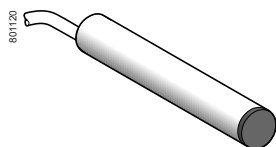


Inductive proximity sensors

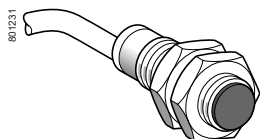
XS range, general purpose

Cylindrical, increased range, flush mountable

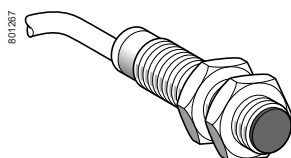
Two-wire DC, solid-state output



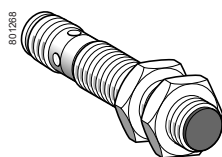
XS606B3●●L2



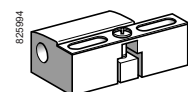
XS612B3●●L2



XS6●●B1●●L2



XS6●●B1●●M12



XSZB1●●

Sensors, 2-wire $\overline{\text{DC}}$ 12-24 V, short case model

Sensing distance (Sn) mm	Function	Connection	Reference	Weight kg
Ø 6.5, plain				
2.5	NO	Pre-cabled (L = 2 m) (1)	XS606B3CAL2	0.060
		Remote M12 connector	XS606B3CAL01M12	0.070
	NC	Pre-cabled (L = 2 m) (1)	XS606B3CBL2	0.060
Ø 8, threaded M8 x 1				
2.5	NO	Pre-cabled (L = 2 m) (1)	XS608B3CAL2	0.070
		Remote M12 connector	XS608B3CAL01M12	0.070
	NC	Pre-cabled (L = 2 m) (1)	XS608B3CBL2	0.070
		Remote M12 connector	XS608B3CBL01M12	0.070
Ø 12, threaded M12 x 1				
4	NO	Pre-cabled (L = 2 m) (1)	XS612B3DAL2	0.090
		M12 connector	XS612B3DAM12	0.030
	NC	Pre-cabled (L = 2 m) (1)	XS612B3DBL2	0.090
		M12 connector	XS612B3DBM12	0.030
Ø 18, threaded M18 x 1				
8	NO	Pre-cabled (L = 2 m) (1)	XS618B3DAL2	0.110
		M12 connector	XS618B3DAM12	0.060
	NC	Pre-cabled (L = 2 m) (1)	XS618B3DBL2	0.110
		M12 connector	XS618B3DBM12	0.060
Ø 30, threaded M30 x 1.5				
15	NO	Pre-cabled (L = 2 m) (1)	XS630B3DAL2	0.180
		M12 connector	XS630B3DAM12	0.130
	NC	Pre-cabled (L = 2 m) (1)	XS630B3DBL2	0.180
		M12 connector	XS630B3DBM12	0.180

Sensors, 2-wire $\overline{\text{DC}}$ 12-48 V, long case model

Sensing distance (Sn) mm	Function	Connection	Reference	Weight kg
Ø 6.5, plain				
2.5	NO	Pre-cabled (L = 2 m) (1)	XS606B1DAL2	0.060
	NC	Pre-cabled (L = 2 m) (1)	XS606B1DBL2	0.060
Ø 8, threaded M8 x 1				
2.5	NO	Pre-cabled (L = 2 m) (1)	XS608B1DAL2	0.035
		M12 connector	XS608B1DAM12	0.015
	NC	Pre-cabled (L = 2 m) (1)	XS608B1DBL2	0.035
		M12 connector	XS608B1DBM12	0.015
Ø 12, threaded M12 x 1				
4	NO	Pre-cabled (L = 2 m) (1)	XS612B1DAL2	0.180
		M12 connector	XS612B1DAM12	0.020
	NC	Pre-cabled (L = 2 m) (1)	XS612B1DBL2	0.075
		M12 connector	XS612B1DBM12	0.020
Ø 18, threaded M18 x 1				
8	NO	Pre-cabled (L = 2 m) (1)	XS618B1DAL2	0.100
		M12 connector	XS618B1DAM12	0.040
	NC	Pre-cabled (L = 2 m) (1)	XS618B1DBL2	0.100
		M12 connector	XS618B1DBM12	0.040
Ø 30, threaded M30 x 1.5				
15	NO	Pre-cabled (L = 2 m) (1)	XS630B1DAL2	0.205
		M12 connector	XS630B1DAM12	0.145
	NC	Pre-cabled (L = 2 m) (1)	XS630B1DBL2	0.205
		M12 connector	XS630B1DBM12	0.145

Accessories (2)


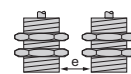
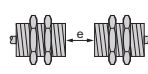
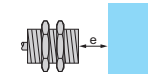
Description	For use with sensors	Reference	Weight kg
Fixing clamps	Ø 6.5 (plain)	XSZB165	0.005
	Ø 8 (M8 x1)	XSZB108	0.006
	Ø 12 (M12 x1)	XSZB112	0.006
	Ø 18 (M18 x1)	XSZB118	0.010
	Ø 30 (M30 x 1.5)	XSZB130	0.020

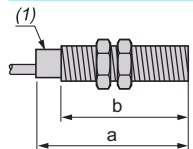
(1) For a 5 m cable, replace L2 by L5. Please consult our Customer Care Centre for availability.
Example: XS606B3CAL2 becomes XS606B3CAL5 with a 5 m cable.

(2) For more information, see page 118.

Characteristics		XS6●●B3●●M12 XS6●●B1D●M12	XS6●●B3●●L2 XS6●●B1D●L2
Sensor type		UL, CSA, CCE	
Product certifications		M12 or remote M12 connector (L01M12) on 0.15 m flying lead	
Connection	Connector	Length 2 m	
	Pre-cabled		
Operating zone (1)	Ø 6.5 and Ø 8	mm	0...2
	Ø 12	mm	0...3.2
	Ø 18	mm	0...6.4
	Ø 30	mm	0...12
Differential travel		%	1...15 of effective sensing distance (Sr)
Degree of protection	Conforming to IEC 60529	IP 65 and IP 67	IP 65 and IP 68, double insulation □ (except Ø 6.5 and Ø 8: IP 67)
	Conforming to DIN 40050	IP 69K	
Storage temperature		°C	-40...+85
Operating temperature		°C	-25...+70
Materials	Case	Nickel plated brass (except XS606B1D or XS608B1D: stainless steel, grade 303)	
	Sensing face	PPS	
	Cable	PvR 2 x 0.34 mm ² except Ø 6.5 and Ø 8: 2 x 0.11 mm ²	
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°	
Rated supply voltage		V	12...48 non polarised for XS6●●B1D 12...24 non polarised for XS6●●B3● (except Ø 6.5 short and Ø 8 short: polarised), with protection against reverse polarity
Voltage limits (including ripple)		V	10...58 for XS6●●B1D 10...36 for XS6●●B3●
Switching capacity		mA	≤ 100 with overload and short-circuit protection
Voltage drop, closed state		V	≤ 4.2
Residual current, open state		mA	≤ 0.5 mA
Maximum switching frequency	Ø 6.5, Ø 8	Hz	1400 for XS6●●B1D, 1100 for XS6●●B3●
	Ø 12	Hz	1300
	Ø 18	Hz	1500
	Ø 30	Hz	800
Delays	First-up	ms	≤ 10
	Response	ms	≤ 0.5
	Recovery	ms	≤ 0.2 for Ø 6.5, Ø 8 and Ø 12; 0.3 for Ø 18; 0.6 for Ø 30

(1) Detection curves, see page 122.

Wiring schemes		Setting-up			
M12 connector	Pre-cabled	Minimum mounting distances (mm)			
	BU: Blue BN: Brown				
2-wire non polarised		Sensors	Side by side	Face to face	Facing a metal object
NO output	NC output	Ø 6.5	e ≥ 5	e ≥ 30	e ≥ 8
		Ø 8	e ≥ 5	e ≥ 30	e ≥ 8
2-wire polarised		Ø 12	e ≥ 8	e ≥ 48	e ≥ 12
XS6●●B3CA	XS6●●B3CB	Ø 18	e ≥ 16	e ≥ 100	e ≥ 25
		Ø 30	e ≥ 30	e ≥ 180	e ≥ 45

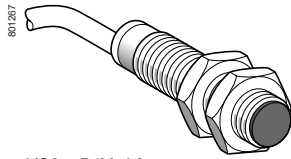
Dimensions	Sensors		Pre-cabled (mm)		M12 connector (mm)		
	Short case model		a	b	a	b	
	Ø 6.5	XS606B3C	33	–	–	–	
	Ø 8	XS608B3C	33	25	–	24	
	Ø 12	XS612B3D	35	25	50	30	
	Ø 18	XS618B3D	40	28	50	28	
	Ø 30	XS630B3D	44	32	55	32	
	Long case model			a	b	a	b
	Ø 6.5	XS606B1D	50	–	–	–	
	Ø 8	XS608B1D	51	42	62	40	
	Ø 12	XS612B1D	53	42	61	42	
	Ø 18	XS618B1D	62	52	74	52	
Ø 30	XS630B1D	62	52	74	52		

Inductive proximity sensors

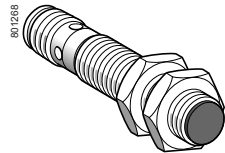
XS range, general purpose

Cylindrical, increased range, flush mountable

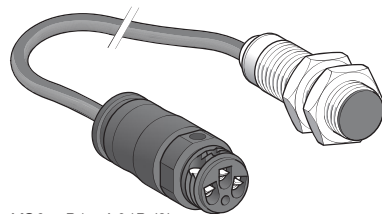
Two-wire AC or DC ⁽¹⁾



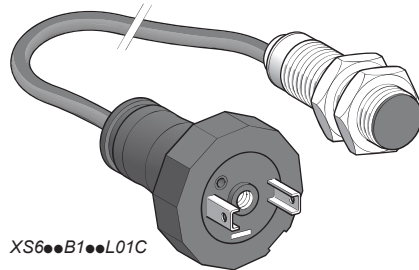
XS612B1MAL2



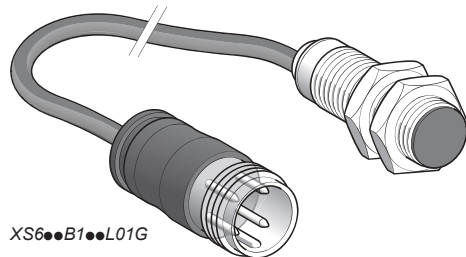
XS618B1MAL2



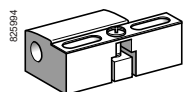
XS630B1MAL2



XS612B1MAL01B (3)



XS618B1MAL01B (3)



XSZB112

Sensors, 2-wire \approx 24-240 V, long case model

Sensing distance (Sn) mm	Function	Connection	Reference	Weight kg
Ø 12, threaded M12 x 1				
4	NO	Pre-cabled (L = 2 m) (2)	XS612B1MAL2	0.075
		1/2"-20 UNF connector	XS612B1MAU20	0.025
	NC	Pre-cabled (L = 2 m) (2)	XS612B1MBL2	0.075
		1/2"-20 UNF connector	XS612B1MBU20	0.025

Ø 18, threaded M18 x 1				
8	NO	Pre-cabled (L = 2 m) (2)	XS618B1MAL2	0.100
		1/2"-20 UNF connector	XS618B1MAU20	0.060
		Remote screw terminal connector	XS618B1MAL01B (3)	0.100
		Remote EN 175301-803-A connector	XS618B1MAL01C	0.100
	NC	Pre-cabled (L = 2 m) (2)	XS618B1MBL2	0.100
		1/2"-20 UNF connector	XS618B1MBU20	0.060
		Remote screw terminal connector	XS618B1MBL01B (3)	0.100
		Remote EN 175301-803-A connector	XS618B1MBL01C	0.100
		Remote M18 connector	XS618B1MBL01G	0.100

Ø 30, threaded M30 x 1.5				
15	NO	Pre-cabled (L = 2 m) (2)	XS630B1MAL2	0.205
		1/2"-20 UNF connector	XS630B1MAU20	0.145
		Remote screw terminal connector	XS630B1MAL01B (3)	0.205
		Remote EN 175301-803-A connector	XS630B1MAL01C	0.205
	NC	Pre-cabled (L = 2 m) (2)	XS630B1MBL2	0.205
		1/2"-20 UNF connector	XS630B1MBU20	0.145
		Remote screw terminal connector	XS630B1MBL01B (3)	0.205
		Remote EN 175301-803-A connector	XS630B1MBL01C	0.205

Accessories (4)

Description	For use with sensors	Reference	Weight kg
Fixing clamps	Ø 12	XSZB112	0.006
	Ø 18	XSZB118	0.010
	Ø 30	XSZB130	0.020

(1) Ø8 plastic, double insulation version available (see page 64).

(2) For a 5 m cable replace L2 by L5; for a 10 m cable replace L2 by L10. Please consult our Customer Care Centre for availability.

Example: XS612B1MAL2 becomes XS612B1MAL5 with a 5 m cable.

(3) Protective cable gland included with sensor.

(4) For more information, see page 118.

Inductive proximity sensors

XS range, general purpose

Cylindrical, increased range, flush mountable

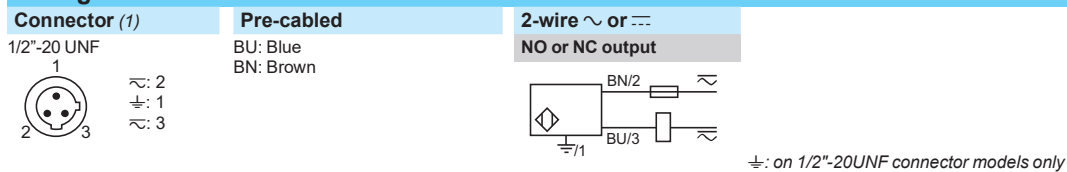
Two-wire AC or DC

Characteristics		XS6...B1M●U20	XS6...B1M●L●
Sensor type		UL, CSA, CE	
Product certifications		UL, CSA, CE	
Connection	Connector	1/2" - 20 UNF	–
	Pre-cabled	–	Length 2 m
	Remote connector	Screw terminal (L01B), EN 175301-803-A (L01C) and M18 (L01G) remote connectors on 0.15 m flying lead	
Operating zone (1)	Ø 12	mm	0... 3.2
	Ø 18	mm	0... 6.4
	Ø 30	mm	0... 12
Differential travel		%	
Degree of protection		1...15 of effective sensing distance (Sr)	
Storage temperature	Conforming to IEC 60529	IP 65, IP 67	
	Conforming to DIN 40050	IP 69K	
Operating temperature		°C	
Materials		°C	
Case		-40...+85	
Sensing face		-25...+70	
Cable		Nickel plated brass	
Vibration resistance		PPS	
Conforming to IEC 60068-2-6		PvR 2 x 0.34 mm ²	
Shock resistance		Conforming to IEC 60068-2-27	
Conforming to IEC 60068-2-27		25 gn, amplitude ± 2 mm (f = 10 to 55 Hz)	
Output state indication		50 gn, duration 11 ms	
Rated supply voltage		Yellow LED: annular on pre-cabled version Yellow LED with 4 viewing ports at 90° on connector version	
Voltage limits (including ripple)		V	
Switching capacity		V	
Voltage drop, closed state		~ 24...240 (~ 50/60 Hz)	
Residual current, open state		V	
Maximum switching frequency (DC/AC)		~ 20...264	
Delays		mA	
First-up		5...200 (2)	
Response		mA	
Recovery		~ 5...300 or ~ 5...200 (2)	
Voltage drop, closed state		V	
Residual current, open state		≤ 5.5	
Maximum switching frequency (DC/AC)		mA	
Ø 12		≤ 0.8	
Ø 18		Hz	
Ø 30		~ 1000 / ~ 25	
Delays		Hz	
First-up		~ 1000 / ~ 25	
Response		~ 500 / ~ 25	
Recovery		ms	
First-up		≤ 25 for Ø 18 and Ø 30; ≤ 20 for Ø 12	
Response		ms	
Recovery		≤ 0.5	
First-up		ms	
Response		≤ 0.2 for Ø 12; ≤ 0.5 for Ø 18; ≤ 2 for Ø 30	
Recovery		ms	
First-up		≤ 0.2 for Ø 12; ≤ 0.5 for Ø 18; ≤ 2 for Ø 30	

(1) Detection curves, see page 122.

(2) It is essential to connect a 0.4 A "quick-blow" fuse in series with the load.

Wiring schemes



(1) For pin arrangement of remote connectors L01B, L01C and L01G, see page 29.

Setting-up

Minimum mounting distances (mm)

Sensors	Side by side	Face to face	Facing a metal object
Ø 12	e ≥ 8	e ≥ 48	e ≥ 12
Ø 18	e ≥ 16	e ≥ 100	e ≥ 25
Ø 30	e ≥ 30	e ≥ 180	e ≥ 45

Dimensions

(1)	Sensors	Pre-cabled (mm)		Connector (mm)	
		a	b	a	b
Ø 12	XS612B1M●	53	42	61	42
Ø 18	XS618B1M●	62	52	73	52
Ø 30	XS630B1M●	62	52	73	52

(1) LED