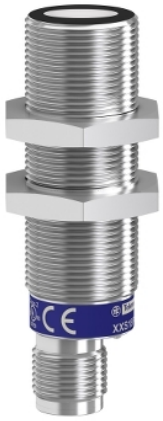
# Product data sheet
## Characteristics

# XXS18S1AM12
## Ultrasonic sensor cylindrical M18 - Sn=1m - analog 4-20mA - SYNC - connector M12



### Main

| | |
|---|---|
| Range of product | OsiSense 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 |
| Material | Metal |
| Type of output signal | Analogue |
| Wiring technique | 4-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 | IP67<br>IP65 conforming to IEC 60529 |

### 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 | -7...7 ° |
| Minimum size of detected object | Cylinder diameter 1 mm at 600 mm |
| Status LED | 1 LED (green) for echo state<br>1 LED (yellow) for output state |
| 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 |
| Voltage drop | <= 2 V |
| Setting-up | Teach mode |
| Delay first up | <= 180 ms |
| Delay recovery | <= 100 ms |
| Marking | CE |
| Threaded length | 45 mm |
| Height | 18 mm |
| Width | 18 mm |

The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein.
This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications.
It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof.
Neither Schneider Electric Industries SAS nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information contained herein.

| | |
|---|---|
| Depth | 64 mm |
| Product weight | 0.05 kg |

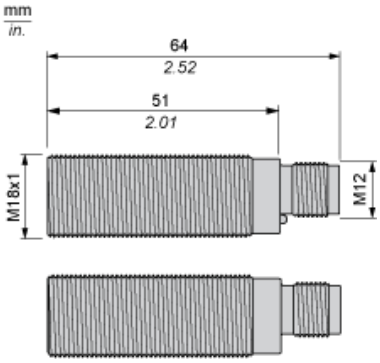
## Environment

| | |
|---|---|
| Standards | EN/IEC 60947-5-2<br>UL 508<br>CSA C22.2 No 14 |
| Product certifications | CULus<br>Ecolab<br>RCM<br>EAC<br>E2 |
| 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 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 |

## Offer Sustainability

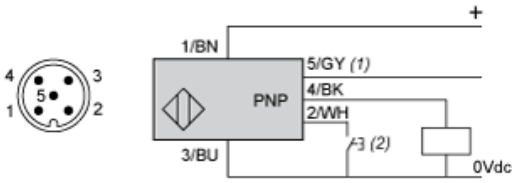
| | |
|---|---|
| RoHS (date code: YYWW) | Compliant - since 1810 - Schneider Electric declaration of conformity Schneider Electric declaration of conformity |
| REACh | Reference contains SVHC above the threshold - Go to CaP for more details- Go to CaP for more details |
| Product end of life instructions | Available |

## 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 |

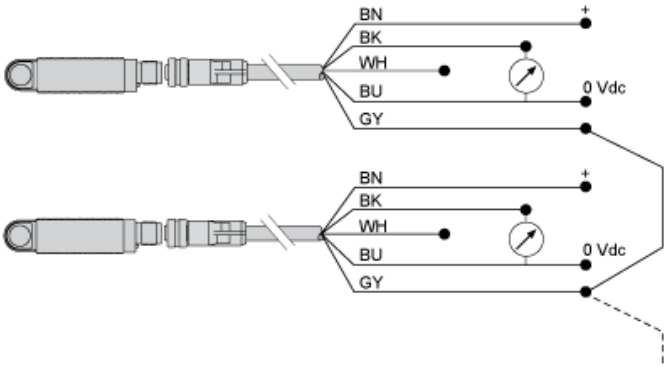
### Wiring Scheme




(1) : Synchronization

4-20 mA: For 12 VDC, load ≤ 250 Ω
For 24 VDC, load ≤ 850 Ω

### Wiring for the Synchronization Function (Side by Side Application)

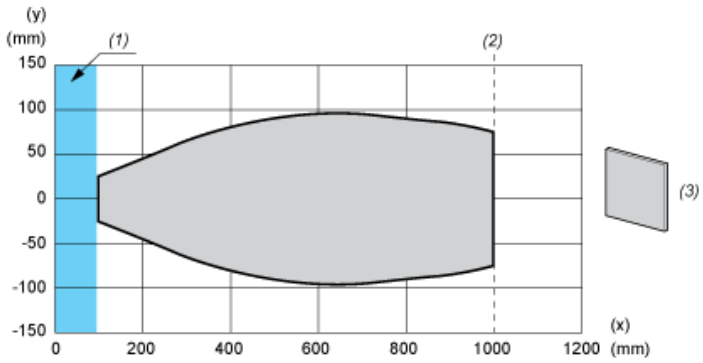



BN : Brown
WH : White
BU : Blue
BK : Black
GY : Grey

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.

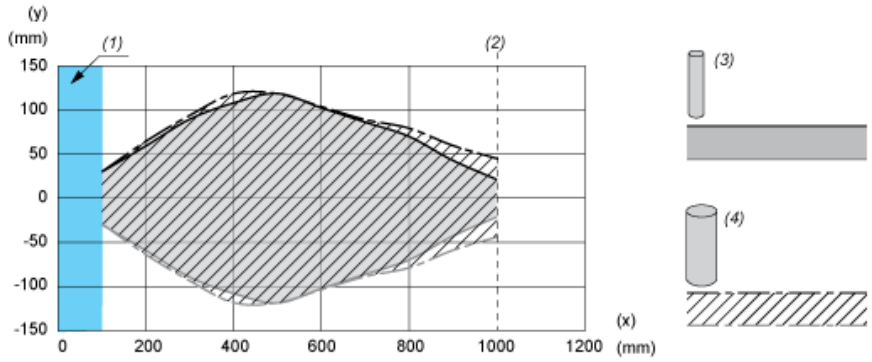
## Performance Curves

### 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

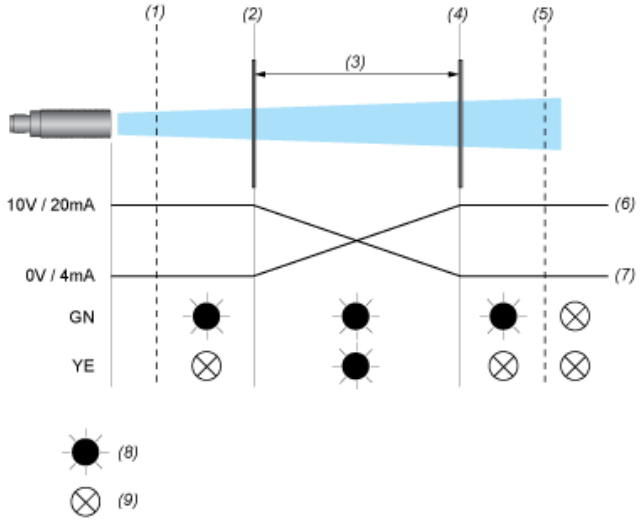
### Detection Curve with Round Bar




(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