

Photo-electric sensors Osiris Optimum **miniature**

Catalogue
December

07



Simply Smart!

Leveraging
ingenuity
and intelligence
for ease of use

Small with high performance

The new Optimum miniature XUM sensors combine compactness and the same dimensions and fixings as the market standard.

The high level of performance, which includes long sensing distances, and its resistance to interference and light sources, makes it one of the best alternatives currently available.

Smaller

The most commonly used standard size on the market, fully compatible.

High performance

■ Installation:

Consumption halved

(twice as many sensors on the same supply, ideal economy for sustainable development).

Significant reduction in interference between sensors

(close mounting of several sensors without interference using the filter accessory).

Output status LED on front face of thru-beam receiver to further improve ease of alignment when installing.

■ Environment:

Longest sensing distances on the market

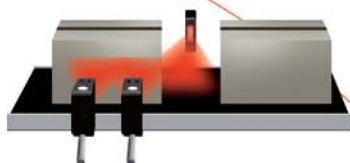
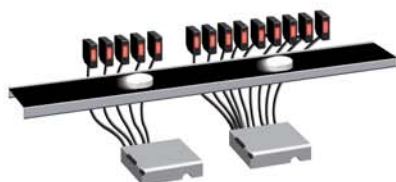
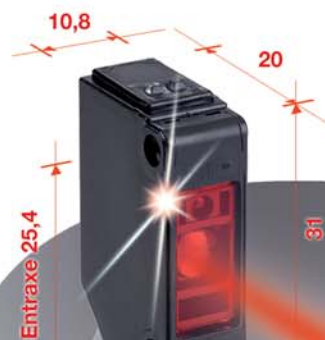
(up to 5m for reflex system, 15m for thru-beam system and 1m for diffuse system).

High insensitivity to light sources

(withstands up to 40 000 lux natural light/10 000 lux incandescent light).

Good resistance to severe environments

(-30 to +60°C operating temperature, IP67 degree of protection).



Miniature design - plastic

System	Diffuse system		Polarised reflex
	with adjustable sensitivity		
Connection	Pre-cabled (L = 2m)	M8 connector	Pre-cabled (L = 2m)
Function	NO / NC configurable par switch		
Sensing distance (Sn)	1m		5m with reflector
Supply	DC 12 ... 24 V with protection against reverse polarity		
Degree of protection	IP67		
NO or NC PNP output	XUM 5APCNL2	XUM 5APCNM8	XUM 9APCNL2
NO PNP output	-	-	-
NC PNP output	-	-	-

NO/NC

configuration

using protected switch (the switch is on the underside of the sensor, ideally located to avoid accidental operation).

Simplified installation

A robust metal fixing bracket, shaped to form a protective cover against mechanical shock, is available to complement the traditional fixing brackets.

Accessories

Anti-interference filters or slotted diaphragms, for focused detection of small objects, can be clipped on the front face.

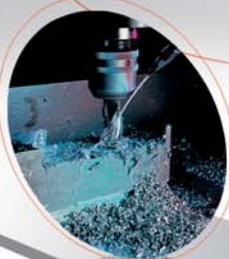
Universal **Osiconcept** version also available; versatile sensors for multiple functions (5 modes in 1). Intelligent functions, simple and unequalled flexibility.



Also available: *metal case* version for *severe* environments.

Robust: Die-cast metal case enclosing the XUM plastic product, providing a mechanical shock resistance of 100gn.

Oil resistance: lenses protected by mineral glass window and stainless steel cover. Reinforced degree of protection (IP67G), special oil resistant cable.



Miniature design - metal

system	Thru-beam system	
	transmitter + receiver	
M8 connector	Pre-cabled (L = 2m)	M8 connector
XUZ C50	15m	
XUM 9APCNM8	XUM 2APCNL2	XUM 2APCNM8
-	-	-
-	-	-

Diffuse system	Polarised reflex system	Thru-beam system
with adjustable sensitivity		transmitter + receiver
Pre-cabled (L = 2m)	Pre-cabled (L = 2m)	Pre-cabled (L = 2m)
NO or NC depending on model		
0.77m	5m with reflector XUZ C50	15m
DC 12 ... 24 V with protection against reverse polarity		
IP67, IP69K*, IP67G**		
-	-	-
XUM 5BPANL2	XUM 9BPANL2	XUM 2BPANL2
XUM 5BPBNL2	XUM 9BPBNL2	XUM 2BPBNL2

*IP69K conforming to DIN 40050 part 9, i.e. spraying of product with high pressure water jet: pressure: 90 bar - temperature: +80°C - duration of test: 3 minutes - solution: pure water.

**IP67G conforming to Yushion Cut Abas BM405, i.e. immersion for 240 hours in cutting oil (insoluble in water) at 50°C.

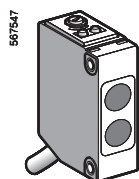
Photo-electric sensors

Osiris® Optimum

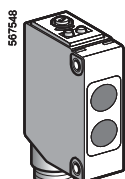
Miniature design, plastic

Three-wire d.c. Solid-state output

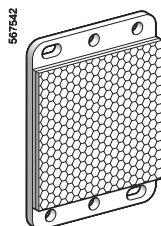
NO/NC configuration switch



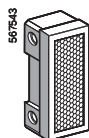
XUM 5A●CNL2



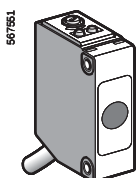
XUM 5A●CNM8



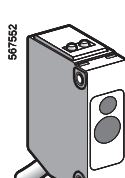
XUZ C50



XUZ C08



XUM 2AKCNL2T



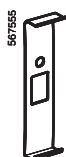
XUM 2A●CNL2R



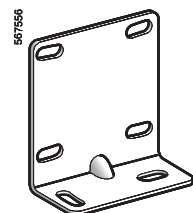
XUZMSV●●



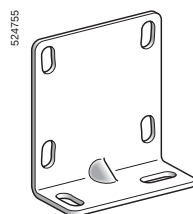
XUZMSH●●



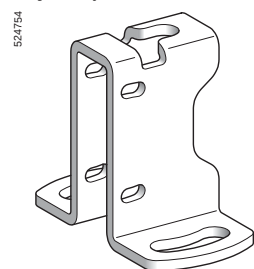
XUZMU01



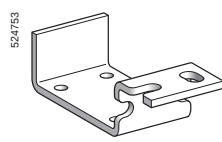
XUZAM01



XUZAM04



XUZAM02



XUZAM03

Sensing distance (Sn)	Function	Output	Connection	Reference	Weight kg
Diffuse system with adjustable sensitivity					
1 m	NO/NC configuration switch	PNP	Pre-cabled (L = 2 m)	XUM 5APCNL2	0.063
			M8 connector	XUM 5APCNM8	0.010
		NPN	Pre-cabled (L = 2 m)	XUM 5ANCNL2	0.063
			M8 connector	XUM 5ANCNM8	0.010

Polarised reflex system with adjustable sensitivity					
5 m with reflector XUZ C50	NO/NC configuration switch	PNP	Pre-cabled (L = 2 m)	XUM 9APCNL2	0.063
2 m with reflector XUZ C08			M8 connector	XUM 9APCNM8	0.010
	NO/NC configuration switch	NPN	Pre-cabled (L = 2 m)	XUM 9ANCNL2	0.063
			M8 connector	XUM 9ANCNM8	0.010

Reflectors					
Universal reflector 50 x 50 mm	—	—		XUZ C50	0.020
Lateral reflector 8.6 x 29.5 mm	—	—		XUZ C08	0.006

Thru-beam system (transmitter + receiver) with adjustable sensitivity					
15 m	NO/NC configuration switch	PNP	Pre-cabled (L = 2 m)	XUM 2APCNL2	0.119
			M8 connector	XUM 2APCNM8	0.019
		NPN	Pre-cabled (L = 2 m)	XUM 2ANCNL2	0.119
			M8 connector	XUM 2ANCNM8	0.019

Transmitter only					
15 m			Pre-cabled (L = 2 m)	XUM 2AKCNL2T	0.063
			M8 connector	XUM 2AKCNM8T	0.010

Receiver only					
15 m	NO/NC configuration switch	PNP	Pre-cabled (L = 2 m)	XUM 2APCNL2R	0.063
			M8 connector	XUM 2APCNM8R	0.010
		NPN	Pre-cabled (L = 2 m)	XUM 2ANCNL2R	0.063
			M8 connector	XUM 2ANCNM8R	0.010

Accessories for thru-beam system				
Description	Dimensions mm	Sensing distance m	Reference	Weight kg
Vertical diaphragm <i>Sold in lots of 2</i>	0.5 x 6.4	1.2	XUZ MSV05	0.002
	1 x 6.4	3	XUZ MSV10	0.002
	1.5 x 6.4	4	XUZ MSV15	0.002
	2 x 6.4	5	XUZ MSV20	0.002
Horizontal diaphragm <i>Sold in lots of 2</i>	0.5 x 6.4	1.2	XUZ MSH05	0.002
	1 x 6.4	3	XUZ MSH10	0.002
	1.5 x 6.4	4	XUZ MSH15	0.002
	2 x 6.4	5	XUZ MSH20	0.002
Anti-interference filter <i>Sold in lots of 4</i>	—	7	XUZ MU01	0.006

Fixing accessories		
Description	Reference	Weight kg
Base mounting fixing bracket	XUZ AM01	0.017
Side mounting fixing bracket	XUZ AM04	0.026
Vertical fixing bracket with protective cover	XUZ AM02	0.062
Horizontal fixing bracket with protective cover	XUZ AM03	0.026

Photo-electric sensors

Osiris® Optimum

Miniature design, plastic

Three-wire d.c. Solid-state output

NO/NC configuration switch

Characteristics

Sensor type		XUM ●A●●●M8	XUM ●A●●●L2
Product certifications		CE, cULus, CTick	
Connection	Connector	M8	—
	Pre-cabled	—	Length: 2 m
Sensing distance nominal Sn / maximum (excess gain = 2) (excess gain = 1)	m	1, diffuse system with adjustable sensitivity	
	m	5, polarised reflex with adjustable sensitivity	
	m	15, thru-beam with adjustable sensitivity	
Type of transmission		Red, except diffuse system (Infrared)	
Degree of protection		Conforming to IEC 60529 IP 65, IP 67	
Storage temperature		°C - 40...+ 70	
Operating temperature		°C - 30...+ 60	
Materials	Case	PBT	
	Lens	PMMA	
	Cable	—	PVC (black for transmitter, grey for other versions)
Vibration resistance	Conforming to IEC 60068-2-6	10 to 55 Hz, amplitude ± 1.5 mm, 2 hours in each direction X, Y and Z	
Shock resistance	Conforming to IEC 60068-2-27	500 m/s² 10 x in each direction X, Y and Z	
Indicator lights	Output state	Orange LED (excluding transmitter)	
	Stability	Green LED	
	Transmitter	Orange LED: supply on	
	Receiver	Red LED: light received; green LED: supply on	
Rated supply voltage		V --- 12...24 with protection against reverse polarity	
Voltage limits (including ripple)		V --- 10...30	
Current consumption, no-load		mA 16 for XUM 5; 13 for XUM 9; 11 for transmitter XUM 2; 13 for receiver XUM 2	
Switching capacity		mA ≤ 100 with overload and short-circuit protection	
Voltage drop, closed state		V ≤ 3	
Maximum switching frequency		Hz 1000	
Delays	First-up	ms < 100	
	Response	ms 0.5	
	Recovery	ms 0.5	

Wiring schemes

M8 connector	Pre-cabled	PNP	NPN	Transmitter ---
2 4 3 (-) 1 (+) 1 (+) 3 4 OUT/Output	(-) BU (Blue) (+) BN (Brown) OUT/Output BK (Black)	BN/1 (+) BK/4 (NO, NC) BU/3 (-)	BN/1 (+) BK/4 (NO, NC) BU/3 (-)	1/BN (+) 3/BU (-)

See connection on page
30210/2.

Curves

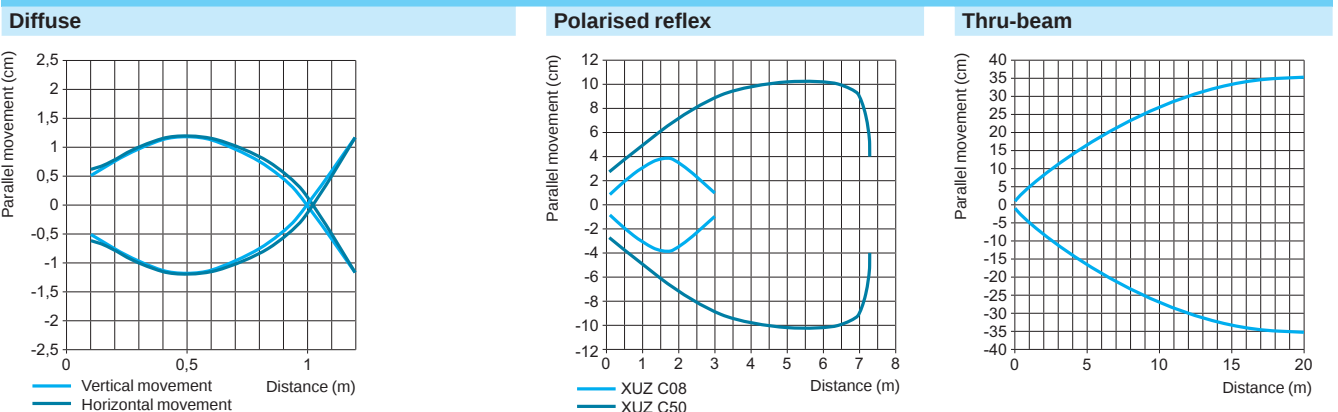


Photo-electric sensors

Osiris® Optimum

Miniature design, plastic

Three-wire d.c. Solid-state output

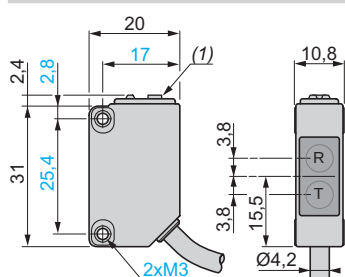
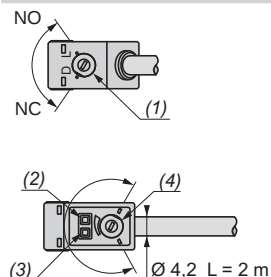
NO/NC configuration switch

Diffuse system, polarised reflex system

Pre-cabled version

Description - XUM 5A●CNL2,
XUM 9A●CNL2

Dimensions - XUM 5A●CNL2,
XUM 9A●CNL2



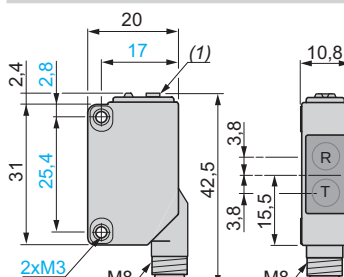
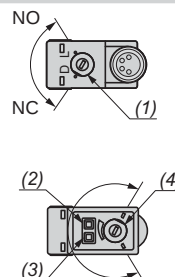
- (1) Configuration switch.
(2) Output state LED.
(3) Stability and power on LED.
(4) Adjustment potentiometer.

R: Reception, T: Transmission.
(1) Potentiometer.

Connector version

Description - XUM 5A●CNM8,
XUM 9A●CNM8

Dimensions - XUM 5A●CNM8,
XUM 9A●CNM8



- (1) Configuration switch.
(2) Output state LED.
(3) Stability and power on LED.
(4) Adjustment potentiometer.

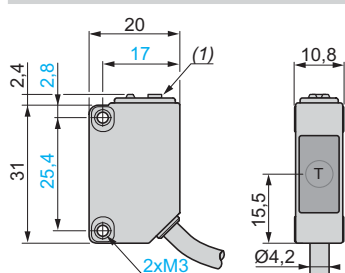
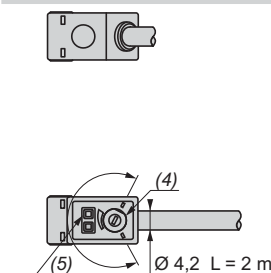
R: Reception, T: Transmission.
(1) Potentiometer.

Thru-beam system

Pre-cabled version

Description - XUM 2AKCNL2T

Dimensions - XUM 2AKCNL2T

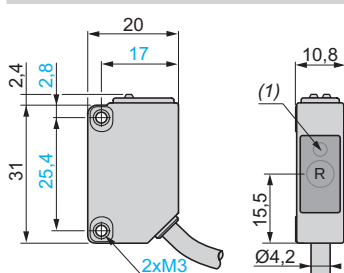
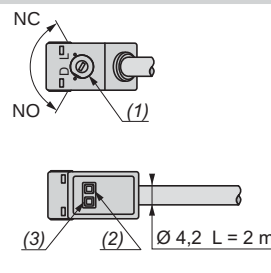


- (4) Adjustment potentiometer.
(5) Power on LED.

T: Transmission.
(1) Potentiometer.

Description - XUM 2A●CNL2R

Dimensions - XUM 2A●CNL2R



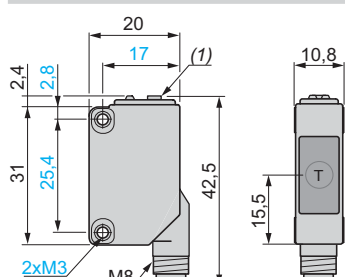
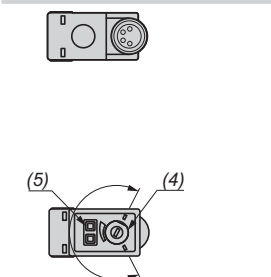
- (1) Configuration switch.
(2) Output state LED.
(3) Stability and power on LED.

R: Reception.
(1) Output state LED on front face.

Connector version

Description - XUM 2AKCNM8T

Dimensions - XUM 2AKCNM8T

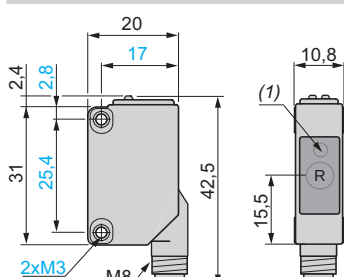
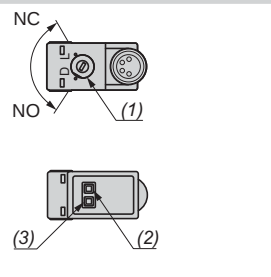


- (4) Adjustment potentiometer.
(5) Power on LED.

T: Transmission.
(1) Potentiometer.

Description - XUM 2A●CNM8R

Dimensions - XUM 2A●CNM8R



- (1) Configuration switch.
(2) Output state LED.
(3) Stability and power on LED.

R: Reception.
(1) Output state LED on front face.

Photo-electric sensors

Osiris® Optimum

Miniature design, plastic

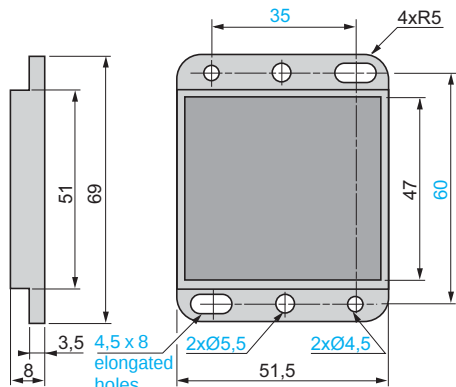
Three-wire d.c. Solid-state output

NO/NC configuration switch

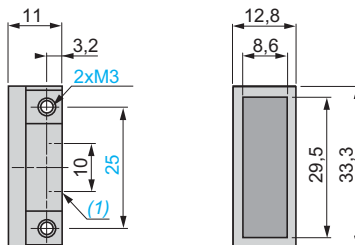
Accessories

Reflectors

XUZ C50



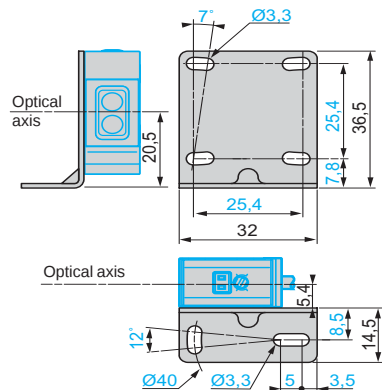
XUZ C08



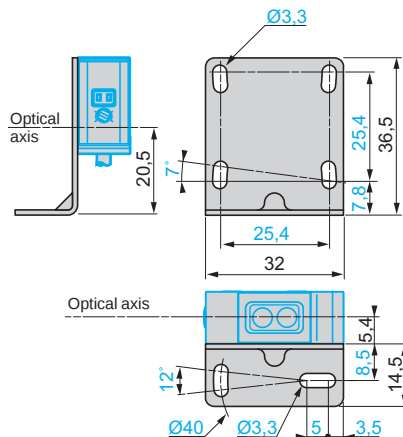
1) 2 x M3

Fixing brackets

XUZ AM01

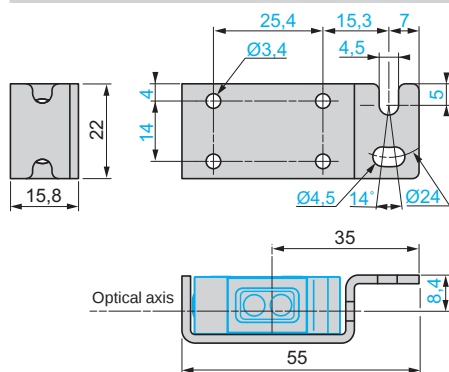


XUZ AM04

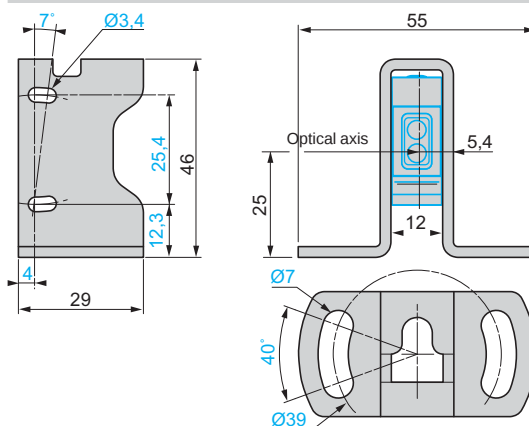


Fixing bracket with protective cover

XUZ AM03

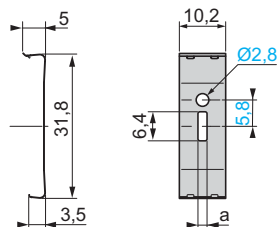


XUZ AM02

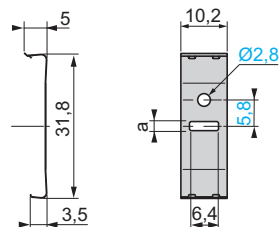


Diaphragms

XUZ MSV●●



XUZ MSH●●



XUZ	a
MSV05	0,5
MSV10	1
MSV15	1,5
MSV20	2
MSH05	0,5
MSH10	1
MSH15	1,5
MSH20	2

Filter

XUZ MU01

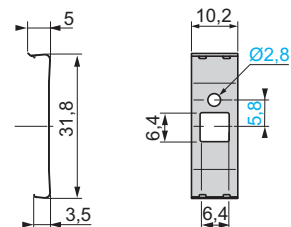
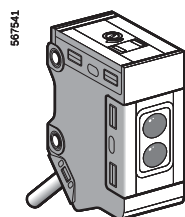


Photo-electric sensors

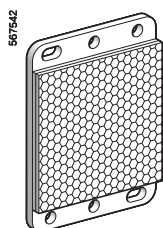
Osiris® Application

Miniature design, metal

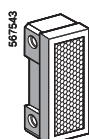
Three-wire d.c. Solid-state output



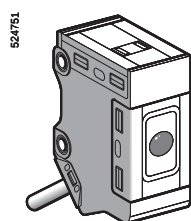
XUM 5B●NL2



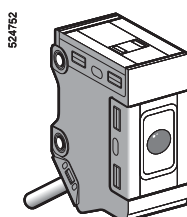
XUZ C50



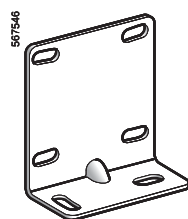
XUZ C08



XUM 2B2KCL2T



XUM 2B●NL2R



XUZ AM81

Sensing distance (Sn)	Function	Output	Connection	Reference	Weight kg
Diffuse system with adjustable sensitivity					
0.77 m	NO	PNP	Pre-cabled (L = 2 m)	XUM 5BPANL2	0.128
		NPN	Pre-cabled (L = 2 m)	XUM 5BNANL2	0.128
	NC	PNP	Pre-cabled (L = 2 m)	XUM 5BPBNL2	0.128
		NPN	Pre-cabled (L = 2 m)	XUM 5BNBNL2	0.128

Polarised reflex system

5 m with reflector XUZ C50	NO	PNP	Pre-cabled (L = 2 m)	XUM 9BPANL2	0.128
		NPN	Pre-cabled (L = 2 m)	XUM 9BNANL2	0.128
2 m with reflector XUZ C08	NC	PNP	Pre-cabled (L = 2 m)	XUM 9BPBNL2	0.128
		NPN	Pre-cabled (L = 2 m)	XUM 9BNBNL2	0.128

Reflectors

Universal reflector 50 x 50 mm	—	—		XUZ C50	0.020
Lateral reflector 8.6 x 29.5 mm	—	—		XUZ C08	0.006

Thru-beam system (transmitter + receiver)

15 m	NO	PNP	Pre-cabled (L = 2 m)	XUM 2BPANL2	0.237
		NPN	Pre-cabled (L = 2 m)	XUM 2BNANL2	0.237
	NC	PNP	Pre-cabled (L = 2 m)	XUM 2BPBNL2	0.237
		NPN	Pre-cabled (L = 2 m)	XUM 2BNBNL2	0.237

Transmitter only

15 m			Pre-cabled (L = 2 m)	XUM 2BKCNL2T	0.128
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Receiver only

15 m	NO	PNP	Pre-cabled (L = 2 m)	XUM 2BPANL2R	0.128
		NPN	Pre-cabled (L = 2 m)	XUM 2BNANL2R	0.128
	NC	PNP	Pre-cabled (L = 2 m)	XUM 2BPBNL2R	0.128
		NPN	Pre-cabled (L = 2 m)	XUM 2BNBNL2R	0.128

Fixing accessory

Description	Reference	Weight kg
Base mounting fixing bracket	XUZ AM81	0.020

Characteristics

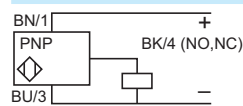
Sensor type		XUM ●B●●NL2
Product certifications		CE, cULus, CTick
Connection	Pre-cabled	Length: 2 m
Sensing distance nominal Sn / maximum (excess gain = 2) (excess gain = 1)	m	0.77, diffuse system with adjustable sensitivity
	m	5, polarised reflex
	m	15, thru-beam
Type of transmission		Red, except diffuse system (Infrared)
Degree of protection	Conforming to IEC 60529	IP 65, IP 67
	DIN 40050	IP 69 K
Storage temperature	°C	- 40...+ 70
Operating temperature	°C	- 30...+ 60
Materials	Case	Zamack and stainless steel
	Lens	Glass
	Cable	— PVC (black for transmitter, grey for other versions)
Vibration resistance	Conforming to IEC 60068-2-6	10 to 55 Hz, amplitude ± 1.5 mm, 2 hours in each direction X, Y and Z
Shock resistance	Conforming to IEC 60068-2-27	500 m/s² 10 x in each direction X, Y and Z
Indicator lights	Output state	Orange LED (excluding transmitter)
	Stability	Green LED
	Transmitter	Orange LED: supply on
	Receiver	Red LED: light received; green LED: supply on
Rated supply voltage	V	— 12...24 with protection against reverse polarity
Voltage limits (including ripple)	V	— 10...30
Current consumption, no-load	mA	16 for XUM 5; 13 for XUM 9; 11 for transmitter XUM 2; 13 for receiver XUM 2
Switching capacity	mA	≤ 100 with overload and short-circuit protection
Voltage drop, closed state	V	≤ 3
Maximum switching frequency	Hz	1000
Delays	First-up	ms < 100
	Response	ms 0.5
	Recovery	ms 0.5

Wiring schemes

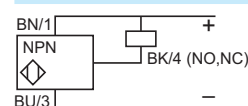
Pre-cabled

(-) BU (Blue)
(+) BN (Brown)
OUT/Output BK (Black)

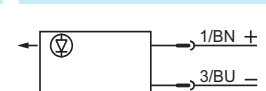
PNP



NPN

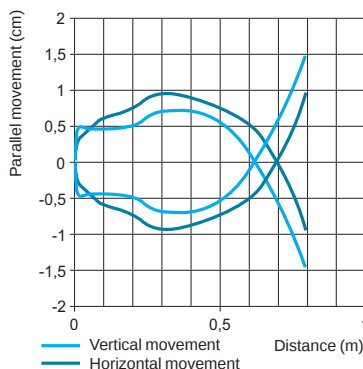


Transmitter ---

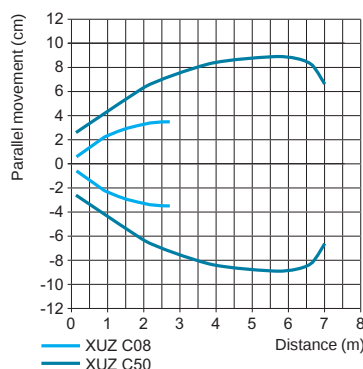


Curves

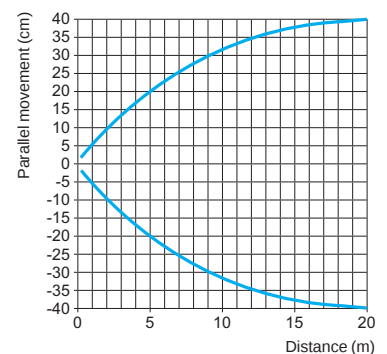
Diffuse



Polarised reflex

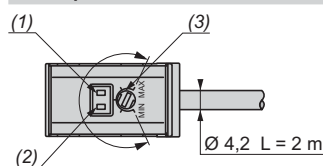


Thru-beam



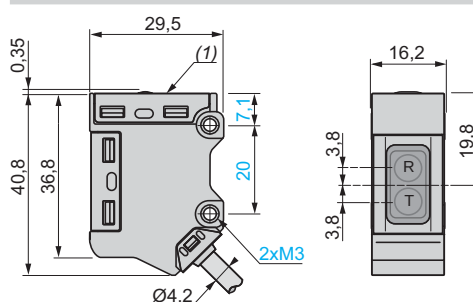
Diffuse system

Description - XUM 5B●●NL2



- (1) Output state LED.
- (2) Stability and power on LED.
- (3) Adjustment potentiometer.

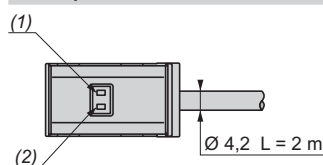
Dimensions - XUM 5B●●NL2



- (1) Potentiometer.
- R: Reception, T: Transmission.

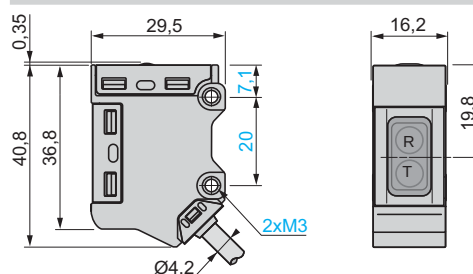
Polarised reflex system

Description - XUM 9B●●NL2



- (1) Output state LED.
- (2) Stability and power on LED.

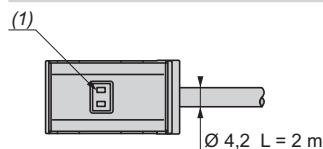
Dimensions - XUM 9B●●NL2



- R: Reception, T: Transmission.

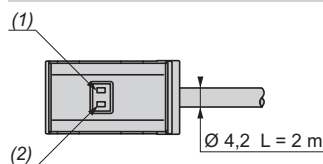
Thru-beam system

Description - XUM 2BKC NL2T



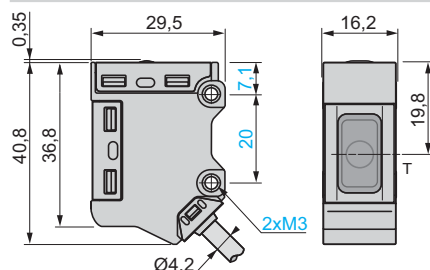
- (1) Output state LED.

Description - XUM 2B●●NL2R



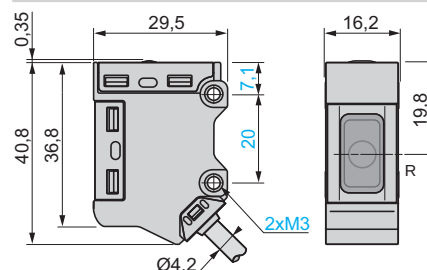
- (1) Output state LED.
- (2) Stability and power on LED.

Dimensions - XUM 2BKC NL2T



- T: Transmission.

Dimensions - XUM 2B●●NL2R

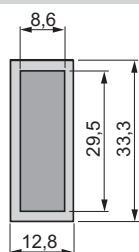
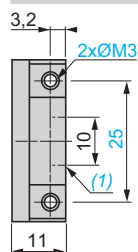


- R: Reception

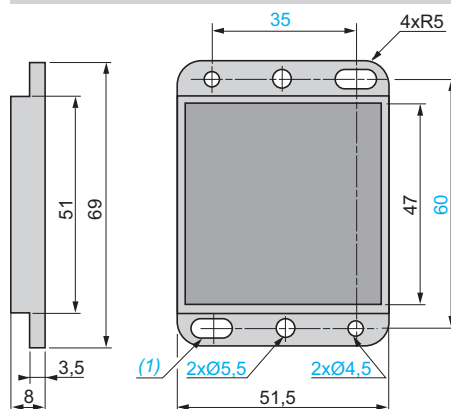
Accessories

Reflectors

XUZ C08

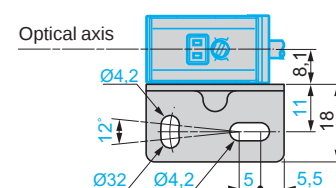
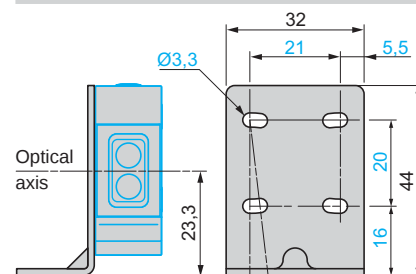


XUZ C50



Fixing bracket

XUZ AM81



(1) 2 x M3

(1) Elongated holes 4.5 x 8