# Inductive proximity sensors XS range

# Catalogue







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# Inductive proximity sensors XS range

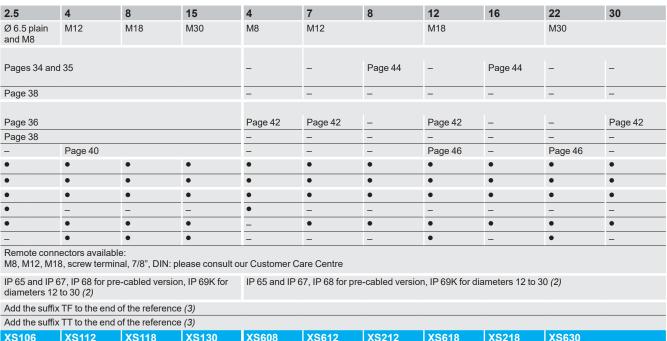
Selection a	uide
_	
	page 1 Intability using teach mode:
	through innovation
XS rang	e, general purpose
Cylindrica	l type
	rd range, flush mountable
	ed range, flush mountable
Block type	·
	rd range, flush mountable
Cubic type	3
□ 40 x 40	x 70 mm format, flush or non-flush mountable page 5
□ 40 x 40	x 117 mm format, flush or non-flush mountable page 5
Multivoltag	ge sensors with short-circuit protection
	ith 2 complementary outputs
	ate PNP or NPN, NO + NC outputs
	se sensors
	hemical processing, marine applications)
Quasi-flus	h mountable sensors, increased range
Miniature :	sensors
XS rang	e, application
Adjustable	e range sensorspage 7
	or rotation monitoring, slip and shaft overload detection <i>page</i> 7
	ith analogue output
	or food & beverage and pharmaceutical applications
	plastic
-	cal, plastic
•	cal, stainless steel, for harsh industrial environments page 10
	or assembly, packaging and light material handling applications
	x 40 mm format
	or welding machine applications
Ŭ	e, Fail Safe
	l type
	rd range page 11 ed range
	age 11
	x 70 mm format
XS rang	e
Accessorie	espage 12
	, .
Detection	curves

# **Inductive proximity sensors** XS range General purpose

Cylindrical typ	00	Standar	d range							
		Flush mo	ountable							
Sensing dista	nce Sn (mm)	1.5		2	5	10				
Diameter		Ø 6.5 plair	n and M8	 M12	M18	M30				
Short case	Supply 3-wire (PNP/NPN)	Page 24								
	2-wire	Page 28	Page 28							
Long case	Supply	. ugo 10								
g	3-wire == (PNP/NPN)	Page 25	Page 25							
	2-wire ==	Page 29								
	2-wire $\overline{\sim}$	-	– Page 32							
Function	NO	•		•	•	•				
	NC	•		•	•	•				
Connection	Pre-cabled (L = $2 \text{ m}$ ) (1)	•		•	•	•				
	M8 connector, 3-pin (3-wire)	•		-	-	-				
	M12 connector	•		•	•	•				
	1/2"-20UNF connector	-		•	•	•				
	Remote connector		Remote connectors available: M8, M12, M18, screw terminal, 7/8", DIN: please consult our Customer Care Centre							
Degree of prote	ction	IP 65 and	IP 67, IP 68	for pre-cabled versio	n, IP 69K for diamete	rs 12 to 30 <i>(2)</i>				
Special	- 40 °C, + 70 °C	Add the su	Add the suffix TF to the end of the reference (3)							
temperatures	Add the su	Add the suffix TT to the end of the reference (3)								
Type reference	9	XS506	XS508	XS512	XS518	XS530				
Pages		24 to 33								
			ailable in len	gths of 5 and 10 m, o	lepending on model					
			2 connector	version						

(3) Product availability depending on model: please consult our Customer Care Centre.

# Increased range Flush mountable



Add the suffix	Add the suffix 1 to the end of the reference (3)								
XS106	XS112	XS118	XS130	XS608	XS612	XS212	XS618	XS218	XS630
XS606	XS612	XS618	XS630						
XS108									
XS608									
34 to 41				42 to 47					

# **Inductive proximity sensors** XS range General purpose



Sensing dista	nce Sn (mm)				
Dimensions (W	x H x D)				
Supply	3-wire === (PNP/NPN)				
	2-wire ===				
	$\overline{\sim}$				
Function	NO				
	NC				
	NO + NC				
	NO/NC				
Connection	Pre-cabled $(L = 2 m) (1)$				
	M8 connector, 3-pin (3-wire)				
	M12 connector				
	1/2"-20UNF connector				
	Screw terminals				
	Remote connector	M8			
		M12			
		1/2"-20 UNF			
	Other remote connector	s available			
Degree of prote	ction				
Special	- 40 °C, + 70 °C				
temperatures	- 25 °C, + 85 °C				
Type reference					
Pages					

2.5	5	10	15	40		
8 x 22 x 8	15 x 32 x 8	26 x 26 x 13	40 x 40 x 15	80 x 80 x 26		
Page 48	Page 48	Page 50	Page 50	Page 50		
Page 48	Page 48	Page 50	Page 50	Page 50		
-	-	-	-	-		
•	•	•	•	•		
•	•	•	•	•		
•	•	•	-	-		
•	•	•	-	-		
•	•	•	•	•		
-	-	•	•	-		
-	•	•	-	•		
-	•	•	-	-		
-	•	•	-	-		
•	•	•	-	-		
-	-	•	•	-		
-	-	-	-	-		
M18, screw terr	M18, screw terminal, 7/8", DIN: please consult our Customer Care Centre					
IP 67	IP 67 or IP 68, depending on model					

Add the suffix TF to the end of the reference (2)

Add the suffix TT to the end of the reference (2)						
XS7J	XS7F	XS7E	XS7C	XS7D		
48		50				

Also available in lengths of 5 and 10 m, depending on model.
 Product availability depending on model: please consult our Customer Care Centre.

### **Standard and increased ranges** Flush mountable





### Non-flush mountable



15	20	40					
40 x 40 x 70 and 40 x 40 x 117							
Pages 54 and 56							
Pages 54 and 56							
Pages 54 and 56							
•	•	•					
•	•	•					
•	•	•					
•	•	•					
-	-	-					
-	-	-					
•	•	•					
•	•	•					
•	•	•					
-	-	-					
-	-	-					
-	-	-					
-							
IP 65, IP 67 and IP 69K	IP 65, IP 67 and IP 69K						

Add the suffix TF to the end of the reference (2)

Add the suffix TT to the end of the reference (2) XS7C2, XS7C4, XS8C2 and XS8C4

54 and 56

# **Inductive proximity sensors** XS range General purpose

Sensor type: flush and non-flush mountable	Multivoltage sensors	Sensors with 2 compler	nentary outputs
	With short-circuit protection	Solid-state PNP or NPN NO + NC outputs	Solid-state PNP + NPN, NO or NC programmable outputs
Sonsing Eluch mountable	2 10	1 5 15	2 10

Sensing	Flush mountable
distance Sn	Quasi flush mountable
(mm)	Non-flush mountable
Diameter	
Case material	
Supply	
	$\sim$
	$\overline{\sim}$
Function	NO
	NC
	NO + NC
	NO/NC
Connection	Pre-cabled (L = $2 \text{ m}$ ) (1)
	M8 connector, 3-pin (3-wire)
	M12 connector
	1/2"-20UNF connector
	Remote connector
Degree of protec	tion
Special	- 40 °C, + 70 °C
temperatures	

2 10	1.5 15	2 10		
-	-	-		
4 15	2.515	4 15		
Threaded: M12, M18, M30	Plain: Ø 6.5 Threaded: M8, M12, M18, M30	Threaded: M12, M18, M30		
Nickel plated brass	Nickel plated brass or stainless steel or plastic	Nickel plated brass or plastic		
-	•	•		
-	-	-		
•	-	-		
•	-	-		
•	-	-		
-	•	-		
-	-	programmable		
•	•	•		
-	-	-		
-	•	•		
•	-	-		
Remote connectors available: M8, M12, M18, screw terminal	7/8", DIN: please consult our Cust	omer Care Centre		

IP 67, IP 68 or IP 69K depending on model

Add the suffix TF to the end of the reference (2)

Add the suffix TT to the end of the reference (2)							
XS1M XS2M	XS4PeeeC410	XS1MeeKP340 XS2MeeKP340 XS4PeeKP340					
58	60 and 64	66					

(1) Also available in lengths of 5 and 10 m, depending on model. (2) Product availability depending on model: please consult our Customer Care Centre.

Type reference

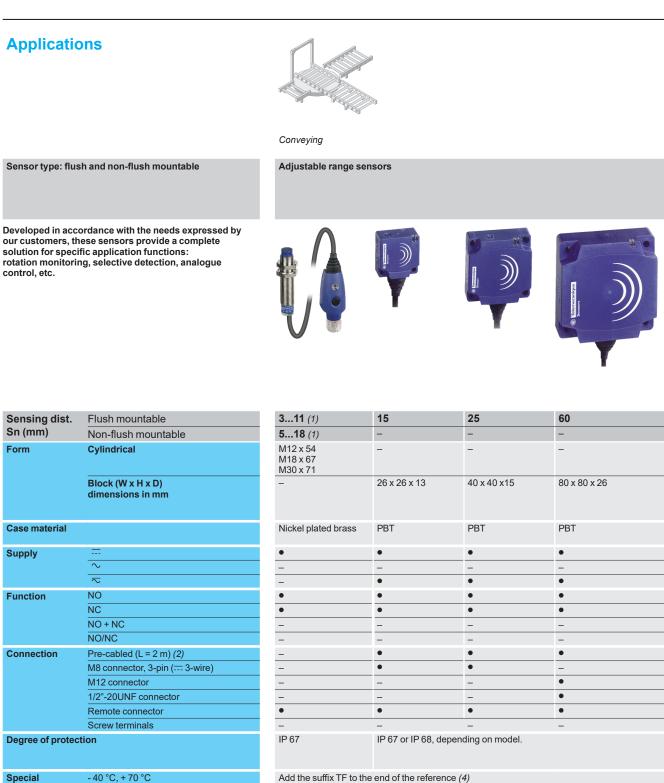
Pages

Plastic case sensors	Basic sensors	Almost flush mountable sensors	Miniature sensors
For chemical processing, marine applications	For repetitive machines		For robotic, transfer machine, assembly line applications
ANGADES MAGADES Magada			

-	1.5 10	2.5 15	-	-	
-	-	-	-	0 0.65	0 1.21
2.5 15	2.5 15	-	2.5 20	-	
Threaded: M8, M12, M18, M30	Threaded: M8, M12, M18, M30	Threaded: M8, M12, M	18, M30	XS••4: Ø 4 Threaded: M5	
Plastic	Nickel plated brass	Nickel plated brass		Stainless steel	
•	•	•	•	•	
-	-	-	-	-	
•	-	-	-	-	
-	•	•	•	•	
•	•	•	•	•	
-	-	-	-	-	
-	-	-	-	-	
•	•	•	•	•	
_	•	•	•	•	
_	•	•	•	-	
•	-	-	-	-	
Remote connectors available: M8, M12, M18, screw terminal, 7/8", D	DIN: please consult our Cus	tomer Care Centre			
IP 67 or IP 68 depending on model	IP 67	IP 65 or IP 67	IP 67 or IP 68 IP 69K depending on model	IP 67	
Add the suffix TF to the end of the refe	erence (2)			-	
Add the suffix TT to the end of the refe	erence (2)			-	
XS4P	XS1eeBLe XS2eeBLe	XS1eeBHe	XS1N●●349	XS504●●●●, XS505●●●●	XS604••••, XS605••••
68	Catalogue Inductive pro	oximity sensors - Basic	70	74	

# Inductive proximity sensors

XS range Applications



Add the	Add the suffix 1 1 to the end of the reference (4)							
XS612	B2	XS8E	XS8C	XS8D				
XS618	B2							
XS630	B2							
76		52						

(1) Depending on model.

(2) Also available in lengths of 5 and 10 m, depending on model.

(3) For M12 connector version
 (4) Product availability depending on model: please consult our Customer Care Centre.

Pages

temperatures

**Type reference** 

- 25 °C, + 85 °C



90

90

Add the suffix TT to the end of the reference (4)						
XSAV		XS1MeeeAB1 XS4PeeAB1	XS9•••A	XS9C2	XS9C4	

87 and 89

83

							M18, M30	M30
-	26 x 26 x 13 40 x 40 x 15	-	32 x 15 x 8 26 x 26 x 13 40 x 40 x 15 80 x 80 x 26	40 x 40 x 70	40 x 40 x 117	-	-	-
Metal	PBT	Metal or plastic	PBT	PBT	PBT	Stainless steel, 316 L	Stainless steel, 316 L	Plastic, PPS
•	•	•	•	•	•	•	•	•
-	-	-	-	-	-	-	-	-
•	•	-	-	-	-	-	•	•
-	-	-	-	-	-	•	•	•
•	•	-	-	-	-	-	-	-
-	_	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
•	-	•	•	-	-	-	•	•
-	-	-	-	-	-	-	-	-
-	-	-	•	•	-	•	•	•
-	-	-	-	-	-	-	•	•
-	•	-	•	-	-	-	-	-
-	-	-	-	-	•	-	-	-
IP 67	IP 67	IP 67	IP 67 or IP 68 (pre-cabled version)	IP 65, IP 67 IP 69K	IP 65, IP 67 IP 69K	IP 68, IP 69K	IP 68 (pre-cable IP 69K conform DIN 40050 <i>(3)</i>	ed version), ing to
Add the suffix	TF to the end of the re	eference (4)						



\_

\_

2...25

\_

\_

2...25



10

10

79

81

M30 x 81

10...15 (1)

10...15 (1)

-

0.2...10 (1)

0.4...15 (1)

M18, M30

Threaded: M12,

5...40 (1)

5...40 (1)

-



Position, displacement and deformation control/monitoring

Machine with stainless steel housing

6,10 or 20 (1)

10, 20 or 40 (1)

Threaded: M12,

M18, M30

XS9eeSe

92

\_

7...22 (1)

Plain: Ø 18

Threaded: M12, M12, M18,

7...22 (1)

Threaded:

XS2eeAA

98 and 100

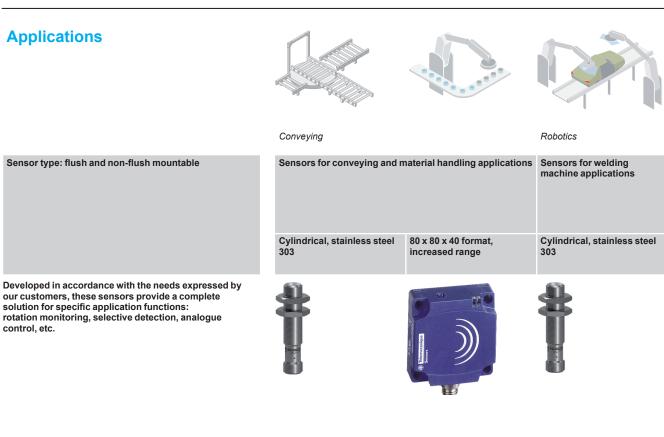
XS2••SA

94 and 96

## Selection guide (continued)

# Inductive proximity sensors

XS range Applications



Sn (mm)         Non-flush mountable           Form         Cylindrical
Form Cylindrical
Block (W x H x D)
dimensions in mm
Case material
Supply
~
$\overline{\sim}$
Function NO
NC
NO + NC
NO/NC
Connection Pre-cabled (L = 2 m) (2)
M8 connector, 3-pin (== 3-wire)
M12 connector
1/2"-20UNF connector
Remote connector
Screw terminals
Degree of protection
<b>Special</b> - 40 °C, + 70 °C
temperatures - 25 °C, + 85 °C
- 40 °C, + 85 °C (storage)

### Type reference

Pages

3, 6, 10 or 20 (1)	50	6 or 10 (1)
6, 10, 20 or 40 (1)	42	-
Threaded: M8, M12, M18, M30	-	Threaded: M12, M18
-	80 x 80 x 40	-
Stainless steel 303	PBT	Stainless steel 303
•	•	•
-	-	-
-	-	-
•	•	•
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
•	•	•
-	-	-
-	-	-
-	-	-
IP 67 and IP 69K	IP 67	IP 68 and IP 69K

### Add the suffix TF to the end of the reference (3)

Add the suffix TT to the end of the reference (3)

XS9eeRe	XS7D	XS9eeRW
102	104	106

(1) Depending on model.

(2) Also available in lengths of 5 and 10 m, depending on model.

(3) Product availability depending on model: please consult our Customer Care Centre





### Assembly machines, conveyor systems, material handling

Factor 1 (Fe/Nfe) sensors for ferrous and non ferrous materials			Selective detection sensors for ferrous materials only or non ferrous materials only	Fail Safe			
Cylindrical	Cubic	Rectangular	Cylindrical	Cylindrical	Cylindrical, increased range	Cubic	Rectangular

5, 10 or 15 (1)	20	20	5	2, 5 or 10 (1)	4, 8 or 15 (1)	20	20
-	-	-	-	-	-	40	40
Threaded: M18, M30	-	-	Threaded: M18	Threaded: M12, M18, M30	Threaded: M12, M18, M30	-	-
-	40 x 40 x 70	40 x 40 x 117	-	-	-	40 x 40 x 70	40 x 40 x 117
Metal	PBT	PBT	Metal	Nickel plated brass/PPS	Nickel plated brass	PBT	PBT
•	•	•	•	•	•	•	•
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	•	-	-	-	-
-	-	-	-	-	-	-	-
-	•	•	-	•	•	•	•
•	-	-	-	-	-	-	-
•	-	-	•	•	•	-	-
-	-	-	-	-	-	-	-
•	•	-	-	•	•	•	-
-	-	-	-	-	-	-	-
•	-	-	-	-	-	-	-
-	-	•	-	-	-	-	•
IP 68	P 68 IP 65, IP 67 and IP 69K IP 68			IP 65, IP 67, and IP IP 65 and IP 68 for		IP 65, IP 67, and IP	69K
Add the suffix TT to	the end of the refere	nce <i>(3)</i>		•	•	•	•

Add the suffix TT to the end of the reference (3)							
-				•	•	•	•
XS1MeeeKP	XS9C2	XS9C4	XS1M18PA	XS5eeBSPD	XS1eeBSPD	XS8C2A PD	XS8C4A PD
66	108	108	110	112	114	116	118

### Inductive proximity sensors XS range

### Recommendations

The sensors detailed in this catalogue are designed for use in standard industrial applications relating to presence detection.

These sensors do not incorporate the required redundant electrical circuit enabling their usage in safety applications.

For safety applications, please consult our website: www.telemecaniquesensors.com

### **Quality control**

### Our inductive proximity sensors are subject to special precautions in order to guarantee their reliability in the most arduous industrial environments.

#### Qualification

- □ The product characteristics stated in this catalogue are subject to a **qualification procedure** carried out in our laboratories.
- □ In particular, the products are subjected to **climatic cycle** tests for 3000 hours whilst powered-up to verify their ability to maintain their characteristics over time.
- Production
- □ The electrical characteristics and sensing distances at both ambient temperature and extreme temperatures are 100% checked.
- Products are randomly selected during the course of production and subjected to monitoring tests relating to all their qualified characteristics.
- Customer returns

If, in spite of all these precautions, defective products are returned to us, they are subject to **systematic analysis** and **corrective actions** are implemented to eliminate the risks of the fault recurring.

### Conformity to standards

All Telemecanique Sensors brand inductive proximity sensors conform to and are tested in accordance with the recommendations of standard IEC 60947-5-2.

Mechanical shock resistance

The sensors are tested in accordance with standard IEC 60068-2-27, 50 gn, duration 11 ms.

### Vibration resistance

The sensors are tested in accordance with standard IEC 60068-2-6, amplitude  $\pm\,2$  mm, f = 10...55 Hz, 25 gn at 55 Hz.

#### **Resistance to the environment**

- Please refer to the characteristics pages for the various sensors.
   IP 67: protection against the effects of immersion.
- Test conforming to IEC 60529: sensor immersed for 30 minutes in 1 m of water. No deterioration in either operating or insulation characteristics is permitted.
- IP 68: protection against prolonged immersion. Sensor immersed for 336 hours in 40 metres of water at 50 °C. No deterioration in either operating or insulation characteristics is permitted. Telemecanique Sensors with an IP 68 degree of protection are ideal for use in the most arduous conditions, such as machine tools, automatic car washers.
  - IP 69K: protection against the effects of high pressure cleaning. Adherence to standard DIN 40050 which stipulates that the product must withstand a water jet at a pressure of 90 bar and temperature of +80 °C for 3 minutes. No deterioration in either operating or insulation characteristics is permitted.

### Resistance to electromagnetic interference

	Electrostatic discharges	$\sim$ and $\eqsim$ versions: 4 kV CD/8 kV AD immunity. IEC 61000-4-2
	Radiated electromagnetic fields (electromagnetic waves)	=-, $\sim$ and $\eqsim$ versions: 3 V/m or 10 V/m immunity. IEC 61000-4-3
_	Fast transients (motor start/stop interference)	$-\!\!\!-\!\!\!-\!\!-\!\!-$ version: > 1 kV immunity $\sim$ and $\sim$ versions: 2 kV immunity except Ø 8 mm model. IEC 61000-4-4
	Conducted electromagnetic fields	$\overline{\dots}$ , $\sim$ , and $\overline{\sim}$ versions: > 3 kV immunity. <b>IEC 61000-4-6</b>

Emission  $=, \sim, and =$ 

### Resistance to chemicals in the environment

 Owing to the very wide range of chemicals encountered in industry, it is very difficult to give general guidelines common to all sensors.

class B

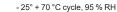
- To ensure lasting efficient operation, it is essential that any chemicals coming into contact with the sensors will not affect their casing and, in doing so, prevent their reliable operation.
   Cylindrical and flat plastic case sensors offer excellent overall resistance to:
- chemical products such as salts, aliphatic and aromatic oils, petroleum, acids and diluted bases. For alcohols, ketones and phenols, preliminary tests should be made relating to the nature and concentration of the liquid.
- ☐ food and beverage industry products such as animal or vegetable based products (vegetable oils, animal fat, fruit juice, dairy proteins, etc.).

oils, animal fat, fruit juice, dairy proteins, etc.). In all cases, the materials selected (see product characteristics) provide satisfactory compatibility in most industrial environments (for further information, please consult our Customer Care Centre).

### Class 2 devices 🗉

Electrical insulation conforming to standards IEC 61140 and NF C 20-030 relating to means of protection against electric shock.

#### Standards and certifications Parameters related to the environment 100 Anipimny 80 75 70 Temperature 50 80 Relative I 25 60 20 - 25 16 18 8 14







### Insulation



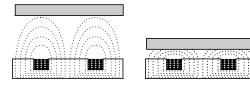
### Inductive proximity sensors XS range

### **Principle of inductive detection**



Output driver Output stage

### Composition of an inductive proximity sensor



Detection of a metal object

### **Operating principle**

An inductive proximity sensor is solely for the detection of metal objects It basically comprises an oscillator whose windings constitute the sensing face. An alternating magnetic field is generated in front of these windings.

When a metal object is placed within the magnetic field generated by the sensor, the resulting currents induced form an additional load and the oscillations cease This causes the output driver to operate and, depending on the sensor type, a normally open (NO) or normally closed (NC) output signal is produced.

### Inductive proximity detection

- Inductive proximity sensors enable the detection, without physical contact, of metal objects.
- Their range of applications is very extensive and includes
- □ monitoring the position of machine parts (cams, end stops, etc.),
- counting the presence of metal objects, etc.

### Advantages of inductive detection

- No physical contact with the object to be detected, thus avoiding wear and enabling detection of fragile objects, freshly painted objects, etc.
- High operating rates. Fast response.
- Excellent resistance to industrial environments (robust products, fully encapsulated in resin).
- Solid-state technology: no moving parts, therefore service life of sensor not related to number of operating cycles.

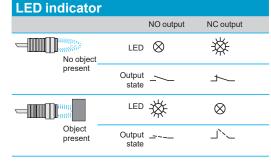
### Flush mountable using teach mode sensors

The flush mountable sensors using teach mode are suitable for all metal environments (flush mountable or non-flush mountable) since they ensure a maximum sensing distance, even if there is a metal background. Precise detection of the position of the object can be obtained using the teach mode. For further information, see page 22.

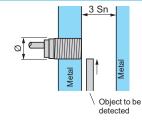
### **Output LED**

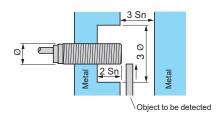
All Telemecanique Sensors inductive proximity sensors incorporate an output state LED indicator.

The flush mountable sensors using teach mode are fitted with a green LED that indicates "Power on" and also assists the user during setting-up (teach mode).



### Mounting sensors on a metal support





### Flush mountable in metal

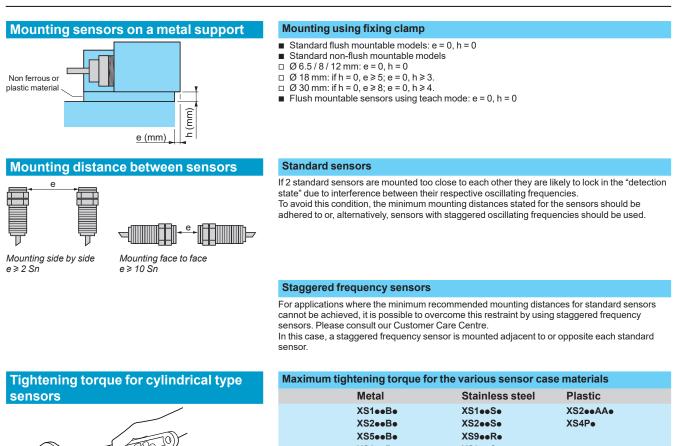
- No side clearance required.
- All flush mountable sensors using teach mode also enable detection of an object against a metal background. For further information, see pages 22 and 23.

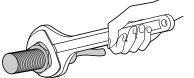
### Sensors not suitable for flush mounting in metal

- Side clearance required.
- Sensing distance greater than that for a standard flush mountable model.
- Flush mountable sensors using teach mode eliminate the need for side clearance. For further information, see pages 22 and 23.

# Inductive proximity sensors

XS range



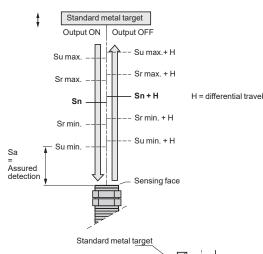


Metal           XS1•eBe           XS2•eBe           XS5•eBe           XS6•eBe           XS1Ne           XS1Me           XS2Me		XS1•• XS2•• XS9••	Stainless steel XS100S0 XS200S0 XS900R0 XS900S0		Plastic XS200AA0 XS4P0	
Diameter of sensor	Maxim	um tightening	g torque			
mm	N.m	lb-in	N.m	lb-in	N.m	lb-in
Ø 5	1.6	14.16	_	-	_	-
Ø 8	5	44.25	9	79.65	1	8.85
Ø 12	6	53.10	30	265.52	2	17.70
Ø 18	15	132.76	50	442.54	5	44.25
Ø 30	40	354.03	100	885.07	20	177.01

### General (continued)

### Inductive proximity sensors XS range

### Sensing distance





In order to ensure that customers can make reliable product comparisons and selection, the standard IEC 60947-5-2 defines various sensing distances, such as:

- Nominal sensing distance (Sn)
- The rated operating distance for which the sensor is designed. It does not take into account any variations (manufacturing tolerances, temperature, voltage).
- Effective sensing distance (Sr) The effective sensing distance is measured at the rated voltage (Un) and the rated ambient temperature (Tn).
- It must be between 90% and 110% of the nominal sensing distance (Sn): 0.9 Sn ≤ Sr ≤ 1.1 Sn. Usable sensing distance (Su)
- The usable sensing distance is measured at the limits of the permissible variations in the ambient temperature (Ta) and the supply voltage (Ub). It must be between 90% and 110% of the effective sensing distance:  $0.9 \text{ Sr} \le \text{Su} \le 1.1 \text{ Sr}$ .
- Assured operating distance (Sa).
- This is the operating zone of the sensor. The assured sensing distance is between 0 and 81% of the nominal sensing distance (Sn):  $0 \le Sa \le 0.9 \times 0.9 \times Sn$ .

### Standard metal target

The standard IEC 60947-5-2 defines the standard metal target as a square mild steel (Fe 360) plate, 1 mm thick

The side dimension of the plate is either equal to the diameter of the circle engraved on the sensing face of the sensor or 3 times the nominal sensing distance (Sn).

### Fail Safe

### Forbidden zone (1)

This zone ensures that it will not be possible to defeat the solution with simple elements or standard tools (ie: glue a coin on the front face). It is a minimum distance maintaining safe condition in all aspects. In this zone, both sensor outputs are opened.

Assured operating distance (Sao) When the target approaches the sensor, the contacts will change state no later than Sao max and remain in the same state as the target continues to approach the switch. At distances beyond the Sao min, the contacts enter in the forbidden zone, not maintaining a closed condition in all aspects.

- Assured release distance (Sar)
- Minimum distance from the sensor that the target must move to assure the reset of the sensor

Standard metal target plate (5) According to IEC 947-5-2 at an ambient temperature of 20°C.

### **Differential travel**

The differential travel (H), or hysteresis, is the distance between the operating point, as the standard metal target moves towards the sensor, and the release point, as it moves away. This hysteresis is essential for the stable operation of the sensor.

#### Repeat accuracy

The repeat accuracy (R) is the repeatability of the sensing distance between successive operations. Readings are taken over a period of time whilst the sensor is subjected to voltage and temperature variations: 8 hours, 10 to 30 °C, Un ± 5 %. It is expressed as a percentage of the effective sensing distance Sr.

For all XS sensors, the repeat accuracy is 3 %.

### Detection zone and precision adjustment zone

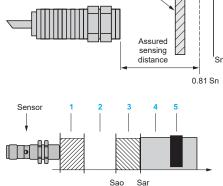
Flush mountable sensors using teach mode, due to adjustment of sensitivity whilst teaching, enable the position of an object to be detected as it approaches from the front or side. The teach mode can be used when the object is located in the zone known as the "precision adjustment zone". When the object approaches from the front, the detection zone of the object ranges from the stored position down to zero.

### **Operating zone**

The operating zone relates to the area in front of the sensing face in which the detection of a metal object is certain

The values stated in the characteristics relating to the various types of sensor are for steel objects of a size equal to the sensing face of the sensor.

For objects of a different nature (smaller than the sensing face of the sensor, other metals, etc.), it is necessary to apply a correction coefficient.

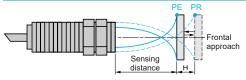


Enable zone Transition zone

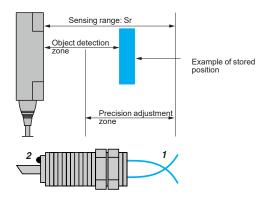
Forbidden zone

Standard metal target plate according to IEC 947-5-2 at an ambient temperature of 20°C

### Terminology



PE = pick-up point, the object is detected PR = drop-out point, the object is no longer detected



Detection threshold curves 2

"Object detected" LED

# Inductive proximity sensors

XS range

### Correction coefficients to apply to the assured operating distance

### Assured operating distance of a sensor

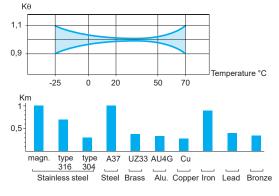
In practice, most objects to be detected are generally made of steel and are of a size equal to, or greater, than the sensing face of the sensor.

For the calculation of the assured operating distance for different operating conditions, one must take into account the correction coefficients that influence it.

The curves indicated are purely representative of typical curves. They are only given as a guide to the approximate usable sensing distance of a proximity sensor for a given application.

Influence of ambient temperature

Apply a correction coefficient Kq, determined from the curve shown opposite.



### Material of object to be detected

Apply a correction coefficient Km, determined from the diagram shown opposite.

The fixed sensing distance models for ferrous/non ferrous (Fe/NFe) materials enable the detection of different objects at a fixed distance, irrespective of the type of material.

Special case of a very thin object made of a non ferrous material.

0,2 Typical curve for a copper object used with a Ø 18 mm cylindrical sensor

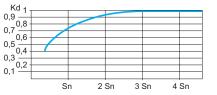
0,5

0.4

Km 1 0,9 0,8

 $0,7 \frac{0,8}{0,6}$  $0,5 \frac{0,6}{0,4}$ 0,3\_0\_2 0.1

0,



Typical curve for a steel object used with a cylindrical sensor

### **Calculation examples**

### Size of object to be detected

Thickness of

object (mm)

1,5

Apply a correction coefficient Kd, determined from the curve shown opposite. When calculating the sensing distance for the selection of a sensor, make the assumption that Kd = 1.

### Variation of supply voltage

In all cases, apply the correction coefficient Kt = 0.9.

### Correction of the sensing distance of a sensor

Sensor with nominal sensing distance Sn = 15 mm.

Ambient temperature variation 0 to + 20 °C

Object material and size: steel, 30 x 30 x 1 mm thick.

The assured sensing distance Sa is determined using the formula:

Sa = Sn x Kq x Km x Kd x Kt =  $15 \times 0.98 \times 1 \times 0.95 \times 0.9$ 

i.e. Sa = 12.5 mm.

### Selecting a sensor for a given application

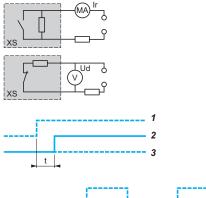
Application characteristics:

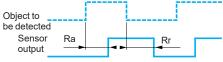
- object material and size: iron (Km = 0.9), 30 x 30 mm, temperature: 0 to 20 °C (K $\theta$  = 0.98),
- object detection distance: 3 mm ± 1.5 mm, i.e. Sa max. = 4.5 mm,
- assume Kd = 1.
- A sensor must be selected for which  $Sn \ge \frac{Sa}{Kq \times Km \times Kd \times Kt} = \frac{4.5}{0.98 \times 0.9 \times 1 \times 0.9}$

i.e. Sn ≥ 5.7 mm

### Inductive proximity sensors XS range

Specific aspects of electronic sensors





Supply

### Terminology

- Residual current (Ir)
- The residual current (Ir) corresponds to the current flowing through the sensor when in the "open" state.
- Characteristic of 2-wire type proximity sensors.

#### Voltage drop (Ud)

□ The voltage drop (Ud) corresponds to the voltage drop at the sensor's terminals when in the "closed" state (value measured at nominal current rating of sensor).

### First-up delay

1

- The first-up delay corresponds to the time (t) between the connection of the power supply to the sensor and its fully operational state.
  - Supply voltage U on
- 2 Sensor operational at state 1
- 3 Sensor at state 0

### Response time

- Response time (Ra): the time delay between the object to be detected entering the sensor's operating zone and the subsequent change of output state. This parameter limits the speed and size of the object.
- Recovery time (Rr): the time delay between an object to be detected leaving the sensor's operating zone and the subsequent change of output state. This parameter limits the interval between successive objects.

### Sensors for AC circuits ( $\sim$ and $\eqsim$ models)

Check that the voltage limits of the sensor are compatible with the nominal voltage of the AC supply used.

### **Sensors for DC circuits**

- DC source: check that the voltage limits of the sensor and the acceptable level of ripple are compatible with the supply used.
- AC source (comprising transformer, rectifier, smoothing capacitor): the supply voltage must be within the operating limits specified for the sensor.

Where the voltage is derived from a single-phase AC supply, the voltage must be rectified and smoothed to ensure that:

- the peak voltage of the DC supply is lower than the maximum voltage rating of the sensor. Peak voltage = nominal voltage x  $\sqrt{2}$ 

- the minimum voltage of the supply is greater than the minimum voltage rating of the sensor, given that :

- $\Delta V = (I \times t) / C$
- $\Delta V = max.$  ripple: 10 % (V),
- I = anticipated load current (mA), t = period of 1 cycle (10 ms full-wave rectified for a 50 Hz supply frequency),
- $C = capacitance (\mu F)$

As a general rule, use a transformer with a lower secondary voltage (Ue) than the required DC voltage (U).

### Example:

 $\sim$  18 V to obtain == 24 V,  $\sim$  36 V to obtain == 48 V.

### Output signal (contact logic)

#### Normally open (NO)

Corresponds to a sensor whose output changes to the closed state when an object is present in the operating zone.

### Normally closed (NC)

Corresponds to a sensor whose output changes to the open state when an object is present in the operating zone.

Complementary outputs (NO + NC)

Corresponds to a sensor with a normally closed output and a normally open output.

# Outputs



### General (continued)

# Inductive proximity sensors

XS range

<b>Outputs (continued)</b>
----------------------------

$\Diamond$	BN/1 BU/3	+/
$\Diamond$	BN/1	$\sim$

	BN/1	$\sim$
$\diamondsuit$		$\sim$

### 2-wire ---- type, non polarised NO or NC output

### Specific aspects

These sensors are wired in series with the load to be switched.

- As a consequence, they are subject to:
- a residual current in the open state (current flowing through the sensor in the "open" state),
   A voltage drop in the closed state (voltage drop across the sensor's terminals in the "closed"
  - A voltage drop in the closed state state).

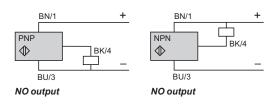
### Advantages

- Only 2 leads to be wired: these sensors can be wired in series in the same way as mechanical limit switches.
- □ They can be connected to either positive (PNP) or negative (NPN) logic PLC inputs,
- No risk of incorrect connections.

### Operating precautions

- Check the possible effects of residual current and voltage drop on the actuator or input connected,
- □ For sensors that do not have overload and short-circuit protection (AC or AC/DC symbol), it is essential to connect a 0.4 A "quick-blow" fuse in series with the load.

### 3-wire ---- type, NO or NC output, PNP or NPN

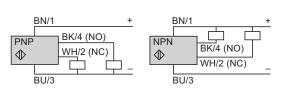


### Specific aspects

- □ These sensors comprise 2 wires for the DC supply and a 3rd wire for the output signal,
- □ PNP type: switching the positive side to the load,
- NPN type: switching the negative side to the load.

#### Advantages

- □ Protection against supply reverse polarity,
- Derived Protection against overload and short-circuit,
- □ No residual current, low voltage drop.



### 4-wire .... type,

### complementary NO and NC outputs, PNP or NPN

- Advantages
   Protection against supply reverse polarity (+/-).
- Derived Protection against overload and short-circuit.

### 4-wire ---- type, multifunction, programmable NO or NC output, PNP or NPN

### Advantages

- Protection against supply reverse polarity (+/-).
- □ Protection against overload and short-circuit.



- These sensors convert the approach of a metal object towards the sensing face into an output current variation which is proportional to the distance between the object and the sensing face.
- Two models available:
- 0...10 V (0...10 mA) output for 3-wire connection,
- 4-20 mA output for 2-wire connection.



BN/1 (NO), BU/3 (NC) +

WH/2

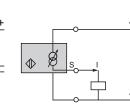
BK/4

BU/3 (NO), BN/1 (NC)

PNP

 $\diamondsuit$ 

党



BN/1 (NO), BU/3 (NC) +

Г

WH/2

BU/3 (NO), BN/1 (NC)

BK/4

3-wire connection

NPN

|

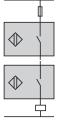
# Inductive proximity sensors

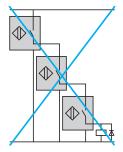
XS range



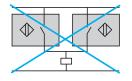
### Inductive proximity sensors XS range

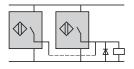
### Setting-up precautions

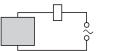




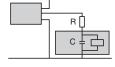














### **Connection in series**

### 2-wire type sensors

- The following points should be taken into account: □ Series wiring is only possible using sensors with wide voltage limits.
- Based on the assumption that each sensor has the same residual current value, each sensor, in the open state, will share the supply voltage, i.e.

#### U (supply) U sensor = n sensors

- U sensor and U supply must remain within the sensor's voltage limits.
- □ If only one sensor in the circuit is in the open state, it will be supplied at a voltage almost equal to the supply voltage
- U When in the closed state, a small voltage drop is present across each sensor. The resultant loss of voltage at the load will be the sum of the individual voltage drops and therefore, the load voltage should be selected accordingly.

### 3-wire type sensors

This connection method is not recommended.

- Correct operation of the sensors cannot be assured and, if this method is used, tests should be made before installation.
  - The following points should be taken into account:
- □ Sensor 1 carries the load current in addition to the no-load current consumption values of the other sensors connected in series. For certain models, this connection method is not possible unless a current limiting resistor is used.
- □ When in the closed state, a small voltage drop is present across each sensor. The load should therefore be selected accordingly.
- □ As sensor 1 closes, sensor 2 does not operate until a certain time (t) has elapsed
- (corresponding to the first-up delay) and likewise for the following sensors in the sequence. □ The use of "flywheel" diodes is recommended when an inductive load is being switched.

### Sensors and devices in series with an external mechanical contact

### 2 and 3-wire type sensors

- The following points should be taken into account:
- $\hfill\square$  When the mechanical contact is open, the sensor is not supplied.  $\hfill\square$  When the contact closes, the sensor does not operate until a certain time (t) has elapsed (corresponding to the first-up delay)

### **Connection in parallel**

### 2-wire type sensors

- This connection method is not recommended.
- Should one of the sensors be in the closed state, the sensor in parallel will be "shorted-out" and no longer supplied.
- As the first sensor passes into the open state, the second sensor will become energised and will be subject to its first-up delay.
- This configuration is only permissible where the sensors will be working alternately
- This method of connection can lead to irreversible damage of the units.

#### 3-wire type sensors

■ No specific restrictions. The use of "flywheel" diodes is recommended when an inductive load (relay) is being switched.

### AC supply

6

- 2-wire type sensors cannot be connected directly to an AC supply.
- □ This would result in immediate destruction of the sensor and considerable danger to the user. An appropriate load (refer to the instruction sheet supplied with the sensor) must always be connected in series with the sensor.

### Capacitive load (C > 0.1 µF)

- On power-up, it is necessary to limit (by resistor) the charging current of the capacitive load C. □ The voltage drop in the sensor can also be taken into account by subtracting it from the supply voltage for the calculation of R.
  - U supply
  - R = I max. (sensor)

### Load comprising an incandescent lamp

If the load comprises an incandescent lamp, the cold state resistance can be 10 times lower than the hot state resistance. This can cause very high current levels on switching. Fit a pre-heat resistor in parallel with the sensor.

- x 10, U = supply voltage and P = lamp power

# General (continued)

# Inductive proximity sensors XS range

Fast trouble shooting guide	Dessible sever	Demadu
Problem	Possible causes	Remedy
The sensor's output will not change state when a metal object enters the detection zone	On a flush mountable sensor using teach mode: setting-up or programming error.	<ul> <li>After a RESET, follow the environment teach mode procedure. Refer to instruction sheet supplied with sensor.</li> </ul>
	Output stage faulty or complete failure of the sensor or the short-circuit protection has tripped.	<ul> <li>Check that the sensor is compatible with the supply being used.</li> <li>Check the load current characteristics:</li> <li>if load current l ≥ maximum switching capacity, an auxiliary relay, of the CAD N type for example, should be interposed between the sensor and the load,</li> <li>if l ≤ maximum switching capacity, check for wiring faults (short-circuit).</li> <li>In all cases, a 0.4 A "quick-blow" fuse should be fitted in series with the sensor.</li> </ul>
	Wiring error	<ul> <li>Check that the wiring conforms to the wiring shown of the sensor label or instruction sheet.</li> </ul>
	Supply fault	<ul> <li>Check that the sensor is compatible with the supply (~ or).</li> <li>Check that the supply voltage is within the voltage limits of the sensor. Remember that with a rectified, smoothed supply, U peak = U nominal x √2 with a ripple voltage ≤ 10 %.</li> </ul>
alse or erratic operation, with or without the presence of metal object in the detection zone	On flush mountable sensor using teach mode: setting-up or programming error.	<ul> <li>After a RESET, follow the environment teach mode procedure. Refer to instruction sheet supplied with sensor.</li> </ul>
	Influence of background or metal environment	<ul> <li>Refer to the instruction sheet supplied with the sensor. For sensors with adjustable sensitivity, reduct the sensing distance.</li> </ul>
	Sensing distance poorly defined for the object to be detected	<ul> <li>Apply the correction coefficients.</li> <li>Realign the system or run the teach mode again.</li> </ul>
	Influence of transient interference on the supply lines	<ul> <li>Ensure that any DC supplies, when derived from rectified AC, are correctly smoothed (C &gt; 400 µF).</li> <li>Separate AC power cables from low-level DC cables (24 V low level).</li> <li>Where very long distances are involved, use suitable cable: screened and twisted pairs of the correct cross-sectional area.</li> </ul>
	Equipment prone to emitting electromagnetic interference	<ul> <li>Position the sensors as far away as possible from an sources of interference.</li> </ul>
	Response time of the sensor too slow for the particular object being detected	<ul> <li>Check the suitability of the sensor for the position or size of the object to be detected.</li> <li>If necessary, select a sensor with a higher switching frequency.</li> </ul>
	Influence of high temperature	<ul> <li>Eliminate sources of radiated heat or protect the sensor casing with a heat shield.</li> <li>Realign, having adjusted the temperature around the fixing support.</li> </ul>
No detection following a period of service	Vibration, shock	<ul> <li>Realign the system.</li> <li>Replace the support or protect the sensor.</li> </ul>

# Inductive proximity sensors

XS range Flush mountability using teach mode: simplicity through innovation







Max. sensing distance



Max. sensing distance



### Operating principle

In proposing flush mountable sensors using teach mode, Telemecanique Sensors offers simplicity through innovation.

A single product enables flush mounting using teach mode and meets all the requirements for inductive detection of metal objects.

By simply pressing the "Teach mode" button, the sensor automatically acquires optimum configuration for all detection, flush mountability and environment requirements.

Other advantages of flush mountable sensors using teach mode Increased performance:

- sensing distance guaranteed and optimised irrespective of the mounting method, object, environment or background,

- suitable for all metal environments.

### □ Simplified use provided by:

the flush mountability using teach mode technology, associated with the availability of the flattest and most compact sensors on the market, ensures full integration in the machine and limits the risks of mechanical damage,

- mechanical adjustments no longer necessary due to teach mode.
- □ I ower costs due to:
  - the elimination of adjustment times and complex supports

- the elimination of flush mountable and non-flush mountable versions, which halves the number of references,

- much easier and much quicker product selection.

### **Precision position detection**

All flush mountable inductive proximity sensors using teach mode benefit from ultra precise adjustment, which is very quick irrespective of the metal environment.

Precision side approach detection makes it possible to accurately define the distance at which the object will be detected as it passes the sensor On the flush mountable sensors using teach mode, the desired detection position can be stored in memory by simply pressing the teach button.

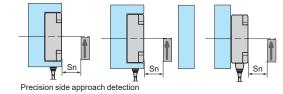
Precision frontal approach detection makes it possible to accurately define the distance at which the object will be detected as it approaches the sensor. On the flush mountable sensors using teach mode, the desired detection position can be stored in memory by simply pressing the teach button.

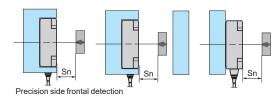
### Mounting accessories

Telemecanique Sensors offers a complete, inexpensive range of mounting accessories (clamps, plates, brackets, etc.) that provide solutions for all installation problems.

Fixing kits for quick installation or replacement of sensors

■ No adjustment required. Simple clipping-in enables the sensor to be fixed in position and ready for operation.









# Presentation

# Inductive proximity sensors

XS range Flush mountability using teach mode: simplicity through innovation



Cylindrical ty	ре			
Dimensions (mm)		12	18	30
Sensing distance	Flush mounted use	03.4	06	011
(mm)	Non-flush mounted use	05	09	018
Sensor type		XS612B2	XS618B2	XS630B2
Page		76		



Block type				
Dimensions (mm)		26 x 26 x 13	40 x 40 x 15	80 x 80 x 26
Sensing distance (mm)	Flush mounted use	010	015	040
	Non-flush mounted use	015	025	060
Sensor type Page		XS8E1A1	XS8C1A1	XS8D1A1
		52		



### References

# Inductive proximity sensors

XS range, general purpose Cylindrical, standard range, flush mountable Three-wire DC, solid-state output

XS506B1●●L2		Sensing distance (Sn) mm	Function	Output	Connection	Reference	Weight (kg)
		Ø 6.5, plain					
		1.5	NO	PNP	Pre-cabled (L = 2 m) (1)	XS506B1PAL2	0.03
					M8 connector	XS506B1PAM8	0.02
					M12 connector	XS506B1PAM12	0.02
				NPN	Pre-cabled (L = 2 m) (1)	XS506B1NAL2	0.03
					M8 connector	XS506B1NAM8	0.02
			NC	PNP	Pre-cabled (L = 2 m) (1)	XS506B1PBL2	0.03
					M8 connector	XS506B1PBM8	0.02
				NPN	Pre-cabled (L = 2 m) (1)	XS506B1NBL2	0.03
					M8 connector	XS506B1NBM8	0.02
<sup>4</sup>		Q Q threaded	VI0 4				
		Ø 8, threaded I 1.5	NO	PNP	Pre-cabled (L = $2 \text{ m}$ ) (1)	X\$508B1DAL2	0.03
			NO		M8 connector	XS508B1PAM8	0.02
XS508B1••L2					M12 connector	XS508B1PAM12	0.02
				NPN	Pre-cabled (L = 2 m) $(1)$		0.02
					M8 connector	XS508B1NAM8	0.02
			NC	PNP	Pre-cabled (L = 2 m) (1)		0.03
					M8 connector	XS508B1PBM8	0.02
					M12 connector	XS508B1PBM12	0.02
* *							
		Ø 12, threaded		-			
		2	NO	PNP	Pre-cabled (L = 2 m) $(1)$		0.07
и ххs512B1••M12					M12 connector	XS512B1PAM12	0.03
עליא XS512B1●●M12				NPN	Pre-cabled (L = 2 m) $(1)$		0.07
×			NC	PNP	M12 connector	XS512B1NAM12	0.03
			NC	PNP	$\frac{\text{Pre-cabled (L = 2 m) (1)}}{\text{M12 connector}}$		0.07
					WIZ connector	XS512B1PBM12	0.03
1913	VD3016	Ø 18, threaded	M18 x 1				
		5	NO	PNP	Pre-cabled (L = $2 \text{ m}$ ) (1)	XS518B1PAL2	0.12
					M12 connector	XS518B1PAM12	0.06
001000000 1915 Lxx XS518B1●●M12	e la			NPN	Pre-cabled $(L = 2 m) (1)$	XS518B1NAL2	0.12
XS518B1●●M12	XS518B1•••L2				M12 connector	XS518B1NAM12	0.06
			NC	PNP	Pre-cabled (L = $2 \text{ m}$ ) (1)		0.12
					M12 connector	XS518B1PBM12	0.06
		Ø 30, threaded	M30 x 1.5				
		10	NO	PNP	Pre-cabled (L = 2 m) (1)	XS530B1PAL2	0.20
					M12 connector	XS530B1PAM12	0.14
				NPN	Pre-cabled (L = 2 m) (1)	XS530B1NAL2	0.20
					M12 connector	XS530B1NAM12	0.14
	15. CF		NC	PNP	Pre-cabled (L = 2 m) (1)		0.20
XS530B1•eL2	באיי XS530B1●●L2				M12 connector	XS530B1PBM12	0.14
	×s						



XSZB1●●

Accessories (2	)		
Description	For use with sensors (mm)	Reference	Weight (kg)
Fixing clamps	Ø 6.5 (plain)	XSZB165	0.005
	Ø8	XSZB108	0.006
	Ø 12	XSZB112	0.006
	Ø 18	XSZB118	0.010
	Ø 30	XSZB130	0.020

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

Care Center for availability. Example: XS508B1PAL2 becomes XS508B1PAL5 with a 5 m cable.

(2) For more information, see page 120.

## References (continued)

S508B1DBL3

103185

XS5••BL••L2

XS5••BL••M12

XS530BLeeL2

# Inductive proximity sensors

XS range, general purpose Cylindrical, standard range, flush mountable Three-wire DC, solid-state output

Sensors	, 3-wire 1	224	V, long case mo	del
Sensing distance (Sn) mm	Function	Output	Connection	Reference
Ø 8, threade	d M8 x 1			
.5	NO	PNP	Pre-cabled (L = $2 \text{ m}$ ) (1)	XS508BLPAL2
			M12 connector	XS508BLPAM12
	NC	PNP	M12 connector	XS508BLPBM12
		NPN	M12 connector	XS508BLNBM12
Sensors	, 3-wire 1	248	V, long case mo	del
Sensing distance (Sn) mm	Function	Output	Connection	Reference
Ø 12, thread	ed M12 x 1			
	NO	PNP	Pre-cabled (L = $2 \text{ m}$ ) (1)	XS512BLPAL2
			M12 connector	XS512BLPAM12
	NC	PNP	Pre-cabled $(L = 2 m) (1)$	XS512BLPBL2
Ø 18, thread	ed M18 x 1			
	NO	PNP	Pre-cabled $(L = 2 m) (1)$	XS518BLPAL2
			M12 connector	XS518BLPAM12
		NPN	Pre-cabled (L = $2 \text{ m}$ ) (1)	XS518BLNAL2
	NC	PNP	Pre-cabled (L = $2 \text{ m}$ ) (1)	XS518BLPBL2
			M12 connector	XS518BLPBM12
a 00 thus a d	ed M30 x 1.5			
o su, thread				
10 30, thread	NO	PNP	Pre-cabled (L = 2 m) (1)	XS530BLPAL2
,		PNP	$\frac{\text{Pre-cabled (L = 2 m) (1)}}{\text{M12 connector}}$	XS530BLPAL2 XS530BLPAM12



XSZB1.

Accessories (2)			
Description	For use with sensors (mm)	Reference	Weight (kg)
Fixing clamps	Ø 6.5 (plain)	XSZB165	0.005
	Ø 8	XSZB108	0.006
	Ø 12	XSZB112	0.006
	Ø 18	XSZB118	0.010
	Ø 30	XSZB130	0.020

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

Example: XS508BLPAL2 becomes XS508BLPAL5 with a 5 m cable.

(2) For more information, see page 120.

Weight (kg)

> 0.035 0.025 0.025 0.025

Weight (kg)

> 0.075 0.035 0.075

> 0.120 0.060 0.120 0.120 0.060

> 0.205 0.145 0.205

# **Characteristics**

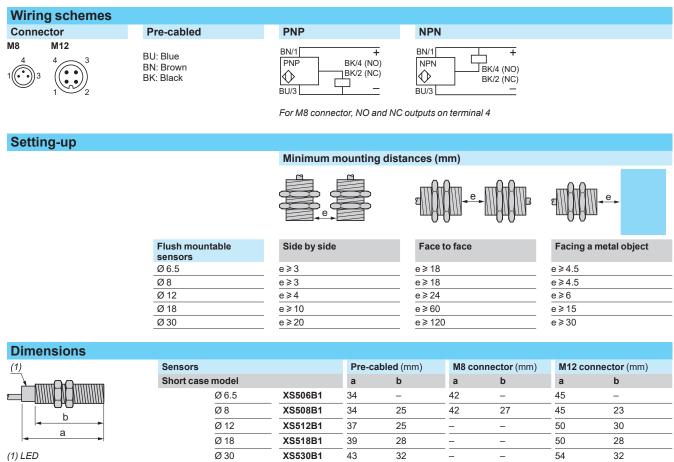
**Inductive proximity sensors** XS range, general purpose Cylindrical, standard range, flush mountable Three-wire DC, solid-state output

Characteristics Sensor type			XS5eeB1eeM8, XS5eeB1eeM12	XS5eeB1eeL2			
Sensor type			XS5eeBLeeM8, XS5eeBLeeM12	XS500BL00L2 XS500BL00L2			
Product certifications			cULus, C€, UKCA, E2				
Connection	Connector		M8 on Ø 6.5 and Ø 8, M12 on Ø 8, Ø 12, Ø 18 and Ø 30	-			
	Pre-cabled		-	Length: 2 m			
Operating zone	Ø 6.5 and Ø 8	mm	01.2				
	Ø 12	mm	01.6				
	Ø 18	mm	04				
	Ø 30	mm	08				
Differential travel		%	115 of effective sensing distance (Sr)				
Degree of protection	Conforming to IEC 60529		IP 65 and IP 67	IP 65 and IP 68 (except Ø 6.5 and Ø 8: IP 67)			
	Conforming to DIN 40050		IP 69K for Ø 12 to Ø 30	-			
Storage temperature		°C	-40+85				
Operating temperature		°C	-25+70				
Materials	Case		Nickel plated brass (except XS506 and XS508: stainless steel, grade 303)				
	Sensing face		PPS				
	Cable		-	PVC 3 x 0.34 mm <sup>2</sup> except <b>XS506</b> and <b>XS508</b> : 3 x 0.11 mm <sup>2</sup>			
Vibration resistance	Conforming to IEC 60068-2-6		25 gn, amplitude $\pm$ 2 mm (f = 10 to 50 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	1248 for XS5••BL (Ø 12, 18, and 30) 1224 for XS5••B1, XS508BL with protection against reverse polarity				
Voltage limits (including ri	pple)	v					
Insulation class			M12:  M8: III				
Switching capacity		mA	≤ 200 with overload and short-circuit prote	ction			
Voltage drop, closed state		۷	≤2				
Current consumption, no-	load	mA	≤ 10				
Maximum switching	XS506, XS508, XS512	Hz	5000				
frequency	XS518	Hz	2000				
	XS530	Hz	1000				
Delays	First-up	ms	≤ 10				
	Response	ms	<ul> <li>≤ 0.1: XS506, XS508 and XS512</li> <li>≤ 0.15: XS518</li> <li>≤ 0.3: XS530</li> </ul>				
	Recovery	ms	≤ 0.1: XS506, XS508 and XS512 ≤ 0.35: XS518 ≤ 0.7: XS530				

## Schemes, setting-up, dimensions

# Inductive proximity sensors

XS range, general purpose Cylindrical, standard range, flush mountable Three-wire DC, solid-state output



	Ø 18	XS518B1	39	28	-	-	50	28
	Ø 30	XS530B1	43	32	_	_	54	32
Sensors			Pre-ca	abled (mm)	M12 c	onnector (mn	n)	
Long case	model		а	b	а	b		
	Ø8	XS508BL	51	42	61	40		
	Ø 12	XS512BL	53	42	61	42		
	Ø 18	XS518BL	62	52	74	52		
	Ø 30	XS530BL	62	52	74	52		

## References

**Inductive proximity sensors** XS range, general purpose Cylindrical, standard range, flush mountable Two-wire DC





Sensor	s, <mark>2-wire</mark> 1	224 V, short case	e model	
Sensing distance (Sn) mm	Function	Connection	Reference	Weight (kg)
Ø 8, thread	ed M8 x 1			
1.5	NC	Pre-cabled $(L = 2 m) (1)$	XS508BSCBL2	0.035
Ø 12, threa	ded M12 x 1			
2	NO	M12 connector	XS512BSDAM12	0.035
Ø 18, threa	ded M18 x 1			
5	NO	M12 connector	XS518BSDAM12	0.060
Ø 30, threa	ded M30 x 1.5			
10	NO terminals 1 & 4 <i>(2)</i>	M12 connector	XS530BSCAM12	0.145



XSZB1••

Accessories (3)			
Description	For use with sensors (mm)	Reference	Weight (kg)
Fixing clamps	Ø 8	XSZB108	0.006
	Ø 12	XSZB112	0.006
	Ø 18	XSZB118	0.010
	Ø 30	XSZB130	0.020

(1) For a 5 m cable replace L2 by L5; for a 10 m cable replace L2 by L10. Please consult our Customer Care Center for availability. Example: XS508BSCBL2 becomes **XS508BSCBL5** with a 5 m cable.

(2) The NO output is connected to terminals 1 and 4 of the M12 connector.

(3) For more information, see page 120.

## References (continued)

# Inductive proximity sensors

XS range, general purpose Cylindrical, standard range, flush mountable Two-wire DC



## **Characteristics**

**Inductive proximity sensors** XS range, general purpose Cylindrical, standard range, flush mountable Two-wire DC

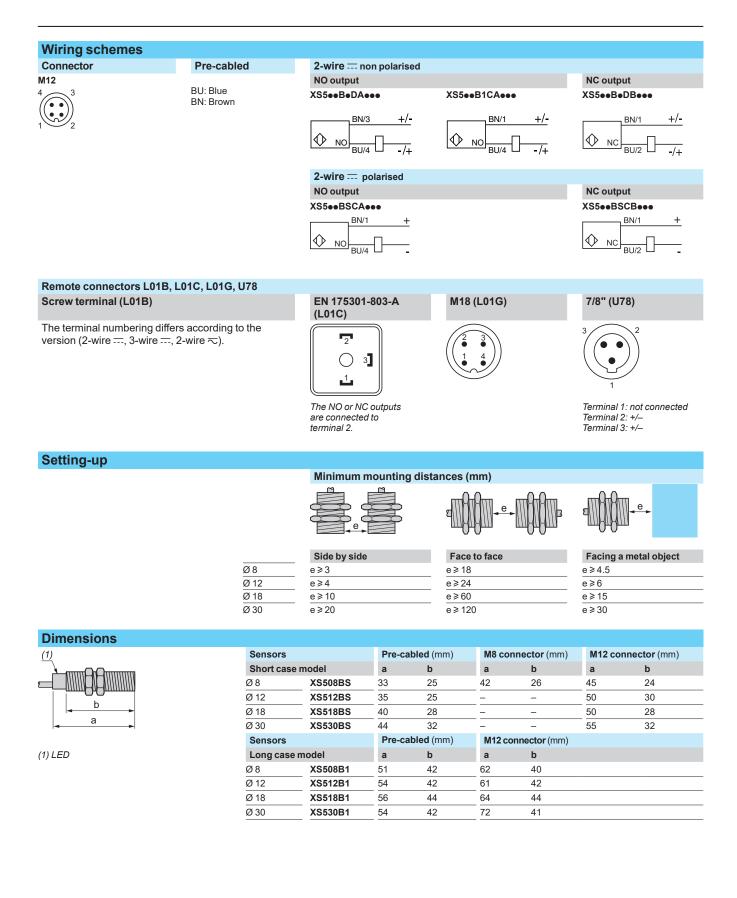
Sensor type			XS5eeB1eeM12, XS5eeBSeeM12	XS5eeB1DeL2, XS5eeBSeeL2			
Product certifications			cULus, CE, UKCA	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
Connection	Connector		M12	_			
	Pre-cabled		-	Length: 2 m			
	Remote connector		M12 (L01M12), EN 175301-803-A (L01C) and M12 (L08M12) connectors on 0.80 m flying lead				
Operating zone	Ø8	mm	01.2				
	Ø 12	mm	01.6				
	Ø 18	mm	04				
	Ø 30	mm	08				
Differential travel		%	115 of effective sensing distance (Sr)				
Degree of protection	Conforming to IEC 60529		IP 65 and IP 67	IP 65 and IP 68 (except Ø 8: IP 67)			
Storage temperature		°C	-40+85				
Operating temperature		°C	-25+70; TF products: -40+70				
Materials	Case		Nickel plated brass (except XS506 and XS508B1: stainless steel, grade 303				
	Sensing face		PPS				
	Cable		-	PVC 2 x 0.34 mm <sup>2</sup> (except XS508: 2 x 0.11 mm <sup>2</sup> ) PUR available <i>(1)</i>			
Vibration resistance	Conforming to IEC 60068-2-6		25 gn, amplitude ± 2 mm (f = 10 to 55 Hz	z)			
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					
Voltage limits (including	ripple)	v	1058 for XS5••B1• 1036 for XS5••BS				
Insulation class							
Switching capacity		mA	1.5100 with overload and short-circuit protection				
Voltage drop, closed sta	te	V	≤4.2				
Residual current, open s	state	mA	≤ 0.5				
Maximum switching	XS508	Hz	1000 for XS5••BS, 1400 for XS5••B1•				
frequency	XS512	Hz	1000				
	XS518	Hz	1200				
	XS530	Hz	1300				
Delays	First-up	ms	≤ 10				
	Response	ms	≤ 0.5: XS508 and XS512 ≤ 0.6: XS518 ≤ 0.6: XS530				
	Recovery	ms	< 0.2 (except <b>XS530</b> ≤ 0.4)				

(1) For PUR cable, replace the letter L in the reference by P. Example: XS508BSCAL2 becomes XS508BSCAP2 with a PUR cable.

## Schemes, setting-up, dimensions

# Inductive proximity sensors

XS range, general purpose Cylindrical, standard range, flush mountable Two-wire DC



# References

301277

MD3017

# Inductive proximity sensors

XS range, general purpose Cylindrical, standard range, flush mountable Two-wire AC or DC (1)

		Sensors, 2-wire $\sim$ 24-240 V, long case model Ø 12, threaded M12 x 1						
XS5••B1M•L2	Sensing distance (Sn) mm	Function	Connection	Reference	Weight (kg)			
	2	NO	Pre-cabled (L = 2 m) <i>(2)</i>	XS512B1MAL2	0.075			
			1/2"-20 UNF connector	XS512B1MAU20	0.025			
		NC	Pre-cabled (L = 2 m) (2)	XS512B1MBL2	0.075			
			1/2"-20 UNF connector	XS512B1MBU20	0.025			
	Ø 18, threaded M18	3 x 1						
	Sensing distance (Sn) mm	Function	Connection	Reference	Weight (kg)			
annua tes termina	5	NO	Pre-cabled (L = 2 m) <i>(2)</i>	XS518B1MAL2	0.100			
XS5••B1M•U20			1/2"-20 UNF connector	XS518B1MAU20	0.060			
		NC	Pre-cabled (L = 2 m) (2)	XS518B1MBL2	0.100			



XS530B1••L2



XSZB1••

Ø 30, threade	d M30 x 1.5			
Sensing dista (Sn) mm	ince Function	Connection	Reference	Weight (kg)
10	NO	Pre-cabled (L = 2 m) $(2)$	XS530B1MAL2	0.205
		1/2"-20 UNF connector	XS530B1MAU20	0.145
	NC	Pre-cabled (L = 2 m) (2)	XS530B1MBL2	0.205

1/2"-20 UNF connector XS518B1MBU20

0.060

Accessorie	<b>S</b> (3)		
Description	For use with sensors (mm)	Reference	Weight (kg)
Fixing clamps	Ø 12	XSZB112	0.006
	Ø 18	XSZB118	0.010
	Ø 30	XSZB130	0.020

ouble insu ie (see page 68)

(2) For a 5 m cable replace L2 by L5; for a 10 m cable replace L2 by L10. Please consult our Customer Care Center for availability. Example: XS512B1MAL2 becomes XS512B1MAL5 with a 5 m cable.

(3) For more information, see page 120.

### Characteristics, schemes, setting-up, dimensions

# Inductive proximity sensors

XS range, general purpose Cylindrical, standard range, flush mountable Two-wire AC or DC

Sensor type			XS5eeB1MeU20	XS5eeB1MeL2		
Product certifications		1	cULus, CE, UKCA			
Connection	Connector		1/2"-20 UNF	_		
Connection	Pre-cabled		-	Length: 2 m		
Operating zone	Ø 12	mm	01.6	Longui. 2 m		
operating zone	Ø 18	mm	04			
	Ø 30	mm	08			
Differential travel	200	%	115 of effective sensing distance (Sr)			
Degree of protection	Conforming to IEC 60529		IP 65 and IP 67	IP 65 and IP 68		
	Conforming to DIN 40050		IP 69K	_		
Storage temperature	·······	°C	-40+85	1		
Operating temperature		°C	-25+70			
Materials Case		-	Nickel plated brass			
	Sensing face		PPS			
	Cable		- PVC 2 x 0.34 mm <sup>2</sup>			
/ibration 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	3		Yellow LED: 4 viewing ports at 90°	Yellow LED: annular		
Rated supply voltage		v	~ or 24240 (~ 50/60 Hz)			
Voltage limits (including	ı ripple)	v	∼ or == 20264			
Insulation class			1	1		
Switching capacity	XS512B1Meee	mA	5200 (1)			
	XS518B1Meee, XS530B1Meee	mA	$\sim$ 5300 or = 5200 (1)			
Voltage drop, closed sta	te	v	≤ 5.5			
Residual current, open s	state	mA	≤ 0.8			
Maximum switching	XS512B1eee, XS518B1Meee	Hz	$\sim$ 25 or == 1000			
frequency	XS530B1Meee	Hz	$\sim$ 25 or == 500			
Delays	First-up	ms	≤ 20 XS512B1M●●● ≤ 25 XS518B1M●●● and XS530B1M●●●			
	Response	ms	≤ 0.5			
	Recovery	ms	<pre>≤ 0.2 XS512B1Meee ≤ 0.5 XS518B1Meee ≤ 2 XS518B1Meee</pre>			

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

Wiring schemes Connector

≂: 2

≟: 1

≂: 3



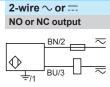
Pre-cabled BU: Blue BN: Brown

Sensor

Ø 12

Ø 18

Ø 30



≟: on connector models only

### Setting-up

### Minimum mounting distances (mm)



Side by side

e≥8

e≥16

e≥30

Face to face

e≥48

e≥100

e≥180



e≥45

Facing a metal object e≥12 e≥25

### **Dimensions**

		XS6				
(1)	Sensor	Pre-cab	oled (mm)	Conne	ctor (mm)	
		а	b	а	b	
	XS512B1M	53	42	62	42	
	XS518B1M	62	52	73	52	
	XS530B1M	62	52	73	52	

### References (continued)

**Inductive proximity sensors** XS range, general purpose Cylindrical, increased range, flush mountable Three-wire DC, solid-state output

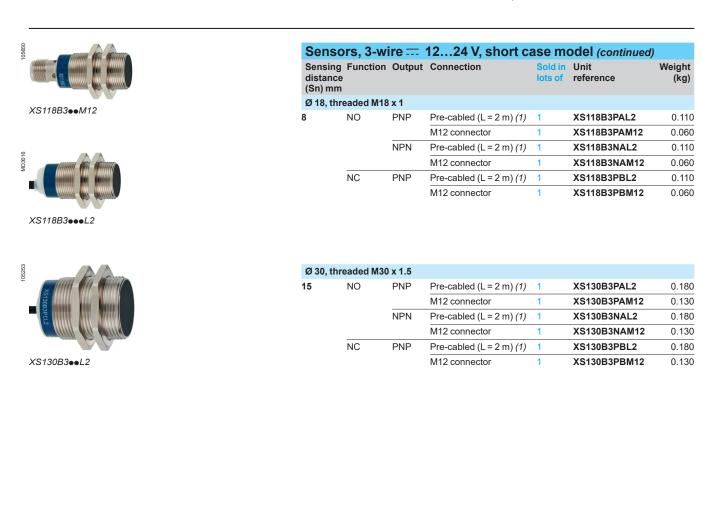
S106B1●●L2				224 V, short ca Connection	Sold in		Weight
	distance (Sn) mm	Function	Output	Connection		reference	(kg)
	Ø 6.5, pla	in					
	2.5	NO	PNP	Pre-cabled (L = $2 \text{ m}$ ) (1)	1	XS106B3PAL2	0.060
				M8 connector	1	XS106B3PAM8	0.030
				M12 connector	1	XS106B3PAM12	0.050
		NC	PNP	Pre-cabled (L = $2 \text{ m}$ ) (1)	1	XS106B3PBL2	0.060
				M8 connector	1	XS106B3PBM8	0.030
	Ø 8, threa	ded M8 x '	1				
	2.5	NO	PNP	Pre-cabled (L = $2 \text{ m}$ ) (1)	1	XS108B3PAL2	0.070
S108B3 <b>●●</b> M8				M8 connector	1	XS108B3PAM8	0.030
				M12 connector	1	XS108B3PAM12	0.060
			NPN	Pre-cabled (L = $2 \text{ m}$ ) (1)	1	XS108B3NAL2	0.070
				M8 connector	1	XS108B3NAM8	0.030
				M12 connector	1	XS108B3NAM12	0.060
		NC PI	PNP	Pre-cabled $(L = 2 m) (1)$	1	XS108B3PBL2	0.070
				M8 connector	1	XS108B3PBM8	0.030
				M12 connector	1	XS108B3PBM12	0.060
			NPN	M8 connector	1	XS108B3NBM8	0.030
	Ø 12, thre	aded M12					
	4	NO	PNP	$\frac{\text{Pre-cabled (L = 2 m) (1)}}{}$		XS112B3PAL2	0.090
				M12 connector	1	XS112B3PAM12	0.030
			NPN	Pre-cabled (L = $2 \text{ m}$ ) (1)	1	XS112B3NAL2	0.090
				M12 connector	1	XS112B3NAM12	0.030
		NC	PNP	Pre-cabled (L = $2 \text{ m}$ ) (1)	1	XS112B3PBL2	0.090
				M12 connector	1	XS112B3PBM12	0.030

Characteristics:	Dimensions:	Connections:	Setting-up:
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### References (continued)

### Inductive proximity sensors

XS range, general purpose Cylindrical, increased range, flush mountable Three-wire DC, solid-state output





XSZB1.

Accessories (2	)		
Description	For use with sensors (mm)	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

 For a 5 m cable, replace L2 by L5. Please consult our Customer Care Center for availability. Example: XS118B3PAL2 becomes XS118B3PAL5 with a 5 m cable.
 For more information, see page 120.

Characteristics:Dimensions:Connections:Setting-up:page 37page 37page 37page 37

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## Inductive proximity sensors

XS range, general purpose Cylindrical, increased range, flush mountable Three-wire DC, solid-state output

•L2	Sensir distan	ng Functio	Reference	Weight (kg)		
	Ø 8, th	readed M8	x 1			
	2.5	NO	PNP	Pre-cabled (L = 2 m) <i>(1)</i>	XS608B1PAL2	0.035
				M8 connector	XS608B1PAM8	0.015
				M12 connector	XS608B1PAM12	0.015
			NPN	Pre-cabled (L = $2 \text{ m}$ ) (1)	XS608B1NAL2	0.035
				M8 connector	XS608B1NAM8	0.015
				M12 connector	XS608B1NAM12	0.015
		NC	PNP	Pre-cabled (L = $2 \text{ m}$ ) (1)	XS608B1PBL2	0.035
				M8 connector	XS608B1PBM8	0.015
				M12 connector	XS608B1PBM12	0.015
			NPN	Pre-cabled (L = $2 \text{ m}$ ) (1)	XS608B1NBL2	0.035
				M8 connector	XS608B1NBM8	0.015
<b>4</b> .5						
	distan (Sn) m	ce m	·	It Connection	Reference	Weight (kg)
B100M12						
	distance (sn)mm         (fg)           Ø B, threaded MB x 1         Pre-cabled (L=2 m) (1)         X5608B1PAL2         0.035 MB connector         X5608B1PAL2         0.035 MB connector           NPN         Pre-cabled (L=2 m) (1)         X5608B1PAL2         0.035 MB connector         X5608B1PAL2         0.035 MB connector           NC         PNP         Pre-cabled (L=2 m) (1)         X5608B1PAL2         0.035 MB connector           NC         PNP         Pre-cabled (L=2 m) (1)         X5608B1PBL2         0.035 MB connector           NC         PNP         Pre-cabled (L=2 m) (1)         X5608B1PBL2         0.035 MB connector           NPN         Pre-cabled (L=2 m) (1)         X5608B1PBL2         0.035 MB connector         X5608B1PBL2         0.035 MB connector           NPN         Pre-cabled (L=2 m) (1)         X5608B1PBL2         0.035 MB connector         X5608B1PBL2         0.035 MB connector           NPN         Pre-cabled (L=2 m) (1)         X5612B1PAL2         0.075 MI 2 connector         X5612B1PAL2         0.075 MI 2 connector           NC         PNP         Pre-cabled (L=2 m) (1)         X5612B1PAL2         0.075 MI 2 connector         X5612B1PAL2         0.075 MI 2 connector           NC         PNP         Pre-cabled (L=2 m) (1)         X5612B1PAL2         0.075 MI 2 connector         X					
						·
			NPN			
NC         PNP         Pre-cabled (L = 2 m) (1)         XS612B'           M12 connector         XS612B'						
		NC	PNP			
M12 connectorXSNPNPre-cabled (L = 2 m) (1)XS						
			NPN			
				M12 connector	XS612B1NBM12	0.020
	8	NO	PNP			
			NPN			
Aug I		NC	PNP			
			NDN			
			NPN			
	Ø 30, t	hreaded N	30 x 1.5	M12 connector	XS618B1NBM12	0.040
	15	NO	PNP	Pre-cabled (L = 2 m) (1)	XS630B1PAL2	0.205
				M12 connector	XS630B1PAM12	0.145
				Remote EN 175301-803-A con	nector XS630B1PAL01C	0.205
			NPN	Pre-cabled (L = 2 m) (1)	XS630B1NAL2	0.205
				M12 connector	XS630B1NAM12	0.145
		NC	PNP	Pre-cabled (L = 2 m) (1)	XS630B1PBL2	0.205
				M12 connector	XS630B1PBM12	0.145
			NPN	Pre-cabled (L = 2 m) (1)	XS630B1NBL2	0.205
	Acce	essorie	<b>S</b> (2)			
			For us		Reference	
	Fixing	clamps	Ø8		XSZB108	0.006
	5	-	Ø 12		XSZB112	0.006
			Ø 18		XSZB118	0.010

(1) For a 5 m long cable replace L2 by L5; for a 10 m long cable replace L2 by L10. Please consult our Customer Care Center for availability. Example: XS608B1PAL2 becomes **XS608B1PAL5** with a 5 m cable.

(2) For more information, see page 120.



**Inductive proximity sensors** XS range, general purpose Cylindrical, increased range, flush mountable Three-wire DC, solid-state output

Characteristics Sensor type			XS1/XS6eeBeeeM8	XS1/XS6	eeBeeeM12	XS1/XS6eeB		
	Ø 6.5 and Ø 8			A31/A30		A31/A3000B	•••L2	
Product certifications			cULus, CE, UKCA					
	Ø 12, 18 and 30		cULus, C€, UKCA, E2					
Connection	Connector		M8	M12		-		
	Pre-cabled		-	-		Length 2 m		
	Remote connector		Screw terminal (L01B), E 0.15 m flying lead	EN 175301-8	803-A (L01C) and I	V18 (L01G) rer	note connectors	
Operating zone (1)	Ø 6.5 and Ø 8		02					
	Ø 12	mm	03.2					
	Ø 18		06.4					
	Ø 30		012					
Differential travel		%	115 of effective sensing	g distance (S	Sr)			
Degree of protection	Conforming to IEC 60529		IP 65 and IP 67			IP 65 and IP 6 except Ø 6.5	8 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 (exce	eptØ6.5 and	d Ø 8: stainless ste	eel, grade 303)		
	Sensing face		PPS					
	Cable		-			PVC 3 x 0.34 except Ø 6.5	mm² and 8: 3 x 0.11 m	
/ibration 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					
Dutput state indication			Yellow LED, 4 viewing po	orts at 90°		Yellow LED, a	nnular	
Rated supply voltage		v	XS1, XS608: 1224 with protection against reverse po XS6: 1248 with protection against reverse polarity (Ø					
/oltage limits (including ripple)		V	XS1, XS608: 1036;	<b>XS6:</b> 10.	58 (Ø 12, 18, 30)	)		
nsulation class			Ш					
Switching capacity		mA	≤ 200 with overload and	short-circuit	protection			
/oltage 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	$\leq$ 0.2 for Ø 6.5, Ø 8 and Ø	Ø 12, ≤ 0.3 fo	or Ø 18, ≤ 0.6 for Ø	030		
	Recovery	ms	≤ 0.2 for Ø 6.5, Ø 8 and Ø	Ø 12, ≤ 0.7 fo	or Ø 18, ≤ 1.4 for Ø	ý 30		
(1) Detection curves, see page 12	8.							
Wiring schemes			ting-up					
Connector (1)	Pre-cabled	Mini	mum mounting distance	es (mm)				
$ \overset{4}{\textcircled{0}}_{3} \overset{4}{\textcircled{0}}_{1} \overset{3}{\textcircled{0}}_{2} $	BU: Blue BN: Brown BK: Black					= <u>[[]]</u>	<u>e</u>	
PNP	NPN	Sens	sors Side by side	1	Face to face	Facing	a metal object	
		Ø 6.5	-		≥30	e≥8		
BN/1 + PNP BK/4 (NO)		Ø 8	e≥5		≥ 30	<u>e≥8</u>		
BK/2 (NC)	BK/4 (NO)	Ø 12	<u>e≥8</u>		≥48			
						e≥12 e≥25		
		Ø 18	e≥16		≥100			
For M8 connector, NO and NC ou	,	Ø 30	e≥30	е	≥180	e≥45		
(1) For pin arrangement of remote Dimensions	e connectors L01B, L01C and L0	1G, se	ee page 31.					
	0		B					
<u>(1)</u>	Sensors		Pre-cabled (r	,	M8 connector (mi	,	onnector (mm)	
	Short case model		a b		a b	а	b	
	Ø 6.5		<b>34</b> –	4		45	-	
	Ø 8	XS1	<b>34 25</b>	5 4	2 27	45	23	
b	Ø 12	XS11	12B3 35 25	5 –	-	50	30	
a	Ø 18	XS11	<b>18B3</b> 39 28	3 –	_	50	28	

		Ø 30	XS130B3	43	32	_	_	55	32
(1) LED	Sensors			Pre-cabl	<b>ed</b> (mm)	M8 conne	ector (mm)	M12 conne	ctor (mm)
	Long case i	model		а	b	а	b	а	b
		Ø 8	XS608B1	51	42	58	43	61	40
		Ø 12	XS612B1	53	42	_	-	61	42
		Ø 18	XS618B1	62	52	_	-	74	52
		Ø 30	XS630B1	62	52	-	_	74	52

03165

03947

12

XS608B3••L2

XS608B3••L2

## Inductive proximity sensors

XS range, general purpose Cylindrical, increased range, flush mountable Two-wire DC, solid-state output

Sensors	, <b>2-wire</b> <del></del> 1	224 V, short case	model
Sensing distance (Sn) mm	Function	Connection	Referen
Ø 6.5, plain	1		
2.5	NO	Pre-cabled (L = 2 m) (1)	XS606E
	NC	Pre-cabled (L = 2 m) (1)	XS606E
Ø 8, thread	ed M8 x 1		
2.5	NO	Pre-cabled (L = 2 m) <i>(1)</i>	XS608E
Ø 12, threa	ded M12 x 1		
4	NO	Pre-cabled (L = 2 m) (1)	XS612E
		M12 connector	XS612E
	NC	Pre-cabled (L = 2 m) (1)	XS612E
		M12 connector	XS612
Ø 18, threa	ded M18 x 1		
8	NO	Pre-cabled (L = 2 m) (1)	XS618E
		M12 connector	VS619E

1001 7180 8005X	
XS6eeB1eeL2	





XSZB1.

Sensing distance (Sn) mm	Function	Connection Reference		Weight (kg)
Ø 6.5, plain	I			
2.5	NO	Pre-cabled (L = 2 m) <i>(1)</i>	XS606B3CAL2	0.060
	NC	Pre-cabled (L = 2 m) (1)	XS606B3CBL2	0.060
Ø 8, thread	ed M8 x 1			
2.5	NO	Pre-cabled (L = 2 m) <i>(1)</i>	XS608B3CAL2	0.070
Ø 12, threa	ded M12 x 1			
4	NO	Pre-cabled (L = 2 m) <i>(1)</i>	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, threa	ded M18 x 1			
8	NO	Pre-cabled (L = 2 m) <i>(1)</i>	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, threa	ded M30 x 1.5			
15	NO	Pre-cabled (L = 2 m) <i>(1)</i>	XS630B3DAL2	0.180
		M12 connector	XS630B3DAM12	0.130

Sensors, 2	2-wire == 12	248 V, long case r	nodel	
Sensing distance (Sn) mm	Function	Connection	Reference	Weight (kg)
Ø 6.5, plain				
2.5	NC	Pre-cabled $(L = 2 m) (1)$	XS606B1DBL2	0.060
Ø 8, threaded	d 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
Ø 12, threade	ed M12 x 1			
4	NO	Pre-cabled (L = 2 m) (1)	XS612B1DAL2	0.180
		M12 connector	XS612B1DAM12	0.020
	NC	M12 connector	XS612B1DBM12	0.020
Ø 18, threade	ed 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, threade	ed M30 x 1.5			
15	NO	Pre-cabled (L = 2 m) <i>(1)</i>	XS630B1DAL2	0.205
		M12 connector	XS630B1DAM12	0.145
	NC	M12 connector	XS630B1DBM12	0.145

Accessories (2)			
Description	For use with sensors (mm)	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 Center for availability. Example: XS606B3CAL2 becomes XS606B3CAL5 with a 5 m cable.

(2) For more information, see page 120.

**Inductive proximity sensors** XS range, general purpose Cylindrical, increased range, flush mountable Two-wire DC, solid-state output

CL		-1-		
CI	ara	cie	rist	ICS

Characteristics								
Sensor type				B3eeM12			XS6eeB3eeL2	2
			XS6ee	B1DeM12			XS6eeB1DeL	2
Product certifications			,	C€, UKCA,				
Connection	Connector				connector (L0	1M12) on	0.15 m flying lea	ıd
	Pre-cabled		Length 2 m					
Operating zone (1)	Ø 6.5 and Ø 8		02					
	Ø 12		03.2					
	Ø 18		06.4					
	Ø 30		012			(		
Differential travel	0 ( )     = 0 00500	%			nsing distance	e (Sr)		
Degree of protection	Conforming to IEC 60529		IP 65 a	nd IP 67			IP 65 and IP 68 (except Ø 6.5 a	
	Conforming to DIN 40050		IP 69K				· ·	
	Comorning to Divide 40050						-	
Storage temperature		°C °C	-40+ -25+					
Operating temperature Materials	Case				overst VS604	P1D or V	2600P1D: staipl	ana ataol grada 202)
Waterials	Sensing face		PPS	plated brass (	except X500		SOUGD ID: Staini	ess steel, grade 303)
	Cable			x 0.24 mm <sup>2</sup> or	kcept Ø 6.5 ar	d (1 0· ) v	0 11 mm <sup>2</sup>	
Vibration resistance	Conforming to IEC 60068-2-6				mm (f = 10 to)		0.111111	
Shock resistance	Conforming to IEC 60068-2-27		<u> </u>	duration 11 m		55112)		
Output state indication			<u> </u>		ng ports at 90°			
Rated supply voltage		v			ised for XS6			
		-					ept Ø 6.5 short a	and Ø 8 short: polarised), with
			protect	ion against re	everse polarity			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Voltage limits (including ripple)		V		.58 for XS6				
				.36 for XS6	•B3●			
Insulation class								
Switching capacity				vith overload	and short-circ	uit protecti	on	
Voltage drop, closed state		V	≤4.2	•				
Residual current, open state	<u> </u>		≤0.5 m		4400 5 200			
Maximum switching frequency	Ø 6.5, Ø 8 Ø 12	Hz Hz		or XS600B1D	, 1100 for XS6	●●B3●		
	Ø 12 Ø 18	Hz	1300 1500					
	Ø 30	Hz	800					
Delays	First-up	ms	800					
Delays	Response	ms	≤ 0.5					
	Recovery	<u> </u>		or Ø65 Ø8a	and Ø 12; 0.3 f	or Ø 18 <sup>.</sup> 0	6 for Ø 30	
(1) Detection curves, see page 128			10.210			0.2.10,0.		
Wiring schemes		Sof	ting-	un				
	Dra asklad			-				
M12 connector	Pre-cabled	IVIINI	mum m	ounting dist	ances (mm)			
4 3	BU: Blue BN: Brown							
$((\bullet \bullet))$	BIN. BIOWII					<u>= الممالية</u>	e - IIII B	2
					Ì	0.0		mArAm
2-wire non polarised								
NO output	NC output	Sens	sors	Side by side	de	Face to	face	Facing a metal object
BN/3 +/-	BN/1 +/-	Ø 6.5		e≥5		e≥30		e≥8
		Ø8		e≥5		e≥30		e≥8
B0/4/+	B0/2/+	Ø 12		e≥8		e≥48		e≥12
2-wire polarised		Ø 18		e≥16		e≥100		e≥25
XS6eeB3CA	XS6eeB3CB	Ø 30		e≥30		e≥180		e≥45
	BN/1 +							
BU/4 LJ _	BU/2							
Dimensions								
(1)	Sensors			Pre-cable	d (mm)	M12 co	nnector (mm)	
<u> </u>	Short case model			а	b	а	b	
	Ø 6.5	XSE	06B3C	a 33	-	a 	-	
	<u>Ø 8.5</u>		08B3C	33	25	-	24	
b	Ø 8 Ø 12		12B3D	35	25	50	30	
a	Ø 12 Ø 18		1263D 1883D	40	25	50	28	
<b>I →</b>	Ø 18 Ø 30			40 44	32		32	
(1) LED		¥20	30B3D			55		
	Long case model	V		a	b	а	b	
	Ø 6.5		06B1D	50	-	-	-	
	Ø 8		08B1D	51	42	62	40	
	Ø 12	-	12B1D		42	61	42	
	Ø 18		18B1D		52	74	52	
	Ø 30	XSE	30B1D	62	52	74	52	

52

74

52

XS630B1D 62

Ø 30



### Inductive proximity sensors

XS range, general purpose Cylindrical, increased range, flush mountable Two-wire AC or DC (1)

	Sensor	s, 2-wire	$ar{\sim}$ 24-240 V, long case n	nodel	
•B1M•L2	Sensing distance (Sn) mm	Function	Connection	Reference	Weight (kg)
	Ø 12, threa	ded 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
		ded 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		0.100
			Remote EN 175301-803-A connector	XS618B1MAL01C	0.100
			Remote 7/8" connector	XS618B1MAL01U78	0.100
		NC	Pre-cabled (L = 2 m) (2)	XS618B1MBL2	0.100
			1/2"-20 UNF connector	XS618B1MBU20	0.060
	Ø 30, threa	ded 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
			Remote 7/8" connector	XS630B1MAL01U78	0.205
		NC	Pre-cabled (L = $2 \text{ m}$ ) (2)	XS630B1MBL2	0.205
			1/2"-20 UNF connector	XS630B1MBU20	0.145
			Remote screw terminal connector	XS630B1MBL01B (3)	0.205
	Access	ories (4)			
	Description	n	For use with sensors (mm)	Reference	Weight (kg)
	Fixing clam	ps	Ø 12	XSZB112	0.006
			Ø 18	XSZB118	0.010
			Ø 30		

(2) For a 5 m cable replace L2 by L5; for a 10 m cable replace L2 by L10. Please consult our Customer Care Center for availability. Example: XS612B1MAL2 becomes **XS612B1MAL5** with a 5 m cable.

(3) Protective cable gland included with sensor.

(4) For more information, see page 120.



### Inductive proximity sensors

XS range, general purpose Cylindrical, increased range, flush mountable Two-wire AC or DC

Sensor type			XS6eeB1MeU20	XS6eeB1MeLe		
Product certifications			cULus, C€, UKCA			
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 connecte 0.15 m flying lead			
Operating zone (1)	Ø 12	mm	0 3.2			
	Ø 18	mm	0 6.4			
	Ø 30	mm	012			
Differential travel		%	115 of effective sensing distance (Sr)			
Degree of protection	Conforming to IEC 60529		IP 65, IP 67	IP 65 and IP 68		
	Conforming to DIN 40050		IP 69K	-		
Storage temperature		°C	-40+85			
Operating temperature		°C	C -25+70			
Materials	Case		Nickel plated brass			
	Sensing face		PPS			
	Cable		PVC 2 x 0.34 mm <sup>2</sup>			
Vibration resistance	Conforming to IEC 60068-2-6		25 gn, amplitude $\pm$ 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: annular on pre-cabled version Yellow LED with 4 viewing ports at 90° on co	nnector version		
Rated supply voltage		V	≂ 24…240 (~ 50/60 Hz)			
Voltage limits (including ripple)		V	≂20264			
Insulation class			1	1		
Switching capacity	XS612B1Meee	mA	5200 (2)			
	XS618B1Meee XS630B1Meee	mA	A ~ 5300 or == 5200 (2)			
Voltage drop, closed state		۷	≤ 5.5			
Residual current, open state		mA	≤0.8			
Maximum switching frequency	Ø 12	Hz	<del></del> 1000 / ∼ 25			
(DC/AC)	Ø 18	Hz	<del></del> 1000 / ∼ 25			
	Ø 30	Hz	<del></del> 500 / ∼ 25			
Delays	First-up	ms	≤ 25 for Ø 18 and Ø 30; ≤ 20 for Ø 12			
	Response	ms	≤0.5			
	Recovery	ms	≤ 0.2 for Ø 12; ≤ 0.5 for Ø 18; ≤ 2 for Ø 30			

(1) Detection curves, see page 128.

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

#### Wiring schemes

Thing continue	/					
Connector (1)	Pre-cabled	2-wire $\sim$ or $=$				
1/2"-20 UNF	BU: Blue BN: Brown	NO or NC output				
$ \begin{array}{c} 1 \\ \hline  \\ 2 \\ \hline  \\ 2 \\ \hline  \\ 3 \\ \hline  \\ 3 \\ \hline  \\  \\ 3 \\ \hline  \\ 3 \\ \hline \hline$	22.2.	$ \begin{array}{c} BN/2 & \overline{} \\ \hline  & \\ \hline \hline \hline  & \\ \hline \hline \hline  & \\ \hline \hline \hline \hline  & \\ \hline \hline$				
(1) For pin arrangement of remote connectors L01B, L01C and L01G, see page 31.						

Setting-up

#### Minimum mounting distances (mm)

		all for the second s	₹ <b>₩₩₩₩</b> +®+
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)		
		а	b	а	b		
	Ø 12 XS612B1Me	53	42	61	42		
	Ø 18 XS618B1Me	62	52	73	52		
	Ø 30 XS630B1M•	62	52	73	52		
(1) LED							

XS-XT\_515\_CPMFS17013

XS-XT\_515\_CPODA2016166

PF154217B

XS\_515\_CPFJR16004

### Inductive proximity sensors

XS range, general purpose Cylindrical, increased range, non-flush mountable Three-wire DC, solid-state output

	Sensors,	3-wire '	1224	V, long case mode	el	
	Ø 8, threade	d M8 x 1				
XS612B4••L2	Sensing distance (Sn) mm	Function	Output	Connection	Reference	Weight (kg)
	4	NO	PNP	Pre-cabled (L = 2 m)	XS608B4PAL2	0.03
				M8 connector	XS608B4PAM8	0.015
				M12 connector	XS608B4PAM12	0.01
			NPN	Pre-cabled (L = 2 m)	XS608B4NAL2	0.035
				M8 connector	XS608B4NAM8	0.015
				M12 connector	XS608B4NAM12	0.015
		NC	PNP	Pre-cabled (L = 2 m)	XS608B4PBL2	0.03
				M8 connector	XS608B4PBM8	0.01
				M12 connector	XS608B4PBM12	0.015
			NPN	Pre-cabled (L = 2 m)	XS608B4NBL2	0.03
				M8 connector	XS608B4NBM8	0.01
				M12 connector	XS608B4NBM12	0.01
	Sensors,	3-wire '	1248	V, long case mode	el	
	Ø 12, thread					
	Sensing distance (Sn) mm	Function	Output	Connection	Reference	Weight (kg)
	7	NO	PNP	Pre-cabled (L = 2 m) (1)	XS612B4PAL2	0.075
				M12 connector	XS612B4PAM12	0.020
			NPN	Pre-cabled (L = 2 m) (1)	XS612B4NAL2	0.075
				M12 connector	XS612B4NAM12	0.020
		NC	PNP	Pre-cabled (L = 2 m) (1)	XS612B4PBL2	0.075
				M12 connector	XS612B4PBM12	0.020
			NPN	Pre-cabled (L = $2 \text{ m}$ ) (1)	XS612B4NBL2	0.075
	Ø 18, thread	ed M18 x 1				
	Sensing distance (Sn) mm	Function	Output	Connection	Reference	Weight (kg)
XS618B4 <b>●●</b> M12	12	NO	PNP	Pre-cabled (L = $2 \text{ m}$ ) (1)	XS618B4PAL2	0.100
				M12 connector	XS618B4PAM12	0.040
			NPN	Pre-cabled $(L = 2 m) (1)$	XS618B4NAL2	0.100
				M12 connector	XS618B4NAM12	0.040
		NC	PNP	Pre-cabled (L = $2 \text{ m}$ ) (1)	XS618B4PBL2	0.100
				M12 connector	XS618B4PBM12	0.040
			NPN	Pre-cabled (L = $2 \text{ m}$ ) (1)	XS618B4NBL2	0.100
and the first	Ø 30, thread	ed M30 x 1.8	5			
	Sensing distance (Sn) mm	Function	Output	Connection	Reference	Weight (kg)
and the same	30	NO	PNP	Pre-cabled (L = $2 \text{ m}$ ) (1)	XS630B5PAL2	0.205
XS630B5••M12				M12 connector	XS630B5PAM12	0.145
			NPN	Pre-cabled $(L = 2 m) (1)$	XS630B5NAL2	0.205
	Accessor	NC	PNP	M12 connector	XS630B5PBM12	0.145
COS COS	Description	185 (2)	For use v		Reference	Weight (kg)
	Fixing clamps		Ø8		XSZB108	0.004

 Ø 18
 XSZB118
 0.010

 Ø 30
 XSZB130
 0.020

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

XSZB112

0.006

consult our Customer Care Center for availability. Example: XS612B4PAL2 becomes **XS612B4PAL5** with a 5 m cable.

Ø 12

(2) For more information, see page 120.

XSZB1.



### Inductive proximity sensors

XS range, general purpose Cylindrical, increased range, non-flush mountable Three-wire DC, solid-state output

Sonsortupe			XS6eeB4eeeM8	XS6eeB4eeeM12	XS6eeB4eeeL2	
Sensor type	<u>a</u>			X5666B4666M12	XS600B4000L2	
Product certifications	<u>Ø8</u>		cULus, CE, UKCA			
	Ø 12, 18 and 30		cULus, C€, UKCA, E2			
Connection	Connector		M8	M8 M12		
	Pre-cabled		-		Length: 2 m	
Operating zone	Ø8	mm	03.2			
	Ø 12	mm	05.6			
	Ø 18	mm	09.6			
	Ø 30	mm	024			
Differential travel		%	115 of effective sensi	ng distance (Sr)		
Degree of protection	Conforming to IEC 60529		IP 65 and IP 67		IP 65 and IP 68	
	Conforming to DIN 40050		-	IP 69K	_	
Storage temperature		°C	-40+85			
Operating temperature		°C	-25+70			
Materials	Case		Nickel plated brass (exc	cept Ø 8: stainless steel, grade	e 303)	
	Sensing face		PPS			
	Cable		-		PVC 3 x 0.34 mm <sup>2</sup> except for Ø 8: 3 x 0.11 mm	
Vibration resistance	Conforming to IEC 60068-2-6		25 gn, amplitude ± 2 mr	m (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 p	ports at 90°	Yellow LED: annular	
Rated supply voltage		v	1224 with protection against reverse polarity (Ø 8) 1248 with protection against reverse polarity (Ø 12, 18, 30)			
Voltage limits (including	ripple)	V				
Insulation class						
Switching capacity		mA	≤ 200 with overload and	d short-circuit protection	•	
Voltage drop, closed sta	te	v	≤2	· · · · ·		
Current consumption, no		mA	≤ 10			
Maximum switching	XS608B4 • • • • and XS612B4 • • •	Hz	2500			
frequency	XS618B4	Hz	1000			
	XS630B5000	Hz	500			
Delays	First-up	ms	$\leq 10$ for Ø 8, Ø 12 and Ø	$718 \le 15$ for (730)		
Bolayo	Response	ms		$\leq 0.3$ for Ø 18; $\leq 0.6$ for Ø 30		
	Recovery	ms	· · · · · · · · · · · · · · · · · · ·	$\leq 0.7$ for Ø 18; $\leq 1.4$ for Ø 30		
		ins	< 0.2 101 @ 0 and @ 12, \$	0.7101 2 10, < 1.4101 2 30		
Wiring schemes						
Connector	Pre-cabled	PNP		NPN		
M8 M12		BN/1	+	BN/1 +		
$\frac{4}{2}$ $\frac{4}{3}$	BU: Blue	PNP	BK/4 (NO)			
$1 \bigcirc 3 $	BN: Brown BK: Black	$\Diamond$	BK/2 (NC)	BK/2 (NC)		
	DR. Didok	BU/3		BU/3		
. 2						
Setting-up						
Minimum mounting d	istances (mm)					
	<u> </u>	0	0 00		d b	
		THU	Hm e mHnHm			
		4111	<u> </u>	¶\\\ \\\\\		
	e	0-	0			

Side by side	Face to face
e≥24	e≥40
e≥48	e≥84
e≥72	e≥144
e≥300	e≥300

XS6

Ø8

Ø 12

Ø 18

Ø 30

а

51

54

60

66

. . .

Ø8

Ø 12

Ø 18

Ø 30

С

(1) LED

**Dimensions** 

h

а

(1)

VAC	- EO	31 (E	Sensors
1/1	JLV	51 I	Sensors

Pre-cabled (mm)

b

38

42

44

41

с

4

5

8

13

Facing a metal object

M8 Connector (mm)

с

4

\_

\_

b

39

\_

\_

e≥12

e≥21

e≥36

e≥90

а

58

\_

\_

\_

с

4

5

8

13

Mounted in a metal

M12 Connector (mm)

b

36

42

44

41

support

d≥24, h≥8

d≥36, h≥12

d≥54, h≥18

d≥90, h≥35

а

61

66

72

74

PF154200

PF154208

# **Inductive proximity sensors** XS range, general purpose

Cylindrical, increased range, non-flush mountable Three-wire DC, solid-state output

	Ø 12, threade	- <b>wire 1</b> d M12 x 1				
5212B400L0	Sensing distance (Sn) mm	Function	Output	Connection	Reference	Weight (kg)
	8	NO PI	PNP	Pre-cabled (L = 2 m)	XS212B4PAL2	0.086
				Pre-cabled (L = 5 m)	XS212B4PAL5	0.160
				M12 connector	XS212B4PAM12	0.032
			NPN	Pre-cabled $(L = 2 m)$	XS212B4NAL2	0.086
			M12 connector	XS212B4NAM12	0.032	
		NC PNP	Pre-cabled (L = 2 m)	XS212B4PBL2	0.086	
			M12 connector	XS212B4PBM12	0.032	
			NPN	Pre-cabled (L = 2 m)	XS212B4NBL2	0.080
	Ø 18, threade	d M18 x 1				
	Sensing distance (Sn) mm	Function	Output	Connection	Reference	Weight (kg)
	16	NO	PNP	Pre-cabled (L = 2 m)	XS218B4PAL2	0.10
S218B4••M12				M12 connector	XS218B4PAM12	0.052
			NPN	Pre-cabled (L = 2 m)	XS218B4NAL2	0.10
				M12 connector	XS218B4NAM12	0.052
		NC	PNP	Pre-cabled (L = 2 m)	XS218B4PBL2	0.10
				M12 connector	XS218B4PBM12	0.052



XSZB1.

Accessories (1)			
Description	For use with sensors (mm)	Reference	Weight (kg)
Fixing clamps	Ø 12	XSZB112	0.006
	Ø 18	XSZB118	0.010

(1) For further information, see page 120.

# **Inductive proximity sensors** XS range, general purpose

Cylindrical, increased range, non-flush mountable Three-wire DC, solid-state output

Sensor type			XS21•B4••M12	XS21eB4eeLe	
Product certifications			cULus, CE, UKCA, E2		
Connection	Connector		M12	-	
	Pre-cabled		-	Length: 2 or 5 m	
Operating zone	Ø 12	mm	06.4		
	Ø 18	mm	012.8		
Differential travel		%	115 of effective sensing distance (Sr)		
Degree of protection Conforming to IEC 60529			IP 65 and IP 67		
	Conforming to DIN 40050		IP 69K	-	
Storage temperature		°C	- 40+ 85		
Operating temperature		°C	- 25+ 70		
Materials Case			Brass		
	Sensing face		PPS		
	Cable		-	PvR 3 x 0.34 mm <sup>2</sup>	
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	Dutput state indication		Yellow LED, 4 viewing ports at 90° Yellow LED, annular		
Rated supply voltage		۷	= 1224 with protection against reverse polarity		
Voltage limits (including ri	ipple)	V	1036		
Insulation class					
Switching capacity		mA	≤ 200 with overload and short-circuit protection		
Voltage drop, closed state	1	V	≤2		
Current consumption, no-	load	mA	≤ 10		
Maximum switching	XS212B4	Hz	2000		
frequency	XS218B4	Hz	1000		
Delays	First-up	ms	≤ 15		
	Response	ms	≤ 0.2 for Ø 12≤ 0.3 for Ø 18		
	Recovery	ms	≤ 0.2 for Ø 12 ≤ 0.7 for Ø 18		
Wiring schemes					
Connector	Pre-cabled	PNP	NPN		

winning schemes			
Connector	Pre-cabled	PNP	NPN
M12	BU: Blue BN: Brown BK: Black	BN/1 + PNP BK/4 (NO) BK/2 (NC) BU/3 -	BN/1 + NPN BK/4 (NO) BU/3 BK/2 (NC)

### Setting-up

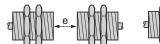
Minimum mounting distances (mm)

e≥100

e≥120

Ø 12

Ø 18





d

Side by side	Face to face
e≥100	e≥120
e≥120	e≥200

Faci
e≥24
e≥48

cing a metal object	
4	
8	

	ןֿ≏		
		W	
Mo	unto	d in a mo	tal

support	
d≥36, h≥15	
d≥54, h≥18	

Dimensions								
(1)		Pre-	cabled (m	m)	M12 cor	nnector (mm)		
		а	b	с	а	b	с	
	Ø 12	37	20	5	51	26	5	
	Ø 18	41	21	8	51	21	8	
b b								
a								

(1) LED



# **Inductive proximity sensors** XS range, general purpose

Cylindrical, increased range, non flush mountable Two-wire AC or DC



Sensors, 2-w	ire $\sim$ 24	. 240 V, long case m	odel	
Ø 18, threaded N	118 x 1			
Sensing distance (Sn) mm	Function	Connection	Reference	Weight (kg)
12	NO	Pre-cabled (L = $2 \text{ m}$ ) (1)	XS618B4MAL2	0.120
		1/2"-20 UNF connector	XS618B4MAU20	0.060
	NC	Pre-cabled (L = 2 m) $(1)$	XS618B4MBL2	0.120
		1/2"-20 UNF connector	XS618B4MBU20	0.060

Connection

Reference

Pre-cabled (L = 2 m) (1) XS630B4MAL2

1/2"-20 UNF connector XS630B4MAU20

Pre-cabled (L = 2 m) (1) XS630B4MBL2

Weight

(kg)

0.205

0.145

0.205





Accessories (2) Description For use with Reference Weight sensors (mm) (kg) Fixing clamps Ø 18 XSZB118 0.010 Ø 30 XSZB130 0.020

(1) For a 5 m cable replace L2 by L5; for a 10 m cable replace L2 by L10. Example: XS618B4MAL2 becomes XS618B4MAL5 with a 5 m cable.

(2) For more information, see page 120.

Ø 30, threaded M30 x 1.5 Sensing distance Function

NO

NC

(Sn) mm

22

### **Inductive proximity sensors** XS range, general purpose

XS range, general purpose Cylindrical, increased range, non flush mountable Two-wire AC or DC

Sensor type			XS6eeB4MeU20	XS6eeB4MeL2		
Product certifications			cULus, C€,UKCA			
Connection	Connector		1/2"-20 UNF	-		
	1/2"-20 UNFPre-cabled		-	Length: 2 m		
Operating zone	Ø 18	mm	09.6			
	Ø 30	mm	017.6			
Differential travel		%	115 of effective sensing distance (Sr)			
Degree of protection	Conforming to IEC 60529		IP 65 and IP 67	IP 65 and IP 68		
Storage temperature		°C	-40+85			
Operating temperature		°C	°C -25+70			
Materials	Case		Nickel plated brass			
	Sensing face		PPS	PPS		
	Cable		-	PvR 2 x 0.34 mm <sup>2</sup>		
Vibration resistance	Conforming to IEC 60068-2-6		25 gn, amplitude $\pm$ 2 mm (f = 10 to 55 H	z)		
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	$\sim$ or $=$ 24240 ( $\sim$ 50/60 Hz)			
Voltage limits (including	g ripple)	V	$\sim$ or $= 20264$			
Insulation class			1	1		
Switching capacity		mA	$\sim$ 5300 or == 5200 (1)			
Voltage drop, closed sta	ate	V	≤ 5.5			
Residual current, open	state	mA	≤0.8			
Maximum switching	XS618B4Meee	Hz	$\sim$ 25 or == 1000			
frequency	XS630B4Meee	Hz	$\sim$ 25 or $=$ 300			
Delays	First-up	ms	≤ 30 XS618B4M●●● and XS630B4M●	•		
	Response	ms	≤0.5			
	Recovery	ms	≤ 0.5 XS618B4M●●●, ≤ 2 XS630B4M●	••		

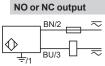
# Wiring schemes Connector Pre-cabled 2-wire ~ or -- Virial Contract Physics No or No output

1/2"-20 UNF

#### BU: Blue BN: Brown



В



 $\pm$ : on connector models only

### Setting-up

Minimum mounting distances (mm)

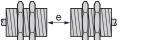
Ø 18

Ø 30

Side by side

e≥72

e≥120



Face to face

e≥144

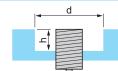
e≥264

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e≥36

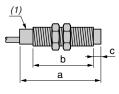
e≥66

Facing a metal object



Mounted in a metal<br/>support $d \ge 54$ ,  $h \ge 18$  $d \ge 90$ ,  $h \ge 30$ 

#### Dimensions



Pre-cabled (mm)				Conn	ector (mm)	
	а	b	с	а	b	
Ø 18	60	44	8	72	44	
Ø 30	63	41	13	74	41	

Conne	ctor (mm)		
а	b	С	
72	44	8	
74	41	13	

(1) LED



Telemecanique

### Inductive proximity sensors

XS range, general purpose, standard range Flat format, flush mountable Two-wire DC Three-wire DC, solid-state output

XS7J1A1ooL2
_
Telemecanique
Sensors
XS7F1A1••L2



XS7F1A1eeL01M8

### Flat, 8 x 22 x 8 mm format (1) (2)

Three-wire					
Sensing distance (Sn) mm	Function	Output	Connection	Reference	Weight (kg)
2.5	NO	PNP	Pre-cabled $(L=2m)$ (3)	XS7J1A1PAL2	0.060
			Remote M8 connector on 0.15 m flying lead	XS7J1A1PAL01M8	0.040
		NPN	Pre-cabled $(L=2m)$ (3)	XS7J1A1NAL2	0.060
			Remote M8 connector on 0.15 m flying lead	XS7J1A1NAL01M8	0.040
	NC	PNP	Pre-cabled $(L=2m)$ (3)	XS7J1A1PBL2	0.060
			Remote M8 connector on 0.15 m flying lead	XS7J1A1PBL01M8	0.040
		NPN	Pre-cabled $(L=2m)$ (3)	XS7J1A1NBL2	0.060
Two-wire					
Sensing distance (Sn) mm	Function	Output	Connection	Reference	Weight (kg)
2.5	NO		Pre-cabled $(L=2m)(3)$	XS7J1A1DAL2	0.050

#### Flat, 15 x 32 x 8 mm format (1)

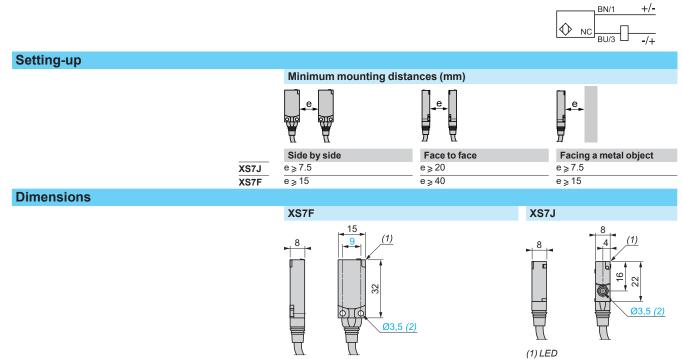
Three-wire					
Sensing distance (Sn) mm	Function	Output	Connection	Reference	Weight (kg)
5	NO	PNP	Pre-cabled (L = 2 m) $(3)$	XS7F1A1PAL2	0.065
			Remote M8 connector on 0.15 m flying lead	XS7F1A1PAL01M8	0.045
		NPN	Pre-cabled (L = 2 m) $(3)$	XS7F1A1NAL2	0.065
	NC	PNP	Pre-cabled $(L=2m)$ (3)	XS7F1A1PBL2	0.065
		_	Remote M8 connector on 0.15 m flying lead	XS7F1A1PBL01M8	0.045
		NPN	Pre-cabled $(L=2m)$ (3)	XS7F1A1NBL2	0.065
Two-wire					
Sensing distance (Sn) mm	Function	Output	Connection	Reference	Weight (kg)
5	NO		Pre-cabled (L = 2 m) $(3)$	XS7F1A1DAL2	0.055
	NC		Pre-cabled $(L=2m)(3)$	XS7F1A1DBL2	0.055
			Remote M8 connector on 0.15 m flying lead	XS7F1A1DBL01M8	0.045

For accessories, see page 120.
 Sensors XS7J include a fixing clamp with screw.
 For a 5 m long cable replace L2 by L5; for a 10 m long cable replace L2 by L10. Example: XS7J1A1PAL2 becomes XS7J1A1PAL5 with a 5 m long cable.

### Inductive proximity sensors

XS range, general purpose, standard range Flat format, flush mountable Two-wire DC Three-wire DC, solid-state output

Sensor type			XS7JeeeeL01M8	XS7FeeeeL01M8	XS7JeeeeeL2, X	S7FeeeeeL2
Product certifications			CE	cULus, CE, UKCA	,,.	
Connection	Connector		Remote M8 connecto	Remote M8 connector on 0.15 m flying lead –		
	Pre-cabled		_		Length: 2 m	
Operating zone	XS7J	mm	02			
	XS7F	mm	04			
Differential travel		%	115 of effective ser	nsing distance (Sr)		
Degree of protection	Conforming to IEC 60529		IP 67 ( <b>XS7J</b> ), IP 68 (	XS7F)		
Storage temperature		°C	- 40+ 85			
Operating temperature		°C	- 25+ 70			
Materials	Case		PBT			
	Cable		PvR 3 x 0.11 mm <sup>2</sup> or	2 x 0.11 mm <sup>2</sup> (XS7F: 2	or 3 x 0.34 mm <sup>2</sup> )	
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 m	S		
Output state indication			Yellow LED			
Rated supply voltage		۷	1224 with prote	ction against reverse p	olarity	
Voltage limits (including ripple)		۷	1036			
Insulation class			III	III		
Current consumption, no-load	3-wire	mA	≤ 10			
Residual current, open state	2-wire	mA	≤0.5			
Switching capacity	3-wire	mA	100 with overload an	nd short-circuit protection	on	
	2-wire	mA	1.5100 with overloa	ad and short-circuit pro	otection	
Voltage drop, closed state	3-wire	۷	≤2			
	2-wire	۷	≤4			
Maximum switching frequency	3-wire	kHz	2			
	2-wire	kHz	4 for XS7J, 5 for XS7	7F		
Delays	First-up	ms	Three-wire: 5			
		ms	Two-wire: 10 XS7J, 5	5 <b>XS7F</b>		
	Response	ms	Three-wire: 0,1			
		ms	Two-wire: 0,5 XS7J,	5 XS7F		
	Recovery	ms	Three-wire: 0,1			
		ms	Two-wire: 1 XS7J, 5	XS7F		
Wiring schemes						
Connector	Pre-cabled	PNP	NO or NC	NPN NO or NO	2-14	/ire NO
M8		BN/1		BN/1		
	BU: Blue	PNP	+ 		+	BN/3



(2) For CHC type screws







0370

XS7E1A1••M8

XS7•1A1•L0•M12





XS7C1A1••M8





XS7D1A1••M12

03782





### Inductive proximity sensors

XS range, general purpose, standard range Flat format, flush mountable Two-wire DC Three-wire DC, solid-state output

Sens. dist (Sn) mm	tion	Output		Reference	Weight (kg)
		x 13 mm fo	( <b>11)</b>		
Three-w	/ire				
10	NO	PNP	Pre-cabled (L = $2 \text{ m}$ ) (3)	XS7E1A1PAL2	0.075
			M8 connector	XS7E1A1PAM8	0.040
			Remote M12 connector	XS7E1A1PAL01M12	0.040
		NPN	Pre-cabled (L = $2 \text{ m}$ ) (3)	XS7E1A1NAL2	0.075
	NC	PNP	Pre-cabled (L = $2 \text{ m}$ ) (3)	XS7E1A1PBL2	0.075
			M8 connector	XS7E1A1PBM8	0.040
			Remote M12 connector	XS7E1A1PBL01M12	0.040
		NPN	Pre-cabled (L = $2 \text{ m}$ ) (3)	XS7E1A1NBL2	0.075
Two-wir	'e				
10	NO		Pre-cabled (L = 2 m) (3)	XS7E1A1DAL2	0.070
			Remote M12 connector	XS7E1A1DAL01M12	0.040
	NO term	inals 1 and 4 <i>(2)</i>	Remote M12 connector	XS7E1A1CAL01M12	0.040

### Flat, 40 x 40 x 15 mm format (1)

Thre	e-wire				
15	15 NO	PNP	Pre-cabled (L = 2 m) (3)	XS7C1A1PAL2	0.095
			M8 connector	XS7C1A1PAM8	0.060
			Remote M12 connector	XS7C1A1PAL01M12	0.060
	NC	PNP	Pre-cabled (L = 2 m) (3)	XS7C1A1PBL2	0.095
			M8 connector	XS7C1A1PBM8	0.060
		NPN	Pre-cabled (L = 2 m) (3)	XS7C1A1NBL2	0.095
			M8 connector	XS7C1A1NBM8	0.060
Two	-wire				
15	NO		Pre-cabled (L = 2 m) (3)	XS7C1A1DAL2	0.090
			M8 connector	XS7C1A1DAM8	0.060
	NC		Remote M12 connector	XS7C1A1DBL01M12	0.060

#### Flat, 80 x 80 x 26 mm format (1)

	-,		( )		
Thre	e-wire	-			
40	) NO	PNP	Pre-cabled (L = 2 m) (3)	XS7D1A1PAL2 (4)	0.340
			M12 connector	XS7D1A1PAM12 (4)	0.290
		NPN	Pre-cabled (L = 2 m) (3)	XS7D1A1NAL2 (4)	0.340
	NC	PNP	M12 connector	XS7D1A1PBM12 (4)	0.290
Two	-wire				
40	NO		Pre-cabled (L = 2 m) <i>(3)</i>	XS7D1A1DAL2 (4)	0.340
			M12 connector	XS7D1A1DAM12 (4)	0.290
	NC		Pre-cabled $(L = 2 m)$ (3)	XS7D1A1DBL2 (4)	0.340

(1) For accessories, see page 120.

(2) The NO output is connected to terminals 1 and 4 of the M12 connector.

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

Example: S7 J1A1PAL2 becomes XS7J1A1PAL5 with a 5 m long cable.
 (4) For clipping onto 35 mm omega rail or 80 x 80 x 40 mm format, add DIN to the end of the reference. Example: XS7D1A1PAL2 becomes XS7D1A1PAL2DIN.

XSTDALDAL2 DIA

XS7D1A1eeL2DIN



**Inductive proximity sensors** XS range, general purpose, standard range Flat format, flush mountable Two-wire DC Three-wire DC, solid-state output

Characteristics							
				VOTE MO	V07E		X075 1.0
Sensor type				XS7EeeeeM8, XS7CeeeeM8, XS7DeeeeM12	XS7E••••• XS7C•••••		XS7E•••••L2, XS7C•••••L2, XS7D•••••L2
Product certifications				cULus, C€, UKCA, EC	DLAB		
Connection	Connector			M8 except M12 on <b>XS7DeeeeM</b>		m flying lead	-
	Pre-cabled			-	-		Length: 2 m
Operating zone	XS7E		mm	08			
	XS7C		mm	012			
	XS7D		mm	032			
Differential travel			%	115 of effective sens	ing distance (Sr)		· · · · · · · · · · · · · · · · · · ·
Degree of protection	Conforming to IEC	C 60529	70	IP 67			IP 68
Storage temperature		0 00020	°C	- 40+ 85			11 00
Operating temperature			°C	- 25+ 70			
Materials	Case		Ŭ	PBT			
Materials	Cable			-	DvD 3 v 0 3/	mm <sup>2</sup> or 2 x 0.34	mm <sup>2</sup>
	-	2 60069 2 6				- THITF OF 2 X 0.34	111111-
Vibration resistance	Conforming to IEC			$25 \text{ gn}$ , amplitude $\pm 2 \text{ m}$	III (I = 10 to 55 HZ)		
Shock resistance	Conforming to IEC	5 60068-2-27		50 gn, duration 11 ms			
Output state indication			V	Yellow LED			
Rated supply voltage	1		V		against reverse polarity		
Voltage limits (including ripp	lie)		۷	1036			
Insulation class				M8 connector: III			
Current concurrention as los	ad 3 wire		mA	M12 connector: □ ≤ 10			
Current consumption, no-loa			mA				
Residual current, open state			mA	$\leq 0.5$	d abort aircuit - 1 1		
Switching capacity	3-wire		mA		d short-circuit protection		
	2-wire		mA		and short-circuit protect	lon	
Voltage drop, closed state	3-wire		V	≤2			
	2-wire		V	≤4			
Maximum switching frequen	-		kHz	1			
	XS7D		Hz	100			
Delays	First-up	3-wire	ms	10 XS7E and XS7C, 3			
		2-wire	ms	5 <b>XS7E</b> and <b>XS7D</b> , 10	XS7D		
	Response	3-wire	ms	2 XS7E and XS7C, 5 X	S7D		
		2-wire	ms	0,3 <b>XS7E</b> and <b>XS7D</b> , 1	0 XS7D		
	Recovery	2-wire 3-wire	ms ms	0,3 XS7E and XS7D, 1 6 XS7E, 5 XS7C, 35 X			
	Recovery				\$7D		
Wiring schemes	Recovery	3-wire	ms	6 XS7E, 5 XS7C, 35 X	\$7D		
Wiring schemes		3-wire	ms ms	6 XS7E, 5 XS7C, 35 X 0,7 XS7E and XS7D, 1	57D 0 XS7D	· M8 2-w	rire NC/M12 or M8
Connector	Pre-cabled	3-wire	ms ms PNP	6 XS7E, 5 XS7C, 35 X 0,7 XS7E and XS7D, 1	S7D 0 XS7D 2-wire NO/M12 or		/ire NC/M12 or M8
-	Pre-cabled BU: Blue	3-wire	ms ms PNP (	6 XS7E, 5 XS7C, 35 X 0,7 XS7E and XS7D, 1 (1)	S7D 0 XS7D 2-wire NO/M12 or	· M8 2-w	/ire NC/M12 or M8
Connector	Pre-cabled	3-wire	ms ms PNP ( BN/1 PNP	6 XS7E, 5 XS7C, 35 X 0,7 XS7E and XS7D, 1 (1) + BK/4 (NO)	2-wire NO/M12 or	+/-	BN/1 +/-
Connector	Pre-cabled BU: Blue BN: Brown	3-wire	ms ms PNP ( BN/1 PNP ↓	6 XS7E, 5 XS7C, 35 X 0,7 XS7E and XS7D, 1 (1)	S7D 0 XS7D 2-wire NO/M12 or		BN/1 +/- NC BU/2 (M12) -/+
Connector	Pre-cabled BU: Blue BN: Brown	3-wire	ms ms PNP ( BN/1 PNP	6 XS7E, 5 XS7C, 35 X 0,7 XS7E and XS7D, 1 (1) + BK/4 (NO)	S7D 0 XS7D 2-wire NO/M12 or BN/3 <sup>−</sup>	+/-	BN/1 +/-
$\begin{array}{c} \text{Connector} \\ M12 & M8 \\ 4 \\ \hline \hline \hline \\ \end{array} \begin{array}{c} 3 \\ 1 \\ \hline \\ \end{array} \begin{array}{c} 4 \\ 3 \end{array} \begin{array}{c} 3 \\ 3 \end{array}$	Pre-cabled BU: Blue BN: Brown	3-wire	ms ms PNP ( BN/1 PNP ↓	6 XS7E, 5 XS7C, 35 X 0,7 XS7E and XS7D, 1 (1) BK/4 (NO) BK/2 (NC)	S7D 0 XS7D 2-wire NO/M12 or BN/3 <sup>−</sup>	+/- /+	BN/1 +/- NC BU/2 (M12) -/+ BU/3 (M8) -/+
$\begin{array}{c} \text{Connector} \\ M12 & M8 \\ 4 \\ \hline \hline \hline \\ \end{array} \begin{array}{c} 3 \\ 1 \\ \hline \\ \end{array} \begin{array}{c} 4 \\ 3 \end{array} \begin{array}{c} 3 \\ 3 \end{array}$	Pre-cabled BU: Blue BN: Brown	3-wire	ms ms PNP ( BN/1 PNP ↓ BU/3 NPN	6 XS7E, 5 XS7C, 35 X 0,7 XS7E and XS7D, 1 (1) BK/4 (NO) BK/2 (NC) (1)	2-wire NO/M12 or BN/3 0 XS7D BU/4 2-wire NO/M12 X	+ <u>/-</u> /+ \$7••••CA•••	BN/1 +/- NC BU/2 (M12) -/+ BU/3 (M8) -/+
$\begin{array}{c} \text{Connector} \\ M12 & M8 \\ 4 \\ \hline \hline \hline \\ \end{array} \begin{array}{c} 3 \\ 1 \\ \hline \\ \end{array} \begin{array}{c} 4 \\ 3 \end{array} \begin{array}{c} 3 \\ 3 \end{array}$	Pre-cabled BU: Blue BN: Brown	3-wire	ms           ms           PNP           BN/1           PNP           ↓           BU/3           NPN           BN/1	6 XS7E, 5 XS7C, 35 X 0,7 XS7E and XS7D, 1 (1) BK/4 (NO) BK/2 (NC) (1) (1)	2-wire NO/M12 or BN/3 0 XS7D BU/4 2-wire NO/M12 X	+/- /+	BN/1 +/- NC BU/2 (M12) -/+ BU/3 (M8) -/+
Connector M12 M8 $4 \underbrace{(\bullet \bullet)}_{0}^{3} 1 \underbrace{(\bullet \bullet)}_{3}^{4} 3$	Pre-cabled BU: Blue BN: Brown	3-wire	ms           ms           ms           BN/1           PNP           ↓           BU/3           NPN           BN/1           NPN	6 XS7E, 5 XS7C, 35 X 0,7 XS7E and XS7D, 1 (1) BK/4 (NO) BK/2 (NC) (1) (1) (1) BK/4 (NO)	S7D     O XS7D     Contract of the second sec	+/- √+ \$7••••CA••• +/-	BN/1 +/- NC BU/2 (M12) -/+ BU/3 (M8)
Connector M12 M8 $4 \underbrace{(\bullet, \bullet)}{3} 1 \underbrace{(\bullet, \bullet)}{3} 3$	Pre-cabled BU: Blue BN: Brown	3-wire	ms           ms           BN/1           PNP           ↓           BU/3           BN/1           NPN	6 XS7E, 5 XS7C, 35 X 0,7 XS7E and XS7D, 1 (1) BK/4 (NO) BK/2 (NC) (1) (1)	S7D     O XS7D     C-wire NO/M12 or     BN/3     BN/3     BU/4     C-wire NO/M12 X     BN/1     BN/1	+/- √+ \$7•••••CA•••• +/- ↓; (1) F	BN/1 +/- NC BU/2 (M12) -/+ BU/3 (M8) -/+
Connector M12 M8 $4 \underbrace{4}_{1} \underbrace{3}_{2} 1 \underbrace{4}_{3} \underbrace{3}_{3}$	Pre-cabled BU: Blue BN: Brown	3-wire	ms           ms           PNP           BN/1           PNP           BU/3           NPN           BN/1           NPN           BU/3	6 XS7E, 5 XS7C, 35 X 0,7 XS7E and XS7D, 1 (1) BK/4 (NO) BK/2 (NC) (1) (1) BK/4 (NO) BK/2 (NC)	S7D     O XS7D     C-wire NO/M12 or     BN/3     BN/3     BU/4     C-wire NO/M12 X     BN/1     BN/1	+/- √+ \$7•••••CA•••• +/- ↓; (1) F	BN/1 +/- NC BU/2 (M12) -/+ BU/3 (M8)
Connector M12 M8 $4 \\ \underbrace{0}_{1} \\ \underbrace{0}_{2} \\ 1 \\ \underbrace{0}_{3} \\ \underbrace{0}$	Pre-cabled BU: Blue BN: Brown BK: Black	3-wire	ms ms PNP ( BN/1 PNP ↓ BU/3 BN/1 NPN ↓ BU/3 BU/3 Dim	6 XS7E, 5 XS7C, 35 X 0,7 XS7E and XS7D, 1 (1) BK/4 (NO) BK/2 (NC) (1) BK/4 (NO) BK/2 (NC) BK/2 (NC) BK/2 (NC) BK/2 (NC)	S7D     O XS7D     Constraints     Constrait     Constraint     Constraints     Constrai	+/- /+ S7••••CA•••• +/- -/+ and I	BN/1 +/- BU/2 (M12) -/+ BU/3 (M8)
Connector M12 M8 $4 \underbrace{4}_{1} \underbrace{4}_{2} \underbrace{3}_{2} \underbrace{1}_{2} \underbrace{4}_{3} \underbrace{3}_{3}$	Pre-cabled BU: Blue BN: Brown BK: Black	3-wire	ms           ms           PNP           BN/1           PNP           BU/3           NPN           BN/1           NPN           BU/3	6 XS7E, 5 XS7C, 35 X 0,7 XS7E and XS7D, 1 (1) BK/4 (NO) BK/2 (NC) (1) BK/4 (NO) BK/2 (NC) BK/2 (NC) BK/2 (NC) BK/2 (NC) BK/2 (NC)	S7D     O XS7D     Constraints     Constrait     Constraint     Constraints     Constrai	+/- /+ S7••••CA•••• +/- -/+ and I	BN/1 +/- NC BU/2 (M12) -/+ BU/3 (M8)
Connector M12 M8 4 1 2 3 1 3 3 3 4 3 3 3 4 3 3 4 3 3 4 3 3 4 3 4 3 4 3 4 3 4 3 4 5 3 4 5 3 4 5 5 5 5 5 5 5 5 5 5 5 5 5	Pre-cabled BU: Blue BN: Brown BK: Black	3-wire	ms ms PNP ( BN/1 PNP ↓ BU/3 BN/1 NPN ↓ BU/3 BU/3 Dim	6 XS7E, 5 XS7C, 35 X 0,7 XS7E and XS7D, 1 (1) BK/4 (NO) BK/2 (NC) (1) BK/4 (NO) BK/2 (NC) BK/2 (NC) BK/2 (NC) BK/2 (NC)	S7D     O XS7D     Constraints     Constrait     Constraint     Constraints     Constrai	+/- /+ S7••••CA•••• +/- -/+ and I	BN/1 +/- BU/2 (M12) -/+ BU/3 (M8)
Connector M12 M8 4 1 5 5 5 5 5 5 1 5 1 5 1 5 5 5 5 5 5 5 5 5 5 5 5 5	Pre-cabled BU: Blue BN: Brown BK: Black BK: Black	3-wire 2-wire	ms ms PNP BN/1 PNP ↓ BU/3 BN/1 NPN ↓ BU/3 Dim XS7C	6 XS7E, 5 XS7C, 35 X 0,7 XS7E and XS7D, 1 (1) BK/4 (NO) BK/2 (NC) (1) BK/4 (NO) BK/2 (NC) BK/2 (NC) BK/2 (NC) BK/2 (NC)	S7D     O XS7D     Contract of the second sec	+/- √+ \$7••••CA••• +/- -/+ (1) F and I XS	BN/1 +/- NC BU/2 (M12) -/+ BU/3 (M8) For M8 connector, NO NC outputs on terminal 4
Connector M12 M8 4 1 2 3 1 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 5 3 4 5 3 4 5 5 5 5 5 5 5 5 5 5 5 5 5	Pre-cabled BU: Blue BN: Brown BK: Black BK: Black	3-wire 2-wire	ms ms PNP BN/1 PNP ↓ BU/3 NPN BU/3 Dim XS7C C	6 XS7E, 5 XS7C, 35 X 0,7 XS7E and XS7D, 1 (1) BK/4 (NO) BK/2 (NC) (1) BK/4 (NO) BK/2 (NC) BK/2 (NC) BK/2 (NC) BK/2 (NC)	$\begin{array}{c} \textbf{STD} \\ \textbf{0} \textbf{XS7D} \\ \textbf{2-wire NO/M12 or} \\ \textbf{BN/3} \\ \textbf{WO} \\ \textbf{BU/4} \\ \textbf{U} \\ \textbf{VO} \\ \textbf{BU/4} \\ \textbf{U} \\ \textbf{WO} \\ \textbf{BU/4} \\ \textbf{U} \\ \textbf{WO} \\ \textbf{BU/4} \\ \textbf{U} \\ \textbf{WO} \\ \textbf{U} \\ \textbf{U} \\ \textbf{WO} \\ \textbf{U} $	+/- √+ \$7••••CA••• +/- -/+ (1) F and I XS	BN/1 +/- NC BU/2 (M12) -/+ BU/3 (M8) For M8 connector, NO NC outputs on terminal 4 S7E
Connector M12 M8 4 1 5 5 5 5 5 5 1 5 1 5 1 5 5 5 5 5 5 5 5 5 5 5 5 5	Pre-cabled BU: Blue BN: Brown BK: Black BK: Black	3-wire 2-wire	ms ms PNP BN/1 PNP ↓ BU/3 NPN BU/3 Dim XS7C C	6 XS7E, 5 XS7C, 35 X 0,7 XS7E and XS7D, 1 (1) BK/4 (NO) BK/2 (NC) (1) BK/4 (NO) BK/2 (NC) BK/2 (NC) BK/2 (NC) BK/2 (NC)	S7D     O XS7D     Contract of the second sec	+/- √+ \$7••••CA••• +/- -/+ (1) F and I XS	BN/1 +/- NC BU/2 (M12) -/+ BU/3 (M8) For M8 connector, NO NC outputs on terminal 4
Connector M12 M8 4 1 5 5 5 5 5 5 1 5 1 5 1 5 5 5 5 5 5 5 5 5 5 5 5 5	Pre-cabled BU: Blue BN: Brown BK: Black BK: Black	3-wire 2-wire	ms ms PNP BN/1 PNP ↓ BU/3 NPN BU/3 Dim XS7C C	6 XS7E, 5 XS7C, 35 X 0,7 XS7E and XS7D, 1 (1) BK/4 (NO) BK/2 (NC) (1) BK/4 (NO) BK/2 (NC) BK/2 (NC) BK/2 (NC) C(NC) BK/2 (NC) BK/2 (NC) BK/2 (NC) BK/2 (NC)	$\begin{array}{c} \textbf{STD} \\ \textbf{0} \textbf{XS7D} \\ \textbf{2-wire NO/M12 or} \\ \textbf{BN/3} \\ \textbf{WO} \\ \textbf{BU/4} \\ \textbf{U} \\ \textbf{VO} \\ \textbf{BU/4} \\ \textbf{U} \\ \textbf{WO} \\ \textbf{BU/4} \\ \textbf{U} \\ \textbf{WO} \\ \textbf{BU/4} \\ \textbf{U} \\ \textbf{WO} \\ \textbf{U} \\ \textbf{U} \\ \textbf{WO} \\ \textbf{U} $	+/- √+ \$7••••CA••• +/- -/+ (1) F and I XS	BN/1 +/- NC BU/2 (M12) -/+ BU/3 (M8) For M8 connector, NO NC outputs on terminal 4 BTE
Connector M12 M8 4 1 2 3 1 3 3 4 3 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 5 3 1 3 3 4 5 3 1 5 5 5 5 5 5 5 5 5 5 5 5 5	Pre-cabled BU: Blue BN: Brown BK: Black BK: BK: BK: BK: BK: BK: BK: BK: BK: BK:	3-wire 2-wire XS7D 120	ms ms PNP BN/1 PNP ↓ BU/3 NPN BU/3 Dim XS7C C	6 XS7E, 5 XS7C, 35 X 0,7 XS7E and XS7D, 1 (1) BK/4 (NO) BK/2 (NC) C(1) BK/2 (NC) BK/2 (NC) BK/2 (NC) BK/2 (NC) C(1) BK/2 (NC) BK/2 (NC) BK/2 (NC)	37D 0 XS7D 2-wire NO/M12 or BN/3  BN/3  BN/3  BN/3  BN/3  BN/3  BN/3  BN/3  BN/3  BN/3  BN/3  BN/3  BN/3  BN/3  BN/4   BN/3       	+/- √+ \$7••••CA••• +/- -/+ (1) F and I XS	BN/1 +/- NC BU/2 (M12) -/+ BU/3 (M8) For M8 connector, NO NC outputs on terminal 4 S7E
Connector M12 M8 4 1 2 3 1 3 3 4 3 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 5 3 1 3 3 4 5 5 5 5 5 5 5 5 5 5 5 5 5	Pre-cabled BU: Blue BN: Brown BK: Black BK: BK: BK: BK: BK: BK: BK: BK: BK: BK:	3-wire 2-wire 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	ms ms PNP BN/1 PNP ↓ BU/3 NPN BU/3 Dim XS7C C	6 XS7E, 5 XS7C, 35 X 0,7 XS7E and XS7D, 1 (1) BK/4 (NO) BK/2 (NC) (1) BK/4 (NO) BK/2 (NC) BK/2 (NC) BK/2 (NC) C(NC) BK/2 (NC) BK/2 (NC) BK/2 (NC) BK/2 (NC)	$\begin{array}{c} \textbf{STD} \\ \textbf{0} \textbf{XS7D} \\ \textbf{2-wire NO/M12 or} \\ \textbf{BN/3} \\ \textbf{WO} \\ \textbf{BU/4} \\ \textbf{U} \\ \textbf{VO} \\ \textbf{BU/4} \\ \textbf{U} \\ \textbf{WO} \\ \textbf{BU/4} \\ \textbf{U} \\ \textbf{WO} \\ \textbf{BU/4} \\ \textbf{U} \\ \textbf{WO} \\ \textbf{U} \\ \textbf{U} \\ \textbf{WO} \\ \textbf{U} $	+/- √+ \$7••••CA••• +/- -/+ (1) F and I XS	BN/1 +/- NC BU/2 (M12) -/+ BU/3 (M8) For M8 connector, NO NC outputs on terminal 4 BTE
Connector M12 M8 4 1 2 3 1 3 3 4 3 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 5 3 1 3 3 4 5 3 1 5 5 5 5 5 5 5 5 5 5 5 5 5	Pre-cabled BU: Blue BN: Brown BK: Black BK: BK: BK: BK: BK: BK: BK: BK: BK: BK:	3-wire 2-wire XS7D 120	ms ms PNP BN/1 PNP ↓ BU/3 NPN BU/3 Dim XS7C C	6 XS7E, 5 XS7C, 35 X 0,7 XS7E and XS7D, 1 (1) BK/4 (NO) BK/2 (NC) C(1) BK/2 (NC) BK/2 (NC) BK/2 (NC) BK/2 (NC) C(1) BK/2 (NC) BK/2 (NC) BK/2 (NC)	37D 0 XS7D 2-wire NO/M12 or BN/3  BN/3  BN/3  BN/3  BN/3  BN/3  BN/3  BN/3  BN/3  BN/3  BN/3  BN/3  BN/3  BN/3  BN/4   BN/3       	+/- √+ \$7•••••CA•••• +/- -/+ (1) F and I XS	BN/1 +/- $BU/2 (M12) -/+$ BU/3 (M8) For M8 connector, NO NC outputs on terminal 4 F(2) F(2) F(2)
Connector M12 M8 4 1 2 3 1 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 4 3 3 4 3 4 3 4 3 1 3 3 4 5 3 1 3 5 5 5 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6	Pre-cabled BU: Blue BN: Brown BK: Black BK: BK: BK: BK: BK: BK: BK: BK: BK: BK:	3-wire 2-wire 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	ms ms PNP BN/1 PNP ↓ BU/3 NPN BU/3 Dim XS7C C	6 XS7E, 5 XS7C, 35 X 0,7 XS7E and XS7D, 1 (1) BK/4 (NO) BK/2 (NC) C(1) BK/2 (NC) BK/2 (NC) BK/2 (NC) BK/2 (NC) C(1) BK/2 (NC) BK/2 (NC) BK/2 (NC)	STD 0 XS7D 2-wire NO/M12 or BN/3  2-wire NO/M12 X BU/4 2-wire NO/M12 X BN/1 C BU/4 C C C C C C C C C C C C C C C C C C C	+/- √+ \$7•••••CA•••• +/- -/+ (1) F and I XS	BN/1 +/- NC BU/2 (M12) -/+ BU/3 (M8) For M8 connector, NO NC outputs on terminal 4 BTE
Connector M12 M8 4 1 2 3 1 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 4 3 3 4 3 4 3 4 3 1 3 3 4 5 3 1 3 5 5 5 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6	Pre-cabled BU: Blue BN: Brown BK: Black BK: BK: BK: BK: BK: BK: BK: BK: BK: BK:	3-wire 2-wire 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	ms ms PNP BN/1 PNP ↓ BU/3 NPN BU/3 Dim XS7C C	6 XS7E, 5 XS7C, 35 X 0,7 XS7E and XS7D, 1 (1) BK/4 (NO) BK/2 (NC) C(1) BK/2 (NC) BK/2 (NC) BK/2 (NC) BK/2 (NC) C(1) BK/2 (NC) BK/2 (NC) BK/2 (NC)	37D 0 XS7D 2-wire NO/M12 or BN/3  BN/3  BN/3  BN/3  BN/3  BN/3  BN/3  BN/3  BN/3  BN/3  BN/3  BN/3  BN/3  BN/3  BN/4   BN/3       	+/- √+ \$7•••••CA•••• +/- -/+ (1) F and I XS	BN/1 +/- $BU/2 (M12) -/+$ $BU/3 (M8)$ For M8 connector, NO NC outputs on terminal 4 <b>57E</b> $(1)$ $F(2)$
Connector M12 M8 4 1 2 3 1 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 5 3 5 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6	Pre-cabled BU: Blue BN: Brown BK: Black ances (mm) e≥ XS7E XS7C 30 45 e≥ XS7E XS7C 72 110	3-wire 2-wire 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	ms ms PNP BN/1 PNP BN/3 NPN BN/1 NPN BN/1 Dim SCC C C C C C C	6 XS7E, 5 XS7C, 35 X 0,7 XS7E and XS7D, 1 (1) BK/2 (NC) BK/2 (NC) BK/2 (NC) BK/2 (NC) BK/2 (NC) BK/2 (NC) BK/2 (NC)	STD 0 XS7D 2-wire NO/M12 or BN/3  2-wire NO/M12 X BU/4 2-wire NO/M12 X BN/1 C BU/4 C C C C C C C C C C C C C C C C C C C	+/- /+ \$7••••CA••• +/- -/+ (1) F and I XS	$\frac{BN/1}{BU/2 (M12)} +/-$ BU/2 (M12) BU/3 (M8) For M8 connector, NO NC outputs on terminal 4 <b>S7E</b> (1) <b>F</b> (2) <b>B</b>
Connector M12 M8 4 1 2 3 1 3 4 3 1 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 5 3 5 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6	Pre-cabled BU: Blue BN: Brown BK: Black BK: Black ances (mm) e≥ XS7E XS7C 30 45 e≥ XS7E XS7C 72 110	3-wire 2-wire 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	ms ms PNP BN/1 PNP BN/3 NPN BN/1 NPN BN/1 Dim SCC C C C C C C	6 XS7E, 5 XS7C, 35 X 0,7 XS7E and XS7D, 1 (1) BK/4 (NO) BK/2 (NC) C(1) BK/2 (NC) BK/2 (NC) BK/2 (NC) BK/2 (NC) C(1) BK/2 (NC) BK/2 (NC) BK/2 (NC)	STD 0 XS7D 2-wire NO/M12 or BN/3 BN/3 2-wire NO/M12 X BU/4 2-wire NO/M12 X BN/1 BN/1 BN/4 BN/1 C BN/4 C C C C C C C C	+/- /+ \$7••••CA••• +/- -/+ (1) F and I XS 1/2 (1)	$\frac{BN/1}{NC} + \frac{1}{BU/2} + \frac{1}{BU/2} + \frac{1}{BU/3} + $
Connector M12 M8 4 3 1 3 1 3 4 3 1 3 3 4 5 3 5 5 5 6 6 6 7 6 7 7 7 7 7 7 7 7 7 7 7 7 7	Pre-cabled BU: Blue BN: Brown BK: Black ances (mm) e≥ XS7E XS7C 30 45 e≥ XS7E XS7C 72 110	3-wire 2-wire 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	ms ms PNP BN/1 PNP BU/3 NPN BU/3 Dim XS7C C - - - - - - - - - - - - -	6 XS7E, 5 XS7C, 35 X 0,7 XS7E and XS7D, 1 (1) BK/4 (NO) BK/2 (NC) (1) BK/2 (NC) BK/2 (NC) BK/2 (NC) BK/2 (NC) BK/2 (NC) BK/2 (NC) BK/2 (NC) BK/2 (NC) BK/2 (NC) BK/2 (NC)	STD 0 XS7D 2-wire NO/M12 or BN/3 2-wire NO/M12 X DNO BU/4 2-wire NO/M12 X 0 BN/1 () NO BU/4 () () () () () () () () () ()	+/- /+ S7••••CA••• +/- -/+ (1) F and I XS 1/2 (1) (2)	BN/1 +/- BU/2 (M12) -/+ BU/3 (M8) or M8 connector, NO NC outputs on terminal 4 STE (1) F (2) E B LED For CHC type screws
Connector M12 M8 4 1 2 3 1 3 4 3 1 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 3 3 4 5 3 5 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6	Pre-cabled BU: Blue BN: Brown BK: Black BK: BK: BK: BK: BK: BK: BK: BK: BK: BK:	3-wire 2-wire 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	ms ms PNP BN/1 PNP BU/3 NPN BU/3 Dim XS7C C - - - - - - - - - - - - -	6 XS7E, 5 XS7C, 35 X 0,7 XS7E and XS7D, 1 (1) BK/2 (NC) BK/2 (NC)	S7D         0 XS7D         2-wire NO/M12 or         BN/3         U         NO         BN/4         2-wire NO/M12 X         BN/1         U         NO         BU/4         O         B         E         (1)         B         C         A (connector)	+/- /+ S7••••CA••• +/- -/+ (1) F and I XS (1) (2) C D	BN/1 +/- $BU/2 (M12) +/+$ $BU/3 (M8) +/+$ $BU/3 (M8) +/+$ $BU/3 (M8) +/+$ $F (2) + F (2) + F (2)$ $E + F + F + F + F + F + F + F + F + F +$
Connector M12 M8 4 3 1 3 1 3 4 3 1 3 3 4 3 3 4 3 3 4 3 1 3 3 4 3 3 4 3 1 3 3 4 3 3 4 3 1 3 3 4 5 3 5 5 5 5 5 5 5 5 5 5 5 5 5	Pre-cabled BU: Blue BN: Brown BK: Black BK: BK: BK: BK: BK: BK: BK: BK: BK: BK:	3-wire 2-wire 120 <b>XS7D</b> 300 <b>XS7D</b> 120	ms ms PNP BN/1 PNP BU/3 NPN BN/1 NPN BU/3 Dim XS7C Sensc XS7E	6 XS7E, 5 XS7C, 35 X 0,7 XS7E and XS7D, 1 (1) BK/2 (NC) BK/2 (NC)	STD         0 XS7D         2-wire NO/M12 or         BN/3         U         NO         BN/4         2-wire NO/M12 X         BN/1         U         NO         BU/4         NO         BU/4         O         B         C         C         B         C	+/- /+ S7••••CA••• +/- -/+ (1) F and I XS (1) (2) C D 13 8.8	BN/1 +/-BU/2 (M12) +/+BU/3 (M8)
Connector M12 M8 4 3 1 3 1 3 4 3 1 3 3 4 3 3 4 3 3 4 3 1 3 3 4 3 3 4 3 1 3 3 4 3 3 4 3 1 3 3 4 5 3 5 5 5 5 5 5 5 5 5 5 5 5 5	Pre-cabled BU: Blue BN: Brown BK: Black BK: BK: BK: BK: BK: BK: BK: BK: BK: BK:	3-wire 2-wire 120 <b>XS7D</b> 300 <b>XS7D</b> 120	ms         ms         ms         ms         BN/1         PNP         BU/3         BN/1         NPN         BU/3         Dim         XS7C         Sensoc         XS7E         XS7C	6 XS7E, 5 XS7C, 35 X 0,7 XS7E and XS7D, 1 (1) BK/2 (NC) BK/2 (NC) BK/2 (NC) BK/2 (NC) BK/2 (NC) Ensions C/D/E XS7C/I	STD         0 XS7D         2-wire NO/M12 or         BN/3         U         NO         BN/3         2-wire NO/M12 X         BN/1         U         NO         BU/4         O         BN/1         Image: Comparison of the system         B         Image: Comparison of the system         Image: Comparison of the system <td>+/- /+ S7••••CA••• +/- -/+ (1) F and I XS () (2) C D 13 8.8 15 9.8</td> <td>BN/1 +/- NC BU/2 (M12) -/+ BU/3 (M8)</td>	+/- /+ S7••••CA••• +/- -/+ (1) F and I XS () (2) C D 13 8.8 15 9.8	BN/1 +/- NC BU/2 (M12) -/+ BU/3 (M8)
Connector M12 M8 4 () 1 2 1 3 3 4 () 3 3 4 () 3 3 4 () 3 3 4 () 3 4 () 3 1 () 3 () 3 () 4 () 3 () 4 () 3 () 4 () 3 () 4 () 3 () 4 () 3 () 4 () 3 () 4 () 3 () 4 () 3 () () () () () () () () () ()	Pre-cabled BU: Blue BN: Brown BK: Black BK: BK: BK: BK: BK: BK: BK: BK: BK: BK:	3-wire 2-wire 120 <b>XS7D</b> 300 <b>XS7D</b> 120	ms ms PNP BN/1 PNP BU/3 NPN BN/1 NPN BU/3 Dim XS7C Sensc XS7E	6 XS7E, 5 XS7C, 35 X 0,7 XS7E and XS7D, 1 (1) BK/2 (NC) BK/2 (NC)	STD         0 XS7D         2-wire NO/M12 or         BN/3         U         NO         BN/4         2-wire NO/M12 X         BN/1         U         NO         BU/4         NO         BU/4         O         B         C         C         B         C	+/- /+ S7••••CA••• +/- -/+ (1) F and I XS (1) (2) C D 13 8.8	BN/1 +/- NC BU/2 (M12) -/+ BU/3 (M8)





103782 XS8E1A1••M8



XS8•1A1••L01M12 XS8•1A1••L01U20



Flat, flush mountable using teach mode (1) Two-wire AC or DC Three-wire DC, solid-state output

			n format (2)		
Sensing distance (Sn) mm	Function	Output	Connection	Reference	Weight (kg)
	ire wit	h overle	oad and short-circuit prote	ection	
15	NO	PNP	Pre-cabled (L = 2 m) (3)	XS8E1A1PAL2	0.075
			M8 connector	XS8E1A1PAM8	0.040
			Remote M12 connector	XS8E1A1PAL01M12	0.040
		NPN	Pre-cabled (L = 2 m) (3)	XS8E1A1NAL2	0.075
1	NC PN	C PNP	Pre-cabled (L = 2 m) (3)	XS8E1A1PBL2	0.075
			M8 connector	XS8E1A1PBM8	0.040
		NPN	Pre-cabled (L = 2 m) (3)	XS8E1A1NBL2	0.075
			M8 connector	XS8E1A1NBM8	0.040
Two-wir	e $\sim$ or	unprot	ected (4)		
15	NO	-	Pre-cabled (L = 2 m) <i>(3)</i>	XS8E1A1MAL2	0.070
			Remote 1/2"-20UNF connector	XS8E1A1MAL01U20	0.040
	NC	-	Pre-cabled (L = 2 m) (3)	XS8E1A1MBL2	0.070
			Remote 1/2"-20UNF connector	XS8E1A1MBL01U20	0.040

Sensing distance (Sn) mm	Function Output		Connection	Reference	Weight (kg)
Three-w	vire wit	h overle	oad and short-circuit pro	otection	
25	NO	PNP	Pre-cabled (L = 2 m) (3)	XS8C1A1PAL2	0.095
			M8 connector	XS8C1A1PAM8	0.060
			Remote M12 connector	XS8C1A1PAL01M12	0.060
		NPN	Pre-cabled (L = 2 m) (3)	XS8C1A1NAL2	0.095
	NC	PNP	Pre-cabled (L = 2 m) (3)	XS8C1A1PBL2	0.095
			M8 connector	XS8C1A1PBM8	0.060

Two-w	/ire $\sim$ or	unpr	otected (4)		
25	NO	-	Pre-cabled (L = 2 m) (3)	XS8C1A1MAL2	0.090
			Remote 1/2"-20UNF conne	ctor XS8C1A1MAL01U20	0.060
	NC	-	Pre-cabled (L = 2 m) (3)	XS8C1A1MBL2	0.090
			Remote 1/2"-20UNF conne	ctor XS8C1A1MBL01U20	0.060

Flat, 80	) x 80 x	26 mn	n format (2)		
Sensing distance (Sn) mm	Function	Output	Connection	Reference	Weight (kg)
Three-wi	ire witl	h overlo	ad and short-circuit prote	ection	
60	NO	PNP	Pre-cabled (L = 2 m) (3)	XS8D1A1PAL2 (5)	0.390
			M12 connector	XS8D1A1PAM12 (5)	0.340
		NPN	Pre-cabled (L = 2 m) (3)	XS8D1A1NAL2 (5)	0.390
	NC	PNP	Pre-cabled (L = 2 m) (3)	XS8D1A1PBL2 (5)	0.390
			M12 connector	XS8D1A1PBM12 (5)	0.340
Two-wire	$ m e  \sim   m or  =$	unprote	ected (4)		
60	NO	-	Pre-cabled (L = 2 m) (3)	XS8D1A1MAL2 (5)	0.390

wo-wiii	B 0 01	unprou			
)	NO	-	Pre-cabled (L = 2 m) (3)	XS8D1A1MAL2 (5)	0.390
			1/2"-20UNF connector	XS8D1A1MAU20 (5)	0.340
	NC	_	Pre-cabled (L = 2 m) (3)	XS8D1A1MBL2 (5)	0.390
			1/2"-20UNF connector	XS8D1A1MBU20 (5)	0.340

(1) For further information on flush or non-flush mountable sensors using teach mode, see page 22

22.
(2) For accessories, see page 120.
(3) For a 5 m long cable replace L2 by L5; for a 10 m long cable replace L2 by L10.
(4) It is essential to connect a 0.4 A "quick-blow" fuse in series with the load.
(5) For clipping onto 35 mm omega rail or 80 x 80 x 40 mm format, add DIN to the end of the reference. Example: XS8D1A1PAL2DIN.





XS8C1A1••M8



XS8D1A1••L2



XS8D1A1eeL2DIN

XS8D1A1••M12





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**Inductive proximity sensors** XS range, general purpose with increased range Flat, flush mountable using teach mode (1) Two-wire AC or DC Three-wire DC, solid-state output

Characteristics											
Sensor type						XS8E•••••M8, XS8C••••M8, XS8D••••M12,		XS8E••••L01M XS8E••••L01U XS8C••••L01W	20, 112,	XS8E••••L2, XS8C••••L2, XS8D••••L2	
Product certifications						XS8DeeeeU20 cULus, (€, UKCA, EC0		XS8CeeeeL01U	20		
Connection	(	Connecto	r			M8 except XS8•••••M12: M12 XS8•••••U20: 1/2"-		Remote on 0.15 m XS8•••••L01M XS8•••••L01U	12: M12	-	
	F	Pre-cable	d			_		-		Length: 2 m	
Sensing distance	>	(S8E	Nominals	ensing dist. Sn	mm	015 not flush mounte	ed / <b>010</b> fl	ush mounted			
and adjustment zone			Fine adj	ustment zone	mm	515 not flush mounte	ed / <b>510</b> flu	ush mounted			
	>	(S8C	Nominal	ensing dist. Sn	mm	025 not flush mounte	ed / <b>015</b> flu	ush mounted			
	_		Fine adj	ustment zone	mm	825 not flush mounte	ed / <b>815</b> flu	ush mounted			
	>	(S8D	Nominals	sensing dist. Sn	mm	060 not flush mounte	ed / <b>040</b> flu	ush mounted			
			Fine adj	ustment zone		2060 not flush moun	ted / 2040	flush mounted			
Differential travel					%	115 of effective sens	ing distance	e (Sr)			
Degree of protection	C	Conformir	ng to IEC	60529		IP 67				IP 68	
Storage temperature					°C	- 40+85					
Operating temperature					°C	- 25+70					
Materials		Case				PBT					
March 1.		Cable	===	20000 0 -		-	16 17 1	PvR 3 x 0.34 mm <sup>2</sup>	and PvR 2 x	0.34 mm <sup>2</sup> ≂	
Vibration resistance			<u> </u>	30068-2-6		$25 \text{ gn}$ , amplitude $\pm 2 \text{ m}$	m (f = 10 to	55 Hz)			
Shock resistance				60068-2-27		50 gn, duration 11 ms					
Indicators Output state Supply on and teach mode					Yellow LED						
			and teac	n mode		Green LED					
Rated supply	-	s-wire			V	1224 with protection	<u> </u>	erse polarity			
voltage 2-wire		V V	$\sim$ or == 24240 ( $\sim$ 50	J/60 HZ)							
Voltage limits (including ripple)	-	8-wire			V	1036 ∼ or 20264					
Insulation class	2	2-wire			V		or: III				
Current consumption, no	load 3	wiro			mA	≤ 10	JI. III				
Residual current, open s		-wire			mA	≤ 1.5					
Switching capacity		-wire			mA	≤ 100 XS8E, ≤ 200 XS	8C and XS8	<b>D</b> with overload an	nd short-circuit n	rotection	
ownening capacity	_	2-wire			mA	5200 ≂ <b>XS8E</b> , 53					
Voltage drop, closed stat		-wire			V	≤2	00 0 0000	and <b>XCOD</b> , 0200		000	
voltago al op, olocoa ota	-	-wire			v	≤5.5					
Maximum switching freq	uencv				Hz	2000 XS8E, 1000 XS8C, 150 XS8D					
Delays		irst-up			ms	≤ 10 XS8E, XS8C and			XS8C, ≤ 15 XS8	BD (2-wire)	
-	F	Response			ms	≤0.3			· · · ·		
	F	Recovery			ms	≤ 0.8 <b>XS8E</b> and <b>XS8C</b> ,	, ≤ 6 <b>XS8D</b>				
Wiring schemes											
Connector		Pre-ca	abled		PNP/	M12 or M8	NPN/M	12 or M8	2-wire 1	2"-20UNF	
M8 M12 1/2"-20	UNF	BU: Blue			_				2 1110 1		
4 4 0 1		BN: Brov			BN/1 PNP	+ BK/4 (NO)	BN/1 NPN	1 📥 🕂			
	$\sim$	BK: Blac				BK/2 (NC)		BK/4 (NO)	$\Diamond$		
$1 \bigcirc 3 (( \bullet \bullet)) (( \bullet \bullet))$	•)				BU/3			BK/2 (NC)		J <sub>BU/3</sub> ∐ − ≂	
	$\checkmark_3$					connector, NO and NC	BU/3	erminal 4			
Setting-up						ensions					
· ·	liater	oo /					Veeco		VOAF		
Minimum mounting o				VOCD		C/D/E	XS8C/D		XS8E		
Side by side	e≥	XS8E		XS8D			- B		(1)		
	Flush mounte	40 d	60	200		·	E E	<u></u>			
e e	Not flus		125	600		1					
a to a to	mounte									<u>(3)</u>	
<b>A A</b>						Ω		ш	□ <b>□</b>		
Face to face	e≥	XS8E	XS8C	XS8D					B		
	Flush	80	120	400		Ļ	10	10			
e	mounte		0								
E E	Not flus mounte		250	not recom-	Ţ	<u>F(3)</u> /	T.	1			
A $A$	mounte	u		recom- mended	Ш				(1) LED		
Facing a metal object	e≥	XS8E	XS8C	XS8D				m∏ o <sup>†</sup>	. ,	node button	
		10	15	40			(2)		. ,	C type screws	
					Sens	or A (cable) A	(connector			GH	
e.					XS8E	1411	•	, <u>26 13 8.</u>	8 <mark>20 3.5</mark>		
E					XS8C	14 11		40 15 9.			
$\mathbf{A}$					XS8D	<u>23 18</u>		80 26 16			
-					XS8De	• <b>DIN</b> 23 18	0	80 40 30	) 65 5.1	22.5 37.8	

### References, characteristics

# **Inductive proximity sensors** XS range, general purpose Cubic case, 40 x 40 x 70 mm,

M12 or 1/2"-20UNF connector 5-position turret head

Sensor type

#### Flush mountable in metal

Non-flush mountable in metal



Nominal sensing distance	(Sn)		mm	15	20	40				
References										
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	NO			XS7C2A1DAM12	XS8C2A1DAM12	XS8C2A4DAM12	XS8C2A4CAM12 (3)			
	NC			XS7C2A1DBM12	-	-	_			
2-wire ( $\sim/\dots$ ) unprotected				-	XS8C2A1MAU20	XS8C2A4MAU20				
	NC			-	XS8C2A1MBU20	XS8C2A4MBU20	-			
Weight			kg	0.149	0.149	0.149	0.149			
Characteristics										
Operating zone			mm	012	016	032				
Product certifications				cULus, CE, UKCA, E2	(3-wire and 4-wire)					
Conformity to standards				IEC 60947-5-2	, ,					
Connection				M12 connector for v						
Differential travel			%	1/2 "-20UNF connecto 315 of Sr	r for $\sim/$ versions					
Degree of protection	Conforming to	IEC 60529	70	IP 65, IP 67 and IP 69k	<					
Source of protection	and DIN 4005				•					
Temperature Storage			°C	- 40+ 85	- 40+ 85					
	Operation (2)		°C	- 25+ 70						
Material				Case: PBT						
Vibration resistance		IEC 60068-2-6		25 gn, amplitude ± 2 mm (f = 1055 Hz)						
Shock resistance		IEC 60068-2-27		50 gn for 11 ms						
Indicators	Output state Power on			Yellow LED	, 3-wire and 2-wir					
Rated supply voltage	Fower on	4-wire	v	1248 with protection	· · ·					
rated cupping voltage		3-wire ===	v		against reverse polari					
		2-wire	V		against reverse polari					
		2-wire ~/	V	24240 (~ 50/60 Hz)		<u> </u>				
Voltage limits		4-wire	v	1058	·					
(including ripple)		3-wire	V	1036						
		2-wire	V	1058						
		2-wire ~/	v	20264						
Insulation class		=	-							
		~/		1						
Current consumption,		3-wire and	mA	< 15						
no-load		4-wire								
Residual current, open stat	e	2-wire ===	mA	< 0.6						
		2-wire ~/	mA	1.5						
Switching capacity		3-wire and 4-wire ===	mA	< 200 with overload an	nd short-circuit protection	on				
		2-wire	mA	< 100 with overload an	nd short-circuit protection	on				
		2-wire ~/	mA	∼: 5300 <i>(</i> 1 <i>)</i>						
				: 5200 mA (1)						
Voltage drop, closed state		3-wire and 4-wire <del></del>	v	<2						
		2-wire	V	< 4.2						
		2-wire $/{\sim}$	V	< 5.5						
Maximum switching freque	ncy		kHz	Flush mountable: == 3	00, ~ 25					
	-			Non-flush mountable:	<del></del> 150, ∼ 25					
	Delays First-up			7 (3-wire and 4-wire $=$ ), 20 (2-wire $=$ and 2-wire $=$ / $\sim$ )						
Delays	First-up		ms		<u>/· · · · · · · · · · · · · · · · · · · </u>					
Delays	First-up Response Recovery		ms ms	7 (3-wire and 4-wire $=$ Flush mountable: $\leq 1.2$ Flush mountable: $\leq 1.8$	2. Non-flush mountable	e: ≤ 1.4				

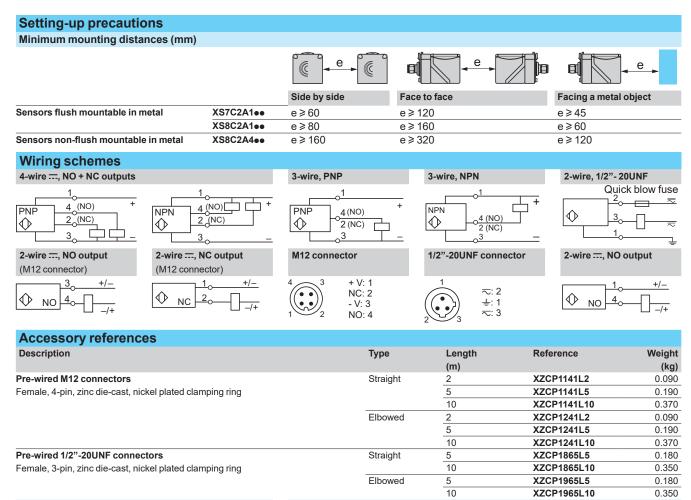
(1) Sensor must be protected by a 0.4 A quick-blow fuse connected in series with the load.
 (2) Sensors are available for very low temperatures (suffix **TF**: - 40°C, + 70°C) or very high temperatures (suffix **TT**: - 25°C, + 85°C). Please consult our Customer Care Centre.

(3) NO terminal 1 & 4 - the NO output is connected to terminal 1 and 4 of M12 connectors.

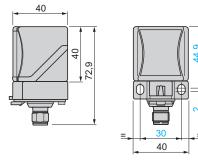


### Inductive proximity sensors

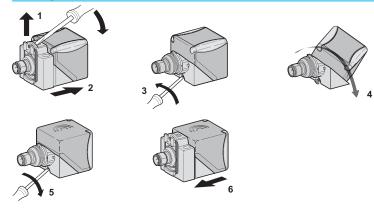
XS range, general purpose Cubic case, 40 x 40 x 70 mm, M12 or 1/2"-20UNF connector 5-position turret head



#### **Dimensions**



### **Head positions**



### References, characteristics

**Inductive proximity sensors** XS range, general purpose Plastic case, 40 x 40 x 117 mm, plug-in 5-position turret head

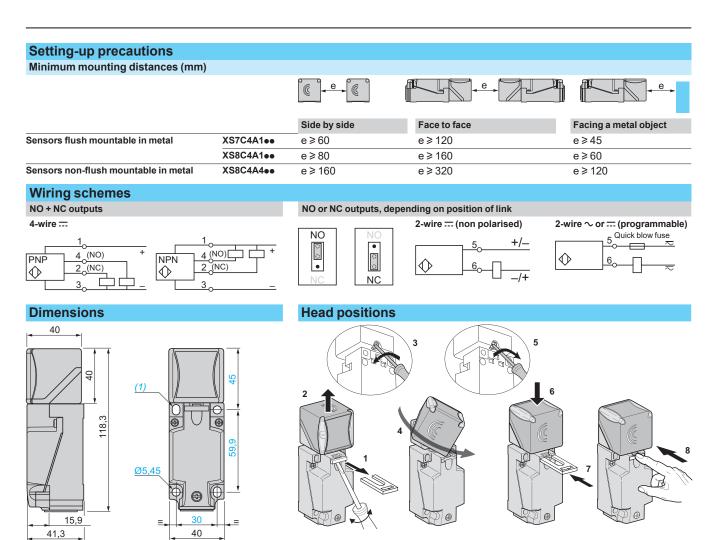
Sensor type			Flush mountable ir	metal	Non-flush mounta	ble in metal			
Nominal sensing dista	nce (Sn)	mm	15	20	40				
Connection type			-	-	Cable entry	M12 connector			
References									
4-wire	PNP NO+NC		-	XS8C4A1PCP20	XS8C4A4PCP20	XS8C4A4PCM12			
	NPN NO+NC		-	XS8C4A1NCP20	XS8C4A4NCP20				
2-wire	NO or NC programmable		XS7C4A1DPP20	XS8C4A1DPP20	XS8C4A4DPP20				
2-wire (~/==) unprotec	ted NO or NC programmable		XS7C4A1MPP20	XS8C4A1MPP20	XS8C4A4MPP20				
<u>(1)</u>		ka	0.244	0.244	0.244	0.244			
Weight		kg	Note: These sensors h	ave an M20 cable entry CG13) or a 1/2" NPT cal		ied with a PG 13.5 cable			
Characteristics									
Operating zone		mm	012	016	032				
Product certifications			cULus, C€, UKCA, E2 (						
Conformity to standard	ls		IEC 60947-5-2	· · ·					
Connection	-			bing capacity: 2 or 4 x 1.	5 mm2 / 2 or 4 x 16 AWG	i (2)			
Differential travel		%	315 of Sr			( )			
Degree of protection	Conforming to IEC 60529 and DIN 40050		IP 65, IP 67 and IP 69K						
Temperature	Storage Operation (3)	°C °C	- 40+ 85 - 25+ 70						
Material	Operation (3)	U	Case: PBT						
Vibration resistance	Conforming to IEC 60068-2-6		25 gn, amplitude ± 2 m	m (f = 1055 Hz)					
Shock resistance	Conforming to IEC 60068-2-27		50 gn for 11 ms						
Indicators	Output state		Yellow LED						
Deted sum house literat	Power on	V		and 2-wire ~/ versi					
Rated supply voltage	4-wire 2-wire	V V	1248 with protection						
	2-wire 2-wire ∼/	V	1248 with protection 24240 ( $\sim$ 50/60 Hz)	against reverse polarity					
Voltage limits	4-wire	V	1058						
(including ripple)	2-wire	V	1058						
	2-wire ~/	V	20264						
Insulation class		-	20204 :□ 						
Current consumption, no-load		mA	< 15						
Residual current, open		mA	< 0.6						
state	2-wire ~/	mA	1.5	distant stars from the star					
Switching capacity	4-wire	mA		d short-circuit protection					
	2-wire 2-wire ~/	mA mA	< 100 with overload and $\sim$ : 5300 (1)	d short-circuit protection					
Voltage drop, closed	4-wire	V	<pre>: 5200 (1) &lt;2</pre>						
state	2-wire	V	< 4.2						
	$\frac{2 \text{-wire}}{2 \text{-wire}}$	v	< 5.5						
Maximum switching fro		V Hz	Flush mountable: 30	0.0.25					
Maximum switching fre	First-up	Hz	Non-flush mountable: 30 7 ms (3-wire and 4-wire	= 150, ∼ 25	nd 2-wire $\frac{1}{1}/\sqrt{2}$				
	Response	ms		. Non-flush mountable:					
	Recovery	ms		ms. Non-flush mountable.					

Sensor must be protected by a 0.4 A quick-blow fuse connected in series with the load.
 These sensors are supplied without a cable gland. An adaptable PG 13.5 cable gland is available (reference XSZPE13). Accessories are available for connection to an M12 or 7/8"-16UN connector which can be added to the PG 13.5 sensor. Please consult our Customer Care Centre.
 Sensors are available for very low temperatures (suffix TF: - 40°C, + 70°C) or very high temperatures (suffix TT: - 25°C, + 85°C). Please consult our Customer Care Centre.



### Inductive proximity sensors

XS range, general purpose Plastic case, 40 x 40 x 117 mm, plug-in 5-position turret head



(1) 2 elongated holes Ø 5.3 x 7 cm.

Tightening torque of cover fixing screws and clamp screws: < 1.2 N.m / < 10.62 lb-in

**Inductive proximity sensors** XS range, general purpose Multivoltage sensor, cylindrical, Flush mountable and non-flush mountable Two-wire AC or DC, short-circuit protection

ed M18 x 1 le O Pre-cabled (L = 1/2"-20UNF cc C Pre-cabled (L = 1/2"-20UNF cc ntable O Pre-cabled (L = 1/2"-20UNF cc C Pre-cabled (L = 1/2"-20UNF cc
Ie         Pre-cabled (L =           O         Pre-cabled (L =           1/2"-20UNF cc         Pre-cabled (L =           1/2"-20UNF cc         Pre-cabled (L =           0         Pre-cabled (L =           1/2"-20UNF cc         Pre-cabled (L =           0         Pre-cabled (L =           0         Pre-cabled (L =           0         Pre-cabled (L =           0         Pre-cabled (L =
Ie         Pre-cabled (L =           O         Pre-cabled (L =           1/2"-20UNF cc         Pre-cabled (L =           1/2"-20UNF cc         Pre-cabled (L =           0         Pre-cabled (L =           1/2"-20UNF cc         Pre-cabled (L =           0         Pre-cabled (L =           0         Pre-cabled (L =           0         Pre-cabled (L =           0         Pre-cabled (L =
1/2"-20UNF cc           C         Pre-cabled (L :           1/2"-20UNF cc           ntable           O         Pre-cabled (L :           1/2"-20UNF cc           T/2"-20UNF cc           C         Pre-cabled (L :           C         Pre-cabled (L :           C         Pre-cabled (L :           C         Pre-cabled (L :
C Pre-cabled (L : 1/2"-20UNF cc ntable O Pre-cabled (L : 1/2"-20UNF cc C Pre-cabled (L :
1/2"-20UNF cc           ntable           O         Pre-cabled (L = 1/2"-20UNF cc           1/2"-20UNF cc           C         Pre-cabled (L = 1/2"-20UNF cc
Pre-cabled (L =           0         Pre-cabled (L =           1/2"-20UNF cc           C         Pre-cabled (L =
0 Pre-cabled (L = 1/2"-20UNF cc C Pre-cabled (L =
0 Pre-cabled (L = 1/2"-20UNF cc C Pre-cabled (L =
C Pre-cabled (L =
ed M30 x 1.5
le
O Pre-cabled (L :
1/2"-20UNF co
C Pre-cabled (L:
1/2"-20UNF cc
ntable
O Pre-cabled (L :
1/2"-20UNF co
C Pre-cabled (L
1/2"-20UNF cc
s (2)
For use with
sensors (mm)
Ø 18
Ø 30
able <b>18</b>

Sensing distance (Sn) mm	Function	Connection	Reference	Weight (kg)
Ø 18, thre	eaded M18 x 1			
Flush mour	ntable			
5	NO	Pre-cabled (L = 2 m) $(1)$	XS1M18MA250	0.120
		1/2"-20UNF connector	XS1M18MA250K	0.060
	NC	Pre-cabled (L = $2 \text{ m}$ ) (1)	XS1M18MB250	0.120
		1/2"-20UNF connector	XS1M18MB250K	0.060
Non flush n	nountable			
8	NO	Pre-cabled (L = $2 \text{ m}$ ) (1)	XS2M18MA250	0.120
		1/2"-20UNF connector	XS2M18MA250K	0.060
	NC	Pre-cabled (L = 2 m) $(1)$	XS2M18MB250	0.120
		1/2"-20UNF connector	XS2M18MB250K	0.060
Ø 30, thre	eaded M30 x 1.5			
Flush mour	ntable			
10	NO	Pre-cabled (L = 2 m) (1)	XS1M30MA250	0.205
		1/2"-20UNF connector	XS1M30MA250K	0.145
	NC	Pre-cabled (L = 2 m) $(1)$	XS1M30MB250	0.205
		1/2"-20UNF connector	XS1M30MB250K	0.145
Non flush n	nountable			
15	NO	Pre-cabled (L = $2 \text{ m}$ ) (1)	XS2M30MA250	0.205
		1/2"-20UNF connector	XS2M30MA250K	0.145
	NC	Pre-cabled (L = 2 m) $(1)$	XS2M30MB250	0.205
		1/2"-20UNF connector	XS2M30MB250K	0.145

Accessories (	2)		
Description	For use with sensors (mm)	Reference	Weight (kg)
Fixing clamps	Ø 18	XSZB118	0.010
	Ø 30	XSZB130	0.020

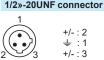
m long cable add **L2** to the reference. L**1** with a 5 m long cable.

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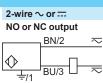
## Inductive proximity sensors

XS range, general purpose Multivoltage sensor, cylindrical, Flush mountable and non-flush mountable Two-wire AC or DC, short-circuit protection

Sensor type			XSeMeeMe250K	XSeMeeMe250			
Product certifications			cULus, CE, UKCA				
Connection			1/2"-20UNF connector	Pre-cabled, length: 2 m			
Operating zone	Ø 18 flush mountable	mm	04	· · · · · · · · · · · · · · · · · · ·			
	Ø 18 non-flush mountable	mm	06.4				
	Ø 30 flush mountable	mm	08				
	Ø 30 non-flush mountable	mm	012				
Differential travel		%	115 of effective sensing distance (Sr)				
Degree of protection	Conforming to IEC 60529		IP 67	IP 68			
Storage temperature		°C	- 40+ 85				
Operating temperature		°C	- 25+ 70				
Materials	Case		Nickel plated brass				
	Cable		-	PvR 2 x 0.34 mm <sup>2</sup>			
Vibration resistance	Conforming to IEC 60068-2-6		25 gn, amplitude $\pm 2$ mm (f = 10 to 55 Hz)				
Shock resistance	Conforming to IEC 60068-2-27		50 gn, duration 11 ms				
Indicators	Output state		Yellow LED, 4 viewing ports at 90°	Yellow LED			
	Supply on		-	Green LED			
Rated supply voltage		۷	~ 24240 (50/60 Hz) or == 24210				
Voltage limits (including ripple)	1	V	$\sim$ or == 20264				
Insulation class			1				
Switching capacity		mA	~ 5300 or				
Voltage drop, closed state		۷	≤ 5.5				
Current consumption, no-load		mA	-				
Residual current, open state		mA	≤ 1.5				
Maximum switching frequency		Hz	$\sim$ 25 or == 2000				
	Ø 30 flush mountable	Hz	$\sim$ 25 or == 2000				
	Ø 30 non-flush mountable	Hz	$\sim$ 25 or == 1000				
Delays	First-up	ms	≤70				
	Response	ms	≤ 2 for Ø 18 and Ø 30				
	Recovery	ms	$\leq$ 4 for Ø 18, $\leq$ 5 for Ø 30 flush mountable, $\leq$	≤ 10 for Ø 30 non-flush mountable			
Wiring schemes							
1/2»-20UNF connector	Pre-cabled	2-wire	$\sim$ or $=$				



BU: Blue BN: Brown



≟: on connector model only

### Setting-up

	Minimum mounting	g distance (mm)						
Sensor	Side by side	Fac	ce to face		Facing a metal of	bject	Mounted in a	metal support
Ø 18 flush mountable	n n	e≥10	0 00	e≥60		e≥15	d	d≥18 h≥0
Ø 18 non-flush mountable		e≥16 <b>"</b>	hm.e.mhhhm,	e≥96	"mhhhm_e	e≥24		d≥54 h≥16
Ø 30 flush mountable	₽.₽	e≥20 1	ղիլու արիդիլու	e≥120	чшАйАйт.	e≥30	-	d≥30≥0
Ø 30 non-flush mountable		e≥60		e≥180		e≥45		d≥18≥0

### Dimensions

		Flush	mounta	ble in m	etal	XS1M	Non-	lush mo	untable i	n metal	XS2M
	Sensor	Pre-ca	bled	Conne	ector		Pre-ca	bled	Conne	ctor	
		а	b	а	b	с	а	b	а	b	с
b to the second	Ø 18	60	51	72	51	8	60	44	72	44	8
a 🔒	Ø 30	60	51	72	51	13	63	41	75	41	13



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### Inductive proximity sensors

XS range, general purpose Cylindrical, metal and plastic, Flush mountable and non-flush mountable Four-wire DC, solid-state NO + NC output

Eurotian Output Composite

Mainht

D . ( . . . . . . .

	Sensing distance (Sn) mm	Function	Output	Connection	Reference	Weight (kg)
XS1L06•C410	Ø 6.5 plai	n				
	Stainless st	eel case, fl	ush mou	Intable		
	1.5	NO + NC	PNP	Pre-cabled (L = 2 m)	XS1L06PC410	0.025
	Ø 8, threa					
	Stainless st	eel case, fl				
	1.5	NO + NC	PNP (3)	Pre-cabled (L = $2 \text{ m}$ )	XS1M08PC410	0.035
				M12 connector	XS1M08PC410D	0.025
lender 18/18/	Stainless st	eel case, n	on-flush	mountable		
	2.5	NO + NC	PNP (3)	Pre-cabled (L = 2 m)	XS2M08PC410	0.035
XS1N12000C410				M12 connector	XS2M08PC410D	0.025
	Plastic case	e, non-flust	n mounta	ible		
	2.5	NO + NC	PNP (3)	Pre-cabled (L = $2 \text{ m}$ ) (1)	XS4P08PC410	0.035
2	Ø 12, thre	aded M1	2 x 1			
Electrication The Tringente	Brass case	flush mou	ntable			
	2	NO + NC	PNP	Pre-cabled (L = 2 m) (1) (2)	XS1N12PC410	0.070
XS2••••C410				M12 connector	XS1N12PC410D	0.020
			NPN	Pre-cabled (L = $2 \text{ m}$ ) (1)	XS1N12NC410	0.070
				M12 connector	XS1N12NC410D	0.020
	Brass case	non-flush	mountal	ole		
	4	NO + NC		Pre-cabled $(L = 2 m) (1)$	XS2N12PC140	0.070
	Plastic case	e. non-flust	n mounta	ıble		
Construction of the second sec	4	NO + NC		Pre-cabled (L = $2 \text{ m}$ ) (1)	XS4P12PC410	0.070
XS4P•••C410D				M12 connector	XS4P12PC410D	0.020

Consing

For a 5 m long cable add L1 to the reference. Example: XS1N12PC410 becomes XS1N12PC410L1 with a 5 m long cable.
 For a 10 m long cable add L2 to the reference. Example: XS1N12PC410 becomes

(2) For a formal data El data El transmissione example. Kommer derro secontes XS1N12PC410L2 with a 10 m long cable.
 (3) These sensors can be supplied in NPN versions. Please contact our Customer Care Centre.

### References (continued)

## Inductive proximity sensors

XS range, general purpose Cylindrical, metal and plastic, Flush mountable and non-flush mountable Four-wire DC, solid-state NO + NC output

	Sensing distance (Sn) mm			Connection	Reference	Weight (kg)
	Ø 18, thre					
XS4P•••C410	Brass case,					
	5	NO + NC	PNP	Pre-cabled (L = 2 m) (1) (2)	XS1N18PC410	0.100
				M12 connector	XS1N18PC410D	0.040
	Plastic case	, non-flush	mounta	able		
	8			Pre-cabled (L = 2 m)	XS4P18PC410	0.100
				M12 connector	XS4P18PC410D	0.040
	Ø 30, thre	aded M3	0 x 1.5			
XS2NeeeC410D	Brass case,					
	10	NO + NC	PNP	Pre-cabled (L = 2 m) (1) (2)	XS1N30PC410	0.160
				M12 connector	XS1N30PC410D	0.100
	Plastic case	, non-flush	mounta	able		
	15			Pre-cabled (L = 2 m)	XS4P30PC410	0.160
				M12 connector	XS4P30PC410D	0.100
XS1N•••C410	Accessor	ies (4)				
	Accessor Description	<b>ies</b> (4)	For use		Reference	Weight
	Description	<b>ies</b> (4)	sensors			(kg)
XS1N++++C410		ies (4)			XSZB108	<b>(kg)</b> 0.006
	Description	ies (4)	sensors Ø8			(kg)
	Description Fixing clamps		sensors           Ø 8           Ø 12           Ø 18           Ø 30		XSZB108 XSZB112 XSZB118 XSZB130	(kg) 0.006 0.006

### **Characteristics**

## Inductive proximity sensors

XS range, general purpose Cylindrical, metal and plastic Flush mountable and non-flush mountable Four-wire DC, solid-state NO + NC output

Characteristics									
Sensor type			XSeeePC410D	XSeeeNC410D	XSeeePC410	XSeeeNC410			
Product certifications			cULus, C€, UKCA, E2 <i>(1)</i>	cULus, C€, UKCA	cULus, C€, UKCA, E2	cULus, C€, UKC/			
Connection			M12 connector		Pre-cabled, length: 2 n	n			
Operating zone	Ø 6.5 and Ø 8 flush mountable	mm	01.2						
	Ø 8 non-flush mountable	mm	02						
	Ø 12 flush mountable	mm	01.6						
	Ø 12 non-flush mountable	mm	03.2						
	Ø 18 flush mountable	mm	04						
	Ø 18 non-flush mountable	mm	06.4						
	Ø 30 flush mountable	mm	08						
	Ø 30 non-flush mountable	mm	012						
Differential travel		%	115 of effective sensi	ing distance (Sr)					
Degree of protection	Conforming to IEC 60529		IP 65 and IP 67	IP 67	IP 67 (Ø 6.5 and Ø 8) IP 68 (Ø 12, Ø 18 and 9	Ø 30)			
	Conforming to DIN 40050		IP 69K (Ø 12, Ø 18 and Ø 30)	-	-				
Storage temperature		°C	- 40+ 85						
Operating temperature		°C	- 25+ 70 (2)						
Materials	Case		Nickel plated brass for XS1Neee. Stainless steel 303 for XS1M08eee and XS2M08eee. Plastic, PPS, for XS4Peee.						
	Cable		-         PvR 4 x 0.08 mm² (Ø 6.5 and Ø 8)           PvR 4 x 0.22 mm² (Ø 12, Ø 18 and Ø 30)						
Vibration resistance	Conforming to IEC 60068-2-6		25 gn, amplitude ± 2 m	m (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		۷	= 1224 with protecti	on against reverse p	oolarity				
Voltage limits (including ripple)		V	936 (1036 for XS4P●●●)	1036	936 (1036 for XS4P18●●●)	<del></del> 1036			
Insulation class									
Switching capacity		mA	≤ 200 with overload an	d short-circuit prote	ction				
Voltage drop, closed state		V	≤2						
Current consumption, no-load		mA	≤ 10						
Maximum switching frequency	Ø 6.5, Ø 8 and Ø 12	Hz	5000						
0 10 17	Ø 18	Hz	2000						
	Ø 30	Hz	1000						
Delays	First-up	ms	≤5						
Delays	•	ms	$\leq 0.1$ for Ø.8 and Ø.12	≤ 0.15 for Ø 18. ≤ 0	.3 for Ø 30				
	Response	1113	<ul> <li>≤ 0.1 for Ø 8 and Ø 12, ≤ 0.15 for Ø 18, ≤ 0.3 for Ø 30</li> <li>≤ 0.1 for Ø 8 and Ø 12, ≤ 0.35 for Ø 18, ≤ 0.7 for Ø 30</li> </ul>						

(2) Sensors are available for very low temperatures (suffix **TF**: -40°C, + 70°C) or very high temperatures (suffix **TT**: - 25°C, + 85°C). Please consult our Customer Care Centre.

### Schemes, setting-up, dimensions

### Inductive proximity sensors

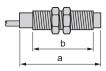
XS range, general purpose Cylindrical, metal and plastic Flush mountable and non-flush mountable Four-wire DC, solid-state NO + NC output

#### Wiring schemes M12 connector **Pre-cabled PNP 4-wire** NPN 4-wire BU: Blue BN/1 3 BN/1 BN: Brown BK: Black BK/4 (NO) PNP NPN BK/4 (NO) WH/2 (NC) |WH: White $\Diamond$ WH/2 (NC) \_\_\_\_\_ BU/3 BU/3

### Setting-up

		Minimum	mounting	distances (mm)					
Sensor		Side by side	e	Face to face		Facing a me	tal object	Mounted in	n a metal support
Ø 6.5 flush mountable	XS1L06		e≥3	mAnAm e mAnAm	e≥18		e≥4.5	d	d≥6.5 h≥0
Ø 8 flush mountable	XS1M08	8.2	e≥3		e≥18	a AAA + e +	e≥4.5		d≥8h≥0
Ø 8 non-flush mountable	XS4P08		e≥10	00 00	e≥30	manam	e≥7.5		d≥24 h≥5
Ø 12 flush mountable	XS1N12		e≥4		e≥24		e≥6		d≥12h≥0
Ø12 non-flush mountable	XS4P12		e≥16		e≥48		e≥12		d≥36 h≥8
Ø 18 flush mountable	XS1N18		e≥10		e≥60		e≥15		d≥18h≥0
Ø18 non-flush mountable	XS4P18		e≥16		e≥96		e≥24		d≥54 h≥16
Ø 30 flush mountable	XS1N30		e≥20		e≥120		e≥30		d≥30 h≥0
Ø30 non-flush mountable	XS4P30		e≥60		e≥180		e≥45		d≥90 h≥30

#### Dimensions



Flush mountable in metal	
--------------------------	--

Sensor		Pre-cabled	l (mm)	M12 conn	M12 connector (mm)		
		а	b	а	b		
Ø 6.5 stainless steel	XS1L06	50	_	-	-		
Ø8 stainless steel	XS1M08	51	42	62	40		
Ø12 brass	XS1N12	37	25	50	31		
Ø18 brass	XS1N18	41	29	51	28		
Ø 30 brass	XS1N30	45	33	54	33		

#### Non-flush mountable in metal

Sensor		Pre-cabled	l (mm)	M12 conr	M12 connector (mm)		
		а	b	а	b		
Ø 8 stainless steel	XS2M08	54	42	65	40		
Ø8 plastic	XS4P08	34	25	_	-		
Ø 12 plastic	XS4P12	37	25	50	31		
Ø 18 plastic	XS4P18	41	29	51	28		
Ø 30 plastic	XS4P30	45	33	54	33		



## Inductive proximity sensors

XS range, general purpose Cylindrical, metal, increased range, flush mountable Four-wire DC, solid-state NO + NC output

	Sensing	Function		48 V, long case n Connection	Reference	Weight
	distance (Sn) mm	Tunction	output	Connection	Reference	(kg)
	Ø 8, threa	ded M8 x 1				
1eeB3PCL2	2.5	NO + NC	PNP	Pre-cabled (L = 2 m)	XS608B1PCL2	0.035
				M12 connector	XS608B1PCM12	0.025
	Senso	rs, 4-wire	<u> </u>	24 V, long case n	nodel	
	Sensing distance (Sn) mm	Function	Output	Connection	Reference	Weight (kg)
PCM12	Ø 12, thre	aded M12 x 1				
	4	NO + NC	PNP	Pre-cabled (L = 2 m)	XS112B3PCL2	0.070
				M12 connector	XS112B3PCM12	0.020
	Ø 18. thre	aded M18 x 1				
	8	NO + NC	PNP	Pre-cabled (L = 2 m)	XS118B3PCL2	0.100
				M12 connector	XS118B3PCM12	0.040
	Ø 30 thre	aded M30 x 1.	5			
	15	NO + NC	PNP	Pre-cabled (L = 2 m)	XS130B3PCL2	0.160
				· · · · · ·		
				M12 connector	XS130B3PCM12	0.100
	Acces	sories (1)				
	Descripti	on	For use sensors		Reference	Weight (kg)
	Fixing clar	nps	Ø 8		XSZB108	0.006
			Ø 12		XSZB112	0.006
			Ø 18		XSZB118	0.010
			Ø 30		XSZB130	0.020
	(1) Ear furt	ner information	see nage	120		

### Inductive proximity sensors

XS range, general purpose Cylindrical, metal, increased range, flush mountable Four-wire DC, solid-state NO + NC output

Characteristics Sensor type			XS100B3PCM12/XS608B1PCM12		XS1ecB3DC	L2/XS608B1F	PCI 2		
					ASTEEDSPC	LZIAGUODIF	OL2		
Product certifications	Ø8		cULus, CE, UKCA						
<b>•</b> • • •	Ø 12, 18 and 30		cULus, C€, UKCA, E2						
Connection	Connector		M12		-				
No	Pre-cabled		-		Length 2 m				
Operating zone (1)	Ø 8		02						
	Ø 12 Ø 18		03.2						
			06.4						
	Ø 30		012	2.)					
Differential travel	0 ( ) ( ) (0.00500	%	115 of effective sensing distance (S	sr)					
egree of protection	Conforming to IEC 60529		IP 65 and IP 67		IP 65 and IP 6	58			
M	Conforming to DIN 40050		IP 69K		-				
Storage temperature		°C	- 40+ 85						
Operating temperature	0	°C	- 25+ 70 (2)			00 for 0 0			
laterials	Case			Nickel plated brass for Ø 12 to Ø 30, stainless steel grade 303 for Ø 8					
	Sensing face		PPS						
	Cable		-		PvR 4 x 0.22	mm <sup>2</sup> except Ø 8	8: 4 x 0.08 mr		
/ibration resistance	Conforming to IEC 60068-2-6		25 gn, amplitude $\pm 2$ mm (f = 10 to 55	5 Hz)					
Shock resistance	Conforming to IEC 60068-2-27		50 gn, duration 11 ms						
Dutput state indication			Yellow LED, 4 viewing ports at 90°						
Rated supply voltage			Yellow LED, 4 viewing ports at 90° Yellow LED, annular == 1224 ( <b>XS1, XS608</b> ), == 1248 ( <b>XS6</b> Ø 12, 18, 30), with protection against re polarity						
Voltage limits (including ripple)			936		(XS1, XS608)	) <del></del> 1058 ( <b>XS</b>	<b>56</b> Ø12,18,3		
Insulation class						· · · · · ·			
Switching capacity			≤ 200 with overload and short-circuit	protectio	<u></u>				
			≤200 with overload and short-circuit	protectio					
/oltage drop, closed state		۷							
Current consumption, no-load		mA							
laximum switching frequency	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 fc	or Ø 30				
	Recovery								
	Recovery	ms	$\leq 0.2$ for Ø 8 and Ø 12, $\leq 0.7$ for Ø 18	9, ≤ 1.410	0.00				
Wiring schemes			ting-up						
M12 connector	Pre-cabled	Mini	mum mounting distances (mm)						
	BU: Blue BN: Brown BK: Black WH: White			-		z <b>alat</b> i e			
PNP 4-wire		Sen	sors Side by side	Face to	face	Facing a n	netal object		
3N/1 +		Ø8	e≥5	e≥30		e≥8			
PNP BK/4 (NO) WH/2 (NC)		Ø 12	e≥8	e≥50		e≥12			
		Ø 18	e≥16 e		e≥100				
BU/3		Ø 30	e≥30	e≥180		e≥45			
Dimensions									
3)				Pre-ca	oled (mm)	M12 conn	ector (mm)		
		Sen	sors	а	b	а	b		
		Ø8		51	42	61	40		
		Ø 12		37	25	50	31		
b		Ø 18		41	29	51	28		

(1) Detection curves, see page 128.

(2) Sensors are available for very low temperatures (suffix TF: -40°C, + 70°C) or very high temperatures (suffix TT: - 25°C, + 85°C).
 Please consult our Customer Care Centre.

(3) LED.

## Inductive proximity sensors

XS range, general purpose Cylindrical, metal and plastic, flush and non-flush mountable Four-wire DC, solid-state PNP + NPN NO/NC programmable output

> Weight (kg)

> > 0.075

0.025

0.075

0.025

0.075

0.025

0.120

0.060

0.120

0.060

0.120

0.060

0.205

0.145

0.205

0.145

0.205

0.145

Weight (kg)

0.006

0.010

0.020

	Sensing distance (Sn) mm	Function	Output	Connection	Reference
area annunun ar annununun	Ø 12, thre	aded M12	x 1		
XS1M••KP340		flush mounta			
$     \begin{aligned}             XS1M \bullet \cdot KP340 & I \\             XS1M \bullet \cdot KP340 & I \\             XS4P \bullet \cdot KP340 & I \\             Ya1 & I \\             XS4P \bullet \cdot KP340 & I \\             Ya1 & I \\             XS4P \bullet \cdot KP340 & I \\             Ya1 & I \\             XS4P \bullet \cdot KP340 & I \\             Ya1 & I \\             XS4P \bullet \cdot KP340 & I \\             Ya1 & I \\             XS4P \bullet \cdot KP340 & I \\             Ya1 & I \\             XS4P \bullet \cdot KP340 & I \\             Ya1 & I \\             XS4P \bullet \cdot KP340 & I \\             Ya1 & I \\             Ya1 & I \\             XS4P \bullet \cdot KP340 & I \\             Ya1 & I \\   $	2	NO/NC programmable	PNP + NPN	Pre-cabled $(L = 2 m) (1)$	XS1M12KP340
2		programmable		M12 connector	XS1M12KP340D
		non-flush mo			
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	4	NO/NC programmable	PNP + NPN	Pre-cabled $(L = 2 m) (1)$	
XS4P••KP340		1 5		M12 connector	XS2M12KP340D
	Plastic case	e, non-flush n			
	4	NO/NC programmable	PNP + NPN	Pre-cabled $(L = 2 m) (1)$	XS4P12KP340
		programmable		M12 connector	XS4P12KP340D
	Ø 18, thre	aded M18	x 1		
		flush mounta			
XS2MeeKP340	5	NO/NC programmable	PNP + NPN	Pre-cabled (L = 2 m) (1)	XS1M18KP340
99 e		Programmable		M12 connector	XS1M18KP340D
ž		non-flush mo			
	8	NO/NC programmable	PNP + NPN	Pre-cabled $(L = 2 m) (1)$	
		programmazio		M12 connector	XS2M18KP340D
XS4P●●KP340D		e, non-flush n			
	8	NO/NC programmable	PNP + NPN	Pre-cabled $(L = 2 m) (1)$	XS4P18KP340
2		F 3		M12 connector	XS4P18KP340D
	Ø 30, thre	aded M30	x 1.5		
		flush mounta			
б ХS1M●●КР340D	10	NO/NC programmable		Pre-cabled $(L = 2 m) (1)$	XS1M30KP340
ix es		programmazio		M12 connector	XS1M30KP340D
		non-flush mo			
~	15	NO/NC programmable		Pre-cabled $(L = 2 m) (1)$	
E-L 1935		F		M12 connector	XS2M30KP340D
anna 155 funantif 🕅 Funantiatif		e, non-flush n			
XS2MeeKP340D	15	NO/NC programmable		Pre-cabled $(L = 2 m) (1)$	XS4P30KP340
				M12 connector	XS4P30KP340D
00	Accesso				
P.R.16	Description		For use witl	1	Reference
815 CF			sensors (m		
SX Ta COLO	Fixing clamps	;	Ø 12		XSZB112
12			Ø 18 Ø 30		XSZB118 XSZB130
			200		

 (1) For a 5 m long cable add L1 to the reference; for a 10 m long cable add L2 to the reference. Example: XS1M12KP340 becomes XS1M12KP340L1 with a 5 m long cable.
 (2) For further information, see page 120.

XSZB1.

### Inductive proximity sensors

XS range, general purpose Cylindrical, metal and plastic, flush and non-flush mountable Four-wire DC, solid-state PNP + NPN NO/NC programmable output

Sensor type			XSeMeeKP340D	XSeMeeKP340	
Product certifications			cULus, CE, UKCA		
Connection			M12 connector	Pre-cabled, length: 2 m	
Operating zone	Ø 12 flush mountable	mm	01.6		
	Ø 12 non-flush mountable	mm	03.2		
	Ø 18 flush mountable	mm	04		
	Ø 18 non-flush mountable	mm	06.4		
	Ø 30 flush mountable	mm	08		
	Ø 30 non-flush mountable	mm	012		
Differential travel		%	115 of effective sensing distance (Sr)		
Degree of protection	Conforming to IEC 60529		IP 67	IP 68	
Storage temperature		°C	- 40+ 85		
Operating temperature			- 25+ 70		
Materials	Case		Nickel plated brass for XS1M and XS2M, PPS for XS4P		
	Cable		-	PvR 4 x 0.34 mm <sup>2</sup>	
Vibration resistance	Conforming to IEC 60068-2-6		25 gn, amplitude ± 2 mm (f = 10 to 55 Hz	z)	
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	= 1224 with protection against revers	se polarity	
Voltage limits (including ripple)		v	1036		
Insulation class					
Switching capacity		mA	≤ 200 with overload and short-circuit pro	otection	
Voltage drop, closed state		v	≤2.6		
Current consumption, no-load		mA	≤ 10		
Maximum switching frequency	Ø 12	Hz	5000		
	Ø 18	Hz	2000		
	Ø 30 flush mountable	Hz	1000		
	Ø 30 non-flush mountable	Hz	1000		
Delays	First-up	ms	≤5		
	Response	ms	$\leq$ 0.1 for Ø 12, $\leq$ 0.15 for Ø 18, $\leq$ 0.3 for	Ø 30	
	Recovery	ms	≤ 0.1 for Ø 12, ≤ 0.35 for Ø 18, ≤ 0.7 for Ø 30		

#### M12 connector Pre-cabled PNP + NPN BU: Blue 4-wire programmable, NO or NC output 3 BN: Brown BK: Black PNP NPN BN/1 (NO), BU/3 (NC) + BN/1 (NO), BU/3 (NC) + WH: White WH/2 WH/2 PNP NPN BK/4 $\diamondsuit$ |BK/4 BU/3 (NO), BN/1 (NC) BU/3 (NO), BN/1 (NC) Setting-up

	<b>Minimum mounting</b>	distances (mm)		
Sensor	Side by side	Face to face	Facing a metal object	Mounted in a metal support
Ø 12 flush mountable XS1M12	e≥4	manam e≥24	e≥6	d d≥12h≥0
Ø 12 non-flush mountable XS2M12 and XS4P12	e ≥ 16	e≥48	e ≥ 12	d≥36h≥8
Ø 18 flush mountable XS1M18	e≥10	e ≥ 60	e≥15	d≥18h≥0
Ø 18 non-flush mountable XS2M18 and XS4P18	e≥16	e≥96	e≥24	d≥54 h≥16
Ø 30 flush mountable XS1M30	e≥20	e≥120	e≥30	d ≥ 30 h ≥ 0
Ø 30 non-flush mountable XS2M30 and XS4P30	e≥60	e≥180	e≥45	d ≥ 90 h ≥ 30

#### **Dimensions**

2		
-	b +	C
	a	

	Flus	h mount	able in m	netal	Non	-flush m	ountable	in metal	
Sensor	Pre-cabled Connector		ector	Pre-c	abled	Conn	ector		
	а	b	а	b	а	b	а	b	с
Ø 12 metal	54	42	61	42	55	42	66	42	5
Ø 12 plastic	_	-	_	_	54	42	61	43	0
Ø 18 metal	60	51	72	51	60	44	72	44	8
Ø 18 plastic	_	-	-	-	60	51	70	51	0
Ø 30 metal	60	51	72	51	63	41	75	41	13
Ø 30 plastic	_	_	_	_	60	51	70	51	0









XS4P••••340D XS4P••••370D XS4P•••230K

### Inductive proximity sensors

XS range, general purpose Plastic, cylindrical, non-flush mountable Two-wire AC or DC Three-wire DC, solid-state output

Sensing dis (Sn) mm	st. Function	Output	Connection	Reference	Weight (kg)
Ø 8, threa	ded M8 x 1				(ng)
Three-wire					
2.5	NO	PNP	Pre-cabled (L = 2 m) (1) (2)	XS4P08PA340	0.025
		NPN	Pre-cabled (L = 2 m) (1) (2)	XS4P08NA340	0.025
	NC	PNP	Pre-cabled (L = 2 m) (1) (2)	XS4P08PB340	0.025
		NPN	Pre-cabled (L = 2 m) (1) (2)	XS4P08NB340	0.025
These sectors a		2.14			
1wo-wire ~	or == 24-240 NO	JV	Pre-cabled (L = 2 m) <i>(1)</i>	XS4P08MA230	0.030
2.5	NC		Pre-cabled (L = 2 m) $(1)$	XS4P08MB230	0.030
	NO				0.000
Ø 12, threa	aded M12 >	c1			
Three-wire					
4	NO	PNP	Pre-cabled (L = 2 m) (1) (3)	XS4P12PA340	0.060
		NPN	Pre-cabled (L = 2 m) (1) (3)	XS4P12NA340	0.060
	NC	PNP	Pre-cabled (L = 2 m) (1) (3)	XS4P12PB340	0.060
		NPN	Pre-cabled (L = 2 m) (1) (3)	XS4P12NB340	0.060
Three-wire	12-48 V				
4	NO	PNP	Pre-cabled (L = 2 m) (1) (3)	XS4P12PA370	0.065
		NPN	Pre-cabled (L = 2 m) (1) (3)	XS4P12NA370	0.065
	NC	PNP	Pre-cabled (L = 2 m) (1) (3)	XS4P12PB370	0.065
	or == 24-24	0 V			
4	NO	JV	Pre-cabled (L = 2 m) <i>(1)</i>	XS4P12MA230	0.065
-			1/2"-20UNF connector	XS4P12MA230K	0.030
	NC		Pre-cabled (L = 2 m) $(1)$	XS4P12MB230	0.065
	NO			XOH TEMBEOU	0.000
	aded M18 >	c1			
Three-wire					
8	NO	PNP	Pre-cabled (L = 2 m) (1) (3)	XS4P18PA340	0.090
	10	NPN	Pre-cabled (L = 2 m) (1) (3)	XS4P18NA340	0.090
	NC	PNP	Pre-cabled (L = $2 \text{ m}$ ) (1) (3)	XS4P18PB340	0.090
Three-wire	12-48 V				
8	NO	PNP	Pre-cabled (L = 2 m) (1) (3)	XS4P18PA370	0.100
		NPN	Pre-cabled (L = 2 m) (1) (3)	XS4P18NA370	0.100
	NC	PNP	Pre-cabled (L = 2 m) (1) (3)	XS4P18PB370	0.100
	or == 24-24	0 V			
8	NO		Pre-cabled (L = $2 \text{ m}$ ) (1)	XS4P18MA230	0.100
-			1/2"-20UNF connector	XS4P18MA230K	0.040
	NC		Pre-cabled (L = $2 \text{ m}$ ) (1)	XS4P18MB230	0.100
			1/2"-20UNF connector	XS4P18MB230K	0.040
	aded M30 >	c1.5			
Three-wire	<b>12-24 V</b> NO	PNP	Pro cobled (1 - 2 m) (1) (2)	XS4P30PA340	0.400
15	NO		Pre-cabled (L = 2 m) (1) (3) Pro-cabled (L = 2 m) (1) (2)		0.120
	NC		Pre-cabled (L = 2 m) (1) (3) Pro-cabled (L = 2 m) (1) (3)	XS4P30NA340	0.120
	NC	PNP	Pre-cabled (L = 2 m) <i>(1) (3)</i>	XS4P30PB340	0.120
Three-wire	12-48 V				
15	NO	PNP	Pre-cabled (L = 2 m) (1) (3)	XS4P30PA370	0.140
	NC	PNP	Pre-cabled (L = $2 \text{ m}$ ) (3)	XS4P30PB370	0.140
Two-wire $\sim$	or				
15	NO		Pre-cabled (L = 2 m) <i>(1)</i>	XS4P30MA230	0.140
			1/2"-20UNF connector	XS4P30MA230K	0.080
	NC		Pre-cabled (L = $2 \text{ m}$ ) (1)	XS4P30MB230	0.140
			1/2"-20UNF connector	XS4P30MB230K	0.080

(1) For a 5 m long cable add L1 to the reference; for a 10 m long cable add L2 to the reference. Example: XS4P08PA340 becomes XS4P08PA340L1 with a 5 m long cable. (2) For an M8 connector, add S to the reference. Example: XS4P08PA340 becomes XS4P08PA340S with an M8 connector. (3) For an M12 connector.

(3) For an M12 connector, add D to the reference. Example: XS4P12PA370 becomes XS4P12PA370D with an M12 connector.



### Inductive proximity sensors

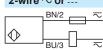
XS range, general purpose Plastic, cylindrical, non-flush mountable Two-wire AC or DC Three-wire DC, solid-state output

Concerture			XS4P0003400	VC4D	VCAD M. 000				
Sensor type				XS4Peeee370e	XS4PeeMe230e				
Product certifications Connection Pre-cabled			cULus, CE, UKCA, ECOLA	Length: 2 m					
Connection	Connector		M8 on Ø 8	1/2"-20UNF					
	Connector		M12 on Ø 12, Ø 18 and Ø	30	1/2 -200NF				
Operating zone	Ø8	mm	,	02					
	Ø 12	mm	03.2						
	Ø 18	mm	06.4						
	Ø 30	mm	012						
Differential travel		%	115 of effective sensing	distance (Sr)					
Degree of protection	Conforming to IEC 60529		IP 68 for pre-cabled version						
	-		IP 67 for connector versio	n j					
Storage temperature		°C	- 40+ 85						
Operating temperature		°C	- 25+ 70						
Materials	Case		PPS						
	Cable		PvR 3 x 0.34 mm <sup>2</sup> except	PvR 2 x 0.34 mm <sup>2</sup> except Ø 8: 2 x 0.11 mm <sup>2</sup>					
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: annular on pre-cabled version Yellow LED: 4 viewing ports at 90° on connector version						
Rated supply voltage		٧			$\sim$ or = 24240				
			against reverse polarity	against reverse polarity	(50/60 Hz)				
/oltage limits (including ripple)		٧	1036	1058	$\sim$ or == 20264				
nsulation class					1				
Switching capacity	Ø8	mA	≤ 200 with overload and s	5100					
	Ø 12	1		5200					
	Ø 18 and 30				5200 and 5300 ~				
/oltage drop, closed state		٧	≤2	≤ 5.5					
Residual current, open state		mA	-	≤0.6					
Current consumption, no-load		mA	≤10	-					
Maximum switching frequency	Ø 8 and Ø 12	Hz	5000		<del></del> 3000, ∼ 25				
	Ø 18	Hz	2000		<u> </u>				
	Ø 30	Hz	1000	1000, ∼ 25					
Delays	First-up	ms	≤ 10		≤40				
	Response	ms	$\leq 0.1$ for Ø 8 and Ø 12, $\leq 0$	).15 for Ø 18, ≤ 0.3 for Ø 30	≤0.2				
Recovery		ms	$\leq$ 0.1 for Ø 8 and Ø 12, $\leq$ 0	0.35 for Ø 18, ≤ 0.7 for Ø 30	≤ 0.2 for Ø 8, Ø 12 and Ø 18, ≤ 0.4 for Ø 30				
Wiring schemes									
Connector	Pre-cabled	PNP	N	PN	2-wire $\sim$ or $=$				
$\begin{array}{c} \text{M8} \\ \text{M8} \\ \text{M8} \\ \text{M2} \\ \text{M2} \\ \text{M3} \end{array}$	BU: Blue BN: Brown BK: Black	BN/1 PNP ∲	BK/4 (NO)						



≂:2 ≂:3





### Setting-up

	Minimum mounting distances (mm)								
	Side by side		Face to face		Facing a m	etal ob	ject	Mounted in a	metal support
Ø 8 Ø 12 Ø 18 Ø 30		$     \begin{array}{r} e \ge 10 \\             e \ge 16 \\             e \ge 60       \end{array} $	ellite-litte	$e \ge 30$ $e \ge 48$ $e \ge 96$ $e \ge 180$	z () () (e→		$e \ge 7.5$ $e \ge 12$ $e \ge 24$ $e \ge 45$		$\frac{d \ge 24 h \ge 5}{d \ge 36 h \ge 8}$ $\frac{d \ge 54 h \ge 16}{d \ge 90 h \ge 30}$

### Dimensions

		3-wire 12-24 V			3-wire	12-48 V	or 2-wire	e ∼/ <del></del> 24-240 V	
		Pre-cabled (mm) Connector (mm)		Pre-ca	bled (mm)	Conne	ctor (mm)		
	XS4P	а	b	а	b	а	b	а	b
	Ø 8	33	26	42	26	50	42	61	40
b b	Ø 12	35	25	48	27	54	42	61	42
a	Ø 18	36	25	48	29	62	52	70	52
	Ø 30	43	32	50	34	62	52	70	52

103171

103178

**Inductive proximity sensors** XS range, general purpose Cylindrical, quasi-flush mountable, increased range Three-wire DC, solid-state output

and the formation	Reference	References						
	Sensing distance (Sn) (mm)	Function	Output	Connection	Reference	Weight (kg)		
(S1N••••349	Ø 12, thread	led M12 x 1						
	4	NO	PNP	Pre-cabled (L = 2 m)	XS1N12PA349	0.07		
				M12 connector	XS1N12PA349D	0.02		
			NPN	Pre-cabled (L = 2 m)	XS1N12NA349	0.07		
				M12 connector	XS1N12NA349D	0.02		
		NC	PNP	Pre-cabled (L = 2 m)	XS1N12PB349	0.07		
				M12 connector	XS1N12PB349D	0.02		
	Ø 18, thread	led M18 x 1						
	10	NO	PNP	Pre-cabled (L = 2 m)	XS1N18PA349	0.10		
		NC		M12 connector	XS1N18PA349D	0.04		
			NPN	Pre-cabled (L = 2 m)	XS1N18NA349	0.10		
				M12 connector	XS1N18NA349D	0.04		
			PNP	Pre-cabled (L = 2 m)	XS1N18PB349	0.10		
				M12 connector	XS1N18PB349D	0.04		
and the and a	Ø 30, thread	led M30 x 1.5						
	20	NO	PNP	Pre-cabled (L = 2 m)	XS1N30PA349	0.16		
				M12 connector	XS1N30PA349D	0.10		
			NPN	Pre-cabled (L = 2 m)	XS1N30NA349	0.16		
				M12 connector	XS1N30NA349D	0.10		
S1N••••349D		NC	PNP	Pre-cabled (L = 2 m)	XS1N30PB349	0.16		
				M12 connector	XS1N30PB349D	0.10		



XSZB1••

Accessories (1)			
Description	For use with sensors (mm)	Reference	Weight (kg)
Fixing clamps	Ø 12	XSZB112	0.006
	Ø 18	XSZB118	0.010
	Ø 30	XSZB130	0.020

(1) For further information, see page 120.

**Inductive proximity sensors** XS range, general purpose Cylindrical, quasi-flush mountable, increased range Three-wire DC, solid-state output

Sensor type			XS10000349D	XS10000349			
Product certifications			cULus, C€, UKCA				
Connection			M12 connector	Pre-cabled, length: 2 m			
Operating zone	Ø 8	mm	02				
	Ø 12	mm	03.2				
	Ø 18	mm	08				
	Ø 30	mm	016				
Differential travel		%	115 of effective sensing distance (Sr)				
Degree of protection	Conforming to IEC 60529		IP 67	IP 68 (except Ø 8: IP 67)			
	Conforming to DIN 40050		IP 69K for Ø 12 to Ø 30				
Storage temperature		°C	- 40+ 85				
Operating temperature		°C	- 25+ 70				
Materials	Case		Nickel plated brass				
	Cable		-	PvR 3 x 0.34 mm <sup>2</sup> except Ø 8: 3 x 0.11 mm <sup>2</sup>			
Vibration resistance	Conforming to IEC 60068-2-6		25 gn, amplitude $\pm$ 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		۷	= 1224 with protection against reverse p	olarity			
Voltage limits (including ripple)		v	1036				
Insulation class							
Switching capacity		mA	$\leq$ 200 with overload and short-circuit protection	tion			
Voltage drop, closed state		V	≤2				
Current consumption, no-load		mA	≤ 10				
Maximum switching frequency	Ø 8 and Ø 12	Hz	2500				
	Ø 18	Hz	1000				
	Ø 30	Hz	500				
Delays	First-up	ms	≤5				
	Response	ms	$\leq$ 0.2 for Ø 8 and Ø 12, $\leq$ 0.3 for Ø 18, $\leq$ 0.6	for Ø 30			
	Recovery	ms	<ul> <li>≤ 0.2 for Ø 8 and Ø 12, ≤ 0.3 for Ø 18, ≤ 0.6 for Ø 30</li> <li>≤ 0.2 for Ø 8 and Ø 12, ≤ 0.7 for Ø 18, ≤ 1.4 for Ø 30</li> </ul>				

Wiring sch	iemes			
Connector		Pre-cabled	PNP 3-wire	NPN 3-wire
M8 1 (•••) 3	M12 4 1 2	BU: Blue BN: Brown BK: Black	BN/1 + PNP BK/4 (NO) → BK/2 (NC) BU/3 -	BN/1 + NPN BK/4 (NO) BU/3 −

For M8 connector, NO and NC outputs on terminal 4

	Minimum mo	ounting	distances (mm)						
Sensor	Side by side		Face to face		Facing a n	netal ob	oject	Mounted in	n a metal support
Ø 8		e≥5		e≥30			e≥7.5	d t	d≥10 h≥1.6
Ø 12		e≥8	amfinan_e_mfina	e≥48	annana e.		e≥12		d≥14 h≥2.4
Ø 18	<u>e</u> e	e≥20	₽ <u>₩₩</u> ₩ <u>+</u> <u>→</u> ₩₩₩₽	e≥96	e <b>ntin</b> te + € +		e≥30		d≥28 h≥3.6
Ø 30		e≥40		e≥240			e≥60		d≥50 h≥6

#### Dimensions

Setting-up precautions

		Flus	h mounta	ble in met	al			
	Sensor	Pre-c	Pre-cabled M8 connector				M12 connector	
-		а	b	а	b	а	b	
	Ø 8	33	25	42	26	45	23	
	Ø 12	35	25	_	-	50	30	
	Ø 18	39	28	_	_	50	28	
-	Ø 30	43	32	_	-	55	32	



**Inductive proximity sensors** XS range, general purpose Miniature, cylindrical, quasi-flush mountable Three-wire DC, solid-state output

	Ø 4 plai	n				
4R1PAL2		stance Function	Output	Connection	Reference	Weight (kg)
	Stainless	steel case, qua	asi-flush ı	nountable		
	1,5	NO	PNP	Pre-cabled (L = 2 m)	XS604R1PAL2	0.030
				M8 connector	XS604R1PAM08	0.004
			NPN	Pre-cabled (L = 2 m)	XS604R1NAL2	0.030
				M8 connector	XS604R1NAM08	0.004
		NC	PNP	Pre-cabled (L = 2 m)	XS604R1PBL2	0.030
				M8 connector	XS604R1PBM08	0.004
			NPN	Pre-cabled (L = 2 m)	XS604R1NBL2	0.030
				M8 connector	XS604R1NBM08	0.004
	0,8	NO	PNP	Pre-cabled (L = 2 m)	XS504R1PAL2	0.030
				M8 connector	XS504R1PAM08	0.004
			NPN	Pre-cabled (L = 2 m)	XS504R1NAL2	0.030
				M8 connector	XS504R1NAM08	0.004
		NC	PNP	Pre-cabled (L = 2 m)	XS504R1PBL2	0.030
		-		M8 connector	XS504R1PBM08	0.004
			NPN	Pre-cabled (L = 2 m)	XS504R1NBL2	0.030
				M8 connector	XS504R1NBM08	0.004
	Ø 5 thre					
	<b>9</b> 3, the	eaded M5 x	0.5			
	Sensing dis (Sn) mm	stance Function	Output	Connection	Reference	Weight (kg)
	Sensing dis (Sn) mm Stainless	stance Function steel case, qua	Output asi-flush ı	nountable		(kg)
	Sensing dis (Sn) mm	stance Function	Output	Pre-cabled (L = 2 m)	XS605R1PAL2	(kg) 0.030
	Sensing dis (Sn) mm Stainless	stance Function steel case, qua	Output asi-flush ı	Pre-cabled (L = 2 m) Pre-cabled (L = 5 m)		(kg)
	Sensing dis (Sn) mm Stainless	stance Function steel case, qua	Output asi-flush r PNP	nountable Pre-cabled (L = 2 m) Pre-cabled (L = 5 m) M8 connector	XS605R1PAL2 XS605R1PAL5 XS605R1PAM08	(kg) 0.030 0.030 0.004
	Sensing dis (Sn) mm Stainless	stance Function steel case, qua	Output asi-flush ı	Pre-cabled (L = 2 m) Pre-cabled (L = 5 m) M8 connector Pre-cabled (L = 2 m)	XS605R1PAL2 XS605R1PAL5 XS605R1PAM08 XS605R1NAL2	(kg) 0.030 0.030 0.004 0.030
	Sensing dis (Sn) mm Stainless	stance Function steel case, qua NO	Output asi-flush r PNP NPN	Pre-cabled (L = 2 m) Pre-cabled (L = 5 m) M8 connector Pre-cabled (L = 2 m) M8 connector	XS605R1PAL2 XS605R1PAL5 XS605R1PAM08 XS605R1NAL2 XS605R1NAM08	(kg) 0.030 0.030 0.004 0.030 0.004
	Sensing dis (Sn) mm Stainless	stance Function steel case, qua	Output asi-flush r PNP	Pre-cabled (L = 2 m) Pre-cabled (L = 5 m) M8 connector Pre-cabled (L = 2 m) M8 connector Pre-cabled (L = 2 m)	XS605R1PAL2 XS605R1PAL5 XS605R1PAM08 XS605R1NAL2	(kg) 0.030 0.030 0.004 0.030 0.004 0.030
	Sensing dis (Sn) mm Stainless	stance Function steel case, qua NO	Output asi-flush r PNP NPN	Pre-cabled (L = 2 m) Pre-cabled (L = 5 m) M8 connector Pre-cabled (L = 2 m) M8 connector	XS605R1PAL2 XS605R1PAL5 XS605R1PAM08 XS605R1NAL2 XS605R1NAM08	(kg) 0.030 0.030 0.004 0.030 0.004
	Sensing dis (Sn) mm Stainless	stance Function steel case, qua NO	Output asi-flush r PNP NPN	Pre-cabled (L = 2 m) Pre-cabled (L = 5 m) M8 connector Pre-cabled (L = 2 m) M8 connector Pre-cabled (L = 2 m)	XS605R1PAL2 XS605R1PAL5 XS605R1PAM08 XS605R1NAL2 XS605R1NAM08 XS605R1PBL2	(kg) 0.030 0.030 0.004 0.030 0.004 0.030
	Sensing dis (Sn) mm Stainless	stance Function steel case, qua NO	Output asi-flush r PNP NPN PNP	Nountable Pre-cabled (L = 2 m) Pre-cabled (L = 5 m) M8 connector Pre-cabled (L = 2 m) M8 connector Pre-cabled (L = 2 m) M8 connector	XS605R1PAL2 XS605R1PAL5 XS605R1PAM08 XS605R1NAL2 XS605R1NAM08 XS605R1PBL2 XS605R1PBM08	(kg) 0.030 0.030 0.004 0.030 0.004 0.030 0.004
3	Sensing dis (Sn) mm Stainless	stance Function steel case, qua NO	Output asi-flush r PNP NPN PNP	Pre-cabled (L = 2 m) Pre-cabled (L = 5 m) M8 connector Pre-cabled (L = 2 m) M8 connector Pre-cabled (L = 2 m) M8 connector Pre-cabled (L = 2 m)	XS605R1PAL2 XS605R1PAL5 XS605R1PAM08 XS605R1NAL2 XS605R1NAM08 XS605R1PBL2 XS605R1PBM08 XS605R1NBL2	(kg) 0.030 0.030 0.004 0.030 0.004 0.030 0.004 0.030
	Sensing dis (Sn) mm Stainless 1,5	stance Function steel case, qua NO	Output asi-flush r PNP NPN PNP	Pre-cabled (L = 2 m) Pre-cabled (L = 5 m) M8 connector Pre-cabled (L = 2 m) M8 connector Pre-cabled (L = 2 m) M8 connector Pre-cabled (L = 2 m) M8 connector	XS605R1PAL2 XS605R1PAL5 XS605R1PAM08 XS605R1NAL2 XS605R1NAM08 XS605R1PBL2 XS605R1PBM08 XS605R1NBL2 XS605R1NBM08	(kg) 0.030 0.030 0.004 0.030 0.004 0.030 0.004 0.030 0.004
	Sensing dis (Sn) mm Stainless 1,5	stance Function steel case, qua NO	Output asi-flush r PNP NPN PNP	Pre-cabled (L = 2 m)         Pre-cabled (L = 5 m)         M8 connector         Pre-cabled (L = 2 m)         M8 connector	XS605R1PAL2 XS605R1PAL5 XS605R1PAM08 XS605R1NAL2 XS605R1NAM08 XS605R1PBL2 XS605R1PBM08 XS605R1NBL2 XS605R1NBM08 XS505R1PAL2	(kg) 0.030 0.030 0.004 0.030 0.004 0.030 0.004 0.030 0.004
	Sensing dis (Sn) mm Stainless 1,5	stance Function steel case, qua NO	Output asi-flush r PNP NPN PNP NPN PNP	Pre-cabled (L = 2 m)         Pre-cabled (L = 5 m)         M8 connector         Pre-cabled (L = 2 m)         M8 connector	XS605R1PAL2 XS605R1PAL5 XS605R1PAM08 XS605R1NAL2 XS605R1NAM08 XS605R1PBL2 XS605R1PBM08 XS605R1PBM08 XS605R1NBL2 XS605R1NBM08 XS505R1PAL2 XS505R1PAM08	(kg) 0.030 0.030 0.004 0.030 0.004 0.030 0.004 0.030 0.004 0.030 0.004
	Sensing dis (Sn) mm Stainless 1,5	stance Function steel case, qua NO	Output asi-flush r PNP NPN PNP NPN PNP	Pre-cabled (L = 2 m)         Pre-cabled (L = 5 m)         M8 connector         Pre-cabled (L = 2 m)         M8 connector	XS605R1PAL2 XS605R1PAL5 XS605R1PAM08 XS605R1NAL2 XS605R1NAM08 XS605R1PBL2 XS605R1PBM08 XS605R1PBM08 XS605R1NBL2 XS605R1NBL2 XS505R1PAL2 XS505R1PAL2 XS505R1PAM08 XS505R1NAL2	(kg) 0.030 0.030 0.004 0.030 0.004 0.030 0.004 0.030 0.004 0.030 0.004
	Sensing dis (Sn) mm Stainless 1,5	stance Function steel case, qua NO NC	Output asi-flush i PNP NPN PNP NPN PNP	Pre-cabled (L = 2 m)         Pre-cabled (L = 5 m)         M8 connector         Pre-cabled (L = 2 m)         M8 connector         M8 connector         M8 connector         M8 connector         M8 connector         M8 connector	XS605R1PAL2 XS605R1PAL5 XS605R1PAM08 XS605R1NAL2 XS605R1NAM08 XS605R1PBL2 XS605R1PBL2 XS605R1NBL2 XS605R1NBL2 XS605R1NBL2 XS505R1NAL2 XS505R1PAL2 XS505R1NAL2 XS505R1NAL2 XS505R1NAM08 XS505R1PBL2	(kg) 0.030 0.030 0.004 0.030 0.004 0.030 0.004 0.030 0.004 0.030 0.004 0.030 0.004 0.030
	Sensing dis (Sn) mm Stainless 1,5	stance Function steel case, qua NO NC	Output asi-flush i PNP NPN PNP NPN PNP NPN PNP	Pre-cabled (L = 2 m)         Pre-cabled (L = 5 m)         M8 connector         Pre-cabled (L = 2 m)         M8 connector	XS605R1PAL2 XS605R1PAL5 XS605R1PAM08 XS605R1NAL2 XS605R1NAL2 XS605R1NBL2 XS605R1NBL2 XS605R1NBL2 XS605R1NBM08 XS505R1NBM08 XS505R1PAL2 XS505R1PAM08 XS505R1NAL2 XS505R1NAL2 XS505R1PAL2 XS505R1PAM08	(kg) 0.030 0.030 0.004 0.030 0.004 0.030 0.004 0.030 0.004 0.030 0.004 0.030 0.004 0.030 0.004 0.030 0.004
	Sensing dis (Sn) mm Stainless 1,5	stance Function steel case, qua NO NC	Output asi-flush i PNP NPN PNP NPN PNP	Pre-cabled (L = 2 m) M8 connector Pre-cabled (L = 5 m) M8 connector Pre-cabled (L = 2 m) M8 connector	XS605R1PAL2 XS605R1PAL5 XS605R1PAM08 XS605R1NAL2 XS605R1NAM08 XS605R1PBL2 XS605R1PBL2 XS605R1NBL2 XS605R1NBL2 XS605R1NBL2 XS505R1NAL2 XS505R1PAL2 XS505R1NAL2 XS505R1NAL2 XS505R1NAM08 XS505R1PBL2	(kg) 0.030 0.030 0.004 0.030 0.004 0.030 0.004 0.030 0.004 0.030 0.004 0.030 0.004 0.030

## Inductive proximity sensors

XS range, general purpose Miniature, cylindrical, quasi-flush mountable Three-wire DC, solid-state output

Sensor type			XSe04eeeeM08 XSe05eeeeM08	XSe04eeeeL2 XSe05eeeeLe			
Product certifications			cULus, CE, UKCA	UL, CE, UKCA			
Connection (1)	Connector	_	M8				
	Pre-cabled Length	m	-	2 for XS•0•••••L2 5 for XS605•••••L5			
Operating zone	XS504	mm	00.65				
	XS505	mm	00.65				
	XS604	mm	01.21				
	XS605	mm	01.21				
Degree of protection	Conforming to IEC 60529		IP 67				
Storage temperature			- 40+ 85				
Operating temperature		°C	- 25+ 70				
Materials Case			Stainless steel 303				
	Cable		PVC 3x0.149 mm <sup>2</sup>				
Vibration resistance			Conforming to IEC 60947-5-2				
Shock resistance			Conforming to IEC 60947-5-2				
Output state indication	LED		Yellow LED				
	Visibility		4 viewing ports at 90°	1 viewing port			
Rated supply voltage		v	1224				
Voltage limits (including ri	pple)	v	1030				
Insulation class			111				
Current consumption, no-	oad	mA	≤ 10				
Switching capacity	3-wire PNP/NPN	mA	≤ 100 with overload and short-circuit protect	ction			
Voltage drop, closed state		V	≤1.5				
Maximum switching freque	ency	kHz	5				
Delays	First-up	ms	50				

(1) Detection curves, see page 128

### Wiring schomes

winning schemes				
Connector	Pre-cabled	PNP 3-wire	NPN 3-wire	
M8 1 ( 3	BU: Blue BN: Brown BK: Black	BN/1 + PNP BK/4 (NO) BK/4 (NC) BU/3 -	BN/1 + NPN BK/4 (NO) BU/3 -	

### Setting-up

	Sensor	d4			d1	d2	d3
t	Ø 4 <b>XS504</b> steel	≥ 2 (1)	≥ 3 (2)	≥0 (3)	≥4	≥8	≥2.4
<b>-</b>	Ø 4 XS604 steel	≥ 3 (1)	≥ 4 (2)	≥ 0 (3)	≥4	≥8	≥4.5
	Ø 5 <b>XS505</b> steel	≥ 0 (1)	≥ 1 (2)	≥ 0 (3)	≥5	≥5	≥2.4
	Ø 5 XS605 steel	≥ 1 (1)	≥ 2 (2)	≥ 0 (3)	≥ 5	≥ 10	≥4.5

(2) If mounting environment is non ferro-magnetic metal, such as aluminium, copper, brass, gold, silver, titanium, etc. 4 (3) If mounting environment is non-metal, such as plastic, wood, etc.

#### **Tightening torque**



For Ø 5: A < 1.5 N.m.

#### Dimension

	Sensor	Pre-cabled		M8 connector	
		а	b	а	b
	Ø4XS•04	30.2	-	38.4	-
b b	Ø 5 XS•05	30.2	26.5	38.4	22.1
а					

### References

**Inductive proximity sensors** XS range, general purpose Miniature, cylindrical, flush mountable Three-wire DC, solid-state output

	Sensing distance Sn) mm	Function	Output	Connection (1)	Reference	Weight (kg)
0	Brass case, flus	sh mounta	able	(*)		(9)
1	,	NO	PNP	Pre-cabled (L = 2 m)	XS1L04PA310	0,025
				M8 connector	XS1L04PA310S	0.010
			NPN	Pre-cabled (L = 2 m)	XS1L04NA310	0.025
				M8 connector	XS1L04NA310S	0.010
		NC	PNP	Pre-cabled (L = 2 m)	XS1L04PB310	0.025
0S				M8 connector	XS1L04PB310S	0.010
			NPN	Pre-cabled (L = 2 m)	XS1L04NB310	0.025
				M8 connector	XS1L04NB310S	0.010
S	Stainless steel	case, flus	h mounta	ble		
0,	8	NO	PNP	Pre-cabled (L = 2 m)	XS1L04PA311	0,025
				M8 connector	XS1L04PA311S	0.010
			NPN	Pre-cabled (L = 2 m)	XS1L04NA311	0.025
				M8 connector	XS1L04NA311S	0.010
		NC	PNP	Pre-cabled (L = 2 m)	XS1L04PB311	0.025
				M8 connector	XS1L04PB311S	0.010
			NPN	Pre-cabled (L = 2 m)	XS1L04NB311	0.025
				M8 connector	XS1L04NB311S	0.010
	Ø 5, threade	d M5 x 0	.5			
uuunesaa ala kuuuna	Sensing distance Sn) mm			Connection (1)	Reference	Weight (kg)
I	Brass case, flus	sh mounta	able			
1		NO	PNP	Pre-cabled (L = 2 m)	XS1N05PA310	0,030
			NPN	Pre-cabled (L = 2 m)	XS1N05NA310	0,030
		NC	PNP	Pre-cabled (L = 2 m)	XS1N05PB310	0,030
			NPN	Pre-cabled (L = 2 m)	XS1N05NB310	0,030
	Stainless steel					
0.	8	NO	PNP	Pre-cabled (L = 2 m)	XS1N05PA311	0.030
mun San Same				M8 connector	XS1N05PA311S	0.015
310			NPN	Pre-cabled (L = 2 m)	XS1N05NA311	0.030
				M8 connector	XS1N05NA311S	0.015
		NC	PNP	Pre-cabled (L = 2 m)	XS1N05PB311	0.030
				M8 connector	XS1N05PB311S	0.004
			NPN	Pre-cabled (L = 2 m)	XS1N05NB311	0.004
				M8 connector	XS1N05NB311S	0.015
(1				ence; for a 10 m long ca I <b>L04PA310L1</b> with a 5		erence.

## Inductive proximity sensors

XS range, general purpose Miniature, cylindrical, flush mountable Three-wire DC, solid-state output

Sensor type			XS1L04●●●●●S, XS1N05●●●●●●S	XS1L04•••••• XS1N05•••••				
Product certifications			cULus, C€, UKCA					
Connection (1)	Connector		M8	-				
	Pre-cabled Length	m	-	2				
Operating zone	Ø4brass	mm	00.8					
Ø 4 stainless steel		mm	00.6					
	Ø5brass	mm	00.8					
	Ø 5 stainless steel	mm	00.6					
Degree of protection	Conforming to IEC 60529		IP 67					
Storage temperature			- 40+ 85					
Operating temperature		°C	- 25+ 70					
Materials Case			Nickel plated brass or stainless steel 303					
	Cable		PvR 3 x 0.11 mm <sup>2</sup>					
Vibration resistance	Conforming to IEC 60068-2-6		25 gn, amplitude $\pm$ 2 mm (f = 10 to 55 Hz)					
Shock resistance	Conforming to IEC 60068-2-27		50 gn, duration 11 ms					
Output state indication	LED		Yellow LED					
	Visibility		1 viewing port					
Rated supply voltage		v	524					
Voltage limits (including ri	ipple)	V	530					
Insulation class								
Current consumption, no-	load	mA	≤10					
Switching capacity	3-wire PNP/NPN	mA	≤ 100 with overload and short-circuit protection	on				
Voltage drop, closed state	!	V	≤2					
Maximum switching frequ	ency	kHz	5					
Delays	First-up	ms	≤5					
	Response	ms	≤0.1					
	Recovery	ms	≤0.1					

(1) Detection curves, see page 128

#### Wiring schemes NPN 3-wire Connector **Pre-cabled** PNP 3-wire BU: Blue BN: Brown BK/4 (NO) M8 BN/1 + BN/1 PNP BK/4 (NO) NPN BK: Black $\Diamond$ <u>BK/4 (NC)</u> $\bigcirc$ Г BU/3 BU/3 Setting-up

Sensor	Side by side	Face to face	Facing a metal object	
			z · · · ·	
Ø 4 XS1L04••••••	e≥2	e≥12	e≥3	d1≥4, h≥0
Ø 5 XS1N0500000	e≥2	e≥12	e≥3	d1≥5, h≥0

#### **Tightening torque**



Stainless steelA = 2.2 N.m.BrassA = 1.6 N.m

(values obtained with washers mounted)

### Dimensions

Bimonorono					
	Sensor	Pre-cabled		M8 connector	
		а	b	а	b
	Ø4XS1L0400000	28	-	43	-
b b	Ø 5 XS1N0500000	28	24	43	24
а					

### References



XS6••B2••L01M12

## Inductive proximity sensors

XS range application Adjustable range sensors Cylindrical, flush mountable using teach mode (1) Three-wire DC, solid-state output

Ø 12, threaded M12 x 1						
Sensing distance (Sn) mm	Function	Output	Connection	Reference	Weight (kg)	
5	NO	PNP	Remote M12 connector on 0.15 m flying lead	XS612B2PAL01M12	0.100	
	NC	PNP	Remote M12 connector on 0.15 m flying lead	XS612B2PBL01M12	0.100	
Ø 18, threa	aded M1	8 x 1				
Ø 18, threa Sensing distance (Sn) mm	aded M1 Function		Connection	Reference	Weight (kg)	
Sensing distance (Sn)			Connection Remote M12 connector on 0.15 m flying lead		•	

Ø 30, threaded M30 x 1.5							
Sensing distance (Sn) mm	Function	Output	Connection	Reference	Weight (kg)		
18	NO	PNP	Remote M12 connector on 0.15 m flying lead	XS630B2PAL01M12	0.220		



Accessories (2) Weight Description For use with Reference sensors (mm) (kg) Fixing clamps XSZB112 0.006 Ø 12 Ø 18 XSZB118 0.010 Ø 30 XSZB130 0.020

(1) For further information on flush or non-flush mountable sensors using teach mode, see page (2) For further information, see page 120.

### Inductive proximity sensors

XS range application Adjustable range sensors Cylindrical, flush mountable using teach mode Three-wire DC, solid-state output

Sensor type				XS6eeB2eeL01M12	
Product certification	าร			cULus, CE, UKCA	
Connection	Connecto	r		Remote M12 connector on 0.15 m flying lead	
Sensing distance	Ø 12	Nominal sensing distance (Sn)	mm	05 non-flush mounted / 03.4 flush mounted	
and adjustment		Precision adjustment zone	mm	1.75 non-flush mounted / 1.73.4 flush mounted	
zone	Ø 18	Nominal sensing distance (Sn)	mm	09 non-flush mounted / 06 flush mounted	
		Precision adjustment zone	mm	39 non-flush mounted / 36 flush mounted	
	Ø 30	Nominal sensing distance (Sn)	mm	018 non-flush mounted / 011 flush mounted	
		Precision adjustment zone	mm	618 non-flush mounted / 611 flush mounted	
Differential travel			%	115 of effective sensing distance (Sr)	
Degree of protection	n Conformi	ng to IEC 60529		IP 67	
Storage temperature	e		°C	- 40+ 85	
Operating temperate	ure		°C	- 25+ 70	
Materials	Case			Nickel plated brass	
Remote control		ontrol		РВТ	
	Cable			PvR - Ø 4.2 mm	
Vibration resistance	Conformi	ng to IEC 60068-2-6		25 gn, amplitude ± 2 mm (f = 10 to 55 Hz)	
Shock resistance	Conformi	ng to IEC 60068-2-27		50 gn, duration 11 ms	
Indicators	Output sta	ate		Yellow LED	
	Supply on	and teach mode		Green LED	
Rated supply voltag	e		۷	== 1224 with protection against reverse polarity	
Voltage limits (inclue	ding ripple	)	۷	1036	
Insulation class					
Switching capacity			mA	< 100 with overload and short-circuit protection	
Voltage drop, closed			V	≤2	
Current consumptio	,		mA	≤ 10	
Maximum switching	frequency	,	Hz	1000	
Delays	First-up		ms	≤10	
	Response		ms	≤0.3	
	Recovery		ms	≤0.7	
Winingsocker					

#### Wiring schemes

Connector M12 3



## Setting-up

### Minimum mounting distances (mm)

+

4(NO)

<u>\_2(NC)</u>

Г

NPN

1

3

NPN

|



PNP

1

PNP

3

|

	Side by side flush mounted	not flush mounted
Ø 12	e≥14	50
Ø 18	e≥28	100
Ø 30	e≥48	180

Face to fac	е
flush mounted	not flush mounted
e≥50	100
e≥100	200
e≥180	360

4(NO)

2(NC)

+

e

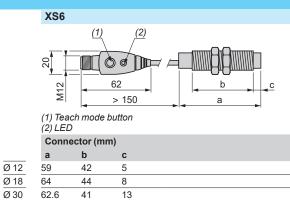
e

е

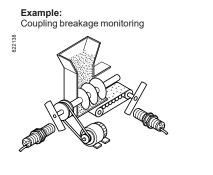
Facing a metal object

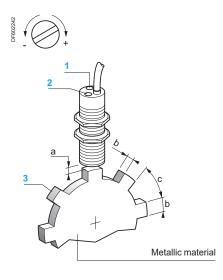
≥3.4		
≥6		
≥ 11		

#### **Dimensions**



### Functions, principle, setting-up





### Inductive proximity sensors

XS range application Sensors for rotation monitoring, slip detection, shaft overload detection Cylindrical form

#### Functions

These self-contained rotation speed monitoring sensors have the special feature of incorporating, in the same case, the pulse sensing and processing electronics as well as the output switching amplifier that are required to establish an integrated rotation monitoring device.

The unit provides an economical solution for detecting slip, belt breakage, drive shaft shear and overloading, etc., in the following applications: conveyor belts, bucket elevators, Archemedian screws, grinders, crushers, pumps, centrifugal driers, mixers, etc.

#### **Operating principle**

The output signal of this type of sensor is processed by an impulse comparator incorporated in the sensor. The impulse frequency Fc generated by the moving part to be monitored is compared to the frequency Fr preset on the sensor. The output switching circuit of the sensor is in the closed state for Fc > Fr and the open state for Fc < Fr.

Sensors XSAV are particularly suitable for the detection of underspeed: when the speed of the moving part Fc falls below a preset threshold Fr, this causes the output circuit of the sensor to switch off.

**Note:** Following power-up, the operational status of the sensor is subject to a delay of 9 seconds in order for the moving part being monitored to run-up to its nominal speed. During this time, the output of the sensor remains in the closed state.

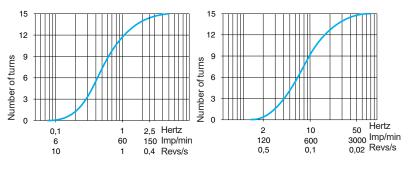
#### Adjustment of frequency threshold

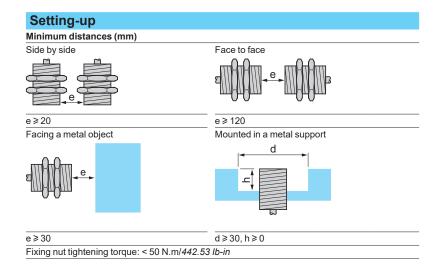
- Adjustment of sensor's frequency threshold: using potentiometer, 15 turns approximately.
- To increase the frequency threshold: turn the adjustment screw clockwise (+)
- To decrease the frequency threshold: turn the adjustment screw anti-clockwise (-).

1: Potentiometer	Diamete	Diameter of sensor				
2: LED		а	b	С		
3: Metal target	M30	46 mm	30 mm	60 mm		

#### Potentiometer adjustment curves (for XSAV1 $\bullet$ 801, 2-wire $\sim$ or = sensors)

Low speed version (6...150 impulses/minute) High speed version (120...3000 impulses/minute)





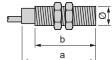
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### References, characteristics, dimensions, schemes

### Inductive proximity sensors

XS range application Sensors for rotation monitoring, slip detection, shaft overload detection Cylindrical form

#### Flush mountable in metal



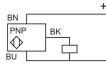


Lengths (mm): a = Overall b = Threaded section a = 81 b = 67 Ø = M30

Nominal sensing distance (Sn)       Adjustable frequency range       References       3-wire     PNP / NC       2-wire     Improve or 10 / NC       Weight (kg)     Characteristics	DC 10 mm 6150 impulses/min XSAV11373 – 0.300	DC           10 mm           1203000 impulses/min           XSAV12373           -	AC/DC 10 mm 6150 impulses/min - XSAV11801	AC/DC 10 mm 1203000 impulses/min - XSAV12801			
Adjustable frequency range       References       3-wire □ PNP / NC       2-wire □ or ~ / NC       Weight (kg)	6150 impulses/min <b>XSAV11373</b> -	1203000 impulses/min XSAV12373	6150 impulses/min	1203000 impulses/min			
References       3-wire IIII PNP / NC       2-wire IIII or ~ / NC       Weight (kg)	XSAV11373	XSAV12373	-	-			
3-wire	-		- XSAV11801	XSAV12801			
2-wire or ~ / NC Weight (kg)	-		- XSAV11801	- XSAV12801			
Weight (kg)	0.300	_	XSAV11801	XSAV12801			
	0.300						
Characteristics		300					
onaraotoniotioo							
Product certifications	cULus, CCC, C€, UKCA						
Connection	Pre-cabled, 3 x 0.34 mm <sup>2</sup> , le	ength 2 m <i>(1)</i>	Pre-cabled, 2 x 0.34 mm <sup>2</sup> ,	length 2 m (1)			
Degree of protection conforming to IEC 60529	IP 67						
Operating zone m	<b>nm</b> 08	08					
Repeat accuracy %	% 3 of Sr	3 of Sr					
Differential travel %	% 315 of Fr						
Operating temperature	° <b>C</b> - 25+ 70						
Output state indication	Red LED						
Rated supply voltage	/	gainst reverse polarity	$\sim$ 24240 (50/60 Hz) or == 24210				
Voltage limits V (including ripple)	/ == 1058		~ or == 20264				
Insulation class			-				
Switching capacity m	nA ≤ 200 with overload and short-circuit protection	on	$\sim$ 5350 or $=$ 5200 (2)	)			
Voltage drop, closed state	/ ≤1.8		≤ 5.7				
Residual current, open state m	mA –		≤1.5				
Current consumption, no-load	<b>mA</b> ≤ 15		-				
Maximum switching frequency	6000 impulses/min (for XSA	<b>4V11●●●</b> ); 48,000 impulses/min	(for <b>XSAV12</b> •••)				
"Run-up" delay following power-up	Jelay following     9 seconds ± 20 % + 1/Fr (3)						

#### Wiring schemes





Z-wire		1	
	BN		$\sim$
•			
$\mathbf{O}$			
•	BU		$\sim$

(1) For a 5 m long cable add L05 to the reference, for a 10 m long cable add L10 to the reference.

Example: XSAV11373 becomes **XSAV11373L05** with a 5 m long cable.

(3) For a sensor without a "run-up" delay following power-up, replace XSAV1 in the reference by XSAV0. Example: XSAV1801 becomes XSAV01801 without a "run-up" delay. For a reduced "run-up" delay of 3 s, replace XSAV1 in the reference by XSAV3.

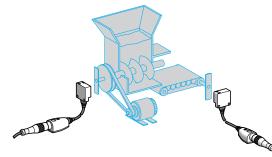
<sup>(2)</sup> These sensors do not incorporate overload or short-circuit protection and therefore, it is essential to connect a 0.4 A "quick-blow" fuse in series with the load, see page 120.

### Inductive proximity sensors

XS range application

Sensors for rotation monitoring, slip detection and shaft overload detection, with teach mode

### Operating principle and applications



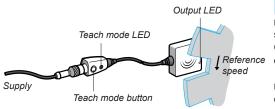
These inductive proximity sensors are designed for monitoring rotational speed or the speed of the flow of objects to be protected or monitored. They operate on the principle of comparing a speed threshold preset by the operator against the instantaneous measurement of the speed of the moving object to be

They provide a simple, economical solution for detecting slip, belt breakage,

coupling breakage and overload, etc.

■ They are widely used in grinder/crusher, mixer, pump, centrifugal driver, conveyor belt, bucket elevator, Archimedean screw, etc. type applications.

#### Installation and setting-up

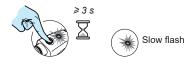


#### Setting-up and positioning the sensor

■ In the positioning phase, the XS9 sensor can operate as a standard inductive sensor (Schneider Electric patent).

Operation in inductive mode enables validation of reliable detection of all the moving objects to be monitored.

■ Using this system, the positioning is therefore made 100 % reliable and can be checked at any time without altering the settings of the sensor.





#### Speed adjustment in teach mode

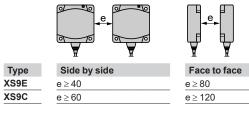
■ The normal or reference speed of the moving object (1) to be monitored is adjusted by simply pressing the teach mode button (2) and is then validated by the display LED.

□ If in doubt, the sensor can be reset at any time to the factory settings.

- (1) To allow the moving object to reach its normal speed (machine inertia), the sensor holds its output closed for 9 seconds.
- (2) The sensor's default drop-out underspeed corresponds to the preset speed 30 %. Example: If the preset speed is 1000 rpm, the sensor drops out on underspeed when the speed of the moving object drops below 1000 - (1000 x 0.3) = 700 rpm. - 20 %, - 11 % and - 6 % thresholds can be obtained by pressing the teach mode button.

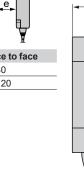
#### Setting-up

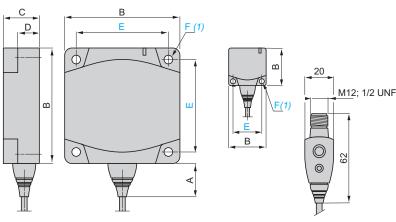
#### Minimum mounting distances (mm)



### Dimensions

#### XS9E, XS9C





#### (1) For CHC type screws

Туре	А	В	С	D	E	F	
XS9E	14	26	13	8.8	20	3.5	
XS9C	14	40	15	9.8	33	4.5	

### References, characteristics, schemes, accessories

**Inductive proximity sensors** XS range application Sensors for rotation monitoring, slip detection and shaft overload detection, with teach mode

Sensor type			Flush mountable in meta	1		
			PBT case			
Nominal sensing distan	ce (Sn)		10 mm		15 mm	
Adjustable frequency ra	inge		66000 impulses/min			
References						
3-wire	PNP/NC		XS9E11RPBL01M12	-	-	
2-wire	$=$ or $\sim$ / NC		-	XS9E11RMBL01U20	XS9C11RMBL01U	20
Weight (kg)			0.040	0.040	0.060	
Characteristics						
Product certifications			cULus, CE, UKCA			
Connection			Remote M12 connector on 0.15 m flying lead	Remote 1/2"-20UNF connect	ctor on 0.15 m flying lead	Ł
Operating zone		mm	08	08	012	
Degree of protection	Conforming to IEC 60529		IP 67			
Storage temperature		°C	- 40+ 85			
Operating temperature		°C	- 25+ 70			
Vibration resistance	Conforming to IEC 60068-2-6		25 gn, amplitude $\pm 2$ mm (f = 1	0 to 55 Hz)		
Shock resistance	Conforming to IEC 60068-2-27		50 gn, duration 11 ms			
Indicators	Output state		Yellow LED Green LED			
Rated supply voltage	Supply on	v	1224	$\sim$ or == 24240 (50/60 Hz)	1	
Voltage limits (including	ripple)	v	1036	$\sim$ or = 20264	·	
Insulation class		-				
	$\overline{\sim}$		1			
Switching capacity		mA	≤ 100 <i>(1)</i>	$\sim$ or == 5100 (2)		
Voltage drop, closed sta		V	≤2	≤ 5.5		
Residual current, open s		mA	≤ 100	≤ 1.5		
Current consumption, n		mA	≤10 (a.a.a.a.)	-		
Maximum switching free			48,000 impulses/min			
"Run-up" delay followin	ig power-up		9 seconds + 1/Fr (1) With overload and short-circ	wit protection		
			(1) With overload and short-circ (2) It is essential to connect a 0.		s with the load.	
Wiring schemes						
Connector			3-wire	2-wire ~		
M12	1/2"-20UNF		XS9e11RPBL01M12	X59e11R	MBL01U20	
			1 + PNP 2 - 3	$\bigcirc$		
Accessory (1)						
9			Description	Reference	)	Weigh
			Remote control fixing clamp	XSZBPM1		( <b>kg</b> 0.01

XSZBPM12 (1) For accessories, see page 120.

10 0

### Functions. principle, curves, schemes

### Inductive proximity sensors

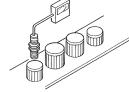
XS range application

Sensors with analogue output signal 0...10 V (1) or 4...20 mA

For position, displacement and deformation control/monitoring

### **Functions**

Example: Sorting parts

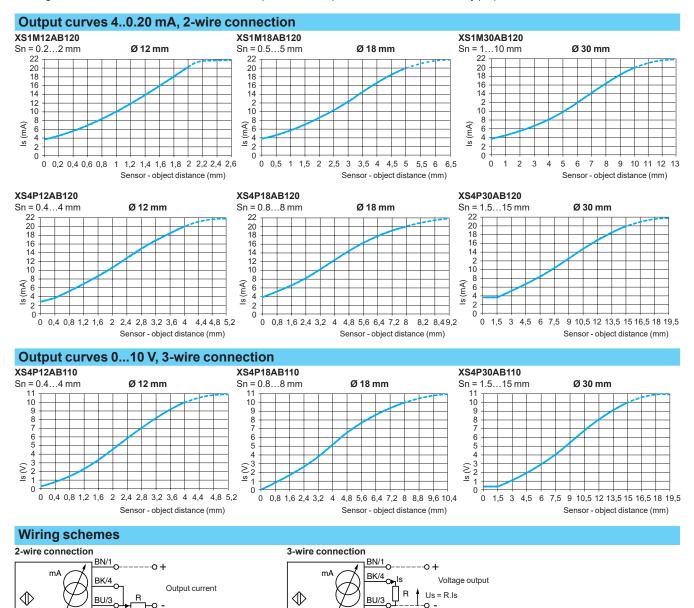


These analogue output proximity sensors are solid-state sensors designed for monitoring displacement. They are not measuring sensors. They are suitable for use in many sectors, particularly for applications involving:

- deformation and displacement monitoring,
- vibration amplitude and frequency monitoring,
- control of dimensional tolerances,
- position control,
- concentricity or eccentricity monitoring.

#### **Operating principle**

The operating principle of the sensor is that of a damped oscillator. The degree of damping will depend on the distance of an object from the sensing face. The sensor will sense the distance and produce an output current with a value directly proportional to this distance.



Output current	Load impedance value	_	Output current	Load impedance value	Output voltage	Load impedance value
420 mA	R≤8.2Ω	24 V	010 mA	R ≤ 1500 Ω	010 V	R = 1000 Ω
420 mA	R≤470Ω	48 V	010 mA	R≤3300 Ω	010 V	R = 1000 Ω
nimum of 10 V betwee	en the + and the - (terminal 3	) Ensure	a minimum of 5 V bet	ween the + and the ser	nsor output (terminal	4).

Ensure a minim of the sensor.

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

Characteristic pages 83 to 85

References pages 83 to 85 82

12 V

24 V

### References, characteristics, setting-up

XS4P12AB120 non-flush mountable e≥16

## Inductive proximity sensors

XS range application Sensors with analogue output signal 0...10 V (1) or 4...20 mA For position, displacement and deformation control/monitoring

Sensor type		Flush mountable in metal	Non-flush mountable in metal			
	I					
Lengths: a = Overall b = Threaded section	mm	a = 50 b = 42	a = 50 b = 42	a = 54 b = 42		
		Metal case	Plastic case	Plastic case		
Nominal sensing distance (Sn)	mm	2	4	4		
References						
3-wire Output 010 V (2)		-	-	XS4P12AB110 (4)		
2-wire Output 420 mA (2)		XS1M12AB120 (3) (4)	XS4P12AB120 (4)	-		
Weight	kg	0.075	0.065	0.065		
Characteristics						
Product certifications		cULus, C€, UKCA				
Connection		Pre-cabled, PvR 3 x 0.34 mm², length 2 m				
Degree of protection Conforming to IEC 60529		IP 67				
Operating zone	mm	0.22	0.44	0.44		
Repeat accuracy	%	±3				
Linearity error	mA	±2 ±1V				
Ambient air temperature	°C	For operation: - 25+ 70				
Rated supply voltage	v	1224	1224			
Voltage limits (including ripple)	v	1036	1036	1558		
Insulation class						
Output current drift	%	≤ 10 (ambient temperature: - 25+ 70 °C)				
Current consumption, no-load	mA	4				
Maximum operating rate	Hz	1500				
		<ul> <li>(1) Voltage range only obtained with a load impedance of 1000 Ω.</li> <li>(2) Output current range Is, see page 82.</li> <li>(3) of the other of professor for Microanter sector sector.</li> </ul>				

(3) Add D at the end of reference for M12 connector version

(4) For 5 m cable, add L1 at the end of the reference

Setting-up				
Minimum mounting distances (mm)	Side by side	Face to face	Facing a metal object	Mounted in a metal support
			₽	
XS1M12AB120 flush mountable	e≥4	e≥24	e≥6	d≥12, h≥0
XS4P12AB110 non-flush mountable	e≥16	e≥48	e≥12	d≥36, h≥8

Fixing nut tightening torque	< 6 N.m (metal case), < 2 N.m (plastic case)
Other versions	Please consult our Customer Care Centre.

e≥48

e≥12

d≥36, h≥8

### References, characteristics, setting-up

## Inductive proximity sensors

XS range application Sensors with analogue output signal 0...10 V (1) or 4...20 mA

Sensor type		Flush mountable in metal	Non-flush mountable in metal			
Lengths (mm): a = Overall b = Threaded section c = For non-flush mountable sensors	mm	a = 53 b = 44 c = 0	a = 41 b = 26 c = 8	a = 41 b = 26 c = 8		
		Metal case	Plastic case	Plastic case		
Nominal sensing distance (Sn)	mm	5	8	8		
References		•	•	•		
3-wire Output 010 V (2)		-	-	XS4P18AB110 (4)		
2-wire Output 420 mA (2)		XS1M18AB120 (3) (4)	XS4P18AB120 (4)	-		
Weight	kg	0.120	0.080	0.080		
Characteristics		'	'	'		
Product certifications		cULus, C€, UKCA				
Connection		Pre-cabled, PvR 3 x 0.34 mm², length 2 m				
Degree of protection Conforming to IEC 60529		IP 67				
Operating zone	mm	0.55	0.88	0.88		
Repeat accuracy	%	±3				
Linearity error	mA	±2	±1V			
Ambient air temperature	°C	For operation: - 25+ 70				
Rated supply voltage	v	1224	1224	<b>244</b> 8		
Voltage limits (including ripple)	v	1036	1036	1558		
Insulation class						
Output current drift	%	≤ 10 (ambient temperature: - 25…+ 70	0°C)			
Current consumption, no-load	mA	4				
Maximum operating rate	Hz	500				
		(1) Voltage range only obtained with a	load impedance of 1000 $\Omega$ .			

(2) Output current range ls, see page 82.
(3) Add D at the end of reference for M12 connector version
(4) For 5 m cable, add L1 at the end of the reference

#### Setting-up

Minimum mounting distances (mm) Side by side Face to face Facing a metal object Mounted in a metal support d Ĺ

XS1M18AB120 flush mountable	e≥10	e≥60	e≥15	d≥18, h≥0
XS4P18AB110 non-flush mountable	e≥32	e≥96	e≥24	d≥54, h≥16
XS4P18AB120 non-flush mountable	e≥32	e≥96	e≥24	d≥54, h≥16

Fixing nut tightening torque	< 15 N.m (metal case), < 5 N.m (plastic case)		
Other versions	Please consult our Customer Care Centre.		

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### References, characteristics, setting-up (continued)

**Inductive proximity sensors** XS range application Sensors with analogue output signal 0...10 V (1) or 4...20 mA

Sensor type		Flush mountable in metal	Non-flush mountable in metal			
Lengths: a = Overall b = Threaded section c = For non-flush mountable sensors	mm	a = 50 b = 42 c = 0	a = 53 b = 32 c = 13	a = 53 b = 32 c = 13		
Nominal sensing distance (Sn)	mm	Metal case 10	Plastic case	Plastic case		
		10	15	10		
References						
3-wire Output 010 V (2)		-	-	XS4P30AB110		
2-wire Output 420 mA (2)		XS1M30AB120 (3)	XS4P30AB120	-		
Weight	kg	0.200	0.100	0.100		
Characteristics						
Product certifications		cULus, C€, UKCA				
Connection		Pre-cabled, PvR 3 x 0.34 mm <sup>2</sup> , leng	th 2 m			
Degree of protection Conforming to IEC 60529		IP 67				
Operating zone	mm	110	1.515	1.515		
Repeat accuracy	%	±3	J			
Linearity error	mA	±2	±1V			
Ambient air temperature	°C	For operation: - 25+ 70				
Rated supply voltage	v			<b>2448</b>		
Voltage limits (including ripple)	v	1036	1036	1558		
Insulation class						
Output current drift Ambient temperature: - 25+ 70 °C	%	≤ 10				
Current consumption, no-load	mA	4				
Maximum operating rate	Hz	300				
		<ol> <li>Voltage range only obtained with a</li> <li>Output current range ls, see page 8</li> <li>Add D at the end of reference for M</li> </ol>	32.			

### Sotting\_up

Setting-up				
Minimum mounting distances (mm)	Side by side	Face to face	Facing a metal object	Mounted in a metal support
			₽	
XS1M30AB120 flush mountable	e≥20	e≥120	e≥30	d≥30, h≥0
XS4P30AB110 non-flush mountable	e≥60	e≥180	e≥45	d≥90, h≥30
XS4P30AB120 non-flush mountable	e≥60	e≥180	e≥45	d≥90, h≥30
Fixing nut tightening torque	< 40 N.m (metal case), < 20 N	J.m (plastic case)		
Other versions	Please consult our Customer Care Centre.			

```
Schemes:
page 82
Accessories:
page 120
```

#### **Functions**

These analogue output proximity sensors are solid-state sensors designed for monitoring displacement. They are not measuring sensors.

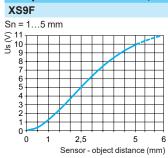
#### They are suitable for use in many sectors, particularly for applications involvina:

- □ deformation and displacement monitoring,
- □ vibration amplitude and frequency monitoring,
- □ control of dimensional tolerances,
- □ position control,
  - □ concentricity or eccentricity monitoring.

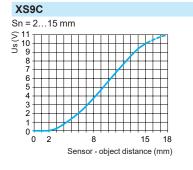
#### **Operating principle**

The operating principle of the sensor is that of a damped oscillator. The degree of damping will depend on the distance of an object from the sensing face. The sensor will sense the distance and produce an output current with a value directly proportional to this distance.

#### Output curves 0...10 V, 3-wire connection







#### XS9D Sn = 5...40 mm (>11 ≤) 10 9 10 9 8 7 6 5 4 3 2 0 0 0 40 45 5 20 Sensor - object distance (mm)

Wiring schemes Connector **Pre-cabled** 3-wire connection BN: Brown M12 <u>BN/1</u>0-BU: Blue -0+ BK/4 BK: Black ls Voltage output R  $\Diamond$ BU/3 Us=R.Is -0 --Load impedance Output Load impedance Output current value voltage value

24 V	010 mA	R≤1400 Ω	•	R = 1000 Ω	
Note: E	nsure a minin	num of 5 V betwe	een the + (terminal 1) and	the sensor output (ter	minal 4).

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

M8

### References, characteristics, dimensions, setting-up

### Inductive proximity sensors

XS range application Sensors with analogue output signal 0...10 V (1) For position, displacement and deformation control/monitoring

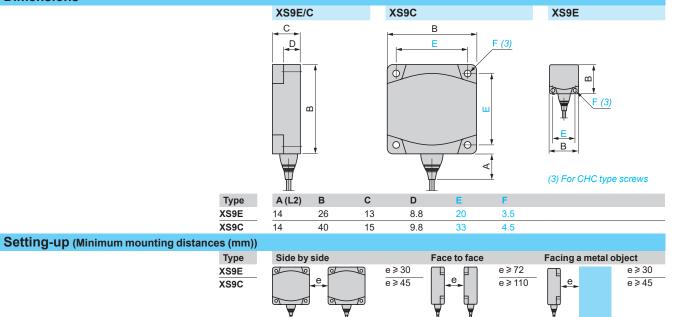
Flush mountable in metal







Nominal sensing distar	nce (Sn)	mm	10	15	
References					
<b>3-wire</b> 010 V	Pre-cabled (L = 2 m) <i>(2)</i>		XS9E111A1L2	XS9C111A1L2	
Weight		kg	0.075	0.095	
Characteristics					
Product certifications			cULus, CE, UKCA, ECOLAB		
Connection	Pre-cabled		PvR 3 x 0.34 mm <sup>2</sup> , length 2 m for XS9•111A•L	2	
Operating zone		mm	110	215	
Degree of protection Conforming to IEC 60529	Pre-cabled 9		IP 68		
Storage temperature		°C	- 40+ 85		
Operating temperature		°C	- 25+ 70		
Materials			PBT case		
Vibration resistance	Conforming to IEC 60068-2-6		25 gn, amplitude $\pm$ 2 mm (f = 10 to 55 Hz)		
Shock resistance	Conforming to IEC 60068-2-27		50 gn, duration 11 ms		
Output state indication			No		
Rated supply voltage		۷	24		
Voltage limits (includin	g ripple)		1536		
Insulation class					
Repeat accuracy		%	±3		
Linearity error		۷	±1		
Current consumption, no-load		mA	≤4 with overload and short-circuit protection		
Maximum operating fre	quency	Hz	1000		
Output current drift		%	≤ 10 (throughout the operating temperature range)		
Dimensions					



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

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

Example: XS9C111A1L2 becomes **XS9C111A1L5** with a 5 m long cable.

### Inductive proximity sensors

XS range application Sensors with analogue output signal 4...20 mA For position, displacement and deformation control/monitoring

### **Functions**

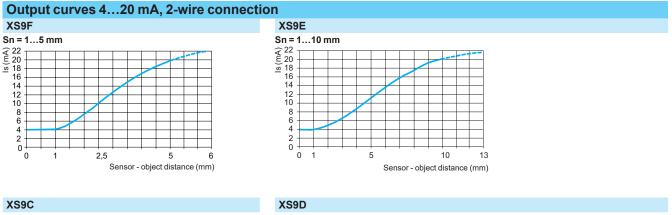
These analogue output proximity sensors are solid-state sensors designed for monitoring displacement. They are not measuring sensors.

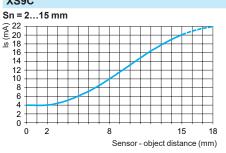
### They are suitable for use in many sectors, particularly for applications involving:

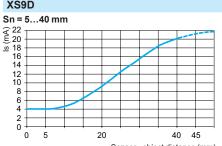
- □ deformation and displacement monitoring,
- □ vibration amplitude and frequency monitoring,
- □ control of dimensional tolerances,
- position control,
- □ concentricity or eccentricity monitoring.

#### **Operating principle**

The operating principle of the sensor is that of a damped oscillator. The degree of damping will depend on the distance of an object from the sensing face. The sensor will sense the distance and produce an output current with a value directly proportional to this distance.







Sensor - object distance (mm)

liring schemes			
onnector	Pre-cabled	2-wire connection	1
$\overset{4}{\underbrace{\bullet}}_{3}^{4}$	BN: Brown BU: Blue BK: Black		
		Output current	Load impedance value
		<b>12 V</b> 420 mA	R≤8.2Ω
		<b>24 V</b> 420 mA	R≤470Ω
		Note: Ensure a minim	um of 10 V between the + (terminal 1) and - (terminal 3) of the sensor.

Wi Co M8 4

### References, characteristics, dimensions, setting-up

## Inductive proximity sensors

XS range application Sensors with analogue output signal 4...20 mA For position, displacement and deformation control/monitoring

Sensor type



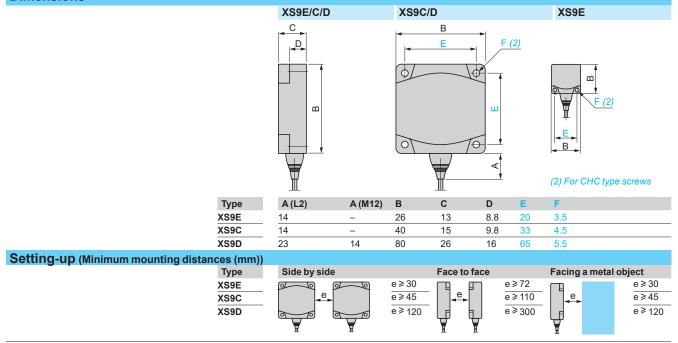
Flush mountable in metal PBT case







Nominal sensing distan	ice (Sn)	mm	10	15	40	
References						
2-wire	Pre-cabled (L = 2 m) <i>(1)</i>		XS9E111A2L2	XS9C111A2L2	XS9D111A2L2	
420 mA	Connector		-	-	XS9D111A2M12	
Weight	Pre-cabled (L = 2 m)	kg	0.075	0.095	0.340	
	Connector	kg	-	-	0.320	
<b>Characteristics</b>						
Product certifications			cULus, C€, UKCA, ECOLAB			
Connection	Pre-cabled		PvR 3 x 0.34 mm <sup>2</sup> , length 2 m			
	Connector		-		M12	
Operating zone		mm	110	215	540	
Degree of protection	Pre-cabled		IP 68			
Conforming to IEC 60529 Connector			IP 67			
Storage temperature		°C	- 40+ 85			
Operating temperature			- 25+ 70			
Materials			PBT case			
Vibration resistance	Conforming to IEC 60068-2-6		25 gn, amplitude $\pm$ 2 mm (f = 10	to 55 Hz)		
Shock resistance	Conforming to IEC 60068-2-27		50 gn, duration 11 ms			
Output state indication			No			
Rated supply voltage		v	1224			
Voltage limits (includin	g ripple)	v	1036			
Insulation class						
Repeat accuracy		%	±3			
Linearity error		mA	±2			
Current consumption,	no-load	mA	$\leq$ 4 with overload and short-circ	uit protection		
Maximum operating fre	quency	Hz	1000		100	
Output current drift		%	≤ 10 (throughout the operating	temperature range)		
Dimensions						



(1) For a 5 m long cable replace L2 by L5; for a 10 m long cable replace L2 by L10. Example: XS9E111A2L2 becomes XS9E111A2L5 with a 5 m long cable.

### References, characteristics

## Inductive proximity sensors

XS range application Sensors with analogue output signal  $0...10 V_{(1)}$  or 4...20 mA. Plastic case,  $40 \times 40 m$ m front face 5-position turret head

Sensor type				Non-flush mountable in metal	
Dimensions			mm	40 x 40 x 70	40 x 40 x 117
Nominal sensing distan	ce (Sn)		mm	25	
References					
3-wire ===	010 V ou	tput <i>(1)</i>		XS9C2A2A1M12	-
2-wire ===	420 mA c	output			XS9C4A2A2P20 (2)
				XS9C400P20 sensors are available with an ISO a PG 13.5 (e.g. XS9C4A2A1G13) or a 1/2" NPT please consult our Customer Care Centre for mo	(e.g. XS9C4A2A2N12) cable entry:
Weight			kg	0.149	0.244
Characteristics					
Product certifications				cULus, CE, UKCA	
Conformity to standards				IEC 60947-5-2 and IEC 60947-5-7	
Connection				M12 connector (4-pin)	Screw terminals, clamping capacity 3 x 1.5 mm²/ 3 x 16 AWG
Operating zone			mm	227	
Linearity error			%	< 3	
Repeat accuracy			%	< 3	
Output current drift			%	< 5	
	Conforming to DIN 40050	IEC 60529 and		IP 65, IP 67 and IP 69K	
Temperature	Storage		°C	- 40+ 85	
	Operation (3)		°C	- 25+ 70	
Material		Case		PBT	
Vibration resistance	Conforming to			25 gn, amplitude ± 2 mm (f = 1055 Hz)	
		IEC 60068-2-27		50 gn for 11 ms	
-	Output state (a			Yellow LED	
Rated supply voltage		420 mA	V	1224 with protection against reverse polarit	ly
Voltago limito (includia a	rinnle)	010 V	V V	$\frac{1}{2}$ 24 with protection against reverse polarity	
Voltage limits (including	(ipple)	420 mA 010 V	v V	1236 1536	
Insulation class		010 V	v	• 1550	
Current consumption, no	o-load	3-wire	mA	< 4	
Delays		First-up	ms	<7	
		Response	ms	< 6	
		Recovery	ms	< 6	
Analogue output	s 4-20 mA	and 0-10 V			
XS9C2A2A2M12 and	XS9C4A2A2	P20		XS9C2A2A1M12	
Output current (mA)	Sn = 2.	25 mm		Sn = 225	

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

Sensing distance (mm)

 (2) These sensors are supplied without a cable gland. An adaptable PG 13.5 cable gland is available (reference XSZPE13).
 (3) Sensors are available for very low temperatures (suffix TF: - 40°C, + 70°C) or very high temperatures (suffix TT: - 25°C, + 85°C); please consult our Customer Care Centre.

0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30

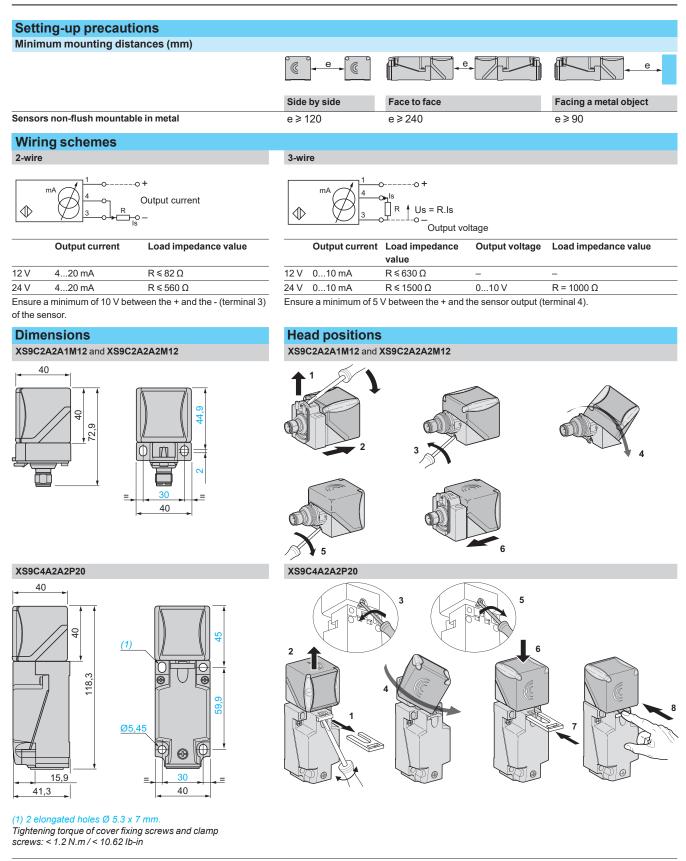
Sensing distance (mm)



### Setting-up, schemes, dimensions

## Inductive proximity sensors

XS range application Sensors with analogue output signal 0...10 V (1) or 4...20 mA. Plastic case, 40 x 40 mm front face 5-position turret head



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

### References, schemes

certified

XS912•1PAM12

XS918•1PAM12

#### Ø 12 mm, threaded M12 x 1 Sensing distance (Sn) Function Output **Connection Reference** mm Three-wire 12-24V ...., flush mountable 6 NO PNP XS912S1PAM12 M12 Three-wire 12-24V ...., non-flush mountable 10 NO PNP XS912S4PAM12 M12 Ø 18 mm, threaded M18 x 1 Sensing distance (Sn) Function Output **Connection Reference** mm Three-wire 12-24V ...., flush mountable 10 XS918S1PAM12 NO PNP M12 Three-wire 12-24V ...., non-flush mountable XS918S4PAM12 20 NO PNP M12 Ø 30 mm, threaded M30 x 1.5 Sensing distance (Sn) Function Output Connection Reference mm Three-wire 12-24V ...., flush mountable 20 NO PNP M12 XS930S1PAM12 Three-wire 12-24V ...., non-flush mountable

NO

XS930•1PAM12

PF120803

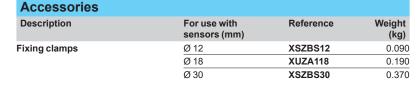


XSZBS30



40

XUZA118



PNP

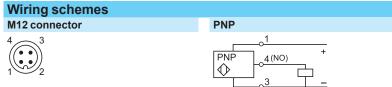
M12



XZCPA1241L•



Connectin	g cables (P	<b>VC)</b> (1)		
Description	Туре	Length m	Reference	Weight (kg)
Pre-wired M12 connectors	5 <b>XZ</b>	2	XZCPA1141L2	0.090
		5	XZCPA1141L5	0.190
Female, 4-pin Stainless steel		XZCPA1141L10	0.370	
clamping ring	Elbowed	2	XZCPA1241L2	0.090
sianiping mig		5	XZCPA1241L5	0.190
		10	XZCPA1241L10	0.370



(1) For further information, please consult our site www.telemecaniquesensors.com.

## Inductive proximity sensors

XS range application Cylindrical, stainless steel 316L front face for food and beverage applications and harsh industrial environments. Three-wire DC, solid-state output

Weight

(kg)

0.024

0.023

Weight

(kg)

0.051

0.051

Weight

(kg)

0.140

0.145

XS930S4PAM12

ITZ COnnector	FINF
	$\begin{array}{c} & & & \\ & & & \\ \hline \\ PNP & & & \\ & & & & \\ & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & &$

Stainless steel

**Inductive proximity sensors** XS range application Cylindrical, stainless steel 316L front face for food and beverage applications and harsh industrial environments. Three-wire DC, solid-state output

Characteristics Sensor type	Flush			XS912S1PAM12	XS918S1P/	M12	XS930S1P	AM12
Sensor type				XS912S1PAM12 XS912S4PAM12				
	Non-flush				XS918S4PA	AIVI12	XS930S4P	AM12
Product certifications	Connector			CULus, C€, UKCA, EC M12	OLAB			
Dperating zone	Flush		mm	04.8	08		016	
speruting zone	Non-flush		mm	08	016		032	
)ifferential travel	Non-Indon		%	115 (real sensing di			002	
egree of protection	Conforming	to IEC 60529		IP 68 (5 meters under	,			
		to DIN 40050		IP 69K	,			
torage temperature			°C	-25+ 85 (-13185°	F)			
perating temperature			°C	-25+ 85 (-13185°	,			
laterials	Case			Stainless steel 316L	,			
ront face thickness			mm	0.4	0.6		1.0	
lechanical shock resistance	Conforming	to IEC 62262		IK10	Î		<b>^</b>	
ibration resistance	Conforming	to IEC 60068-2-6		25 gn, amplitude ± 1 m	nm (f = 10 to 55 Hz)			
hock resistance	Conforming	to IEC 60068-2-27		30 gn, duration 11 ms				
Output state indication				Yellow LED, 4 viewing			and Sr)	
ated supply voltage			V	1224 with protect	ion against reverse	polarity		
oltage limits (including ripple	)		۷	1030				
sulation class								
witching capacity			mA	≤ 200 with overload ar	nd short-circuit prote	ction		
oltage drop, closed state			V	≤2				
urrent consumption, no-load			mA	≤ 10				
laximum switching frequency			Hz	600	300		100	
	Non-flush		Hz	400	200		90	
Delays	First set-up		ms	40				
	Response		μs	0.06				
	Recovery		μs	15				
Setting-up								
$\frac{\emptyset \ 18}{\emptyset \ 30}  \stackrel{e \ge 42}{e \ge 80}  \bigoplus$		$\frac{e \ge 40}{e \ge 70}$		$\frac{e \ge 30}{e \ge 60}$	атНПП+		≥ 50 ≥ 90	E
Side by side	ices in finit, i	Face to face	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Facing	a metal object	N	lounted in a m	netal supp
$ \begin{array}{c}                                     $		$\frac{e \ge 40}{e \ge 70}$		$\begin{array}{c} e \ge 30 \\ e \ge 60 \end{array}$	e di e		≥30 h≥22 ≥60 h≥34	
		e≥130	0	e≥120	-00-	d	≥120 h≥34	
Dimensions		e≥130	U	e≥120	-00-			
		e≥130	U-	e ≥ 120 Flush sensor	-00-	Non-flus	sh sensor	
	ngths (mm):	e≥130		е≥120 Flush sensor M12 M18	M30	Non-flus M12	sh sensor M18	۲ پر ا
	overall	<u>a (mm)</u>	·	е ≥ 120 Flush sensor M12 M18 60 63.5	63.5	<b>Non-flus</b> <b>M12</b> 60	<b>sh sensor</b> <b>M18</b> 63.5	63.5
		a (mm) b (mm)	)	Hush sensor           M12         M18           60         63.5           41         42	63.5 42	<b>Non-flus</b> <b>M12</b> 60 36	<b>5h sensor</b> <b>M18</b> 63.5 35	63.5 32
b c c =	overall threaded	a (mm) b (mm)	)	е ≥ 120 Flush sensor M12 M18 60 63.5	63.5	<b>Non-flus</b> <b>M12</b> 60	<b>sh sensor</b> <b>M18</b> 63.5	63.5
b a mon	overall threaded for non-flush untable sensors	a (mm) b (mm)	)	Hush sensor           M12         M18           60         63.5           41         42	63.5 42	<b>Non-flus</b> <b>M12</b> 60 36	<b>5h sensor</b> <b>M18</b> 63.5 35	63.5 32
Reduction coefficien	overall threaded for non-flush untable sensors	a (mm) b (mm)	)	Hush sensor           M12         M18           60         63.5           41         42           0         0	63.5 42	<b>Non-flus</b> <b>M12</b> 60 36 5	<b>sh sensor</b> <b>M18</b> 63.5 35 7	63.5 32
Len a = b = c = c = mon Reduction coefficien	overall threaded for non-flush untable sensors	a (mm) b (mm)	)	Hush sensor           M12         M18           60         63.5           41         42           0         0	63.5 42 0	<b>Non-flus</b> 60 36 5 <b>Non-flus</b>	<b>sh sensor</b> <b>M18</b> 63.5 35 7 <b>sh sensor</b>	63.5 32 10
Reduction coefficien	overall threaded for non-flush untable sensors	a (mm) b (mm)	)	Hush sensor           M12         M18           60         63.5           41         42           0         0	63.5 42 0 M30	<b>Non-flus</b> <b>M12</b> 60 36 5	<b>sh sensor</b> <b>M18</b> 63.5 35 7	63.5 32
Reduction coefficien	overall threaded for non-flush untable sensors	a (mm) b (mm)	)	Hush sensor           M12         M18           60         63.5           41         42           0         0	63.5 42 0	Non-flus 60 36 5 Non-flus	<b>sh sensor</b> <b>M18</b> 63.5 35 7 <b>sh sensor</b>	63.5 32 10
Reduction coefficien lush-non mounted	overall threaded for non-flush untable sensors	a (mm) b (mm)	)	Hush sensor           M12         M18           60         63.5           41         42           0         0           Flush sensor         Flush sensor           M12         M18	63.5 42 0 M30	Non-flus 60 36 5 Non-flus M12	sh sensor <u>M18</u> 63.5 35 7 sh sensor <u>M18</u>	63.5 32 10 M30
Reduction coefficien lush-non mounted	overall threaded for non-flush untable sensors	a (mm) b (mm)	) ) 	Flush sensor         M12       M18         60       63.5         41       42         0       0         Flush sensor         M12       M18         1       1	63.5 42 0 <b>M30</b> 1	Non-flus 60 36 5 Non-flus M12 1	sh sensor           M18           63.5           35           7           sh sensor           M18           1	63.5 32 10 <b>M30</b> 1
Reduction coefficien iush-non mounted iteel iuminum irass	overall threaded for non-flush untable sensors	a (mm) b (mm)	) ) - -	Flush sensor       M12     M18       60     63.5       41     42       0     0       Flush sensor       M12     M18       1     1       1     1	63.5 42 0 <b>M30</b> 1 1	Non-flus 60 36 5 Non-flus M12 1 1	sh sensor M18 63.5 35 7 sh sensor M18 1 1	63.5 32 10 <b>M30</b> 1 1
Reduction coefficien iush-non mounted iush-non mounted iush-non mounted iush-non mounted	overall threaded for non-flush untable sensors	<u>a (mm)</u> <u>b (mm)</u> s c (mm)	- ) ) - - -	Flush sensor           M12         M18           60         63.5           41         42           0         0           Flush sensor         M18           1         1           1.3         1.2           0.85         0.8	63.5 42 0 <b>M30</b> 1 1 1.3 0.9	Non-flus M12 60 36 5 Non-flus M12 1 1 1.4 0.8	sh sensor M18 63.5 35 7 sh sensor M18 1 1 1.35 0.9	63.5 32 10 <b>M30</b> 1 1 1.2 0.9
Reduction coefficien Flush-non mounted Steel Muminum Brass Cupper	overall threaded for non-flush untable sensors	a (mm) b (mm)	) ) - - - n	Flush sensor           M12         M18           60         63.5           41         42           0         0           Flush sensor         M18           1         1           1.3         1.2           0.85         0.8           0.5         0.5	63.5 42 0 <b>M30</b> 1 1 1.3	Non-flus M12 60 36 5 Non-flus M12 1 1 1.4 0.8 (1)	sh sensor M18 63.5 35 7 sh sensor M18 1 1 1.35	63.5 32 10 <b>M30</b> 1 1.2 0.9 (1)
Image: Constraint of the second state of the second sta	overall threaded for non-flush untable sensors	a (mm) b (mm) s c (mm) Thickness 1 mr	) ) - - - n	Flush sensor           M12         M18           60         63.5           41         42           0         0           Flush sensor         M18           1         1           1.3         1.2           0.85         0.8           0.5         0.5	63.5 42 0 <b>M30</b> 1 1 1.3 0.9 0.35	Non-flus M12 60 36 5 Non-flus M12 1 1 1.4 0.8	sh sensor M18 63.5 35 7 sh sensor M18 1 1 1.35 0.9 0.3	63.5 32 10 <b>M30</b> 1 1 1.2 0.9
Image: constraint of the system       Image: constraint of the system       Image: constraint of the system         Image: constraint of the system       Image: constraint of the system       Image: constraint of the system         Image: constraint of the system       Image: constraint of the system       Image: constraint of the system         Image: constraint of the system       Image: constraint of the system       Image: constraint of the system         Image: constraint of the system       Image: constraint of the system       Image: constraint of the system         Image: constraint of the system       Image: constraint of the system       Image: constraint of the system         Image: constraint of the system       Image: constraint of the system       Image: constraint of the system         Image: constraint of the system       Image: constraint of the system       Image: constraint of the system         Image: constraint of the system       Image: constraint of the system       Image: constraint of the system         Image: constraint of the system       Image: constraint of the system       Image: constraint of the system         Image: constraint of the system       Image: constraint of the system       Image: constraint of the system         Image: constraint of the system       Image: constraint of the system       Image: constraint of the system         Image: constraint of the system       Image: constraint of the system       I	overall threaded for non-flush untable sensors	a (mm) b (mm) s c (mm) Thickness 1 mr	- - - - - - - - - - - - - - - - - - -	Flush sensor           M12         M18           60         63.5           41         42           0         0           Flush sensor         M18           1         1           1.3         1.2           0.85         0.8           0.5         0.5           0.9         0.9	63.5 42 0 <b>M30</b> 1 1 1.3 0.9 0.35 0.7	Non-flus M12 60 36 5 Non-flus M12 1 1 1.4 0.8 (1) 0.66	sh sensor M18 63.5 35 7 sh sensor M18 1 1 1.35 0.9 0.3 0.6	63.5 32 10 <b>M30</b> 1 1.2 0.9 (1)
Reduction coefficien iush-non mounted iteel iuminum irass cupper itainless steel itainless steel	overall threaded for non-flush untable sensors	a (mm) b (mm) s c (mm) Thickness 1 mr	) ) - - - - - - - - - - - - - - - - - -	Flush sensor       M12     M18       60     63.5       41     42       0     0       Flush sensor       M12     M18       1     1       1.3     1.2       0.85     0.8       0.5     0.5       0.9     0.9	63.5 42 0 <b>M30</b> 1 1 1.3 0.9 0.35 0.7 <b>M30</b>	Non-flus M12 60 36 5 Non-flus M12 1 1 1.4 0.8 (1)	sh sensor M18 63.5 35 7 sh sensor M18 1 1 1.35 0.9 0.3 0.6	63.5 32 10 <b>M30</b> 1 1.2 0.9 (1)
Reduction coefficien Flush-non mounted Steel Muminum Brass Cupper Stainless steel Flush mounted Steel	overall threaded for non-flush untable sensors	a (mm) b (mm) s c (mm) Thickness 1 mr	) ) - - - - - - - - - - - - - - - - - -	High         i           Flush sensor         M18           60         63.5           41         42           0         0           Flush sensor           M12         M18           1         1           1.3         1.2           0.85         0.8           0.5         0.5           0.9         0.9           M12         M18           0.7         0.75	63.5 42 0 M30 1 1 1.3 0.9 0.35 0.7 M30 0.9	Non-flus M12 60 36 5 Non-flus M12 1 1 1.4 0.8 (1) 0.66	sh sensor M18 63.5 35 7 sh sensor M18 1 1 1.35 0.9 0.3 0.6	63.5 32 10 <b>M30</b> 1 1.2 0.9 (1)
b c=	overall threaded for non-flush untable sensors	a (mm) b (mm) s c (mm) Thickness 1 mr	) ) - - - - - - - - - - - - - - - - - -	Flush sensor       M12     M18       60     63.5       41     42       0     0       Flush sensor       M12     M18       1     1       1.3     1.2       0.85     0.8       0.5     0.5       0.9     0.9	63.5 42 0 <b>M30</b> 1 1 1.3 0.9 0.35 0.7 <b>M30</b>	Non-flus M12 60 36 5 Non-flus M12 1 1 1.4 0.8 (1) 0.66	sh sensor M18 63.5 35 7 sh sensor M18 1 1 1.35 0.9 0.3 0.6	63.5 32 10 <b>M30</b> 1 1.2 0.9 (1)

0.8

1.3

0.8



**Inductive proximity sensors** XS range application Food and beverage processing series Cylindrical, stainless steel, non-flush mountable Three-wire DC, solid-state output

KS2e+SA+e.I2       IO       PNP       Pre-cabled (L = 2 m) XS212SAPAL2       0.075 (H12 connector         M       V       NO       PNP       Pre-cabled (L = 2 m) XS212SAPAL2       0.075 (H12 connector         M       V       Pre-cabled (L = 2 m) XS212SAPAL2       0.075 (H12 connector       0.072 (H12 connector         M       V       Pre-cabled (L = 2 m) XS212SAPAL2       0.072 (H12 connector       0.072 (H12 connector         M       V       Pre-cabled (L = 2 m) XS212SAPAL2       0.072 (H12 connector       0.072 (H12 connector         M       V       Pre-cabled (L = 2 m) XS218SAPAL2       0.072 (H12 connector       0.072 (H12 connector       0.072 (H12 connector         M       V       Pre-cabled (L = 2 m) XS218SAPAL2       0.072 (H12 connector       0.072 (H12 connector       0.072 (H12 connector         M       V       Pre-cabled (L = 2 m) XS218SAPAL2       0.072 (H12 connector       0.072 (H12 connector       0.072 (H12 connector         XS2005A4-e12       NPN       Pre-cabled (L = 2 m) XS218SAPAL2       0.020 (H12 connector	10264		Ø 12, threade					
$ \begin{array}{c} X \\ S \\ X \\ S \\ X \\ S \\ X \\ X \\ X \\ X \\$				Function	Output	Connection	Reference	Weight (kg)
$\frac{M^{12} \text{ connector } \overline{XS212SAPAM12} 0.033}{N^{PN}} \xrightarrow{\text{Pre-cabled}(L=2m) XS212SAPAL12} 0.075}{M^{12} \text{ connector } XS212SAPAL12} 0.075} \\ (9) \\ (12                                  $	XS2••SA•eL2		7	NO	PNP		XS212SAPAL2	0.075
$\int \frac{1}{2} \frac{1}{\sqrt{2 \text{ connector } \text{ KS212SANAM12 } 0.035}} \\ M 2 \text{ connector } \text{ KS212SANAM12 } 0.035} \\ (1) M 2 \text{ connector } \text{ KS212SANAM12 } 0.035} \\ (2) M 2 \text{ connector } \text{ KS212SANAM12 } 0.035} \\ (2) M 2 \text{ connector } \text{ KS212SANAM12 } 0.035} \\ (2) M 2 \text{ connector } \text{ KS212SANAM12 } 0.035} \\ (2) M 2 \text{ connector } \text{ KS21SSAPAL2 } 0.125 \\ (1) M 12 \text{ connector } \text{ KS21SSAPAL2 } 0.125 \\ (1) M 12 \text{ connector } \text{ KS21SSANAL2 } 0.125 \\ (1) M 12 \text{ connector } \text{ KS21SSANAL2 } 0.125 \\ (1) M 12 \text{ connector } \text{ KS21SSANAL2 } 0.035 \\ (2) M M 2 \text{ connector } \text{ KS21SSANAL2 } 0.035 \\ (3) \text{ (hreaded M33 x 1, 5 ) } \\ (3) \text{ (hreaded M33 x 1, 5 ) } \\ (3) \text{ (hreaded M33 x 1, 5 ) } \\ (2) N M Pre-abled (1 = 2 m) \text{ KS23SSANAL2 } 0.035 \\ (3) \text{ (hreaded M33 x 1, 5 ) } \\ (2) N M Pre-abled (1 = 2 m) \text{ KS23SSANAL2 } 0.035 \\ (1) M 12 \text{ connector } \text{ KS23SSANAL2 } 0.035 \\ (1) M 12 \text{ connector } \text{ KS23SSANAL2 } 0.035 \\ (1) M 12 \text{ connector } \text{ KS23SSANAL2 } 0.146 \\ (2) N M 2 \text{ connector } \text{ KS23SSANAL2 } 0.146 \\ (3) M 2 \text{ connector } \text{ KS23SSANAL2 } 0.146 \\ (4) M 12 \text{ connector } \text{ KS23SSANAL2 } 0.146 \\ (4) M 12 \text{ connector } \text{ KS23SSANAL2 } 0.146 \\ (4) M 2 \text{ connector } \text{ KS23SSANAL2 } 0.146 \\ (4) M 2 \text{ connector } \text{ KS23SSANAL2 } 0.146 \\ (4) M 2 \text{ connector } \text{ KS23SSANAL2 } 0.146 \\ (4) M 2 \text{ connector } \text{ KS23SSANAL2 } 0.146 \\ (4) M 2 \text{ connector } \text{ KS23SSANAL2 } 0.146 \\ (4) M 2 \text{ connector } \text{ KS23SSANAL2 } 0.146 \\ (4) M 2 \text{ connector } \text{ KS23SSANAL2 } 0.146 \\ (4) M 2 \text{ connector } \text{ KS23SSANAL2 } 0.146 \\ (5) M 12 \text{ connector } \text{ KS23SSANAL2 } 0.146 \\ (5) M 12 \text{ connector } \text{ KS23SSANAL2 } 0.146 \\ (5) M 12 \text{ connector } \text{ KS23SSANAL2 } 0.146 \\ (6) M 12 \text{ connector } \text{ KS23SSANAL2 } 0.146 \\ (6) M 12 \text{ connector } \text{ KS23SSANAL2 } 0.146 \\ (6) M 12 \text{ connector } \text{ KS23SSANAL2 } 0.146 \\ (6) M 12 \text{ connector } \text{ KS23SSANAL2 } 0.146 \\ (6) M 12 \text{ connector } \text{ KS23SSANA } 0.16 \\ (6) M 12 \text{ connector } \text{ KS23SSANA } 0.16 \\ (6) M 12 \text{ connector } \text{ KS23SSANA } 0.0$							XS212SAPAM12	0.035
M12 connector       XS212SANAM12       0.033         M12 connector       XS212SANAM12       0.035         XS2+sSA+eM12       NO       PNP       Phy-cabled (L = 2m) XS218SAPAL2       0.122         M12 connector       XS218SAPAL2       0.122       0.122         M12 connector       XS218SAPAL2       0.122         M12 connector       XS218SAPAL2       0.122         M12 connector       XS218SANA12       0.060         NPN       Phy-cabled (L = 2m) XS218SAPAL2       0.122         M12 connector       XS218SANA12       0.060         M12 connector       XS218SANA12       0.060         M12 connector       XS218SANA12       0.060         M12 connector       XS218SANA12       0.060         M12 connector       XS230SA+12       0.060         M12 connector       XS230SA+12       0.060         M12 connector       XS230SA+12       0.460         M12 connector<					NPN		XS212SANAL2	0.075
Sensing distance Function         Output         Connection         Reference         Weight (b)           12         NO         PNP         Pre-celled (L=2m)         X52185APAL2         0.122           12         NO         PNP         Pre-celled (L=2m)         X52185APAL2         0.122           12         NO         PNP         Pre-celled (L=2m)         X52185APAL2         0.122           13         NO         PNP         Pre-celled (L=2m)         X52185APAL2         0.122           14         Connection         Reference         Weight (M)         Mill connector         X52185APAL2         0.022           12         NO         PNP         Pre-called (L=2m)         X52185APAL2         0.022           12         NO         PNP         Pre-called (L=2m)         X52305APAL2         0.020           12         NO         PNP         Pre-called (L=2m)         X52305APAL2         0.020           12         NO         Pre-called (L=2m)         X52305APAL2         0.200         0.020           12         NO         Pre-called (L=2m)         X52305APAL2         0.200         0.020           12         NO         Pre-called (L=2m)         X52305APAL2         0.200         0.020							XS212SANAM12	0.035
Sensing distance Function         Cuput         Connection         Reference         Weight (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c			Ø 18, threade	ed M18 x	<b>(1</b>			
12       NO       PNP       Pre-cabled (L=2 m) XS2858APAL2       0.122         M12 connector       XS2805APAL2       0.202         M12 connector       XS2305APAL2       0.202         M12 connector       XS2305APAAPA			Sensing distance			Connection	Reference	Weight (kg)
M12  connector  X52185APAM12 0.060 $NPN  Pre-cabled (L=2m) X52185ANAL2 0.120$ $(f)  M12  connector  X52185ANAL2 0.060$ $M12  connector  X52185ANAL2 0.060$ $M12  connector  X52185ANAM12 0.060$ $(g) 30,  threaded M30 x 1.5$ Sensing distance Function Output Connecton Reference Weight (fg) m22 NO PNP Pre-cabled (L=2m) X52305APAL2 0.200 (fm) m12  connector  X52305APAL2 0.000 (fm) m12  connector  X52305APAL2 0.200 (fm) m12	XS2= SA==M12		12	NO	PNP	· · · · ·	XS218SAPAL2	0.120
(1) $M12 connector XS2185ANAM12 0.060$ $M12 connector XS2185ANAM12 0.060$ $M12 connector XS2185ANAM12 0.060$ $(5) mm$ $22 NO PNP Pre-cabled (L = 2 m) XS2305APAL2 0.200$ $(7)$ $M12 connector XS2305ANAL2 0.200$ $(7)$ $M12 connector XS2305ANAM12 0.145$ $(6)$ $M12 connector XS2205ANAM12 0.145$ $(6)$ $M12 connector XS2205ANAM12 0.005$ $(6)$ $M12 connector XS2205ANAM12 0.145$ $(6)$ $M12 connector XS2205ANAM12 0.005$ $(7)$ $M12 connector XS2205ANAM12 0.005$	X32003A0010112					1.7	XS218SAPAM12	0.060
$\frac{M12 \text{ connector } XS218SANAM12 0.060}{M12 \text{ connector } XS218SANAM12 0.060}$ $\frac{\emptyset 30, \text{ threaded M30 x 1.5}}{Sensing distance Function Output Connection Reference Weight (kg)}{22 NO PNP Pre-cabled (L=2m) XS230SAPAL2 0.200 (no.100) (kg)}{M12 \text{ connector } XS230SAPAL2 0.200 (no.100) (kg)}{M12 \text{ connector } XS230SANAL2 0.200 (no.100) (kg)}{M12 \text{ connector } XS230SANAM12 0.146}$					NPN	· · · · ·	XS218SANAL2	0.120
$\frac{1}{22} \qquad NO \qquad PNP \qquad Pre-cabled (L = 2 m) XS230SAPAL2 \qquad 0.205 \\ (1) \\ M12 connector \qquad XS230SAPAM12 \qquad 0.145 \\ NPN \qquad Pre-cabled (L = 2 m) XS230SANAL2 \qquad 0.205 \\ (1) \\ M12 connector \qquad XS230SANAL2 \qquad 0.205 \\ (1) \\ M12 connector \qquad XS230SANAL2 \qquad 0.205 \\ (1) \\ M12 connector \qquad XS230SANAL2 \qquad 0.205 \\ (1) \\ M12 connector \qquad XS230SANAL2 \qquad 0.205 \\ (1) \\ M12 connector \qquad XS230SANAL2 \qquad 0.205 \\ (1) \\ M12 connector \qquad XS230SANAL2 \qquad 0.205 \\ (1) \\ M12 connector \qquad XS230SANAL2 \qquad 0.205 \\ (1) \\ M12 connector \qquad XS230SANAL2 \qquad 0.205 \\ (1) \\ M12 connector \qquad XS230SANAL2 \qquad 0.205 \\ (2) \\ M12 connector \qquad XS230SANAL2 \qquad 0.205 \\ (3) \\ Stainless steel fixing bracket \qquad 0.12 \\ (3) \\ Stainless steel fixing bracket \qquad 0.12 \\ (3) \\ Stainless steel fixing bracket \qquad 0.12 \\ (3) \\ Stainless steel fixing bracket \qquad 0.12 \\ (3) \\ Stainless steel fixing bracket \qquad 0.12 \\ (3) \\ Stainless steel fixing bracket \qquad 0.12 \\ (3) \\ Stainless steel fixing bracket \qquad 0.12 \\ (3) \\ Stainless steel fixing bracket \qquad 0.12 \\ (3) \\ Stainless steel fixing bracket \qquad 0.12 \\ (3) \\ Stainless steel fixing bracket \qquad 0.12 \\ (3) \\ Stainless steel fixing bracket \qquad 0.12 \\ (3) \\ Stainless steel fixing bracket \qquad 0.12 \\ (4) \\ (5) \\ Stainless steel fixing bracket \\ (5) \\ Stainless steel fixing bracket \\ (6) \\ (6) \\ (7) \\$							XS218SANAM12	0.060
$\frac{1}{22} \qquad NO \qquad PNP \qquad Pre-cabled (L = 2 m) XS230SAPAL2 \qquad 0.205 \\ (1) \\ M12 connector \qquad XS230SAPAM12 \qquad 0.145 \\ \hline M12 connector \qquad XS230SANAL2 \qquad 0.205 \\ (1) \\ M12 connector \qquad XS230SANAL2 \qquad 0.205 \\ (1) \\ M12 connector \qquad XS230SANAL2 \qquad 0.205 \\ (1) \\ M12 connector \qquad XS230SANAL2 \qquad 0.205 \\ (1) \\ M12 connector \qquad XS230SANAL2 \qquad 0.205 \\ (1) \\ M12 connector \qquad XS230SANAL2 \qquad 0.205 \\ (1) \\ M12 connector \qquad XS230SANAL2 \qquad 0.205 \\ (1) \\ M12 connector \qquad XS230SANAL2 \qquad 0.205 \\ (2) \\ M12 connector \qquad XS230SANAL2 \qquad 0.205 \\ (2) \\ M12 connector \qquad XS230SANAL2 \qquad 0.205 \\ (2) \\ M12 connector \qquad XS230SANAL2 \qquad 0.205 \\ (3) \\ Stainless steel fixing bracket \qquad 0 \\ 0 \\ 12 \\ XSZBS0 \qquad 0.066 \\ 0 \\ 18 \\ XUZA118 \qquad 0.045 \\ 0 \\ 30 \\ XSZBS30 \qquad 0.066 \\ \hline M12 connector \\ Stainless steel fixing bracket \qquad 0 \\ 12 \\ XSZBS0 \\ 0 \\ 30 \\ XSZBS30 \qquad 0.066 \\ \hline M12 connector \\ Stainless steel clamping ring \\ \hline M12 connector \\ Straight 2 \\ ZZCPA1241L \\ 0 \\ M12 lumper cable \\ \hline \ \ M12 lumper cable \\ \hline \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$	manne har famme		Ø 30, threade	ed M30 x	c 1.5			
$\frac{22}{NO} = \frac{NO}{PNP} = \frac{P_{PP}-\text{cabled} (L = 2 \text{ m}) \text{ XS230SAPAL2} 0.200}{\frac{(1)}{M12} \text{ connector } \text{ XS230SAPAM12} 0.144}{NPN} = \frac{P_{PP}-\text{cabled} (L = 2 \text{ m}) \text{ XS230SAPAM12} 0.144}{NPN} = \frac{P_{PP}-\text{cabled} (L = 2 \text{ m}) \text{ XS230SANAL2} 0.200}{\frac{(1)}{M12} \text{ connector } \text{ XS230SANAM12} 0.144}{N2 \text{ connector } \text{ XS230SANAM12} 0.144}$			Sensing distance			Connection	Reference	Weight
$\frac{M12 \text{ connector } \text{ XS230SAPAM12 } 0.145}{MPN  \frac{Pre-cabled (L=2m) \text{ XS230SANAL2 } 0.205}{(1) \\ M12 \text{ connector } \text{ XS230SANAL2 } 0.145}$			. ,	NO	PNP	( )	XS230SAPAL2	(kg) 0.205
(1) $M12 connector XS230SANAM12 0.145$ $M12 connector XS30SANAM12 0.145$ $M12 connector$							XS230SAPAM12	0.145
$ V_{XZCPA1141L5} V_{XZCPA114$	XS230SA••L2				NPN		XS230SANAL2	0.205
VUZA118 $VUZA118$ $VUZA$						M12 connector	X32303ANAM12	0.145
$V_{XSZBS} = V_{XUZA118}$ $V_{XSZBS} = V_{XUZA118}$ $V_{XSZBS} = V_{XUZA118}$ $V_{XSZBS} = V_{XSZBS} $	0100	5	Accessories	(2)				
$XSZBS \bullet XUZA118$ $VUZA118$ $VUZA1111$ $VUZPA121$ $VUZPA124112$		CoP190	Description				Reference	Weight (kq)
$XSZBS \bullet \qquad XUZA118 \qquad $		×	Stainless steel fixir	ng bracket		Ø 12	XSZBS12	0.060
XSZBS••       XUZA118         V       V         XZCPA1241L•       V         XZCPA1241L•       XZCP1141L•         XZCPA1241L•       XZCP1141L•             XZCPA1241L•       XZCP1141L•             XZCPA1241L•       XZCP1141L•             XZCPA1241L•       XZCPA1141L•             XZCPA1241L•       XZCPA1141L•             XZCPA1241L•       XZCPA1141L•             XZCPA1241L•       XZCPA1141L•             XZCPA1241L•       XZCPA1241L•             XZCPA1241L•       XZCPA1241L•						Ø 18	XUZA118	0.045
XZCPA1241Le         XZCP1141Le         Pre-wired M12 connectors Female, 4-pin, stainless steel clamping ring         Straight         2         XZCPA1141L2         0.090           10         XZCPA1141L10         0.410           Elbowed         2         XZCPA1241L2         0.090           10         XZCPA1241L5         0.210           10         XZCPA1241L10         0.410           10         XZCPA1241L10         0.410           10         XZCPA1241L10         0.410           10         XZCPA1241L2         0.090           10         XZCPA1241L10         0.410           10         XZCPA1241L10         0.410           10         XZCPA1241L10         0.410           10         XZCPA1241L10         0.410           11         11         11         0.90           12         XZCRA151140A2         0.095	XSZBS	XUZA118				30	X52B530	0.080
Pre-wired M12 connectors       Straight       2       XZCPA1141L2       0.090         XZCPA1241Le       XZCP1141Le       XZCP1141Le       5       XZCPA1141L5       0.210         XZCPA1241Le       XZCP1141Le       Elbowed       2       XZCPA1241L2       0.090         M12 jumper cable       Straight       2       XZCPA1241L5       0.210         M12 jumper cable       Straight       2       XZCRA151140A2       0.090		AAIN	Connecting	cables				
Pre-wired M12 connectors       Straight       2       XZCPA1141L2       0.090         XZCPA1241Le       XZCP1141Le       5       XZCPA1141L5       0.210         XZCPA1241Le       XZCP1141Le       10       XZCPA1141L10       0.410         M12 jumper cable       Straight       2       XZCPA1241L2       0.090         M12 jumper cable       Straight       2       XZCRA151140A2       0.090		CP1151L_J			Туре		Reference	Weight (kg)
XZCPA1241Le       XZCP1141Le       Stainless steel clamping ring       0       XZCPA1141L10       0.410         Elbowed       2       XZCPA1241L2       0.090         5       XZCPA1241L5       0.210         10       XZCPA1241L10       0.410         Elbowed       2       XZCPA1241L2       0.090         5       XZCPA1241L5       0.210         10       XZCPA1241L10       0.410         M12 jumper cable       Straight       2       XZCRA151140A2       0.095		XX	Pre-wired M12 con	nectors	Straight		XZCPA1141L2	0.090
XZCPA1241Le     XZCP1141Le     IO     XZCPA1241L10     0.410       Elbowed     2     XZCPA1241L2     0.090       5     XZCPA1241L5     0.210       10     XZCPA1241L10     0.410       11     XZCPA1241L10     0.410       12     XZCRA151140A2     0.095	1/2	1 de la		la a riz -			XZCPA1141L5	0.210
Elbowed         2         XZCPA1241L2         0.090           5         XZCPA1241L5         0.210           10         XZCPA1241L10         0.410           M12 jumper cable         Straight         2         XZCRA151140A2         0.095	XZCPA1241L	XZCP1141L•	stainless steel clamp	ping ring			XZCPA1141L10	0.410
10XZCPA1241L100.410M12 jumper cableStraight2XZCRA151140A20.095					Elbowed	2	XZCPA1241L2	0.090
M12 jumper cable Straight 2 XZCRA151140A2 0.095							XZCPA1241L5	0.210
							XZCPA1241L10	0.410
Mala 0 min					Straight	2	XZCRA151140A2	0.095
			Male, 3-pin,	la a ri		5	XZCRA151140A5	0.200
stainless steel clamping ring (1) For a 5 m long cable replace L2 by <b>L5</b> ; for a 10 m long cable replace L2 by <b>L10</b> .								

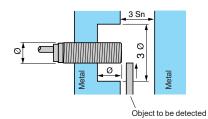
### Inductive proximity sensors

XS range application Food and beverage processing series Cylindrical, stainless steel, non-flush mountable Three-wire DC, solid-state output

Sensor type			XS2eeSAeeM12	XS2eeSAeeL2		
Product certifications/a	pprovals		cULus, C€, UKCA			
Connection	Connector		M12	-		
	Pre-cabled		-	Length: 2 m		
Operating	Ø 12	mm	05.6			
zone	Ø 18	mm	1 09.6			
	Ø 30	mm	017.6			
Differential travel		%	115 of effective sensing distance (Sr)			
Degree of protection	Conforming to IEC 60529		IP 67	IP 68		
-	DIN 40050		IP 69K	· ·		
Storage temperature		°C	- 40+ 85 (1)			
Operating temperature		°C	- 25+ 85			
Materials	Case		Stainless steel 316 L			
	Cable		-	Non-poisonous PVC, 3 x 0.34 mm <sup>2</sup>		
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	= 1224 with protection against rever	se polarity		
/oltage limits (including	ı ripple)	V	1036			
nsulation class						
Switching capacity		mA	≤ 200 with overload and short-circuit pro	otection		
Voltage drop, closed sta	te	V	≤2			
Current consumption, n	o-load	mA	≤ 10			
Maximum switching	XS212SA	Hz	2500			
frequency	XS218SA eee and XS2L2eee	Hz	1000			
	XS230SA	Hz	500			
Delays	First-up	ms	≤ 10			
	Response	ms	≤ 0.2 Ø 12, ≤ 0.3 Ø 18, ≤ 0.6 Ø 30			
	Recovery	ms	≤ 0.2 Ø 12, ≤ 0.7 Ø 18, ≤ 1.4 Ø 30			

Wiring schemes Connector Pre-cabled PNP NPN M12 4 BN/1 BN/1 + BK/4 (NO) + + BU: Blue PNP BK/4 (NO) NPN BN: Brown  $\Diamond$  $\Diamond$ ╘ BK: Black BU/3 \_ BU/3

### Setting-up



### Minimum mounting distances (mm)

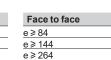


Side by side e≥48 <u>e≥72</u> e≥120

Ø 12

Ø 18

Ø 30

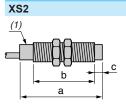


F e

XSZBS30

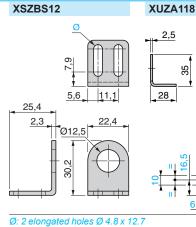
Facing a metal	object
e≥21	
e≥36	
e≥66	

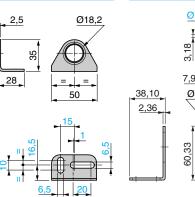
**Dimensions** 

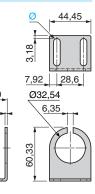


(1) LED

	Pre-cabled (mm)		Connector (mm)		
XS2	а	b	а	b	с
Ø 12	54.5	38	61	37	5
Ø 18	60	40	70	42	8
Ø 30	62.5	41	70	36	13







### References

**Inductive proximity sensors** XS range application Food and beverage processing series Cylindrical, stainless steel, non-flush mountable Two-wire AC or DC





Sensing distance (Sn) mm	Function	Connection	Reference	Weight (kg)
12	NO	Pre-cabled (L = 2 m) (1)	XS218SAMAL2	0.120
		1/2"-20UNF connector	XS218SAMAU20	0.060





XS230SAM•U20

Ø 30, threade	d M30 x 1.5			
Sensing distance (Sn) mm	Function	Connection	Reference	Weight (kg)
22	NO	Pre-cabled (L = 2 m) <i>(1)</i>	XS230SAMAL2	0.205
		1/2"-20UNF connector	XS230SAMAU20	0.145

Connecting of	cables			
Description	Туре	Length m	Reference	Weight (kg)
Pre-wired	Straight	5	XZCPA1865L5	0.210
connectors		10	XZCPA1865L10	0.410
1/2"-20UNF 3-pin female, stainless steel clamping ring	Elbowed	5	XZCPA1965L5	0.250
		10	XZCPA1965L10	0.485





XUZA	118	

Accessories			
Description	For use with sensors (mm)	Reference	Weight (kg)
Stainless steel fixing brackets	Ø 18	XUZA118	0.045
	Ø 30	XSZBS30	0.080

(1) For a 5 m long cable replace L2 by L5; for a 10 m long cable replace L2 by L10. Example: XS218SAMAL2 becomes XS218SAMAL5 with a 5 m long cable.

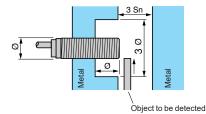
### Inductive proximity sensors

XS range application Food and beverage processing series Cylindrical, stainless steel, non-flush mountable Two-wire AC or DC

Characteristics					
Sensor type			XS2eeSAMeU20	XS2eeSAMeL2	
Product certifications/a	pprovals		cULus, CE, UKCA		
Connection	Connector		1/2"-20UNF	_	
	Pre-cabled			Length: 2 m	
Operating zone	Ø 18	mm	09.6		
	Ø 30	mm	017.6		
Differential travel		%	115 of effective sensing distance (Sr		
Degree of protection	Conforming to IEC 60529		IP 67	IP 68	
	DIN 40050		IP 69K		
Storage temperature		°C	- 40+ 85 (1)		
Operating temperature		°C	- 25+ 85		
Materials	Case		Stainless steel 316 L		
	Cable		-	Non-poisonous PVC, 2 x 0.34 mm <sup>2</sup>	
Vibration resistance	Conforming to IEC 60068-2-6		25 gn, amplitude ± 2 mm (f = 10 to 55 H	lz)	
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	$\sim$ or == 24240 ( $\sim$ 50/60 Hz)		
Voltage limits (including	ripple)	V	$\sim$ or $\pm 20264$		
Insulation class			1		
Switching capacity		mA	$\sim$ 5300 or == 5200 (2)		
Voltage drop, closed sta	te	V	≤ 5.5		
Residual current, open state			≤0.8		
Maximum switching	XS218SAMeee	Hz	$\sim$ 25 or $=$ 1000		
frequency	XS230SAMeee	Hz	$\sim$ 25 or $=$ 300		
Delays	First-up	ms	≤ 30		
	Response	ms	≤0.5		
	Recovery	ms	≤ 0.5 XS218SAM●●●, ≤ 2 XS230SAM	•••	
			00 °C for cleaning and sterilization phase		
		(2) It is	essential to connect a 0.4 A "quick-blow	" fuse in series with the load.	
Wiring schemes					
Connector	Pre-cabled	2-wi	re $\sim$ or $=$		
1/2"-20UNF	BU: Blue	NO o	utput		
1 AC/DC: 2	BN: Brown	$\bigcirc$	BN/2 - ~		
AC/DC: 3		/ ≠: on	$BU/3$ $\overline{\Box}$ $\overline{\sim}$		

#### Setting-up

Minimum mounting distances (mm)



Si

Ø 18

Ø 30

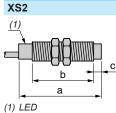
Side by side e ≥ 72

**Face to face** e ≥ 144 e ≥ 264

Ø18,2

Facing a metal object  $e \ge 36$  $e \ge 66$ 

Dimensions

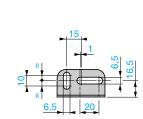


	Pre-ca	bled (mm)	Conn	ector (mm)		
XS2	а	b	а	b	с	
Ø 18	60	40	72	44	8	
<u>Ø 30</u>	62.5	41	74	40	13	

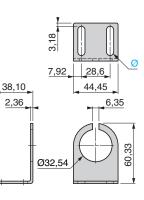


e≥120

**XSZA118** 



50



XSZBS30

Ø: 2 elongated holes Ø 7.14 x 29.36

### References

**Inductive proximity sensors** XS range application Food and beverage processing series Cylindrical, plastic, non-flush mountable Three-wire DC, solid-state output

	Ø 12, threade			0	D. (	
	Sensing distance (Sn) mm			Connection	Reference	Weight (kg)
S2••AA••L2	7	NO	PNP	Pre-cabled (L = 2 m) $(1)$	XS212AAPAL2	0.065
				M12 connector	XS212AAPAM12	0.030
			NPN	Pre-cabled (L = 2 m) (1)	XS212AANAL2	0.065
				M12 connector	XS212AANAM12	0.030
Second Contraction	Ø 18, threade	ed M18	x 1			
	Sensing distance (Sn) mm			Connection	Reference	Weight (kg)
•AA••M12	12	NO	PNP	Pre-cabled (L = 2 m) (1)	XS218AAPAL2	0.100
				M12 connector	XS218AAPAM12	0.040
			NPN	Pre-cabled (L = 2 m) (1)	XS218AANAL2	0.100
				M12 connector	XS218AANAM12	0.040
man In Innan	Ø 30, threade	ed M30 :	x 1.5			
	Sensing distance (Sn) mm	Function	Output	Connection	Reference	Weight (kg)
	22	NO	PNP	Pre-cabled (L = 2 m) (1)	XS230AAPAL2	0.140
••L2				M12 connector	XS230AAPAM12	0.080
			NPN	Pre-cabled (L = 2 m) (1)	XS230AANAL2	0.140
				M12 connector	XS230AANAM12	0.080
	Accessories	(2)	_			
- C	Description		For use v sensors		Reference	Weight (kg)
	Fixing clamps		Ø 12		XSZB112	0.006
			Ø 18 Ø 30		XSZB118 XSZB130	0.010
			<i>9</i> 30			0.020
MAIN	Connecting	cables				
CP1151L	Description		Туре	Length m	Reference	Weight (kg)
Y X	Pre-wired M12 con	nectors	Straight		XZCPA1141L2	0.090

Connecting cables				
Description	Туре	Length m	Reference	Weight (kg)
<b>Pre-wired M12 connectors</b> Female, 4-pin, stainless steel clamping ring	Straight	2	XZCPA1141L2	0.090
		5	XZCPA1141L5	0.190
		10	XZCPA1141L10	0.370
	Elbowed	2	XZCPA1241L2	0.090
		5	XZCPA1241L5	0.190
		10	XZCPA1241L10	0.370
M12 jumper cable	Straight	2	XZCRA151140A2	0.090
Male, 3-pin, stainless steel clamping ring		5	XZCRA151140A5	0.190

(1) For a 5 m long cable replace L2 by L5; for a 10 m long cable replace L2 by L10. Example: XS212AAPAL2 becomes XS212AAPAL5 with a 5 m long cable.
 (2) For further information, see page 120.

XZCPA1241L•

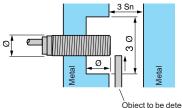
XZCP1141L•

### Inductive proximity sensors

XS range application Food and beverage processing series Cylindrical, plastic, non-flush mountable Three-wire DC, solid-state output

Sensor type			XS2eeAAeeM12		XS2eeAAeeL2
Product certifications/appro	ovals		cULus, CE, UKCA		
Connection	Connector	_	M12		_
	Pre-cabled		_		Length: 2 m
Operating zone	Ø 12	mm	05.6		201.941.211
-per a	~ · - Ø 18	mm	09.6		
	Ø 30	mm	017.6		
	2 00				
Differential travel		%	115 of effective sense	sing distance (Sr)	
Degree of protection	Conforming to IEC 60529		IP 67	. ,	IP 68
· · ·	DIN 40050		IP 69K		-
Storage temperature		°C	- 40+ 85		
Operating temperature		°C	- 25+ 85		
Materials	Case		PPS		
	Cable		-		PvR and 3 x 0.34 mm <sup>2</sup>
Vibration resistance	Conforming to IEC 60068-2-6		25 gn, amplitude ± 2 n	nm (f = 10 to 55 Hz)	)
Shock resistance	Conforming to IEC 60068-2-27		50 gn, duration 11 ms		
Output state indication			Yellow LED: annular		
Rated supply voltage		v	1248 for T - 25+ 85 °C		
Voltage limits (including ripple)		v	1058 for T - 25	+ 85 °C	
Insulation class					
Switching capacity		mA	≤ 200 with overload ar	nd short-circuit prot	tection
Voltage drop, closed state		V	≤2		
Current consumption, no-lo	ad	mA	≤ 10		
Maximum switching	XS212AA	Hz	2500		
frequency	XS218AA	Hz	1000		
	XS230AA	Hz	500		
Delays	First-up	ms	≤ 10		
	Response	ms	≤ 0.2 Ø 12, ≤ 0.3 Ø 18	, ≤ 0.6 Ø 30	
	Recovery	ms	≤ 0.2 Ø 12, ≤ 0.7 Ø 18	, ≤ 1.4 Ø 30	
Wiring schemes					
Connector	Pre-cabled	PNP		NPN	
M12		BN/1	+	BN/1	L +
4 3	BU: Blue	PNP	BK/4 (NO)		 Гвк/4 (NO)
$((\bullet \bullet))$	BN: Brown BK: Black	$\Diamond$			
	DIV. DIGON	BU/3		BU/3	-

### Setting-up



Object to be detected

#### Minimum mounting distances (mm)



Side by side

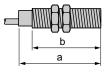
e≥84

Face to face e≥144 e≥264

Facing a metal ob e≥2

e≥21	
e≥36	
e≥66	

#### Dimensions



#### XS2

e≥48

e≥72

e≥120

Ø 12

Ø 18

Ø 30

	Pre-cabled (mm)		Connect	or (mm)	
XS2	а	b	а	b	
Ø 12	50	42	61	43	
Ø 18	60	51	70	52	
Ø 30	60	51	70	52	

### References

### **Inductive proximity sensors** XS range application

XS range application Food and beverage processing series Cylindrical, plastic, non-flush mountable Two-wire AC or DC











XSZB1..

Ø 18, threaded	1 M18 x 1			
Sensing distance (Sn) mm	Function	Connection	Reference	Weight (kg)
12	NO	Pre-cabled (L = 2 m) <i>(1)</i>	XS218AAMAL2	0.100
		1/2"-20UNF connector	XS218AAMAU20	0.040

Ø 30, threade	a w30 x 1.5			
Sensing distance (Sn) mm	Function	Connection	Reference	Weight (kg)
22	NO	Pre-cabled (L = 2 <i>(1)</i>	2 m) XS230AAMAL2	0.140
		1/2"-20UNF connector	XS230AAMAU20	0.080

Accessories	<b>i</b> (2)		
Description	For use with sensors (mm)	Reference	Weight (kg)
Fixing clamps	Ø 18	XSZB118	0.010
	Ø 30	XSZB130	0.020

<b>Connecting cal</b>	bles			
Description	Туре	Length m	Reference	Weight (kg)
Pre-wired connectors	Straight	5	XZCPA1865L5	0.180
1/2"-20UNF 3-pin		10	XZCPA1865L10	0.350
female, stainless steel 316 L clamping ring	Elbowed	5	XZCPA1965L5	0.180
5 TO L Clamping mig		10	XZCPA1965L10	0.350

 For a 5 m long cable replace L2 by L5; for a 10 m long cable replace L2 by L10. Example: XS218AAMAL2 becomes XS218AAMAL5 with a 5 m long cable.
 For further information, see page 120.

## Inductive proximity sensors

XS range application Food and beverage processing series Cylindrical, plastic, non-flush mountable Two-wire AC or DC

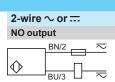
Sensor type			XS2eeAAMeU20	XS2eeAAMeL2		
Product certifications/a	pprovals		cULus, C€, UKCA			
Connection	Connector		1/2"-20UNF	-		
	Pre-cabled		-	Length: 2 m		
Operating zone	Ø 18	mm	09.6			
	Ø 30	mm	017.6			
Differential travel		%	115 of effective sensing distance (Sr)			
Degree of protection	Conforming to IEC 60529		IP 67	IP 68		
	DIN 40050		IP 69K			
Storage temperature		°C	- 40+ 85			
Operating temperature		°C	- 25+ 85			
Materials	Case		PPS			
	Cable		-	PvR and 2 x 0.34 mm <sup>2</sup>		
Vibration resistance	Conforming to IEC 60068-2-6		25 gn, amplitude $\pm$ 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: annular			
Rated supply voltage		V	$\sim$ or == 24240 ( $\sim$ 50/60 Hz)			
Voltage limits (including	ripple)	V	$\sim$ or == 20264			
Insulation class			1	1		
Switching capacity		mA	$\sim$ 5300 or == 5200 (1)			
Voltage drop, closed sta	te	V	≤ 5.5			
Residual current, open s	state	mA	≤ 0.8			
Maximum switching	XS218AAMeee	Hz	$\sim$ 25 or == 1000			
frequency	XS230AAMeee	Hz	$\sim$ 25 or == 300			
Delays	First-up	ms	≤ 30			
	Response	ms	≤0.5			
	Recovery	ms	≤ 0.5 XS218AAM●●●, ≤ 2 XS230AAM●●	•		

#### **Wiring schemes**

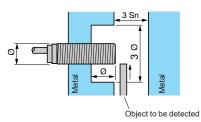
≂: 2 ≂: 3

Connector 1/2"-20UNF

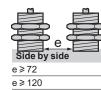
Pre-cabled BU: Blue BN: Brown

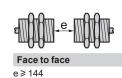


### Setting-up



Minimum mounting distances (mm)





e≥264

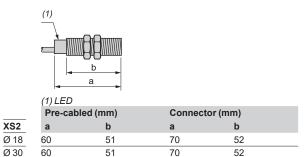
Facing a metal object  $e \ge 36$  $e \ge 66$ 

**Dimensions** 

XS2

Ø 18

Ø 30





# References, schemes









XS930•1PAM12



XZCPA1241L•

XZCP1141L•



XS range application Cylindrical, stainless steel 303 front face for harsh industrial environments Three-wire DC, solid-state output

Ø 8 mm, threade	d M8 x 1				
Sensing distance (Sn) mm	Function	Output	Connection	Reference	Weight (kg)
Three-wire 12-24V	, flush mou	untable			
3	NO	PNP	M12	XS908R1PAM12	0.018
Three-wire 12-24V	, non-flush	mountat	ole		
6	NO	PNP	M12	XS908R4PAM12	0.018
Ø 12 mm, thread	ed M12 x	:1			
Sensing distance (Sn) mm	Function	Output	Connection	Reference	Weight (kg)
Three-wire 12-24V	, flush mou	untable			
6	NO	PNP	M12	XS912R1PAM12	0.024
Three-wire 12-24V	, non-flush	mountat	ole		
10	NO	PNP	M12	XS912R4PAM12	0.023
Ø 18 mm, thread	ed M18 x	:1			
Sensing distance (Sn) mm	Function	Output	Connection	Reference	Weight (kg)
Three-wire 12-24V	, flush mou	untable			
10	NO	PNP	M12	XS918R1PAM12	0.044
Three-wire 12-24V	, non-flush	mountab	ole		
20	NO	PNP	M12	XS918R4PAM12	0.051
Ø 30 mm, thread	ed M30 x	1.5			
Sensing distance (Sn) mm	Function	Output	Connection	Reference	Weight (kg)
Three-wire 12-24V	, flush mou	untable			
20	NO	PNP	M12	XS930R1PAM12	0.140

Three-wire 12-24	/, non-flu	ish mounta	able		
40	NO	PNP	M12	XS930R4PAM12	0.144

Connecting of	ables (PUR	<b>(</b> 1)		
Description	Туре	Length m	Reference	Weight (kg)
Pre-wired M12 connectors	Straight	2	XZCP1141L2	0.090
		5	XZCP1141L5	0.190
Female, 4-pin Metal clamping		10	XZCP1141L10	0.370
wetai clamping	Elbowed	2	XZCP1241L2	0.090
		5	XZCP1241L5	0.190
		10	XZCP1241L10	0.370

Wiring schemes	
M12 connector	PNP
	$\begin{array}{c} & & & & \\ & & & & \\ \hline \\ \hline \\ \hline \\ \hline \\ \hline \\$

(1) For further information, please consult our site www.telemecaniquesensors.com.

## Inductive proximity sensors

XS range application Cylindrical, stainless steel 303 front face for harsh industrial environments Three-wire DC, solid-state output

Product certifications Connection Operating zone Differential travel Degree of protection	Flush Non-flush		1						
roduct certifications connection Operating zone Differential travel Degree of protection Storage temperature	Non-flush		XS908R1	PAM12	XS912R1PAM12	XS91	I8R1PAM12	XS93	R1PAM1
Connection Operating zone Differential travel Degree of protection Ctorage temperature			XS908R4	PAM12	XS912R4PAM12	XS91	18R4PAM12	XS93	R4PAM1
perating zone ifferential travel egree of protection torage temperature			cULus, C€	, UKCA					
ifferential travel egree of protection torage temperature	Connector		M12		-				
ifferential travel egree of protection torage temperature	Flush	mm	02.4		04.8	08		016	
egree of protection orage temperature	Non-flush	mm	04.8		08	01	6	032	
orage temperature		%	· ·	al sensing o	listance Sr)				
orage temperature	Conforming to IEC 60529		IP 67		IP 68 (5 meters u	nderwater	for 1 month)		
• ·	Conforming to DIN 40050		IP 69K						
perating temperature		°C		(-13158	/				
		°C		(-13158	,				
	Case			steel, 303 g					
ront face thickness		mm	0.25		0.4	0.6		1.0	
	Conforming to IEC 62262		IK10	alituda 1.1	mm /f = 10 to EE    -				
	Conforming to IEC 60068-2-6	,			mm (f = 10 to 55 Hz	.)			
	Conforming to IEC 60068-2-27			ation 11 ms		lin a from	0.0.0.5.0.0.4.0.5.		
utput state indication		V		-	g points at 90° (blin		0.8 Sr and Sr)		
ated supply voltage		V		· · ·	tion against revers	epolarity			
oltage limits (including ripple) sulation class		V	1030 □						
vitching capacity		mA		overload	nd short-circuit pro				
oltage drop, closed state		V	≤200 with	ovenoad a	ing onon-on out pro				
urrent consumption, no-load		mA	<pre>&lt;2</pre> <pre>&lt;</pre>						
• •	Flush	Hz	1000		600	300		100	
	Non-flush	Hz	700		400	200		90	
	First set-up	ms	40		400	200		30	
•	Response	μs	0.05		0.06				
	Recovery	μs	23		15				
Setting-up									
Minimum mounting distance	a ta anna fhachanairtean								
Ø 30 e≥80		on	00	e≥60			d≥90		
Side by side	Face to face $e \ge 25$ $e \ge 40$ $e \ge 70$ $e \ge 130$	<b>1</b> .e.		$e \ge 20$ $e \ge 30$ $e \ge 60$ $e \ge 120$	g a metal object		d≥20 d≥30 d≥60	$h \ge 15$ $h \ge 22$ $h \ge 34$ $h \ge 34$	al suppor
Dimensions			Flush ser	isor		Non-	flush senso	r	
	hs (mm):			12 M <sup>2</sup>	I8 M30	M8	M12	M18	M30
Length	erall a (mm		66 60			66	60	63.5	63.5
	readed b (mm	<u>,</u>	46 41			42	36		
b b thr		/		4/		42	30	35	32
b b b = thr c = for		) (	0 0	0	0	42	5	35 7	32 10
b c a = ov. b b b b thr c = for mount	table sensors c (mm	)	0 0		0				
b c b b thr c b c b thr c c for mount		)	0 0		0				
a = ov b + c = for a - c = for mount Reduction coefficient		,	0 0 Flush ser	0	0	4		7	
a = ov b + c = for mount Reduction coefficient		,	Flush ser	0 Isor		4 Non-	5 flush senso	7 • <b>r</b>	10
Reduction coefficient on-flush mounted		,	Flush ser M8 M	0 Isor 12 M <sup>.</sup>	18 M30	4 Non- M8	5 flush senso M12	7 r M18	10 <b>M30</b>
Reduction coefficient on-flush mounted		,	<b>Flush ser</b> <b>M8 M</b> 1 1	0 Isor 12 M <sup>-</sup> 1	18 M30 1	4 <b>Non-</b> <b>M8</b> 1	5 flush senso M12 1	7 r M18 1	10 <b>M30</b> 1
a       a       a       b       c       for       c       for       <		, 	<b>Flush ser</b> <b>M8 M</b> 1 1 1 1	0 Isor 12 M 1 1	18 M30 1 1	4 <b>Non-</b> <u>M8</u> 1 1	5 flush senso M12 1 1	7 r M18 1 1	10 <b>M30</b> 1 1
a       a       a       b       c       for       c       for       <		-	<b>Flush ser</b> <b>M8 M</b> 1 1 1.35 1.	0 Isor 12 M <sup>.</sup> 1 3 1.3	18 M30 1 1 2 1.3	4 Non- M8 1 1 1.4	5 flush senso M12 1 1 1.4	7 <b>M18</b> 1 1.35	10 <b>M30</b> 1 1.2
a       a       a       a       b       c       for       b       b       for       for <td< td=""><td>table sensors c (mm</td><td>-</td><td>Flush ser           M8         M           1         1           1         1           1.35         1.           0.9         0.</td><td>0 <b>ISOT</b> 12 M<sup>1</sup> 1 3 1.2 85 0.8</td><td><b>18 M30</b> 1 1 2 1.3 3 0.9</td><td>4 Non- M8 1 1 1.4 0.85</td><td>5 flush senso M12 1 1.4 0.8</td><td>7 M18 1 1.35 0.9</td><td>10 <b>M30</b> 1 1.2 0.9</td></td<>	table sensors c (mm	-	Flush ser           M8         M           1         1           1         1           1.35         1.           0.9         0.	0 <b>ISOT</b> 12 M <sup>1</sup> 1 3 1.2 85 0.8	<b>18 M30</b> 1 1 2 1.3 3 0.9	4 Non- M8 1 1 1.4 0.85	5 flush senso M12 1 1.4 0.8	7 M18 1 1.35 0.9	10 <b>M30</b> 1 1.2 0.9
a       a       a       a       b       c       for       b       b       for       for <td< td=""><td>Thickness 1 m</td><td>, </td><td>Flush ser           M8         M           1         1           1         1           1.35         1.           0.9         0.           0.3         0.</td><td>0 <b>ISOF</b> <b>12</b> <b>M</b> 1 1 3 1.2 85 0.4 5 0.5</td><td>I8         M30           1         1           2         1.3           3         0.9           5         0.35</td><td>4 Non- M8 1 1.4 0.85 0.3</td><td>5 flush senso M12 1 1.4 0.8 (1)</td><td>7 M18 1 1.35 0.9 0.3</td><td>10 <b>M30</b> 1 1.2 0.9 (1)</td></td<>	Thickness 1 m	, 	Flush ser           M8         M           1         1           1         1           1.35         1.           0.9         0.           0.3         0.	0 <b>ISOF</b> <b>12</b> <b>M</b> 1 1 3 1.2 85 0.4 5 0.5	I8         M30           1         1           2         1.3           3         0.9           5         0.35	4 Non- M8 1 1.4 0.85 0.3	5 flush senso M12 1 1.4 0.8 (1)	7 M18 1 1.35 0.9 0.3	10 <b>M30</b> 1 1.2 0.9 (1)
a       a       a       a       b       c       for       b       b       for       for <td< td=""><td>table sensors c (mm</td><td>, </td><td>Flush ser           M8         M           1         1           1         1           1.35         1.           0.9         0.</td><td>0 <b>ISOF</b> <b>12</b> <b>M</b> 1 1 3 1.2 85 0.4 5 0.5</td><td>I8         M30           1         1           2         1.3           3         0.9           5         0.35</td><td>4 Non- M8 1 1 1.4 0.85</td><td>5 flush senso M12 1 1.4 0.8</td><td>7 M18 1 1.35 0.9</td><td>10 <b>M30</b> 1 1.2 0.9</td></td<>	table sensors c (mm	, 	Flush ser           M8         M           1         1           1         1           1.35         1.           0.9         0.	0 <b>ISOF</b> <b>12</b> <b>M</b> 1 1 3 1.2 85 0.4 5 0.5	I8         M30           1         1           2         1.3           3         0.9           5         0.35	4 Non- M8 1 1 1.4 0.85	5 flush senso M12 1 1.4 0.8	7 M18 1 1.35 0.9	10 <b>M30</b> 1 1.2 0.9
a       output       a       output       b <td< td=""><td>Thickness 1 m</td><td>, </td><td>Flush ser           M8         M           1         1           1         1           1.35         1.           0.9         0.           0.3         0.</td><td>0 <b>ISOF</b> <b>12</b> <b>M</b> 1 1 3 1.2 85 0.4 5 0.5</td><td>I8         M30           1         1           2         1.3           3         0.9           5         0.35</td><td>4 Non- M8 1 1.4 0.85 0.3</td><td>5 flush senso M12 1 1.4 0.8 (1)</td><td>7 M18 1 1.35 0.9 0.3</td><td>10 <b>M30</b> 1 1.2 0.9 (1)</td></td<>	Thickness 1 m	, 	Flush ser           M8         M           1         1           1         1           1.35         1.           0.9         0.           0.3         0.	0 <b>ISOF</b> <b>12</b> <b>M</b> 1 1 3 1.2 85 0.4 5 0.5	I8         M30           1         1           2         1.3           3         0.9           5         0.35	4 Non- M8 1 1.4 0.85 0.3	5 flush senso M12 1 1.4 0.8 (1)	7 M18 1 1.35 0.9 0.3	10 <b>M30</b> 1 1.2 0.9 (1)
a       output       a       output       b <td< td=""><td>Thickness 1 m</td><td>, </td><td>Flush ser           M8         M           1         1           1         1           1.35         1.           0.9         0.           0.3         0.           0.6         0.</td><td>0 <b>ISOF</b> <b>12</b> <b>M</b> 1 1 3 1.2 85 0.4 5 0.5</td><td>18         M30           1         1           2         1.3           3         0.9           5         0.35           9         0.7</td><td>4 Non- M8 1 1.4 0.85 0.3 0.9</td><td>5 flush senso M12 1 1.4 0.8 (1)</td><td>7 M18 1 1.35 0.9 0.3</td><td>10 <b>M30</b> 1 1.2 0.9 (1)</td></td<>	Thickness 1 m	, 	Flush ser           M8         M           1         1           1         1           1.35         1.           0.9         0.           0.3         0.           0.6         0.	0 <b>ISOF</b> <b>12</b> <b>M</b> 1 1 3 1.2 85 0.4 5 0.5	18         M30           1         1           2         1.3           3         0.9           5         0.35           9         0.7	4 Non- M8 1 1.4 0.85 0.3 0.9	5 flush senso M12 1 1.4 0.8 (1)	7 M18 1 1.35 0.9 0.3	10 <b>M30</b> 1 1.2 0.9 (1)
a       over the second s	Thickness 1 m	, 	Flush ser           M8         M           1         1           1         1           1.35         1.           0.9         0.           0.3         0.           0.6         0.           M8         M	0 <b>ISOT</b> 12 M 1 1 1 1 1 3 1 2 5 0.3 9 0.5 12 M 1 1 1 1 1 1 1 1 1 1 1 1 1	18     M30       1     1       2     1.3       3     0.9       5     0.35       9     0.7       18     M30	4 Non- M8 1 1.4 0.85 0.3 0.9	5 <b>flush senso</b> <b>M12</b> 1 1.4 0.8 (1) 0.66	7 M18 1 1.35 0.9 0.3	10 <b>M30</b> 1 1.2 0.9 (1)
a       output       a       output       a       b       dia	Thickness 1 m	, 	Flush ser           M8         M           1         1           1.35         1.           0.9         0.           0.3         0.           0.6         0.           M8         M           1         0.	0 <b>ISOT</b> 12 M 1 3 1.2 85 0.3 5 0.3 9 0.3 12 M 7 0.1	18     M30       1     1       2     1.3       3     0.9       5     0.35       9     0.7       18     M30       75     0.9	4 Non- M8 1 1.4 0.85 0.3 0.9	5 <b>flush senso</b> <b>M12</b> 1 1.4 0.8 (1) 0.66	7 M18 1 1.35 0.9 0.3	10 <b>M30</b> 1 1.2 0.9 (1)
a       output       a       output       a       b       diada       b       diada       b       diada       b       diada       b       diada       b       diada       diad       diada       diada	Thickness 1 m	, m - m - 1 m - 1 C	Flush ser           M8         M           1         1           1.35         1.           0.9         0.           0.6         0.           M8         M           1         0.           0.03         0.           0.6         0.	0 <b>ISOT</b> 12 M 1 1 1 1 1 3 1 2 5 0.3 9 0.5 12 M 1 1 1 1 1 1 1 1 1 1 1 1 1	18     M30       1     1       2     1.3       3     0.9       5     0.35       9     0.7       18     M30       75     0.9       9     0.7	4 Non- M8 1 1.4 0.85 0.3 0.9	5 <b>flush senso</b> <b>M12</b> 1 1.4 0.8 (1) 0.66	7 M18 1 1.35 0.9 0.3	10 <b>M30</b> 1 1.2 0.9 (1)

### References, characteristics

**Inductive proximity sensors** XS range application Flat sensor, flush mountable, increased range, Switching capacity 300 mA 80 x 80 x 40 format, DIN rail mounting, solid-state output

Sensor type

#### Flush mountable in metal

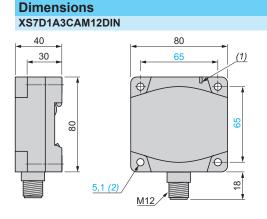


Dimensions		mm	80 x 80 x 40
Nominal sensing distand	ce (Sn)	mm	50 (not flush mounted: 42)
Reference			
2-wire === (non polarised)	NO		XS7D1A3CAM12DIN
Weight		kg	0.374
Characteristics			
Product certifications			C€, UKCA
Degree of protection	Conforming to IEC 60529		IP 67
Temperature	Operating	°C	- 25+ 70
	Storage	°C	- 40+ 85
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
Connection			M12 connector
Operating zone		mm	040 (not flush mounted: 035)
Repeat accuracy		%	3 of Sr
Differential travel		%	115 of Sr
Output state indication			Yellow LED
Rated supply voltage		۷	1248 with protection against reverse polarity
Voltage limits (including r	ipple)	v	1058
Insulation class			
Residual current, open s	state	mA	≤0.5
Switching capacity		mA	1.5300 with overload and short-circuit protection
Voltage drop, closed sta	te	v	≤4.5
Maximum switching free	quency	Hz	100
Delays	First-up	ms	≤10
	Response	ms	≤2
	Recovery	ms	≤5
		-	

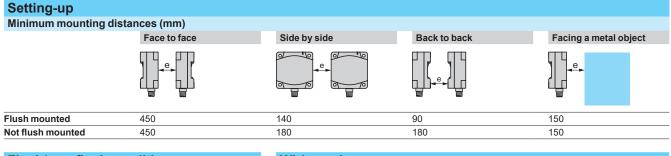
### Dimensions, setting-up, schemes

## Inductive proximity sensors

XS range application Flat sensor, flush mountable, increased range, Switching capacity 300 mA 80 x 80 x 40 format, DIN rail mounting, solid-state output



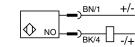
(1) Output LED (2) For CHC type screws



Flush/non-flush conditions					
In A37 ste	el				
0			d > 10 mm		
Sn	Su	Sn	Su		
42 mm	35 mm	50 mm	40 mm		

### **Wiring schemes**

#### 2-wire NO/M12 XS7D1A3CAM12DIN



# References, schemes









Connecting ca	bles (PUR	<b>(</b> 1)		
Description	Туре	Length m	Reference	Weight (kg)
Pre-wired M12 connectors Female, 4-pin Metal clamping ring	Straight	2	XZCP1141L2	0.090
		5	XZCP1141L5	0.190
		10	XZCP1141L10	0.370
	Elbowed	2	XZCP1241L2	0.090
		5	XZCP1241L5	0.190
		10	XZCP1241L10	0.370

Wiring schemes	
M12 connector	PNP
	$\begin{array}{c} & & & \\ & & & \\ \hline \\ \hline \\ \hline \\ \hline \\ \hline \\ \\ \hline \\ \\ \\ \\$

(1) For further information, please consult our site www.telemecaniquesensors.com.

## Three-wire DC, solid-state output

environments

Ø 12 mm, threaded M12 x 1							
Sensing distance (Sn) mm	Function	Output	Connection	Reference	Weight (kg)		
Three-wire 12-24V	Three-wire 12-24V, flush mountable						
6	NO	PNP	M12	XS912RWPAM12	0.024		

**Inductive proximity sensors** XS range application Cylindrical, stainless steel 303 front face, for welding

Ø 18 mm, threaded M18 x 1					
Sensing distance (Sn) mm	Function	Output	Connection	Reference	Weight (kg)
Three-wire 12-24V, flush mountable					
10	NO	PNP	M12	XS918RWPAM12	0.051

#### Characteristics, setting-up, dimensions

**Inductive proximity sensors** XS range application Cylindrical, stainless steel 303 front face, for welding environments Three-wire DC, solid-state output

Characteristics					
Sensor type	Flush			XS912RWPAM12	XS918RWPAM12
Product certifications				cULus, CE, UKCA	
Connection	Connector			M12	
Operating zone	Connector		mm	04.8	08
Differential travel			%	115 (real sensing distance Sr)	00
Degree of protection	Conforming to IEC 60	)529	70	IP 68 (5 meters underwater for 1 mon	th)
3	Conforming to DIN 40			IP 69K	
Storage temperature	<u> </u>		°C	-25+ 70 (-13158°F)	
Operating temperature			°C	-25+ 70 (-13158°F)	
Aaterials	Case			Stainless steel, 303 grade	
ront face thickness			mm	0.4	0.6
Aechanical shock resistanc	e Conforming to IEC 62	2262		IK10	· ·
/ibration resistance	Conforming to IEC 60	068-2-6		25 gn, amplitude ± 1 mm (f = 10 to 55	Hz)
Shock resistance	Conforming to IEC 60	068-2-27		30 gn, duration 11 ms	
Output state indication				Yellow LED, 4 viewing points at 90° (b	plinking from 0.8 Sr and Sr)
Rated supply voltage			٧	= 1224 with protection against rev	
/oltage limits (including rip)	ple)		٧	1030	
nsultation class	· ·				
Switching capacity			mA	= ≤ 200 with overload and short-circuit µ	protection
/oltage drop, closed state			٧	≤2	
Current consumption, no-lo	ad		mA	≤10	
Aaximum switching frequer			Hz	15	
Delays	First set-up		ms	80	
	Response		μs	100	
	Recovery		μs	15	
Minimum mounting dist Side by side Ø 12 e≥ 38	Face t e ≥ 30	ersion to face		Facing a metal object $e \ge 20$ = 0.0m	<u>d≥24</u>   • • •
Minimum mounting dist Side by side	Face t		e.		d d
Minimum mounting distSide by side	Face t e ≥ 30			<u>e≥20</u>	<u>d≥24</u>   •
Minimum mounting distSide by side	Face t e ≥ 30		• <b>e</b> +	<u>e≥20</u>	<u>d≥24</u>   •
Minimum mounting dist Side by side $\frac{\emptyset 12}{\emptyset 18} \stackrel{e \ge 38}{e \ge 42}$	Face t $e \ge 30$ $e \ge 40$			Flush sensor	<u>d≥24</u>   •
Minimum mounting dist Side by side $\frac{\emptyset}{0}\frac{12}{18} \stackrel{e \ge 38}{e \ge 42}$ Dimensions	engths (mm): a = overall	to face		Flush sensor M12 M18	<u>d≥24</u>   •
Minimum mounting dist Side by side $\frac{\emptyset 12}{\emptyset 18} \stackrel{e \ge 38}{e \ge 42}$	Face t $e \ge 30$ $e \ge 40$ Lengths (mm): a = overall e = threaded	to face		$e \ge 20$ $e \ge 30$ $e \longrightarrow 10^{-1}$ Flush sensorM186063.5	<u>d≥24</u>   •
$ \frac{\emptyset}{\emptyset} \frac{12}{18} \stackrel{e \ge 38}{e \ge 42} $ Dimensions	Face t $e \ge 30$ $e \ge 40$ e = 0verall e = threaded e = for non-flush	to face		$e \ge 20$ $e \ge 30$ $e \longrightarrow 30$ Flush sensor       M18 $60$ $63.5$ $41$ $42$	<u>d≥24</u>   •
Minimum mounting dist Side by side	Face t $e \ge 30$ $e \ge 40$ Lengths (mm): a = overall e = threaded	to face		$e \ge 20$ $e \ge 30$ $e \longrightarrow 10^{-1}$ Flush sensorM186063.5	<u>d≥24</u>   •
Minimum mounting dist Side by side $\frac{\emptyset 12}{\emptyset 18} \stackrel{e \ge 38}{e \ge 42}$ Dimensions $\downarrow \qquad b \qquad \downarrow \qquad c \qquad c$	Face t $e \ge 30$ $e \ge 40$ e \ge 40 Lengths (mm): a = overall b = threaded c = for non-flush mountable sensors	to face		$e \ge 20$ $e \ge 30$ $e \longrightarrow 30$ Flush sensor       M18         60       63.5         41       42         0       0	<u>d≥24</u>   •
Minimum mounting dist Side by side $\frac{\emptyset 12}{\emptyset 18} \stackrel{e \ge 38}{e \ge 42}$ Dimensions $\downarrow \qquad b \qquad \downarrow \qquad c \qquad c$	Face t $e \ge 30$ $e \ge 40$ e \ge 40 Lengths (mm): a = overall b = threaded c = for non-flush mountable sensors	to face		$e \ge 20$ $e \ge 30$ $e \bigoplus 1$ Flush sensorM18 $60$ $63.5$ $41$ $42$ $0$ $0$	<u>d≥24</u>   •
Minimum mounting dist Side by side $\frac{\emptyset 12}{\emptyset 18} \stackrel{e \ge 38}{e \ge 42}$ Dimensions Dimensions Reduction coefficient Non-flush mounted	Face t $e \ge 30$ $e \ge 40$ e \ge 40 Lengths (mm): a = overall b = threaded c = for non-flush mountable sensors	to face		$e \ge 20$ $e \ge 30$ $fush sensor$ M12M186063.5414200Flush sensorM12M18	<u>d≥24</u>   •
Minimum mounting dist Side by side $\frac{\emptyset 12}{\emptyset 18} \stackrel{e \ge 38}{e \ge 42}$ Dimensions Dimensions Reduction coefficient Non-flush mounted	Face t $e \ge 30$ $e \ge 40$ e \ge 40 Lengths (mm): a = overall b = threaded c = for non-flush mountable sensors	to face		$e \ge 20$ $e \ge 30$ $e \bigoplus 1$ Flush sensorM18 $60$ $63.5$ $41$ $42$ $0$ $0$	<u>d≥24</u>   •
Minimum mounting dist Side by side $ \begin{array}{r}                                     $	Face t $e \ge 30$ $e \ge 40$ e \ge 40 Lengths (mm): a = overall b = threaded c = for non-flush mountable sensors	to face		$e \ge 20$ $e \ge 30$ $fush sensor$ M12M186063.5414200Flush sensorM12M18	<u>d≥24</u>   •
Minimum mounting dist Side by side	Face t $e \ge 30$ $e \ge 40$ e \ge 40 Lengths (mm): a = overall b = threaded c = for non-flush mountable sensors	to face		$e \ge 20$ $e \ge 30$ $e \longrightarrow 30$ Flush sensor       M18         60       63.5         41       42         0       0         Flush sensor       M18         1       1	<u>d≥24</u>   •
Minimum mounting dist Side by side Ø 12 Ø 18 e ≥ 38 e ≥ 42 Dimensions Comparisons	Face t $e \ge 30$ $e \ge 40$ Lengths (mm): a = overall e = threaded e = for non-flush mountable sensors	to face		$e \ge 20$ $e \ge 30$ $e \longrightarrow 30$ Flush sensor       M18         60       63.5         41       42         0       0         Flush sensor       M18         11       1         1       1	<u>d≥24</u>   •
Minimum mounting dist Side by side Ø 12 Ø 18 e ≥ 38 e ≥ 42 Dimensions Cuper Conflush mounted Steel Numinum Brass Cupper	Face t $\frac{e \ge 30}{e \ge 40}$ engths (mm): a = overall b = threaded c = for non-flush nountable sensors ent	a (mm) <u>b (mm)</u> c (mm)		$e \ge 20$ $e \ge 30$ $e \longrightarrow 30$ Flush sensor       M18         60       63.5         41       42         0       0         Flush sensor       M18         11       1         1.3       1.2         0.85       0.8	<u>d≥24</u>   •
Minimum mounting dist Side by side $0 12 e \ge 38$ $0 18 e \ge 42$	Face t $e \ge 30$ $e \ge 40$ e = 040 e = 0400 e = 0400 e = 0400 e = 0400 e = 0400 e = 0	to face	- - - - - - - - - - - - - - - - - - -	$e \ge 20$ $e \ge 30$ $e \longrightarrow 30$ Flush sensor       M18         60       63.5         41       42         0       0         Flush sensor       M18         11       1         1.3       1.2	<u>d≥24</u>   •
Minimum mounting dist Side by side $ \begin{array}{c}                                     $	Face t $e \ge 30$ $e \ge 40$ e = 040 e = 0400 e = 0400 e = 0400 e = 0400 e = 0400 e = 0	a (mm) b (mm) c (mm)		$e \ge 20$ $e \ge 30$ Flush sensor       M18         60       63.5         41       42         0       0         Flush sensor       M18         11       1         1.3       1.2         0.85       0.8         0.5       0.5         0.9       0.9	<u>d≥24</u>   •
Minimum mounting dist Side by side $ \begin{array}{c}                                     $	Face t $e \ge 30$ $e \ge 40$ e = 040 e = 0400 e = 0400 e = 0400 e = 0400 e = 0400 e = 0	a (mm) b (mm) c (mm)		$e \ge 20$ $e \ge 30$ Flush sensor       M18         60       63.5         41       42         0       0         Flush sensor       M18         M12       M18         1       1         1.3       1.2         0.85       0.8         0.5       0.5         0.9       0.9         M12       M18	<u>d≥24</u>   •
Minimum mounting dist Side by side Ø 12 Ø 18 e ≥ 38 Ø 18 e ≥ 42 Dimensions Dimensions Comparisons Reduction coefficient Non-flush mounted Steel Muminum Brass Cupper Stainless steel Flush mounted Steel Steel	Face t $e \ge 30$ $e \ge 40$ e = 040 e = 0400 e = 0400 e = 0400 e = 0400 e = 0400 e = 0	a (mm) b (mm) c (mm)		$e \ge 20$ $e \ge 30$ $e \longrightarrow 30$ Flush sensor       M18         60       63.5         41       42         0       0         Flush sensor       M18         11       1         1.3       1.2         0.85       0.8         0.5       0.5         0.9       0.9         M12       M18         0.7       0.75	<u>d≥24</u>   •
Minimum mounting dist Side by side $ \begin{array}{c}                                     $	Face t $e \ge 30$ $e \ge 40$ e = 040 e = 0400 e = 0400 e = 0400 e = 0400 e = 0400 e = 0	a (mm) b (mm) c (mm)		$e \ge 20$ $e \ge 30$ $e \longrightarrow 30$ Flush sensor       M18         60       63.5         41       42         0       0         Flush sensor       M18         11       1         1.3       1.2         0.85       0.8         0.5       0.5         0.9       0.9         M12       M18         0.7       0.75         1.15       0.9	<u>d≥24</u>   •
Minimum mounting dist Side by side Ø 12 Ø 18 e ≥ 38 Ø 18 e ≥ 42 Dimensions Dimensions Comparisons Reduction coefficient Non-flush mounted Steel Muminum Brass Cupper Stainless steel Flush mounted Steel Steel	Face t $e \ge 30$ $e \ge 40$ e = 040 e = 0400 e = 0400 e = 0400 e = 0400 e = 0400 e = 0	a (mm) b (mm) c (mm)		$e \ge 20$ $e \ge 30$ $e \longrightarrow 30$ Flush sensor       M18         60       63.5         41       42         0       0         Flush sensor       M18         11       1         1.3       1.2         0.85       0.8         0.5       0.5         0.9       0.9         M12       M18         0.7       0.75	<u>d≥24</u>   • • •

#### References, characteristics, setting-up

## Inductive proximity sensors

XS range application

Factor 1 sensors for ferrous or non-ferrous material detection and welding applications. Plastic case, 40 x 40 mm front face. 5-position turret head

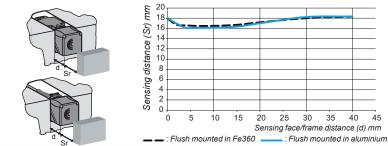
Sensor type			Flush mountable in metal	
Dimensions		mm	40 x 40 x 70	40 x 40 x 117
Nominal sensing distance (	(Sn)	mm	20	
References				
4-wire ===	PNP NO+NC		XS9C2A1PCM12	XS9C4A1PCP20 (1)
	NPN NO+NC	-	XS9C2A1NCM12	-
			XS9C4000P20 sensors are available with ar with a Pg 13.5 (e.g. XS9C4A1PCG13) or a 1 please consult our Customer Care Centre for	2" NPT (e.g. XS9C4A1PCN12) cable entry:
Weight		kg	0.110	0.220
Characteristics				
Product certifications			cULus, CE, UKCA	
Conformity to standards			IEC 60947-5-2	
Connection			M12 connector (4-pin)	Screw terminals, clamping capacity 4 x 1.5 mm <sup>2</sup> / 4 x 16 AWG
Operating zone		mm	016	
Differential travel		%	315 of Sr	
Repeat accuracy		%	< 3	
Immunity to magnetic fields			< 250 mTesla	
Degree of protection	Conforming to IEC 60529 and DIN 40050		IP 65, IP 67 and IP 69K	
Temperature	Storage	°C	- 40+ 85	
	Operation (2)	°C	- 25+ 70	
Material	<u> </u>		Case: PBT	
Vibration resistance	Conforming to IEC 60068-2-6		25 gn, amplitude $\pm$ 2 mm (f = 1055 Hz)	
Shock resistance	Conforming to IEC 60068-2-27		50 gn for 11 ms	
Indicators Pated supply voltage	4-wire	v	Output state: yellow LED. Supply on: green L	
Rated supply voltage Voltage limits (including ripple)	4-wire	V	1224 with protection against reverse po 1036	lanıy
Insulation class				
Current consumption, no-load	4-wire	mA	< 30	
Switching capacity	4-wire	mA	< 200 with protection against overload and sl	nort-circuit
Voltage drop, closed state	4-wire	v	<2	
Maximum switching frequency	4-wire	Hz	250	
Delays	First-up	ms	< 15	
	Response	ms	< 2.5	
	Recovery	ms	< 2.5	
Setting-up				

#### Setting-up

Sensing distance correction factor 1.20 1.00 1.02 1.02 1.00 1.03 1.02 1.03 1.00 0.80 0.60 0.40 0.20 0.00 SS 303 SS 304 SS 316 Fe360 Brass Cu AI

SS: stainless steel, Fe: steel, Al: aluminium, Cu: copper.

Operating distance (according to the sensor's level of flush mounting)



(1) These sensors are supplied without a cable gland. A suitable Pg 13.5 cable gland is available (reference **XSZPE13**). (2) Sensors are available for very low temperatures (suffix **TE** -  $40^{\circ}$ C +  $70^{\circ}$ C) or very high temperatures (suffix **TE** -  $25^{\circ}$ C +  $85^{\circ}$ C

(2) Sensors are available for very low temperatures (suffix **TF**: - 40°C, + 70°C) or very high temperatures (suffix **TT**: - 25°C, + 85°C); please consult our Customer Care Centre.

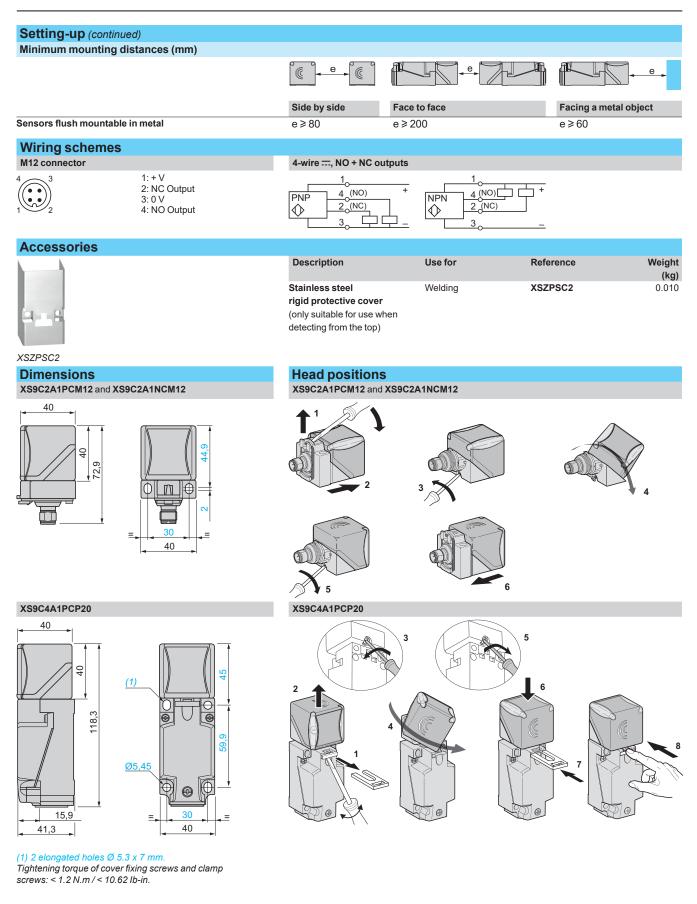


#### Setting-up (continued), schemes, dimensions

## Inductive proximity sensors

XS range application

Factor 1 sensors for ferrous or non-ferrous material detection and welding applications. Plastic case, 40 x 40 mm front face. 5 position turret head



#### References, characteristics, schemes, dimensions

**Inductive proximity sensors** XS range application Selective detection of ferrous and non-ferrous materials Cylindrical type, solid-state output

#### Sensor type

Flush mountable



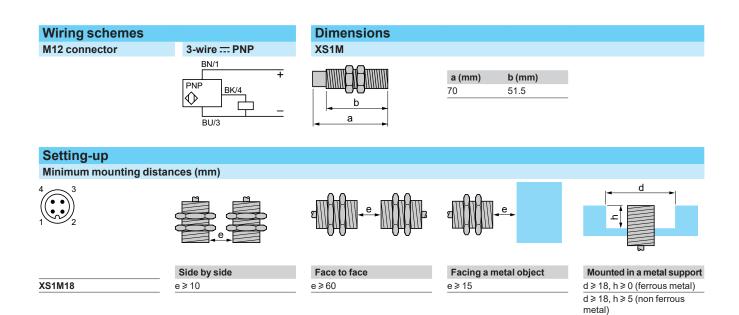
Naminal consing distance (Sp)			5
Nominal sensing distance (Sn)		mm	0
References			
<b>3-wire, ferrous version</b> Insensitive to non ferrous materia	PNP NO Is		XS1M18PAS40D
<b>3-wire, non ferrous version</b> Insensitive to ferrous materials	PNP NO		XS1M18PAS20D
Weight		kg	0.060
Characteristics			
Product certifications			cULus, CE, UKCA
Connection			M12 connector
Degree of protection conforming	to IEC 60529		IP 67
Operating zone		mm	04
Operating temperature		°C	- 25+ 70
Output state indication			Yellow LED, 4 viewing ports at 90°
Rated supply voltage		V	== 1224 with protection against reverse polarity
Voltage limits (including ripple)		V	
Insulation class			
Switching capacity			0200 mA with overload and short-circuit protection
Voltage drop, closed state		v	≤2.6
Residual current, open state			-
Current consumption, no-load		mA	≤15
Maximum switching frequency		Hz	1000
Delays	First-up	ms	≤10
	Response	ms	≤0.3
	Recovery	ms	≤0.7



#### Schemes, dimensions

## Inductive proximity sensors

XS range application Selective detection of ferrous and non-ferrous materials Cylindrical type, solid-state output



#### References







XS530BSPD••



XSZB1••

## Inductive proximity sensors

XS range, Fail Safe Cylindrical, metal, flush mountable Standard sensing distance Four-wire DC, solid-state NO + NC output, SIL2, PLd, cat 2

Sensors, 4-wire, brass case, flush mountable						
Sensing distance (Sn) mm	Function	Output	Connection	Reference	Weight (kg)	
Ø 12, threaded M12 x 1						
2	NO + NC	PNP	Pre-cabled (L = 2 m)	XS512BSPDL2	0.070	
			M12 connector	XS512BSPDM12	0.020	
Ø 18, threa	ded M18 x 1					
5	NO + NC	PNP	Pre-cabled (L = 2 m)	XS518BSPDL2	0.100	
			M12 connector	XS518BSPDM12	0.040	
Ø 30, threa	ded M30 x 1	.5				
10	NO + NC	PNP	Pre-cabled (L = 2 m)	XS530BSPDL2	0.160	
			M12 connector	XS530BSPDM12	0.100	

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

#### *Characteristics, schemes, setting-up, dimensions*

## Inductive proximity sensors

XS range, Fail Safe Cylindrical, metal, flush mountable Standard sensing distance Four-wire DC, solid-state NO + NC output, SIL2, PLd, cat 2

Characteristics					
Sensor type			XS5eeBSPDM12	XS5eeBS	PDL2
Product certifications			cULus, CE, UKCA, E2	cULus, CE	, UKCA, E2
Conformity to safety standards	Ø 12, Ø 18 and Ø 30		IEC 60947-5-2 IEC 60947-5-3 EN/IEC 61508: SIL 2 EN/ISO 13849-1: PL =d IEC 62061: SILcl2		
Reliability data	Ø 12, Ø 18 and Ø 30		MTTFd = 2422 years, PFHd = 47.1 10 <sup>.9</sup> 1/h, SFF > 98.9 %, DC > 96 % (with a safety controller)		
Connection			M12 connector	Pre-cable	d, length: 2m
Operating zone (Sao/Sar)	Ø 12 flush mountable	mm	0.41.6/2.8		
	Ø 18 flush mountable	mm	1.54/7		
	Ø 30 flush mountable	mm	4.98.1/13.9		
Differential travel		%	115 of effective sensing distance (Sr)		
Degree of protection	Conforming to IEC 60529		IP 65 and IP 67	IP 65 and	IP 68
	Conforming to DIN 40050		IP 69K		
Storage temperature		°C	- 40+ 85		
Operating temperature		°C	- 40+ 70		
Materials	Case/Sensing face		Nickel plated brass/PPS		
	Cable			PVC4x0	.22 mm <sup>2</sup> (Ø 12, Ø 18 and Ø 30)
Vibration resistance	Conforming to IEC 60068-2-6		25 gn, amplitude $\pm$ 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	1224 with protection against reverse	polarity	
Voltage limits (including ripple)		v	1036	1036	;
Insulation class					
Switching capacity		mA	≤200 with overload and short-circuit protection	n	
Voltage drop, closed state		v	≤2		
Current consumption, no-load		mA	≤10		
Maximum switching frequency	Ø 12	Hz	85		
	Ø 18	Hz	85		
	Ø 30	Hz	85		
Delays	First-up	ms	≤10		
	Response	ms	≤5.7		
	Recovery	ms	≤5.7		
Wiring schemes					
M12 connector	Pre-cabled	PNP	4-wire		
4 3	BU: Blue	BN/1	<u>.</u>		
	BN: Brown BK: Black	PNP	BK/4 (NO)+		
	WH: White	$\Diamond$	WH/2 (NC)		
		BU/3			
Setting-up					
	Minimum mounting of	distan	ces (mm)		
Sensor	Side by side	Face	to face Facing a metal o	bject	Mounted in a metal support
Ø 12 flush mountable XS512			 	e≥6	d d≥12h≥0
Ø 18 flush mountable XS518		a MUM		e≥15	d≥18h≥0
Ø 30 flush mountable XS530		-00-	e≥120	e≥30	- ↓ d≥30h≥0
Dimensions					
Dimensions	Flush mountable in r	netal			
Dimensions		netal	Pro-cohlad (mm)		M12 connector (mm)
Dimensions	Flush mountable in r Sensor	netal	Pre-cabled (mm)		M12 connector (mm)
	Sensor		a	b	a b
	Sensor Ø 12 brass	XS512	a 37	<b>b</b> 25	<b>a b</b> 50 31
	Ø 12 brass Ø 18 brass		a 37 41	b	a b

#### References







XSZB1••

## Inductive proximity sensors

XS range, Fail Safe Cylindrical, metal, flush mountable Increased range Four-wire DC, solid-state NO + NC output, SIL2, PLd, cat 2

Sensor	s, 4-wire	<del></del> 12:	24 V, short case r	nodel	
Sensing distance (Sn) mm	Function	Output	Connection	Reference	Weight (kg)
Ø 12, threa	ded M12 x 1				
4	NO + NC	PNP	Pre-cabled (L = 2 m)	XS112B3PDL2	0.070
			M12 connector	XS112B3PDM12	0.020
Ø 18, threa	ided M18 x 1				
8	NO + NC	PNP	Pre-cabled (L = 2 m)	XS118B3PDL2	0.100
			M12 connector	XS118B3PDM12	0.040
Ø 30, threa	ded M30 x 1.	5			
15	NO + NC	PNP	Pre-cabled (L = 2 m)	XS130B3PDL2	0.160
			M12 connector	XS130B3PDM12	0.100

Accessories	(1)		
Description	For use with sensors (mm)	Reference	Weight (kg)
Fixing clamps	Ø 12	XSZB112	0.006
	Ø 18	XSZB118	0.010
	Ø 30	XSZB130	0.020

(1) For further information, see page 120.

#### *Characteristics, schemes, setting-up, dimensions*

### Inductive proximity sensors

XS range, Fail Safe Cylindrical, metal, flush mountable Increased range Four-wire DC, solid-state NO + NC output, SIL2, PLd, cat 2

Characteristics				
Sensor type			XS1eeB3PDM12	XS1eeB3PDL2
Product certifications	Ø 12, 18 and 30		cULus, CE, UKCA, E2	1
Conformity to safety standards	Ø 12, Ø 18 and Ø 30		IEC 60947-5-2 IEC 60947-5-3 EN/IEC 61508: SIL 2 EN/ISO 13849-1: PL =d IEC 62061: SILcl2	
Reliability data	Ø 12, Ø 18 and Ø 30		MTTFd = 2422 years, PFHd = 47.1 10 <sup>.9</sup> 1/h, SFF > 98.9 %, DC > 96 % (with a safety controller)	
Connection			M12 connector	Pre-cabled, length 2 m
Operating zone (Sao/Sar)	Ø 12	mm	1.23.2/5.6	
	Ø 18	mm	36.5/11.1	
	Ø 30	mm	5.812.2/20.9	
Differential travel		%	115 of effective sensing distance (Sr)	
Degree of protection	Conforming to IEC 60529		IP 65 and IP 67	IP 65 and IP 68
	Conforming to DIN 40050		IP 69K	-
Storage temperature		°C	- 40+ 85	
Operating temperature		°C	- 40+ 70	
Materials	Case		Nickel plated brass	
	Sensing face		PPS	
	Cable		-	PVC 4 x 0.22 mm <sup>2</sup>
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		۷	1224 with protection against reverse po	plarity
Voltage limits (including ripple)		۷	936	
Insulation class			111	
Switching capacity		mA	≤200 with overload and short-circuit protect	ion
Voltage drop, closed state		۷	≤2	
Current consumption, no-load		mA	≤10	
Maximum switching frequency	Ø 12	Hz	85	
	Ø 18	Hz	85	
	Ø 30	Hz	85	
Delays	First-up	ms	≤ 10	
	Response	ms	≤5.7	
	Recovery	ms	≤5.7	

Wiring schemes	
M12 connector	Pre-cabled
	BU: Blue BN: Brown BK: Black WH: White
PNP 4-wire	

BN/1	+
PNP	BK/4 (NO)
	WH/2 (NC)
$\mathbb{N}$	
BU/3	· 🖵 🖵 –

Setting	g-up

Sensors

Ø 12

Ø 18

Ø 30

Minimum mounting distances (mm)

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тин

**e**\_\_\_\_

M12 connector (mm)

b

31

28

33

а

50

51

54

Sensors	Side by side	Face to face	Facing a metal object
Ø 12	e≥8	e≥50	e≥12
Ø 18	e≥16	e≥100	e≥25
Ø 30	e≥30	e≥180	e≥45

Pre-cabled (mm)

b

25

29

33

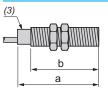
а

37

41

45

#### Dimensions



(3) LED.

#### References, Characteristics,

## Inductive proximity sensors

XS range, Fail Safe Cubic case, 40 x 40 x 70 mm, M12 connector 5-position turret head Four-wire DC, solid-state NO + NC output, SIL2, PLd, cat 2

Sensor type

#### Flush mountable in metal

Non-flush mountable in metal



Nominal sensing distance	(Sn)	mm	20	40
References				
4-wire	PNP NO+NC		XS8C2A1PDM12	XS8C2A4PDM12
Weight		kg	0.149	0.149
Characteristics		J		
Operating zone (Sao/Sar)		mm	8.316.2/27.8	18.432.4/55.7
Product certifications			cULus, CE, UKCA, TÜV (4-wire), E2 ( 3-wire and	
Conformity to standards			IEC 60947-5-2	
Conformity to safety stand	ards (1)		IEC 60947-5-3 EN 62061 (2005): SILcl2 EN 61508 (2010): SIL 2, EN ISO 13849 (2008): PL d	
Reliability data (1)			MTTFd = 2422 years, PFHd = 7.4 10 <sup>.8</sup> 1/h, SFF > 98.9 %, DC > 96 % (with a safety controller)	
Connection			M12 connector	
Differential travel		%	315 of Sr	
Degree of protection	Conforming to IEC 60529 and DIN 40050		IP 65, IP 67 and IP 69K	
Temperature	Storage	°C	- 40+ 85	
	Operation (3)	°C	- 40+ 70	
Material	Case		PBT	
Vibration resistance	Conforming to IEC 60068-2-6		25 gn, amplitude ± 2 mm (f = 1055 Hz)	
Shock resistance	Conforming to IEC 60068-2-27		50 gn for 11 ms	
Indicators	Output state		Yellow LED	
	Power on		Green LED	
Rated supply voltage	4-wire	v	1248 with protection against reverse polarity	
Voltage limits (including ri	<b>pple)</b> 4-wire	v	1058	
Insulation class				
Current consumption, no-l	oad 4-wire ===	mA	< 15	
Switching capacity	4-wire	mA	< 200 with overload and short-circuit protection	
Voltage drop, closed state	4-wire	v	<2	
Maximum switching frequency	Flush mountable		40	
	Non-flush mountable	Hz	== 30	
Delays	First-up	ms	Flush mountable: ≤ 12. Non-flush mountable: ≤	14
	Response	ms	Flush mountable: ≤ 10. Non-flush mountable: ≤	12.5
	Recovery	ms	Flush mountable: ≤ 10. Non-flush mountable: ≤	12.5

(1) SIL 2 protection can only be obtained by connecting both outputs to a safety PLC. Please consult our website: www.telemecaniquesensors.com .



#### Setting-up, schemes, dimensions

#### **Inductive proximity sensors** XS range, Fail Safe

XS range, Fail Safe Cubic case, 40 x 40 x 70 mm, M12 connector 5-position turret head Four-wire DC, solid-state NO + NC output, SIL2, PLd, cat 2

Setting-up precautions				
Minimum mounting distances (mm)				
		€ €		
		Side by side	Face to face	Facing a metal object
Sensors flush mountable in metal	XS8C2A1ee	e≥80	e≥160	e≥60
Sensors non-flush mountable in metal	XS8C2A4ee	e≥160	e≥320	e≥120
Wiring schemes				
4-wire, NO + NC outputs		M12 connector		
$\begin{array}{c} 1 \\ \hline \\ PNP \\ \hline \\ 2 \\ (NC) \\ \hline \\ 3 \\ \hline \end{array}$		4 3 + V: 1 NC: 2 - V: 3 NO: 4		
Accessory references				
Description	Туре	Length m	Reference	Weight (kg)
Pre-wired M12 connectors	Straight	2	XZCP1141L2	0.090
Female, 4-pin, zinc die-cast, nickel plated	5	5	XZCP1141L5	0.190
clamping ring		10	XZCP1141L10	0.370
	Elbowed	2 5	XZCP1241L2 XZCP1241L5	0.090
		10	XZCP1241L5 XZCP1241L10	0.190
Dimensions		Head positions		
		t		
	XPSMCMCP		+24V S	FF (Safe Failure Fraction): 98,9 %
K1     K1     K2     K1     K2     K1     K2       +24V     K1     K2     K1     K2     K1     K2	Vdc ster_Enable1 ster_Enable2	OUT_TEST1 13 OUT_TEST2 14 OUT_TEST3 15 OUT_TEST4 16 INPUT1 18 INPUT2 18 INPUT2 20 INPUT5 21 INPUT5 21 INPUT6 22 INPUT6 22 INPUT7 23 INPUT8 24	XS8CeAePDee	C (Diagnosis Coverage): 96 %

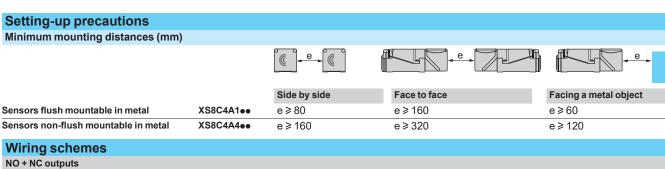
#### References, Characteristics,

**Inductive proximity sensors** XS range, Fail Safe Plastic case, 40 x 40 x 117 mm, plug-in

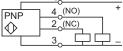
Sensor type			Flush mountable in metal	Non-flush mountable in metal
Nominal sensing distant	ce (Sn)	mm	20	40
References				
4-wire	PNP NO+NC		XS8C4A1PDP20	XS8C4A4PDP20
Weight		kg	0.244	0.244
			Note: These sensors have an M20 cable 13.5 cable entry (e.g. XS8C4A4PDG13) ( XS8C4A1PDN12). Please consult our Customer Care Centro	
Characteristics				
Operating zone (Sao/Sar)	)	mm	8.316.2/27.8	18.432.4/55.7
Product certifications			cULus, C€, UKCA, TÜV, E2	
Conformity to standards			IEC 60947-5-2 IEC 60947-5-3	
Conformity to safety star	ndards (1)		EN 62061 (2005): SILcl2, EN 61508 (2010): SIL 2, EN ISO 13849 (2008): PL d	
Reliability data (1)			MTTFd = 2422 years, PFHd = 7.4 10 <sup>.8</sup> 1/h, SFF > 98.9 %, DC > 96 % (with a safety controller)	
Connection			Screw terminals, clamping capacity: 2 or 4	4 x 1.5 mm2 / 2 or 4 x 16 AWG (3)
Differential travel		%	315 of Sr	
Degree of protection	Conforming to IEC 60529 and DIN 40050		IP 65, IP 67 and IP 69K	
Temperature	Storage	°C	- 40+ 85	
Matarial	Operation	°C	- 40+ 70	
Material Vibration resistance	Conforming to IEC 60068 2.6	_	Case: PBT $25 \text{ gm} \text{ simplify} (f = 10, 55 \text{ Hz})$	
Shock resistance	Conforming to IEC 60068-2-6 Conforming to IEC 60068-2-27		25 gn, amplitude ± 2 mm (f = 1055 Hz) 50 gn for 11 ms	
Indicators	Output state		Yellow LED	
maioutoro	Power on		Green LED	
Rated supply voltage	4-wire	v	1248 with protection against reverse po	plarity
Voltage limits (including ripple)	4-wire	v	1058	
Insulation class				
Current consumption, no-load	4-wire	mA	< 15	
Switching capacity	4-wire	mA	< 200 mA with overload and short-circuit p	protection
Voltage drop, closed stat	<b>e</b> 4-wire	v	<2	
Maximum switching freq	uency	Hz	Flush mountable: 40 Non-flush mountable: 30	
Delays	First-up	ms	Flush mountable: ≤ 12. Non-flush mounta	ble: ≤ 14.
	Response	ms	Flush mountable: ≤ 10. Non-flush mounta	
	Recovery	ms	Flush mountable: ≤ 10. Non-flush mounta	ble: ≤ 12.5.

(1) SIL 2 protection can only be obtained by connecting both outputs to a safety PLC. Please consult our website www.telemecaniquesensors.com.

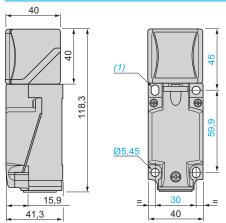
XS range, Fail Safe Plastic case, 40 x 40 x 117 mm, plug-in



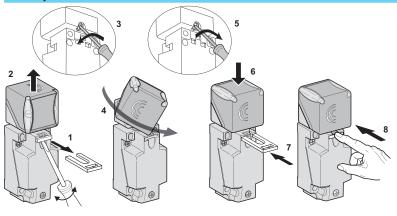
## 4-wire .... 1



#### **Dimensions**



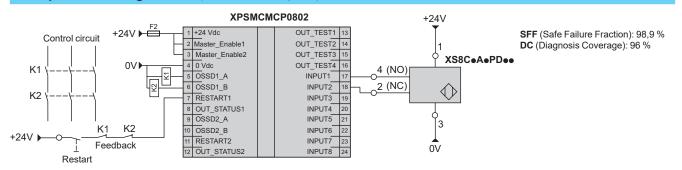
#### **Head positions**



(1) 2 elongated holes Ø 5.3 x 7 cm.

Tightening torque of cover fixing screws and clamp screws: < 1.2 N.m / < 10.62 lb-in

#### Example SIL 2 wiring scheme (with XPSMC safety PLC)



#### References

## Inductive proximity sensors

XS range Accessories



XSZBE10

XS-XT\_515\_CPODA2016049

XSZBD10



XSZBC10



XSZB1••

Mounting and fix	king accessories				
Description	For use with sensor	For use with sensor			
	Туре	Diameter (mm)	)	(kg)	
Replacement bracket	XS∙E Replaces: XS7T2, XS8T2, XSE	-	XSZBE10	0.060	
	XS•C Replaces: XS7T4, XS7C40, XS8T4, XS8C40 and XSC	-	XSZBC10	0.110	
	XS•D (for XSD) (1)	-	XSZBD10	0.065	
Fixing clamps	XS1, XS2, XS4, XS5, XS6	8 (M8 x 1)	XSZB108	0.006	
	XS1, XS2, XS4, XS5, XS6	12 (M12 x 1)	XSZB112	0.006	
		18 (M18 x 1)	XSZB118	0.010	
		30 (M30 x 1.5)	XSZB130	0.020	
Set of 2 metal fixing nuts	, XS1, XS2, XS5, XS6	12 (M12 x 1)	XSZE112	0.015	
nickel plated		18 (M18 x 1)	XSZE118	0.020	
		30 (M30 x 1.5)	XSZE130	0.050	



XSZP100

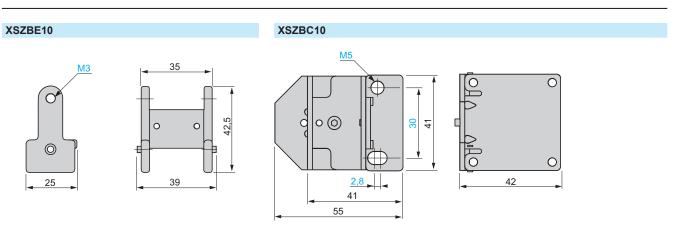
Protection acce	ssories			
Description	For use with sensor		Unit reference	Weight
	Туре	Diameter (mm	-	(kg)
Cable sleeve adaptor (CNOMO type)	XS●, XT●	12 (M12 x 1)	XSZP112	0.005
		18 (M18 x 1)	XSZP118	0.005
		30 (M30 x 1.5)	XSZP130	0.010
Outer cover (IP 68)	XT7, XS7, XS8 and XS (C format)	9 –	XSCZ01	0.100

Fuses (for unprote	ected 2-wire $= /\sim$ sensors)			
Description	Туре	Sold in lots of	Unit reference	Weight (kg)
Cartridge fuses	0.4 A "quick-blow"	10	XUZE04	0.001
5 x 20	0.63 A "quick-blow"	10	XUZE06	0.001
	0.8 A "quick-blow"	10	XUZE08	0.001

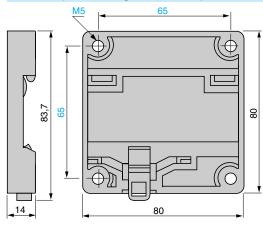
(1) Depth adjustment shim for converting 80 x 80 x 26 mm format to 80 x 80 x 40 mm format. Also enables clipping onto 35 mm omega rail.



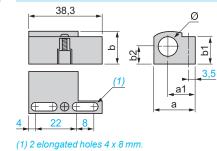
XS range Accessories



XSZBD10 (for mounting on XS•D••••)

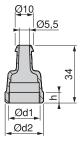


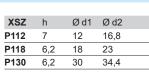
#### XSZB108, XSZB112, XSZB118, XSZB130, XSZB165

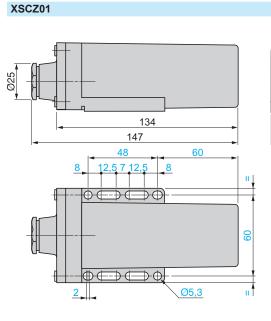


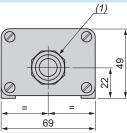
XSZ	а	a1	b	b1	b2	Ø
B112	21.9	14.5	16	15.5	8.5	12
B118	26	15.7	22.3	20.1	11.5	18
B130	39	21.7	35.5	31	18.5	30

#### XSZP112, XSZP118, XSZP130







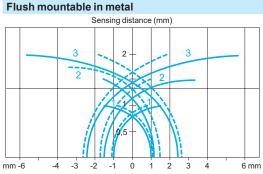




(1) 13P cable gland

XS range Cylindrical, standard range

#### Cylindrical type sensors

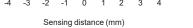


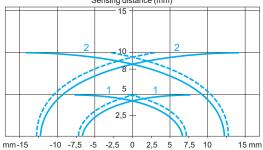
Sensor (mm)	Standard steel target (mm)	Operating zone (mm)
Ø 4	5 x 5 x 1	00.8
Ø 5	5 x 5 x 1	00.8
Ø 6.5	8 x 8 x 1	01.2
Ø 8	8 x 8 x 1	01.2
Ø 12	12 x 12 x 1	01.6

drop-out points (object approaching from the side)
 Ø 4 (plain) XS1 and Ø 5 (M5 x 0.5) XS1

2 Ø 6.5 (plain) XS1 and Ø 8 (M8 x 1) XS5

3 Ø 12 (M12 x 1) XS5

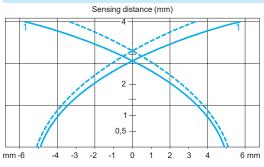




Sensor (mm)	Standard steel target (mm)	Operating zone (mm)
Ø 18	18 x 18 x 1	04
Ø 30	30 x 30 x 1	08
pick-up	points	

---- drop-out points (object approaching from the side)
 1 Ø 18 (M18 x 1) XS5
 2 Ø 30 (M30 x 1.5) XS5

#### Non flush mountable in metal



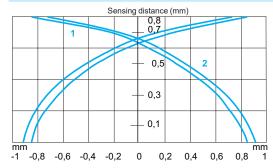
Sensor (mm)	Standard steel target (mm)	Operating zone (mm)	
Ø 12	12 x 12 x 1	03.2	
pick-up	points		
drop-ou	t points (object approaching from	the side)	
1 Ø 12 (M12 x 1)	XS4		

	Se	ensing dista	ance (mm)		
2		15			2
	1	8+			
mm-15	-10 -7,5 -5	2,5	25 5	7,5 1	0 15 mm

drop-out points (object approaching from the side) 1 Ø 18 (M18 x 1) XS4

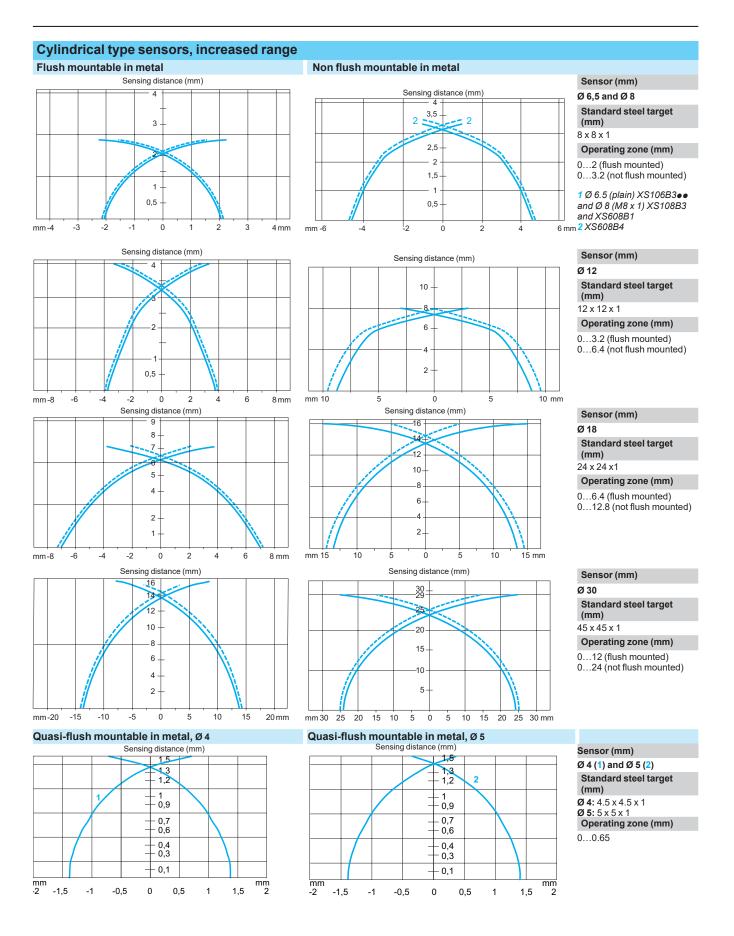
2 Ø 30 (M30 x 1.5) XS4

#### Quasi-flush mountable in metal



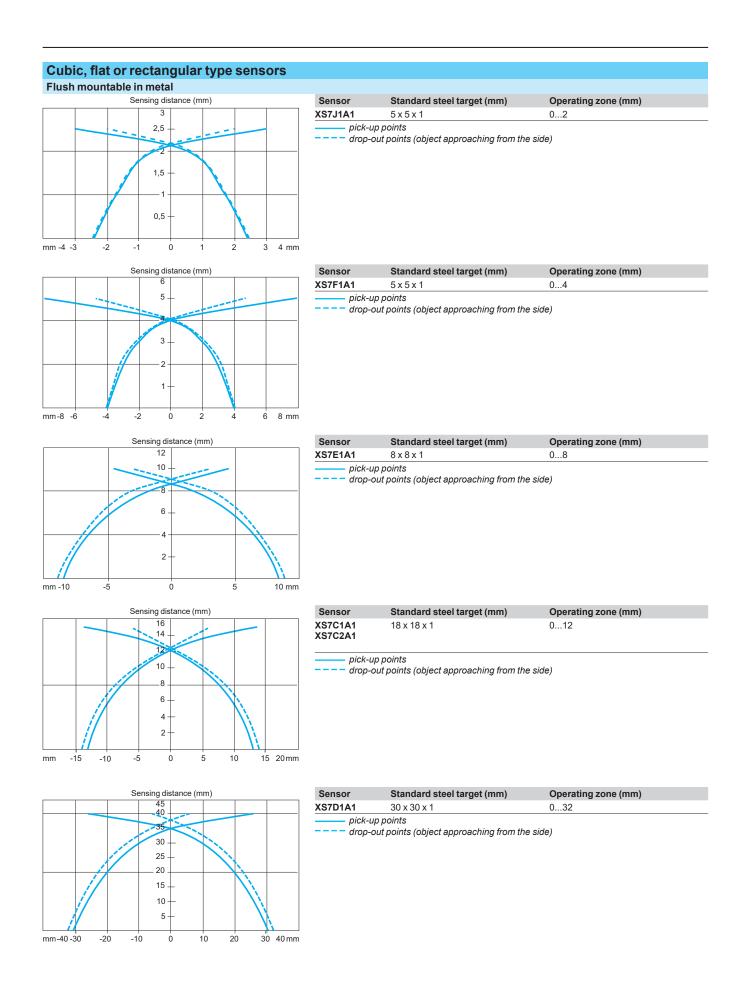
Sensor (mm)	Standard steel target (mm)	Operating zone (mm)
Ø 4	4 x 4 x 1	00.65
Ø 5	5 x 5 x 1	00.65
1Ø4		
2Ø5		

XS range Cylindrical, increased range



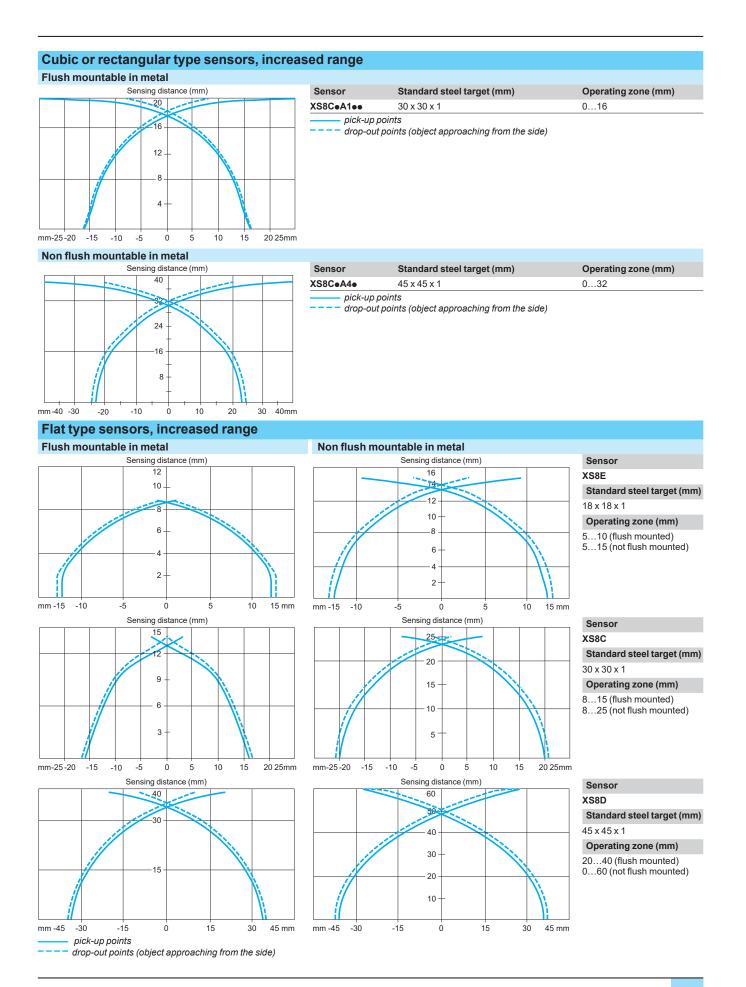
— pick-up points
— of the points
— of the points (object approaching from the side)

XS range Cubic, flat or rectangular, standard range



# Inductive proximity sensors XS range

Cubic, flat or rectangular, increased range



## Inductive proximity sensors

#### Sensors with the closest functionalities

Old sensor	New XS sensor	Old sensor	New XS sensor	Old sensor	New XS sensor
Cylindrical type, DC	;	XS1L06NA340S	XS506B1NAM8	XS1M08NB370D	XS508BLNBM12
Diameter 4 mm		XS1L06NB340	XS506B1NBL2	XS1M08PA370	XS508BLPAL2
XS1		XS1L06NB340S	XS506B1NBM8	XS1M08PA370D	XS508BLPAM12
XS1L04NA310	XS604R1NAL2	XS1L06PA340	XS506B1PAL2	XS1M08PA370L1	XS508BLPAL5
XS1L04NA310S	XS604R1NAM08	XS1L06PA340L1	XS506B1PAL5	XS1M08PA370L2	XS508BLPAL10
XS1L04NB310	XS604R1NBL2	XS1L06PA340D	XS506B1PAM12	XS1M08PA370LD	XS508BLPAM12 (1)
XS1L04NB310S	XS604R1NBM08	XS1L06PA340S	XS506B1PAM8	XS1M08PA370S	XS508BLPAM12 (2)
XS1L04PA310	XS604R1PAL2	XS1L06PB340	XS506B1PBL2	XS1M08PB370	XS508BLPBL2
	XS604R1PAM08	XS1L06PB340L1	XS506B1PBL5	XS1M08PB370D	XS508BLPBM12
XS1L04PA310S		XS1L 06PB340S	XS506B1PBM8	XS1M08PB370L1	XS508BLPBL5
XS1L04PB310	XS604R1PBL2			XS1M08PB370L2	XS508BLPBL10
XS1L04PB310S	XS604R1PBM08				
		XS1L06NA349	XS106B3NAL2		
		XS1L06NA349S	XS106B3NAM8	XS1N08NA340	XS508B1NAL2
XS1L04NA311	XS504R1NAL2	XS1L06NB349	XS106B3NBL2	XS1N08NA340D	XS508B1NAM12
XS1L04NA311S	XS504R1NAM08	XS1L06NB349S	XS106B3NBM8	XS1N08NA340L1	XS508B1NAL5
XS1L04NB311	XS504R1NBL2	XS1L06PA349	XS106B3PAL2	XS1N08NA340L2	XS508B1NAL10
XS1L04NB311S	XS504R1NBM08	XS1L06PA349L1	XS106B3PAL5	XS1N08NA340S	XS508B1NAM8
XS1L04PA311	XS504R1PAL2	XS1L06PA349D	XS106B3PAM12	XS1N08NB340	XS508B1NBL2
XS1L04PA311S	XS504R1PAM08	XS1L06PA349S	XS106B3PAM8	XS1N08NB340D	XS508B1NBM12
XS1L04PB311	XS504R1PBL2	XS1L06PB349	XS106B3PBL2	XS1N08NB340S	XS508B1NBM8
		XS1L06PB349L1	XS106B3PBL5	XS1N08PA340	XS508B1PAL2
XS1L04PB311S	XS504R1PBM08	XS1L06PB349S	XS106B3PBM8	XS1N08PA340D	XS508B1PAM12
				XS1N08PA340L1	XS508B1PAL5
				XS1N08PA340L2	XS508B1PAL10
Diameter 5 mm		Diameter 8 mm		XS1N08PA340LD	XS508B1PAM12
XS1		XS1		XS1N08PA340S	XS508B1PAM8
XS1N05NA310	XS605R1NAL2	XS1D08NA140	XS108BLNAL2	XS1N08PB340	XS508B1PBL2
XS1N05NA310S	XS605R1NAM08	XS1D08NA140D	XS108BLNAM12	XS1N08PB340D	XS508B1PBM12
XS1N05NB310	XS605R1NBL2	XS1D08PA140	XS108BLPAL2	XS1N08PB340L1	XS508B1PBL5
XS1N05NB310S	XS605R1NBM08	XS1D08PA140D	XS108BLPAM12	XS1N08PB340L2	XS508B1PBL10
XS1N05PA310	XS605R1PAL2	XS1D08PA140L1	XS108BLPAL5	XS1N08PB340S	XS508B1PBM8
XS1N05PA310L1	XS605R1PAL5				
XS1N05PA310S	XS605R1PAM08			XS1N08NA349	XS108B3NAL2
XS1N05PB310	XS605R1PBL2	XS1M08DA210	XS508B1DAL2	XS1N08NA349L1	XS108B3NAL5
		XS1M08DA210D	XS508B1DAM12	XS1N08NA349D	XS108B3NAM12
XS1N05PB310S	XS605R1PBM08	XS1M08DA210L1	XS508B1DAL5	XS1N08NA349S	XS108B3NAM8
		XS1M08DA210L2	XS508B1DAL10	XS1N08NB349	XS108B3NBL2
		XS1M08DA210LD	XS508B1DAL08M12	XS1N08NB349L1	XS108B3NBL5
XS1N05NA311	XS505R1NAL2	XS1M08DB210	XS508B1DBL2	XS1N08NB349D	XS108B3NBM12
XS1N05NA311S	XS505R1NAM08	XS1M08DB210D	XS508B1DBM12	XS1N08NB349S	XS108B3NBM8
XS1N05NB311	XS505R1NBL2	XS1M08DB210L1	XS508B1DBL5	XS1N08PA349	XS108B3PAL2
XS1N05NB311S	XS505R1NBM08	XS1M08DB210LD	XS508B1DBM12 (1)	XS1N08PA349L1	XS108B3PAL5
XS1N05PA311	XS505R1PAL2			XS1N08PA349D	XS108B3PAM12
XS1N05PA311S	XS505R1PAM08	VOILIND ACT ID	Vecopioinia	XS1N08PA349S	XS108B3PAM8 XS108B3PBL2
XS1N05PB311	XS505R1PBL2	XS1M08DA214D	XS508B1CAM12	XS1N08PB349 XS1N08PB349L1	XS108B3PBL2 XS108B3PBL5
XS1N05PB311S	XS505R1PBM08	XS1M08DA214LD	XS508B1CAL08M12	XS1N08PB349D	XS108B3PBL5
				XS1N08PB349D XS1N08PB349S	XS108B3PBM12 XS108B3PBM8
		XS1M08NA370	XS508BLNAL2	X0 1100F D3490	ACTOOD OF DIVID
Diameter 6.5 mm		XS1M08NA370 XS1M08NA370D	XS508BLNAM12		
XS1			XS508BLNAL5		
	XS506B1NAL2	XS1M08NA370L1			
XS1L06NA340		XS1M08NB370	XS508BLNBL2		

(1) For the new sensor an integral M12 connector replaces the remote M12 connector on a 0.80 m flying lead.
 (2) For the new sensor an M12 connector replaces the M8 connector.
 (3) For the new sensor, the metal case replaces the plastic case.

## Inductive proximity sensors

#### Sensors with the closest functionalities

Old sensor	New XS sensor	Old sensor	New XS sensor	Old sensor	New XS sensor
Cylindrical type, DC (continued)		XS1M12NA370L1	XS512BLNAL5	XS2M12NA370D	XS612B1NAM12
XS2		XS1M12NA370L2	XS512BLNAL10	XS2M12NA370L1	XS612B1NAL5
XS2M08NA340	XS608B1NAL2	XS1M12NA370S	XS612B1NAM12 (2)	XS2M12NA370L2	XS612B1NAL10
XS2N08NA340	XS108B3NAL2	XS1M12NB370	XS512BLNBL2	XS2M12NB370	XS612B1NBL2
XS2N08NA340D	XS108B3NAM12	XS1M12NB370D	XS512BLNBM12	XS2M12NB370D	XS612B1NBM12
XS2N08NA340L1	XS108B3NAL5	XS1M12PA370	XS512BLPAL2	XS2M12PA370	XS612B1PAL2
XS2N08NA340L2	XS108B3NAL10	XS1M12PA370D	XS512BLPAM12	XS2M12PA370D	XS612B1PAM12
XS2N08NA340S	XS108B3NAM8	XS1M12PA370L1	XS512BLPAL5	XS2M12PA370L1	XS612B1PAL5
KS2N08NB340	XS108B3NBL2	XS1M12PA370L2	XS512BLPAL10	XS2M12PA370L2	XS612B1PAL10
(S2N08NB340D	XS108B3NBM12	XS1M12PA370LA	XS612B1PAL08U78	XS2M12PA370LA	XS612B1PAL08U78
<s2n08nb340s< td=""><td>XS108B3NBM8</td><td>XS1M12PA370LD</td><td>XS612B1PAL08M12</td><td>XS2M12PA370LD</td><td>XS612B1PAL08M12</td></s2n08nb340s<>	XS108B3NBM8	XS1M12PA370LD	XS612B1PAL08M12	XS2M12PA370LD	XS612B1PAL08M12
(S2N08PA340	XS108B3PAL2	XS1M12PB370	XS512BLPBL2	XS2M12PB370	XS612B1PBL2
(S2N08PA340D	XS108B3PAM12	XS1M12PB370D	XS512BLPBM12	XS2M12PB370D	XS612B1PBM12
(S2N08PA340L1	XS108B3PAL5	XS1M12PB370L1	XS512BLPBL5	XS2M12PB370L1	XS612B1PBL5
(S2N08PA340L2	XS108B3PAL10	XS1M12PB370L2	XS512BLPBL10	XS2M12PB370S	XS612B1PBM12 (2)
(S2N08PA340S	XS108B3PAM8	XS1M12PB370LD	XS612B1PAM12 (1)		
KS2N08PB340	XS108B3PBL2			XS2N12NA340	XS112B3NAL2
KS2N08PB340D	XS108B3PBM12			XS2N12NA340D	XS112B3NAM12
(S2N08PB340S	XS108B3PBM8	XS1N12NA340	XS512B1NAL2	XS2N12NA340L1	XS112B3NAL5
		XS1N12NA340D	XS512B1NAM12	XS2N12NA340L2	XS112B3NAL10
(\$3		XS1N12NA340L1	XS512B1NAL5	XS2N12NB340	XS112B3NBL2
(S3P08NA340	XS508B1NAL2 (3)	XS1N12NA340L2	XS512B1NAL10	XS2N12NB340D	XS112B3NBM12
(S3P08NA340D	XS508B1NAM12 (3)	XS1N12NB340	XS512B1NBL2	XS2N12NC410L1	XS2N12NC410D
(S3P08NA340L1	XS508B1NAL5 (3)	XS1N12NB340D	XS512B1NBM12		+ XZCPV1141L5
(S3P08PA340	XS508B1PAL2 (3)	XS1N12NC410L2	XS1N12NC410D	XS2N12PA340	XS112B3PAL2
(S3P08PA340D	XS508B1PAM12 (3)		+ XZCPV1141L10	XS2N12PA340D	XS112B3PAM12
(S3P08PA340L1	XS508B1PAL5 (3)	XS1N12PA340	XS512B1PAL2	XS2N12PA340L1	XS112B3PAL5
		XS1N12PA340D	XS512B1PAM12	XS2N12PA340L2	XS112B3PAL10
(S3P08NA370	XS508BLNAL2 (3)	XS1N12PA340L1	XS512B1PAL5	XS2N12PC410	XS112B3PCL2
(S3P08NA370L1	XS508BLNAL5 (3)	XS1N12PA340L2	XS512B1PAL10	XS2N12PC410D	XS112B3PCM12
(S3P08PA370	XS508BLPAL2 (3)	XS1N12PA340LD	XS512B1PAM12 (1)	XS2N12PC410L1	XS112B3PCM12 + XZCPV1141L5
<s3p08pa370l1< td=""><td>XS508BLPAL5 (3)</td><td>XS1N12PA340S</td><td>XS512B1PAM12 (2)</td><td>XS2N12PC410L2</td><td>XS112B3PCM12</td></s3p08pa370l1<>	XS508BLPAL5 (3)	XS1N12PA340S	XS512B1PAM12 (2)	XS2N12PC410L2	XS112B3PCM12
		XS1N12PB340	XS512B1PBL2	X321112F 0410L2	+ XZCPV1141L10
Diameter 12 mm		XS1N12PB340D	XS512B1PBM12	XS2N12PB340	XS112B3PBL2
(\$1		XS1N12PB340L1	XS512B1PBL5	XS2N12PB340D	XS112B3PBM12
XS1M12DA210	XS512B1DAL2			XS2N12PB340L1	XS112B3PBL5
(S1M12DA210D	XS512B1DAM12	XS1M12PA349D	XS612B1PAM12		
(S1M12DA210L1	XS512B1DAL5	XS1N12NA349	XS112B3NAL2	XS3	
(S1M12DA210L2	XS512B1DAL10	XS1N12NA349L1	XS112B3NAL5	XS3P12NA340	XS512B1NAL2 (3)
KS1M12DA210LA	XS512B1DAL08U78	XS1N12NA349D	XS112B3NAM12	XS3P12NA340D	XS512B1NAM12 (3)
(S1M12DA210LD	XS512B1DAL08M12	XS1N12NB349	XS112B3NBL2	XS3P12NA340L1	XS512B1NAL5 (3)
(S1M12DB210	XS512B1DBL2	XS1N12NB349L1	XS112B3NBL5	XS3P12PA340	XS512B1PAL2 (3)
(S1M12DB210D	XS512B1DBM12	XS1N12NB349D	XS112B3NBM12	XS3P12PA340D	XS512B1PAM12 (3)
(S1M12DB210L1	XS512B1DBL5	XS1N12PA349	XS112B3PAL2	XS3P12PA340L1	XS512B1PAL5 (3)
(S1M12DB210L2	XS512B1DBL10	XS1N12PA349L1	XS112B3PAL5		
S1M12DB210LD	XS512B1DBL08M12	XS1N12PA349D	XS112B3PAM12	XS3P12NA370	XS512BLNAL2 (3)
		XS1N12PB349	XS112B3PBL2	XS3P12NA370L1	XS512BLNAL5 (3)
(S1M12DA214D	XS512B1CAM12	XS1N12PB349L1	XS112B3PBL5	XS3P12PA370	XS512BLPAL2 (3)
(S1M12DA214LD	XS512B1CAL08M12	XS1N12PB349D	XS112B3PBM12	XS3P12PA370L1	XS512BLPAL5 (3)
104144 014 070	VOEADDINALO				
(S1M12NA370	XS512BLNAL2	XS2		XS4	
KS1M12NA370D	XS512BLNAM12	XS2M12NA370	XS612B1NAL2	XS4P12PC410L2	XS4P12PC410D + XZCPV1141L10

(1) For the new sensor an integral M12 connector replaces the remote M12 connector on a 0.80 m flying lead.
(2) For the new sensor an M12 connector replaces the M8 connector.
(3) For the new sensor, the metal case replaces the plastic case.

## Inductive proximity sensors

#### Sensors with the closest functionalities

0ld sensor	New XS sensor	Old sensor	New XS sensor	Old sensor	New XS sensor
Sylindrical type, DC	(continued)	XS1		XS2M18NB370	XS618B1NBL2
iameter 18 mm		XS1M18PB370D	XS518BLPBM12		
'S1		XS1M18PB370L1	XS518BLPBL5	XS2M18NB370B	XS618B1NBL01B (4)
S1M18DA210	XS518B1DAL2	XS1M18PB370L2	XS518BLPBL10	XS2M18NB370C	XS618B1NBL01C (4)
S1M18DA210B	XS518B1DAL01B (4)	XS1M18PB370C	XS618B1PBL01C (4)	XS2M18NB370D	XS618B1NBM12
S1M18DA210C	XS518B1DAL01C (4)			XS2M18NB370L1	XS618B1NBL5
S1M18DA210D	XS518B1DAM12			XS2M18NB370L2	XS618B1NBL10
S1M18DA210G	XS518B1DAL01G (4)	XS1N18NA340	XS518B1NAL2	XS2M18PA370	XS618B1PAL2
S1M18DA210L1	XS518B1DAL5	XS1N18NA340D	XS518B1NAM12	XS2M18PA370A	XS618B1PAL01U78 (4)
S1M18DA210L2	XS518B1DAL10	XS1N18NA340L1	XS518B1NAL5	XS2M18PA370B	XS618B1PAL01B (4)
S1M18DA210LD	XS518B1DAL08M12	XS1N18NA340L2	XS518B1NAL10	XS2M18PA370C	XS618B1PAL01C (4)
S1M18DB210	XS518B1DBL2	XS1N18NB340	XS518B1NBL2	XS2M18PA370D	XS618B1PAM12
S1M18DB210B	XS518B1DBL01B (4)	XS1N18NB340D	XS518B1NBM12	XS2M18PA370G	XS618B1PAL01G (4)
S1M18DB210D	XS518B1DBM12	XS1N18NB340L2	XS518B1NBL10	XS2M18PA370LA	XS618B1PAL08U78 (4)
S1M18DB210LD	XS518B1DBL08M12	XS1N18NC410L1	XS1N18NC410D	XS2M18PA370L1	XS618B1PAL5
			+ XZCPV1141L5	XS2M18PA370L2	XS618B1PAL10
		XS1N18PA340	XS518B1PAL2	XS2M18PB370	XS618B1PBL2
S1M18DA214D	XS518B1CAM12	XS1N18PA340D	XS518B1PAM12	XS2M18PB370A	XS618B1PBL01U78 (4)
S1M18DA214LD	XS518B1CAL08M12	XS1N18PA340L1	XS518B1PAL5	XS2M18PB370B	XS618B1PBL01B (4)
		XS1N18PA340L2	XS518B1PAL10	XS2M18PB370C	XS618B1PBL01C (4)
		XS1N18PB340	XS518B1PBL2	XS2M18PB370D	XS618B1PBM12
S1M18NA370	XS518BLNAL2	XS1N18PB340D	XS518B1PBM12	XS2M18PB370L1	XS618B1PBL5
S1M18NA370A	XS618B1NAL01U78 (4)	XS1N18PB340L2	XS518B1PBL10	XS2M18PB370L2	XS618B1PBL10
S1M18NA370B	XS618B1NAL01B (4)				
S1M18NA370C	XS618B1NAL01C (4)				
S1M18NA370D	XS518BLNAM12				
S1M18NA370L1	XS518BLNAL5				
S1M18NA370L2	XS518BLNAL10	XS2		XS3	
S1M18NB370	XS518BLNBL2	XS2N18NA340	XS118B3NAL2	XS3P18NA340	XS518B1NAL2 (3)
S1M18NB370B	XS618B1NBL01B (4)	XS2N18NA340D	XS118B3NAM12	XS3P18NA340D	XS518B1NAM12 (3)
S1M18NB370C	XS618B1NBL01C (4)	XS2N18NA340L1	XS118B3NAL5	XS3P18NA340L1	XS518B1NAL5 (3)
S1M18NB370D	XS518BLNBM12	XS2N18NA340L2	XS118B3NAL10	XS3P18PA340	XS518B1PAL2 (3)
S1M18NB370L1	XS518BLNBL5	XS2N18NB340	XS118B3NBL2	XS3P18PA340D	XS518B1PAM12 (3)
S1M18NB370L2	XS518BLNBL10	XS2N18NC410L2	XS2N18NC410D	XS3P18PA340L1	XS518B1PAL5 (3)
S1M18PA370	XS518BLPAL2		+ XZCPV1141L10	XS3P18NA370	XS518BLNAL2 (3)
S1M18PA370A	XS618B1PAL01U78 (4)	XS2N18PC410	XS118B3PCL2	XS3P18NA370L1	XS518BLNAL5 (3)
S1M18PA370A	XS618B1PAL01B (4)	XS2N18PC410D	XS118B3PCM12	XS3P18PA370	XS518BLPAL2 (3)
S1M18PA370B	XS618B1PAL01B (4)	XS2N18PC410L1	XS118B3PCM12 + XZCPV1141L5	XS3P18PA370L1	XS516BLPAL2 (3)
S1M18PA370C S1M18PA370D		VOANTONIDO TOD			
	XS518BLPAM12	XS2N18NB340D	XS118B3NBM12	XS3P18PA370L2	XS518BLPAL10 (3)
S1M18PA370G	XS618B1PAL01G (4)	XS2N18PA340	XS118B3PAL2		
S1M18PA370DTQ	XS518BLPAM12TQ	XS2N18PA340D	XS118B3PAM12		
S1M18PA370G	XS618B1PAL01G (4)	XS2N18PA340L1	XS118B3PAL5		
S1M18PA370L1	XS518BLPAL5	XS2N18PA340L2	XS118B3PAL10	XS4	VOIDIOLIZATI
S1M18PA370L2	XS518BLPAL10	XS2N18PB340	XS118B3PBL2	XS4P18NA370B	XS4P18NA370L01B (4)
S1M18PA370LA	XS618B1PAL08U78	XS2N18PB340D	XS118B3PBM12	XS4P18NB370B	XS4P18NB370L01B (4)
S1M18PA370LD	XS518BLPAM12 (1)	XS2M18NA370	XS618B1NAL2	XS4P18PA370B	XS4P18PA370L01B (4)
S1M18PA370DTQ	XS518BLPAM12TQ	XS2M18NA370A	XS618B1NAL01U78 (4)	XS4P18PB370B	XS4P18PB370L01B (4)
S1M18PA370TF	XS518BLPAL2TF	XS2M18NA370B	XS618B1NAL01B (4)	XS4P18PC410L1	XS4P18PC410D + XZCPV1141L5
S1M18PB370	XS518BLPBL2	XS2M18NA370C	XS618B1NAL01C (4)	I.	
S1M18PB370A	XS618B1PBL01U78 (4)	XS2M18NA370D	XS618B1NAM12		

(1) For the new sensor an integral M12 connector replaces the remote M12 connector on a 0.80 m flying lead.
(3) For the new sensor, the metal case replaces the plastic case.
(4) For the new sensor, connectors A, B, C and G on 0.1 m flying lead replace integral connectors A, B, C and G.



## Inductive proximity sensors

#### Sensors with the closest functionalities

Old sensor	New XS sensor	Old sensor	New XS sensor	Old sensor	New XS sensor
Cylindrical type, DC (continued)		XS1N30NA340	XS530B1NAL2	XS2M30PA370G	XS630B1PAL01G (4)
Diameter 30 mm		XS1N30NA340D	XS530B1NAM12	XS2M30PA370L1	XS630B1PAL5
XS1		XS1N30NA340L1	XS530B1NAL5	XS2M30PA370L2	XS630B1PAL10
XS1M30DA210	XS530B1DAL2	XS1N30NA340L2	XS530B1NAL10	XS2M30PB370	XS630B1PBL2
XS1M30DA210B	XS530B1DAL01B (4)	XS1N30NB340	XS530B1NBL2	XS2M30PB370B	XS630B1PBL01B (4)
XS1M30DA210C	XS530B1DAL01C (4)	XS1N30NB340D	XS530B1NBM12	XS2M30PB370C	XS630B1PBL01C (4)
XS1M30DA210D	XS530B1DAM12	XS1N30PA340	XS530B1PAL2	XS2M30PB370D	XS630B1PBM12
KS1M30DA210G	XS530B1DAL01G (4)	XS1N30PA340D	XS530B1PAM12	XS2M30PB370G	XS630B1PBL01G (4)
KS1M30DA210L1	XS530B1DAL5	XS1N30PA340L1	XS530B1PAL5	XS2M30PB370L1	XS630B1PBL5
KS1M30DA210L2	XS530B1DAL10	XS1N30PA340L2	XS530B1PAL10	XS2M30PB370L2	XS630B1PBL10
KS1M30DA210LD	XS530B1DAL08M12	XS1N30PB340	XS530B1PBL2		
KS1M30DB210	XS530B1DBL2	XS1N30PB340D	XS530B1PBM12		
<s1m30db210b< td=""><td>XS530B1DBL01B (4)</td><td></td><td></td><td></td><td></td></s1m30db210b<>	XS530B1DBL01B (4)				
(S1M30DB210D	XS530B1DBM12				
(S1M30DB210LD	XS530B1DBM12 (1)	XS2			
		XS2N30NA340	XS130B3NAL2		
		XS2N30NA340D	XS130B3NAM12	XS3	
KS1M30DA214D	XS530B1CAM12	XS2N30NA340L1	XS130B3NAL5	XS3P30NA340	XS530B1NAL2 (3)
(S1M30DA214LD	XS530B1CAL08M12	XS2N30NA340L2	XS130B3NAL10	XS3P30NA340D	XS530B1NAM12 (3)
		XS2N30NB340	XS130B3NBL2	XS3P30NA340L1	XS530B1NAL5 (3)
		XS2N30NC410L1	XS2N30NC410D	XS3P30PA340	XS530B1PAL2 (3)
(S1M30PA349D	XS630B1PAM12 (5)		+ XZCPV1141L5	XS3P30PA340D	XS530B1PAM12 (3)
10 million A343D		XS2N30PC410	XS130B3PCL2	XS3P30PA340L1	XS530B1PAL5 (3)
		XS2N30PC410D	XS130B3PCM12	XS3P30PA340L2	XS530B1PAL10 (3)
(S1M30NA370	XS530BLNAL2	XS2N30PC410L1	XS130B3PCM12 + XZCPV1141L5		ACCOUNT ALLO (C)
(S1M30NA370B	XS630B1NAL01B (4)	VOONOONEO (OD		XS3P30PA370	XS530BLPAL2 (3)
<s1m30na370c< td=""><td>XS630B1NAL01C (4)</td><td>XS2N30NB340D</td><td>XS130B3NBM12</td><td>XS3P30PA370L1</td><td>XS530BLPAL5 (3)</td></s1m30na370c<>	XS630B1NAL01C (4)	XS2N30NB340D	XS130B3NBM12	XS3P30PA370L1	XS530BLPAL5 (3)
(S1M30NA370D	XS530BLNAM12	XS2N30PA340	XS130B3PAL2	XS3P30PA370L2	XS530BLPAL10 (3)
(S1M30NA370L1	XS530BLNAL5	XS2N30PA340D	XS130B3PAM12	XS3P30NA370	XS530BLNAL2 (3)
(S1M30NA370L2	XS530BLNAL10	XS2N30PA340L1	XS130B3PAL5	XS3P30NA370L1	XS530BLNAL5 (3)
(S1M30NB370	XS530BLNBL2	XS2N30PA340L2	XS130B3PAL10		
(S1M30NB370B	XS630B1NBL01B (4)	XS2N30PB340	XS130B3PBL2		
(S1M30NB370C	XS630B1NBL01C (4)	XS2N30PB340D	XS130B3PBM12		
(S1M30NB370D	XS530BLNBM12				
(S1M30NB370L1	XS530BLNBL5				
(S1M30NB370L2	XS530BLNBL10	XS2M30NA370	XS630B1NAL2		
(S1M30PA370	XS530BLPAL2	XS2M30NA370B	XS630B1NAL01B (4)	XS4	
(S1M30PA370 (S1M30PA370A	XS630B1PAL01U78 (4)	XS2M30NA370C	XS630B1NAL01C (4)	XS4P30NA370B	
		XS2M30NA370D	XS630B1NAM12		XS4P30NA370L01B (4
(S1M30PA370B	XS630B1PAL01B (4)	XS2M30NA370L1	XS630B1NAL5	XS4P30NB370B	XS4P30NB370L01B (4
(S1M30PA370C	XS630B1PAL01C (4)	XS2M30NA370L2	XS630B1NAL10	XS4P30NC410L2	XS4P30NC410D + XZCPV1141L10
(S1M30PA370D	XS530BLPAM12	XS2M30NB370	XS630B1NBL2	XS4P30PA370B	XS4P30PA370L01B (4
(S1M30PA370G	XS630B1PAL01G (4)	XS2M30NB370B	XS630B1NBL01B (4)	XS4P30PB370B	XS4P30PB370L01B (4
(S1M30PA370L1	XS530BLPAL5	XS2M30NB370C	XS630B1NBL01C (4)	XS4P30PC410L1	XS4P30PC410D
(S1M30PA370L2	XS530BLPAL10	XS2M30NB370D	XS630B1NBM12		+ XZCPV1141L5
(S1M30PB370	XS530BLPBL2	XS2M30NB370L1	XS630B1NBL5	XS4P30PC410L2	XS4P30PC410D
(S1M30PB370B	XS630B1PBL01B (4)	XS2M30NB370L2	XS630B1NBL10		+ XZCPV1141L10
(S1M30PB370C	XS630B1PBL01C (4)	XS2M30PA370	XS630B1PAL2		
(S1M30PB370D	XS530BLPBM12	XS2M30PA370A	XS630B1PAL01U78 (4)		
(S1M30PB370G	XS630B1PBL01G (4)	XS2M30PA370B	XS630B1PAL01B (4)		
(S1M30PB370L1	XS530BLPBL5	XS2M30PA370C	XS630B1PAL01C (4)		
(S1M30PB370L2	XS530BLPBL10	XS2M30PA370D	XS630B1PAM12		

For the new sensor an integral M12 connector replaces the remote M12 connector on a 0.80 m flying lead.
 For the new sensor, the metal case replaces the plastic case.
 For the new sensor, connectors A, B, C and G on 0.1 m flying lead replace integral connectors A, B, C and G.
 For the new sensor, Sn = 15 mm instead of 20 mm.

## Inductive proximity sensors

#### Sensors with the closest functionalities

Old sensor	New XS sensor	Old sensor	New XS sensor	Old sensor	New XS sensor	
Cylindrical type, AC or DC		Diameter 18 mm (conti	nued)	Diameter 30 mm (continued)		
Diameter 12 mm		XS1		XS1M30MB230C	XS630B1MBL01C (4)	
XS1		XS1M18MA239A	XS1M18MA239L01A (4)	XS1M30MB230G	XS630B1MBL01G (4)	
XS1M12MA230	XS512B1MAL2	XS1M18MA239K	XS618B1MAU20 (5)	XS1M30MB230K	XS530B1MBU20	
XS1M12MA230K	XS512B1MAU20			XS1M30MB230L1	XS530B1MBL5	
XS1M12MA230L1	XS512B1MAL5	XS2		XS1M30MB230L2	XS530B1MBL10	
XS1M12MA230L2	XS512B1MAL10	XS2M18MA230	XS618B1MAL2			
XS1M12MB230	XS512B1MBL2	XS2M18MA230A	XS618B1MAL01U78 (4)	XS1M30MA239	XS630B1MAL2 (5)	
XS1M12MB230K	XS512B1MBU20	XS2M18MA230B	XS618B1MAL01B (4)	XS1M30MA239A	XS1M30MA239L01A (4)	
XS1M12MB230L1	XS512B1MBL5	XS2M18MA230C	XS618B1MAL01C (4)			
XS1M12MB230L2	XS512B1MBL10	XS2M18MA230G	XS618B1MAL01G (4)			
		XS2M18MA230K	XS618B1MAU20	XS2		
XS1M12MA239	XS612B1MAL2	XS2M18MA230L1	XS618B1MAL5	XS2M30MA230	XS630B1MAL2	
XS1M12MA239K	XS612B1MAU20	XS2M18MA230L2	XS618B1MAL10	XS2M30MA230A	XS630B1MAL01U78 (4)	
		XS2M18MB230	XS618B1MBL2	XS2M30MA230B	XS630B1MAL01B (4)	
XS2		XS2M18MB230A	XS618B1MBL01U78 (4)	XS2M30MA230C	XS630B1MAL01C (4)	
XS2M12MA230	XS612B1MAL2	XS2M18MB230B	XS618B1MBL01B (4)	XS2M30MA230G	XS630B1MAL01G (4)	
XS2M12MA230K	XS612B1MAU20	XS2M18MB230C	XS618B1MBL01C (4)	XS2M30MA230K	XS630B1MAU20	
XS2M12MA230L1	XS612B1MAL5	XS2M18MB230G	XS618B1MBL01G (4)	XS2M30MA230L1	XS630B1MAL5	
XS2M12MA230L2	XS612B1MAL10	XS2M18MB230K	XS618B1MBU20	XS2M30MA230L2	XS630B1MAL10	
XS2M12MB230	XS612B1MBL2	XS2M18MB230L1	XS618B1MBL5	XS2M30MB230	XS630B1MBL2	
XS2M12MB230K	XS612B1MBU20	XS2M18MB230L2	XS618B1MBL10	XS2M30MB230A	XS630B1MBL01U78 (4)	
XS2M12MB230L1	XS612B1MBL5			XS2M30MB230B	XS630B1MBL01B (4)	
XS2M12MB230L2	XS612B1MBL10	XS3		XS2M30MB230C	XS630B1MBL01C (4)	
		XS3P18MA230	XS618B1MAL2 (3)	XS2M30MB230G	XS630B1MBL01G (4)	
XS3		XS3P18MA230K	XS618B1MAU20 (3)	XS2M30MB230K	XS630B1MBU20	
XS3P12MA230	XS612B1MAL2 (3)	XS3P18MA230L1	XS618B1MAL5 (3)	XS2M30MB230L1	XS630B1MBL5	
XS3P12MA230K	XS612B1MAU20 (3)	XS3P18MA230L2	XS618B1MAL10 (3)	XS2M30MB230L2	XS630B1MBL10	
XS3P12MA230L1	XS612B1MAL5 (3)	XS3P18MB230	XS618B1MBL2 (3)			
XS3P12MA230L2	XS612B1MAL10 (3)	XS3P18MB230A	XS618B1MBU20 (3)	XS3		
XS3P12MB230	XS612B1MBL2 (3)	XS3P18MB230K	XS618B1MBU20 (3)	XS3P30MA230	XS630B1MAL2 (3)	
XS3P12MB230K	XS612B1MBU20 (3)	XS3P18MB230L1	XS618B1MBL5 (3)	XS3P30MA230K	XS630B1MAU20 (3)	
XS3P12MB230L1	XS612B1MBL5 (3)			XS3P30MA230L1	XS630B1MAL5 (3)	
		XS4		XS3P30MA230L2	XS630B1MAL10 (3)	
Diameter 18 mm		XS4P18MA230B	XS4P18MA230L01B (4)	XS3P30MB230	XS630B1MBL2 (3)	
XS1		XS4P18MA230C	XS4P18MA230L01C (4)	XS3P30MB230K	XS630B1MBU20 (3)	
XS1M18MA230	XS518B1MAL2	XS4P18MA230G	XS4P18MA230L01G (4)	XS3P30MB230L1	XS630B1MBL5 (3)	
XS1M18MA230A	XS618B1MAL01U78 (4)	XS4P18MB230B	XS4P18MB230L01B (4)			
XS1M18MA230B	XS618B1MAL01B (4)	XS4P18MB230C	XS4P18MB230L01C (4)			
XS1M18MA230C	XS618B1MAL01C (4)			XS4		
XS1M18MA230G	XS618B1MAL01G (4)	Diameter 30 mm		XS4P30MA230B	XS4P30MA230L01B (4)	
XS1M18MA230K	XS518B1MAU20	XS1		XS4P30MA230C	XS4P30MA230L01C (4)	
XS1M18MA230L1	XS518B1MAL5	XS1M30MA230	XS530B1MAL2	XS4P30MA230G	XS4P30MA230L01G (4)	
XS1M18MA230L2	XS518B1MAL10	XS1M30MA230A	XS630B1MAL01U78 (4)	XS4P30MB230B	XS4P30MB230L01B (4)	
XS1M18MB230	XS518B1MBL2	XS1M30MA230B	XS630B1MAL01B (4)	XS4P30MB230C	XS4P30MB230L01C (4)	
XS1M18MB230A	XS618B1MBL01U78 (4)	XS1M30MA230C	XS630B1MAL01C (4)			
XS1M18MB230B	XS618B1MBL01B (4)	XS1M30MA230G	XS630B1MAL01G (4)			
XS1M18MB230C	XS618B1MBL01C (4)	XS1M30MA230K	XS530B1MAU20			
XS1M18MB230G	XS618B1MBL01G (4)	XS1M30MA230L1	XS530B1MAL5			
XS1M18MB230K	XS518B1MBU20	XS1M30MA230L2	XS530B1MAL10			
XS1M18MB230L1	XS518B1MBL5	XS1M30MB230	XS530B1MBL2			
XS1M18MB230L2	XS518B1MBL10	XS1M30MB230A	XS630B1MBL01U78 (4)			
XS1M18MA239	XS618B1MAL2 (5)	XS1M30MB230B	XS630B1MBL01B (4)			

(3) For the new sensor, the metal case replaces the plastic case.
(4) For the new sensor, connectors A, B, C and G on 0.1 m flying lead replace integral connectors A, B, C and G.
(5) For the new sensor, Sn = 8 mm instead of 10 mm.

## Inductive proximity sensors

## Sensors with the closest functionalities

Old sensor	New XS sensor	Old sensor	New XS sensor
Block type		40 x 40 x 70 mm and 40	x 40 x 117 mm (continued)
40 x 40 x 70 mm and 40	x 40 x 117 mm	XS8	
xs7		XS8C40DA210	XS8C4A1DPG13
XS7C40DA210	XS7C4A1DPG13	XS8C40DA210H29	XS8C4A1DPP20
XS7C40DA210A	XS7C4A1DPU78	XS8C40DA214D	XS8C4A1DPM12
XS7C40DA210D	XS7C4A1DPM12	XS8C40DP210	XS8C4A1DPG13
XS7C40DA210H29	XS7C4A1DPP20	XS8C40DP210H29	XS8C4A1DPP20
XS7C40DA210H7	XS7C4A1DPN12	XS8C40DP210H7	XS8C4A1DPN12
KS7C40DA214D	XS7C4A1DPM12	XS8C40FP260	XS8C4A1MPG13
XS7C40DP210	XS7C4A1DPG13	XS8C40FP260H29	XS8C4A1MPP20
XS7C40DP210H29	XS7C4A1DPP20	XS8C40FP260H7	XS8C4A1MPN12
XS7C40DP210H7	XS7C4A1DPN12	XS8C40MP230	XS8C4A1MPG13
XS7C40FP260	XS7C4A1MPG13	XS8C40MP230H29	XS8C4A1MPP20
XS7C40FP260A	XS7C4A1MPU78	XS8C40MP230H7	XS8C4A1MPN12
XS7C40FP260H29	XS7C4A1MPP20	XS8C40NC440	XS8C4A1NCG13
XS7C40FP260H7	XS7C4A1MPN12	XS8C40NC440H29	XS8C4A1NCP20
XS7C40KPM40	XS9C4A1PCG13	XS8C40NC449	XS8C4A4NCG13
XS7C40KPM40H29	XS9C4A1PCP20	XS8C40NC449H29	XS8C4A4NCP20
XS7C40KPM40H7	XS9C4A1PCN12	XS8C40NC449H7	XS8C4A4NCN12
XS7C40MP230	XS7C4A1MPG13	XS8C40PC440	XS8C4A1PCG13
XS7C40MP230A	XS7C4A1MPU78	XS8C40PC440D	XS8C4A1PCM12
(S7C40MP230H29	XS7C4A1MPP20	XS8C40PC440H29	XS8C4A1PCP20
(S7C40MP230H7	XS7C4A1MPN12	XS8C40PC440H7	XS8C4A1PCN12
KS7C40NC440	XS8C4A1NCG13	XS8C40PC449	XS8C4A4PCG13
KS7C40NC440D	XS8C4A1NCM12	XS8C40PC449D	XS8C4A4PCM12
(S7C40NC440H29	XS8C4A1NCP20	XS8C40PC449H29	XS8C4A4PCP20
(S7C40NC440H7	XS8C4A1NCN12	XS8C40PC449H7	XS8C4A4PCN12
<s7c40nc449< td=""><td>XS8C4A1NCG13</td><td>XS8T4NC440</td><td>XS8C2A1NCM12</td></s7c40nc449<>	XS8C4A1NCG13	XS8T4NC440	XS8C2A1NCM12
(S7C40NC449H29	XS8C4A1NCP20		+ XZCP1141L2
XS7C40NC449H7	XS8C4A1NCN12	XS8T4NC440LD01	XS8C2A1NCM12
XS7C40PC440	XS8C4A1PCG13	XS8T4PC440	XS8C2A1PCM12
XS7C40PC440D	XS8C4A1PCM12		+ XZCP1141L2
XS7C40PC440H29	XS8C4A1PCP20	XS8T4PC440L1	XS8C2A1PCM12 + XZCP1141L5
XS7C40PC440H29	XS8C4A1PCP20	VERTARCAAN D	
		XS8T4PC440L2	XS8C2A1PCM12 + XZCP1141L10
XS7C40PC449	XS8C4A1PCG13 XS8C4A1PCM12	XS8T4PC440LD	XS8C2A1PCM12
XS7C40PC449D		XS8T4PC440LD01	XS8C2A1PCM12
XS7C40PC449H29	XS8C4A1PCP20		
XS7C40PC449H7	XS8C4A1PCN12	40 x 40 x 117 mm	
XS7T4DA210	XS7C2A1DAM12 + XZCP1141L2	ХЅСН	
XS7T4DA214LD	XS8C2A1CAM12	XSCH203629	XS9C4A2A2G13
XS7T4DA214LD01	XS8C2A1CAM12	XSCH203629H7	XS9C4A2A2N12
XS7T4DA214LD01W	XS8C2A1CAM12	XSCH207629	XS9C4A2A1G13
	+ XSZPKC2	XSCH207629H7	XS9C4A2A1N12
KS7T4DA214LDW	XS8C2A1CAM12 + XSZPKC2	·	
XS7T4NC440	XS8C2A1NCM12 + XZCP1141L2		
XS7T4NC440LD	XS8C2A1NCM12		
XS7T4NC440LD01	XS8C2A1NCM12		
XS7T4PC440	XS8C2A1PCM12 + XZCP1141L2		
XS7T4PC440LD	XS8C2A1PCM12		

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XS1L04PA311         74         XS1N30PC4100         670         XS4P30MA230         68         XS7JA1APLD1M8         44         XS9CAA2AP260         9           XS1L04PB310         74         XS1N30PC4100         67         XS4P30MB230         68         XS7JA1APBL51M6         48         XS9C111A1L2         68           XS1L04PB3105         74         XS1000PC4100         60         XS4P30MB230         68         XS7JA1APBL2         48         XS9C111A1L2         8           XS1L04PB3115         74         XS2000PC4100         60         XS4P30MA30         68         XS3C1A1ML21         20         XS9D111A2M122         8           XS1L04PB3115         74         XS20M3PC4100         66         XS4P30PA310         68         XS3C1A1ML21         20         XS9E11FRBL101112         8           XS1M04PC410         60         XS201MA2300         66         XS4P30PC4100         61         XS3C1A1AL2         25         XS1068PA12         23         XS1068PA14         3           XS1M14P3400         66         XS4P30PC4100         61         XS3C1A1AL2         25         XS1068PA14         3           XS1M14P340         66         XS202AVC410         61         XS3C1A1AL2         25         XS1068PA14										
XS1L04PB3105         74         XS1N3PC410         67         XS4P20M220K         68         XS7L41PB12         44         XS0C11NNBL01200         6           XS1L04PB3105         74         XS2M08PC4100         60         XS4P20MB220K         68         XS7L41PB121         45         XS0C11NAL2         6           XS1L04PB3105         74         XS2M08PC4100         60         XS4P20M2400         68         XS8C1A1ML212         28         XS0C11NAL2         28           XS1L04PB311         74         XS2M1XPF3400         66         XS4P20M240         68         XS8C1A1ML212         28         XS0E11NA212         8           XS1M08PC4100         60         XS2M1XPF3400         66         XS4P20PB340         68         XS8C1A1NAL2         28         XS0E11NA212         8           XS1M1XPF340         66         XS2M1MM220K         68         XS4P20PC410         61         XS2C1A1PAL2         28         XS1068PAM2         3           XS1M14FP340         66         XS2M1MM220K         68         XS7C1A1PAL2         28         XS1068PAM8         3           XS1M14FP340         66         XS7C1A1PAL2         50         XS1068PAM8         3         XS1068PAM8         3         XS1068PAM8         3<										
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XS1104PB3105         74         XS2M08PC4100         60         XS4P30MA340         66         XS3C1141PBL2         64         XS6C1111A2L2         6           XS1L04PB311         74         XS2M08PC410D         60         XS4P30MA340         66         XS8C1A1MAL2         52         XS8D111A2L1         6           XS1L04PB3115         74         XS2M12KP340D         66         XS4P30PA340         68         XS8C1A1MAL2         52         XS8D111A2L1         6           XS1M08PC410D         60         XS2M18KP340         66         XS4P30PB340         68         XS8C1A1MAL2         52         XS9E111A1L2         6           XS1M18PC410         60         XS2M18MA280K         58         XS4P30PC410         61         XS8C1A1MAL2         52         XS166B3PAB         3           XS1M18AP340         66         XS2M18MB220K         58         XS5P0PC11         113         XS6C1A1PBA0         52         XS166B3PAB         3           XS1M18AP340         66         XS2M30KP340         66         XS7C1A1DA0         58         XS166B3PBL2         3           XS1M18AP340         68         XS2M30MA260         58         XS166B3PBL2         58         XS166B3PBL3         3           XS1M11MA22<										81
XS1104PB311         74         XS2M08PC410         60         XS4P30RA340         66         XS8C1A1MAL01U20         52         XS8D111A2L12         6           XS1L04PB311S         74         XS2M12KP340         66         XS4P30RA370         68         XS8C1A1MAL2         52         XS8ET1RMELD1U20         52         XS8ET1RMEL21         52         XS8ET1RMEL21         52         XS8ET1RMEL21         53         XS8T1184824         52         XS106B3PAL2         53         XS11112         53         XS11112         53         XS11112         53         XS1112         53         XS11112         53         XS11112 <td< td=""><th></th><td></td><th></th><td></td><th></th><td></td><th></th><td></td><th></th><td>87</td></td<>										87
XS1L04PD3115         74         XS2M12KP340         66         XS4P30PDA320         68         XS8C1A1MAL2         52         XS3D111A01120         52           XS1L06PC410         60         XS2M16RP340         66         XS4P30PB340         68         XS8C1A1MAL2         52         XS9E111RML01U20         52         XS9E111RM12         68           XS1M06PC410         60         XS2M16RP340         66         XS4P30PB340         68         XS8C1A1MAL2         52         XS9E111A12         68           XS1M12RP340         66         XS2M16MA250K         58         XS4P30PC410         61         XS8C1A1PAL2         52         XS160B3PAM         33           XS1M14RP340         66         XS2M16MA250K         58         XS4P30PC410         61         XS8C1A1PAL3         54         XS106B3PAM2         33           XS1M14RP340D         66         XS2M30RP340         66         XS7C1A1DAL2         50         XS8C2A1DAM120         54         XS106B3PAM2         33           XS1M14RP340D         68         XS2M30M250         58         XS7C1A1DBL3         50         XS8C2A1DAM120         54         XS106B3PAM2         33           XS1M14RP340D         68         XS2M30MB250         58         XS7C1A1DM12 <th></th> <td></td> <th></th> <td></td> <th></th> <td></td> <th></th> <td></td> <th></th> <td>89</td>										89
XS1L08PC410         60         XS2M12PA0D         66         XS4C1AVMEL01U20         62         XS1601           XS1M08PC410         60         XS2M18KP340         66         XS4P30PB370         68         XS8C1A1MAL2         52         XS9E11RPBL01M12         8           XS1M03PC4100         60         XS2M15KP3400         66         XS4P30PC310         67         XS8C1A1MAL2         52         XS9E111A2L2         8           XS1M1ZKP3400         66         XS2M15MA250         59         XS4P30PC410         67         XS8C1A1FAAL         52         XS166B37AL2         3           XS1M1XRP3400         66         XS2M15MB250         59         XS167C1A1DAL2         50         XS166B37AL2         3           XS1M1SKP3400         66         XS2M30KP340         66         XS7C1A1DAL3         50         XS8C2A1MAU20         54         XS166B37BM8         3           XS1M15MA250         58         XS7C1A1DBL3         50         XS8C2A1MAU20         54         XS166B37BM8         3           XS1M15MA250         58         XS2M30M250         58         XS7C1A1DBL3         50         XS8C2A1MAU20         54         XS166B37BM8         3           XS1M15MA250         58         XS2M30MB250										89
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SYMMSPC410D         60         XS2M18PA20D         66         XS4P30P210         66         XS2CA14NAL2         52         XSSET11A1L2         67           XS1M12KP340         60         XS2M18MA250         58         XS4P30PC410D         61         XSBC1ATPAL2         52         XS1018ZP340D         66         XS2M18MB250         58         XS4P30PC410D         61         XSBC1ATPAL2         52         XS10683PAL2         33           XS1M1XEP340D         66         XS2M18MB250         58         XS5ppBSPD12         113         XSBC1ATPAL2         52         XS10683PAL2         33           XS1M1XEP340         66         XS2M30KP340         66         XS7C1ATDAL2         50         XS10683PAL2         33           XS1M18M250         58         XS2M30KP340         66         XS7C1ATDAL2         50         XS10683PAL2         33           XS1M18M250         58         XS2M30M250         58         XS7C1ATBAL2         50         XS10683PAL3         33           XS1M18M250K         58         XS2M30M2250         58         XS7C1ATPAL2         50         XS1083PAL2         33           XS1M18M250K         58         XS2M30M2250         58         XS7C1ATPAL2         50         XS1083BAN46 <td< td=""><th>XS1L06PC410</th><td>60</td><th>XS2M12KP340D</th><td>66</td><th>XS4P30PA370</th><td>68</td><th>XS8C1A1MBL01U20</th><td>52</td><th>XS9E11RMBL01U20</th><td>81</td></td<>	XS1L06PC410	60	XS2M12KP340D	66	XS4P30PA370	68	XS8C1A1MBL01U20	52	XS9E11RMBL01U20	81
XSHM12AB120         83         XS2M13MA250         58         XS4P30PC410         61         XS8C1A1PAL0H12         52         XS106B3PAL2         53           XS1M12KP340         66         XS2M15MA250         58         XS4p30PC410D         61         XS8C1A1PAL2         52         XS106B3PAL2         53           XS1M12KP3400         66         XS2M15MB250         58         XS5ppBSPDL2         113         XS8C1A1PAL         52         XS106B3PAL2         33           XS1M14KP3400         66         XS2M30KP340         66         XS7C1A1DAL2         50         XS8C2A10M12         54         XS108B3PAL2         33           XS1M15MA250         58         XS2M30M250         58         XS7C1A1DAL2         50         XS8C2A10M12         54         XS108B3NAL2         33           XS1M15MB250         58         XS2M30MB250         58         XS7C1A1NBL         50         XS8C2A11CM12         54         XS108B3NAL2         33           XS1M15MB250         58         XS2M30MB250         58         XS7C1A1PAL8         50         XS8C2A11CM12         54         XS108B3NAL2         33           XS1M15MB250         58         XS4P0BM3A30         68         XS7C1A1PAL8         50         XS8C2A1POM12	XS1M08PC410	60	XS2M18KP340	66	XS4P30PB340	68	XS8C1A1MBL2	52	XS9E11RPBL01M12	81
XS1M12KP340         66         XS2M18MA250K         58         XS4P30PC410D         61         XS8C1A1PAL2         52         XS106B3PAL2         3           XS1M12KP340D         66         XS2M18ME220         58         XS5ppBSPD12         1113         XS8C1A1PAL2         52         XS106B3PAM12         3           XS1M18KP340         66         XS2M18ME220K         58         XS7C1A1DAL2         50         XS8C1A1PBL2         52         XS106B3PBM12         3           XS1M18KP340         66         XS2M30M2200         58         XS7C1A1DAL6         50         XS8C2A1DAM12         54         XS106B3PBM12         3           XS1M18MB250         58         XS2M30M220         58         XS7C1A1DBL01M12         50         XS8C2A1NCM12         54         XS108B3NAL2         3           XS1M18MB250K         58         XS7C1A1PAL01M12         50         XS8C2A1PCM12         54         XS108B3NAL2         3           XS1M18MB250K         58         XS7C1A1PAL04         50         XS8C2A1CM12         54         XS108B3NAL2         3           XS1M18MB250K         58         XS7C1A1PAL04         50         XS8C2A1CM12         54         XS108B3PAM2         3           XS1M30M250K         58	XS1M08PC410D	60	XS2M18KP340D	66	XS4P30PB370	68	XS8C1A1NAL2	52	XS9E111A1L2	87
XS1M12KP340D         66         XS2M18MB250         59         XS8ppBSPDU12         113         XSC1A1PAMS         52         XS106B3PAM12         33           XS1M18KP340D         66         XS2M30KP340D         66         XS7C1A1DALS         50         XS6C1A1PBM8         52         XS106B3PAM12         33           XS1M18KP340D         66         XS2M30KP340D         66         XS7C1A1DAMS         50         XS6C2A1MAU20         54         XS106B3PEM8         33           XS1M18KP340D         66         XS2M30M250K         58         XS7C1A1DALS         50         XS6C2A1MBU20         54         XS106B3PAM2         3           XS1M18MB250K         58         XS2C1A1NBU20         54         XS106B3PAM2         3         XS101B3PA520D         10         XS2M30M2520K         58         XS7C1A1PAL         50         XS6C2A1FCM12         54         XS108B3PAM8         3           XS1M18MB250K         58         XS7C1A1PAL         50         XS6C2A1FCM12         54         XS108B3PAM2         3           XS1M18MB250K         58         XS4P08MA230         68         XS7C1A1PAL         50         XS6C2A4DAM12         54         XS108B3PAM2         3           XS1M30M250K         58         XS4P08MA340 <th>XS1M12AB120</th> <td>83</td> <th>XS2M18MA250</th> <td>58</td> <th>XS4P30PC410</th> <td>61</td> <th>XS8C1A1PAL01M12</th> <td>52</td> <th>XS9E111A2L2</th> <td>89</td>	XS1M12AB120	83	XS2M18MA250	58	XS4P30PC410	61	XS8C1A1PAL01M12	52	XS9E111A2L2	89
XS1M18AB120         64         XS2M18NB250K         59         XS5ppBSPDM12         113         XS8C1A1PBL2         52         XS106B3PBL2         3           XS1M18KP340         66         XS2M30KP340         66         XS7C1A1DAM2         50         XS8C2A1DAM12         54         XS106B3PBL3         3           XS1M18KP340         66         XS2M30KP340         66         XS7C1A1DAM6         50         XS8C2A1DAM12         54         XS106B3PBM8         33           XS1M18KP340         68         XS2M30MA250         58         XS7C1A1DEL01M12         50         XS8C2A1MBU20         54         XS10B83NAM8         3           XS1M18HB250         58         XS2M30M250K         58         XS7C1A1FAL         50         XS8C2A1MCM12         54         XS10B83NAM12         3           XS1M18HB250         58         XS2M30M250K         58         XS7C1A1FAL         50         XS8C2A1CM12         54         XS10B83PAL12         3           XS1M18HB260         10         XS4P08M230         68         XS7C1A1FAL         50         XS8C2A4CM12         54         XS10B83PBH12         3           XS1M30KP340         68         XS7C2A1DAM12         54         XS8C2A4MBU20         54         XS10B83PBH12	XS1M12KP340	66	XS2M18MA250K	58	XS4P30PC410D	61	XS8C1A1PAL2	52	XS106B3PAL2	34
XS1M18KP340         66         XS2C1A1DAL2         50         XS8C2A1DAM12         54         XS106B3PBL2         3           XS1M18NA250         66         XS2C1A1DAM8         50         XS8C2A1MAU20         54         XS106B3PAL2         3           XS1M18NA250         57         XS2M30MA250         58         XS7C1A1DEU1M12         50         XS8C2A1MAU20         54         XS108B3NAL2         3           XS1M18NA250K         58         XS2C1A1DEU1M12         50         XS8C2A1NCM12         54         XS108B3NAM8         3           XS1M18NB250K         58         XS7C1A1PAL1         50         XS8C2A1NCM12         54         XS108B3NAM8         3           XS1M18NPA50D         110         XS2M12PC140         60         XS7C1A1PAL2         50         XS8C2A4CAM12         54         XS108B3PAM8         3           XS1M18NPA50D         10         XS4P08MA20         68         XS7C1A1PAL2         50         XS8C2A4DAM12         54         XS108B3PAM8         3           XS1M30KP340D         66         XS7C2A1DAM12         54         XS108B3PBM8         3         3           XS1M30KP340D         68         XS7C2A1DBM12         54         XS108B3PBM8         3         3         3	XS1M12KP340D	66	XS2M18MB250	58	XS5ppBSPDL2	113	XS8C1A1PAM8	52	XS106B3PAM8	34
XS1M18KP340D         66         XS2M30KP340D         66         XS7C1A1DAM8         50         XS8C2A1DAM12         54         XS106B3PAL2         3           XS1M118MA250         58         XS2M30MA250         58         XS7C1A1DBL01M12         50         XS8C2A1MBU20         54         XS10BB3NAL2         3           XS1M118MA250K         58         XS2M30MA250K         58         XS7C1A1NEM8         50         XS8C2A1MBU20         54         XS10BB3NAM8         3           XS1M18PAS20K         58         XS2M30ME250K         58         XS7C1A1PAL2         50         XS8C2A1PCM12         54         XS10BB3NBM8         3           XS1M18PAS20D         110         XS2M30ME250         68         XS7C1A1PAL2         50         XS8C2A1CM12         54         XS10BB3PAL2         3           XS1M30KP340D         68         XS7C1A1PAM8         50         XS8C2A4DAM12         54         XS10BB3PBM12         3           XS1M30KP340D         68         XS7C2A1DAM12         54         XS10BB3PBM12         3           XS1M30MA250K         58         XS4P08PA340         68         XS7C2A1DAM12         54         XS10BB3PBM12         3           XS1M30MA250K         58         XS4P08PA340         68	XS1M18AB120	84	XS2M18MB250K	58	XS5ppBSPDM12	113	XS8C1A1PBL2	52	XS106B3PAM12	34
XS1M180A250         58         XS2M30MA250         58         XS7C1A1DBL01M12         50         XS8C2A1MAU20         54         XS108B3NAMB         3           XS1M18MA250K         58         XS2M30MA250K         58         XS7C1A1MBL2         50         XS8C2A1MBU20         54         XS108B3NAMB         3           XS1M18MB250K         58         XS2M30MB250K         58         XS7C1A1MBU3         50         XS8C2A1PCM12         54         XS108B3NAMB         3           XS1M18PAS20D         110         XS2N12PC140         60         XS7C1A1PAL         50         XS8C2A1PCM12         54         XS108B3PAM2         3           XS1M18PA30D         10         XS2N12PC140         60         XS7C1A1PBL2         50         XS8C2A4PCM12         54         XS108B3PAM12         3           XS1M30AB120         66         XS4P08NB340         68         XS7C2A1DBM12         54         XS108B3PEM12         3           XS1M30MA250         58         XS4P08NB340         68         XS7C2A1DBM12         54         XS8C2A4PCM12         54         XS108B3PEM12         3           XS1M30MA250         58         XS4P08PB340         68         XS7C2A1DBM12         54         XS8C2A4PCM12         54         XS102B3PEM12<	XS1M18KP340	66	XS2M30KP340	66	XS7C1A1DAL2	50	XS8C1A1PBM8	52	XS106B3PBL2	34
XS1M18MA250K         58         XS2M30MA250K         58         XS7C1A1NBL2         50         XS8C2A1MBU20         54         XS108B3NAM12         33           XS1M18MB250         58         XS2M30MB250K         58         XS7C1A1NBM3         50         XS8C2A1PCM12         54         XS108B3NAM12         33           XS1M18MB250K         58         XS2M10MB250K         58         XS7C1A1PAL01M12         50         XS8C2A1PCM12         54         XS108B3PAL2         33           XS1M18PA540D         110         XS2N12PC140         60         XS7C1A1PAM8         50         XS8C2A1PCM12         54         XS108B3PAM8         33           XS1M30AP340D         66         XS4P08MB230         68         XS7C1A1PBM8         50         XS8C2A4MD12         54         XS108B3PAM8         33           XS1M30MA250K         58         XS4P08MB340         68         XS7C2A1DBM12         54         XS8C2A4MD12         54         XS108B3PBM12         33           XS1M30MB250K         58         XS4P08P340         68         XS7C2A1NBM12         54         XS8C2A4PCM12         54         XS108B3PBM12         33           XS1M30MB250K         58         XS4P08PC410         60         XS7C2A1NBM12         54         XS	XS1M18KP340D	66	XS2M30KP340D	66	XS7C1A1DAM8	50	XS8C2A1DAM12	54	XS106B3PBM8	34
XS1M18MA250K         58         XS2M30MA250K         58         XS7C1A1NBL2         50         XS8C2A1MBU20         54         XS108B3NAM12         33           XS1M18MB250         58         XS2M30MB250K         58         XS7C1A1NBM3         50         XS8C2A1PCM12         54         XS108B3NAM12         33           XS1M18MB250K         58         XS2M10MB250K         58         XS7C1A1PAL01M12         50         XS8C2A1PCM12         54         XS108B3PAL2         33           XS1M18PA540D         110         XS2N12PC140         60         XS7C1A1PAM8         50         XS8C2A1PCM12         54         XS108B3PAM8         33           XS1M30AP340D         66         XS4P08MB230         68         XS7C1A1PBM8         50         XS8C2A4MD12         54         XS108B3PAM8         33           XS1M30MA250K         58         XS4P08MB340         68         XS7C2A1DBM12         54         XS8C2A4MD12         54         XS108B3PBM12         33           XS1M30MB250K         58         XS4P08P340         68         XS7C2A1NBM12         54         XS8C2A4PCM12         54         XS108B3PBM12         33           XS1M30MB250K         58         XS4P08PC410         60         XS7C2A1NBM12         54         XS	XS1M18MA250	58	XS2M30MA250	58	XS7C1A1DBL01M12	50	XS8C2A1MAU20	54	XS108B3NAL2	34
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XS1M30MB250K         58         XS4P12AB110         83         XS7C2A1PAM12         54         XS8C4A1DPP20         56         XS112B3PAL2         3           XS1N05NA310         74         XS4P12AB120         83         XS7C2A1PBM12         54         XS8C4A1MPP20         56         XS112B3PAL2         3           XS1N05NA311         74         XS4P12KP340         66         XS7C4A1DP20         56         XS112B3PBL2         3           XS1N05NA3115         74         XS4P12KP340D         66         XS7C4A1MP20         56         XS112B3PBL2         6           XS1N05NB310         74         XS4P12M230         68         XS7D1A1DAL2         50         XS8C4A4MP20         56         XS112B3PCL2         6           XS1N05NB311         74         XS4P12M230         68         XS7D1A1DBL2         50         XS8C4A4MP20         56         XS112B3PCL2         61           XS1N05PA310         74         XS4P12NA30         68         XS7D1A1DAL2         50         XS8C4A4PCP20         56         XS112B3PDL2         111           XS1N05PA311         74         XS4P12N340         68         XS7D1A1PAL2         50         XS8C4A4PCP20         56         XS118B3NAL2         3           XS1N05PB3										34
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XS1N05NB311S         74         XS4P12MB230         68         XS7D1A1DBL2         50         XS8C4A4NCP20         56         XS112B3PDL2         11           XS1N05PA310         74         XS4P12NA340         68         XS7D1A1DBL2         50         XS8C4A4PCP20         56         XS112B3PDL2         11           XS1N05PA311         74         XS4P12NA370         68         XS7D1A1PAL2         50         XS8C4A4PCP20         56         XS112B3PDM12         11           XS1N05PA311         74         XS4P12NB340         68         XS7D1A1PAM12         50         XS8C4A4PCP20         56         XS118B3NAL2         3           XS1N05PB310         74         XS4P12PA340         68         XS7D1A1PBM12         50         XS8D1A1MAL2         52         XS118B3PAL2         3           XS1N05PB311         74         XS4P12PA370         68         XS7D1A12DIN         104         XS8D1A1MAL2         52         XS118B3PAM12         3           XS1N05PB311         74         XS4P12PB370         68         XS7E1A1CAL01M12         50         XS8D1A1MAL2         52         XS118B3PBM12         3           XS1N12NA349         70         XS4P12PC410         60         XS7E1A1DAL2         50         XS8D1A1PAL2	XS1N05NB310	74	XS4P12MA230	68	XS7D1A1DAL2	50	XS8C4A4DPP20	56	XS112B3PCL2	64
XS1N05PA310         74         XS4P12NA340         68         XS7D1A1NAL2         50         XS8C4A4PCM12         56         XS112B3PDM12         11           XS1N05PA311         74         XS4P12NA370         68         XS7D1A1NAL2         50         XS8C4A4PCP20         56         XS118B3NAL2         33           XS1N05PA311         74         XS4P12NB340         68         XS7D1A1PAM12         50         XS8C4A4PCP20         118         XS118B3NAM12         33           XS1N05PB310         74         XS4P12PA340         68         XS7D1A1PAM12         50         XS8D1A1MAL2         52         XS118B3NAM12         33           XS1N05PB311         74         XS4P12PB340         68         XS7E1A1CAL01M12         50         XS8D1A1MAL2         52         XS118B3PAL2         33           XS1N12NA349         70         XS4P12PB370         68         XS7E1A1CAL01M12         50         XS8D1A1MBL2         52         XS118B3PBM12         33           XS1N12NA349         70         XS4P12PC410         60         XS7E1A1DAL2         50         XS8D1A1MBL2         52         XS118B3PCM12         66           XS1N12NC410         60         XS4P18AB10         84         XS7E1A1NAL2         50         XS8D1A1PBL	XS1N05NB311	74	XS4P12MA230K	68	XS7D1A1DAM12	50	XS8C4A4MPP20	56	XS112B3PCM12	64
XS1N05PA311       74       XS4P12NA370       68       XS7D1A1PAL2       50       XS8C4A4PCP20       56       XS118B3NAL2       3         XS1N05PA311S       74       XS4P12NB340       68       XS7D1A1PAM12       50       XS8C4A4PCP20       118       XS118B3NAL2       3         XS1N05PB310       74       XS4P12PA340       68       XS7D1A1PBM12       50       XS8D1A1MAL2       52       XS118B3NAM12       3         XS1N05PB311       74       XS4P12PA370       68       XS7D1A3CAM12DIN       104       XS8D1A1MAL2       52       XS118B3PAL2       3         XS1N05PB311S       74       XS4P12PB370       68       XS7E1A1CAL01M12       50       XS8D1A1MBL2       52       XS118B3PAL2       3         XS1N12NA349       70       XS4P12PB370       68       XS7E1A1DAL01M12       50       XS8D1A1MBL2       52       XS118B3PBM12       3         XS1N12NA349D       70       XS4P12PC410       60       XS7E1A1DAL2       50       XS8D1A1MAL2       52       XS118B3PCL2       6         XS1N12NC410D       60       XS4P12PC410D       60       XS7E1A1DAL2       50       XS8D1A1PAL2       52       XS118B3PDL2       11         XS1N12PA349       70	XS1N05NB311S	74	XS4P12MB230	68	XS7D1A1DBL2	50	XS8C4A4NCP20	56	XS112B3PDL2	114
XS1N05PA311       74       XS4P12NA370       68       XS7D1A1PAL2       50       XS8C4A4PCP20       56       XS118B3NAL2       3         XS1N05PA311S       74       XS4P12NB340       68       XS7D1A1PAM12       50       XS8C4A4PCP20       118       XS118B3NAL2       3         XS1N05PB310       74       XS4P12PA340       68       XS7D1A1PBM12       50       XS8D1A1MAL2       52       XS118B3NAL2       3         XS1N05PB311       74       XS4P12PA370       68       XS7D1A3CAM12DIN       104       XS8D1A1MAL2       52       XS118B3PAL2       3         XS1N05PB311S       74       XS4P12PB370       68       XS7E1A1CAL01M12       50       XS8D1A1MBL2       52       XS118B3PAL2       3         XS1N12NA349       70       XS4P12PB370       68       XS7E1A1DAL01M12       50       XS8D1A1MBL2       52       XS118B3PBL2       3         XS1N12NC410       60       XS4P12PC410       60       XS7E1A1DAL2       50       XS8D1A1PAL2       52       XS118B3PCL2       6         XS1N12NC410D       60       XS4P18AB110       84       XS7E1A1DAL2       50       XS8D1A1PAL2       52       XS118B3PDL2       111         XS1N12PA349       70       XS4	XS1N05PA310	74	XS4P12NA340	68	XS7D1A1NAL2	50	XS8C4A4PCM12	56	XS112B3PDM12	114
XS1N05PA311S       74       XS4P12NB340       68       XS7D1A1PAM12       50       XS8C4A4PDP20       118       XS118B3NAM12       33         XS1N05PB310       74       XS4P12PA340       68       XS7D1A1PAM12       50       XS8D1A1MAL2       52       XS118B3NAM12       33         XS1N05PB310       74       XS4P12PA340       68       XS7D1A1PBM12       50       XS8D1A1MAL2       52       XS118B3PAL2       33         XS1N05PB311S       74       XS4P12PB340       68       XS7E1A1CAL01M12       50       XS8D1A1MAL2       52       XS118B3PAL2       33         XS1N12NA349       70       XS4P12PB370       68       XS7E1A1DAL01M12       50       XS8D1A1MBL2       52       XS118B3PBL2       33         XS1N12NA349       70       XS4P12PC410       60       XS7E1A1DAL2       50       XS8D1A1MAL2       52       XS118B3PCL2       66         XS1N12NC410       60       XS4P12PC4100       60       XS7E1A1NBL2       50       XS8D1A1PAL2       52       XS118B3PCL2       11         XS1N12NC410D       60       XS4P13BAB10       84       XS7E1A1NBL2       50       XS8D1A1PAM12       52       XS118B3PDL2       111         XS1N12PA349       70       <		74				50			XS118B3NAL2	35
XS1N05PB31074XS4P12PA34068XS7D1A1PBM1250XS8D1A1MAL252XS118B3PAL233XS1N05PB31174XS4P12PA37068XS7D1A3CAM12DIN104XS8D1A1MAU2052XS118B3PAL233XS1N05PB311S74XS4P12PB34068XS7E1A1CAL01M1250XS8D1A1MBL252XS118B3PBL233XS1N12NA34970XS4P12PB37068XS7E1A1DAL01M1250XS8D1A1MBL252XS118B3PBM1233XS1N12NA349D70XS4P12PC41060XS7E1A1DAL250XS8D1A1MAL252XS118B3PCL266XS1N12NC410D60XS4P12PC410D60XS7E1A1NAL250XS8D1A1PAL252XS118B3PDL211XS1N12NC410D60XS4P18AB11084XS7E1A1PAL01M1250XS8D1A1PAL252XS118B3PDL211XS1N12PA34970XS4P18AB12084XS7E1A1PAL250XS8D1A1PAM1252XS103B3NAL233XS1N12PA349D70XS4P18KP340D66XS7E1A1PAL250XS8D1A1PBM1252XS130B3NAL233XS1N12PB34970XS4P18MA23068XS7E1A1PAL250XS8E1A1MAL252XS130B3PAL233XS1N12PC41060XS4P18MA23068XS7E1A1PBL250XS8E1A1MAL252XS130B3PAL233XS1N12PC41060XS4P18MA23068XS7E1A1PBM850XS8E1A1MAL252XS130B3PAL233XS1N12PC41060XS		74	XS4P12NB340				XS8C4A4PDP20	118	XS118B3NAM12	35
XS1N05PB31174XS4P12PA37068XS7D1A3CAM12DIN104XS8D1A1MAU2052XS118B3PAM1233XS1N05PB311S74XS4P12PB34068XS7E1A1CAL01M1250XS8D1A1MBL252XS118B3PBL233XS1N12NA34970XS4P12PB37068XS7E1A1DAL01M1250XS8D1A1MBU2052XS118B3PBM1233XS1N12NA349D70XS4P12PC41060XS7E1A1DAL250XS8D1A1MBU2052XS118B3PCL266XS1N12NC41060XS4P12PC410D60XS7E1A1DAL250XS8D1A1PAL252XS118B3PCM1266XS1N12NC410D60XS4P18AB11084XS7E1A1NAL250XS8D1A1PAL252XS118B3PDL211XS1N12PA34970XS4P18AB12084XS7E1A1PAL01M1250XS8D1A1PBL252XS118B3PDM1211XS1N12PA34970XS4P18KP34066XS7E1A1PAL250XS8D1A1PBL252XS130B3NAL233XS1N12PB34970XS4P18KP340D66XS7E1A1PAL250XS8E1A1MAL01U2052XS130B3NAL233XS1N12PB34970XS4P18M23068XS7E1A1PBL01M1250XS8E1A1MAL252XS130B3PAL233XS1N12PC41060XS4P18M230K68XS7E1A1PBL250XS8E1A1MBL01U2052XS130B3PAM1233XS1N12PC41060XS4P18MB23068XS7E1A1PBL250XS8E1A1MBL252XS130B3PAM1233XS1N12PC410										35
XS1N05PB311S74 XS4P12PB340XS4P12PB34068 XS7E1A1CAL01M12XS7E1A1CAL01M1250 XS7E1A1DAL01M12XS8D1A1MBL252 XS8D1A1MBL2XS118B3PBL233 XS118B3PBM1233 XS118B3PBM1233 XS118B3PBM1233 XS118B3PCL266 XS118B3PCL233 XS18D1A1MAL233 XS8D1A1MAL233 XS8D1A1MAL233 XS8D1A1MAL233 XS8D1A1MAL233 XS118B3PCL2XS118B3PCL233 XS118B3PCL233 XS118B3PCL233 XS118B3PCL233 XS118B3PCL233 XS118B3PCL233 XS118B3PCL233 XS118B3PCL233 XS118B3PCL233 XS118B3PCL233 XS118B3PCL233<										35
XS1N12NA349       70       XS4P12PB370       68       XS7E1A1DAL01M12       50       XS8D1A1MBU20       52       XS118B3PBM12       33         XS1N12NA349D       70       XS4P12PC410       60       XS7E1A1DAL2       50       XS8D1A1MBU20       52       XS118B3PDM12       66         XS1N12NC410       60       XS4P12PC410D       60       XS7E1A1DAL2       50       XS8D1A1PAL2       52       XS118B3PCL2       66         XS1N12NC410D       60       XS4P18AB110       84       XS7E1A1NAL2       50       XS8D1A1PAL2       52       XS118B3PDL2       11         XS1N12PA349       70       XS4P18AB120       84       XS7E1A1PAL01M12       50       XS8D1A1PBL2       52       XS118B3PDM12       11         XS1N12PA349D       70       XS4P18KP340       66       XS7E1A1PAL2       50       XS8D1A1PBL2       52       XS130B3NAL2       3         XS1N12PB349       70       XS4P18KP340D       66       XS7E1A1PAL2       50       XS8E1A1MAL01U20       52       XS130B3NAM12       3         XS1N12PB349       70       XS4P18MA230       68       XS7E1A1PBL01M12       50       XS8E1A1MAL01U20       52       XS130B3PAL2       3         XS1N12PC410       60										35
XS1N12NA349D       70       XS4P12PC410       60       XS7E1A1DAL2       50       XS8D1A1NAL2       52       XS118B3PCL2       66         XS1N12NC410       60       XS4P12PC410D       60       XS7E1A1DAL2       50       XS8D1A1NAL2       52       XS118B3PCL2       66         XS1N12NC410D       60       XS4P18AB110       84       XS7E1A1NAL2       50       XS8D1A1PAM12       52       XS118B3PCM12       66         XS1N12PA349       70       XS4P18AB120       84       XS7E1A1PAL01M12       50       XS8D1A1PBL2       52       XS118B3PDM12       11         XS1N12PA349D       70       XS4P18KP340       66       XS7E1A1PAL2       50       XS8D1A1PBL2       52       XS130B3NAL2       3         XS1N12PB349       70       XS4P18KP340D       66       XS7E1A1PAM8       50       XS8E1A1MAL01U20       52       XS130B3NAM12       3         XS1N12PB349D       70       XS4P18MA230       68       XS7E1A1PBL01M12       50       XS8E1A1MAL01U20       52       XS130B3PAL2       3         XS1N12PC410       60       XS4P18MA230K       68       XS7E1A1PBL2       50       XS8E1A1MBL01U20       52       XS130B3PAM12       3         XS1N12PC410       60										
XS1N12NC410         60         XS4P12PC410D         60         XS7E1A1NAL2         50         XS8D1A1PAL2         52         XS118B3PCM12         66           XS1N12NC410D         60         XS4P18AB110         84         XS7E1A1NAL2         50         XS8D1A1PAL2         52         XS118B3PCM12         11           XS1N12PA349         70         XS4P18AB120         84         XS7E1A1NBL2         50         XS8D1A1PAL2         52         XS118B3PDM12         11           XS1N12PA349D         70         XS4P18AB120         84         XS7E1A1PAL2         50         XS8D1A1PBM12         52         XS118B3PDM12         11           XS1N12PA349D         70         XS4P18KP340         66         XS7E1A1PAL2         50         XS8D1A1PBM12         52         XS130B3NAL2         3           XS1N12PB349         70         XS4P18KP340D         66         XS7E1A1PAL8         50         XS8E1A1MAL01U20         52         XS130B3NAM12         3           XS1N12PB349D         70         XS4P18MA230         68         XS7E1A1PBL01M12         50         XS8E1A1MAL2         52         XS130B3PAL2         3           XS1N12PC410         60         XS4P18M230K         68         XS7E1A1PBL2         50         XS8E1A1MBL										
XS1N12NC410D         60         XS4P18AB110         84         XS7E1A1NBL2         50         XS8D1A1PAM12         52         XS118B3PDL2         11           XS1N12PA349         70         XS4P18AB120         84         XS7E1A1NBL2         50         XS8D1A1PAM12         52         XS118B3PDL2         11           XS1N12PA349D         70         XS4P18KP340         66         XS7E1A1PAL2         50         XS8D1A1PBM12         52         XS118B3PDM12         11           XS1N12PB349D         70         XS4P18KP340D         66         XS7E1A1PAL2         50         XS8D1A1PBM12         52         XS130B3NAL2         3           XS1N12PB349D         70         XS4P18KP340D         66         XS7E1A1PAL01M12         50         XS8E1A1MAL01U20         52         XS130B3NAL2         3           XS1N12PB349D         70         XS4P18MA230         68         XS7E1A1PBL01M12         50         XS8E1A1MAL2         52         XS130B3PAL2         3           XS1N12PC410         60         XS4P18MB230         68         XS7E1A1PBL2         50         XS8E1A1MBL01U20         52         XS130B3PAM12         3           XS1N12PC410         60         XS4P18MB230         68         XS7E1A1PBM8         50         XS8										
XS1N12PA349         70         XS4P18AB120         84         XS7E1A1PAL01M12         50         XS8D1A1PBL2         52         XS118B3PDM12         11           XS1N12PA349D         70         XS4P18KP340         66         XS7E1A1PAL2         50         XS8D1A1PBL2         52         XS118B3PDM12         11           XS1N12PB349         70         XS4P18KP340D         66         XS7E1A1PAL2         50         XS8D1A1PBM12         52         XS130B3NAL2         33           XS1N12PB349D         70         XS4P18KP340D         66         XS7E1A1PAL2         50         XS8E1A1MAL01U20         52         XS130B3NAM12         33           XS1N12PB349D         70         XS4P18MA230         68         XS7E1A1PBL01M12         50         XS8E1A1MAL2         52         XS130B3NAM12         33           XS1N12PC410         60         XS4P18MB230K         68         XS7E1A1PBL2         50         XS8E1A1MBL01U20         52         XS130B3PAM12         33           XS1N12PC410D         60         XS4P18MB230         68         XS7E1A1PBM8         50         XS8E1A1MBL2         52         XS130B3PBM12         33           XS1N12PC410D         60         XS4P18MB230K         68         XS7F1A1DAL2         48										64
XS1N12PA349D         70         XS4P18KP340         66         XS7E1A1PAL2         50         XS8D1A1PBM12         52         XS130B3NAL2         33           XS1N12PB349         70         XS4P18KP340D         66         XS7E1A1PAL2         50         XS8D1A1PBM12         52         XS130B3NAL2         33           XS1N12PB349D         70         XS4P18KP340D         66         XS7E1A1PAM8         50         XS8E1A1MAL01U20         52         XS130B3NAM12         33           XS1N12PC410         60         XS4P18MA230K         68         XS7E1A1PBL2         50         XS8E1A1MBL01U20         52         XS130B3PAL2         33           XS1N12PC410D         60         XS4P18MB230         68         XS7E1A1PBL2         50         XS8E1A1MBL01U20         52         XS130B3PAM12         33           XS1N12PC410D         60         XS4P18MB230         68         XS7E1A1PBM8         50         XS8E1A1MBL2         52         XS130B3PBL2         33           XS1N12PC410D         60         XS4P18MB230K         68         XS7F1A1DAL2         48         XS8E1A1MAL2         52         XS130B3PBM12         33           XS1N18NA349         70         XS4P18MB230K         68         XS7F1A1DAL2         48         X										114
XS1N12PB349         70         XS4P18KP340D         66         XS7E1A1PAM8         50         XS8E1A1MAL01U20         52         XS130B3NAM12         33           XS1N12PB349D         70         XS4P18MA230         68         XS7E1A1PBL01M12         50         XS8E1A1MAL01U20         52         XS130B3NAM12         33           XS1N12PC410         60         XS4P18MA230K         68         XS7E1A1PBL2         50         XS8E1A1MBL01U20         52         XS130B3PAL2         33           XS1N12PC410D         60         XS4P18MB230         68         XS7E1A1PBL2         50         XS8E1A1MBL2         52         XS130B3PAM12         33           XS1N12PC410D         60         XS4P18MB230         68         XS7E1A1PBM8         50         XS8E1A1MBL2         52         XS130B3PAL2         33           XS1N12PC410D         60         XS4P18MB230         68         XS7E1A1PBM8         50         XS8E1A1MBL2         52         XS130B3PBL2         33           XS1N18NA349         70         XS4P18MB230K         68         XS7F1A1DAL2         48         XS8E1A1NAL2         52         XS130B3PBM12         33										
XS1N12PB349D         70         XS4P18MA230         68         XS7E1A1PBL01M12         50         XS8E1A1MAL2         52         XS130B3PAL2         33           XS1N12PC410         60         XS4P18MA230K         68         XS7E1A1PBL2         50         XS8E1A1MAL2         52         XS130B3PAL2         33           XS1N12PC410D         60         XS4P18MB230         68         XS7E1A1PBL8         50         XS8E1A1MBL2         52         XS130B3PAL2         33           XS1N12PC410D         60         XS4P18MB230         68         XS7E1A1PBM8         50         XS8E1A1MBL2         52         XS130B3PBL2         33           XS1N18NA349         70         XS4P18MB230K         68         XS7F1A1DAL2         48         XS8E1A1NAL2         52         XS130B3PBM12         33										35
XS1N12PC410         60         XS4P18MA230K         68         XS7E1A1PBL2         50         XS8E1A1MBL01U20         52         XS130B3PAM12         33           XS1N12PC410D         60         XS4P18MB230         68         XS7E1A1PBM8         50         XS8E1A1MBL2         52         XS130B3PAM12         33           XS1N18NA349         70         XS4P18MB230K         68         XS7F1A1DAL2         48         XS8E1A1MAL2         52         XS130B3PBM12         33										35
XS1N12PC410D         60         XS4P18MB230         68         XS7E1A1PBM8         50         XS8E1A1MBL2         52         XS130B3PBL2         33           XS1N18NA349         70         XS4P18MB230K         68         XS7F1A1DAL2         48         XS8E1A1MAL2         52         XS130B3PBL2         33										35
XS1N18NA349         70         XS4P18MB230K         68         XS7F1A1DAL2         48         XS8E1A1NAL2         52         XS130B3PBM12         3										35
	XS1N12PC410D	60	XS4P18MB230	68	XS7E1A1PBM8	50		52	XS130B3PBL2	35
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