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

**WARNING**

- Improper setup or installation
- 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.

**Package Content (Example)**

- **EU Declaration of conformity**
- **Quick Start Guide/ XUSL...**

**Mounting**

- **3.5 Nm 30.97 lb-in**

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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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http://qr.tesensors.com/XU0002

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

XUSL2E: Type 2 (EN/IEC 61496-1), SIL 1 (EN/IEC 61508), SILCL 1 (EN/IEC 62061), PLe–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)
**Connectors wiring**

<table>
<thead>
<tr>
<th>Pin Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+24 Vdc</td>
</tr>
<tr>
<td>2</td>
<td>Configuration_0 or Master/Slave_A</td>
</tr>
<tr>
<td>3</td>
<td>0 Vdc</td>
</tr>
<tr>
<td>4</td>
<td>Configuration_1 or Master/Slave_B</td>
</tr>
<tr>
<td>5</td>
<td>FE</td>
</tr>
</tbody>
</table>

**M12, 5-Pin Single pair models (XUSL4E or XUSL2E) or Master models primary connector (XUSL4E)**

<table>
<thead>
<tr>
<th>Pin Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>OSSD1</td>
</tr>
<tr>
<td>2</td>
<td>+24 Vdc</td>
</tr>
<tr>
<td>3</td>
<td>OSSD2</td>
</tr>
<tr>
<td>4</td>
<td>Configuration_A</td>
</tr>
<tr>
<td>5</td>
<td>K1_K2 Feedback/Restart</td>
</tr>
<tr>
<td>6</td>
<td>Configuration_B</td>
</tr>
<tr>
<td>7</td>
<td>0 Vdc</td>
</tr>
<tr>
<td>8</td>
<td>FE</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Pin Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+24 Vdc</td>
</tr>
<tr>
<td>2</td>
<td>Master/Slave_A</td>
</tr>
<tr>
<td>3</td>
<td>0 Vdc</td>
</tr>
<tr>
<td>4</td>
<td>Master/Slave_B</td>
</tr>
<tr>
<td>5</td>
<td>FE</td>
</tr>
</tbody>
</table>

**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.

**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**
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.

Connection Schematics

Standalone Application

Connecting with a Safety Control Unit: XPSU-AF

Connecting with a Safety Controller: XPSMCM

Cables

M12, 5 pins
XZCP1164L2, XZCP1164L5, XZCP1164L10, XZCP1264L2, XZCP1264L5, XZCP1264L10, XZCP29P11L2, XZCP29P11L5, XZCP29P11L10

M12, 8 pins

M12/M12 Master/Slave cables jumpers
XZCR1111064D03, XZCR1111064D3, XZCR1111064D5, XZCR1111064D10, XZCR1111064D25

BN = Brown
WH = White
BU = Blue
BK = Black
GY = Grey
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YE = Yellow

(1) : Use of arc suppressors for KM1 & KM2 is recommended

(1) Pulsed output for diagnostics
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 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 XUSL2PE 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).

Characteristics

Product certifications
CE, cULus, TüV, EAC, RCM

Ambient air temperature
- CE, cULus, TüV, EAC, RCM
- EN/IEC 61496-1: Normal sensing range -30°C...+55°C (-22 °F to 131 °F)
- Type 4 Standard models -20°C...+55°C (-4 °F to 131 °F)
- Type 4 Standard models Long sensing range

Storage: Type2 and 4 - Standard and Long Sensing Range: -35...70 °C (-31 °F to 158 °F)

Degree of protection
Conforming to 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

PFH2
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

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