

# Safety Light curtains - XUSL



## Connection Schematics

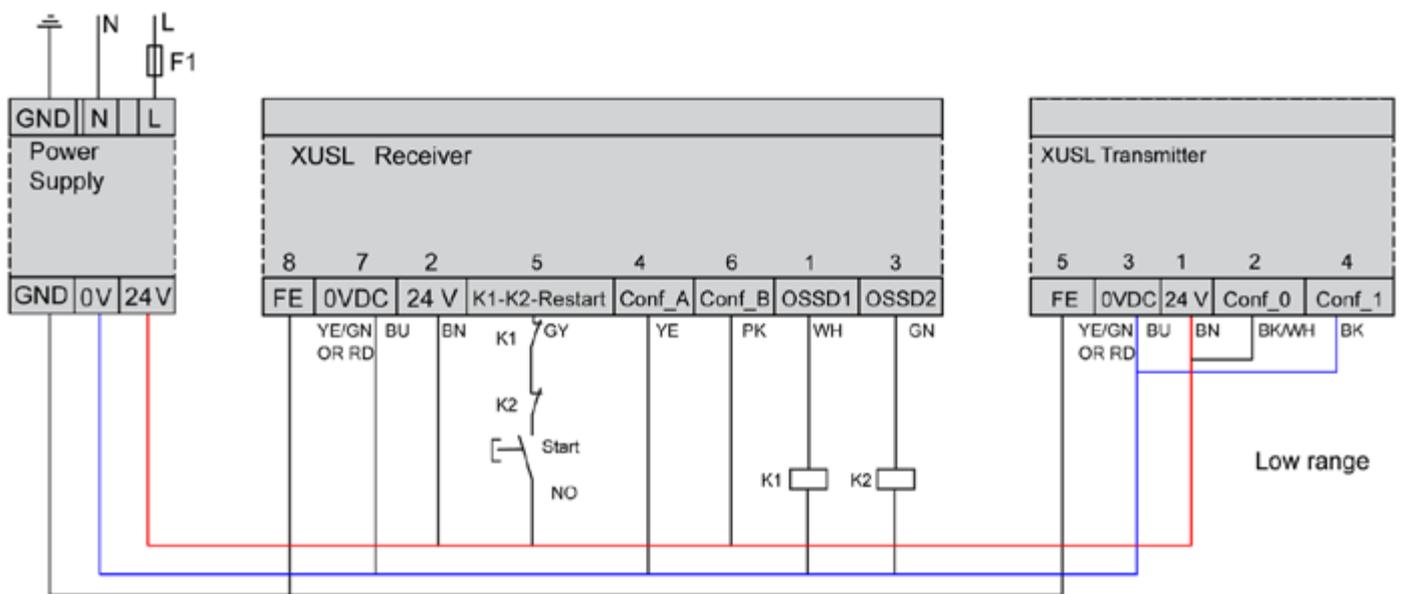
The wiring from the XUSL2E/XUSL4E light curtain system to the machine control circuit must be control reliable. The solid-state outputs should be connected only to a control reliable, safety-rated PLC or to a control reliable safety-rated machine system.

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## Standalone application

Example of wiring diagram with manual start, external device monitoring and low range



**OSSD1/OSSD2** : Output signal switching device

**YE/GN OR RD** : Yellow/Green OR Red

**BU** : Blue

**BN** : Brown

**GY** : Grey

**YE** : Yellow

**PK** : Pink

**WH** : White

**GN** : Green

**BK/WH** : Black/White

**BK** : Black

When used in standalone mode, the XUSL2E and XUSL4E are compliant with the following standards respectively :

Type 2 (IEC 61496-1), SIL1 (IEC 61508) - SILCL1 (IEC 62061), and PLc- Cat.2 (EN ISO 13849-1:2008).

Type 4 (IEC 61496-1), SIL3 (IEC 61508) SILCL3 (IEC 62061), and PLc- Cat.4 (EN ISO 13849-1:2008).

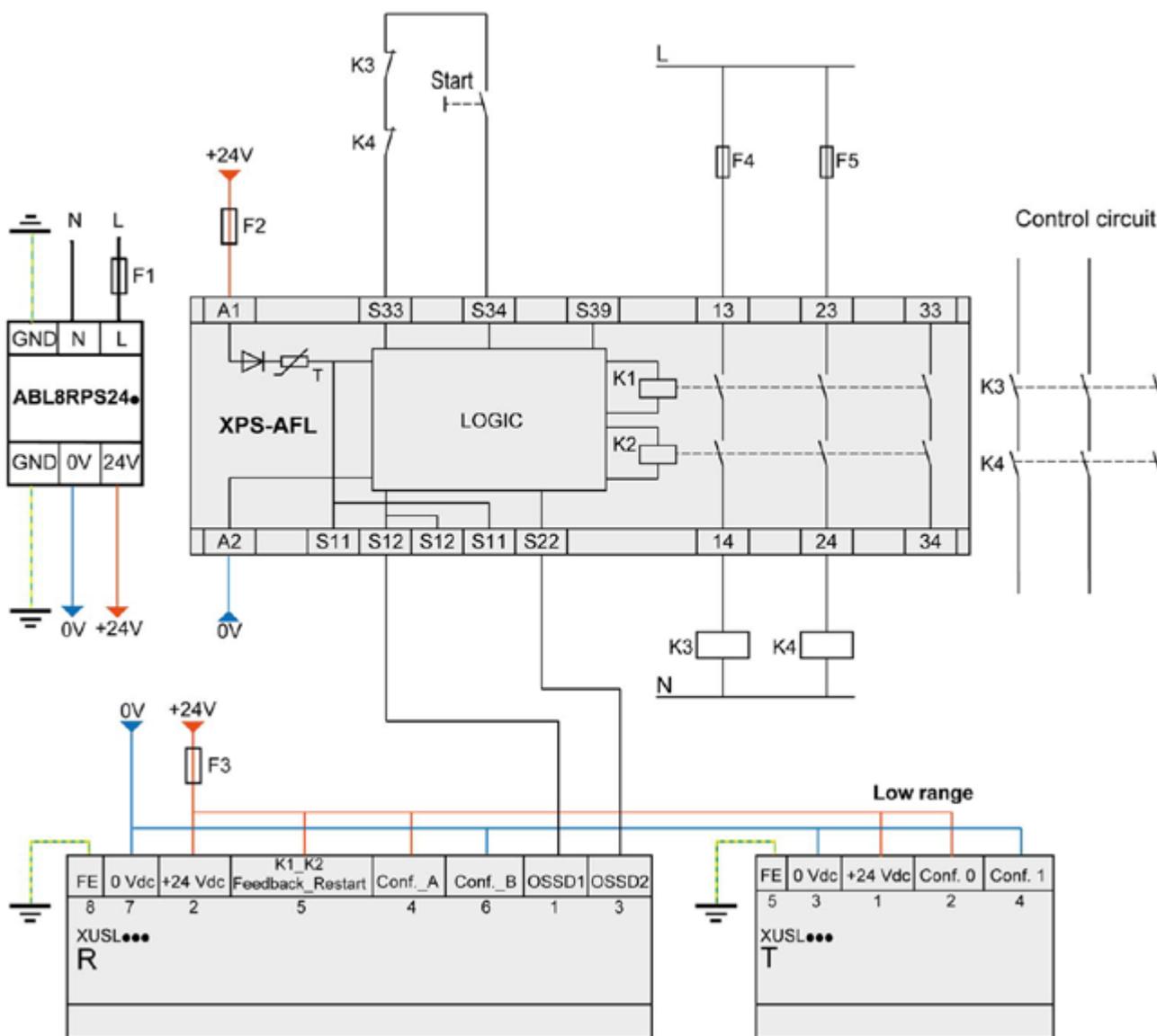
It is the aim of the risk analysis to determine whether the use of type 2 or type 4 standalone safety light curtains are compatible with the expected safety level of the entire system.

The K1 and K2 relays must have normally closed mirror contact (according to IEC 60947-4-1 for power contactors) and forced guided contacts (according to IEC 60947-5-1 or EN 50205 for auxiliary contactors or control relays).



## Connecting to a Safety Monitoring Device

Example of wiring diagram with the XPS-AFL safety module in low range configuration



OSSD1/OSSD2: Output signal switching device

For using the XUSLAFL in manual start, the receiver must be configured by wiring in automatic start and without EDM (External Device Monitoring).

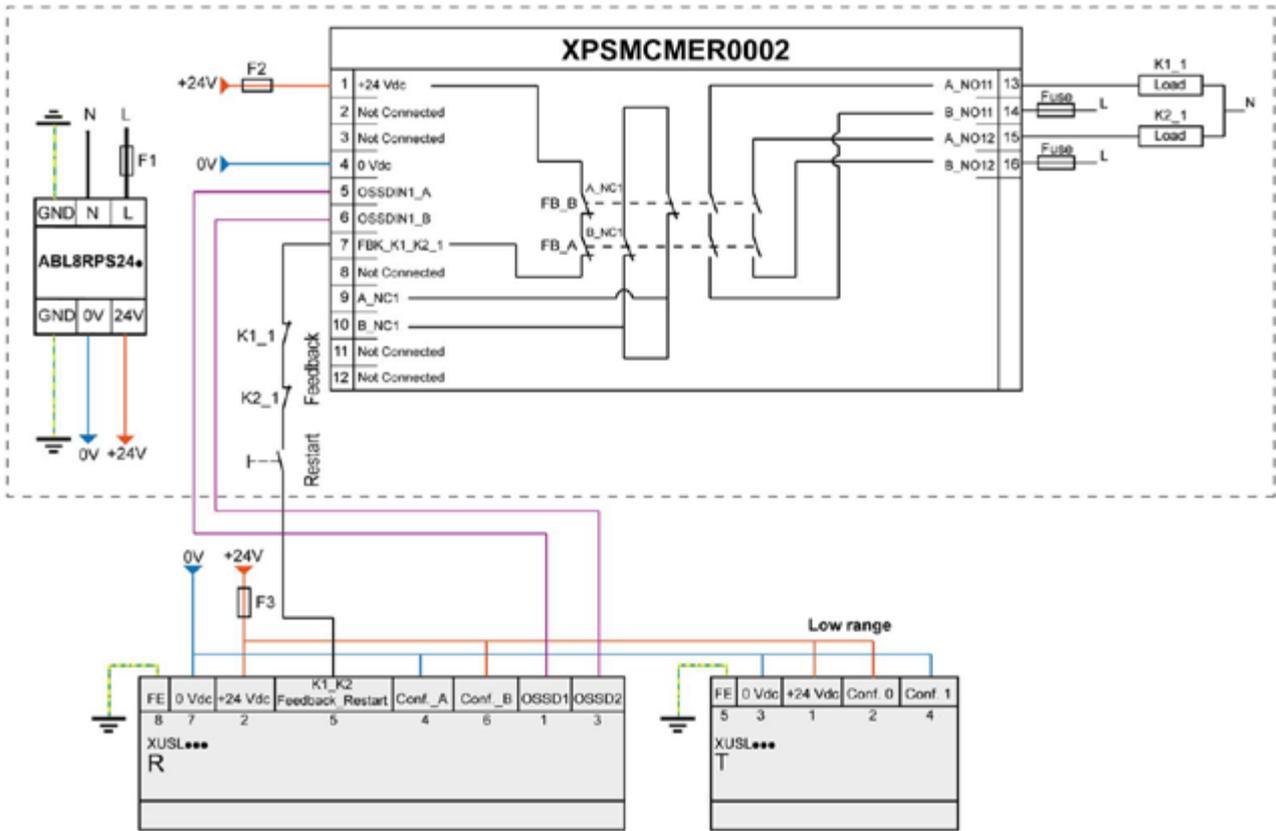
Automatic start is not allowed with the XPS-AFL module (between terminals S33 and S39).

The maximum cable length between the terminals S33 and S34 must be between 3 to 5 m.

The K3 and K4 relays must have forced guided contacts.

## Connecting to a Safety Monitoring Device

Example of wiring diagram with an XPSMCMER safety relay output extension module in manual start with EDM (External Device Monitoring)



**OSSD1/OSSD2** : Output signal switching device

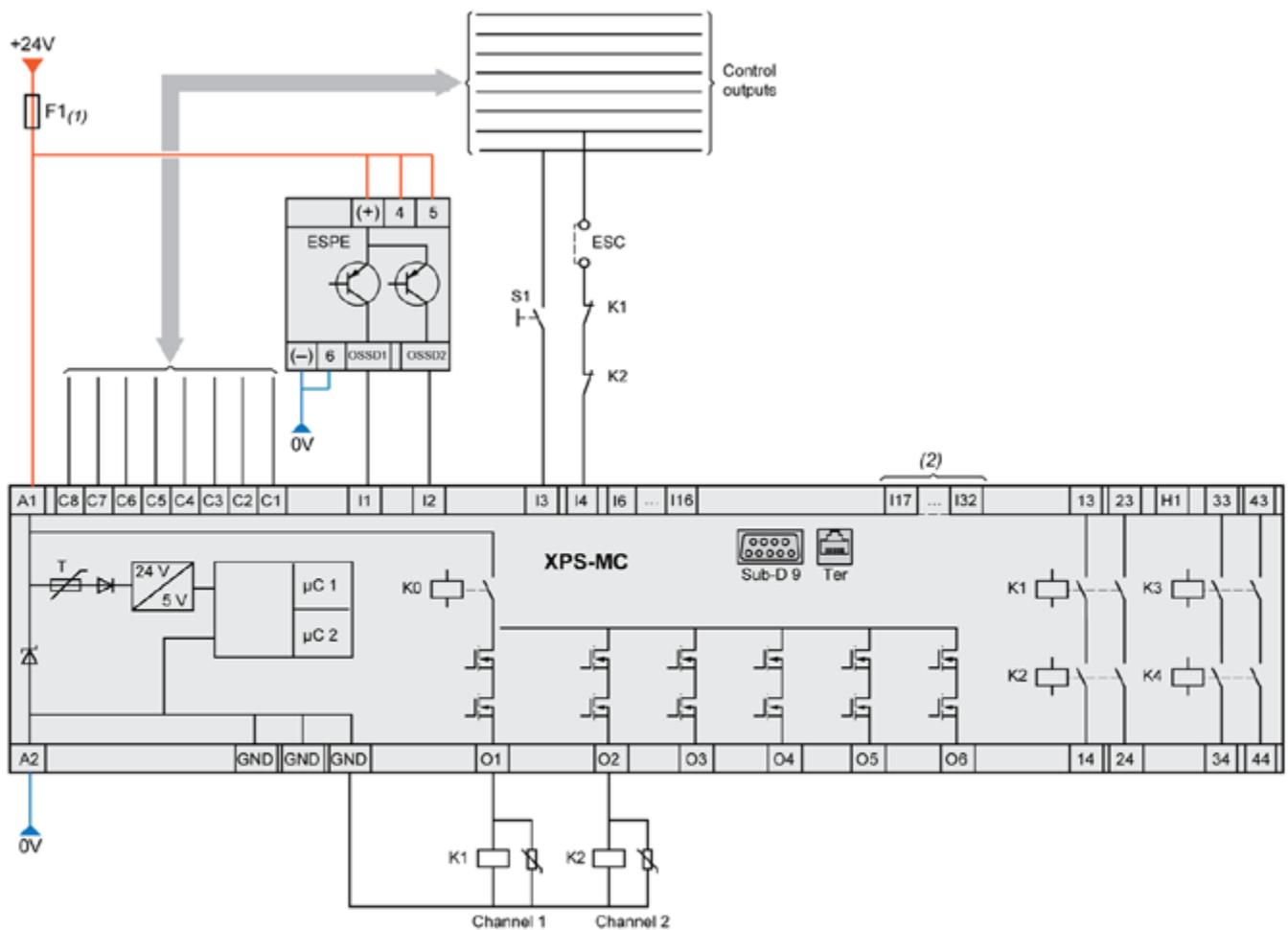
The XPSMCMER safety relay output extension modules do not require a CPU unit XPSMCMCP as they are connected directly to the safety light curtains OSSDs.

For the association with XPSMCMER, the operating modes (manual or automatic start) and EDM must be configured by wiring on the receiver. For example, in the schematic above, automatic start is possible by removing the start button (short circuit instead) and by configuring the receiver in automatic start, with EDM.

The K1 and K2 relays must have forced guided contacts.

## Connecting to a Safety Monitoring Device

Example of wiring diagram with the XPSMC safety controller



(1) Technical characteristics for minimum rating of fuse. Refer to XPSMC catalog (technical data)

(2) Only applicable to XPSMC32Z●●●

**ESC** : External start conditions

**ESPE** : Electro-sensitive protection equipment

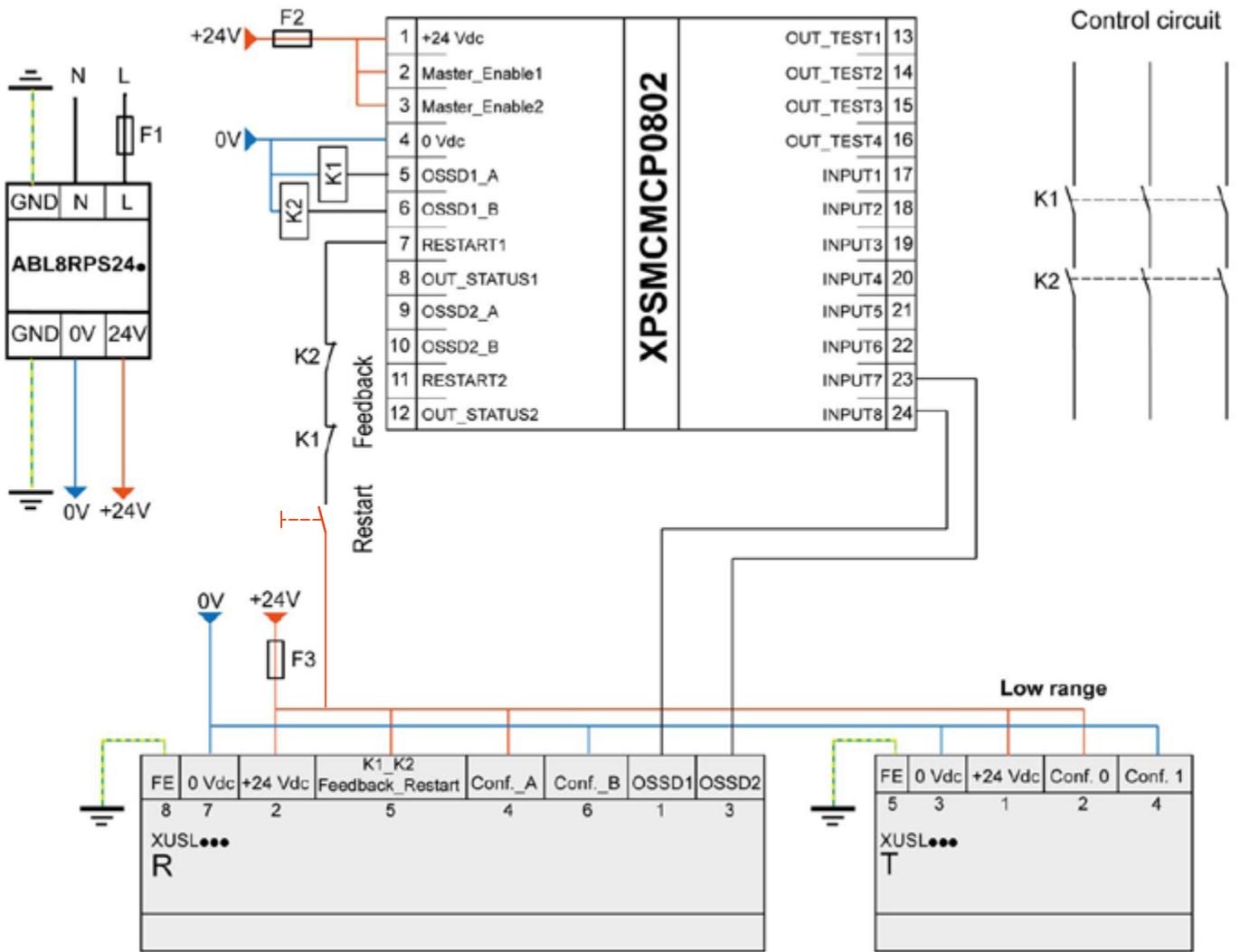
**OSSD1/OSSD2** : Output signal switching device

For any start mode, the receiver must be configured by wiring in automatic start and without EDM (External Device Monitoring).

The K1 and K2 relays must have forced guided contacts.

# Connecting to a Safety Monitoring Device

Example of wiring diagram with the XPSMCM safety controller



**OSSD1/OSSD2** : Output signal switching device

For any start mode, the receiver must be configured by wiring in automatic start and without EDM (External Device Monitoring).

The K1 and K2 relays must have forced guided contacts.