XUK8TAKSMM12 / XUK8TAKDMM12 Diffuse distance sensor with background suppression

XUK8TAKSMM12



XUK8TAKDMM12



IO-Link

ECOLAB

CE

UK CA

c UL us

Background suppression (BGS)



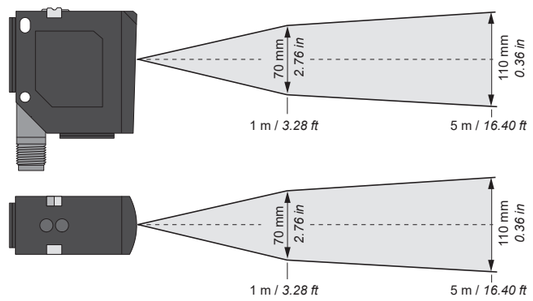


https://tesensors.com/global/en/document/EAV83774

Scan the Qr-code to access this Instruction Sheet in different languages or you can download it from our website at: **www.tesensors.com**

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

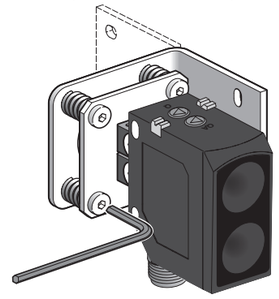
Prevention against other light beams in the colored area



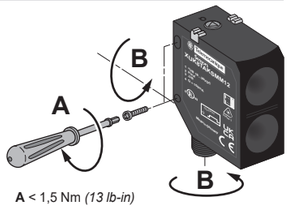
Adjustment

Adjustment of light spot position with optional mounting angle bracket XUZASK004.

Align sensor to the target object.
Observe the preferential direction of proximity switches.



Mounting and Tightening torques

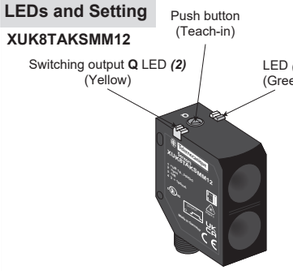


A < 1,5 Nm *(13 lb-in)*

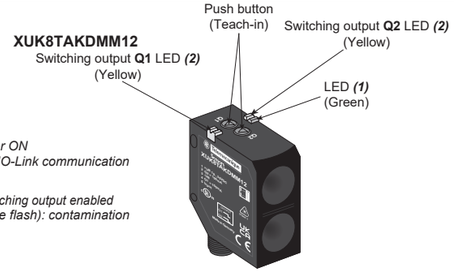
B < 1 Nm *(8.85 lb-in)*

LEDs and Setting

XUK8TAKSMM12



XUK8TAKDMM12

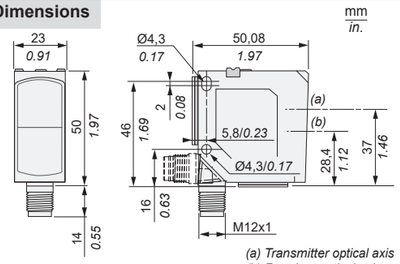


(1) :
***Green on**: Power ON*
***Green flashes**: IO-Link communication*

(2):
***Q or Q1/Q2**: Switching output enabled*
If flashing (double flash): contamination

Dimensions

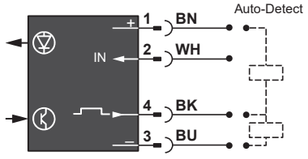
mm / in.



(a) Transmitter optical axis
(b) Receiver optical axis

Wiring diagrams

XUK8TAKSMM12



M12 Connector

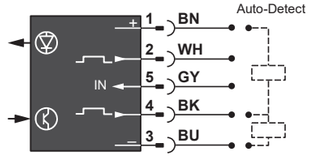


1: (+U_B)
2: IN
3: (-U_B)
4: Q/IO-Link

4-pin

Extension cable reference: **XZCPV1141L2 / L5 / L10**
In **IO**-Link mode, a 4-pin cable must be used

XUK8TAKDMM12



M12 Connector



1: (+U_B)
2: Q_2
3: (-U_B)
4: Q1/IO-Link
5: IN

5-pin

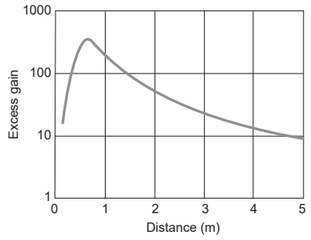
Extension cable reference: **XZCPV11V12L2 / L5 / L10**
In **IO**-Link mode, a 4-pin cable must be used

BN: Brown
WH: White
GY: Grey
BK: Black
BU: Blue

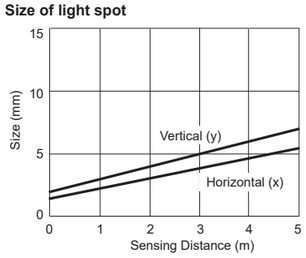
Wiring precautions
Use certified CYJV or R/C CYJV2 cable assemblies

Detection curves

Excess Gain



Size of light spot



Characteristics

Certification		CE - UKCA - cULus - Ecolab
Sensing distance (Reference material)	White (90%)	0...5 m / *0…16.4 ft*
	Grey (18%)	0...5 m / *0…16.4 ft*
	Black (6%)	0,05...3 m / *0.16…9.84 ft*
Setting		Teach button
Color of detection light beam		Laser class 1, red, 655 nm
Spot size of the light beam		see "Light beam size" curve
Wavelength		λ = 655 nm
Puls duration		t < 5 ns
Frequency		f = 62,5 kHz
Limit of radiant power pulse		Pp < 1,25 mW
Switching output Q		Auto-Detect PNP/NPN (N.O. or N.C.) - IOLINK **XUK8TAKSMM12**: 1 x Auto-Detect (Q) **XUK8TAKDMM12**: 2 x Auto-Detect (Q1,Q2)
Control input IN (switching function Q): see illustration G		**XUK8TAKSMM12** +U_B = Teach-in -U_B = 🔒 Open = normal function **XUK8TAKDMM12** +U_B = – -U_B = 🔒 Open = normal function 🔒 = button locked
Current consumption		≤ 60 mA
Switching capacity		≤ 100 mA
Switching frequency		≤ 500 Hz
First-up delay		300 ms max.
Response time		1,2 ms max.
Recovery time		1,2 ms max.
Ambient Temperature		Operating : - 20...+60 °C *(-4...+140 °F)* Storage : - 40...+80 °C *(-40...+176 °F)*
Power Voltage		Rated operational voltage: 24 Vdc Ripple p-p 10% maximum Operating range: 18...30 Vdc (including ripple)
Product Protection		Power supply : Reverse polarity protection Output: Short circuit protection
Protection class		□
Degree of protection		IP67 conforming to **EN/IEC 60529** IP69K conforming to **DIN 40050**
Vibration resistance		Frequency range: 10 Hz to 55 Hz Acceleration: 7 gn
Shock resistance		Peak acceleration: 10 gn Duration of the pulse: 11 ms
Material		Housing: ABS/PC, Lens: PMMA

IO-Link Data sheet and IODD IO-Link on website: *https://tesensors.com/iolink*

⚠ WARNING

UNINTENDED EQUIPMENT OPERATION

- Comply with the wiring and configuration instructions.
- Clean the lens regularly, taking care not to scratch it.
- Check the connections and fixings during maintenance operations.

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

⚠ CAUTION

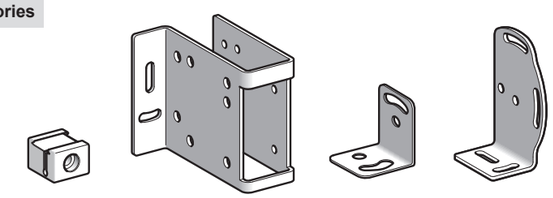
HAZARD OF LASER RADIATION EXPOSURE

- Do not stare into the beam.
- Do not operate below - 20°C *(- 4°F)*
- Follow all operating instructions.

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

CLASS 1 LASER PRODUCT (IEC 60825-1: 2014)
Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to laser Notice No. 56 dated May, 2019

Accessories



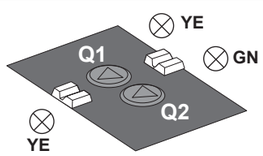
XUZASW001 **XUZASK001** **XUZASW002** **XUZA51S**

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

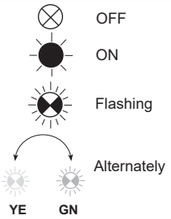
UK Reprensentative :
YAGEO TMSS UK LIMITED
2 North Park Road
Harrogate, HG1 5PA, United Kingdom

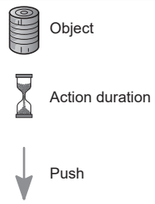
Our products should be installed, operated, serviced, and maintained only by qualified personnel. Neither TMSS France nor any of its subsidiaries or other affiliated companies shall be responsible or liable for any consequences arising out of the use of this material. Telemecanique™ Sensors is a trademark of Schneider Electric Industries SAS used under license by TMSS France. Any other brands or trademarks referred to in this document are property of TMSS France or, as the case may be, of its subsidiaries or other affiliated companies. All other brands are trademarks of their respective owners.
© 2024, TMSS France, All Rights Reserved

XUK8TAK●MM12 (50 x 23 x 50)



GN: Green
YE: Yellow







Setting

The sensor has 3 differerent Teach-in modes. The variant XUK8TAKDMM12 has two switching outputs which can be set independently of one another.

Standard Teach-in (STI): is suited for nearly all applications. Setting is made on object and background (see Chapter B).

Object-Object Teach-in (OTI): is suited for applications where the background cannot be taught in. Setting is made 2x on the object (see Chapter C).

Dynamic Teach-in (DTI): is suited for setting the sensor in the running process (see Chapter D).

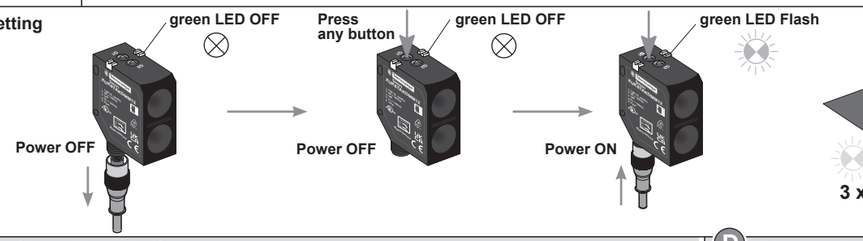
Overview

A

Function	Action Step 1 (1)		See illustation
	Teach-button	External teach	
Switching output 1	press Q_1 > 3 s	connect IN > 3 s	**B / C / D**
Switching output 2 (2)	press Q_2 > 3 s	connect IN > 6 s	**B / C / D**
N.O. / N.C. / Antivalent (NO + NC)	press Q > 10 s	connect IN > 10 s	**E**
Auto-Detect / NPN / PNP	press Q > 13 s	connect IN > 13 s	**F**

(1) Step 2: press Q_1 (or Q_2) / connect IN > 1 s
(2) All XUK8TAK●MM12

Factory setting



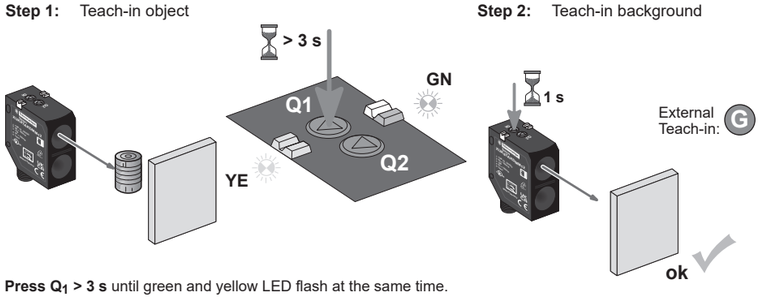
Hold any button down and power on for more than 10s until both yellow LEDs flash fast at the same time.

ok

B Standard Teach-In (STI)

Step 1: Teach-in object

Step 2: Teach-in background

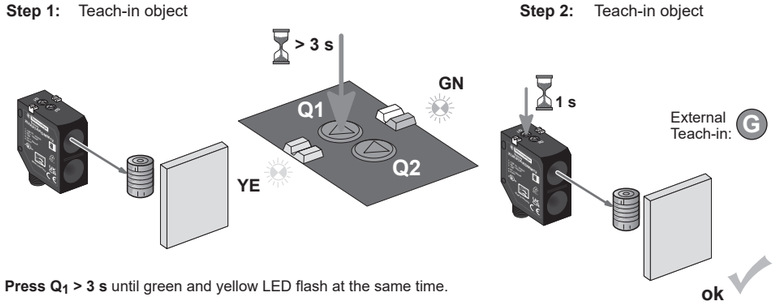


Press Q_1 > 3 s until green and yellow LED flash at the same time.

C Object-Object Teach-In (OTI)

Step 1: Teach-in object

Step 2: Teach-in object

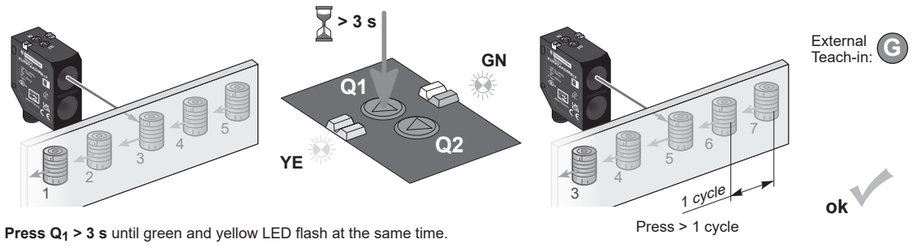


Press Q_1 > 3 s until green and yellow LED flash at the same time.

D Dynamic Teach-In (DTI)

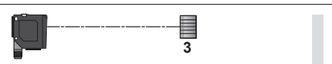
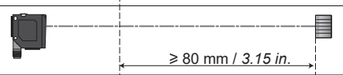
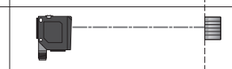
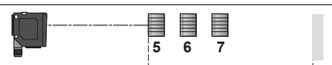
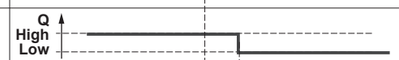
Step 1: During running process

Step 2: Teach-in object during running process



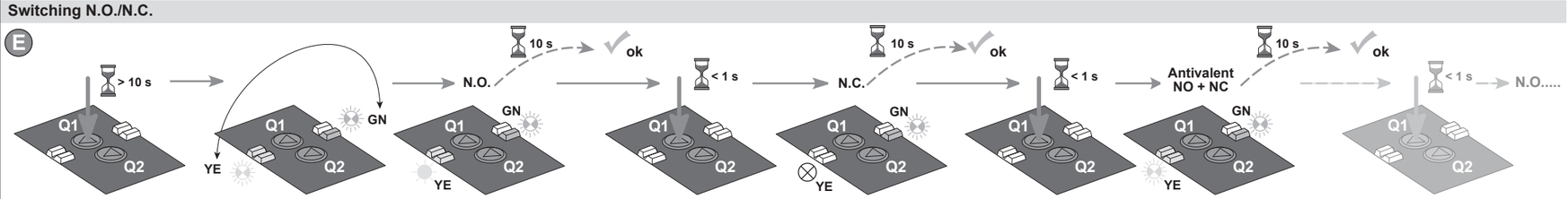
Press Q_1 > 3 s until green and yellow LED flash at the same time.

Press > 1 cycle

Teach 1			
Teach 2	 ≥ 80 mm / *3.15 in.*	 80 mm / *3.15 in.*	
Q_1 / Q_2 N.O.			
Q_1 / Q_2 N.C.			
	Q High Low	Q High Low	Q High Low
	1/2 1/2	1/2 1/2	1/2 1/2

Switching N.O./N.C.

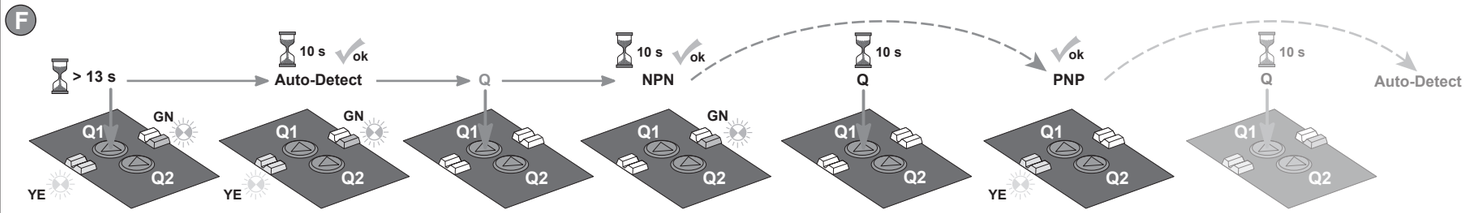
E



Antivalent : Inversion antivalent to N.O. (N.C.): Q1/Q2 accept most recent switching point settings

Switching Auto-detect / NPN / PNP

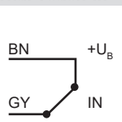
F



Press Q > 13 s until green and yellow LED flash at the same time
Re-setting concerns Q_1 and Q_2 of XUK8TAKDMM12

External Teach-In

G



Setting via control input IN:
Closing and opening times according to the respective information stated in the overview **A**