

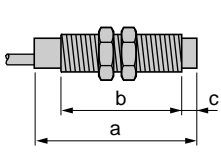
# Inductive proximity sensors

Cylindrical type, M12 x 1 threaded  
Metal case (brass), form A  
a.c. or d.c. supply

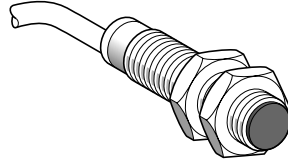
Accessories :  
page 3/0

References, characteristics, dimensions, schemes

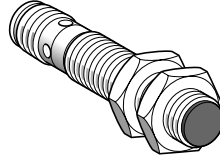
## Flush mountable in metal



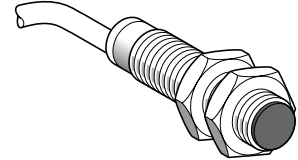
Lengths (mm) :  
a = Overall  
b = Threaded section  
c = For non flush mounting sensors



a = 50  
b = 42



a = 61 (XS1-M12M●230K)  
a = 66 (XS1-M12M●250K)  
b = 40



a = 50  
b = 42

AC/DC

AC/DC

AC

Nominal sensing distance (S<sub>n</sub>)

2 mm

2 mm

2 mm

## References

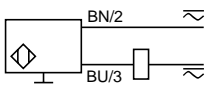
2-wire ~ or ---	NO	XS1-M12MA230	XS1-M12MA230K	—
	NC	XS1-M12MB230	XS1-M12MB230K	—
2-wire ~ or --- (protected against short-circuits)	NO	XS1-M12MA250	XS1-M12MB250K	—
	NC	XS1-M12MB250	XS1-M12MB250K	—
2-wire ~	NO	—	—	XS1-M12FA260
	NC	—	—	XS1-M12FB260
Weight (kg)		0.075	0.025	0.075

## Characteristics

Connection	Pre-cabled, 2 x 0.34 mm <sup>2</sup> , L = 2 m (1)	Connector (types 13 and 14) (2)	Pre-cabled, 2 x 0.34 mm <sup>2</sup> , L = 2 m (1)
Degree of protection	IP 68	Dpg. on connector (see page 3/5)	IP 68
Operating zone	0...1.6 mm		0...1.6 mm
Repeat accuracy	3 % of S <sub>r</sub>		3 % of S <sub>r</sub>
Differential travel	1...15 % of S <sub>r</sub>		1...15 % of S <sub>r</sub>
Operating temperature	- 25...+ 80 °C		- 25 %...+ 80 % °C
Output state indication	LED, annular	LED, 4 viewing ports at 90°	LED, annular
Rated supply voltage	~ 24...240 V (50/60 Hz) or --- 24...210 V		~ 24...240 V (50/60 Hz)
Voltage limits (including ripple)	~ or --- 20...264 V		~ 20...264 V
Switching capacity	5...200 mA (3)		5...200 mA (3) (2 A inrush)
Voltage drop, closed state	≤ 5.5 V		≤ 7 V
Residual current, non protected model	≤ 0.8 mA / 24 V or ≤ 1.5 mA / 120 V		≤ 1.5 mA
open state protected model	≤ 1.5 mA		—
Current consumption, no-load	—		—
Maximum switching frequency	(~) 25 Hz or (---) 350 Hz		25 Hz
Delays	first-up	≤ 40 or 70 ms (models with short-circuit protection)	≤ 40 ms
	response	≤ 1 ms	≤ 10 ms
	recovery	≤ 2 ms	≤ 15 ms

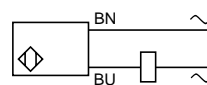
## Wiring schemes

2-wire ~ or ---, NO or NC output  
XS1/XS2-M12●●230/250/230K/250K



⊥ For connector version sensors

2-wire ~, NO or NC output  
XS1-M12F●260



(1) Sensors pre-cabled with other cable lengths :

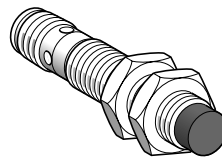
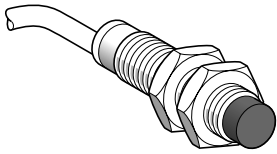
Length of cable	Suffix to be added to references stated above for 2 m pre-cabled sensors	Weight increase
5 m	L1	0.075 kg
10 m	L2	0.200 kg

Example : sensor XS1-M12MA230 with 5 m cable becomes XS1-M12MA230L1

(2) The type numbers refer to suitable female extension cables, see page 3/5.

(3) For the sensors not incorporating overload or short-circuit protection, it is recommended that a 0.8 A "quick-blow" fuse be connected in series with the load. See page 3/0.

Non flush mountable in metal



a = 50  
b = 37  
c = 5  
AC/DC

a = 61  
b = 35  
c = 5  
AC/DC

4 mm

4 mm

XS2-M12MA230	XS2-M12MA230K
XS2-M12MB230	XS2-M12MB230K
XS2-M12MA250	—
XS2-M12MB250	—
—	—
—	—
0.075	0.025

Pre-cabled, 2 x 0.34 mm <sup>2</sup> , length 2 m (1)	Connector (types 13 and 14) (2)
IP 68	Depending on connector (see page 3/5)
<b>0...3.2 mm</b>	
3 % of Sr	
1...15 % of Sr	
- 25...+ 80 °C	
LED, annular	LED, 4 viewing ports at 90°
<b>~ 24...240 V (50/60 Hz) or = 24...210 V</b>	
~ or = 20...264 V	
<b>5...200 mA (3)</b>	
≤ 5.5 V	
≤ 0.8 mA / 24 V or ≤ 1.5 mA / 120 V	
≤ 1.5 mA	
—	
(~) 25 Hz or (=) 300 Hz	
≤ 40 or 70 ms (models with short-circuit protection)	
≤ 1 ms	
≤ 2 ms	

Setting-up

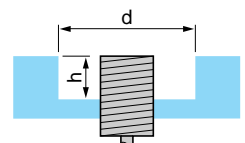
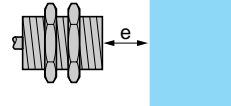
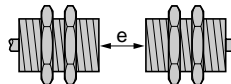
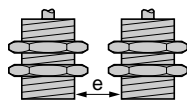
Minimum mounting distances (mm)

Side by side

Face to face

Facing a metal object

Mounted in a metal support



XS1 flush mountable in metal	e ≥ 4	e ≥ 24	e ≥ 6	d ≥ 12, h ≥ 0
XS2 non flush mountable in metal	e ≥ 16	e ≥ 48	e ≥ 12	d ≥ 36, h ≥ 8
Fixing nut tightening torque :	< 15 N.m			

Other versions

Inductive proximity sensors specifically designed for other ambient operating temperatures. Please consult your local Customer support centre.