

# Product data sheet

Specifications



## Photoelectric sensors XU, XUB, multi, Sn 0...20 m, 12...24 VDC, M12

XUB0APSNM12

### Main

|                               |                                                                                                                                                             |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Range of product              | Telemecanique Photoelectric sensors XU                                                                                                                      |
| Series name                   | General purpose multimode                                                                                                                                   |
| Electronic sensor type        | Photo-electric sensor                                                                                                                                       |
| Sensor name                   | XUB                                                                                                                                                         |
| Sensor design                 | Cylindrical M18                                                                                                                                             |
| Detection system              | Multimode                                                                                                                                                   |
| Material                      | Plastic                                                                                                                                                     |
| Line of sight type            | Axial                                                                                                                                                       |
| Type of output signal         | Discrete                                                                                                                                                    |
| Supply circuit type           | DC                                                                                                                                                          |
| Wiring technique              | 3-wire                                                                                                                                                      |
| Discrete output type          | PNP                                                                                                                                                         |
| Discrete output function      | 1 NO or 1 NC programmable                                                                                                                                   |
| Electrical connection         | 1 male connector M12, 4 pins                                                                                                                                |
| Product specific application  | -                                                                                                                                                           |
| Emission                      | Infrared diffuse<br>Infrared diffuse with background suppression<br>Infrared thru beam<br>Red polarised reflex                                              |
| [Sn] nominal sensing distance | 3 m polarised reflex need reflector XUZC50<br>20 m thru beam need a transmitter XUB0AKSNM12T<br>0.12 m diffuse with background suppression<br>0.3 m diffuse |

### Complementary

|                          |                                                                                                         |
|--------------------------|---------------------------------------------------------------------------------------------------------|
| Enclosure material       | PBT                                                                                                     |
| Lens material            | PMMA                                                                                                    |
| Maximum sensing distance | 0.12 m diffuse with background suppression<br>0.4 m diffuse<br>30 m thru beam<br>4.5 m polarised reflex |
| Output type              | Solid state                                                                                             |
| Add on output            | Without                                                                                                 |
| Status LED               | 1 LED (green) for supply<br>1 LED (red) for instability                                                 |

|                           |                                                   |
|---------------------------|---------------------------------------------------|
|                           | 1 LED (yellow) for output state                   |
| [Us] rated supply voltage | 12...24 V DC with reverse polarity protection     |
| Supply voltage limits     | 10...36 V DC                                      |
| Switching capacity in mA  | <= 100 mA (overload and short-circuit protection) |
| Switching frequency       | <= 250 Hz                                         |
| Maximum voltage drop      | <1.5 V (closed state)                             |
| Current consumption       | 35 mA no-load                                     |
| Maximum delay first up    | 200 ms                                            |
| Maximum delay response    | 2 ms                                              |
| Maximum delay recovery    | 2 ms                                              |
| Setting-up                | Self-teaching                                     |
| Diameter                  | 18 mm                                             |
| Length                    | 78 mm                                             |
| Product weight            | 0.045 kg                                          |

## Environment

|                                       |                                                                                                                                                     |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Product certifications                | CSA<br>UL<br>CE                                                                                                                                     |
| Ambient air temperature for operation | -25...55 °C                                                                                                                                         |
| Ambient air temperature for storage   | -40...70 °C                                                                                                                                         |
| Vibration resistance                  | 7 gn, amplitude = +/- 1.5 mm (f = 10...55 Hz) conforming to IEC 60068-2-6                                                                           |
| Shock resistance                      | 30 gn (duration = 11 ms) conforming to IEC 60068-2-27                                                                                               |
| IP degree of protection               | IP65 double insulation conforming to IEC 60529<br>IP67 double insulation conforming to IEC 60529<br>IP69K double insulation conforming to DIN 40050 |

## Packing Units

|                              |          |
|------------------------------|----------|
| Unit Type of Package 1       | PCE      |
| Number of Units in Package 1 | 1        |
| Package 1 Height             | 4.2 cm   |
| Package 1 Width              | 6.7 cm   |
| Package 1 Length             | 9.7 cm   |
| Package 1 Weight             | 42.9 g   |
| Unit Type of Package 2       | S01      |
| Number of Units in Package 2 | 22       |
| Package 2 Height             | 15.0 cm  |
| Package 2 Width              | 15.0 cm  |
| Package 2 Length             | 40.0 cm  |
| Package 2 Weight             | 1.305 kg |
| Unit Type of Package 3       | P06      |
| Number of Units in Package 3 | 704      |
| Package 3 Height             | 75.0 cm  |
| Package 3 Width              | 80.0 cm  |
| Package 3 Length             | 60.0 cm  |

|                  |           |
|------------------|-----------|
| Package 3 Weight | 48.116 kg |
|------------------|-----------|

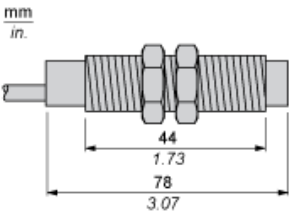
## Offer Sustainability

|                            |                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sustainable offer status   | Green Premium product                                                                                                                                                                                                                                                                                                                                                             |
| REACH Regulation           | <a href="#">REACH Declaration</a>                                                                                                                                                                                                                                                                                                                                                 |
| EU RoHS Directive          | Pro-active compliance (Product out of EU RoHS legal scope)<br><a href="#">EU RoHS Declaration</a>                                                                                                                                                                                                                                                                                 |
| Mercury free               | Yes                                                                                                                                                                                                                                                                                                                                                                               |
| RoHS exemption information | <a href="#">Yes</a>                                                                                                                                                                                                                                                                                                                                                               |
| Environmental Disclosure   | <a href="#">Product Environmental Profile</a>                                                                                                                                                                                                                                                                                                                                     |
| Circularity Profile        | <a href="#">End of Life Information</a>                                                                                                                                                                                                                                                                                                                                           |
| California proposition 65  | WARNING: This product can expose you to chemicals including: Diisononyl phthalate (DINP), which is known to the State of California to cause cancer, and Di-isodecyl phthalate (DIDP), which is known to the State of California to cause birth defects or other reproductive harm. For more information go to <a href="http://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a> |

## Contractual warranty

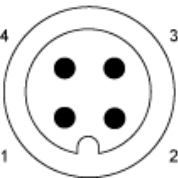
|          |           |
|----------|-----------|
| Warranty | 18 months |
|----------|-----------|

Dimensions



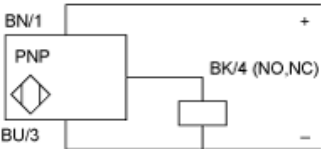
Wiring Schemes

M12 Connector



- 1 : (+)
- 2 : Beam break input (1)
- 3 : (-)
- 4 : OUT/Output
- (1) Beam break input on thru-beam transmitter only

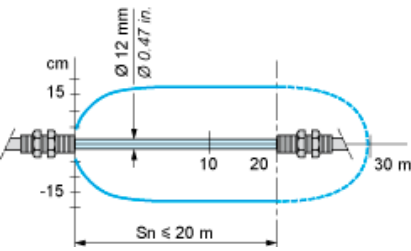
Receiver, PNP Output



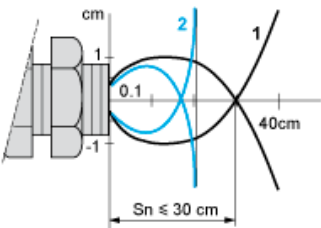
- BN : Brown
- BU : Blue
- BK : Black

Detection Curves

With Thru-beam Accessory (Thru-beam)

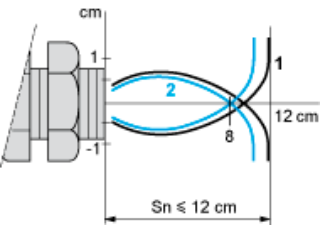


Without Accessory (Diffuse)



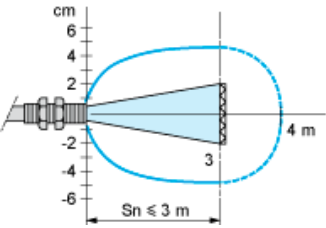
1 : White 90%  
2 : Grey 18%  
Object 10 x 10 cm

Without Accessory (Diffuse with background suppression)



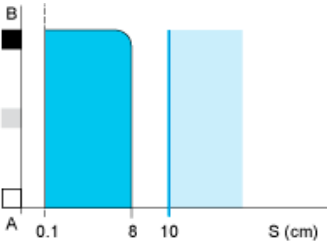
1 : White 90%  
2 : Grey 18%  
Object 10 x 10 cm

With reflector (Polarised reflex)

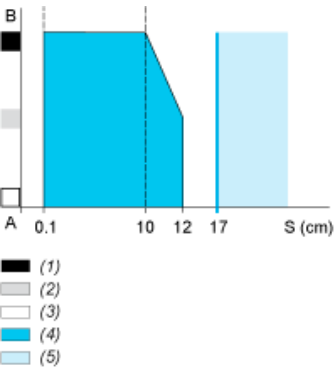


With reflector XUZC50

Variation of Usable Sensing Distance  $S_u$  (Without accessory, with adjustable background suppression)  
Teach Mode at Minimum



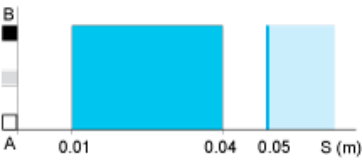
Teach Mode at Maximum



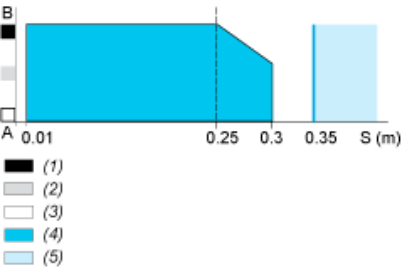
- A-B : Object reflection coefficient
- (1) Black 6%
  - (2) Grey 18%
  - (3) White 90%
  - (4) Sensing range
  - (5) Non sensing zone (matt surfaces)

Variation of Usable Sensing Distance

Minimum Setting



Maximum Setting



- A-B : Object reflection coefficient
- (1) Black 6%
  - (2) Grey 18%
  - (3) White 90%
  - (4) Sensing range
  - (5) Non sensing zone (matt surfaces)

Recommended replacement(s)