

# OsiSense™ XS

## Inductive Proximity Sensors

### Cubic Range

Catalog





MV-BL  
250

MV-BL  
250

72

# A sensor that adapts quickly and easily to your machines

With unique one-click mounting and a rotating detection head, the new **OsiSense™ XS cubic sensor** can be installed quickly and easily on your machines or equipment.

Maintenance is simplified thanks to quick mounting and removal, as well as LED indicators of sensor status that are clearly visible from a long distance and from any direction.

## > Simple installation, easier maintenance

One-click concept makes operation and servicing easier

## > Robustness and compliance with SIL2

The first general purpose proximity sensor with SIL2 certification (Safety Integrity Level 2)

## > Selection guide

Easily select the product best suited to your application

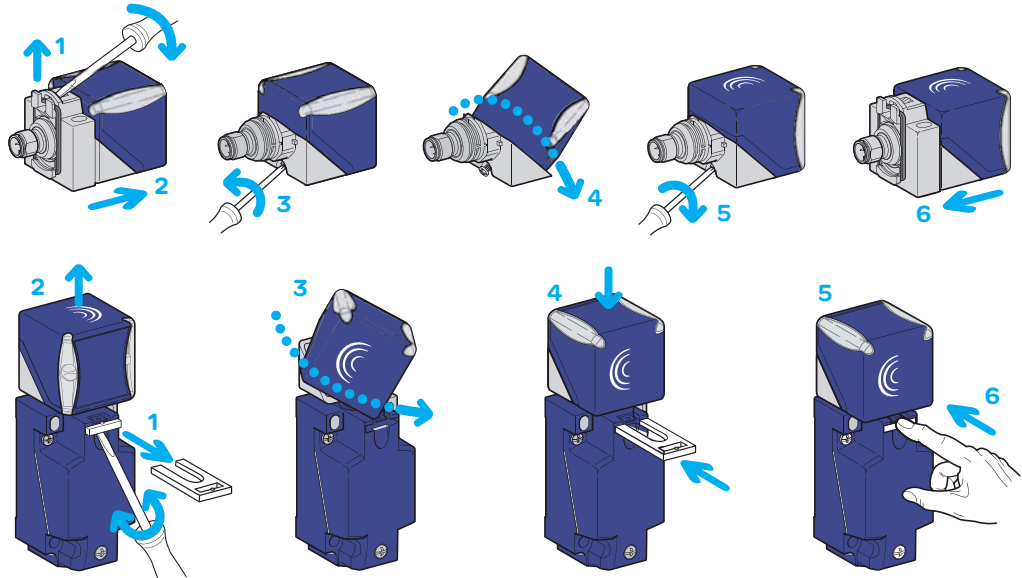
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# > Simple installation, easier maintenance

The new OsiSense XS proximity sensors, available in cubic and rectangular versions, have a 5-position turret head, enabling accurate detection in any direction. The orientation of the head can be adjusted manually and quickly without any special tools.

## 5-position Turret head



## Maintenance time **halved**

LEDs visible from any direction provide fast status evaluation from several feet away.

For the cubic version, the detection head can be changed without removing the whole product from the machine, thanks to the innovative **one-click concept**.



# > Reliable and robust detection

The compact design and robustness of these new sensors make them perfectly suited for use in those industrial applications where there is a high risk of damage or collision with moving parts.

The OsiSense XS range includes the first SIL2 certified cubic inductive sensor that significantly reduces the risk of failure, minimizing the chance of damage to your conveyors and machines.

Analog versions are also available for detection and monitoring of material handling processes and many packaging applications.

The OsiSense XS sensors are IP69K tested and validated for use in rough industrial environments.



**SIL2**  
Certification

## Selection guide



XS-C2		Flush mountable		Non-flush mountable		
Sensing distance Sn		15 mm	20 mm	25 mm	40 mm	
NO+NC	DC4	PNP	-	XS8C2A1PC M12	-	
		NPN	-	XS8C2A1NC M12	-	
NO or NC	DC3	PNP	XS7C2A1P A M12	-	-	
		NPN	XS7C2A1N A M12	-	-	
	DC2	PNP	XS7C2A1D A M12	XS8C2A1D A M12	-	XS8C2A4D A M12
		NPN	XS7C2A1M A U20	XS8C2A1M A U20	-	XS8C2A4M A U20
Select the output function	NO	A	A	-	A	
	NC	B	B	-	B	
Analog	0-10 V	-	-	XS9C2A2A1 M12	-	
	4-20mA	-	-	XS9C2A2A2 M12	-	



XS-C4		Flush mountable		Non-flush mountable	
Sensing distance Sn		15 mm	20 mm	25 mm	40 mm
NO+NC	DC4	PNP	-	XS8C4A1PC P20	-
		NPN	-	XS8C4A1NC P20	-
NO or NC	DC2	XS7C4A1DP P20	XS8C4A1DP P20	-	XS8C4A4DP P20
	AC/DC	XS7C4A1MP P20	XS8C4A1MP P20	-	XS8C4A4MP P20
Analog	0-10 V	-	-	XS9C4A2A1 P20	-
	4-20mA	-	-	XS9C4A2A2 P20	-
Select the type of connection	M20	P20	P20	P20	P20
	PG13	G13	G13	G13	G13
	1/2" NPT	N12	N12	N12	N12

SIL2 sensors

A comprehensive range of cubic and flat inductive sensors  
Refer to the Telemecanique Sensors panorama

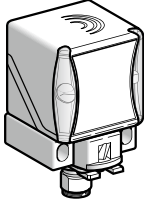


Dimensions	8 x 22 x 8 mm	15 x 32 x 8 mm	26 x 26 x 8 mm	40 x 40 x 15 mm	80 x 80 x 26 mm
Sensing Distance Sn	2.5 mm	5 mm	10 mm	15 mm	40 mm
Catalog Numbers	XS7J1...	XS7F1...	XS7E1...	XS7C1...	XS7D1...

# OsiSense™ XS

## Inductive proximity sensors

General purpose, Cubic case, 40 x 40 x 70 mm,  
M12 or 1/2"-20UNF connector, 5 position turret head

Sensor	Flush mountable in metal	Non-flush mountable in metal		
				
Nominal sensing distance (Sn)	15 mm (0.59 in.)	20 mm (0.78 in.)	40 mm (1.57 in.)	
<b>Catalog Numbers</b>				
4-wire ☐☐☐	PNP NO+NC	–	XS8C2A1PCM12	XS8C2A4PCM12
	NPN NO+NC	–	XS8C2A1NCM12	XS8C2A4NCM12
3-wire ☐☐☐	PNP NO	XS7C2A1PAM12	–	–
	NPN NO	XS7C2A1NAM12	–	–
	PNP NC	XS7C2A1PBM12	–	–
	NPN NC	XS7C2A1NBM12	–	–
2-wire ☐☐☐ <i>Available 3<sup>rd</sup> quarter 2012</i>	NO	XS7C2A1DAM12	XS8C2A1DAM12	XS8C2A4DAM12
	NC	XS7C2A1DBM12	XS8C2A1DBM12	XS8C2A4DBM12
2-wire (~/☐☐☐) unprotected (1) <i>Available 3<sup>rd</sup> quarter 2012</i>	NO	XS7C2A1MAU20	XS8C2A1MAU20	XS8C2A4MAU20
	NC	XS7C2A1MBU20	XS8C2A1MBU20	XS8C2A4MBU20
Weight, kg (lb)	0.149 (0.328)	0.149 (0.328)	0.149 (0.328)	
<b>Specifications</b>				
Operating zone, mm (in.)	0–12 (0–0.47)	0–16 (0–0.62)	0–32 (0–1.25)	
Product certifications	UL, CSA, CE, TÜV (4-wire versions)			
Conformity to standards	IEC 60947-5-2			
Conformity to safety standards (2)	For XS8 C2A●PCM12	EN 62061 (2005): SILcl2 EN 61508 (2010): SIL 2, EN ISO 13849 (2008): PL d		
Reliability data (2)	For XS8 C2A●PCM12	MTTFd = 1546 years PFHd = 7.4 10 <sup>-8</sup> 1/h		
Connection	M12 connector for ☐☐☐ versions 1/2"-20UNF connector for ~/☐☐☐ versions			
Differential travel	3–15% of Sr			
Degree of protection	Conforming to IEC 60529 and DIN 40050	IP65, IP67 and IP69K		
Temperature	Storage	–40 to +85 °C (–40 to +185 °F)		
	Operation (3)	–25 to +70 °C (–13 to +158 °F)		
Material	Case: PBT			
Vibration resistance	Conforming to IEC 60068-2-6	25 gn, amplitude ±2 mm (10–55 Hz)		
Shock resistance	Conforming to IEC 60068-2-27	50 gn for 11 ms		
Indicators	Output state	Yellow LED		
	Power on	Green LED, for 4-wire ☐☐☐, 3-wire ☐☐☐ and 2-wire ~/☐☐☐ versions		
Rated supply voltage	4-wire ☐☐☐	12–48 V with protection against reverse polarity		
	3-wire ☐☐☐	12–24 V with protection against reverse polarity		
	2-wire ☐☐☐	12–48 V with protection against reverse polarity		
	2-wire ~/☐☐☐	24–240 V (~ 50/60 Hz)		
Voltage limits (including ripple)	4-wire ☐☐☐	10–58 V		
	3-wire ☐☐☐	10–36 V		
	2-wire ☐☐☐	10–58 V		
	2-wire ~/☐☐☐	20–264 V		
Current consumption, no-load	3-wire and 4-wire ☐☐☐	< 15 mA		
Residual current, open state	2-wire ☐☐☐	< 0.6 mA		
	2-wire ~/☐☐☐	1.5 mA		
Switching capacity	3-wire and 4-wire ☐☐☐	< 200 mA with overload and short-circuit protection		
	2-wire ☐☐☐	< 100 mA with overload and short-circuit protection		
	2-wire ~/☐☐☐	~/: 5–300 mA (1) ☐☐☐: 5–200 mA (1)		
Voltage drop, closed state	3-wire and 4-wire ☐☐☐	< 2 V		
	2-wire ☐☐☐	< 4.2 V		
	2-wire ☐☐☐~/	< 5.5 V		
Maximum switching frequency	< 300 Hz (flush mountable) < 200 Hz (non-flush mountable)			
Delays	First-up	< 7 ms		
	Response	Flush mountable: ≤ 1.2 ms. Non-flush mountable: ≤ 1.4 ms		
	Recovery	Flush mountable: ≤ 1.8 ms. Non-flush mountable: ≤ 2.5 ms		

(1) Sensor must be protected by a 0.4 A fast-acting fuse (XUZE04) connected in series with the load.

(2) SIL 2 protection can only be obtained by connecting both outputs to a safety PLC. Refer to catalog MKTED208051EN-US, Preventa Machine Safety Products.

(3) Sensors are available for very low temperatures (suffix TF: –40 to +70 °C / –40 to +158 °F) or very high temperatures (suffix TT: –25 to +85 °C / –13 to +185 °F). Consult the Customer Care Center (1-800-435-2121).

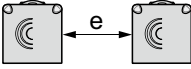
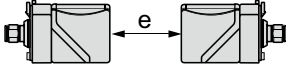
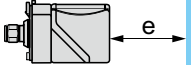
# OsiSense™ XS

## Inductive proximity sensors

General purpose, Cubic case, 40 x 40 x 70 mm,  
M12 or 1/2"-20UNF connector, 5 position turret head

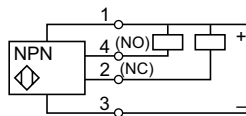
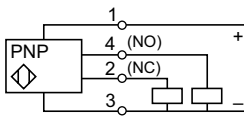
### Setup

#### Minimum mounting distances (mm)

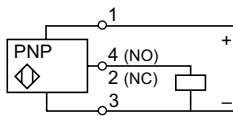
		 Side by side	 Face to face	 Facing a metal object
Sensors flush mountable in metal	<b>XS7C2A1●●</b>	$e \geq 60$	$e \geq 120$	$e \geq 45$
	<b>XS8C2A1●●</b>	$e \geq 80$	$e \geq 160$	$e \geq 60$
Sensors non-flush mountable in metal	<b>XS8C2A4●●</b>	$e \geq 160$	$e \geq 320$	$e \geq 120$

### Wiring diagrams

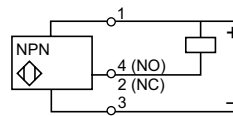
#### 4-wire $\overline{\text{NPN}}$ , NO + NC outputs



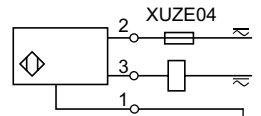
#### 3-wire, PNP



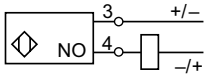
#### 3-wire, NPN



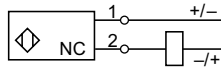
#### 2-wire, 1/2"-20UNF



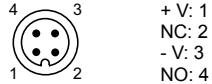
#### 2-wire $\overline{\text{NPN}}$ , NO output (M12 connector)



#### 2-wire $\overline{\text{NPN}}$ , NC output (M12 connector)



#### M12 connector



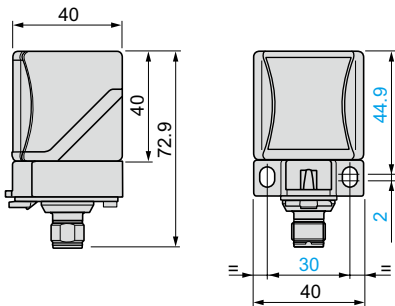
#### 1/2"-20UNF connector



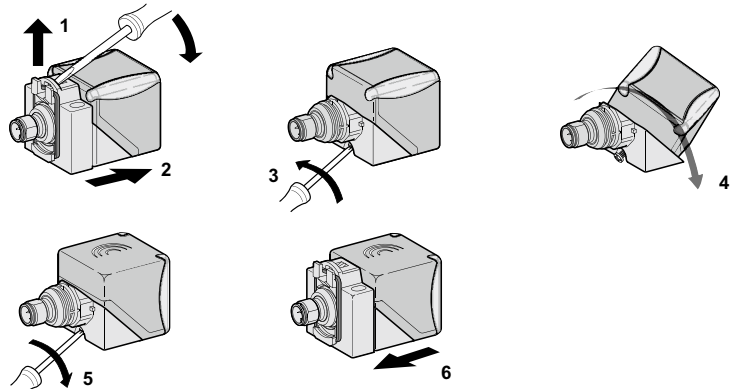
### Accessory catalog numbers

Description	Type	Length m	Catalog Number	Weight kg (lb)
<b>Pre-wired M12 connectors</b> Female, 4-pin, zinc die-cast, nickel plated clamping ring	Straight	2	<b>XZCP1141L2</b>	0.090 (0.198)
		5	<b>XZCP1141L5</b>	0.190 (0.418)
		10	<b>XZCP1141L10</b>	0.370 (0.815)
	Elbowed	2	<b>XZCP1241L2</b>	0.090 (0.198)
		5	<b>XZCP1241L5</b>	0.190 (0.418)
		10	<b>XZCP1241L10</b>	0.370 (0.815)
<b>Pre-wired 1/2"-20UNF connectors</b> Female, 3-pin, zinc die-cast, nickel plated clamping ring	Straight	5	<b>XZCP1865L5</b>	0.180 (0.396)
		10	<b>XZCP1865L10</b>	0.350 (0.771)
		10	<b>XZCP1965L5</b>	0.180 (0.396)
	Elbowed	5	<b>XZCP1965L5</b>	0.180 (0.396)
		10	<b>XZCP1965L10</b>	0.350 (0.771)

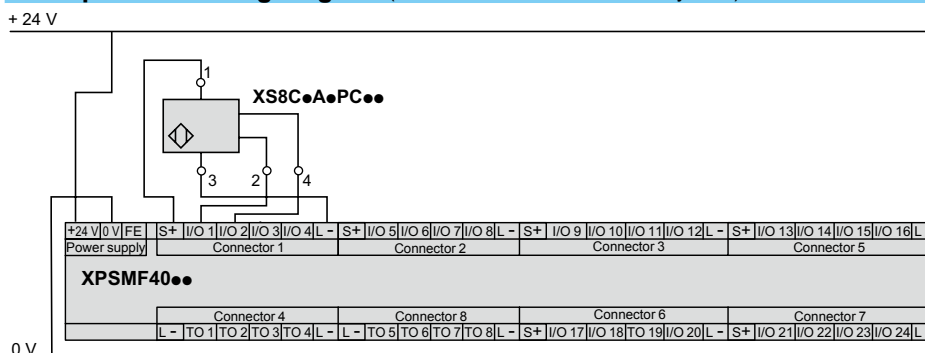
### Dimensions (mm)



### Head positions



### Example SIL 2 wiring diagram (with Preventa XPSMF40 safety PLC)



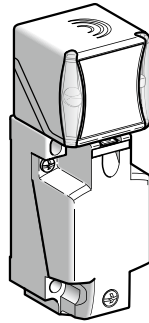
SFF (safe failure fraction): 92.68 %  
DC (diagnosis coverage): 75.8 %

S+: 24 V  
L-: 0 V  
I/O 1-24: safety I/O

# OsiSense™ XS Inductive proximity sensors

General purpose, Plastic case, 40 x 40 x 117 mm,  
plug-in, 5 position turret head

Sensor	Flush mountable in metal	Non-flush mountable in metal
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Nominal sensing distance (Sn)	15 mm (0.59 in.)	20 mm (0.78 in.)	40 mm (1.57 in.)	
<b>Catalog Numbers</b>				
4-wire $\text{---}$	PNP NO+NC	–	<b>XS8C4A1PCP20</b>	<b>XS8C4A4PCP20</b>
	NPN NO+NC	–	<b>XS8C4A1NCP20</b>	<b>XS8C4A4NCP20</b>
2-wire $\text{---}$	NO or NC programmable	<b>XS7C4A1DPP20</b>	<b>XS8C4A1DPP20</b>	<b>XS8C4A4DPP20</b>
<i>Available 3<sup>rd</sup> quarter 2012.</i>				
2-wire $\text{~ ---}$ unprotected (1)	NO or NC programmable	<b>XS7C4A1MPP20</b>	<b>XS8C4A1MPP20</b>	<b>XS8C4A4MPP20</b>
<i>Available 3<sup>rd</sup> quarter 2012.</i>				
Weight, kg (lb)	0.244 (0.537)	0.244 (0.537)	0.244 (0.537)	

**Note:** These sensors have an M20 cable entry. They are also available with a Pg 13.5 cable entry (e.g. **XS8C4A4PCG13**) or a 1/2" NPT cable entry (e.g. **XS8C4A1MPN12**). Consult the Customer Care Center (1-800-435-2121).

## Specifications

Operating zone		0–12 mm (0–0.47 in.)	0–16 mm (0–0.62 in.)	0–32 mm (0–1.25 in.)
Product certifications		UL, CSA, CE, TÜV (4-wire versions)		
Conformity to standards		IEC 60947-5-2		
Conformity to safety standards (2)	For XS8C4A●PCP20	EN 62061 (2005): SILcl2, EN 61508 (2010): SIL 2, EN ISO 13849 (2008): PL d		
Reliability data (2)	For XS8C4A●PCP20	MTTFd = 1546 years PFHd = 7.4 10 <sup>-8</sup> 1/h		
Connection		Screw terminals, clamping capacity: 2 or 4 x 1.5 mm <sup>2</sup> (3)		
Differential travel		3–15% of Sr		
Degree of protection	Conforming to IEC 60529 and DIN 40050	IP65, IP67 and IP69K		
Temperature	Storage	–40 to +85 °C (–40 to +185 °F)		
	Operation (4)	–25 to +70 °C (–13 to +158 °F)		
Material		Case: PBT		
Vibration resistance	Conforming to IEC 60068-2-6	25 gn, amplitude ±2 mm (10–55 Hz)		
Shock resistance	Conforming to IEC 60068-2-27	50 gn for 11 ms		
Indicators	Output state	Yellow LED		
	Power on	Green LED, for 4-wire $\text{---}$ and 2-wire $\text{~ ---}$ versions		
Rated supply voltage	4-wire $\text{---}$	12–48 V with protection against reverse polarity		
	2-wire $\text{---}$	12–48 V with protection against reverse polarity		
	2-wire $\text{~ ---}$	24–240 V ( $\sim$ 50/60 Hz)		
Voltage limits (including ripple)	4-wire $\text{---}$	10–58 V		
	2-wire $\text{---}$	10–58 V		
	2-wire $\text{~ ---}$	20–264 V		
Current consumption, no-load	4-wire $\text{---}$	< 15 mA		
Residual current, open state	2-wire $\text{---}$	< 0.6 mA		
	2-wire $\text{~ ---}$	1.5 mA		
Switching capacity	4-wire $\text{---}$	< 200 mA with overload and short-circuit protection		
	2-wire $\text{---}$	< 100 mA with overload and short-circuit protection		
	2-wire $\text{~ ---}$	$\sim$ : 5–300 mA (1) $\text{---}$ : 5–200 mA (1)		
Voltage drop, closed state	4-wire $\text{---}$	< 2 V		
	2-wire $\text{---}$	< 4.2 V		
	2-wire $\text{--- ~}$	< 5.5 V		
Maximum switching frequency		< 300 Hz (flush mountable) < 200 Hz (non-flush mountable)		
Delays	First-up	< 7 ms		
	Response	Flush mountable: ≤ 1.2 ms. Non-flush mountable: ≤ 1.4 ms		
	Recovery	Flush mountable: ≤ 1.8 ms. Non-flush mountable: ≤ 2.5 ms		

(1) Sensor must be protected by a 0.4 A fast-acting fuse (**XUZE04**) connected in series with the load (see OsiSense XS Accessories in catalog 9006CT1007).

(2) SIL 2 protection can only be obtained by connecting both outputs to a safety PLC. Refer to catalog MKTED208051EN-US, Preventa Machine Safety Products.

(3) These sensors come without a cable connector. An adaptable Pg 13.5 cable connector is available (reference **XSZ PE13**). Accessories are available for connection to an M12 or 7/8"-16UN connector, which can be added to the Pg 13.5 sensor. Consult the Customer Care Center (1-800-435-2121).

(4) Sensors are available for very low temperatures (suffix **TF**: –40 to +70 °C / –40 to +158 °F) or very high temperatures (suffix **TT**: –25 to +85 °C / –13 to +185 °F). Consult the Customer Care Center (1-800-435-2121).



# OsiSense™ XS

## Inductive proximity sensors

General purpose, Plastic case, 40 x 40 x 117 mm, plug-in, 5 position turret head

### Setup

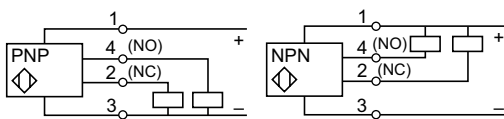
#### Minimum mounting distances (mm)

		Side by side	Face to face	Facing a metal object
Sensors flush mountable in metal	XS7C4A1●●	$e \geq 60$	$e \geq 120$	$e \geq 45$
	XS8C4A1●●	$e \geq 80$	$e \geq 160$	$e \geq 60$
Sensors non-flush mountable in metal	XS8C4A4●●	$e \geq 160$	$e \geq 320$	$e \geq 120$

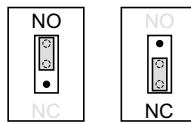
### Wiring diagrams

#### NO + NC outputs

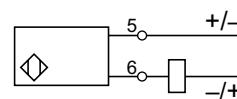
##### 4-wire ...



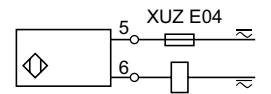
#### NO or NC outputs, depending on position of link



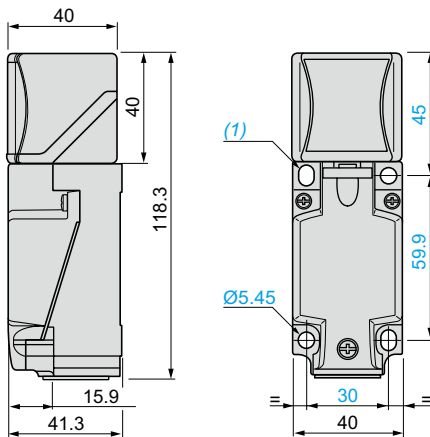
#### 2-wire ... (non-polarized)



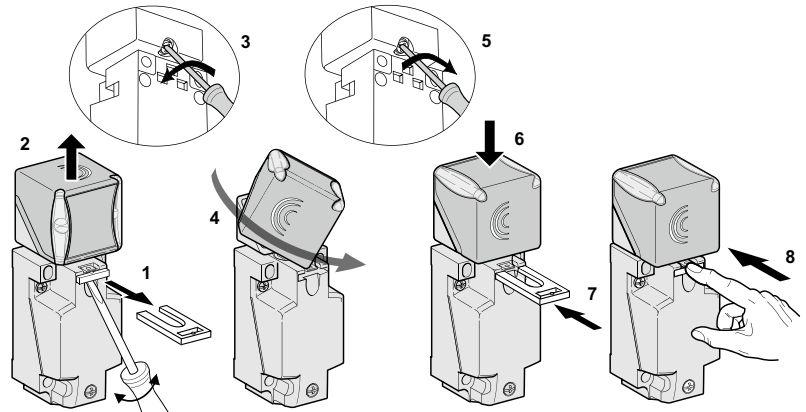
#### 2-wire ~ or ... (programmable)



### Dimensions (mm)



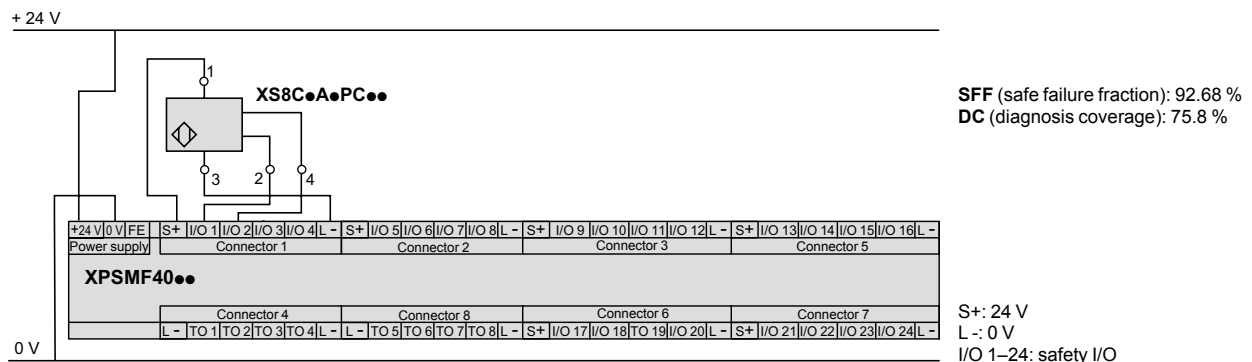
### Head positions



(1) 2 elongated holes Ø 5.3 x 7 cm.

Tightening torque of cover mounting screws and clamp screws: < 1.2 N·m (10.6 lb-in)

### Example SIL 2 wiring diagram (with Preventa XPSMF40 safety PLC)

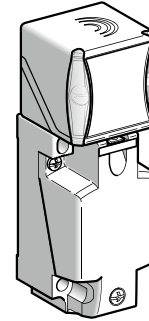
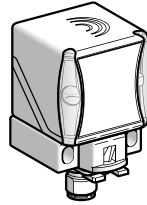


# OsiSense™ XS

## Inductive proximity sensors

Application, Sensors with analog output signal  
0–10 V (1), or 4–20 mA. Plastic case, 40 x 40 mm  
front face, 5 position turret head

<b>Sensor</b>	<b>Non-flush mountable in metal</b>	
<b>Dimensions</b>	<b>40 x 40 x 70 mm</b>	<b>40 x 40 x 117 mm</b>



<b>Nominal sensing distance (Sn)</b>	25 mm
--------------------------------------	-------

### Catalog Numbers

<b>3-wire</b> ☐☐☐	0–10 V output (1)	<b>XS9C2A2A1M12</b>	<b>XS9C4A2A1P20</b> (2)
<b>2-wire</b> ☐☐	4–20 mA output	<b>XS9C2A2A2M12</b>	<b>XS9C4A2A2P20</b> (2)
<b>Weight, kg (lb)</b>		0.149 (0.328)	0.244 (0.537)

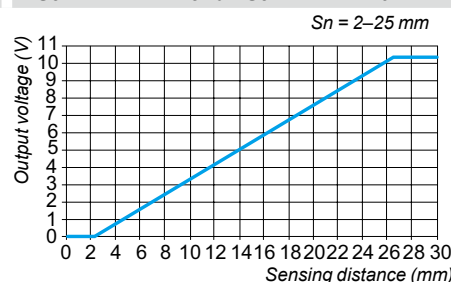
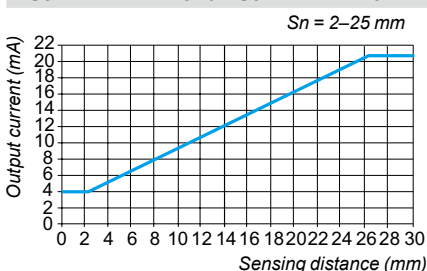
Note: XS9C4●●●P20 sensors are available with an ISO M20 cable entry. They are also available with a Pg 13.5 (e.g. XS9C4A2A1G13) or a 1/2" NPT (e.g. XS9C4A2A2N12) cable entry. Consult the Customer Care Center (1-800-435-2121) for more information.

### Specifications

<b>Product certifications</b>	UL, CSA, CE	
<b>Conformity to standards</b>	IEC 60947-5-2 and IEC 60947-5-7	
<b>Connection</b>	M12 connector (4-pin)	Screw terminals, clamping capacity 3 x 1.5 mm <sup>2</sup> (16 AWG)
<b>Operating zone</b>	2–27 mm (0.08–1.06 in.)	
<b>Linearity error</b>	< 3%	
<b>Repeat accuracy</b>	< 3%	
<b>Output current drift</b>	< 5%	
<b>Degree of protection</b>	Conforming to IEC 60529 and DIN 40050	IP65, IP67 and IP69K
<b>Temperature</b>	Storage	–40 to +85 °C (–40 to +185 °F)
	Operation (3)	–25 to +70 °C (–13 to +158 °F)
<b>Material</b>	Case: PBT	
<b>Vibration resistance</b>	Conforming to IEC 60068-2-6	25 gn, amplitude ±2 mm (10–55 Hz)
<b>Shock resistance</b>	Conforming to IEC 60068-2-27	50 gn for 11 ms
<b>Indicators</b>	Output state (alignment aid)	Yellow LED
<b>Rated supply voltage</b>	4–20 mA	☐☐☐ 12–24 V with protection against reverse polarity
	0–10 V	☐☐☐ 24 V with protection against reverse polarity
<b>Voltage limits (including ripple)</b>	4–20 mA	☐☐☐ 12–36 V
	0–10 V	☐☐☐ 15–36 V
<b>Current consumption, no-load</b>	3-wire ☐☐☐	< 4 mA
<b>Delays</b>	First-up	< 7 ms
	Response	< 6 ms
	Recovery	< 6 ms

### Analog outputs 4–20 mA and 0–10 V

<b>XS9C2A2A2M12 and XS9C4A2A2P20</b>	<b>XS9C2A2A1M12 and XS9C4A2A1P20</b>
--------------------------------------	--------------------------------------



(1) Voltage range only obtained with a load impedance of 1000 Ω.

(2) These sensors come without a cable connector. An adaptable Pg 13.5 cable connector is available (catalog number XSZPE13).

(3) Sensors are available for very low temperatures (suffix TF: –40 to +70 °C / –40 to +158 °F) or very high temperatures (suffix TT: –25 to +85 °C / –13 to +185 °F). Consult the Customer Care Center (1-800-435-2121).

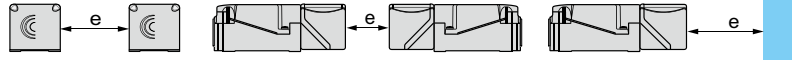
# Setup, Wiring Diagram, Dimensions

# OsiSense™ XS Inductive proximity sensors

Application, Sensors with analog output signal  
0–10 V <sup>(1)</sup>, or 4–20 mA. Plastic case, 40 x 40 mm  
front face, 5 position turret head

## Setup

### Minimum mounting distances (mm)



Side by side

Face to face

Facing a metal object

Sensors non-flush mountable in metal

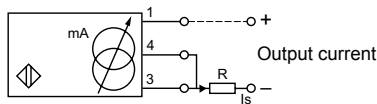
$e \geq 120$

$e \geq 240$

$e \geq 90$

## Wiring diagrams

### 2-wire

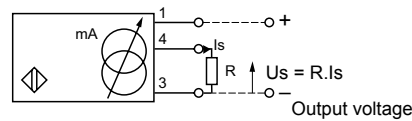


Output current      Load impedance value

12 V	4–20 mA	$R \leq 82 \Omega$
24 V	4–20 mA	$R \leq 560 \Omega$

Ensure a minimum of 10 V between the + and the - (terminal 3) of the sensor.

### 3-wire



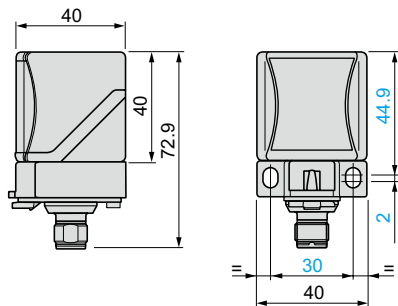
Output current      Load impedance value      Output voltage      Load impedance value

12 V	0–10 mA	$R \leq 630 \Omega$	–	–
24 V	0–10 mA	$R \leq 1500 \Omega$	0–10 V	$R = 1000 \Omega$

Ensure a minimum of 5 V between the + and the sensor output (terminal 4).

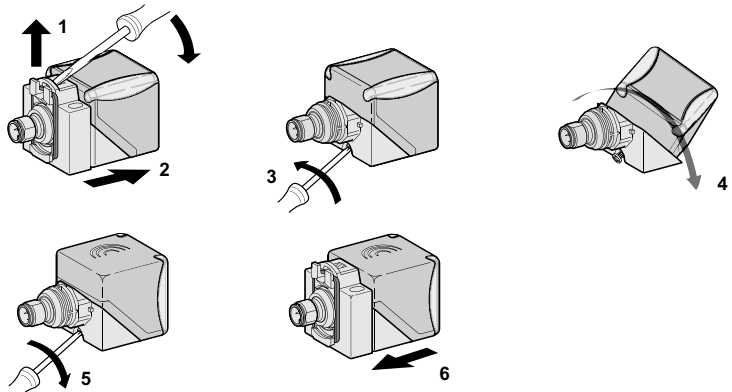
## Dimensions (mm)

### XS9C2A2A1M12 and XS9C2A2A2M12

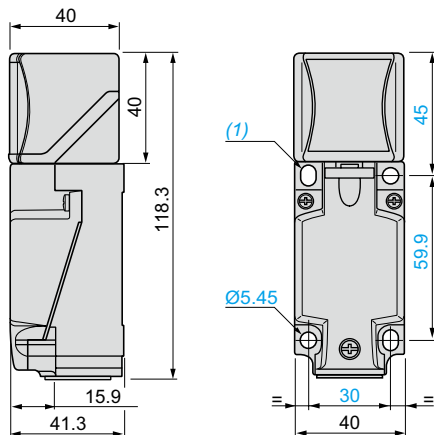


## Head positions

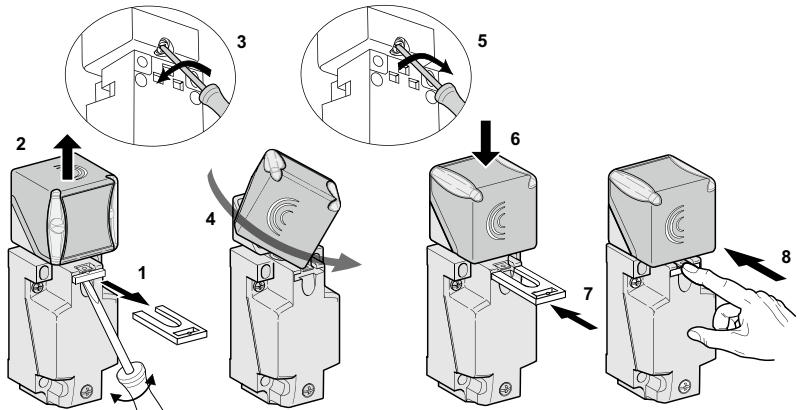
### XS9C2A2A1M12 and XS9C2A2A2M12



### XS9C4A2A1P20 and XS9C4A2A2P20



### XS9C4A2A1P20 and XS9C4A2A2P20



(1) 2 elongated holes  $\varnothing 5.3 \times 7$  mm.

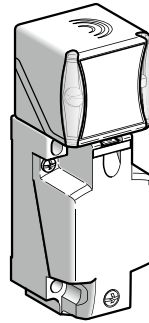
Tightening torque of cover mounting screws and clamp screws:  $< 1.2 \text{ N}\cdot\text{m}$  (10.62 lb-in)

(1) Voltage range only obtained with a load impedance of 1000  $\Omega$ .

# OsiSense™ XS Inductive proximity sensors

General purpose, Plastic case, 40 x 40 x 117 mm,  
plug-in, 5 position turret head

Sensor	Flush mountable in metal	Non-flush mountable in metal
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Nominal sensing distance (Sn)	15 mm (0.59 in.)	20 mm (0.78 in.)	40 mm (1.57 in.)	
<b>Catalog Numbers</b>				
4-wire $\text{---}$	PNP NO+NC	–	<b>XS8C4A1PCP20</b>	<b>XS8C4A4PCP20</b>
	NPN NO+NC	–	<b>XS8C4A1NCP20</b>	<b>XS8C4A4NCP20</b>
2-wire $\text{---}$	NO or NC programmable	<b>XS7C4A1DPP20</b>	<b>XS8C4A1DPP20</b>	<b>XS8C4A4DPP20</b>
<i>Available 3<sup>rd</sup> quarter 2012</i>				
2-wire $\sim\text{---}$ unprotected (1)	NO or NC programmable	<b>XS7C4A1MPP20</b>	<b>XS8C4A1MPP20</b>	<b>XS8C4A4MPP20</b>
<i>Available 3<sup>rd</sup> quarter 2012</i>				
Weight, kg (lb)	0.244 (0.537)	0.244 (0.537)	0.244 (0.537)	

Note: These sensors have an M20 cable entry. They are also available with a Pg 13.5 cable entry (e.g. **XS8C4A4PCG13**) or a 1/2" NPT cable entry (e.g. **XS8C4A1MPN12**). Consult the Customer Care Center (1-800-435-2121).

## Specifications

Operating zone		0–12 mm (0–0.47 in.)	0–16 mm (0–0.62 in.)	0–32 mm (0–1.25 in.)
Product certifications		UL, CSA, CE, TÜV (4-wire versions)		
Conformity to standards		IEC 60947-5-2		
Conformity to safety standards (2)	For XS8C4A●PCP20	EN 62061 (2005): SILcl2, EN 61508 (2010): SIL 2, EN ISO 13849 (2008): PL d		
Reliability data (2)	For XS8C4A●PCP20	MTTFd = 1546 years PFHd = 7.4 10 <sup>-8</sup> 1/h		
Connection		Screw terminals, clamping capacity: 2 or 4 x 1.5 mm <sup>2</sup> (3)		
Differential travel		3–15% of Sr		
Degree of protection	Conforming to IEC 60529 and DIN 40050	IP65, IP67 and IP69K		
Temperature	Storage	–40 to +85 °C (–40 to +185 °F)		
	Operation (4)	–25 to +70 °C (–13 to +158 °F)		
Material		Case: PBT		
Vibration resistance	Conforming to IEC 60068-2-6	25 gn, amplitude ±2 mm (10–55 Hz)		
Shock resistance	Conforming to IEC 60068-2-27	50 gn for 11 ms		
Indicators	Output state	Yellow LED		
	Power on	Green LED, for 4-wire $\text{---}$ and 2-wire $\sim\text{---}$ versions		
Rated supply voltage	4-wire $\text{---}$	12–48 V with protection against reverse polarity		
	2-wire $\text{---}$	12–48 V with protection against reverse polarity		
	2-wire $\sim\text{---}$	24–240 V ( $\sim$ 50/60 Hz)		
Voltage limits (including ripple)	4-wire $\text{---}$	10–58 V		
	2-wire $\text{---}$	10–58 V		
	2-wire $\sim\text{---}$	20–264 V		
Current consumption, no-load	4-wire $\text{---}$	< 15 mA		
Residual current, open state	2-wire $\text{---}$	< 0.6 mA		
	2-wire $\sim\text{---}$	1.5 mA		
Switching capacity	4-wire $\text{---}$	< 200 mA with overload and short-circuit protection		
	2-wire $\text{---}$	< 100 mA with overload and short-circuit protection		
	2-wire $\sim\text{---}$	$\sim$ : 5–300 mA (1) $\text{---}$ : 5–200 mA (1)		
Voltage drop, closed state	4-wire $\text{---}$	< 2 V		
	2-wire $\text{---}$	< 4.2 V		
	2-wire $\text{---}/\sim$	< 5.5 V		
Maximum switching frequency		< 300 Hz (flush mountable)		
		< 200 Hz (non-flush mountable)		
Delays	First-up	< 7 ms		
	Response	Flush mountable: ≤ 1.2 ms. Non-flush mountable: ≤ 1.4 ms		
	Recovery	Flush mountable: ≤ 1.8 ms. Non-flush mountable: ≤ 2.5 ms		

(1) Sensor must be protected by a 0.4 A fast-acting fuse (**XUZE04**) connected in series with the load (see OsiSense XS Accessories in catalog 9006CT1007).

(2) SIL 2 protection can only be obtained by connecting both outputs to a safety PLC. Refer to catalog MKTED208051EN-US, Preventa Machine Safety Products.

(3) These sensors come without a cable connector. An adaptable Pg 13.5 cable connector is available (reference **XSZ PE13**). Accessories are available for connection to an M12 or 7/8"-16UN connector, which can be added to the Pg 13.5 sensor. Consult the Customer Care Center (1-800-435-2121).

(4) Sensors are available for very low temperatures (suffix **TF**: –40 to +70 °C / –40 to +158 °F) or very high temperatures (suffix **TT**: –25 to +85 °C / –13 to +185 °F). Consult the Customer Care Center (1-800-435-2121).

# OsiSense™ XS Inductive proximity sensors

General purpose, Plastic case, 40 x 40 x 117 mm,  
plug-in, 5 position turret head

## Setup

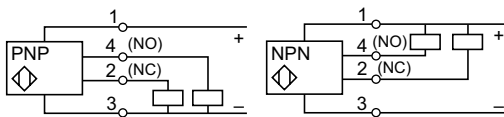
### Minimum mounting distances (mm)

		Side by side	Face to face	Facing a metal object
Sensors flush mountable in metal	XS7C4A1●●	$e \geq 60$	$e \geq 120$	$e \geq 45$
	XS8C4A1●●	$e \geq 80$	$e \geq 160$	$e \geq 60$
Sensors non-flush mountable in metal	XS8C4A4●●	$e \geq 160$	$e \geq 320$	$e \geq 120$

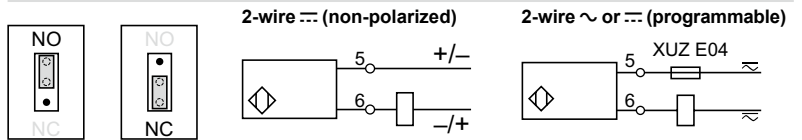
## Wiring diagrams

### NO + NC outputs

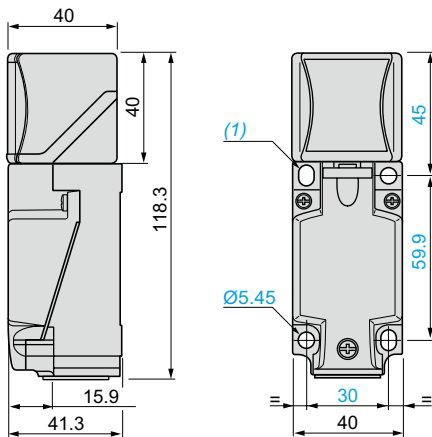
#### 4-wire ...



### NO or NC outputs, depending on the position of the link



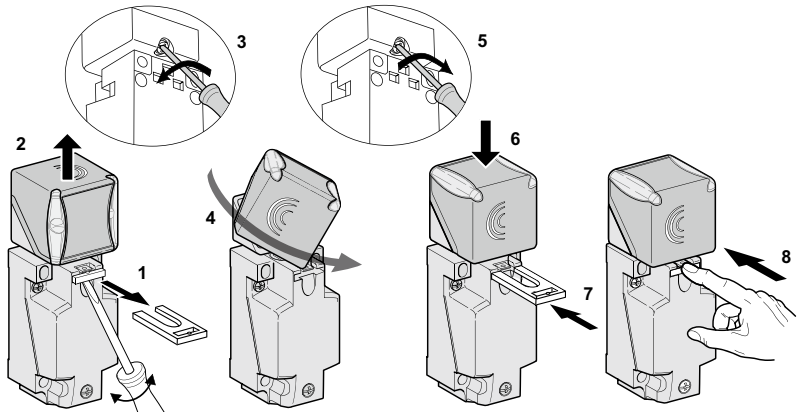
## Dimensions (mm)



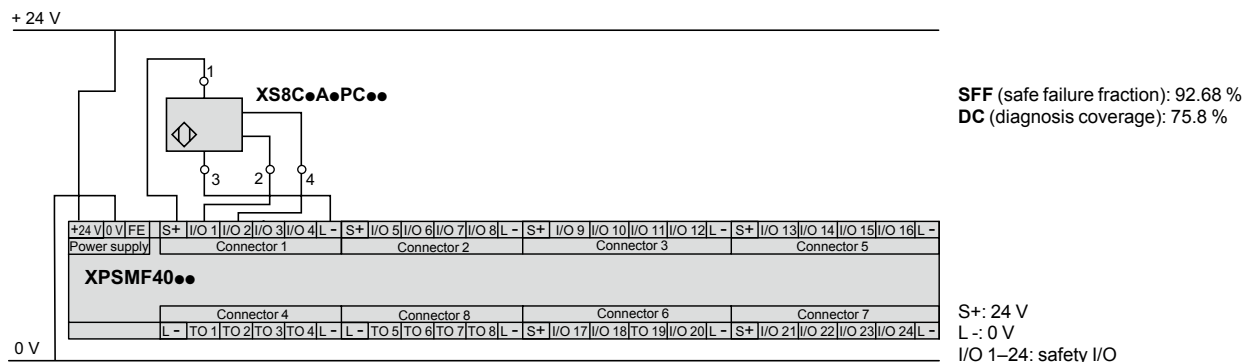
(1) 2 elongated holes  $\varnothing 5.3 \times 7$  cm.

Tightening torque of cover mounting screws and  
clamp screws:  $< 1.2 \text{ N}\cdot\text{m}$  (10.6 lb-in)

## Head positions



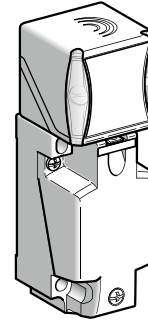
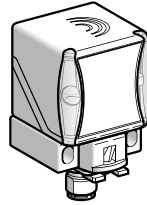
## Example SIL 2 wiring diagram (with Preventa XPSMF40 safety PLC)



# OsiSense™ XS Inductive proximity sensors

Application Sensors with analog output signal  
0–10 V <sup>(1)</sup> or 4–20 mA. Plastic case, 40 x 40 mm  
front face, 5 position turret head

<b>Sensor</b>	Non-flush mountable in metal	
<b>Dimensions</b>	40 x 40 x 70 mm	40 x 40 x 117 mm



<b>Nominal sensing distance (Sn)</b>	25 mm
--------------------------------------	-------

## Catalog Numbers

<b>3-wire</b> ⋯	0–10 V output <sup>(1)</sup>	<b>XS9C2A2A1M12</b>	<b>XS9C4A2A1P20</b> <sup>(2)</sup>
<b>2-wire</b> ⋯	4–20 mA output	<b>XS9C2A2A2M12</b>	<b>XS9C4A2A2P20</b> <sup>(2)</sup>
<b>Weight, kg (lb)</b>		0.149 (0.328)	0.244 (0.537)

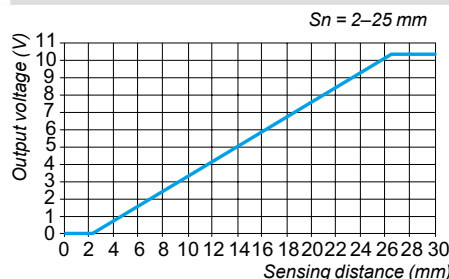
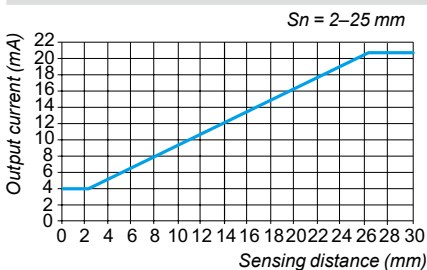
*Note: XS9C4●●●P20 sensors are available with an ISO M20 cable entry. They are also available with a Pg 13.5 (e.g. XS9C4A2A1G13) or a 1/2" NPT (e.g. XS9C4A2A2N12) cable entry. Consult the Customer Care Center (1-800-435-2121) for more information.*

## Specifications

<b>Product certifications</b>	UL, CSA, CE	
<b>Conformity to standards</b>	IEC 60947-5-2 and IEC 60947-5-7	
<b>Connection</b>	M12 connector (4-pin)	Screw terminals, clamping capacity 3 x 1.5 mm <sup>2</sup> (16 AWG)
<b>Operating zone</b>	2–27 mm (0.08–1.06 in.)	
<b>Linearity error</b>	< 3%	
<b>Repeat accuracy</b>	< 3%	
<b>Output current drift</b>	< 5%	
<b>Degree of protection</b>	Conforming to IEC 60529 and DIN 40050	IP65, IP67 and IP69K
<b>Temperature</b>	Storage	–40 to +85 °C (–40 to +185 °F)
	Operation <sup>(3)</sup>	–25 to +70 °C (–13 to +158 °F)
<b>Material</b>	Case: PBT	
<b>Vibration resistance</b>	Conforming to IEC 60068-2-6	25 gn, amplitude ±2 mm (10–55 Hz)
<b>Shock resistance</b>	Conforming to IEC 60068-2-27	50 gn for 11 ms
<b>Indicators</b>	Output state (alignment aid)	Yellow LED
<b>Rated supply voltage</b>	4–20 mA	⋯ 12–24 V with protection against reverse polarity
	0–10 V	⋯ 24 V with protection against reverse polarity
<b>Voltage limits (including ripple)</b>	4–20 mA	⋯ 12–36 V
	0–10 V	⋯ 15–36 V
<b>Current consumption, no-load</b>	3-wire ⋯	< 4 mA
<b>Delays</b>	First-up	< 7 ms
	Response	< 6 ms
	Recovery	< 6 ms

## Analog outputs 4–20 mA and 0–10 V

**XS9C2A2A2M12 and XS9C4A2A2P20**      **XS9C2A2A1M12 and XS9C4A2A1P20**



<sup>(1)</sup> Voltage range only obtained with a load impedance of 1000 Ω.

<sup>(2)</sup> These sensors come without a cable connector. An adaptable Pg 13.5 cable connector is available (Catalog number **XSZPE13**).

<sup>(3)</sup> Sensors are available for very low temperatures (suffix **TF**: –40 to +70 °C / –40 to +158 °F) or very high temperatures (suffix **TT**: –25 to +85 °C / –13 to +185 °F). Consult the Customer Care Center (1-800-435-2121).

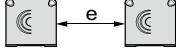
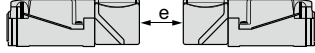

# OsiSense™ XS

## Inductive proximity sensors

Application Sensors with analog output signal  
0–10 V <sup>(1)</sup> or 4–20 mA. Plastic case, 40 x 40 mm  
front face, 5 position turret head

### Setup

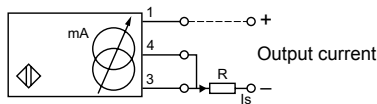
#### Minimum mounting distances (mm)

		
<b>Side by side</b>	<b>Face to face</b>	<b>Facing a metal object</b>
$e \geq 120$	$e \geq 240$	$e \geq 90$

Sensors non-flush mountable in metal

### Wiring diagrams

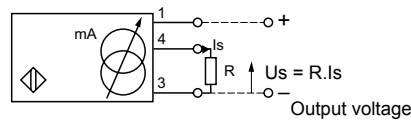
#### 2-wire



Output current	Load impedance value
12 V 4–20 mA	$R \leq 82 \Omega$
24 V 4–20 mA	$R \leq 560 \Omega$

Ensure a minimum of 10 V between the + and the - (terminal 3) of the sensor.

#### 3-wire

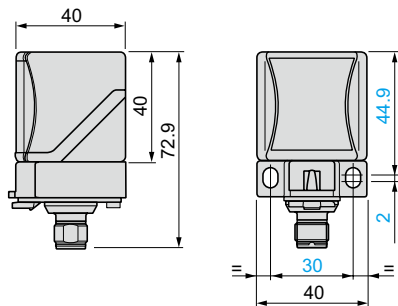


Output current	Load impedance value	Output voltage	Load impedance value
12 V 0–10 mA	$R \leq 630 \Omega$	–	–
24 V 0–10 mA	$R \leq 1500 \Omega$	0–10 V	$R = 1000 \Omega$

Ensure a minimum of 5 V between the + and the sensor output (terminal 4).

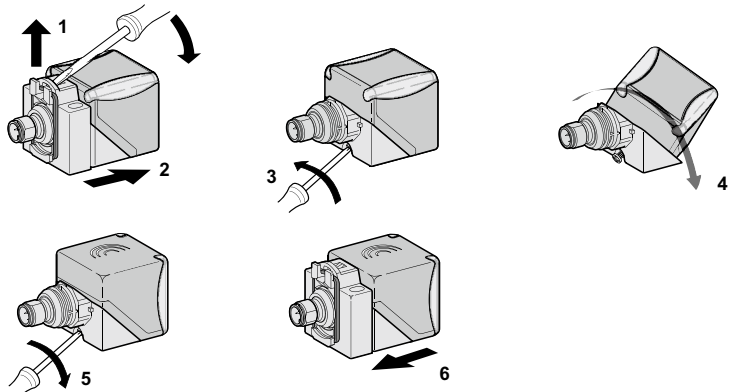
### Dimensions (mm)

#### XS9C2A2A1M12 and XS9C2A2A2M12

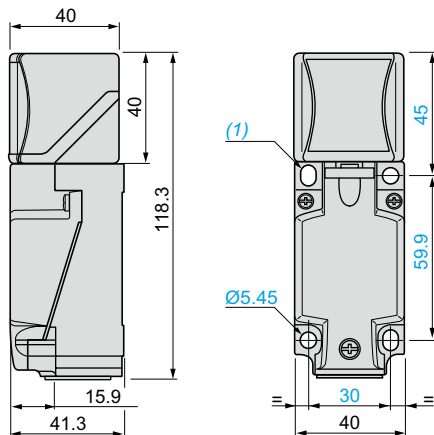


### Head positions

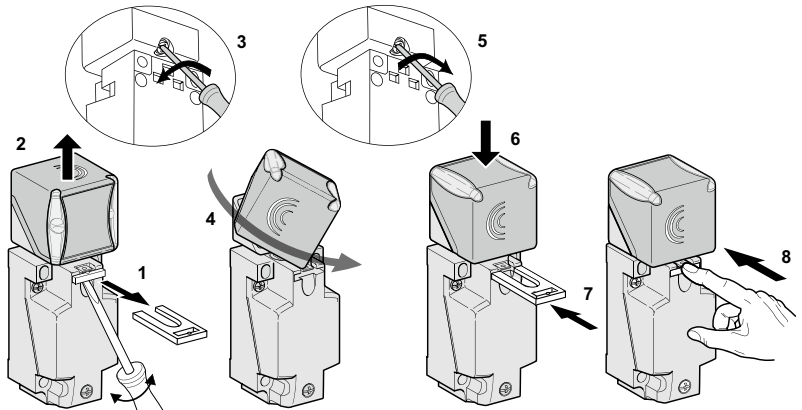
#### XS9C2A2A1M12 and XS9C2A2A2M12



#### XS9C4A2A1P20 and XS9C4A2A2P20



#### XS9C4A2A1P20 and XS9C4A2A2P20



(1) 2 elongated holes  $\varnothing 5.3 \times 7$  mm.

Tightening torque of cover mounting screws and clamp screws:  $< 1.2 \text{ N}\cdot\text{m}$  (10.62 lb-in)

(1) Voltage range only obtained with a load impedance of 1000  $\Omega$ .

**Telemecanique Sensors**

[www.tesensors.com](http://www.tesensors.com)

**Schneider Electric USA, Inc.**  
1875 Founders Drive  
Dayton, Ohio 45420  
(800) 435-2121  
[www.tesensors.us](http://www.tesensors.us)

**Schneider Electric Canada, Inc.**  
5985 McLaughlin Road  
Mississauga, Ontario L5R 1B8  
(800) 435-2121  
[www.tesensors.ca](http://www.tesensors.ca)

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