

Photo-electric sensors - Miniature design



⚠ 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.

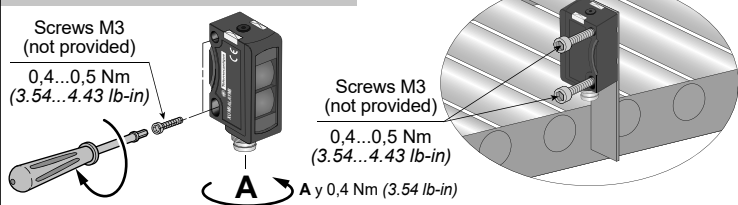
Failure to follow these instructions will result in death or serious injury.

⚠ 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 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



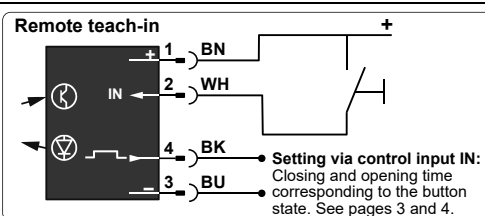
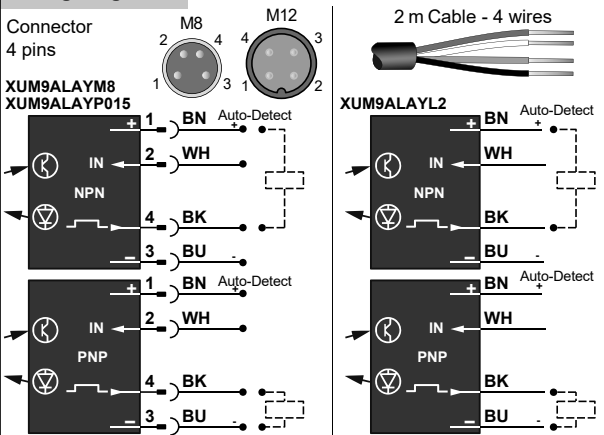
⚠ CAUTION

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.

Wiring diagrams



⚠ CAUTION

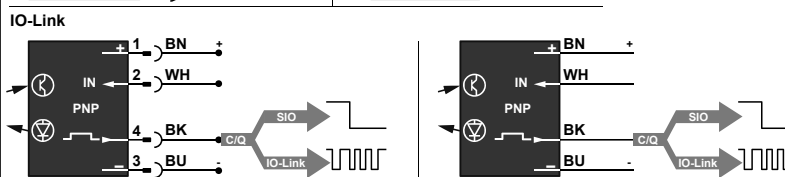
INOPERABLE EQUIPMENT DUE TO CYBER ATTACK ON IO-LINK

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

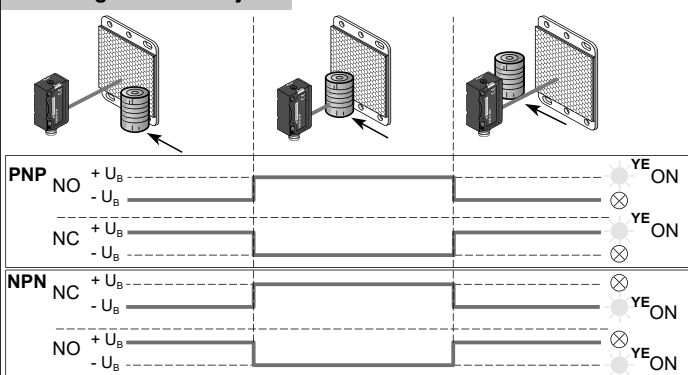
Failure to follow these instructions can result in injury or equipment damage.

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

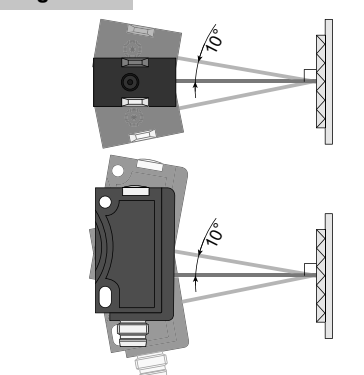
IO-Link data tables and IODD files are online: Scan the 2D code, above



Switching mode for object



Alignment



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92400 Courbevoie

France

UK Representative :

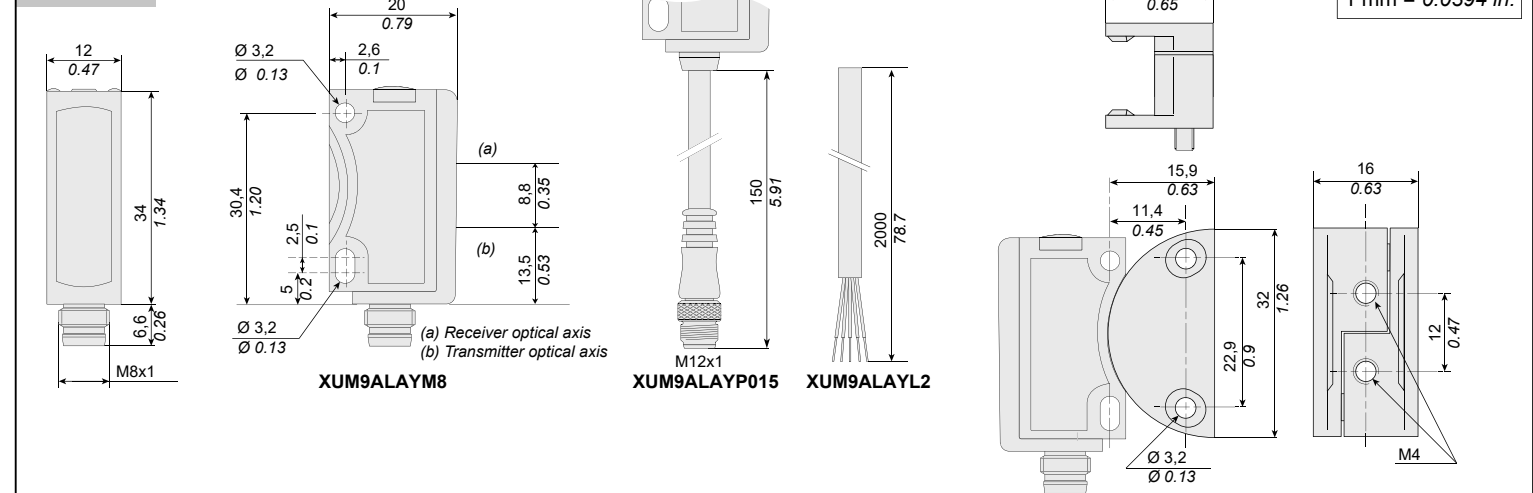
Yageo TMSS UK Limited

2 North Park Road

Harrogate, HG1 5PA

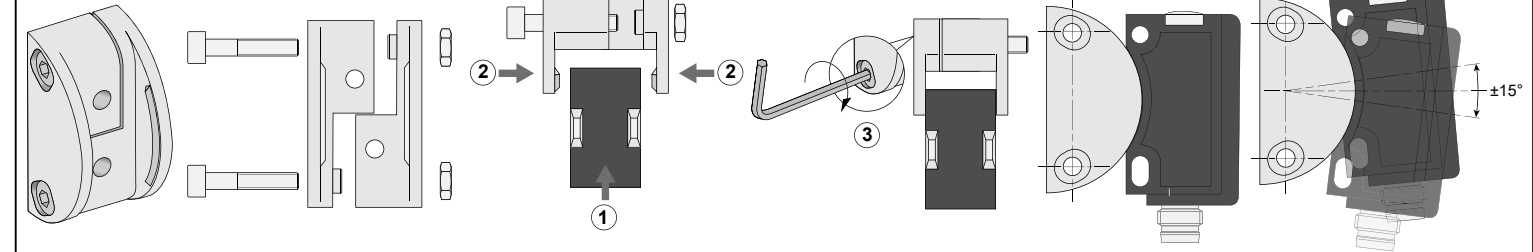
United Kingdom

Dimensions

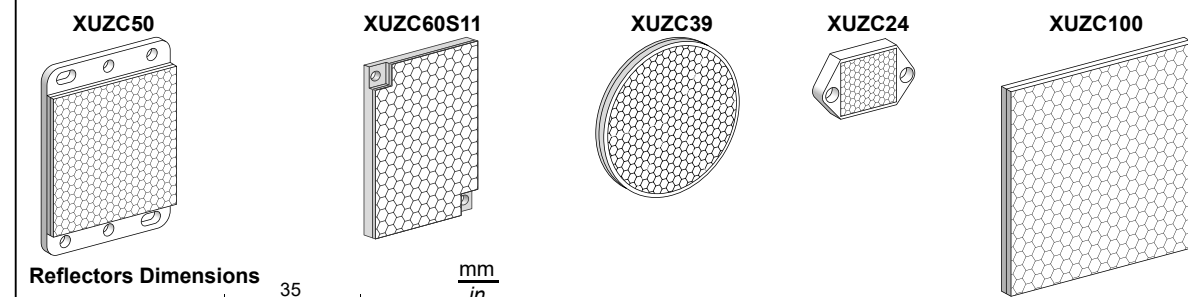


Accessories **Dovetail clamp mounting for flexible adjustment (to order separately)**

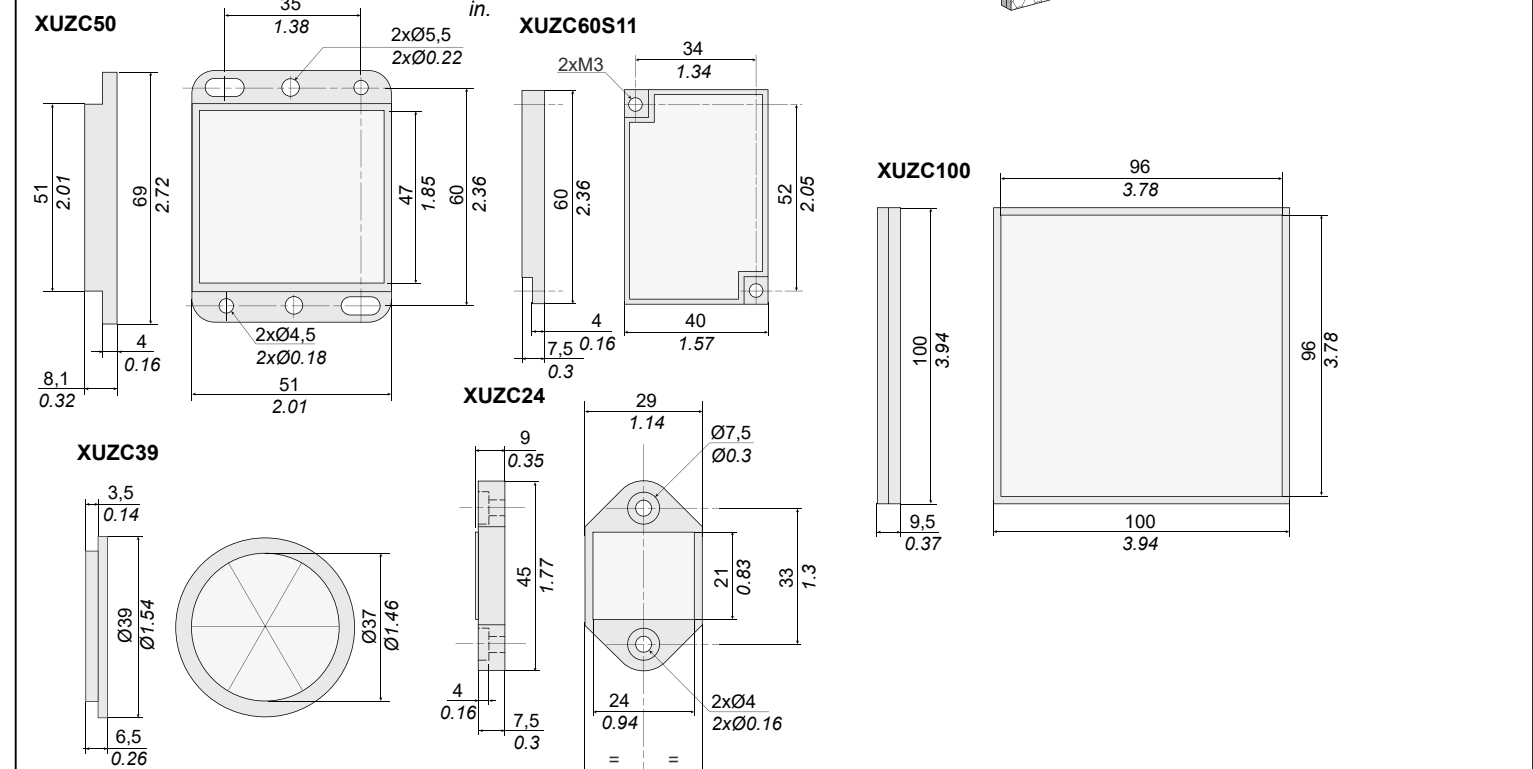
XUZARM



Reflector examples (to order separately)



Reflectors Dimensions



Pre-wired connectors (examples)

PVC cable for general use
PUR cable for severe industrial environments

Jumper

M8 - 4 pins plug
M8 - 4 pins socket
XZCR2609P2Y1 1m PUR
XZCR2609P2Y2 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

Curves

Functional reserves

Distance (m)

Light spot diameter

Distance (m)

Reference material: XUZC50 reflector

Setting

The sensor has 2 different Teach-in modes:
A-Standard Teach-in (STI): is suited for nearly all applications. Setting is made on object and background (see illustration A).
B-Dynamic Teach-in (DTI): is suited for setting the sensor in the running process, particularly for small objects (see illustration B).

The sensor has 3 different **Switching NO/NC** settings:
1: NO/NC via teach-in in series
2: Sensor always NC
3: Sensor always NO

GN
YE

OFF
ON
Flashing
Action duration

Alternately
YE GN
GN: Green
YE: Yellow

Press Teach-button

Reflector
Object

A Standard teach-in (STI)

Step 1: Teach-in object

Press teach button > 3 s
until green and yellow LED flash at the same time.

Step 2: Teach-in background

Press teach button 1 s
The green LED flashes

B Dynamic Teach-in (DTI)

Step 1: During running process

Press teach button > 3 s
until green and yellow LED flash at the same time.

Step 2: Teach-in object during running process

Press teach button > 1 Object

C Switching NO/NC

> 10 s
10 s
ok
< 1 s
10 s
ok
< 1 s

D SWITCHING AUTO-DETECT / NPN / PNP

> 10 s
10 s
ok
< 1 s
10 s
ok
< 1 s
10 s
ok
< 1 s
Auto-Detect

(1): IO-Link is specified for PNP

E Factory Setting

Max. scanning distance and NO

Green LED OFF
Press Q
Green LED OFF
Power OFF
Power ON
Green & yellow LEDs flash slowly at the same time

Keep any button pressed and Power ON > 10 s
until yellow LEDs flash 3x at the same time

Characteristics	
Certification	CE - UKCA - cULus - Ecolab
Sensing distance (Using reflector XUZC50)	Nominal sensing distance: 0,1...13 m / 0.33...42.7 ft. Maximum sensing distance: 0,1...15 m / 0.33...49.2 ft.
Setting	Teach button
Color of detection light beam	Laser class 1, red, 650 nm
Wavelength	$\lambda = 650 \text{ nm}$
Puls duration	$t = 0,7 \text{ }\mu\text{s}$
Frequency	$f = 11,7 \text{ kHz}$
Limit of radiant power pulse	Pp y 8,5 mW
Light spot size	See spot diameter curve
Switching output Q	Auto-Detect - PNP/NPN (NO or NC) - IO-LINK
Control input IN (switching function Q):	(+) = Teach-in (-) = button locked Open = normal function
Current consumption	$\leq 30 \text{ mA}$
Switching capacity	$\leq 100 \text{ mA}$
Switching frequency	$\leq 4000 \text{ Hz}$
First-up delay	< 300 ms
Response time	125 μs
Recovery time	< 300 ms
Ambient Temperature	Operating : - 20...+60 °C (-4...+140 °F) - UL : - 20...+50 °C (-4...+122 °F) Storage : - 20...+80 °C (-4...+176 °F)
Power Voltage	Rated operational voltage: 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
Protection against electric shocks	Protection class II
Degree of protection	IP67 conforming to IEC 60529, IP69K conforming to DIN 40050-9
Vibration resistance	Conforming to EN 60947-5-2
Shock resistance	Conforming to EN 60947-5-2
Material	Housing: ABS, Front and Lens: PMMA