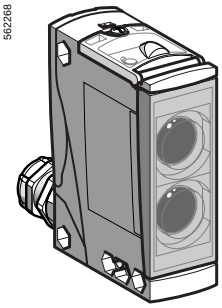
Photo-electric sensors

Osiris® Optimum

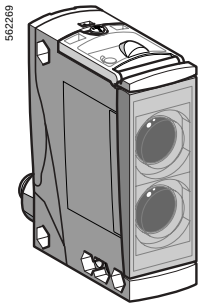
Compact design

Five-wire, a.c. or d.c. supply, 1 NC/NO relay output

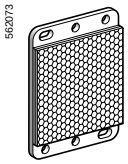
Three-wire, d.c. supply, solid-state output



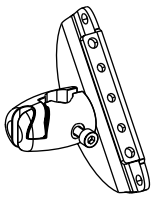
XUX ●A●●●T16



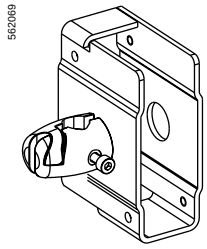
XUX ●A●●●M12



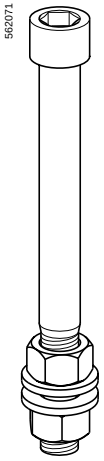
XUZ C50



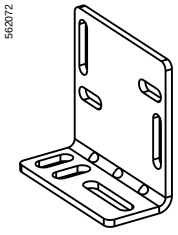
XUZ X2003



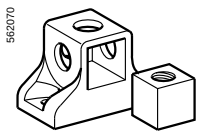
XUZ X2004



XUZ 2001



XUZ X2000



XUZ 2003

Sensing distance (Sn) m	Function	Output	Connection (pre-cabled or connector)	Reference	Weight kg
Diffuse system *(1)*					
d.c. supply					
2.1	N/O	PNP	Screw terminals *(3)*	**XUX 5APANT16**	0.200
			M12 connector	**XUX 5APANM12**	0.200
		NPN	Screw terminals *(3)*	**XUX 5ANANT16**	0.200
			M12 connector	**XUX 5ANANM12**	0.200
	N/C	PNP	Screw terminals *(3)*	**XUX 5APBNT16**	0.200
			M12 connector	**XUX 5APBNM12**	0.200
		NPN	Screw terminals *(3)*	**XUX 5ANBNT16**	0.200
			M12 connector	**XUX 5ANBNM12**	0.200
d.c. or a.c. supply					
2.1	N/O+N/C	Relay	Screw terminals *(3)*	**XUX 5ARCNT16**	0.200
Polarised reflex system *(1)*					
d.c. supply					
11	N/O	PNP	Screw terminals *(3)*	**XUX 9APANT16**	0.200
			M12 connector	**XUX 9APANM12**	0.200
		NPN	Screw terminals *(3)*	**XUX 9ANANT16**	0.200
			M12 connector	**XUX 9ANANM12**	0.200
	N/C	PNP	Screw terminals *(3)*	**XUX 9APBNT16**	0.200
			M12 connector	**XUX 9APBNM12**	0.200
		NPN	Screw terminals *(3)*	**XUX 9ANBNT16**	0.200
			M12 connector	**XUX 9ANBNM12**	0.200
d.c. or a.c. supply					
11	N/O+N/C	Relay	Screw terminals *(3)*	**XUX 9ARCNT16**	0.200
Reflector 50 x 50 mm *(2)*		–	–	**XUZ C50**	0.020
Reflex system *(1)*					
d.c. supply					
14	N/O	PNP	Screw terminals *(3)*	**XUX 1APANT16**	0.200
			M12 connector	**XUX 1APANM12**	0.200
		NPN	Screw terminals *(3)*	**XUX 1ANANT16**	0.200
			M12 connector	**XUX 1ANANM12**	0.200
	N/C	PNP	Screw terminals *(3)*	**XUX 1APBNT16**	0.200
			M12 connector	**XUX 1APBNM12**	0.200
		NPN	Screw terminals *(3)*	**XUX 1ANBNT16**	0.200
			M12 connector	**XUX 1ANBNM12**	0.200
d.c. or a.c. supply					
14	N/O+N/C	Relay	Screw terminals *(3)*	**XUX 1ARCNT16**	0.200
Reflector 50 x 50 mm *(2)*		–	–	**XUZ C50**	0.020
Thru-beam system *(1)*					
d.c. supply					
Transmitter 40			Screw terminals *(3)*	**XUX 0AKSAT16T**	0.200
			M12 connector	**XUX 0AKSAM12T**	0.200
Receiver 40	N/O	PNP	Screw terminals *(3)*	**XUX 2APANT16R**	0.200
			M12 connector	**XUX 2APANM12R**	0.200
		NPN	Screw terminals *(3)*	**XUX 2ANANT16R**	0.200
			M12 connector	**XUX 2ANANM12R**	0.200
	N/C	PNP	Screw terminals *(3)*	**XUX 2APBNT16R**	0.200
			M12 connector	**XUX 2APBNM12R**	0.200
		NPN	Screw terminals *(3)*	**XUX 2ANBNT16R**	0.200
			M12 connector	**XUX 2ANBNM12R**	0.200
d.c. or a.c. supply					
Transmitter 40			Screw terminals *(3)*	**XUX 0ARCTT16T**	0.200
Receiver 40	N/O+N/C	Relay	Screw terminals *(3)*	**XUX 2ARCNT16R**	0.200

Fixing accessories *(2)*

Description	Reference	Weight kg
3D fixing kit for use on M12 rod for XUX or XUZ C50	**XUZ X2003**	0.220
3D fixing kit for use on M12 rod with XUX protective cover	**XUZ X2004**	0.420
M12 rod	**XUZ 2001**	0.050
Support for M12 rod	**XUZ 2003**	0.150
Mounting bracket	**XUZ X2000**	0.120

(1) With adjustable sensitivity. (2) For further information, see page 37012/2.
(3) ISO 16 cable gland, capacity Ø 7 to 10 mm.

Characteristics, schemes, curves, dimensions

Photo-electric sensors

Osiris® Optimum

Compact design

Five-wire, a.c. or d.c. supply, 1 NC/NO relay output

Three-wire, d.c. supply, solid-state output

Characteristics

Sensor type			XUX ●●●●●M12	XUX ●●●●●T16
Product certifications			UL, CSA, CE	
Connection			M12 connector	Screw terminals – ISO 16 cable gland
Sensing distance nominal Sn / maximum (excess gain = 2) (excess gain = 1)		m	**2.1 / 3 diffuse with adjustable sensitivity**	
		m	**11 / 15 polarised reflex with adjustable sensibility**	
		m	**14 / 20 reflex with adjustable sensitivity**	
		m	**40 / 60 thru-beam with adjustable sensitivity**	
Type of transmission			Infrared, except for polarised reflex (red)	
Degree of protection	Conforming to IEC 60529		IP 65, IP 67, double insulation ⧈	
Storage temperature range		°C	- 40…+ 70	
Operating temperature range		°C	- 25…+ 55	
Materials	Case		PBT	
	Lens		PMMA	
Vibration resistance	Conforming to IEC 60068-2-6		7 gn, amplitude ± 1.5 mm (f = 10 to 55 Hz)	
Shock resistance	Conforming to IEC 60068-2-27		30 gn, duration 11 ms	
Indicator lights	Output state		Yellow LED (transmission present for **XUX 0●●●●●●●T** ⎓)	
	Supply on		Green LED	
Rated supply voltage	PNP/NPN	V	12…24 with protection against reverse polarity	
	Relay output	V	–	24…240 ∿ or ⎓
Voltage limits (including ripple)	PNP/NPN	V	10…36 ⎓	
	Relay output	V	–	20…264 ∿ or ⎓
Current consumption, no-load	PNP/NPN	mA	⩽ 35 (20 for **XUX 0●●●●●●●T**)	
Power consumption	Relay output	W	–	2 ∿ or ⎓
Switching capacity	PNP/NPN	mA	⩽ 100 mA with overload and short-circuit protection	
	Relay output	A	–	500,000 operating cycles 3 A: cos φ = 1/0.5 A: cos φ = 0.4
Voltage drop, closed state		V	⩽ 1.5	
Maximum switching frequency	PNP/NPN	Hz	250	
	Relay output	Hz	–	20
Delays	First-up	ms	< 15 (PNP/NPN); < 60 (relay output)	
	Response	ms	< 2 (PNP/NPN); < 25 (relay output)	
	Recovery	ms	< 2 (PNP/NPN); < 25 (relay output)	

Connections

M12 connector



See connection on page 30210/2.

Relay output ∿

Terminals	
1 ⊘	∿
2 ⊘	∿
3 ⊘	N/O
4 ⊘	Relay common
5 ⊘	N/C

PNP / NPN ⎓

M12	Terminals	
1 ●	1 ⊘	+
3 ●	2 ⊘	-
4 ●	3 ⊘	Output

Transmitter ⎓

M12	Terminals	
1 ●	1 ⊘	+
3 ●	2 ⊘	-
2 ●	3 ⊘	Beam broken input *(1)*

(1) Input not connected: beam made.
Input connected to –: beam broken.

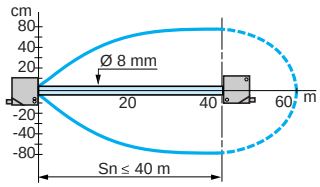
Transmitter ∿

Terminals	
1 ⊘	∿
2 ⊘	∿

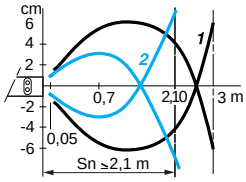
Maximum permissible conductor section: 1 x 1.5 mm² or 1 x 0.75 mm² with adaptor..

Detection curves

Thru-beam system

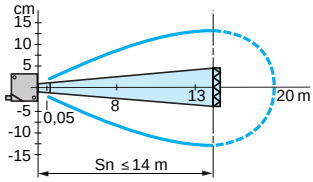


Diffuse system



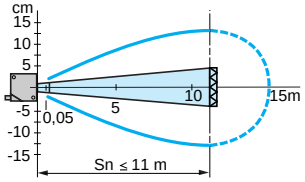
*Object 10 x 10 cm; **1** White 90 %; **2** Grey 18 %*

Reflex system



With reflector XUZ C50

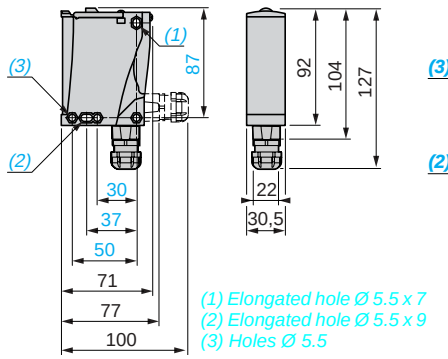
Polarised reflex system



With reflector XUZ C50

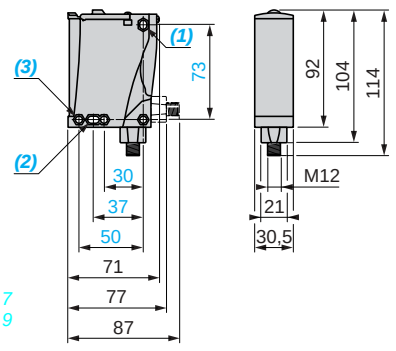
Dimensions

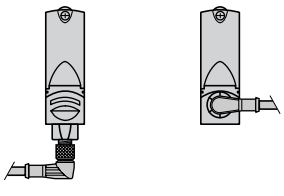
XUX ●●●●●T16



(1) Elongated hole Ø 5.5 x 7
(2) Elongated hole Ø 5.5 x 9
(3) Holes Ø 5.5

XUX ●●●●●M12





Indexation of the elbowed connector (rear view)