# Product data sheet
## Characteristics

# XXW54P3HPL01M12
## Ultrasonic sensor, plastic, Wide Beam Φ54, 3m, 0.5…4.5V+PNP, 0.15m cable + M12-5pin male connector

### Main

| | |
|---|---|
| Range of Product | Telemecanique Ultrasonic sensors XX |
| Sensor Type | Ultrasonic sensor |
| Series name | Application |
| Sensor name | XXS |
| Sensor design | Ø 54 mm |
| Detection system | Diffuse |
| [Sn] nominal sensing distance | 9.84 ft (3 m) software with kit |
| Material | Plastic |
| Type of output signal | Analogue + discrete |
| Discrete output function | 1 NO or 1 NC programmable |
| Wiring Technique | 5-wire |
| Discrete output type | PNP |
| Analogue output function | 0.5...4.5 V |
| [Us] rated supply voltage | 12...24 V DC reverse polarity protection |
| Electrical connection | Remote male connector M12 5 pins, 0.49 ft (0.15 m) |
| [Sd] sensing range | 1.39…9.84 ft (0.425…3 m) |
| Beam angle | 50 ° |
| IP degree of protection | IP65 conforming to IEC 60529<br>IP67 conforming to IEC 60529<br>IP69K conforming to DIN 40050 |

### Complementary

| | |
|---|---|
| Enclosure Material | Valox |
| Front material | Ultem |
| Supply voltage limits | 9…32 V DC |
| Function Available | With synchronisation mode<br>Software configurable |
| [Sa] assured operating distance | 1.39…9.84 ft (0.425…3 m) configurator software) |
| Maximum differential travel | 0.79 in (20 mm) |
| Blind zone | 16.73 in (425 mm) |
| Transmission frequency | 48 kHz |
| Repeat accuracy | 0.1 % |
| Minimum size of detected object | Cylinder diameter 12 mm 9.84 ft (3 m) |
| Status LED | Output state 1 LED yellow)<br>Echo state and power ON 1 LED green/white) |
| Current Consumption | 30 mA |
| Maximum switching current | 100 mA overload and short-circuit protection |
| Maximum switching capacity | >= 2 kOhm overload and short-circuit protection |
| Maximum voltage drop | 2 V |
| Switching frequency | <= 1.6 Hz |
| Setting-up | Configurator software |
| Maximum delay first up | 400 ms |
| Maximum delay response | 300 ms |
| Maximum delay recovery | 300 ms |
| Marking | CE |

| | |
|---|---|
| Height | 2.13 in (54 mm) |
| Width | 3.11 in (79 mm) |
| Depth | 1.28 in (32.5 mm) |
| Net Weight | 0.25 lb(US) (0.115 kg) |

## Environment

| | |
|---|---|
| Standards | IEC 60947-5-2<br>CSA C22.2 No 14<br>UL 508 |
| Product Certifications | cULus[RETURN]E2 |
| Ambient Air Temperature for Operation | -40…158 °F (-40…70 °C) |
| Ambient Air Temperature for Storage | -40…185 °F (-40…85 °C) |
| Vibration resistance | +/-1 mm 10…55 Hz)IEC 60068-2-6 |
| Shock resistance | 30 gn in all 3 axes 11 ms IEC 60068-2-27 |
| Resistance to electrostatic discharge | 8 kV 8 kV air, 4 kV contact IEC 61000-4-2 |
| Resistance to electromagnetic fields | 9.14 V/m (10 V/m) level 3 IEC 61000-4-3 |
| Resistance to fast transients | 2 kV IEC 61000-4-4 |

## Ordering and shipping details

| | |
|---|---|
| Category | US10DS222489 |
| Discount Schedule | 0DS2 |
| GTIN | 3389110003291 |
| Returnability | Yes |
| Country of origin | US |

## Packing Units

| | |
|---|---|
| Unit Type of Package 1 | PCE |
| Number of Units in Package 1 | 1 |
| Package 1 Height | 1.70 in (4.318 cm) |
| Package 1 Width | 3.80 in (9.652 cm) |
| Package 1 Length | 5.10 in (12.954 cm) |
| Package 1 Weight | 4.96 oz (140.614 g) |
| Unit Type of Package 2 | S01 |
| Number of Units in Package 2 | 4 |
| Package 2 Height | 5.91 in (15 cm) |
| Package 2 Width | 5.91 in (15 cm) |
| Package 2 Length | 15.75 in (40 cm) |
| Package 2 Weight | 28.22 oz (800 g) |

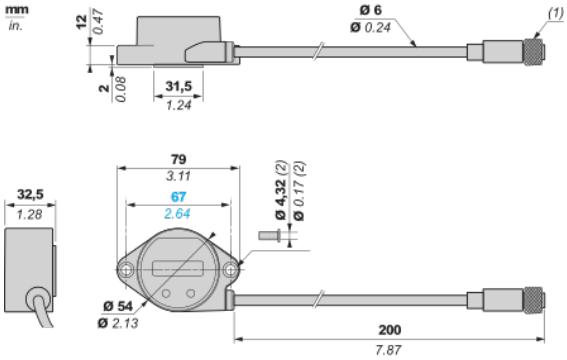
## Offer Sustainability

| | |
|---|---|
| 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 www.P65Warnings.ca.gov |
| WEEE | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins. |
| For all Reach Rohs enquiries contact us at | sustainability@tesensors.com |

## Contractual warranty

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

## Dimensions



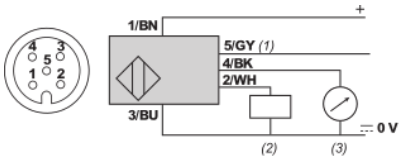

(1): M12 connector (male, 5-pin).

(2): The sensor is supplied with 2 stainless steel inserts Ø 4.32 mm and 2 silicone washers. M4 screws not provided.

## Connection and schema

### Connector wiring

Connector model: M12 male 5-pin




(1): Synchronization

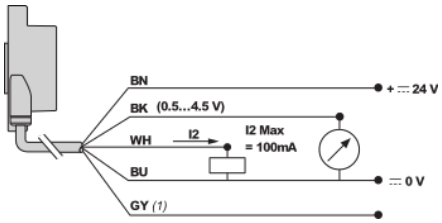
(2): Output 2

(3): Output 1

| Pin Number | Wire Color | Description |
|---|---|---|
| 1 | BN: Brown | + 12…24 V ■ |
| 2 | WH: White | PNP Digital Output |
| 3 | BU: Blue | 0 V ■ |
| 4 | BK: Black | 0.5…4.5 V Analog Output |
| 5 | GY: Grey | Synchronization |

## Connection and schema

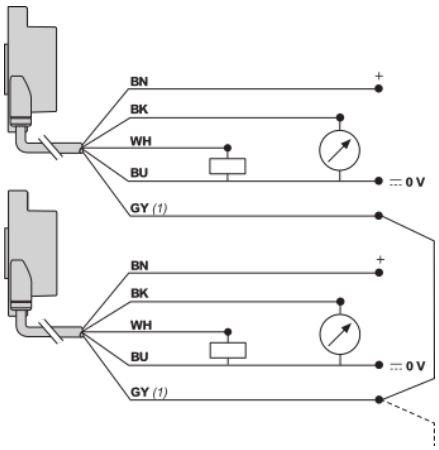
### Wiring diagram




(1): Synchronization

Analog output load: 2 kΩ…∞

## Synchronization function diagram (side by side application)

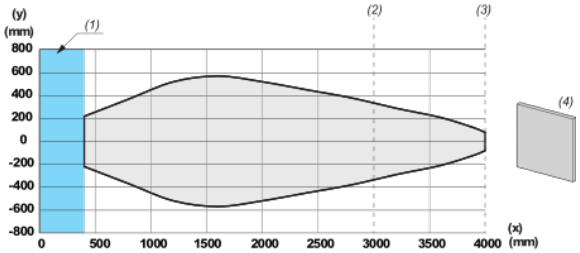



(1): Synchronization

Note: Up to 8 sensors can be synchronized to operate side by side by electrically connecting all pin no.6 (grey) wires together. All sensors must be the same model and have the same cycle time setting.

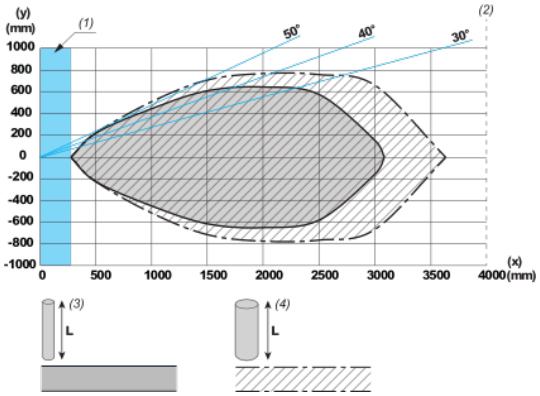
## Performance Curves

### Detection curve with 100 x 100 mm / 3.94 x 3.94 inches square target




(X): Target distance
(Y): Detection limit
(1): Blind zone: 425 mm / 16.7 inches
(2): Far limit
(3): Sn max.
(4): 100 x 100 mm / 3.94 x 3.94 inches stainless steel plate

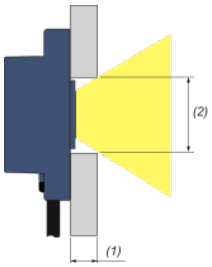
### Detection curve with round bar




(X): Target distance
(Y): Detection limit
(1): Blind zone: 425 mm / 16.7 inches
(2): Sn max.
(3): Ø 10 mm / 0.394 inches stainless steel cylinder
(4): Ø 25 mm / 0.984 inches stainless steel cylinder
L: 1 m / 3.28 ft.

## Mounting and Clearance

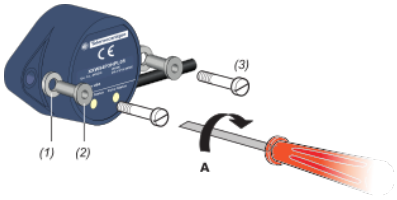
### Flush mounting recommendations




(1): E max: 10 mm / 0.39 in.

(2): Ø min: 33 mm / 1.3 in.

### Tightening torque




A ≤ 3 Nm / 26.6 lb-in

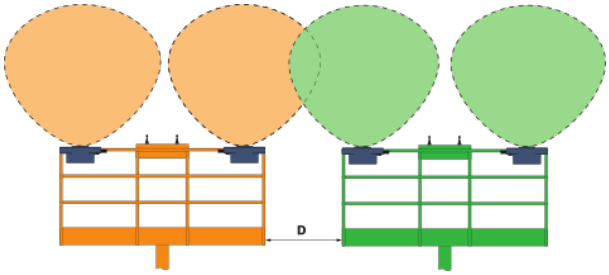
(1): 2 silicone washers provided with the sensor

(2): 2 stainless steel inserts provided with the sensor

(3): 2 M4 screws (not provided)

### Mutual interference between two separate pieces of mobile equipment, side by side

Sensors in the same mobile equipment must be synchronized, but sensors in two separate pieces of mobile equipment cannot be synchronized




D min: 2,5 m /8.2 ft.

Note: For the side by side use, consider the machine manufacturer's prescriptions without ever going below the 2,5 m / 8.2 ft.