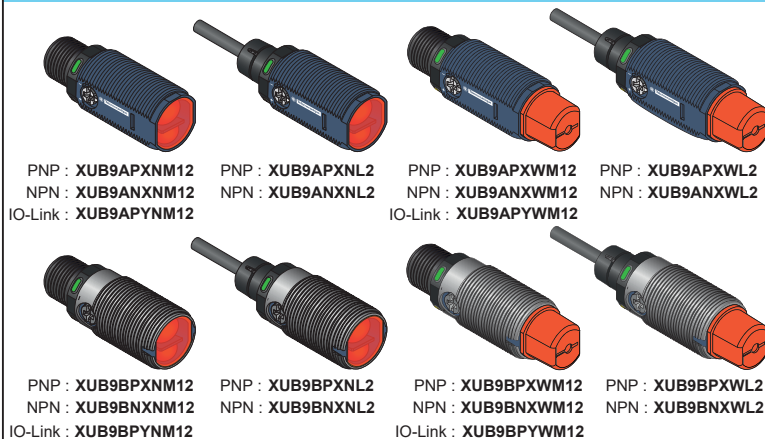
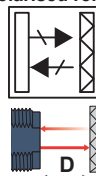


M18 Photo-electric sensors - Straight or 90° angled version



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

Polarised reflex



Model	D
XUB9 Axial	7 m / 23 ft
XUB9 Radial	5,5 m / 18 ft

Package Content (Example)



<http://qr.tesensors.com/XU0022>

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

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.

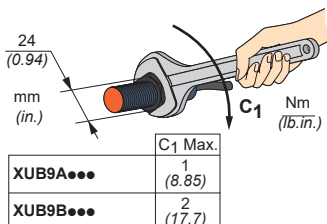
⚠ WARNING

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 XUB 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 XUB 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.).

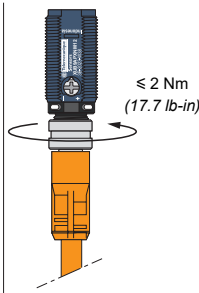
Failure to follow these instructions can result in death, serious injury, or equipment damage.

Mounting and tightening torques

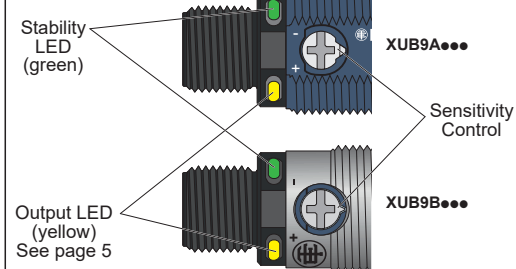


⚠ CAUTION

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



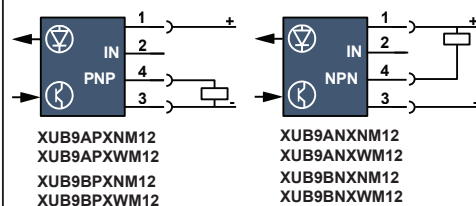
Wiring diagrams

M12 Connector - 4 pins

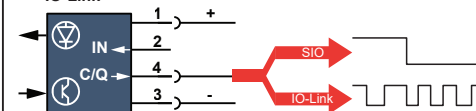


Control input IN
 (Pin 2 or grey wire):
 (+) = NO
 (-) = NC
 Open = NO

2 m Cable - 4 wires



IO-Link



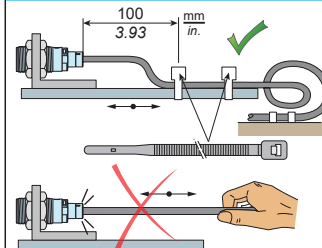
Pin	Signal	Definition
1	+	+ 24 Vdc
2	IN	+ = NO - = NC Open = NO
3	-	0 Vdc
4	Q	Switching signal (SIO)
	C	Communication IO-Link

⚠ 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 servers:
<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.

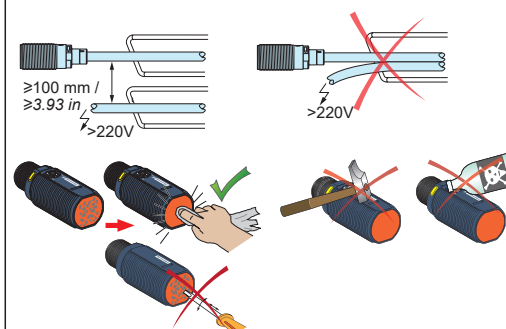
IO-Link data tables and IODD files are online : Scan the 2D code, above

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.

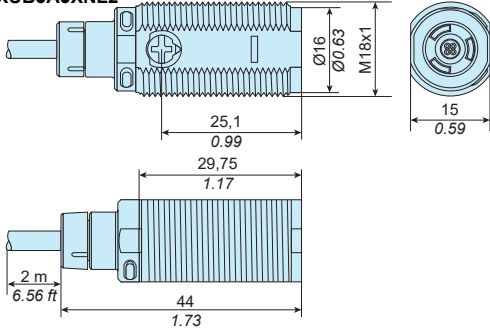


Dimensions

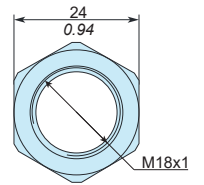
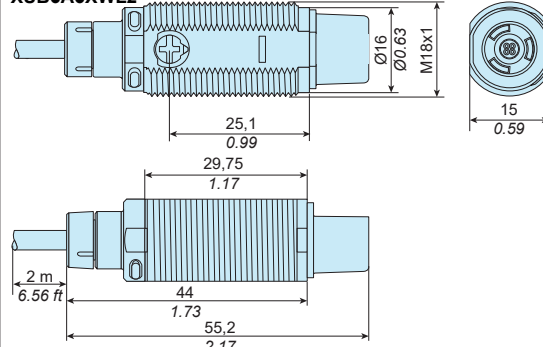
mm
in.

1 mm = 0.0393 in.

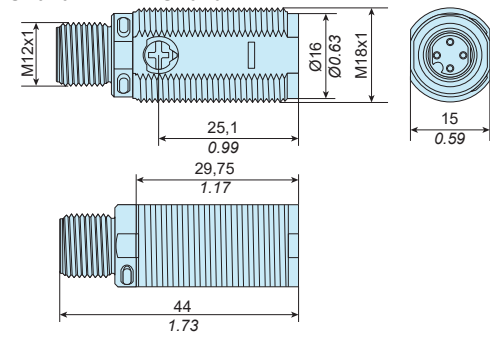
XUB●A●XNL2



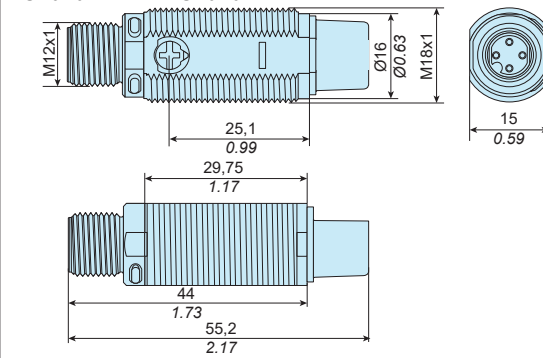
XUB●A●XWL2



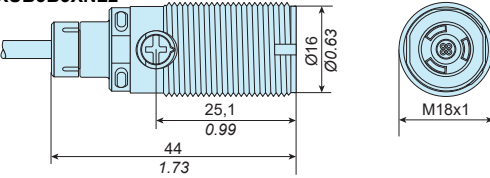
XUB●A●XNM12 / XUB●A●YNM12



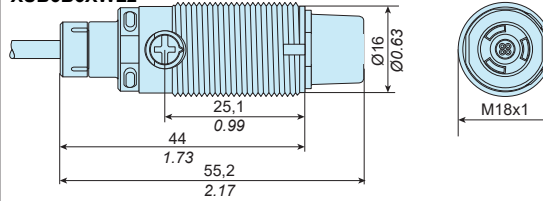
XUB●A●XWM12 / XUB●A●YWM12



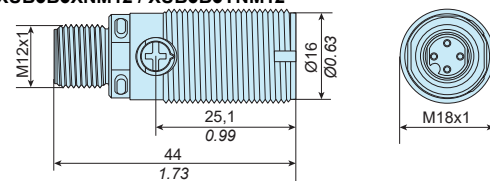
XUB●B●XNL2



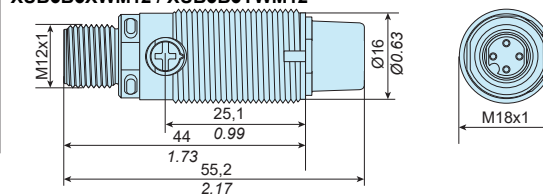
XUB●B●XWL2



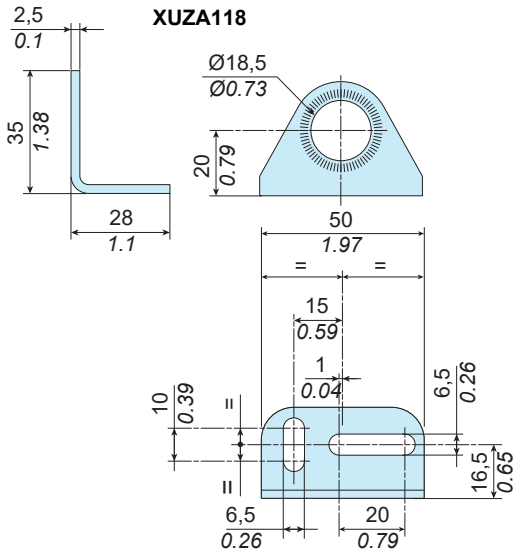
XUB●B●XNM12 / XUB●B●YNM12



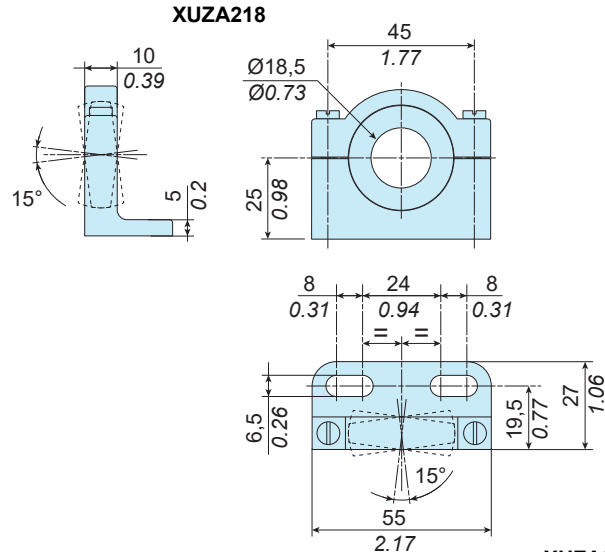
XUB●B●XWM12 / XUB●B●YWM12



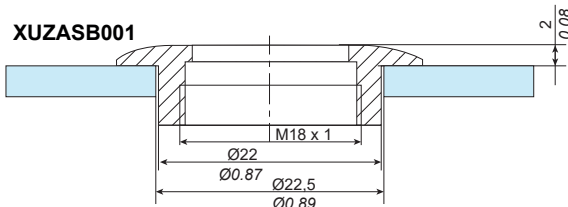
XUZA118



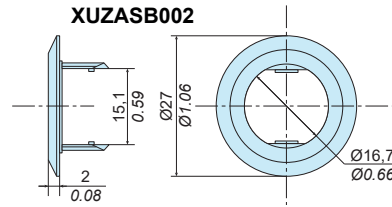
XUZA218



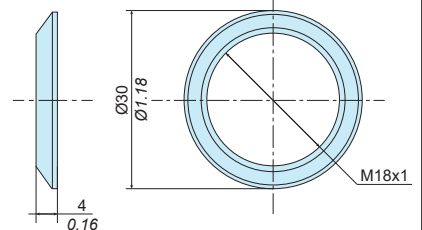
XUZASB001



XUZASB002



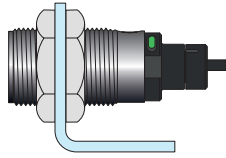
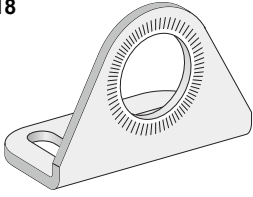
XUZASB003



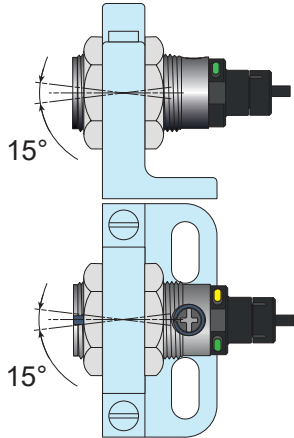
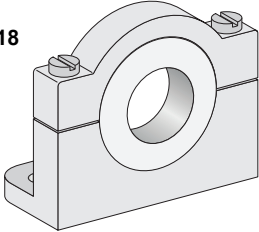
Accessories

Mounting brackets (to order separately)

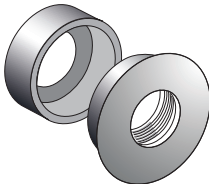
XUZA118



XUZA218



XUZASB001



(See Instruction Sheet: EAV2211101)

XUZASB002

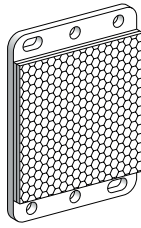


XUZASB003

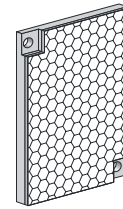


Reflector examples (to order separately)

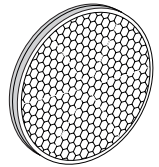
XUZC50



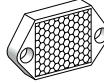
XUZC60S11



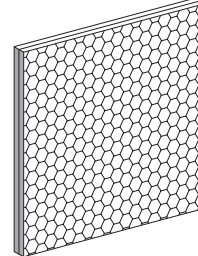
XUZC39



XUZC24



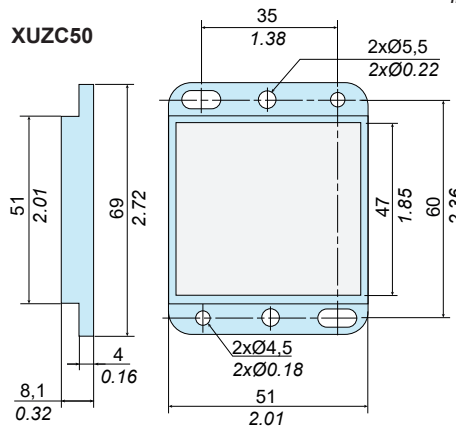
XUZC100



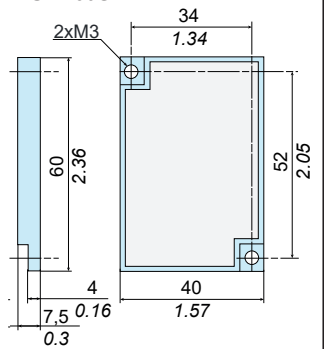
Reflectors Dimensions

mm
in.

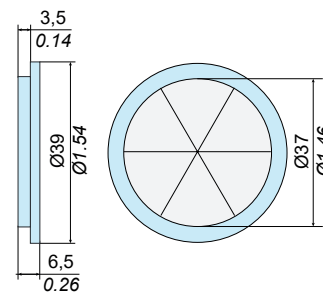
XUZC50



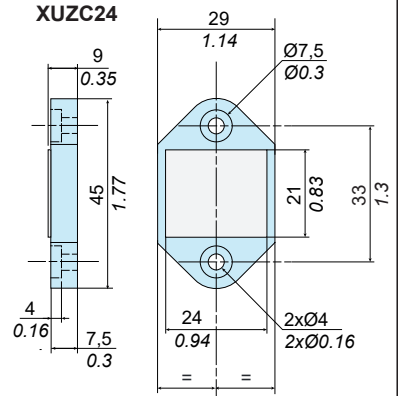
XUZC60S11



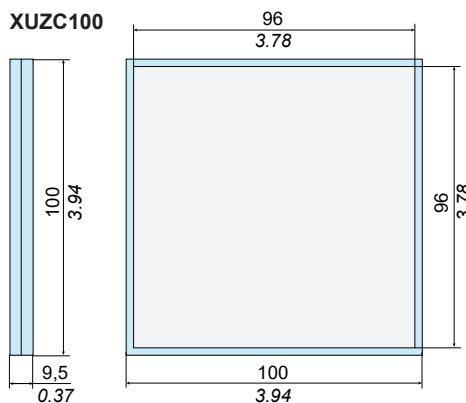
XUZC39

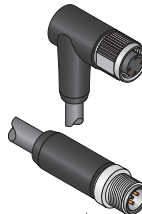


XUZC24



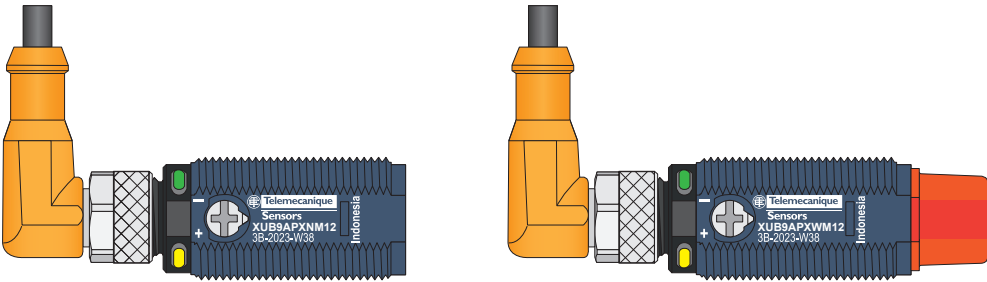
XUZC100



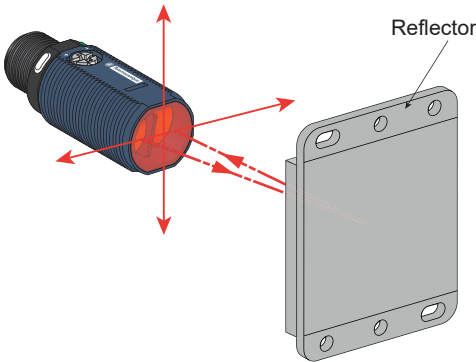
Pre-Wired connectors (examples)				PVC cable for general use PUR cable for severe industrial environments							
M12, 4 pins					M12 - M12, 4 pins						
	Cable length	PVC	PUR	PVC		PUR	Jumper length	PVC	PUR	PVC	PUR
	2 m / 6.56 ft.	XZCPV1141L2	XZCP1141L2	XZCPV1241L2		XZCP1241L2	1 m / 3.28 ft.	XZCRV1511041C1	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.

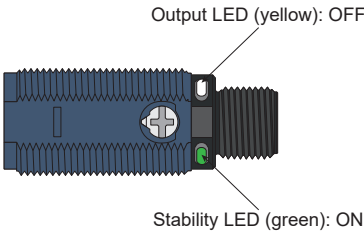
Cable direction with angled connector



Sensor position adjustment

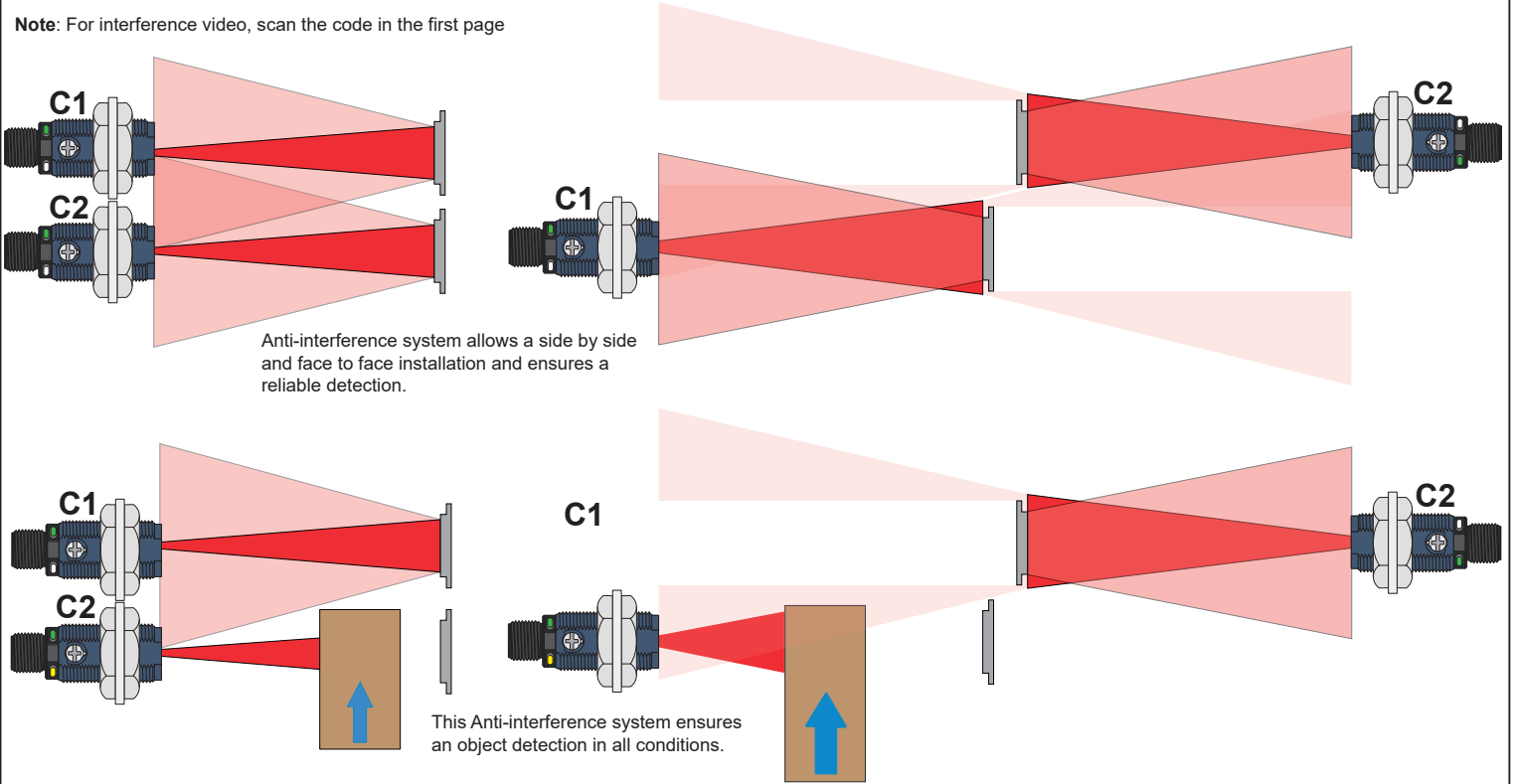


- Translate the sensor or reflector, up/down and left/right. When the setting is optimal, the Stability LED (green) is lit.
 - Check sensor operation with the object and adjust the sensor, if necessary.
- LED status with NO output function**



Anti-interference for side by side and face to face (only for reflex model) mounting

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



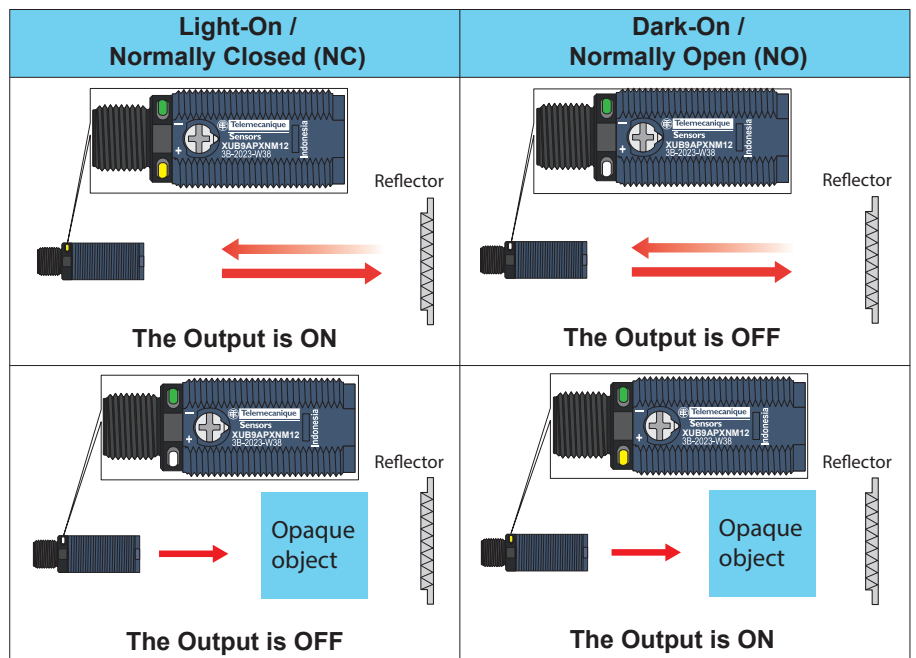
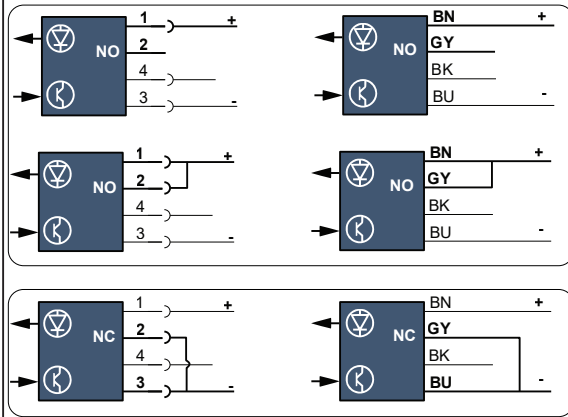
Diagnostic LEDs

¹: Only for IO-Link version



	LED	Description	Corrective Action
Output LED (yellow)	2 Hz	Communication issue detected	Perform a Power Off/Power On cycle. The sensor restarts with factory settings.
	Blinking ¹ 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	-
	OFF	Sensor output is OFF	-
Stability LED (green)	Dim	Inconsistent quality of detection	Check the sensor sensitivity adjustment (See next page).
	Bright	Consistent quality of detection	-

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



Sensor sensitivity adjustment

For accurate detection, follow the configuration below. (eg. Reflective objects, with holes or small size to obstruct the reflection of the light beam).

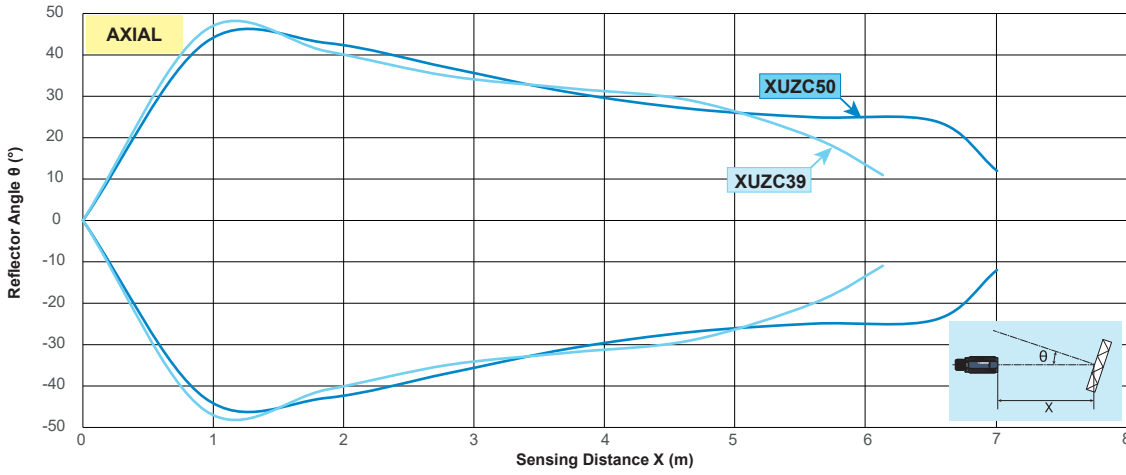
Note: How to install in video, scan the code on the first page

	Light-On / Normally Closed (NC)	Dark-On / Normally Open (NO)
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 minimum position (resulting to point A).
Reflector	2-Put the reflector in front of the sensor. Turn the potentiometer clockwise until the Output LED (yellow) switches on: the reflector is detected (resulting to point B). Continue to turn the potentiometer clockwise until the Stability LED (green) switches on (resulting to point C).	2-Put the reflector in front of the sensor. Turn the potentiometer clockwise until the Output LED (yellow) switches off: the reflector is detected (resulting to point B). Continue to turn the potentiometer clockwise until the Stability LED (green) switches on (resulting to point C).
	3-Put the object between the sensor and the reflector. Make sure the Output LED (yellow) switches off and the Stability LED (green) is on. This ensures a good stability of detection. The Sensor is set and ready to detect.	3-Put the object between the sensor and the reflector. Make sure the Output LED (yellow) switches on & the Stability LED (green) is on. This ensures a good stability of detection. The Sensor is set and ready to detect.

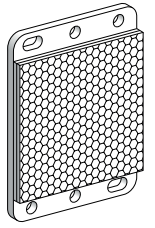
During the set up process, the output is acting as the yellow LED

Detection curves

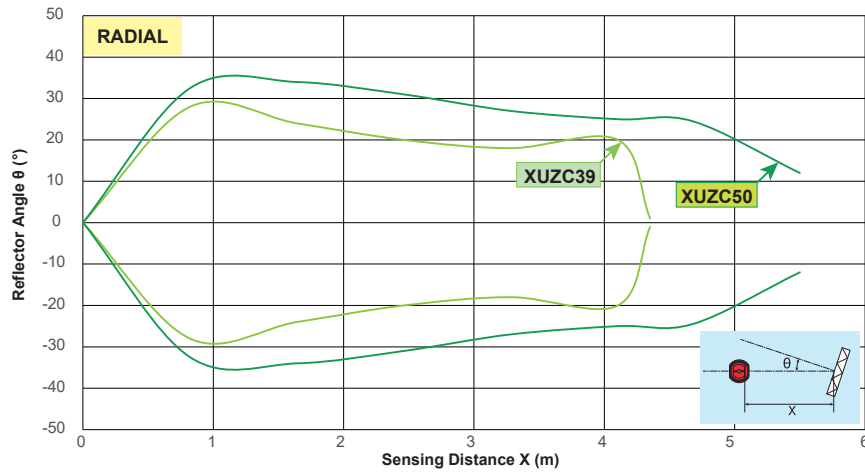
Angle - Polarized Retro-reflective XUB9



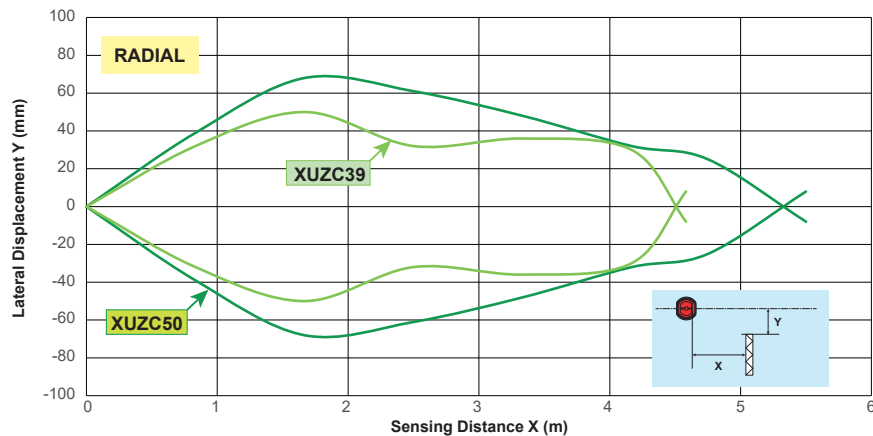
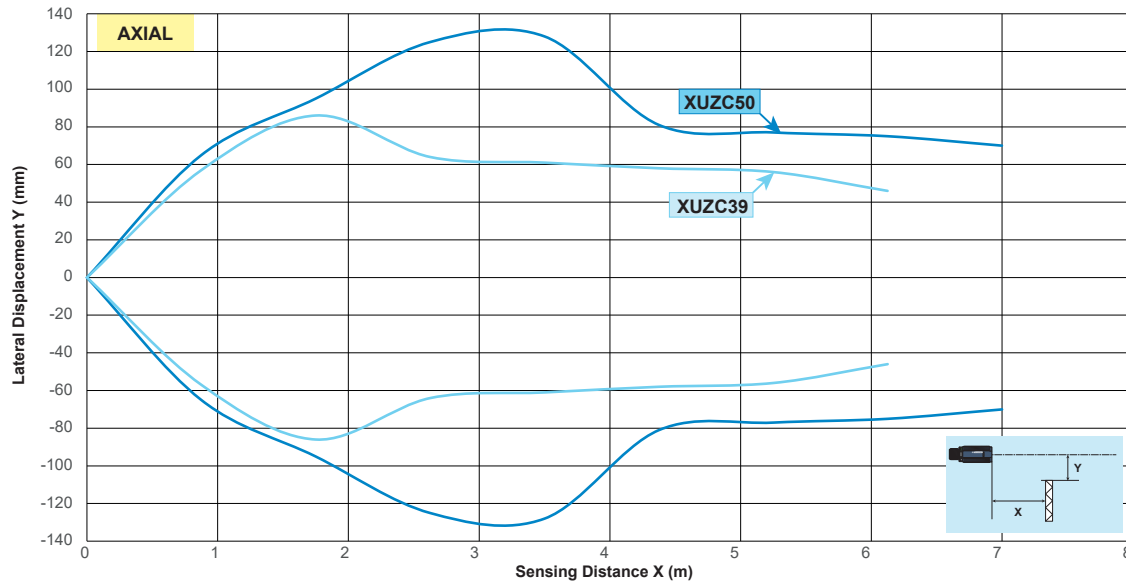
XUZC50



XUZC39

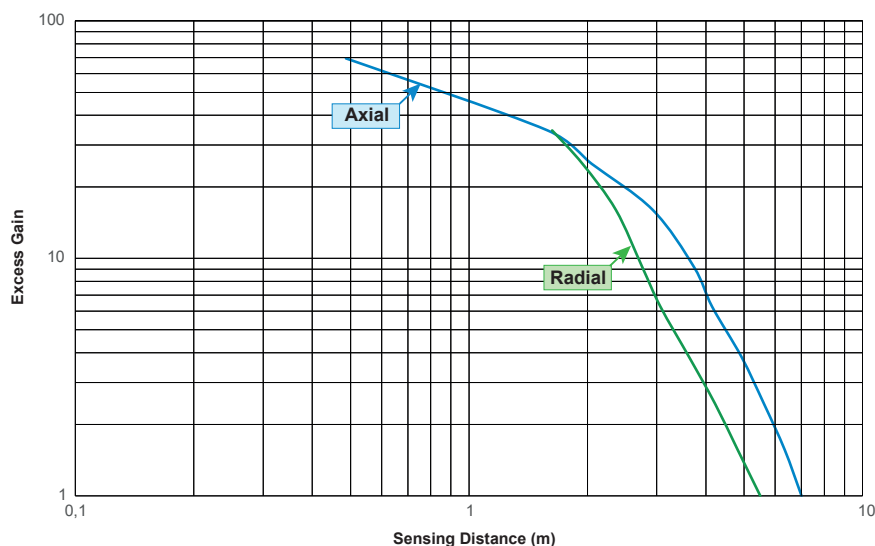


Lateral Displacement - Polarized Retro-reflective XUB9



Detection curves

Excess Gain - Polarized Retro-reflective XUB9



Characteristics

1 mm = 0.0393 in.

Certification	CE - UKCA - cULus
Sensing Range (using a 50 mm x 50 mm reflector XUZC50) Excess gain = 1: Maximum sensing distance	XUB9 axial: Excess gain 1= 7m Excess gain 2= 5m XUB9 radial: Excess gain 1= 5,5m Excess gain 2= 4m
Color of detection light beam	Red
Blind zone	0 mm using a 50 mm x 50 mm reflector XUZC50 (for the reflector - no blind zone for objects)
Sensing distance setting	Potentiometer 1 turn (~ 220 degrees)
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	< 100 ms / IO-Link < 300 ms
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 2 kV - 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) 
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 :
TMSS France
Tour Egho - 2 avenue Gambetta
92400 Courbevoie
France



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