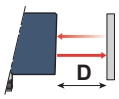
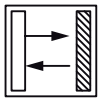
Photo-electric sensors - Miniature design





Model	Sensing distance **D**
XUM4A●	0,25 m / *0.82 ft*
XUM5A●	1,9 m / *6.23 ft*
XUM6A●	1,1 m / *3.61 ft*

Diffuse



Package Content
(Example)



NPN - M8 Connector : **XUM4ANXBM8**
XUM5ANXBM8
XUM6ANXBM8

NPN - 2 m Cable : **XUM4ANXBL2**
XUM5ANXBL2
XUM6ANXBL2

PNP - M8 Connector : **XUM4APXBM8**
XUM5APXBM8
XUM6APXBM8

PNP - 2 m Cable : **XUM4APXBL2**
XUM5APXBL2
XUM6APXBL2



http://qr.tesensors.com/XU0007

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

⚠⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Disconnect all power 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.

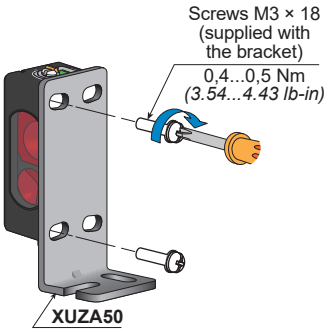
⚠ WARNING

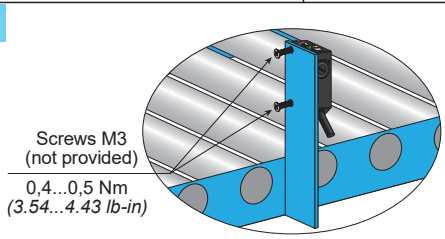
IMPROPER SETUP OR INSTALLATION

- This equipment must only be installed and serviced by qualified personnel.
- Read, understand, and follow the compliance below, before installing the XUM Photo-electric sensor.
- 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.
- The proper functioning of the XUM photoelectric sensor 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.

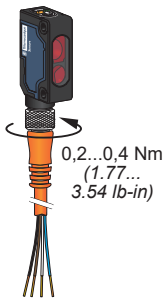
Mounting and tightening torques



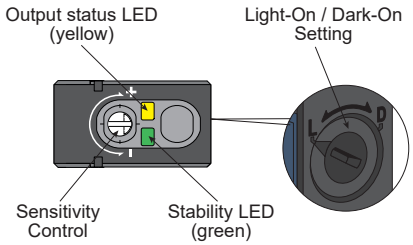


⚠ CAUTION

UNINTENDED EQUIPMENT OPERATION
Do not apply excessive impact on the sensor during the installation process, so as to prevent damage or deterioration in the degree of protection.
Failure to follow these instructions can result in injury or equipment damage.

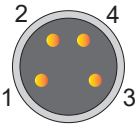


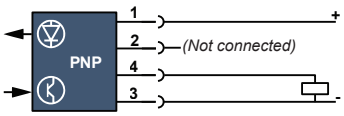
LEDs and settings



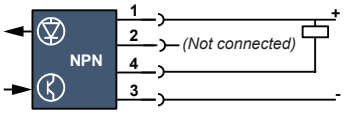
Wiring diagrams

M8 Metal Connector - 4 pins





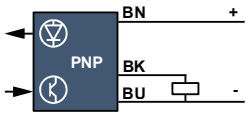
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XUM5APXBM8
XUM6APXBM8



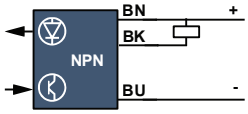
XUM4ANXBM8
XUM5ANXBM8
XUM6ANXBM8

2 m Cable - 3 wires



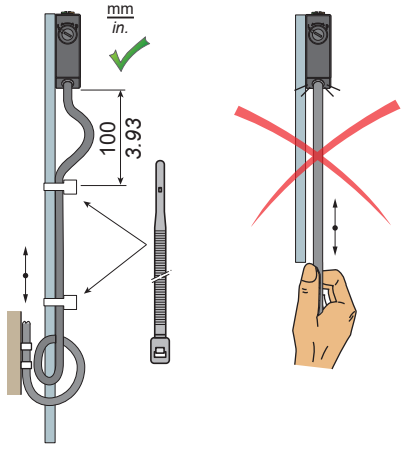


XUM4APXBL2
XUM5APXBL2
XUM6APXBL2



XUM4ANXBL2
XUM5ANXBL2
XUM6ANXBL2

Wiring precaution



NOTICE

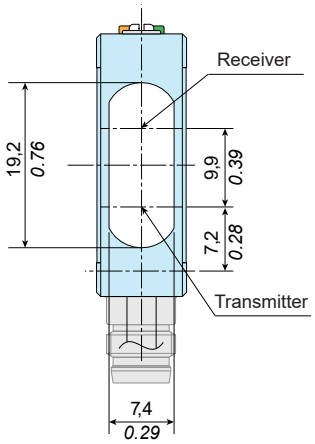
UNINTENDED EQUIPMENT OPERATION
Do not pull on the sensor cable so as to prevent damage or deterioration in the degree of protection
Failure to follow these instructions can result in equipment damage.

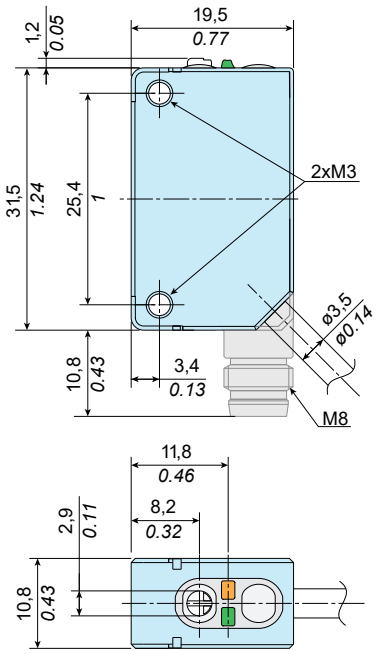
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Dimensions

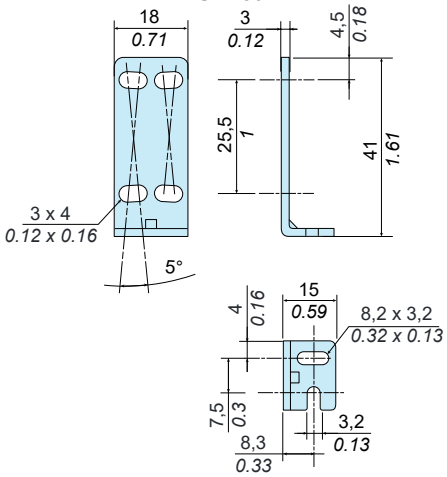
mm / in.

1 mm = *0.0397 in.*

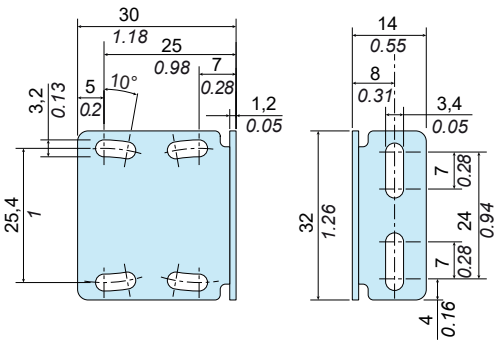




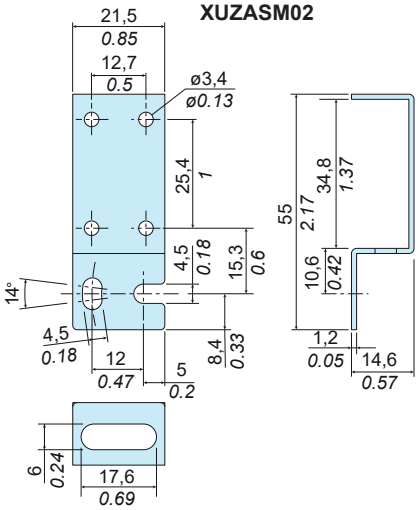
XUZA50



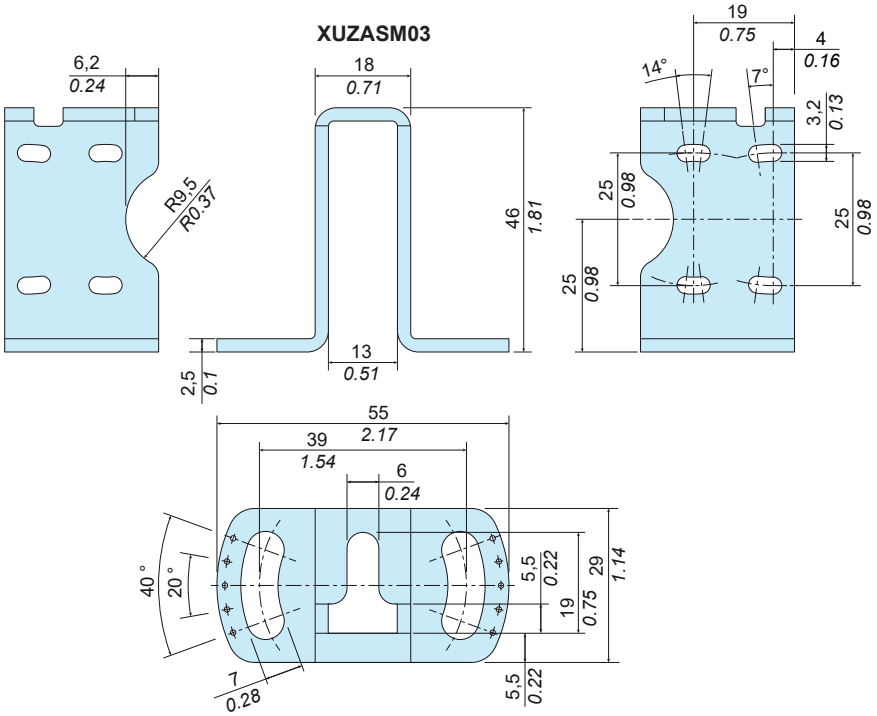
XUZASM04



XUZASM02

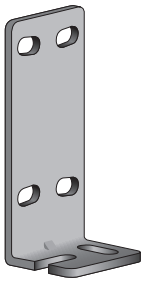


XUZASM03



Accessories

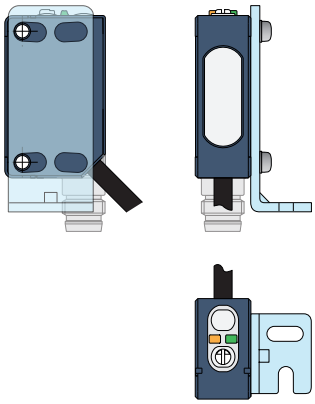
Mounting brackets (to order separately)

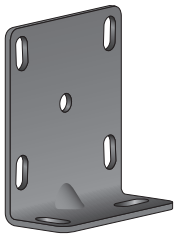


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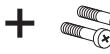


Screws M3 × 18

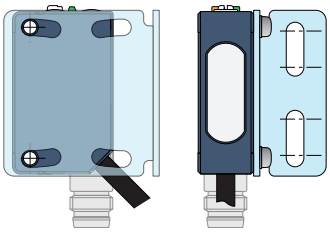


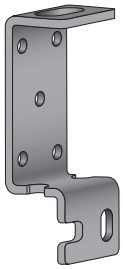


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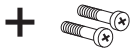


Screws M3 × 12

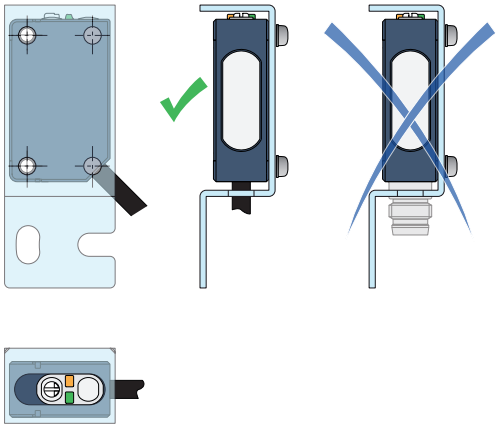


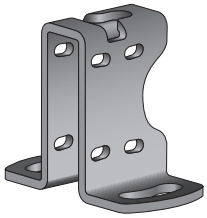


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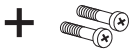


Screws M3 × 12

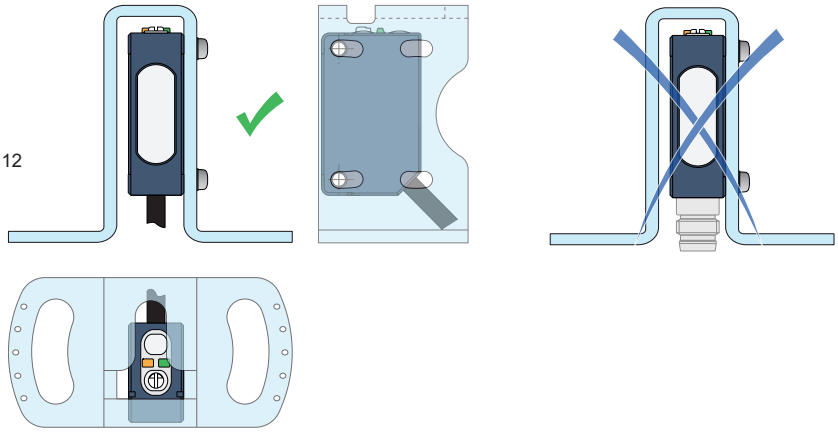




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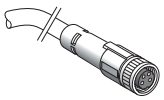
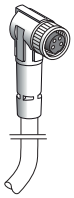
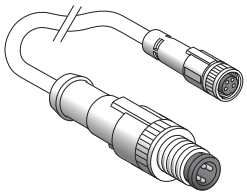
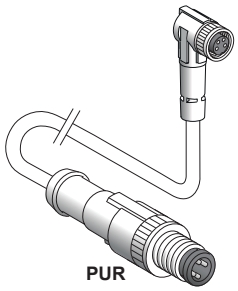


Screws M3 × 12

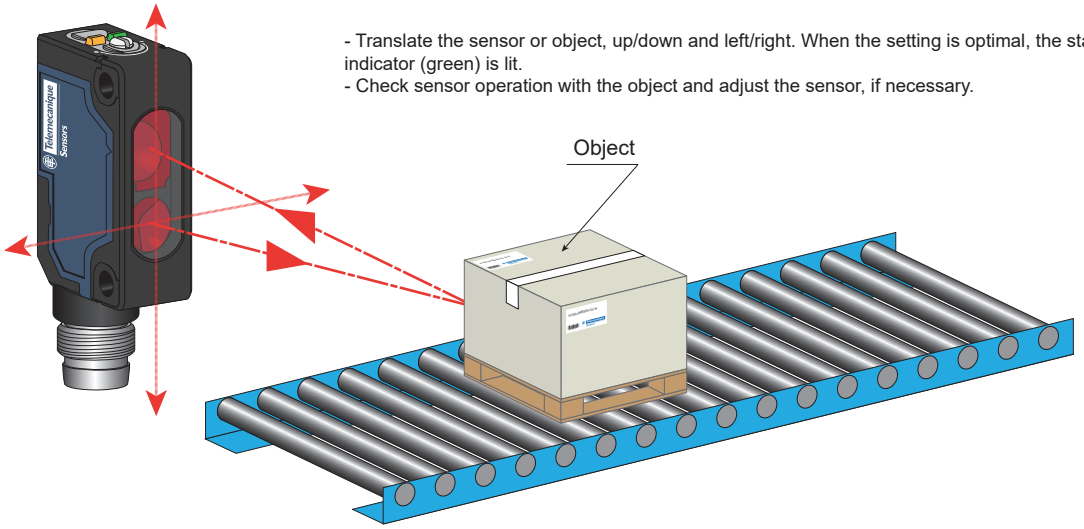


Pre-wired connectors (examples)

PVC cable for general use
PUR cable for severe industrial environments

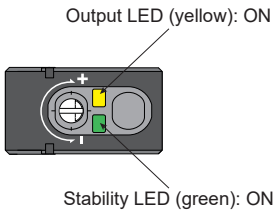
M8, 4 pins					M8 - M12, 4 pins		
							
Cable length	PVC	PUR	PVC	PUR	Jumper length	PUR	PUR
2 m / *6.56 ft.*	XZCPV0941L2	XZCP0941L2	XZCPV1041L2	XZCP1041L2	1 m / *3.28 ft.*	XZCR1509041J1	XZ CR1510041J1
5 m / *16.4 ft.*	XZCPV0941L5	XZCP0941L5	XZCPV1041L5	XZCP1041L5	2 m / *6.56 ft.*	XZCR1509041J2	XZCR1510041J2
10 m / *32.8 ft.*	XZCPV0941L10	XZCP0941L10	XZCPV1041L10	XZCP1041L10			

Sensors position adjustment



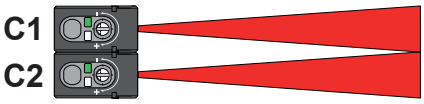
- Translate the sensor or object, up/down and left/right. When the setting is optimal, the stability indicator (green) is lit.
- Check sensor operation with the object and adjust the sensor, if necessary.

LED status with LO output function

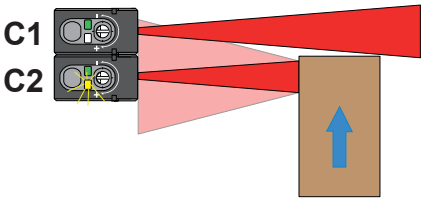


Anti-interference for side by side mounting

Anti-interference system to ensure good detection even disturbed by another sensor when mounted side by side

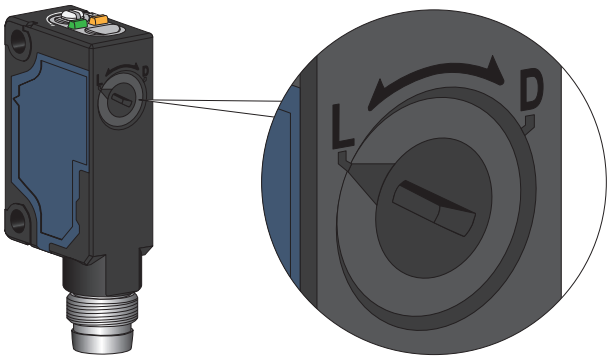


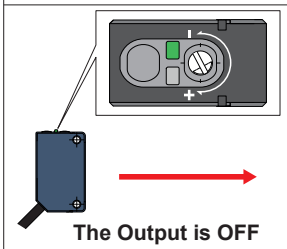
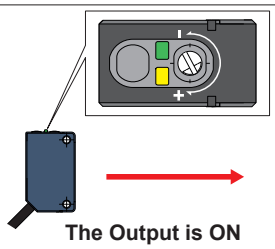
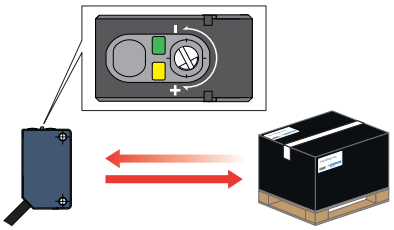
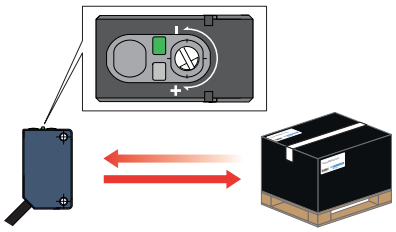
Anti-interference system allows a side by side installation and ensures a reliable detection.



This Anti-interference system ensures an object detection in all conditions.

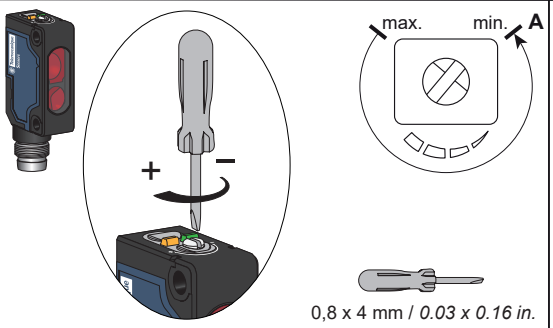
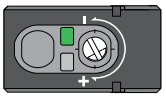
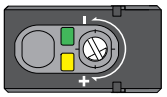
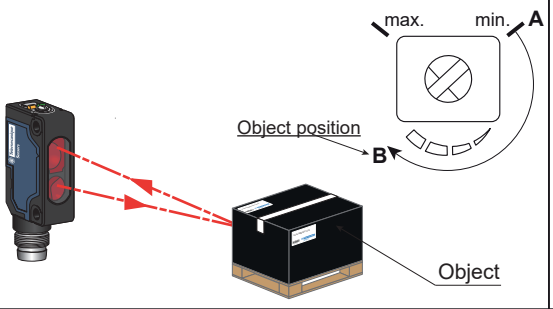
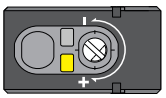
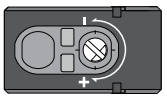
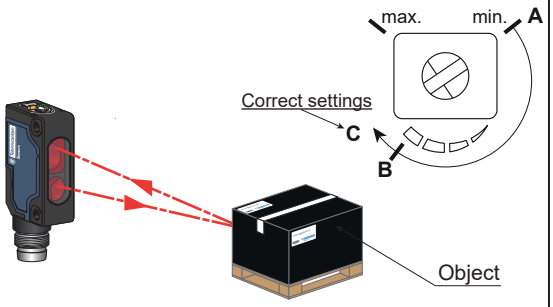
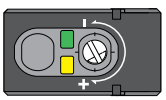
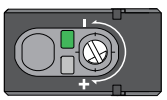
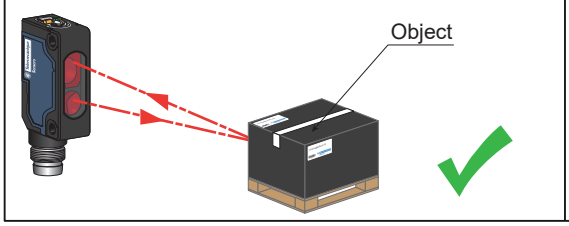
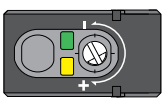
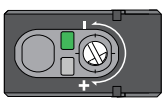
Output mode setting: Light-On or Dark-On (Light-On by default)



Light-On / Normally Open	Dark-On / Normally Closed
 The Output is OFF	 The Output is ON
 The Output is ON	 The Output is OFF

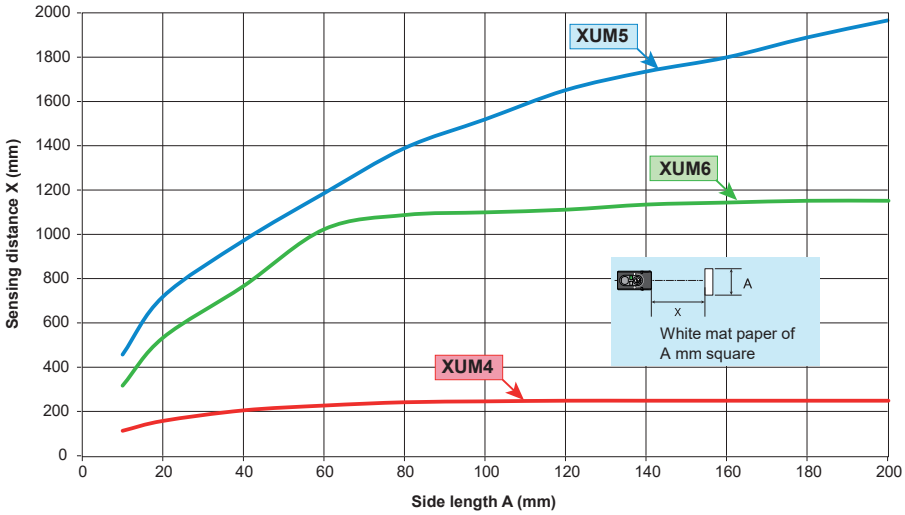
Sensor sensitivity adjustment

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

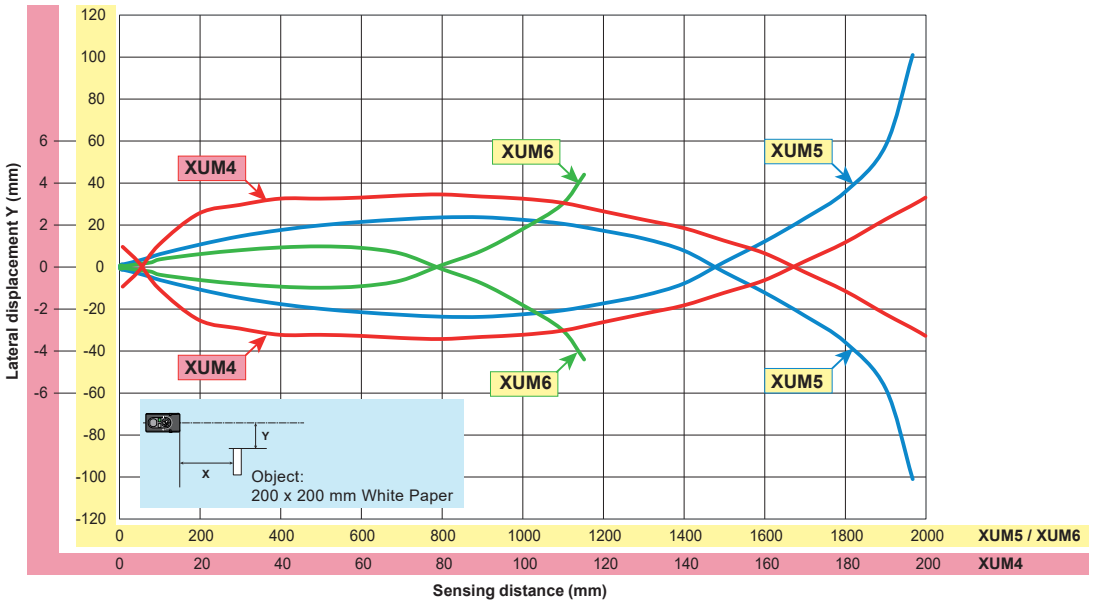
	Light-On	Dark-On
 0,8 x 4 mm / *0.03 x 0.16 in.*	1-Connect the sensor to the power supply *(see page 1 for the wire connection & page 7 for the power voltage)*. Before settings, start with the potentiometer at the minimum position (resulting to point A). 	1-Connect the sensor to the power supply *(see page 1 for the wire connection & page 7 for the power voltage)*. Before settings, start with the potentiometer at the maximum position (resulting to point A). 
	2-Put the object in front of the sensor. Turn clockwise the potentiometer until the output led (yellow) switches on (resulting to point B). 	2-Put the object in front of the sensor. Turn clockwise the potentiometer until the output led (yellow) switches off (resulting to point B). 
	3-For a stable detection, turn the potentiometer clockwise until the stability led (green) switches on & the output led (yellow) remained on (resulting to point C). 	3-For a stable detection, turn the potentiometer clockwise until the stability led (green) switches on & the output led (yellow) remained off (resulting to point C). 
	4-The Sensor is set and ready to detect 	4-The Sensor is set and ready to detect 

Detection curves

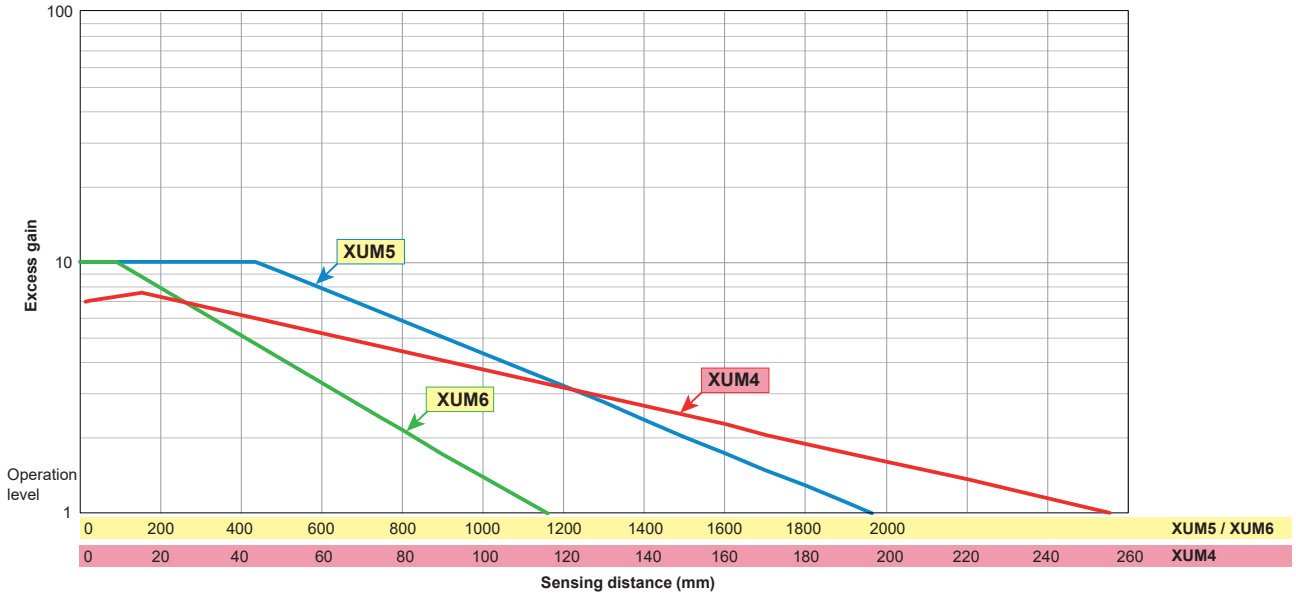
XUM4: Diffuse reflective (0,25 m) - Object size / Sensing distance
XUM5: Diffuse reflective (1,9 m) - Object size / Sensing distance
XUM6: Diffuse reflective (1,1 m) - Object size / Sensing distance



XUM4: Diffuse reflective (0,25 m) - Lateral displacement
XUM5: Diffuse reflective (1,9 m) - Lateral displacement
XUM6: Diffuse reflective (1,1 m) - Lateral displacement



XUM4: Diffuse reflective (0,25 m) - Excess gain
XUM5: Diffuse reflective (1,9 m) - Excess gain
XUM6: Diffuse reflective (1,1 m) - Excess gain



Characteristics

1 mm = *0.0397 in.*

Certification	CE - UKCA - cULus
Sensing Range (using a white paper 200 x 200) Max. sensing distance (excess gain=1)	**XUM5**: 1,9 m - excess gain =1 1,5 m - excess gain=2 **XUM6**: 1,1 m - excess gain =1 0,8 m - excess gain=2 **XUM4**: 0,25 m - excess gain =1 0,17 m - excess gain=2
Color of detection light beam	**XUM6**: Red - **XUM5 / XUM4**: Infrared
Blind zone	**XUM4 / XUM5 / XUM6**: 10 mm
Hysteresis	2% < H < 20% (at most sensitivity, white paper)
Sensing distance setting	Potentiometer 1 turn (~ 240 degres)
Light-On/Dark-On selection	Switch (~ 120 degres)
Output type	PNP or NPN
ON Voltage drop	2 V max. (30 Vdc 100 mA) / 1,2 V max. (30 Vdc 10mA)
Current consumption	< 20 mA max.
Switching capacity	100 mA
Response time	0,5 ms max.
Recovery time	0,5 ms max.
Switching frequency	1000 Hz
Electrostatic discharge immunity	4 kV (Contact), 8 kV (Air) conforming to **IEC 61000-4-2**
Electromagnetic field immunity	10 V/m conforming to **IEC 61000-4-3**
Fast transients immunity	Burst 5 kHz - 2kV conforming to **IEC 61000-4-4**
Conducted disturbances immunity	10 V conforming to **IEC 61000-4-6**
Emissivity Radiated disturbances	Class A conforming to **EN 55011 / CISPR 11**
Power Voltage	Rated operational voltage: 12...24 Vdc Ripple p-p 10% maximum Operating range: 10...30 Vdc (including ripple)
Product protection	Power supply : Reverse polarity protection Output: Short circuit protection Reverse polarity protection
Light Immunity	Operating atmosphere; Sunlight 40 kLx max. Incandescent light 10 kLx max.
Ambient Temperature	Operating : - 30...+55 °C *(-22...+131 °F)*, Storage : - 40...+70 °C *(-40...+158 °F)*
Ambient Humidity	Operating : 35...95% RH, Storage : 35...95% RH
Degree of protection	IP65, IP67 conforming to **EN/IEC 60529**
Vibration resistance	Frequency range: 10 Hz to 500 Hz Acceleration: 9 g_n
Shock resistance	Peak acceleration: 100 g_n Duration of the pulse: 11 ms
Material	Housing: PBT, Lens: PMMA, Operation cover: PC, Adjustment potentiometer: PBT

Manufacturer :
TMSS France
Tour Eqho, 2 avenue Gambetta
92400 Courbevoie – France

UK Representative :
YAGEO TMSS UK LIMITED
2 North Park Road
Harrogate, HG1 5PA, United Kingdom