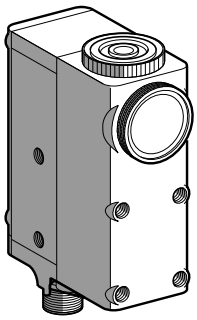
Photo-electric sensors

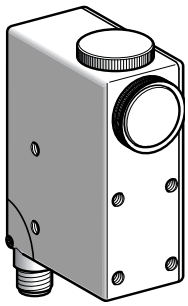
Osiris® Application, packaging series

Colour mark readers *(1)*

d.c. supply. Solid-state output

Compact design





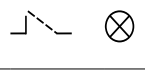
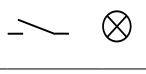
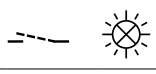
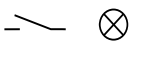
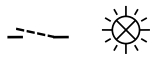
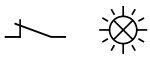
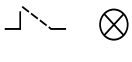
System		**Diffuse**	
Type of transmission (line of sight along case axis or at 90° depending on position of lens)		Red or green, manually switched	Red or green, automatically selected when using teach mode
Nominal sensing distance (Sn)		**9 mm (7 mm with XUR Z02 or 18 mm with XUR Z01)** *(2)*	
Sensitivity adjustment		By 20-turn potentiometer	Automatic when using teach mode

References

3-wire, PNP or NPN programmable	Light or dark programmable switching *(3)*	**XUR K0955D**	**XUR K1KSMM12**
Weight (kg)		0.550	

Characteristics

Product certifications		CE	
Ambient air temperature		For operation: - 10…+ 55 °C. For storage: - 20…+ 70 °C	
Vibration resistance	Conforming to IEC 60068-2-6	7 gn, amplitude ± 0.6 mm (f = 10…55 Hz)	
Shock resistance	Conforming to IEC 60068-2-27	30 gn, duration 11 ms	
Degree of protection	Conforming to IEC 60529	IP 67	
Connection		M12 connector	M12 connector, can be set at 3 positions
		(suitable female connectors, including pre-wired versions, see page 30210/2)	
Materials		Case: zinc alloy; lenses: glass	
Spot dimensions		At 9 mm: 1.5 x 5 mm (with lens **XUR Z0●** see table on page 30160/3)	
Minimum detectable width of mark		0.5 mm	
Maximum vertical inclination of reader		20°	
Maximum linear speed of mark		10 m/s (for 1 mm wide mark)	
Rated supply voltage		⎓ **12…24 V with protection against reverse polarity**	
Voltage limits		⎓ 10…30 V (including ripple)	
Switching capacity (sealed)		⩽ **200 mA with overload and short-circuit protection**	
Voltage drop, closed state		⩽ 1.2 V (NPN); ⩽ 2.2 V (PNP)	⩽ 1 V (NPN); ⩽ 2 V (PNP)
Current consumption, no-load		⩽ 80 mA	
Maximum switching frequency		10 kHz	
Delays		First-up: ⩽ 100 ms; response: ⩽ 50 µs; recovery: ⩽ 50 µs	
Time delay		"OFF delay": 20 ms, activated/deactivated by internal link (**XUR K0955D**) or by internal switch (**XUR K1KSMM12**)	
Analogue output		–	⎓ 0…5.5 V (voltage proportional to light reflected by the object)

Function table	**Function**	**Detection of dark mark on light background**		**Detection of light mark on dark background**	
		No mark present in the beam	**Mark present in the beam**	**No mark present in the beam**	**Mark present in the beam**
Output state (PNP or NPN) indicator: red LED (illuminated when sensor output is ON)	Light switching				
	Dark switching				

(1) Applications: detection of contrasting colours on reflective, matt or embossed surfaces. Colour mark and index mark reading function on automated packaging and filling systems and on labelling, heat sealing, thermo-forming and printing machines, etc.

(2) Lenses for reduction or magnification of spot (see page 37012/2 and spot size table on page 30160/3).

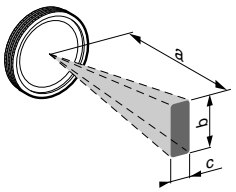
*(3) Programmable light or dark switching using switch for **XUR K0955D**, automatically programmed (in teach mode) depending on chronological order of teaching for the mark and the background for **XUR K1KSMM12**.*

Accessories:
page 37012/2

Photo-electric sensors
Osiris® Application, packaging series
Colour mark readers
d.c. supply. Solid-state output

XUR K0995D, XUR K1KSMM12

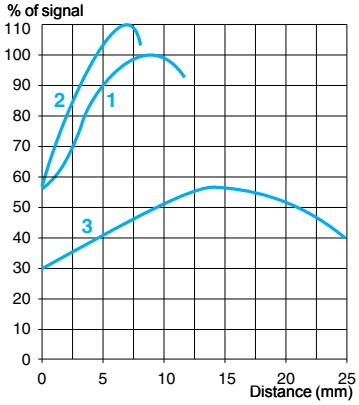
Detection zone and spot size (mm)



XUR	a	b	c
K●●●●●●●	9	5	1.5
K●●●●●●● + XUR Z01	18	7	2
K●●●●●●● + XUR Z02	7	4	1

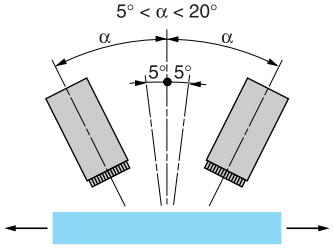
Lenses **XUR Z0●**, see page 37012/2

Detection curve



1 **XUR K●●●●●●●**
2 **XUR K●●●●●●● + XUR Z02**
3 **XUR K●●●●●●● + XUR Z01**

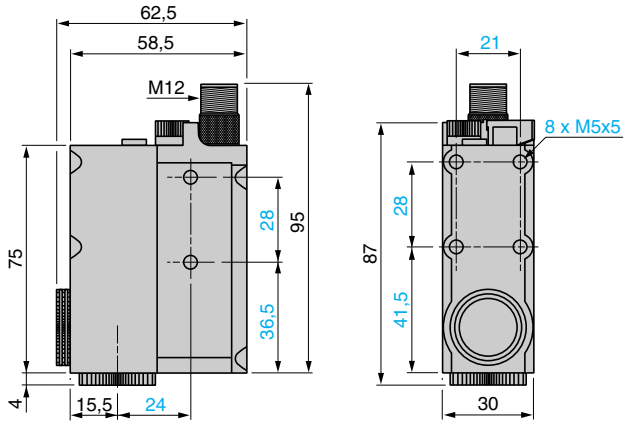
Vertical inclination



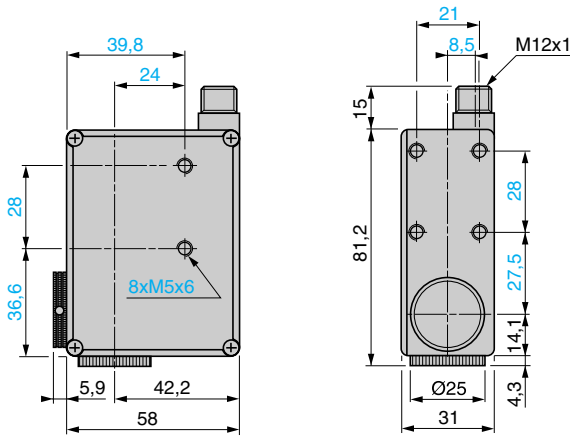
An angle of 5 to 10° from vertical is recommended for reflective or transparent surfaces.
Maximum vertical inclination: 20°.

Dimensions

XUR K0995D



XUR K1KSMM12

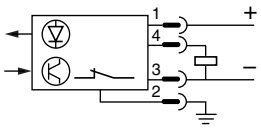


Wiring schemes (3-wire ⎓)

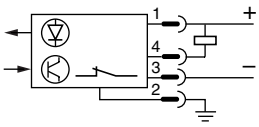
XUR K0995D

Light switching function

PNP output

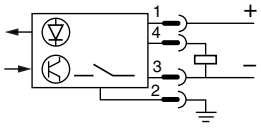


NPN output

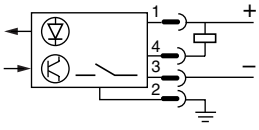


Dark switching function

PNP output



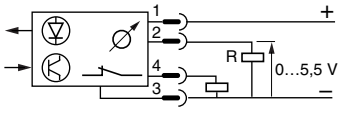
NPN output



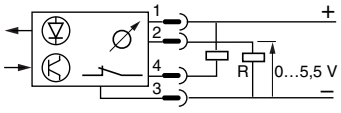
XUR K1KSMM12

Automatic light or dark switching selection depending on chronological order of teaching for the mark and the background

PNP output



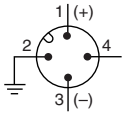
NPN output



R = 2.2 kΩ

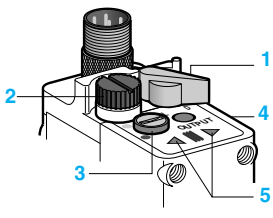
Connector scheme

(sensor connector pin view)



See connection on page 30210/2

Functions

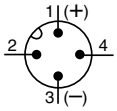


1 Light/dark switching selector
2 Threshold adjustment
3 Transmission colour selector switch cap
4 Output state LED
5 Adjustment aid LEDs

PNP/NPN programming and time delay by internal links

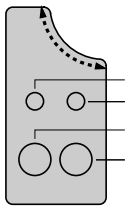
Connector scheme

(sensor connector pin view)



See connection on page 30210/2

Functions



1 Green LED, sensor in teach mode
2 Red LED, output state
3 Teach mode button for mark
4 Teach mode button for background

PNP/NPN programming and time delay by internal switches

Accessories:
page 37012/2