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# Photo-electric sensors

## XU range

Material handling & working, packaging

## Catalogue



Simply easy!™

# Photo-electric sensors

## XU range

### XU range, general purpose

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# Photo-electric sensors

XUM, general purpose, single mode function

Miniature design, plastic

Three-wire DC, solid-state output



XUM2A●XBL2, XUM2A●XBL03M8,  
XUM2A●XBL03M12



XUM2A●XBM8

## Thru-beam system with adjustable sensitivity

| Max./operating sensing distance (Sn)      | Function  | Output                | Connection            | Reference             | Weight kg |
|---|---|-----------------------|-----------------------|-----------------------|-----------|
| <b>Transmitter + receiver IO-Link (1)</b> |   |                       |                       |                       |           |
| 30 m/24 m                                 | Light ON (NC)/<br>Dark ON (NO)<br>configuration by<br>IO Link | Autodetect<br>PNP/NPN | M8 connector (4-pin)  | <b>XUM2APYBM8</b>     | 0 010     |
|   |   |                       | M12 connector (4-pin) | <b>XUM2APYBL03M12</b> | –         |

|                               |   |                       |                           |                          |       |
|-------------------------------|---|-----------------------|---------------------------|--------------------------|-------|
| <b>Transmitter + receiver</b> |   |                       |                           |                          |       |
| 30 m/24 m                     | Light ON (NC)/<br>Dark ON (NO)<br>configuration by<br>potentiometer | PNP                   | Pre-cabled (L = 2 m)      | <b>XUM2APXBL2</b>        | 0 096 |
|                               |   |                       | M8 connector (4-pin)      | <b>XUM2APXBM8</b>        | 0 026 |
|                               |   |                       |                           | <b>XUM2APXBL03M8 (1)</b> | –     |
|                               |   | M12 connector (4-pin) | <b>XUM2APXBL03M12 (1)</b> | –                        |       |
|                               |   | NPN                   | Pre-cabled (L = 2 m)      | <b>XUM2ANXBL2</b>        | 0 096 |
|                               |   |                       | M8 connector (4-pin)      | <b>XUM2ANXBM8</b>        | 0 026 |
|                               | <b>XUM2ANXBL03M8 (1)</b>  |                       | –                         |                          |       |
|                               |   | M12 connector (4-pin) | <b>XUM2ANXBL03M12 (1)</b> | –                        |       |

|                         |  |  |                       |                            |       |
|-------------------------|--|--|-----------------------|----------------------------|-------|
| <b>Transmitter only</b> |  |  |                       |                            |       |
| 30 m/24 m               |  |  | Pre-cabled (L = 2 m)  | <b>XUM2AKXBL2T</b>         | 0 063 |
|                         |  |  | M8 connector (4-pin)  | <b>XUM2AKXBM8T</b>         | 0 010 |
|                         |  |  |                       | <b>XUM2AKXBL03M8T (1)</b>  | –     |
|                         |  |  | M12 connector (4-pin) | <b>XUM2AKXBL03M12T (1)</b> | –     |

|                                  |   |                       |                       |                            |       |
|----------------------------------|---|-----------------------|-----------------------|----------------------------|-------|
| <b>Receiver only IO-Link (1)</b> |   |                       |                       |                            |       |
| 30 m/24 m                        | Light ON (NC)/<br>Dark ON (NO)<br>configuration by<br>IO-Link | Autodetect<br>PNP/NPN | M8 connector (4-pin)  | <b>XUM2APYBM8R</b>         | 0 010 |
|                                  |   |                       | M12 connector (4-pin) | <b>XUM2APYBL03M12R (1)</b> | –     |

|                      |   |                       |                            |                           |       |
|----------------------|---|-----------------------|----------------------------|---------------------------|-------|
| <b>Receiver only</b> |   |                       |                            |                           |       |
| 30 m/24 m            | Light ON (NC)/<br>Dark ON (NO)<br>configuration by<br>potentiometer | PNP                   | Pre-cabled (L = 2 m)       | <b>XUM2APXBL2R</b>        | 0 063 |
|                      |   |                       | M8 connector (4-pin)       | <b>XUM2APXBM8R</b>        | 0 010 |
|                      |   |                       |                            | <b>XUM2APXBL03M8R (1)</b> | –     |
|                      |   | M12 connector (4-pin) | <b>XUM2APXBL03M12R (1)</b> | –                         |       |
|                      |   | NPN                   | Pre-cabled (L = 2 m)       | <b>XUM2ANXBL2R</b>        | 0 063 |
|                      |   |                       | M8 connector (4-pin)       | <b>XUM2ANXBM8R</b>        | 0 010 |
|                      | <b>XUM2ANXBL03M8R (1)</b>   |                       | –                          |                           |       |
|                      |   | M12 connector (4-pin) | <b>XUM2ANXBL03M12R (1)</b> | –                         |       |

## Accessories

### For all XUM miniature sensors

See page 5 .

### For thru-beam system

See page 5 .

### IO-Link Master (2)

See page 70 .

### Fixing and other accessories

See page 74 .

### Cabling accessories

See page 80 .

(1) Available 4<sup>th</sup> quarter 2024.

(2) Available 2<sup>nd</sup> quarter 2024.

## Photo-electric sensors

XUM, general purpose, single mode function

Miniature design, plastic

Three-wire DC, solid-state output



XUM9A•XBL2



XUM9A•XBM8



XUM8A•XBL2



XUM8A•XBM8

## Polarised reflex system with adjustable sensitivity

| Max./operating sensing distance (Sn) | Function   | Output             | Connection            | Reference                 | Weight kg |
|--------------------------------------|--|--------------------|-----------------------|---------------------------|-----------|
| <b>Sensors IO-Link (1)</b>           |  |                    |                       |                           |           |
| 8 m/6.7 m with reflector XUZC50      | Light ON (NC)/ Dark ON (NO) configuration by IO-Link       | Autodetect PNP/NPN | M8 connector (4-pin)  | <b>XUM9APYBM8</b>         | 0 010     |
|                                      |  |                    | M12 connector (4-pin) | <b>XUM9APYBL03M12 (1)</b> | –         |
| <b>Standard sensors</b>              |  |                    |                       |                           |           |
| 8 m/6.7 m with reflector XUZC50      | Light ON (NC)/ Dark ON (NO) configuration by potentiometer | PNP                | Pre-cabled (L = 2 m)  | <b>XUM9APXBL2</b>         | 0 063     |
|                                      |  |                    | M8 connector (4-pin)  | <b>XUM9APXBM8</b>         | 0 010     |
|                                      |  |                    |                       | <b>XUM9APXBL03M8 (1)</b>  | –         |
|                                      |  |                    | M12 connector (4-pin) | <b>XUM9APXBL03M12 (1)</b> | –         |
|                                      |  | NPN                | Pre-cabled (L = 2 m)  | <b>XUM9ANXBL2</b>         | 0 063     |
|                                      |  |                    | M8 connector (4-pin)  | <b>XUM9ANXBM8</b>         | 0 010     |
|                                      |  |                    |                       | <b>XUM9ANXBL03M8 (1)</b>  | –         |
|                                      |  |                    | M12 connector (4-pin) | <b>XUM9ANXBL03M12 (1)</b> | –         |

## Background suppression system with adjustable sensitivity

| Max./operating sensing distance (Sn)  | Function   | Output | Connection           | Reference         | Weight kg |
|---------------------------------------|--|--------|----------------------|-------------------|-----------|
| 300 mm/200 mm (white object or paper) | Light ON (NO)/ Dark ON (NC) configuration by potentiometer | PNP    | Pre-cabled (L = 2 m) | <b>XUM8APXBL2</b> | 0 063     |
|                                       |  |        | M8 connector (4-pin) | <b>XUM8APXBM8</b> | 0 010     |
|                                       |  |        |                      | <b>XUM8ANXBL2</b> | 0 063     |
|                                       |  |        | M8 connector (4-pin) | <b>XUM8ANXBM8</b> | 0 010     |

## Accessories

## For all XUM miniature sensors

See page 5 .

## IO-Link Master (2)

See page 70 .

## Fixing and other accessories

See page 74 .

## Cabling accessories

See page 80 .

(1) Available 4<sup>th</sup> quarter 2024.(2) Available 2<sup>nd</sup> quarter 2024.

# Photo-electric sensors

XUM, general purpose, single mode function

Miniature design, plastic

Three-wire DC, solid-state output



XUM4A●XBL2



XUM4A●XBM8



XUM6A●XBL2



XUM6A●XBM8



XUM5A●XBL2



XUM5A●XBM8

## Diffuse system with adjustable sensitivity

| Max./operating sensing distance (Sn) | Function   | Output | Connection            | Reference                 | Weight kg |
|--------------------------------------|--|--------|-----------------------|---------------------------|-----------|
| <b>Diffuse short range</b>           |  |        |                       |                           |           |
| 0.25 m/0.17 m                        | Light ON (NO)/ Dark ON (NC) configuration by potentiometer | PNP    | Pre-cabled (L = 2 m)  | <b>XUM4APXBL2</b>         | 0 063     |
|                                      |  |        | M8 connector (4-pin)  | <b>XUM4APXBM8</b>         | 0 010     |
|                                      |  |        | M12 connector (4-pin) | <b>XUM4APXBL03M8 (1)</b>  | –         |
|                                      |  | NPN    | Pre-cabled (L = 2 m)  | <b>XUM4ANXBL2</b>         | 0 063     |
|                                      |  |        | M8 connector (4-pin)  | <b>XUM4ANXBM8</b>         | 0 010     |
|                                      |  |        | M12 connector (4-pin) | <b>XUM4ANXBL03M12 (1)</b> | –         |

## Diffuse medium range IO-Link (1)

|             |  |                    |                       |                       |   |
|-------------|--|--------------------|-----------------------|-----------------------|---|
| 1.1 m/0.8 m | Light ON (NO)/ Dark ON (NC) configuration by IO-Link | Autodetect PNP/NPN | M8 connector (4-pin)  | <b>XUM6APYBM8</b>     | – |
|             |  |                    | M12 connector (4-pin) | <b>XUM6APYBL03M12</b> | – |

## Diffuse medium range

|             |  |     |                       |                           |       |
|-------------|--|-----|-----------------------|---------------------------|-------|
| 1.1 m/0.8 m | Light ON (NO)/ Dark ON (NC) configuration by potentiometer | PNP | Pre-cabled (L = 2 m)  | <b>XUM6APXBL2</b>         | 0 063 |
|             |  |     | M8 connector (4-pin)  | <b>XUM6APXBM8</b>         | 0 010 |
|             |  |     | M12 connector (4-pin) | <b>XUM6APXBL03M12 (1)</b> | –     |
|             |  | NPN | Pre-cabled (L = 2 m)  | <b>XUM6ANXBL2</b>         | 0 063 |
|             |  |     | M8 connector (4-pin)  | <b>XUM6ANXBM8</b>         | 0 010 |
|             |  |     | M12 connector (4-pin) | <b>XUM6ANXBL03M12 (1)</b> | –     |

## Diffuse long range IO-Link (1)

|             |  |                    |                       |                       |   |
|-------------|--|--------------------|-----------------------|-----------------------|---|
| 1.9 m/1.5 m | Light ON (NO)/ Dark ON (NC) configuration by IO-Link | Autodetect PNP/NPN | M8 connector (4-pin)  | <b>XUM5APYBM8</b>     | – |
|             |  |                    | M12 connector (4-pin) | <b>XUM5APYBL03M12</b> | – |

## Diffuse long range

|             |  |     |                       |                           |       |
|-------------|--|-----|-----------------------|---------------------------|-------|
| 1.9 m/1.5 m | Light ON (NO)/ Dark ON (NC) configuration by potentiometer | PNP | Pre-cabled (L = 2 m)  | <b>XUM5APXBL2</b>         | 0 063 |
|             |  |     | M8 connector (4-pin)  | <b>XUM5APXBM8</b>         | 0 010 |
|             |  |     | M12 connector (4-pin) | <b>XUM5ANXBL03M12 (1)</b> | –     |
|             |  | NPN | Pre-cabled (L = 2 m)  | <b>XUM5ANXBL2</b>         | 0 063 |
|             |  |     | M8 connector (4-pin)  | <b>XUM5ANXBM8</b>         | 0 010 |
|             |  |     | M12 connector (4-pin) | <b>XUM5ANXBL03M12 (1)</b> | –     |

## Accessories for XU sensors

### For all XUM miniature sensors

See page 5 .

### IO-Link Master (2)

See page 70 .

### Fixing and other accessories

See page 74 .

### Cabling accessories

See pages 80 to 85 .

(1) Available 4<sup>th</sup> quarter 2024.

(2) Available 2<sup>nd</sup> quarter 2024.



XUZASM05



XUZDVM05



XUZDHM05



XUZDRM05

### Accessories for all XUM miniature sensors

#### Setting-up accessory

| Description  | For use with sensors     | Reference       | Weight kg |
|--|--------------------------|-----------------|-----------|
| <b>Air blower mounting block (1)</b><br>for cleaning the sensitive face of the sensor, using compressed air .<br><br>Supplied with 2 mounting screws (M3 x 20), 1 air supply port plugging screw for the unused port (of 2 available) and 1 gasket . | XUM●A●XBL2<br>XUM●A●XBM8 | <b>XUZASM05</b> | 0 030     |

### Accessories for thru-beam system

#### Diaphragms

| Description                                      | Dimensions | Sensing distance | Reference       | Weight kg |
|--|------------|------------------|-----------------|-----------|
|  | mm         | m                |                 |           |
| Vertical diaphragm<br><i>Sold in lots of 2</i>   | 0.5 x 6.4  | 1                | <b>XUZDVM05</b> | 0 003     |
|  | 1 x 6.4    | 1.5              | <b>XUZDVM10</b> | 0 003     |
|  | 2 x 6.4    | 3.5              | <b>XUZDVM20</b> | 0 003     |
| Horizontal diaphragm<br><i>Sold in lots of 2</i> | 0.5 x 6.4  | 0.7              | <b>XUZDHM05</b> | 0 003     |
|  | 1 x 6.4    | 1.5              | <b>XUZDHM10</b> | 0 003     |
|  | 2 x 6.4    | 3                | <b>XUZDHM20</b> | 0 003     |
| Round diaphragm<br><i>Sold in lots of 2</i>      | 0.5 x 6.4  | 0.08             | <b>XUZDRM05</b> | 0 003     |
|  | 1 x 6.4    | 0.3              | <b>XUZDRM10</b> | 0 003     |
|  | 2 x 6.4    | 1.2              | <b>XUZDRM20</b> | 0 003     |

### Accessories for XU sensors

#### IO-Link Master (2)

See page 70 .

#### Fixing and other accessories

See page 74 .

#### Cabling accessories

See pages 80 to 85 .

(1) To order these references, please contact our Customer Care Centre.

(2) Available 2<sup>nd</sup> quarter 2024.

# Photo-electric sensors

XUM, general purpose, single mode function

Miniature design, plastic

Three-wire DC, solid-state output

| Characteristics                          |   |          |  | XUM●A●XBM8   | XUM●A●XBL03M●  | XUM●A●XBL2    |
|--|---|----------|--|--|--|---------------|
| <b>Sensor type</b>                       |   |          |  | XUM●A●XBM8   | XUM●A●XBL03M●  | XUM●A●XBL2    |
| <b>Product certifications</b>            |   |          |  | CE, UKCA, cULus<br>EAC, RCM ( <i>pending</i> )   |  |               |
| <b>Connection</b>                        | Connector   |          |  | M8   | –  | –             |
|  | Pigtail   |          |  | –  | Length: 0.3 m  | –             |
|  | Pre-cabled  |          |  | –  | –  | Length: 2 m   |
| <b>Configuration</b>                     |   |          |  | IO-Link<br>Potentiometer   | IO-Link<br>Potentiometer                             | Potentiometer |
| <b>Nominal sensing distance Sn</b>       | Thru-beam system  | XUM2     | <b>m</b>   | 30 (with excess gain = 1)<br>24 (with excess gain = 2)   |  |               |
|  | Polarised reflex system (using a 50 x 50 mm reflector XUZC50) | XUM9     | <b>m</b>   | 0.05...8 (with excess gain = 1)<br>0.05...6.7 (with excess gain = 2)   |  |               |
|  | Background suppression system                                 | XUM8     | <b>mm</b>  | 4 . 300: White paper or object .Sn (90%)<br>5 . 265: Grey object .Sn (18%)<br>8 . 200: Black object .Sn (6%)       |  |               |
|  | Diffuse system (using a white paper 200 x 200 mm)             | XUM4     | <b>m</b>   | 0.25 (with excess gain = 1)<br>0.17 (with excess gain = 2)   |  |               |
|  |   | XUM5     | <b>m</b>   | 1.9 (with excess gain = 1)<br>1.5 (with excess gain = 2)   |  |               |
| XUM6                                     |   | <b>m</b> | 1.1 (with excess gain = 1)<br>0.8 (with excess gain = 2) |  |  |               |
| <b>Hysteresis</b>                        |   |          |  | 2% < H < 20% at Sn   |  |               |
| <b>Type of transmission</b>              | Red   |          |  | Thru-beam system XUM2<br>Polarised reflex system XUM9<br>Background suppression system XUM8<br>Diffuse system XUM6 |  |               |
|  | Infrared  |          |  | Diffuse system XUM4 and XUM5   |  |               |
| <b>Degree of protection</b>              | Conforming to IEC 60529                                       |          |  | IP65, IP67   |  |               |
| <b>Storage temperature</b>               |   |          |  | <b>°C</b>  | -40...+70  |               |
| <b>Operating temperature</b>             |   |          |  | <b>°C</b>  | -30...+55  |               |
| <b>Materials</b>                         | Case  |          |  | PBT  |  |               |
|  | Lens  |          |  | PMMA   |  |               |
|  | Display   |          |  | PC   |  |               |
|  | Cable   |          |  | –  | –  | PVC           |
| <b>Vibration resistance</b>              | Conforming to IEC 60068-2-6                                   |          |  | Frequency range: 10 to 500 Hz<br>Acceleration: 9 gn  |  |               |
| <b>Shock resistance</b>                  | Conforming to IEC 60068-2-27                                  |          |  | Peak acceleration: 100 gn<br>Duration of the pulse: 11 ms  |  |               |
| <b>Indicator lights</b>                  | Output state  |          |  | Yellow LED   |  |               |
|  | Stability   |          |  | Green LED (XUM4, XUM5, XUM6, XUM8, XUM9)   |  |               |
|  | Power on  |          |  | Green LED (XUM2)   |  |               |
| <b>Rated supply voltage</b>              |   |          |  | <b>V</b>   | 12 . 24 --- with protection against reverse polarity |               |
| <b>Voltage limits (including ripple)</b> |   |          |  | <b>V</b>   | 12 . 24 ---  |               |
| <b>Current consumption, no-load</b>      |   |          |  | <b>mA</b>  | < 20 max.  |               |
| <b>Switching capacity</b>                |   |          |  | <b>mA</b>  | 100  |               |
| <b>Voltage drop, closed state</b>        |   |          |  | <b>V</b>   | ≤ 2  |               |
| <b>Maximum switching frequency</b>       |   |          |  | <b>Hz</b>  | 1000   |               |
| <b>Delays</b>                            | First-up  |          |  | <b>ms</b>  | < 100  |               |
|  | Response  |          |  | <b>ms</b>  | 0.5  |               |
|  | Recovery  |          |  | <b>ms</b>  | 0.5  |               |



# Photo-electric sensors

XUM, general purpose, single mode function

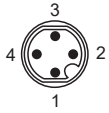
Miniature design, plastic

Three-wire DC, solid-state output

## Wiring schemes

### Thru-beam system

#### M8 and M12 connector - 4-pin IO-Link

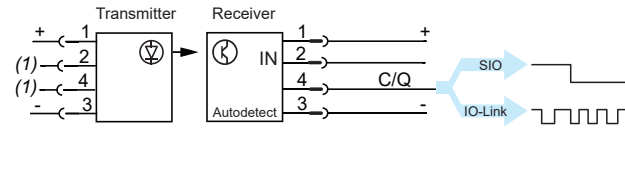


| Pin | Signal | Definition                    |
|-----|--------|-------------------------------|
| 1   | +      | + 24 V $\overline{\text{DC}}$ |
| 2   | IN     | + = NO<br>- = NC<br>Open = NO |
| 3   | -      | 0 V $\overline{\text{DC}}$    |
| 4   | Q      | Switching signal (SIO)        |
|     | C      | IO-Link communication         |

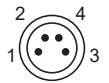
#### Autodetect PNP/NPN or by IO-Link

XUM2APYBM8, XUM2APYBM8R

XUM2APYBL03M12, XUM2APYBL03M12R



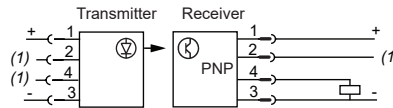
#### M8 and M12 connector - 4-pin



|       |       |              |
|-------|-------|--------------|
| 3 (-) | 1 (+) | 4 OUT/Output |
|-------|-------|--------------|

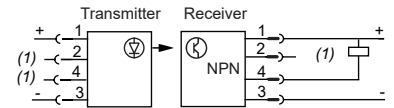
#### PNP

XUM2APXBM8, XUM2APXBL03M8,  
XUM2AKXBM8T, XUM2AKXBL03M8T,  
XUM2APXBM8R, XUM2APXBL03M8R  
XUM2APXBL03M12, XUM2AKXBL03M12T,  
XUM2APXBL03M12R



#### NPN

XUM2ANXBM8, XUM2ANXBL03M8,  
XUM2ANXBM8R, XUM2ANXBL03M8R  
XUM2ANXBL03M12,  
XUM2ANXBL03M12R



#### Pre-cabled - 3-wire

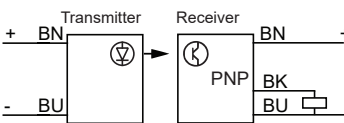
(-) BU (Blue)

(+) BN (Brown)

OUT/Output BK (Black)

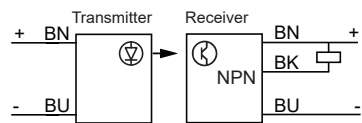
#### PNP

XUM2APXBL2, XUM2AKXBL2T,  
XUM2APXBL2R



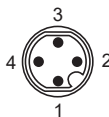
#### NPN

XUM2ANXBL2, XUM2ANXBL2R



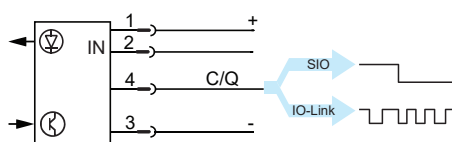
### Polarised reflex, background suppression and diffuse systems

#### M8 and M12 connector - 4-pin IO-Link

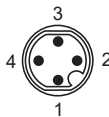


| Pin | Signal | Definition                    |
|-----|--------|-------------------------------|
| 1   | +      | + 24 V $\overline{\text{DC}}$ |
| 2   | IN     | + = NO<br>- = NC<br>Open = NO |
| 3   | -      | 0 V $\overline{\text{DC}}$    |
| 4   | Q      | Switching signal (SIO)        |
|     | C      | IO-Link communication         |

XUM●APYBL03M12, XUM●APYBM8



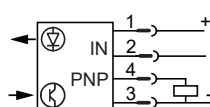
#### M8 and M12 connector - 4-pin



| Pin | Signal | Definition                    |
|-----|--------|-------------------------------|
| 1   | +      | + 24 V $\overline{\text{DC}}$ |
| 2   | IN     | + = NO<br>- = NC<br>Open = NO |
| 3   | -      | 0 V $\overline{\text{DC}}$    |
| 4   | Q      | Switching signal (SIO)        |

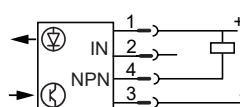
#### PNP

XUM●APXBL03M12, XUM●APXBM8,  
XUM●APXBL03M8



#### NPN

XUM●ANXBL03M12



#### Pre-cabled - 3-wire

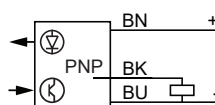
(-) BU (Blue)

(+) BN (Brown)

OUT/Output BK (Black)

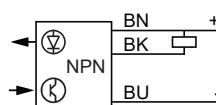
#### PNP

XUM●APXBL2



#### NPN

XUM●ANXBL2



(1) Not connected.

# Photo-electric sensors

XUM, general purpose, single mode function

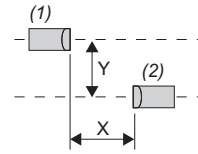
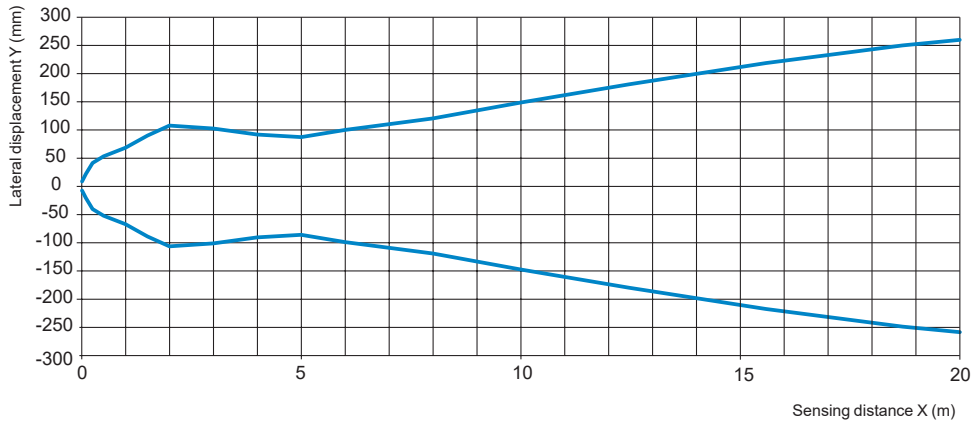
Miniature design, plastic

Three-wire DC, solid-state output

## Detection curves

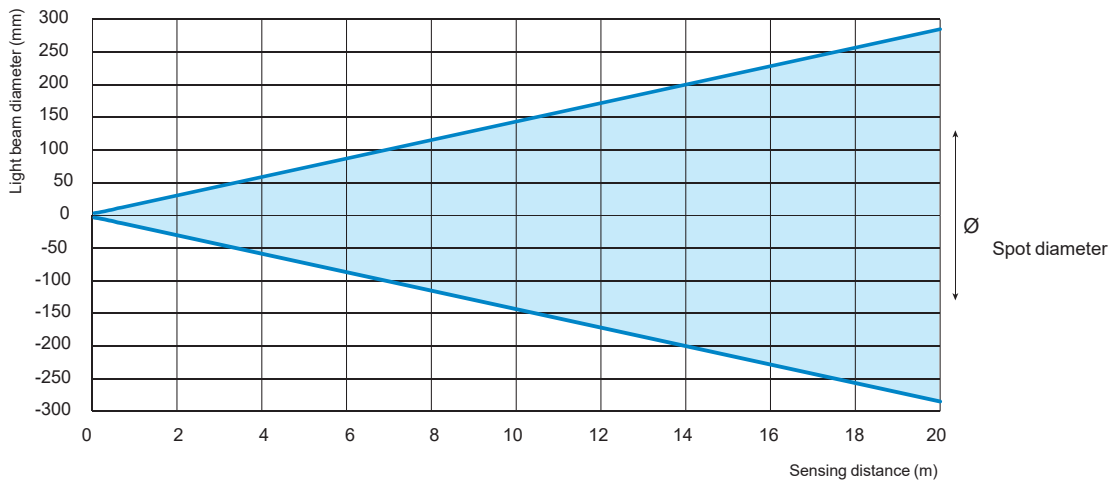
Thru-beam system: XUM2

Lateral displacement

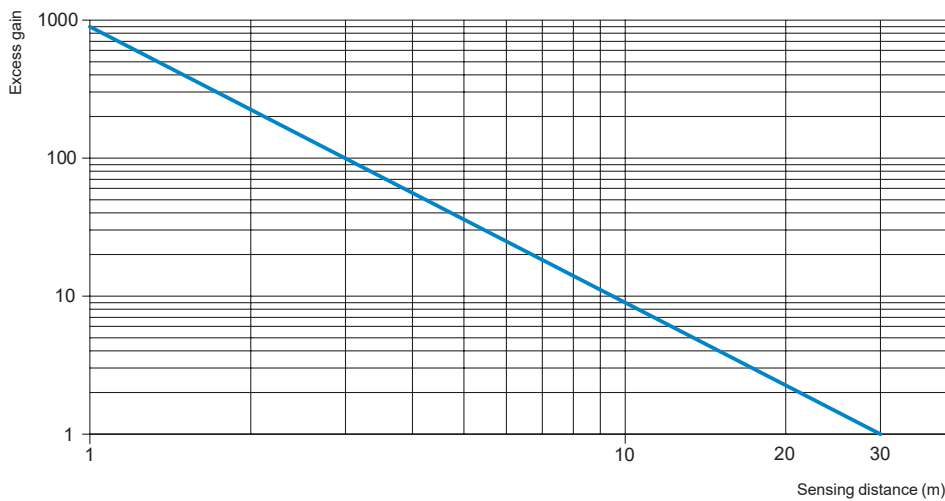


(1): Transmitter  
(2): Receiver

## Light beam diameter



## Excess gain



# Photo-electric sensors

XUM, general purpose, single mode function

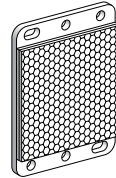
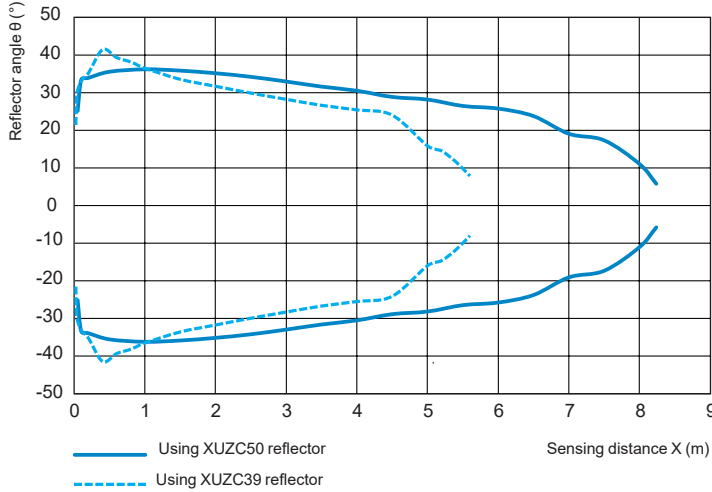
Miniature design, plastic

Three-wire DC, solid-state output

## Detection curves

Polarised reflex system: XUM9

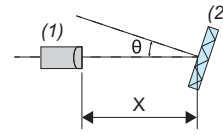
Reflector angle



XUZC50

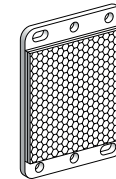
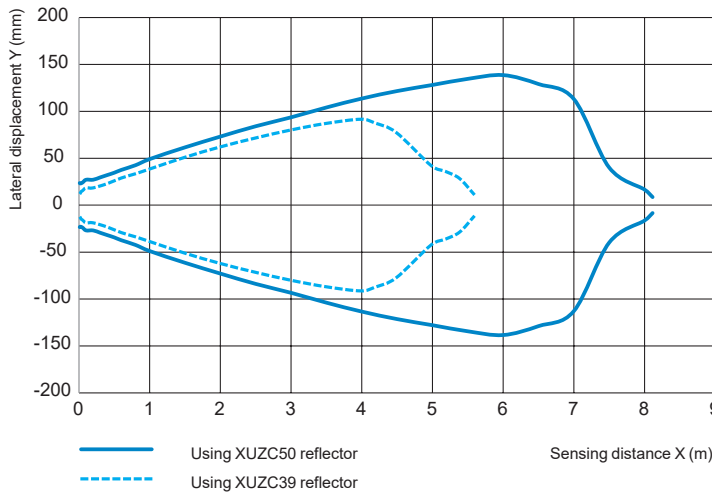


XUZC39



(1): Sensor  
(2): Reflector  
 $\theta$ : Reflector angle (°)  
X: Sensing distance (m)

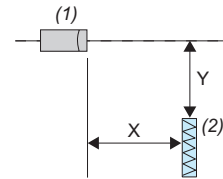
## Lateral displacement



XUZC50

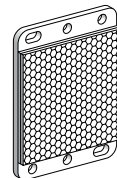
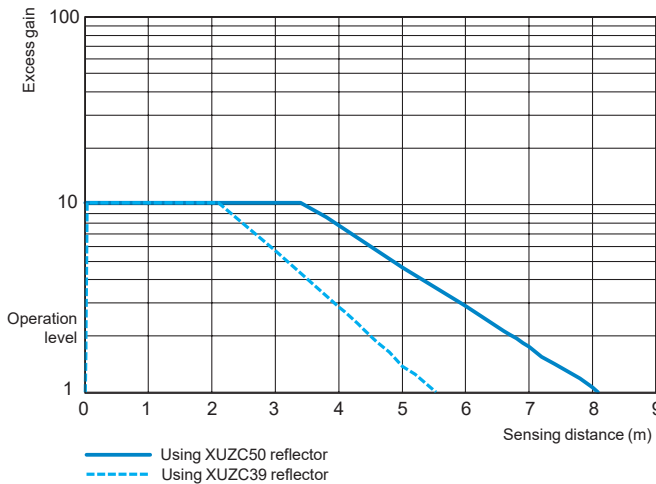


XUZC39



(1): Sensor  
(2): Reflector  
Y: Lateral displacement (mm)  
X: Sensing distance (m)

## Excess gain



XUZC50



XUZC39

# Photo-electric sensors

XUM, general purpose, single mode function

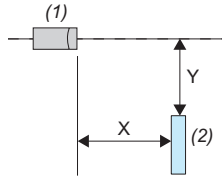
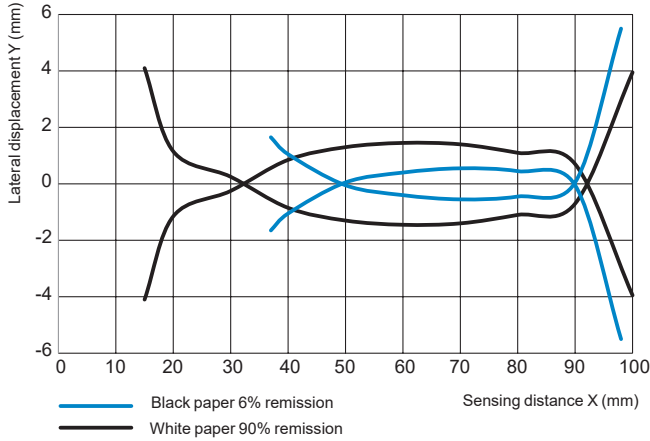
Miniature design, plastic

Three-wire DC, solid-state output

## Detection curves (continued)

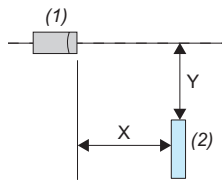
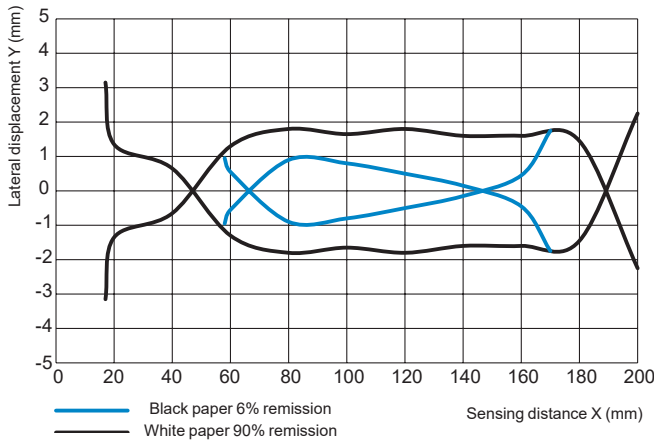
Background suppression system: XUM8

Lateral displacement (preset 100 mm)



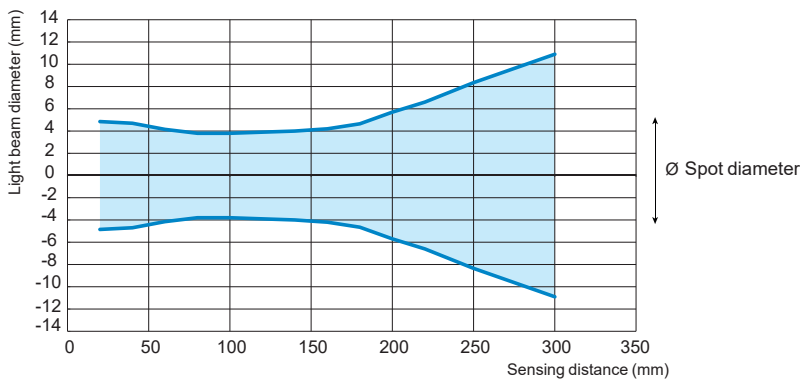
(1): Sensor  
 (2): Object (200 mm square white and black mat paper)  
 X: Sensing distance (mm)  
 Y: Lateral displacement (mm)

Lateral displacement (preset 200 mm)

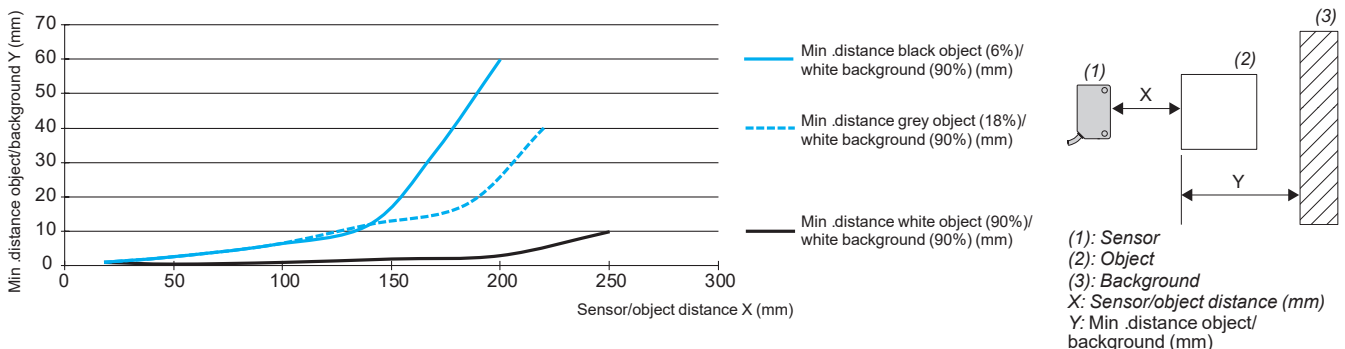


(1): Sensor  
 (2): Object (200 mm square white and black mat paper)  
 X: Sensing distance (mm)  
 Y: Lateral displacement (mm)

## Light beam diameter



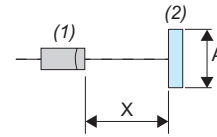
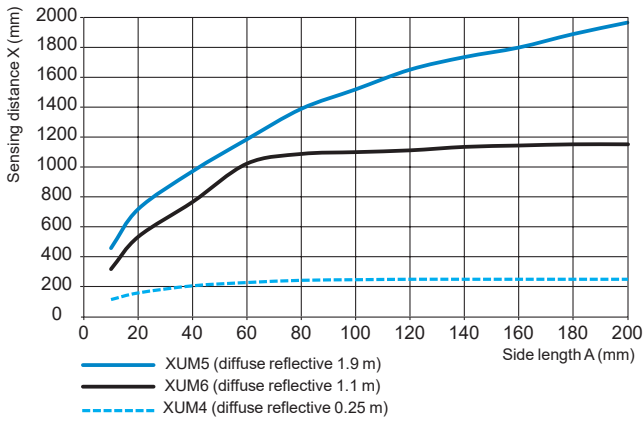
## Minimum distance between the object to be detected and a white background



## Detection curves (continued)

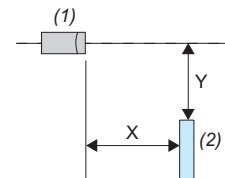
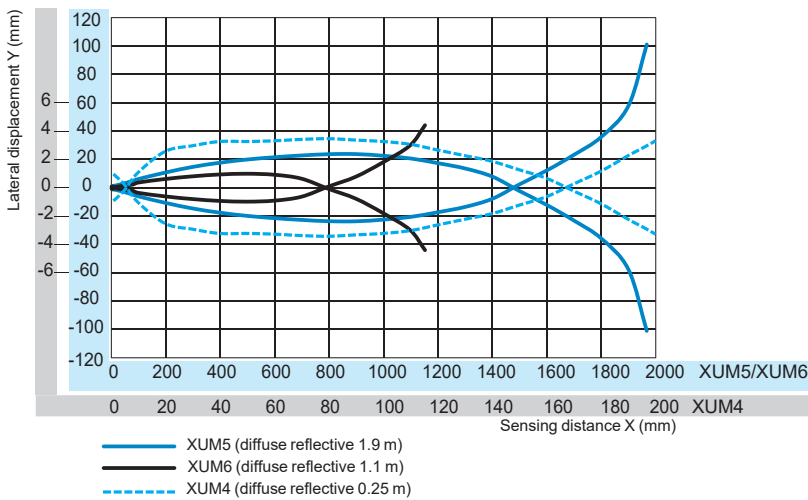
Diffuse system: XUM4, XUM5 and XUM6

Object size/sensing distance



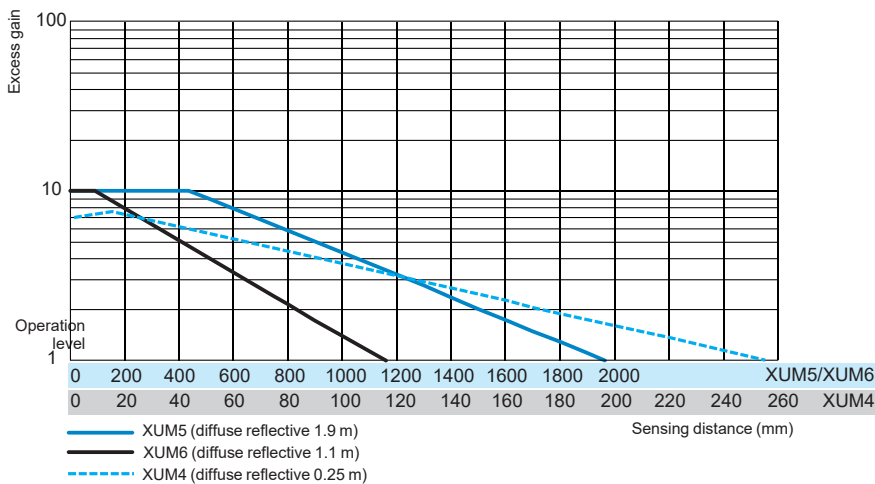
(1): Sensor  
 (2): Object (white mat paper of A mm square)  
 A: Side length (mm)  
 X: Sensing distance (mm)

## Lateral displacement



(1): Sensor  
 (2): Object (200 x 200 mm square white paper)  
 X: Sensing distance (mm)  
 Y: Lateral displacement (mm)

## Excess gain



# Photo-electric sensors

XUM, general purpose, single mode function

Miniature design, plastic

Three-wire DC, solid-state output

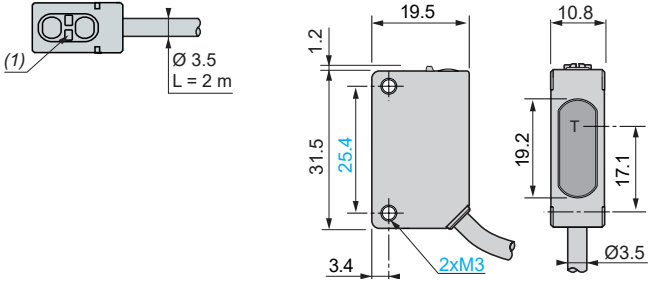
## Thru-beam system

### Pre-cabled and pigtail versions

#### Transmitter

Description - XUM2A●XBL2

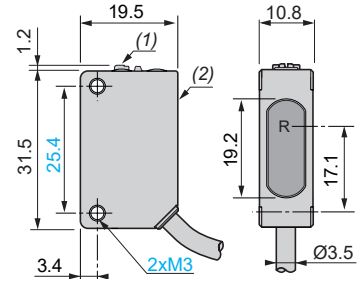
Dimensions - XUM2A●XBL2



#### Receiver

Description - XUM2A●XBL2

Dimensions - XUM2A●XBL2

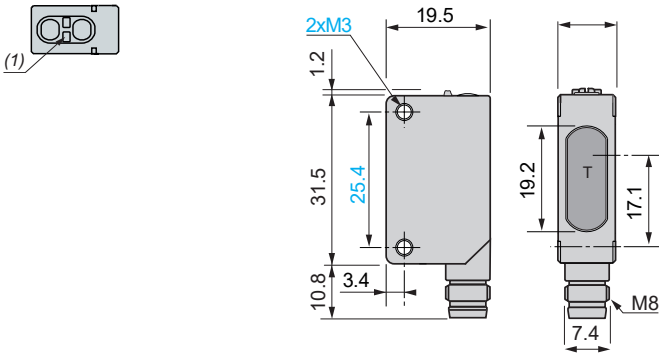


## M8 connector version

### Transmitter

Description - XUM2A●XBM8

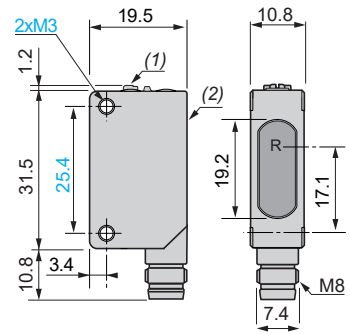
Dimensions - XUM2A●XBM8



### Receiver

Description - XUM2A●XBM8

Dimensions - XUM2A●XBM8



(1) Power ON indicator (green)

T: Transmission

(1) Output indicator (yellow)

(2) Setting potentiometer (sensitivity)

(3) Power ON indicator (green)

R: Reception

(1) Setting potentiometer (sensitivity)

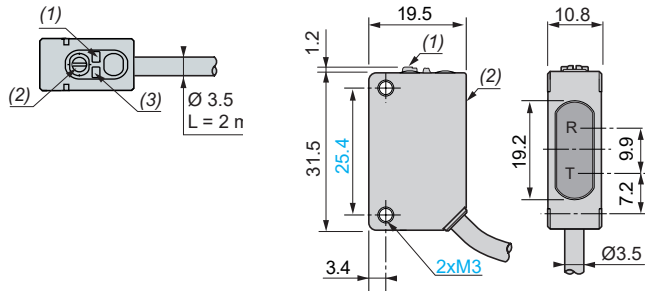
(2) Setting potentiometer (output)

## Polarised reflex system

### Pre-cabled and pigtail versions

Description - XUM9A●XBL2

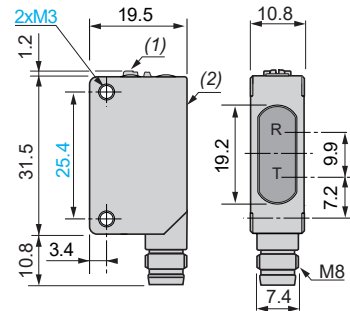
Dimensions - XUM9A●XBL2



### M8 connector version

Description - XUM9A●XBM8

Dimensions - XUM9A●XBM8

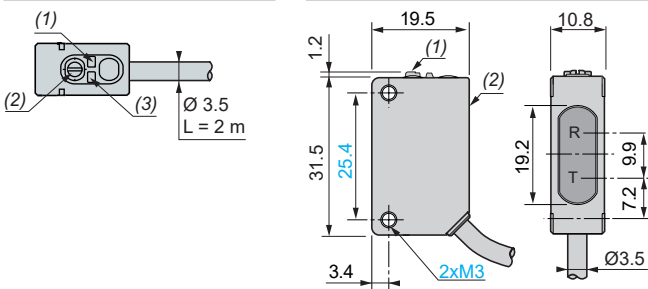


## Background suppression system

### Pre-cabled version

Description - XUM8A●XBL2

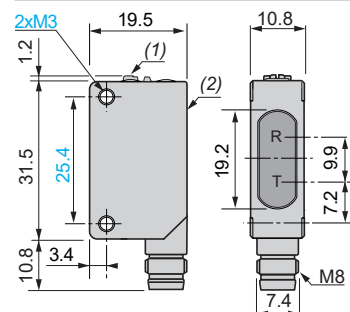
Dimensions - XUM8A●XBL2



### M8 connector version

Description - XUM8A●XBM8

Dimensions - XUM8A●XBM8



# Photo-electric sensors

XUM, general purpose, single mode function

Miniature design, plastic

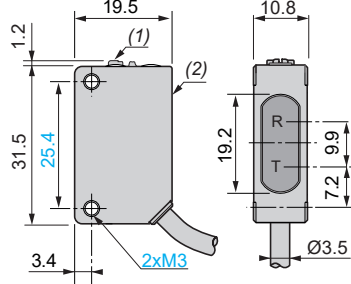
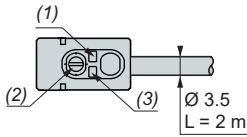
Three-wire DC, solid-state output

## Diffuse system

### Pre-cabled and pigtail versions

Description - XUM5A●XBL2,  
XUM6A●XBL2, XUM4A●XBL2

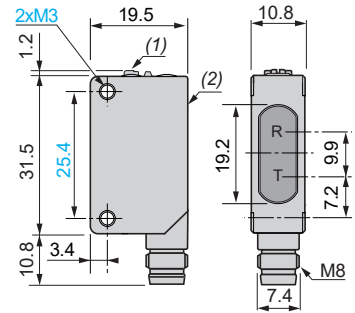
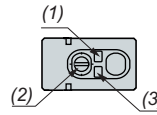
Dimensions - XUM5A●XBL2,  
XUM6A●XBL2, XUM4A●XBL2



### M8 connector version

Description - XUM5A●XBM8,  
XUM6A●XBM8, XUM4A●XBM8

Dimensions - XUM5A●XBM8,  
XUM6A●XBM8, XUM4A●XBM8



- (1) Output indicator (yellow)
- (2) Setting potentiometer (sensitivity)
- (3) Stability indicator (green)

- R: Reception  
T: Transmission
- (1) Setting potentiometer (sensitivity)
  - (2) Setting potentiometer (output)

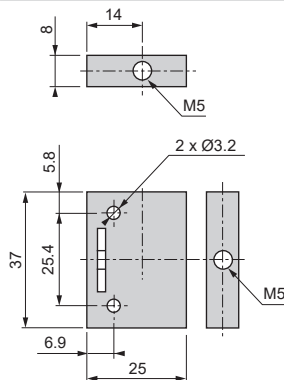
- (1) Output indicator (yellow)
- (2) Setting potentiometer (sensitivity)
- (3) Stability indicator (green)

- R: Reception  
T: Transmission
- (1) Setting potentiometer (sensitivity)
  - (2) Setting potentiometer (output)

## Accessories

### Setting-up accessory

#### XUZASM05

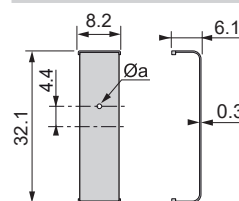
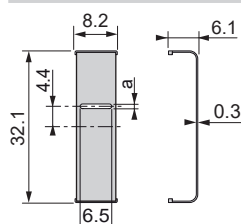
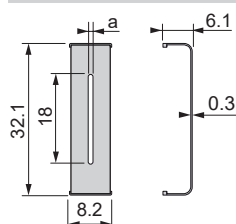


## Diaphragms

#### XUZDVM●●

#### XUZDHM●●

#### XUZDRM●●



#### Reference a (mm)

|          |       |
|----------|-------|
| XUZDVM05 | 0.5   |
| XUZDVM10 | 1     |
| XUZDVM20 | 2     |
| XUZDHM05 | 0.5   |
| XUZDHM10 | 1     |
| XUZDHM20 | 2     |
| XUZDRM05 | Ø 0.5 |
| XUZDRM10 | Ø 1   |
| XUZDRM20 | Ø 2   |

# Photo-electric sensors

XUB general purpose, single mode function

Cylindrical miniature design 18, plastic

Four-wire DC, solid-state output

Wire setting for NO/NC



XUB2AKXNM12T



XUB2AKXWM12T



XUB2AKXNL2T



XUB2AKXWL2T



XUB2APXNM12R  
XUB2ANXNM12R  
XUB2APXNM12R



XUB2APXWM12R  
XUB2ANXWM12R  
XUB2APXWM12R



XUB2ANXNL2R  
XUB2APXNL2R



XUB2ANXWL2R  
XUB2APXWL2R

### Thru-beam system with adjustable sensitivity

| Max./operating sensing distance (Sn)/Line of sight | Function | Output | Connection            | Reference    | Weight kg |
|--|----------|--------|-----------------------|--------------|-----------|
| <b>Transmitter (1)</b>                             |          |        |                       |              |           |
| 30 m/20 m<br>Along case axis                       | –        | –      | Pre-cabled (L = 2 m)  | XUB2AKXNL2T  | 0 095     |
|  |          |        | M12 connector (4-pin) | XUB2AKXNM12T | 0 040     |
| 17 m/12 m<br>90° to case axis                      | –        | –      | Pre-cabled (L = 2 m)  | XUB2AKXWL2T  | 0 095     |
|  |          |        | M12 connector (4-pin) | XUB2AKXWM12T | 0 040     |

### Receiver IO-Link

|                               |   |                       |                       |              |       |
|-------------------------------|---|-----------------------|-----------------------|--------------|-------|
| 30 m/20 m<br>Along case axis  | NO (Dark ON)/<br>NC (Light ON)<br>configuration<br>by wire or IO-Link | Autodetect<br>PNP/NPN | M12 connector (4-pin) | XUB2APYNM12R | 0 040 |
|                               |   |                       | M12 connector (4-pin) | XUB2APYWM12R | 0 040 |
| 17 m/12 m<br>90° to case axis | NO (Dark ON)/<br>NC (Light ON)<br>configuration<br>by wire or IO-Link | Autodetect<br>PNP/NPN | M12 connector (4-pin) | XUB2APYNM12R | 0 040 |
|                               |   |                       | M12 connector (4-pin) | XUB2APYWM12R | 0 040 |

### Receiver

|                               |  |     |                       |              |       |
|-------------------------------|--|-----|-----------------------|--------------|-------|
| 30 m/20 m<br>Along case axis  | NO (Dark ON)/<br>NC (Light ON)<br>configuration<br>by wire | NPN | Pre-cabled (L = 2 m)  | XUB2ANXNL2R  | 0 095 |
|                               |  |     | M12 connector (4-pin) | XUB2ANXNM12R | 0 040 |
|                               |  | PNP | Pre-cabled (L = 2 m)  | XUB2APXNL2R  | 0 095 |
|                               |  |     | M12 connector (4-pin) | XUB2APXNM12R | 0 040 |
| 17 m/12 m<br>90° to case axis | NO (Dark ON)/<br>NC (Light ON)<br>configuration<br>by wire | NPN | Pre-cabled (L = 2 m)  | XUB2ANXWL2R  | 0 095 |
|                               |  |     | M12 connector (4-pin) | XUB2ANXWM12R | 0 040 |
|                               |  | PNP | Pre-cabled (L = 2 m)  | XUB2APXWL2R  | 0 095 |
|                               |  |     | M12 connector (4-pin) | XUB2APXWM12R | 0 040 |

### Accessories

#### IO-Link Master (2)

See page 70 .

#### Fixing and other accessories

See page 74 .

#### Cabling accessories

See page 80 .

(1) All transmitters are compatible with the receivers listed below.

(2) Available 2<sup>nd</sup> quarter 2024.



# Photo-electric sensors

XUB general purpose, single mode function

Cylindrical miniature design 18, metal

Four-wire DC, solid-state output

Wire setting for NO/NC



XUB2BKXNM12T



XUB2BKXWM12T



XUB2BKXNL2T



XUB2BKXWL2T



XUB2BPYNM12R  
XUB2BNXNM12R  
XUB2BPXNM12R



XUB2BPYWM12R  
XUB2BNXWM12R  
XUB2BPXWM12R



XUB2BNXNL2R  
XUB2BPXNL2R



XUB2BNXWL2R  
XUB2BPXWL2R

## Thru-beam system with adjustable sensitivity

| Max./operating sensing distance (Sn)/Line of sight | Function | Output | Connection            | Reference    | Weight kg |
|--|----------|--------|-----------------------|--------------|-----------|
| <b>Transmitter (1)</b>                             |          |        |                       |              |           |
| 30 m/20 m<br>Along case axis                       | –        | –      | Pre-cabled (L = 2 m)  | XUB2BKXNL2T  | 0 095     |
|  |          |        | M12 connector (4-pin) | XUB2BKXNM12T | 0 040     |
| 17 m/12 m<br>90° to case axis                      | –        | –      | Pre-cabled (L = 2 m)  | XUB2BKXWL2T  | 0 095     |
|  |          |        | M12 connector (4-pin) | XUB2BKXWM12T | 0 040     |

## Receiver IO-Link

|                               |   |                       |                       |              |       |
|-------------------------------|---|-----------------------|-----------------------|--------------|-------|
| 30 m/20 m<br>Along case axis  | NO (Dark ON)/<br>NC (Light ON)<br>configuration<br>by wire or IO-Link | Autodetect<br>PNP/NPN | M12 connector (4-pin) | XUB2BPYNM12R | 0 040 |
|                               |   |                       | M12 connector (4-pin) | XUB2BPYWM12R | 0 040 |
| 17 m/12 m<br>90° to case axis | NO (Dark ON)/<br>NC (Light ON)<br>configuration<br>by wire or IO-Link | Autodetect<br>PNP/NPN | M12 connector (4-pin) | XUB2BPYNM12R | 0 040 |
|                               |   |                       | M12 connector (4-pin) | XUB2BPYWM12R | 0 040 |

## Receiver

|                               |  |     |                       |              |       |
|-------------------------------|--|-----|-----------------------|--------------|-------|
| 30 m/20 m<br>Along case axis  | NO (Dark ON)/<br>NC (Light ON)<br>configuration<br>by wire | NPN | Pre-cabled (L = 2 m)  | XUB2BNXNL2R  | 0 095 |
|                               |  |     | M12 connector (4-pin) | XUB2BNXNM12R | 0 040 |
|                               |  | PNP | Pre-cabled (L = 2 m)  | XUB2BPXNL2R  | 0 095 |
|                               |  |     | M12 connector (4-pin) | XUB2BPXNM12R | 0 040 |
| 17 m/12 m<br>90° to case axis | NO (Dark ON)/<br>NC (Light ON)<br>configuration<br>by wire | NPN | Pre-cabled (L = 2 m)  | XUB2BNXWL2R  | 0 095 |
|                               |  |     | M12 connector (4-pin) | XUB2BNXWM12R | 0 040 |
|                               |  | PNP | Pre-cabled (L = 2 m)  | XUB2BPXWL2R  | 0 095 |
|                               |  |     | M12 connector (4-pin) | XUB2BPXWM12R | 0 040 |

## Accessories

### IO-Link Master (2)

See page 70 .

### Fixing and other accessories

See page 74 .

### Cabling accessories

See page 80 .

(1) All transmitters are compatible with the receivers listed below.

(2) Available 2<sup>nd</sup> quarter 2024.

# Photo-electric sensors

XUB general purpose, single mode function

Cylindrical miniature design 18, plastic

Four-wire DC, solid-state output

Wire setting for NO/NC

Apelec\_CFO720004



XUB●APYNM12  
XUB●ANXNM12  
XUB●APXNM12

Apelec\_CFO720008



XUB●APYWM12  
XUB●ANXWM12  
XUB●APXWM12

Apelec\_CFO720002



XUB●ANXNL2  
XUB●APXNL2

Apelec\_CFO720006



XUB●ANXWL2  
XUB●APXWL2

## Diffuse system with adjustable sensitivity, IO-Link

| Max./operating sensing distance (Sn)/Line of sight | Function | Output | Connection | Reference | Weight kg |
|--|----------|--------|------------|-----------|-----------|
|--|----------|--------|------------|-----------|-----------|

### Long range, red LED emission

|                              |   |                       |                          |                    |       |
|------------------------------|---|-----------------------|--------------------------|--------------------|-------|
| 1 m/0.7 m<br>Along case axis | NO (Light ON)/<br>NC (Dark ON)<br>configuration by<br>wire or IO-Link | Autodetect<br>PNP/NPN | M12 connector<br>(4-pin) | <b>XUB5APYNM12</b> | 0 040 |
|------------------------------|---|-----------------------|--------------------------|--------------------|-------|

### Medium range, red LED emission

|                                 |   |                       |                          |                    |       |
|---------------------------------|---|-----------------------|--------------------------|--------------------|-------|
| 0.6 m/0.42 m<br>Along case axis | NO (Light ON)/<br>NC (Dark ON)<br>configuration by<br>wire or IO-Link | Autodetect<br>PNP/NPN | M12 connector<br>(4-pin) | <b>XUB6APYNM12</b> | 0 040 |
|---------------------------------|---|-----------------------|--------------------------|--------------------|-------|

|                                  |   |                       |                          |                    |       |
|----------------------------------|---|-----------------------|--------------------------|--------------------|-------|
| 0.5 m/0.35 m<br>90° to case axis | NO (Light ON)/<br>NC (Dark ON)<br>configuration by<br>wire or IO-Link | Autodetect<br>PNP/NPN | M12 connector<br>(4-pin) | <b>XUB6APYWM12</b> | 0 040 |
|----------------------------------|---|-----------------------|--------------------------|--------------------|-------|

## Diffuse system with adjustable sensitivity

| Max./operating sensing distance (Sn)/Line of sight | Function | Output | Connection | Reference | Weight kg |
|--|----------|--------|------------|-----------|-----------|
|--|----------|--------|------------|-----------|-----------|

### Long range, red LED emission

|                              |  |     |                          |                    |       |
|------------------------------|--|-----|--------------------------|--------------------|-------|
| 1 m/0.7 m<br>Along case axis | NO (Light ON)/<br>NC (Dark ON)<br>configuration by<br>wire | NPN | Pre-cabled<br>(L = 2 m)  | <b>XUB5ANXNL2</b>  | 0 095 |
|                              |  |     | M12 connector<br>(4-pin) | <b>XUB5ANXNM12</b> | 0 040 |
|                              |  | PNP | Pre-cabled<br>(L = 2 m)  | <b>XUB5APXNL2</b>  | 0 095 |
|                              |  |     | M12 connector<br>(4-pin) | <b>XUB5APXNM12</b> | 0 040 |

### Medium range, red LED emission

|                                  |  |     |                          |                    |       |
|----------------------------------|--|-----|--------------------------|--------------------|-------|
| 0.6 m/0.42 m<br>Along case axis  | NO (Light ON)/<br>NC (Dark ON)<br>configuration by<br>wire | NPN | Pre-cabled<br>(L = 2 m)  | <b>XUB6ANXNL2</b>  | 0 095 |
|                                  |  |     | M12 connector<br>(4-pin) | <b>XUB6ANXNM12</b> | 0 040 |
|                                  |  | PNP | Pre-cabled<br>(L = 2 m)  | <b>XUB6APXNL2</b>  | 0 095 |
|                                  |  |     | M12 connector<br>(4-pin) | <b>XUB6APXNM12</b> | 0 040 |
| 0.5 m/0.35 m<br>90° to case axis | NO (Light ON)/<br>NC (Dark ON)<br>configuration by<br>wire | NPN | Pre-cabled<br>(L = 2 m)  | <b>XUB6ANXWL2</b>  | 0 095 |
|                                  |  |     | M12 connector<br>(4-pin) | <b>XUB6ANXWM12</b> | 0 040 |
|                                  |  | PNP | Pre-cabled<br>(L = 2 m)  | <b>XUB6APXWL2</b>  | 0 095 |
|                                  |  |     | M12 connector<br>(4-pin) | <b>XUB6APXWM12</b> | 0 040 |

## Accessories

### IO-Link Master (1)

See page 70 .

### Fixing and other accessories

See page 74 .

### Cabling accessories

See page 80 .

(1) Available 2<sup>nd</sup> quarter 2024.

# Photo-electric sensors

XUB general purpose, single mode function

Cylindrical miniature design 18, metal

Four-wire DC, solid-state output

Wire setting for NO/NC

Apollo\_CP0720012



XUB•BPYNM12  
XUB•BNXNM12  
XUB•BPXNM12

Apollo\_CP0720016



XUB6BPYWM12  
XUB6BNXWM12  
XUB6BPXWM12

Apollo\_CP0720010



XUB•BNXNL2  
XUB•BPXNL2

Apollo\_CP0720014



XUB6BNXWL2  
XUB6BPXWL2

## Diffuse system with adjustable sensitivity, IO-Link

| Max./operating sensing distance (Sn)/Line of sight | Function  | Output                | Connection               | Reference          | Weight kg |
|--|---|-----------------------|--------------------------|--------------------|-----------|
| <b>Long range, red LED emission</b>                |   |                       |                          |                    |           |
| <b>1 m/0.7 m</b><br>Along case axis                | NO (Light ON)/<br>NC (Dark ON)<br>configuration by<br>wire or IO-Link | Autodetect<br>PNP/NPN | M12 connector<br>(4-pin) | <b>XUB5BPYNM12</b> | 0 040     |
| <b>Medium range, red LED emission</b>              |   |                       |                          |                    |           |
| <b>0.6 m/0.42 m</b><br>Along case axis             | NO (Light ON)/<br>NC (Dark ON)<br>configuration by<br>wire or IO-Link | Autodetect<br>PNP/NPN | M12 connector<br>(4-pin) | <b>XUB6BPYNM12</b> | 0 040     |
| <b>0.5 m/0.35 m</b><br>90° to case axis            | NO (Light ON)/<br>NC (Dark ON)<br>configuration by<br>wire or IO-Link | Autodetect<br>PNP/NPN | M12 connector<br>(4-pin) | <b>XUB6BPYWM12</b> | 0 040     |

## Diffuse system with adjustable sensitivity

| Max./operating sensing distance (Sn)/Line of sight | Function   | Output | Connection               | Reference          | Weight kg |
|--|--|--------|--------------------------|--------------------|-----------|
| <b>Long range, red LED emission</b>                |  |        |                          |                    |           |
| <b>1 m/0.7 m</b><br>Along case axis                | NO (Light ON)/<br>NC (Dark ON)<br>configuration by<br>wire | NPN    | Pre-cabled<br>(L = 2 m)  | <b>XUB5BNXNL2</b>  | 0 095     |
|  |  |        | M12 connector<br>(4-pin) | <b>XUB5BNXNM12</b> | 0 040     |
|  |  | PNP    | Pre-cabled<br>(L = 2 m)  | <b>XUB5BPXNL2</b>  | 0 095     |
|  |  |        | M12 connector<br>(4-pin) | <b>XUB5BPXNM12</b> | 0 040     |
| <b>Medium range, red LED emission</b>              |  |        |                          |                    |           |
| <b>0.6 m/0.42 m</b><br>Along case axis             | NO (Light ON)/<br>NC (Dark ON)<br>configuration by<br>wire | NPN    | Pre-cabled<br>(L = 2 m)  | <b>XUB6BNXNL2</b>  | 0 095     |
|  |  |        | M12 connector<br>(4-pin) | <b>XUB6BNXNM12</b> | 0 040     |
|  |  | PNP    | Pre-cabled<br>(L = 2 m)  | <b>XUB6BPXNL2</b>  | 0 095     |
|  |  |        | M12 connector<br>(4-pin) | <b>XUB6BPXNM12</b> | 0 040     |
| <b>0.5 m/0.35 m</b><br>90° to case axis            | NO (Light ON)/<br>NC (Dark ON)<br>configuration by<br>wire | NPN    | Pre-cabled<br>(L = 2 m)  | <b>XUB6BNXWL2</b>  | 0 095     |
|  |  |        | M12 connector<br>(4-pin) | <b>XUB6BNXWM12</b> | 0 040     |
|  |  | PNP    | Pre-cabled<br>(L = 2 m)  | <b>XUB6BPXWL2</b>  | 0 095     |
|  |  |        | M12 connector<br>(4-pin) | <b>XUB6BPXWM12</b> | 0 040     |

## Accessories

### IO-Link Master (1)

See page 70 .

### Fixing and other accessories

See page 74 .

### Cabling accessories

See page 80 .

(1) Available 2<sup>nd</sup> quarter 2024.

# Photo-electric sensors

XUB general purpose, single mode function

Cylindrical miniature design 18, plastic

Four-wire DC, solid-state output

Wire setting for NO/NC

Apcello\_CP0720004



XUB9APYNM12  
XUB9ANXNM12  
XUB9APXNM12

Apcello\_CP0720008



XUB9APYWM12  
XUB9ANXWM12  
XUB9APXWM12

Apcello\_CP0720002



XUB9ANXNL2  
XUB9APXNL2

Apcello\_CP0720006



XUB9ANXWL2  
XUB9APXWL2

### Polarised reflex system with adjustable sensitivity, IO-Link

Plastic, red LED emission

| Max./operating sensing distance (Sn)/Line of sight | Function  | Output                | Connection               | Reference          | Weight kg |
|--|---|-----------------------|--------------------------|--------------------|-----------|
| 7 m/5 m<br>Along case axis                         | NO (Dark ON)/<br>NC (Light ON)<br>configuration by<br>wire or IO-Link | Autodetect<br>PNP/NPN | M12 connector<br>(4-pin) | <b>XUB9APYNM12</b> | 0 040     |
| 5.5 m/4 m<br>90° to case axis                      | NO (Dark ON)/<br>NC (Light ON)<br>configuration by<br>wire or IO-Link | Autodetect<br>PNP/NPN | M12 connector<br>(4-pin) | <b>XUB9APYWM12</b> | 0 040     |

### Polarised reflex system with adjustable sensitivity

Plastic, red LED emission

| Max./operating sensing distance (Sn)/Line of sight | Function   | Output                        | Connection   | Reference          | Weight kg                |                    |       |
|--|--|-------------------------------|--|--------------------|--------------------------|--------------------|-------|
| 7 m/5 m<br>Along case axis                         | NO (Dark ON)/<br>NC (Light ON)<br>configuration by<br>wire | NPN                           | Pre-cabled<br>(L = 2 m)                                    | <b>XUB9ANXNL2</b>  | 0 095                    |                    |       |
|  |  |                               | M12 connector<br>(4-pin)                                   | <b>XUB9ANXNM12</b> | 0 040                    |                    |       |
|  |  | PNP                           | Pre-cabled<br>(L = 2 m)                                    | <b>XUB9APXNL2</b>  | 0 095                    |                    |       |
|  |  |                               | M12 connector<br>(4-pin)                                   | <b>XUB9APXNM12</b> | 0 040                    |                    |       |
|  |  | 5.5 m/4 m<br>90° to case axis | NO (Dark ON)/<br>NC (Light ON)<br>configuration by<br>wire | NPN                | Pre-cabled<br>(L = 2 m)  | <b>XUB9ANXWL2</b>  | 0 095 |
|  |  |                               |  |                    | M12 connector<br>(4-pin) | <b>XUB9ANXWM12</b> | 0 040 |
| PNP  | Pre-cabled<br>(L = 2 m)                                    | <b>XUB9APXWL2</b>             | 0 095  |                    |                          |                    |       |
|  |  | M12 connector<br>(4-pin)      | <b>XUB9APXWM12</b>   | 0 040              |                          |                    |       |

### Accessories

#### IO-Link Master (1)

See page 70 .

#### Fixing and other accessories

See page 74 .

#### Cabling accessories

See page 80 .

(1) Available 2<sup>nd</sup> quarter 2024.

# Photo-electric sensors

XUB general purpose, single mode function

Cylindrical miniature design 18, metal

Four-wire DC, solid-state output

Wire setting for NO/NC



XUB9BPYNM12  
XUB9BNXNM12  
XUB9BPXNM12



XUB9BPYWM12  
XUB9BNXWM12  
XUB9BPXWM12



XUB9BNXNL2  
XUB9BPXNL2



XUB9BNXWL2  
XUB9BPXWL2

## Polarised reflex system with adjustable sensitivity, IO-Link

Metal, red LED emission

| Max./operating sensing distance (Sn)/Line of sight | Function  | Output                | Connection               | Reference          | Weight kg |
|--|---|-----------------------|--------------------------|--------------------|-----------|
| 7 m/5 m<br>Along case axis                         | NO (Dark ON)/<br>NC (Light ON)<br>configuration by<br>wire or IO-Link | Autodetect<br>PNP/NPN | M12 connector<br>(4-pin) | <b>XUB9BPYNM12</b> | 0 040     |
| 5.5 m/4 m<br>90° to case axis                      | NO (Dark ON)/<br>NC (Light ON)<br>configuration by<br>wire or IO-Link | Autodetect<br>PNP/NPN | M12 connector<br>(4-pin) | <b>XUB9BPYWM12</b> | 0 040     |

## Polarised reflex system with adjustable sensitivity

| Max./operating sensing distance (Sn)/Line of sight | Function | Output | Connection | Reference | Weight kg |
|--|----------|--------|------------|-----------|-----------|
|--|----------|--------|------------|-----------|-----------|

Metal, red LED emission

|                               |  |     |                          |                    |       |
|-------------------------------|--|-----|--------------------------|--------------------|-------|
| 7 m/5 m<br>Along case axis    | NO (Dark ON)/<br>NC (Light ON)<br>configuration by<br>wire | NPN | Pre-cabled<br>(L = 2 m)  | <b>XUB9BNXNL2</b>  | 0 095 |
|                               |  |     | M12 connector<br>(4-pin) | <b>XUB9BNXNM12</b> | 0 040 |
| 5.5 m/4 m<br>90° to case axis | NO (Dark ON)/<br>NC (Light ON)<br>configuration by<br>wire | PNP | Pre-cabled<br>(L = 2 m)  | <b>XUB9BPXNL2</b>  | 0 095 |
|                               |  |     | M12 connector<br>(4-pin) | <b>XUB9BPXNM12</b> | 0 040 |
|                               |  | PNP | Pre-cabled<br>(L = 2 m)  | <b>XUB9BNXWL2</b>  | 0 095 |
|                               |  |     | M12 connector<br>(4-pin) | <b>XUB9BNXWM12</b> | 0 040 |
| 5.5 m/4 m<br>90° to case axis | NO (Dark ON)/<br>NC (Light ON)<br>configuration by<br>wire | PNP | Pre-cabled<br>(L = 2 m)  | <b>XUB9BPXWL2</b>  | 0 095 |
|                               |  |     | M12 connector<br>(4-pin) | <b>XUB9BPXWM12</b> | 0 040 |

## Accessories

### IO-Link Master (1)

See page 70 .

### Fixing and other accessories

See page 74 .

### Cabling accessories

See page 80 .

(1) Available 2<sup>nd</sup> quarter 2024.

# Photo-electric sensors

XUB general purpose, single mode function  
Cylindrical miniature design 18, plastic  
Four-wire DC, solid-state output  
Wire setting for NO/NC

| Characteristics  |   |   |  |  |   |
|--|---|---|--|--|---|
| Sensor type  |   | XUB2APY●M12R, XUB2BPY●M12R, XUB2A●X●M12T, XUB2A●X●M12R, XUB2B●X●M12T, XUB2B●X●M12R, XUB5APYNM12, XUB5BPYNM12, XUB5A●X●M12, XUB5B●X●M12, XUB6APY●M12, XUB6A●X●M12, XUB6B●X●M12, XUB9APY●M12, XUB9BPY●M12, XUB9A●X●M12, XUB9B●X●M12 |  | XUB2A●X●L2T, XUB2A●X●L2R, XUB2B●X●L2T, XUB2B●X●L2R, XUB5A●X●L2, XUB5B●X●L2, XUB6A●X●L2, XUB6B●X●L2, XUB9A●X●L2, XUB9B●X●L2 |   |
| Product certifications   |   | CE, UKCA, cULus   |  |  |   |
| Connection   | Connector   | M12   |  |  |   |
|  | Pre-cabled  | –   |  |  |   |
| Sensing distance<br>Excess gain = 1 :<br>maximum sensing distance<br>Excess gain = 2 :<br>nominal sensing distance | Thru-beam system<br><b>XUB2</b>   | Along case axis (axial)   | <b>m</b>   | 30 (with excess gain = 1)<br>20 (with excess gain = 2)   |   |
|  |   | 90° to case axis (radial)   | <b>m</b>   | 17 (with excess gain = 1)<br>12 (with excess gain = 2)   |   |
|  | Diffuse system<br><b>XUB5</b><br>(using a white paper 200 x 200 mm)             | Along case axis (axial)   | <b>m</b>   | 1 (with excess gain = 1)<br>0.7 (with excess gain = 2)   |   |
|  |   | Diffuse system<br><b>XUB6</b><br>(using a white paper 200 x 200 mm)   | Along case axis (axial)                                | <b>m</b>   | 0.6 (with excess gain = 1)<br>0.42 (with excess gain = 2) |
|  | 90° to case axis (radial)   |   | <b>m</b>   | 0.5 (with excess gain = 1)<br>0.35 (with excess gain = 2)  |   |
|  | Polarised reflex system<br><b>XUB9</b><br>(using a 50 x 50 mm reflector XUZC50) | Along case axis   | <b>m</b>   | 7 (with excess gain = 1)<br>5 (with excess gain = 2)   |   |
| 90° to case axis   |   | <b>m</b>  | 5.5 (with excess gain = 1)<br>4 (with excess gain = 2) |  |   |
| Blind zone   |   | <b>mm</b>   | 0 (white object and potentiometer max.)                |  |   |
| Sensing distance setting   |   | Potentiometer 1 turn (+/- 220 degrees)  |  |  |   |
| Colour of detection light beam   |   | Red (except XUB2 transmitter)   |  |  |   |
| Output type  |   | PNP/NPN (or autodetect PNP/NPN with IO-Link)  |  |  |   |
| Hysteresis   |   | 2% < H < 20% at Sn  |  |  |   |
| Degree of protection   | Conforming to IEC 60529   | IP65, IP67  |  |  |   |
|  | Conforming to DIN 40050-9   | IP69K (M12 connector versions only)   |  |  |   |
| Artificial optical radiation   | Conforming to IEC 62471   | Class 0 (risk exempt)   |  |  |   |
| Radiated disturbances emissions  | Conforming to EN 55011/CISPR 1  | Class A   |  |  |   |
| Storage temperature  |   | <b>°C</b>   | -40...+70  |  |   |
| Operating temperature  |   | <b>°C</b>   | -30...+55  |  |   |
| Materials  | Case  | XUB2A, XUB5A, XUB6A and XUB9A: PBT/PC<br>XUB2B, XUB5B, XUB6B and XUB9B: brass   |  |  |   |
|  | Back cap  | MABS  |  |  |   |
|  | Potentiometer screw   | PBT   |  |  |   |
|  | Lens cover  | PMMA  |  |  |   |
|  | Cable   | –   | PVC  |  |   |
| Vibration resistance   | Conforming to IEC 60068-2-6   | Frequency range: 10 to 55 Hz<br>Acceleration: 7 gn  |  |  |   |
| Shock resistance   | Conforming to IEC 60068-2-27  | Peak acceleration: 30 gn<br>Duration of the pulse: 11 ms  |  |  |   |
| Rated supply voltage   |   | <b>V</b>  | 12 . 24 --- with protection against reverse polarity   |  |   |
| Voltage limits (including ripple)  |   | <b>V</b>  | 10 . 30 ---  |  |   |
| Current consumption, no-load   |   | <b>mA</b>   | < 20/IO-Link : < 30                                    |  |   |
| Switching capacity   |   | <b>mA</b>   | 100  |  |   |
| Voltage drop, closed state   |   | <b>V</b>  | ≤ 2  |  |   |
| Maximum switching frequency  |   | <b>Hz</b>   | 1000   |  |   |
| Delays   | First-up  | <b>ms</b>   | < 100/IO-Link : < 300                                  |  |   |
|  | Response  | <b>ms</b>   | 0.5 max.   |  |   |
|  | Recovery  | <b>ms</b>   | 0.5 max  |  |   |

# Photo-electric sensors

XUB general purpose, single mode function

Cylindrical miniature design 18

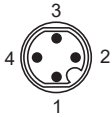
Four-wire DC, solid-state output

Wire setting for NO/NC

## Wiring schemes

### Thru-beam system

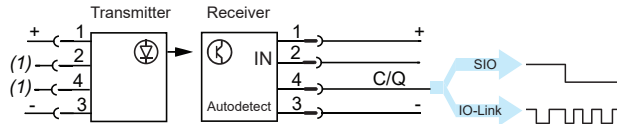
#### M12 connector - 4 pins, plastic and metal, IO-Link



| Pin | Signal | Definition                    |
|-----|--------|-------------------------------|
| 1   | +      | + 24 V                        |
| 2   | IN     | + = NO<br>- = NC<br>Open = NO |
| 3   | -      | 0 V                           |
| 4   | Q      | Switching signal (SIO)        |
|     | C      | IO-Link communication         |

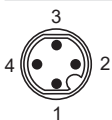
#### Autodetect PNP/NPN or by IO-Link

XUB2●PYNM12R, XUB2●PYWM12R, XUB2●KXNM12T, XUB2●KXWM12T



Note: IODD IO-Link files available on our website [www.telemecanique.com/iolink](http://www.telemecanique.com/iolink)

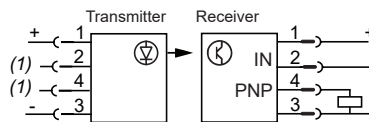
#### M12 connector - 4 pins, plastic and metal



| Pin | Signal | Definition                    |
|-----|--------|-------------------------------|
| 1   | +      | + 24 V                        |
| 2   | IN     | + = NO<br>- = NC<br>Open = NO |
| 3   | -      | 0 V                           |
| 4   | Q      | Switching signal (SIO)        |

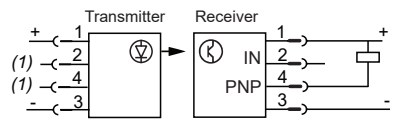
#### PNP

XUB2●PXNM12R, XUB2●PXWM12R,  
XUB2●KXNM12T, XUB2●KXWM12T



#### NPN

XUB2●NXNM12R, XUB2●NXWM12R,  
XUB2●KXNM12T, XUB2●KXWM12T

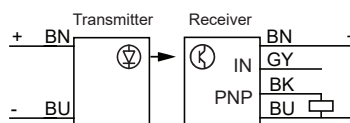


#### Pre-cabled - 4 wires, plastic and metal

+BN (Brown)  
IN (input) GY (Grey)  
OUT (output) BK (Black)  
-BU (Blue)

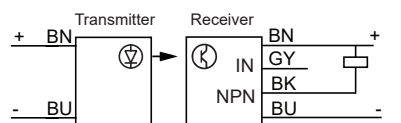
#### PNP

XUB2●PXNL2R, XUB2●APXWL2R,  
XUB2●KXNL2T, XUB2●KXWL2T



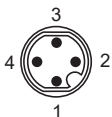
#### NPN

XUB2●NXNL2R, XUB2●NXWL2R,  
XUB2●KXNL2T, XUB2●KXWL2T



### Diffuse system

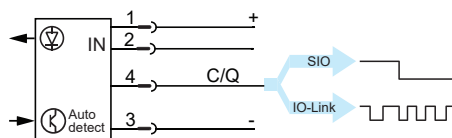
#### M12 connector - 4 pins, plastic and metal, IO-Link



| Pin | Signal | Definition                    |
|-----|--------|-------------------------------|
| 1   | +      | + 24 V                        |
| 2   | IN     | + = NO<br>- = NC<br>Open = NO |
| 3   | -      | 0 V                           |
| 4   | Q      | Switching signal (SIO)        |
|     | C      | IO-Link communication         |

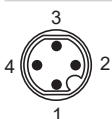
#### Autodetect PNP/NPN or by IO-Link

XUB5APYNM12, XUB6APYNM12, XUB6APYWM12, XUB5BPYNM12, XUB6BPYNM12,  
XUB6BPYWM12



Note: IODD IO-Link files available on our website [www.telemecanique.com/iolink](http://www.telemecanique.com/iolink)

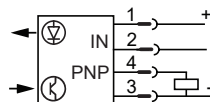
#### M12 connector - 4 pins, plastic and metal



| Pin | Signal | Definition                    |
|-----|--------|-------------------------------|
| 1   | +      | + 24 V                        |
| 2   | IN     | + = NO<br>- = NC<br>Open = NO |
| 3   | -      | 0 V                           |
| 4   | Q      | Switching signal (SIO)        |

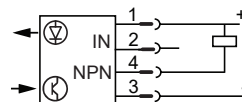
#### PNP

XUB5APXNM12, XUB6APXNM12,  
XUB6APXWM12, XUB5BPXNM12,  
XUB6BPXNM12, XUB6BPXWM12,



#### NPN

XUB5ANXNM12, XUB6ANXNM12,  
XUB6ANXWM12, XUB5BNXNM12,  
XUB6BNXNM12, XUB6BNXWM12

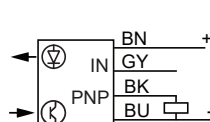


#### Pre-cabled - 4 wires, plastic and metal

+BN (Brown)  
IN (input) GY (Grey)  
OUT (output) BK (Black)  
-BU (Blue)

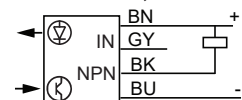
#### PNP

XUB5APXNL2, XUB6APXNL2, XUB6APXWL2,  
XUB5BPXNL2, XUB6BPXNL2, XUB6BPXWL2



#### NPN

XUB5ANXNL2, XUB6ANXNL2,  
XUB6ANXWL2, XUB5BNXNL2,  
XUB6BNXNL2, XUB6BNXWL2



(1) Not connected.

# Photo-electric sensors

XUB general purpose, single mode function

Cylindrical miniature design 18

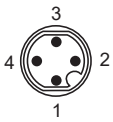
Four-wire DC, solid-state output

Wire setting for NO/NC

## Wiring schemes (continued)

### Polarised reflex system

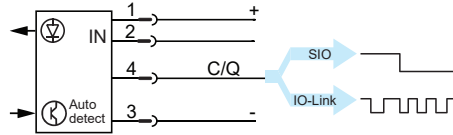
#### M12 connector - 4 pins, plastic and metal, IO-Link



| Pin | Signal | Definition                     |
|-----|--------|--------------------------------|
| 1   | +      | + 24 V $\overline{\text{---}}$ |
| 2   | IN     | + = NO<br>- = NC<br>Open = NO  |
| 3   | -      | 0 V $\overline{\text{---}}$    |
| 4   | Q      | Switching signal (SIO)         |
|     | C      | IO-Link communication          |

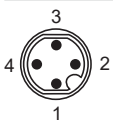
#### Autodetect PNP/NPN or by IO-Link

XUB9APYNM12, XUB9APYW12, XUB9BPYNM12, XUB9BPYW12



Note: IODD IO-Link files available on our website [www.telemecanique.com/iolink](http://www.telemecanique.com/iolink)

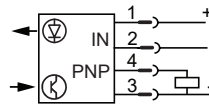
#### M12 connector - 4 pins, plastic and metal



| Pin | Signal | Definition                     |
|-----|--------|--------------------------------|
| 1   | +      | + 24 V $\overline{\text{---}}$ |
| 2   | IN     | + = NO<br>- = NC<br>Open = NO  |
| 3   | -      | 0 V $\overline{\text{---}}$    |
| 4   | Q      | Switching signal (SIO)         |

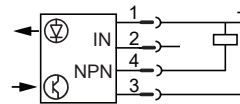
#### PNP

XUB9APXNM12, XUB9APXW12,  
XUB9BPXNM12, XUB9BPXW12



#### NPN

XUB9ANXNM12, XUB9ANXW12,  
XUB9BNXNM12, XUB9BNXW12

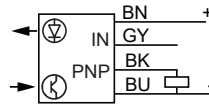


#### Pre-cabled - 4 wires, plastic and metal

+BN (Brown)  
IN (input) GY (Grey)  
OUT (output) BK (Black)  
-BU (Blue)

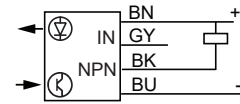
#### PNP

XUB9APXNL2, XUB9BAPXWL2,  
XUB9BPXNL2, XUB9BPXWL2



#### NPN

XUB9ANXNL2, XUB9ANXWL2,  
XUB9BNXNL2, XUB9BNXWL2





# Photo-electric sensors

XUB general purpose, single mode function

Cylindrical miniature design 18

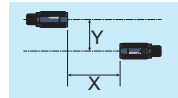
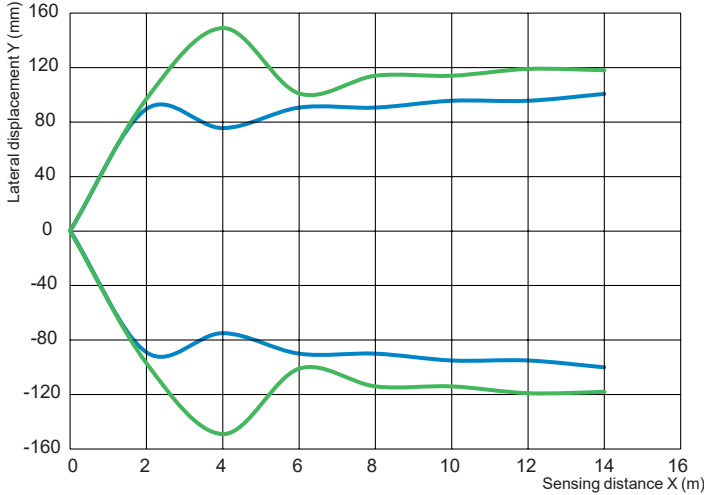
Four-wire DC, solid-state output

Wire setting for NO/NC

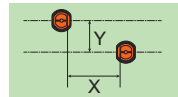
## Detection curves

Thru-beam system: XUB2

Lateral displacement

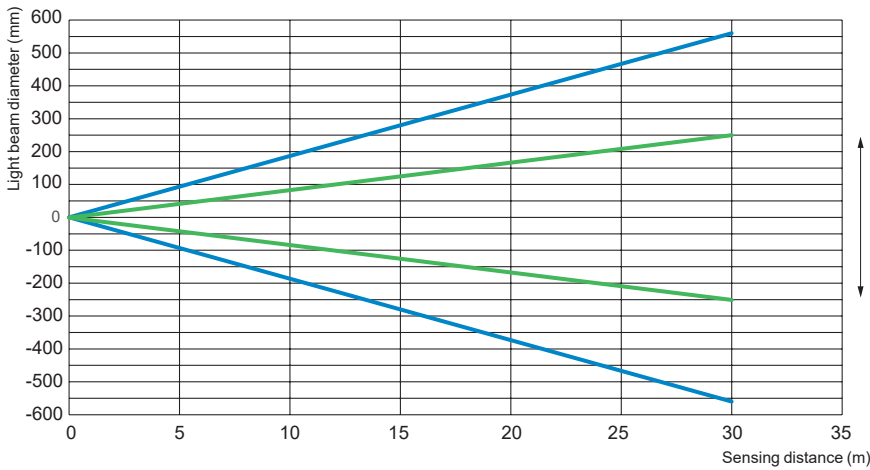


Line of sight: along case axis (axial)



Line of sight: 90° to case axis (radial)

## Light beam diameter

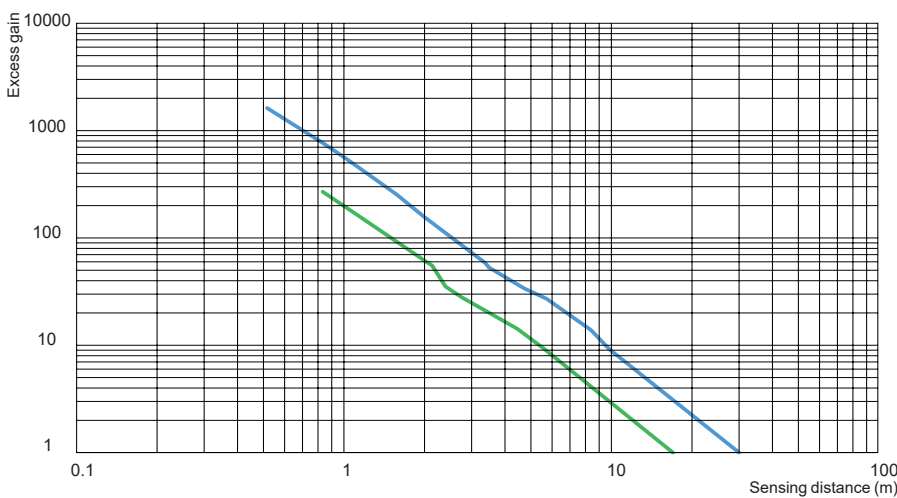


∅ Spot diameter

Line of sight: 90° to case axis (radial)

Line of sight: along case axis (axial)

## Excess gain



Line of sight: 90° to case axis (radial)

Line of sight: Along case axis (axial)

# Photo-electric sensors

XUB general purpose, single mode function

Cylindrical miniature design 18

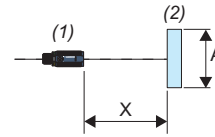
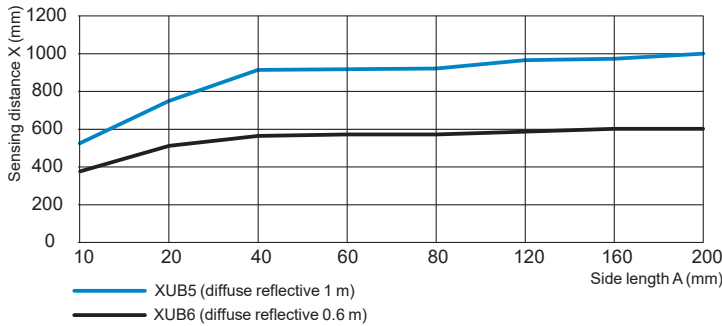
Four-wire DC, solid-state output

Wire setting for NO/NC

## Detection curves (continued)

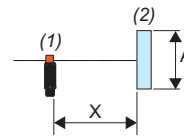
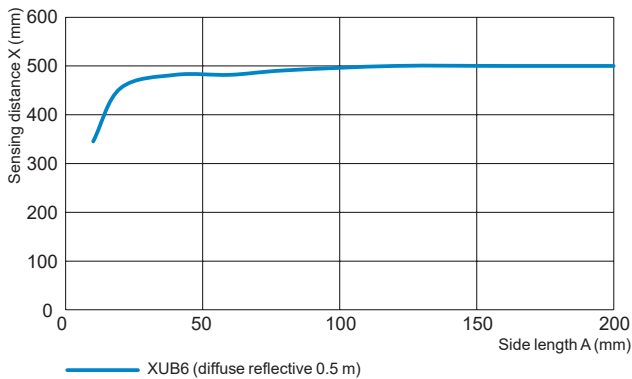
Diffuse system: XUB5 and XUB6

Minimum object size/sensing distance. Line of sight: along case axis (axial)



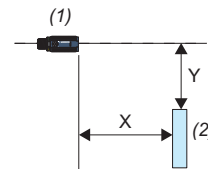
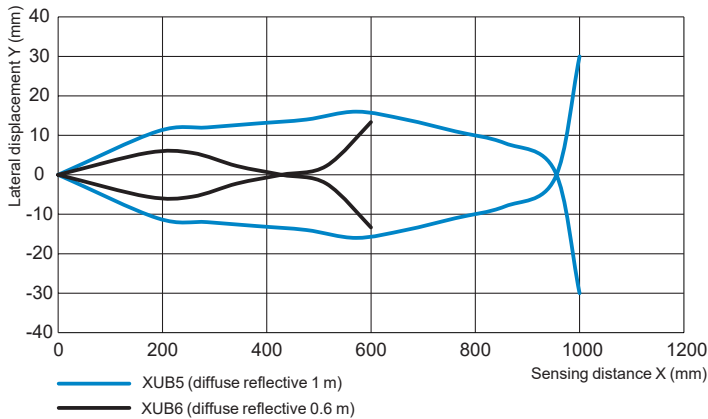
(1): Sensor  
 (2): Object (white matt paper of A mm square)  
 A: Side length (mm)  
 X: Sensing distance (mm)

Minimum object size/sensing distance. Line of sight: 90° to case axis (radial)



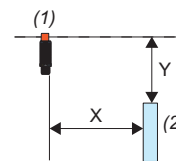
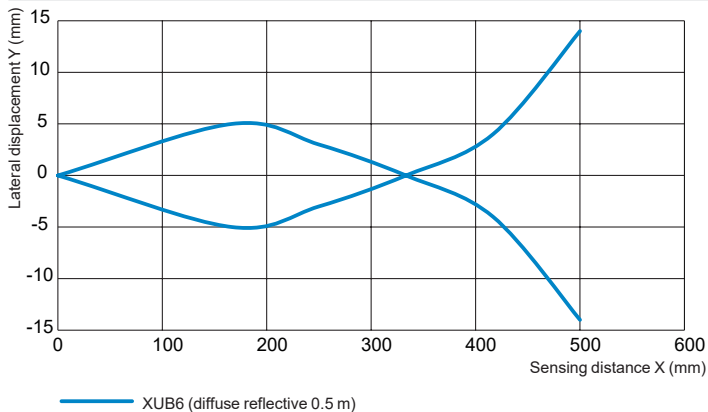
(1): Sensor  
 (2): Object (white matt paper of A mm square)  
 A: Side length (mm)  
 X: Sensing distance (mm)

Lateral displacement. Line of sight: along case axis (axial)



(1): Sensor  
 (2): Object (200 mm square white paper)  
 X: Sensing distance (mm)  
 Y: Lateral displacement (mm)

Lateral displacement. Line of sight: 90° to case axis (radial)



(1): Sensor  
 (2): Object (200 mm square white paper)  
 X: Sensing distance (mm)  
 Y: Lateral displacement (mm)

# Photo-electric sensors

XUB general purpose, single mode function

Cylindrical miniature design 18

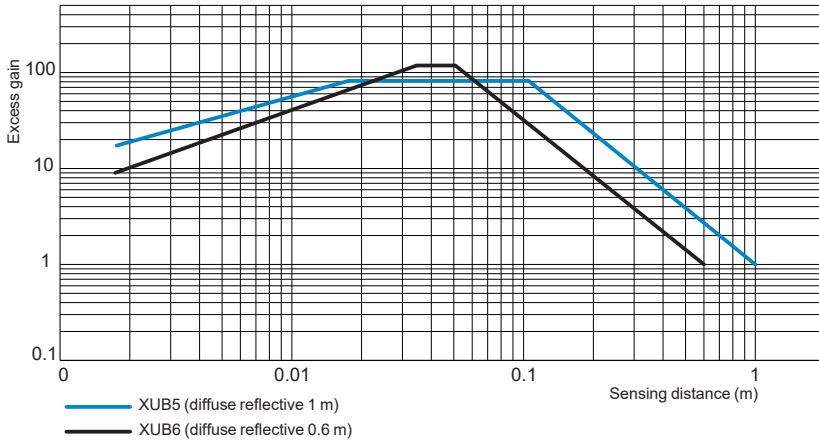
Four-wire DC, solid-state output

Wire setting for NO/NC

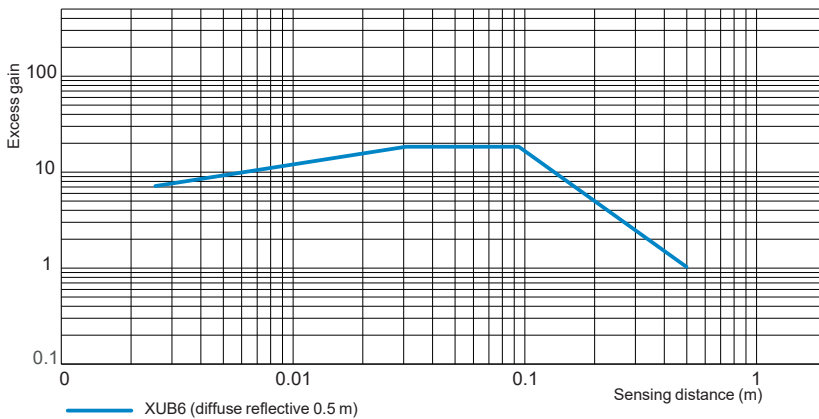
## Detection curves (continued)

Diffuse system: XUB5 and XUB6 (continued)

Excess gain. Line of sight: along case axis (axial)

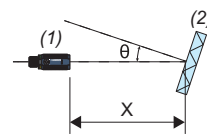
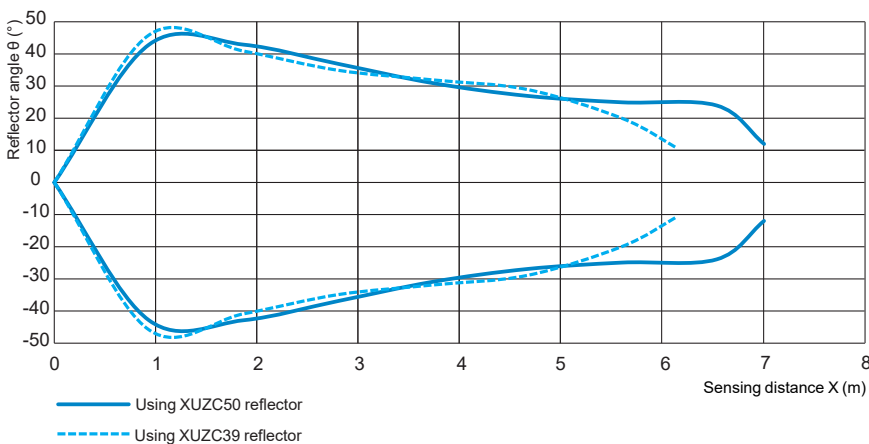


Excess gain. Line of sight: 90° to case axis (radial)

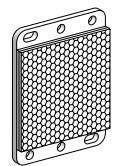


## Polarised reflex system: XUB9

Reflector angle. Line of sight: along case axis (axial)



(1): Sensor  
(2): Reflector  
 $\theta$ : Reflector angle (°)  
X: Sensing distance (m)



XUZC50



XUZC39

# Photo-electric sensors

XUB general purpose, single mode function

Cylindrical miniature design 18

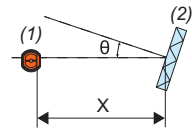
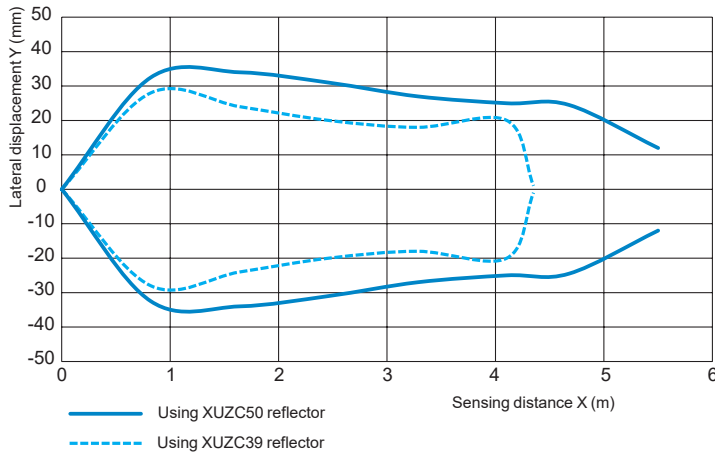
Four-wire DC, solid-state output

Wire setting for NO/NC

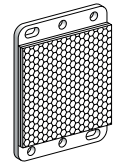
## Detection curves (continued)

Polarised reflex system: XUB9 (continued)

Reflector angle. Line of sight: 90° to case axis (radial)



(1): Sensor  
(2): Reflector  
 $\theta$ : Reflector angle (°)  
X: Sensing distance (m)

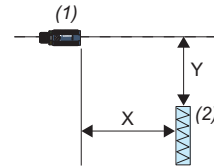
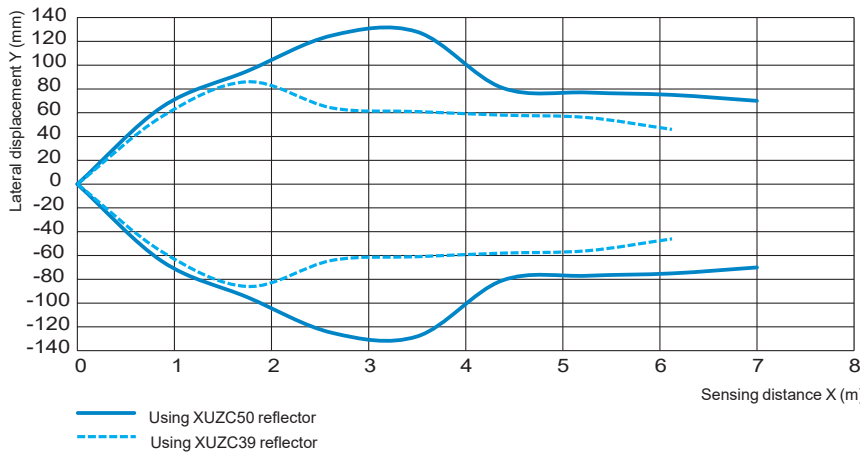


XUZC50

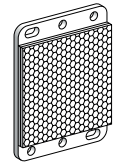


XUZC39

## Lateral displacement. Line of sight: along case axis (axial)



(1): Sensor  
(2): Reflector  
Y: Lateral displacement (mm)  
X: Sensing distance (m)

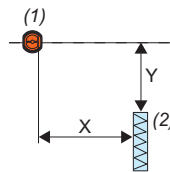
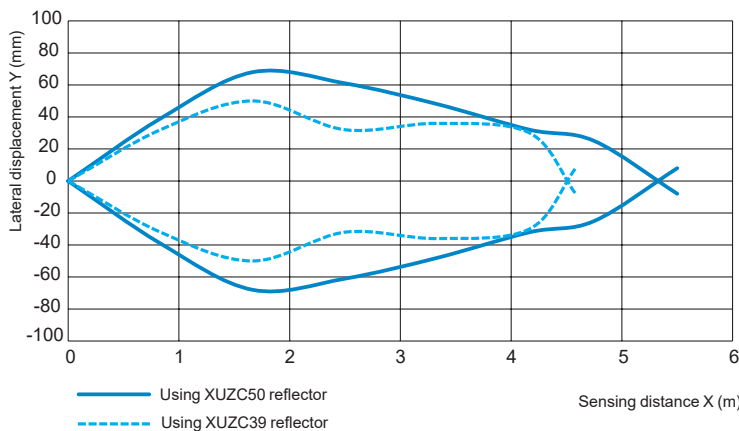


XUZC50

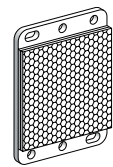


XUZC39

## Lateral displacement. Line of sight: along case axis (axial)



(1): Sensor  
(2): Reflector  
Y: Lateral displacement (mm)  
X: Sensing distance (m)



XUZC50



XUZC39

# Photo-electric sensors

XUB general purpose, single mode function

Cylindrical miniature design 18, plastic

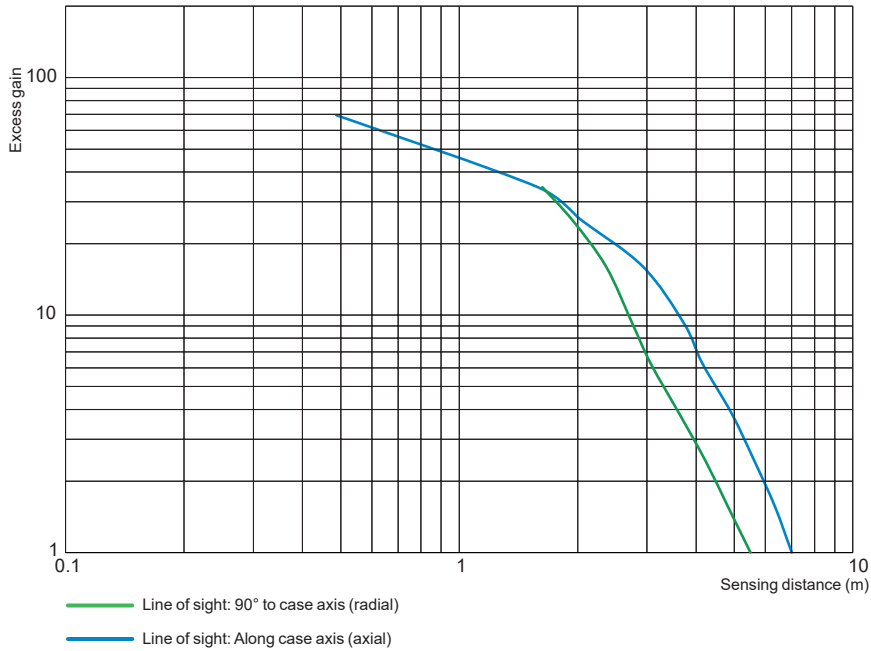
Four-wire DC, solid-state output

Wire setting for NO/NC

## Detection curves (continued)

Polarised reflex system: XUB9 (continued)

Excess gain



# Photo-electric sensors

XUB general purpose, single mode function

Cylindrical miniature design 18, plastic

Four-wire DC, solid-state output

Wire setting for NO/NC

## Thru-beam system, plastic, M12 connector version

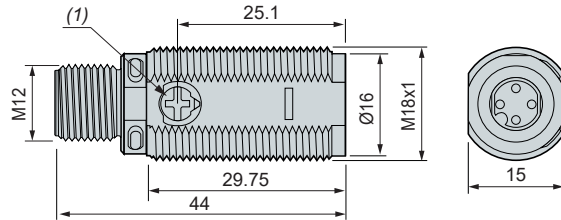
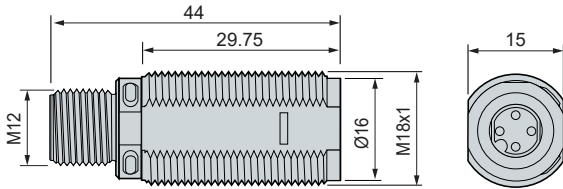
Line of sight: along case axis (axial)

Transmitter

XUB2AKXNM12T

Receiver

XUB2APYNM12R, XUB2ANXNM12R, XUB2APXNM12R



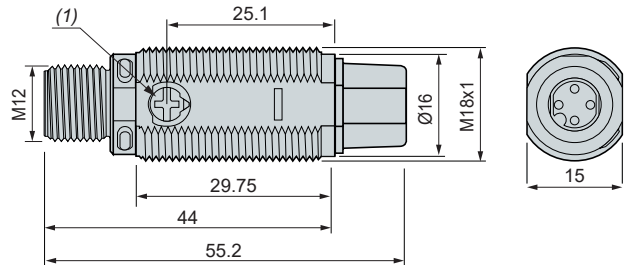
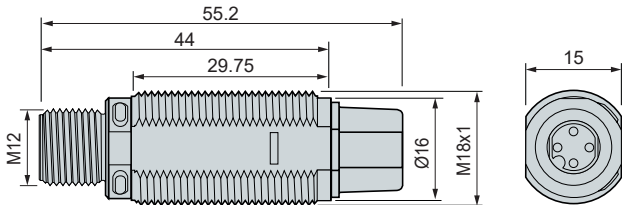
Line of sight: 90° to case axis (radial)

Transmitter

XUB2AKXWM12T

Receiver

XUB2APYW12R, XUB2ANXWM12R, XUB2APXWM12R



## Thru-beam system, plastic, pre-cabled version

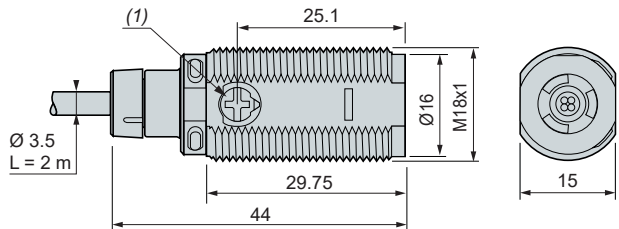
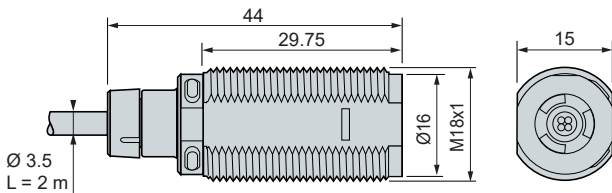
Line of sight: along case axis (axial)

Transmitter

XUB2AKXNL2T

Receiver

XUB2ANXNL2R, XUB2APXNL2R



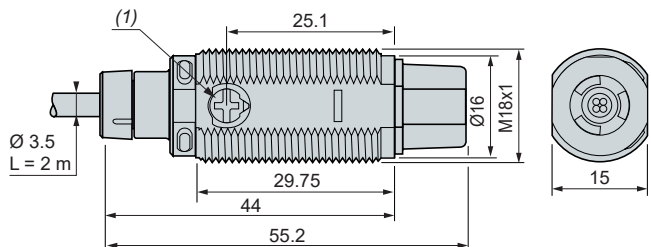
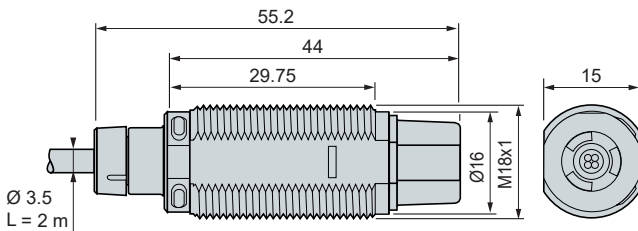
Pre-cabled version, line of sight 90° to case axis

Transmitter

XUB2AKXWL2T

Receiver

XUB2ANXWL2R, XUB2APXWL2R



(1) Adjustment potentiometer (sensitivity).

# Photo-electric sensors

XUB general purpose, single mode function

Cylindrical miniature design 18, metal

Four-wire DC, solid-state output

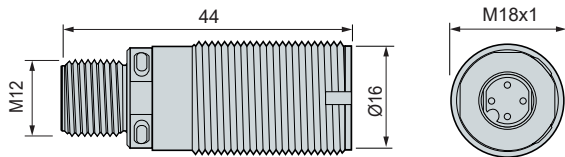
Wire setting for NO/NC

## Thru-beam system, metal, M12 connector version

Line of sight: along case axis (axial)

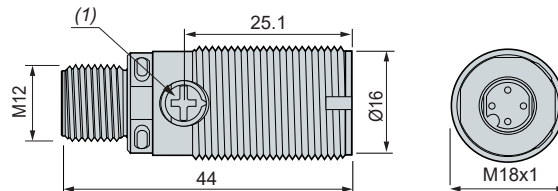
Transmitter

XUB2BKXNM12T



Receiver

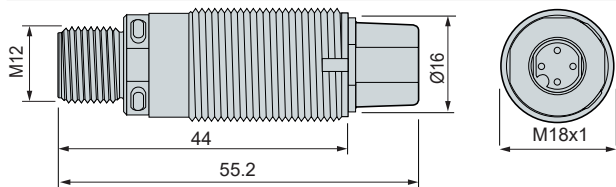
XUB2BPYNM12R, XUB2BNXNM12R, XUB2BPXNM12R



Line of sight: 90° to case axis (radial)

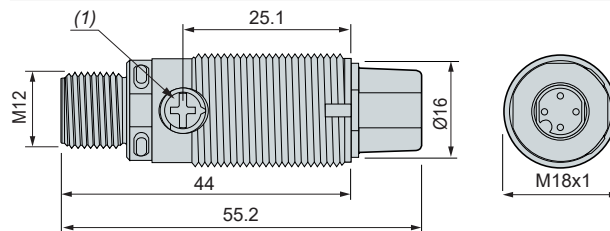
Transmitter

XUB2BKXWM12T



Receiver

XUB2BPYWM12R, XUB2BNXWM12R, XUB2BPXWM12R

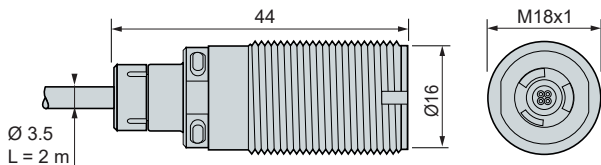


## Thru-beam system, metal, pre-cabled version

Line of sight: along case axis (axial)

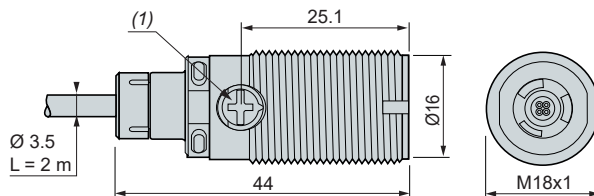
Transmitter

XUB2BKXNL2T



Receiver

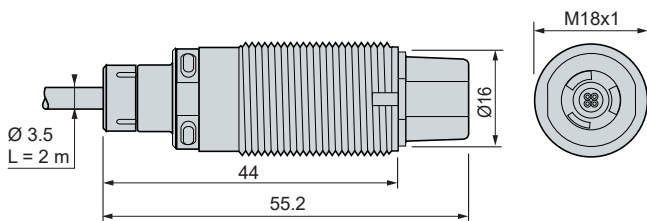
XUB2BNXNL2R, XUB2BPXNL2R



Line of sight: 90° to case axis (radial)

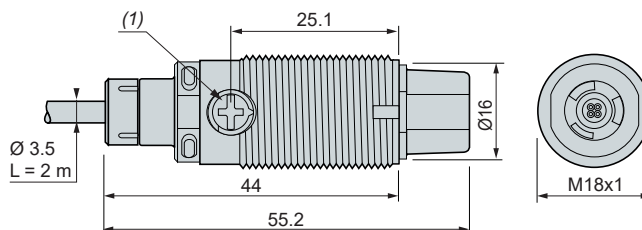
Transmitter

XUB2BKXWL2T



Receiver

XUB2BNXWL2R, XUB2BPXWL2R



(1) Adjustment potentiometer (sensitivity).

# Photo-electric sensors

XUB general purpose, single mode function

Cylindrical miniature design 18

Four-wire DC, solid-state output

Wire setting for NO/NC

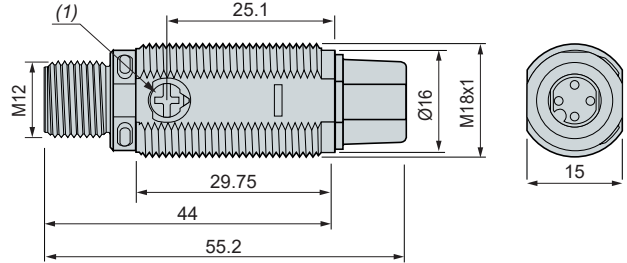
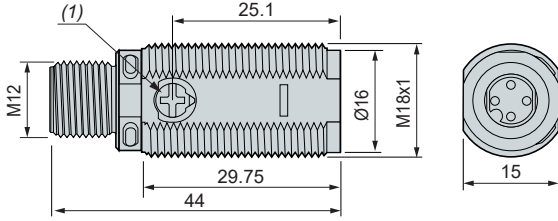
## Diffuse system, plastic, M12 connector version

Line of sight: along case axis (axial)

XUB5ANXNM12, XUB6ANXNM12, XUB5APXNM12, XUB6APXNM12, XUB5APYNM12 and XUB6APYNM12

Line of sight: 90° to case axis (radial)

XUB6ANXWM12, XUB6APXWM12 and XUB6APYWM12



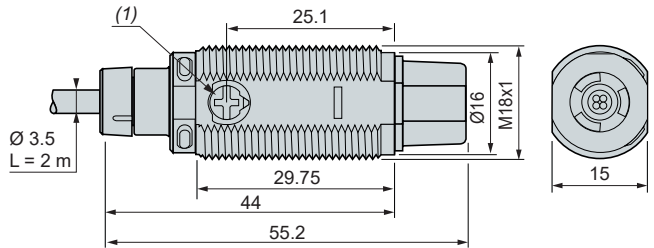
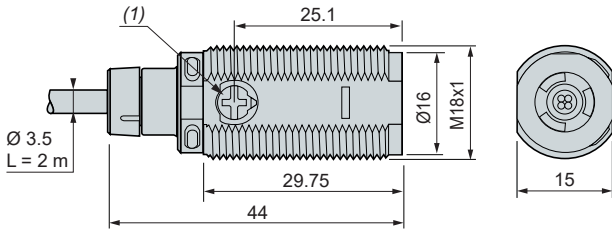
## Diffuse system, plastic, pre-cabled version

Line of sight: along case axis (axial)

XUB5ANXL2, XUB6ANXL2, XUB5APXL2 and XUB6APXL2

Line of sight: 90° to case axis (radial)

XUB6ANXWL2 and XUB6APXL2



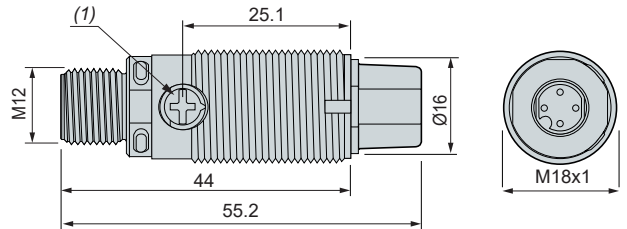
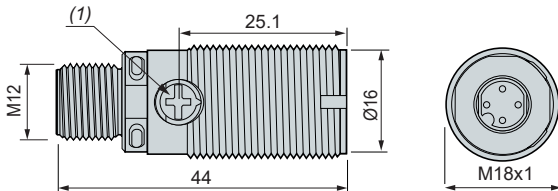
## Diffuse system, metal, M12 connector version

Line of sight: along case axis (axial)

XUB5BNXNM12, XUB6BNXNM12, XUB5BPXNM12, XUB6BPXNM12, XUB5BPYNM12 and XUB6BPYNM12

Line of sight: 90° to case axis (radial)

XUB6BNXWM12, XUB6BPXWM12 and XUB6BPYWM12



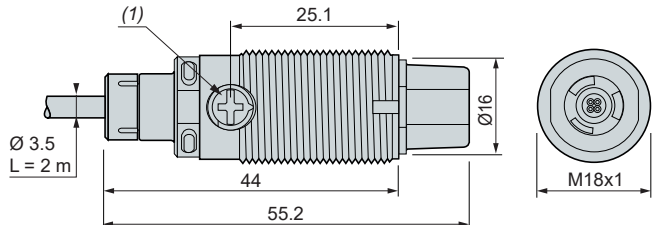
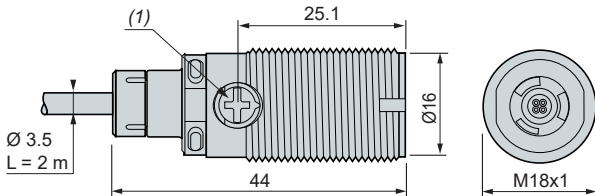
## Diffuse system, metal, pre-cabled version

Line of sight: along case axis (axial)

XUB5BNXL2, XUB6BNXL2, XUB5BPXL2 and XUB6BPXL2

Line of sight: 90° to case axis (radial)

XUB6BNXWL2 and XUB6BPXL2



(1) Adjustment potentiometer (sensitivity).



# Photo-electric sensors

XUB general purpose, single mode function

Cylindrical miniature design 18

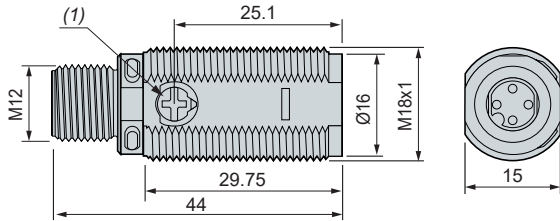
Four-wire DC, solid-state output

Wire setting for NO/NC

## Polarised reflex system, plastic, M12 connector version

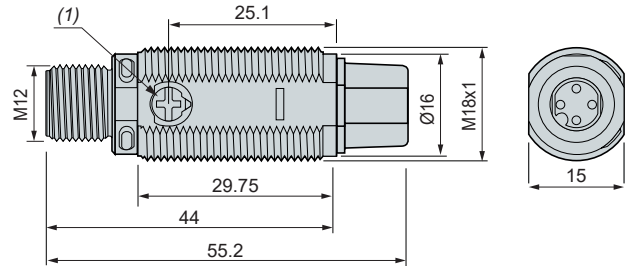
Line of sight: along case axis (axial)

XUB9ANXNM12, XUB9APXNM12 and XUB9APYNM12



Line of sight: 90° to case axis (radial)

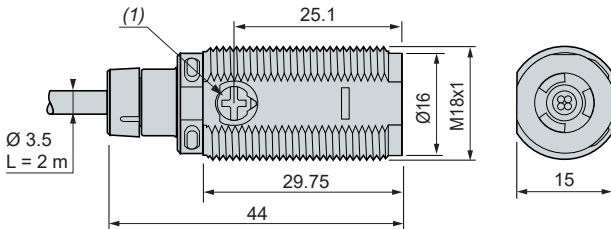
XUB9ANXWM12, XUB9APXWM12 and XUB9APYWM12



## Polarised reflex system, plastic, pre-cabled version

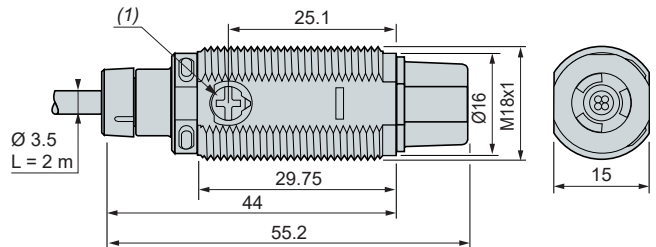
Line of sight: along case axis (axial)

XUB9ANXNL2 and XUB9APXNL2



Line of sight: 90° to case axis (radial)

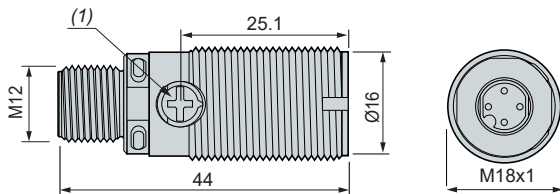
XUB9ANXWL2 and XUB9APXWL2



## Polarised reflex system, metal, M12 connector version

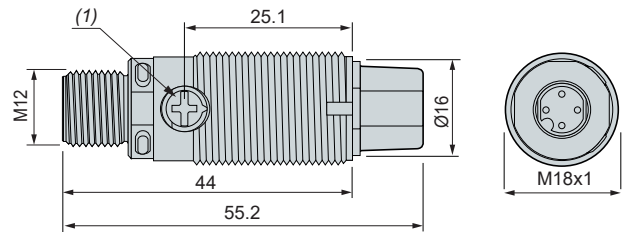
Line of sight: along case axis (axial)

XUB9BNXNM12, XUB9BPXNM12 and XUB9BPNM12



Line of sight: 90° to case axis (radial)

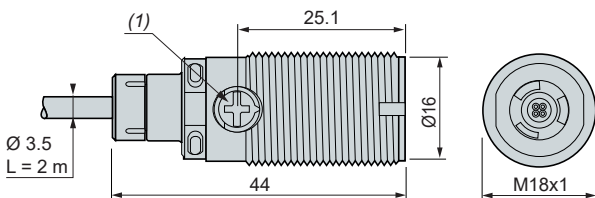
XUB9BNXWM12, XUB9BPXWM12 and XUB9BPYWM12



## Polarised reflex system, metal, pre-cabled version

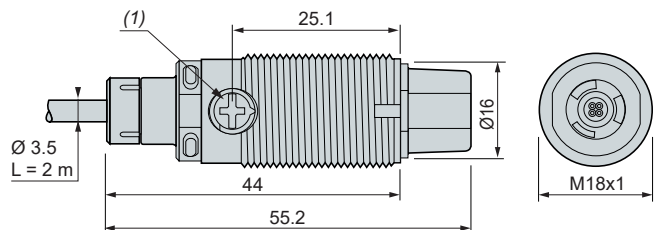
Line of sight: along case axis (axial)

XUB9BNXNL2 and XUB9BPXNL2



Line of sight: 90° to case axis (radial)

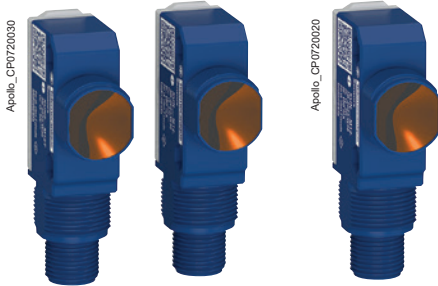
XUB9BNXWL2 and XUB9BPXWL2



(1) Adjustment potentiometer (sensitivity).

# Photo-electric sensors

XUN general purpose (1), single mode function  
 Hybrid miniature design, plastic, thru-beam system  
 Four-wire DC, solid-state output, wire setting for NO/NC



XUN2APYNM12



XUN2APYNM12R



XUN2ANXNL2  
XUN2APXNL2



XUN2AKXNL2T



XUN2ANXNM12  
XUN2APXNM12



XUN2AKXNM12T



XUN2ANXNL2R  
XUN2APXNL2R



XUN2ANXNM12R  
XUN2APXNM12R

## Thru-beam system with adjustable sensitivity

| Max./operating sensing distance (Sn) | Function | Output | Connection | Reference | Weight kg |
|--------------------------------------|----------|--------|------------|-----------|-----------|
|--------------------------------------|----------|--------|------------|-----------|-----------|

### Transmitter + receiver IO-Link

|           |   |                       |                          |                    |       |
|-----------|---|-----------------------|--------------------------|--------------------|-------|
| 30 m/20 m | NO (Dark ON)/<br>NC (Light ON)<br>configuration by<br>wire or IO-Link | Autodetect<br>PNP/NPN | M12 connector<br>(4-pin) | <b>XUN2APYNM12</b> | 0 013 |
|-----------|---|-----------------------|--------------------------|--------------------|-------|

### Transmitter + receiver

|           |  |     |                          |                    |       |
|-----------|--|-----|--------------------------|--------------------|-------|
| 30 m/20 m | NO (Dark ON)/<br>NC (Light ON)<br>configuration by<br>wire | NPN | Pre-cabled<br>(L = 2 m)  | <b>XUN2ANXNL2</b>  | 0 040 |
|           |  |     | M12 connector<br>(4-pin) | <b>XUN2ANXNM12</b> | 0 013 |
|           |  | PNP | Pre-cabled<br>(L = 2 m)  | <b>XUN2APXNL2</b>  | 0 040 |
|           |  |     | M12 connector<br>(4-pin) | <b>XUN2APXNM12</b> | 0 013 |

### Transmitter (2)

|           |  |  |                          |                     |       |
|-----------|--|--|--------------------------|---------------------|-------|
| 30 m/20 m |  |  | Pre-cabled<br>(L = 2 m)  | <b>XUN2AKXNL2T</b>  | 0 040 |
|           |  |  | M12 connector<br>(4-pin) | <b>XUN2AKXNM12T</b> | 0 013 |

### Receiver IO-Link

|           |   |                       |                          |                     |       |
|-----------|---|-----------------------|--------------------------|---------------------|-------|
| 30 m/20 m | NO (Dark ON)/<br>NC (Light ON)<br>configuration by<br>wire or IO-Link | Autodetect<br>PNP/NPN | M12 connector<br>(4-pin) | <b>XUN2APYNM12R</b> | 0 013 |
|-----------|---|-----------------------|--------------------------|---------------------|-------|

### Receiver

|           |  |     |                          |                     |       |
|-----------|--|-----|--------------------------|---------------------|-------|
| 30 m/20 m | NO (Dark ON)/<br>NC (Light ON)<br>configuration by<br>wire | NPN | Pre-cabled<br>(L = 2 m)  | <b>XUN2ANXNL2R</b>  | 0 040 |
|           |  |     | M12 connector<br>(4-pin) | <b>XUN2ANXNM12R</b> | 0 013 |
|           |  | PNP | Pre-cabled<br>(L = 2 m)  | <b>XUN2APXNL2R</b>  | 0 040 |
|           |  |     | M12 connector<br>(4-pin) | <b>XUN2APXNM12R</b> | 0 013 |

## Accessories

### IO-Link Master (3)

See page 70 .

### Fixing and other accessories

See page 74 .

### Cabling accessories

See page 80 .

(1) Available 3<sup>rd</sup> quarter 2024

(2) All transmitters are compatible with the receivers listed below.

(3) Available 2<sup>nd</sup> quarter 2024.

## Photo-electric sensors

XUN general purpose (1), single mode function  
Hybrid miniature design, plastic, thru-beam system  
Four-wire DC, solid-state output, wire setting for NO/NC



XUN5APYNM12  
XUN6APYNM12



XUN5ANXNL2  
XUN5APXNL2



XUN5ANXNM12  
XUN5APXNM12



XUN6ANXNL2  
XUN6APXNL2



XUN6ANXNM12  
XUN6APXNM12

## Diffuse system with adjustable sensitivity, IO-Link

| Max./operating sensing distance (Sn) | Function  | Output                | Connection               | Reference          | Weight kg |
|--------------------------------------|---|-----------------------|--------------------------|--------------------|-----------|
| <b>Long range, red LED emission</b>  |   |                       |                          |                    |           |
| 1 m/0.7 m                            | NO (Light ON)/<br>NC (Dark ON)<br>configuration by<br>wire or IO-Link | Autodetect<br>PNP/NPN | M12 connector<br>(4-pin) | <b>XUN5APYNM12</b> | 0 013     |

## Medium range, red LED emission

|              |   |                       |                          |                    |       |
|--------------|---|-----------------------|--------------------------|--------------------|-------|
| 0.6 m/0.42 m | NO (Light ON)/<br>NC (Dark ON)<br>configuration by<br>wire or IO-Link | Autodetect<br>PNP/NPN | M12 connector<br>(4-pin) | <b>XUN6APYNM12</b> | 0 013 |
|--------------|---|-----------------------|--------------------------|--------------------|-------|

## Diffuse system with adjustable sensitivity

| Max./operating sensing distance (Sn) | Function   | Output | Connection               | Reference          | Weight kg |
|--------------------------------------|--|--------|--------------------------|--------------------|-----------|
| <b>Long range, red LED emission</b>  |  |        |                          |                    |           |
| 1 m/0.7 m                            | NO (Light ON)/<br>NC (Dark ON)<br>configuration by<br>wire | NPN    | Pre-cabled<br>(L = 2 m)  | <b>XUN5ANXNL2</b>  | 0 040     |
|                                      |  |        | M12 connector<br>(4-pin) | <b>XUN5ANXNM12</b> | 0 013     |

|     |                         |                          |                    |
|-----|-------------------------|--------------------------|--------------------|
| PNP | Pre-cabled<br>(L = 2 m) | <b>XUN5APXNL2</b>        | 0 040              |
|     |                         | M12 connector<br>(4-pin) | <b>XUN5APXNM12</b> |

## Medium range, red LED emission

|              |  |                          |                          |                    |       |
|--------------|--|--------------------------|--------------------------|--------------------|-------|
| 0.6 m/0.42 m | NO (Light ON)/<br>NC (Dark ON)<br>configuration by<br>wire | NPN                      | Pre-cabled<br>(L = 2 m)  | <b>XUN6ANXNL2</b>  | 0 040 |
|              |  |                          | M12 connector<br>(4-pin) | <b>XUN6ANXNM12</b> | 0 013 |
| PNP          | Pre-cabled<br>(L = 2 m)                                    | <b>XUN6APXNL2</b>        | 0 040                    |                    |       |
|              |  | M12 connector<br>(4-pin) | <b>XUN6APXNM12</b>       | 0 013              |       |

## Accessories

## IO-Link Master (2)

See page 70 .

## Fixing and other accessories

See page 74 .

## Cabling accessories

See page 80 .

(1) Available 3<sup>rd</sup> quarter 2024

(2) Available 2<sup>nd</sup> quarter 2024.

# Photo-electric sensors

XUN general purpose (1), single mode function  
 Hybrid miniature design, plastic, polarised reflex system  
 Four-wire DC, solid-state output, wire setting for NO/NC



XUN9APYNM12



XUN9ANXNL2  
XUN9APXNL2



XUN9ANXNM12  
XUN9APXNM12

### Polarised reflex system with adjustable sensitivity, IO-Link

Plastic, red LED emission

| Max./operating sensing distance (Sn) | Function  | Output                | Connection               | Reference   | Weight kg |
|--------------------------------------|---|-----------------------|--------------------------|-------------|-----------|
| 7 m/5 m                              | NO (Dark ON)/<br>NC (Light ON)<br>configuration by<br>wire or IO-Link | Autodetect<br>PNP/NPN | M12 connector<br>(4-pin) | XUN9APYNM12 | 0 013     |

### Polarised reflex system with adjustable sensitivity

Plastic, red LED emission

| Max./operating sensing distance (Sn) | Function   | Output | Connection               | Reference   | Weight kg |
|--------------------------------------|--|--------|--------------------------|-------------|-----------|
| 7 m/5 m                              | NO (Dark ON)/<br>NC (Light ON)<br>configuration by<br>wire | NPN    | Pre-cabled<br>(L = 2 m)  | XUN9ANXNL2  | 0 040     |
|                                      |  |        | M12 connector<br>(4-pin) | XUN9ANXNM12 | 0 013     |
| 7 m/5 m                              | NO (Dark ON)/<br>NC (Light ON)<br>configuration by<br>wire | PNP    | Pre-cabled<br>(L = 2 m)  | XUN9APXNL2  | 0 040     |
|                                      |  |        | M12 connector<br>(4-pin) | XUN9APXNM12 | 0 013     |

### Accessories

#### IO-Link Master (2)

See page 70 .

#### Fixing and other accessories

See page 74 .

#### Cabling accessories

See page 80 .

(1) Available 3<sup>rd</sup> quarter 2024

(2) Available 2<sup>nd</sup> quarter 2024.

| Characteristics  |   |           |   |  |
|--|---|-----------|---|--|
| Sensor type  |   |           | XUN2APYNM12, XUN2APYNM12R, XUN2A●XNM12, XU2AKXNM12T, XUN2A●XNM12R, XUN5APYNM12, XUN5A●XNM12, XUN6APYNM12, XUN6A●XNM12, XUN9APYNM12, XUN9A●XNM12 | XUN2A●XNL2, XUN2A●XNL2R, XUN2AKXNL2T, XUN5A●XNL2, XUN6A●XNL2, XUN9A●XNL2 |
| Product certifications   |   |           | CE, UKCA, cULus   |  |
| Connection   | Connector   |           | M12   | –  |
|  | Pre-cabled  |           | –   | Length: 2 m  |
| Sensing distance<br>Excess gain = 1 :<br>maximum sensing<br>distance<br>Excess gain = 2 :<br>nominal sensing<br>distance | Thru-beam system <b>XUN2</b>  | <b>m</b>  | 30 (with excess gain = 1)<br>20 (with excess gain = 2)  |  |
|  | Diffuse system <b>XUN5</b><br>(using a white paper<br>200 x 200 mm)             | <b>m</b>  | 1 (with excess gain = 1)<br>0.7 (with excess gain = 2)  |  |
|  | Diffuse system <b>XUN6</b><br>(using a white paper<br>200 x 200 mm)             | <b>m</b>  | 0.6 (with excess gain = 1)<br>0.42 (with excess gain = 2)   |  |
|  | Polarised reflex system <b>XUN9</b><br>(using a 50 x 50 mm<br>reflector XU2C50) | <b>m</b>  | 7 (with excess gain = 1)<br>5 (with excess gain = 2)  |  |
| Blind zone   |   | <b>mm</b> | 0 (white object and potentiometer max.)   |  |
| Sensing distance setting   |   |           | Potentiometer 1 turn (+/- 220 degrees)  |  |
| Colour of detection light beam   |   |           | Red (except XUB2 transmitter)   |  |
| Output type  |   |           | PNP/NPN (or autodetect PNP/NPN with IO-Link)  |  |
| Hysteresis   |   |           | 2 % < H < 20 % at Sn  |  |
| Degree of protection   | Conforming to IEC 60529   |           | IP65, IP67  |  |
|  | Conforming to DIN 40050-9   |           | IP69K (M12 connector versions only)   |  |
| Artificial optical radiation   | Conforming to IEC 62471   |           | Class 0 (risk exempt)   |  |
| Radiated disturbances emissions  | Conforming to EN 55011/CISPR 1  |           | Class A   |  |
| Storage temperature  |   | <b>°C</b> | -40...+70   |  |
| Operating temperature  |   | <b>°C</b> | -30...+55   |  |
| Materials  | Case  |           | XUN2A, XUN5A, XUN6A and XUN9A: ABS  |  |
|  | Lens cover  |           | PMMA  |  |
|  | Back cap  |           | MABS  |  |
|  | Potentiometer screw   |           | PA66  |  |
|  | Cable   |           | –   | PVC  |
| Vibration resistance   | Conforming to IEC 60068-2-6   |           | Frequency range: 10 to 55 Hz<br>Acceleration: 7 gn  |  |
| Shock resistance   | Conforming to IEC 60068-2-27  |           | Peak acceleration: 30 gn<br>Duration of the pulse: 11 ms  |  |
| Rated supply voltage   |   | <b>V</b>  | 12 . 24 --- with protection against reverse polarity  |  |
| Voltage limits (including ripple)  |   | <b>V</b>  | 10 . 30 ---   |  |
| Current consumption, no-load   |   | <b>mA</b> | < 20/IO-Link: < 30  |  |
| Switching capacity   |   | <b>mA</b> | 100   |  |
| Voltage drop, closed state   |   | <b>V</b>  | < 2 max.  |  |
| Maximum switching frequency  |   | <b>Hz</b> | 1000  |  |
| Delays   | First-up  | <b>ms</b> | < 100/IO-Link : < 300   |  |
|  | Response  | <b>ms</b> | 0.5 max.  |  |
|  | Recovery  | <b>ms</b> | 0.5 max   |  |

# Photo-electric sensors

XUN general purpose, single mode function

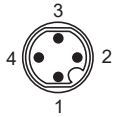
Hybrid miniature design, plastic, thru-beam and diffuse systems

Four-wire DC, solid-state output, wire setting for NO/NC

## Wiring schemes

### Thru-beam system

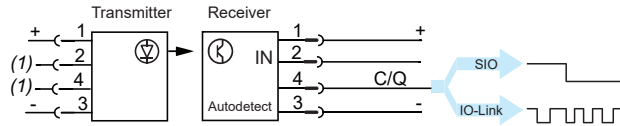
#### M12 connector - 4 pins - IO-Link



| Pin | Signal | Definition                    |
|-----|--------|-------------------------------|
| 1   | +      | + 24 V $\overline{\text{DC}}$ |
| 2   | IN     | + = NO<br>- = NC<br>Open = NO |
| 3   | -      | 0 V $\overline{\text{DC}}$    |
| 4   | Q      | Switching signal (SIO)        |
|     | C      | IO-Link communication         |

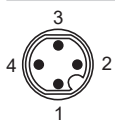
#### Autodetect PNP/NPN or by IO-Link

##### XUN2APYNM12



Note: IODD IO-Link files available on our website [www.telemecaniquesensors.com/iolink](http://www.telemecaniquesensors.com/iolink)

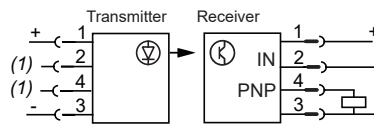
#### M12 connector - 4 pins



| Pin | Signal | Definition                    |
|-----|--------|-------------------------------|
| 1   | +      | + 24 V $\overline{\text{DC}}$ |
| 2   | IN     | + = NO<br>- = NC<br>Open = NO |
| 3   | -      | 0 V $\overline{\text{DC}}$    |
| 4   | Q      | Switching signal (SIO)        |

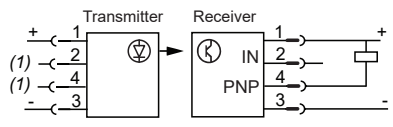
#### PNP

##### XUN2APXNM12



#### NPN

##### XUN2ANXNM12

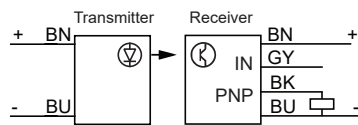


#### Pre-cabled - 4 wires

- +BN (Brown)
- IN (input) GY (Grey)
- OUT (output) BK (Black)
- BU (Blue)

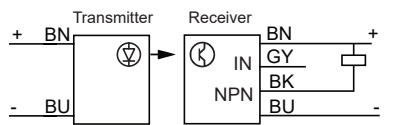
#### PNP

##### XUN2APXNL2



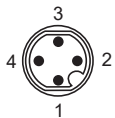
#### NPN

##### XUN2ANXNL2



### Diffuse system

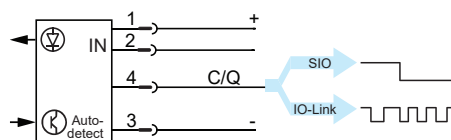
#### M12 connector - 4 pins - IO-Link



| Pin | Signal | Definition                    |
|-----|--------|-------------------------------|
| 1   | +      | + 24 V $\overline{\text{DC}}$ |
| 2   | IN     | + = NO<br>- = NC<br>Open = NO |
| 3   | -      | 0 V $\overline{\text{DC}}$    |
| 4   | Q      | Switching signal (SIO)        |
|     | C      | IO-Link communication         |

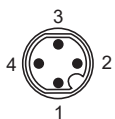
#### Autodetect PNP/NPN or by IO-Link

##### XUN5APYNM12, XUN6APYNM12



Note: IODD IO-Link files available on our website [www.telemecaniquesensors.com/iolink](http://www.telemecaniquesensors.com/iolink)

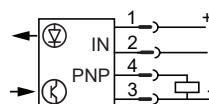
#### M12 connector - 4 pins



| Pin | Signal | Definition                    |
|-----|--------|-------------------------------|
| 1   | +      | + 24 V $\overline{\text{DC}}$ |
| 2   | IN     | + = NO<br>- = NC<br>Open = NO |
| 3   | -      | 0 V $\overline{\text{DC}}$    |
| 4   | Q      | Switching signal (SIO)        |

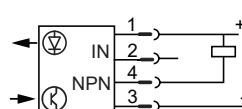
#### PNP

##### XUN5APXNM12, XUN6APXNM12



#### NPN

##### XUN5ANXNM12, XUN6ANXNM12



(1) Not connected

# Photo-electric sensors

XUN general purpose, single mode function  
 Hybrid miniature design, plastic, diffuse and polarised  
 reflex systems  
 Four-wire DC, solid-state output, wire setting for NO/NC

## Wiring schemes (continued)

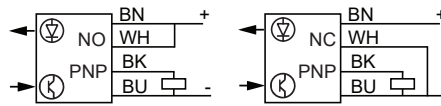
### Diffuse system (continued)

#### Pre-cabled - 4 wires

+BN (Brown)  
 IN (input) GY (Grey)  
 OUT (output) BK (Black)  
 -BU (Blue)

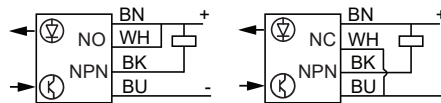
#### PNP

XUN5APXNL2, XUN6APXNL2



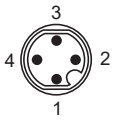
#### NPN

XUN5ANXNL12, XUN6ANXNL2,



### Polarised reflex system

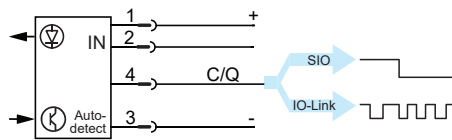
#### M12 connector - 4 pins - IO-Link



| Pin | Signal | Definition                     |
|-----|--------|--------------------------------|
| 1   | +      | + 24 V $\overline{\text{---}}$ |
| 2   | IN     | + = NO<br>- = NC<br>Open = NO  |
| 3   | -      | 0 V $\overline{\text{---}}$    |
| 4   | Q      | Switching signal (SIO)         |
| C   |        | IO-Link communication          |

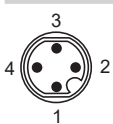
#### Autodetect PNP/NPN or by IO-Link

XUN9APYNM12



Note: IO-Link files available on our website [www.telemecaniquesensors.com/iolink](http://www.telemecaniquesensors.com/iolink)

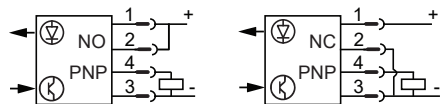
#### M12 connector - 4 pins



Control input IN:  
 (+) = NO  
 (-) = NC  
 Open = NO

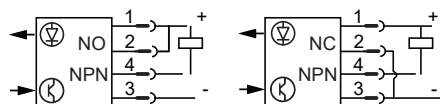
#### PNP

XUN9APXNM12



#### NPN

XUN9ANXNM12

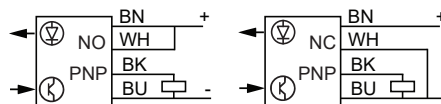


#### Pre-cabled - 4 wires

+BN (Brown)  
 IN (input) GY (Grey)  
 OUT (output) BK (Black)  
 -BU (Blue)

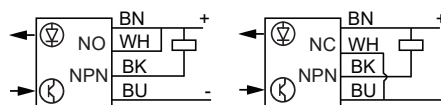
#### PNP

XUN9APXNL2



#### NPN

XUN9ANXNL12



# Photo-electric sensors

XUN general purpose, single mode function

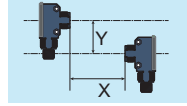
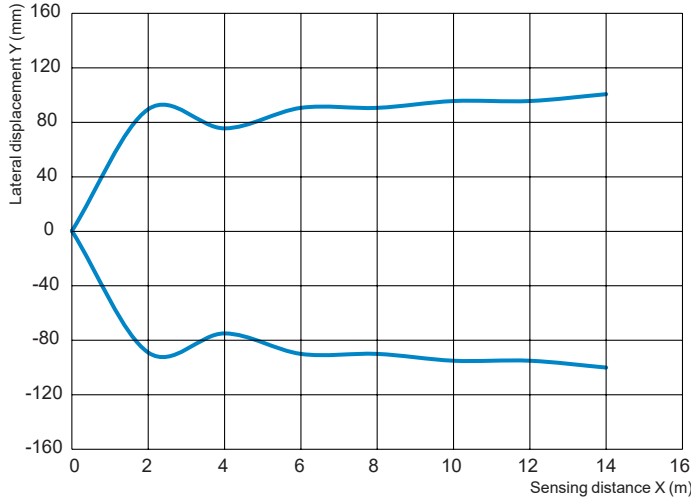
Hybrid miniature design, plastic, thru-beam system

Four-wire DC, solid-state output, wire setting for NO/NC

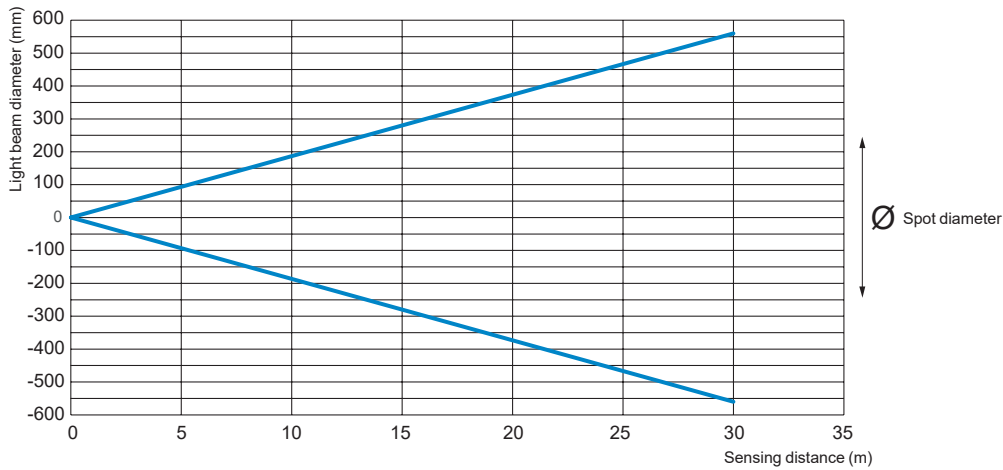
## Detection curves

Thru-beam system: XUN2

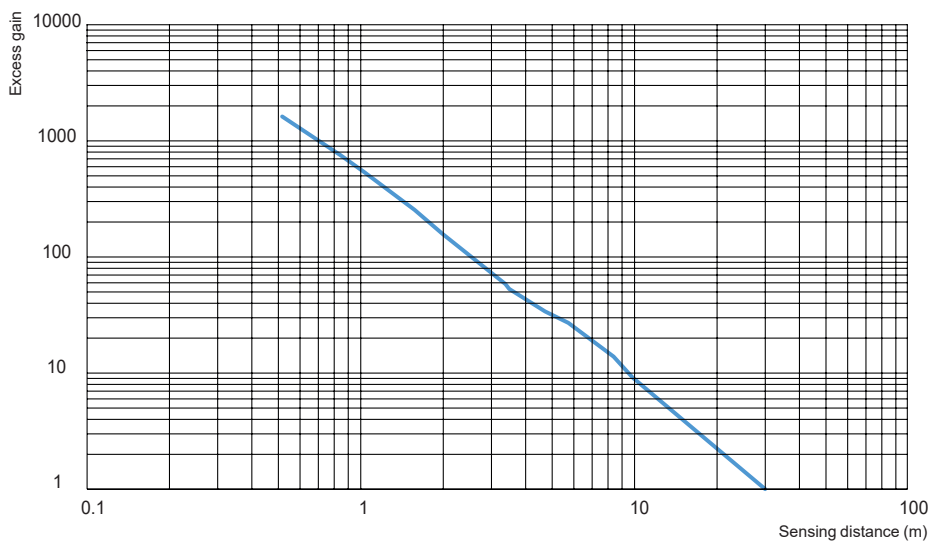
Lateral displacement



## Light beam diameter



## Excess gain





# Photo-electric sensors

XUN general purpose, single mode function

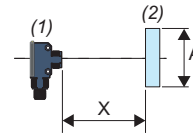
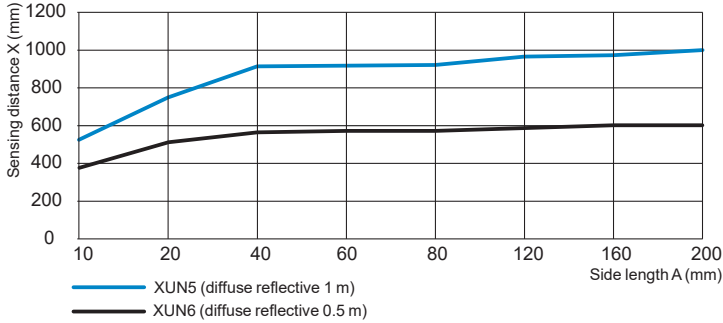
Hybrid miniature design, plastic, diffuse system

Four-wire DC, solid-state output, wire setting for NO/NC

## Detection curves (continued)

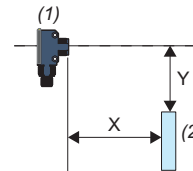
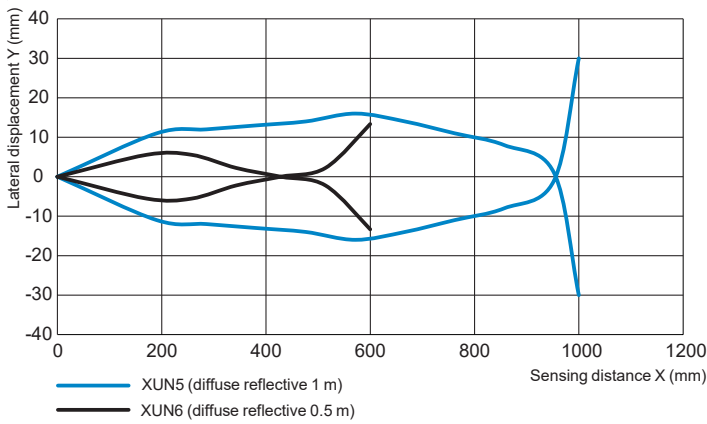
Diffuse system: XUN5 and XUN6

Minimum object size/sensing distance



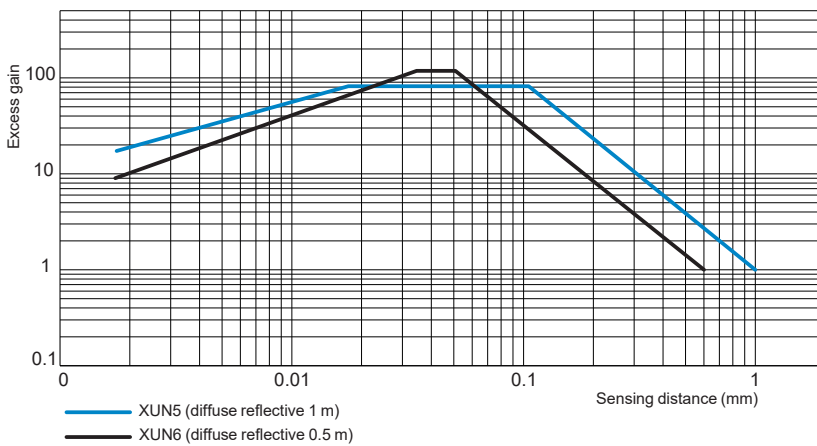
(1): Sensor  
 (2): Object (white matt paper of A mm square)  
 A: Side length (mm)  
 X: Sensing distance (mm)

## Lateral displacement



(1): Sensor  
 (2): Object (200 mm square white paper)  
 X: Sensing distance (mm)  
 Y: Lateral displacement (mm)

## Excess gain



# Photo-electric sensors

XUN general purpose, single mode function

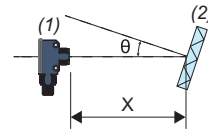
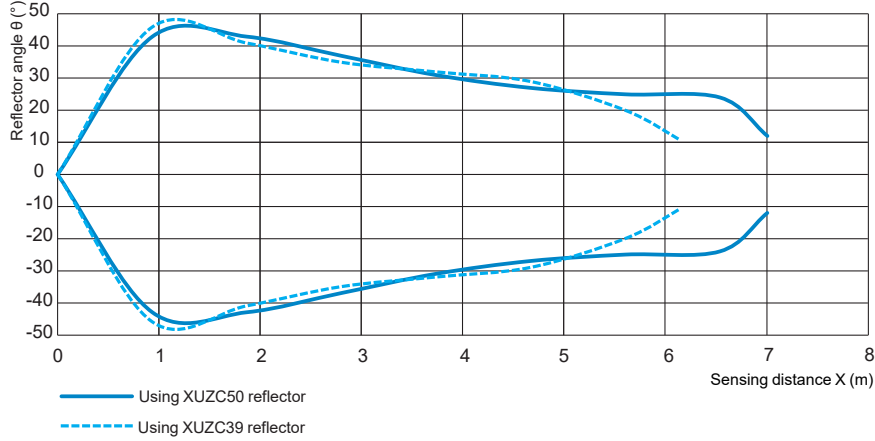
Hybrid miniature design, plastic, polarised reflex system

Four-wire DC, solid-state output, wire setting for NO/NC

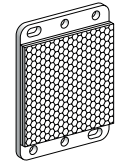
## Detection curves (continued)

Polarised reflex system: XUN9

Reflector angle



(1): Sensor  
(2): Reflector  
 $\theta$ : Reflector angle (°)  
X: Sensing distance (m)

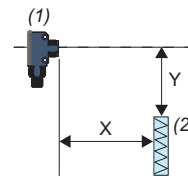
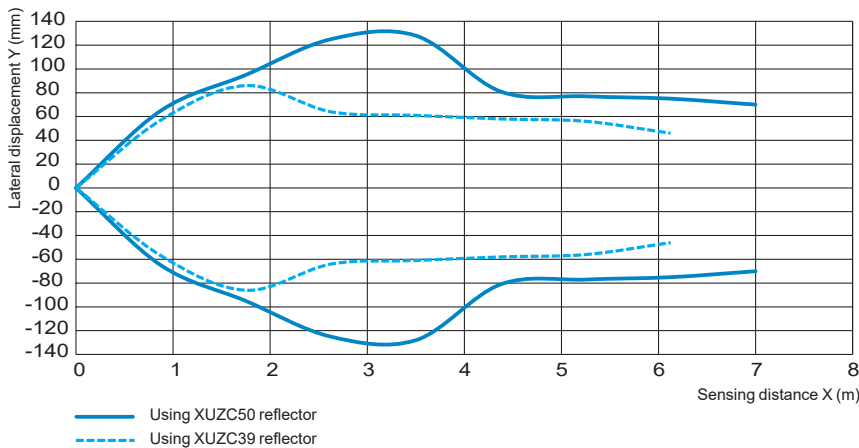


XU50

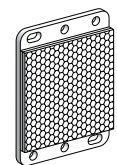


XU39

## Lateral displacement



(1): Sensor  
(2): Reflector  
Y: Lateral displacement (mm)  
X: Sensing distance (m)

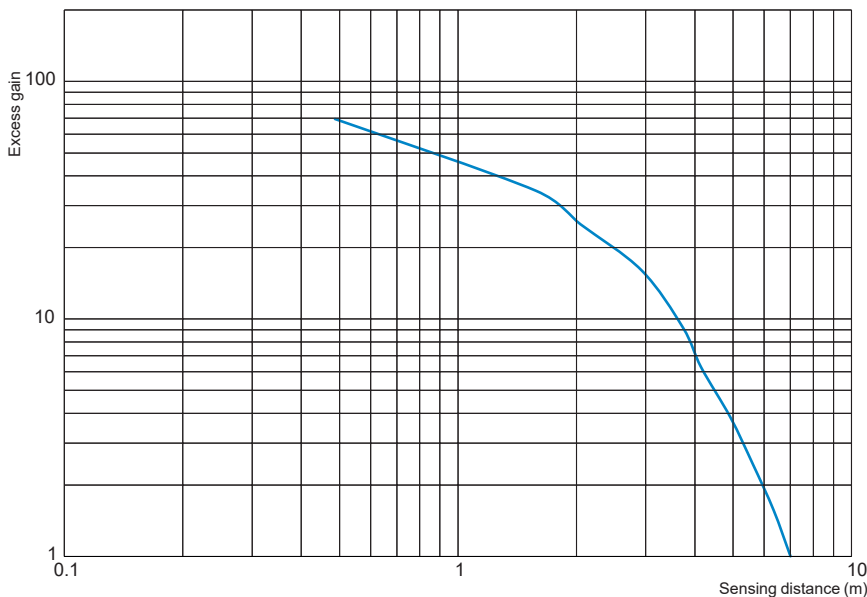


XU50



XU39

## Excess gain



# Photo-electric sensors

XUN general purpose, single mode function

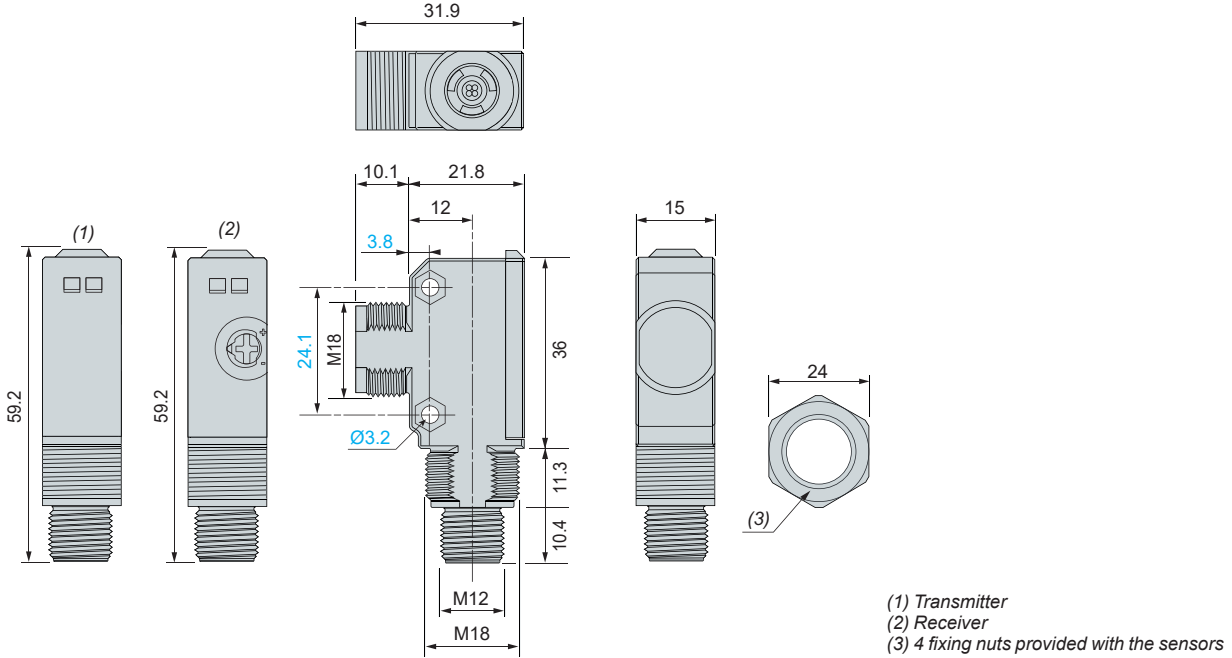
Hybrid miniature design, plastic, thru-beam system

Four-wire DC, solid-state output, wire setting for NO/NC

## Thru-beam system, plastic, M12 connector version

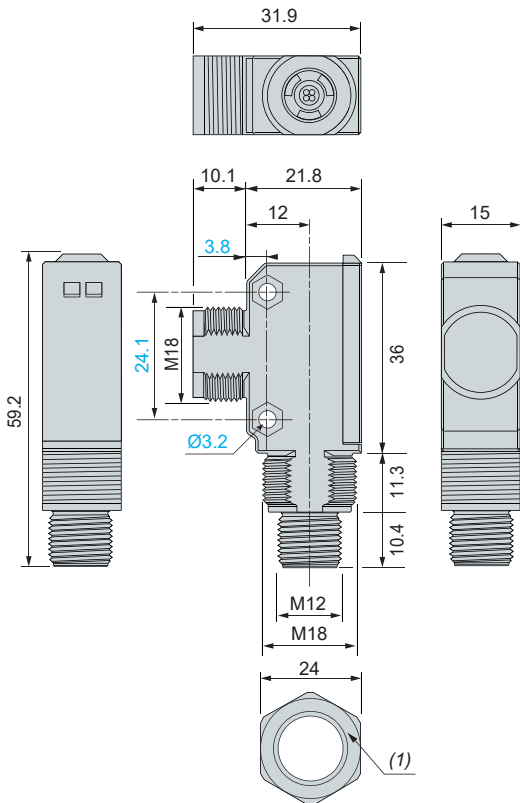
Transmitter + receiver (common top, side and front views)

XUN2APYNM12, XUN2ANXNM12, XUN2APXNM12



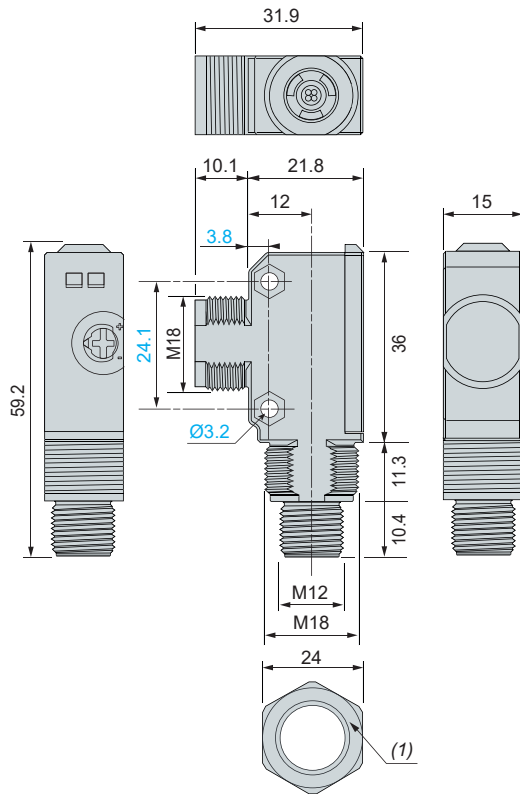
## Transmitter only

XUN2AKXNM12T



## Receiver only

XUN2APYNM12R, XUN2ANXNM12R, XUN2APXNM12R



(1) 2 fixing nuts provided with the sensor.

# Photo-electric sensors

XUN general purpose, single mode function

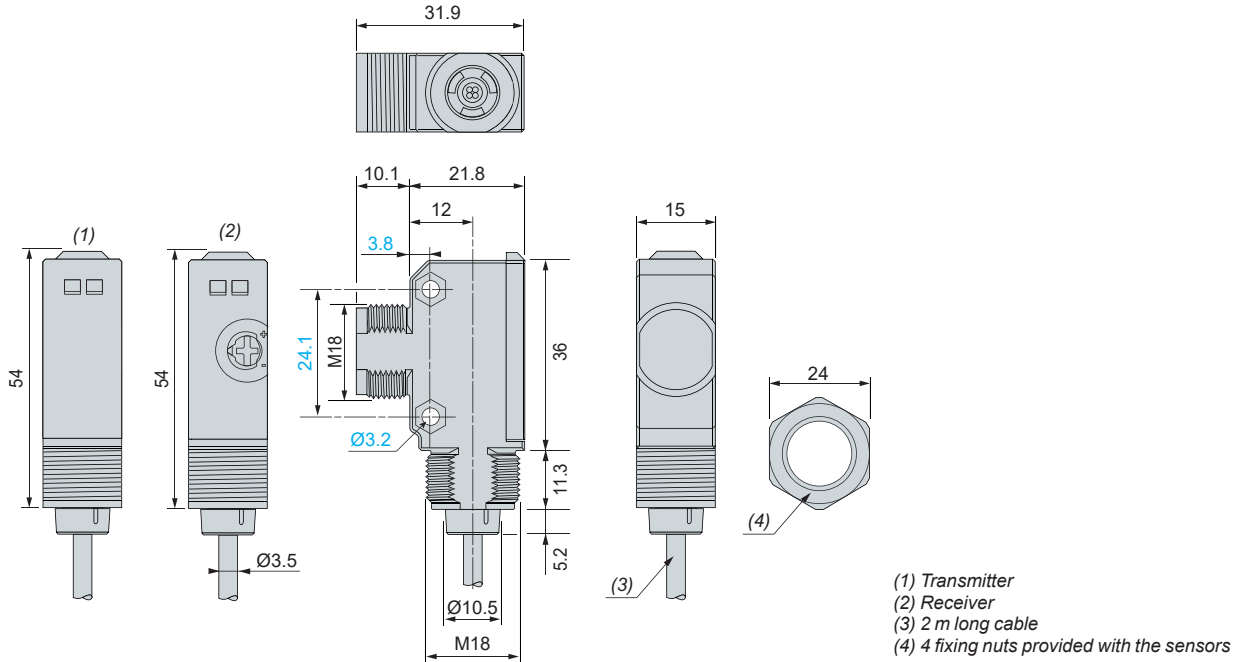
Hybrid miniature design, plastic, thru-beam system

Four-wire DC, solid-state output, wire setting for NO/NC

## Thru-beam system, plastic, pre-cabled version

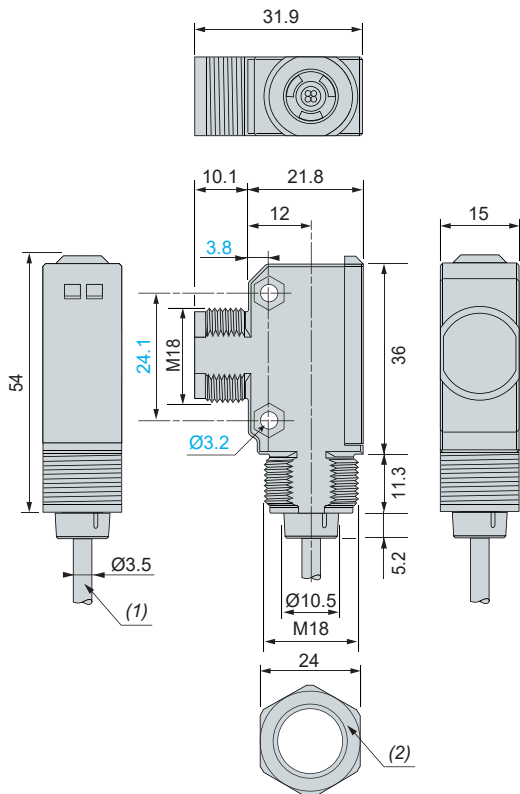
Transmitter + receiver (common top, side and front views)

XUN2ANXNL2, XUN2APXNL2



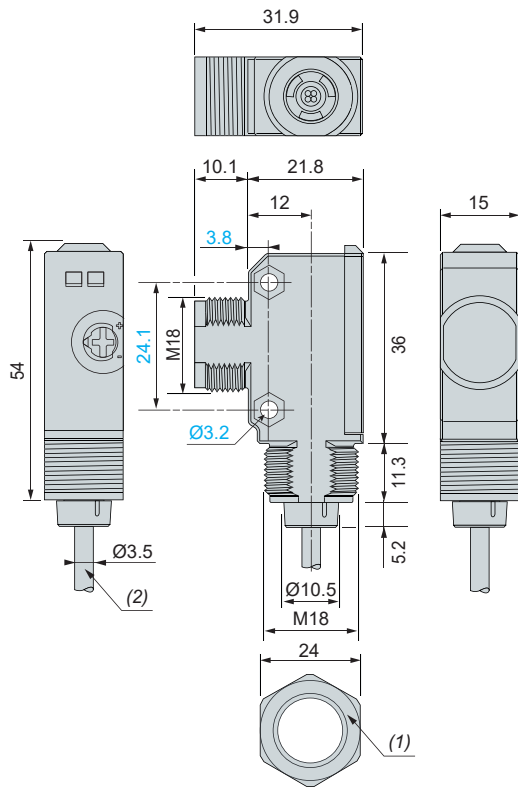
## Transmitter only

XUN2AKXNL2T



## Receiver only

XUN2ANXNL2R, XUN2APXNL2R



(1) 2 m long cable.  
 (2) 2 fixing nuts provided with the sensor.

# Photo-electric sensors

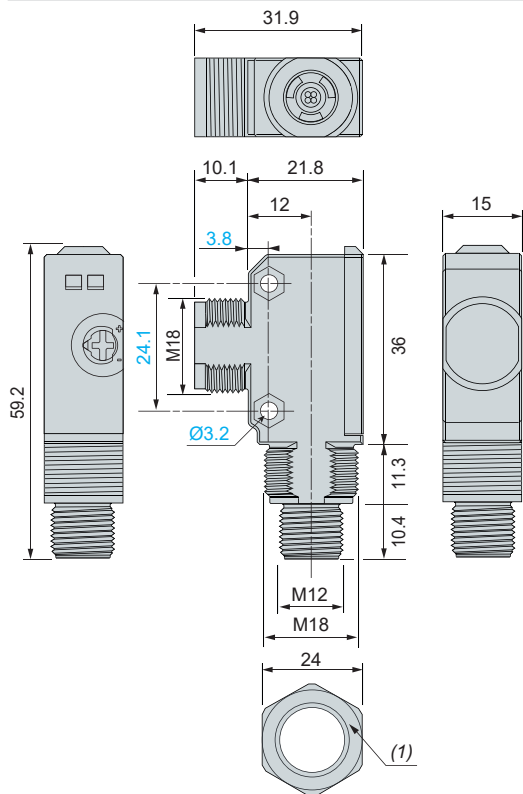
XUN general purpose, single mode function  
Hybrid miniature design, plastic, diffuse and polarised  
reflex systems

Four-wire DC, solid-state output, wire setting for NO/NC

## Diffuse system, M12 connector version

Long range or medium range, red LED emission

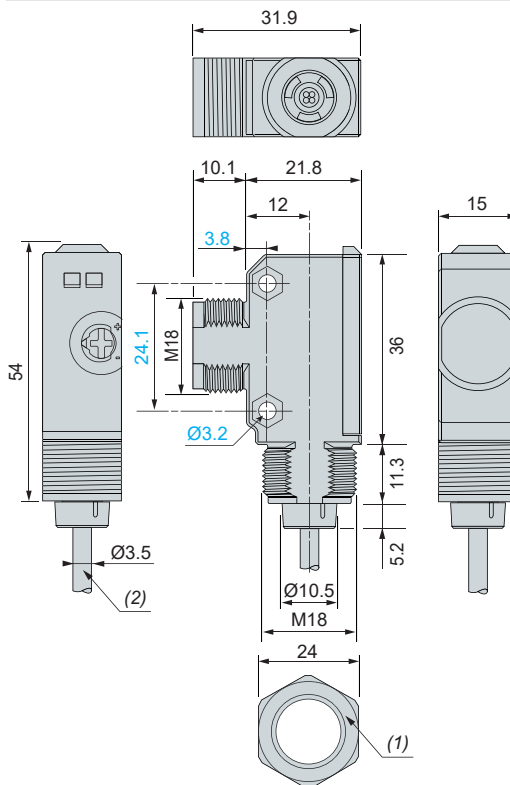
XUN5APYNM12, XUN5ANXNM12, XUN5APXNM12,  
XUN6APYNM12, XUN6ANXNM12, XUN6APXNM12



## Diffuse system, pre-cabled version

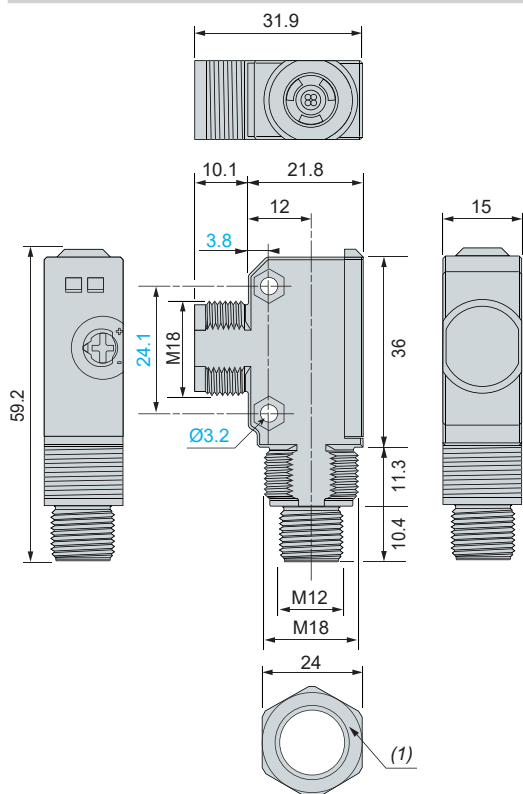
Long range or medium range, red LED emission

XUN5ANXNL2, XUN5APXNL2, XUN6ANXNL2, XUN6APXNL2



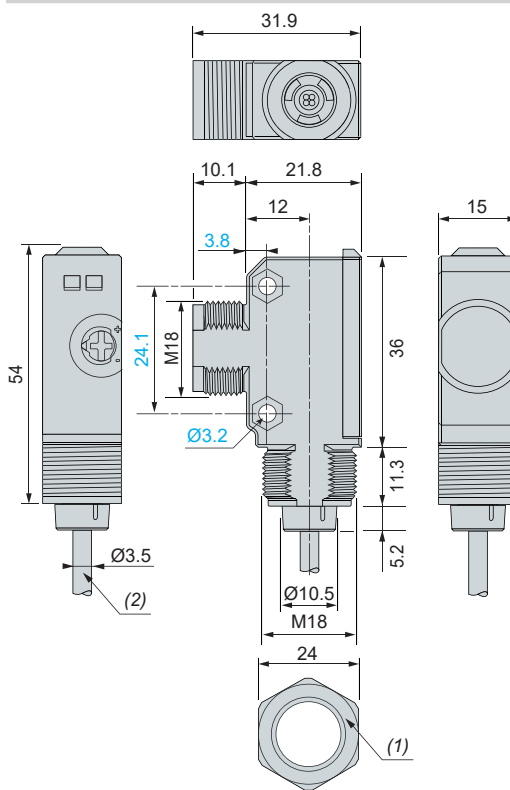
## Polarised reflex system, M12 connector version

XUN9APYNM12, XUN9ANXNM12, XUN9APXNM12



## Polarised reflex system, pre-cabled version

XUN9ANXNL2, XUN9APXNL2



(1) 2 fixing nuts provided with the sensor.  
(2) 2 m long cable.



**XU photo-electric sensors**  
for packaging, food & beverage

Telemecanique Sensors presents an expanded XU range of application photo-electric sensors to be embedded in automated lines for the packaging market segment .

With their diverse technical characteristics, high performance and smart management capabilities, they are designed to address a wide scope of specific needs .



Packaging



Handling



Food and Beverage

Fast object detection

### Sensor family per application

- > Marking detection
- > Very dark and light-absorbing object detection
- > Accurate detection
- > Colour object detection, from simple colour to very complex colour sorting
- > Transparent object detection, with or without reflector



Five light spots

### Select the perfectly suitable light spot

- > **Laser light:** to detect very small objects and contrast marks with pinpoint accuracy, even at a long sensing distance
- > **White light:** for simple contrast detection (high contrast), short distances
- > **Blue light:** for low-reflectivity objects, especially dark ones. Blue light short waves mean less penetration, resulting in higher surface reflection.
- > **Red light:** for detecting objects at a long distance and for very absorbing objects
- > **RGB light :** for more accurate contrast in colour prints



Laser



Red light



White light



Blue light



RGB



Designed for small spaces in packaging machines

### Choose the casing, connection type and size

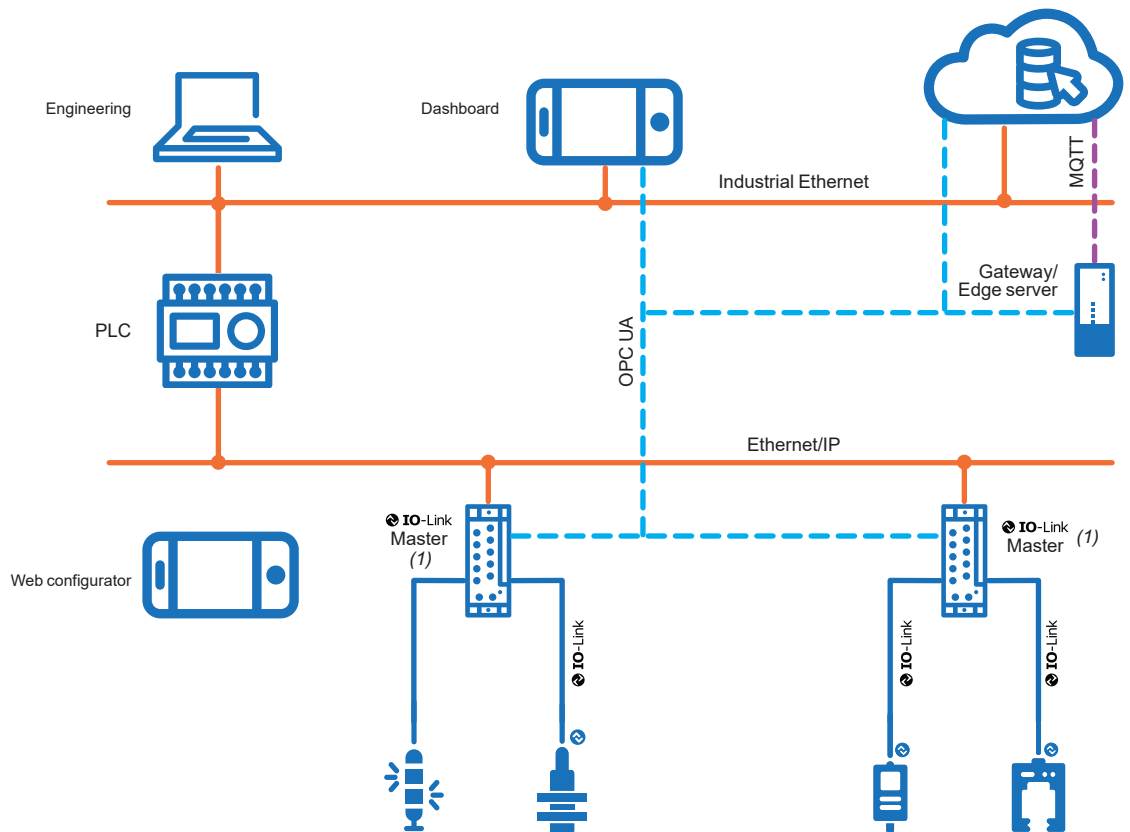
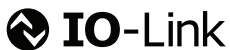
- > Plastic or metal casing
- > Pre-cabled, with pigtail or connector
- > Miniature, sub-miniature and compact size



Simple communication with the PLC via Ethernet

### Smart devices communicate via IO-Link protocol

- > Install your new IO-Link sensor easily: automatic reading of the device identification file (IODD) and automatic detection of the sensor output mode
- > Automated parameter settings: configure the detection parameters
- > Extended diagnostics, with real-time information for optimised usage and maintenance



(1) Available 2<sup>nd</sup> quarter 2024.

# Photo-electric sensors

XU application, for marking detection  
Miniature and compact design, plastic



XUMRAWAYM8  
XUMRAGAYM8  
XUMRACAYM8



XUMRAWAYP015  
XUMRAGAYP015



XUM5ALAYM8



XUM5ALAYL2

### Contrast mark reader sensors IO-Link

| Max./operating sensing distance (Sn) | Function | Output | Connection | Reference | Weight kg |
|--------------------------------------|----------|--------|------------|-----------|-----------|
|--------------------------------------|----------|--------|------------|-----------|-----------|

#### White light

|             |   |                    |                         |                     |       |
|-------------|---|--------------------|-------------------------|---------------------|-------|
| 15 mm/12 mm | NO/NC configuration via teach-in or IO-Link | Autodetect PNP/NPN | M8 connector (4-pin)    | <b>XUMRAWAYM8</b>   | 0 018 |
|             |   | Autodetect PNP/NPN | Pigtail M12 (L= 0.15 m) | <b>XUMRAWAYP015</b> | 0 027 |

#### RGB light

|             |   |                    |                         |                     |       |
|-------------|---|--------------------|-------------------------|---------------------|-------|
| 15 mm/12 mm | NO/NC configuration via Teach-in or IO-Link | Autodetect PNP/NPN | M8 connector (4-pin)    | <b>XUMRAGAYM8</b>   | 0 018 |
|             |   | Autodetect PNP/NPN | Pigtail M12 (L= 0.15 m) | <b>XUMRAGAYP015</b> | 0 027 |
|             |   | Autodetect PNP/NPN | M8 connector (4-pin)    | <b>XUMRACAYM8</b>   | 0 018 |

#### Laser light

|               |   |                    |                         |                     |       |
|---------------|---|--------------------|-------------------------|---------------------|-------|
| 250 mm/150 mm | NO/NC configuration via Teach-in or IO-Link | Autodetect PNP/NPN | Pre-cabled (L = 2 m)    | <b>XUM5ALAYL2</b>   | 0 045 |
|               |   | Autodetect PNP/NPN | M8 connector (4-pin)    | <b>XUM5ALAYM8</b>   | 0 018 |
|               |   | Autodetect PNP/NPN | Pigtail M12 (L= 0.15 m) | <b>XUM5ALAYP015</b> | 0 026 |

### Accessories

#### IO-Link Master (1)

See page 70 .

#### Fixing and other accessories

See page 74 .

#### Cabling accessories

See page 80 .

(1) Available 2<sup>nd</sup> quarter 2024.



# Photo-electric sensors

XU application, for marking detection  
Miniature and compact design, plastic

| Characteristics                           |                           |                                     |   |
|---|---------------------------|-------------------------------------|---|
| Sensor type                               |                           | XUMRA●AYM8                          | XUM5ALAY●●                                      |
| Product certifications                    |                           | CE, UKCA, cULus, Ecolab             |   |
| Connection                                | Connector                 | M8                                  | M8  |
|   | Pigtail                   | M12<br>Length: 0.15 m               | M12<br>Length: 0.15 m                           |
|   | Pre-cabled                | –                                   | Length: 2 m                                     |
| Maximum sensing distance S <sub>max</sub> | Contrast mark reader      | mm                                  | 15  |
| Detection light beam colour               |                           | White LED<br>RGB (red, green, blue) | Red (laser class 1)                             |
| Degree of protection                      | Conforming to IEC 60529   | IP67                                |   |
|   | Conforming to DIN 40050-9 | IP69K                               |   |
| Storage temperature                       |                           | °C                                  | -20 . +80                                       |
| Operating temperature                     |                           | °C                                  | -20 . +55                                       |
| Materials                                 | Case                      | ABS                                 |   |
|   | Lens                      | PMMA                                |   |
|   | Front                     | PMMA                                |   |
|   | Cable                     | PVC                                 |   |
| Rated supply voltage                      |                           | V                                   | 12 . 24 ---                                     |
| Voltage limits (including ripple)         |                           | V                                   | 10 . 30 ---                                     |
| Current consumption, no-load              |                           | mA                                  | ≤ 30 for RGB<br>≤ 25 for white light            |
| Switching capacity                        |                           | mA                                  | 100   |
| Maximum switching frequency               |                           | Hz                                  | 10,000 for XUMRAW and XUMARG<br>2500 for XUMRAC |
| Delays                                    | First-up                  | ms                                  | 300   |
|   | Response                  | µs                                  | 50 for XUMRAW and XUMARG<br>200 for XUMRAC      |
|   | Recovery                  | ms                                  | 300   |

# Photo-electric sensors

XU application, for marking detection  
Miniature and compact design, plastic

## Wiring schemes

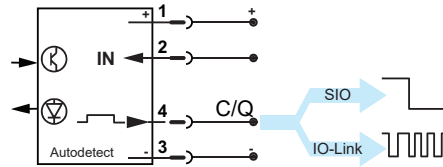
### Contrast mark reader systems

#### M8/M12 connector - 4-pin - IO-Link

| Pin | Signal | Definition                     |
|-----|--------|--------------------------------|
| 1   | +      | + 24 V $\overline{\text{---}}$ |
| 2   | IN     | + = NO<br>- = NC<br>Open = NO  |
| 3   | -      | 0 V $\overline{\text{---}}$    |
| 4   | Q      | Switching signal (SIO)         |
|     | C      | Communication (IO-Link)        |

#### Autodetect PNP/NPN or by IO-Link

XUM●A●AYM8, XUM●A●AYP015 (white, RGB and laser)



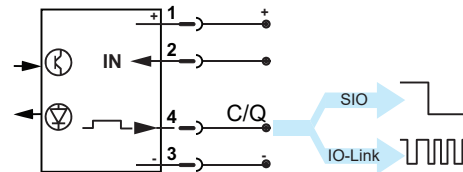
Note: IODD IO-Link files available on our website [www.telemecaniquesensors.com/iolink](http://www.telemecaniquesensors.com/iolink)

#### Pre-cabled - 4-wire - IO-Link

| Pin | Signal | Definition  |
|-----|--------|---|
| 1   | +      | + 24 V $\overline{\text{---}}$                    |
| 2   | IN     | + = NO<br>- = NC<br>Open = NO                     |
| 3   | -      | 0 V $\overline{\text{---}}$                       |
| 4   | C      | Switching signal (SIO)<br>Communication (IO-Link) |

#### Autodetect PNP/NPN or by IO-Link

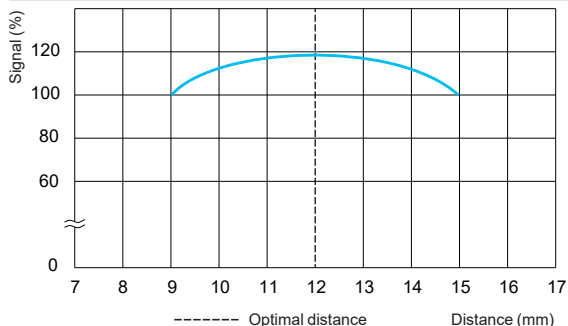
XUM5ALAYL2 (laser)



## Detection curves

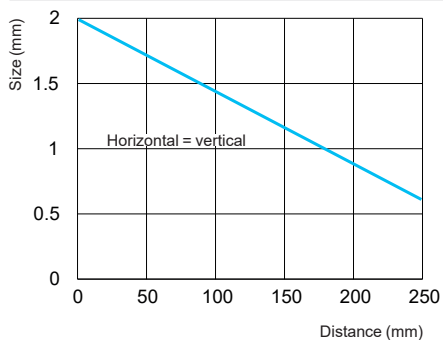
Contrast mark reader system: XUMRA●AYM8, XUMRA●AYP015

Signal process

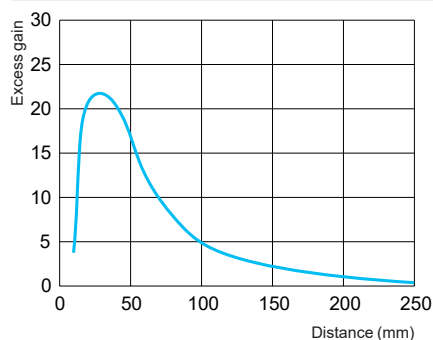


Contrast mark reader system: XUM5ALAY●●

Light spot size

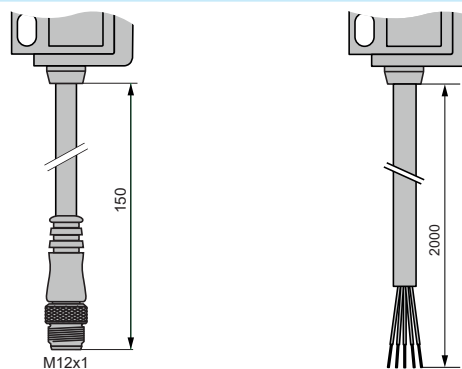
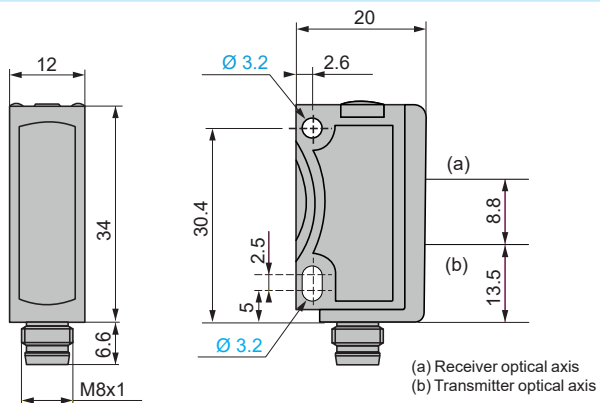


Excess gain

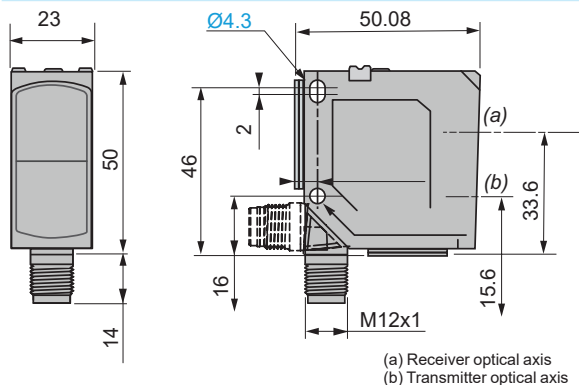


## Dimensions

Miniature format: XUM



Compact format: XUK



# Photo-electric sensors

XU application, for very dark object detection  
Miniature, sub-miniature and compact design, plastic



XUM8ABAYP015



XUM7ABPXM8,  
XUM8ABAYM8

XUM7ABPXL2



XUT7ABPXL2,  
XUT8ABAYL2

XUT7ABPXP02,  
XUT8ABAYP02



XUK8ABPXM12

## Background suppression sensors IO-Link

| Max./operating sensing distance (Sn) | Function                                    | Output             | Connection              | Reference           | Weight kg |
|--------------------------------------|---|--------------------|-------------------------|---------------------|-----------|
| <b>Adjustable blue light</b>         |   |                    |                         |                     |           |
| 200 mm/200 mm (miniature format)     | NO/NC configuration via teach-in or IO-Link | Autodetect PNP/NPN | M8 connector (4-pin)    | <b>XUM8ABAYM8</b>   | 0 014     |
|                                      |   | Autodetect PNP/NPN | Pigtail M12 (L= 0 15 m) | <b>XUM8ABAYP015</b> | 0 027     |
| 100 mm/100 mm sub-miniature format   | NO/NC configuration via teach-in or IO-Link | Autodetect PNP/NPN | Pre-cabled (L = 2 m)    | <b>XUT8ABAYL2</b>   | 0 031     |
|                                      |   | Autodetect PNP/NPN | Pigtail M8 (L= 0 2 m)   | <b>XUT8ABAYP02</b>  | 0 019     |

## Background suppression sensors

| <b>Fixed blue light, miniature format</b> |                                  |     |                      |                   |       |
|---|----------------------------------|-----|----------------------|-------------------|-------|
| 100 mm/80 mm                              | NO/NC configuration via teach-in | PNP | Pre-cabled (L = 2 m) | <b>XUM7ABPXL2</b> | 0 056 |
|   |                                  | PNP | M8 connector (4-pin) | <b>XUM7ABPXM8</b> | 0 017 |

## Fixed blue light, sub-miniature format

|             |                                  |     |                       |                    |       |
|-------------|----------------------------------|-----|-----------------------|--------------------|-------|
| 50 mm/50 mm | NO/NC configuration via teach-in | PNP | Pre-cabled (L = 2 m)  | <b>XUT7ABPXL2</b>  | 0 031 |
|             |                                  | PNP | Pigtail M8 (L= 0 2 m) | <b>XUT7ABPXP02</b> | 0 022 |

## Adjustable blue light (potentiometer)

|                |                                  |     |                       |                    |       |
|----------------|----------------------------------|-----|-----------------------|--------------------|-------|
| 1200 mm/600 mm | NO/NC configuration via teach-in | PNP | M12 connector (4-pin) | <b>XUK8ABPXM12</b> | 0 046 |
|----------------|----------------------------------|-----|-----------------------|--------------------|-------|

## Accessories

### IO-Link Master (1)

See page 70 .

### Fixing and other accessories

See page 74 .

### Cabling accessories

See page 80 .

(1) Available 2<sup>nd</sup> quarter 2024.

# Photo-electric sensors

XU application, for very dark object detection

Miniature, sub-miniature and compact design, plastic

| Characteristics                           |                            |      |    | XU●7ABPX●●                               | XU●8ABAY●●  | XUK8ABPXM12 |
|---|----------------------------|------|----|--|---|-------------|
| Sensor type                               |                            |      |    | XU●7ABPX●●                               | XU●8ABAY●●  | XUK8ABPXM12 |
| Product certifications                    |                            |      |    | CE, UKCA, cULus, Ecolab                  |   |             |
| Connection                                | Connector                  |      |    | M8                                       | M8  | M12         |
|   | Pre-cabled                 |      |    | Length = 2 m                             | Length = 2 m  | –           |
|   | Pigtail                    |      |    | Length = 0.2 m                           | Length = 0.15 m for XUM8<br>Length = 0.2 m for XUT8 | –           |
| Maximum sensing distance S <sub>max</sub> | BGS, fixed blue light      | XUM7 | mm | 100                                      | –   | –           |
|   |                            | XUT7 | mm | 50                                       | –   | –           |
|   | BGS, adjustable blue light | XUM8 | mm | –  | 200   | –           |
|   |                            | XUT8 | mm | –  | 100   | –           |
|   |                            | XUK8 | mm | –  | –   | 1200        |
| Detection light beam colour               |                            |      |    | Blue                                     |   |             |
| Degree of protection                      | Conforming to IEC 60529    |      |    | IP67                                     |   |             |
|   | Conforming to DIN 40050-9  |      |    | IP69K for XUM7 only                      | IP69K for XUM8 only                                 | IP69K       |
| Storage temperature                       |                            |      | °C | -20 . +80                                |   |             |
| Operating temperature                     |                            |      | °C | -20 . +60 for XUM7<br>-20 . +50 for XUT7 | -20 . +60   |             |
| Materials                                 | Case                       |      |    | ABS for XUM7<br>PUR for XUT7             | ABS for XUM8<br>PUR for XUT8                        | ABS/PC      |
|   | Lens                       |      |    | PMMA                                     |   |             |
|   | Front                      |      |    | PMMA                                     | –   |             |
|   | Cable                      |      |    | PVC                                      | –   |             |
| Rated supply voltage                      |                            | V    |    | 12 . 24 ∴                                | 24 ∴ for XUT8<br>12 . 24 ∴ for XUM8                 | 12 . 24 ∴   |
| Voltage limits (including ripple)         |                            | V    |    | 13 . 30 for XUT8                         |   |             |
| Current consumption, no-load              |                            | mA   |    | ≤ 30 for XUM                             |   | ≤ 30        |
|   |                            | mA   |    | ≤ 20 for XUT                             |   |             |
| Switching capacity                        |                            | mA   |    | ≤ 100 for XUM                            |   | ≤ 100       |
|   |                            | mA   |    | ≤ 50 for XUT                             |   |             |
| Maximum switching frequency               |                            | Hz   |    | 1000                                     | 700   | 600         |
| Delays                                    | First-up                   | ms   |    | < 300                                    |   |             |
|   | Response                   | µs   |    | 500                                      | 700 for XUT<br>500 for XUM                          | 830 max.    |
|   | Recovery                   | ms   |    | < 300                                    |   | 300 max.    |

# Photo-electric sensors

XU application, for very dark object detection  
Miniature, sub-miniature and compact design, plastic

## Wiring schemes

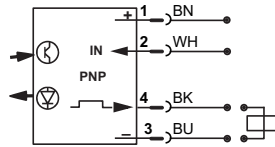
### Background suppression system

#### M8 connector (including pigtail) - 4-pin



| Pin | Signal | Definition                     |
|-----|--------|--------------------------------|
| 1   | +      | + 24 V $\overline{\text{---}}$ |
| 2   | IN     | + = NC<br>- = NO<br>Open = NO  |
| 3   | -      | 0 V $\overline{\text{---}}$    |
| 4   | Q      | Switching signal               |

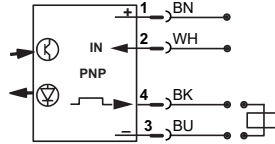
#### PNP XUM7ABPXM8, XUT7ABPXP02



#### Pre-cabled - 4-wire

+BN (Brown)  
IN (input) GY (Grey)  
OUT (output) BK (Black)  
-BU (Blue)

#### PNP XUT7ABPXL2, XUM7ABPXL2



#### M8/M12 connector - 4-pin IO-Link



M8

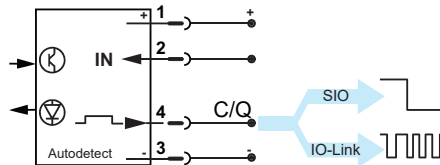
| Pin | Signal | Definition                     |
|-----|--------|--------------------------------|
| 1   | +      | + 24 V $\overline{\text{---}}$ |
| 2   | IN     | + = NO<br>- = NC<br>Open = NO  |
| 3   | -      | 0 V $\overline{\text{---}}$    |
| 4   | C      | Communication (IO-Link)        |



M12

| Pin | Signal | Definition                  |
|-----|--------|-----------------------------|
| 3   | -      | 0 V $\overline{\text{---}}$ |
| 4   | C      | Communication (IO-Link)     |

#### Autodetect PNP/NPN or by IO-Link XUM8ABAYM8, XUM8ABAYP015, XUT8ABAYP02



Note: IODD IO-Link files available on our website [www.telemecaniquesensors.com/iolink](http://www.telemecaniquesensors.com/iolink)

## Wiring schemes

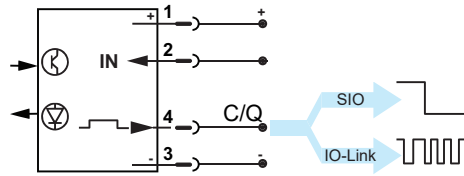
### Background suppression system

#### Pre-cabled - 4-wire IO-Link

|                         | Pin | Signal | Definition  |
|-------------------------|-----|--------|---|
| +BN (Brown)             | 1   | +      | + 24 V $\overline{\text{---}}$                    |
| IN (input) GY (Grey)    | 2   | IN     | + = NO<br>- = NC<br>Open = NO                     |
| OUT (output) BK (Black) | 3   | -      | 0 V $\overline{\text{---}}$                       |
| -BU (Blue)              | 4   | C      | Switching signal (SIO)<br>Communication (IO-Link) |


#### Autodetect PNP/NPN or by IO-Link

##### XUT8ABAYL2



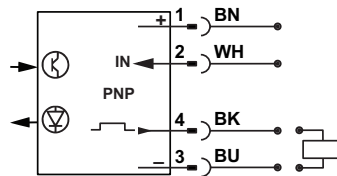
Note: IO-Link files available on our website [www.telemecaniquesensors.com/iolink](http://www.telemecaniquesensors.com/iolink)

#### M12 connector - 4-pin

|   | Pin | Signal | Definition                     |
|---|-----|--------|--------------------------------|
|  | 1   | +      | + 24 V $\overline{\text{---}}$ |
|   | 2   | IN     | + = NC<br>- = NO<br>Open = NO  |
|   | 3   | -      | 0 V $\overline{\text{---}}$    |
|   | 4   | C      | Switching signal               |

#### PNP

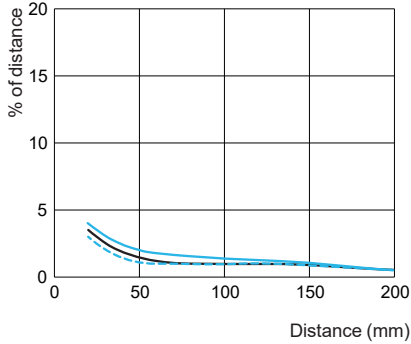
##### XUK8ABPXM12



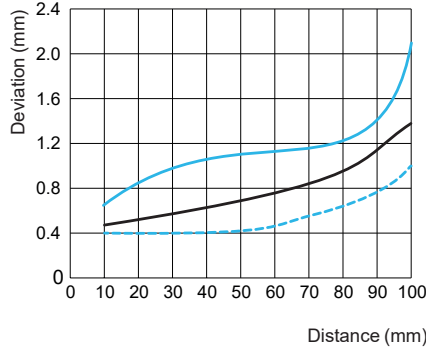
## Detection curves

### Background suppression system

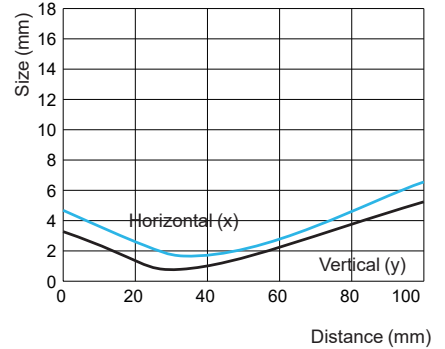
#### Scanning properties: XUM8ABAY●●



#### Scanning properties: XUT8ABAY●●

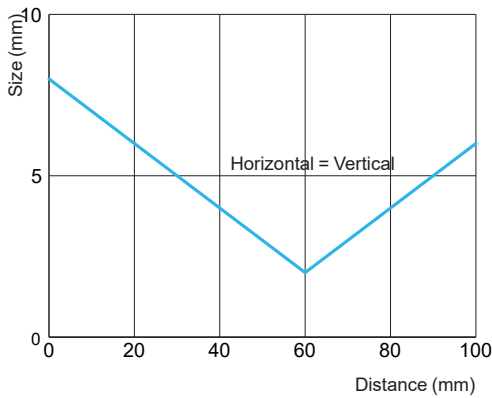


#### Light spot size: XUT8ABAY●●

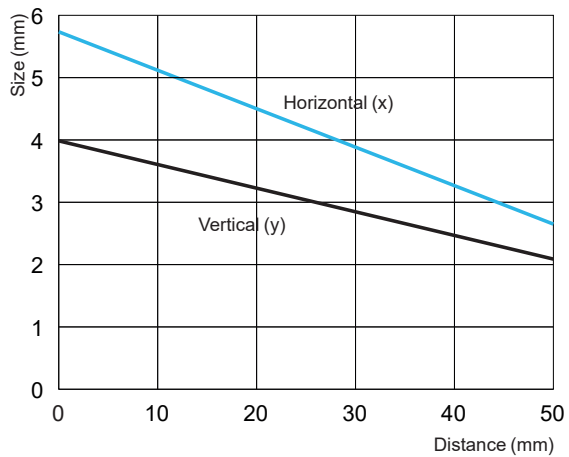


--- Min .distance white object (90%)/white background (90%) (mm)  
— Min .distance grey object (18%)/white background (90%) (mm)  
— Min .distance black object (6%)/white background (90%) (mm)

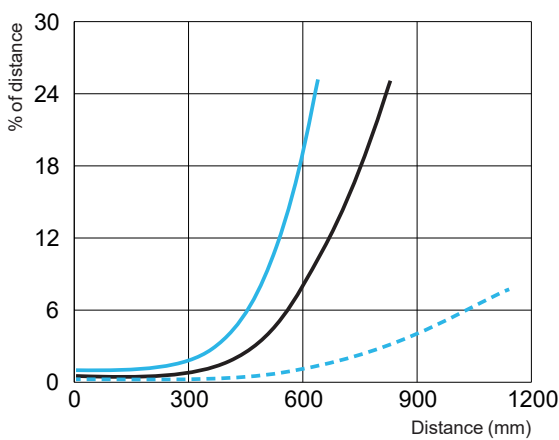
#### Light spot size: XUM7ABPX●●



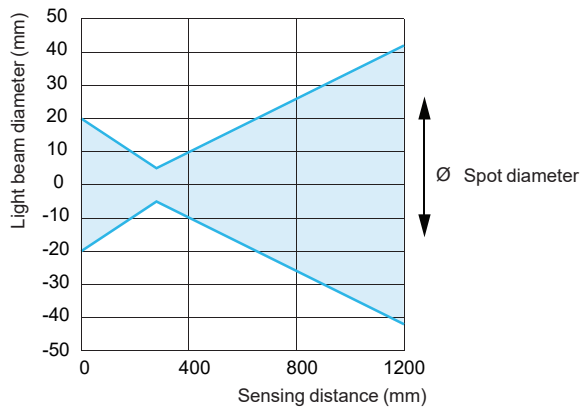
#### Light spot size: XUT7ABPX●●



#### Scanning properties: XUK8ABPXM12



#### Light beam diameter: XUK8ABPXM12



--- Min .distance white object (90%)/white background (90%) (mm)  
— Min .distance grey object (18%)/white background (90%) (mm)  
— Min .distance black object (6%)/white background (90%) (mm)



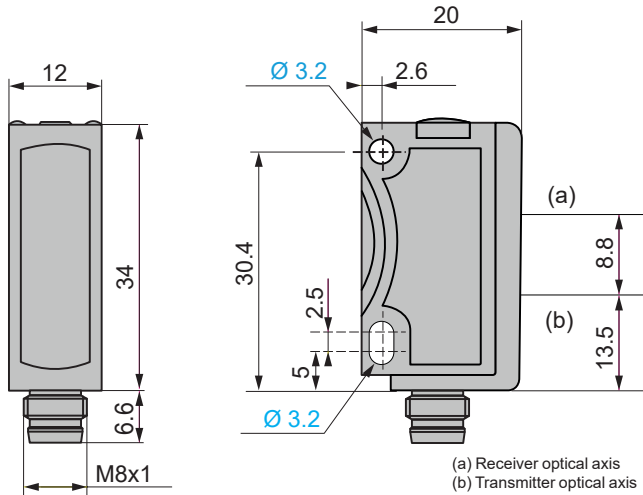
# Photo-electric sensors

XU application, for very dark object detection  
Miniature, sub-miniature and compact design, plastic

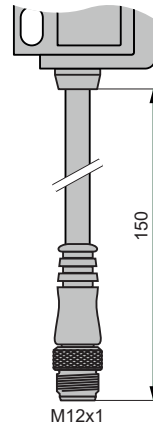
## Dimensions

### Miniature format: XUM

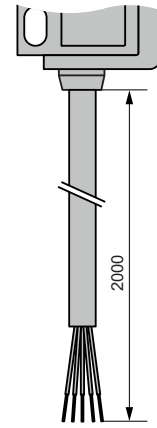
XUM7ABPXL2, XUM8ABAYM8



XUM8ABAYP015

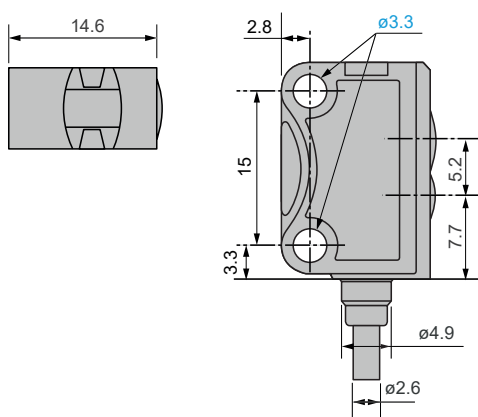


XUM7ABPXL2

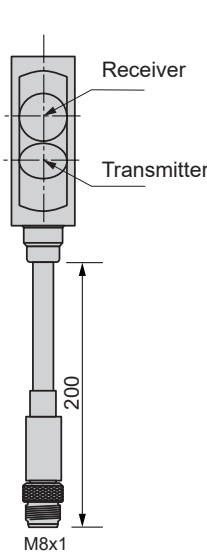


### Sub-miniature format: XUT

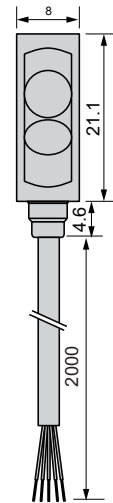
XUT7ABPXP02, XUT7ABPXL2, XUT8ABAYP02, XUT8ABAYL2



XUT●●●●●P02

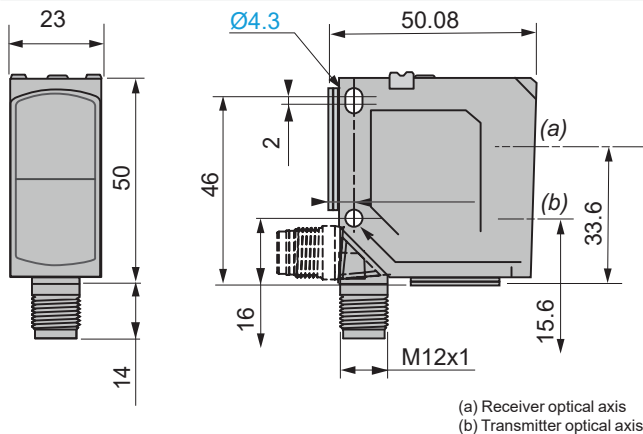


XUT●●●●●L2



### Compact format

XUK8ABPXM12



# Photo-electric sensors

XU application, for accurate detection  
Miniature and sub-miniature design, plastic



XUM5ALAYM8,  
XUM8ALAYM8,  
XUM9ALAYM8



XUT8ALAYP02,  
XUT8ALAYL2,  
XUT9ALXP02,  
XUT9ALPXL2



XUM5ALAYP015,  
XUM8ALAYP015,  
XUM9ALAYP015



XUM5ALAYL2,  
XUM8ALAYL2,  
XUM9ALAYL2

## Laser sensors

| Max./operating sensing distance (Sn)         | Function                                    | Output             | Connection               | Reference           | Weight kg |
|--|---|--------------------|--------------------------|---------------------|-----------|
| <b>Diffuse mode detection</b> <b>IO-Link</b> |   |                    |                          |                     |           |
| 250 mm/150 mm                                | NO/NC configuration via teach-in or IO-Link | Autodetect PNP/NPN | Pre-cabled (L = 2 m)     | <b>XUM5ALAYL2</b>   | 0 045     |
|  |   | Autodetect PNP/NPN | M8 connector (4-pin)     | <b>XUM5ALAYM8</b>   | 0 018     |
|  |   | Autodetect PNP/NPN | Pigtail M12 (L = 0.15 m) | <b>XUM5ALAYP015</b> | 0 026     |

## BGS mode detection

| <b>BGS mode detection</b> <b>IO-Link</b> |   |                    |                          |                     |       |
|--|---|--------------------|--------------------------|---------------------|-------|
| 150 mm/120 mm                            | NO/NC configuration via teach-in or IO-Link | Autodetect PNP/NPN | Pre-cabled (L = 2 m)     | <b>XUM8ALAYL2</b>   | 0 056 |
|  |   | Autodetect PNP/NPN | M8 connector (4-pin)     | <b>XUM8ALAYM8</b>   | 0 018 |
|  |   | Autodetect PNP/NPN | Pigtail M12 (L = 0.15 m) | <b>XUM8ALAYP015</b> | 0 027 |
| 100 mm/70 mm                             | NO/NC configuration via teach-in or IO-Link | Autodetect PNP/NPN | Pre-cabled (L = 2 m)     | <b>XUT8ALAYL2</b>   | 0 031 |
|  |   | Autodetect PNP/NPN | Pigtail M8 (L = 0.2 m)   | <b>XUT8ALAYP02</b>  | 0 019 |

## Reflex mode detection

|           |   |                    |                          |                     |       |
|-----------|---|--------------------|--------------------------|---------------------|-------|
| 15 m/13 m | NO/NC configuration via teach-in or IO-Link | Autodetect PNP/NPN | Pre-cabled (L = 2 m)     | <b>XUM9ALAYL2</b>   | 0 056 |
|           |   | Autodetect PNP/NPN | M8 connector (4-pin)     | <b>XUM9ALAYM8</b>   | 0 018 |
|           |   | Autodetect PNP/NPN | Pigtail M12 (L = 0.15 m) | <b>XUM9ALAYP015</b> | 0 027 |

## Reflex mode detection

| <b>Reflex mode detection</b> <b>IO-Link</b> |                                  |     |                        |                   |       |
|---|----------------------------------|-----|------------------------|-------------------|-------|
| 4 m/3 m                                     | NO/NC configuration via teach-in | PNP | Pre-cabled (L = 2 m)   | <b>XUT9ALPXL2</b> | 0 031 |
|   |                                  | PNP | Pigtail M8 (L = 0.2 m) | <b>XUT9ALXP02</b> | 0 019 |

## Accessories

### IO-Link Master (1)

See page 70 .

### Fixing and other accessories

See page 74 .

### Cabling accessories

See page 80 .

(1) Available 2<sup>nd</sup> quarter 2024.

| Characteristics                           |                               |                                       |  |
|---|-------------------------------|---------------------------------------|--|
| Sensor type                               |                               | XUM●ALAY●●                            |  |
| Product certifications                    |                               | CE, UKCA, cULus, Ecolab               |  |
| Connection                                | Connector                     | M8                                    |  |
|   | Pigtail for XUM5, XUM8, XUM9  | m                                     | Length = 0.15  |
|   | Pigtail for XUT8, XUT9        | m                                     | Length = 0.20  |
|   | Pre-cabled                    | m                                     | Length = 2   |
| Maximum sensing distance S <sub>max</sub> | Diffuse mode                  | XUM5                                  | mm 1 . 250   |
|   | Background suppression system | XUM8                                  | mm 4 . 150   |
|   |                               | XUT8                                  | mm 6 . 70  |
|   | Reflex mode system            | XU●9                                  | mm 0.1 . .13   |
| Detection light beam colour               |                               | Laser class 1, red                    |  |
| Degree of protection                      | Conforming to IEC 60529       | IP67 for XUM5, XUT8, XUM8, XUT9, XUM9 |  |
|   | Conforming to DIN 40050-9     | IP69K for XUM5, XUM8, XUM9            |  |
| Storage temperature                       |                               | °C                                    | -20 . +80  |
| Operating temperature                     | XUM5, XUM8, XUM9              | °C                                    | -20 . +60  |
|   | XUT8, XUT9                    | °C                                    | -20 . +50  |
| Materials                                 | Case for XUM5, XUM8, XUM9     | ABS                                   |  |
|   | Case for XUT8, XUT9           | PUR                                   |  |
|   | Lens                          | PMMA                                  |  |
|   | Front                         | PMMA                                  |  |
|   | Cable                         | PVC                                   |  |
| Rated supply voltage                      |                               | V                                     | 12 . 24 ---  |
| Voltage limits (including ripple)         |                               | V                                     | 10 . 30 ---  |
| Current consumption, no-load              | XUM5, XUM8, XUM9              | mA                                    | ≤ 30   |
|   | XUT8, XUT9                    | mA                                    | ≤ 12   |
| Switching capacity                        | XUM5, XUM8, XUM9              | mA                                    | ≤ 100  |
|   | XUT8, XUT9                    | mA                                    | ≤ 50   |
| Maximum switching frequency               | XUM5, XUM9                    | Hz                                    | 4000   |
|   | XUT8, XUM8, XUT9              | Hz                                    | 1000   |
| Delays                                    | First-up                      | ms                                    | < 300  |
|   | Response                      | µs                                    | ≤ 125 for XUM5<br>125 for XUM9<br>500 for XUT8, XUT9<br>≤ 500 for XUM8 |
|   | Recovery                      | ms                                    | < 300  |

# Photo-electric sensors

XU application, for accurate detection  
Miniature and sub-miniature design, plastic

## Wiring schemes

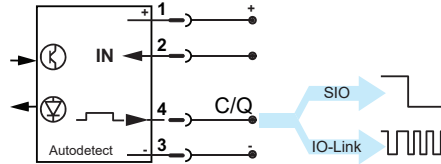
### Laser sensors

#### M8/M12 connector - 4-pin - IO-Link

| Pin | Signal | Definition                     |
|-----|--------|--------------------------------|
| 1   | +      | + 24 V $\overline{\text{---}}$ |
| 2   | IN     | + = NO<br>- = NC<br>Open = NO  |
| 3   | -      | 0 V                            |
| 4   | Q      | Switching signal (SIO)         |
|     | C      | Communication (IO-Link)        |

#### Autodetect PNP/NPN or by IO-Link

XUM5ALAYM8, XUM5ALAYP015, XUM8ALAYM8, XUM8ALAYP015,  
XUT8ALAYP02, XUM9ALAYM8, XUM9ALAYP015



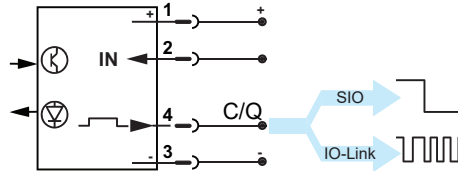
Note: IODD IO-Link files available on the website [www.telemecaniquesensors.com/iolink](http://www.telemecaniquesensors.com/iolink)

#### Pre-cabled - 4-wire - IO-Link

| Pin | Signal | Definition  |
|-----|--------|---|
| 1   | +      | + 24 V $\overline{\text{---}}$                    |
| 2   | IN     | + = NO<br>- = NC<br>Open = NO                     |
| 3   | -      | 0 V $\overline{\text{---}}$                       |
| 4   | C      | Switching signal (SIO)<br>Communication (IO-Link) |

#### Autodetect PNP/NPN or by IO-Link

XUM5ALAYL2, XUM8ALAYL2, XUT8ALAYL2, XUM9ALAYL2



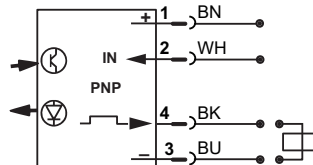
Note: IODD IO-Link files available on the website [www.telemecaniquesensors.com/iolink](http://www.telemecaniquesensors.com/iolink)

#### M8 connector - 4-pin

| Pin | Signal | Definition                     |
|-----|--------|--------------------------------|
| 1   | +      | + 24 V $\overline{\text{---}}$ |
| 2   | IN     | + = NC<br>- = NO<br>Open = NO  |
| 3   | -      | 0 V $\overline{\text{---}}$    |
| 4   | Q      | Switching signal               |

#### PNP

XUT9ALPXL2, XUT9ALPXP02



Note: IODD IO-Link files available on the website [www.telemecaniquesensors.com/iolink](http://www.telemecaniquesensors.com/iolink)

# Photo-electric sensors

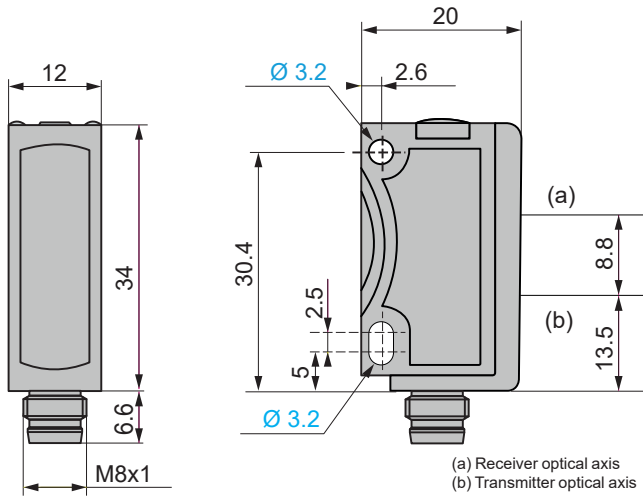
XU application, for accurate detection

Miniature and sub-miniature design, plastic

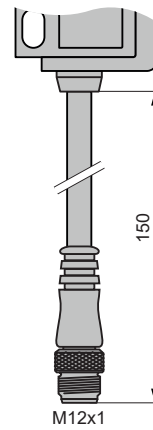
## Dimensions

### Miniature format: XUM

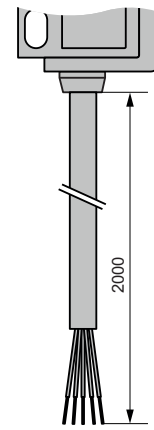
XUM●ALAYM8



XUM●ALAYP015

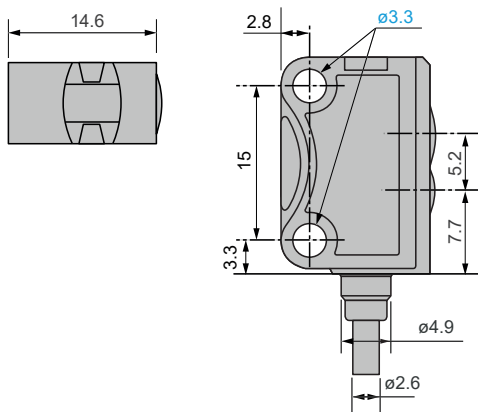


XUM●ALAYL2

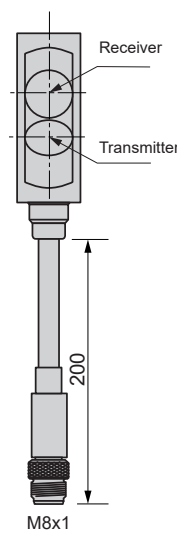


### Sub-miniature format: XUT

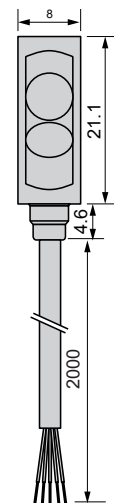
XUT●●●●●2



XUT●●●●●P02



XUT●●●●●L2



# Photo-electric sensors

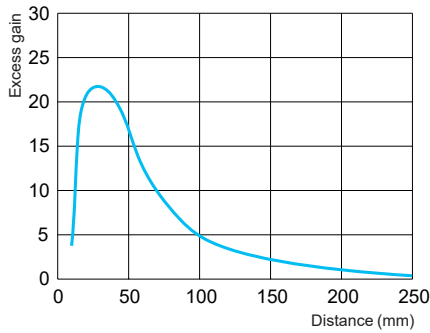
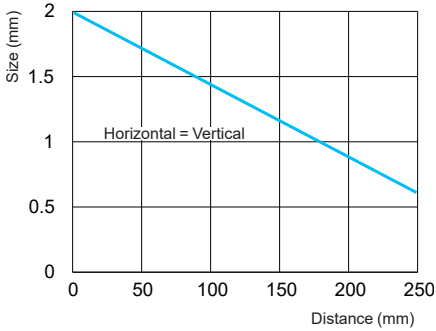
XU application, for accurate detection  
Miniature and sub-miniature design, plastic

## Detection curves

### Laser sensor, diffuse mode detection

Light spot size: XUM5ALAY●●

Excess gain: XUM5ALAY●●

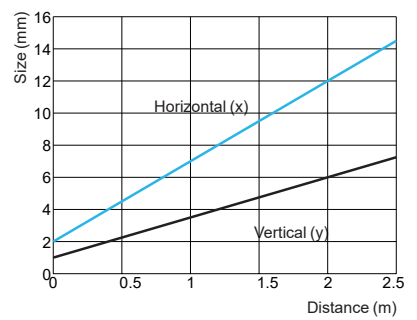
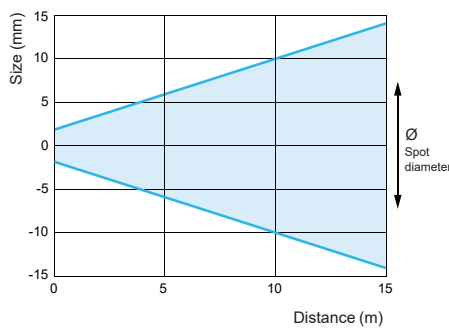
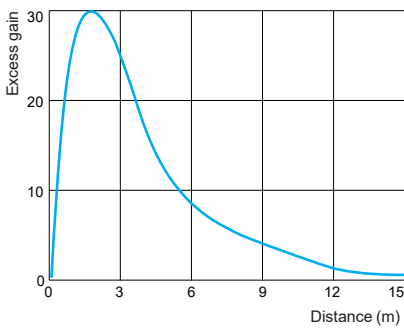


### Laser sensor, reflex mode detection: XU●9AL●●

Functional reserves: XUM9ALAY●●

Light spot diameter: XUM9ALAY●●

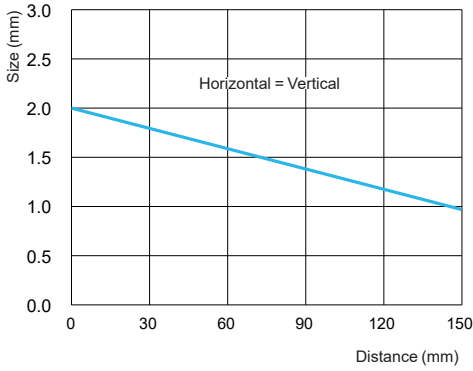
Light spot size: XUT9ALPX●●



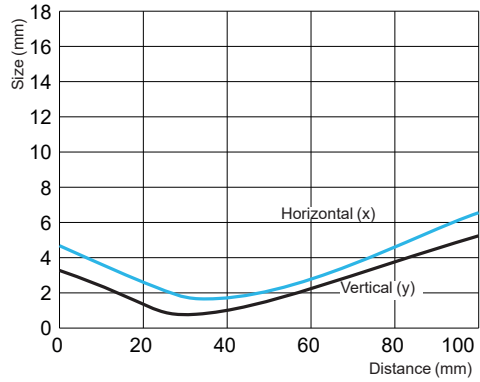
## Detection curves

Laser sensor, background suppression mode

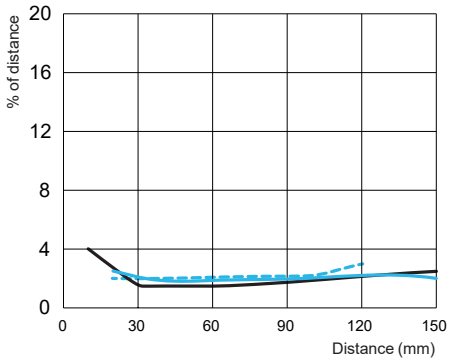
Light spot size: XUM8ALAY●●



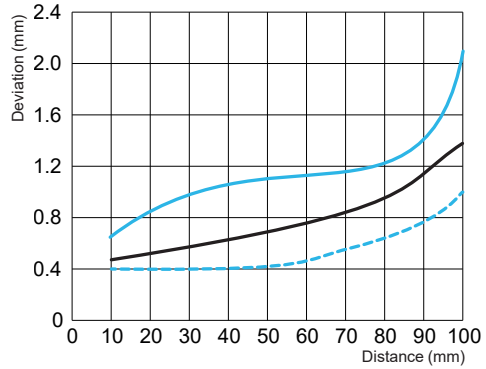
Light spot size: XUT8ALAY●●



Scanning properties: XUM8ALAY●●



Scanning properties: XUT8ALAY●●



- Min .distance white object (90%)/white background (90%) (mm)
- Min .distance grey object (18%)/white background (90%) (mm)
- Min .distance black object (6%)/white background (90%) (mm)

# Photo-electric sensors

XU application, for colour object detection  
Compact and miniature design, plastic



XUKCBSAYM12



XUKCBLAYM12



XUMRACAYM8

## Colour sensors IO-Link

| Max./operating sensing distance (Sn) | Function                                    | Output             | Connection               | Reference          | Weight kg |
|--------------------------------------|---|--------------------|--------------------------|--------------------|-----------|
| <b>White light, multiple colour</b>  |   |                    |                          |                    |           |
| 60 mm/30 mm                          | NO/NC configuration                         | Autodetect PNP/NPN | M12 connector (3-output) | <b>XUKCBSAYM12</b> | 0 017     |
| 150 mm/120 mm                        | via teach-in or IO-Link                     | Autodetect PNP/NPN | M12 connector (3-output) | <b>XUKCBLAYM12</b> | 0 017     |
| <b>RGB light, unique colour</b>      |   |                    |                          |                    |           |
| 15 mm/12 mm                          | NO/NC configuration via teach-in or IO-Link | Autodetect PNP/NPN | M8 connector (4-pin)     | <b>XUMRACAYM8</b>  | 0 018     |

## Accessories

### IO-Link Master (1)

See page 70 .

### Fixing and other accessories

See page 74 .

### Cabling accessories

See page 80 .

(1) Available 2<sup>nd</sup> quarter 2024.

## Characteristics

| Sensor type                       |             |                           |               | XUKCB●AYM12     | XUMRACAYM8              |             |
|-----------------------------------|-------------|---------------------------|---------------|-----------------|-------------------------|-------------|
| Product certifications            |             |                           |               | CE, UKCA, cULus | CE, UKCA, cULus, Ecolab |             |
| Connection                        |             | Connector                 |               | M12 (5-pin)     | M8 (4-pin)              |             |
| Maximum sensing distance Smax     | White light | XUKC short                | mm            | 60              | –                       |             |
|                                   |             | XUKC long                 | mm            | 150             | –                       |             |
|                                   | RGB light   | XUMR                      | mm            | –               | 15                      |             |
| Detection light beam colour       |             |                           |               | White           | Red, green and blue     |             |
| Degree of protection              |             | Conforming to IEC 60529   |               | IP67            |                         |             |
|                                   |             | Conforming to DIN 40050-9 |               | IP69K           |                         |             |
| Storage temperature               |             |                           |               | °C              | -20 . +80               |             |
| Operating temperature             |             |                           |               | °C              | -20 . +55               |             |
| Materials                         | Case        |                           | Zinc die-cast |                 | ABS                     |             |
|                                   | Lens        |                           | PMMA          |                 | PMMA                    |             |
|                                   | Front       |                           | PMMA          |                 | PMMA                    |             |
|                                   | Cable       |                           |               |                 |                         |             |
| Rated supply voltage              |             |                           |               | V               | 24 ---                  | 12 . 24 --- |
| Voltage limits (including ripple) |             |                           |               | V               | 18 . 30                 | 10 . 30     |
| Current consumption, no-load      |             |                           |               | mA              | ≤ 60                    | ≤ 30        |
| Switching capacity                |             |                           |               | mA              | ≤ 100                   |             |
| Maximum switching frequency       |             |                           |               | Hz              | 3000                    | 2500        |
| Delays                            | First-up    |                           | ms            | 300             |                         |             |
|                                   | Response    |                           | µs            | ≤ 180           | ≤ 200                   |             |
|                                   | Recovery    |                           | ms            | < 300           | –                       |             |



## Wiring schemes

### Colour detection system

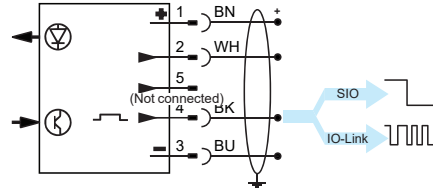
#### M12 connector - 5-pin - IO-Link



| Pin | Signal | Definition                    |
|-----|--------|-------------------------------|
| 1   | +      | + 24 V $\overline{\text{DC}}$ |
| 2   | IN     | + = NO<br>- = NC<br>Open = NO |
| 3   | -      | 0 V $\overline{\text{DC}}$    |
| 4   | Q      | Switching signal (SIO)        |
| C   |        | Communication (IO-Link)       |

#### Autodetect PNP/NPN or by IO-Link

#### XUKCB●AYM12, XUMRACAYM8

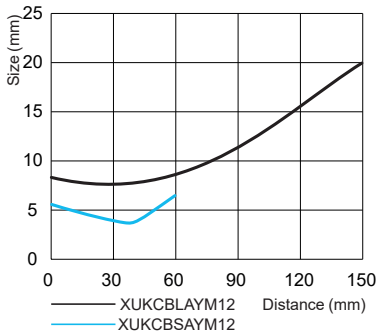


Note: IODD IO-Link files available on our website [www.telemecaniquesensors.com/iolink](http://www.telemecaniquesensors.com/iolink)

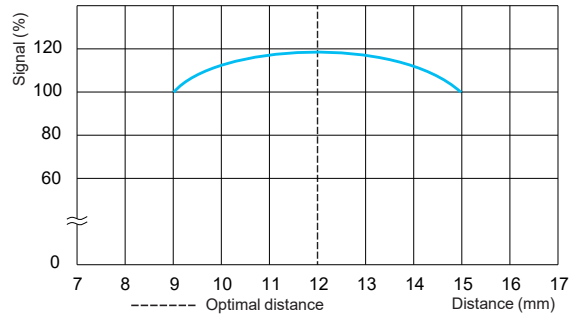
## Detection curves

### Colour detection system

#### Light spot size: XUKCBSAYM12 and XUKCBLAYM12

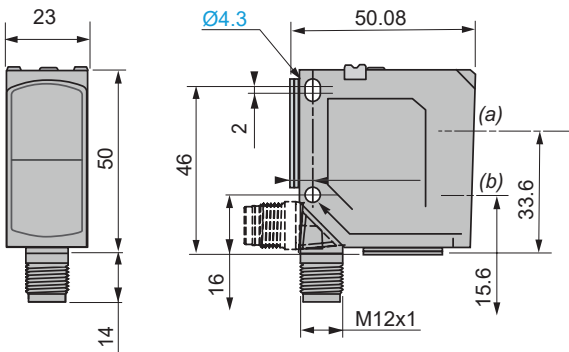


#### Signal process: XUMRACAYM8



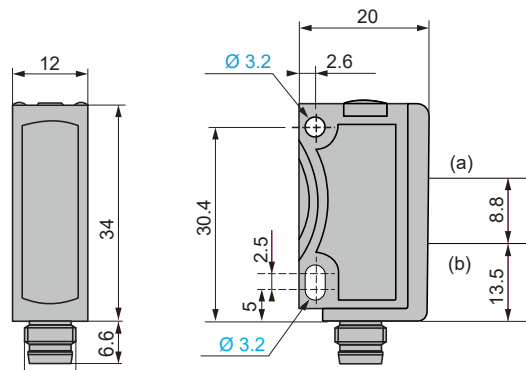
## Dimensions

#### Compact format: XUKCB●AYM12



(a) Receiver optical axis  
(b) Transmitter optical axis

#### Miniature format: XUMRACAYM8



(a) Receiver optical axis  
(b) Transmitter optical axis

# Photo-electric sensors

XU application, for transparent object detection  
Miniature, sub-miniature and compact design, plastic



XUMTARAYM8,  
XUM7ABPXM8,  
XUM8ABAYM8



XUMTARAYL2,  
XUMTARAYP015,  
XUM7ABPXL2,  
XUM8ABAYP015



XUT8ABAYL2,  
XUT8ABAYP02,  
XUT7ABPXL2,  
XUT7ABPXP02



XUK8ABPXM12

## Sensors for transparent object detection

| Max./operating sensing distance (Sn)   | Function                                    | Output             | Connection               | Reference           | Weight kg |
|--|---|--------------------|--------------------------|---------------------|-----------|
| <b>Polarised reflex system IO-Link</b> |   |                    |                          |                     |           |
| 2 m/2 m                                | NO/NC configuration via teach-in or IO-Link | Autodetect PNP/NPN | Pre-cabled (L = 2 m)     | <b>XUMTARAYL2</b>   | 0 056     |
|  |   | Autodetect PNP/NPN | M8 connector (4-pin)     | <b>XUMTARAYM8</b>   | 0 018     |
|  |   | Autodetect PNP/NPN | Pigtail M12 (L = 0.15 m) | <b>XUMTARAYP015</b> | 0 027     |

## BGS mode detection, adjustable IO-Link

|               |   |                    |                          |                     |       |
|---------------|---|--------------------|--------------------------|---------------------|-------|
| 200 mm/200 mm | NO/NC configuration via teach-in or IO-Link | Autodetect PNP/NPN | M8 connector (4-pin)     | <b>XUM8ABAYM8</b>   | 0 014 |
|               |   | Autodetect PNP/NPN | Pigtail M12 (L = 0.15 m) | <b>XUM8ABAYP015</b> | 0 027 |
| 100 mm/100 mm | NO/NC configuration via teach-in or IO-Link | Autodetect PNP/NPN | Pigtail M8 (L = 0.2 m)   | <b>XUT8ABAYP02</b>  | 0 019 |
|               |   | Autodetect PNP/NPN | Pre-cabled (L = 2 m)     | <b>XUT8ABAYL2</b>   | 0 031 |

## BGS mode detection, not adjustable

|              |                                  |     |                        |                    |       |
|--------------|----------------------------------|-----|------------------------|--------------------|-------|
| 100 mm/80 mm | NO/NC configuration via teach-in | PNP | Pre-cabled (L = 2 m)   | <b>XUM7ABPXL2</b>  | 0 056 |
|              |                                  | PNP | M8 connector (4-pin)   | <b>XUM7ABPXM8</b>  | 0 017 |
| 50 mm/50 mm  | NO/NC configuration via teach-in | PNP | Pre-cabled (L = 2 m)   | <b>XUT7ABPXL2</b>  | 0 031 |
|              |                                  | PNP | Pigtail M8 (L = 0.2 m) | <b>XUT7ABPXP02</b> | 0 022 |

## BGS mode detection, compact IO-Link

|                 |   |     |                       |                    |       |
|-----------------|---|-----|-----------------------|--------------------|-------|
| 1200 mm/1200 mm | NO/NC configuration via teach-in or IO-Link | PNP | M12 connector (4-pin) | <b>XUK8ABPXM12</b> | 0 046 |
|-----------------|---|-----|-----------------------|--------------------|-------|

## Accessories

### IO-Link Master (1)

See page 70 .

### Fixing and other accessories

See page 74 .

### Cabling accessories

See page 80 .

(1) Available 2<sup>nd</sup> quarter 2024.

| Characteristics                    |                                 |                         |                              |                               |  |
|------------------------------------|---------------------------------|-------------------------|------------------------------|-------------------------------|--|
| Sensor type                        |                                 | XUMTARAY●●              | XU●7ABP●●                    | XUK8ABP●●                     | XU●8ABAY●●                                       |
| Product certifications             |                                 | CE, UKCA, cULus, Ecolab |                              |                               |  |
| Connection                         | Connector                       | M8                      | M8 (for XUM7)                | M12                           | M8   |
|                                    | Pigtail                         | Length = 0.15 m         | Length = 0.2 m               | –                             | L = 0.15 m (XUM8)<br>L = 0.2 m (XUT8)            |
|                                    | Pre-cabled                      | Length = 2 m            | Length = 2 m                 | –                             | Length = 2 m                                     |
| Maximum sensing distance $S_{max}$ | Polarised reflex system XUMTA   | m                       | 0.2                          | –                             | –  |
|                                    | BGS system, not adjustable XUM7 | mm                      | –                            | 0.80                          | –  |
|                                    | BGS system, adjustable XU●8     | mm                      | –                            | –                             | White = 3.1200<br>Grey = 5.750<br>Black = 10.600 |
|                                    | BGS system, blue light XUT7     | mm                      | –                            | 2.50                          | –  |
| Detection light beam colour        |                                 | Red (LED)               | Blue (LED)                   | Blue (LED)                    | Blue (LED)                                       |
| Degree of protection               | Conforming to IEC 60529         | IP67                    |                              |                               |  |
|                                    | Conforming to DIN 40050-9       | IP69K (except XUT)      |                              |                               |  |
| Storage temperature                |                                 | °C                      | -20 . +80                    |                               |  |
| Operating temperature              |                                 | °C                      | -20 . +60                    | -20 . +50                     | -20 . +60  |
| Materials                          | Case                            | ABS                     | ABS for XUM7<br>PUR for XUT7 | ABS/PC                        | ABS for XUM8<br>PUR for XUT8                     |
|                                    | Lens                            | PMMA                    | PMMA                         | PMMA                          | PMMA   |
|                                    | Front                           | PMMA                    | PMMA                         | PMMA                          | PMMA   |
|                                    | Cable                           | PVC                     | PVC                          | –                             | PVC  |
| Rated supply voltage               |                                 | V                       | 24 ---                       | 12 . 24 ---                   | 12 . 24 ---                                      |
| Voltage limits (including ripple)  |                                 | V                       | 10 . 30                      |                               |  |
| Current consumption, no-load       |                                 | mA                      | ≤ 30                         | ≤ 30 for XUM<br>≤ 20 for XUT  | ≤ 30   |
| Switching capacity                 |                                 | mA                      | ≤ 100                        | ≤ 100 for XUM<br>≤ 50 for XUT | ≤ 100  |
| Maximum switching frequency        |                                 | Hz                      | 1000                         | 1000                          | 600  |
| Delays                             | First-up                        | ms                      | < 300                        |                               |  |
|                                    | Response                        | µs                      | 500                          | 830                           | 500 for XUM<br>700 for XUT                       |
|                                    | Recovery                        | ms                      | < 300                        |                               |  |

## Wiring schemes

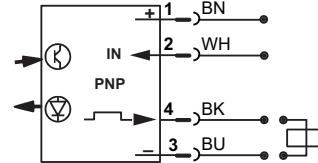
### Polarised reflex system

#### M8/M12 connector - 4-pin - or pre-cabled - 4-wire IO-Link

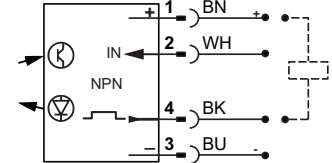
| Pin | Signal | Definition                     |
|-----|--------|--------------------------------|
| 1   | +      | + 24 V $\overline{\text{---}}$ |
| 2   | IN     | + = NO<br>- = NC<br>Open = NO  |
| 3   | -      | 0 V $\overline{\text{---}}$    |
| 4   | Q      | Switching signal (SIO)         |
|     | C      | Communication (IO-Link)        |

#### PNP

XUMTARAYL2, XUMTARAYM8, XUMTARAYP015



#### NPN



Note: IO-Link files available on the website [www.telemecaniquesensors.com/iolink](http://www.telemecaniquesensors.com/iolink)

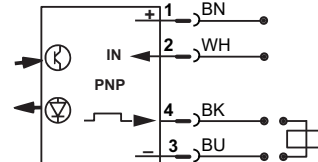
### BGS mode detection, adjustable IO-Link

#### M8/M12 connector - 4-pin - or pre-cabled - 4-wire

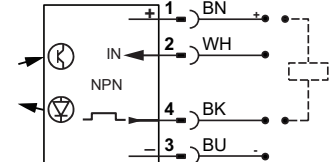
| Pin | Signal | Definition                     |
|-----|--------|--------------------------------|
| 1   | +      | + 24 V $\overline{\text{---}}$ |
| 2   | IN     | + = NO<br>- = NC<br>Open = NO  |
| 3   | -      | 0 V $\overline{\text{---}}$    |
| 4   | Q      | Switching signal (SIO)         |
|     | C      | Communication (IO-Link)        |

#### PNP

XUM8ABAYM8, XUM8ABAYP015, XUT8ABAYP02, XUT8ABAYL2



#### NPN



Note: IO-Link files available on the website [www.telemecaniquesensors.com/iolink](http://www.telemecaniquesensors.com/iolink)

### BGS mode detection, not adjustable

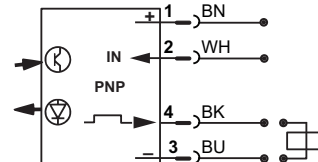
#### M8 connector - 4-pin - or pre-cabled - 4-wire

| Pin | Signal | Definition                     |
|-----|--------|--------------------------------|
| 1   | +      | + 24 V $\overline{\text{---}}$ |
| 2   | IN     | + = NC<br>- = NO<br>Open = NO  |
| 3   | -      | 0 V $\overline{\text{---}}$    |
| 4   | Q      | Switching signal               |

#### PNP

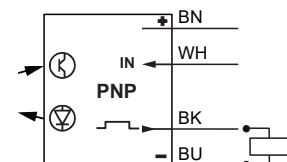
##### M8 connector

XUM7ABPXM8, XUT7ABPXP02



##### Pre-cabled

XUM7ABPXL2, XUT7ABPXL2



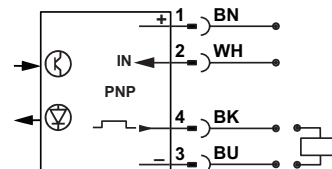
Note: IO-Link files available on the website [www.telemecaniquesensors.com/iolink](http://www.telemecaniquesensors.com/iolink)

#### M12 connector - 4-pin

| Pin | Signal | Definition                     |
|-----|--------|--------------------------------|
| 1   | +      | + 24 V $\overline{\text{---}}$ |
| 2   | IN     | + = NC<br>- = NO<br>Open = NO  |
| 3   | -      | 0 V $\overline{\text{---}}$    |
| 4   | Q      | Switching signal               |

#### PNP

XUK8ABPXM12



Note: IO-Link files available on the website [www.telemecaniquesensors.com/iolink](http://www.telemecaniquesensors.com/iolink)

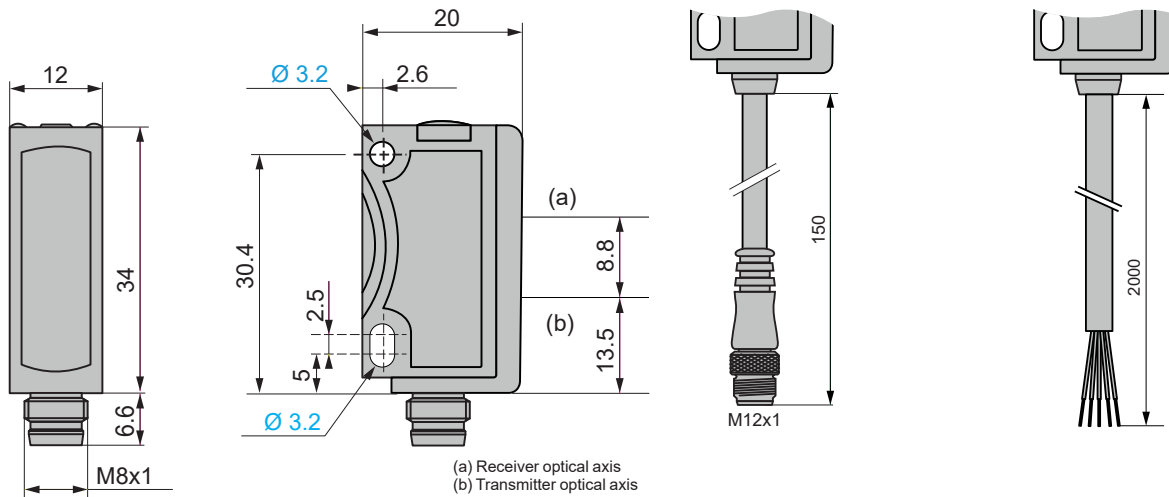
## Dimensions

### Miniature format: XUM

XUM●A●AYM8, XUM●A●AYL2, XUM●A●AYP015, XUM●ABPX●●

XUM●●●●●●●●P015

XUM●●●●●●●●L2

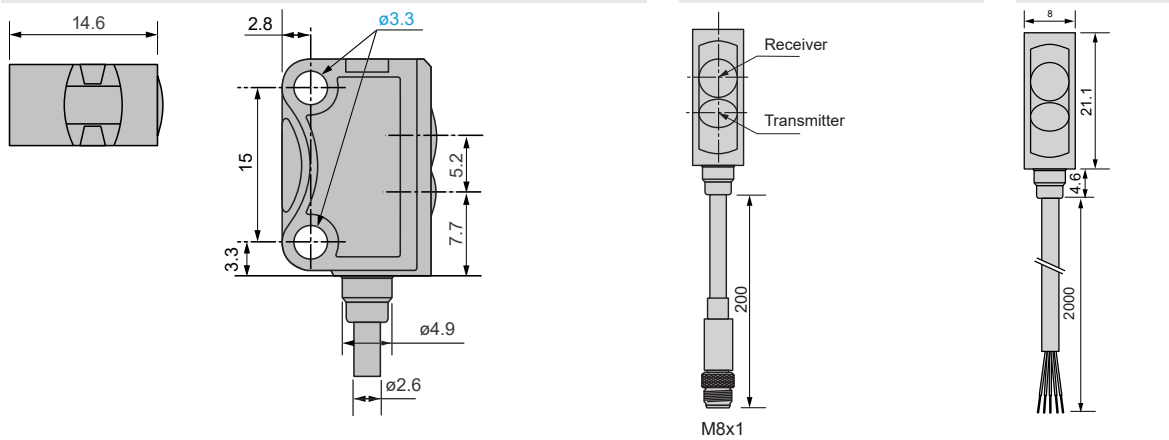


### Sub-miniature format: XUT

XUT7ABXP02, XUT7ABPX2, XUT8ABAYL2, XUT8ABAYP02

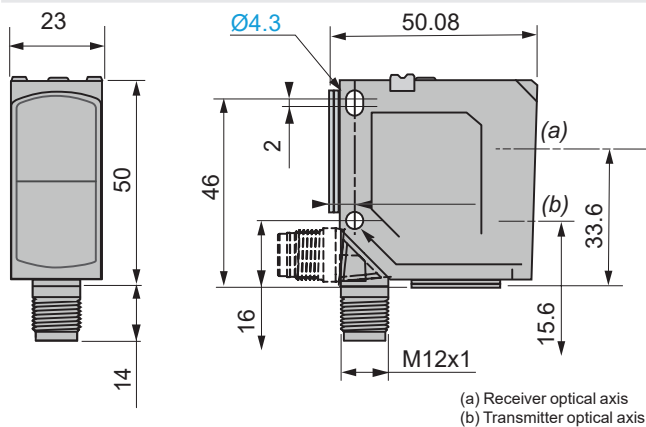
XUT●●●●●●●●P02

XUT●●●●●●●●L2



### Compact format: XUK

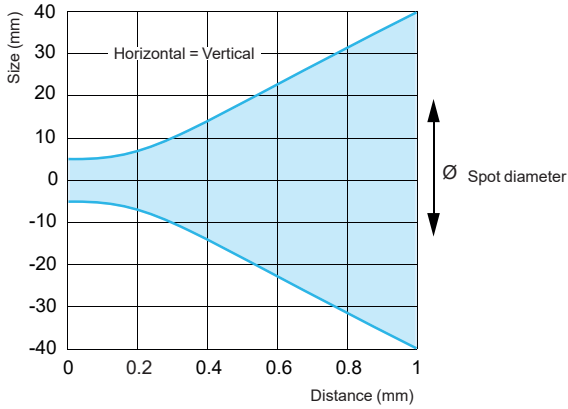
XUK8ABPXM12



## Detection curves

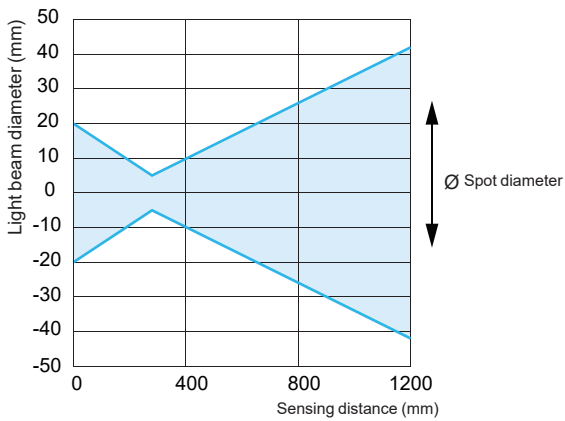
### Polarised reflex

Light spot diameter: XUMTARAY●●



### Background suppression mode

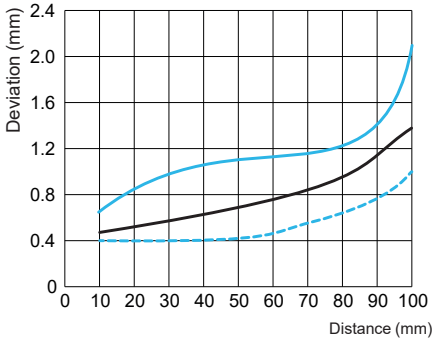
Light spot diameter: XUK8ABPXM12



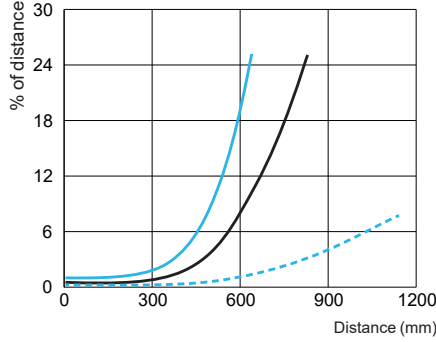
## Detection curves

### Background suppression mode

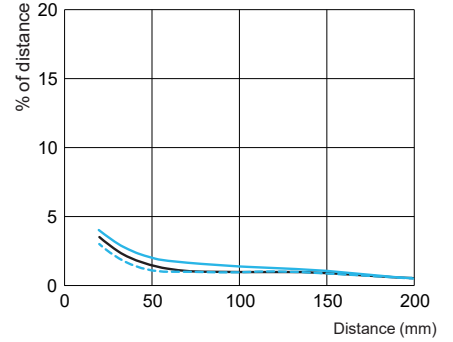
Scanning properties: XUT8ABAY●●



Scanning properties: XUK8ABPXM12

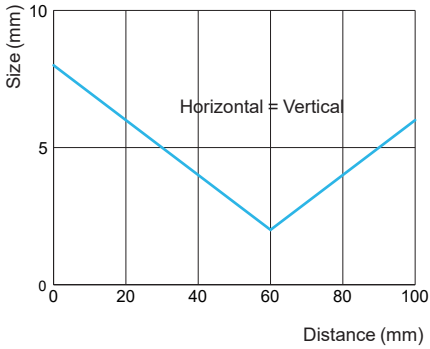


Scanning properties: XUM8ABAY●●

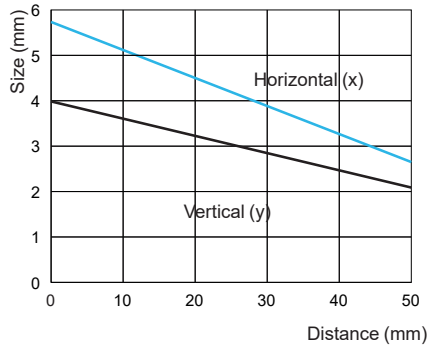


--- Min .distance white object (90%)/white background (90%) (mm)  
--- Min .distance grey object (18%)/white background (90%) (mm)  
--- Min .distance black object (6%)/white background (90%) (mm)

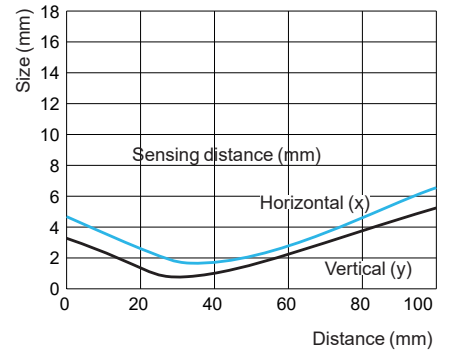
Light spot size: XUM7ABPX●●



Light spot size: XUT7ABPX●●



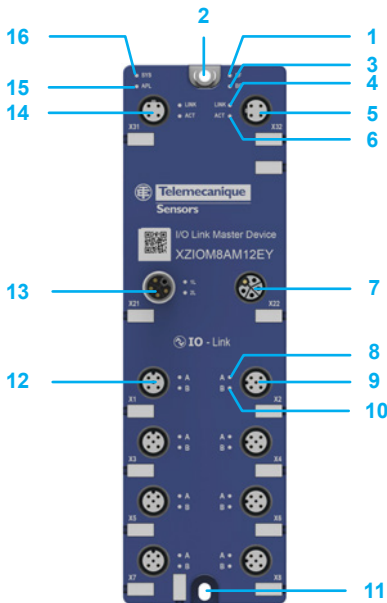
Light spot size: XUT8ABAY●●



### IO-Link



XZIO8AM12PY



- 1 For Ethernet, module status LED (MS)  
For PROFINET, system error LED (SF)
- 2 Fixing hole and functional earth (FE)
- 3 For Ethernet, network status LED (NS)  
For PROFINET, bus failure LED (BF)
- 4 Link LED X32
- 5 Ethernet interface, M12, D-coded, port 2
- 6 Activity LED X32
- 7 Power Out
- 8 IO-Link status LED, port 2, channel A
- 9 IO-Link, port 2, M12, A-coded
- 10 IO-Link status LED, port 2, channel B
- 11 Fixing hole
- 12 IO-Link, port 1, M12, A-coded
- 13 Power In
- 14 Ethernet interface, M12, D-coded, port 1
- 15 Application status LED
- 16 System status LED

### Presentation

IO-Link is a point-to-point network communication protocol dedicated to sensors and actuators offering advantages such as increased productivity, simplified integration and reduced inventory .

It enables:

- Simplified connection of sensors and actuators to the upper-level control and monitoring system of an automated line
- Advanced diagnostic functions, through continuous monitoring of critical parameters such as signal quality and sensor status
- Reduced commissioning time due to fewer cables and hot swappable devices
- Integration with third-party devices, thanks to multiple fieldbus protocol support (PROFINET, Ethernet/IP)

Telemecanique Sensors offers a wide choice of IO-Link conformant devices, with various detection systems such as thru-beam, diffuse, polarised reflex, etc.

### IO-Link system

An IO-Link system consists of the following components:

- IO-Link Master
- IO-Link devices (sensors, RFID readers, valves, motor starters, I/O modules)
- Cabling
- Engineering tool for integration and configuration of IO-Link devices (Simply Config IO-Link Master software (2))

### Description

#### IO-Link Masters

IO-Link Masters serve to capture digital inputs and outputs being conveyed between the PLC and the IO-Link devices .

Two types of IO-Link Master are available:

- **XZIO8AM12EY** Ethernet Master, for devices connected to an Ethernet/IP network
- **XZIO8AM12PY** PROFINET Master, for devices connected to a PROFINET network

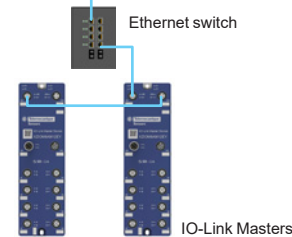
An IO-Link Master enables:

- On the sensor side: IODD file management, sensor configuration, port diagnosis
- On the Master side: Master configuration, firmware update, factory reset, Master diagnosis, MQTT setting

### Example of installation in line or star topology

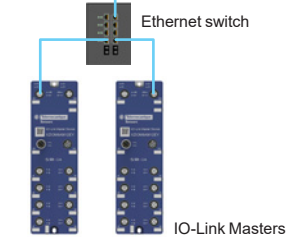
#### Line topology

Ethernet/IP-Scanner/  
PROFINET I/O controller



#### Star topology

Ethernet/IP-Scanner/  
PROFINET I/O controller



(1) Available 2<sup>nd</sup> quarter 2024.

(2) Simply Config IO-Link software can be downloaded from [our website](#).



### IO-Link Master devices

| Description    | Protocol    | Power consumption           | Number of ports | Connector | Reference    | Weight kg |
|----------------|-------------|-----------------------------|-----------------|-----------|--------------|-----------|
| IO-Link Master | Ethernet/IP | 24V $\overline{\text{---}}$ | 8 class A       | M12       | XZIOM8AM12EY | 0 405     |
|                | PROFINET    | 24V $\overline{\text{---}}$ | 8 class A       | M12       | XZIOM8AM12PY | 0 405     |

### IO-Link power cables

| Description  | Type of connector | End fittings | Length m                 |                     | Reference           | Weight kg |
|--|-------------------|--------------|--------------------------|---------------------|---------------------|-----------|
| Single-ended, pre-wired, L-coded power cable (PUR) | Female            | 5-pin (4+FE) | 2                        | 1 5 mm <sup>2</sup> | XZCPK75DL2          | 0 255     |
|  |                   |              | 5                        | 1 5 mm <sup>2</sup> | XZCPK75DL5          | 0 585     |
|  |                   |              | 2                        | 1 5 mm <sup>2</sup> | XZCPK75CL2          | 0 255     |
|  |                   |              | 5                        | 1 5 mm <sup>2</sup> | XZCPK75CL5          | 0 585     |
|  |                   |              | Jumper power cable (PUR) | Male/<br>Female     | M12 5-pin/M12 5-pin | 2         |
|  |                   |              | 5                        | 1 5 mm <sup>2</sup> | XZCR25K25DL5        | 0 615     |
|  |                   |              | 2                        | 1 5 mm <sup>2</sup> | XZCR26K26CL2        | 0 285     |
|  |                   |              | 5                        | 1 5 mm <sup>2</sup> | XZCR26K26CL5        | 0 615     |

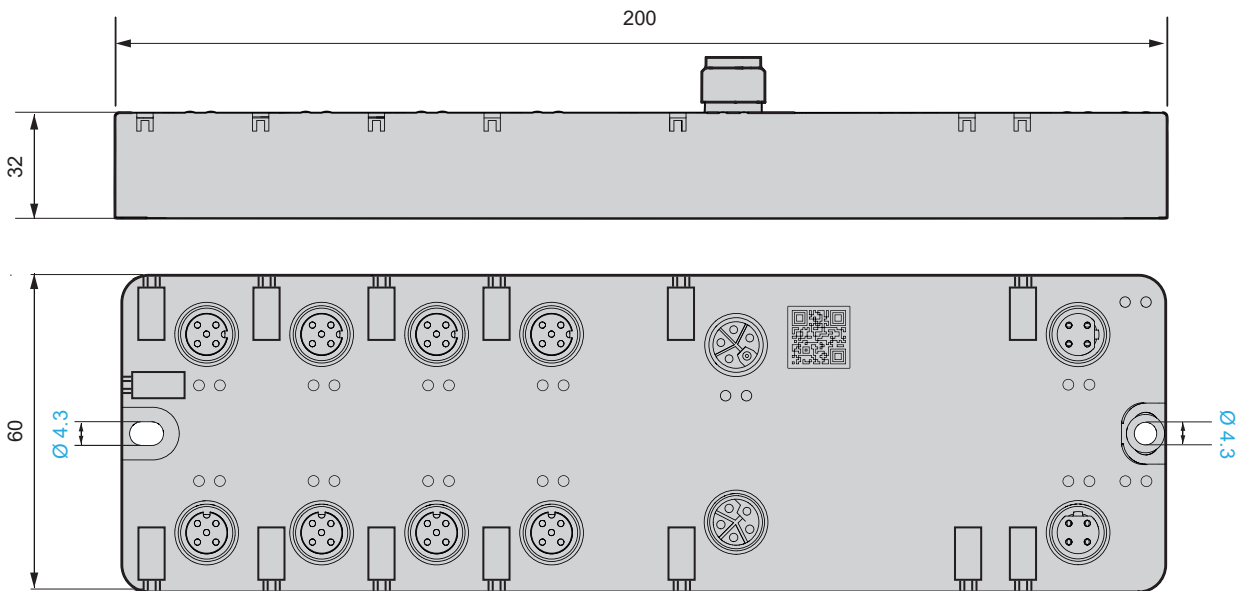


XZCPK75L

XZCR26K26L

### Dimensions

XZIOM8AM12Y



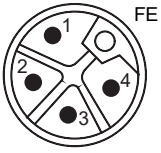
| Product specifications                |                                    |                            |   |                         |                              |
|---------------------------------------|------------------------------------|----------------------------|---|-------------------------|------------------------------|
| Reference                             |                                    | XZIOM8AM12EY               |   | XZIOM8AM12PY            |                              |
| <b>Function</b>                       |                                    | Ethernet/IP IO-Link Master |   | ProfiNet IO-Link Master |                              |
| <b>Power supply 1L, 2L</b>            | Supply voltage 1L, 2L              | <b>V</b>                   | 24, -25%/+30% (18...31.2)   |                         |                              |
|                                       | Low voltage warning 1L             | <b>V</b>                   | 18.0 (± 5% at 25 °C) notification on, 18.3 (± 5% at 25 °C) notification off   |                         |                              |
|                                       | Overvoltage warning 1L             | <b>V</b>                   | 30.0 (± 5% at 25 °C) notification on, 29.7 (± 5% at 25 °C) notification off   |                         |                              |
|                                       | Current consumption                | <b>A</b>                   | 1L: 0.1 . 16 (at 24 V DC)<br>2L: 0.01 . 16 (at 24 V DC)                       |                         |                              |
|                                       | Current consumption of supply port | <b>A</b>                   | Max. 16   |                         |                              |
|                                       | Conductor cross-section            | <b>mm<sup>2</sup></b>      | 0.5...2.5   |                         |                              |
|                                       | Connector                          |                            | PWR IN: M12 L-coded, 5-pin, plug<br>PWR OUT: M12 L-coded, 5-pin, socket       |                         |                              |
|                                       | Torque                             | <b>Nm</b>                  | 1.0   |                         |                              |
|                                       | Reverse polarity protection        |                            | Yes   |                         |                              |
|                                       | Power supply                       | <b>V</b>                   | 24 --- PELV (Protective Extra Low Voltage) or SELV (Safety Extra Low Voltage) |                         |                              |
| <b>Total load</b>                     | Maximum total load current         | <b>A</b>                   | 15.7  |                         |                              |
| <b>Device</b>                         | Dimensions (L x W x H)             | <b>mm</b>                  | 200 x 60 x 32   |                         |                              |
|                                       | Weight                             | <b>g</b>                   | 404   |                         |                              |
|                                       | Housing                            |                            | Plastic   |                         |                              |
|                                       | Potting                            |                            | Solvent-free electro-casting resin system based on 2 K polyurethane           |                         |                              |
|                                       | Degree of protection               |                            | IP67 (EN 60529)   |                         |                              |
|                                       | Protection class                   |                            | III (EN 61140)  |                         |                              |
|                                       | Mounting                           |                            | Screw mounting on carrier, 2x M4  |                         |                              |
| <b>Environmental conditions</b>       | Location of operation              |                            | Indoor  |                         |                              |
|                                       | Ambient temperature (operation)    | <b>°C</b>                  | -25 . +70   |                         |                              |
|                                       | Ambient temperature (storage)      | <b>°C</b>                  | -40 . +80   |                         |                              |
|                                       | Maximum temperature change         | <b>K/min</b>               | 3   |                         |                              |
|                                       | Relative humidity                  |                            | 5% . 95%  |                         |                              |
|                                       | Degree of pollution                |                            | 3 (EN 60664-1)  |                         |                              |
|                                       | Altitude                           | <b>m</b>                   | 0...2000  |                         |                              |
|                                       | Overvoltage category               |                            | II (EN 60664-1)   |                         |                              |
|                                       | Degree of protection               |                            | IP67 (EN 60529)   |                         |                              |
|                                       | Protection class                   |                            | III (EN 61140)  |                         |                              |
| <b>Electrical characteristics</b>     | Insulation resistance              | <b>V</b>                   | 60 ---  |                         |                              |
|                                       | Test voltage                       | <b>V</b>                   | 550 ~ RMS   |                         |                              |
|                                       | Minimal creepage distance          | <b>mm</b>                  | 0.7   |                         |                              |
| <b>Ethernet connector</b>             | Communication interface            |                            | Ethernet  |                         |                              |
|                                       | Autonegotiation, autocrossover     |                            | Yes   |                         |                              |
|                                       | Connector                          |                            | 2x M12, D-coded, socket, 4-pin  |                         |                              |
|                                       | Torque                             | <b>Nm</b>                  | 1.0   |                         |                              |
| <b>IO-Link connector</b>              | Connector                          |                            | 8x M12, A-coded, plug, 5-pin  |                         |                              |
|                                       | Torque                             | <b>Nm</b>                  | 1.0   |                         |                              |
|                                       | Operating modes                    |                            | Pin 2: DI or DO<br>Pin 4: IO-Link Master, DI or DO                            |                         |                              |
| <b>LEDs</b>                           | SYS                                |                            | System status, green/yellow   |                         |                              |
|                                       | APL                                |                            | Application status, red/green   |                         |                              |
|                                       | MS                                 |                            | Module status (EtherNet/IP), red/green  |                         | -                            |
|                                       | SF                                 |                            | -   |                         | System error (PROFINET), red |
|                                       | NS                                 |                            | Network status (EtherNet/IP), red/green                                       |                         | -                            |
|                                       | BF                                 |                            | -   |                         | Bus error (PROFINET), red    |
|                                       | LINK                               |                            | Link status, green  |                         |                              |
|                                       | ACT                                |                            | Activity status, yellow   |                         |                              |
|                                       | 1L, 2L                             |                            | Supply voltage status, red/green  |                         |                              |
|                                       | A, B                               |                            | Port status: red/green/yellow (yellow by simultaneous red and green)          |                         |                              |
| <b>Compliance</b>                     | RoHS                               |                            | Yes   |                         |                              |
| <b>Compliance with EMC guidelines</b> | CE sign                            |                            | Yes   |                         |                              |
|                                       | UKCA sign                          |                            | Yes   |                         |                              |
|                                       | Emission                           |                            | EN 61000-6-4/BS EN 61000-6-4  |                         |                              |
|                                       | Immunity                           |                            | EN 61000-6-2/BS EN 61000-6-2  |                         |                              |

### Wiring schemes

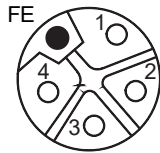
#### Power supply

M12 connector - 5 pins (4 + FE) - IO-Link

#### Supply voltage input



#### Supply voltage input

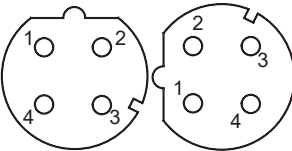


| Pin | Signal | Wire colour | Description   |
|-----|--------|-------------|---|
| 1   | 1L+    | Brown       | 24 V $\overline{\text{DC}}$                               |
| 2   | 2L-    | White       | Reference potential for 2L                                |
| 3   | 1L-    | Blue        | Reference potential for 1L                                |
| 4   | 2L+    | Black       | 24 V $\overline{\text{DC}}$ auxiliary/control voltage U2L |
| FE  | FE     | Pink        | Functional earth  |

#### Communication

M12 connector - D-coded - socket - 4 pins

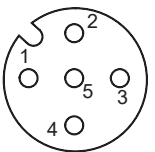
#### Ethernet



| Pin | Signal | Wire colour | Description            |
|-----|--------|-------------|------------------------|
| 1   | TX+    | Brown       | Transmit data positive |
| 2   | RX+    | White       | Receive data positive  |
| 3   | TX-    | Blue        | Transmit data negative |
| 4   | RX-    | Black       | Receive data negative  |

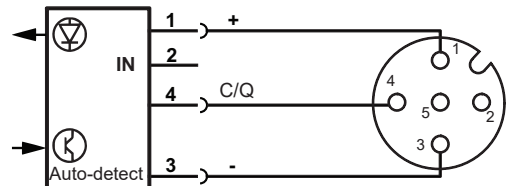
#### IO-Link ports (Class A)

M12 connector - 4 pins



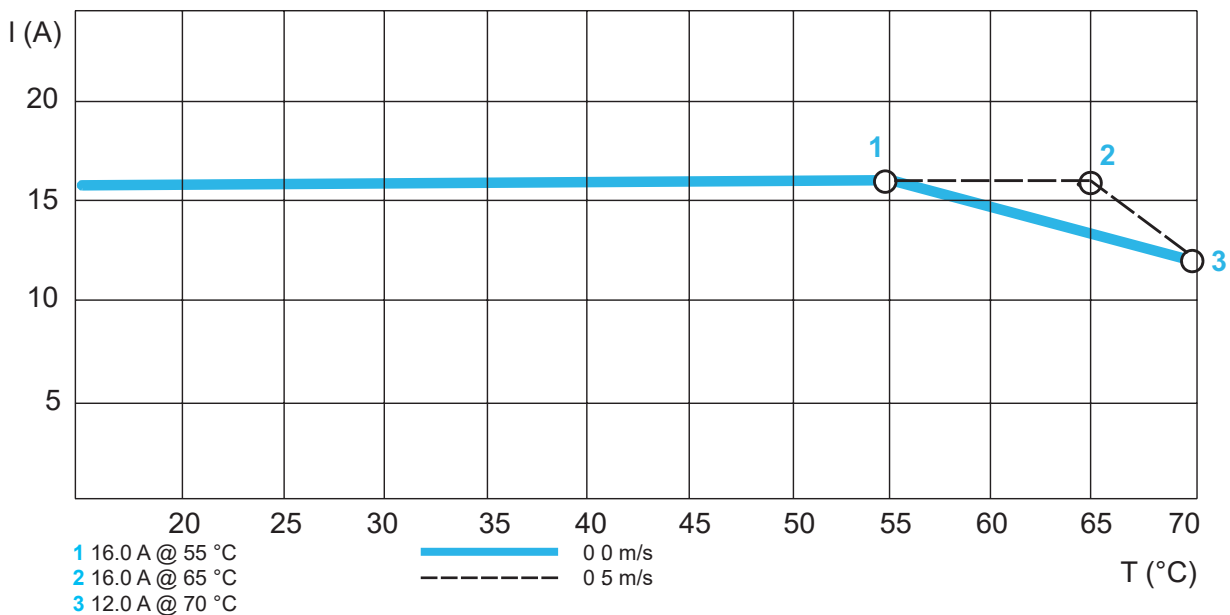
| Pin | Signal | Wire colour | Description                                      |
|-----|--------|-------------|--|
| 1   | +      | Brown       | +24 V DC supply voltage U 1L for sensor/actuator |
| 2   | IN     | White       | Digital input/output channel B                   |
| 3   | -      | Blue        | Functional earth for 1L+                         |
| 4   | Q      | Black       | IO-Link data or Digital input/output channel A   |
| 5   | -      | -           | Not connected                                    |

#### Auto-detect PNP/NPN or by IO-Link IO-Link



#### Derating curves

XZIOM8AM12EY and XZIOM8AM12PY



# Photo-electric sensors

## XU general purpose, single mode function

### Accessories

#### Fixing brackets



XUZASM02

XUZASM03

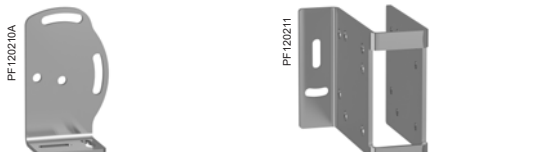
XUZASM04



XUZASN001

XUZASN002

XUZA50



XUZA51S

XU\_ZASK001



XUZASW001

XUZASW002



XUZA118

XUZA218



XUZARS

XUZASS



XUZARM

XUZARK



XUZASB001

XUZASB002

XUZASB003

#### Fixing accessories

| Fixing brackets  |   |                  |           |
|--|---|------------------|-----------|
| Description  | For use with sensors                                      | Reference        | Weight kg |
| <b>Wrap-around horizontal mounting bracket</b> for pre-cabled sensors<br>Supplied with 2 x M3 screws         | XUM●A●XBL2  | <b>XUZASM02</b>  | 0 030     |
| <b>Wrap-around vertical mounting bracket</b> for pre-cabled sensors<br>Supplied with 2 x M3 screws           | XUM●A●XBL2  | <b>XUZASM03</b>  | 0 062     |
| <b>Rear mounting bracket</b><br>Supplied with 2 x M3 screws  | XUM●A●XBL2,<br>XUM●A●XBM8                                 | <b>XUZASM04</b>  | 0 030     |
| <b>Stainless steel grade 316 fixing bracket</b><br>Supplied with 2 x M3 screws                               | XUN   | <b>XUZASN001</b> | 0 124     |
| <b>Wrap-around vertical mounting bracket</b> for pre-cabled sensors<br>Supplied with 2 x M3 screws           | XUN   | <b>XUZASN002</b> | 0 133     |
| <b>Metal fixing bracket</b><br>Supplied with 2 x M3 screws   | XUM, XUT, XUK   | <b>XUZA50</b>    | 0 025     |
| <b>Stainless steel grade 316 fixing brackets</b><br>Supplied with 2 x M3 screws                              | XUK8ABPXM12   | <b>XUZA51S</b>   | 0 050     |
| <b>Stainless steel grade 304 fixing bracket</b> for compact sensor 50 x 50 mm<br>Supplied with 2 x M3 screws | XUK8ABPXM12   | <b>XUZASK001</b> | 0 240     |
| <b>Metal dovetail fixing clamp, 1 axis</b><br>Supplied with 1 x M3 screw                                     | XUK8ABPXM12   | <b>XUZASW001</b> | 0 014     |
| <b>Simple metal fixing bracket</b><br>Supplied with 2 x M3 screws  | XUK8ABPXM12   | <b>XUZASW002</b> | 0 017     |
| <b>90° stainless steel fixing brackets</b>   | XUB   | <b>XUZA118</b>   | 0 045     |
| <b>Plastic fixing bracket</b> with adjustable ball joint   | XUB   | <b>XUZA218</b>   | 0 035     |
| <b>Dovetail clamp</b><br>Supplied with 2 x M3 screws   | XUT7ABPX●●,<br>XUT8A●AY●●,<br>XUT9ABPX●●                  | <b>XUZARS</b>    | 0 005     |
| <b>Mounting bracket</b><br>Supplied with 2 x M3 screws   | XUT7ABPX●●,<br>XUT8A●AY●●,<br>XUT9ABPX●●                  | <b>XUZASS</b>    | 0 008     |
| <b>Dovetail clamp</b><br>Supplied with 2 x M3 screws   | XUM●A●AYM8,<br>XUM●A●AYP015,<br>XUM●A●AYL2,<br>XUM7ABPX●● | <b>XUZARM</b>    | 0 017     |
| <b>Dovetail clamp</b><br>Supplied with 1 x M3 screw  | XUKCB●AYM12,<br>XUK8ABPXM12                               | <b>XUZARK</b>    | 0 026     |

#### Mounting rings

| Description                                  | For use with sensors | Reference        | Weight kg |
|--|----------------------|------------------|-----------|
| <b>Stainless steel flush mounting nut</b>    | XUB                  | <b>XUZASB001</b> | 0 018     |
| <b>Plastic mounting ring</b> 27 mm x 16.8 mm | XUB                  | <b>XUZASB002</b> | 0 003     |
| <b>Metal mounting ring</b> 30 mm x 18 mm     | XUB                  | <b>XUZASB003</b> | 0 011     |

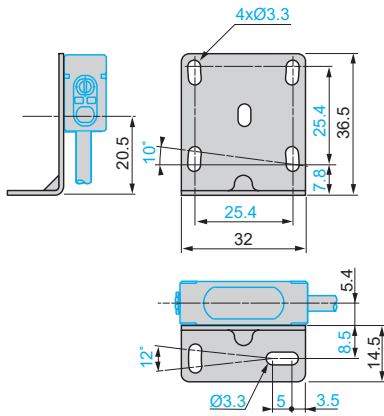
#### Cabling accessories

See pages 80 to 85 .

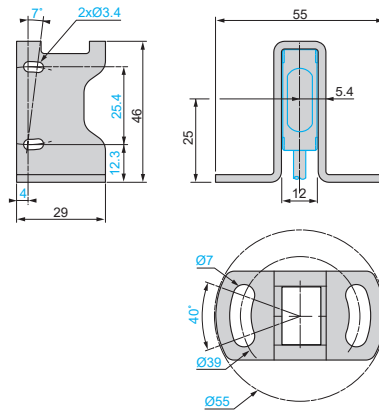
#### Fixing accessories

#### Fixing brackets

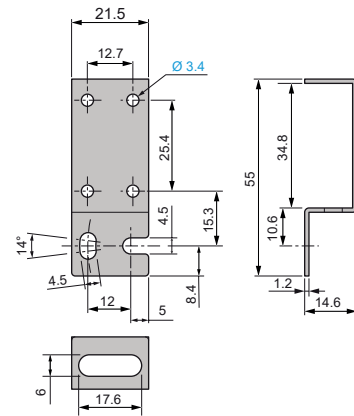
##### XUZASM04



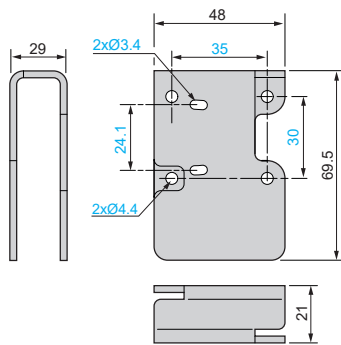
##### XUZASM03



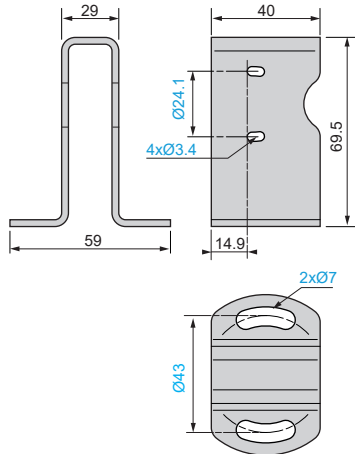
##### XUZASM02



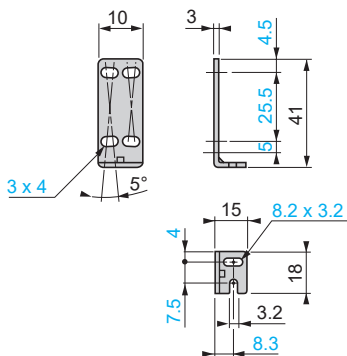
##### XUZASN001



##### XUZASN002



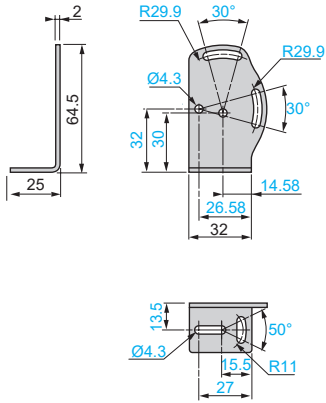
##### XUZA50



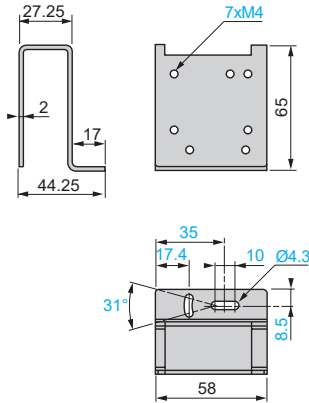
**Fixing accessories**

**Fixing brackets**

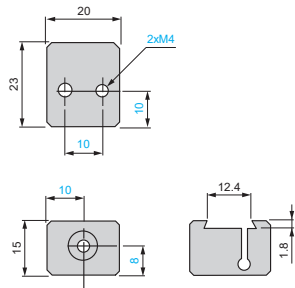
**XUZA51S**



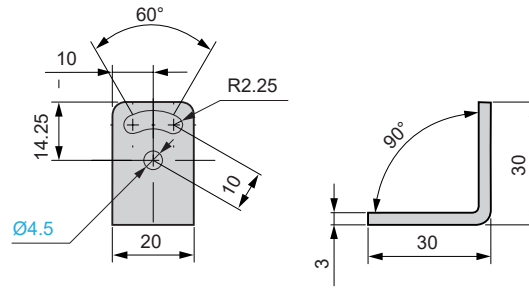
**XUZASK001**



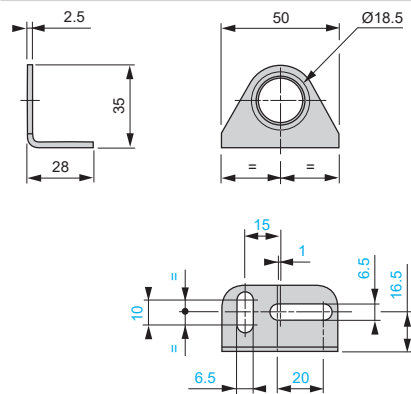
**XUZASW001**



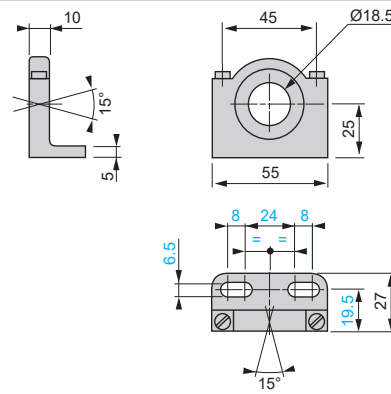
**XUZASW002**



**XUZA118**



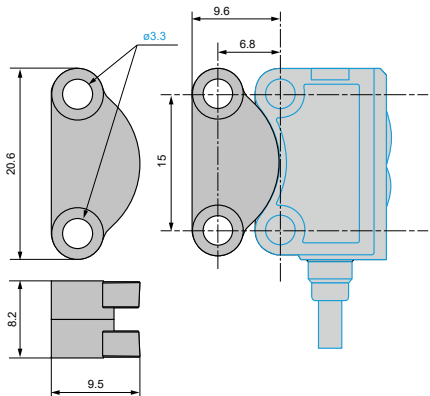
**XUZA218**



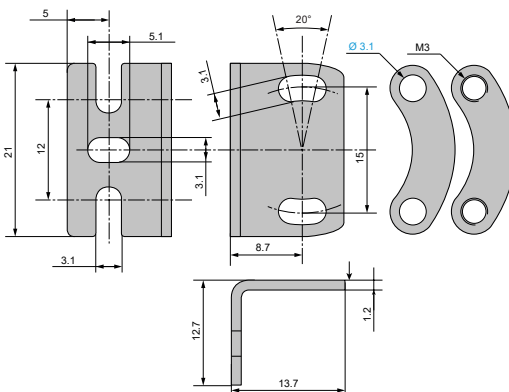
Fixing accessories

Fixing brackets

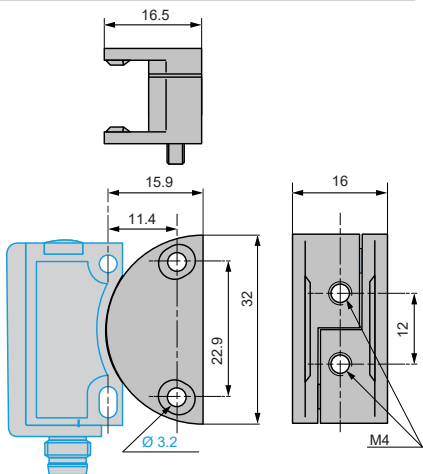
XUZARS



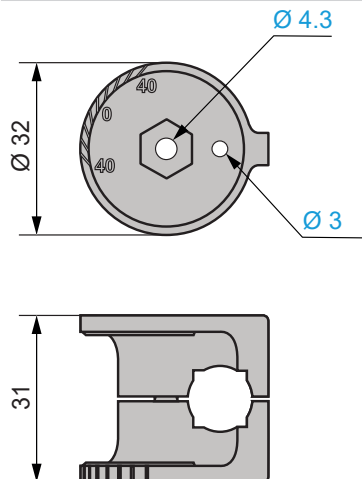
XUZASS



XUZARM

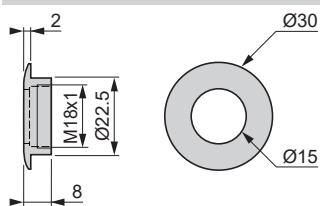


XUZARK

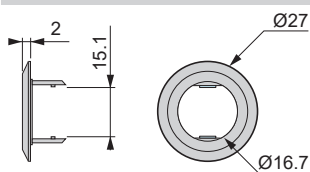


Mounting rings

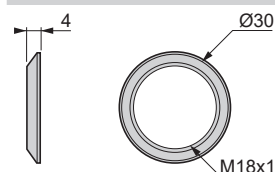
XUZASB001



XUZASB002



XUZASB003



# Photo-electric sensors

XU general purpose, single mode function

Accessories

Reflectors



XUZC50\_30

XUZC50



XU\_511\_FF-R18019

XUZC60S11



XU\_511\_FF-R18005

XUZC39

## Reflectors

### References

| Description                | Size            | Fixing mode               | Reference        | Weight kg |
|----------------------------|-----------------|---------------------------|------------------|-----------|
| Rigid square reflectors    | 100 mm x 100 mm | 2 brackets (not provided) | <b>XUZC100</b>   | 0 035     |
|                            | 51.5 mm x 69 mm | 6 holes                   | <b>XUZC50</b>    | 0 020     |
| Rigid rectangle reflectors | 45 mm x 29 mm   | 2 holes                   | <b>XUZC24</b>    | 0 010     |
|                            | 40 mm x 60 mm   | 2 holes                   | <b>XUZC60S11</b> | 0 022     |
| Rigid circular reflectors  | Ø 39 mm         | Adhesive                  | <b>XUZC39</b>    | 0 008     |

### Cabling accessories

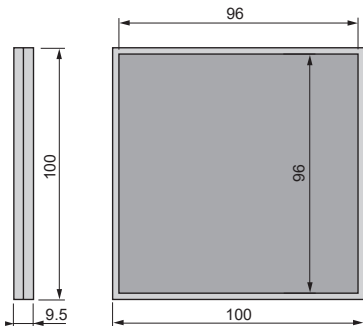
See pages 80 to 85 .



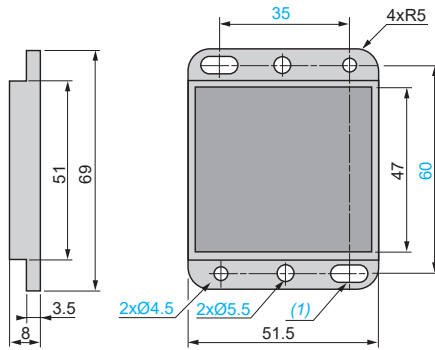
## Reflectors

### Dimensions

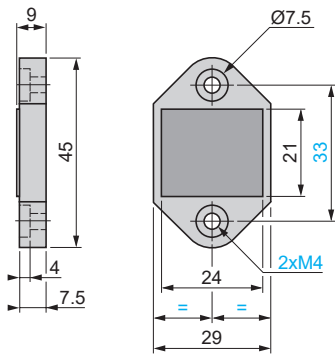
#### XUZC100



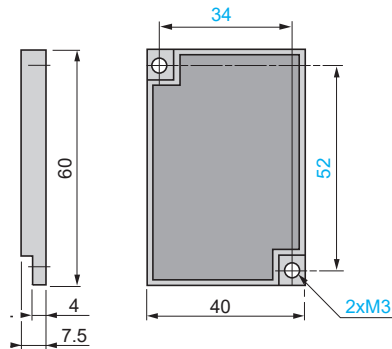
#### XUZC50



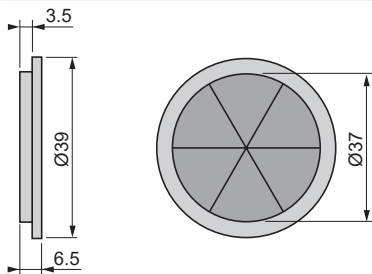
#### XUZC24



#### XUZC60S11



#### XUZC39



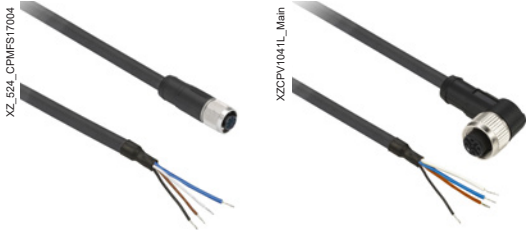
(1) 2 elongated holes Ø 4.5 x 8

**Note:** All reflectors are IP 67 and IP 69K.

# Photo-electric sensors

## Cables for sensors

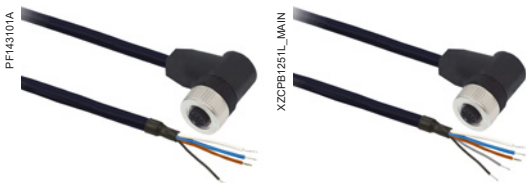
### Pre-wired connectors



Pre-wired M8 connector, 4 conductors



Pre-wired M12 connector, straight, 4 conductors (left) and 5 conductors (right)



Pre-wired M12 connector, elbowed, 4 conductors (left) and 5 conductors (right)

#### PVC cables with pre-wired connector

| Description             | Connector type   | End fittings | Length (m) | For use with sensor | Reference           | Weight kg |
|-------------------------|------------------|--------------|------------|---------------------|---------------------|-----------|
| <b>M8 connector</b>     |                  |              |            |                     |                     |           |
| Pre-wired M8 connectors | Female, straight | 4-pin        | 2          | XUM●●●●M8,          | <b>XZCPV0941L2</b>  | 0 090     |
|                         |                  |              | 5          | XUT●●●●M8           | <b>XZCPV0941L5</b>  | 0 200     |
|                         |                  |              | 10         |                     | <b>XZCPV0941L10</b> | 0 380     |
|                         | Female, elbowed  | 2            |            |                     | <b>XZCPV1041L2</b>  | 0 090     |
|                         |                  |              | 5          |                     | <b>XZCPV1041L5</b>  | 0 200     |
|                         |                  |              | 10         |                     | <b>XZCPV1041L10</b> | 0 380     |

#### M12 connector

|                          |                  |       |    |              |                     |       |
|--------------------------|------------------|-------|----|--------------|---------------------|-------|
| Pre-wired M12 connectors | Female, straight | 4-pin | 2  | XUM●●●●M12,  | <b>XZCPV1141L2</b>  | 0 090 |
|                          |                  |       | 5  | XUM●●●●P015, | <b>XZCPV1141L5</b>  | 0 200 |
|                          |                  |       | 10 | XUN●●●●M12,  | <b>XZCPV1141L10</b> | 0 380 |
|                          | Female, elbowed  | 2     |    | XUB●●●●M12,  | <b>XZCPV1241L2</b>  | 0 090 |
|                          |                  |       | 5  | XUT●●●●M12   | <b>XZCPV1241L5</b>  | 0 200 |
|                          |                  |       | 10 |              | <b>XZCPV1241L10</b> | 0 380 |

#### PUR cables with pre-wired connector

| Description             | Connector type   | End fittings | Length (m) | For use with sensor | Reference          | Weight kg |
|-------------------------|------------------|--------------|------------|---------------------|--------------------|-----------|
| <b>M8 connector</b>     |                  |              |            |                     |                    |           |
| Pre-wired M8 connectors | Female, straight | 4-pin        | 2          | XUM●●●●M8,          | <b>XZCP0941L2</b>  | 0 080     |
|                         |                  |              | 5          | XUT●●●●M8           | <b>XZCP0941L5</b>  | 0 180     |
|                         |                  |              | 10         |                     | <b>XZCP0941L10</b> | 0 360     |
|                         | Female, elbowed  | 2            |            |                     | <b>XZCP1041L2</b>  | 0 080     |
|                         |                  |              | 5          |                     | <b>XZCP1041L5</b>  | 0 180     |
|                         |                  |              | 10         |                     | <b>XZCP1041L10</b> | 0 360     |

#### M12 connector

|                          |                  |       |    |             |                    |       |
|--------------------------|------------------|-------|----|-------------|--------------------|-------|
| Pre-wired M12 connectors | Female, straight | 4-pin | 2  | XUM●●●●M12, | <b>XZCP1141L2</b>  | 0 090 |
|                          |                  |       | 5  | XUM●●●●P0●, | <b>XZCP1141L5</b>  | 0 190 |
|                          |                  |       | 10 | XUN●●●●M12, | <b>XZCP1141L10</b> | 0 370 |
|                          | Female, elbowed  | 2     |    | XUB●●●●M12, | <b>XZCP1241L2</b>  | 0 090 |
|                          |                  |       | 5  | XUK●●●●M12  | <b>XZCP1241L5</b>  | 0 190 |
|                          |                  |       | 10 |             | <b>XZCP1241L10</b> | 0 370 |

#### M12 connector, shielded

|                                   |                  |       |                    |             |                    |                    |
|-----------------------------------|------------------|-------|--------------------|-------------|--------------------|--------------------|
| Shielded pre-wired connectors M12 | Female, straight | 4-pin | 2                  | XUM●●●●M12, | <b>XZCPB1141L2</b> | 0 200              |
|                                   |                  |       | 5                  | XUM●●●●P0●, | <b>XZCPB1141L5</b> | 0 350              |
|                                   |                  |       |                    | XUN●●●●M12, |                    |                    |
|                                   | Female, elbowed  | 2     |                    | XUB●●●●M12, |                    |                    |
|                                   |                  |       | 5                  | XUK●●●●M12  |                    |                    |
|                                   |                  |       | 5-pin              | 2           | XUKC●●●●           | <b>XZCPB1151L2</b> |
|                                   | 5                |       | <b>XZCPB1151L5</b> | 0 259       |                    |                    |
|                                   | 2                |       | <b>XZCPB1251L2</b> | 0 113       |                    |                    |
|                                   | 5                |       | <b>XZCPB1251L5</b> | 0 258       |                    |                    |



Jumper cables, M12-M12 connectors, 4-pin/4-pin



Shielded jumper cables, M12-M12 connectors, 5-pin/5-pin



Jumper cables, M8-M8 connectors, 3-pin/3-pin



Jumper cables, M8-M8 connectors, 3-pin/4-pin



Jumper cables, M8-M12 connectors, 3-pin/5-pin

**PVC jumper cables**

| Description               | Connector type |               | End fittings | Length (m) | For use with sensor | Reference             | Weight kg |
|---------------------------|----------------|---------------|--------------|------------|---------------------|-----------------------|-----------|
|                           | Male           | Female        |              |            |                     |                       |           |
| <b>M12-M12 connectors</b> |                |               |              |            |                     |                       |           |
| PVC jumper cable XZ       | M12, straight  | M12, straight | 4-pin/4-pin  | 1          | XUM●●●●M12,         | <b>XZCRV1511041C1</b> | 0 070     |
|                           |                |               |              | 2          | XUM●●●●P015,        | <b>XZCRV1511041C2</b> | 0 110     |
|                           |                |               |              | 5          | XUN●●●●M12,         | <b>XZCRV1511041C5</b> | 0 230     |
|                           | M12, elbowed   |               |              | 1          | XUT●●●●M12          | <b>XZCRV1512041C1</b> | 0 070     |
|                           |                |               |              | 2          |                     | <b>XZCRV1512041C2</b> | 0 110     |
|                           |                |               |              | 5          |                     | <b>XZCRV1512041C5</b> | 0 230     |

**PUR jumper cables**

| Description                         | Connector type |               | End fittings | Length (m) | For use with sensor | Reference            | Weight kg |
|-------------------------------------|----------------|---------------|--------------|------------|---------------------|----------------------|-----------|
|                                     | Male           | Female        |              |            |                     |                      |           |
| <b>Shielded, M12-M12 connectors</b> |                |               |              |            |                     |                      |           |
| PUR jumper cable XZ                 | M12, straight  | M12, straight | 5-pin/5-pin  | 2          | XUCK●●●●            | <b>XZCRB151151C2</b> | 0 123     |
|                                     |                |               |              | 5          |                     | <b>XZCRB151151C5</b> | 0 267     |

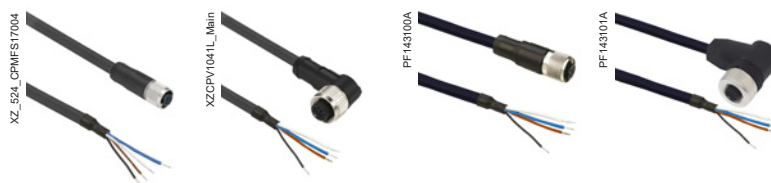
**M8-M8 connectors**

|                     |              |              |             |             |            |                      |                      |
|---------------------|--------------|--------------|-------------|-------------|------------|----------------------|----------------------|
| PUR jumper cable XZ | M8, straight | M8, straight | 3-pin/3-pin | 1           | XUM●●●●M8, | <b>XZCR2705037R1</b> | 0 065                |
|                     |              |              |             | 2           | XUT●●●●M8  | <b>XZCR2705037R2</b> | 0 090                |
|                     |              |              |             | M8, elbowed | 1          |                      | <b>XZCR2706037R1</b> |

|                     |              |              |             |             |            |                      |                      |
|---------------------|--------------|--------------|-------------|-------------|------------|----------------------|----------------------|
| PUR jumper cable XZ | M8, straight | M8, straight | 3-pin/4-pin | 2           | XUM●●●●M8, | <b>XZCR2709037S2</b> | 0 090                |
|                     |              |              |             | XUT●●●●M8   |            | <b>XZCR2710037S1</b> | 0 065                |
|                     |              |              |             | M8, elbowed | 1          |                      | <b>XZCR2710037S2</b> |

**M8-M12 connectors**

|                     |              |               |             |           |            |                      |       |
|---------------------|--------------|---------------|-------------|-----------|------------|----------------------|-------|
| PUR jumper cable XZ | M8, straight | M12, straight | 3-pin/5-pin | 1         | XUM●●●●M8, | <b>XZCR2711037T1</b> | 0 065 |
|                     |              |               |             | XUT●●●●M8 |            | <b>XZCR2711037T2</b> | 0 093 |
|                     | M12, elbowed |               |             | 1         |            | <b>XZCR2712037T1</b> | 0 065 |
|                     |              |               |             | 2         |            | <b>XZCR2712037T2</b> | 0 093 |

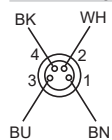


|                      |          |  |                     |                       |                      |
|----------------------|----------|--|---------------------|-----------------------|----------------------|
| Connector type       |          | Female, M8, straight                                   | Female, M8, elbowed | Female, M12, straight | Female, M12, elbowed |
| Number of conductors |          | 4  |                     |                       |                      |
| <b>References</b>    |          |  |                     |                       |                      |
| PVC cable            | L = 2 m  | XZCPV0941L2  | XZCPV1041L2         | XZCPV1141L2           | XZCPV1241L2          |
|                      | L = 5 m  | XZCPV0941L5  | XZCPV1041L5         | XZCPV1141L5           | XZCPV1241L5          |
|                      | L = 10 m | XZCPV0941L10   | XZCPV1041L10        | XZCPV1141L10          | XZCPV1241L10         |
| Weight (kg)          |          | 0 090 (L = 2 m)<br>0 200 (L = 5 m)<br>0 380 (L = 10 m) |                     |                       |                      |

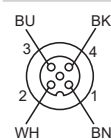
|                         |                      |                                      |
|-------------------------|----------------------|--------------------------------------|
| <b>Characteristics</b>  |                      |                                      |
| Certifications          |                      | cULus                                |
| Connection type         |                      | Screw threaded (metal clamping ring) |
| Cable material          | Sheath               | PVC                                  |
|                         | Conductor insulation | PP                                   |
| Degree of protection    |                      | IP65, IP67                           |
| Ambient air temperature | Static cable         | -25...+80 °C                         |
|                         | Flexing cable        | -5...+80 °C                          |
| Conductor c.s.a         |                      | 4 x 0.25 mm <sup>2</sup>             |
| Cable diameter          |                      | 4 6 mm                               |
| Nominal voltage         |                      | 60 V ~, 75 V ~                       |
| Nominal current         |                      | 3 A                                  |
| Insulation resistance   |                      | > 10 <sup>9</sup> Ω                  |
| Contact resistance      |                      | ≤ 5 m Ω                              |

## Connections

XZCPV0941L●,  
XZCPV1041L●



XZCPV1141L●,  
XZCPV1241L●



BN: Brown  
WH: White  
BU: Blue  
BK: Black

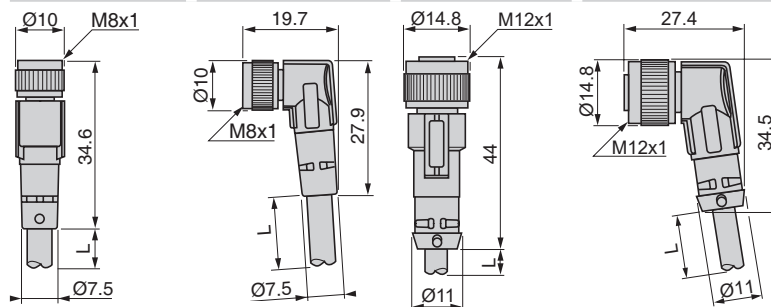
## Dimensions

XZCPV0941L●

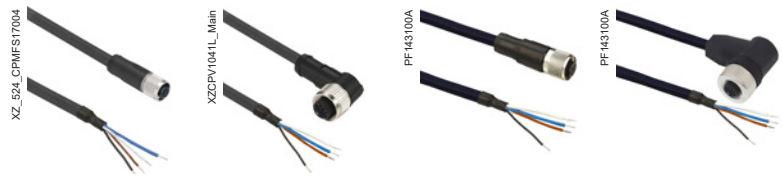
XZCPV1041L●

XZCPV1141L●

XZCPV1241L●



L = 2, 5 or 10 m

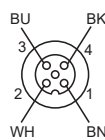
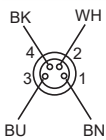


|                                |  |                     |  |                      |                    |
|--------------------------------|--|---------------------|--|----------------------|--------------------|
| <b>Connector type</b>          | Female, M8, straight                                   | Female, M8, elbowed | Female, M12, straight                                  | Female, M12, elbowed |                    |
| <b>Number of conductors</b>    | 4  |                     |  |                      |                    |
| <b>References</b>              |  |                     |  |                      |                    |
| <b>PUR cable</b>               | L = 2 m  | <b>XZCP0941L2</b>   | <b>XZCP1041L2</b>                                      | <b>XZCP1141L2</b>    | <b>XZCP1241L2</b>  |
|                                | L = 5 m  | <b>XZCP0941L5</b>   | <b>XZCP1041L5</b>                                      | <b>XZCP1141L5</b>    | <b>XZCP1241L5</b>  |
|                                | L = 10 m   | <b>XZCP0941L10</b>  | <b>XZCP1041L10</b>                                     | <b>XZCP1141L10</b>   | <b>XZCP1241L10</b> |
| <b>Weight (kg)</b>             | 0 080 (L = 2 m)<br>0 180 (L = 5 m)<br>0 360 (L = 10 m) |                     | 0 090 (L = 2 m)<br>0 190 (L = 5 m)<br>0 370 (L = 10 m) |                      |                    |
| <b>Characteristics</b>         |  |                     |  |                      |                    |
| <b>Certifications</b>          | cULus  |                     |  |                      |                    |
| <b>Connection type</b>         | Screw threaded (metal clamping ring)                   |                     |  |                      |                    |
| <b>Cable material</b>          | Sheath   | PUR                 |  |                      |                    |
|                                | Conductor insulation                                   | PP                  |  |                      |                    |
| <b>Degree of protection</b>    | IP65, IP67, IP69K                                      |                     |  |                      |                    |
| <b>Ambient air temperature</b> | Static cable   | -40...+80 °C        |  |                      |                    |
|                                | Flexing cable  | -5...+80 °C         |  |                      |                    |
| <b>Conductor c.s.a.</b>        | 4 x 0.34 mm <sup>2</sup>                               |                     |  |                      |                    |
| <b>Cable diameter</b>          | 5.2 mm   |                     |  |                      |                    |
| <b>Nominal voltage</b>         | 60 V ~, 75 V ~   |                     | 250 V ~, 300 V ~                                       |                      |                    |
| <b>Nominal current</b>         | 4 A  |                     |  |                      |                    |
| <b>Insulation resistance</b>   | > 10 <sup>9</sup> Ω                                    |                     |  |                      |                    |
| <b>Contact resistance</b>      | ≤ 5 m Ω  |                     |  |                      |                    |

## Connections

**XZCP0941L●,  
XZCP1041L●**

**XZCP1141L●,  
XZCP1241L●**



BN: Brown  
WH: White  
BU: Blue  
BK: Black

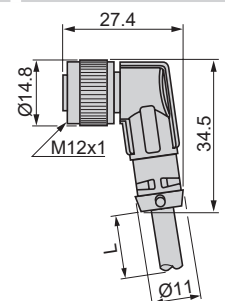
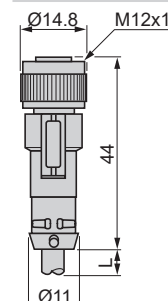
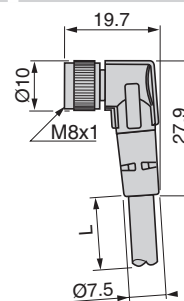
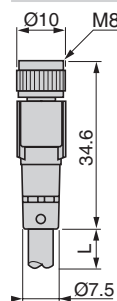
## Dimensions

**XZCP0941L●**

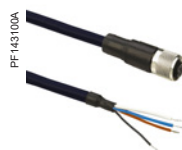
**XZCP1041L●**

**XZCP1141L●**

**XZCP1241L●**



L = 2, 5 or 10 m

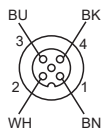


|                             |                                    |                    |
|-----------------------------|------------------------------------|--------------------|
| <b>Connector type</b>       | Female, M12, straight              |                    |
| <b>Number of conductors</b> | 4                                  |                    |
| <b>References</b>           |                                    |                    |
| <b>PUR cable</b>            | L = 2 m                            | <b>XZCPB1141L2</b> |
|                             | L = 5 m                            | <b>XZCPB1141L5</b> |
| <b>Weight (kg)</b>          | 0 200 (L = 2 m)<br>0 350 (L = 5 m) |                    |

|                                |                                      |               |
|--------------------------------|--------------------------------------|---------------|
| <b>Characteristics</b>         |                                      |               |
| <b>Certifications</b>          | cULus                                |               |
| <b>Connection type</b>         | Screw threaded (metal clamping ring) |               |
| <b>Cable material</b>          | Sheath                               | PUR, shielded |
|                                | Conductor insulation                 | PP            |
| <b>Degree of protection</b>    | IP65, IP67                           |               |
| <b>Ambient air temperature</b> | Static cable                         | -25...+80 °C  |
|                                | Flexing cable                        | -5...+80 °C   |
| <b>Conductor c.s.a.</b>        | 4 x 0.34 mm <sup>2</sup>             |               |
| <b>Cable diameter</b>          | 5.9 mm                               |               |
| <b>Nominal voltage</b>         | 250 V ~, 300 V ---                   |               |
| <b>Nominal current</b>         | 4 A                                  |               |
| <b>Insulation resistance</b>   | 1 GΩ                                 |               |
| <b>Contact resistance</b>      | 5000 μOhm                            |               |

### Connections

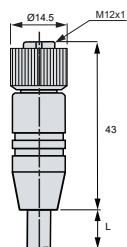
#### XZCPB1141L●



BN: Brown  
WH: White  
BU: Blue  
BK: Black

### Dimensions

#### XZCPB1141L●



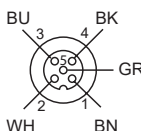
L = 2 or 5 m



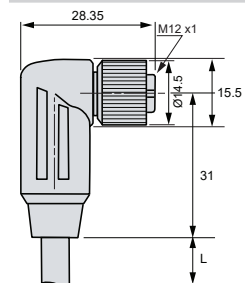
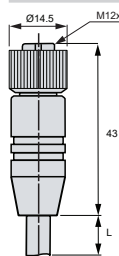
|                             |                                    |                                    |                    |
|-----------------------------|------------------------------------|------------------------------------|--------------------|
| <b>Connector type</b>       | Female, M12, straight              | Female, M12, elbowed               |                    |
| <b>Number of conductors</b> | 5                                  |                                    |                    |
| <b>References</b>           |                                    |                                    |                    |
| <b>PUR cable</b>            | L = 2 m                            | <b>XZCPB1151L2</b>                 | <b>XZCPB1251L2</b> |
|                             | L = 5 m                            | <b>XZCPB1151L5</b>                 | <b>XZCPB1251L5</b> |
| <b>Weight (kg)</b>          | 0.114 (L = 2 m)<br>0.259 (L = 5 m) | 0.113 (L = 2 m)<br>0.258 (L = 5 m) |                    |

|                                |                                       |               |
|--------------------------------|---------------------------------------|---------------|
| <b>Characteristics</b>         |                                       |               |
| <b>Certifications</b>          | cULus                                 |               |
| <b>Connection type</b>         | Screw threaded (nickel clamping ring) |               |
| <b>Cable material</b>          | Sheath                                | PUR, shielded |
|                                | Conductor insulation                  | PP            |
| <b>Degree of protection</b>    | IP65, IP67, IP69K                     |               |
| <b>Ambient air temperature</b> | Static cable                          | -40...+90 °C  |
|                                | Flexing cable                         | -25...+80 °C  |
| <b>Conductor c.s.a.</b>        | 5 x 0.34 mm <sup>2</sup>              |               |
| <b>Cable diameter</b>          | 5.85 mm                               |               |
| <b>Nominal voltage</b>         | 250 V ~, 60 V ☰                       |               |
| <b>Nominal current</b>         | 4 A                                   |               |
| <b>Insulation resistance</b>   | > 10 <sup>9</sup> Ω                   |               |
| <b>Contact resistance</b>      | ≤ 10 m Ω                              |               |

|                    |                                       |
|--------------------|---------------------------------------|
| <b>Connections</b> | <b>Dimensions</b>                     |
| <b>XZCPB1●51L●</b> | <b>XZCPB1151L●</b> <b>XZCPB1251L●</b> |



BN: Brown  
WH: White  
BU: Blue  
BK: Black  
GR: Grey



L = 2 or 5 m



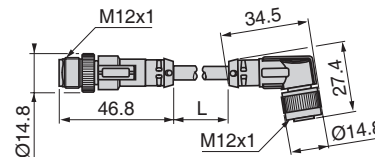
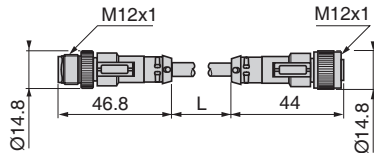
|                              |   |                       |                       |
|------------------------------|---|-----------------------|-----------------------|
| <b>Male connector type</b>   | M12, 4-pin, straight                                  |                       |                       |
| <b>Female connector type</b> | M12, 4-pin, straight                                  | M12, 4-pin, elbowed   |                       |
| <b>Number of conductors</b>  | 4   |                       |                       |
| <b>References</b>            |   |                       |                       |
| <b>PVC cable</b>             | L = 1 m   | <b>XZCRV1511041C1</b> | <b>XZCRV1512041C1</b> |
|                              | L = 2 m   | <b>XZCRV1511041C2</b> | <b>XZCRV1512041C2</b> |
|                              | L = 5 m   | <b>XZCRV1511041C5</b> | <b>XZCRV1512041C5</b> |
| <b>Weight (kg)</b>           | 0 070 (L = 1 m)<br>0 110 (L = 2 m)<br>0 230 (L = 5 m) |                       |                       |

|                                |                                 |              |  |
|--------------------------------|---------------------------------|--------------|--|
| <b>Characteristics</b>         |                                 |              |  |
| <b>Certifications</b>          | cULus                           |              |  |
| <b>Connection type</b>         | Male and female: screw threaded |              |  |
| <b>Cable material</b>          | Sheath                          | PVC          |  |
|                                | Conductor insulation            | PP           |  |
| <b>Degree of protection</b>    | IP65, IP67                      |              |  |
| <b>Ambient air temperature</b> | Static cable                    | -25...+80 °C |  |
|                                | Flexing cable                   | -5...+80 °C  |  |
| <b>Conductor c.s.a</b>         | 4 x 0.25 mm <sup>2</sup>        |              |  |
| <b>Cable diameter</b>          | 4 6 mm                          |              |  |
| <b>Nominal voltage</b>         | 250 V ~, 300 V ≍                |              |  |
| <b>Nominal current</b>         | 3 A                             |              |  |
| <b>Insulation resistance</b>   | > 10 <sup>9</sup> Ω             |              |  |
| <b>Contact resistance</b>      | ≤ 5 m Ω                         |              |  |

**Dimensions**

XZCRV1511041C1, XZCRV1511041C2, XZCRV1511041C5

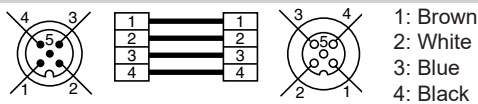
XZCRV1512041C1, XZCRV1512041C2, XZCRV1512041C5



L = 2, 5 or 10 m

**Connections**

XZCRV1511041C●, XZCRV1512041C●



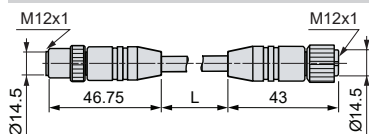




|                              |                                    |
|------------------------------|------------------------------------|
| <b>Male connector type</b>   | M12, 5-pin, straight               |
| <b>Female connector type</b> | M12, 5-pin, straight               |
| <b>Number of conductors</b>  | 5                                  |
| <b>References</b>            |                                    |
| <b>PUR cable</b>             | L = 2 m <b>XZCRB151151C2</b>       |
|                              | L = 5 m <b>XZCRB151151C5</b>       |
| <b>Weight (kg)</b>           | 0 123 (L = 2 m)<br>0 267 (L = 5 m) |

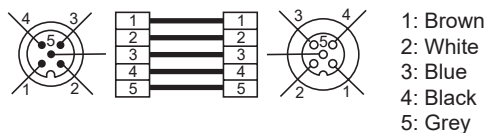
|                                |   |
|--------------------------------|---|
| <b>Characteristics</b>         |   |
| <b>Certifications</b>          | cULus   |
| <b>Connection type</b>         | Male and female: screw threaded                           |
| <b>Cable material</b>          | Sheath: PUR, shielded<br>Conductor insulation: PP         |
| <b>Degree of protection</b>    | IP65, IP67, IP69K   |
| <b>Ambient air temperature</b> | Static cable: -40...+90 °C<br>Flexing cable: -25...+80 °C |
| <b>Conductor c.s.a</b>         | 5 x 0.34 mm <sup>2</sup>                                  |
| <b>Cable diameter</b>          | 5.85 mm ± 0.15 mm   |
| <b>Nominal voltage</b>         | 250 V ~, 60 V ---   |
| <b>Nominal current</b>         | 4 A   |
| <b>Insulation resistance</b>   | > 10 <sup>9</sup> Ω                                       |
| <b>Contact resistance</b>      | ≤ 10 m Ω  |

**Dimensions**  
XZCRB151151C2, XZCRB151151C5



L = 2 or 5 m

**Connections**



# Photo-electric sensors

Cables for sensors, PUR

Jumper cables M8-M8, 3-pin/3-pin or 3-pin/4-pin



|                       |                     |                    |                     |
|-----------------------|---------------------|--------------------|---------------------|
| Male connector type   | M8, 3-pin, straight |                    |                     |
| Female connector type | M8, 3-pin, straight | M8, 3-pin, elbowed | M8, 4-pin, straight |
| Number of conductors  | 3                   |                    |                     |

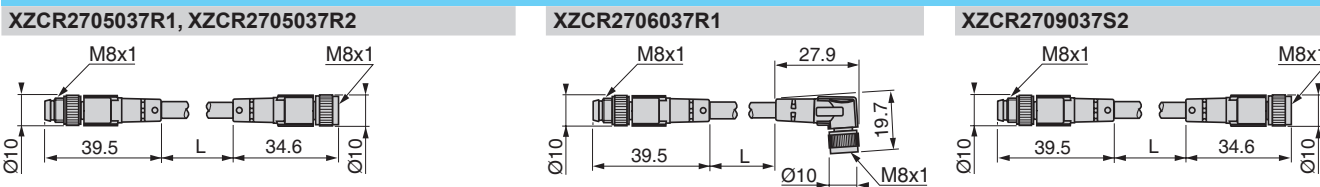
## References

|             |         |               |               |               |
|-------------|---------|---------------|---------------|---------------|
| PUR cable   | L = 1 m | XZCR2705037R1 | XZCR2706037R1 | -             |
|             | L = 2 m | XZCR2705037R2 | -             | XZCR2709037S2 |
| Weight (kg) | L = 1 m | 0 065         |               |               |
|             | L = 2 m | 0 090         |               |               |

## Characteristics

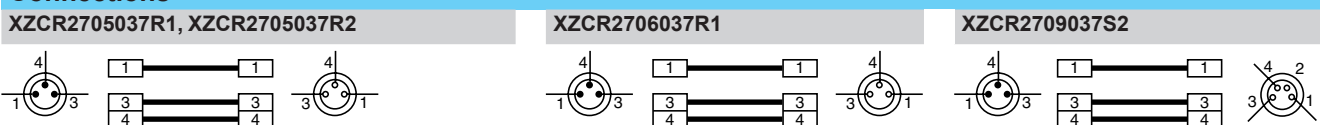
|                         |  |              |
|-------------------------|--|--------------|
| Certifications          | cULus  |              |
| Connection type         | Male: screw threaded and clip .Female: screw threaded .Metal clamping ring . |              |
| Cable material          | Sheath   | PUR          |
|                         | Conductor insulation   | PP           |
| Degree of protection    | IP65, IP67, IP69K  |              |
| Ambient air temperature | Static cable   | -35...+90 °C |
|                         | Flexing cable  | -5...+90 °C  |
| Conductor c.s.a.        | 3 x 0.34 mm <sup>2</sup>   |              |
| Cable diameter          | 5.2 mm   |              |
| Nominal voltage         | 60 V ~, 45 V -   |              |
| Nominal current         | 4 A  |              |
| Insulation resistance   | > 10 <sup>9</sup> Ω  |              |
| Contact resistance      | ≤ 5 mΩ   |              |

## Dimensions



L = 1 or 2 m

## Connections



# Photo-electric sensors

Cables for sensors, PUR

Jumper cables M8-M8 and M8-M12, 3-pin/4-pin or 3-pin/5-pin



|                       |                     |                      |                     |
|-----------------------|---------------------|----------------------|---------------------|
| Male connector type   | M8, 3-pin, straight |                      |                     |
| Female connector type | M8, 4-pin, elbowed  | M12, 5-pin, straight | M12, 5-pin, elbowed |
| Number of conductors  | 3                   |                      |                     |

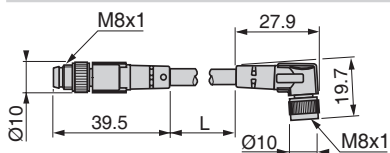
## References

|             |         |               |               |               |
|-------------|---------|---------------|---------------|---------------|
| PUR cable   | L = 1 m | XZCR2710037S1 | XZCR2711037T1 | XZCR2712037T1 |
|             | L = 2 m | XZCR2710037S2 | XZCR2711037T2 | XZCR2712037T2 |
| Weight (kg) | L = 1 m | 0 065         |               |               |
|             | L = 2 m | 0 090         | 0 093         |               |

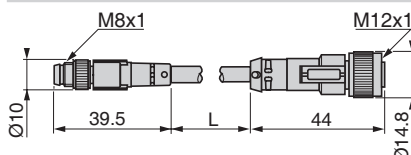
## Characteristics

|                         |  |              |  |
|-------------------------|--|--------------|--|
| Certifications          | cULus  |              |  |
| Connection type         | Male: screw threaded and clip .Female: screw threaded .Metal clamping ring |              |  |
| Cable material          | Sheath   | PUR          |  |
|                         | Conductor insulation   | PP           |  |
| Degree of protection    | IP65, IP67, IP69K  |              |  |
| Ambient air temperature | Static cable   | -35...+90 °C |  |
|                         | Flexing cable  | -5...+90 °C  |  |
| Conductor c.s.a.        | 3 x 0.34 mm <sup>2</sup>   |              |  |
| Cable diameter          | 5.2 mm   |              |  |
| Nominal voltage         | 60 V ~, 45 V ---   |              |  |
| Nominal current         | 4 A  |              |  |
| Insulation resistance   | > 10 <sup>9</sup> Ω  |              |  |
| Contact resistance      | ≤ 5 m Ω  |              |  |

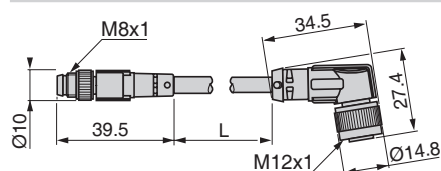
XZCR2710037S1, XZCR2710037S2



XZCR2711037T1, XZCR2711037T2

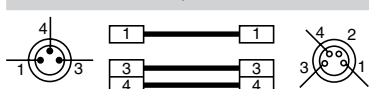


XZCR2712037T1, XZCR2712037T2

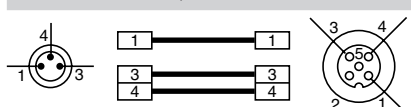


L = 1 or 2 m

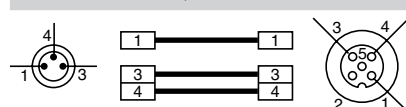
XZCR2710037S1, XZCR2710037S2



XZCR2711037T1, XZCR2711037T2



XZCR2712037T1, XZCR2712037T2



|              |    |                 |    |                |    |             |    |               |    |
|--------------|----|-----------------|----|----------------|----|-------------|----|---------------|----|
| <b>XU</b>    |    |                 |    |                |    |             |    |               |    |
| XUB2AKXNL2T  | 14 | XUB9APXNL2      | 18 | XUM5APYBL03M12 | 4  | XUN5APXNM12 | 33 | XZCP0941L5    | 80 |
| XUB2AKXNM12T | 14 | XUB9APXNM12     | 18 | XUM5APYBM8     | 4  | XUN5APYNM12 | 33 | XZCP1041L10   | 80 |
| XUB2AKXWL2T  | 14 | XUB9APXWL2      | 18 | XUM6ANXBL03M12 | 4  | XUN6ANXNL2  | 33 |               | 83 |
| XUB2AKXWM12T | 14 | XUB9APXWM12     | 18 | XUM6ANXBL03M8  | 4  | XUN6ANXNM12 | 33 | XZCP1041L2    | 80 |
| XUB2ANXNL2R  | 14 | XUB9APYNM12     | 18 | XUM6ANXBL2     | 4  | XUN6APXNL2  | 33 |               | 83 |
| XUB2ANXNL2R  | 14 | XUB9APYWM12     | 18 | XUM6ANXBM8     | 4  | XUN6APXNM12 | 33 | XZCP1041L5    | 80 |
| XUB2ANXNM12R | 14 | XUB9BNXNL2      | 19 | XUM6APXBL03M12 | 4  | XUN6APYNM12 | 33 |               | 83 |
| XUB2ANXWL2R  | 14 | XUB9BNXNM12     | 19 | XUM6APXBL03M8  | 4  | XUN9ANXNL2  | 34 | XZCP1141L10   | 80 |
| XUB2ANXWM12R | 14 | XUB9BNXWL2      | 19 | XUM6APXBL2     | 4  | XUN9ANXNM12 | 34 |               | 83 |
| XUB2APXNL2R  | 14 | XUB9BNXWM12     | 19 | XUM6APXBM8     | 4  | XUN9APXNL2  | 34 | XZCP1141L2    | 80 |
| XUB2APXNM12R | 14 | XUB9BPXNL2      | 19 | XUM6APYBL03M12 | 4  | XUN9APXNM12 | 34 |               | 83 |
| XUB2APXWL2R  | 14 | XUB9BPXNM12     | 19 | XUM6APYBM8     | 4  | XUN9APYNM12 | 34 | XZCP1141L5    | 80 |
| XUB2APXWM12R | 14 | XUB9BPXWL2      | 19 | XUM7ABPXL2     | 50 |             | 50 |               | 83 |
| XUB2APYNM12R | 14 | XUB9BPXWM12     | 19 |                | 64 | XUT7ABPXL2  | 64 | XZCP1241L10   | 80 |
| XUB2APYWM12R | 14 | XUB9BPNM12      | 19 | XUM7ABPXM8     | 50 |             | 64 |               | 83 |
| XUB2BKXNL2T  | 15 | XUB9BPYWM12     | 19 |                | 64 | XUT7ABPXP02 | 50 | XZCP1241L2    | 80 |
| XUB2BKXNM12T | 15 | XUK8ABPXM12     | 50 | XUM8ABAYM8     | 50 |             | 64 |               | 83 |
| XUB2BKXWL2T  | 15 |                 | 64 |                | 64 | XUT8ABAYL2  | 50 | XZCP1241L5    | 80 |
| XUB2BKXWM12T | 15 | XUKCBLAYM12     | 62 | XUM8ABAYP015   | 50 |             | 64 |               | 83 |
| XUB2BNXNL2R  | 15 | XUKCBSAYM12     | 62 |                | 64 | XUT8ABAYP02 | 50 | XZCPB1141L2   | 80 |
| XUB2BNXNM12R | 15 | XUM2AKXBL03M12T | 2  | XUM8ALAYL2     | 56 |             | 64 |               | 84 |
| XUB2BNXWL2R  | 15 | XUM2AKXBL03M8T  | 2  | XUM8ALAYM8     | 56 | XUT8ALAYL2  | 56 | XZCPB1141L5   | 80 |
| XUB2BNXWM12R | 15 | XUM2AKXBL2T     | 2  | XUM8ALAYP015   | 56 | XUT8ALAYP02 | 56 |               | 84 |
| XUB2BPXNL2R  | 15 | XUM2AKXBL2T     | 2  | XUM8ANXBL2     | 3  | XUT9ALPXL2  | 56 | XZCPB1151L2   | 80 |
| XUB2BPXNM12R | 15 | XUM2AKXBM8T     | 2  | XUM8ANXBM8     | 3  | XUT9ALPXP02 | 56 |               | 85 |
| XUB2BPXWL2R  | 15 | XUM2ANXBL03M12  | 2  | XUM8APXBL2     | 3  | XUZA118     | 74 | XZCPB1151L5   | 80 |
| XUB2BPXWM12R | 15 | XUM2ANXBL03M12R | 2  | XUM8APXBM8     | 3  | XUZA218     | 74 |               | 85 |
| XUB2BPYNM12R | 15 | XUM2ANXBL03M8   | 2  | XUM9ALAYL2     | 56 | XUZA50      | 74 | XZCPB1251L2   | 80 |
| XUB2BPYWM12R | 15 | XUM2ANXBL03M8R  | 2  | XUM9ALAYM8     | 56 | XUZA51S     | 74 |               | 85 |
| XUB5ANXNL2   | 16 | XUM2ANXBL2R     | 2  | XUM9ALAYP015   | 56 | XUZARK      | 74 | XZCPB1251L5   | 80 |
| XUB5ANXNM12  | 16 | XUM2ANXBL2R     | 2  | XUM9ANXBL03M12 | 3  | XUZARM      | 74 |               | 85 |
| XUB5APXNL2   | 16 | XUM2ANXBM8      | 2  | XUM9ANXBL03M8  | 3  | XUZARS      | 74 | XZCPK75CL2    | 71 |
| XUB5APXNM12  | 16 | XUM2ANXBM8R     | 2  | XUM9ANXBL2     | 3  | XUZASB001   | 74 | XZCPK75CL5    | 71 |
| XUB5APYNM12  | 16 | XUM2APXBL03M12  | 2  | XUM9ANXBM8     | 3  | XUZASB002   | 74 | XZCPK75DL2    | 71 |
| XUB5BNXNL2   | 17 | XUM2APXBL03M12R | 2  | XUM9ANXBL2     | 3  | XUZASB003   | 74 | XZCPK75DL5    | 71 |
| XUB5BNXNM12  | 17 | XUM2APXBL03M8   | 2  | XUM9APXBL03M12 | 3  | XUZASK001   | 74 | XZCPV0941L10  | 80 |
| XUB5BPXNL2   | 17 | XUM2APXBL03M8R  | 2  | XUM9APXBL03M8  | 3  | XUZASM02    | 74 |               | 82 |
| XUB5BPXNM12  | 17 | XUM2APXBL2      | 2  | XUM9APXBL2     | 3  | XUZASM03    | 74 | XZCPV0941L2   | 80 |
| XUB5BPYNM12  | 17 | XUM2APXBL2R     | 2  | XUM9APXBM8     | 3  | XUZASM04    | 74 |               | 82 |
| XUB6ANXNL2   | 16 | XUM2APXBM8      | 2  | XUM9APYBL03M12 | 3  | XUZASM05    | 5  | XZCPV1041L10  | 80 |
| XUB6ANXNM12  | 16 | XUM2APXBM8R     | 2  | XUM9APYBM8     | 3  | XUZASN001   | 74 |               | 82 |
| XUB6ANXWL2   | 16 | XUM2APYBL03M12  | 2  | XUMRACAYM8     | 46 | XUZASN002   | 74 | XZCPV1041L2   | 80 |
| XUB6ANXWM12  | 16 | XUM2APYBL03M12R | 2  | XUMRACAYP015   | 46 | XUZASS      | 74 |               | 82 |
| XUB6APXNL2   | 16 | XUM2APYBM8      | 2  | XUMRAGAYM8     | 46 | XUZASW001   | 74 | XZCPV1041L5   | 80 |
| XUB6APXNM12  | 16 | XUM2APYBM8R     | 2  | XUMRAGAYP015   | 46 | XUZASW002   | 74 |               | 82 |
| XUB6APXWL2   | 16 | XUM4ANXBL03M12  | 4  | XUMRAWAYM8     | 46 | XUZA100     | 78 | XZCPV1141L10  | 80 |
| XUB6APXWM12  | 16 | XUM4ANXBL03M8   | 4  | XUMRAWAYP015   | 46 | XUZA24      | 78 |               | 82 |
| XUB6APYNM12  | 16 | XUM4ANXBL2      | 4  | XUMTARAYL2     | 64 | XUZA39      | 78 | XZCPV1141L2   | 80 |
| XUB6APYWM12  | 16 | XUM4ANXBM8      | 4  | XUMTARAYM8     | 64 | XUZA50      | 78 |               | 82 |
| XUB6BNXNL2   | 17 | XUM4APXBL03M12  | 4  | XUMTARAYP015   | 64 | XUZC60S11   | 78 | XZCPV1141L5   | 80 |
| XUB6BNXNM12  | 17 | XUM4APXBL03M8   | 4  | XUN2AKXNL2T    | 32 | XUZC60S11   | 78 |               | 82 |
| XUB6BNXWL2   | 17 | XUM4APXBL2      | 4  | XUN2AKXNM12T   | 32 | XUZDHM05    | 5  | XZCPV1241L10  | 80 |
| XUB6BNXWM12  | 17 | XUM4APXBM8      | 4  |                | 41 | XUZDHM10    | 5  |               | 82 |
| XUB6BPXNL2   | 17 | XUM5ALAYL2      | 46 | XUN2ANXNL2     | 32 | XUZDHM20    | 5  | XZCPV1241L2   | 80 |
| XUB6BPXNM12  | 17 |                 | 56 | XUN2ANXNL2R    | 32 | XUZDRM05    | 5  |               | 82 |
| XUB6BPXWL2   | 17 | XUM5ALAYM8      | 46 | XUN2ANXNM12    | 32 | XUZDRM10    | 5  | XZCPV1241L5   | 80 |
| XUB6BPXWM12  | 17 |                 | 56 | XUN2ANXNM12R   | 32 | XUZDRM20    | 5  |               | 82 |
| XUB6BPNM12   | 17 | XUM5ALAYP015    | 46 | XUN2ANXNM12R   | 32 | XUZDVM05    | 5  | XZCR25K25DL2  | 71 |
| XUB6BPYNM12  | 17 |                 | 56 | XUN2APXNL2     | 32 | XUZDVM10    | 5  | XZCR25K25DL5  | 71 |
| XUB6BPYWM12  | 17 | XUM5ANXBL03M12  | 4  | XUN2APXNL2R    | 32 | XUZDVM20    | 5  | XZCR26K26CL2  | 71 |
| XUB9ANXNL2   | 18 | XUM5ANXBL2      | 4  | XUN2APXNM12    | 32 |             |    | XZCR26K26CL5  | 71 |
| XUB9ANXNM12  | 18 | XUM5ANXBM8      | 4  | XUN2APXNM12R   | 32 | <b>XZ</b>   |    | XZCR2705037R1 | 81 |
| XUB9ANXWL2   | 18 | XUM5APXBL2      | 4  | XUN2APYNM12    | 32 | XZCP0941L10 | 80 |               | 88 |
| XUB9ANXWM12  | 18 | XUM5APXBM8      | 4  | XUN2APYNM12R   | 32 |             | 83 | XZCR2705037R2 | 81 |
|              |    |                 |    | XUN5ANXNL2     | 33 | XZCP0941L2  | 80 |               | 88 |
|              |    |                 |    | XUN5ANXNM12    | 33 |             | 83 | XZCR2706037R1 | 81 |
|              |    |                 |    | XUN5APXNL2     | 33 |             |    |               | 88 |
|              |    |                 |    |                |    |             |    | XZCR2709037S2 | 81 |
|              |    |                 |    |                |    |             |    |               | 88 |

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|                |          |
|----------------|----------|
| XZCR2710037S1  | 81<br>89 |
| XZCR2710037S2  | 81<br>89 |
| XZCR2711037T1  | 81<br>89 |
| XZCR2711037T2  | 81<br>89 |
| XZCR2712037T1  | 81<br>89 |
| XZCR2712037T2  | 81<br>89 |
| XZCRB151151C2  | 81<br>87 |
| XZCRB151151C5  | 81<br>87 |
| XZCRV1511041C1 | 81<br>86 |
| XZCRV1511041C2 | 81<br>86 |
| XZCRV1511041C5 | 81<br>86 |
| XZCRV1512041C1 | 81<br>86 |
| XZCRV1512041C2 | 81<br>86 |
| XZCRV1512041C5 | 81<br>86 |
| XZIOM8AM12EY   | 71       |
| XZIOM8AM12PY   | 71       |

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