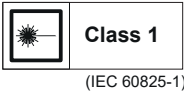
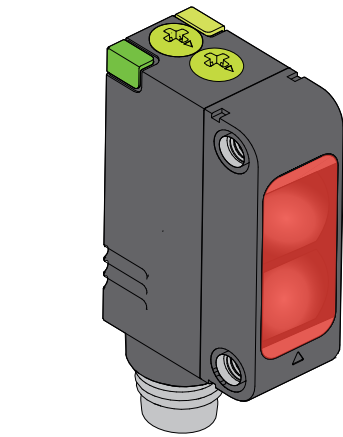


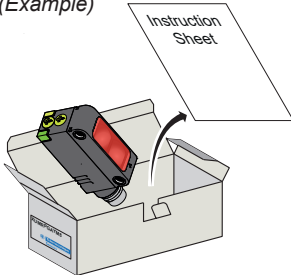
Photo-electric sensors - Miniature design



Background suppression (BGS)



Package Content (Example)



http://qr.tesensors.com/XU0020

Scan the code to access this Instruction Sheet and all product information in different languages or you can visit our website at:
www.telemecaniquesensors.com

We welcome your comments about this document. You can reach us through the customer support page on your local website.

DANGER

WARNING

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Disconnect allower before servicing equipment.
- Do not connect this device to AC power.
- The power voltage must not exceed the rated range.

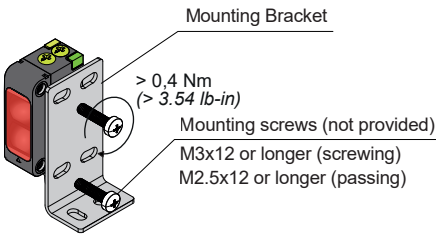
Failure to follow these instructions will result in death or serious injury.

IMPROPER SETUP OR INSTALLATION

- This equipment must only be installed and serviced by qualified personnel.
- Read, understand, and follow the compliance below, before installing the device.
- Do not tamper with or make alterations on the device.
- Comply with the wiring and mounting instructions.
- Check the connections and fastening during maintenance operations.
- The proper functioning of the device and its operating line must be checked regularly and according to the application (for example number of operations, level of environmental pollution, etc.).

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

Mounting and tightening torques

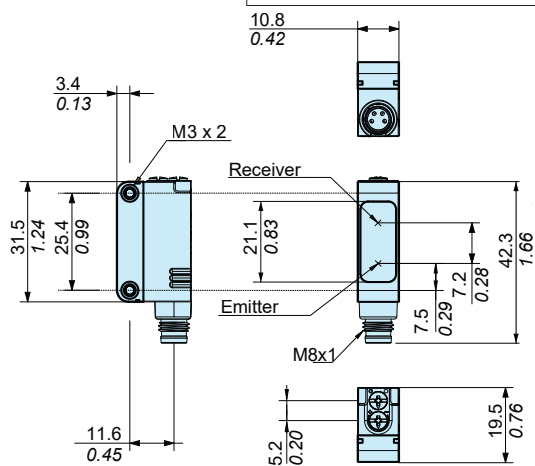


CAUTION

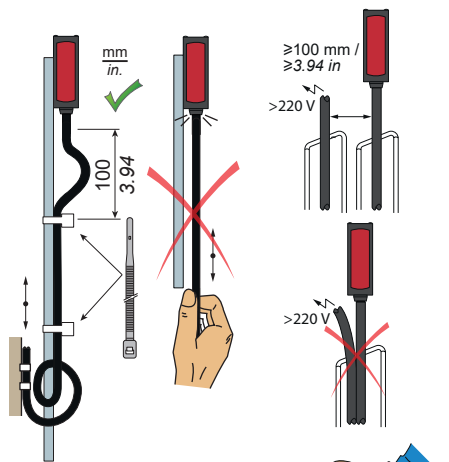
DEGREE OF PROTECTION DETERIORATION
Do not apply excessive torque on the sensor during the installation process.
Failure to follow these instructions can result in injury or equipment damage.

Dimensions

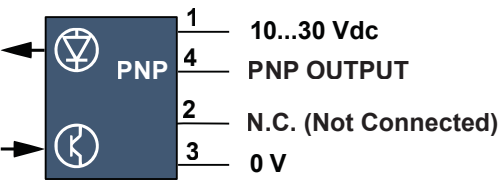
1 mm = 0.0394 in.



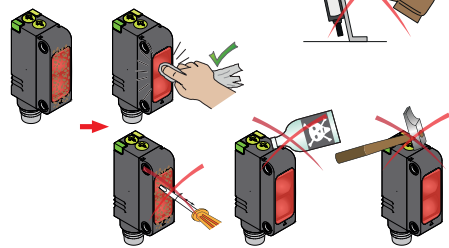
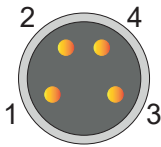
Mounting, wiring and maintenance precautions



Wiring diagrams



M8 Connector
4 pins



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Pre-wired connectors (examples)

PVC cable for general use
PUR cable for severe industrial environments

Jumper



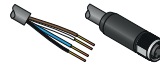
M8 - 4 pins plug
M8 - 4 pins socket
XZCR2705037R1 1m PUR
XZCR2705037R2 2m PUR

Jumper



M12 - 4 pins plug
M8 - 4 pins socket
XZCR1509041J1 1m PUR
XZCR1509041J2 2m PUR

Cable



M8 - 4 pins socket
4 wires
XZCP0941L2 2m PUR
XZCP0941L5 5m PUR

For other cables (angled or length) visit our website: www.telemecaniquesensors.com

Accessories

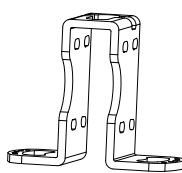
Fixing bracket:



XUZA50



XUZASM02



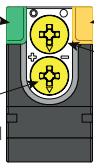
XUZASM03

LEDs and settings

Power ON LED
(green)

Output status LED
(yellow)

Sensitivity Control
(9 turns)



L/D selection

Output status LED

The yellow LED indicates the output status.

Power On LED

The green LED indicates that the sensor is operating.

Sensitivity control

The potentiometer can be used to adjust the cutoff distance (9 turns potentiometer); the operating distance increases turning the potentiometer clockwise.

Light-on/Dark-on potentiometer

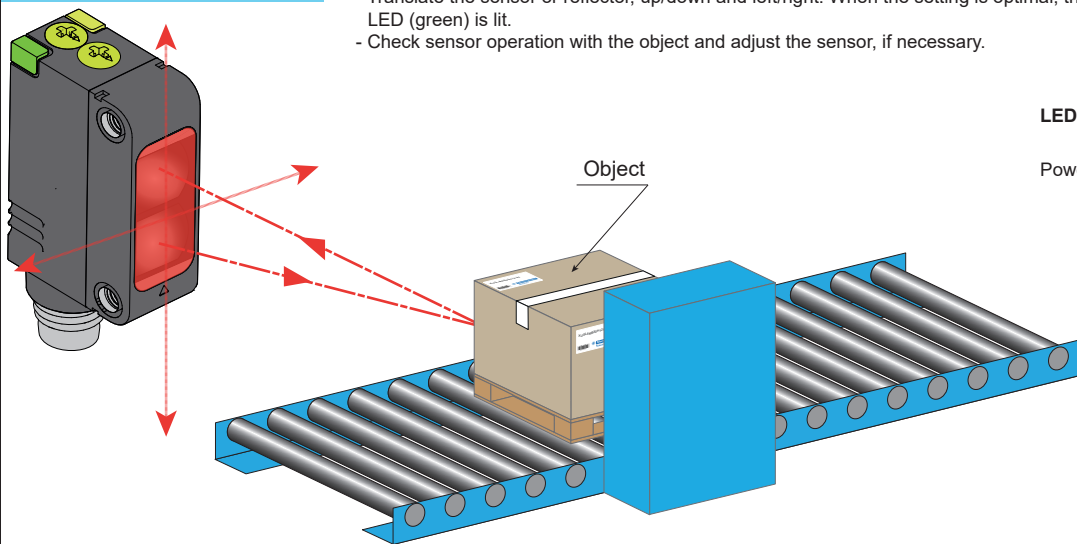
This potentiometer can be used to set LIGHT-ON or DARK-ON operation mode.

See NO/NC correspondences below.

Notice: Do not apply excessive torque when adjusting the potentiometer (max 0.02 Nm).

Sensors position adjustment

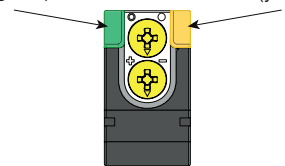
- Translate the sensor or reflector, up/down and left/right. When the setting is optimal, the Stability LED (green) is lit.
- Check sensor operation with the object and adjust the sensor, if necessary.



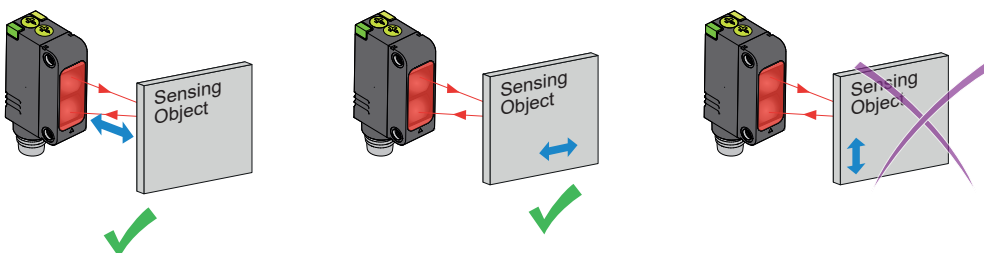
LED status with NO output function

Power ON LED: ON
(green)

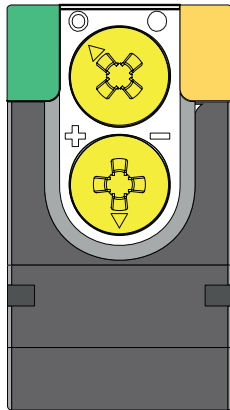
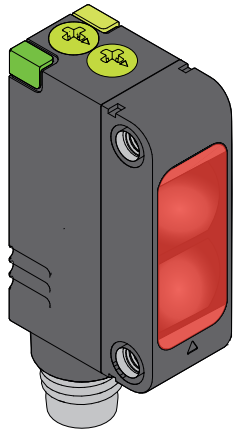
Output status LED: ON
(yellow)



Install the sensor head perpendicular to the object transfer as shown below to ensure good detection.



Output mode setting: Light-On or Dark-On (Light-On by default)



Light-On / Normally Open (NO)	Dark-On / Normally Closed (NC)
No object detected The Output is OFF	No object detected The Output is ON
The Output is ON	The Output is OFF

Sensor sensitivity adjustment

For an accurate detection, follow the set up below. (eg. Dark objects, with holes or with small size to reflect properly the light beam).

	Light-On / Normally Open (NO)	Dark-On / Normally Closed (NC)
0,8 x 4 mm / 0.03 x 0.16 in.	1-Connect the sensor to the power supply (see page 1 for the wire connection & page 4 for the power voltage). Before settings, start with the potentiometer at the minimum position (resulting to point A).	1-Connect the sensor to the power supply (see page 1 for the wire connection & page 4 for the power voltage). Before settings, start with the potentiometer at the minimum position (resulting to point A).
	2-Put the background in front of the sensor. the Output LED (yellow) switches on. Without any object, set the background limit: Turn the potentiometer anticlockwise until to not detect the background. The Output LED (yellow) switches off (resulting to point B). Several turns can be done to adjust the detection.	2-Put the background in front of the sensor. the Output LED (yellow) switches off. Without any object, set the background limit: Turn the potentiometer anticlockwise until to not detect the background. The Output LED (yellow) switches on (resulting to point B). Several turns can be done to adjust the detection.
Object	3-Put the object between the sensor and the background. Make sure the Output LED (yellow) switches on. The sensor is set and ready to detect.	3-Put the object between the sensor and the background. Make sure the Output LED (yellow) switches off. The sensor is set and ready to detect.

Characteristics

Certification	CE - UKCA - cULus
Operating distance	30...200 mm (W/B <25%) 30...130 mm (Black 6%) 10...500 mm (White 90%)
Power Voltage	Operating range: 10...30 Vdc (including ripple p-p 10% maximum)
Current consumption	≤ 35 mA (≤ 50 mA below 12 V supply)
Output	PNP (short circuit protected);
Output current	100 mA max.
Saturation voltage	2 V max.
Response time	0.25 ms
Switching frequency	2 kHz
Indicators	Yellow: output status Green: Stability
Setting	9 turns adjustment screw L/D selector
Operating temperature	-20...55°C (not condensing) (-4...131°C)
Storage temperature	-40...70 °C (-40 ...158 °F)
W/G and W/B difference	w/g=2%, w/b=5%
Emission Type	Laser Light 650 nm (red) Class 1 Laser product (EN/IEC 60825-1)
Ambient light rejection	According to 60947-5-2 plus reinforced immunity (internal test)
Vibration	0.5 mm amplitude, 10...55 Hz frequency, for each axis (EN/IEC 60068-2-6)
Shock resistance	11 ms (30 g) 6 shock for each axis (EN/IEC 60068-2-27)
LIGHT/DARK selection	By selector
Housing	Body: Glass filled technopolymer Indicators: TPE Actuators: POM
Lenses	PMMA
Protection degree	IP65/IP67 conforming to EN/IEC 60529
Connections	M8 connector 4 pins
Weight	10 g (0.35 oz)



Class 1
(IEC 60825-1)