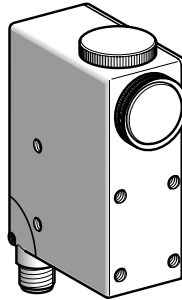


Photo-electric sensors

OsiSense XU Application, packaging series
Colour mark readers (1)
DC 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, automatically selected when using teach mode
Nominal sensing distance (Sn)	9 mm (7 mm with XURZ02 or 18 mm with XURZ01) (2)
Sensitivity adjustment	Automatic when using teach mode

References

3-wire, PNP or NPN programmable	NO or NC programmable function (3)	XURK1KSMM12
Weight (kg)		0.550

Characteristics

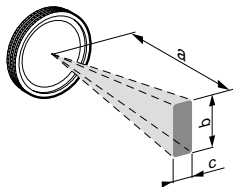
Product certifications	CE
Ambient air temperature	For operation: - 10...+ 55 °C. For storage: - 20...+ 70 °C
Vibration resistance	Conforming to IEC 60068-2-6 7 gn, amplitude ± 0.6 mm (f = 10...55 Hz)
Shock resistance	Conforming to IEC 60068-2-27 30 gn, duration 11 ms
Degree of protection	Conforming to IEC 60529 IP 67
Connection	M12 connector, can be set at 3 positions (suitable female connectors, including pre-wired versions, refer to our "Cabling accessories OsiSense XZ" catalogue)
Materials	Case: zinc alloy; lenses: glass
Spot dimensions	At 9 mm: 1.5 x 5 mm (with lens XURZ0 see table on page 79)
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 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 switch
Analogue output	0...5.5 V (voltage proportional to light reflected by the object)

Function table	Function	Detection of dark mark on light background		Function	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)	NC			NO		
	NO			NC		

(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 165 and spot size table on page 79).
 (3) Automatic programming depending on chronological order of teaching for the mark and the background.

XURK1KSMM12

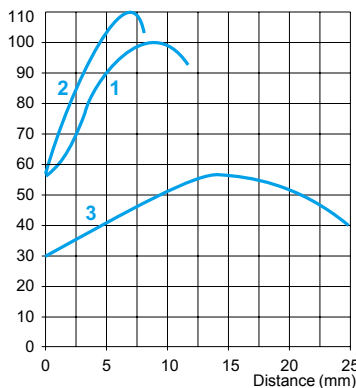
Detection zone and spot size
(mm)



XUR	a	b	c
K●●●●●●●●	9	5	1.5
K●●●●●●●● + XURZ01	18	7	2
K●●●●●●●● + XURZ02	7	4	1

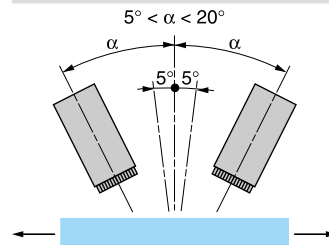
Lenses XURZ0●, see page 165

Detection curve



- 1 XURK●●●●●●●●
- 2 XURK●●●●●●●● + XURZ02
- 3 XURK●●●●●●●● + XURZ01

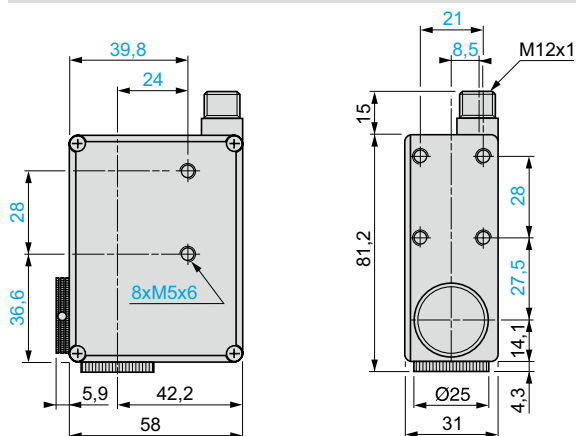
Vertical inclination



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

Dimensions

XURK1KSMM12

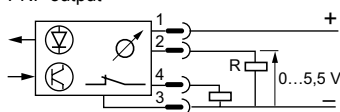


Wiring schemes (3-wire ---)

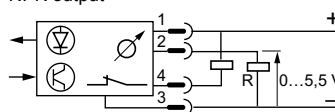
XURK1KSMM12

Automatic NC or NO selection depending on chronological order of teaching for the mark and the background

PNP output



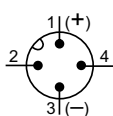
NPN output



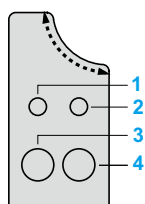
R = 2.2 kΩ

Connector scheme

(sensor connector
pin view)



Functions



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

PNP/NPN programming
and time delay by internal switches