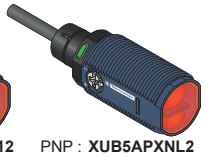
XUB5A●●● / XUB6A●●● / XUB5B●●● / XUB6B●●●

www.telemecaniquesensors.com

M18 Photo-electric sensors - Straight or 90° angled version



PNP : **XUB5APXNM12**
XUB6APXNM12
NPN : **XUB5ANXNM12**
XUB6ANXNM12
IO-Link : **XUB5APYNM12**
XUB6APYNM12



PNP : **XUB5APXNL2**
XUB6APXNL2
NPN : **XUB5ANXNL2**
XUB6ANXNL2



PNP : **XUB6APXWM12**
NPN : **XUB6ANXWM12**
IO-Link : **XUB6APYWM12**



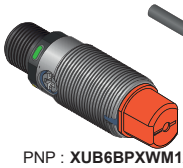
PNP : **XUB6APXWL2**
NPN : **XUB6ANXWL2**



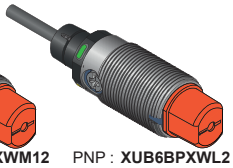
PNP : **XUB5BPXNM12**
XUB6BPXNM12
NPN : **XUB5BNXNM12**
XUB6BNXNM12
IO-Link : **XUB5BPYNM12**
XUB6BPYNM12



PNP : **XUB5BPXNL2**
XUB6BPXNL2
NPN : **XUB5BNXNL2**
XUB6BNXNL2



PNP : **XUB6BPXWM12**
NPN : **XUB6BNXWM12**
IO-Link : **XUB6BPYWM12**



PNP : **XUB6BPXWL2**
NPN : **XUB6BNXWL2**

To choose your sensor, scan the 2D code on the right

Diffuse

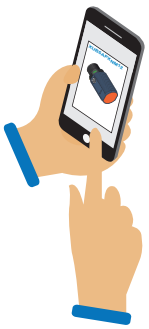




Model	Sensing distance **D**
XUB5●N●	1m / *3.28 ft*
XUB6●N●	0,6 m / *1.97 ft*
XUB6●W●	0,5 m / *1.64 ft*

Package Content





http://qr.tesensors.com/XU0022

Scan the code to access this Instruction Sheet in different languages and all the product information 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.

ECOLAB IO-Link CE UKCA cULus

⚠⚠ 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.

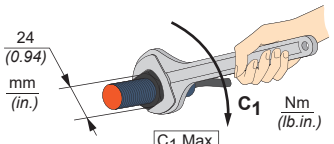
⚠ WARNING

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 XU 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 XU 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.

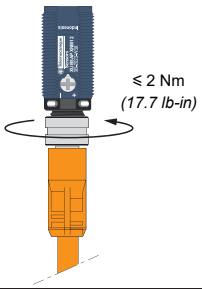
Mounting and tightening torques



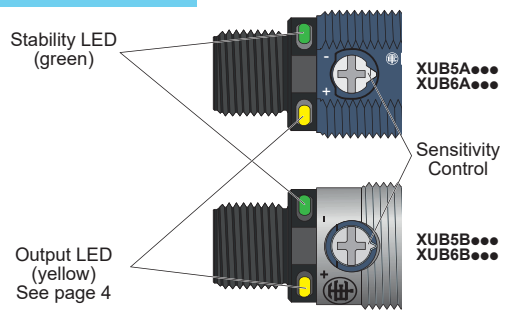
	C_1 Max.
XUB5A●●● **XUB6A●●●**	1 *(8.85)*
XUB5B●●● **XUB6B●●●**	2 *(17.7)*

⚠ CAUTION

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



LEDs and settings



Wiring diagrams

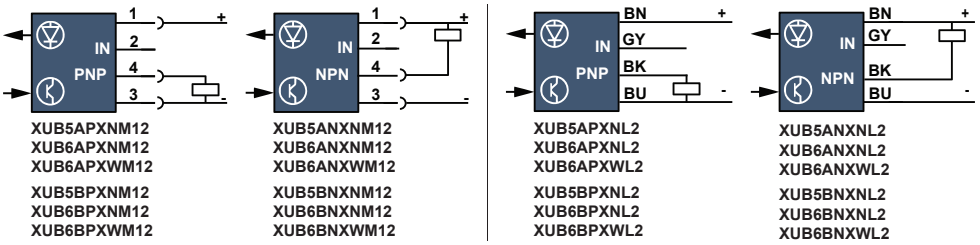
M12 Connector - 4 pins



Control input IN
(Pin 2 or grey wire):
(+) = NO
(-) = NC
Open = NO

2 m Cable - 4 wires





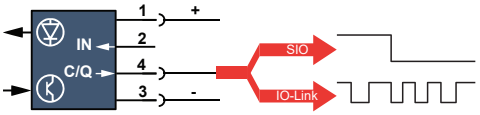
XUB5APXNM12
XUB6APXNM12
XUB6APXWM12
XUB5BPXNM12
XUB6BPXNM12
XUB6BPXWM12

XUB5ANXNM12
XUB6ANXNM12
XUB6ANXWM12
XUB5BNXNM12
XUB6BNXNM12
XUB6BNXWM12

XUB5APXNL2
XUB6APXNL2
XUB6APXWL2
XUB5BPXNL2
XUB6BPXNL2
XUB6BPXWL2

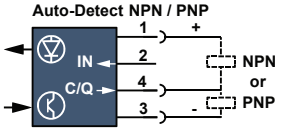
XUB5ANXNL2
XUB6ANXNL2
XUB6ANXWL2
XUB5BNXNL2
XUB6BNXNL2
XUB6BNXWL2

IO-Link



Pin	Signal	Definition
1	+	+ 24 Vdc
2	IN	+ = NO - = NC Open = NO
3	-	0 Vdc
4	Q	Switching signal (SIO)
	C	Communication IO-Link

Auto-Detect NPN / PNP



XUB5APYNM12
XUB6APYNM12
XUB6APYWM12
XUB5BPYNM12
XUB6BPYNM12
XUB6BPYWM12

⚠ CAUTION

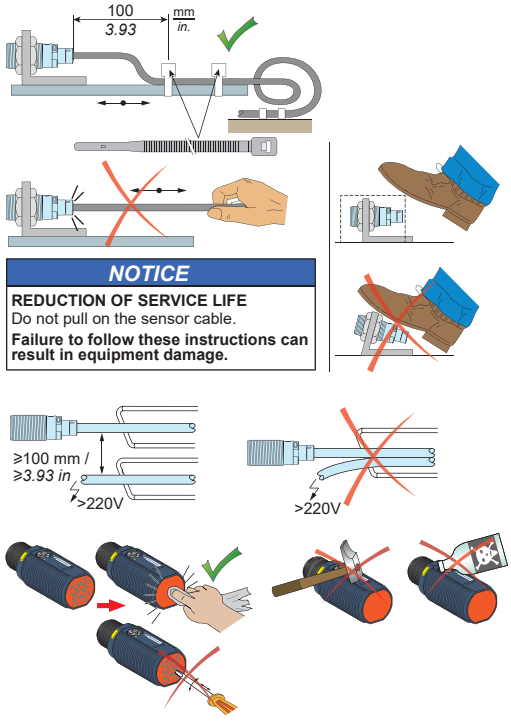
INOPERABLE EQUIPMENT DUE TO CYBER ATTACK ON IO-LINK

- Apply external cybersecurity protection on IO-Link Master device.
- Download IO-Link Description files only from these web severs: https://telemecaniquesensors.com/global/en/support/iolink or https://ioddfinder.io-link.com/#/

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

IO-Link data tables and IODD files are online : Scan the 2D code, above

Mounting, wiring and maintenance precautions



NOTICE

REDUCTION OF SERVICE LIFE
Do not pull on the sensor cable.
Failure to follow these instructions can result in equipment damage.

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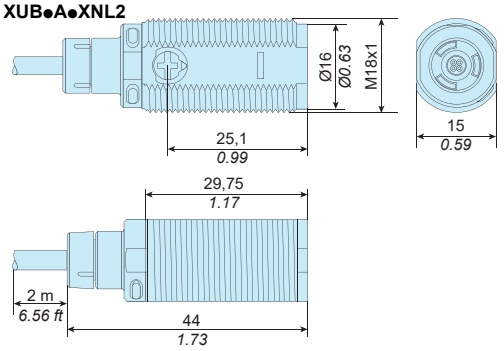
Telemecanique Sensors

Dimensions

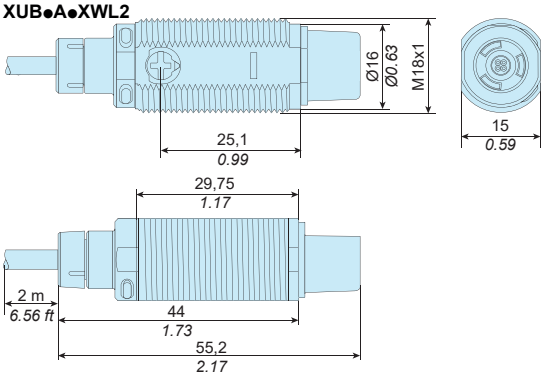
mm / in.

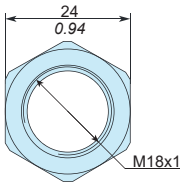
1 mm = *0.0394 in.*

XUB●A●XNL2

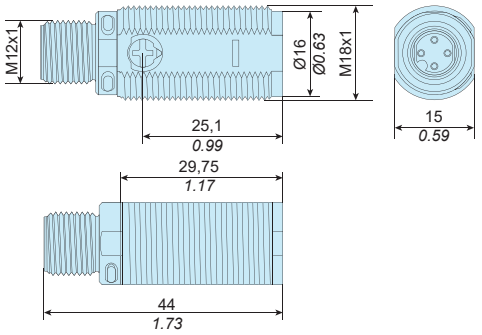


XUB●A●XWL2

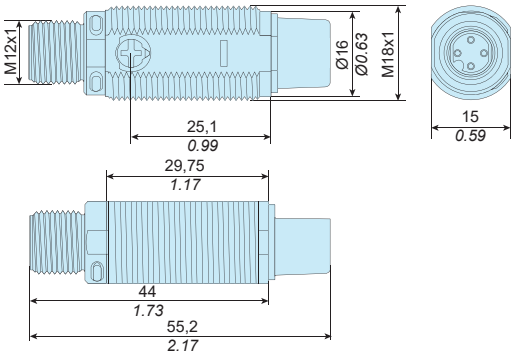




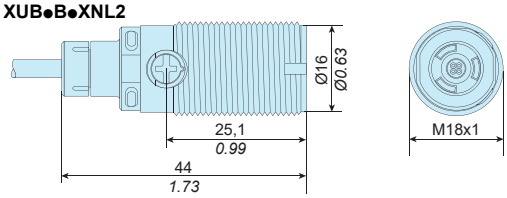
XUB●A●XNM12 / XUB●A●YNM12



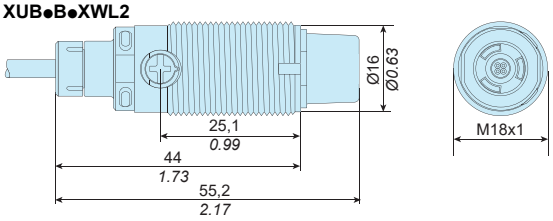
XUB●A●XWM12 / XUB●A●YWM12



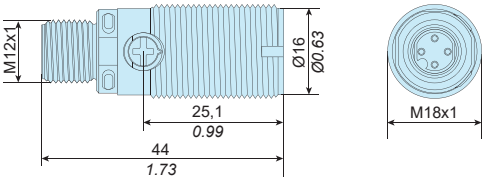
XUB●B●XNL2



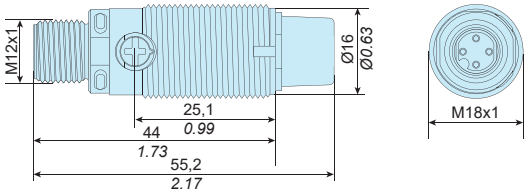
XUB●B●XWL2



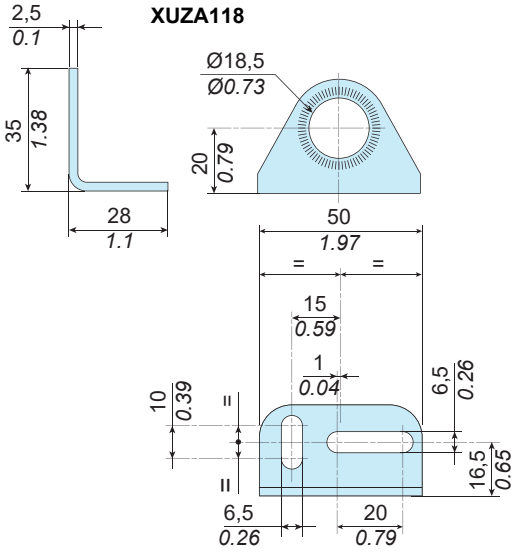
XUB●B●XNM12 / XUB●B●YNM12



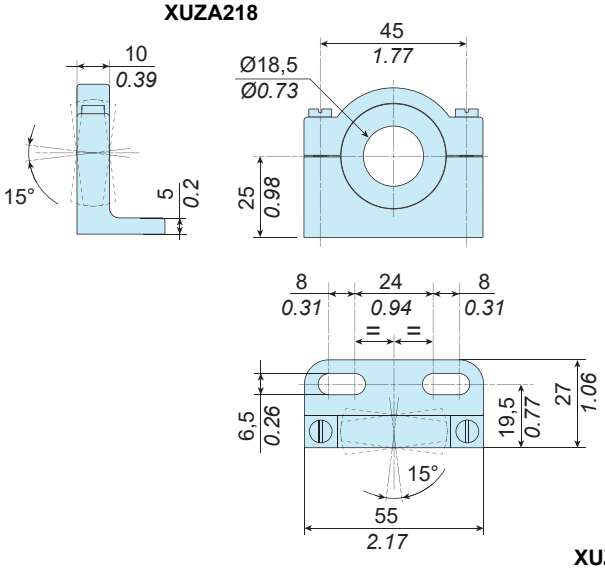
XUB●B●XWM12 / XUB●B●YWM12



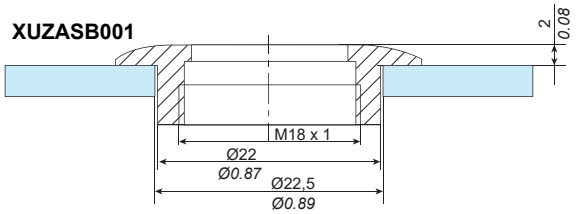
XUZA118



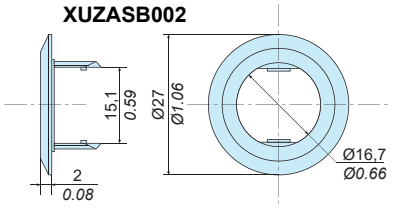
XUZA218



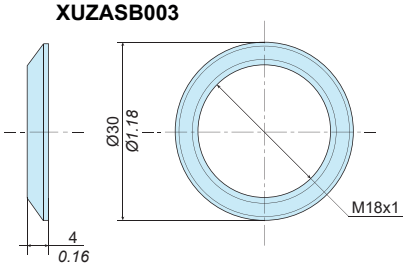
XUZASB001



XUZASB002



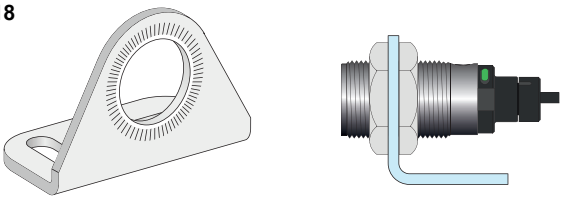
XUZASB003



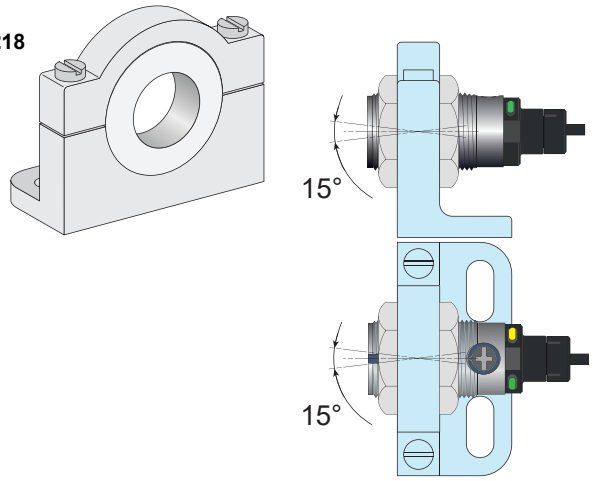
Accessories

Mounting brackets

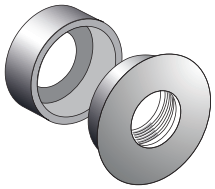
XUZA118



XUZA218



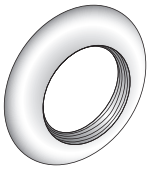
XUZASB001



XUZASB002



XUZASB003



(See Instruction Sheet: EAV2211101)

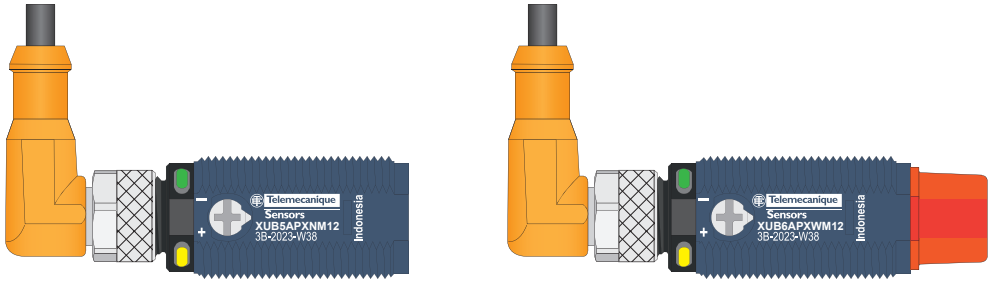
Pre-wired connectors examples

PVC cable for general use
PUR cable for severe industrial environments

M12, 4 pins					M12 - M12, 4 pins				
									
Cable length	**PVC**	**PUR**	**PVC**	**PUR**	**Jumper length**	**PVC**	**PUR**	**PVC**	**PUR**
2 m / 6.56 ft.	XZCPV1141L2	XZCP1141L2	XZCPV1241L2	XZCP1241L2	1 m / *3.28 ft.*	XZCRV1511041C1	XZCR1511041C1	XZCRV1512041C1	XZCR1512041C1

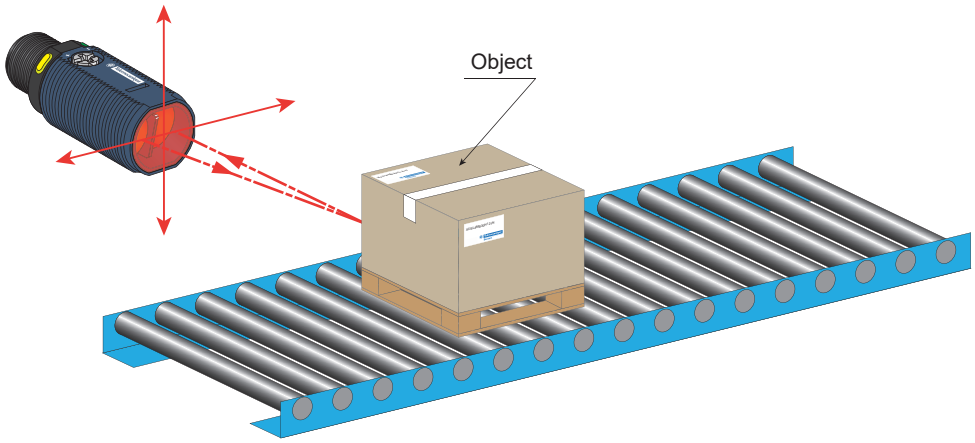
Other cable references are available in our online catalog. Please visit our website at: www.telemecaniquesensors.com
Or you can ask us through the customer support page on your local website.

Cable direction with angled connector

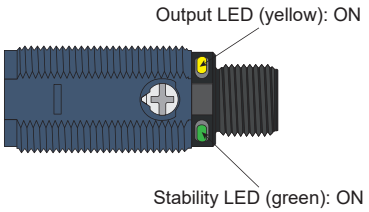


Sensors position adjustment

- Translate the sensor or object, 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.



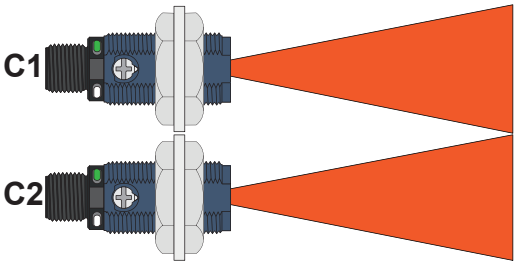
LED status with NO output function



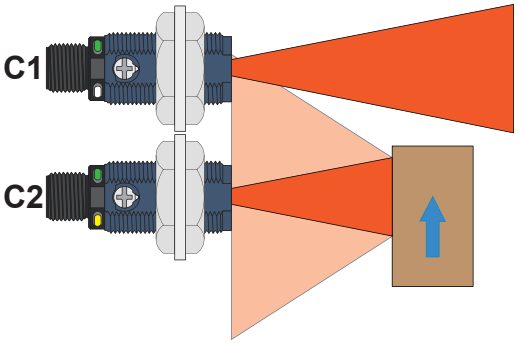
Anti-interference for side by side mounting (Between same detection mode)

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

Note: For interference video, scan the 2D code in the first page



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.

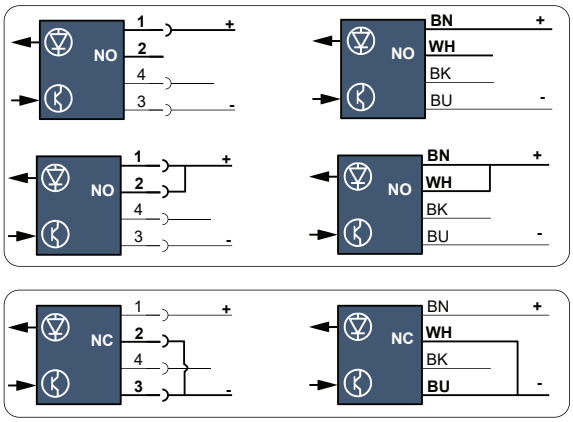
Diagnostic LEDs

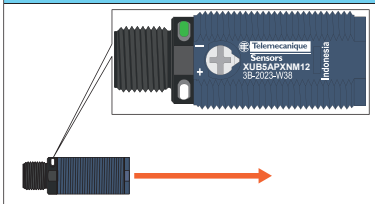
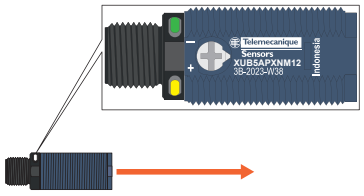
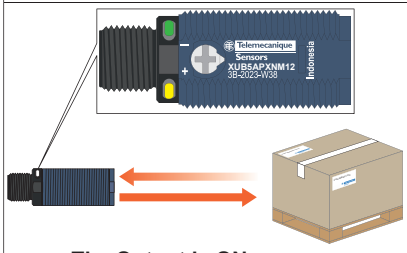
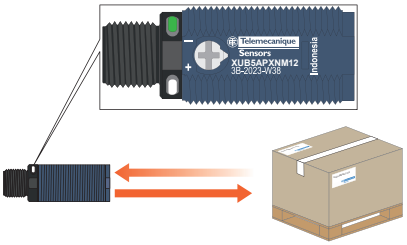
[1]: Only for IO-Link version



	LED		Description	Corrective Action
Output LED (yellow)	Blinking[1]	2 Hz	Communication issue detected	Perform a Power Off/Power On cycle. The sensor restarts with factory settings.
		3 Hz	Output short-circuit Output overload Undervoltage Overtemperature	Remove the short circuit Verify that the load current is < 100 mA Verify that the sensor power voltage is 12...24 Vdc Reduce ambient temperature of the sensor or replace the sensor.
	ON		Sensor output is ON	-
	OFF		Sensor output is OFF	
Stability LED (green)	OFF		Inconsistent quality of detection	Check the sensor sensitivity adjustment (See next page).
	Dim			
	Bright		Consistent quality of detection	-

Output mode setting: NO or NC (NO by default)

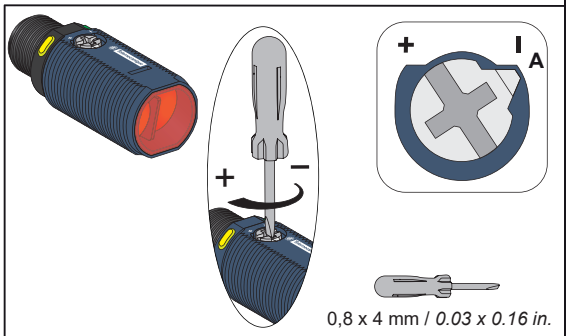
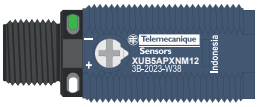
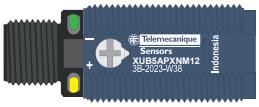
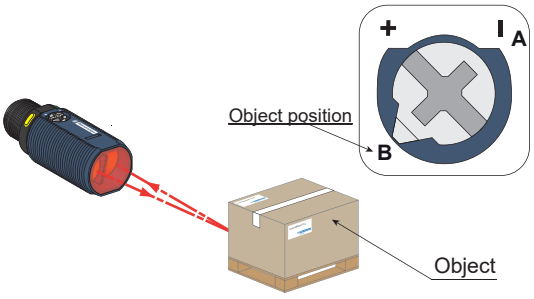
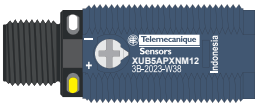
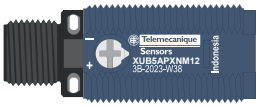
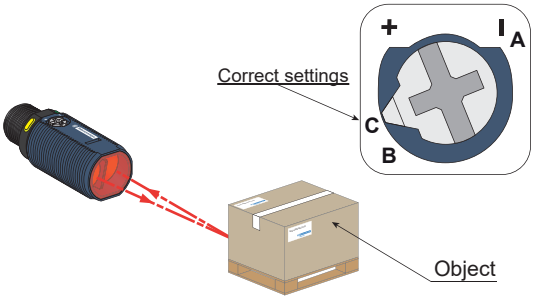
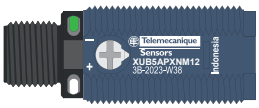
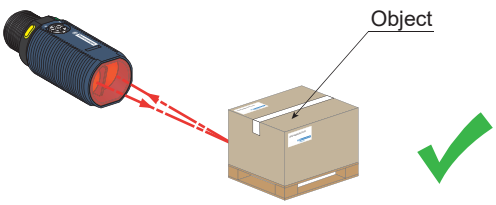
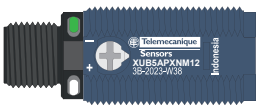


Light-On Normally Open (NO)	Dark-On Normally Closed (NC)
	
The Output is OFF	The Output is ON
	
The Output is ON	The Output is OFF

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).

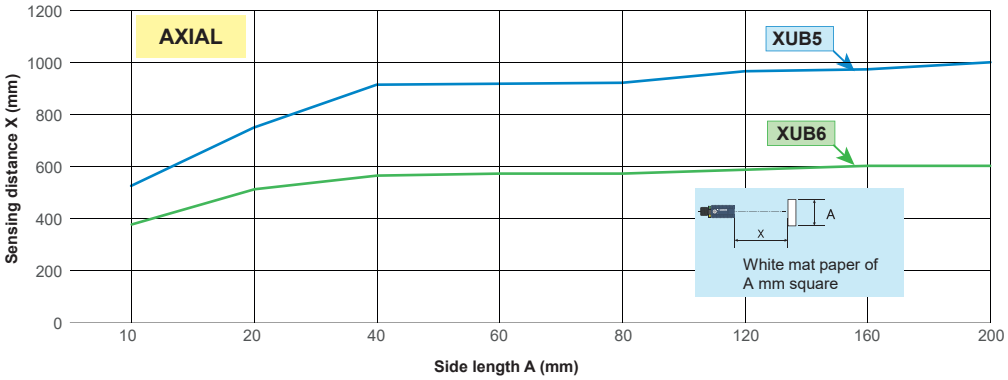
Note: How to install in video, scan the 2D code on the first page

	Light-On Normally Open (NO)	Dark-On Normally Closed (NC)
	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 minimum 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 

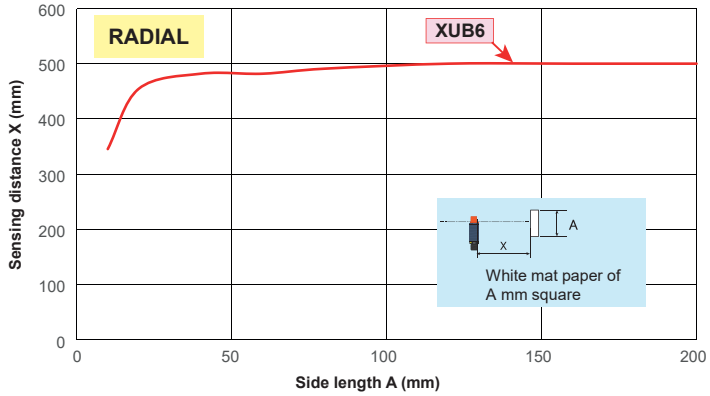
Detection curves

1 mm = *0.0394 in.*

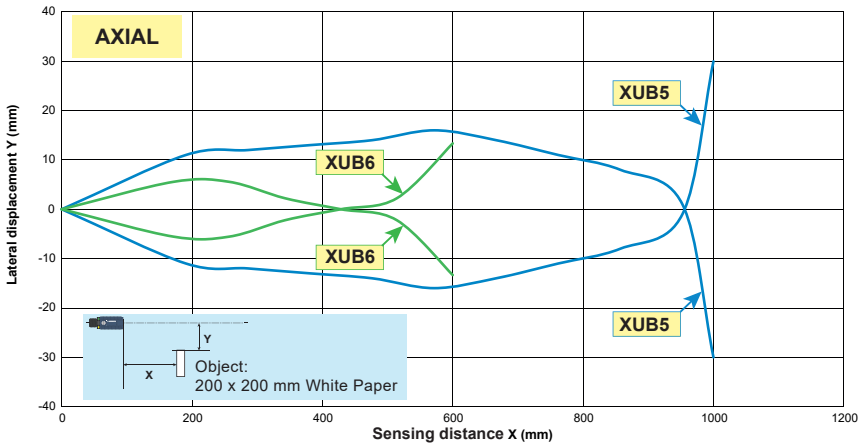
XUB5: Axial diffuse reflective (1 m) - Minimum object size / Sensing distance
XUB6: Axial diffuse reflective (0,6 m) - Minimum object size / Sensing distance



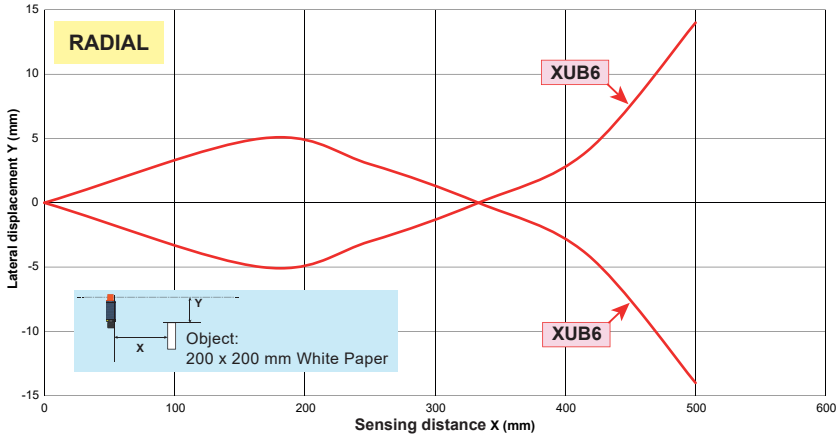
XUB6: Radial diffuse reflective (0,5 m) - Minimum object size / Sensing distance



XUB5: Axial diffuse reflective (1 m) - Lateral displacement
XUB6: Axial diffuse reflective (0,6 m) - Lateral displacement



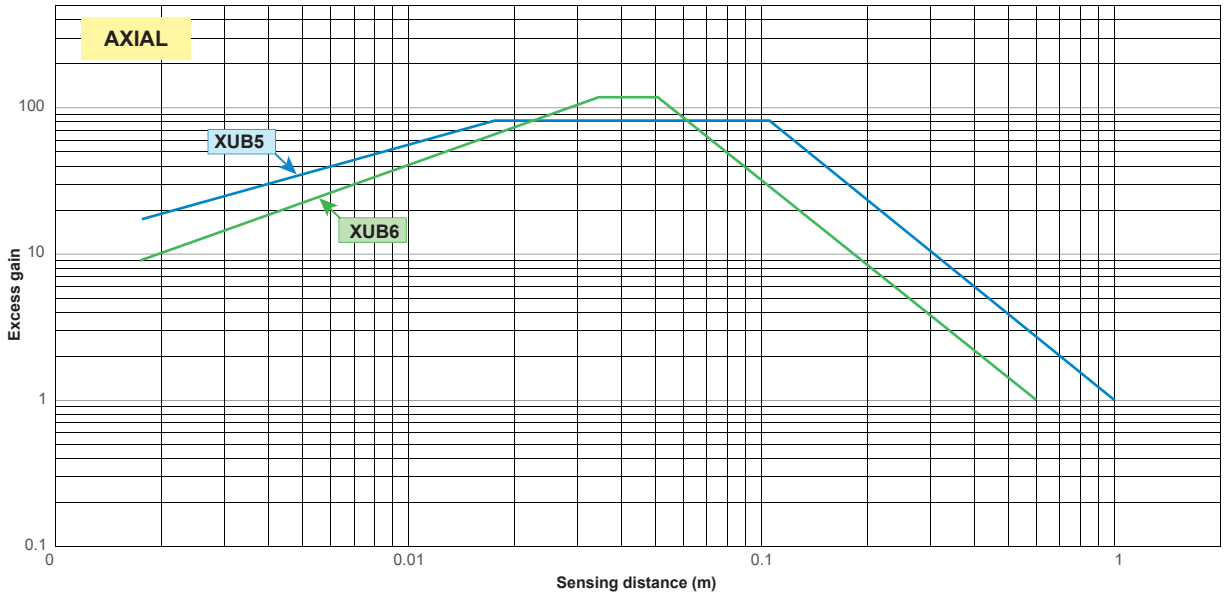
XUB6: Radial diffuse reflective (0,5 m) - Lateral displacement



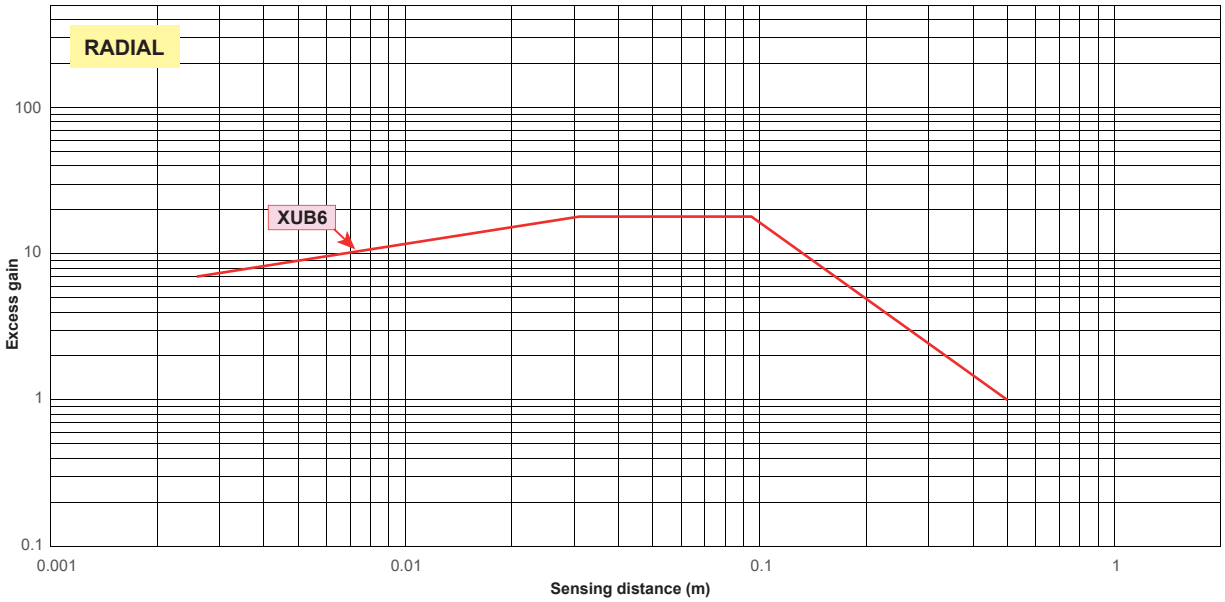
Detection curves

1 mm = *0.0394 in.*

XUB5: Axial diffuse reflective (1 m) - Excess gain
XUB6: Axial diffuse reflective (0,6 m) - Excess gain



XUB6: Radial diffuse reflective (0,5 m) - Excess gain



Characteristics

1 mm = *0.0394 in.*

Certification	CE - UKCA - cULus
Sensing Range (using a white paper 200 x 200) Max. sensing distance (excess gain=1)	**Axial:** **XUB5** = 1 m - excess gain =1 **XUB5** = 0.7 m - excess gain =2 **XUB6** = 0.6 m - excess gain =1 **XUB6** = 0.42 m - excess gain =2 **Radial:** **XUB6** = 0.5 m - excess gain =1 **XUB6** = 0.35 m - excess gain =2
Color of detection light beam	**XUB5 / XUB6**: Red
Blind zone (white object + potentiometer max.)	**XUB5 / XUB6**: 0 mm
Hysteresis	2% < H < 20% (at max sensitivity, white paper)
Sensing distance setting	Potentiometer 1 turn (~ 220 degres)
Output type	PNP / NPN or Autodetect PNP / NPN (with IO-Link)
ON Voltage drop	2 V max. (30 Vdc 100 mA)
Current consumption	< 20 mA / IO-Link: <30mA
Switching capacity	100 mA
First-up delay	< 100ms / IO-Link: < 300ms
Response time	0.5 ms max.
Recovery time	0.5 ms max.
Switching frequency	1000 Hz (In SIO Mode for IO-Link)
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 2kV - 5 kHz conforming to **IEC 61000-4-4**
Conducted disturbances immunity	10 V conforming to **IEC 61000-4-6**
Radiated disturbances emissions	Class A conforming to **EN 55011 / CISPR 11**
Power Voltage	Rated operational voltage: 12...24 Vdc Operating range: 10...30 Vdc (including ripple p-p 10% maximum) III
Product protection	Power supply : Reverse polarity protection Output: Short circuit protection Reverse polarity protection
Light Immunity	Sunlight 40 kLx max. Incandescent light 10 kLx max.
Artificial optical radiation	Class 0 (Risk exempt) conforming to **IEC 62471**
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 **IEC 60529** - **IP69K** conforming to **DIN 40050-9** (only for M12 connector version)
Vibration resistance	Frequency range: 10 Hz to 55 Hz Acceleration: 7 g_n
Shock resistance	Peak acceleration: 30 g_n Duration of the pulse: 11 ms
Material	Housing: PBT/PC or Brass, Transparent Cover: PMMA, Back cap: MABS, Potentiometer screw: PBT Cable: PVC (for cable version) Plug (cable version): PA66

Manufacturer :
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92400 Courbevoie
France

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