

Photo-electric sensors

OsiSense XU

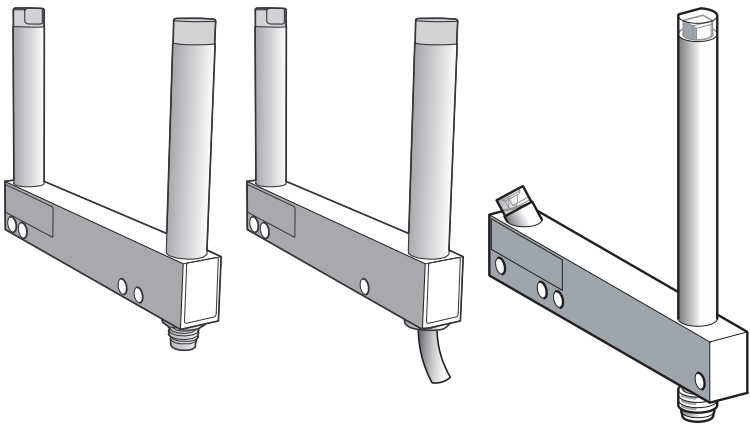
Optical fork without adjustment
DC supply. Solid-state output

Optical fork without adjustment

Connector

Pre-cabled

Angular fork



System	Thru-beam		
Type of transmission	Red LED, modulated		
Nominal sensing distance (Sn)	2...180 mm		
Minimum size of object detected	Passageway 2...120 mm	0.8 mm	1.2 mm
	Passageway ≥ 150 mm	1 mm	1.5 mm
Fork type	XUVR●		XUVA●

References of forks type XUVR●

3-wire NO or NC function PNP or NPN output A = Passageway B = Depth	Passageway (A)	Function	Output	Pre-cabled, length 2 m. Depth (B): 40 mm
	30 mm	NO	PNP	XUVR0303PANL2
	50 mm	NO	PNP	XUVR0605PANM8
			NPN	XUVR0605NANM8
		NC	PNP	XUVR0605PBNM8
			NPN	XUVR0605NBNM8
	80 mm	NO	PNP	XUVR0608PANM8
			NPN	XUVR0608NANM8
		NC	PNP	XUVR0608PBNM8
			NPN	XUVR0608NBNM8
	Passageway (A)	Function	Output	M8 connector, 3-pin. Depth (B): 120 mm
	120 mm	NO	PNP	XUVR1212PANM8
			NPN	XUVR1212NANM8
		NC	PNP	XUVR1212PBNM8
			NPN	XUVR1212NBNM8
	180 mm	NO	PNP	XUVR1218PANM8
			NPN	XUVR1218NANM8
		NC	PNP	XUVR1218PBNM8
			NPN	XUVR1218NBNM8

Weight (kg)	0.080 to 0.190 depending on model
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References of forks type XUVA●

3-wire NO function, PNP output A = Passageway	Type	Function	Output	M8 connector, 3-pin
	50 mm	NO	PNP	XUVA0505PANM8
	80 mm	NO	PNP	XUVA0808PANM8
	120 mm	NO	PNP	XUVA1212PANM8
	150 mm	NO	PNP	XUVA1515PANM8

Weight (kg)	0.100 to 0.195 depending on model
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Other versions: please consult our Customer Care Centre.

Applications: detection on conveyor, detection on vibrating rail.

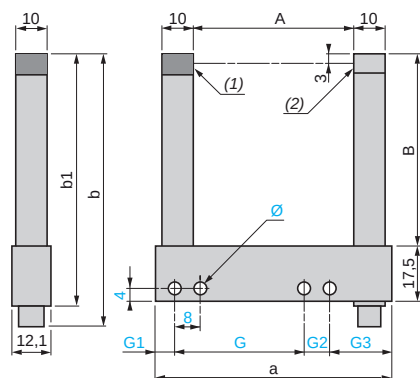
Accessories

Description	Details	Length of cable	Reference	Weight kg
Pre-wired M8 connector	Straight	2 m	XZCP0566L2	0.060
	Elbowed (90°)	2 m	XZCP0666L2	0.060
	Straight	5 m	XZCP0566L5	0.120
	Elbowed (90°)	5 m	XZCP0666L5	0.120

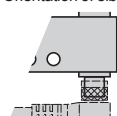
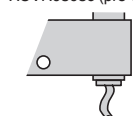
Characteristics		XUVR●	XUVA
Product certifications		CE, UL, CSA	CE
Ambient air temperature	For operation	- 10...+ 60 °C	
	For storage	- 40...+ 80 °C	
Degree of protection	Conforming to IEC 60529	IP 65 and IP 67	
Vibration resistance	Conforming to IEC 60068-2-6	7 gn, amplitude ± 0.75 mm (f = 10 to 55 Hz)	
Shock resistance	Conforming to IEC 60068-2-27	30 gn, duration 11 ms	
Materials	Case	Painted aluminium and polyamide	
Rated supply voltage		--- 12...24 V with protection against reverse polarity	
Voltage limits (including ripple)		--- 10...30 V	
Immunity to ambient light	Natural light	10 000 lux	
	Incandescent bulb	5000 lux	
Switching capacity		100 mA with overload and short-circuit protection	
Voltage drop, closed state		< 1.5 V	
Current consumption, no-load		< 20 mA	
Maximum switching frequency		4000 Hz	
Delays	First-up	140 ms max.	
	Stability	± 15 µs	
Indicator lights	Yellow LED	Output signal	

Dimensions

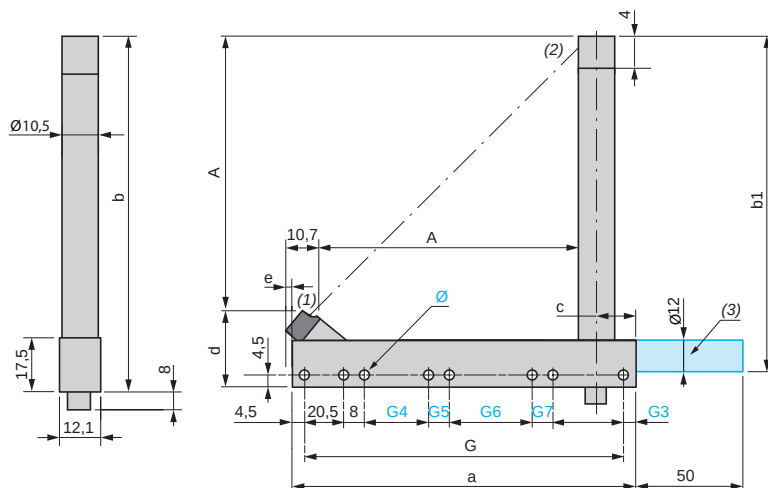
XUVR●



XUVR0303● (pre-cabled version detail) Orientation of elbowed connector



XUVA●



(1) *Transmission LED*

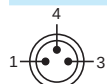
(2) Yellow LED: output signal

(3) Optional fixing rod available on request. Please consult our Customer Care Centre.

Type XUVR	Passageway A	Depth B	a	b	b1	G	G1	G2	G3	Ø					
XUVR0303●●●●●	30	40	54	65.7	57.5	30	17	–	–	4 × 4.3					
XUVR0605●●●●●	50	60	74	85.7	77.5	40	6.5	8	19.5	4 × 4.3					
XUVR0608●●●●●	80	60	104	85.7	77.5	70	6.5	8	19.5	4 × 4.3					
XUVR01212●●●●●	120	124.3	144	150.2	142	100	17	10	17	4 × 4.3					
XUVR01218●●●●●	180	124.3	204	150.2	142	152	22	8	22	4 × 4.3					
Type XUVA	Type	Depth A	a	b	b1	G	G1	G2	G3	Ø	G4	G5	G6	G7	c
XUVA0505●●●●●	50	44.3	75	83	75	66	–	–	4.5	4 × 4.3	–	–	–	–	14.75
XUVA0808●●●●●	80	74.3	105	113	105	96	–	–	4.5	4 × 4.3	–	–	–	–	14.75
XUVA1212●●●●●	120	112.3	145	154	146	136	–	–	4.5	4 × 4.3	–	–	–	–	19.75
XUVA1515●●●●●	150	142.3	175	184	176	166	–	–	4.5	8 × 4.3	24	8	60	8	19.75

Wiring schemes

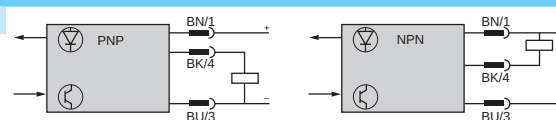
M8 connector



Pin n° - colour

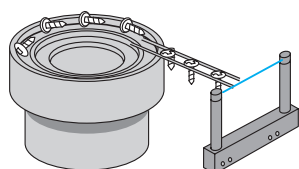
1	BN
3	BU
4	BK

Cabling

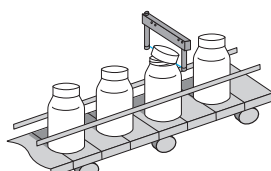


Application examples

Vibrating bowl



Monitoring height of objects passing on a conveyor



Detecting position of object on a conveyor

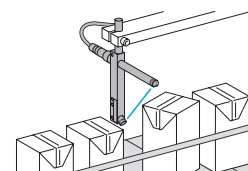


Photo-electric sensors

OsiSense XU Application

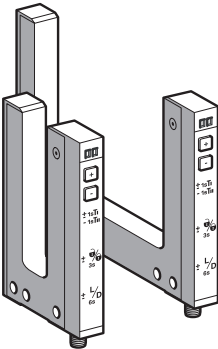
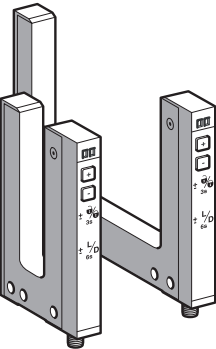
Optical fork with teach mode

DC supply. Solid-state output

Optical fork with teach mode

+/- numeric potentiometer mode
Green keypad

Teach mode
Yellow keypad



System	Thru-beam
Type of transmission	Infrared LED, modulated
Nominal sensing distance (Sn)	2...120 mm
Minimum size of object detected	Passageway 2...120 mm
Fork type	XUYFNEP●
	XUYFANEP●

References

4-wire, PNP/NPN independent outputs	NO/NC function, selectable	Passageway (A)	Depth (B)			Depth (B)		
		mm	42	59	95	42	59	95
		2	XUY FNEP40002	XUY FNEP60002	XUY FNEP100002	XUY FANEP40002	XUY FANEP60002	XUY FANEP100002
		5	XUY FNEP40005	XUY FNEP60005	XUY FNEP100005	XUY FANEP40005	XUY FANEP60005	XUY FANEP100005
		15	XUY FNEP40015	XUY FNEP60015	XUY FNEP100015	XUY FANEP40015	XUY FANEP60015	XUY FANEP100015
		30	XUY FNEP40030	XUY FNEP60030	XUY FNEP100030	XUY FANEP40030	XUY FANEP60030	XUY FANEP100030
		50	XUY FNEP40050	XUY FNEP60050	XUY FNEP100050	XUY FANEP40050	XUY FANEP60050	XUY FANEP100050
		80	XUY FNEP40080	XUY FNEP60080	XUY FNEP100080	XUY FANEP40080	XUY FANEP60080	XUY FANEP100080
		120	XUY FNEP40120	XUY FNEP60120	XUY FNEP100120	XUY FANEP40120	XUY FANEP60120	XUY FANEP100120

Weight (kg)	0.055 to 0.128 depending on model
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Characteristics

Product certifications	CE, cULus. This product is UL Listed if supplied by a class II or isolated supply delivering c 30 V max. (isolated transformer for example) and protected by a UL fuse rated at 3 A max.	
Ambient air temperature	For operation	- 20...+ 60 °C
	For storage	- 30...+ 80 °C
Degree of protection	Conforming to IEC 60529	IP 65
Connection	M8, 4-pin male connector (for 3-pin version please consult our Customer Care Centre)	
Vibration resistance	Conforming to IEC 60068-2-6	7 gn, amplitude ± 0.75 mm (f = 10 to 55 Hz)
Shock resistance	Conforming to IEC 60068-2-27	30 gn, duration 11 ms
Materials	Case	Painted aluminium and polyamide/glass
Rated supply voltage	12...24 V with protection against reverse polarity	
Voltage limits (including ripple)	10...30 V	
Immunity to ambient light	Natural light	10 000 lux
	Incandescent bulb	5000 lux
Outputs	PNP and NPN	By independent wire
	NO/NC	By programming
Switching capacity	100 mA with overload and short-circuit protection	
Voltage drop, closed state	< 2 V	
Current consumption, no-load	40 mA	
Permissible capacitive load	330 nF	
Maximum switching frequency	10 kHz	
Response time	Stability	+/- 20 µs
Indicator lights	Yellow LED	Output signal
	Red LED	Adjustment mode and keypad locking

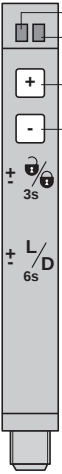
Application: Detection of labels, detection of double sheet, detection of reference marks, detection on conveyor, detection on vibrating rail.

Accessories

Description	Details	Length of cable (m)	References	Weight kg
Pre-wired M8 connector	Straight	2	XZCP0941L2	0.080
	Elbowed (90°)	2	XZCP1041L2	0.080
	Straight	5	XZCP0941L5	0.180
	Elbowed (90°)	5	XZCP1041L5	0.180

Presentation

XUYFNEP●●●



1

Yellow LED "ON":
Output activated

2

Red LED "ON":
Adjustments and keypad
locking

3, 4

Sensitivity adjustment

3 + 4

Keypad locking
(3 s ≤ press time < 6 s)

3 + 4

NO/NC (press time ≥ 6 s)

XUYFANEP●●●



1

Yellow LED "ON":
Output activated

2

Red LED "ON":
Adjustments and keypad
locking

3, 4

Sensitivity adjustment

3 + 4

Teach mode and automatic adjustment of sensitivity
(press time < 3 seconds)

3 + 4

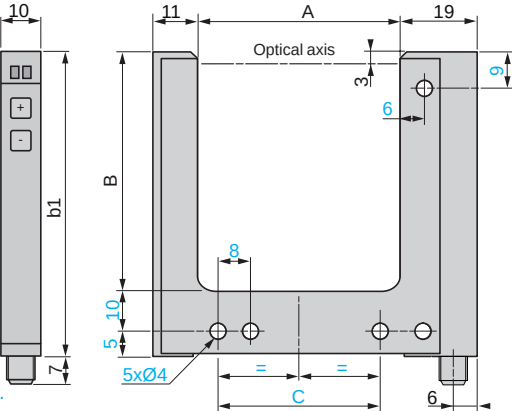
Keypad locking (3 s ≤ press time < 6 s)

3 + 4

NO/NC (press time ≥ 6 s)

Dimensions

XUYFNEP●●● / XUYFANEP●●●



XUY	Passageway		Depth	
	A	B	b1	C
FNEP/FANEP●002	2	42, 59, 95	57, 74, 110	14
FNEP/FANEP●005	5	42, 59, 95	57, 74, 110	14
FNEP/FANEP●015	15	42, 59, 95	57, 74, 110	27
FNEP/FANEP●030	30	42, 59, 95	57, 74, 110	42
FNEP/FANEP●050	50	42, 59, 95	57, 74, 110	40
FNEP/FANEP●080	80	42, 59, 95	57, 74, 110	70
FNEP/FANEP●120	120	42, 59, 95	57, 74, 110	110

Wiring schemes

Cabling



Pin n° - colour

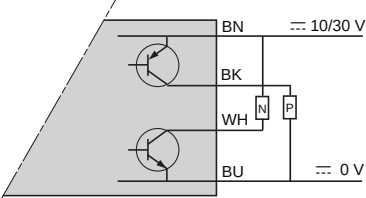
1 BN: Brown

2 WH: White

3 BU: Blue

4 BK: Black

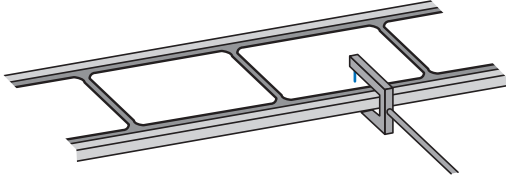
M8 connector



Application examples

Green keypad: Potentiometer mode

Detection of labels on belt



Yellow keypad: Teach mode

Detection of sheet feed on printing machine

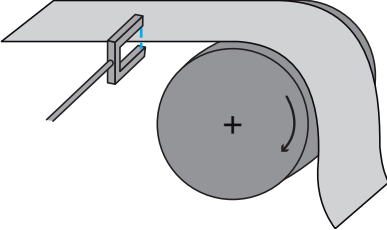
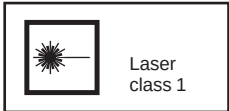


Photo-electric sensors

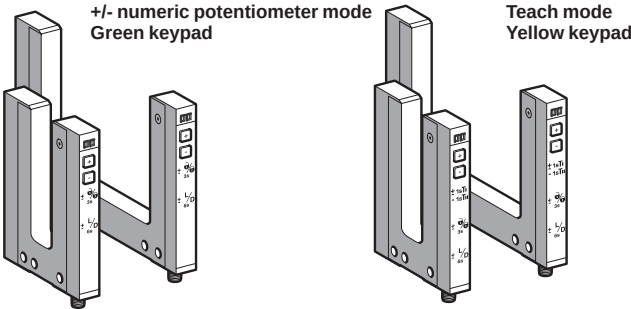
OsiSense XU Application

Optical fork with laser transmission, with teach mode
DC supply. Solid-state output

High sensitivity fork range

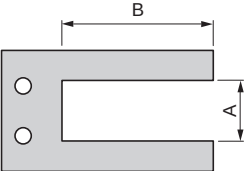


Laser class 1, conforming to
IEC 60825-1



System	Thru-beam	
Type of transmission	Red laser, modulated, class 1, wavelength: 670 m	
Nominal sensing distance (Sn)	2...120 mm	
Minimum size of object detected	Passageway 2...120 mm	0.05 mm (repeat accuracy 0.01 mm)
Fork type	XUYFLNEP●	XUYFALNEP●

References

4-wire, PNP/NPN independent outputs NO/NC function, selectable	Passageway (A)	Depth (B)			Depth (B)		
	mm	42	59	95	42	59	95
	2	XUY FLNEP40002	XUY FLNEP60002	XUY FLNEP100002	XUY FALNEP40002	XUY FALNEP60002	XUY FALNEP100002
	5	XUY FLNEP40005	XUY FLNEP60005	XUY FLNEP100005	XUY FALNEP40005	XUY FALNEP60005	XUY FALNEP100005
	15	XUY FLNEP40015	XUY FLNEP60015	XUY FLNEP100015	XUY FALNEP40015	XUY FALNEP60015	XUY FALNEP100015
	30	XUY FLNEP40030	XUY FLNEP60030	XUY FLNEP100030	XUY FALNEP40030	XUY FALNEP60030	XUY FALNEP100030
	50	XUY FLNEP40050	XUY FLNEP60050	XUY FLNEP100050	XUY FALNEP40050	XUY FALNEP60050	XUY FALNEP100050
	80	XUY FLNEP40080	XUY FLNEP60080	XUY FLNEP100080	XUY FALNEP40080	XUY FALNEP60080	XUY FALNEP100080
	120	XUY FLNEP40120	XUY FLNEP60120	XUY FLNEP100120	XUY FALNEP40120	XUY FALNEP60120	XUY FALNEP100120

Weight (kg) 0.055 to 0.128 depending on model

Characteristics

Product certifications		CE, cULus. This product is UL Listed if supplied by a class II or isolated supply delivering c 30 V max. (isolated transformer for example) and protected by a UL fuse rated at 3 A max.
Ambient air temperature	For operation	- 20...+ 50 °C
	For storage	- 30...+ 80 °C
Degree of protection	Conforming to IEC 60529	IP 65
Connection		M8, 4-pin male connector
Vibration resistance	Conforming to IEC 60068-2-6	7 gn, amplitude ± 0.75 mm (f = 10 to 55 Hz)
Shock resistance	Conforming to IEC 60068-2-27	30 gn, duration 11 ms
Materials	Case	Painted aluminium and polyamide/glass
Rated supply voltage		12...24 V with protection against reverse polarity
Voltage limits (including ripple)		10...30 V
Immunity to ambient light	Natural light	10 000 lux
	Incandescent bulb	5000 lux
Outputs	PNP/NPN	By wiring
	NO/NC	Using teach mode
Switching capacity		100 mA with overload and short-circuit protection
Voltage drop, closed state		< 2 V
Current consumption, no-load		< 40 mA
Permissible capacitive load		330 nF
Maximum switching frequency		10 kHz
Response time		+/- 20 µs
Indicator lights		Yellow LED: output signal; red LED: keypad locking and adjustments

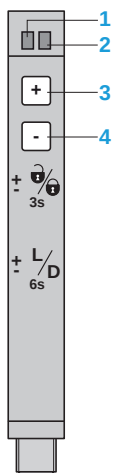
■ Applications: Detection of reference marks, detection on conveyor, detection on vibrating rail, detection of transparent object.

Accessories

Description	Details	Length of cable (m)	References	Weight kg
Pre-wired M8 connector	Straight	2	XZCP0941L2	0.080
	Elbowed (90°)	2	XZCP1041L2	0.080
	Straight	5	XZCP0941L5	0.180
	Elbowed (90°)	5	XZCP1041L5	0.180

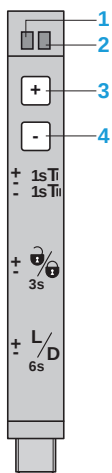
Presentation

XUYFLNEP●



- | | |
|-------|--|
| 1 | Yellow LED "ON":
Output activated |
| 2 | Red LED "ON":
Adjustments and keypad
locking |
| 3, 4 | Sensitivity adjustment |
| 3 + 4 | Keypad locking
(3 s ≤ press time < 6 s) |
| 3 + 4 | NO/NC (press time ≥ 6 s) |

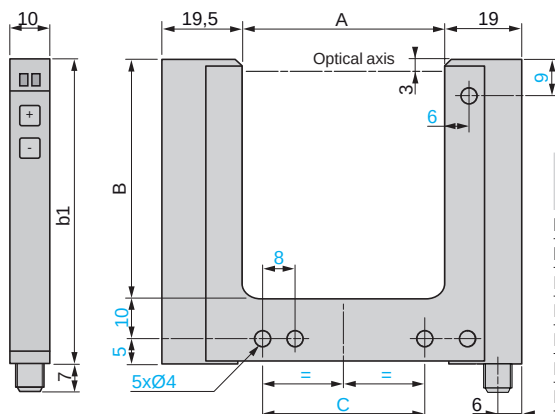
XUYFALNEP●



- 1 Yellow LED "ON":
Output activated
- 2 Red LED "ON":
Adjustments and keypad locking
- 3, 4 Sensitivity adjustment
- 3 + 4 Teach mode and automatic adjustment of sensitivity
(press time < 3 seconds)
- 3 + 4 Keypad locking ($3 \text{ s} \leq \text{press time} < 6 \text{ s}$)
- 3 + 4 NO/NC (press time $\geq 6 \text{ s}$)

Dimensions

XUYFLNEP•/XUYFALNEP•



XUY	Passageway Depth		b1	C
	A	B		
FLNEP/FALNEP●2	2	42, 59, 95	57, 74, 110	14
FLNEP/FALNEP●5	5	42, 59, 95	57, 74, 110	14
FLNEP/FALNEP●15	15	42, 59, 95	57, 74, 110	27
FLNEP/FALNEP●30	30	42, 59, 95	57, 74, 110	42
FLNEP/FALNEP●50	50	42, 59, 95	57, 74, 110	40
FLNEP/FALNEP●80	80	42, 59, 95	57, 74, 110	70
FLNEP/FALNEP●120	120	42, 59, 95	57, 74, 110	110

Wiring schemes

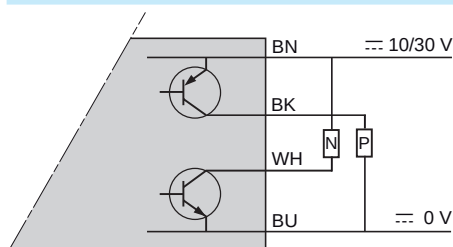
Cabling



Pin n° - colour

- 1 **BN:** Brown
2 **WH:** White
3 **BU:** Blue
4 **BK:** Black

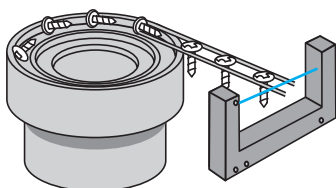
M8 connector



Application examples

Green keypad: Potentiometer mode

Detection of an object exiting a vibrating bowl



Yellow keypad: Teach mode

Detection of transparent bottles (glass, PET...)

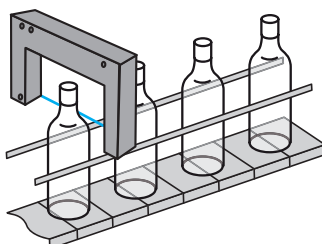
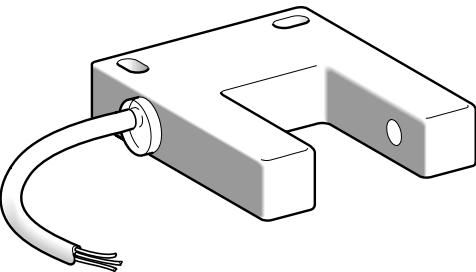


Photo-electric sensors
OsiSense XU Application, material handling
series
Optical fork with integrated amplifier
DC supply. Solid-state output

Fork design



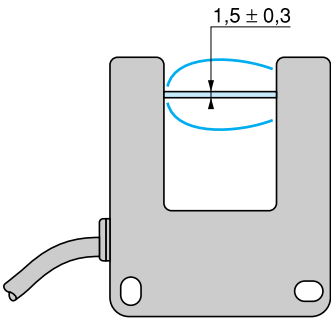
System	Thru-beam
Type of transmission	Infrared
Nominal sensing distance (Sn)	30 mm

References		
3-wire, PNP	NO function	XUVH0312
3-wire, NPN	NO function	XUVJ0312
Weight (kg)		0.130

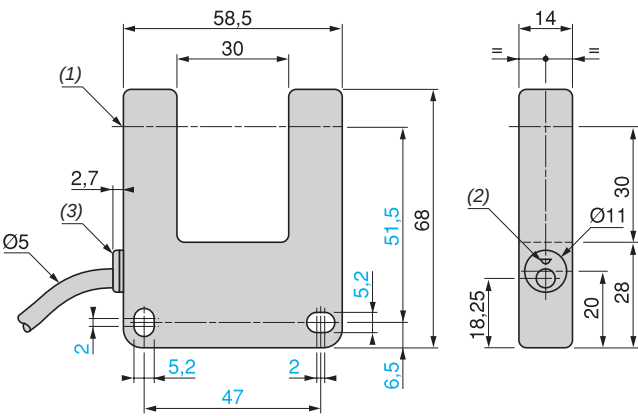
Characteristics		
Product certifications		CE
Ambient air temperature	For operation	- 5...+ 55 °C
	For storage	- 20...+ 70 °C
Vibration resistance	Conforming to IEC 60068-2-6	Amplitude ±1 mm up to 42 Hz, 7 gn (f = 10...42 Hz)
Shock resistance	Conforming to IEC 60068-2-27	30 gn, duration 11 ms
Degree of protection	Conforming to IEC 60529	IP 54
Connection		Pre-cabled: diameter 5 mm, length 2 m, wire c.s.a.: 3 x 0.34 mm ²
Materials	Case	PC/ABS
	Lenses	PMMA
	Cable	PvR
Rated supply voltage		⎓ 24 V with protection against reverse polarity
Voltage limits		⎓ 19...38 V (including ripple)
Switching capacity (sealed)		≤ 150 mA with overload and short-circuit protection
Voltage drop, closed state		≤ 1.5 V
Current consumption, no-load		≤ 20 mA
Maximum switching frequency		1000 Hz
Delays	First-up	≤ 30 ms
	Response	500 μs
	Recovery	500 μs

Function table	Function	Thru-beam system	
NO function		No object present in the beam	Object present in the beam
Output state (PNP or NPN) indicator: red LED (illuminated when sensor output is ON)	NO		

Detection curve



Dimensions

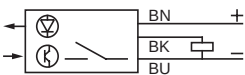


(1) Optical axis
(2) Red LED
(3) Diffuser
Max. tightening torque of fixing screws: 3 N.m

Wiring schemes (3-wire ...)

NO function

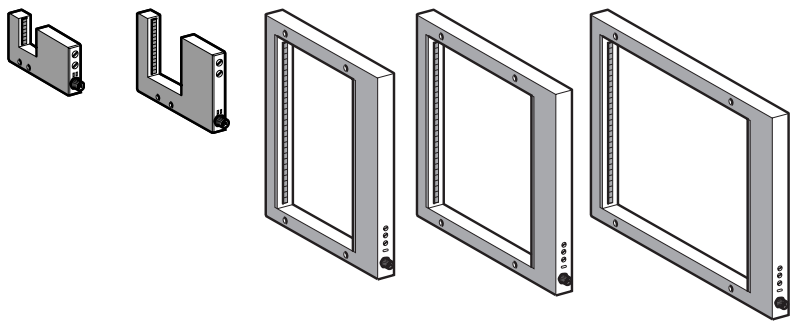
PNP output



NPN output



Photo-electric sensors
OsiSense XU Application, conveying series
Dynamic/static detection of passage of objects (1)
For detecting and counting parts
DC supply. Solid-state output



System			Thru-beam				
Type of transmission			Infrared				
Passageway dimensions			30 x 30 mm	60 x 60 mm	200 x 120 mm	200 x 180 mm	200 x 250 mm
References							
4-wire, PNP or NPN NO or NC programmable function	Minimum size of object detected						
	Dynamic mode	Static mode					
	Ø 2 mm	–	XUVF30M8	XUVF60M8	–	–	–
	Ø 4 mm	Ø 6 mm	–	–	XUVF120M12	XUVF180M12	XUVF250M12
	Ø 10 mm	Ø 15 mm	–	–	XUYFRS120S	XUYFRS180S	XUYFRS250S
Weight (kg)			0.080	0.140	0.860	1.000	1.120

References of U shape frames

Open (U shape) frames for sizes 120, 180 and 250 mm are also available.
To order an open frame, add the letter **U** to the end of the reference. Example: XUVF120M12 becomes **XUVF120M12U**.

Characteristics		
Product certifications	CE, cULus	
Ambient air temperature	For operation: 0...+ 60°C. For storage: - 20...+ 80°C	
Vibration resistance	7 gn, amplitude ± 1 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	Conforming to IEC 60529	IP 65
Connection	M8 connector (suitable female connectors, including pre-wired versions, refer to our "OsiSense XZ" catalogue)	M12 connector (suitable female connectors, including pre-wired versions, please refer to our "Cabling accessories OsiSense XZ" catalogue)
Materials	Case	Painted aluminium
	Lenses	Polycarbonate
		Altuglass
Immunity to ambient light	Sunlight: 4000 lux max. Incandescent light: 400 lux max.	Sunlight: 10,000 lux max. Incandescent light: 3000 lux max.
Passing speed of object	Min.: 10 cm/s, max.: 15 m/s (Ø 2 mm object)	Min (2): 10 cm/s, max.: 15 m/s (Ø 4 mm object) or max.: 70 m/s (Ø 10 mm object)
Rated supply voltage	24 V  with protection against reverse polarity	
Voltage limits	18...30 V  (including ripple)	
Switching capacity (sealed)	≤ 100 mA with overload and short-circuit protection	
Voltage drop, closed state	< 2 V	
Current consumption, no-load	≤ 120 mA	≤ 150 mA
Maximum switching frequency	500 Hz	5000 Hz
Delays	Response: < 1 ms Recovery: < 1 ms	Response: < 0.1 ms Recovery: < 0.1 ms
Time delay	Off-delay (reset): adjustable between 0 and 5 seconds	

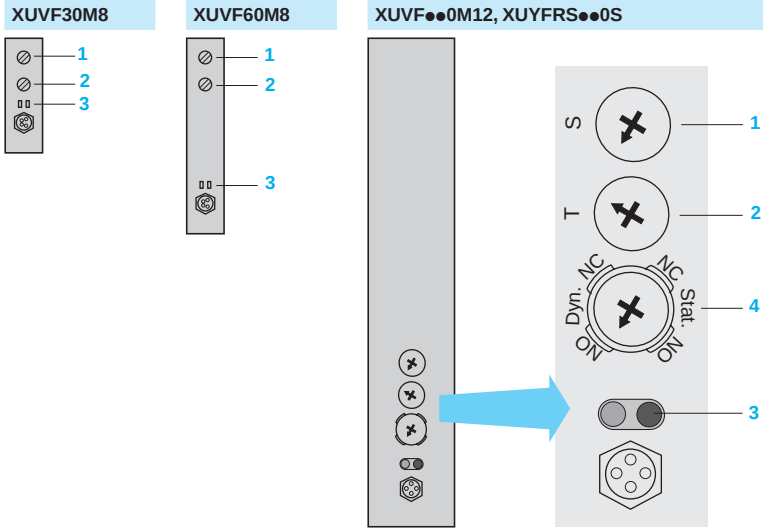
Function table	Function	Thru-beam system	
		No object present in the beam	Passage of object through the beam
Output state (PNP or NPN) and orange LED: illuminated when sensor output is ON.	NC	 	 
	NO	 	 

(1) XUVF●● sensors are suitable for detecting the passage of all types of objects (both metal and plastic), of any shape and colour.
XUVF120M12, XUVF180M12 and XUVF250M12 frames can be used:
- In dynamic mode for counting parts or monitoring the passing of parts on injection moulding machines.
- In static mode for detecting bar or cable type moving or non-moving parts, entering machines (maintain the signal).

(2) The min. value only applies to dynamic mode.

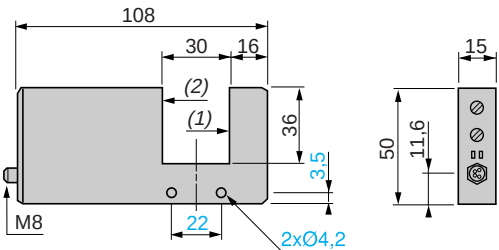
Presentation

- 1 Sensitivity adjustment potentiometer
- 2 Time delay adjustment potentiometer (XUV only)
- 3 Indicators:
 - Orange LED:
 - For XUVF30M8 and XUVF60M8: object in the beam
 - For XUVF120M12, XUVF180M12, XUVF250M12, XUVFRS120S, XUVFRS180S and XUVFRS250S: closed state of the contact
 - Red LED: solid state output overload or short-circuit (flashing)
- Notes concerning XUVF30M8 and XUVF60M8:
 - In the event of a supply malfunction, the red LED flashes
 - In the event of a short-circuit on the output, both the red and orange LEDs flash
- 4 Dynamic mode (NO or NC) or static mode (NO or NC) selector switch

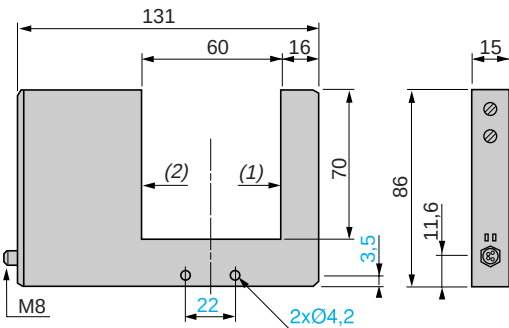


Dimensions

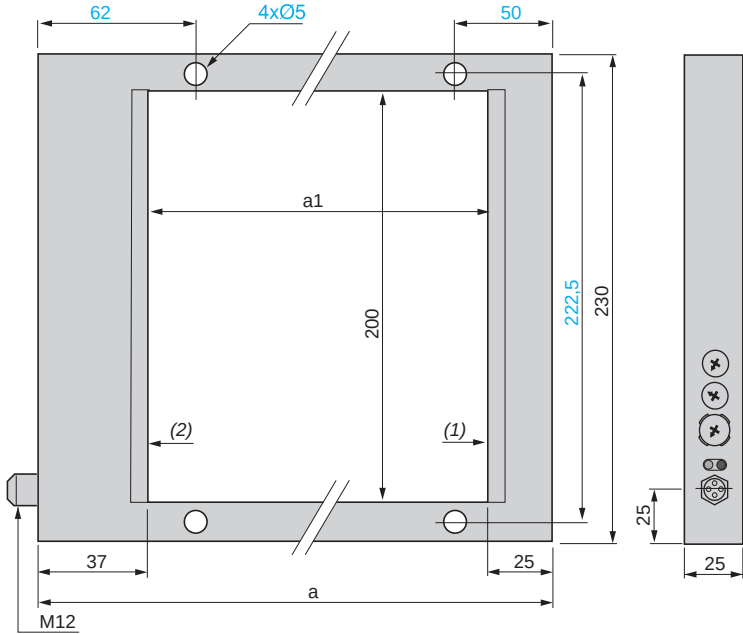
XUVF30M8



XUVF60M8



XUVF120M12, XUVFRS120S



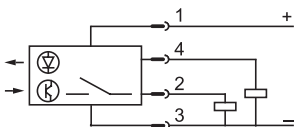
- (1) Transmitting face
- (2) Reception face

Reference	Reference	a	a1
XUVF120M12	XUVFRS120S	182	120
XUVF180M12	XUVFRS180S	242	180
XUVF250M12	XUVFRS250S	312	250

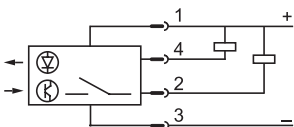
Connections

Wiring schemes (4-wire ---)

PNP output

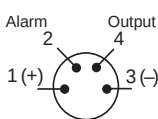


NPN output

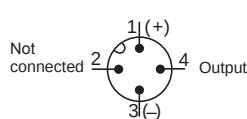


Connector scheme (sensor connector pin view)

XUVF30M8 and XUVF60M8



XUVF120M12, XUVFRS120S, XUVF180M12, XUVFRS180S, XUVF250M12 and XUVFRS250S



Note: For XUVF30M8 and XUVF60M8 only, the alarm (2) triggers in the event of an object stopping within the beam.
For XUVF30M8 and XUVF60M8, the NC output is gained by connecting terminal 3 to (+) and terminal 1 to (-).