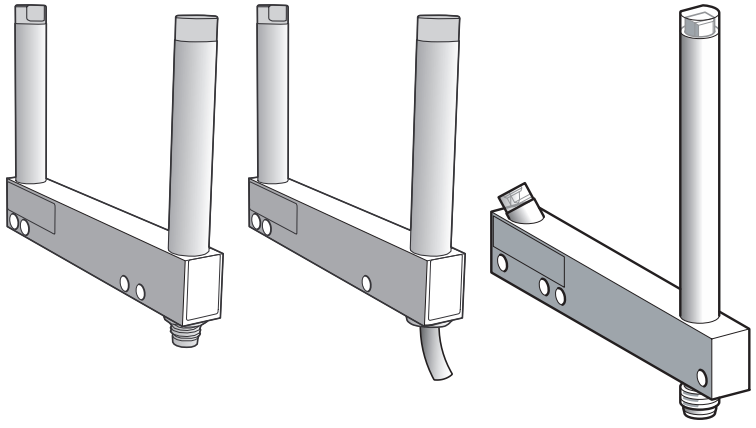
# Photo-electric sensors

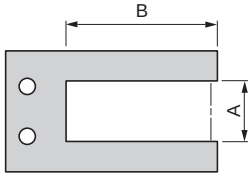
## OsiSense XU

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**



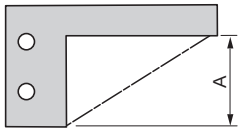

*A = Passageway*
*B = Depth*

| Passageway (A) | Function | Output | Pre-cabled, length 2 m. Depth (B): 40 mm |
|---|---|---|---|
| 30 mm | NO | PNP | **XUVR0303PANL2** |
| **Passageway (A)** | **Function** | **Output** | **M8 connector, 3-pin. Depth (B): 60 mm** |
| 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

## 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

***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 |

# Photo-electric sensors

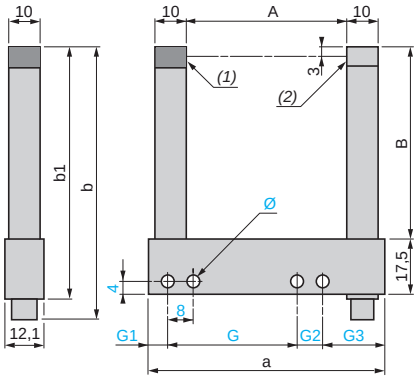
## OsiSense XU

Optical fork without adjustment
DC supply. Solid-state output

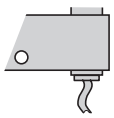
| Characteristics | | XUVR● | XUVA |
|---|---|---|---|
| **Product certifications** | | CE, UL, CSA | CE |
| **Ambient air temperature** | For operation | - 10…+ 60 °C | |
| | For storage | - 40…+ 80 °C | |
| **Degree of protection** | Conforming to IEC 60529 | IP 65 and IP 67 | |
| **Vibration resistance** | 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

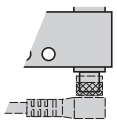
**XUVR●**




XUVR0303● (pre-cabled version detail)

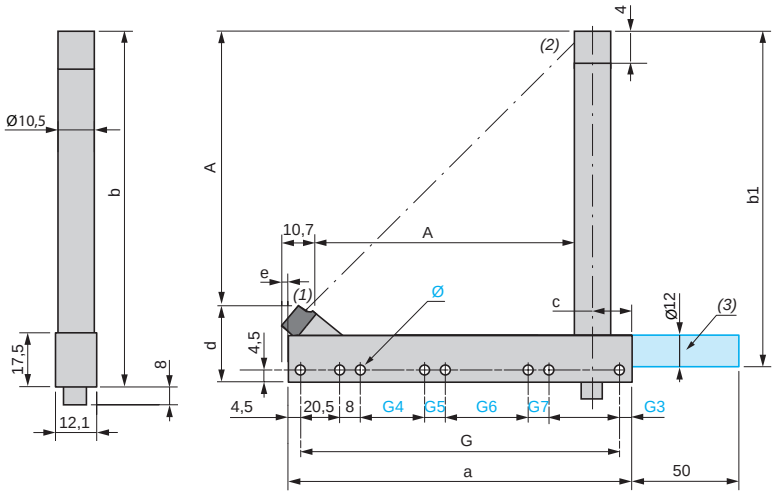


Orientation of elbowed connector



*(1) Transmission LED - (2) Yellow LED: output signal*

**XUVA●**



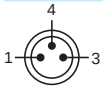

*(1) Transmission LED*
*(2) Yellow LED: output signal*
*(3) Optional fixing rod available on request. Please consult our Customer Care Centre.*

| 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 x 4.3 |
| XUVR0605●●●●● | 50 | 60 | 74 | 85.7 | 77.5 | 40 | 6.5 | 8 | 19.5 | 4 x 4.3 |
| XUVR0608●●●●● | 80 | 60 | 104 | 85.7 | 77.5 | 70 | 6.5 | 8 | 19.5 | 4 x 4.3 |
| XUVR01212●●●●● | 120 | 124.3 | 144 | 150.2 | 142 | 100 | 17 | 10 | 17 | 4 x 4.3 |
| XUVR01218●●●●● | 180 | 124.3 | 204 | 150.2 | 142 | 152 | 22 | 8 | 22 | 4 x 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 x 4.3 | – | – | – | – | 14.75 |
| XUVA0808●●●●● | 80 | 74.3 | 105 | 113 | 105 | 96 | – | – | 4.5 | 4 x 4.3 | – | – | – | – | 14.75 |
| XUVA1212●●●●● | 120 | 112.3 | 145 | 154 | 146 | 136 | – | – | 4.5 | 4 x 4.3 | – | – | – | – | 19.75 |
| XUVA1515●●●●● | 150 | 142.3 | 175 | 184 | 176 | 166 | – | – | 4.5 | 8 x 4.3 | 24 | 8 | 60 | 8 | 19.75 |

## Wiring schemes

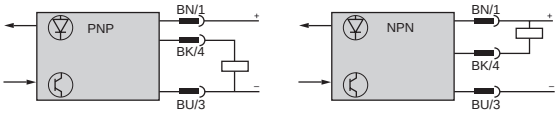
**M8 connector**




**Pin n° - colour**

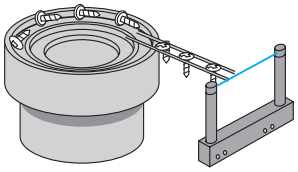
**1** BN
**3** BU
**4** BK

**Cabling**

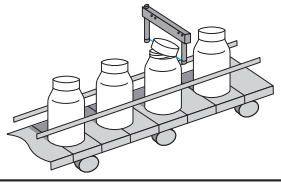



## Application examples

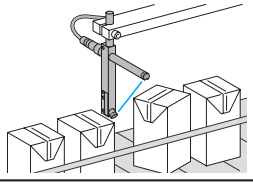
**Vibrating bowl**



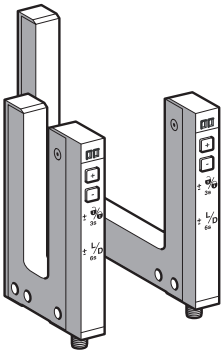
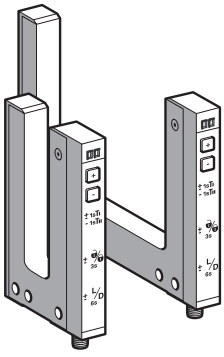
**Monitoring height of objects passing on a conveyor**



**Detecting position of object on a conveyor**



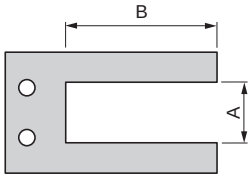
# Photo-electric sensors
## OsiSense XU Application
### Optical fork with teach mode
### DC supply. Solid-state output

| Optical fork with teach mode | +/- numeric potentiometer mode<br>Green keypad | Teach mode<br>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 | **0.2 mm** | |
| **Fork type** | | **XUYFNEP●** | **XUYFANEP●** |

## References

**4-wire, PNP/NPN independent outputs** — NO/NC function, selectable




A = Passageway
B = Depth

| 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 |

## 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 |

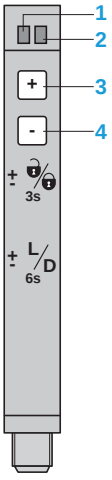
# Photo-electric sensors

## OsiSense XU Application

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

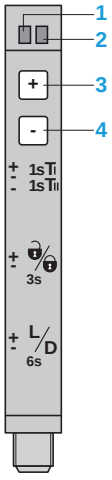
## Presentation

### 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) |

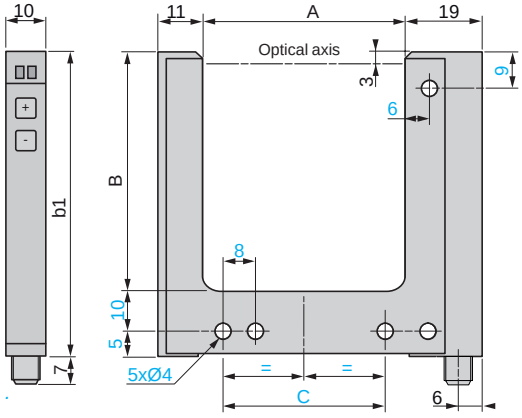
### XUYFANEP●●●




| | |
|---|---|
| 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●●●



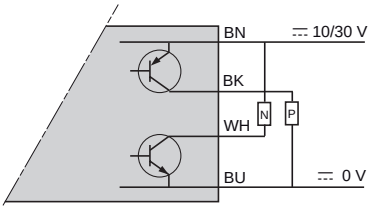

| XUY | Passageway A | Depth B | b1 | C |
|---|---|---|---|---|
| FNEP/FANEP●002 | 2 | 42, 59, 95 | 57, 74, 110 | 14 |
| FNEP/FANEP●005 | 5 | 42, 59, 95 | 57, 74, 110 | 14 |
| FNEP/FANEP●015 | 15 | 42, 59, 95 | 57, 74, 110 | 27 |
| FNEP/FANEP●030 | 30 | 42, 59, 95 | 57, 74, 110 | 42 |
| FNEP/FANEP●050 | 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 |

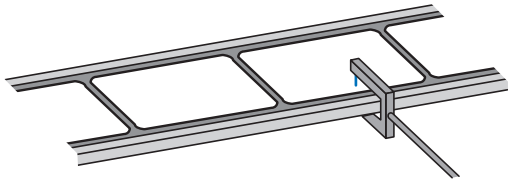
### M8 connector




## Application examples

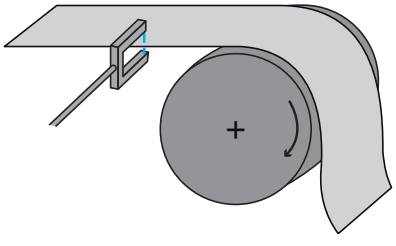
### Green keypad: Potentiometer mode

**Detection of labels on belt**



### Yellow keypad: Teach mode

**Detection of sheet feed on printing machine**

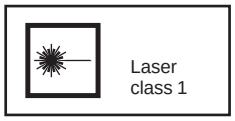


# Photo-electric sensors

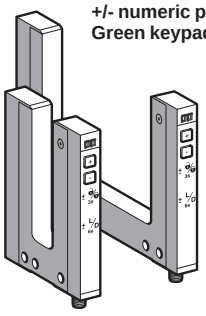
## OsiSense XU Application

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

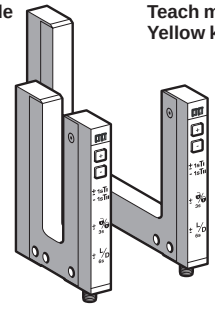
### High sensitivity fork range




Laser class 1, conforming to IEC 60825-1



**+/- numeric potentiometer mode**
**Green keypad**

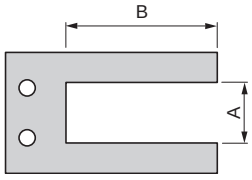


**Teach mode**
**Yellow keypad**

| | | |
|---|---|---|
| **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




A = Passageway
B = Depth

| 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 |

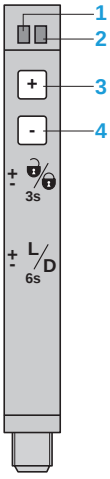
# Photo-electric sensors

## OsiSense XU Application

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

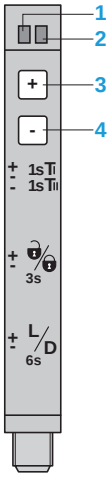
## Presentation

### 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) |

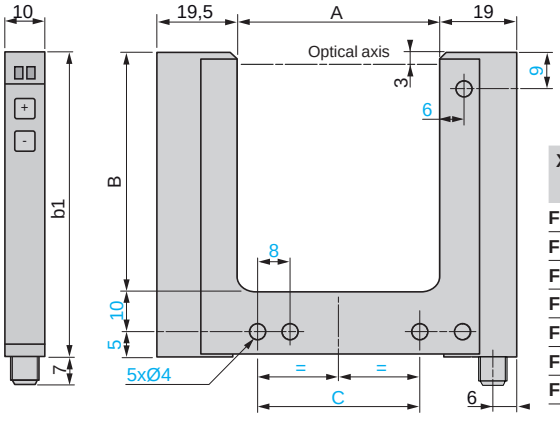
### XUYFALNEP●




| | |
|---|---|
| 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 s ≤ press time < 6 s) |
| 3 + 4 | NO/NC (press time ≥ 6 s) |

## Dimensions

### XUYFLNEP●/XUYFALNEP●



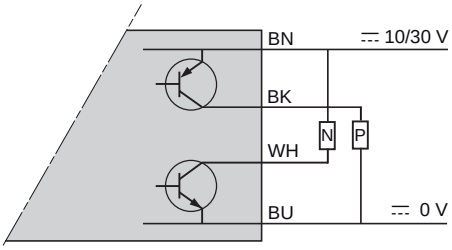

| XUY | Passageway Depth A | B | b1 | C |
|---|---|---|---|---|
| FLNEP/FALNEP●2 | 2 | 42, 59, 95 | 57, 74, 110 | 14 |
| FLNEP/FALNEP●5 | 5 | 42, 59, 95 | 57, 74, 110 | 14 |
| FLNEP/FALNEP●15 | 15 | 42, 59, 95 | 57, 74, 110 | 27 |
| FLNEP/FALNEP●30 | 30 | 42, 59, 95 | 57, 74, 110 | 42 |
| FLNEP/FALNEP●50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

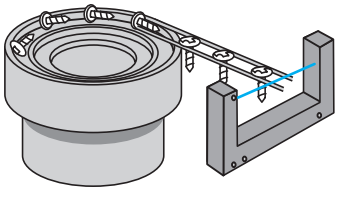
### M8 connector




## Application examples

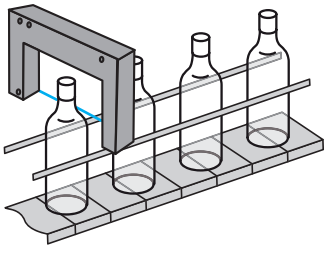
### Green keypad: Potentiometer mode

**Detection of an object exiting a vibrating bowl**



### Yellow keypad: Teach mode

**Detection of transparent bottles (glass, PET…)**

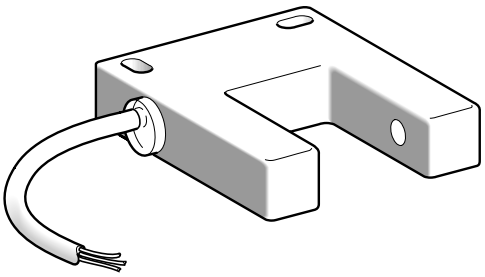


# Photo-electric sensors

## OsiSense XU Application, material handling series

**Optical** fork with integrated amplifier
**DC** supply. Solid-state output

### Fork design



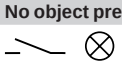
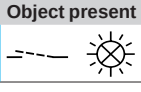
| | | |
|---|---|---|
| **System** | | **Thru-beam** |
| **Type of transmission** | | Infrared |
| **Nominal sensing distance (Sn)** | | **30 mm** |

## References

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

## Characteristics

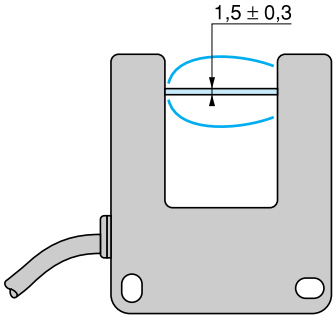
| | | |
|---|---|---|
| **Product certifications** | | CE |
| **Ambient air temperature** | For operation | - 5…+ 55 °C |
| | For storage | - 20…+ 70 °C |
| **Vibration resistance** | Conforming to IEC 60068-2-6 | Amplitude ±1 mm up to 42 Hz, 7 gn (f = 10…42 Hz) |
| **Shock resistance** | Conforming 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 mm² |
| **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**<br>**NO function** | **Function** | **Thru-beam system**<br>**No object present in the beam** | **Object present in the beam** |
|---|---|---|---|
| **Output state (PNP or NPN) indicator: red LED**<br>(illuminated when sensor output is ON) | NO |  |  |

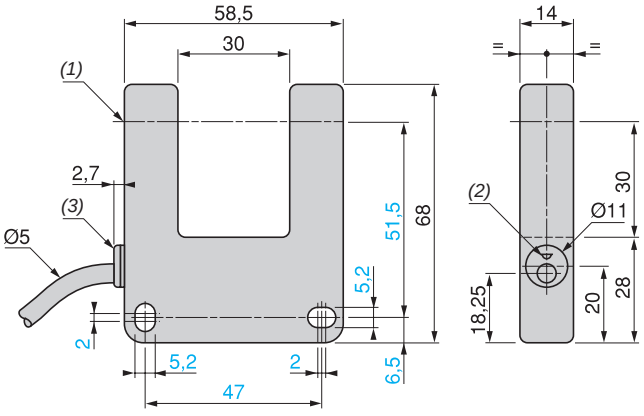
# Photo-electric sensors

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

## Detection curve




## Dimensions

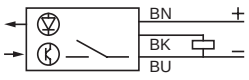



*(1) Optical axis*
*(2) Red LED*
*(3) Diffuser*
*Max. tightening torque of fixing screws: 3 N.m*

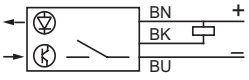
## Wiring schemes (3-wire ⎓)

### NO function

**PNP output**



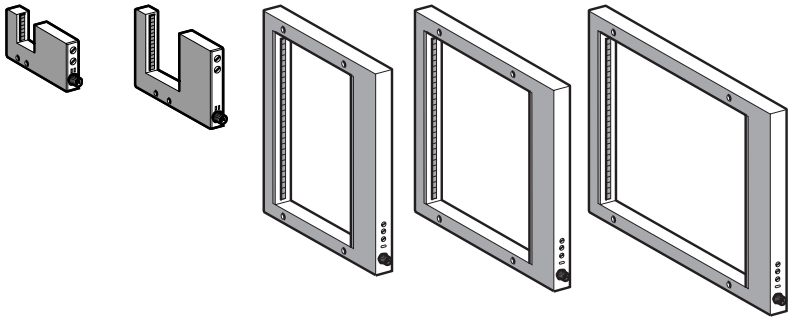

**NPN output**



# 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



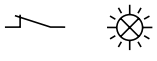
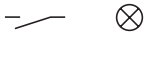
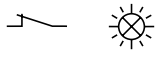
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **System** | | | **Thru-beam** | | | | |
| **Type of transmission** | | | **Infrared** | | | | |
| **Passageway dimensions** | | | **30 x 30 mm** | **60 x 60 mm** | **200 x 120 mm** | **200 x 180 mm** | **200 x 250 mm** |
| **References** | | | | | | | |
| **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.*

# Photo-electric sensors

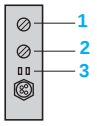
## OsiSense XU Application, conveying series

Dynamic/static detection of passage of objects
For detecting and counting parts
DC supply. Solid-state output

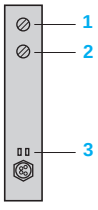
## Presentation

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

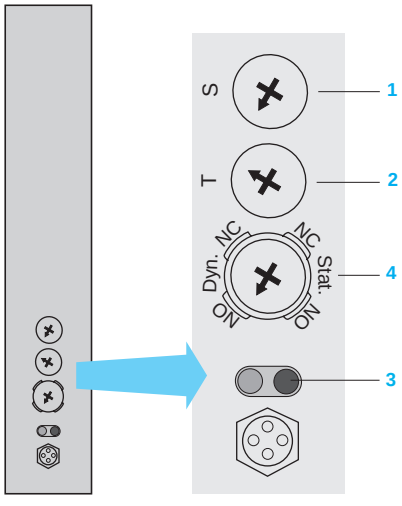
**XUVF30M8**




**XUVF60M8**

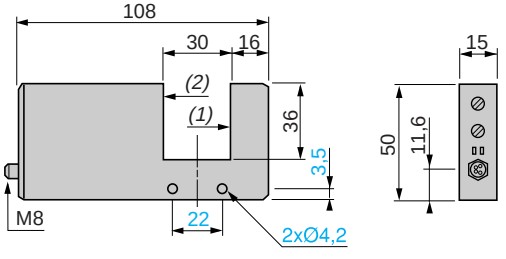



**XUVF●●0M12, XUYFRS●●0S**

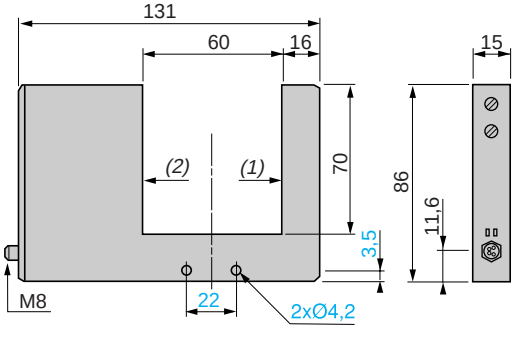



## Dimensions

**XUVF30M8**

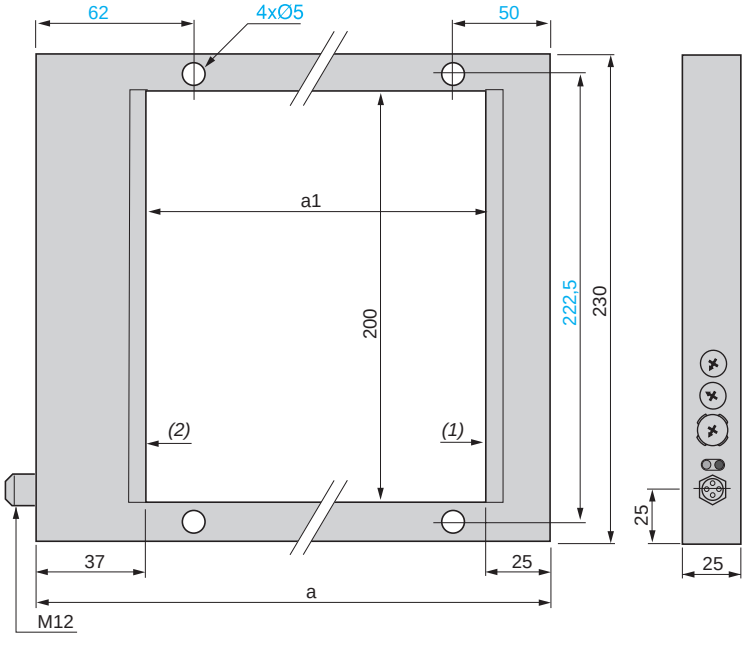



**XUVF60M8**




*(1) Transmitting face*
*(2) Reception face*

**XUVF●●0M12, XUYFRS●●0S**

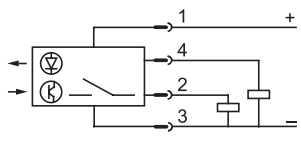



| Reference | Reference | a | a1 |
|---|---|---|---|
| XUVF120M12 | XUVFRS120S | 182 | 120 |
| XUVF180M12 | XUVFRS180S | 242 | 180 |
| XUVF250M12 | XUVFRS250S | 312 | 250 |

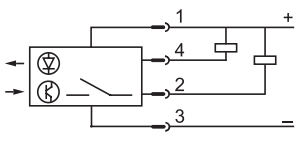
## Connections

**Wiring schemes (4-wire ⎓)**

**PNP output**

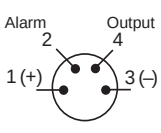



**NPN output**

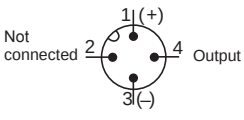



**Connector scheme (sensor connector pin view)**

**XUVF30M8** and **XUVF60M8**




**XUVF120M12, XUYFRS120S, XUVF180M12, XUYFRS180S, XUVF250M12** and **XUYFRS250S**




***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 (-).*