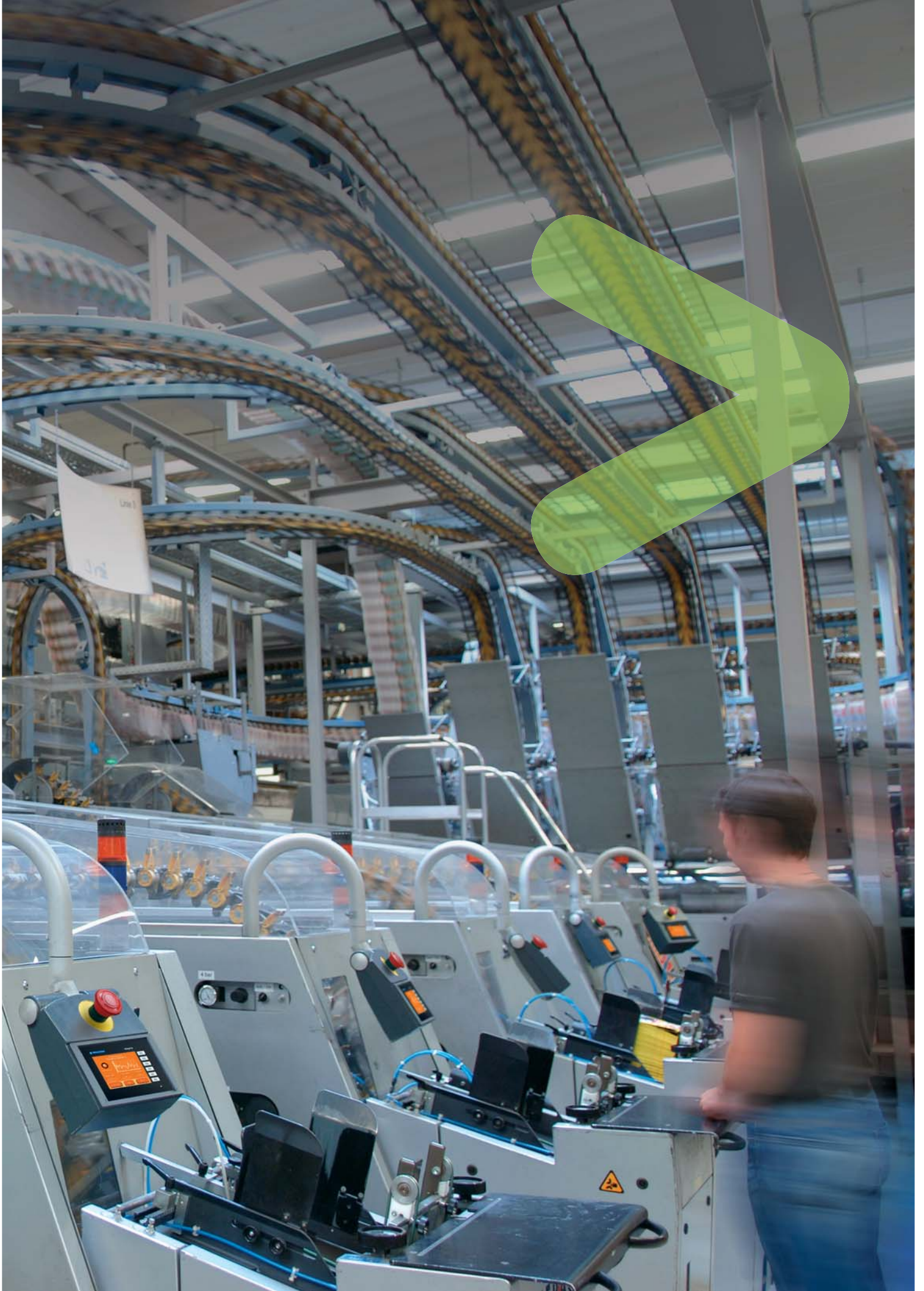


# OsiSense® XS Inductive Sensors

Basic and  
Basic + series  
with increased range





# Helping you to find the most efficient solution

## Inductive sensing at a great price

Machine manufacturers need a wider range in inductive sensing options than ever before. This new product offer meets your demanding requirements.

### > Easy to install

Contributes to machine compactness  
Wider adjustment range

### > Economical

Increase the profitability of your solution

### > Readily available

Contributes to machine performance

## Contents

Cylindrical inductive proximity sensors

Introduction	p 2 and 3
Selection guide	p 4 and 5
Basic, cylindrical, flush mountable, increased range	p 6 to 9
Basic, cylindrical, metal flush and non-flush mountable	p 10 to 13
Basic, cylindrical, plastic non-flush mountable	p 14 and 15

Make the most of your energy<sup>SM</sup>

NOTE: Sensors described in this catalog are designed to be used for standard industrial presence sensing applications. These sensors do not include the self-checking redundant circuitry necessary to allow for their use in safety applications.

## > Contributes to machine compactness

### Easy to install:

Compact product (short), easier integration into the machine

- Increased range (x2), sensing distance easier to adjust
- All standard diameters (complete range, from Ø 6.5 to Ø 30 mm)
- Long and short product lengths to meet most demanding dimension standards on the market

**+100%**

of the sensing distance for flush mountable models



## > Increase the profitability of your solution

### Economical:

- Machine manufacturers products without loss the of Schneider Electric quality
- Sold in lots for easier unpacking and reduced carton disposal
- Packaged to suit industrial ordering quantities



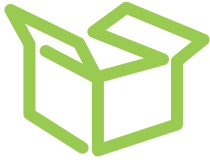
**-75%**

packaging for environmental friendliness and convenience

## > Contributes to machine performance

Readily available:

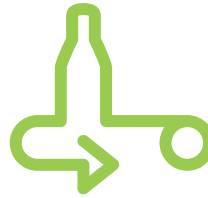
- Robust products designed to meet your needs
- Particularly well suited for machines used in sectors such as assembly and packaging, automotive, and conveying.



Packaging



Automotive



Materials handling



**100%**

availability  
throughout  
the world

- Proven tried-and-tested performance with world-wide product availability
- You export your machines throughout the world. Present in 190 countries, Schneider Electric assures service and product availability wherever you are

## Basic, flush mountable, increased range and basic, flush or non-flush mountable, standard range

A global offer of economical inductive sensors to meet your individual needs



**XS1..B3 range**

Metal

Increased range

2 to 15 mm (0.08 to 0.59 in.)

Compact

**Flush mountable**



**XS1..BL range**

Metal

Standard range

1.5 to 10 mm (0.06 to 0.39 in.)

**Flush mountable**



**XS2..BL range**

Metal

Standard range

2.5 to 15 mm (0.10 to 0.59 in.)

**Non-flush mountable**



**XS2..AL range**

Plastic

Standard range

2.5 to 15 mm (0.10 to 0.59 in.)

**Non-flush mountable**

# > Selection guide Basic inductive sensors

Flush mountable increased range,  
2 to 15 mm (0.08 to 0.59 in.)

Metal

3-wire DC



Format	Ø 6.5 mm plain	Ø 8 mm	Ø 12 mm	Ø 18 mm	Ø 30 mm
Sensing dist., mm (in.)	2 (0.08)	2 (0.08)	4 (0.16)	8 (0.31)	15 (0.59)
Length, mm (in.)	33 (1.30)	33 (1.30)	35 (1.38)	38 (1.50)	42.3 (1.67)
Connection	2 m cable M8 connector	2 m cable M8 connector M12 connector	2 m cable M12 connector	2 m cable M12 connector	2 m cable M12 connector
Supply, DC	3-wire 12–24 V	3-wire 12–24 V	3-wire 12–24 V	3-wire 12–24 V	3-wire 12–24 V
Output	PNP or NPN	PNP or NPN	PNP or NPN	PNP or NPN	PNP or NPN
Function	NO or NC	NO or NC	NO or NC	NO or NC	NO or NC
Cat. no., metal	XS106B3•••	XS108B3•••	XS112B3•••	XS118B3•••	XS130B3•••

Increased-range sensors are packaged and sold individually or in lots of 20 (catalog numbers with suffix TQ).

Non-flush mountable standard range,  
2.5 to 15 mm (0.10 to 0.59 in.)

Plastic

3-wire DC



Format	Ø 8 mm	Ø 12 mm	Ø 18 mm	Ø 30 mm
Sensing dist., mm (in.)	2.5 (0.10)	4 (0.16)	8 (0.31)	15 (0.59)
Length, mm (in.)	49 (1.93)	49 (1.93)	59 (2.32)	59 (2.32)
Connection	2 m cable	2 m cable M12 connector	2 m cable M12 connector	2 m cable M12 connector
Supply, DC	3-wire 12–24 V	3-wire 12–24 V	3-wire 12–24 V	3-wire 12–24 V
Output	PNP or NPN	PNP or NPN	PNP or NPN	PNP or NPN
Function	NO or NC	NO or NC	NO or NC	NO or NC
Cat. no., plastic	XS208AL•••	XS212AL•••	XS218AL•••	XS230AL•••

Flush mountable standard range,  
1.5 to 10 mm (0.04 to 0.39 in.)

Metal

3-wire DC or 2-wire AC



Format	Ø 6.5 mm plain	Ø 8 mm	Ø 12 mm	Ø 18 mm	Ø 30 mm
Sensing dist., mm (in.)	1.5 (0.04)	1.5 (0.04)	2 (0.08)	5 (0.20)	10 (0.39)
Length, mm (in.)	42 (1.65)	42 (1.65)	41.3 (1.63)	51.3 (2.02)	51.3 (2.02)
Connection	2 m cable	2 m cable M8 connector M12 connector	2 m cable M12 connector	2 m cable M12 connector	2 m cable M12 connector
Supply, DC AC	3-wire 12–24 V	3-wire 12–24 V	3-wire 12–24 V 2-wire 24–240 V	3-wire 12–24 V 2-wire 24–240 V	3-wire 12–24 V 2-wire 24–240 V
Output	PNP or NPN	PNP or NPN	PNP or NPN	PNP or NPN	PNP or NPN
Function	NO or NC	NO or NC	NO or NC	NO or NC	NO or NC
Cat. no., metal, DC	XS106BL***	XS108BL***	XS112BL***	XS118BL***	XS130BL***
Cat. no., metal, AC			XS112BLFAL2	XS118BLFAL2	XS130BLFAL2

Non-flush mountable standard range,  
2.5 to 15 mm (0.10 to 0.59 in.)

Metal

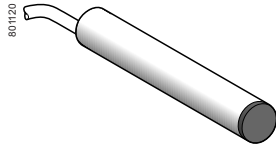
3-wire DC



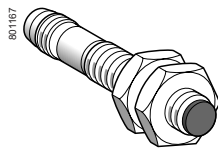
Format	Ø 8 mm	Ø 12 mm	Ø 18 mm	Ø 30 mm
Sensing dist., mm (in.)	2.5 (0.10)	4 (0.16)	8 (0.31)	15 (0.59)
Length, mm (in.)	42 (1.65)	41.3 (1.63)	50.6 (1.99)	50.6 (1.99)
Connection	2 m cable M8 connector M12 connector	2 m cable M12 connector	2 m cable M12 connector	2 m cable M12 connector
Supply, DC	3-wire 12–24 V	3-wire 12–24 V	3-wire 12–24 V	3-wire 12–24 V
Output	PNP or NPN	PNP or NPN	PNP or NPN	PNP or NPN
Function	NO or NC	NO or NC	NO or NC	NO or NC
Cat. no., metal	XS208BL***	XS212BL***	XS218BL***	XS230BL***

# OsiSense® Inductive proximity sensors

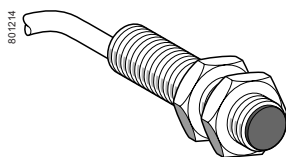
Basic, cylindrical, flush mountable, increased range  
Three-wire DC, solid-state output



XS1 06B3●●L2



XS1 08B3●●M8



XS1 12B3●●L2

Sensing distance Sn, mm (in.)	Function	Output	Connection	Sold in lots of	Catalog Number	Weight kg (lb)		
<b>Ø 6.5, plain</b>								
<b>Three-wire 12–24 V DC, flush mountable</b>								
2 (0.07)	NO	PNP	Pre-cabled (L = 2 m) (1)	1	XS106B3PAL2	0.060 (0.13)		
			M8 connector	1	XS106B3PAM8	0.030 (0.06)		
			M12 connector	1	XS106B3PAM12	0.050 (0.11)		
			Pre-cabled (L = 2 m)	20	XS106B3PAL2TQ	0.980 (2.16)		
			M8 connector	20	XS106B3PAM8TQ	0.320 (0.70)		
			M12 connector	20	XS106B3PAM12TQ	0.350 (0.77)		
	NPN	Pre-cabled (L = 2 m)	1	XS106B3NAL2	0.060 (0.13)			
		M8 connector	1	XS106B3NAM8	0.030 (0.06)			
	NC	PNP	Pre-cabled (L = 2 m) (1)	1	XS106B3PBL2	0.060 (0.13)		
			M8 connector	1	XS106B3PBM8	0.030 (0.06)		
	<b>Ø 8, threaded M8 x 1</b>							
	<b>Three-wire 12–24 V DC, flush mountable</b>							
2 (0.07)	NO	PNP	Pre-cabled (L = 2 m) (1)	1	XS108B3PAL2	0.070 (0.15)		
			M8 connector	1	XS108B3PAM8	0.030 (0.06)		
			M12 connector	1	XS108B3PAM12	0.060 (0.13)		
			Pre-cabled (L = 2 m)	20	XS108B3PAL2TQ	1.120 (2.46)		
			M8 connector	20	XS108B3PAM8TQ	0.460 (1.01)		
			M12 connector	20	XS108B3PAM12TQ	0.940 (2.07)		
		NPN	Pre-cabled (L = 2 m) (1)	1	XS108B3NAL2	0.070 (0.15)		
			M8 connector	1	XS108B3NAM8	0.030 (0.06)		
			M12 connector	1	XS108B3NAM12	0.060 (0.13)		
			Pre-cabled (L = 2 m)	20	XS108B3NAL2TQ	1.120 (2.46)		
			M8 connector	20	XS108B3NAM8TQ	0.460 (1.01)		
			M12 connector	20	XS108B3NAM12TQ	0.940 (2.07)		
	NC	PNP	Pre-cabled (L = 2 m) (1)	1	XS108B3PBL2	0.070 (0.15)		
			M8 connector	1	XS108B3PBM8	0.030 (0.06)		
			M12 connector	1	XS108B3PBM12	0.060 (0.13)		
		NPN	Pre-cabled (L = 2 m) (1)	1	XS108B3NBL2	0.070 (0.15)		
			M8 connector	1	XS108B3NBM8	0.030 (0.06)		
			M12 connector	1	XS108B3NBM12	0.060 (0.13)		
	<b>Ø 12, threaded M12 x 1</b>							
	<b>Three-wire 12–24 V DC, flush mountable</b>							
	4 (0.15)	NO	PNP	Pre-cabled (L = 2 m) (1)	1	XS112B3PAL2	0.090 (0.19)	
				M12 connector	1	XS112B3PAM12	0.030 (0.06)	
				Pre-cabled (L = 2 m)	20	XS112B3PAL2TQ	1.600 (3.52)	
				M12 connector	20	XS112B3PAM12TQ	0.470 (1.03)	
NPN				Pre-cabled (L = 2 m) (1)	1	XS112B3NAL2	0.090 (0.19)	
				M12 connector	1	XS112B3NAM12	0.030 (0.06)	
			Pre-cabled (L = 2 m)	20	XS112B3NAL2TQ	1.600 (3.52)		
			M12 connector	20	XS112B3NAM12TQ	0.470 (1.03)		
			NC	PNP	Pre-cabled (L = 2 m) (1)	1	XS112B3PBL2	0.090 (0.19)
					M12 connector	1	XS112B3PBM12	0.030 (0.06)
M12 connector					20	XS112B3PBM12TQ	0.470 (1.03)	
NPN				Pre-cabled (L = 2 m) (1)	1	XS112B3NBL2	0.090 (0.19)	
		M12 connector		1	XS112B3NBM12	0.030 (0.06)		
		M12 connector		1	XS112B3NBM12	0.030 (0.06)		

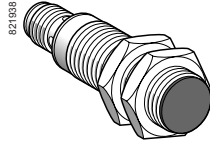
(1) For a 5 m cable replace L2 with L5.

Example: XS106B3PAL2 becomes XS106B3PAL5 with a 5 m cable.

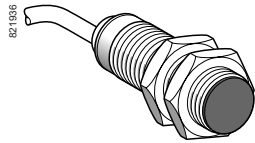


# OsiSense® Inductive proximity sensors

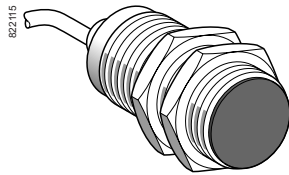
Basic, cylindrical, flush mountable, increased range  
Three-wire DC, solid-state output



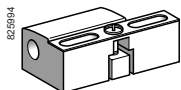
XS1 18B3...M12



XS1 18B3...L2



XS1 30B3...L2



XSZ B1...

Sensing distance Sn, mm (in.)	Function	Output	Connection	Sold in lots of	Catalog Number	Weight kg	(lb)
<b>Ø 18, threaded M18 x 1</b>							
<b>Three-wire 12–24 V <math>\overline{\text{DC}}</math>, flush mountable</b>							
8 (0.31)	NO	PNP	Pre-cabled (L = 2 m) (1)	1	XS118B3PAL2	0.110	(0.24)
			M12 connector	1	XS118B3PAM12	0.060	(0.13)
			Pre-cabled (L = 2 m)	20	XS118B3PAL2TQ	2.000	(4.40)
	NPN	M12 connector	20	XS118B3PAM12TQ	1.140	(2.51)	
		Pre-cabled (L = 2 m) (1)	1	XS118B3NAL2	0.110	(0.24)	
		M12 connector	1	XS118B3NAM12	0.060	(0.13)	
NC	Pre-cabled (L = 2 m)	20	XS118B3NAL2TQ	2.000	(4.40)		
	M12 connector	20	XS118B3NAM12TQ	1.140	(2.51)		
	Pre-cabled (L = 2 m) (1)	1	XS118B3PBL2	0.110	(0.24)		
NPN	M12 connector	1	XS118B3PBM12	0.060	(0.13)		
	Pre-cabled (L = 2 m) (1)	1	XS118B3NBL2	0.110	(0.24)		
	M12 connector	1	XS118B3NBM12	0.060	(0.13)		

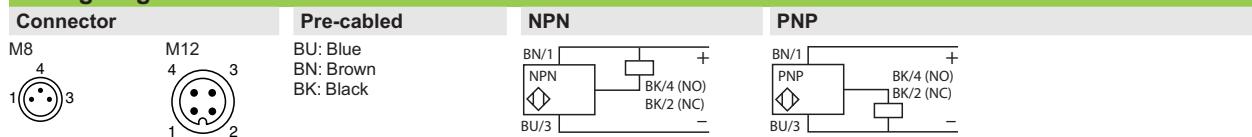
<b>Ø 30, threaded M30 x 1.5</b>							
<b>Three-wire 12–24 V <math>\overline{\text{DC}}</math>, flush mountable</b>							
15 (0.59)	NO	PNP	Pre-cabled (L = 2 m) (1)	1	XS130B3PAL2	0.180	(0.39)
			M12 connector	1	XS130B3PAM12	0.130	(0.28)
			Pre-cabled (L = 2 m)	20	XS130B3PAL2TQ	3.360	(7.40)
	NPN	M12 connector	20	XS130B3PAM12TQ	2.000	(4.40)	
		Pre-cabled (L = 2 m) (1)	1	XS130B3NAL2	0.180	(0.39)	
		M12 connector	1	XS130B3NAM12	0.130	(0.28)	
NC	Pre-cabled (L = 2 m)	20	XS130B3NAL2TQ	2.000	(4.40)		
	M12 connector	1	XS130B3PBL2	0.180	(0.39)		
	Pre-cabled (L = 2 m) (1)	1	XS130B3PBM12	0.130	(0.28)		
NPN	M12 connector	1	XS130B3NBL2	0.180	(0.39)		
	Pre-cabled (L = 2 m) (1)	1	XS130B3NBL2	0.180	(0.39)		
	M12 connector	1	XS130B3NBM12	0.130	(0.28)		

<b>Accessories (2)</b>				
Description	For use with sensors	Catalog Number	Weight kg	(lb)
Mounting clamps	Ø = 6.5 (plain)	XSZB165	0.005	(0.01)
	Ø 8 (M8 x 1)	XSZB108	0.006	(0.01)
	Ø 12 (M12 x 1)	XSZB112	0.006	(0.01)
	Ø 18 (M18 x 1)	XSZB118	0.010	(0.02)
	Ø 30 (M30 x 1.5)	XSZB130	0.020	(0.04)

(1) For a 5 m cable replace L2 with L5.  
Example: XS118B3PAL2 becomes XS118B3PAL5 with a 5 m cable.  
(2) For more information, see page 9.

Specifications		XS1●●B3●●M8	XS1●●B3●●M12	XS1●●B3●●L2
Sensor type				
Product certifications		UL, CSA, C€		
Connection	Connector	M8	M12	–
	Pre-cabled	–	–	Length 2 m
Operating zone	Ø 6.5 and Ø 8	mm	0–1.6 (0–0.06 in.)	
	Ø 12	mm	0–3.2 (0–0.12 in.)	
	Ø 18	mm	0–6.4 (0–0.25 in.)	
	Ø 30	mm	0–12 (0–0.47 in.)	
Differential travel		%	1–15 of effective sensing distance (Sr)	
Degree of protection	Conforming to IEC 60529		IP 65 and IP 67	
Storage temperature		°C	–40 to +85 (–40 to +185 °F)	
Operating temperature		°C	–25 to +70 (–13 to +158 °F)	
Materials	Case	Nickel plated brass		
	Cable	–		
Vibration resistance	Conforming to IEC 60068-2-6	25 gn, amplitude ± 2 mm (f = 10 to 55 Hz)		
Shock resistance	Conforming to IEC 60068-2-27	50 gn, duration 11 ms		
Output state indication		Yellow LED, 4 viewing ports at 90°		Yellow LED, annular
Rated supply voltage		V	— 12–24 with protection against reverse polarity	
Voltage limits (including ripple)		V	— 10–36	
Switching capacity		mA	≤ 200 with overload and short-circuit protection	
Voltage drop, closed state		V	≤ 2	
Current consumption, no-load		mA	≤ 10	
Maximum switching frequency	Ø 6.5, Ø 8, and Ø 12	Hz	2500	
	Ø 18	Hz	1000	
	Ø 30	Hz	500	
Delays	First-up	ms	≤ 10	
	Response	ms	≤ 0.2 for Ø 8 and Ø 12, ≤ 0.3 for Ø 18, ≤ 0.6 for Ø 30	
	Recovery	ms	≤ 0.2 for Ø 8 and Ø 12, ≤ 0.7 for Ø 18, ≤ 1.4 for Ø 30	

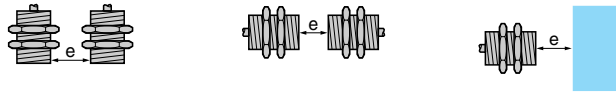
## Wiring diagrams



For the M8 connector, the NO and NC outputs are on terminal 4.

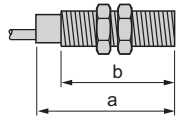
## Setup

### Minimum mounting distances (mm)



Sensors		Side by side	Face to face	Facing a metal object
Ø 6.5 flush mountable	XS106 B3	$e \geq 4$	$e \geq 24$	$e \geq 6$
Ø 8 flush mountable	XS1 08 B3	$e \geq 4$	$e \geq 24$	$e \geq 6$
Ø 12 flush mountable	XS1 12 B3	$e \geq 8$	$e \geq 50$	$e \geq 12$
Ø 18 flush mountable	XS1 18 B3	$e \geq 16$	$e \geq 100$	$e \geq 25$
Ø 30 flush mountable	XS1 30 B3	$e \geq 30$	$e \geq 180$	$e \geq 45$

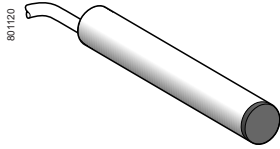
## Dimensions (mm)



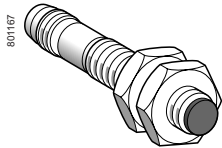
Sensors	Flush mountable in metal					
	Pre-cabled (mm)		M8 connector (mm)		M12 connector (mm)	
	a	b	a	b	a	b
Ø 6.5 XS106 B3	33	30	42	34	45	24
Ø 8 XS108 B3	33	25	42	26	45	23
Ø 12 XS112 B3	35	25	–	–	50	29
Ø 18 XS118 B3	38	28	–	–	50.3	28
Ø 30 XS130 B3	42.3	32	–	–	54.5	32

# OsiSense® Inductive proximity sensors

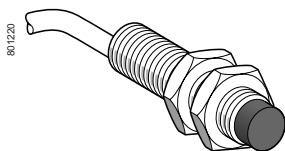
Basic, cylindrical, metal, flush and non-flush mountable  
Two-wire, AC supply  
Three-wire DC, solid-state output



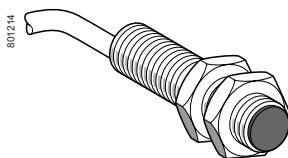
801120  
XS1 06BL●●L2



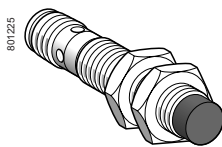
801167  
XS1 08BL●●M8



801220  
XS2 08BL●●L2



801214  
XS1 12BL●●L2



801225  
XS2 12BL●●M12

Sensing distance Sn, mm (in.)	Function	Output	Connection	Catalog Number	Weight			
					kg	(lb)		
<b>Ø 6.5, plain</b>								
<b>Three-wire 12–24 V <math>\overline{\text{DC}}</math>, flush mountable</b>								
1.5 (0.05)	NO	PNP	Pre-cabled (L = 2 m) (1)	<b>XS106BLPAL2</b>	0.030	(0.06)		
		NPN	Pre-cabled (L = 2 m) (1)	<b>XS106BLNAL2</b>	0.030	(0.06)		
	NC	PNP	Pre-cabled (L = 2 m) (1)	<b>XS106BLPBL2</b>	0.030	(0.06)		
		NPN	Pre-cabled (L = 2 m) (1)	<b>XS106BLNBL2</b>	0.030	(0.06)		
<b>Ø 8, threaded M8 x 1</b>								
<b>Three-wire 12–24 V <math>\overline{\text{DC}}</math>, flush mountable</b>								
1.5 (0.05)	NO	PNP	Pre-cabled (L = 2 m) (1)	<b>XS108BLPAL2</b>	0.035	(0.07)		
			M8 connector	<b>XS108BLPAM8</b>	0.008	(0.01)		
			M12 connector	<b>XS108BLPAM12</b>	0.015	(0.03)		
		NPN	Pre-cabled (L = 2 m) (1)	<b>XS108BLNAL2</b>	0.035	(0.07)		
	M8 connector		<b>XS108BLNAM8</b>	0.008	(0.01)			
	M12 connector		<b>XS108BLNAM12</b>	0.015	(0.03)			
	NC	PNP	Pre-cabled (L = 2 m) (1)	<b>XS108BLPBL2</b>	0.035	(0.07)		
			M8 connector	<b>XS108BLPBM8</b>	0.008	(0.01)		
			M12 connector	<b>XS108BLPBM12</b>	0.015	(0.03)		
		NPN	Pre-cabled (L = 2 m) (1)	<b>XS108BLNBL2</b>	0.035	(0.07)		
	M8 connector	<b>XS108BLNBM8</b>	0.008	(0.01)				
		M12 connector	<b>XS108BLNBM12</b>	0.015	(0.03)			
<b>Three-wire 12–24 V <math>\overline{\text{DC}}</math>, non-flush mountable</b>								
2.5 (0.09)	NO	PNP	Pre-cabled (L = 2 m) (1)	<b>XS208BLPAL2</b>	0.035	(0.07)		
			M8 connector	<b>XS208BLPAM8</b>	0.008	(0.01)		
			M12 connector	<b>XS208BLPAM12</b>	0.015	(0.03)		
			Pre-cabled (L = 2 m) (1)	<b>XS208BLNAL2</b>	0.035	(0.07)		
		NPN	M8 connector	<b>XS208BLNAM8</b>	0.008	(0.01)		
			M12 connector	<b>XS208BLNAM12</b>	0.015	(0.03)		
			NC	PNP	Pre-cabled (L = 2 m) (1)	<b>XS208BLPBL2</b>	0.035	(0.07)
					M8 connector	<b>XS208BLPBM8</b>	0.008	(0.01)
	M12 connector	<b>XS208BLPBM12</b>			0.015	(0.03)		
	NPN	Pre-cabled (L = 2 m) (1)		<b>XS208BLNBL2</b>	0.035	(0.07)		
	M8 connector	<b>XS208BLNBM8</b>	0.008	(0.01)				
		M12 connector	<b>XS208BLNBM12</b>	0.015	(0.03)			
	<b>Ø 12, threaded M12 x 1</b>							
	<b>Three-wire 12–24 V <math>\overline{\text{DC}}</math>, flush mountable</b>							
	2 (0.07)	NO	PNP	Pre-cabled (L = 2 m) (2)	<b>XS112BLPAL2</b>	0.070	(0.15)	
				M12 connector	<b>XS112BLPAM12</b>	0.015	(0.03)	
NPN			Pre-cabled (L = 2 m) (2)	<b>XS112BLNAL2</b>	0.070	(0.15)		
			M12 connector	<b>XS112BLNAM12</b>	0.015	(0.03)		
NC		PNP	Pre-cabled (L = 2 m) (2)	<b>XS112BLPBL2</b>	0.070	(0.15)		
			M12 connector	<b>XS112BLPBM12</b>	0.015	(0.03)		
			Pre-cabled (L = 2 m) (2)	<b>XS112BLNBL2</b>	0.070	(0.15)		
		M12 connector	<b>XS112BLNBM12</b>	0.015	(0.03)			
<b>Two-wire 24–240 V <math>\sim</math>, flush mountable</b>								
2 (0.07)	NO		Pre-cabled (L = 2 m) (2)	<b>XS112BLFAL2</b>	0.075	(0.16)		
<b>Three-wire 12–24 V <math>\overline{\text{DC}}</math>, non-flush mountable</b>								
4 (0.15)	NO	PNP	Pre-cabled (L = 2 m) (2)	<b>XS212BLPAL2</b>	0.070	(0.15)		
			M12 connector	<b>XS212BLPAM12</b>	0.015	(0.03)		
		NPN	Pre-cabled (L = 2 m) (2)	<b>XS212BLNAL2</b>	0.070	(0.15)		
			M12 connector	<b>XS212BLNAM12</b>	0.015	(0.03)		
	NC	PNP	Pre-cabled (L = 2 m) (2)	<b>XS212BLPBL2</b>	0.070	(0.15)		
			M12 connector	<b>XS212BLPBM12</b>	0.015	(0.03)		
			Pre-cabled (L = 2 m) (2)	<b>XS212BLNBL2</b>	0.070	(0.15)		
		M12 connector	<b>XS212BLNBM12</b>	0.015	(0.03)			

(1) For a 5 m cable replace L2 with L5.

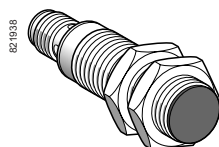
Example: XS106BLPAL2 becomes **XS106BLPAL5** with a 5 m cable.

(2) For a 5 m long cable replace L2 by L5; for a 10 m long cable replace L2 with L10.

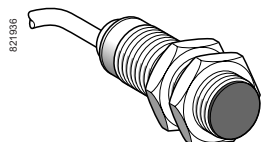
Example: XS112BLPAL2 becomes **XS112BLPAL5** with a 5 m cable.

# OsiSense® Inductive proximity sensors

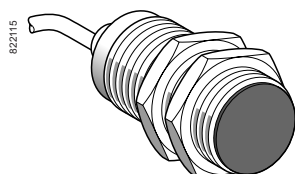
Basic, cylindrical, metal, flush and non-flush mountable  
Two-wire, AC supply  
Three-wire DC, solid-state output



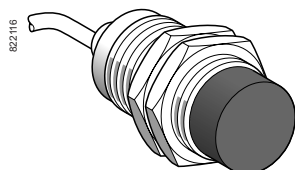
XS1 18BL●●M12



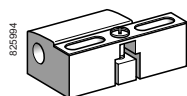
XS1 18BL●●●L2



XS1 30BL●●L2



XS2 30BL●●L2



XSZ B1●●

Sensing distance Sn, mm (in.)	Function	Output	Connection	Catalog Number	Weight kg (lb)
<b>Ø 18, threaded M18 x 1</b>					
<b>Three-wire 12–24 V <math>\overline{\text{DC}}</math>, flush mountable</b>					
5 (0.19)	NO	PNP	Pre-cabled (L = 2 m) (1)	<b>XS118BLPAL2</b>	0.105 (0.23)
			M12 connector	<b>XS118BLPAM12</b>	0.035 (0.07)
		NPN	Pre-cabled (L = 2 m) (1)	<b>XS118BLNAL2</b>	0.105 (0.23)
			M12 connector	<b>XS118BLNAM12</b>	0.035 (0.07)
	NC	PNP	Pre-cabled (L = 2 m) (1)	<b>XS118BLPBL2</b>	0.105 (0.23)
			M12 connector	<b>XS118BLPBM12</b>	0.035 (0.07)
		NPN	Pre-cabled (L = 2 m) (1)	<b>XS118BLNBL2</b>	0.105 (0.23)
			M12 connector	<b>XS118BLNBM12</b>	0.035 (0.07)
<b>Two-wire 24–240 V <math>\sim</math>, flush mountable</b>					
5 (0.19)	NO		Pre-cabled (L = 2 m) (1)	<b>XS118BLFAL2</b>	0.120 (0.26)
<b>Three-wire 12–24 V <math>\overline{\text{DC}}</math>, non-flush mountable</b>					
8 (0.31)	NO	PNP	Pre-cabled (L = 2 m) (1)	<b>XS218BLPAL2</b>	0.105 (0.23)
			M12 connector	<b>XS218BLPAM12</b>	0.035 (0.07)
		NPN	Pre-cabled (L = 2 m) (1)	<b>XS218BLNAL2</b>	0.105 (0.23)
			M12 connector	<b>XS218BLNAM12</b>	0.035 (0.07)
	NC	PNP	Pre-cabled (L = 2 m) (1)	<b>XS218BLPBL2</b>	0.105 (0.23)
			M12 connector	<b>XS218BLPBM12</b>	0.035 (0.07)
		NPN	Pre-cabled (L = 2 m) (1)	<b>XS218BLNBL2</b>	0.105 (0.23)
			M12 connector	<b>XS218BLNBM12</b>	0.035 (0.07)
<b>Ø 30, threaded M30 x 1.5</b>					
<b>Three-wire 12–24 V <math>\overline{\text{DC}}</math>, flush mountable</b>					
10 (0.39)	NO	PNP	Pre-cabled (L = 2 m) (1)	<b>XS130BLPAL2</b>	0.165 (0.36)
			M12 connector	<b>XS130BLPAM12</b>	0.075 (0.16)
		NPN	Pre-cabled (L = 2 m) (1)	<b>XS130BLNAL2</b>	0.165 (0.36)
			M12 connector	<b>XS130BLNAM12</b>	0.075 (0.16)
	NC	PNP	Pre-cabled (L = 2 m) (1)	<b>XS130BLPBL2</b>	0.165 (0.36)
			M12 connector	<b>XS130BLPBM12</b>	0.075 (0.16)
		NPN	Pre-cabled (L = 2 m) (1)	<b>XS130BLNBL2</b>	0.165 (0.36)
			M12 connector	<b>XS130BLNBM12</b>	0.075 (0.16)
<b>Two-wire 24–240 V <math>\sim</math>, flush mountable</b>					
10 (0.39)	NO		Pre-cabled (L = 2 m) (1)	<b>XS130BLFAL2</b>	0.205 (0.45)
<b>Three-wire 12–24 V <math>\overline{\text{DC}}</math>, non-flush mountable</b>					
15 (0.59)	NO	PNP	Pre-cabled (L = 2 m) (1)	<b>XS230BLPAL2</b>	0.155 (0.34)
			M12 connector	<b>XS230BLPAM12</b>	0.085 (0.18)
		NPN	Pre-cabled (L = 2 m) (1)	<b>XS230BLNAL2</b>	0.155 (0.34)
			M12 connector	<b>XS230BLNAM12</b>	0.085 (0.18)
	NC	PNP	Pre-cabled (L = 2 m) (1)	<b>XS230BLPBL2</b>	0.155 (0.34)
			M12 connector	<b>XS230BLPBM12</b>	0.085 (0.18)
		NPN	Pre-cabled (L = 2 m) (1)	<b>XS230BLNBL2</b>	0.155 (0.34)
			M12 connector	<b>XS230BLNBM12</b>	0.085 (0.18)
<b>Accessories (2)</b>					
<b>Description</b>				<b>Catalog Number</b>	<b>Weight kg (lb)</b>
<b>Mounting clamps</b>			Ø 6.5	<b>XSZ B165</b>	0.005 (0.01)
			Ø 8	<b>XSZ B108</b>	0.006 (0.01)
			Ø 12	<b>XSZ B112</b>	0.006 (0.01)
			Ø 18	<b>XSZ B118</b>	0.010 (0.02)
			Ø 30	<b>XSZ B130</b>	0.020 (0.04)

(1) For a 5 m long cable replace L2 with L5; for a 10 m long cable replace L2 with L10.

Example: XS118BLPAL2 becomes **XS118BLPAL5** with a 5 m long cable.

(2) For more information, see page 13.

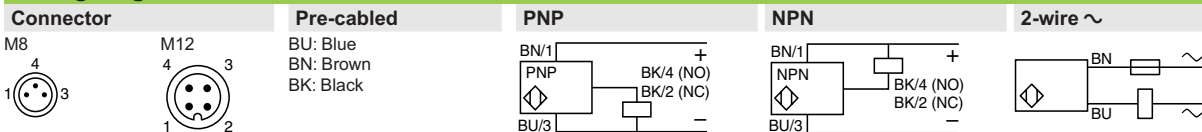
# OsiSense® Inductive proximity sensors

Basic, cylindrical, metal, flush and non-flush mountable  
Two-wire, AC supply  
Three-wire DC, solid-state output

Specifications		XS1●●BLP●L2 XS1●●BLN●L2	XS1●●BLP●M● XS1●●BLN●M●	XS2●●BLP●L2 XS2●●BLN●L2	XS2●●BLP●M● XS2●●BLN●M●	XS1●●BLFAL2	
Sensor type		UL, CSA, CE					
Product certifications	Pre-cabled	Length 2 m		Length 2 m	–	Length 2 m	
	Connector	–	M8 on Ø 8 M12 on Ø 8, Ø 12, Ø 18 and Ø 30	–	M8 on Ø 8 M12 on Ø 8, Ø 12, Ø 18 and Ø 30	–	
Operating zone	Ø 6.5	mm	0–1.2 (0–0.04 in.)	–	–	–	
	Ø 8	mm	0–1.2 (0–0.04 in.)	–	0–2 (0–0.07 in.)	–	
	Ø 12	mm	0–1.6 (0–0.06 in.)	–	0–3.2 (0–0.12 in.)	0–1.6 (0–0.06 in.)	
	Ø 18	mm	0–4 (0–0.15 in.)	–	0–6.4 (0–0.25 in.)	0–4 (0–0.15 in.)	
	Ø 30	mm	0–8 (0–0.31 in.)	–	0–12 (0–0.47 in.)	0–8 (0–0.31 in.)	
Differential travel		%	1–15 of real sensing distance (Sr)				
Degree of protection	Conforming to IEC 60529		IP 67				
Storage temperature		°C	–40 to +85 (–40 to +185 °F)				
Operating temperature		°C	–25 to +70 (–13 to +158 °F)				
Materials	Case		Nickel plated brass				
	Cable		PVC 3 x 0.34 mm <sup>2</sup> (22 AWG) except Ø 6.5 and 8: 3 x 0.11 mm <sup>2</sup> (27 AWG)	–	PVC 3 x 0.34 mm <sup>2</sup> (22 AWG) except Ø 6.5 and 8: 3 x 0.11 mm <sup>2</sup> (27 AWG)	–	PVC 2 x 0.34 mm <sup>2</sup> (22 AWG)
Vibration resistance	Conforming to IEC 60068-2-6		25 gn, amplitude ± 2 mm (f = 10 to 55 Hz)				
Shock resistance	Conforming to IEC 60068-2-27		50 gn, duration 11 ms				
Output state indication			Yellow LED, on rear	Yellow LED: 4 viewing ports at 90°	Yellow LED, on rear	Yellow LED: 4 viewing ports at 90°	Yellow LED, on rear
Rated supply voltage		V	~ 12–24 with protection against reverse polarity				~ 24–240
Voltage limits (including ripple)		V	~ 10–36				~ 20–264
Switching capacity		mA	≤ 100 (except Ø 6.5 and 8: ≤ 50) with overload and short-circuit protection				5–300 (5–200 for Ø 12) (1)
Voltage drop, closed state		V	≤ 2				≤ 4.5 (≤ 7 for Ø 12)
Current consumption, no-load		mA	≤ 10				–
Residual current, open state		mA	–				≤ 1.5
Maximum switching frequency	Ø 6.5, Ø 8	Hz	3000				–
	Ø 12	Hz	2000		1000	25	
	Ø 18	Hz	2000		250	25	
	Ø 30	Hz	200		60	25	
Delays	First-up	ms	≤ 5 (except Ø 30 ≤ 10)				≤ 40
	Response	ms	≤ 0.5 for Ø 8, Ø 12, ≤ 1 for Ø 18, ≤ 2 for Ø 30				≤ 10
	Recovery	ms	≤ 1 for Ø 8, ≤ 0.5 for Ø 12, ≤ 2 for Ø 18, ≤ 6 for Ø 30				≤ 15

(1) These sensors do not incorporate overload or short-circuit protection, so it is essential to connect a 0.4 A "fast-acting" fuse in series with the load.

## Wiring diagrams

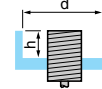
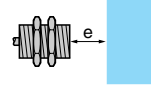
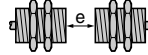
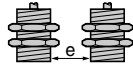


# OsiSense® Inductive proximity sensors

Basic, cylindrical, metal, flush and non-flush mountable  
Two-wire, AC supply  
Three-wire DC, solid-state output

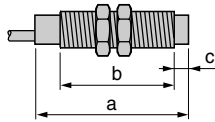
## Setup

### Minimum mounting distances (mm)



Sensors		Side by side	Face to face	Facing a metal object	Mounted in a metal support
Ø 6.5 flush mountable	XS106	$e \geq 3$	$e \geq 18$	$e \geq 4.5$	$d \geq 6.5$ $h \geq 0$
Ø 8 flush mountable	XS108	$e \geq 3$	$e \geq 18$	$e \geq 4.5$	$d \geq 8$ $h \geq 0$
Ø 8 non-flush mountable	XS208	$e \geq 10$	$e \geq 30$	$e \geq 7.5$	$d \geq 24$ $h \geq 5$
Ø 12 flush mountable	XS112	$e \geq 4$	$e \geq 24$	$e \geq 6$	$d \geq 12$ $h \geq 0$
Ø 12 non-flush mountable	XS212	$e \geq 16$	$e \geq 48$	$e \geq 12$	$d \geq 36$ $h \geq 8$
Ø 18 flush mountable	XS118	$e \geq 10$	$e \geq 60$	$e \geq 15$	$d \geq 18$ $h \geq 0$
Ø 18 non-flush mountable	XS218	$e \geq 16$	$e \geq 96$	$e \geq 24$	$d \geq 54$ $h \geq 16$
Ø 30 flush mountable	XS130	$e \geq 20$	$e \geq 120$	$e \geq 30$	$d \geq 30$ $h \geq 0$
Ø 30 non-flush mountable	XS230	$e \geq 60$	$e \geq 180$	$e \geq 45$	$d \geq 90$ $h \geq 30$

## Dimensions (mm)



### Flush mountable in metal

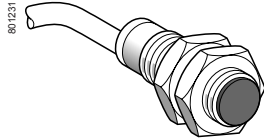
Sensors	Flush mountable in metal						
	Pre-cabled (mm)		M8 connector (mm)			M12 connector (mm)	
	a	b	a	b	a	b	
Ø 6.5 XS106	42	–	–	–	–	–	
Ø 8 XS108	42	39.4	52.2	41.3	61.4	39	
Ø 12 XS112	41.3	38.7	–	–	53	39	
Ø 18 XS118	51.3	48.4	–	–	64	48.5	
Ø 30 XS130	51.3	48.4	–	–	64	48.5	

### Non-flush mountable in metal

Sensors	Non-flush mountable in metal								
	Pre-cabled (mm)		M8 connector (mm)			M12 connector (mm)			
	a	b	a	b	c	a	b	c	
Ø 8 XS208	42	35.8	52.2	37.7	4	61.4	35.4	4	
Ø 12 XS212	41.3	34.1	–	–	–	52.6	34	5	
Ø 18 XS218	50.6	40.4	–	–	–	63.4	40.5	8	
Ø 30 XS230	50.6	35.4	–	–	–	63.4	35.5	13	

# OsiSense® Inductive proximity sensors

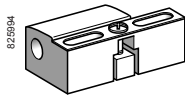
Basic, plastic, cylindrical, non-flush mountable  
Three-wire DC, solid-state output



XS2●●AL●●L2



XS2●●AL●●M12



XSZ B1●●

Sensing distance Sn, mm (in.)	Function	Output	Connection	Catalog Number	Weight	
					kg	(lb)
<b>Ø 8, threaded M8 x 1</b>						
<b>Three-wire 12–24 V DC, non-flush mountable</b>						
2.5 (0.09)	NO	PNP	Pre-cabled (L = 2 m) (1)	<b>XS208ALPAL2</b>	0.030	(0.06)
		NPN	Pre-cabled (L = 2 m) (1)	<b>XS208ALNAL2</b>	0.030	(0.06)
	NC	PNP	Pre-cabled (L = 2 m) (1)	<b>XS208ALPBL2</b>	0.003	(0.06)
		NPN	Pre-cabled (L = 2 m) (1)	<b>XS208ALNBL2</b>	0.030	(0.06)
<b>Ø 12, threaded M12 x 1</b>						
<b>Three-wire 12–24 V DC, non-flush mountable</b>						
4 (0.15)	NO	PNP	Pre-cabled (L = 2 m) (2)	<b>XS212ALPAL2</b>	0.065	(0.14)
			M12 connector	<b>XS212ALPAM12</b>	0.010	(0.02)
		NPN	Pre-cabled (L = 2 m) (2)	<b>XS212ALNAL2</b>	0.065	(0.14)
			M12 connector	<b>XS212ALNAM12</b>	0.010	(0.02)
	NC	PNP	Pre-cabled (L = 2 m) (2)	<b>XS212ALPBL2</b>	0.065	(0.14)
			M12 connector	<b>XS212ALPBM12</b>	0.010	(0.02)
		NPN	Pre-cabled (L = 2 m) (2)	<b>XS212ALNBL2</b>	0.065	(0.14)
			M12 connector	<b>XS212ALNBM12</b>	0.010	(0.02)
<b>Ø 18, threaded M18 x 1</b>						
<b>Three-wire 12–24 V DC, non-flush mountable</b>						
8 (0.31)	NO	PNP	Pre-cabled (L = 2 m) (2)	<b>XS218ALPAL2</b>	0.095	(0.20)
			M12 connector	<b>XS218ALPAM12</b>	0.025	(0.05)
		NPN	Pre-cabled (L = 2 m) (2)	<b>XS218ALNAL2</b>	0.095	(0.20)
			M12 connector	<b>XS218ALNAM12</b>	0.025	(0.05)
	NC	PNP	Pre-cabled (L = 2 m) (2)	<b>XS218ALPBL2</b>	0.095	(0.20)
			M12 connector	<b>XS218ALPBM12</b>	0.025	(0.05)
		NPN	Pre-cabled (L = 2 m) (2)	<b>XS218ALNBL2</b>	0.095	(0.20)
			M12 connector	<b>XS218ALNBM12</b>	0.025	(0.05)
<b>Ø 30, threaded M30 x 1.5</b>						
<b>Three-wire 12–24 V DC, non-flush mountable</b>						
15 (0.59)	NO	PNP	Pre-cabled (L = 2 m) (2)	<b>XS230ALPAL2</b>	0.135	(0.29)
			M12 connector	<b>XS230ALPAM12</b>	0.065	(0.14)
		NPN	Pre-cabled (L = 2 m) (2)	<b>XS230ALNAL2</b>	0.135	(0.29)
			M12 connector	<b>XS230ALNAM12</b>	0.065	(0.14)
	NC	PNP	Pre-cabled (L = 2 m) (2)	<b>XS230ALPBL2</b>	0.135	(0.29)
			M12 connector	<b>XS230ALPBM12</b>	0.065	(0.14)
		NPN	Pre-cabled (L = 2 m) (2)	<b>XS230ALNBL2</b>	0.135	(0.29)
			M12 connector	<b>XS230ALNBM12</b>	0.065	(0.14)
<b>Accessories (3)</b>						
Description				Catalog Number	kg	Weight (lb)
Mounting clamps			Ø 8	<b>XSZB108</b>	0.006	(0.01)
			Ø 12	<b>XSZB112</b>	0.006	(0.01)
			Ø 18	<b>XSZB118</b>	0.010	(0.02)
			Ø 30	<b>XSZB130</b>	0.020	(0.04)

(1) For a 5 m cable replace L2 with L5.

Example: XS208ALPAL2 becomes **XS208ALPAL5** with a 5 m cable.

(2) For a 5 m long cable replace L2 by L5; for a 10 m long cable replace L2 by L10.

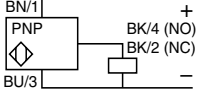
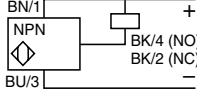
Example: XS218ALPAL2 becomes **XS218ALPAL5** with a 5 m cable.

(3) For more information, see page 15.



Specifications			
Sensor type		XS2●●ALP●L2 XS2●●ALN●L2	XS2●●ALP●M12 XS2●●ALN●M12
Product certifications		UL, CSA, CÉ	
Connection	Pre-cabled	Length: 2 m	
	Connector	–	M12
Operating zone	Ø 8	mm	0–2 (0–0.07 in.)
	Ø 12	mm	0–3.2 (0–0.12 in.)
	Ø 18	mm	0–6.4 (0–0.25 in.)
	Ø 30	mm	0–12 (0–0.47 in.)
Differential travel		%	1–15 of real sensing distance (Sr)
Degree of protection	Conforming to IEC 60529	IP 67	
Storage temperature		°C -40 to +85 (-40 to +185 °F)	
Operating temperature		°C -25 to +70 (-13 to +158 °F)	
Materials	Case	PPS	
	Cable	PVC 3 x 0.34 mm <sup>2</sup> (22 AWG) except Ø 8: 3 x 0.11 mm <sup>2</sup> (27 AWG)	
Vibration resistance	Conforming to IEC 60068-2-6	25 gn, amplitude ± 2 mm (f = 10 to 55 Hz)	
Shock resistance	Conforming to IEC 60068-2-27	50 gn, duration 11 ms	
Output state indication		Yellow LED, on rear	Yellow LED: 4 viewing ports at 90°
Rated supply voltage		V	--- 12–24 with protection against reverse polarity
Voltage limits (including ripple)		V	--- 10–36
Switching capacity		mA	≤ 100 (except Ø 8: ≤ 50) with overload and short-circuit protection
Voltage drop, closed state		V	≤ 2
Current consumption, no-load		mA	≤ 10
Maximum switching frequency	Ø 8	Hz	3000
	Ø 12	Hz	1000
	Ø 18	Hz	250
	Ø 30	Hz	60
Delays	First-up	ms	≤ 5 (except Ø 30 ≤ 10)
	Response	ms	≤ 0.5 for Ø 8, Ø 12, ≤ 1 for Ø 18, ≤ 2 for Ø 30
	Recovery	ms	≤ 1 for Ø 8, ≤ 0.5 for Ø 12, ≤ 2 for Ø 18, ≤ 6 for Ø 30

## Wiring diagrams

Connector	Pre-cabled	PNP	NPN
M12 4 3 1 2	BU: Blue BN: Brown BK: Black		

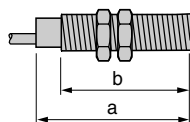
## Setup

### Minimum mounting distances (mm)



Sensors	Side by side	Face to face	Facing a metal object	Mounted in a metal support
Ø 8 XS208AL	e > 10	e > 30	e > 7.5	d > 24 h > 5
Ø 12 XS212AL	e > 16	e > 48	e > 12	d > 36 h > 8
Ø 18 XS218AL	e > 16	e > 96	e > 24	d > 54 h > 16
Ø 30 XS230AL	e > 60	e > 180	e > 45	d > 90 h > 30

## Dimensions



Sensors	Non-flush mountable in metal			
	Pre-cabled (mm)		Connector (mm)	
	a	b	a	b
Ø 8 XS208AL	49	40	–	–
Ø 12 XS212AL	49	42	61	42
Ø 18 XS218AL	58.8	51.5	70.3	51.5
Ø 30 XS230AL	58.8	51.5	70.3	51.5

Schneider Electric USA, Inc.

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

Schneider Electric Sensor  
Competency Center  
1875 Founders Drive  
Dayton OH 45420  
(800) 435-2121

The information and dimensions in this catalog are provided for the convenience of our customers. While this information is believed to be accurate, Schneider Electric reserves the right to make updates and changes without prior notification and assumes no liability for any errors or omissions.

Design: Schneider Electric  
Photos: Schneider Electric

© 2010 Schneider Electric. All Rights Reserved.

April 2010

9006CT1001