

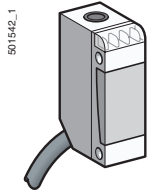
OSICONCEPT™ Photoelectric Sensors

XUM Miniature Rectangular

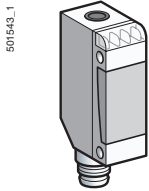
Multi-Mode, DC



Photoelectric Sensors



XUM OA••L2



XUM OA••M8

Features:

- Ability to select sensing mode (Diffuse, Diffuse with Background Suppression, Polarized Retroreflective ■, or Thru-Beam ★)
- Simple push-button teach for sensor to learn application
- Ability to reduce stock with one multi-mode sensor
- Housing: Plastic
- N.C. / N.O. selectable

Output Mode	Circuit Type	Voltage Range	Connection Type □	Load Current Maximum	Operating Frequency Maximum	Catalog Number
N.C. / N.O.	PNP	12-24 Vdc	2 m (6.6') cable	100 mA	250 Hz	XUM0APSA2
N.C. / N.O.	PNP	12-24 Vdc	M8 Nano conn.	100 mA	250 Hz	XUM0APSAM8
N.C. / N.O.	NPN	12-24 Vdc	2 m (6.6') cable	100 mA	250 Hz	XUM0ANSAL2
N.C. / N.O.	NPN	12-24 Vdc	M8 Nano conn.	100 mA	250 Hz	XUM0ANSAM8

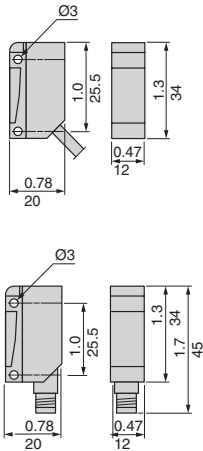
Accessories

Description	Connection Type	Catalog Number
Reflector	-	XUZC50
Transmitter	2 m (6.6') cable	XUM0AKSA2T
	M8 Nano connector	XUM0AKSAM8T

- ★ Transmitter required for multi-mode receiver to operate in Thru-beam mode
- Reflector required for multi-mode receiver to operate in Polarized Retroreflective mode
- 5 m cable length available with L5 suffix / 10 m cable length available with L10 suffix.

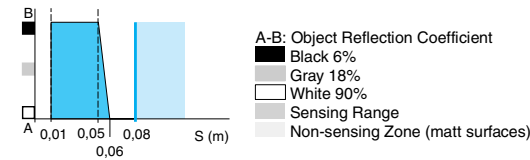
Dimensions

XUM

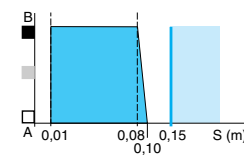


Variation of Usable Sensing Distance

Diffuse System with Adjustable Background Suppression
Learning at Minimum



Learning at Maximum



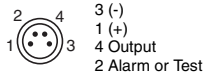
Excess Gain

An excess gain of 2 has been achieved at the nominal sensing distance (Sn) of all sensing modes.

Dual Dimensions $\frac{\text{inches}}{\text{mm}}$

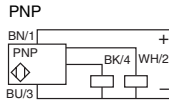
Wiring

Connector

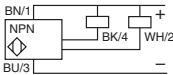


Cable

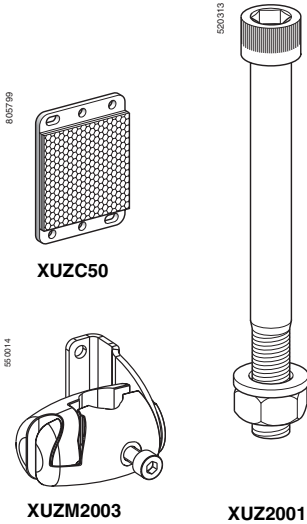
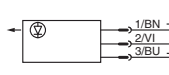
- (-) Blue
- (+) Brown
- (Output) Black
- Alarm White
- Beam Break Test Violet



NPN



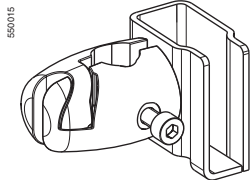
Emitter



XUZC50

XUZM2003

XUZ2001



XUZM2004

Specifications

Mechanical

For usable sensing range, see detection curves

Sensing Distance (Sn) (excess gain = 2)	Diffuse Background Supp.	10 cm
	Diffuse Standard	40 cm
	Pol. Retroreflective	3 m
	Thru-Beam	10 m
Temperature Range	Operating	-13 ° to +131 ° F (-25 ° to +55 ° C)
	Storage	-40 ° to +158 ° F (-40 ° to +70 ° C)
Enclosure Rating	NEMA Type	1, 3, 4, 6, 6P (cable version only), 12, 13
	IEC Type	IP67
Enclosure Material	Case	PBT
	Lens	PMMA
	Cable	PVR
Vibration Resistance	(IEC 60068-2-6)	7 g, amplitude +/- 1.5 mm (f=10 Hz to 55 Hz)
Shock Resistance	(IEC 60068-2-27)	30 g, duration 11 ms
LED indicator	Output	Yellow
	Power & Teach	Green
	Signal Instability	Red
Connection	Cable	4.2 mm O.D. 4 conductor
	Connector	4 pin Nano conn. M8

Electrical

Voltage Range	12 – 24 Vdc	
Voltage Limit (including ripple)	10 – 30 Vdc	
Voltage Drop (across switch) closed state maximum	1.5 V	
Current Consumption (no load) maximum	35 mA (20 mA – XUM0...T)	
Load Current maximum	100 mA	
Maximum Operating Frequency	250 Hz	
On Delay Maximum	2 ms	
Off Delay Maximum	2 ms	
Power up Delay Maximum	100 ms	
Alarm Output	50 mA	
Wavelength	Polarized - red	660 nm
	Short Range Proximity	660 nm
	All others	880 nm
Protective Circuitry	Reverse Polarity Protection	Yes
	Overload Protection	Yes
	Short Circuit Protection-SCP	Yes

Agency Listings			
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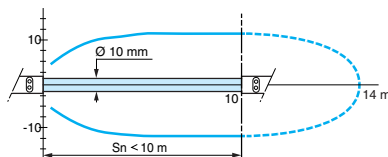
Accessories

Description	Catalog Number
Reflector 50x50 mm	XUZC50
3-D mounting bracket (stem not included)	XUZM2003
3-D Protective mounting bracket (stem not included)	XUZM2004
M12 Stem (75 mm usable length)	XUZ2001
3-D mounting base	XUZ2003
Metal Mounting Nuts	XSZE108

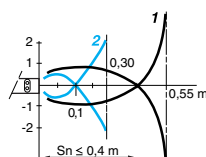
See page 159 for complete 3-D assembly.

Detection Curves

Thru-beam with Thru-beam Accessory

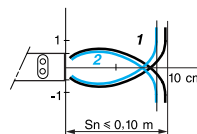


Diffuse without Accessory

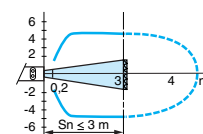


Object: 3.9 x 3.9" (10 x 10 cm)
 1: White 90%, 2: Grey 18%

Diffuse without Accessory with Background Suppression



Polarized Retroreflective with Reflector Accessory



With Reflector XUZC50

Connector Cables (M8 or S suffix)

XSZCS141	Nano conn., 4 pin, 2m, straight
XSZCS151	Nano conn., 4 pin, 2m 90 °

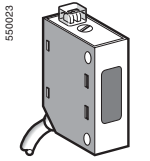
For additional cable options and lengths see p. 518

Photoelectric Sensors

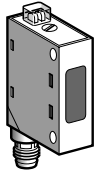
XUM Miniature Rectangular DC



Photoelectric Sensors



XUM •A•L2



Optimum miniature rectangular photoelectric sensors designed for OEMs & industrial applications.

Features:

- Small dimensions, designed to fit in those tight applications
- Quick connect versions
- Available in either N.C. or N.O. operation

Output Mode	Circuit Type	Voltage Range	Connection Type ★	Load Current Maximum	Operating Frequency Maximum	Catalog Number
Thru-Beam (receiver) - 8 m (26') Nominal Sensing Distance (emitter sold separately)						
N.O.	PNP	12-24 Vdc	2 m (6.6') cable	100 mA	400 Hz	XUM2APANL2R
N.C.	PNP	12-24 Vdc	2 m (6.6') cable	100 mA	400 Hz	XUM2APBNL2R
N.O.	NPN	12-24 Vdc	2 m (6.6') cable	100 mA	400 Hz	XUM2ANANL2R
N.C.	NPN	12-24 Vdc	2 m (6.6') cable	100 mA	400 Hz	XUM2ANBNL2R
N.O.	PNP	12-24 Vdc	M 8 Nano conn.	100 mA	400 Hz	XUM2APANM8R
N.C.	PNP	12-24 Vdc	M 8 Nano conn.	100 mA	400 Hz	XUM2APBNM8R
N.O.	NPN	12-24 Vdc	M 8 Nano conn.	100 mA	400 Hz	XUM2ANANM8R
N.C.	NPN	12-24 Vdc	M 8 Nano conn.	100 mA	400 Hz	XUM2ANBNM8R

Thru-Beam (emitter)

-	-	12-24 Vdc	2 m (6.6') cable	-	-	XUM2AKSNL2T
-	-	12-24 Vdc	M 8 Nano conn.	-	-	XUM2AKSNM8T

Retroreflective - 4 m (13') Nominal Sensing Distance (reflector sold separately)

N.O.	PNP	12-24 Vdc	2 m (6.6') cable	100 mA	500 Hz	XUM1APANL2
N.C.	PNP	12-24 Vdc	2 m (6.6') cable	100 mA	500 Hz	XUM1APBNL2
N.O.	NPN	12-24 Vdc	2 m (6.6') cable	100 mA	500 Hz	XUM1ANANL2
N.C.	NPN	12-24 Vdc	2 m (6.6') cable	100 mA	500 Hz	XUM1ANBNL2
N.O.	PNP	12-24 Vdc	M 8 Nano conn.	100 mA	500 Hz	XUM1APANM8
N.C.	PNP	12-24 Vdc	M 8 Nano conn.	100 mA	500 Hz	XUM1APBNM8
N.O.	NPN	12-24 Vdc	M 8 Nano conn.	100 mA	500 Hz	XUM1ANANM8
N.C.	NPN	12-24 Vdc	M 8 Nano conn.	100 mA	500 Hz	XUM1ANBNM8

Polarized Retroreflective - 2 m (6.6') Nominal Sensing Distance (reflector sold separately)

N.O.	PNP	12-24 Vdc	2 m (6.6') cable	100 mA	500 Hz	XUM9APANL2
N.C.	PNP	12-24 Vdc	2 m (6.6') cable	100 mA	500 Hz	XUM9APBNL2
N.O.	NPN	12-24 Vdc	2 m (6.6') cable	100 mA	500 Hz	XUM9ANANL2
N.C.	NPN	12-24 Vdc	2 m (6.6') cable	100 mA	500 Hz	XUM9ANBNL2
N.O.	PNP	12-24 Vdc	M 8 Nano conn.	100 mA	500 Hz	XUM9APANM8
N.C.	PNP	12-24 Vdc	M 8 Nano conn.	100 mA	500 Hz	XUM9APBNM8
N.O.	NPN	12-24 Vdc	M 8 Nano conn.	100 mA	500 Hz	XUM9ANANM8
N.C.	NPN	12-24 Vdc	M 8 Nano conn.	100 mA	500 Hz	XUM9ANBNM8

Adjustable Short Range Proximity Diffuse – 10 cm (4') Nominal Sensing Distance

N.O.	PNP	12-24 Vdc	2 m (6.6') cable	100 mA	500 Hz	XUM6APANL2
N.C.	PNP	12-24 Vdc	2 m (6.6') cable	100 mA	500 Hz	XUM6APBNL2
N.O.	NPN	12-24 Vdc	2 m (6.6') cable	100 mA	500 Hz	XUM6ANANL2
N.C.	NPN	12-24 Vdc	2 m (6.6') cable	100 mA	500 Hz	XUM6ANBNL2
N.O.	PNP	12-24 Vdc	M 8 Nano conn.	100 mA	500 Hz	XUM6APANM8
N.C.	PNP	12-24 Vdc	M 8 Nano conn.	100 mA	500 Hz	XUM6APBNM8
N.O.	NPN	12-24 Vdc	M 8 Nano conn.	100 mA	500 Hz	XUM6ANANM8
N.C.	NPN	12-24 Vdc	M 8 Nano conn.	100 mA	500 Hz	XUM6ANBNM8

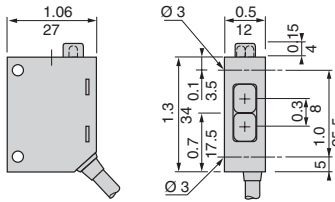
Adjustable Long Range Proximity Diffuse – 40 cm (16') Nominal Sensing Distance

N.O.	PNP	12-24 Vdc	2 m (6.6') cable	100 mA	500 Hz	XUM5APANL2
N.C.	PNP	12-24 Vdc	2 m (6.6') cable	100 mA	500 Hz	XUM5APBNL2
N.O.	NPN	12-24 Vdc	2 m (6.6') cable	100 mA	500 Hz	XUM5ANANL2
N.C.	NPN	12-24 Vdc	2 m (6.6') cable	100 mA	500 Hz	XUM5ANBNL2
N.O.	PNP	12-24 Vdc	M 8 Nano conn.	100 mA	500 Hz	XUM5APANM8
N.C.	PNP	12-24 Vdc	M 8 Nano conn.	100 mA	500 Hz	XUM5APBNM8
N.O.	NPN	12-24 Vdc	M 8 Nano conn.	100 mA	500 Hz	XUM5ANANM8
N.C.	NPN	12-24 Vdc	M 8 Nano conn.	100 mA	500 Hz	XUM5ANBNM8

★ 5 m cable length available with L5 suffix.

Dimensions

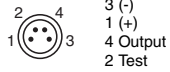
XUM



Dual Dimensions $\frac{\text{inches}}{\text{mm}}$

Wiring

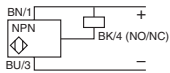
Connector



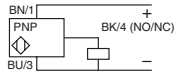
Cable

(-) Blue
(+) Brown
(Output) Black
Beam Break Test Violet

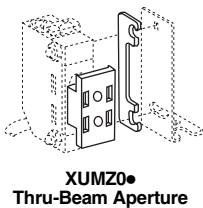
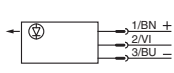
NPN



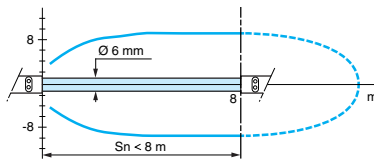
PNP



Emitter



Thru-Beam System



Specifications

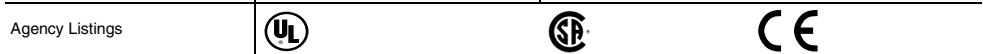
Mechanical

For usable sensing range, see detection curves

Temperature Range	Operating	-13 ° to +131 ° F (-25 ° to +55 ° C)
	Storage	-40 ° to +158 ° F (-40 ° to +70 ° C)
Enclosure Rating	NEMA Type	1, 3, 4, 4X (indoor), 6, 6P (cable version only), 12, 13
	IEC Type	IP67
Enclosure Material	Case	PBT
	Lens	PMMA
	Cable	PVR
Vibration Resistance	(IEC 60068-2-6)	7 g, amplitude +/- 1.5 mm (f=10 Hz to 55 Hz)
Shock Resistance	(IEC 60067-2-27)	30 g duration 11 ms
LED indicator	Output	Yellow
	Power	Green (XUM2...T)
Connection	Cable	4.2 mm O.D. 3 conductor
	Connector	4 pin Nano style DC (M8)

Electrical

Voltage Range	12 – 24 Vdc	
Voltage Limit (including ripple)	10 – 30 Vdc	
Voltage Drop (across switch) closed state maximum	1.5 V	
Current Consumption (no load) maximum	35 mA	
Load Current maximum	100 mA	
Maximum Operating Frequency	500 Hz (400 Hz Thru-Beam)	
On Delay Maximum	1 ms	
Off Delay Maximum	1 ms	
Power up Delay Maximum	30 ms	
Wavelength	Polarized - red	660 nm
	Short Range Proximity	660 nm
	All others	880 nm
Protective Circuitry	Overload Protection	Yes
	Short Circuit Protection	Yes



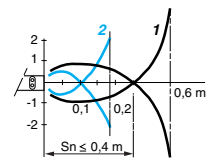
Accessories

Description	Sensing Distance	Catalog Number
90 ° mounting bracket (cable version)	–	XUZA47
90 ° mounting bracket (connector version)	–	XUZA46
Thru-beam aperture	0.5 mm diameter	4.5 cm (1.78")
	1.0 mm diameter	4.5 cm (1.78")
	2.0 mm diameter	4.5 cm (1.78")

Detection Curves

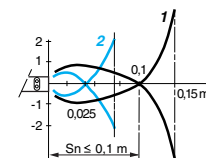
Diffuse

Long Range

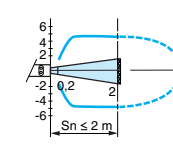


Diffuse

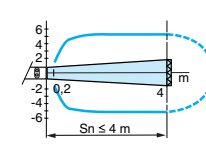
Short Range



Polarized Retroreflective



Retroreflective



Object : 3.9 x 3.9" (10 x 10 cm), 1 : White 90 %, 2 : Gray 18 %

With Reflector XUZ C50

With Reflector XUZ C50

Excess Gain

An excess gain of 2 has been achieved at the nominal sensing distance (Sn) of all sensing modes.

Connector Cables (M8 or S suffix)

XSZCS141	Nano conn., 4 pin, 2m, straight
XSZCS151	Nano conn., 4 pin, 2m 90 °

For additional cable options and lengths see p. 518