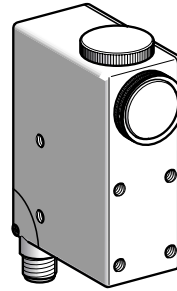
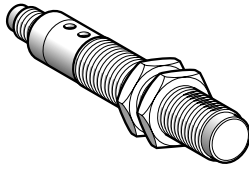


Design 18 and
compact design



System	Diffuse	
Type of transmission	Ultra-violet (370 nm)	
Nominal sensing distance (Sn)	20 mm for colour mark reading, 0...80 mm in diffuse mode	9 mm (7 mm with XUR Z02 or 18 mm with XUR Z01) (2)
Sensitivity adjustment	By potentiometer	Automatic by self teaching feature

References

3-wire, PNP	Light switching (3)	XU5 M18U1D	–
3-wire, PNP or NPN programmable	Light or dark programmable switching (4)	–	XUR U1KSMM12
Weight (kg)		0.075	0.550

Characteristics

Product certifications	CE, CSA, UL	CE
Ambient air temperature	Operation : - 25...+ 55 °C Storage : - 40...+ 70 °C	Operation : - 10...+ 55 °C Storage : - 20...+ 70 °C
Vibration resistance	7 gn, amplitude ± 0.6 mm (f = 10...55 Hz), conforming to IEC : 60068-2-6	
Shock resistance	30 gn, duration 11 ms, conforming to IEC 60068-2-27	
Degree of protection	IP 67 conforming to IEC 529 and IP 673 conforming to NF C 20-010	
Connection	M12 male connector (suitable extension cables and female connectors, see page 30210/2)	M12 male connector, can be set at 3 positions
Materials	Case : nickel plated brass ; lenses : PMMA	Case : zinc alloy ; lenses : glass
Spot dimensions	At 20 mm : Ø 3 x 1 mm	At 9 mm : Ø 5 mm (with lens XUR Z0● see table on page 30171/3)
Rated supply voltage	=== 12...24 V with protection against reverse polarity	
Voltage limits	=== 10...30 V (including ripple)	
Switching capacity (sealed)	≤ 100 mA with overload and short-circuit protection	≤ 200 mA with overload and short-circuit protection
Voltage drop, closed state	≤ 1.5 V (PNP)	≤ 1 V (NPN) ; ≤ 2 V (PNP)
Current consumption, no-load	≤ 20 mA	≤ 80 mA
Maximum switching frequency	1 kHz	2 kHz
Delays	First-up ≤ 100 ms Response ≤ 500 µs Recovery ≤ 500 µs	≤ 100 ms ≤ 250 µs ≤ 250 µs
Time delay	"OFF delay" : 20 ms, activated/deactivated by cabling method (XU5 M18U1D) or by internal switch (XUR U1KSMM12)	
Analogue output	–	=== 0...7 V (voltage proportional to light reflected by the object)

(1) Applications : detection of invisible index marks, colour marks, glues or varnishes containing azurine agents.

(2) Lenses for reduction or magnification of spot (see page 37012/2 and spot size table on page 30171/3).

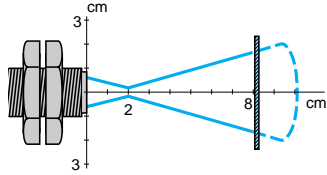
(3) Output activated when an azurine mark on a non azurine background is present.

(4) Automatic light or dark switching programming depending on chronological order of self teaching for the mark and the background.

Photo-electric sensors

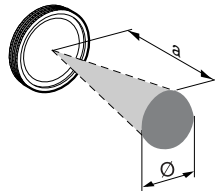
Osiris® Application, packaging series
Luminescence sensors
d.c. supply. Solid-state output

XU5 M18U1D Detection curve



Object 5 x 5 cm, white 90 %
Spot size at 20 mm :
oval, Ø 3 x 1 mm

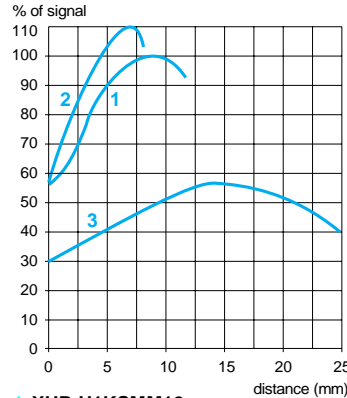
XUR U1KSMM12 Detection zone and spot size (mm)



XUR	a	Ø
U1KSMM12	9	5
U1KSMM12 + XUR Z01	18	7
U1KSMM12 + XUR Z02	7	2.5

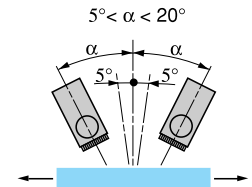
Lenses XUR Z0●, see p. 37012/2

Detection curve



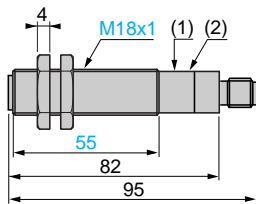
- 1 XUR U1KSMM12
- 2 XUR U1KSMM12 + XUR Z02
- 3 XUR U1KSMM12 + XUR Z01

Vertical inclination



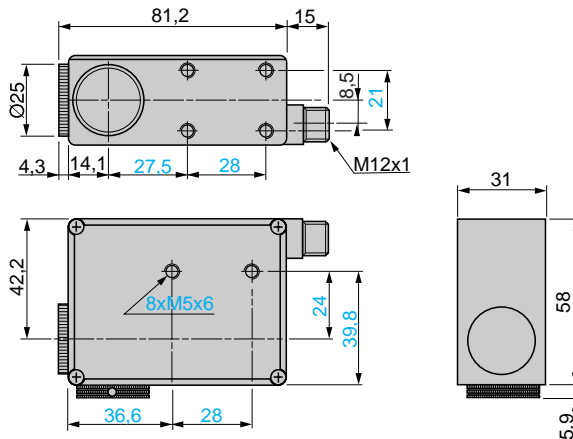
An angle of 5 to 10° from vertical is recommended for reflective or transparent surfaces.
Max. vertical inclination : 20°

Dimensions XU5 M18U1D



- (1) Potentiometer
- (2) LED, green
- (3) Fixing nut tightening torque : 15 N.m

XUR U1KSMM12

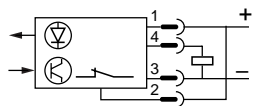


Wiring schemes (3-wire ---)

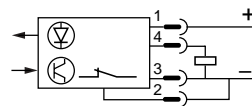
XU5 M18U1D

PNP output

Without time delayed output signal



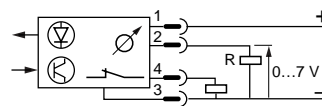
With time delayed output signal (20 ms)



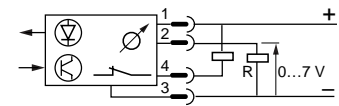
XUR U1KSMM12

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

PNP output



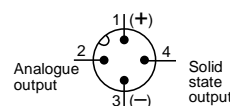
NPN output



R = 2.2 kΩ

Connector scheme

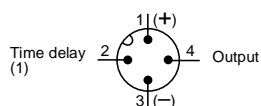
(detector connector pin view)



Depending on connector page 30210/2.

Connector scheme

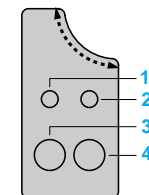
(detector connector pin view)



- (1) "OFF delay" of output signal :
-no time delay : connect contact 2 to (+)
-20 ms time delay : connect contact 2 to (-)

Depending on connector page 30210/2.

Functions



- 1 Green LED, unit 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.