Photo-electric sensors

XUN general purpose, single mode function
Hybrid miniature design, plastic, thru-beam system
Four-wire DC, solid-state output, wire setting for NO/NC

XUN2APYNM12

XUN2APYNM12R

XUN2ANXNL2
XUN2APXNL2

XUN2AKXNL2T

XUN2ANXNM12
XUN2APXNM12

XUN2AKXNM12T

XUN2ANXNL2R
XUN2APXNL2R

XUN2ANXNM12R
XUN2APXNM12R

Thru-beam system with adjustable sensitivity

Max./operating sensing distance (Sn)	Function	Output	Connection	Reference	Weight (kg)
Transmitter + receiver IO-Link					
30 m/20 m	NO/NC (Dark ON/Light ON) configuration by wire or IO-Link	Autodetect PNP/NPN	M12 connector (4-pin)	**XUN2APYNM12**	0.013
Transmitter + receiver					
30 m/20 m	NO/NC (Dark ON/Light ON) configuration by wire	NPN	Pre-cabled (L = 2 m)	**XUN2ANXNL2**	0.040
			M12 connector (4-pin)	**XUN2ANXNM12**	0.013
		PNP	Pre-cabled (L = 2 m)	**XUN2APXNL2**	0.040
			M12 connector (4-pin)	**XUN2APXNM12**	0.013
Transmitter only *(1)*					
30 m/20 m			Pre-cabled (L = 2 m)	**XUN2AKXNL2T**	0.040
			M12 connector (4-pin)	**XUN2AKXNM12T**	0.013
Receiver IO-Link **only**					
30 m/20 m	NO/NC (Dark ON/Light ON) configuration by wire or IO-Link	Autodetect PNP/NPN	M12 connector (4-pin)	**XUN2APYNM12R**	0.013
Receiver					
30 m/20 m	NO/NC (Dark ON/Light ON) configuration by wire	NPN	Pre-cabled (L = 2 m)	**XUN2ANXNL2R**	0.040
			M12 connector (4-pin)	**XUN2ANXNM12R**	0.013
		PNP	Pre-cabled (L = 2 m)	**XUN2APXNL2R**	0.040
			M12 connector (4-pin)	**XUN2APXNM12R**	0.013

Accessories

IO-Link Master
See page 78.

Fixing and other accessories
See page 82.

Cabling accessories
See page 88.

(1) All transmitters are compatible with the receivers listed below.

Photo-electric sensors

XUN general purpose, single mode function

Hybrid miniature design, plastic, thru-beam system

Four-wire DC, solid-state output, wire setting for NO/NC

XUN5APYNM12
XUN6APYNM12

XUN5ANXNL2
XUN5APXNL2

XUN5ANXNM12
XUN5APXNM12

XUN6ANXNL2
XUN6APXNL2

XUN6ANXNM12
XUN6APXNM12

Diffuse system with adjustable sensitivity IO-Link

Max./operating sensing distance (Sn)	Function	Output	Connection	Reference	Weight (kg)
Long range, red LED emission					
1 m/0.7 m	NO/NC (Light ON/Dark ON) configuration by wire or IO-Link	Autodetect PNP/NPN	M12 connector (4-pin)	**XUN5APYNM12**	0.013
Medium range, red LED emission					
0.6 m/0.42 m	NO/NC (Light ON/Dark ON) configuration by wire or IO-Link	Autodetect PNP/NPN	M12 connector (4-pin)	**XUN6APYNM12**	0.013

Diffuse system with adjustable sensitivity

Max./operating sensing distance (Sn)	Function	Output	Connection	Reference	Weight (kg)
Long range, red LED emission					
1 m/0.7 m	NO/NC (Light ON/Dark ON) configuration by wire	NPN	Pre-cabled (L = 2 m)	**XUN5ANXNL2**	0.040
			M12 connector (4-pin)	**XUN5ANXNM12**	0.013
		PNP	Pre-cabled (L = 2 m)	**XUN5APXNL2**	0.040
			M12 connector (4-pin)	**XUN5APXNM12**	0.013
Medium range, red LED emission					
0.6 m/0.42 m	NO/NC (Light ON/Dark ON) configuration by wire	NPN	Pre-cabled (L = 2 m)	**XUN6ANXNL2**	0.040
			M12 connector (4-pin)	**XUN6ANXNM12**	0.013
		PNP	Pre-cabled (L = 2 m)	**XUN6APXNL2**	0.040
			M12 connector (4-pin)	**XUN6APXNM12**	0.013

Accessories

IO-Link Master

See page 78.

Fixing and other accessories

See page 82.

Cabling accessories

See page 88.

Photo-electric sensors

XUN general purpose, single mode function

Hybrid miniature design, plastic, polarised reflex system

Four-wire DC, solid-state output, wire setting for NO/NC

Apollo_CP0720020

XUN9APYNM12

Apollo_CP0720018

XUN9ANXNL2
XUN9APXNL2

Apollo_CP0720020

XUN9ANXNM12
XUN9APXNM12

Polarised reflex system with adjustable sensitivity, IO-Link

Plastic, red LED emission

Max./operating sensing distance (Sn)	Function	Output	Connection	Reference	Weight (kg)
7 m/5 m	NO/NC (Dark ON/Light ON) configuration by wire or IO-Link	Autodetect PNP/NPN	M12 connector (4-pin)	**XUN9APYNM12**	0.013

Polarised reflex system with adjustable sensitivity

Plastic, red LED emission

7 m/5 m	NO/NC (Dark ON/Light ON) configuration by wire	NPN	Pre-cabled (L = 2 m)	**XUN9ANXNL2**	0.040
			M12 connector (4-pin)	**XUN9ANXNM12**	0.013
		PNP	Pre-cabled (L = 2 m)	**XUN9APXNL2**	0.040
			M12 connector (4-pin)	**XUN9APXNM12**	0.013

Accessories

IO-Link Master

See page 78.

Fixing and other accessories

See page 82.

Cabling accessories

See page 88.

Photo-electric sensors

XUN general purpose, single mode function
Hybrid miniature design, plastic, polarised reflex system
Four-wire DC, solid-state output, wire setting for NO/NC

Characteristics

Sensor type			XUN2APYNM12, XUN2APYNM12R, XUN2A●XNM12, XU2AKXNM12T, XUN2A●XNM12R, XUN5APYNM12, XUN5A●XNM12, XUN6APYNM12, XUN6A●XNM12, XUN9APYNM12, XUN9A●XNM12	XUN2A●XNL2, XUN2A●XNL2R, XUN2AKXNL2T, XUN5A●XNL2, XUN6A●XNL2, XUN9A●XNL2
Product certifications			CE, UKCA, cULus	
Connection	Connector		M12	–
	Pre-cabled		–	Length: 2 m
Sensing distance Excess gain = 1: maximum sensing distance Excess gain = 2 : nominal sensing distance	Thru-beam system **XUN2**	**m**	30 (with excess gain = 1) 20 (with excess gain = 2)	
	Diffuse system **XUN5** (using a white paper 200 x 200 mm)	**m**	1 (with excess gain = 1) 0.7 (with excess gain = 2)	
	Diffuse system **XUN6** (using a white paper 200 x 200 mm)	**m**	0.6 (with excess gain = 1) 0.42 (with excess gain = 2)	
	Polarised reflex system **XUN9** (using a 50 x 50 mm reflector XUZC50)	**m**	7 (with excess gain = 1) 5 (with excess gain = 2)	
Blind zone		**mm**	0 (white object and potentiometer max.)	
Sensing distance setting			Potentiometer 1 turn (+/- 220 degrees)	
Colour of detection light beam			Red	
Output type			PNP/NPN (or autodetect PNP/NPN with IO-Link)	
Hysteresis			2 % < H < 20 % at Sn	
Degree of protection	Conforming to IEC 60529		IP65, IP67	
	Conforming to DIN 40050-9		IP69K (M12 connector versions only)	
Artificial optical radiation	Conforming to IEC 62471		Class 0 (risk exempt)	
Radiated disturbances emissions	Conforming to EN 55011/CISPR 1		Class A	
Storage temperature		**°C**	-40…+70	
Operating temperature		**°C**	-30…+55	
Materials	Case		PBT/PC	
	Lens cover		PMMA	
	Transparent cover		ABS	
	Potentiometer screw		PA66	
	Cable		–	PVC
Vibration resistance	Conforming to IEC 60068-2-6		Frequency range: 10 to 55 Hz Acceleration: 7 gn	
Shock resistance	Conforming to IEC 60068-2-27		Peak acceleration: 30 gn Duration of the pulse: 11 ms	
Rated supply voltage		**V**	12...24 ⎓ with protection against reverse polarity	
Voltage limits (including ripple)		**V**	10...30 ⎓	
Current consumption, no-load		**mA**	< 20/IO-Link: < 30	
Switching capacity		**mA**	100	
Voltage drop, closed state		**V**	< 2 max.	
Maximum switching frequency		**Hz**	1000	
Delays	First-up	**ms**	< 100/IO-Link : < 300	
	Response	**ms**	0.5 max.	
	Recovery	**ms**	0.5 max	

Characteristics: page 43 | Schemes: page 44 | Curves: pages 47 and 48 | Descriptions, dimensions: pages 49 to 51 | Accessories: page 82

Photo-electric sensors

XUN general purpose, single mode function

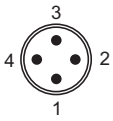
Hybrid miniature design, plastic, thru-beam and diffuse systems

Four-wire DC, solid-state output, wire setting for NO/NC

Wiring schemes

Thru-beam system

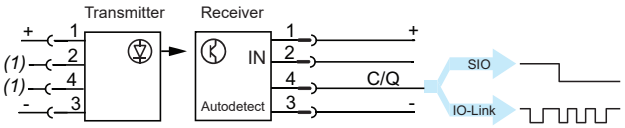
M12 connector - 4 pins - IO-Link



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

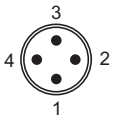
Autodetect PNP/NPN or by IO-Link

XUN2APYNM12



***Note**: IODD IO-Link files available on our website www.telemecaniquesensors.com/iolink*

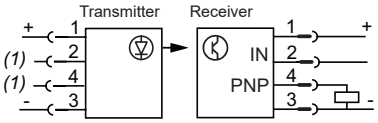
M12 connector - 4 pins



Pin	Signal	Definition
1	+	+ 24 V ⎓
2	IN	+ = NO - = NC Open = NO
3	-	0 V ⎓
4	Q	Switching signal (SIO)

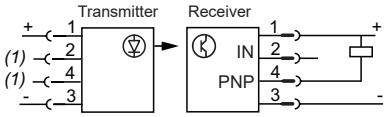
PNP

XUN2APXNM12



NPN

XUN2ANXNM12

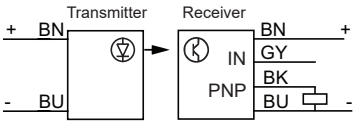


Pre-cabled - 4 wires

+BN (Brown)
IN (input) GY (Grey)
OUT (output) BK (Black)
-BU (Blue)

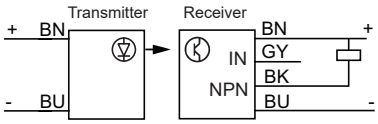
PNP

XUN2APXNL2



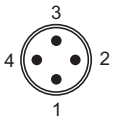
NPN

XUN2ANXNL2



Diffuse system

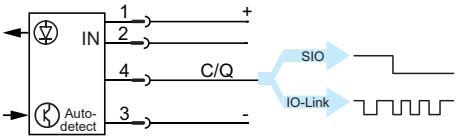
M12 connector - 4 pins - IO-Link



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

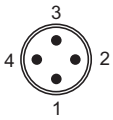
Autodetect PNP/NPN or by IO-Link

XUN5APYNM12, XUN6APYNM12



***Note**: IODD IO-Link files available on our website www.telemecaniquesensors.com/iolink*

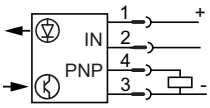
M12 connector - 4 pins



Pin	Signal	Definition
1	+	+ 24 V ⎓
2	IN	+ = NO - = NC Open = NO
3	-	0 V ⎓
4	Q	Switching signal (SIO)

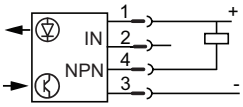
PNP

XUN5APXNM12, XUN6APXNM12



NPN

XUN5ANXNM12, XUN6ANXNM12



(1) Not connected

Photo-electric sensors

XUN general purpose, single mode function

Hybrid miniature design, plastic, diffuse and polarised reflex systems

Four-wire DC, solid-state output, wire setting for NO/NC

Wiring schemes (continued)

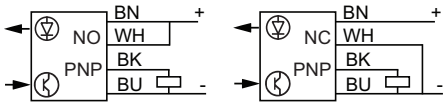
Diffuse system (continued)

Pre-cabled - 4 wires

+BN (Brown)
IN (input) GY (Grey)
OUT (output) BK (Black)
-BU (Blue)

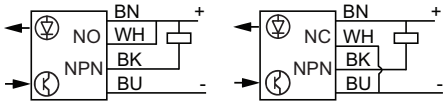
PNP

XUN5APXNL2, XUN6APXNL2



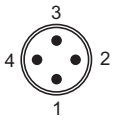
NPN

XUN5ANXNL12, XUN6ANXNL2,



Polarised reflex system

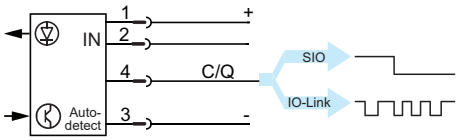
M12 connector - 4 pins - IO-Link



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

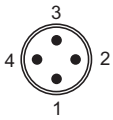
Autodetect PNP/NPN or by IO-Link

XUN9APYNM12



***Note**: IODD IO-Link files available on our website www.telemecaniquesensors.com/iolink*

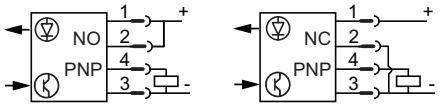
M12 connector - 4 pins



Control input IN:
(+) = NO
(-) = NC
Open = NO

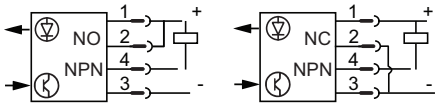
PNP

XUN9APXNM12



NPN

XUN9ANXNM12

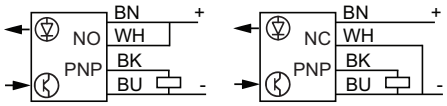


Pre-cabled - 4 wires

+BN (Brown)
IN (input) GY (Grey)
OUT (output) BK (Black)
-BU (Blue)

PNP

XUN9APXNL2



NPN

XUN9ANXNL12

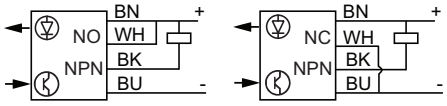


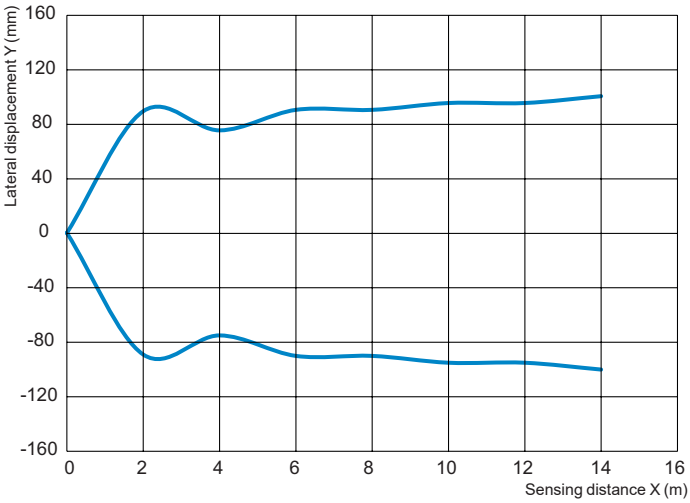
Photo-electric sensors

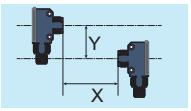
XUN general purpose, single mode function
Hybrid miniature design, plastic, thru-beam system
Four-wire DC, solid-state output, wire setting for NO/NC

Detection curves

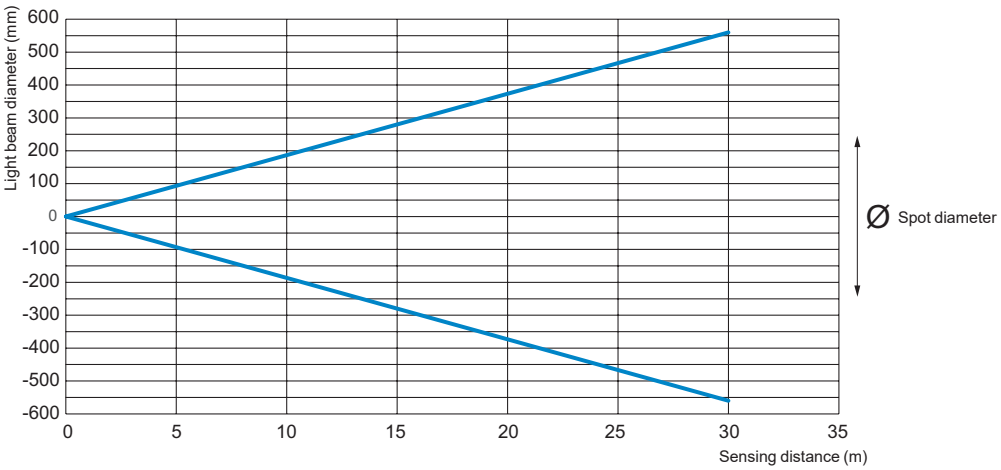
Thru-beam system: XUN2

Lateral displacement

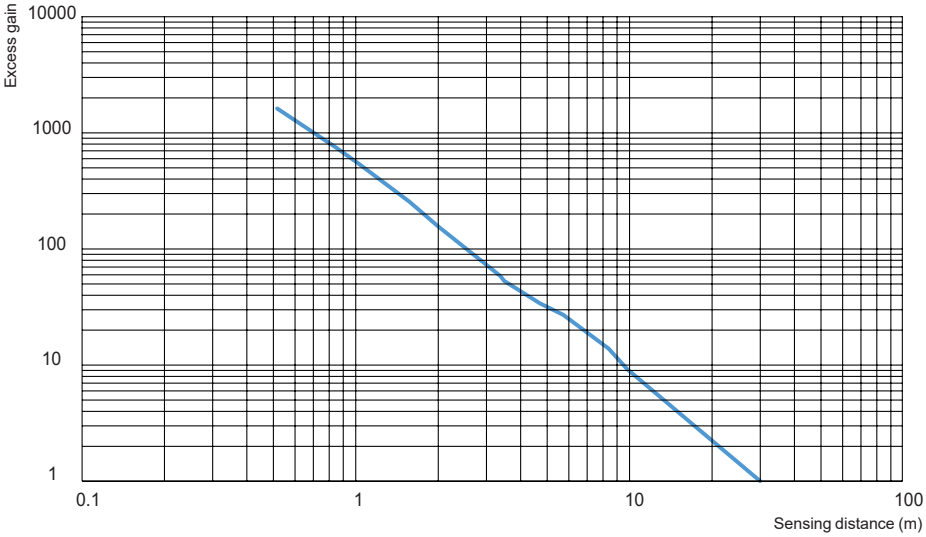




Light beam diameter



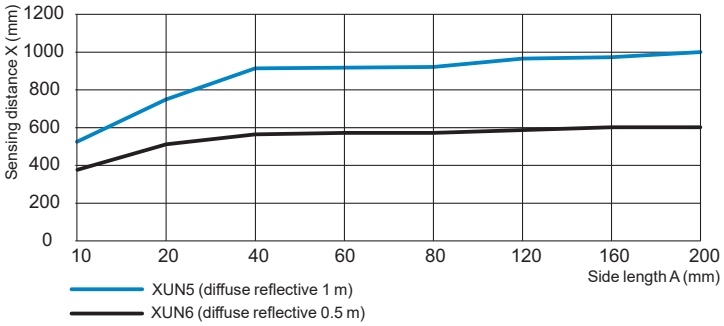
Excess gain

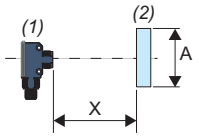


Detection curves *(continued)*

Diffuse system: XUN5 and XUN6

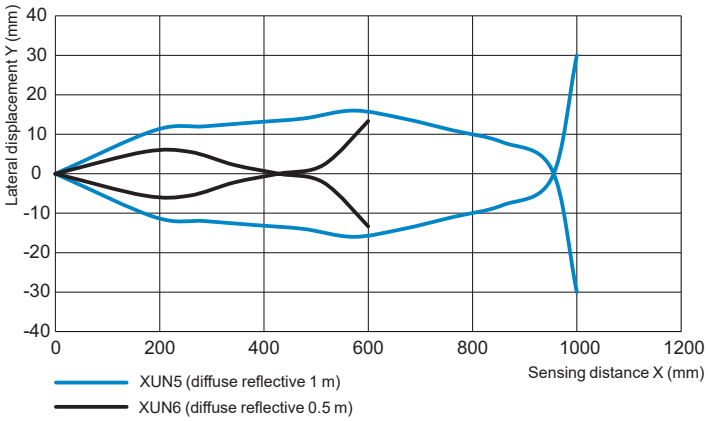
Minimum object size/sensing distance

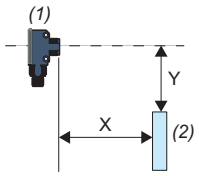




(1): Sensor
(2): Object (white matt paper of A mm square)
A: Side length (mm)
X: Sensing distance (mm)

Lateral displacement





(1): Sensor
(2): Object (200 mm square white paper)
X: Sensing distance (mm)
Y: Lateral displacement (mm)

Excess gain

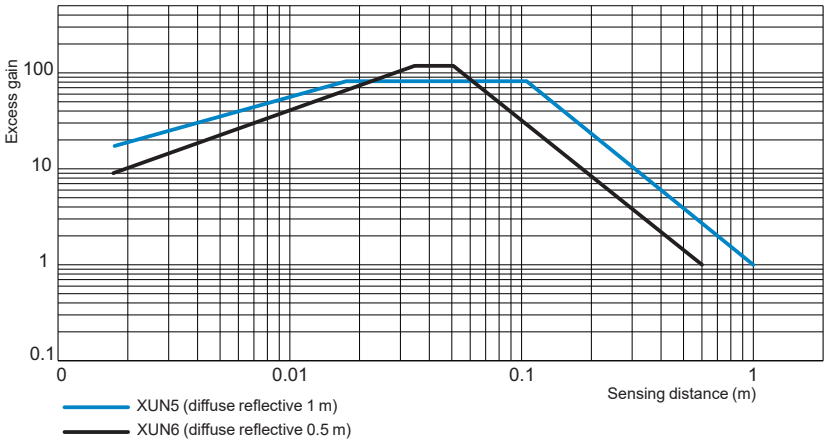


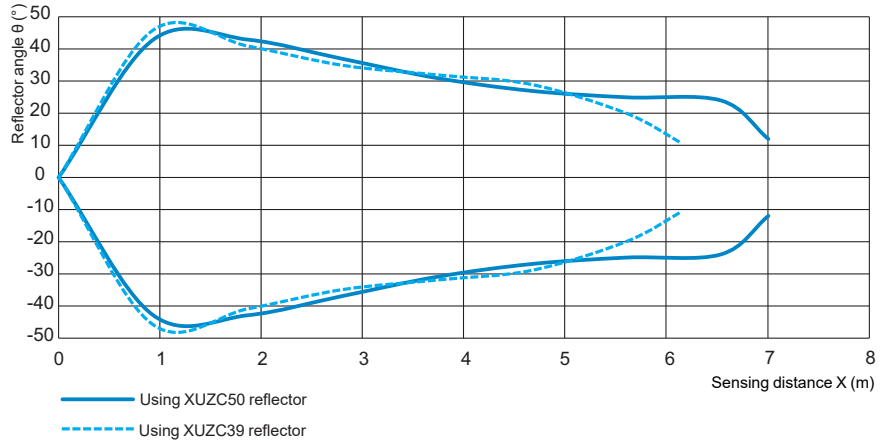
Photo-electric sensors

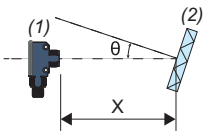
XUN general purpose, single mode function
Hybrid miniature design, plastic, polarised reflex system
Four-wire DC, solid-state output, wire setting for NO/NC

Detection curves (continued)

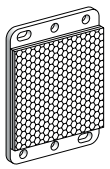
Polarised reflex system: XUN9

Reflector angle





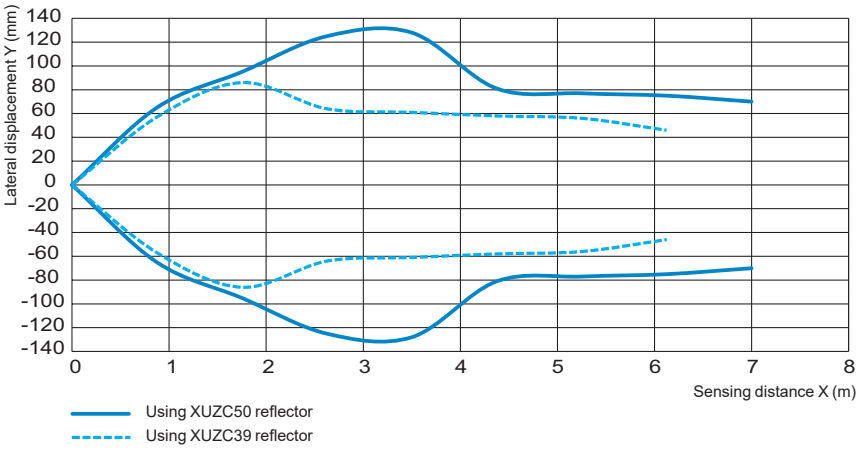
(1): Sensor
(2): Reflector
θ: Reflector angle (°)
X: Sensing distance (m)

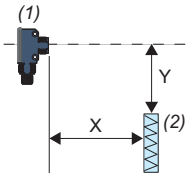


XUZC50

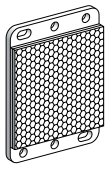
XUZC39

Lateral displacement





(1): Sensor
(2): Reflector
Y: Lateral displacement (mm)
X: Sensing distance (m)



XUZC50

XUZC39

Excess gain

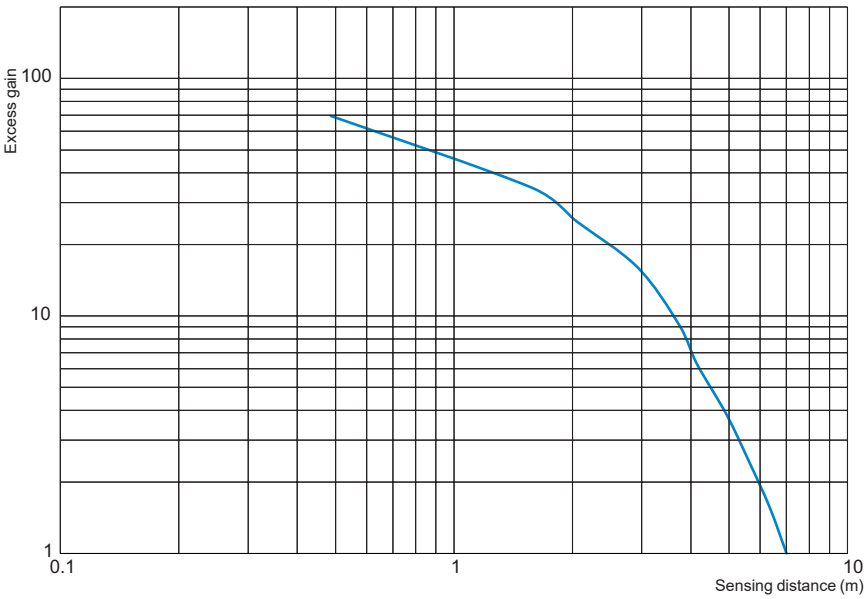


Photo-electric sensors

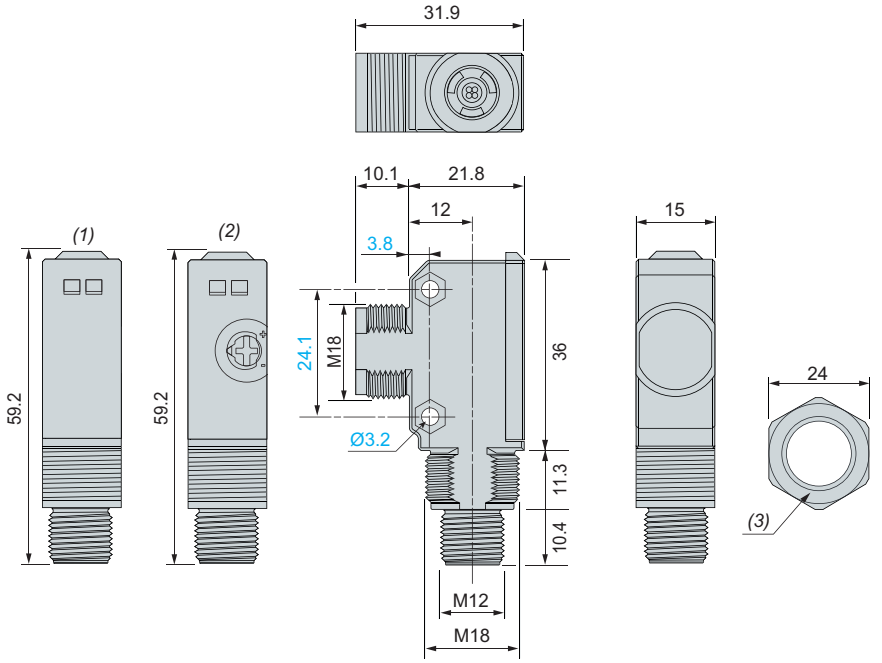
XUN general purpose, single mode function

Hybrid miniature design, plastic, thru-beam system
Four-wire DC, solid-state output, wire setting for NO/NC

Thru-beam system, plastic, M12 connector version

Transmitter + receiver (common top, side and front views)

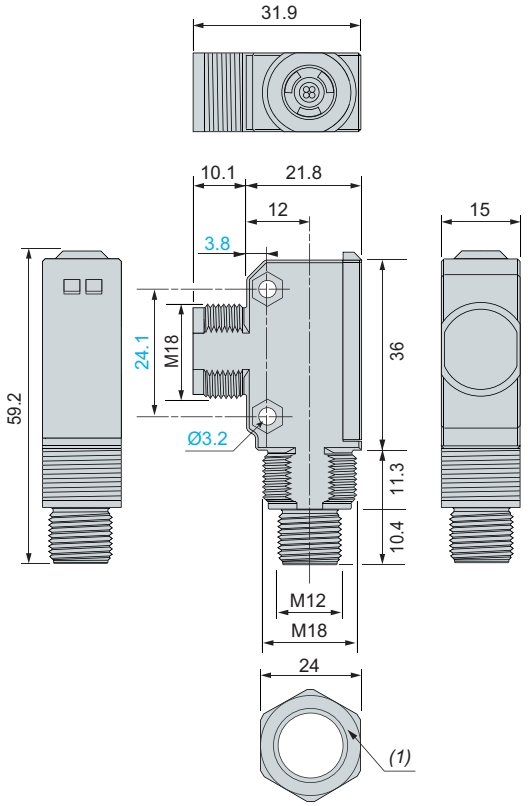
XUN2APYNM12 , XUN2ANXNM12, XUN2APXNM12



(1) Transmitter
(2) Receiver
(3) 4 fixing nuts provided with the sensors

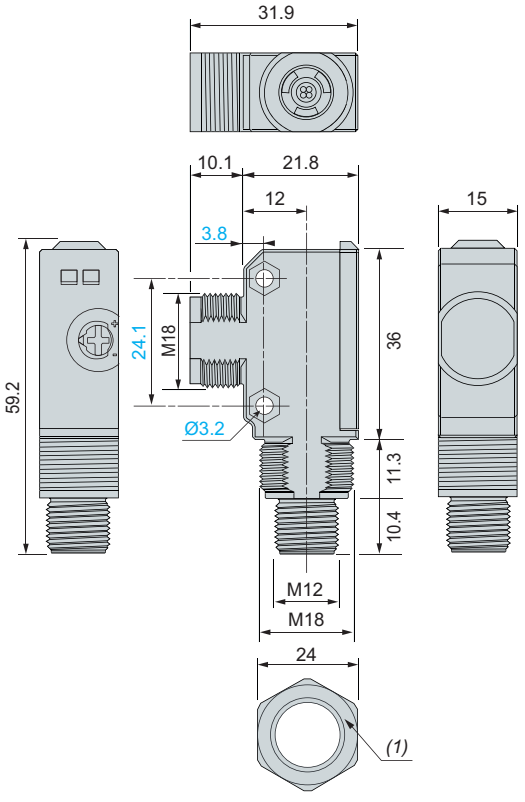
Transmitter only

XUN2AKXNM12T



Receiver only

XUN2APYNM12R, XUN2ANXNM12R, XUN2APXNM12R



(1) 2 fixing nuts provided with the sensor.

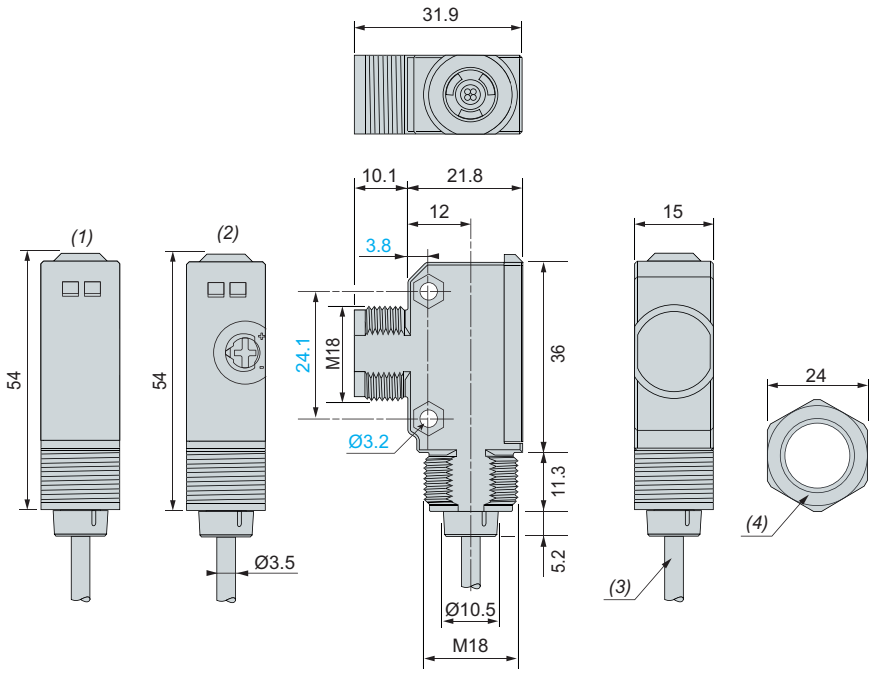
Photo-electric sensors

XUN general purpose, single mode function
Hybrid miniature design, plastic, thru-beam system
Four-wire DC, solid-state output, wire setting for NO/NC

Thru-beam system, plastic, pre-cabled version

Transmitter + receiver (common top, side and front views)

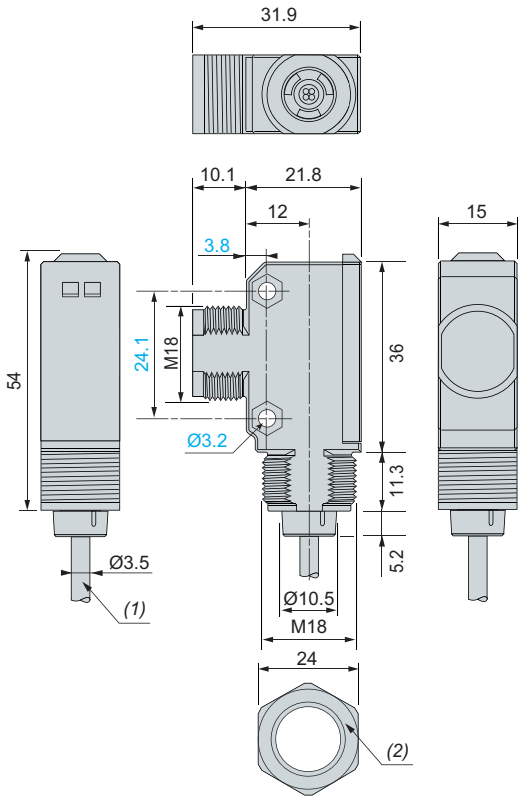
XUN2ANXNL2, XUN2APXNL2



(1) Transmitter
(2) Receiver
(3) 2 m long cable
(4) 4 fixing nuts provided with the sensors

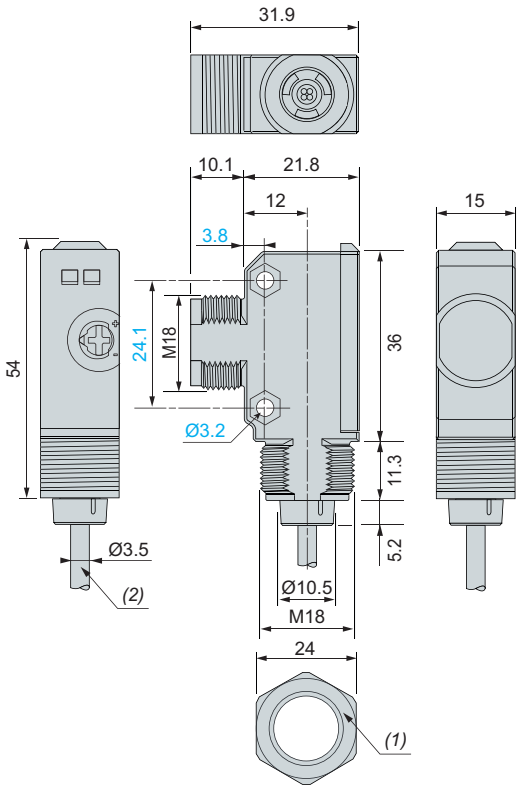
Transmitter only

XUN2AKXNL2T



Receiver only

XUN2ANXNL2R, XUN2APXNL2R



(1) 2 m long cable.
(2) 2 fixing nuts provided with the sensor.

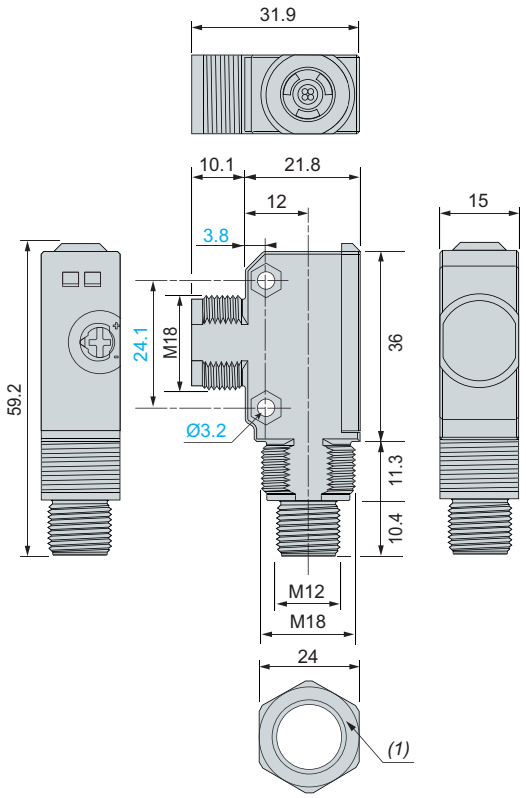
Photo-electric sensors

XUN general purpose, single mode function
Hybrid miniature design, plastic, diffuse and polarised reflex systems
Four-wire DC, solid-state output, wire setting for NO/NC

Diffuse system, M12 connector version

Long range or medium range, red LED emmission

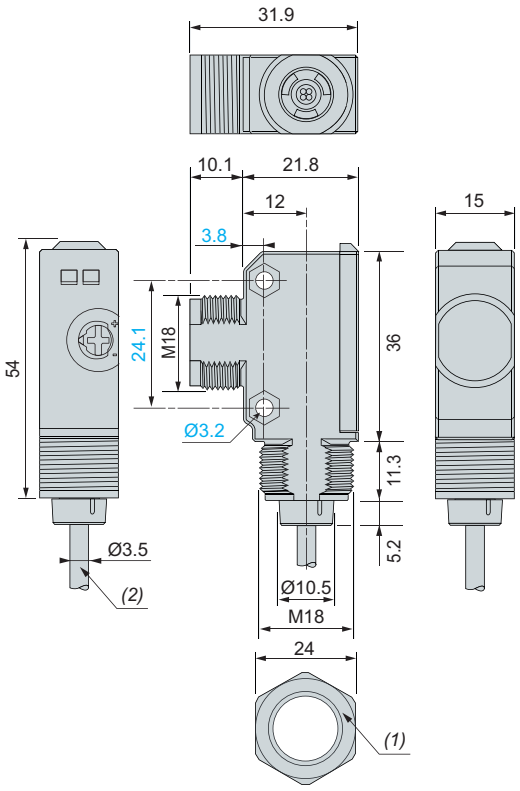
XUN5APYNM12, XUN5ANXNM12, XUN5APXNM12, XUN6APYNM12, XUN6ANXNM12, XUN6APXNM12



Diffuse system, pre-cabled version

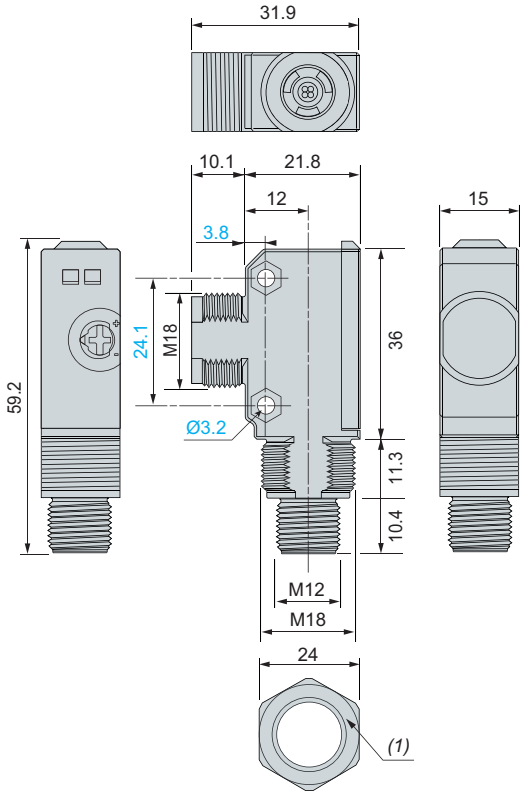
Long range or medium range, red LED emmission

XUN5ANXNL2, XUN5APXNL2, XUN6ANXNL2, XUN6APXNL2



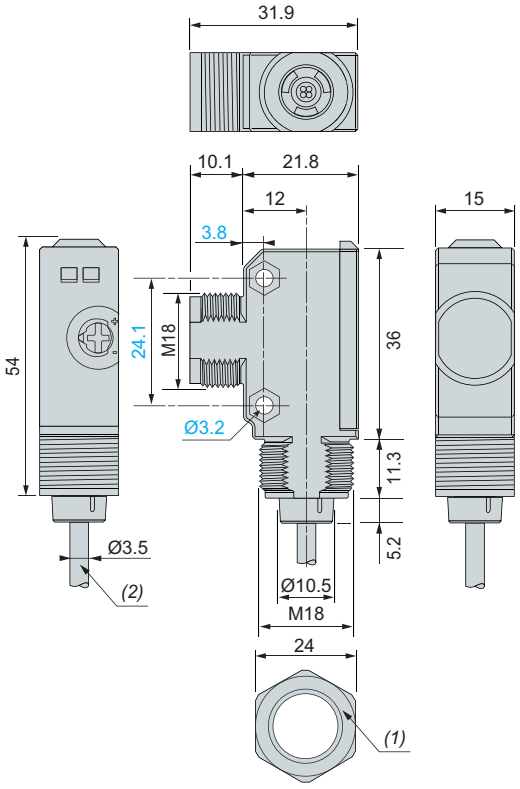
Polarised reflex system, M12 connector version

XUN9APYNM12, XUN9ANXNM12, XUN9APXNM12



Polarised reflex system, pre-cabled version

XUN9ANXNL2, XUN9APXNL2



(1) 2 fixing nuts provided with the sensor.
(2) 2 m long cable.