

# XXS18S1AM12

Ultrasonic sensors XX, ultrasonic sensor cylindrical M18, Sn=1 m, analog 4 20 mA, SYNC, connector M12



## Main

|                               |                                                                       |
|-------------------------------|-----------------------------------------------------------------------|
| Range of product              | Telemecanique Ultrasonic sensors XX                                   |
| Sensor type                   | Ultrasonic sensor                                                     |
| Series name                   | General purpose                                                       |
| Sensor name                   | XXS                                                                   |
| Sensor design                 | Cylindrical M18                                                       |
| Detection system              | Diffuse                                                               |
| [Sn] nominal sensing distance | 1 M adjustable with remote teach push-button<br>1 m software with kit |
| Material                      | Metal                                                                 |
| Type of output signal         | Analogue                                                              |
| Wiring technique              | 5-wire                                                                |
| Analogue output function      | 4...20 mA                                                             |
| [Us] rated supply voltage     | 12...24 V DC with reverse polarity protection                         |
| Electrical connection         | Male connector M12 5 pins                                             |
| [Sd] sensing range            | 0.105...1 m                                                           |
| IP degree of protection       | IP65 conforming to IEC 60529<br>IP67                                  |

## Complementary

|                                                   |                                                                                    |
|---------------------------------------------------|------------------------------------------------------------------------------------|
| Enclosure material                                | Stainless steel 316L                                                               |
| Front material                                    | Epoxy<br>Rubber<br>Resin                                                           |
| Supply voltage limits                             | 10...30 V DC                                                                       |
| Function available                                | With synchronisation mode<br>Software configurable                                 |
| [Sa] assured operating distance                   | 0.105...1 m (teach mode)                                                           |
| Blind zone                                        | 105 mm                                                                             |
| Transmission frequency                            | 200 kHz                                                                            |
| Repeat accuracy                                   | 0.1 %                                                                              |
| Deviation angle from 90° of object to be detected | -10...10 °                                                                         |
| Minimum size of detected object                   | Cylinder diameter 1 mm at 600 mm                                                   |
| Status LED                                        | Output state: 1 LED (yellow)<br>Echo state: 1 LED (green)                          |
| Current consumption                               | 30 mA                                                                              |
| Maximum switching capacity                        | 250 Ohm with 12 V DC overload and short-circuit protection<br>850 Ohm with 24 V DC |
| Setting-up                                        | Teach mode<br>Configurator software                                                |
| Maximum delay first up                            | 180 ms                                                                             |
| Maximum delay recovery                            | 100 ms                                                                             |
| Marking                                           | CE                                                                                 |
| Threaded length                                   | 45 mm                                                                              |
| Height                                            | 18 mm                                                                              |
| Width                                             | 18 mm                                                                              |
| Depth                                             | 64 mm                                                                              |
| Net weight                                        | 0.05 kg                                                                            |

## Environment

|                                       |                                                            |
|---------------------------------------|------------------------------------------------------------|
| Standards                             | IEC 60947-5-2<br>CSA C22.2 No 14<br>UL 508                 |
| Product certifications                | cULus[RETURN]E2[RETURN]RCM[RETURN]Ecolab                   |
| Ambient air temperature for operation | -25...70 °C                                                |
| Ambient air temperature for storage   | -40...80 °C                                                |
| Vibration resistance                  | +/-1 mm conforming to IEC 60068-2-6 (f = 10...55 Hz)       |
| Shock resistance                      | 30 gn in all 3 axes for 11 ms conforming to IEC 60068-2-27 |
| Resistance to electrostatic discharge | 8 kV level 4 conforming to IEC 61000-4-2                   |
| Resistance to electromagnetic fields  | 10 V/m level 3 conforming to IEC 61000-4-3                 |
| Resistance to fast transients         | 1 kV level 3 conforming to IEC 61000-4-4                   |

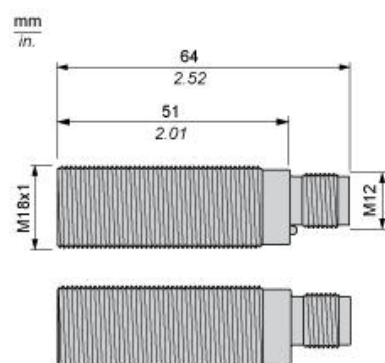
## Packing Units

|                              |          |
|------------------------------|----------|
| Unit Type of Package 1       | PCE      |
| Number of Units in Package 1 | 1        |
| Package 1 Height             | 4.1 cm   |
| Package 1 Width              | 6.4 cm   |
| Package 1 Length             | 9.4 cm   |
| Package 1 Weight             | 49.986 g |

## Offer Sustainability

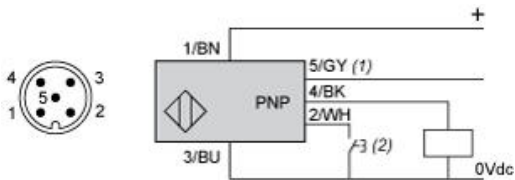
|                                            |                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sustainable offer status                   | Green Premium product                                                                                                                                                                                                                                                                                                                                                             |
| Circularity Profile                        | No need of specific recycling operations                                                                                                                                                                                                                                                                                                                                          |
| 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> |
| For all Reach Rohs enquiries contact us at | <a href="mailto:sustainability@tesensors.com">sustainability@tesensors.com</a>                                                                                                                                                                                                                                                                                                    |

## Dimensions



Connections

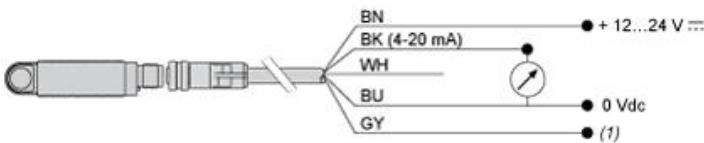
Connector Wiring



- (1) : Synchronization  
(2) : External setting pushbutton or XXZPB100 remote teach pushbutton.

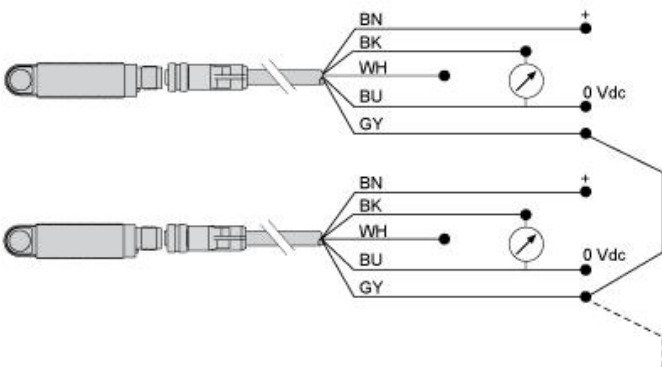
| Pin number | Wire color | Description     |
|------------|------------|-----------------|
| 1          | BN: Brown  | +12...24VDC     |
| 2          | WH: White  | Input teach     |
| 3          | BU: Blue   | 0 VDC           |
| 4          | BK: Black  | Output          |
| 5          | GY: Grey   | Synchronization |

Wiring Scheme



- (1) : Synchronization  
4-20    For 12 VDC, load ≤ 250 Ω  
mA:    For 24 VDC, load ≤ 850 Ω

Wiring for the Synchronization Function (Side by Side Application)

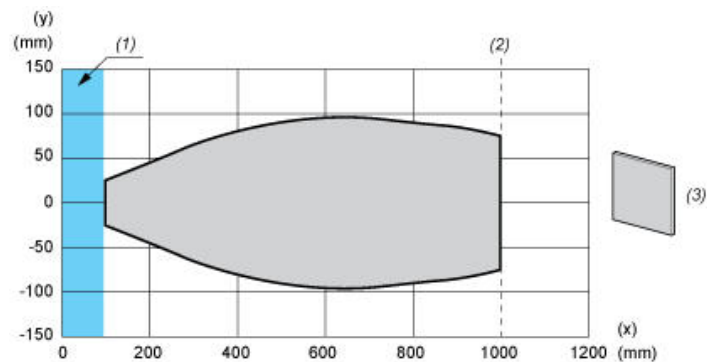


- BN : Brown  
WH : White  
BU : Blue  
BK : Black  
GY : Grey

NB: To enable synchronization between several sensors, all of the wires of pin no.5 (Grey) must be electrically connected together. A maximum of 8 sensors can be synchronized. To enable "Multiplexer" function for the sensors, use the XX Configuration Software. Without synchronization or multiplexing, the sensors must be at least 50 cm away from each other in order to avoid mutual interference.

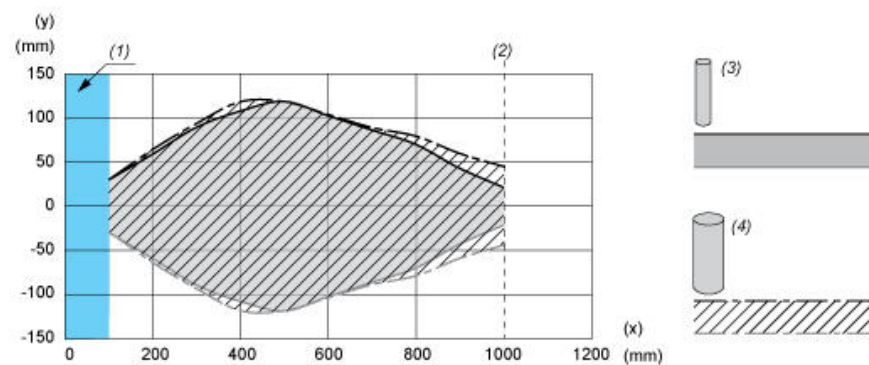
## Performance Curves

### Detection Curve with 100 x 100 mm / 3.94 x 3.94 in. Square Target



- (x) Target distance
- (y) Detection limit
- (1) : Blind zone: 105 mm
- (2) : Sn max.
- (3) : 100 x 100 mm / 3.94 x 3.94 in. stainless steel plate

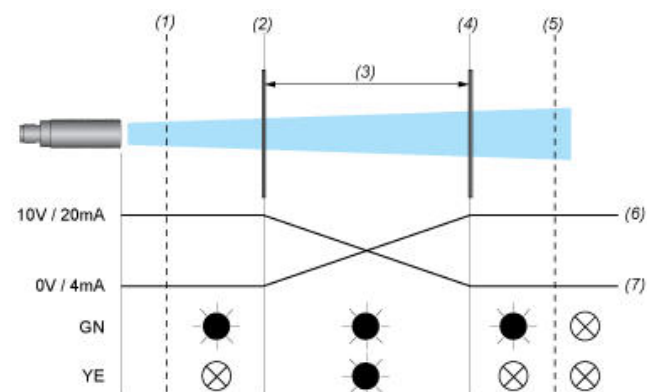
### Detection Curve with Round Bar



- (x) Target distance
- (y) Detection limit
- (1) : Blind zone: 105 mm
- (2) : Sn max.
- (3) : Ø 10 mm / 0.394 in. stainless steel cylinder
- (4) : Ø 25 mm / 0.984 in. stainless steel cylinder

## Operating Diagram

### Near and Far Limits Setting with Teach Procedure



- (1) : Blind zone
- (2) : Near limit
- (3) : Sensing window
- (4) : Far limit
- (5) : Sn max
- (6) : Inverse
- (7) : Direct
- (8) : ON
- (9) : OFF
- GN : Green LED
- YE : Yellow LED