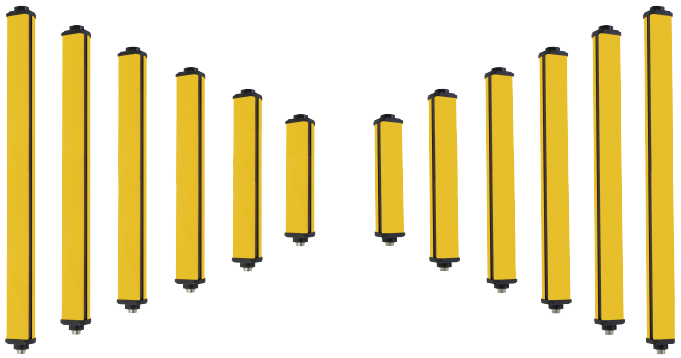
# Safety Light Curtain Sensor

# XLC



## SALIENT FEATURES

- 30mm beam gap
- Blanking Function*
- Self-Checking Circuit
- Dual PNP / NPN Outputs
- Dust and Vibration Resistant
- Status indication for each beam
- Upto 1600mm Protective Height
- No need for Seperate Control Unit

## Model Number Legend

**XLC-□-□□-□**

**1 2 3 4 5**

**1. Series**

XLC

**2. Type**

30: 30mm Beam Gap

50: 50mm Beam Gap

**3. Protective Height**

180: 180 mm

300: 300 mm

480: 480 mm

720: 720 mm

960: 960 mm

1600: 1600 mm

**4. Output**

N2: Dual NPN Outputs

P2: Dual PNP Outputs

**5. Muting**

_: No Muting (leave blank)

M: With Muting

**#. Accessories included**

Mounting Kit : 1 Set

Test Object : 1 No.

Connector Cable : 1 Pair

*** Optional Internal/ External Muting**
****Upto 15m Sensing Available for Special Requirement**

**Example:**

XLC-30-300N2

XLC Series - 30mm beam gap - 300mm protective height, Dual NPN outputs

**NOTE:** Contact us for models not shown in catalogue.

# Product Highlights

XLC

## ♦ One Touch Muting!

The XLC series of light curtain offers user side muting of beams. Muting has never been so easy; just block the beam that needs muting and press the mute button on top of the receiver to activate muting. Same for removing muting. No more messy cables or complicated software for enabling muting.

## ♦ Interference/ Noise Proof

Unique scanning algoritim combined with a synchronised clock pulse ensures that external light disturbances both visible and infra-red do not interfere with the functioning of the light currain.
The sensor is protected against interference by external noise thus ensuring that the outputs continue to function even under noise prone environments.

## ♦ Dual Outputs

Dual PNP or NPN outputs of 100mA rating are provided for fail safe operation. Seperate output LEDs are provided for both the outputs. RED when there is no interuption, OFF when beam(s) are interupted.

## ♦ LED indication for each Beam

Red LED indication is provided to highlight the intereption to each beam. When any beam is blocked/ not-working the particular LED light up and output turns ON.

## ♦ Self Test

A self-test is performed to check for errors when the power is turned ON. Also, the self test is regularly performed (within the response time) while in operation to check for failures. This ensures that in event of a fault in the sensor or circuits the output immediately switches off preventing any accidents..

## ♦ Use in Vibration prone places

Optional vibration dampers are provided with the sensors enabling use of the same in places with shock or vibration like Press Shops and CNC machines.
It is to be noted that the sensor when used without the damper could malfunction in these environments.

## ♦ Reduce Down-time

Heavy duty connectors are provided so that the faulty sensor can be replaced with minimum downtime.
Also the transmitters & receivers are independent and can be replaced seperately.

## ♦ Easy Alignment!

Easy to install and may be mounted in amy position with non-critical alignment between sensors. Once the transmitter and receiver are aligned, output LED turns ON (Red).

# Ratings and Specifications

| Models | NPN Output | XLC-30-180N2-_ | XLC-30-300N2-_ | XLC-30-480N2-_ | XLC-30-720N2-_ | XLC-30-960N2-_ | XLC-50-1600N2-_ |
|---|---|---|---|---|---|---|---|
| | PNP Output | XLC-30-180P2-_ | XLC-30-300P2-_ | XLC-30-480P2-_ | XLC-30-720P2-_ | XLC-30-960P2-_ | XLC-50-1600P2-_ |
| Sensor Type | | Type IV Light Curtain Sensor under IEC-61496 (For Hand Protection, except XLC-50 series) | | | | | |
| Detection Capability | | Opaque objects min. 31mm dia. | | | | | Opaque objects min. 51mm dia. |
| Beam Gap (Resolution) | | 30mm (1.22 in) | | | | | 50mm (2 in) |
| No. of Beams | | 6 | 10 | 16 | 24 | 32 | 32 |
| Protective Height | | 180mm | 300mm | 480mm | 720mm | 960mm | 1600mm |
| Sensing Range | | 3000mm* | | | | | |
| Offset Angle | | Horizontal: ± 5° ; Vertical: ± 1.2° max. | | | | | |
| Response Time | | ON to OFF: 10ms; OFF to ON: 75ms aprox. | | | | | |
| Startup Time | | 2 sec. max. | | | | | |
| Aperture Angle (Receiver) | | ± 5° | | | | | |
| Light Source | | IR LED | | | | | |
| Light Wavelength | | 940 nm | | | | | |
| Operation Mode | | Dual Light ON (NC) outputs provided; to be connected to a safety controller or force guided electromechanical safety relay to confirm to Safety standards | | | | | |
| Supply Voltage | | 12 - 24 VDC (10% Ripple) | | | | | |
| Current Consumption | Emitter | 26mA max. | 32mA max. | 44mA max. | 57mA max. | 63mA max. | 63mA max. |
| | Receiver | 32mA max. | 38mA max. | 42mA max. | 47mA max. | 48mA max. | 48mA max. |
| Protection Circuits | | Reverse polarity, Output short circuit protection; Self-check for failure alarm | | | | | |
| Control Output | | 2 NPN or PNP open collector output (depending on model) | | | | | |
| Control Output Rating | | Load Voltage: max. 30 VDC; Load Current: max 100mA | | | | | |
| Operation Indication | | Red LED - NO (Interuption); Green LED - NC (OK) | | | | | |
| Indication Lights | Emitter | Power LED: Red - Power ON | | | | | |
| | Receiver | Output LED: Red (Beam Blocked, Output ON), Green (OK, Output OFF); Beam LED (For each beam): RED (Beam blocked); Self Check LED: Red (Self Check Taking Place) | | | | | |
| Vibration Resistance | | Malfunction: 10 to 55 Hz, Multiple amplitude of 0.7mm, 20 sweeps (1 octave/min) in X, Y, Z directions; 1hr/ Axis | | | | | |
| Shock Resistance | | 10 G | | | | | |
| Environmental Illuminance | | 500 lux max. (light opposite to receiver); if at 20° angle, Sunlight: 5,000 lux, Lamp: 3,000 lux | | | | | |
| Ambient Temperature | | Operation: -10° ~ 55°C; Storage: -15° ~ 70°C (non- freezing; non- condensing) | | | | | |
| Ambient Humidity | | Operation: 35 ~ 80% RH; Storage: 30 ~ 95% RH (non- condensing) | | | | | |
| Protection Class | | IP54 | | | | | |
| Light Curtain Body | Emitter Weight | 180g | 300g | 440g | 720g | 980 g | 1480g |
| | Receiver Weight | 200g | 325g | 460g | 740g | 1040g | 1520g |
| | Material | Case: Powder coated Aluminium; Cap: ABS resin; Optical Cover: Polarized Red PMMA | | | | | |
| Connector Cables* | Emitter | 4 meters, 4 core, Oil Resistant PVC, bending radius - R5 mm; 190g | | | | | |
| | Receiver | 2.5 meters, 5 core, Oil Resistant PVC, bending radius - R5 mm; 140g | | | | | |

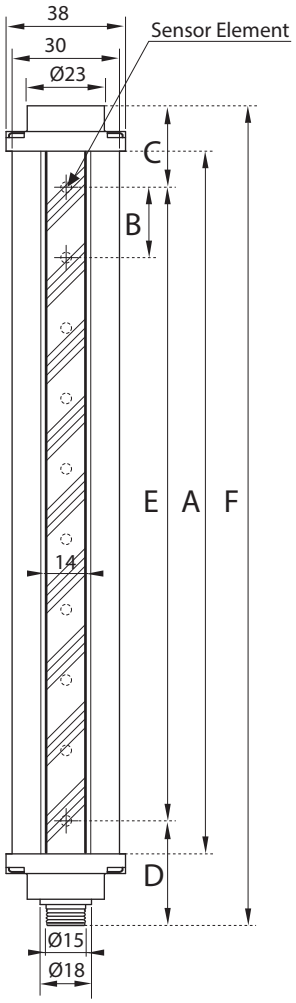
* Note:

1) Sensing Distance is mentioned under standard testing conditions and standard test object with an ambient illumination of 2000 lux.
2) Sensing Distance of more than 3 meters upto 15meters is also available against special order.
3) The cable length can be extended safely upto 30meters, the output may malfunction if the length of the cable is extended beyond this limit.

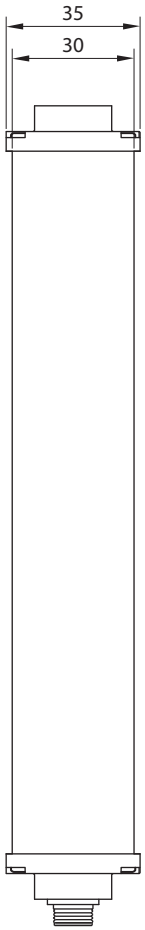
# Sensor Dimension Drawing



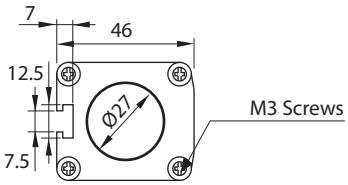
• Front



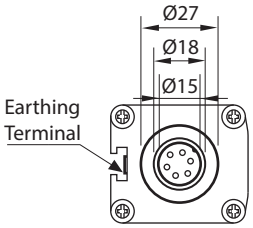

• Side



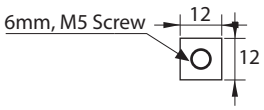

• Top




• Rear



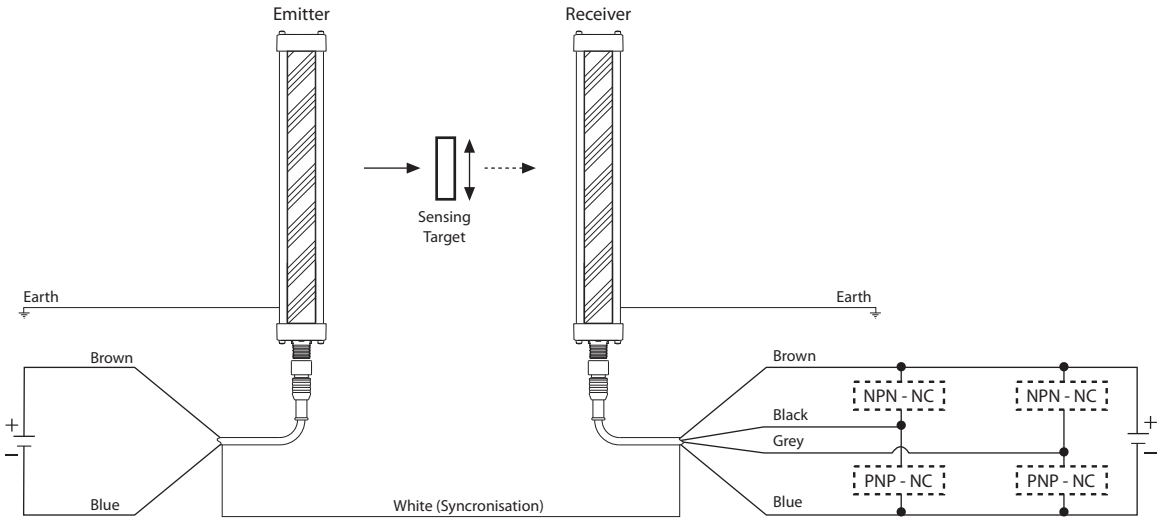

• Mounting Nut



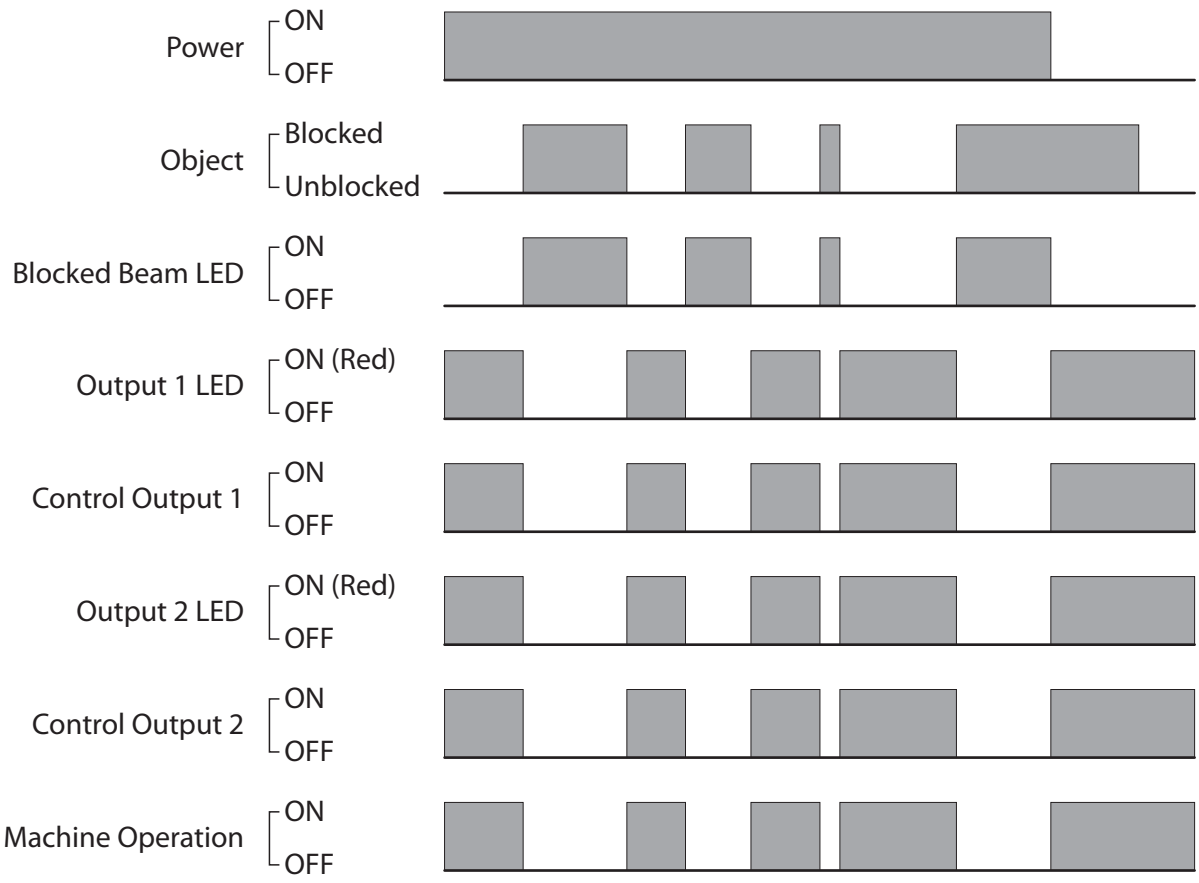

All dimensions are in mm

| Model | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| XLC-30-180N2-_ | 196 | 30 | 50 | 35 | 150 | 240 |
| XLC-30-180P2-_ | | | | | | |
| XLC-30-300N2-_ | 325 | | | | 270 | 360 |
| XLC-30-300P2-_ | | | | | | |
| XLC-30-480N2-_ | 486 | | 40 | | 450 | 530 |
| XLC-30-480P2-_ | | | | | | |
| XLC-30-720N2-_ | 726 | | | | 690 | 770 |
| XLC-30-720P2-_ | | | | | | |
| XLC-30-960N2-_ | 980 | | | | 930 | 1010 |
| XLC-30-960P2-_ | | | | | | |
| XLC-50-1600N2-_ | 1600 | 50 | | | 1550 | 1635 |
| XLC-50-1600P2-_ | | | | | | |

## Connections

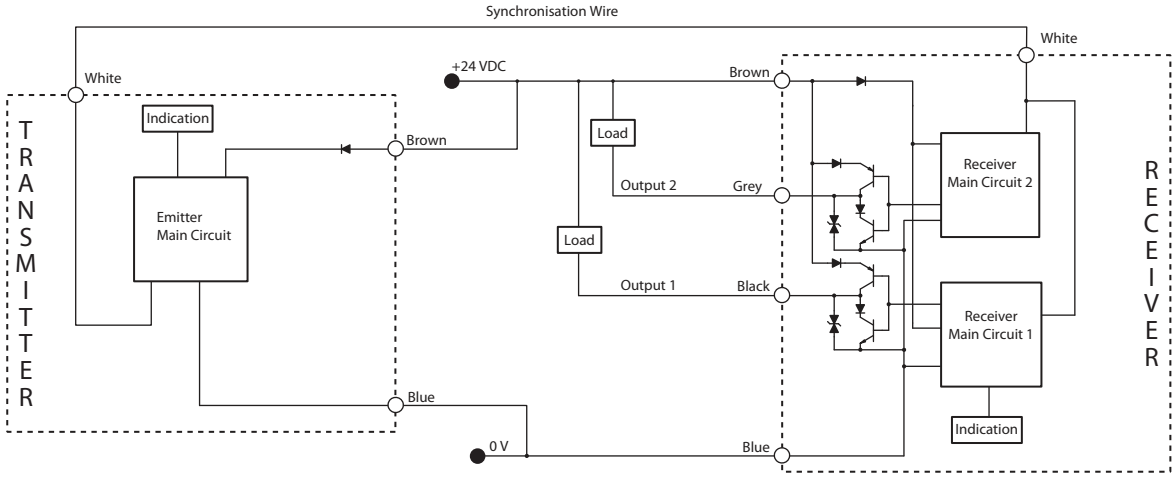



## Operation Type

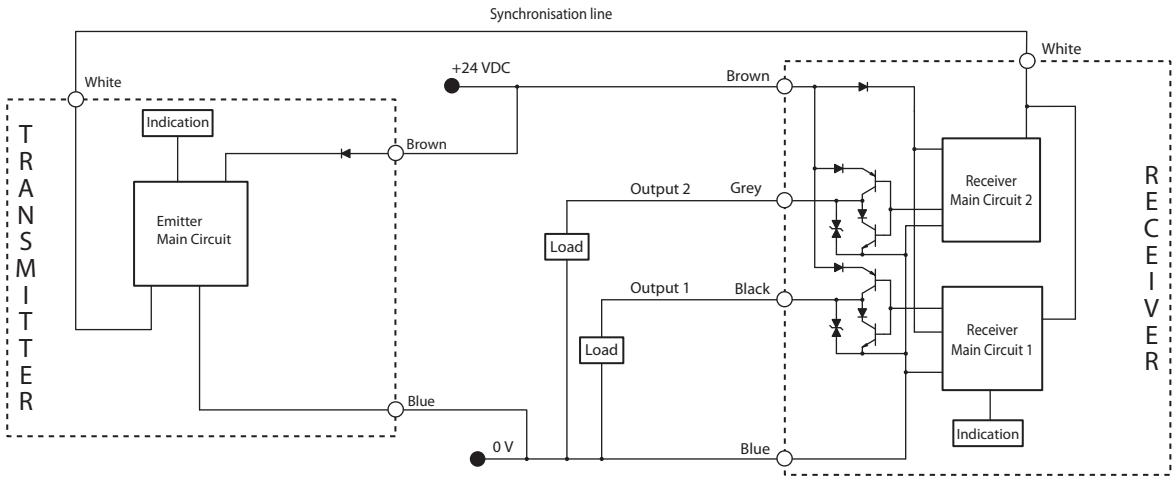


## Input/ Output Circuit Diagram

- NPN Output Type

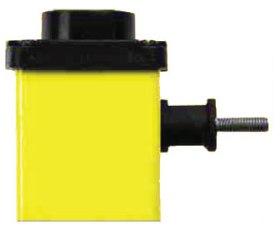



- PNP Output Type




## Mounting and Adjustments

### ♦ Vibration Damper



The light curtain sensor is designed to withstand upto a maximum of 10G shock and vibration of 1mm at 55Hz. This statisfies the general installation environment's requirements. However if the sensor is to be installed in places with high shock and vibration levels like power & axial presses is it advisable to mount the sensor using vibration dampers.

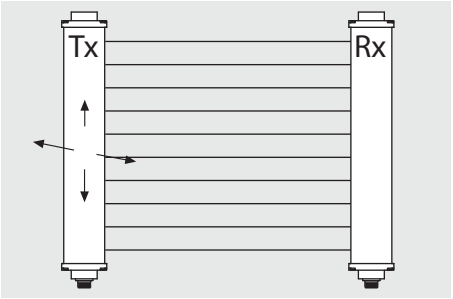
OPTIONAL PART (Rubber Damper).: XLC-VD1

The mounting of the Rubber Damper (XLC-RD1) is done on the mounting nut. The front of the damper comes with threaded male end that is to be screwed to the mounting nut. The rear of the damper is M5 threaded female which is used for mounting on the machine's surface.

# Mounting and Adjustments



## ♦ Alignment




Place the transmitter and receiver facing each other and connect to power.If all/ any of the alignment LEDs in the receiver glows the sensor is not properly aligned.
Adjust the sensor by moving/ rotating along the vertical and horizontal axis till the alignment LEDs of all the beams go OFF.
Under this condition both the Output LEDs turn ON indicating proper alignment.

## ♦ Blanking/ Fixed Muting

One or more beams of the sensor can be blanked using the pushbutton provided in the top of the receiver*.

Blanking:
Block the beam that need not be sensed on the transmitter. You will see the corresponding Beam's LED turn ON in the receiver and the output turns off. Press and hold the blanking pushbutton for 5 seconds till the output turns on again. Now the blanked beam LED will remain ON, this however will have no bearing on the output.

Remove Blanking:
To remove the blanking, press and hold the blanking pushbutton, while keeping the sensors aligned and ensuring no beam is blocked - Turn off the power, wait for 2 seconds and turn on the power. The blanking is now removed.

NOTE: To access the pushbutton, the top cover of the receiver has to be removed.
*: Only for models with muting function.

Cat. No. XLC-823