

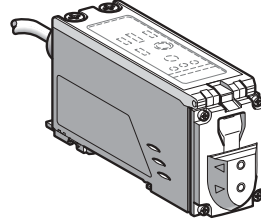
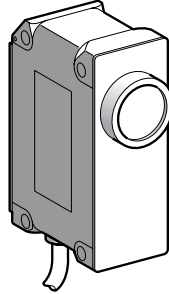
Photo-electric sensors

Osiris® Application, packaging series

For colour detection ⁽¹⁾

d.c. supply. Solid-state output

Compact design and fibre design



System	Diffuse	Thru-beam or diffuse depending on fibre optics selected
Type of transmission	Red, blue and green	
Nominal sensing distance (Sn)	40...60 mm	4...250 mm depending on fibre optics (see page 30166/3)

References

3-wire PNP	Light switching	XUR C3PPML2	XUR C4PPML2
3-wire NPN	Light switching	XUR C3NPML2	XUR C4NPML2
Weight (kg)	0.260		0.190

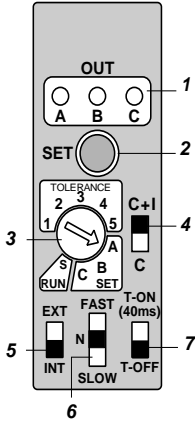
Characteristics

Product certifications	CE		
Ambient air temperature	Operation	- 10...+ 50 °C	
	Storage	- 30...+ 70 °C	
Ambient humidity	35...85 % RH (without condensation)		
Vibration resistance	Conforming to IEC 60068-2-6	Amplitude ± 0.75 mm, f = 10...55 Hz, 2 hours on the 3 axes	
Shock resistance	Conforming to IEC 60068-2-27	50 gn, 5 shocks on the 3 axes	
Degree of protection	Conforming to IEC 529	IP 67	IP 65
Connection	Pre-cabled: diameter 5.4 mm, length 2 m, wire c.s.a.: 7 x 0.2 mm ²		
Materials	Case	Aluminium	
	Lenses	Glass	-
	Cable	Vinyl rubber sleeve	
	Cover	Polyacrylate	
Spot diameter	At 40 mm:	4 mm	Depending on fibre optics: 2.5...8 mm (see page 30166/3)
	At 50 mm:	6 mm	
	At 60 mm:	8 mm	
Immunity to ambient light	Sunlight	10,000 Lux max.	
	Halogen light	3000 Lux max.	
Rated supply voltage	≡ 12...24 V		
Voltage limits	≡ 10...30 V (including ripple)		
Switching capacity (sealed)	≤ 100 mA with overload and short-circuit protection		
Voltage drop, closed state	≤ 1.5 V		
Current consumption, no-load	≤ 150 mA		
Switching time	Programmable by switch: 0.8 ms, 1.5 ms or 6 ms		
Maximum switching frequency	1.2 kHz		
Time delay	Programable by switch: 40 ms on falling edge		

Function table per channel (3 channels) Function light switching	Colour recognised by detector	Colour not recognised by detector
Output state (PNP or NPN) indicator (illuminated when detector output is ON)		

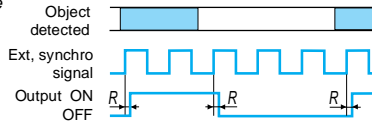
(1) Applications: Osiris® "Full colour" is a colour detector that can recognise up to 3 colours. It can be used to sort objects by colour or to monitor colours, and is insensitive to surface finishes (matt or gloss), as well as ambient lighting. The detector is suitable for use in many industrial sectors, such as packaging lines, print shops, etc.

Presentation



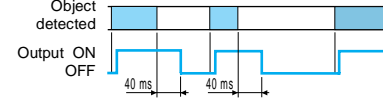
- 1 **Operational status LED**
- 2 **Teach mode button, for memorising reference colours (SET)**
- 3 **Reference colours and operating mode selector**
 - Selection of reference colours (SET)
 - Selection of operating mode:
 - TOLERANCE mode (positions 1...5): 5 positions allow selection of the tolerance level to be applied to the shading of the colour to be detected.
 - RUN mode (position S): this mode enables sorting by colour.

- 4 **C or C + I selector**
 - Mode "C": this mode, is used for the detection of different coloured objects.
 - Mode "C + I": in this mode, the detector is insensitive to varying surface finishes of the object to be detected.
- 5 **Synchronisation mode selector**
 - Internal synchronisation mode (INT): in this mode, colour detection is performed continually.
 - External synchronisation mode (EXT): in this mode, colour detection is synchronised with an external signal.

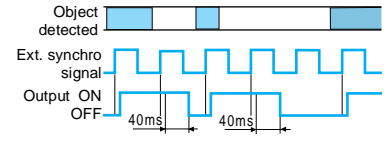


- 6 **Response time mode selector**
 - Fast mode (F), normal mode (N) slow mode (S).

- 7 **Output time delay selector (T-ON/T-OFF)**
 - Output time delay, internal synchronisation mode



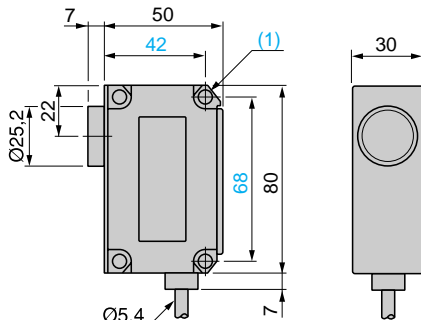
- Output time delay, external synchronisation mode



R = response time
 Same colour
 Different colour

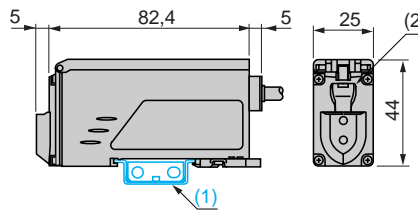
Dimensions

XUR C3●PML2



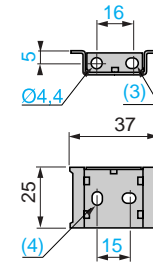
(1) 2 holes for M5 screws, depth 10 mm

XUR C4●PML2



- (1) Mounting on rail
- (2) Fibre optic clamp
- (3) 1 elongated hole $\varnothing 4.4 \times 5.4$
- (4) 2 elongated holes $\varnothing 4.4 \times 6.4$

Mounting on rail



Mounting

Installation precautions

XUR C3●PML2

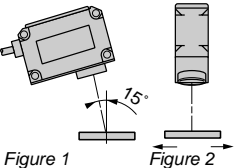


Figure 1

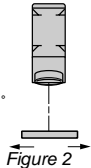


Figure 2

XUR C4●PML2

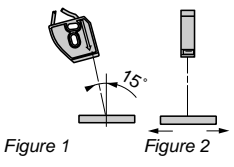


Figure 1

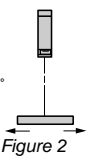


Figure 2

- To obtain optimal detection of the colours, it is recommended that the detector be positioned such that the transmitted light beams strike the object at an angle of 15° from its vertical axis (figure 1).
- The direction of travel of the object must be as shown in figure 2. This provides detection that is less sensitive to variations in the angle of detection.

Suitable fibre optics. For further information, see pages 30131/2 to 30131/6.

Type of fibre	System	Reference	Sensing distance (mm)	Diameter of spot (mm)	
Focused	Diffuse	XUF N5L01L2	10	$\varnothing 2,5$	
		XUF N5L02L2	20	$\varnothing 5$	
		XUF N5L03L2	30	$\varnothing 8$	
Standard	Diffuse	XUF N05321	5	-	
		XUF S0520	4	-	
		XUF N02323 + XUF Z06	7	$\varnothing 0,5$	
		Thru-beam (1)	XUF N12301 + XUF Z01	250	-
		XUF S2020 + XUF Z01	150	-	

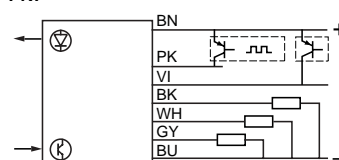
(1) Detection of colour by transparency

Cable connections

BN	(brown)	+ Supply (12...24 V)
BU	(blue)	-
PK	(pink)	SET signal (remote activation of teach mode to memorise reference colours)
VI	(violet)	EXT signal (external synchronisation)
BK	(black)	Output A
WH	(white)	Output B
GR	(grey)	Output C

Wiring schemes

PNP



NPN

