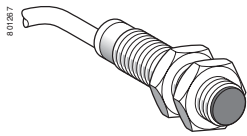


Proximity Sensors

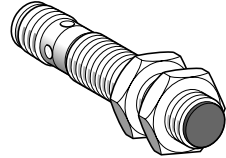
XS5 Inductive Sensor

Metal Tubular, DC



thread
M8x1

XS5 ..B1..L2



thread
M12x1

XS5 ..B1..M12

thread
M30x1.5

Features:

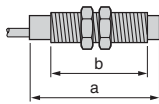
Complete range of cylindrical proximity sensors dedicated to OEM's and their applications.

- Low cost shielded cylindrical inductive proximity sensors
- 2 and 3 wire DC
- Normally Open or Normally Closed outputs available
- Cable and connector versions
- PNP or NPN

Nominal Sensing Distance	Circuit Type	Output Mode	Voltage Range	Load Current Maximum	Operating Frequency	Catalog Number
8 mm Diameter, 2 m (6.6') cable ▲						
1.5 mm	2 wire	N.O.★	12-48 Vdc	1.5-100 mA	4000 Hz	XS508B1DAL2
1.5 mm	PNP	N.O.★	12-24 Vdc	200 mA	5000 Hz	XS508B1PAL2
1.5 mm	NPN	N.O.★	12-24 Vdc	200 mA	5000 Hz	XS508B1NAL2
8 mm Diameter, M12 connector						
1.5 mm	2 wire	N.O.★	12-48 Vdc	1.5-100 mA	4000 Hz	XS508B1DAM12
1.5 mm	PNP	N.O.★	12-24 Vdc	200 mA	5000 Hz	XS508B1PAM12
1.5 mm	NPN	N.O.★	12-24 Vdc	200 mA	5000 Hz	XS508B1NAM12
12 mm Diameter, 2 m (6.6') cable ▲						
2 mm	2 wire	N.O.★	12-48 Vdc	1.5-100 mA	4000 Hz	XS512B1DAL2
2 mm	PNP	N.O.★	12-24 Vdc	200 mA	5000 Hz	XS512B1PAL2
2 mm	NPN	N.O.★	12-24 Vdc	200 mA	5000 Hz	XS512B1NAL2
12 mm Diameter, M12 connector						
2 mm	2 wire	N.O.★	12-48 Vdc	1.5-100 mA	4000 Hz	XS512B1DAM12
2 mm	PNP	N.O.★	12-24 Vdc	200 mA	5000 Hz	XS512B1PAM12
2 mm	NPN	N.O.★	12-24 Vdc	200 mA	5000 Hz	XS512B1NAM12

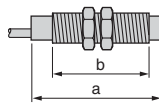
Dimensions

2 Wire



	Cable		Connector	
	a	b	a	b
∅ 8	1.9 (50)	1.6 (42)	2.4 (61)	1.6 (40)
∅ 12	1.9 (50)	1.6 (42)	2.4 (61)	1.6 (40)
∅ 18	2.0 (52.5)	1.7 (44)	2.5 (64.6)	1.7 (44)
∅ 30	1.9 (50)	1.6 (42)	2.5 (64.2)	1.6 (41)

3 Wire



	Cable		Connector	
	a	b	a	b
∅ 8	1.3 (33)	1.0 (25)	1.6 (42)	1.0 (26)
∅ 12	1.3 (33)	1.0 (25)	1.9 (48)	1.1 (29)
∅ 18	1.4 (36.5)	1.1 (28)	1.9 (48.6)	1.1 (28)
∅ 30	1.6 (40.6)	1.2 (32)	2.0 (50.7)	1.3 (32)

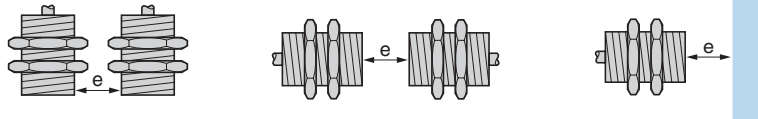
inches (mm)

18 mm Diameter, 2 m (6.6') cable ▲						
5 mm	2 wire	N.O.★	12-48 Vdc	1.5-100 mA	3000 Hz	XS518B1DAL2
5 mm	PNP	N.O.★	12-24 Vdc	200 mA	2000 Hz	XS518B1PAL2
5 mm	NPN	N.O.★	12-24 Vdc	200 mA	2000 Hz	XS518B1NAL2
18 mm Diameter, M12 connector						
5 mm	2 wire	N.O.★	12-48 Vdc	1.5-100 mA	3000 Hz	XS518B1DAM12
5 mm	PNP	N.O.★	12-24 Vdc	200 mA	2000 Hz	XS518B1PAM12
5 mm	NPN	N.O.★	12-24 Vdc	200 mA	2000 Hz	XS518B1NAM12
30 mm Diameter, 2 m (6.6') cable ▲						
10 mm	2 wire	N.O.★	12-48 Vdc	1.5-100 mA	2000 Hz	XS530B1DAL2
10 mm	PNP	N.O.★	12-24 Vdc	200 mA	1000 Hz	XS530B1PAL2
10 mm	NPN	N.O.★	12-24 Vdc	200 mA	1000 Hz	XS530B1NAL2
30 mm Diameter, M12 connector						
10 mm	2 wire	N.O.★	12-48 Vdc	1.5-100 mA	2000 Hz	XS530B1DAM12
10 mm	PNP	N.O.★	12-24 Vdc	200 mA	1000 Hz	XS530B1PAM12
10 mm	NPN	N.O.★	12-24 Vdc	200 mA	1000 Hz	XS530B1NAM12

★ To order a normally closed (N.C.) version change the A to B, example: XS518B1PAL2 to XS518B1PBL2.

▲ 5m cable length available with L5 suffix / 10m cable length available with L10 suffix.

Minimum Mounting Clearances (mm)



	Side by Side	Face to Face	Facing a Metal Object
∅ 8	e ≥ 0.11 (3)	e ≥ 0.7 (18)	e ≥ 0.17 (4.5)
∅ 12	e ≥ 0.15 (4)	e ≥ 0.9 (24)	e ≥ 0.2 (6)
∅ 18	e ≥ 0.4 (10)	e ≥ 2.4 (60)	e ≥ 0.6 (15)
∅ 30	e ≥ 0.8 (20)	e ≥ 4.7 (120)	e ≥ 1.2 (30)

Dual Dimensions $\frac{\text{inches}}{\text{mm}}$

Proximity Sensors

Inductive Sensors

Interpretation of Catalog Numbers



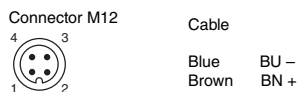
Proximity Sensors Example **X S 8 C 1 A 1 P A L 2**

Inductive Sensor																				
TYPE																				
Cylindrical Optimum		5																		
Cylindrical Universal		6																		
Optimum Rectangular		7																		
Universal Rectangular		8																		
Application Specific		9																		
FORMAT OR MODE																				
Rectangular 8x8x20			J	1																
Rectangular 8x15x32			F	1																
Rectangular 13x26x26			E	1																
Rectangular 15x40x40			C	1																
Rectangular 26x80x80			D	1																
Cylindrical smooth 4mm			L	4																
Cylindrical 5mm			0	5																
Cylindrical smooth 6mm			L	6																
Cylindrical 8mm			0	8																
Cylindrical 12mm			1	2																
Cylindrical 18mm			1	8																
Cylindrical 30mm			3	0																
FAMILY TYPE OR MATERIAL																				
Applications					1...9															
Plastic					A															
Metal					B															
Stainless Steel					S															
APPLICATION																				
Operating Mode					1...9															
Food & Beverage					A															
Namur					E															
Ferrous only					F															
Light industry					L															
Ferrous/Non-ferrous					M															
Non-ferrous only					N															
Speed Control					R															
Serdac					S															
Weld Field Immune					W															
OUTPUTS																				
DC 3 wire PNP										P										
DC 3 wire NPN										N										
DC 3 wire PNP/NPN										K										
DC 2 wire (3/4)										D										
DC 2 wire automobile (1/4)										C										
DC analog output										A										
AC 2 wire										F										
AC/DC 2 wire										M										
AC/DC 2 wire SCP protect										S										
AC/DC relay output										R										
BUS										B										
FUNCTION																				
Analog 0...10mA											1									
Analog 4.20mA											2									
N.O.											A									
N.C.											B									
N.O. + N.C.											C									
Programmable/wiring											P									
Programmable											S									
CABLING OR CONNECTION																				
M8X1 Nano (S)											M	8								
M12x1 Micro (D)											M	1	2							
7/8 16UN Mini (A)											U	7	8							
1/2 20 UNF Micro (K)											U	2	0							
Cable 0.1m											L	0	1							
Cable 2m											L	2								
Cable 5m											L	5								
Cable 10m											L	1	0							
M12 micro on 0.1m pigtail											L	0	1	M	1	2				
PG 16 cable gland											T	1	6							

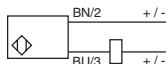
Proximity Sensors

Wiring

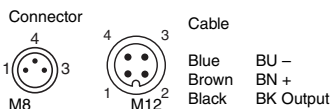
2 Wire



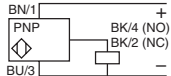
2 Wire Non Polarized



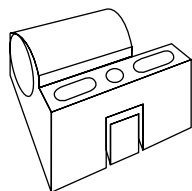
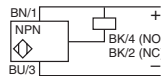
3 Wire



PNP



NPN



XSZB1●●

Connector Cables

(M8 or S suffix; M12 or D suffix)

XSZCS101	Nano Conn., 3 pin, 2 m, straight
XSZCS111	Nano Conn., 3 pin, 2 m, 90°
XSZCD101Y	Micro Conn., 4 pin, 2 m, straight
XSZCD111Y	Micro Conn., 4 pin, 2 m, 90°

For additional cable options and lengths see p. 518

Specifications

Mechanical			
Usable Sensing Range	08mm	0 – 1.2 mm	
	12mm	0 – 1.6 mm	
	18mm	0 – 4 mm	
	30mm	0 – 8 mm	
Temperature Range	Storage	-40 ° to +185 ° F (-40 ° to +85 ° C)	
	Operation	-13 ° to +158 ° F (-25 ° to +70 ° C)	
Enclosure Rating	NEMA Type	3,4X,6P,12,13	
	IEC Type	IP68 cable version (except 8mm and connector version: IP67)	
Enclosure Material	Case	Nickel Plated Brass	
	Face	PBT	
Max. Tightening Torque	08mm	5 N•m (3.7 lb-ft)	
	12mm	6 N•m (4.4 lb-ft)	
	18mm	15 N•m (11 lb-ft)	
	30mm	40 N•m (29.5 lb-ft)	
Vibration	25 g, amplitude +/- 2 mm (f=10-50 Hz)		
Shock Resistance	50 g duration 11 ms		
Differential (% of Sr)	15%		
Repeatability (% of Sr)	3%		
LED Indicator	Output status		
Cable	PVR 2x0.5 mm ²	PVR 3x0.34 mm ²	
Connector	M12 4pin	M8 3 pin / M12 4pin	
Electrical			
Voltage Range	2 wire	3 wire	
	12 – 48 Vdc	12 – 24 Vdc	
Voltage Limit (including ripple)	10 – 58 Vdc	10 – 36 Vdc	
Voltage Drop	4V	2V	
Maximum Load Current	1.5 ... 100 mA	200 mA	
(max.) Leakage (Residual) Current-open state	0.5mA	-	
Current consumption	-	10 mA	
Power up Delay (max.)	5 ms	5 ms	
On Delay (max.)	08mm	0.2 ms	0.1 ms
	12mm	0.2 ms	0.1 ms
	18mm	0.2 ms	0.15 ms
	30mm	0.3 ms	0.2 ms
Off Delay (max.)	08mm	0.2 ms	0.1 ms
	12mm	0.2 ms	0.1 ms
	18mm	0.2 ms	0.35 ms
	30mm	0.3 ms	0.7 ms
Protective Circuitry	Short Circuit Protection	Yes	Yes
	Overload Protection	Yes	Yes
	Radio Frequency Immunity (RFI)	IEC 61000-4-3 Level 3	IEC 61000-4-3 Level 3
	Reverse Polarity Protection	Yes	Yes
Agency Listings	UL CSA CE		

Accessories

Description	Catalog Numbers
8mm tubular mounting bracket	XSZB108
12mm tubular mounting bracket	XSZB112
18mm tubular mounting bracket	XSZB118
30mm tubular mounting bracket	XSZB130