

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 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
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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.

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



XUN5APYNM12
XUN6APYNM12



XUN5ANXNL2
XUN5APXNL2



XUN6ANXNL2
XUN6APXNL2



XUN5ANXNM12
XUN5APXNM12



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
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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

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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



XUN9APYNM12



XUN9ANXNL2
XUN9APXNL2



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.

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 XU2C50)	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	

Photo-electric sensors

XUN general purpose, single mode function

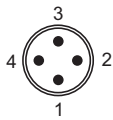
Hybrid miniature design, plastic, thru-beam and diffuse systems

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

Wiring schemes

Thru-beam system

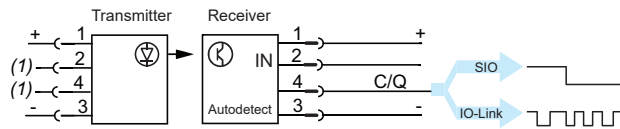
M12 connector - 4 pins - IO-Link



Pin	Signal	Definition
1	+	+ 24 V $\overline{\text{DC}}$
2	IN	+ = NO - = NC Open = NO
3	-	0 V $\overline{\text{DC}}$
4	Q	Switching signal (SIO)
	C	IO-Link communication

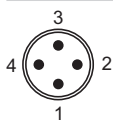
Autodetect PNP/NPN or by IO-Link

XUN2APYNM12



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

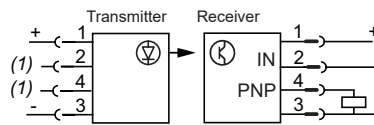
M12 connector - 4 pins



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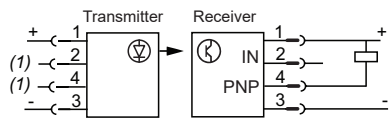
PNP

XUN2APXNM12



NPN

XUN2ANXNM12

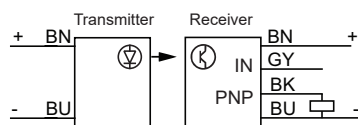


Pre-cabled - 4 wires

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

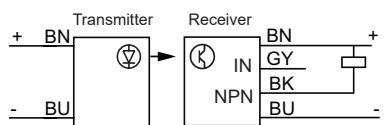
PNP

XUN2APXNL2



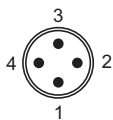
NPN

XUN2ANXNL2



Diffuse system

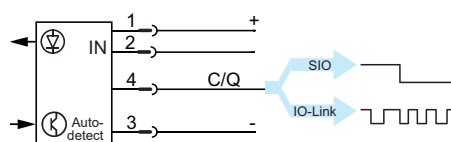
M12 connector - 4 pins - IO-Link



Pin	Signal	Definition
1	+	+ 24 V $\overline{\text{DC}}$
2	IN	+ = NO - = NC Open = NO
3	-	0 V $\overline{\text{DC}}$
4	Q	Switching signal (SIO)
	C	IO-Link communication

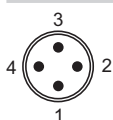
Autodetect PNP/NPN or by IO-Link

XUN5APYNM12, XUN6APYNM12



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

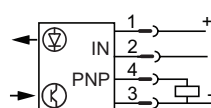
M12 connector - 4 pins



Pin	Signal	Definition
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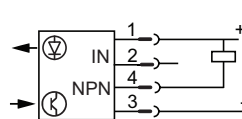
PNP

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)

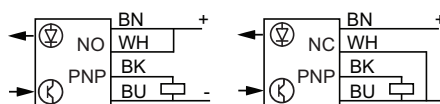
Diffuse system (continued)

Pre-cabled - 4 wires

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

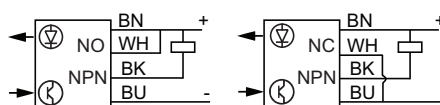
PNP

XUN5APXNL2, XUN6APXNL2



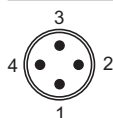
NPN

XUN5ANXNL12, XUN6ANXNL2,



Polarised reflex system

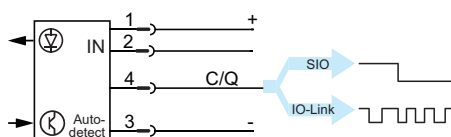
M12 connector - 4 pins - IO-Link



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

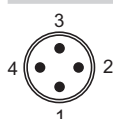
Autodetect PNP/NPN or by IO-Link

XUN9APYNM12



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

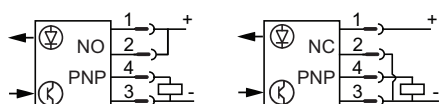
M12 connector - 4 pins



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

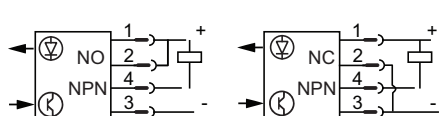
PNP

XUN9APXNM12



NPN

XUN9ANXNM12

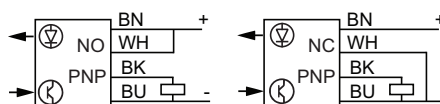


Pre-cabled - 4 wires

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

PNP

XUN9APXNL2



NPN

XUN9ANXNL12

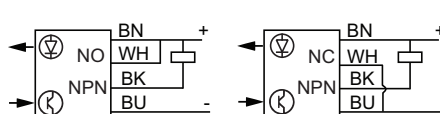


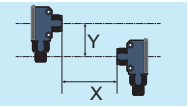
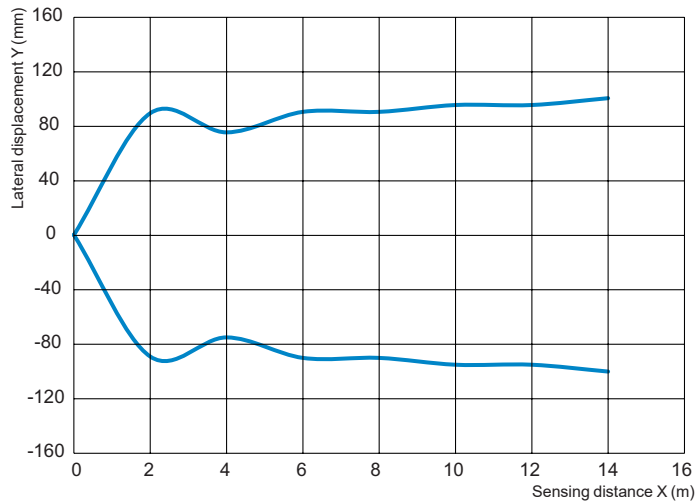
Photo-electric sensors

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

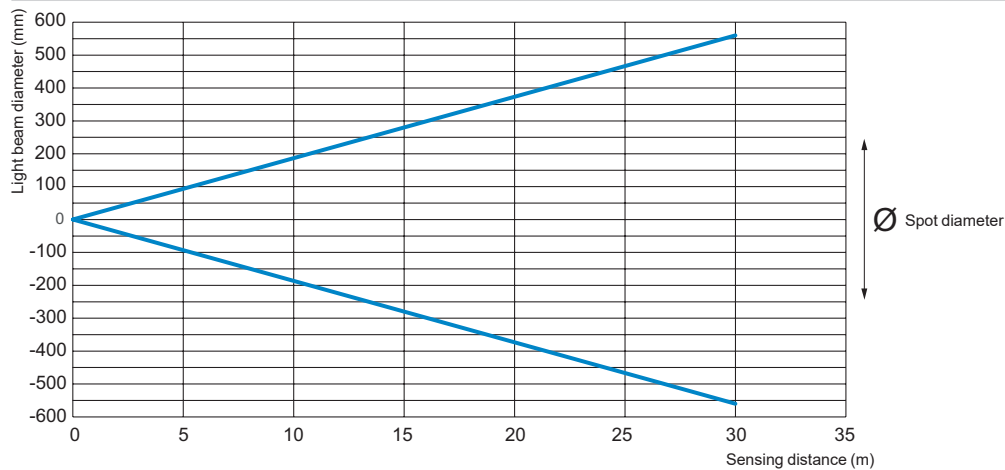
Detection curves

Thru-beam system: XUN2

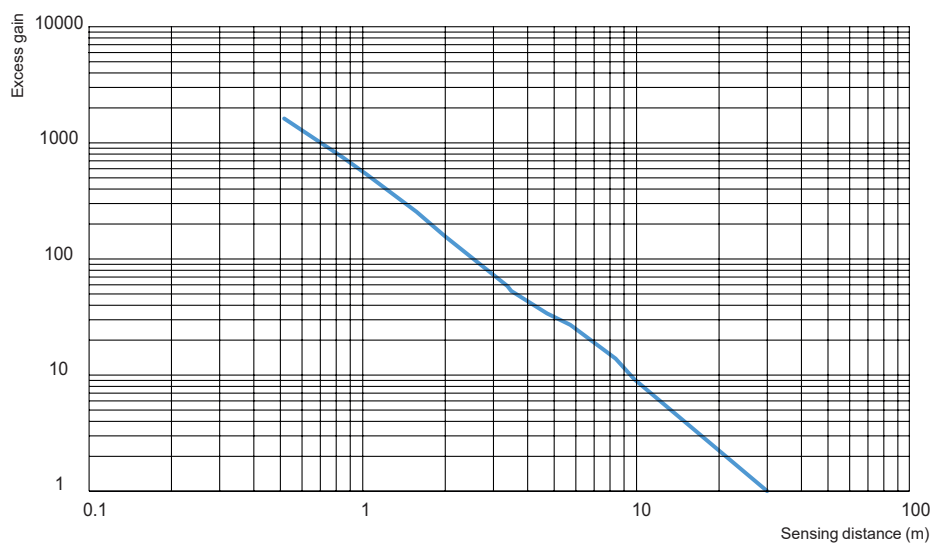
Lateral displacement



Light beam diameter



Excess gain



XUN general purpose, single mode function

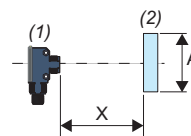
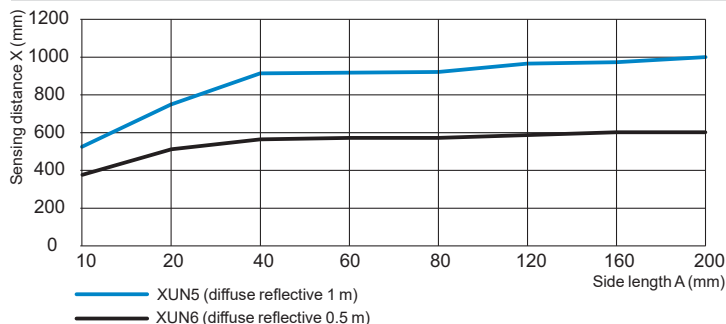
Hybrid miniature design, plastic, diffuse system

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

Detection curves (continued)

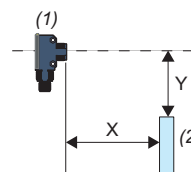
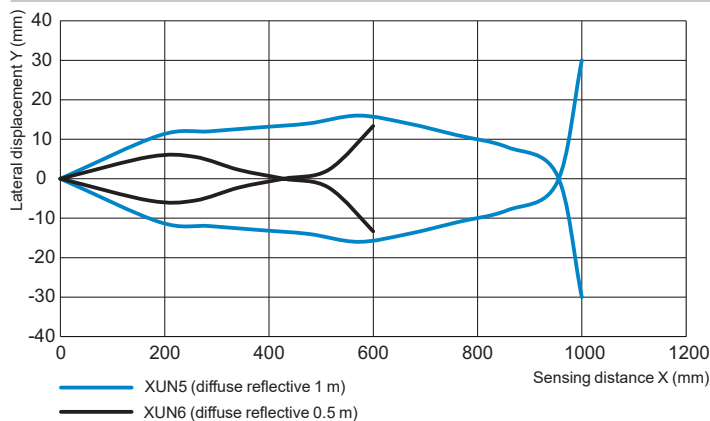
Diffuse system: XUN5 and XUN6

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

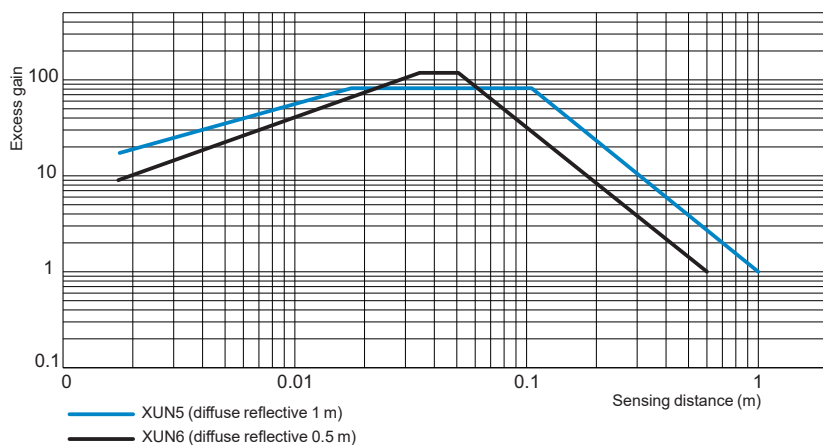


Photo-electric sensors

XUN general purpose, single mode function

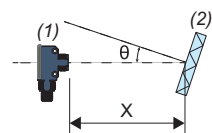
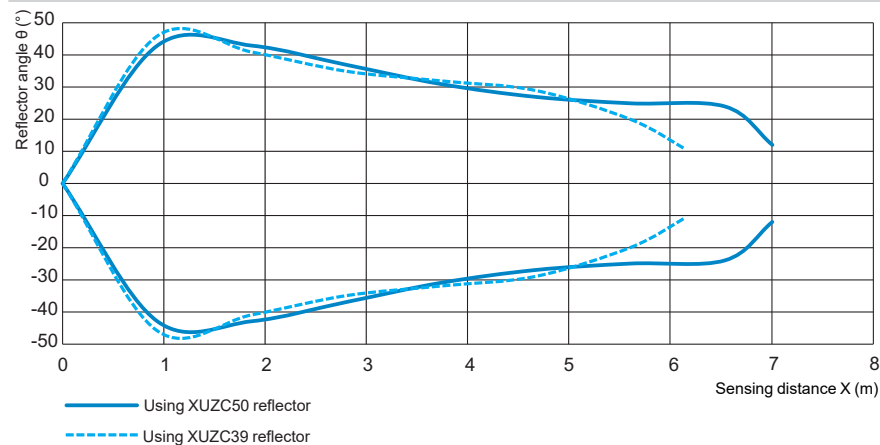
Hybrid miniature design, plastic, polarised reflex system

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

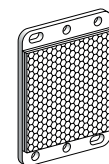
Detection curves (continued)

Polarised reflex system: XUN9

Reflector angle



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

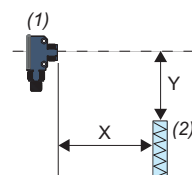
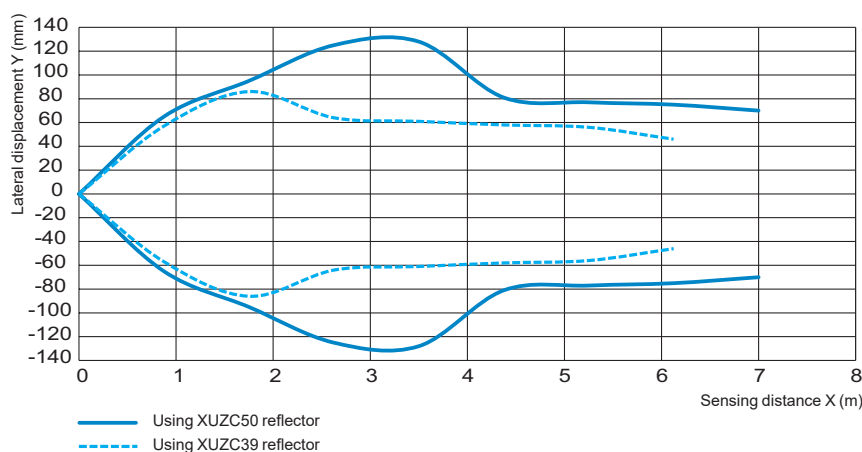


XUZC50

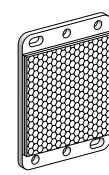


XUZC39

Lateral displacement



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



XUZC50



XUZC39

Excess gain

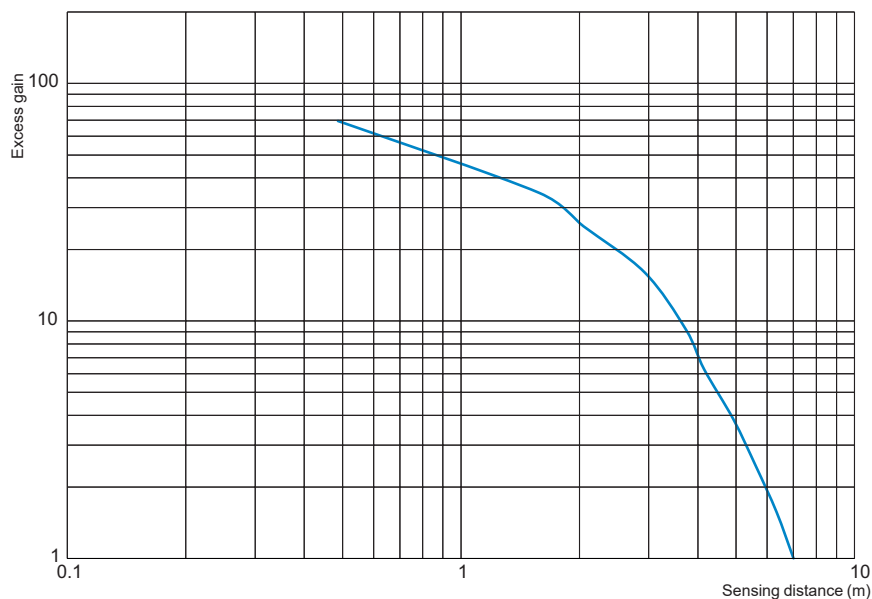


Photo-electric sensors

XUN general purpose, single mode function

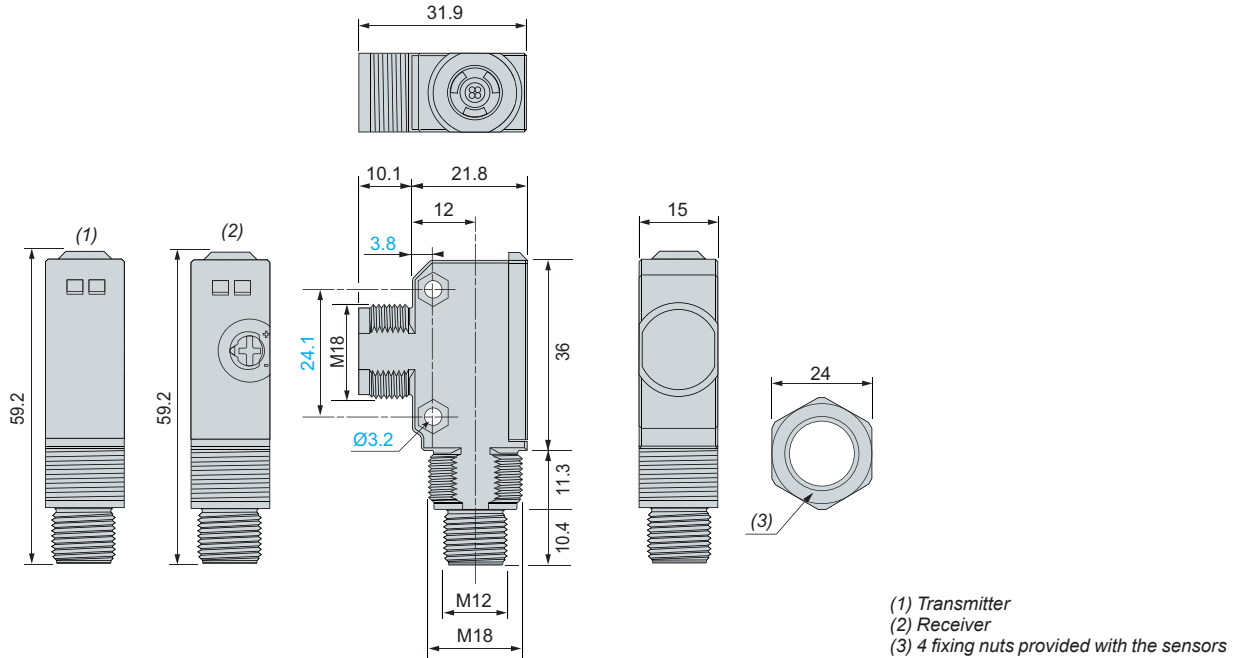
Hybrid miniature design, plastic, thru-beam system

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

Thru-beam system, plastic, M12 connector version

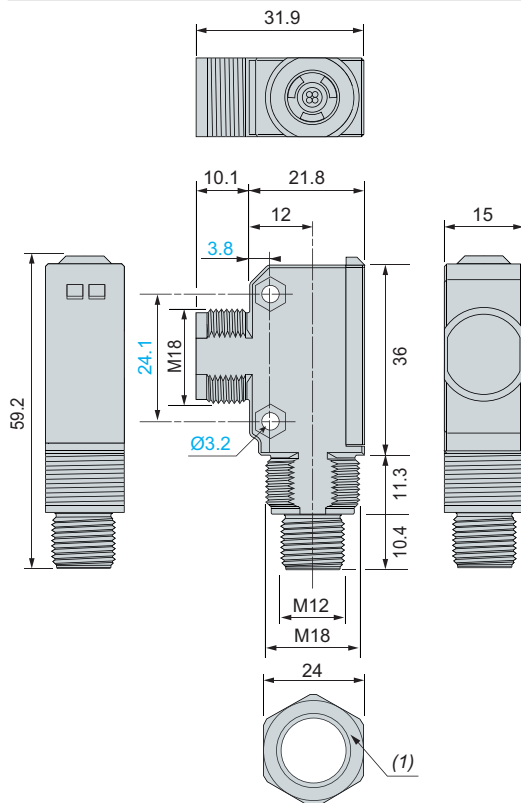
Transmitter + receiver (common top, side and front views)

XUN2APYNM12, XUN2ANXNM12, XUN2APXNM12



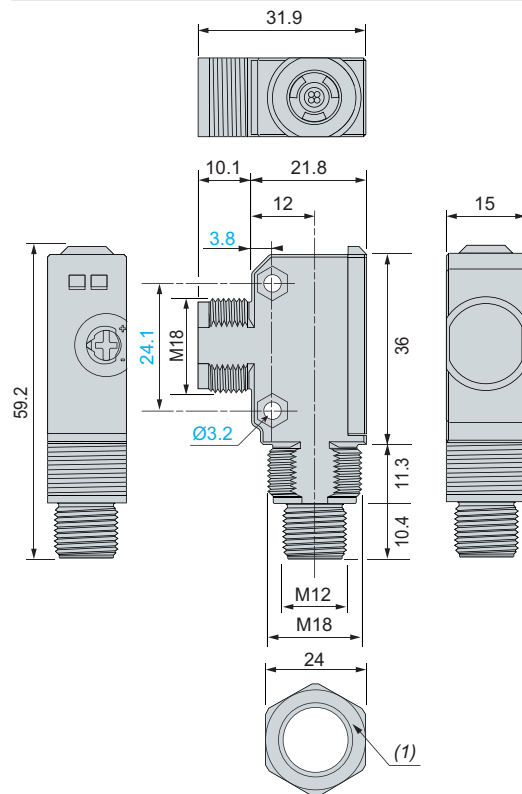
Transmitter only

XUN2AKXNM12T



Receiver only

XUN2APYNM12R, XUN2ANXNM12R, XUN2APXNM12R



(1) 2 fixing nuts provided with the sensor.

Photo-electric sensors

XUN general purpose, single mode function

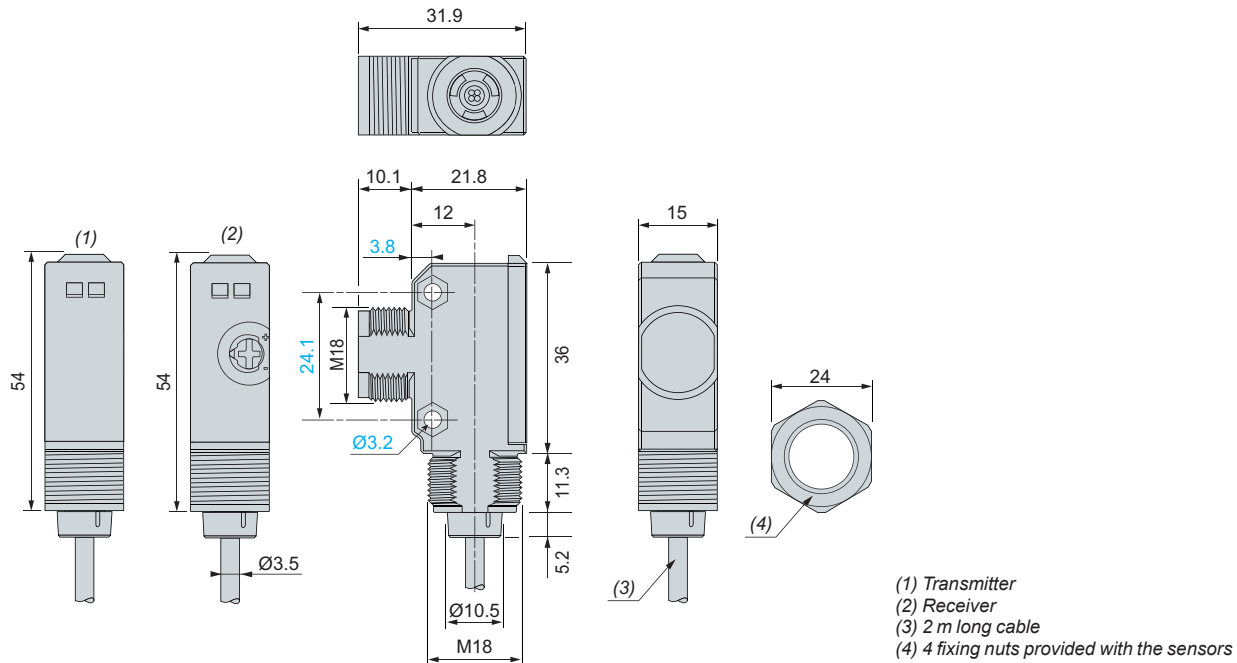
Hybrid miniature design, plastic, thru-beam system

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

Thru-beam system, plastic, pre-cabled version

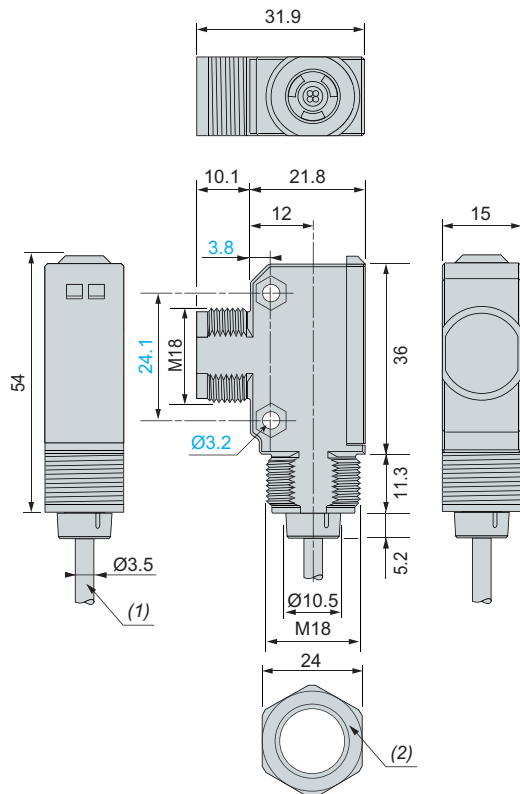
Transmitter + receiver (common top, side and front views)

XUN2ANXNL2, XUN2APXNL2



Transmitter only

XUN2AKXNL2T



Receiver only

XUN2ANXNL2R, XUN2APXNL2R

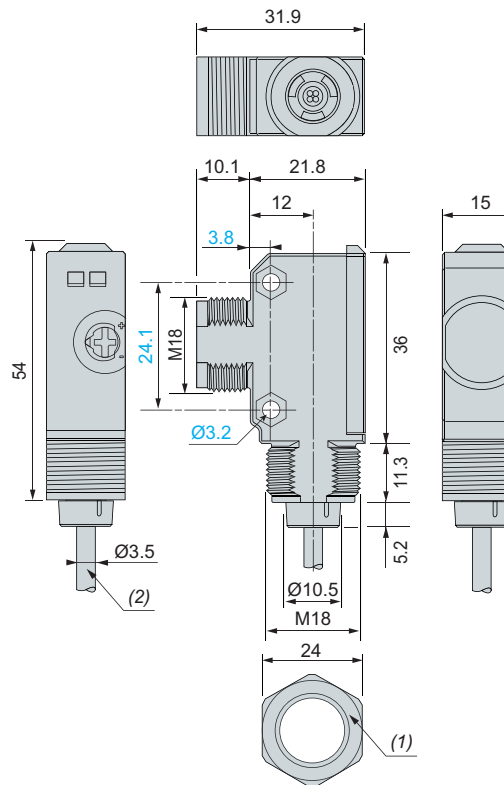


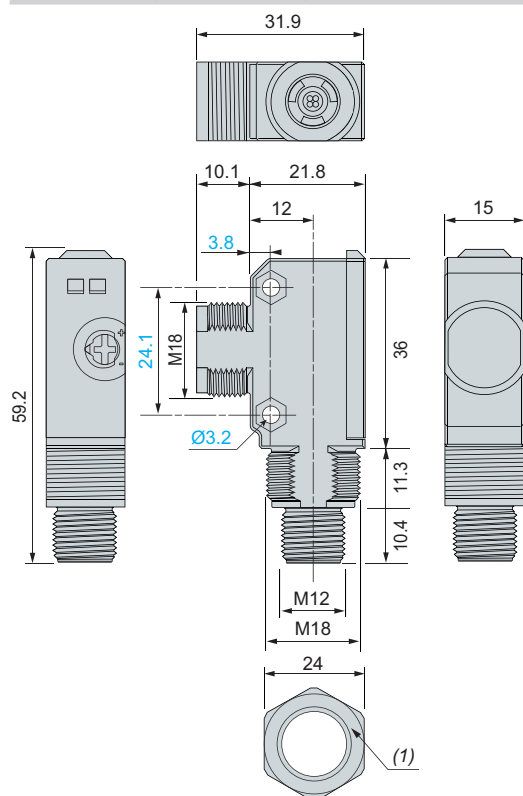
Photo-electric sensors

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 emission

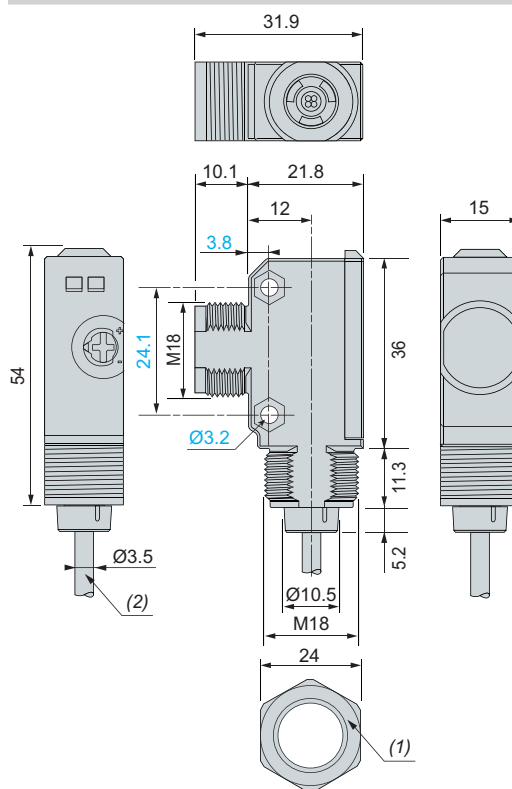
XUN5APYNM12, XUN5ANXNM12, XUN5APXNM12,
XUN6APYNM12, XUN6ANXNM12, XUN6APXNM12



Diffuse system, pre-cabled version

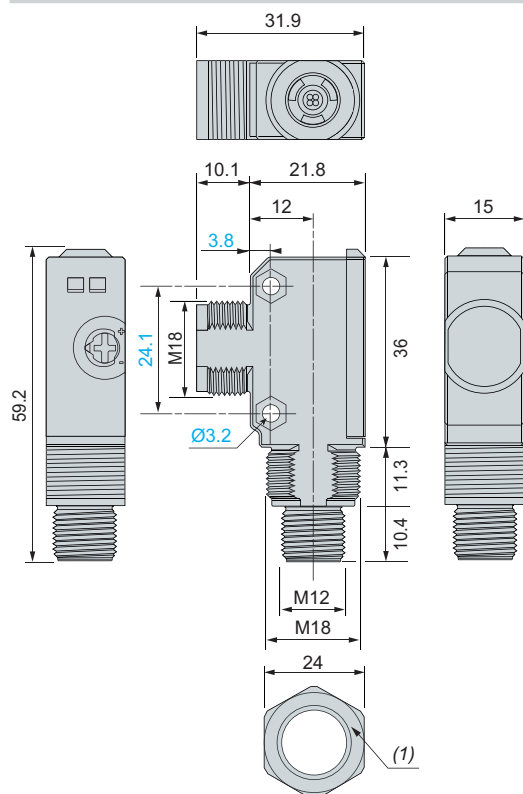
Long range or medium range, red LED emission

XUN5ANXNL2, XUN5APXNL2, XUN6ANXNL2, XUN6APXNL2



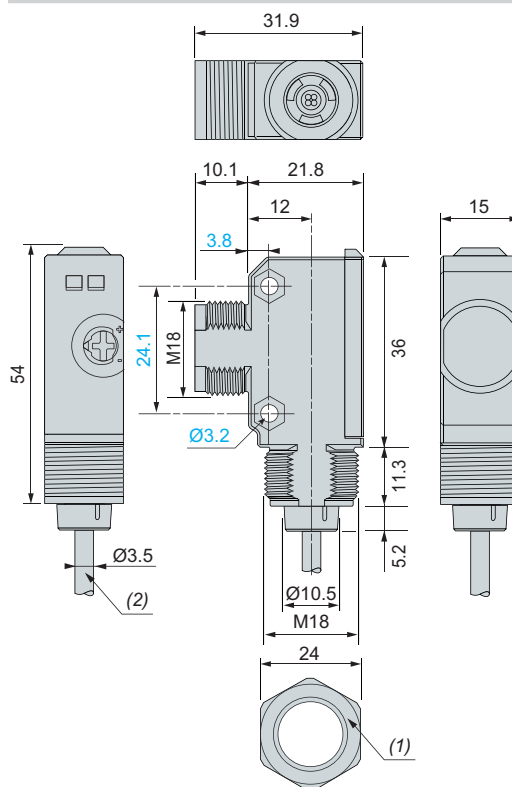
Polarised reflex system, M12 connector version

XUN9APYNM12, XUN9ANXNM12, XUN9APXNM12



Polarised reflex system, pre-cabled version

XUN9ANXNL2, XUN9APXNL2



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