

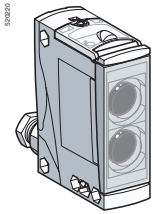
OSICONCEPT™ Photoelectric Sensors

XUX Compact Rectangular

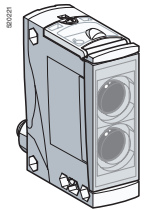
Multi-Mode, DC and AC/DC



Photoelectric Sensors



XUX 0ARTT16



XUX 0AKSAM12

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

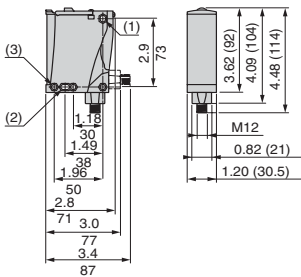
Output Mode	Circuit Type	Voltage Range	Connection Type	Load Current Maximum	Operating Frequency Maximum	Catalog Number
N.C. / N.O.	PNP/NPN	12-24 Vdc	PG 16 cable gland	100 mA	250 Hz	XUX0AKSAT16
N.C. / N.O.	PNP/NPN	12-24 Vdc	4 pin micro conn.	100 mA	250 Hz	XUX0AKSAM12
N.C. / N.O.	AC/DC relay	20-240 Vac/dc	PG 16 cable gland	3 A	25 Hz	XUX0ARCTT16

Accessories

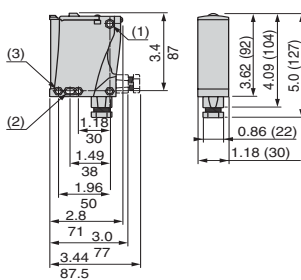
Description	Connection Type	Catalog Number
Reflector	-	XUZC50
Transmitter	12-240 Vdc	2 m (6.6') cable
	12-240 Vdc	4 pin micro conn.
	24-240 Vac/dc	2 m (6.6') cable

- ★ Transmitter required for multi-mode receiver to operate in Thru-beam mode
 - Reflector required for multi-mode receiver to operate in Polarized Retroreflective mode
- PG 16 cable gland is for cable size from 0.27" to 0.40" (7 to 10 mm) diameter.

Dimensions



XUX...M12



XUX...T16

inches (mm) /

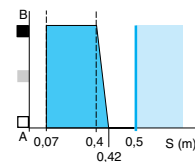
Dual Dimensions $\frac{\text{inches}}{\text{mm}}$

Excess Gain

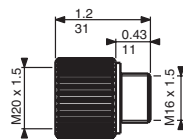
An excess gain of 2 has been achieved at the nominal sensing distance (Sn) of all sensing modes.

Variation of Usable Sensing Distance

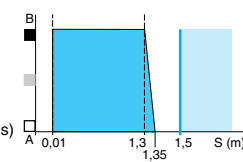
Diffuse System with Adjustable Background Suppression
Learning at Minimum



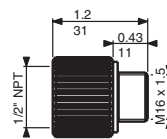
XUXZ2001



Learning at Maximum



XUXZ2002



Wiring

Connector M12

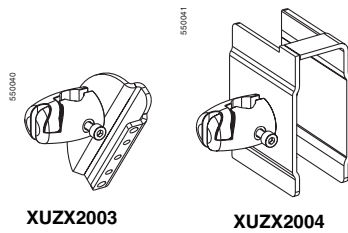


PNP/NPN
M12 Terminal
1 • 1 ⓪ +
3 • 2 ⓪ -
4 • 3 ⓪ -
- • 4 ⓪ -
- • 5 ⓪ -

Emitter ---
M12 Terminal
1 • 1 ⓪ +
3 • 2 ⓪ -
2 • 3 ⓪ -

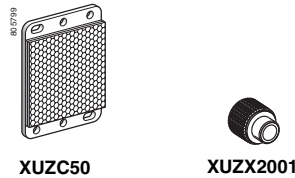
Output ~
Terminal
1 ⓪ ~
2 ⓪ ~
3 ⓪ N.O.
4 ⓪ ~
5 ⓪ N.C.

Emitter ~
Terminal
1 ⓪ ~
2 ⓪ ~



XUXZ2003

XUXZ2004



XUZC50

XUZ2001

Specifications

Mechanical

For usable sensing range, see detection curves

Sensing Distance (Sn) (excess gain = 2)	Diffuse Background Supp.	1.3 m
	Diffuse Standard	2 m
	Pol. Retroreflective	11 m
Temperature Range	Thru-beam	40 m
	Operating	-13 ° to +131 ° F (-25 ° to +55 ° C)
	Storage	-40 ° to +158 ° F (-40 ° to +70 ° C)
Enclosure Rating	NEMA Type	4, 4X (indoor), 12, 13
	IEC Type	IP67
Enclosure Material	Case	PBT
	Lens	PMMA
	Cable	PVR
Vibration Resistance	(IEC 60068-2-6)	7 g, amplitude +/- 1.5mm (f=10 Hz to 55 Hz)
Shock Resistance	(IEC 60068-2-27)	30 g, duration 11ms
	Output	Yellow
LED indicator	Signal Instability	Red
	Power & Teach	Green
	Cable Gland	M16
Connection	Connector (DC version)	4 pin Micro style DC (M12)

Electrical

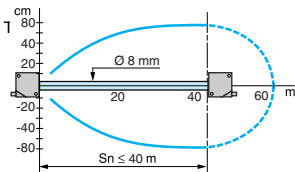
	AC/DC	DC
Voltage Range	24-240 Vac/dc	12-24 Vdc
Voltage Limit (including ripple)	20-264 Vac/dc	10-36 Vdc
Voltage Drop (across switch) closed state maximum	1.5 V	1.5 V
Current Consumption (no load) maximum	2 W	35 mA (20 mA – Transmitter)
Alarm Output	100 mA	
Load Current maximum	3 A	100 mA
Maximum Operating Frequency	20 Hz	240 Hz
On Delay Maximum	25 ms	2 ms
Off Delay Maximum	25 ms	2 ms
Power up Delay Maximum	200 ms	200 ms
Protective Circuitry	Overload Protection	Yes
	Reverse Polarity Protection	-
	Short Circuit Protection	Yes
Agency Listings	E164869 CCN NRKH	

Accessories

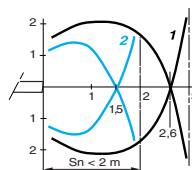
Description	Catalog Number
Reflector 50x50 mm	XUZC50
3-D mounting bracket (stem not included)	XUXZ2003
3-D protective mounting bracket	XUXZ2004
M12 Stem (75 mm usable length)	XUZ2001
3-D mounting base	XUZ2003
Adapter ISO 16 to 1/2" NPT	XUXZ2001
Adapter ISO 16 to ISO 20	XUXZ2002

See page 159 for complete 3-D assembly.

Detection Curves

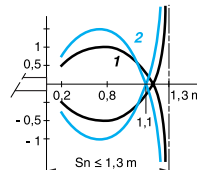


Diffuse without Accessory

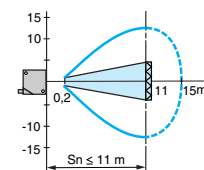


Object: 3.9 x 3.9" (10 x 10 cm)
1: White 90%, 2: Grey 18%

Diffuse without Accessory with Background Suppression



Polarized Retroreflective with Reflector Accessory



With Reflector XUZC50

Connector Cables (M12 or D suffix)

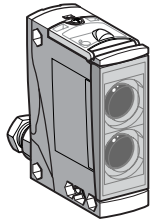
XSZCD101Y	Micro Conn., 4 pin, 2 m, straight
XSZCD111Y	Micro Conn., 4 pin, 2 m, 90°

For additional cable options and lengths see p. 518

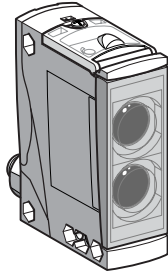
Photoelectric Sensors XUX Compact Rectangular DC and AC/DC



Photoelectric Sensors



XUX•A••NT16



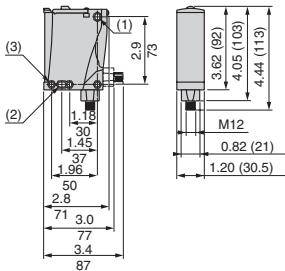
XUX•A••M12

Features:

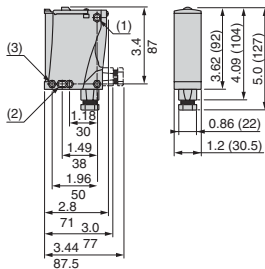
- Interchangeable mounting of competitive compact sensor body styles.
- Available with terminal block wiring or connector version.

Output Mode	Circuit Type	Voltage Range	Connection Type	Load Current Maximum	Operating Frequency Maximum	Catalog Number
Thru-Beam (receiver)40–m (130') Nominal Sensing Distance (emitter sold separately)						
N.O.	PNP	12-24 Vdc	PG16 cable entry	100 mA	250 Hz	XUX2APANT16R
N.C.	PNP	12-24 Vdc	PG16 cable entry	100 mA	250 Hz	XUX2APBNT16R
N.O.	NPN	12-24 Vdc	PG16 cable entry	100 mA	250 Hz	XUX2ANANT16R
N.C.	NPN	12-24 Vdc	PG16 cable entry	100 mA	250 Hz	XUX2ANBNT16R
N.O.	PNP	12-24 Vdc	4 pin micro conn.	100 mA	250 Hz	XUX2APANM12R
N.C.	PNP	12-24 Vdc	4 pin micro conn.	100 mA	250 Hz	XUX2APBNM12R
N.O.	NPN	12-24 Vdc	4 pin micro conn.	100 mA	250 Hz	XUX2ANANM12R
N.C.	NPN	12-24 Vdc	4 pin micro conn.	100 mA	250 Hz	XUX2ANBNM12R
N.O.	AC/DC relay	20-240Vac/dc	PG16 cable entry	3 A	20Hz	XUX2ARCNT16R
Thru-Beam (emitter)						
–	–	12-24 Vdc	PG16 cable entry	–	–	XUX2AKSNT16T
–	–	12-24 Vdc	4 pin micro conn.	–	–	XUX2AKSNM12T
–	–	20-240 Vac/dc	PG16 cable entry	–	–	XUX2ARCNT16T
Retroreflective 14m (45') Nominal Sensing Distance (reflectors sold separately)						
N.O.	PNP	12-24 Vdc	PG16 cable entry	100 mA	250 Hz	XUX1APANT16
N.C.	PNP	12-24 Vdc	PG16 cable entry	100 mA	250 Hz	XUX1APBNT16
N.O.	NPN	12-24 Vdc	PG16 cable entry	100 mA	250 Hz	XUX1ANANT16
N.C.	NPN	12-24 Vdc	PG16 cable entry	100 mA	250 Hz	XUX1ANBNT16
N.O.	PNP	12-24 Vdc	4 pin micro conn.	100 mA	250 Hz	XUX1APANM12
N.C.	PNP	12-24 Vdc	4 pin micro conn.	100 mA	250 Hz	XUX1APBNM12
N.O.	NPN	12-24 Vdc	4 pin micro conn.	100 mA	250 Hz	XUX1ANANM12
N.C.	NPN	12-24 Vdc	4 pin micro conn.	100 mA	250 Hz	XUX1ANBNM12
N.C./N.C. / N.O.	AC/DC relay	20-240 Vac/dc	PG16 cable entry	3 A	20 Hz	XUX1ARCNT16
Polarized Retroreflective 11m (36') Nominal Sensing Distance (reflectors sold separately)						
N.O.	PNP	12-24 Vdc	PG16 cable entry	100 mA	250 Hz	XUX9APANT16
N.C.	PNP	12-24 Vdc	PG16 cable entry	100 mA	250 Hz	XUX9APBNT16
N.O.	NPN	12-24 Vdc	PG16 cable entry	100 mA	250 Hz	XUX9ANANT16
N.C.	NPN	12-24 Vdc	PG16 cable entry	100 mA	250 Hz	XUX9ANBNT16
N.O.	PNP	12-24 Vdc	4 pin micro conn.	100 mA	250 Hz	XUX9APANM12
N.C.	PNP	12-24 Vdc	4 pin micro conn.	100 mA	250 Hz	XUX9APBNM12
N.O.	NPN	12-24 Vdc	4 pin micro conn.	100 mA	250 Hz	XUX9ANANM12
N.C.	NPN	12-24 Vdc	4 pin micro conn.	100 mA	250 Hz	XUX9ANBNM12
N.C. / N.O.	AC/DC relay	20-240 Vac/dc	PG16 cable entry	3 A	20 Hz	XUX9ARCNT16
Proximity Diffuse 2.1m (7.9') Nominal Sensing Distance						
N.O.	PNP	12-24 Vdc	PG16 cable entry	100 mA	250 Hz	XUX5APANT16
N.C.	PNP	12-24 Vdc	PG16 cable entry	100 mA	250 Hz	XUX5APBNT16
N.O.	NPN	12-24 Vdc	PG16 cable entry	100 mA	250 Hz	XUX5ANANT16
N.C.	NPN	12-24 Vdc	PG16 cable entry	100 mA	250 Hz	XUX5ANBNT16
N.O.	PNP	12-24 Vdc	4 pin micro conn.	100 mA	250 Hz	XUX5APANM12
N.C.	PNP	12-24 Vdc	4 pin micro conn.	100 mA	250 Hz	XUX5APBNM12
N.O.	NPN	12-24 Vdc	4 pin micro conn.	100 mA	250 Hz	XUX5ANANM12
N.C.	NPN	12-24 Vdc	4 pin micro conn.	100 mA	250 Hz	XUX5ANBNM12
N.C. / N.O.	AC/DC relay	20-240 Vac/dc	PG16 cable entry	3 A	20 Hz	XUX5ARCNT16

Dimensions



XUX•••••M12



XUX•••••T16

inches (mm) /

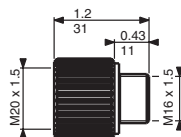
Dual Dimensions $\frac{\text{inches}}{\text{mm}}$

PG 16 cable gland is for cable size from 0.27" to 0.40" (7 to 10 mm) diameter.

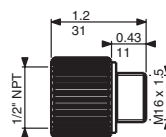
Excess Gain

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

XUXZ2001



XUXZ2002



Wiring

Connector M12

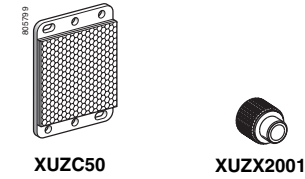
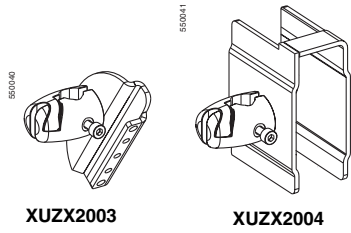


PNP/NPN
M12 Terminal
1 • 1 ∅ +
3 • 2 ∅ -
4 • 3 ∅ -
- • 4 ∅ -
- • 5 ∅ -

Emitter ---
M12 Terminal
1 • 1 ∅ +
3 • 2 ∅ -
2 • 3 ∅ -
- • 4 ∅ -
- • 5 ∅ -

Output ~
Terminal
1 ∅ ~
2 ∅ ~
3 N.O.
4 ∅ ~
5 N.C.

Emitter ~
Terminal
1 ∅ ~
2 ∅ ~
3 ∅ -
4 ∅ -
5 ∅ -



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, 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)	30g, duration 11ms
LED indicator	Output	Yellow
	Power	Green
Connection	Cable gland	M16
	Connector (DC version)	4 pin Micro style DC (M12)

	AC/DC	DC
	Voltage Range	20-240 Vac/dc
Voltage Limit (including ripple)	20-264 Vac/dc	10-36 Vdc
Voltage Drop (across switch) closed state maximum	1.5 V	1.5 V
Current Consumption (no load) maximum	2 W	35 mA
Load Current maximum	3 A	100 mA
Maximum Operating Frequency	20 Hz	250 Hz
On Delay Maximum	25 ms	2 ms
Off Delay Maximum	25 ms	2 ms
Power up Delay Maximum	60 ms	15 ms
Protective Circuitry	Overload Protection	Yes
	Reverse Polarity Protection	-
	Short Circuit Protection	Yes
Agency Listings	UL E164869 CCN NRKH	CE

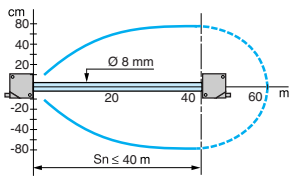
Accessories

Description	Catalog Number
Reflector 50x50 mm	XUZC50
3-D mounting bracket (stem not included)	XUZX2003
3-D Protective mounting bracket (stem not included)	XUZX2004
M12 Stem (75 mm usable length)	XUZX2001
3-D mounting base	XUZX2003
Adapter ISO 16 to 1/2" NPT	XUZX2001
Adapter ISO 16 to ISO 20	XUZX2002

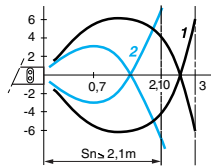
See page 159 for complete 3-D assembly.

Detection Curves

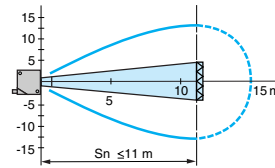
Thru-Beam System



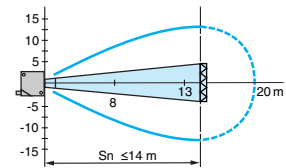
Diffuse System



Polarized Retroreflective



Retroreflective System



Object : 3.9 x 3.9" (10 x 10 cm), 1 : White 90 %, 2 : Gray 18 %
With reflector XUZ C50

Connector Cables (M12 or D suffix)

XSZCD101Y	Micro Conn., 4 pin, 2 m, straight
XSZCD111Y	Micro Conn., 4 pin, 2 m, 90°

For additional cable options and lengths see p. 518