback/Restart
	PK	Configuration_B
	BU	0 Vdc
	RD	FE
	BK	0 V (with heating system)
	VT	24 V ~ / ∞ (with heating system)

WH: White
BK: Black
BN: Brown
GN: Green
YE: Yellow
GY: Grey
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RD: Red
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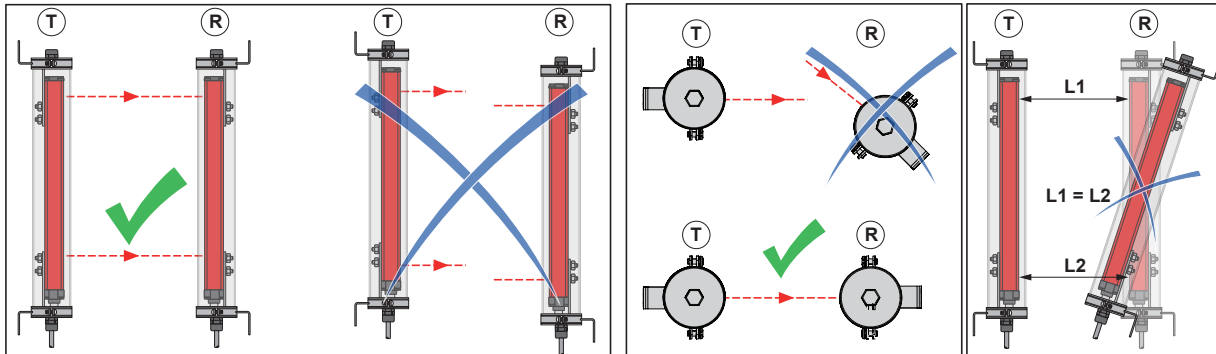
Alignment procedure

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.

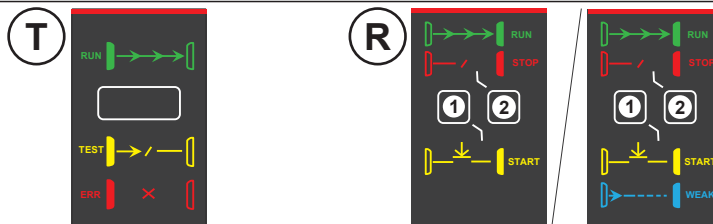
The use of LED indicators helps in proper alignment as described below:

- 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.
- 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			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	XUSL2E30H...NWC	Type 2 IP69K without heating system
		XUSL2E30H...NWH	Type 2 IP69K with heating system
		XUSL4E14F...NWC	Type 4 IP69K without heating system
	Storage	XUSL4E14F...NWH	Type 4 IP69K with heating system
		XUSL4E...BB...LWC	Type 4 IP69K without heating system
		XUSL4E30H...LWC	
		XUSL4E...BB...LWH	Type 4 IP69K with heating system
XUSL4E30H...LWH			
Standard and Long Sensing Range - With and without heating system: - 30...70 °C (- 22 °F to 158 °F)			
Degree of protection	Conforming to EN/IEC 60529: IP65, IP67 - DIN 40050: IP69K		
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