

Sensors Quick Look

A quick reference guide to Proximity, Photoelectric, and Ultrasonic Sensors, Limit Switches, Pressure Sensors, Cabling Components, Encoders, RFID, and Machine Safety

Catalog



Simply easy!

Telemecanique™ Sensors

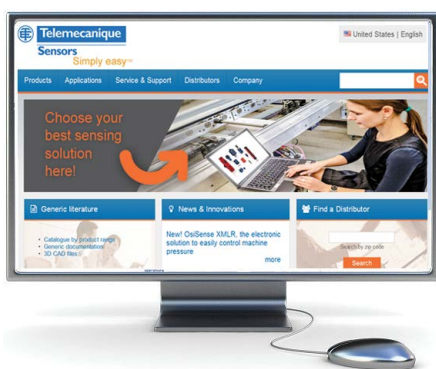
Simply easy!

Telemecanique brand has designed and manufactured factory automation and safety sensors for nine decades. Throughout its history, it has been known for its wide range of robust and reliable products.

Our goal is to **simplify the life of our customers**, allowing them to concentrate on their core business and the performance of their machines. Telemecanique Sensors products are designed and manufactured based on the following values:

- Simplicity and modularity
- Ease of selection
- Ease of installation and maintenance
- Availability of expert services to share our know-how

Connect with the experts



- Dedicated sales team: our trained and experienced sales professionals are available to help you with any sensing application.
- Telemecanique Sensors team: available for pre- and post-sales support. We become an extension of your team and share our expertise with you.

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Telemecanique Sensors

Simply easy!

New

• Safety and limit switches



< **Preventa XCSLF** and **XCSLE**, the new safety interlock switches for protecting operators of potentially dangerous machines with inertia

Preventa XUSL, the new safety Light Curtains, for efficient protection of machine operators—for finger, hand, and body



< **Preventa XY2CJ** emergency-stop cable pull switches—a solution that's easy to reach and trigger from anywhere in the work zone

Osisense™ XCKVR, the new economical cross limit switches for hoisting applications



• Pressure sensors for control applications



< **OsiSense XMLP**, a new range of compact pressure transmitters with a gasket-free design for industrial operations

OsiSense XMLR, the intuitive pressure switch that combines high performance and maximum ease of use, to easily control machine pressure



< **OsiSense ZMLP**, the simple switch with display, delivering a clear view of accurate pressure information. Mounts directly on a separate pressure transmitter, or remotely if the transmitter is in a hard-to-access location.

• Inductive proximity sensors



< **OsiSense XS7, XS8, C2, and C4**, the new range of cubic and rectangular inductive sensors for material handling applications

OsiSense XS9 stainless steel inductive proximity sensors—tough enough for the harshest industrial applications and environments



• Vision sensors



OsiSense XUW vision sensor—simple to configure and install, assists in the quality control of your manufactured parts

• Photoelectric sensors



OsiSense XUY roller sensors, the new photoelectric sensors for simple integration into your roller conveyors system

OsiSense XUVE optical fork sensor for labeling applications, offering fast integration, a small heel, and very precise, one-step teaching for simple setup



OsiSense XUM8, the miniature photoelectric sensors with efficient detection in diffuse mode with background suppression

OsiSense XUK laser, a new range of long sensing distance photoelectric laser sensors that provide an accurate beam for very precise detection, even on small objects, and are also highly resistant to harsh environments (IP69K, Ecolab)



• Ethernet RFID smart antenna

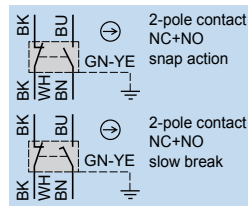


OsiSense XG smart antenna with integrated Modbus™ TCP and Ethernet IP communication—allows daisy chaining of up to 32 smart antennas in a single loop

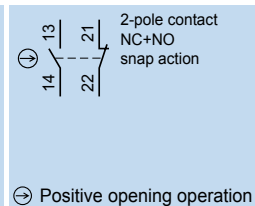
• Cabling components

OsiSense XZ PVC, a new economical offer of prewired connectors and jumpers with PVC cable for environments with low mechanical constraints, completing the offer of PUR cable for severe environments and reinforced PVC for food and beverage environments

XCMD



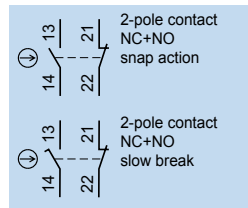
XCKT



Miniature XCMD metal, precabled; mounting by the body or by the head

Type of operator	Metal end plunger	Steel roller plunger	Thermoplastic roller lever	Steel roller lever	Variable length thermoplastic roller lever	M12 head metal end plunger bushing mount
Mechanical durability (millions of operating cycles) (5)	10	10	10	10	10	10
Actuation speed (m/s)	0.5	0.5	1.5	1.5	1.5	0.5
Switches conforming to standard IEC 947-5-1 section 3	⊕	⊕	⊕	⊕	⊕	⊕
Product certification	CE, UL, CSA, CCC					
Degree of protection conforming to IEC 60529	IP66 and IP67					
Rated operational specifications (conforming to EN IEC 60947-5-1)	AC-15; B300 (Ue = 240 V, Ie = 1.5 A) / DC-13; R300 (Ue = 250 V, Ie = 0.1 A)					
Mounting centers, mm (in.)	20 (0.79)					M12 x 1
Body dimensions, W x D x H, mm (in.)	30 x 16 x 50 (1.18 x 0.63 x 1.97)					
Connection Cable	Precabled, adjustable direction, 1 m (other lengths available on request)					
Complete switch 2-pole NC+NO snap action	XCMD2110L1	XCMD2102L1	XCMD2115L1	XCMD2116L1	XCMD2145L1	XCMD21F0L1
2-pole NC+NO break before make, slow break	XCMD2510L1	XCMD2502L1	XCMD2515L1	XCMD2516L1	XCMD2545L1	XCMD25F0L1
Connector	M12					
Complete switch NC+NO snap action (M12-5 pins)	XCMD2110C12	XCMD2102C12	XCMD2115C12	XCMD2116C12	XCMD2145C12	XCMD21F0C12
1C/O snap action (M12-4 pins) (1)	XCMD2110M12	XCMD2102M12	XCMD2115M12	XCMD2116M12	XCMD2145M12	XCMD21F0M12

XCKP/XCKD



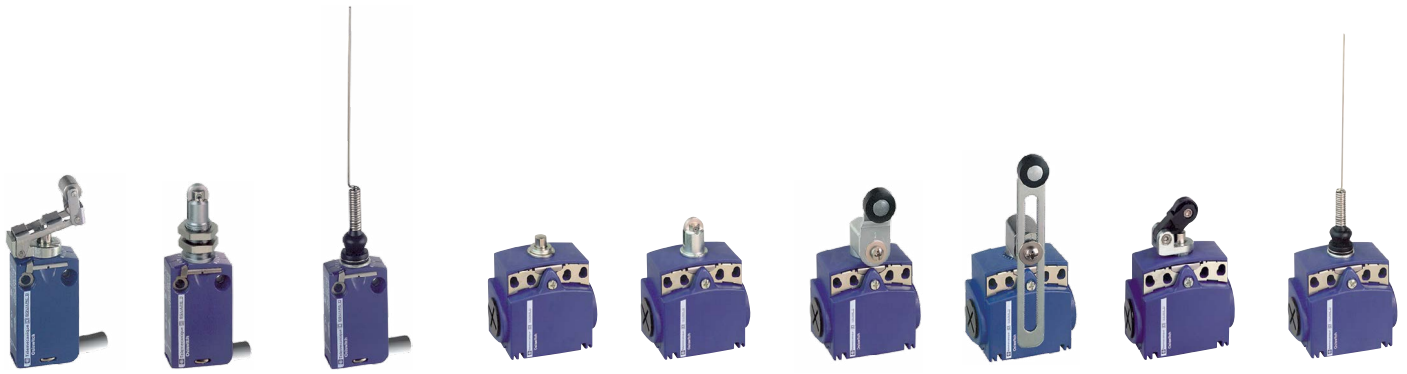
⊕ Positive opening operation



Compact XCKD metal and XCKP plastic conforming to standard EN 50047

Type of operator	Metal end plunger	Steel roller plunger	Thermoplastic roller-lever plunger, horizontal actuation in 1 direction	M18 head metal end plunger bushing mount	M18 head steel roller plunger bushing mount
Mechanical durability (millions of operating cycles) (5)	15	10	15	10	10
Actuation speed (m/s)	0.5	0.5	1	0.5	0.5
Switches conforming to standard IEC 947-5-1 section 3	⊕	⊕	⊕	⊕	⊕
Product certification	CE, CSA, CCC, GOST				
Degree of protection conforming to IEC 60529	IP66 and IP67				
Rated operational specifications (conforming to EN IEC 60947-5-1)	AC-15; A300 (Ue = 240 V, Ie = 3 A) / DC-13; Q300 (Ue = 250 V, Ie = 0.27 A)				
Cable entry	1 tapped entry for 1/2"-14 NPT conduit (3) or M12 connector				
Mounting centers, mm (in.)	20 (0.79)	20 (0.79)	20 (0.79)	M18 x 1	M18 x 1
Body dimensions, W x D x H, mm (in.)	31 x 30 x 65 (1.22 x 1.18 x 2.56)				
Metal switches					
Complete switch 2-pole NC+NO snap action	XCKD2110N12	XCKD2102N12	XCKD2121N12	XCKD21H0N12	XCKD21H2N12
2-pole NC+NO break before make, slow break	XCKD2510N12	XCKD2502N12	XCKD2521N12	XCKD25H0N12	XCKD25H2N12
2-pole NC+NO snap action (M12-5 pins)	XCKD2110M12	XCKD2102M12	XCKD2121M12	XCKD21H0M12	XCKD21H2M12
Plastic, double insulated switches					
Complete switch 2-pole NC+NO snap action	XCKP2110N12	XCKP2102N12	XCKP2121N12	XCKP21H0N12	XCKP21H2N12
2-pole NC+NO break before make, slow break	XCKP2510N12	XCKP2502N12	XCKP2521N12	XCKP25H0N12	XCKP25H2N12
2-pole NC+NO snap action (M12-4 pins)	XCKP2110M12	XCKP2102M12	XCKP2121M12	XCKP21H0M12	XCKP21H2M12

(1) Although their design is identical to the precabled switches, the switches incorporating an M12 4-pin connector cannot be marked with the ⊕ symbol because they are single-pole C/O.
 (2) For ISO M16 x 1.5 cable entries, replace **N12** with **P16**. Example: XCKT2110N12 becomes XCKT2110P16.
 (3) For Pg 11 cable entries, replace **N12** with **G11**. Example: XCKD2110N12 becomes XCKD2110G11. For other cable entries, see "Customized assembly" on page 8.
 (4) For Pg 13.5 cable entries, replace **N12** with **G13**. Example: XCKD2110N12 becomes XCKD2110G13. For other cable entries, see "Customized assembly" on page 9.
 (5) Depending on the application.



Compact XCKT plastic, 2 cable entries

Retractable steel roller-lever plunger	M12 head steel roller plunger	Cat's whisker	Metal end plunger	Steel roller plunger	Thermoplastic roller lever	Thermoplastic roller-lever plunger, horizontal actuation	Cat's whisker	Cat's whisker	
10	10	5	15	10	10	15	5	5	
0.5	0.1	1	0.5	0.5	1.5	1	1	1	
⊖	⊖	–	⊕	⊕	⊕	⊕	–	–	
CE, CSA, CCC, GOST									
IP66 and IP67									
AC-15; A300 (Ue = 240 V, Ie = 3 A) / DC-13; Q300 (Ue = 250 V, Ie = 0.27 A)									
20 (0.79)	M12 x 1	20 (0.79)	20 (0.79) or 40 (1.58)						
58 x 30 x 51 (2.28 x 1.18 x 2.01)									
3 entries tapped ISO Pg 11, including one conduit adapter DE9RA1012, Pg 11 to 1/2"-14 NPT (2)									
XCMD2124L1	XCMD21F2L1	XCMD2106L1	XCKT2110N12	XCKT2102N12	XCKT2118N12	XCKT2145N12	XCKT2121N12	XCKT2106N12	
XCMD2524L1	XCMD25F2L1	XCMD2506L1	–	–	–	–	–	–	
XCMD2124C12	XCMD21F2C12	XCMD2106C12	–	–	–	–	–	–	
XCMD2124M12	XCMD21F2M12	XCMD2106M12	–	–	–	–	–	–	



Application specific—XCPR and XCDR with manual reset

Thermoplastic roller lever	Variable length thermoplastic roller lever	Thermoplastic roller lever Ø50 mm	Cat's whisker	Metal end plunger	Steel roller plunger	Thermoplastic roller-lever plunger, horizontal actuation in 1 direction	Thermoplastic roller-lever plunger, vertical actuation in 1 direction	Thermoplastic roller lever
10	10	10	5	1	1	1	1	1
1.5	1.5	1.5	1	0.5	0.5	1	1	1.5
⊖	⊖	⊖	–	⊖	⊖	⊖	⊖	⊖
CE, CSA, CCC, GOST								
IP66 and IP67								
AC-15; A300 (Ue = 240 V, Ie = 3 A) / DC-13; Q300 (Ue = 250 V, Ie = 0.27 A)								
1 tapped entry for 1/2"-14 NPT conduit (4)								
20 (0.79)	20 (0.79)	20 (0.79)	20 (0.79)	20 (0.79)	20 (0.79)	20 (0.79)	20 (0.79)	20 (0.79)
31 x 30 x 95 (1.22 x 1.18 x 3.74)								
XCKD2118N12	XCKD2145N12	XCKD2139N12	XCKD2106N12	XCDR2110N12	XCDR2102N12	XCDR2121N12	XCDR2127N12	XCDR2118N12
XCKD2518N12	XCKD2545N12	XCKD2539N12	XCKD2506N12	XCDR2510N12	XCDR2502N12	XCDR2521N12	XCDR2527N12	XCDR2518N12
XCKD2118M12	XCKD2145M12	XCKD2139M12	XCKD2106M12	–	–	–	–	–
XCKP2118N12	XCKP2145N12	XCKP2139N12	XCKP2106N12	XCPR2110N12	XCPR2102N12	XCPR2121N12	XCPR2127N12	XCPR2118N12
XCKP2518N12	XCKP2545N12	XCKP2539N12	XCKP2506N12	XCPR2510N12	XCPR2502N12	XCPR2521N12	XCPR2527N12	XCPR2518N12
XCKP2118M12	XCKP2145M12	XCKP2139M12	XCKP2106M12	–	–	–	–	–






For table footnotes, see page 6.

Heads—common to miniature and compact bodies

Metal plunger and multi-directional heads





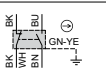
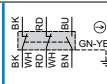
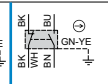
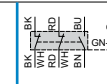
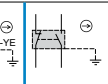
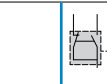
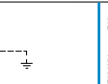
Description	Metal end plunger	Metal end plunger with protective elastomer boot	Steel roller plunger	Retractable steel roller-lever plunger	Thermoplastic roller-lever plunger, horizontal actuation
					
Catalog number	⊕ ZCE10	⊕ ZCE11	⊕ ZCE02	⊖ ZCE24 (2)	⊖ ZCE21

Metal rotary head and levers

Description	Rotary head without lever, spring return, for actuation from left and right	Thermoplastic roller lever, track: 24/31 mm (ZCMD) 29/36 mm (ZCD/P/T)	Steel roller lever, track: 24/31 mm (ZCMD) 29/36 mm (ZCD/P/T)	Thermoplastic roller lever, track: 16/39 mm (ZCMD) 21/44 mm (ZCD/P/T)	Steel roller lever, track: 16/39 mm (ZCMD) 21/44 mm (ZCD/P/T)
					
Catalog number	⊕ ZCE01	⊕ ZCY15 (2)	⊕ ZCY16 (2)	⊖ ZCY25 (2)	⊖ ZCY25 (2)

Bodies

Miniature

							
Type of contact	 2-pole NO+NC Snap action	 3-pole 2 NC+1 NO Snap action	 2-pole NC+NO Slow break	 3-pole 2 NC+1 NO Slow break	 2-pole NC+NO Snap action Connector 5 pin	 1-pole 1 C/O Snap action Connector 4 pin	 4-pole 2 NC+2 NO Snap action
Catalog number of metal body	ZCMD21	ZCMD39	ZCMD25	ZCMD37	ZCMD21C12	ZCMD21M12	ZCMD41
Cable							
1 m	ZCMD21L1	ZCMD39L1	ZCMD25L1	ZCMD37L1	ZCMD21C12L1	ZCMD21M12L1	ZCMD41L1
2 m	ZCMD21L2	ZCMD39L2	ZCMD25L2	ZCMD37L2	ZCMD21C12L2	ZCMD21M12L2	ZCMD41L2
5 m	ZCMD21L5	ZCMD39L5	ZCMD25L5	ZCMD37L5	ZCMD21C12L5	ZCMD21M12L5	ZCMD41L5

Connection of miniature bodies

Specific precabled connection components					Option: PUR prewired M12 connector, 2 m. For other cable options, see page 55.
	for ZCMD21	for ZCMD39	for ZCMD25	for ZCMD37	5-pin 
1 m	ZCMC21L1	ZCMC39L1	ZCMC25L1	ZCMC37L1	4-pin 
2 m	ZCMC21L2	ZCMC39L2	ZCMC25L2	ZCMC37L2	
5 m	ZCMC21L5	ZCMC39L5	ZCMC25L5	ZCMC37L5	
					XZCP1164L2
					XZCP1141L2

(1) Recommended for use with bodies ZCD... / ZCP... / ZCT...

(2) Recommended for use with bodies ZCMD....

⊕ Positive opening operation.

Thermoplastic roller-lever plunger, vertical actuation



➔ ZCE27

M12 head metal end plunger bushing mount



➔ ZCEF0 (2)

M18 head metal end plunger bushing mount



➔ ZCEH0 (1)

M12 head steel roller plunger bushing mount



➔ ZCEF2 (2)

M18 head steel roller plunger bushing mount



➔ ZCEH2 (1)

Spring rod



ZCE08

Spring rod with plastic end



ZCE07

Cat's whisker



ZCE06

Thermoplastic roller lever, track: 20/36 mm (ZCMD) 24/40 mm (ZCD/P/T)



➔ ZCY18 (1)

Steel roller lever, track: 20/36 mm (ZCMD) 24/40 mm (ZCD/P/T)



➔ ZCY19 (1)

Ceramic roller lever



➔ ZCY22

Variable length thermoplastic roller lever



➔ ZCY45

Round, glass fiber rod lever Ø3 mm 125 mm



ZCY55

Metal spring-rod lever



ZCY91

Thermoplastic roller lever Ø50 mm



➔ ZCY39

Adjustable thermoplastic roller lever Ø50 mm



➔ ZCY49

Compact



Type of contact



2-pole NC+NO Snap action

ZCD21

ZCP21

ZCD39

ZCP39



2-pole NC+NO Slow break

ZCD25

ZCP25

ZCD27

ZCP27



2-pole NC+NC Slow break

ZCD28

ZCP28



2-pole NC+NO Snap action

ZCD29

ZCP29

ZCD37

ZCP37



2-pole NC+NO - Snap action

ZCD21M12

ZCP21M12



2-pole NC+NO Snap action

ZCT21P16 (3)

ZCT25P16 (3)

Metal body

Plastic body

Connection of compact bodies

Interchangeable outlet for cable connector



Description

For ISO M16 cable entry

For ISO M20 cable entry

For Pg 11 cable entry

For Pg 13.5 cable entry

For 1/2" NPT cable entry

For PF 1/2 (G12) cable entry

Metal

ZCDEP16

ZCDEP20

ZCDEG11

ZCDEG13

ZCDEN12

ZCDEF12

Plastic

ZCPEP16

ZCPEP20

ZCPEG11

ZCPEG13

ZCPEN12

ZCPEF12

Option: PUR prewired M12 connector, 2 m. For other cable options, see page 55.

5-pin



XZCP1164L2

4-pin

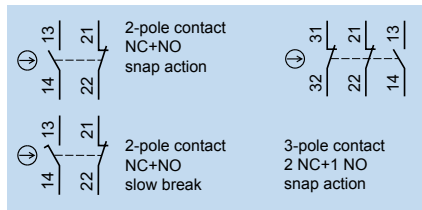


XZCP1141L2

(3) ZCT Pg 11 cable connector versions: replace the suffix P16 with G11. Example: ZCT21P16 becomes ZCT21G11.

ZCT 1/2" NPT versions: replace the suffix P16 with N12 (adapter). Example: ZCT21P16 becomes ZCT21N12 (2 Pg11 cable entries with 1 1/2"-14 adapter).

XCKM



Type XCKM metal, 3 cable entries / XCKL metal, 1 cable entry

Type of operator	Metal end plunger	Steel roller plunger	Roller-lever plunger, horizontal actuation in 1 direction	Thermoplastic roller lever	Cat's whisker
Mechanical durability (millions of operating cycles) (6)	20	20	20	15	10
Actuation speed (in m/s)	0.5	0.5	1.5	1.5	0.5
Product certification	CE, UL, CSA, CCC, GOST, C-TICK, BV				
Degree of protection conforming to IEC 60529	IP665				
Rated operational specifications (conforming to EN IEC 60947-5-1)	AC-15; A300 (Ue = 240 V, Ie = 3 A) / DC-13; Q300 (Ue = 250 V, Ie = 0.27 A)				
Cable entry	XCKM (1) (2) XCKL (1)	3 tapped entries 1/2"-14 NPT (2 entries fitted with blanking plugs), conduit adapter 1 bottom cable entry tapped for 1/2"-14 NPT conduit			
Mounting centers, mm (in.)	41 (1.61)				
Body dimensions, W x D x H, mm (in.)	XCKM / XCKL	64 x 30 x 64 (2.52 x 1.18 x 2.52) / 52 x 30 x 72 (2.05 x 1.18 x 2.84)			

Complete switch	XCKM					
2-pole NC+NO snap action		⊕ XCKM110H7	⊕ XCKM102H7	⊖ XCKM121H7	⊖ XCKM115H7	XCKM106H7
2-pole NC+NO, break before make, slow break		⊕ XCKM510H7	⊕ XCKM502H7	⊖ XCKM521H7	⊖ XCKM515H7	—
Complete switch	XCKL					
2-pole NC+NO snap action		⊕ XCKL110H7	⊕ XCKL102H7	⊖ XCKL121H7	⊖ XCKL115H7	XCKL106H7

Classic—XCKM, XCKL, Customized assembly—Body/contact sub-assemblies



Type XCKM metal, 3 cable entries / XCKL metal, 1 cable entry

Type of contact					
Catalog number of body with contact block	XCKM	⊕ ZCKM1H7	⊖ ZCKM5H7	⊕ ZCKMD39H7	⊖ ZCKMD37H7
	XCKL (3)	⊕ ZCKL1H7	⊖ ZCKL5H7	⊕ ZCKLD39H7	⊖ ZCKLD37H7
Catalog number of contact block only	XCKM	⊕ XE2SP2151	⊖ XE2NP2151	⊕ XE3SP2141	⊖ XE3NP2141

(1) For Pg 11 cable entries, remove the H7 suffix. Example: XCKL110H7 becomes XCKL110.
 (2) For ISO M20 x 1.5, replace the H7 suffix with H29. Example: XCKM110H7 becomes XCKM110H29 (XCKM only).
 (3) For Pg 11 cable entry, remove the H7 suffix. Example: ZCKL1H7 becomes ZCKL1.
 (6) Depending on the application.
 ⊕ Positive opening operation.

Operating heads, complete or for customer assembly



Complete switch

=



Body/contact assembly

+



Head

+



Lever

Rotary or multi-directional heads

Metal head with thermoplastic roller lever

Metal head with steel roller lever

With variable length thermoplastic roller lever (4)

With Ø6 mm thermoplastic rod 200 mm (5)

With thermoplastic roller lever (5) for actuation from left AND right or left OR right

With cat's whisker

With spring rod



Catalog number ↻ ZCKD15

↻ ZCKD16

ZCKD41

ZCKD59

↻ ZCKD31

ZCKD06

ZCKD08

Plunger heads

With metal end plunger

With metal end plunger and protective boot

With steel roller plunger

With steel roller plunger and protective boot

With thermoplastic roller-lever plunger, horizontal actuation in 1 direction

With steel roller-lever plunger, horizontal actuation in 1 direction



Catalog number ↻ ZCKD10

↻ ZCKD109

↻ ZCKD02

↻ ZCKD029

↻ ZCKD21

↻ ZCKD23

Rotary heads and separate levers

Spring return, selectable, for actuation from left AND right or left OR right

Spring return, selectable, for actuation from left AND right or left OR right

Lever with thermoplastic roller (4)

Lever with steel roller (4)

Variable length lever with thermoplastic roller (4)

Variable length lever with steel roller (4)

Rod, Ø6 mm thermoplastic 200 mm (4)



Catalog number ↻ ZCKG00

↻ ZCKD05

↻ ZCKY31

↻ ZCKY33

ZCKY41

ZCKY43

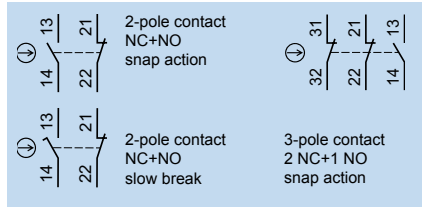
ZCKY59

(4) Adjustable throughout 360° in 5° steps, or in 90° steps by reversing the notched washer.

(5) Adjustable throughout 360° in 5° steps, or in 45° steps by reversing the lever mounting.

↻ Positive opening operation.

XCKJ

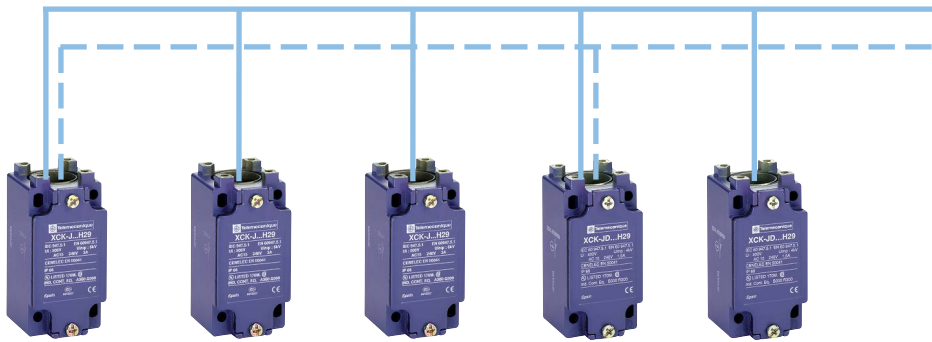


Type XCKJ metal, fixed body, conforming to standard EN 50041

Type of operator	Metal end plunger	Steel roller plunger	Thermoplastic roller lever	Steel roller lever	Variable length thermoplastic roller lever	Polyamide Ø6 mm rod lever 200 mm
Mechanical durability (millions of operating cycles) (2)	30	25	30	30	30	30
Actuation speed (in m/s)	0.5	1	1.5	1.5	1.5	1.5
Product certification	CE, UL, CSA, CCC, GOST, C-TICK, BV					
Degree of protection conforming to IEC 60529	IP667					
Rated operational specifications (conforming to EN IEC 60947-5-1)	AC-15; A300 (Ue = 240 V, Ie = 3 A) / DC-13; Q300 (Ue = 250 V, Ie = 0.27 A)					
Cable entry (1)	1 tapped entry for 1/2"-14 NPT conduit entry					
Mounting centers, mm (in.)	30 x 60 (1.18 x 2.36)					
Body dimensions, W x D x H, mm (in.)	40 x 44 x 77 (1.58 x 1.73 x 3.03)					

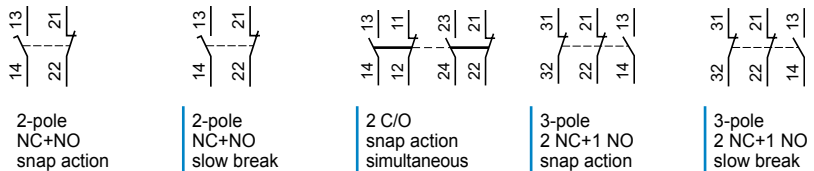
Complete switch	1/2"-14 NPT	2-pole NC+NO snap action	⊕ XCKJ161H7	⊕ XCKJ167H7	⊕ XCKJ10511H7	⊕ XCKJ10513H7	XCKJ10541H7	XCKJ10559H7
		2-pole NC+NO break before make, slow break	⊕ XCKJ561H7	⊕ XCKJ567H7	⊕ XCKJ50511H7	⊕ XCKJ50513H7	XCKJ50541H7	XCKJ50559H7
Pg 13.5		2-pole NC+NO snap action	⊕ XCKJ161	⊕ XCKJ167	⊕ XCKJ10511	⊕ XCKJ10513	XCKJ10541	XCKJ10559
M12 (5 pin)		2-pole NC+NO snap action	⊕ XCKJ161D	⊕ XCKJ167D	⊕ XCKJ10511D	⊕ XCKJ10513D	XCKJ10541D	XCKJ10559D

Industrial—XCKJ, Customized assembly—Body/contact sub-assemblies



Type XCKJ metal, 1 cable entry

Type of contact



Cable entry (1)	1 tapped entry or M12 connector entry					
Body with contact block	1/2"-14 NPT	⊕ ZCKJ1H7	⊕ ZCKJ5H7	ZCKJ2H7	⊕ ZCKJD39H7	⊕ ZCKJD37H7
	Pg 13.5	⊕ ZCKJ1	⊕ ZCKJ5	ZCKJ2	⊕ ZCKJD39	⊕ ZCKJD37
	M20	⊕ ZCKJ1H29	⊕ ZCKJ5H29	ZCKJ2H29	⊕ ZCKJD39H29	⊕ ZCKJD37H29
	M12 (5 pin)	⊕ ZCKJ1D	⊕ ZCKJ5D	—	—	—
Contact block only		⊕ XE2SP2151	⊕ XE2NP2151	—	⊕ XE3SP2141	⊕ XE3NP2141

(1) For M20 x 1.5 mm conduit entry, change suffix H7 to H29. Example: XCKJ161H7 becomes XCKJ161H29.

(2) Depending on the application.

⊕ Positive opening operation.

Operating heads, complete or for customer assembly



Complete switch

=



Body/contact assembly

+



Head

+



Lever

Plunger or multi-directional heads

With reinforced steel roller end plunger

With metal end plunger

With thermoplastic roller-lever plunger, 1 direction of actuation

With steel roller-lever plunger, 1 direction of actuation

With steel roller end plunger

With steel ball bearing end plunger

End steel roller plunger with protective boot



Catalog number **ZCKE67**



ZCKE61



ZCKE21



ZCKE23



ZCKE62



ZCKE66



ZCKE629

Metal side plunger

Side steel roller plunger, horizontal

Side steel roller plunger, vertical

Spring rod

Cat's whisker



Catalog number **ZCKE63**



ZCKE64



ZCKE65



ZCKE08



ZCKE06

Separate rotary heads and levers

Spring return for actuation from left AND right or left OR right

Lever with thermoplastic roller (2)

Lever with steel roller (3)

Variable length lever with thermoplastic roller (3)

Variable length lever with steel roller (3)

Rod, Ø6 mm thermoplastic 200 mm (3)

Square rod lever, steel, 125 mm (3)

Round rod lever, steel, 125 mm (3)

Spring lever with thermoplastic end (4)

Spring-metal rod lever (4)



Catalog number **ZCKE05**



ZCKY11



ZCKY13



ZCKY41



ZCKY43



ZCKY59



ZCKY51



ZCKY53



ZCKY81



ZCKY91

Maintained (stay put) for actuation from left AND right

Forked arm lever with thermoplastic rollers, 1 track (3)

Forked arm lever with thermoplastic rollers, 2 track (2)



Catalog number **ZCKE09**



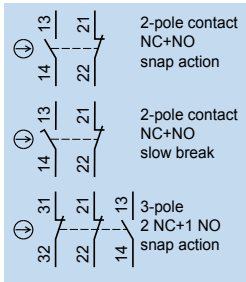
ZCKY71



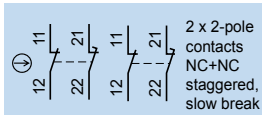
ZCKY61

(3) Adjustable throughout 360° in 5° steps, or in 45° steps by reversing the lever mounting.
 (4) Adjustable throughout 360° in 5° steps, or in 90° steps by reversing the notched washer.

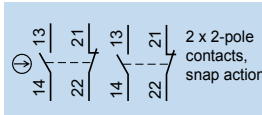
XCKS



XCKMR



XCR



Type XCKS plastic, double insulated, conforming to standard EN 50041

Type of operator	Metal end plunger	Steel roller plunger	Thermoplastic roller lever	Variable length thermoplastic roller lever	Rubber roller lever Ø50 mm	Polyamide Ø6 mm rod lever 200 mm
Mechanical durability (millions of operating cycles) (3)	25	15	20	20	20	20
Actuation speed (in m/s)	0.5	0.5	1.5	1.5	1	1
Product certification	CE, UL, CSA, CCC, GOST, C-TICK					
Degree of protection conforming to IEC 60529	IP653					
Rated operational specifications (conforming to EN IEC 60947-5-1)	AC-15; A300 (Ue = 240 V, Ie = 3 A) / DC-13; Q300 (Ue = 250 V, Ie = 0.27 A)					
Cable entry (1)	1 tapped entry for use with Pg 13.5 cable connector or DE9RA1212 1/2"-14 NPT conduit adapter					
Mounting centers, mm (in.)	30 x 60 (1.18 x 2.36)					
Body dimensions, W x D x H, mm (in.)	40 x 36 x 72.5 (1.58 x 1.42 x 2.85)					

Complete switch	2-pole NC+NO snap action	⊖ XCKS101	⊖ XCKS102	⊖ XCKS131	XCKS141	XCKS139	XCKS159
	2-pole NC+NO break before make, slow break	⊖ XCKS501	⊖ XCKS502	⊖ XCKS531	XCKS541	XCKS539	XCKS559
Body	2-pole NC+NO snap action	⊖ ZCKS1	⊖ ZCKS1	⊖ ZCKS1	⊖ ZCKS1	⊖ ZCKS1	⊖ ZCKS1
	2-pole NC+NO break before make, slow break	⊖ ZCKS5	⊖ ZCKS5	⊖ ZCKS5	⊖ ZCKS5	⊖ ZCKS5	⊖ ZCKS5
	3-pole 2 NC+1 NO snap action	⊖ ZCKSD39	⊖ ZCKSD39	⊖ ZCKSD39	⊖ ZCKSD39	⊖ ZCKSD39	⊖ ZCKSD39
Associated head (including operator)		⊖ ZCKD01	⊖ ZCKD02	⊖ ZCKD31	ZCKD41	ZCKD39	ZCKD59
Rotary operating head only (2)		–	–	ZCKD05	ZCKD05	ZCKD05	ZCKD05
Operating lever for rotary head		–	–	⊖ ZCKY31	ZCKY41	ZCKY39	ZCKY59
Complete switch	Snap-action 2-pole 2X (1 NC + 1 NO) contact	–	–	–	–	–	–
	Both contacts act in each direction of actuation	–	–	–	–	–	–
	1 contact operates in each direction	–	–	–	–	–	–
Complete switch	2 C/O staggered snap action contacts	–	–	–	–	–	–
	2 x 2 pole NC+NC staggered, slow break contacts	–	–	–	–	–	–

Separate components

Adapter
Pg 13.5 to 1/2"-14 NPT

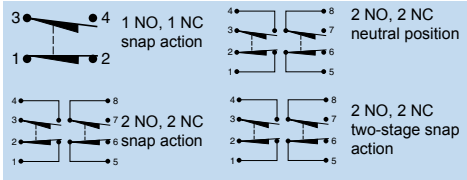


Catalog number | **DE9RA1212**

- (1) For ISO M20 x 1.5 mm cable entry, add suffix **H29**. Example: XCKS161 becomes XCKS161H29.
For 1/2"-14 NPT order Pg 13.5 version and use with DE9RA1212: Pg 13.5 to 1/2"-14 NPT adapter.
(2) ZCKD05 uses same levers as XCKL/M series. See page 11.
(3) Depending on the application.
⊖ Positive opening operation.

Square D 9007C

Limit switches Industrial Heavy Duty—9007C



9007C metal, plug-in style body, conforming to UL508		Top metal end-plunger	Top steel roller plunger	Rotary level arm type (1)	Plastic wobble stick	Metal wire cat's whisker	Side push rod plunger	
Type of operator								
Mechanical durability (millions of operating cycles) (2)		30						
Pretravel, mm (in.)		2 (0.08)			10°	10°	20°	2 (0.08)
Product certification		UL, CSA, CE						
Degree of protection conforming to NEMA and UL, oil-tight		NEMA Types 1, 2, 4, 6, 6P, 12, 13, and IP67 conforming to IEC 60529						
Rated operational specifications		NEMA A600, (Ue=600V, Ie=1.2A, 240 V Ie=A3) NEMA Q600 (Ue=600V, Ie=0.1A, 250 V Ie=0.27 A, two-pole 250 V Ie=0.11 A)						
Cable entry		1/2"-14 NPT standard, optional M20 x 1.5 mm						
Mounting hole centers, mm (in.)		30 x 60 (1.18 x 2.36)						
Body dimensions, without head, W x D x H, mm (in.)		39 x 45 x 75 (1.54 x 1.77 x 2.95)						
Complete switch (4)	SPDT-DB Form Z, NO + NC snap action	9007C54E	9007C54D	9007C54B2	9007C54J	9007C54L	9007C54G	
	DPDT-DB Form ZZ, 2 NO + 2 NC snap action	9007C62E	9007C62D	9007C62B2	9007C62J	9007C62L	9007C62G	
	SPDT-DB ISO M20 x 1.5 mm metric threads	9007C54EM11	9007C54DM11	9007C54B2M11	9007C54JM11	9007C54LM11	9007C54GM11	
	DPDT-DB ISO M20 x 1.5 mm metric threads	9007C62EM11	9007C62DM11	9007C62B2N11	9007C62JM11	9007C62LM11	9007C62GM11	

Industrial—9007C, Customized Assembly: Body/Contact Sub-Assemblies



9007C metal, 1 conduit/cable entry						
Type of contact						
Terminology SPDT: single pole, double throw DPDT: double pole, double throw DB: double break		SPDT-DB Form Z NO + NC snap action, single pole	DPDT-DB Form ZZ 2 NO + 2 NC snap action, two pole	DPDT-DB Form ZZ 2 NO + 2 NC snap action, two stage	DPDT-DB Form ZZ 2 NO + 2 NC snap action, neutral position	SPDT-DB Form Z NO + NC snap action, compact body
Plug-in switch top (includes contact block)		9007CO54	9007CO62	9007CO66	9007CO68	9007CO52
1/2"-14 NPT standard receptacle (3)		9007CT54	9007CT62	9007CT62	9007CT62	9007CT52



(1) Over 200 lever arms and roller types available. Order separately.
 (2) Depending on the application.
 (3) For ISO M20 x 1.5 mm threads, add **M11** to the end of the part number. Example: 9007CT54 becomes 9007CT54M11.
 (4) See the *Sensors* master catalog, 9006CT1007, for more assemblies.

Operating heads, complete or for customer assembly

Plunger or multi-directional heads

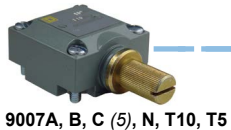


9007L	9007K	9007J	9007KC	<i>Requires a mushroom head, sold separately</i>
9007E	9007ED	9007D	9007JKC	9007R
9007H	9007G	9007F	9007GD	

Separate rotary heads and levers (more than 200 rotary style operators are available—some examples are shown below)



9007MA11	9007HA1	9007FA1	9007EA1	9007FA6	9007LA19 (5)
9007AA1	9007LA4 (5)	9007KB11	9007CA11	9007MA12	9007BA3
9007HA5	9007KA11	9007HA21	9007RA11	9007HA23	9007DA1



9007A, B, C (5), N, T10, T5

(5) 9007LA• forked levers are recommended for use with 9007C maintained (stay put) operating head.

or call the Sensors Support line at (800) 435-2121

Square D 9007MS/ML

Limit switches Miniature



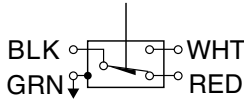
- Mounting hole centers: 0.98 in. (25 mm)
- Standard cable: 3.0 ft (0.9 m)

General specifications

Temperature range	-4 to +220 °F (-20 to 104 °C)
Enclosure rating	NEMA Types 1, 2, 4, 6, 6P, 12, 13, IP67
Vibration resistance	10 G (75–1200 Hz)
Shock resistance	35 G
Cable entry	18 AWG (0.823 mm ²) SJTO

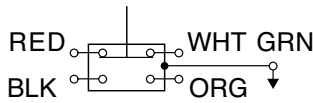
Type MS circuit Form C

	Electrical Ratings / SPDT			Gold Contacts
	Silver Contacts			
1 NO or 1 NC	Volts	Make	Break	100 mA @ 125 Vac
	120 Vac	60 A	6 A	
	240 Vac	30 A	3 A	30 mA
	10.0 A continuous			
DC contact rating: 5 A (resistance), 28 Vdc			28 Vdc	



Type ML circuit Form Z

	Electrical Ratings / SPDT-DB		
	Silver Contacts		
1 NO or 1 N.C	Volts	Make	Break
	120 Vac	60 A	6 A
	240 Vac	30 A	3 A
	10.0 A continuous		
DC contact rating: 5 A (resistance), 28 Vdc			



Contact specifications

Rated thermal current	10 A (standard)
Rated insulation voltage	300 Vac and Vdc (standard)
Gold contact switching ratings	0.1 A, 24 Vdc; 0.24 VA



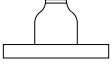

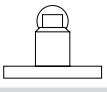


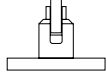
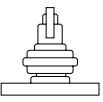
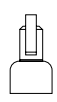
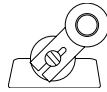
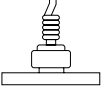
Lever arm selection

	Length		Catalog suffix					
	in.	mm	0.25 in. (6 mm) wide		0.5 in. (13 mm) wide		0.75 in. (19 mm) wide	1.0 in. (25 mm) wide
			Nylon	Steel	Nylon	Steel	Nylon	Nylon
Style 7: diameter 0.75 in. (18 mm), nylon or steel roller— outside roller type	0.875	22.23	7A2N	7A2	7B2N	7B2	7F2N	7J2N
	1.375	34.93	7A3N	—	7B3N	—	7F3N	7J3N
	1.50	38.10	7A1N	7A1	7B1N	—	7F1N	7J1N
	1.75	44.45	7A7N	—	7B7N	—	7F7N	7J7N
	2.0	50.80	7A4N	—	7B4N	—	7F4N	7J4N
Style 7X: diameter 0.75 in. (18 mm), nylon or steel roller— inside roller type	0.875	22.23	7XA2N	7XA2	7XB2N	7XB2	7XF2N	7XJ2N
	1.375	34.93	7XA3N	—	7XB3N	—	7XF3N	7XJ3N
	1.50	38.10	7XA1N	7XA1	7XB1N	—	7XF1N	7XJ1N
	1.75	44.45	7XA7N	—	7XB7N	—	7XF7N	7XJ7N
	2.0	50.8	7XA4N	—	7XB4N	—	7XF4N	7XJ4N

Specialty Arms and Options

Description	Length	Diameter	Width	Catalog number
Style 7D adjustable length, metal roller	1.38–3.38 in. (35–85.8 mm)	0.75 in. (19 mm)	0.25 in. (6.35 mm)	7D
Style 7DN adjustable length, nylon roller	1.38–3.38 in. (35–85.8 mm)	0.75 in. (19 mm)	0.25 in. (6.35 mm)	7DN
Style 7E rod arm	10.0 in. (254 mm)	0.125 in. (3.175 mm)	—	7E
Style 7N nylon rod	5.0 in. (127 mm)	0.3 in. (7.6 mm)	—	7N
Style 7S spring nylon rod	6.0 in. (152.4 mm)	0.3 in. (7.6 mm)	—	7S

Rotary and plunger head descriptions

Rotary and plunger head descriptions		Standard	Bushing Mounted	Booted	Adjustable (no boot)
Top plunger					
Operating Force or Torque		80 oz (0.6 N)			
Contact type	Form Z, Silver	9007ML01S0100	9007ML06S0100	9007ML10S0100	9007ML09S0100
	Form C, Silver	9007MS01S0100	9007MS06S0100	9007MS10S0100	9007MS09S0100
	Form C, Gold	9007MS01G0100	9007MS06G0100	9007MS10G0100	9007MS09G0100
Parallel roller plunger					
Operating Force or Torque		80 oz (0.6 N)			
Contact type	Form Z, Silver	9007ML02S0100	9007ML07S0100	9007ML12S0100	
	Form C, Silver	9007MS02S0100	9007MS07S0100	9007MS12S0100	
	Form C, Gold	9007MS02G0100	9007MS07G0100	9007MS12G0100	
Cross roller plunger					
Operating Force or Torque		80 oz (0.6 N)			
Contact type	Form Z, Silver	9007ML03S0100	9007ML08S0100	9007ML13S0100	
	Form C, Silver	9007MS03S0100	9007MS08S0100	9007MS13S0100	
	Form C, Gold	9007MS03G0100	9007MS08G0100	9007MS13G0100	
Rotary lever, CW and CCW					
Operating Force or Torque		48 oz-in (0.3 N•m)			
Contact type	Form Z, Silver	9007ML04S0100			
	Form C, Silver	9007MS04S0100			
	Form C, Gold	9007MS04G0100			
Omni-directional, cat's whisker (NEMA types 1, 2, 12, 13 only)					
Operating Force or Torque		15 oz-in (0.1 N•m)			
Contact type	Form Z, Silver	9007ML05S0100			
	Form C, Silver	9007MS05S0100			
	Form C, Gold	9007MS05G0100			

For pumping applications



Pressure range (psi) (1)	0 to 100	0 to 150	0 to 200	0 to 300	0 to 100	0 to 150	0 to 200	0 to 300	
Fluids controlled	air, fresh water								
Ambient air temperature	+32 to +176 °F (0 to +80 °C)								
Degree of protection (conforming to IEC 60529)	IP65								
Product certification	CE, UL, CSA								
Voltage limits	8–33 Vdc for 4–20 mA, 16.2–33 Vdc for 0–10 V								
Dimensions Ø x L, mm (in.)	36 x 67.5 (1.42 x 2.66) (not including connector)								
Fluid connection	1/4"-18 NPT (male) or G 1/4" A (male)								
Electrical connection (2)	Packard Metri-Pak				M12, 3-pin male				
Type of output	4–20 mA, 2-wire technique, 0–10 V, 3-wire technique								
Analog output	4–20 mA	XMLK100P2P23	XMLK150P2P23	XMLK200P2P23	XMLK300P2D23	XMLK100P2D23	XMLK150P2D23	XMLK200P2D23	XMLK300P2D23
	0–10 V	XMLK100P2P73	XMLK150P2P73	XMLK200P2D73	XMLK300P2P73	XMLK100P2D73	XMLK150P2D73	XMLK200P2D73	XMLK300P2D73

Available in bulk packs for selling in lots. Add **TQ** suffix to the catalog number. Example: XMLK100P2D23 becomes XMLK100P2D23TQ.

Electronic sensors XMLR

Electronic + Display



Adjustable pressure range (1)	bar	-1 to 0	0 to 1	0 to 2.5	0 to 10	0 to 16	0 to 25	0 to 40	0 to 250	0 to 400
	psi	-14.5 to 0	0 to 14.5	0 to 36.3	0 to 145	0 to 232	0 to 362.5	0 to 580.2	0 to 3625	0 to 5800
Fluids controlled	Hydraulic oils, air, fresh water, refrigerant fluids									
Ambient air temperature	-20 to +80 °C									
Degree of protection (conforming to IEC 60529)	IP65, IP67 conforming to EN/IEC 60529									
Product certification	cULus conforming to UL 61010-1									
Voltage limits (V)	17 to 33 Vdc									
Dimensions (mm) H x W x D	93 x 41 x 42								88 x 41 x 42	
Fluid connection (2)	G1/4A (female)									
Electrical connection	M12 connector 4 pin or 5 pin									
Configurable with 4-digit display										
Analog output	4 to 20 mA	XMLRM01G0T25	XMLR001G0T25	XMLR2D5G0T25	XMLR010G0T25	XMLR016G0T25	XMLR025G0T25	XMLR040G0T25	XMLR250G0T25	XMLR400G0T25
	0 to 10 V	XMLRM01G0T75	XMLR001G0T75	XMLR2D5G0T75	XMLR010G0T75	XMLR016G0T75	XMLR025G0T75	XMLR040G0T75	XMLR250G0T75	XMLR400G0T75
Analog + switching output	4 to 20 mA	XMLRM01G1P25	XMLR001G1P25	XMLR2D5G1P25	XMLR010G1P25	XMLR016G1P25	XMLR025G1P25	XMLR040G1P25	XMLR250G1P25	XMLR400G1P25
PNP, NO/NC programmable	0 to 10 V	XMLRM01G1P75	XMLR001G1P75	XMLR2D5G1P75	XMLR010G1P75	XMLR016G1P75	XMLR025G1P75	XMLR040G1P75	XMLR250G1P75	XMLR400G1P75
2 switching outputs, PNP, NO/NC prog.		XMLRM01G2P05	XMLR001G2P05	XMLR2D5G2P05	XMLR010G2P05	XMLR016G2P05	XMLR025G2P05	XMLR040G2P05	XMLR250G2P05	XMLR400G2P05
Analog + 2 switching outputs	4 to 20 mA	XMLRM01G2P25	—	—	XMLR010G2P25	—	—	XMLR040G2P25	XMLR250G2P25	XMLR400G2P25
Possible differential (bar) (pressure switches)	Min.	0.03		0.08	0.3	0.48	0.8	1.2	7.5	12
	Max.	0.95		2.38	9.5	15	23.8	38	238	380
Maximum permissible accidental pressure (bar)		3	7.5	12	40	62	100	150	750	1200

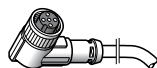
(1) For other pressure ranges, consult our website at TEsensors.us.

(2) Also available with 1/4"-18 NPT female fluid entry.

Adaptable female plug-in connectors

PUR prewired connectors, 5 m (without LED)

For other cable options, see page 55.



Elbowed

XZCP1241L5



Straight

XZCP1141L5

Other connectors



Screw terminal

XZCC12FCM40B



Female, DIN 43650A, elbowed

XZCC43FCP40B

Electronic sensors XMLG

Electrical connection by M12 connector

For industrial and vacuum applications



Pressure range: (1)	bar	-1 to 0	0 to 1	0 to 6	0 to 10	0 to 16	0 to 25	0 to 100	0 to 250	0 to 400
	psi	-14.5 to 0	0 to 14.5	0 to 87	0 to 145	0 to 232	0 to 362.5	0 to 1450	0 to 3625	0 to 5800
Fluids controlled	Hydraulic oils, air, fresh water, some corrosive fluids from +5 to +257 °F (-15 to +125 °C)									
Ambient air temperature	+5 to +185 °F (-15 to +85 °C)									
Degree of protection	IP66 and IP67, NEMA 4 (conforming to IEC 60529)									
Product certification	CE, UL, CSA, GOST									
Voltage limits	8–33 Vdc for 4–20 mA, 11.4–33 Vdc for 0–10 V									
Dimensions Ø x L, mm (in.)	Ø22.8 x 58 (Ø0.90 x 2.28) not including connector									
Connections	Fluid: 1/4" NPT male (2). Electrical: M12 connector (3) (5).									
Type of output (4)	4–20 mA, 2-wire technique, 0–10 V, 3-wire technique									
Analog output	4–20 mA	XMLGM01D23	XMLG001D23	XMLG006D23	XMLG010D23	XMLG016D23	XMLG025D23	XMLG100D23	XMLG250D23	XMLG400D23
	0–10 V	XMLGM01D73	XMLG001D73	XMLG006D73	XMLG010D73	XMLG016D73	XMLG025D73	XMLG100D73	XMLG250D73	XMLG400D73

Available in bulk packs for selling in lots. Add **TQ** suffix to the catalog number. Example: XMLGM01D21 becomes XMLGM01D21TQ.

Electronic sensors XMLP

Electrical connection by DIN 43650A, Packard® Metri-Pak or M12 connectors

For industrial applications (hydraulic circuits, HVAC, pumps and compressors)



Pressure range (psi) (3) (4)	0 to 100		0 to 150		0 to 200		0 to 300		0 to 600		0 to 1000		0 to 2000		0 to 3000	
	Fluids controlled	Hydraulic oils, air, fresh water, gas, refrigeration fluids from -22 to +248 °F (-30 to +120 °C)														
Ambient air temperature	-22 to +212 °F (-30 to +100 °C)															
Degree of protection	IP65 (DIN 43650A), IP65, IP67 and IP69K (M12 and Packard Metri-Pak connector) (conforming to IEC 60529)															
Product certification	CE, UL, CSA															
Voltage limits	8–30 Vdc for 4–20 mA, 14–30 Vdc for 0–10 V															
Dimensions Ø x L, mm (in.)	30 x 26 (1.18 x 1.02) (not including connector)															
Fluid connection (4)	1/4"-18 NPT male, G1/4A male and 7/16-20UNF male or female															
Electrical connection (5)	DIN 43650A, Packard Metri-Pak, and M12 4 pin connector															
Type of output	4–20 mA, 2-wire technique, 0–10 V, 3-wire technique, 0.5–4.5 ratiometric															
Analog output 4–20 mA	Packard Metri-Pak	XMLP100PP23	XMLP150PP23	XMLP200PP23	XMLP300PP23	XMLP600PP23	XMLP1K0PP23	XMLP2K0PP23	XMLP3K0PP23							
	M12 connector	XMLP100PD23	XMLP150PD23	XMLP200PD23	XMLP300PD23	XMLP600PD23	XMLP1K0PD23	XMLP2K0PD23	XMLP3K0PD23							
Analog output 0–10 V	Packard Metri-Pak	XMLP100PP73	XMLP150PP73	XMLP200PP73	XMLP300PP73	XMLP600PP73	XMLP1K0PP73	XMLP2K0PP73	XMLP3K0PP73							
	M12 connector	XMLP100PD73	XMLP150PD73	XMLP200PD73	XMLP300PD73	XMLP600PD73	XMLP1K0PD73	XMLP2K0PD73	XMLP3K0PD73							

Available in bulk packs for selling in lots. Add **Q** suffix to the catalog number. Example: XMLP100PC23 becomes XMLP100PC23Q.

(1) Also available with bar range.

(2) Also available with DIN 43650A shown above.

(3) Also available with bar range.

(4) Also available in 6,000 and 10,000 psi range. Insert **06KP** into the catalog number for 6,000 psi version, and **10KP** for 10,000 psi version. Example: XMLP06KPD23 or XMLP10KPD23.

(5) Replace **D** in the catalog number with **P** or **C** to indicate Packard or DIN electrical connection. Example: XMLP100PD23 (M12 version) becomes XMLP100PP23 for Packard and XMLP100PC23 for DIN connector.

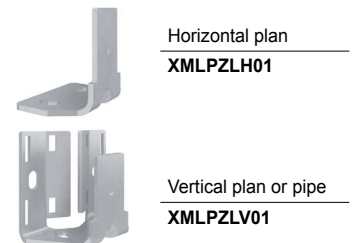
Switch with display ZMLP for use only with 4–20 mA analog output pressure transmitters

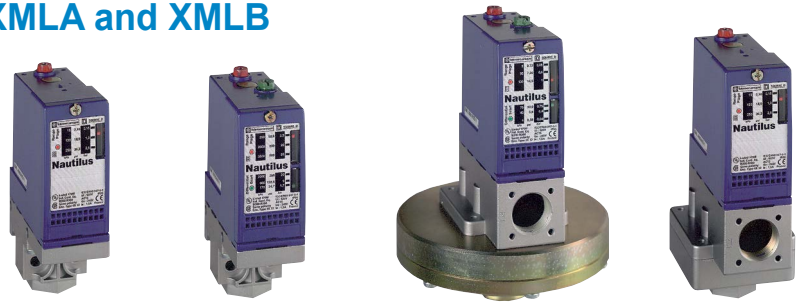
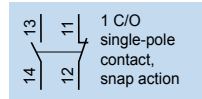


Type of switching mode			
Analog output	Switching output	Hysteresis	Windows
4–20 mA	PNP	ZMLPA1P2SH	ZMLPA1P2SW
4–20 mA	NPN	ZMLPA1N2SH	ZMLPA1N2SW
–	2 PNP	ZMLPA2P0SH	–
–	2 NPN	ZMLPA2N0SH	–
Displayed value range (bar)		-14.5 to 6000 with 27 selectable value ranges	
Degree of protection		IP65, IP67, and IP69K	
Product certification		CE, cULus	
Power supply		24 Vdc (17 to 33 Vdc)	
Electrical connection		Input: M12 female, 4 pin. Output: M12 male, 4 pin	

Accessories

Quick mounting bracket





Size: bar (psi)	-0.28 to -1 (-4.06 to -14.5)	-0.5 to 5 (-7.25 to 72.5)	0.03 to 1 (0.435 to 14.5)	0.15 to 2.5 (2.17 to 36.25)
Environmental specifications	Ambient air temperature: -13 to +158 °F (-25 to +70 °C). IP66: screw terminal models; IP65: connector models.			
Rated operational specifications (conforming to EN IEC 60947-5-1)	AC-15; B300 (Ue = 240 V, Ie = 1.5 A; Ue = 120 V, Ie = 3 A) / DC-13; R300 (Ue = 250 V, Ie = 0.1 A)			
Product certification	CE, UL, CSA, CCC, BV, LROS, RINA, GL, DNV, VIT-SEPRO, GOST			
Fluid connection	1/4" NPT (female) (for other connections, consult the Customer Care Center)			
Electrical connection (1)	Screw terminals, tapped entry for 1/2" NPT cable connector.			
Fluids controlled	Hydraulic oils, fresh water, air up to +158 °F (+70 °C)		Hydraulic oils, air up to +320 °F (+160 °C)	Hydraulic oils, fresh water, air up to +158 °F (+70 °C)

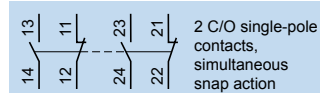
Type XMLA—fixed differential, for detection of a single threshold

Setting range in bar (psi) of upper limit (PH) for pressure switches	-0.28 to -1 (-4.06 to -14.5) (4)	–	0.03 to 1 (4.35 to 14.5)	0.15 to 2.5 (2.17 to 36.25)
Dimensions, H x W x D, mm (in.)	113 x 35 x 75 (4.45 x 1.38 x 2.95)	–	162 x 110 x 110 (6.38 x 4.33 x 4.33)	158 x 55 x 77.5 (6.22 x 2.17 x 3.05)
With setting scale	1 C/O single-pole, snap action contact		XMLA001R2S13	XMLA002A2S13
Natural differential: bar (psi)	at low setting	0.24 ±0.05 (3.48 ±0.72) (2)	–	0.13 ±0.03 (1.88 ±0.43)
subtract from PH to get PB	at high setting	0.24 ±0.05 (3.48 ±0.72) (2)	–	0.13 ±0.03 (1.88 ±0.43)

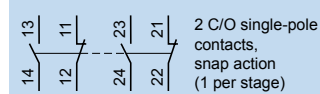
Type XMLB—adjustable differential, regulation between 2 thresholds

Setting range in bar (psi) of upper limit (PH) for pressure switches	-0.14 to -1 (-2.03 to -14.5) (4)	-0.5 to 5 (-7.25 to 72.5)	0.05 to 1 (0.72 to 14.5)	0.3 to 2.5 (4.35 to 36.25)
With setting scale	1 C/O single-pole, snap action contact		XMLB001R2S13	XMLB002A2S13
Possible differential: bar (psi)	Min. at low setting	0.13 ±0.02 (1.88 ±0.29) (3)	0.04 ±0.10 mbar (0.58 ±0.14)	0.16 -0.08 mbar +1.1 mbar (2.32 -0.01, +0.02)
subtract from PH to get PB	Min. at high setting	0.13 ±0.02 (1.88 ±0.29) (3)	0.06 ±0.20 mbar (0.87 ±0.29)	0.21 ±1.4 mbar (3.04 ±0.02)
	Max. at high setting	0.8 (11.6) (3)	6 (87)	1.75 (25.37)

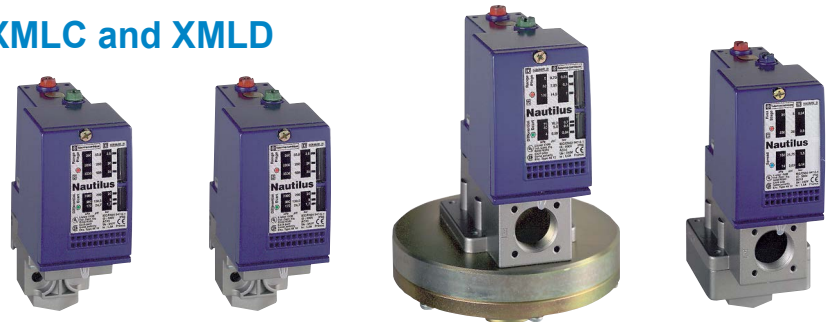
XMLC



XMLD



XMLC and XMLD



Fluids controlled	Hydraulic oils, fresh water, sea water, air up to +158 °F (+70 °C)		Hydraulic oils, air up to +320 °F (+160 °C)	Hydraulic oils, fresh water, sea water, air up to +320 °F (+160 °C)
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Type XMLC—adjustable differential, regulation between 2 thresholds

Setting range in bar (psi) of upper limit (PH) for pressure switches	-0.14 to -1 (-2.03 to -14.5) (4)	-0.55 to 5 (-7.97 to 72.5)	0.05 to 1 (0.725 to 14.5)	0.3 to 2.5 (4.35 to 36.25)
Dimensions (mm) H x W x D	158 x 55 x 90	158 x 55 x 90	150 x 110 x 110	145 x 55 x 90
With setting scale	2 C/O single-pole, snap action contacts		XMLC001R2S13	XMLC002B2S13
Possible differential: bar (psi)	Min. at low setting	0.13 ±0.02 (1.89 ±0.29) (4)	0.03 ±0.01 (0.43 ±0.14)	0.13 ±0.02 (1.89 ±0.29)
subtract from PH to get PB	Min. at high setting	0.14 ±0.02 (2.03 ±0.29) (4)	0.04 ±0.03 (0.58 ±0.43)	0.17 ±0.03 (2.47 ±0.43)
	Max. at high setting	0.8 (11.6) (4)	6 (87)	2 (29)

Type XMLD—fixed differential, dual stage, for detection at each threshold

Setting range	2 nd stage switching point (PB2)	-0.12 to -1 (-1.74 to -14.5) (4)	–	0.12 to 1 (1.74 to 14.5)	0.34 to 2.5 (4.93 to 36.25)
bar (psi)	1 st stage switching point (PB1)	-0.10 to -0.98 (-1.45 to -14.21)	–	0.04 to 0.92 (0.58 to 13.34)	0.2 to 2.36 (2.90 to 34.22)
	Spread between 2 stages (PB2 – PB1)	-0.02 to -0.88 (0.29 to 12.76)	–	0.08 to 0.73 (1.16 to 10.59)	0.14 to 1.5 (2.03 to 21.75)
Without setting scale: 2 C/O single-pole, snap action contacts (1 per stage)		XMLD002V1S13	–	XMLD001R1S13	XMLD002B1S13
Natural differential: bar (psi)	at low setting	0.1 ±0.035 (1.45 ±0.51) (2)	–	0.03 ±0.01 (0.44 ±0.14)	0.14 ±0.04 (2.03 ±0.58)
subtract from PH1/PH2 to get PB1/PB2	at high setting	0.1 ±0.02 (1.45 ±0.29) (2)	–	0.07 ±0.04 (1.02 ±0.58)	0.19 ±0.07 (2.76 ±1.02)

- (1) For electrical connection by DIN 43650A connector (IP65), replace the suffix **S13** in the catalog number with **C11**. Example: XMLB010A2S13 becomes XMLB010A2C11.
 (2) For vacuum switch: add the natural differential to PB to get PH.
 (3) For vacuum switch: add the possible differential to PB to get PH.
 (4) Setting range in bar (psi) of **lower limit (PB)** for vacuum switches.



0.3 to 4 (4.35 to 58)	0.6 to 10 (8.7 to 145)	1 to 20 (14.5 to 290)	1.5 to 35 (21.75 to 507.5)	5 to 70 (72.5 to 1015)	10 to 160 (145 to 2320)	22 to 300 (319 to 4350)	30 to 500 (435 to 7250)
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conforming to IEC 947-5-1 Appendix A, EN 60 947-5-1

Hydraulic oils, fresh water, sea water, air up to +158 °F (+70 °C)	Hydraulic oils up to +320 °F (+160 °C)
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0.4 to 4 (5.8 to 58)	0.6 to 10 (8.7 to 145)	1 to 20 (14.5 to 290)	1.5 to 35 (21.75 to 507.5)	5 to 70 (72.5 to 1015)	10 to 160 (145 to 2320)	20 to 300 (290 to 4350)	30 to 500 (435 to 7250)
113 x 35 x 75 (4.45 x 1.38 x 2.95)							
XMLA004A2S13	XMLA010A2S13	XMLA020A2S13	XMLA035A2S13	XMLA070D2S13	XMLA160D2S13	XMLA300D2S13	XMLA500D2S13
0.35 ±0.03 (5.07 ±0.43)	0.5 ±0.05 (7.25 ±0.72)	0.4 ±0.2 (5.8 ±2.9)	1.25 ±.25 (18.12 ±3.62)	3 ±1 (43.5 ±14.5)	5.5 ±1 (79.75 ±14.5)	16.5 ±3 (239.25 ±43.5)	20 ±6 (290 ±87)
0.35 ±0.03 (5.07 ±0.43)	0.5 ±0.05 (7.25 ±0.72)	1 ±0.1 (14.5 ±1.45)	1.25 ±.25 (18.12 ±3.62)	7.5 ±1 (108.75 ±14.5)	18 ±3 (261 ±43.5)	35 ±6 (507.6 ±87)	45 ±10 (652.5 ±145)

0.25 to 4 (3.62 to 58)	0.7 to 10 (10.15 to 145)	1.3 to 20 (18.9 to 290)	3.5 to 35 (50.75 to 507.5)	7 to 70 (101.5 to 1015)	10 to 160 (145 to 2320)	22 to 300 (319 to 4350)	30 to 500 (435 to 7250)
XMLB004A2S13	XMLB010A2S13	XMLB020A2S13	XMLB035A2S13	XMLB070D2S13	XMLB160D2S13	XMLB300D2S13	XMLB500D2S13
0.02 ±0.01 (2.9 ±0.14)	0.57 ±0.05 (8.26 ±0.72)	1 ±0.25 (14.5 ±3.63)	1.7 -0.05, +0.7 (24.65 -7.25, +10.15)	4.7 -0.4, +0.7 (68.15 -5.8, +10.15)	9.3 -1.8, +1.5 (134.85 -26.1, +21.75)	19.4 -1.5, +1.7 (281.3 -21.75, +24.65)	23 -2.6, +3.8 (333.5 -37.7, +55.1)
0.25 -0.03, +0.05 (3.62 -0.43, +0.72)	0.85 -0.1, +0.15 (12.32 -1.45, +2.17)	1.6 ±0.25 (23.20 ±3.63)	2.55 -0.5, +0.7 (36.97 -7.25, +10.15)	8.8 -0.6, +0.8 (127.6 -8.7, +11.6)	20.8 -1.9, +1.6 (301.6 -27.55, +23.2)	37 -1, +4 (536.5 -14.5, +58)	52.6 -14.8, +11.2 (762.7 -214.6, +162.4)
2.4 (34.8)	7.5 (108.75)	11 (159.5)	20 (290)	50 (725)	100 (1450)	200 (2900)	300 (4350)



Hydraulic oils, fresh water, sea water, air up to +320 °F (+160 °C)	Hydraulic oils up to +320 °F (+160 °C)
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0.3 to 4 (4.35 to 58)	0.7 to 10 (10.15 to 145)	1.3 to 20 (18.85 to 290)	3.5 to 35 (50.75 to 507.5)	7 to 70 (101.5 to 1015)	12 to 160 (174 to 2320)	22 to 300 (319 to 4350)	30 to 500 (435 to 7250)
113 x 46 x 90	113 x 46 x 85	113 x 46 x 85	113 x 46 x 85	113 x 46 x 85	113 x 46 x 85	113 x 46 x 85	113 x 46 x 85
XMLC004B2S13	XMLC010B2S13	XMLC020B2S13	XMLC035B2S13	XMLC070D2S13	XMLC160D2S13	XMLC300D2S13	XMLC500D2S13
0.15 ±0.02 (2.18 ±0.29)	0.45 ±0.05 (6.53 ±0.72)	0.7 ±0.02 (10.15 ±2.9)	1 ±0.2 (14.5 ±2.9)	4.5 ±0.8 (65.25 ±11.6)	9 ±0.9 (130.5 ±13.05)	16 ±0.9 (232 ±13.05)	19 ±0.9 (275.5 ±13.05)
0.17 ±0.02 (2.47 ±0.29)	0.7 ±0.01 (10.15 ±1.45)	1 ±0.2 (14.5 ±2.9)	1.5 ±0.5 (21.75 ±7.25)	8.9 ±0.8 (129.05 ±11.6)	21 ±0.9 (304.5 ±13.05)	35 ±0.9 (507.5 ±13.05)	52 ±0.9 (754 ±13.05)
2.5 (36.25)	8 (116)	11 (159.5)	22 (319)	60 (870)	110 (1590)	240 (3480)	340 (4930)

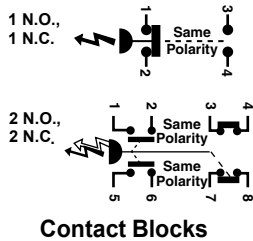
0.40 to 4 (5.8 to 58)	1.2 to 10 (17.4 to 145)	2.14 to 20 (31.03 to 290)	4.4 to 35 (63.8 to 507.5)	9.4 to 70 (136.3 to 1015)	16.5 to 160 (239.25 to 2320)	36 to 300 (522 to 4350)	41 to 500 (594.5 to 7250)
0.19 to 3.79 (2.76 to 54.96)	0.52 to 9.32 (7.54 to 135.14)	0.9 to 18.76 (13.05 to 272.02)	1.9 to 32.5 (27.55 to 471.25)	6.6 to 67.2 (95.7 to 974.4)	10.5 to 154 (152.25 to 2233)	25 to 289 (362.5 to 4190.5)	25 to 484 (362.5 to 7018)
0.21 to 2.18 (3.05 to 31.61)	0.68 to 5.8 (9.86 to 84.1)	1.24 to 9.55 (17.98 to 138.48)	2.5 to 20.4 (36.25 to 295.8)	2.8 to 46 (40.6 to 667)	6 to 83 (87 to 1203.5)	11 to 189 (159.5 to 2740.5)	16 to 244 (16 to 244)
XMLD004B1S13	XMLD010B1S13	XMLD020B1S13	XMLD035B1S13	XMLD070D1S13	XMLD160D1S13	XMLD300D1S13	XMLD500D1S13
0.15 ±0.03 (2.18 ±0.43)	0.45 ±0.05 (6.53 ±0.72)	0.7 ±0.15 (10.15 ±2.18)	1.5 ±0.03 (21.75 ±4.35)	5 ±1.5 (72.25 ±21.75)	8.8 ±1.5 (127.6 ±21.75)	17 ±2.5 (246.5 ±36.25)	21 ±3 (304.5 ±43.5)
0.19 ±0.03 (2.76 ±0.43)	0.6 ±0.1 (8.7 ±1.45)	1.3 ±0.3 (18.85 ±4.35)	2.6 ±0.7 (37.7 ±10.15)	9.5 ±2 (137.75 ±29)	20 ±7 (290 ±101.5)	42 ±9 (609 ±130.5)	65 ±10 (942.5 ±145)



9012GAW5



9012GCW1



Range on decreasing pressure, psig	Adjustable differential (1) approximate at mid range	Maximum allowable pressure, psig	Class 9012 Type	
			SPDT	DPDT
Diaphragm actuated—Buna-N nitrile diaphragm, zinc plated steel housing				
0.2–10	.7–2	100	GAW1	GAW21
1–40	2.4–8	100	GAW2	GAW22
1.5–75	3.9–15	240	GAW4	GAW24
3–150	6.6–30	475	GAW5	GAW25
5–250	11–49	750	GAW6	GAW26
13–425	20–82	850	GBW1	GBW21
20–675	35–130	2000	GBW2	GBW22
Piston actuated—#440 stainless steel piston				
#303 Stainless steel housing, Viton® fluorocarbon diaphragm and O-ring, Teflon® retaining ring				
20–1000	65–200	1000	GCW1	GCW21
90–2900	187–560	15,000	GCW2	GCW22
170–5600	425–1050	20,000	GCW3	GCW23
270–9000	580–1500	25,000	GCW4	GCW24

Specifications		
Fluids controlled	Air, water, hydraulic oils, gases, steam (depending on the model)	
Fluid connections	1/4" NPT (female) standard, Forms include G 1/4 (BSP) female, 1/4" NPTF, or 1/4"-18 NPT (2) (3)	
Weight (approximate)	3 lb (1.36 kg)	
Voltage limits	600 V	
Continuous current	10 A	
Electrical connections	1/2"-14 NPTF, Pg 13.5, or ISO M20. For 20 x 1.5 mm electrical conduit entry, add M after the W in the catalog number for all Types.	
Standards/ratings	CE, IEC 60957.5.1, UL 508, CSA 3211-03. UL Marine listed for use on vessels longer than 65 ft where ignition protection is not required.	
Degree of protection	NEMA Type 4, 4X, 13 enclosures	
Temperature ratings	Minimum	Maximum
Ambient	-10 °F (-23 °C)	+185 °F (+85 °C)
Media	Diaphragm: -40 °F (-40 °C); Piston and all switches with Form Q4: -15 °F (-26 °C)	+250 °F (+120 °C)

Connection		
Form H10	Form H11	<p>SPDT snap switches contain two double-break contact elements (1 NO, 1 NC) that must be used on circuits of the same polarity.</p> <p>DPDT snap switches contain two electrically separated sets of contact elements, allowing use on circuits of opposite polarity. Each set contains two double-break contact elements. (1 NO, 1 NC) that must be used on circuits of the same polarity.</p>
<p>Acceptable wire sizes: 12–22 AWG (0.5–2.5 mm²)</p>		<p>Recommended terminal clamp torque: 7 lb-in (0.79 N•m)</p>

- (1) The differential adds to the range setting and determines the operating point on rising pressure.
- (2) Form M12 includes 1/4"-19 BSP pressure connection and Pg 13.5 electrical conduit entry.
- (3) For other connections, consult the Customer Care Center.

Form	Description
G17	120 Vac or Vdc neon pilot light—clear lens
G18	120 Vac or Vdc neon pilot light—red lens
G21	24 Vdc only LED—clear lens
G22	24 Vdc only LED—red lens
H3	SPDT snap switch rated 1.1 A at 125 Vdc (minimum differential doubles)
H10, H11	Prewired 5-pin male receptacle (see the connection diagram above)
M12	Pg 13.5 electrical conduit thread and 1/4"-19 BSP pressure connection (available on 9012G•WM only)
V1	Range scale window
Y1	Special factory setting specified
Z	1/4" – 18 NPT external thread pressure connection

9012 NEMA Type 1 enclosure adjustable differential



9012GNO5



9012GQO2



9012GNG1

Range on decreasing pressure, psig	Approximate mid range (1) differential (adds to the decreasing set point)	Maximum allowable pressure, psig	Class 9012 Type	
			Open Type	NEMA Type 1
Diaphragm actuated—Buna-N nitrile diaphragm, zinc plated steel housing				
0.2–10	0.6–1	100	GNO1	GNG1
1–40	1.6–5	100	GNO3	GNG3
1.5–75	2.5–6.5	240	GNO4	GNG4
3–150	4.8–13	475	GNO5	GNG5
5–250	8.5–20.5	750	GNO6	GNG6
13–425	20–41	850	GPO1	GPG1
20–675	35–66	2000	GPO2	GPG2

Piston actuated—#440 stainless steel piston #303 Stainless steel housing, Viton® fluorocarbon diaphragm and O-ring, Teflon® retaining ring				
20–1000	56–98	1000	GQO1	GQG1
90–2900	162–308	15,000	GQO2	GQG2
170–5600	355–563	20,000	GQO3	GQG3
270–9000	481–1050	25,000	GQO4	GQG4

Specifications

Fluids controlled	Air, water, hydraulic oils, gases, steam (depending on the model)		
Fluid connections	1/4" NPT (female) standard, Forms include G 1/4 (BSP) female, 1/4" NPTF, or 1/2"-14 NPT (2)		
Weight (approximate)	Type 1: 2 lb (0.91 kg); Open: 1.7 lb (0.77 kg)		
Voltage limits	600 V		
Continuous current	10 A		
Electrical connections	1/2" conduit entry, unthreaded		
Standards/ratings	CE, IEC 60957.5.1, UL 508, CSA 3211-03		
Degree of protection	NEMA Type 1 Enclosure		
Temperature ratings	Minimum	Maximum	
Ambient	-10 °F (-23 °C)	+185 °F (+85 °C)	
	Diaphragm	-40 °F (-40 °C)	
Media	Piston	-15 °F (-26 °C)	
	All with Form Q	-15 °F (-26 °C)	

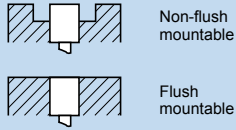
Operating curves Contact blocks

<p style="font-size: small;">Rising Pressure</p> <p style="font-size: small;">Max. Differential</p> <p style="font-size: small;">Adjustable Differential</p> <p style="font-size: small;">Min. Differential</p> <p style="font-size: small;">Falling pressure</p>	<p>SPDT</p> <p>Form C</p> <p>contacts</p>	<p>Acceptable wire sizes:</p> <p>12–22 AWG (0.5–2.5 mm²)</p> <hr/> <p>Recommended terminal clamp torque:</p> <p>7 lb-in (0.79 N•m)</p>
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- (1) Determines the operating point on rising pressure.
 (2) For other connections, consult the Customer Care Center.

Available modifications for 9012G pressure switches, Open Type or NEMA Type 1 enclosure UL listed and CSA certified as industrial control equipment

Modification	Applies to	Form
Standard Buna-N nitrile diaphragm in #316 stainless steel housing	GNG, GNO, GPG, GPO, GRG, GRO, GSG, GSO. Not available on 9012GRO1, GRG1, GNO1, GNG1.	Q1
Ethylene propylene diaphragm in #316 stainless steel housing	GNG, GNO, GPG, GPO, GRG, GRO, GSG, GSO. Not available on 9012GRO1, GRG1, GNO1, GNG1.	Q3
Viton fluorocarbon diaphragm in #316 stainless steel housing	GNG, GNO, GPG, GPO, GRG, GRO, GSG, GSO. Not available on GRO1, GRG1, GNO1, GNG1.	Q4
1/4-18 NPT external thread pressure connection	GNG, GNO, GRG, GRO	Z
1/2-14 NPT external thread, 1/4-18 NPTF internal thread pressure connection. Standard actuator only.	GNG, GNO, GRG, GRO	Z16
7/16-20 UNF-2B internal thread pressure connection	GNG, GNO, GPG, GPO, GQG, GQO, GRG, GRO, GSG, GSO, GTG, GTO	Z18



	Flush standard and increased range			
	M8		M12	
Nominal sensing distance Sn	1.5 mm	2.5 mm	2 mm	4 mm
Usable sensing distance S (mm) flush mountable / non-flush mountable	0–1.2	0–2	0–1.6	0–3.2
Temperature range	–13 to +158 °F (–25 to +70 °C)			
Product certification	CE, UL, CSA, CCC (in progress), C-TICK			
Degree of protection, conforming to IEC 60529	IP67		precabled: IP69K conforming to DIN 40050, IP68	

Sensors for DC applications

Output function (for NC, replace the shaded A with B)	NO	A		A		A			
	NC	B		B		B			
Dimensions, Ø x L, mm (in.)	Cable/connector	M8 x 33 (1.30) / M8 x 42 (1.65)				M12 x 35 (1.38) / M12 x 50 (1.97)			
3-wire	PNP	Cable (2 m)	XS508B1PA L2	XS108B3P AL2	XS512B1PAL2	XS112B3PAL2			
		Connector M8 / M12	XS508B1PA M8	XS108B3P AM8	XS512B1PAM12	XS112B3PAM12			
	NPN	Cable (2 m)	XS508B1NA L2	XS108B3N AL2	XS512B1NAL2	XS112B3NAL2			
		Connector M8 / M12	XS508B1NA M8	XS108B3N AM8	XS512B1NAM12	XS112B3NAM12			
2-wire non-polarized (1)	Cable (2 m)	XS508BSCA L2	XS608B3C AL2	XS512BSDAL2	XS612B3DAL2				
	Connector M12	XS508BSCA L01M12	XS608B3C AL01M12	XS512BSDAM12	XS612B3DAM12				
Supply voltage range (V), including ripple		10–36	10–36	10–36	10–36				
Switching capacity, max. (mA)	3-wire / 2-wire	200 / 100	200 / 100	200 / 100	200 / 100				
Overload and short-circuit protection (★) / Output state LED (⊗)		★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗				
Residual current, open state (mA)		≤ 0.5	≤ 0.5	≤ 0.5	≤ 0.5				
Voltage drop, closed state (V) at I nominal	3-wire / 2-wire	≤ 2 / ≤ 4	≤ 2 / ≤ 4	≤ 2 / ≤ 4	≤ 2 / ≤ 4				
Switching frequency (Hz)	3-wire / 2-wire	5000 / 4000	2500 / 3000	5000 / 4000	2500 / 2000				
Dimensions, Ø x L, mm (in.)	Cable/connector	M8 x 51 (2.01) / M8 x 62 (2.44)				M12 x 53 (2.09) / M12 x 62 (2.44)			
3-wire	PNP	Cable (2 m)	XS508BLPA L2	XS608B1P AL2	XS512BLPAL2	XS612B1PAL2			
		Connector M12	XS508BLPA M12	XS608B1P AM12	XS512BLPAM12	XS612B1PAM12			
	NPN	Cable (2 m)	XS508BLNA L2	XS608B1N AL2	XS512BLNAL2	XS612B1NAL2			
		Connector M12	XS508BLNA M12	XS608B1N AM12	XS512BLNAM12	XS612B1NAM12			
2-wire non-polarized	Cable (2 m)	XS508B1DA L2	XS608B1D AL2	XS512B1DAL2	XS612B1DAL2				
	Connector M12	XS508B1DA M12	XS608B1D AM12	XS512B1DAM12	XS612B1DAM12				
Supply voltage range (V), including ripple		10–58	10–58	10–58	10–58				
Switching capacity, max. (mA)	3-wire / 2-wire	200 / 100	200 / 100	200 / 100	200 / 100				
Overload and short-circuit protection (★) / Output state LED (⊗)		★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗				
Residual current, open state (mA)	2-wire	≤ 0.5	≤ 0.5	≤ 0.5	≤ 0.5				
Voltage drop, closed state (V) at I nominal	3-wire / 2-wire	≤ 2 / ≤ 4	≤ 2 / ≤ 4	≤ 2 / ≤ 4	≤ 2 / ≤ 4				
Switching frequency (Hz)	3-wire / 2-wire	5000 / 4000	2500 / 3000	5000 / 4000	2500 / 2000				

Multi-current/multi-voltage sensors for AC/DC applications

Dimensions, Ø x L, mm (in.)	Cable/connector	–	–	M12 x 53 (2.09) / M12 x 62 (2.44)	
2-wire	Cable (2 m)	–	–	XS512B1MAL2	XS612B1MAL2
	Connector 1/2"-20 UNF	–	–	XS512B1MAU20	XS612B1MAU20
Supply voltage range (V), including ripple		–	–	20–264	20–264
Switching capacity, max. (mA)		–	–	200	200
Output state LED (⊗)		–	–	⊗	⊗
Residual current, open state (mA)		–	–	≤ 0.8	≤ 0.8
Voltage drop, closed state (V) at I nominal		–	–	≤ 5.5	≤ 5.5
Switching frequency (Hz)		–	–	25 AC / 1000 DC	25 AC / 1000 DC

(1) Polarized for M8 short.

Accessories

Mounting for cylindrical sensors

Mounting clamp with indexing pin for cylindrical sensors.



M8	XSZB108
M12	XSZB112
M18	XSZB118
M30	XSZB130

Adaptable female plug-in connectors

M8	Straight
Metal ring	XZCC8FDM30S
M12 (4 pin)	
Metal ring	XZCC12FDM40B
Plastic ring	XZCC12FDP40B



Elbowed	
	XZCC8FCM30S
	XZCC12FCM40B
	XZCC12FCP40B





M18		M30		Non-flush increased range		
5 mm	8 mm	10 mm	15 mm	M12	M18	M30
0-4	0-6.4	0-8	0-12	0-5.6	0-9.6	0-17.6
-13 to +158 °F (-25 to +70 °C)				-25 to +70		
CE, UL, CSA, CCC (in progress), C-TICK				CE, UL, CSA, CCC (in progress), C-TICK		
(with connector: IP67)				precabled: IP69K conforming to DIN 40050, IP68 (with connector: IP67)		

A		A		A		A		A		A	
B		B		B		B		B		B	
M18 x 39 (1.54) / M18 x 50 (1.97)		M30 x 43 (1.69) / M30 x 55 (2.17)		-		-		-		-	
XS518B1PAL2	XS118B3PAL2	XS530B1PAL2	XS130B3PAL2	-		-		-		-	
XS518B1PAM12	XS118B3PAM12	XS530B1PAM12	XS130B3PAM12	-		-		-		-	
XS518B1NAL2	XS118B3NAL2	XS530B1NAL2	XS130B3NAL2	-		-		-		-	
XS518B1NAM12	XS118B3NAM12	XS530B1NAM12	XS130B3NAM12	-		-		-		-	
XS518BSDAL2	XS618B3DAL2	XS530BSDAL2	XS630B3DAL2	-		-		-		-	
XS518BSDAM12	XS618B3DAM12	XS530BSDAM12	XS630B3DAM12	-		-		-		-	
10-36	10-36	10-36	10-36	-		-		-		-	
200 / 100	200 / 100	200 / 100	200 / 100	-		-		-		-	
★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗	-		-		-		-	
≤ 0.5	≤ 0.5	≤ 0.5	≤ 0.5	-		-		-		-	
≤ 2 / ≤ 4	≤ 2 / ≤ 4	≤ 2 / ≤ 4	≤ 2 / ≤ 4	-		-		-		-	
2000 / 3000	1000 / 1000	1000 / 2000	500 / 500	-		-		-		-	

M18 x 62 (2.44) / M18 x 74 (2.91)		M30 x 62 (2.44)		M12 x 55 (2.17) / M12 x 65 (2.56)		M18 x 62 (2.44) / M18 x 74 (2.91)		M30 x 62 (2.44) / M30 x 74 (2.91)	
XS518BLPAL2	XS618B1PAL2	XS530BLPAL2	XS630B1PAL2	XS612B4PAL2	XS618B4PAL2	XS630B4PAL2	-		-
XS518BLPAM12	XS618B1PAM12	XS530BLPAM12	XS630B1PAM12	XS612B4PAM12	XS618B4PAM12	XS630B4PAM12	-		-
XS518BLNAL2	XS618B1NAL2	XS530BLNAL2	XS630B1NAL2	XS612B4NAL2	XS618B4NAL2	XS630B4NAL2	-		-
XS518BLNAM12	XS618B1NAM12	XS530BLNAM12	XS630B1NAM12	XS612B4NAM12	XS618B4NAM12	XS630B4NAM12	-		-
XS518B1DAL2	XS618B1DAL2	XS530B1DAL2	XS630B1DAL2	-	-	-	-		-
XS518B1DAM12	XS618B1DAM12	XS530B1DAM12	XS630B1DAM12	-	-	-	-		-
10-58	10-58	10-58	10-58	10-58	10-58	10-58	-		-
200 / 100	200 / 100	200 / 100	200 / 100	200 / -	200 / -	200 / -	-		-
★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗	-		-
≤ 0.5	≤ 0.5	≤ 0.5	≤ 0.5	-	-	-	-		-
≤ 2 / ≤ 4	≤ 2 / ≤ 4	≤ 2 / ≤ 4	≤ 2 / ≤ 4	≤ 2 / -	≤ 2 / -	≤ 2 / -	-		-
2000 / 3000	1000 / 1000	1000 / 2000	500 / 500	2500 / -	1000 / -	500 / -	-		-

M18 x 62 (2.44) / M18 x 73 (2.87)		M30 x 62 (2.44) / M30 x 73 (2.87)		-		M18 x 60 (2.36) / M18 x 72 (2.84)		M30 x 63 (2.48) / M30 x 74 (2.91)	
XS518B1MAL2	XS618B1MAL2	XS530B1MAL2	XS630B1MAL2	-		XS618B4MAL2	XS630B4MAL2	-	
XS518B1MAU20	XS618B1MAU20	XS530B1MAU20	XS630B1MAU20	-		XS618B4MAU20	XS630B4MAU20	-	
20-264	20-264	20-264	20-264	-		20-264	20-264	-	
300 AC / 200 DC	300 AC / 200 DC	300 AC / 200 DC	300 AC / 200 DC	-		300 AC / 200 DC	300 AC / 200 DC	-	
⊗	⊗	⊗	⊗	-		⊗	⊗	-	
≤ 0.8	≤ 0.8	≤ 0.8	≤ 0.8	-		≤ 0.8	≤ 0.8	-	
≤ 5.5	≤ 5.5	≤ 5.5	≤ 5.5	-		≤ 5.5	≤ 5.5	-	
25 AC / 1000 DC	25 AC / 1000 DC	25 AC / 500 DC	25 AC / 500 DC	-		25 AC / 1000 DC	25 AC / 300 DC	-	

PUR prewired connectors (1)

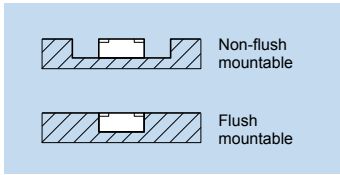


Straight

Elbowed

M8 (3 pin)		1/2"		M12 (4 pin)					
	Straight	Elbowed		Straight	Elbowed	Elbowed PNP LED			
2 m	XZCP0566L2	XZCP0666L2	2 m	XZCP1865L2	XZCP1965L2	2 m	XZCP1141L2	XZCP1241L2	XZCP1340L2
5 m	XZCP0566L5	XZCP0666L5	5 m	XZCP1865L5	XZCP1965L5	5 m	XZCP1141L5	XZCP1241L5	XZCP1340L5
10 m	XZCP0566L10	XZCP0666L10	10 m	XZCP1865L10	XZCP1965L10	10 m	XZCP1141L10	XZCP1241L10	XZCP1340L10

(1) For other cable options, see page 55.



mm (in.)	∅ 8 x 22 x 8 (0.32 x 0.87 x 0.32)	∅ 15 x 32 x 8 (0.59 x 1.26 x 0.32)	∅ 26 x 26 x 13 (1.02 x 1.02 x 0.51)	∅ 40 x 40 x 15 (1.58 x 1.58 x 0.59)	∅ 80 x 80 x 26 (3.15 x 3.15 x 1.02)
Nominal sensing distance S_n	2.5 mm	5 mm	10 mm	15 mm	40 mm
Usable sensing distance S (mm) flush mountable / non-flush mountable	0–2	0–4	0–8	0–12	0–32
Fine adjustment zone (mm) flush mountable / non-flush mountable	–	–	–	–	–
Suitability for flush mounting (metal environment)	flush mountable	flush mountable	flush mountable	flush mountable	flush mountable
Temperature range	–13 to +158 °F (–25 to +70 °C)				
Product certification	CE	CE, UL, CSA, C-TICK			
Degree of protection, conforming to IEC 60529	precabled: IP68 (with connector: IP67)				

Sensors for DC applications

Connection			Precabled, PvR (2 m)				
2-wire (non-polarized)	NO or NC	programmable	–	–	–	–	–
2-wire non-polarized	NO		XS7J1A1DAL2	XS7F1A1DAL2	XS7E1A1DAL2	XS7C1A1DAL2	XS7D1A1DAL2
	NC		XS7J1A1DBL2	XS7F1A1DBL2	XS7E1A1DBL2	XS7C1A1DBL2	XS7D1A1DBL2
4-wire	PNP	NO + NC complementary outputs	–	–	–	–	–
	NPN	NO + NC complementary outputs	–	–	–	–	–
3-wire	PNP	NO	XS7J1A1PAL2	XS7F1A1PAL2	XS7E1A1PAL2	XS7C1A1PAL2	XS7D1A1PAL2
		NC	XS7J1A1PBL2	XS7F1A1PBL2	XS7E1A1PBL2	XS7C1A1PBL2	XS7D1A1PBL2
	NPN	NO	XS7J1A1NAL2	XS7F1A1NAL2	XS7E1A1NAL2	XS7C1A1NAL2	XS7D1A1NAL2
		NC	XS7J1A1NBL2	XS7F1A1NBL2	XS7E1A1NBL2	XS7C1A1NBL2	XS7D1A1NBL2
Connection			M8 connector		M12 connector		
2-wire non-polarized	NO		XS7J1A1DAL01M8 (1)	XS7F1A1DAL01M8 (1)	XS7E1A1DAM8	XS7C1A1DAM8	XS7D1A1DAM12
	NC		XS7J1A1DBL01M8 (1)	XS7F1A1DBL01M8 (1)	XS7E1A1DBM8	XS7C1A1DBM8	XS7D1A1DBM12
3-wire	PNP	NO	XS7J1A1PAL01M8 (1)	XS7F1A1PAL01M8 (1)	XS7E1A1PAM8	XS7C1A1PAM8	XS7D1A1PAM12
		NC	XS7J1A1PBL01M8 (1)	XS7F1A1PBL01M8 (1)	XS7E1A1PBM8	XS7C1A1PBM8	XS7D1A1PBM12
	NPN	NO	XS7J1A1NAL01M8 (1)	XS7F1A1NAL01M8 (1)	XS7E1A1NAM8	XS7C1A1NAM8	XS7D1A1NAM12
		NC	XS7J1A1NBL01M8 (1)	XS7F1A1NBL01M8 (1)	XS7E1A1NBM8	XS7C1A1NBM8	XS7D1A1NBM12
Supply voltage range (V), including ripple			10–36	10–36	10–36	10–36	10–36
Switching capacity, max. (mA)			100	100	100	100	100
Short-circuit protection (★) / Output state LED (⊗) / Power on LED (⊗)			★ / ⊗ / –	★ / ⊗ / –	★ / ⊗ / –	★ / ⊗ / –	★ / ⊗ / –
Voltage drop, closed state (V) at I nominal cable / Connector			≤ 4 / ≤ 2	≤ 4 / ≤ 2	≤ 2	≤ 2	≤ 2
Switching frequency (Hz) cable / Connector			4000 / 2000	5000 / 2000	1000	1000	100

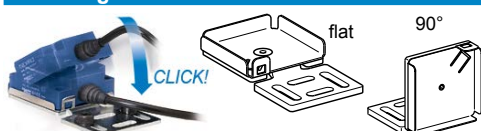
Multi-current/multi-voltage sensors for AC/DC applications

Connection							
2-wire	AC/DC	NO	–	–	–	–	–
		NC	–	–	–	–	–
	AC	NO or NC programmable	–	–	–	–	–
		NO or NC programmable	–	–	–	–	–
Connection							
2-wire	AC/DC	NO	–	–	–	–	–
		NC	–	–	–	–	–
Supply voltage range (V), including ripple			–	–	–	–	–
Switching capacity, max. (mA)			–	–	–	–	–
Short-circuit protection (★) / Output state LED (⊗) / Power on LED (⊗)			–	–	–	–	–
Residual current, open state (mA)			–	–	–	–	–
Voltage drop, closed state (V) at I nominal			–	–	–	–	–
Switching frequency (Hz)			–	–	–	–	–

(1) M8 connector on pigtail connector (0.15 m).

Accessories

Mounting for flat sensors



	flat	90°
8x22x8	XSZBJ00	XSZBJ90
15x32x8	XSZBF00	XSZBF90
26x26x13	XSZBE00	XSZBE90
40x40x15	XSZBC00	XSZBC90

Adaptable female plug-in connectors

	Straight	Elbowed
M8	XZCC8FDM30S	XZCC8FCM30S
M12 (4 pin)		
Metal ring	XZCC12FDM40B	XZCC12FCM40B
Plastic ring	XZCC12FDP40B	XZCC12FCP40B



∅ 40 x 40 x 70 (1.58 x 1.58 x 2.76)			∅ 40 x 40 x 117 (1.58 x 1.58 x 4.61)		∅ 26 x 26 x 13 (1.02 x 1.02 x 0.51)	∅ 40 x 40 x 15 (1.58 x 1.58 x 0.59)	∅ 80 x 80 x 26 (3.15 x 3.15 x 1.02)	
15 mm	20 mm	40 mm	20 mm	40 mm	15 mm	25 mm	60 mm	
0–12	0–16	0–32	0–16	0–32	0–8 / 0–12	0–12 / 0–20	0–32 / 0–48	
flush mountable	flush mountable	non-flush mountable	flush mountable	non-flush mountable	flush mountable or non-flush mountable via teach mode			
–13 to +158 °F (–25 to +70 °C)			–13 to +158 °F (–25 to +70 °C)		–13 to +158 °F (–25 to +70 °C)			
CE, UL, CSA, CCC, C-TICK			CE, UL, CSA, CCC, C-TICK		CE, UL, CSA, CCC, C-TICK			
IP67 and IP69K			IP67 and IP69K		precabled: IP68 (with connector: IP67)			

M12 connector			Screw terminals (2)		Precabled (2 m)		
–	–	–	XS8C4A1DPN12	XS8C4A4DPN12	–	–	–
XS7C2A1DAM12	XS8C2A1DAM12	XS8C2A4DAM12	–	–	–	–	–
XS7C2A1DBM12	XS8C2A1DBM12	XS8C2A4DBM12	–	–	–	–	–
XS7C2A1PCM12	XS8C2A1PCM12	XS8C2A4PCM12	XS8C4A1PCN12	XS8C4A4PCN12	–	–	–
XS7C2A1NCM12	XS8C2A1NCM12	XS8C2A4NCM12	XS8C4A1NCN12	XS8C4A4NCN12	–	–	–
XS7C2A1PAM12	–	–	–	–	XS8E1A1PAL2	XS8C1A1PAL2	XS8D1A1PAL2
XS7C2A1NAM12	–	–	–	–	XS8E1A1PBL2	XS8C1A1PBL2	XS8D1A1PBL2
XS7C2A1PBM12	–	–	–	–	XS8E1A1NAL2	XS8C1A1NAL2	XS8D1A1NAL2
XS7C2A1NBM12	–	–	–	–	XS8E1A1NBL2	XS8C1A1NBL2	XS8D1A1NBL2
					M8 connector		M12 connector
	–	–	–	–	–	–	–
	–	–	–	–	–	–	–
	–	–	–	–	XS8E1A1PAM8	XS8C1A1PAM8	XS8D1A1PAM12
	–	–	–	–	XS8E1A1PBM8	XS8C1A1PBM8	XS8D1A1PBM12
	–	–	–	–	XS8E1A1NAM8	XS8C1A1NAM8	XS8D1A1NAM12
	–	–	–	–	XS8E1A1NBM8	XS8C1A1NBM8	XS8D1A1NBM12
12–48					10–36	10–36	10–36
4-wire version = 200; 2-wire version = 1.5–100					100	200	200
4-wire version = ★ / ⊗ / ⊗; 2-wire version = ★ / ⊗ / –					★ / ⊗ / ⊗	★ / ⊗ / ⊗	★ / ⊗ / ⊗
4-wire version = ≤ 2; 2-wire version = ≤ 4					≤ 2	≤ 2	≤ 2
flush version: 300; non-flush version: 200					2000	1000	150

1/2"-20 UNF connector			Screw terminals (2)		Precabled (2 m)		
XS7C2A1MAU20	XS8C2A1MAU20	XS8C2A4MAU20	–	–	XS8E1A1MAL2	XS8C1A1MAL2	XS8D1A1MAL2
XS7C2A1MBU20	XS8C2A1MBU20	XS8C2A4MBU20	–	–	XS8E1A1MBL2	XS8C1A1MBL2	XS8D1A1MBL2
	–	–	–	–	–	–	–
	–	–	XS8C4A1MPN12	XS8C4A4MPN12	–	–	–
	–	–	–	–	1/2"-20 UNF connector		
	–	–	–	–	XS8E1A1MAL01U20	XS8C1A1MAL01U20	XS8D1A1MAU20
	–	–	–	–	XS8E1A1MBL01U20	XS8C1A1MBL01U20	XS8D1A1MBU20
20–264					20–264	20–264	20–264
AC/DC version = 300 / 200					200 AC or DC	300 AC / 200 DC	300 AC / 200 DC
– / ⊗ / –					– / ⊗ / ⊗	– / ⊗ / ⊗	– / ⊗ / ⊗
AC/DC version = ≤ 1.5					≤ 1.5	≤ 1.5	≤ 1.5
≤ 5.5					≤ 5.5	≤ 5.5	≤ 5.5
25 AC / 50 DC					2000	1000	150

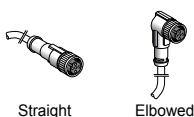
(2) Sensors come with 1/2" NPT conduit fitting and screw terminals.

For an M20 connector, change the suffix from **N12** to **P20**. Example: XS8C4A4MPP**20**.

For a Pg 13.5 cable entry, change **N12** to **G13**. Example: XS8C4A4PCG**13**.

For a 7/8 in. mini-style connector, change **N12** to **U78**. Example: XS7C4A1MPU**78**.

PUR prewired connectors (3)

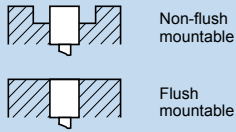


Straight Elbowed

	M8 (3 pin)		1/2"		M12 (4 pin)				
	Straight	Elbowed	Straight	Elbowed	Straight	Elbowed	Elbowed PNP LED		
2 m	XZCP0566L2	XZCP0666L2	2 m	XZCP1865L2	XZCP1965L2	2 m	XZCP1141L2	XZCP1241L2	XZCP1340L2
5 m	XZCP0566L5	XZCP0666L5	5 m	XZCP1865L5	XZCP1965L5	5 m	XZCP1141L5	XZCP1241L5	XZCP1340L5
10 m	XZCP0566L10	XZCP0666L10	10 m	XZCP1865L10	XZCP1965L10	10 m	XZCP1141L10	XZCP1241L10	XZCP1340L10

(3) For other cable options, see page 55.

or call the Sensors Support line at (800) 435-2121



	M8	M12	M18	M30
Nominal sensing distance S_n	2.5 mm	4 mm	8 mm	15 mm
Operating zone (mm)	0–2	0–3.2	0–6.4	0–12
Suitability for flush mounting (metal environment)	non-flush mountable			
Temperature range	–13 to +158 °F (–25 to +70 °C)			
Product certification	CE, UL, CSA, CCC, C-TICK			
Degree of protection, conforming to IEC 60529	IP67	precabled: IP68 (with connector: IP67)		

Sensors for DC applications

Connection				Precabled, PvR (2 m)			
Dimensions, Ø x L, mm (in.)				M8 x 33 (1.30)	M12 x 33 (1.30)	M18 x 33.5 (1.32)	M30 x 40.5 (1.59)
2-wire (non-polarized)	NO or NC	programmable	–	–	–	–	
			–	–	–	–	
4-wire	PNP	NO + NC	complementary outputs	–	–	–	–
	NPN	NO + NC	complementary outputs	–	–	–	–
3-wire	PNP	NO	XS4P08PA340	XS4P12PA340	XS4P18PA340	XS4P30PA340	
		NC	XS4P08PB340	XS4P12PB340	XS4P18PB340	XS4P30PB340	
	NPN	NO	XS4P08NA340	XS4P12NA340	XS4P18NA340	XS4P30NA340	
		NC	XS4P08NB340	XS4P12NB340	XS4P18NB340	XS4P30NB340	
Connection				M8 connector	M12 connector		
Dimensions, Ø x L, mm (in.)				M8 x 42 (1.65)	M12 x 48 (1.89)	M18 x 48 (1.89)	M30 x 50 (1.97)
3-wire	PNP	NO	XS4P08PA340S	XS4P12PA340D	XS4P18PA340D	XS4P30PA340D	
		NC	XS4P08PB340S	XS4P12PB340D	XS4P18PB340D	XS4P30PB340D	
	NPN	NO	XS4P08NA340S	XS4P12NA340D	XS4P18NA340D	XS4P30NA340D	
		NC	XS4P08NB340S	XS4P12NB340D	XS4P18NB340D	XS4P30NB340D	
Supply voltage range (V), including ripple				10–38	10–38	10–38	10–38
Switching capacity, max. (mA)				200	200	200	200
Short-circuit protection (★) / Output state LED (⊗)				★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗
Voltage drop, closed state (V) at I nominal				≤ 2	≤ 2	≤ 2	≤ 2
Switching frequency (Hz)				5000	5000	2000	1000

Multi-current/multi-voltage sensors for AC/DC applications

Connection				Precabled, PvR (2 m)			
Dimensions, Ø x L, mm (in.)				M8 x 50 (1.97)	M12 x 50 (1.97)	M18 x 60 (2.36)	M30 x 60 (2.36)
2-wire	AC/DC	NO	XS4P08MA230	XS4P12MA230	XS4P18MA230	XS4P30MA230	
		NC	XS4P08MB230	XS4P12MB230	XS4P18MB230	XS4P30MB230	
Not short-circuit protected (1)	AC	NO or NC programmable	–	–	–	–	
	AC/DC	NO or NC programmable	–	–	–	–	
Connection				1/2" connector			
Dimensions, Ø x L, mm (in.)				M8 x 61 (2.40)	M12 x 61 (2.40)	M18 x 70 (2.76)	M30 x 70 (2.76)
2-wire	AC/DC	NO	XS4P08MA230K	XS4P12MA230K	XS4P18MA230K	XS4P30MA230K	
		NC	XS4P08MB230K	XS4P12MB230K	XS4P18MB230K	XS4P30MB230K	
Supply voltage range (V), including ripple				20–264	20–264	20–264	20–264
Switching capacity, max. (mA)				100	200	300 AC / 200 DC	300 AC / 200 DC
Output state LED (⊗)				⊗	⊗	⊗	⊗
Residual current, open state (mA)				≤ 0.6	≤ 0.6	≤ 0.6	≤ 0.6
Voltage drop, closed state (V) at I nominal				≤ 5.5	≤ 5.5	≤ 5.5	≤ 5.5
Switching frequency (Hz)				25 AC / 3000 DC	25 AC / 3000 DC	25 AC / 2000 DC	25 AC / 1000 DC

(1) For these sensors without short-circuit protection, it is essential to connect a 0.4 A quick-blow fuse in series with the load.

Accessories

Mounting for cylindrical sensors

Mounting clamp with indexing pin for cylindrical sensors.



M4	XSZB104	M12	XSZB112
M5	XSZB105	M18	XSZB118
M6.5	XSZB165	M30	XSZB130
M8	XSZB108		

Adaptable female plug-in connectors

	Straight	Elbowed
M8		
Metal ring	XZCC8FDM30S	XZCC8FCM30S
M12 (4 pin)		
Metal ring	XZCC12FDM40B	XZCC12FCM40B
Plastic ring	XZCC12FDP40B	XZCC12FCP40B

Miniature cylindrical metal (assembly)



	Ø4	M5	Ø6.5	
Nominal sensing distance Sn	1 mm	1 mm	1.5 mm	2.5 mm
Operating zone (mm)	0–0.8	0–0.8	0–1.2	0–2
Suitability for flush mounting (metal environment)	flush mountable			
Temperature range	–13 to +158 °F (–25 to +70 °C)			
Product certification	CE, UL, CSA, CCC, C-TICK			
Degree of protection, conforming to IEC 60529	IP67			

Sensors for DC applications

Connection		Precabled, PvR (2 m)				
Dimensions, Ø x L, mm (in.)		Ø4 x 29 (0.16 x 1.14)	M5 x 29 (1.14)	Ø6.5 x 33 (0.26 x 1.30)		
3-wire	PNP	NO	XS1L04PA310	XS1N05PA310	XS506B1PAL2	XS106B3PAL2
		NC	–	–	XS506B1PBL2	XS106B3PBL2
	NPN	NO	XS1L04NA310	XS1N05NA310	XS506B1NAL2	XS106B3NAL2
		NC	–	–	XS506B1NBL2	XS106B3NBL2
2-wire (polarized)	NO	–	–	XS506BSCAL2	XS606B3CAL2	
	NC	–	–	XS506BSCBL2	XS606B3CBL2	
Connection		M8				
Dimensions, Ø x L, mm (in.)		Ø4 x 29 (0.16 x 1.14)	M5 x 29 (1.14)	Ø6.5 x 33 (0.26 x 1.30)		
3-wire	PNP	NO	XS1L04PA310S	XS1N05PA311S (1)	XS506B1PAM8	XS106B3PAM8
		NC	–	–	XS506B1PBM8	XS106B3PBM8
	NPN	NO	XS1L04NA310S	XS1N05NA311S (1)	XS506B1NAM8	XS106B3NAM8
		NC	–	–	XS506B1NBM8	XS106B3NBM8
Connection		M12				
2-wire (polarized)	NO	–	–	XS506BSCAL01M12	XS506B3CAL01M12	
Supply voltage range (V), including ripple		5–30	5–30	10–36		
Switching capacity, max. (mA)		3-wire / 2-wire	100 / –	100 / –	200 / 100	
Short-circuit protection (★) / Output state LED (⊗)		★ / ⊗	★ / ⊗	★ / ⊗		
Voltage drop, closed state (V) at I nominal		3-wire / 2-wire	≤ 2 / –	≤ 2 / –	≤ 2 / ≤ 4	
Switching frequency (Hz)		3-wire / 2-wire	5000 / –	5000 / –	5000 / 4000	2500 / 3000

(1) Stainless steel sensors, Sn = 0.8 mm.

PUR prewired connectors (1)



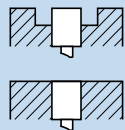
Straight

Elbowed

	M8 (3 pin)		1/2"		M12 (4 pin)				
	Straight	Elbowed	Straight	Elbowed	Straight	Elbowed	Elbowed PNP LED		
2 m	XZCP0566L2	XZCP0666L2	2 m	XZCP1865L2	XZCP1965L2	2 m	XZCP1141L2	XZCP1241L2	XZCP1340L2
5 m	XZCP0566L5	XZCP0666L5	5 m	XZCP1865L5	XZCP1965L5	5 m	XZCP1141L5	XZCP1241L5	XZCP1340L5
10 m	XZCP0566L10	XZCP0666L10	10 m	XZCP1865L10	XZCP1965L10	10 m	XZCP1141L10	XZCP1241L10	XZCP1340L10

(1) For other cable options, see page 55.

or call the Sensors Support line at (800) 435-2121



Non-flush mountable

Flush mountable



		M12	M18	M30
Sensing distance, S_n	flush mountable	2 mm	5 mm	10 mm
	non-flush mountable	4 mm	8 mm	15 mm
Operating zone (mm)	flush mountable	0–1.6	0–4	0–8
	non-flush mountable	0–3.2	0–6.4	0–12
Suitability for flush mounting (metal environment)		flush mountable or non-flush mountable, depending on the model		
Case: M (metal), P (plastic)		M		
Temperature range		–13 to +158 °F (–25 to +70 °C)		
Degree of protection, conforming to IEC 60529		IP68 (with connector: IP67)		
Product certification		CE, UL, CSA, CCC, C-TICK		
Dimensions, Ø x L, mm (in.)	Cable/connector	M12 x 55 (2.17) / M12 x 66 (2.60)	M18 x 60 (2.36) / M18 x 72 (2.84)	M30 x 60 (2.36) / M30 x 72 (2.84)

Sensors for DC applications

Connection						
4-wire	PNP	NO + NC	flush mountable	–	–	–
			non-flush mountable	–	–	–
	NPN	NO + NC	flush mountable	–	–	–
			non-flush mountable	–	–	–
	PNP+NPN programmable	NO/NC	flush mountable (metal)	–	–	–
			non-flush mountable (metal)	–	–	–
non-flush mountable (plastic)			–	–	–	
Connection						
4-wire	PNP	NO + NC	flush mountable	–	–	–
			non-flush mountable	–	–	–
	NPN	NO + NC	flush mountable	–	–	–
			non-flush mountable	–	–	–
	PNP+NPN programmable	NO/NC	flush mountable (metal)	–	–	–
			non-flush mountable (metal)	–	–	–
non-flush mountable (plastic)			–	–	–	
Supply voltage range (V), including ripple				–	–	–
Switching capacity, max. (mA)				–	–	–
Short-circuit protection (★) / Output state LED (⊗)				–	–	–
Voltage drop, closed state (V) at I nominal				–	–	–
Switching frequency (Hz)				–	–	–

Multi-current/multi-voltage sensors for AC/DC applications

Connection			Precabled, PvR (2 m)		
2-wire AC/DC	NO	flush mountable	XS1M12MA250	XS1M18MA250	XS1M30MA250
		non-flush mountable	XS2M12MA250	XS2M18MA250	XS2M30MA250
	NC	flush mountable	XS1M12MB250	XS1M18MB250	XS1M30MB250
		non-flush mountable	XS2M12MB250	XS2M18MB250	XS2M30MB250
Connection			1/2"-20 UNF connector		
2-wire AC/DC	NO	flush mountable	XS1M12MA250K	XS1M18MA250K	XS1M30MA250K
		non-flush mountable	XS2M12MA250K	XS2M18MA250K	XS2M30MA250K
	NC	flush mountable	XS1M12MB250K	XS1M18MB250K	XS1M30MB250K
		non-flush mountable	XS2M12MB250K	XS2M18MB250K	XS2M30MB250K
Supply voltage range (V), 50-60 Hz			20–264		
Switching capacity, max. (mA)			5–200		5–200 AC, 5–300 DC
Output state LED (⊗) / Power on LED (⊗)			⊗ / ⊗		
Residual current, open state (mA)			≤ 1.5		
Voltage drop, closed state (V) at I nominal			≤ 5.5		
Switching frequency (Hz)			25 AC, 4000 DC		25 AC, 2000 DC
					25 AC, 2000 DC (1)

(1) 25 AC, 1000 DC for non-flush mountable Ø30 mm.

PNP or NPN NO + NC Complementary outputs

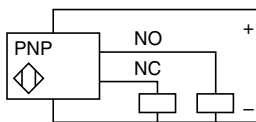
PNP + NPN outputs, NO or NC programmable



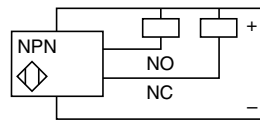
M8	M12	M18	M30	M12	M18	M30
1.5 mm	2 mm	5 mm	10 mm	2 mm	5 mm	10 mm
2.5 mm	4 mm	8 mm	15 mm	4 mm	8 mm	15 mm
0-1.2	0-1.6	0-4	0-8	0-1.6	0-4	0-8
0-2	0-3.2	0-6.4	0-12	0-3.2	0-6.4	0-12
flush mountable or non-flush mountable depending on the model M				flush mountable or non-flush mountable depending on the model M or P depending on the model		
-13 to +158 °F (-25 to +70 °C)				-13 to +158 °F (-25 to +70 °C)		
IP67		IP68 (with connector: IP67)		IP68 (with connector: IP67)		
CE, UL, CSA, CCC, C-TICK				CE, UL, CSA, CCC, C-TICK		
M8x50 (1.97) / M8x61 (2.40)	M12x33 (1.30) / M12x48 (1.89)	M18x36.5 (1.44) / M18x49 (1.93)	M30x40.5 (1.59) / M30x53 (2.09)	M12x50 (1.97) / M12x61 (2.40)	M18x60 (2.36) / M18x72 (2.84)	M30x60 (2.36) / M30x72 (2.84)

Precabled, PvR (2 m)				Precabled, PvR (2 m)		
XS1M08PC410	XS1N12PC410	XS1N18PC410	XS1N30PC410	-	-	-
XS2M08PC410	XS2N12PC410	XS2N18PC410	XS2N30PC410	-	-	-
XS1M08NC410	XS1N12 NC410	XS1N18NC410	XS1N30NC410	-	-	-
XS2M08NC410	XS2N12 NC410	XS2N18NC410	XS2N30NC410	-	-	-
-	-	-	-	XS1M12KP340	XS1M18KP340	XS1M30KP340
-	-	-	-	XS2M12KP340	XS2M18KP340	XS2M30KP340
-	-	-	-	XS4P12KP340	XS4P18KP340	XS4P30KP340
M12 connector				M12 connector		
XS1M08PC410D	XS1N12PC410D	XS1N18PC410D	XS1N30PC410D	-	-	-
XS2M08PC410D	XS2N12PC410D	XS2N18PC410D	XS2N30PC410D	-	-	-
XS1M08NC410D	XS1N12 NC410D	XS1N18NC410D	XS1N30NC410D	-	-	-
XS2M08NC410D	XS2N12 NC410D	XS2N18NC410D	XS2N30NC410D	-	-	-
-	-	-	-	XS1M12KP340D	XS1M18KP340D	XS1M30KP340D
-	-	-	-	XS2M12KP340D	XS2M18KP340D	XS2M30KP340D
-	-	-	-	XS4P12KP340D	XS4P18KP340D	XS4P30KP340D
10-36				10-36		
200				200		
★ / ⊗				★ / -		
≤ 2				≤ 2.6		
5000	5000	2000	1000	5000	2000	1000

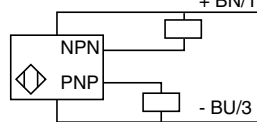
PNP



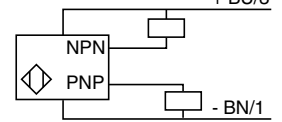
NPN



NO



NC



Accessories

Mounting clamps

With indexing pin for cylindrical sensors.



M8	XSZB108
M12	XSZB112
M18	XSZB118
M30	XSZB130

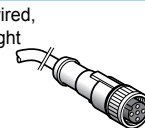
Adaptable female plug-in connectors, including PUR prewired versions (1)

5 m
without LED

prewired,
elbowed



prewired,
straight



screw terminal



M8 (or S)	XZCP0666L5
M12 (or D)	XZCP1241L5
1/2" (or K)	XZCP1965L5

XZCP0566L5
XZCP1141L5
XZCP1865L5

XZCC8FCM30S
XZCC12FCM40B
XZCC20FCM30B

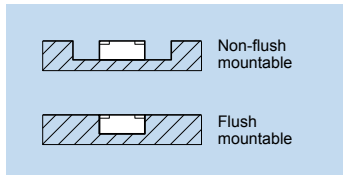
(1) For other cable options, see page 55.

Rotation control

Fixed sensing distance

for ferrous or non-ferrous materials

For table footnotes, see page 35.



	26 x 26 x 13	40 x 40 x 15	M30	M18	M30	
Nominal sensing distance S_n	10 mm	15 mm	10 mm	5 mm	10 mm	
Operating zone (mm)	0–8	0–12	0–8	0–4	0–8	
Suitability for flush mounting (metal environment)	flush mountable			flush mountable		
Case: M (metal), P (plastic)	P	P	M	M	M	
Temperature range	–13 to +158 °F (–25 to +70 °C)			+32 to +122 °F (0 to +50 °C)		
Degree of protection, conforming to IEC 60529	IP67			precabled: IP68 (with connector: IP67)		
Product certification	CE, UL, CSA, CCC, C-TICK			CE, UL, CSA, CCC, C-TICK		
Dimensions, Ø x L or W x H x D, mm (in.)	Cable/connector	26 x 26 x 13 (1.02 x 1.02 x 0.51)	40 x 40 x 15 (1.58 x 1.58 x 0.59)	M30 x 81 (3.19)	M18 x 60 (2.36) / M18 x 70 (2.76)	M30 x 60 (2.36)
Maximum speed of passing object (impulses/min)	48000	48000	6000–48000 (1)	–	–	
Adjustable frequency range (impulses/min)	6–6000	6–6000	6–150 / 120–3000 (1)	–	–	

Sensors for DC applications

Connection			Precabled, PvR (2 m)				
4-wire	PNP/NPN, NO/NC	programmable	–	–	–	XS1M18KPM40	XS1M30KPM40
3-wire	PNP, NC	slow version	–	–	XSAV11373	–	–
		fast version	–	–	XSAV12373	–	–
	0–10 V output	plastic	–	–	–	–	–
4–20 mA output		metal, flush mountable	–	–	–	–	–
		plastic, flush mountable	–	–	–	–	–
		plastic, non-flush mountable	–	–	–	–	–
Connection			M8 or M12 connector				
4-wire	PNP/NPN, NO/NC	programmable	–	–	–	XS1M18KPM40D	M12 on 0.8 m pigtail
3-wire	PNP, NC		XS9E11RPBL01M12 (3)	XS9C11RPBL01M12 (3)	–	–	XS1M30KPM40LD
		0–10 V output	–	–	–	–	–
	4–20 mA output		–	–	–	–	–
Supply voltage range (V), including ripple			10–36	10–36	10–58	10–38	
Switching capacity, max. (mA)			100	200	200	200	
Short-circuit protection (★) / Output state LED (⊗) / Power on LED (⊗)			(⊗)	★ / ⊗ / ⊗	★ / ⊗ / ⊗	★ / ⊗ / –	★ / ⊗ / –
Linearity error			–	–	–	–	–
Voltage drop, closed state (V) at I nominal			≤ 2	≤ 2	≤ 2	≤ 2.6	
Switching frequency (Hz)			–	–	–	1000	
Operating frequency (Hz)			–	–	–	–	

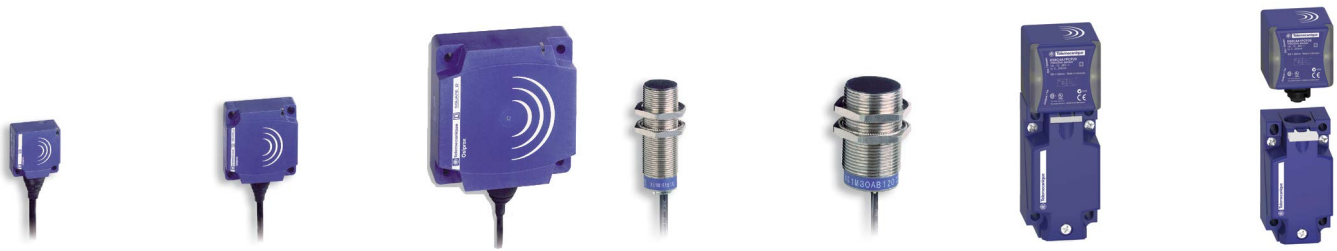
Multi-current/multi-voltage sensors for AC/DC applications

Connection			Precabled, PvR (2 m)				
2-wire	AC/DC	NC	XS9E11RMBL01U20 (5)	XS9C11RMBL01U20 (5)	–	–	–
not short-circuit protected (2)	NC	slow version	–	–	XSAV11801	–	–
		fast version	–	–	XSAV12801	–	–
Supply voltage range (V), 50–60 Hz			20–264	20–264	20–264	–	–
Switching capacity, max. (mA)			100	300 AC / 200 DC	300 AC / 200 DC	–	–
Output state LED (⊗) / Power on LED (⊗)			⊗ / ⊗	⊗ / ⊗	⊗ / –	–	–
Residual current, open state (mA)			≤ 1.5	≤ 1.5	≤ 1.5	–	–
Voltage drop, closed state (V) at I nominal			≤ 5.5	≤ 5.5	≤ 5.7	–	–
Switching frequency (Hz)			–	–	–	–	–

Accessories

Mounting						substitution of block type sensors XSE / XSC / XSD		Mounting clamp with indexing pin for cylindrical sensors.		
for flat sensors				flat	90°					
	CLICK!		flat	8x22x8	XSZBJ00	XSZBJ90	–			
				15x32x8	XSZBF00	XSZBF90	XSZBE10		M12	XSZB112
				26x26x13	XSZBE00	XSZBE90	XSZBC10		M18	XSZB118
				40x40x15	XSZBC00	XSZBC90	XSZBD10		M30	XSZB130

Analog / Factor 1



26 x 26 x 13	40 x 40 x 15	80 x 80 x 26	M18	M30	Cubic, Analog	Cubic, Factor 1
10 mm	15 mm	40 mm	M: 5 mm / P: 8 mm	M: 10 mm / P: 15 mm	15, 20, or 40 mm	25 mm
1-10	2-15	5-40	M: 0.5-5 / P: 0.8-8	M: 1-10 / P: 1.5-15		2-27
flush mountable			flush / non-flush mountable			non-flush mountable
P	P	P	M or P	M or P	P	P
-13 to +158 °F (-25 to +70 °C)					Storage: -40 to +85 °C (-40 to +185 °F). Operation: -25 to +70 °C (-13 to +158 °F). (7)	
precabled: IP68 (with connector: IP67)					IP65, IP67, IP69K	
CE, UL, CSA, CCC, C-TICK					UL, CSA, CE, TÜV (4-wire versions, XS7)	
26 x 26 x 13 (1.02 x 1.02 x 0.51)	40 x 40 x 15 (1.58 x 1.58 x 0.59)	80 x 80 x 26 (3.15 x 3.15 x 1.02)	Ø18 x 50 (Ø0.71 x 1.97)	Ø30 x 52.5 (Ø1.18 x 2.07)	40 x 183.3 x 40 (1.57 x 7.22 x 1.57)	40 x 72.9 x 40 (1.57 x 2.87 x 1.57) (XS9 head)
-	-	-	-	-	-	-
-	-	-	-	-	-	-

					Screw terminals	
-	-	-	-	-		
-	-	-	-	-		
-	-	-	-	-		
XS9E111A1L2	XS9C111A1L2	XS9D111A1L2	XS4P18AB110	XS4P30AB110		
-	-	-	XS1M18AB120	XS1M30AB120		
XS9E111A2L2	XS9C111A2L2	XS9D111A2L2	-	-		
-	-	-	XS4P18AB120	XS4P30AB120		
-	-	-	-	-		
-	-	-	-	-		
XS9E111A1L01M12 (4)	XS9C111A1L01M12 (4)	XS9D111A1M12	-	-		
XS9E111A2L01M12 (4)	XS9C111A2L01M12 (4)	XS9D111A2M12	-	-		
10-36	10-36	10-36	10-38	10-38	DC: 10-58 V AC/DC: 20-264 V (8)	0-10 V: 15-36 V $\ddot{=}$ 4-20 mA: 12-36 V $\ddot{=}$
-	-	-	-	-		-
-	-	-	-	-		-
± 1 V for 0-10 V version / ± 2 mA for 4-20 mA version						< 3%
-	-	-	-	-		-
-	-	-	-	-	< 300 (flush), < 200 (non-flush)	-
1000	1000	100	500	300		-

Accessories

PUR prewired connectors (6)		M8 (3 pin)		1/2"		M12 (4 pin)		
		Straight	Elbowed	Straight	Elbowed	Straight	Elbowed	Elbowed PNP LED
		2 m XZCP0566L2	XZCP0666L2	2 m XZCP1865L2	XZCP1965L2	2 m XZCP1141L2	XZCP1241L2	XZCP1340L2
		5 m XZCP0566L5	XZCP0666L5	5 m XZCP1865L5	XZCP1965L5	5 m XZCP1141L5	XZCP1241L5	XZCP1340L5
		10 m XZCP0566L10	XZCP0666L10	10 m XZCP1865L10	XZCP1965L10	10 m XZCP1141L10	XZCP1241L10	XZCP1340L10

Adaptable female plug-in connectors

M8	Straight	Elbowed
Steel ring	XZCC8FDM30S	XZCC8FCM30S
M12 (4 pin)		
Steel ring	XZCC12FDM40B	XZCC12FCM40B
Plastic ring	XZCC12FDP40B	XZCC12FCP40B

(1) 6-150 and 6000 impulses/min for XSAV11373 and XSAV11801 (slow version);
120-3000 and 48000 impulses/min for XSAV12373 and XSAV12801 (fast version).

(2) For these sensors without short-circuit protection, it is essential to connect a 0.4 A quick-blow fuse in series with the load.

(3) Pigtail connector (0.15 m) with end mounted remote control incorporating M12 connector.

(4) Pigtail connector (0.15 m) with end connector.

(5) Pigtail connector (0.15 m) with end mounted remote control incorporating 1/2"-20 UNF connector.

(6) For other cable options, see page 55.

(7) Sensors are available for very low temperatures (suffix TF: -40 to +70 °C / -40 to +158 °F) or very high temperatures (suffix TT: -25 to +85 °C / -13 to +185 °F). Consult the Customer Care Center (1-800-435-2121).

(8) 4-wire $\ddot{=}$: < 200 (with overload and short-circuit protection)

2-wire $\ddot{=}$: < 100 (with overload and short-circuit protection)

2-wire $\sim\ddot{=}$: AC = 5-300.

DC = 5-200. Sensor must be protected by a 0.4 A fast-acting fuse (XUZE04) connected in series with the load. See "OsiSense XS Accessories" in catalog 9006CT1007.



Type	M12	M18	Ø18 plain	M30
Nominal sensing distance Sn	7 mm	12 mm	12 mm	22 mm
Operating zone (mm)	0–5.6	0–9.6	0–9.6	0–17.6
Suitability for flush mounting (metal environment)	non-flush mountable			
Case: M (metal) (1)	M: stainless steel 316 L			
Product certification	CE, UL, CSA, CCC, C-TICK			
Temperature range	–13 to +185 °F (–25 to +85 °C)			
Degree of protection, conforming to IEC 60529	precabled: IP68 (with connector: IP67) and IP69K conforming to DIN 40050			

Sensors for DC applications (solid-state output: transistor)

Connection: Precabled, non-toxic PVC (2 m)			Dimensions, mm (in.)			
3-wire	PNP	NO	M12 x 55 (2.17)	M18 x 60 (2.36)	Ø18 x 60 (2.36)	M30 x 62 (2.44)
	NPN	NO	XS212SAPAL2	XS218SAPAL2	XS2L2SAPAL2	XS230SAPAL2
3-wire	PNP	NO	M12 x 61 (2.40)	M18 x 70 (2.76)	Ø18 x 70 (2.76)	M30 x 70 (2.76)
	NPN	NO	XS212SANAL2	XS218SANAL2	XS2L2SANAL2	XS230SANAL2
Connection: M12 connector			Dimensions, mm (in.)			
3-wire	PNP	NO	M12 x 61 (2.40)	M18 x 70 (2.76)	Ø18 x 70 (2.76)	M30 x 70 (2.76)
	NPN	NO	XS212SAPAM12	XS218SAPAM12	XS2L2SAPAM12	XS230SAPAM12
3-wire	PNP	NO	M12 x 61 (2.40)	M18 x 70 (2.76)	Ø18 x 70 (2.76)	M30 x 70 (2.76)
	NPN	NO	XS212SANAM12	XS218SANAM12	XS2L2SANAM12	XS230SANAM12
Supply voltage range (V), including ripple			10–36			
Switching capacity, max. (mA)			≤ 200			
Switching frequency (Hz)			2500			
Short-circuit protection (★) / Output state LED (⊗)			★ / ⊗			
Voltage drop, closed state (V) at I nominal			≤ 2			

Multi-current/multi-voltage sensors for AC/DC applications




Connection: Precabled, non-toxic PVC (2 m)			Dimensions, mm (in.)			
2-wire (2)	AC/DC	NO	–	M18 x 60 (2.36)	–	M30 x 62 (2.44)
	AC/DC	NO	–	XS218SAMAL2	–	XS230SAMAL2
2-wire (2)	AC/DC	NO	–	M18 x 72 (2.84)	–	M30 x 74 (2.91)
	AC/DC	NO	–	XS218SAMAU20	–	XS230SAMAU20
Supply voltage range (V), 50-60 HZ			–			
Switching capacity, max. (mA)			20–264			
Switching frequency (Hz)			300 AC / 200 DC			
Output state LED (⊗)			–			
Voltage drop, closed state (V) at I nominal			–			
Residual current, open state (mA)			–			



(1) Plastic range available. M12, M18, M30: To order, replace the second letter S in the catalog number with A. Example: XS212SAPAL2 becomes XS212AAPAL2.

(2) For these sensors without short-circuit protection, you must connect a 0.4 A quick-blow fuse in series with the load.

Accessories

Mounting clamps	M12 prewired connector	M12 jumper cable
Plastic 24.1 mm mounting centers, with locking screw  for sensor Ø18 plain XUZB2005	female, 4-pin, stainless steel clamping ring  Straight connector 5 m cable XZCPA1141L5	male, 3-pin, stainless steel clamping ring Straight 5 m cable XZCRA151140A5 connector
Stainless steel for sensor Ø12 XSZBS12 Ø18 XUZA118 Ø30 XSZBS30	Elbowed connector 5 m cable XZCPA1241L5 	1/2" prewired connector Straight 5 m cable XZCP1865L5 Elbowed 5 m cable XZCP1965L5

Catalog Numbers Inductive proximity sensors—Application specific Stainless steel housing for Food and Beverage



Three-wire 12–24 Vdc, NO function, PNP output, M12 connector		M12 Ø12 mm x 1, threaded	M18 Ø18 mm x 1, threaded	M30 Ø30 mm x 1.5, threaded
Sensing distance (Sn), mm	flush mountable	6	10	20
	non-flush mountable	10	20	40
Operating zone	flush mountable	0–4.8 mm	0–8 mm	0–16 mm
	non-flush mountable	0–8 mm	0–16 mm	0–32 mm
Suitability for flush mounting (metal environment)		Flush mountable or non-flush mountable, depending on the model		
Case		Stainless steel 316L		
Temperature range		–13 to +185 °F (–25 to +85 °C)		
Degree of protection, conforming to IEC 60529		IP68 conforming to IEC 60529, IP 69 conforming to DIN 40050		
Product certification		CULus, CE		CULus, CE
Dimensions, mm (in.)	connector	M12 x 60 mm (2.32 in.)	M18 x 64 mm (2.52 in.)	M30 x 64 mm (2.52 in.)

Sensors for DC applications

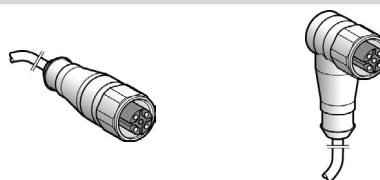
Catalog number	flush mountable	XS912S1PAM12	XS918S1PAM12	XS930S1PAM12
	non-flush mountable	XS912S4PAM12	XS918S4PAM12	XS930S4PAM12
Weight, kg (lb)	flush mountable	0.024 (0.053)	0.051 (0.112)	0.140 (0.309)
	non-flush mountable	0.023 (0.051)	0.051 (0.112)	0.145 (0.320)
Supply voltage range (V), including ripple		10–30	10–30	10–30
Switching capacity, max (mA)		200	200	200
Short-circuit protection (★) / Output state LED (⊗)		★ / ⊗	★ / ⊗	★ / ⊗
Voltage drop, closed state (V) at I nominal		≤ 2	≤ 2	≤ 2
Switching frequency (Hz)		600	300	100



Accessories

Stainless steel mounting bracket	For use with Ø12 sensor	Ø18 sensor	Ø30 sensor
Catalog number	XSZBS12	XUZA118	XSZBS30
Weight, kg (lb)	0.090 (0.199)	0.190 (0.419)	0.370 (0.816)

Connecting cables



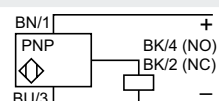
Pre-wired M12 connectors, female, 4-pin, stainless steel clamping ring	2 m	5 m	10 m	
Catalog number	Straight	XZCPA1141L2	XZCPA1141L5	XZCPA1141L10
	Elbowed	XZCPA1241L2	XZCPA1241L5	XZCPA1241L10
Weight, kg (lb)	0.090 (0.198)	0.190 (0.419)	0.370 (0.816)	

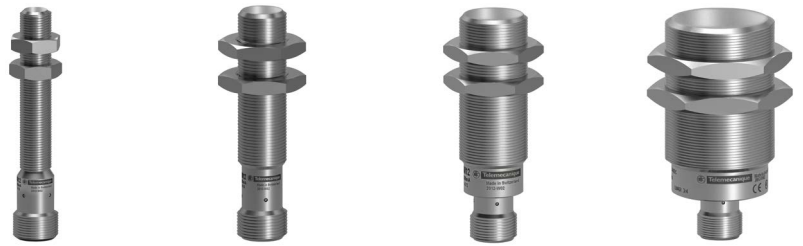
Wiring diagrams

M12 connector



PNP

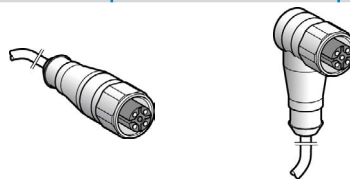




Three-wire 12–24 Vdc, NO Function, PNP Output, M12 Connection		M8	M12	M18	M30
Ø8 mm, threaded M8 x 1					
Sensing distance (Sn), mm	flush mountable	3	6	10	20
	non-flush mountable	6	10	20	40
Operating zone	flush mountable	0–2.4 mm	0–4.8 mm	0–8 mm	0–16 mm
	non-flush mountable	0–4.8 mm	0–8 mm	0–16 mm	0–32 mm
Weight, kg (lb)	flush mountable	industrial	0.018 (0.040)	0.024 (0.053)	0.044 (0.097)
		welding	–	0.024 (0.053)	0.051 (0.112)
	non-flush mountable	0.018 (0.040)	0.023 (0.051)	0.051 (0.112)	0.144 (0.317)
Suitability for flush mounting (metal environment)		flush mountable or non-flush mountable, depending on the model			
Case		Stainless steel 303			
Temperature range		–13 to +158 °F (–25 to +70 °C)			
Degree of protection, conforming to IEC 60529		IP67 conforming to IEC 60529, IP 69 conforming to DIN 40050			
Product certification		CULus, CE	CULus, CE	CULus, CE	CULus, CE
Dimensions, mm (in.)		connector M8 x 66 mm (2.60 in.)	M12 x 60 mm (2.32 in.)	M18 x 64 mm (2.52 in.)	M30 x 64 mm (2.52 in.)

Sensors for DC applications

Catalog number 3-wire, PNP, NO	flush mountable	industrial	XS908R1PAM12	XS912R1PAM12	XS918R1PAM12	XS930R1PAM12
			welding	–	XS912RWPAM12	XS918RWPAM12
	non-flush mountable		XS908R4PAM12	XS912R4PAM12	XS918R4PAM12	XS930R4PAM12
Supply voltage range (V), including ripple			10-30	10-30	10-30	10-30
Switching capacity, max (mA)			200	200	200	200
Short-circuit protection (★) / Output state LED (⊗)			★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗
Voltage drop, closed state (V) at I nominal			≤ 2	≤ 2	≤ 2	≤ 2
Switching frequency (Hz)	flush mountable	industrial	1000	600	300	100
		welding	–	15	15	–
	non-flush mountable		700	400	200	90



Connecting cables

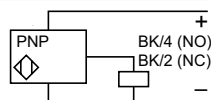
Description	Catalog Number		2 m	5 m	10 m
Pre-wired M12 connectors, female, 4-pin, metal clamping ring		Straight	XZCP1141L2	XZCP1141L5	XZCP1141L10
		Elbowed	XZCP1241L2	XZCP1241L5	XZCP1241L10
	Weight		0.090 (0.198)	0.190 (0.419)	0.370 (0.816)

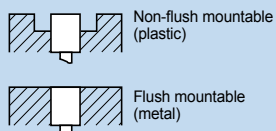
Wiring diagrams

M12 connector



PNP





Suitability for flush mounting		M12	M18	M30	Ø32	40 x 40 x 117
Nominal sensing distance S_n	flush mountable	2 mm	5 mm	10 mm	15 mm	15 mm
	non-flush mountable	–	8 mm	15 mm	20 mm	–
Operating zone S_a (mm) (2)	flush mountable	0–1.44	0–3.6	0–7.2	0–10	0–11
	non-flush mountable	–	0–5.8	0–11	0–15	–
Case: M (metal), P (plastic)	flush mountable	M	M	M	M	P
	non-flush mountable	–	P	P	P	–
Product certification	CE, c ETL us (All XT1); CE, UL (All XT2)					CE, UL, CSA
Temperature range	–13 to +158 °F (–25 to +70 °C)					
Degree of protection, conforming to IEC 60529	IP67					
Dimensions, Ø x L or H x W x D, mm (in.)		M12 x 70 (2.76)	M18 x 80 (3.15)	M30 x 80 (3.15)	M32 x 80 (3.15)	117 x 40 x 40 (4.61 x 1.58 x 1.58)

Sensors for DC applications

Connection		Precabled, PVC (2 m)					
3-wire	PNP NO	flush mountable	XT112S1PAL2	XT118B1PAL2	XT130B1PAL2	–	–
		non-flush mountable	–	XT218A1PAL2	XT230A1PAL2	–	–
	NO + NC	flush mountable	XT112S1PCL2	XT118B1PCL2	XT130B1PCL2	–	–
		non-flush mountable	–	–	–	–	–
NPN NO	flush mountable	XT112S1NAL2	XT118B1NAL2	XT130B1NAL2	–	–	
	non-flush mountable	–	XT218A1NAL2	XT230A1NAL2	–	–	
Connection		M12 connector				Screw terminals	
3-wire	PNP NO + NC	flush mountable	XT112S1PCM12	XT118B1PCM12	XT130B1PCM12	–	XT7C40PC440H7
		non-flush mountable	–	XT218A1PCM12	XT230A1PCM12	–	–
NPN NO + NC	flush mountable	–	–	–	–	XT7C40NC440H7	
	–	–	–	–	–	–	
Supply voltage range (V), including ripple		10–38					10–58
Switching capacity, max. (mA)		200					200
Short circuit-protection (★) / Output state LED (⊗)		★ / ⊗					★ / ⊗
Voltage drop, closed state (V) at I nominal		≤ 2					≤ 2
Switching frequency (Hz)		300	100 (XT2) / 200 (XT1)	100 (XT2) / 150 (XT1)	–	100	

Multi-current/multi-voltage sensors for AC applications

Connection		Precabled, PVC (2 m)					
2-wire AC (1)	NO	flush mountable	–	XT118B1FAL2	XT130B1FAL2	XT132B1FAL2	–
		non-flush mountable	–	XT218A1FAL2	XT230A1FAL2	XT232A1FAL2	–
	NC	flush mountable	–	XT118B1FBL2	XT130B1FBL2	XT132B1FBL2	–
		non-flush mountable	–	–	XT230A1FBL2	XT232A1FBL2	–
Connection		Screw terminals					
2-wire AC (1)	NO or NC programmable	flush mountable	–	–	–	–	XT7C40FP262H7
Supply voltage range (V), 50–60 Hz		–					20–264
Switching capacity, max. (mA)		–					350 (2 A inrush) (1)
Output state LED (⊗) / Power on LED (⊗)		⊗ / –					–
Voltage drop, closed state (V) at I nominal		–					≤ 5.5
Switching frequency (Hz)		–					25

(1) For these sensors without short-circuit protection, you must connect a 0.4 A quick-blow fuse in series with the load.

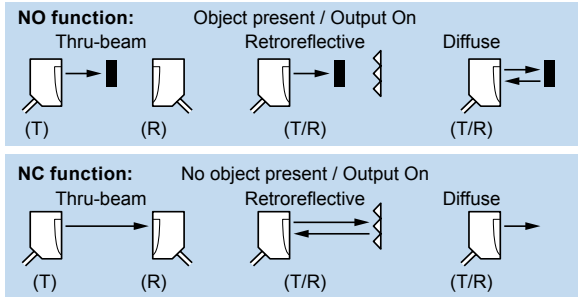
(2) The operating distance depends on the object material.

(3) For other cable options, see page 55.

Accessories

Adaptable female plug-in connectors, including PUR prewired versions (3)

5 m without LED	prewired, elbowed	prewired, straight	screw terminal
M12	XZCP1241L5	XZCP1141L5	XZCC12FCM40B



			M18 Metal (1) Cable	M12 connector	M18 Plastic Cable	M12 connector	
Diffuse	Sensing distance		0.6 m (2) (3)		0.6 m (2) (3)		
		Output type	DC3 NO	XUB5BPANL2	XUB5BPANM12	XUB5APANL2	XUB5APANM12
			PNP	XUB5BPANL2	XUB5BPANM12	XUB5APANL2	XUB5APANM12
			NPN	XUB5BNANL2	XUB5BNANM12	XUB5ANANL2	XUB5ANANM12
	AC/DC, 1 C/O relay		–	–	–	–	
With background suppression	NO	PNP	XU8M18MA230	XU8MA230K	–	–	
		NPN	–	–	–	–	
		AC/DC relay output	–	–	–	–	
			–	–	–	–	
Polarized retroreflective	Sensing distance (4)		2 m		2 m		
		Output type	DC3 NO	XUB9BPANL2	XUB9BPANM12	XUB9APANL2	XUB9APANM12
			PNP	XUB9BPANL2	XUB9BPANM12	XUB9APANL2	XUB9APANM12
			NPN	XUB9BNANL2	XUB9BNANM12	XUB9ANANL2	XUB9ANANM12
	AC/DC 1C/O relay		–	–	–	–	
Retroreflective	Sensing distance (4)		4 m		4 m		
		Output type	DC3 NO	XUB1BPANL2	XUB1BPANM12	XUB1APANL2	XUB1APANM12
			PNP	XUB1BPANL2	XUB1BPANM12	XUB1APANL2	XUB1APANM12
			NPN	XUB1BNANL2	XUB1BNANM12	XUB1ANANL2	XUB1ANANM12
	AC/DC 1C/O relay		–	–	–	–	
Thru-beam	Sensing distance		15 m		15 m		
		Output type	DC3 NO	XUB2BPANL2R	XUB2BPANM12R	XUB2APANL2R	XUB2APANM12R
			PNP	XUB2BPANL2R	XUB2BPANM12R	XUB2APANL2R	XUB2APANM12R
			NPN	XUB2BNANL2R	XUB2BNANM12R	XUB2ANANL2R	XUB2ANANM12R
	AC/DC 1C/O relay		–	–	–	–	
Output function	NO		A	A	A	A	
	NC		B	B	B	B	
Thru-beam transmitter	DC		XUB2BKSNL2T	XUB2BKSNM12T	XUB2AKSNL2T	XUB2AKSNM12T	
	AC/DC		–	–	–	–	
Multimode	Sensing distance		Background suppression: 0.12 m. Diffuse: 0.4 m.				
			Polarized retroreflective: 3 m. Thru-beam: 20 m.				
	Output type	DC3 NO/NC	PNP	XUB0BPSNL2	XUB0BPSNM12	XUB0APSNL2	XUB0APSNM12
			NPN	XUB0BNSNL2	XUB0BNSNM12	XUB0ANSNL2	XUB0ANSNM12
		PNP/NPN	–	–	–	–	
	AC/DC 1C/O relay		–	–	–	–	
Thru-beam transmitter	DC		XUB0BKSNL2T	XUB0BKSNM12T	XUB0AKSNL2T	XUB0AKSNM12T	
	AC/DC		–	–	–	–	
Mounting			M18 x 1		M18 x 1		
Dimensions, mm (in.)			M18 x 64 (2.52) / M18 x 78 (3.07)				
Product certifications			CE, UL, CSA, C-Tick			CE, UL, CSA, C-Tick	
DC common specifications							
	Supply voltage range (V), including ripple		10–36		10–36		
	Switching frequency (Hz)		500		500		
	Common specifications for DC versions		Switching capacity max.: 100 mA / Overload and short-circuit protection (★) / Output state LED				
AC/DC common specifications							
	Supply voltage range (V), including ripple		–		–		
	Switching frequency (Hz)		–		–		
	Output state LED (☉) / power on LED (☉)		–		–		

Accessories

Reflectors

Reflectors (mm)	Model
Ø21	XUZC21
24 x 21	XUZC24
11 x 33	XUZC08
Ø39	XUZC39
Ø80	XUZC80
50 x 50	XUZC50
100 x 100	XUZC100

3D mountings with ball joint

Bracket with ball joint for sensors and reflector XUZC50

Protective housing with ball joint

M12 rod for ball joint

for XUZC50

XUK●●●	XUZK2004
XUX●●●	XUZX2004

for

XUB●●●	XUZB2003
XUM0●●●	XUZM2003
XUK●●●	XUZK2003
XUX●●●	XUZX2003

XUZ2001

(1) Brass. Also available in stainless steel. See page 47 for the food/beverage processing series.

(2) For a sensing distance 0.1 m without sensitivity adjustment, replace digit 5 with 4 in the catalog number. Example: XUB5BPANL2 becomes XUB4BPANL2.

(3) With sensitivity adjustment.

(4) With reflector XUZC50, ordered separately.

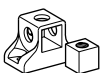
(5) For other cable options, see page 55.



Miniature Cable		M8 connector	Compact 50 x 50 mm		Compact 92 x 71 mm	
			Cable	M12 connector	Screw terminal	M12 connector
1 m (3)			1 m (3)		2.1 m (3)	
XUM5APCNL2	XUM5APCNM8	XUM5APCNL2	XUK5APANL2	XUK5APANM12	XUX5APANT16	XUX5APANM12
XUM5ANCNL2	XUM5ANCNM8	XUM5ANCNL2	XUK5ANANL2	XUK5ANANM12	XUX5ANANT16	XUX5ANANM12
-	-	XUM5ARCNL2	XUK5ARCNL2	-	XUX5ARCNT16	-
XUM5APCNL2	XUM5APCNM8	XUM5APCNL2	XUK8AKSNL2	XUK8AKSNM12	XUX8AKSAT16	XUX8AKSAM12
XUM5ANCNL2	XUM5ANCNM8	XUM5ANCNL2	XUK8ARCTL2	-	XUX8ARCTT16	-
-	-					
5 m (3)			5 m		11 m (3)	
XUM9APCNL2	XUM9APCNM8	XUM9APCNL2	XUK9APANL2	XUK9APANM12	XUX9APANT16	XUX9APANM12
XUM9ANCNL2	XUM9ANCNM8	XUM9ANCNL2	XUK9ANANL2	XUK9ANANM12	XUX9ANANT16	XUX9ANANM12
-	-	XUM9ARCNL2	XUK9ARCNL2	-	XUX9ARCNT16	-
-	-					
7 m			7 m		14 m (3)	
-	-	XUM1APCNL2	XUK1APANL2	XUK1APANM12	XUX1APANT16	XUX1APANM12
-	-	XUM1ANANL2	XUK1ANANL2	XUK1ANANM12	XUX1ANANT16	XUX1ANANM12
-	-	XUM1ARCNL2	XUK1ARCNL2	-	XUX1ARCNT16	-
15 m (3)			30 m		40 m (3)	
XUM2APCNL2R	XUM2APCNM8R	XUM2APCNL2R	XUK2APANL2R	XUK2APANM12R	XUX2APANT16R	XUX2APANM12R
XUM2ANCNL2R	XUM2ANCNM8R	XUM2ANCNL2R	XUK2ANANL2R	XUK2ANANM12R	XUX2ANANT16R	XUX2ANANM12R
-	-	XUM2ARCNL2R	XUK2ARCNL2R	-	XUX2ARCNT16R	-
			A	A	A	A
			B	B	B	B
XUM2AKCNL2T	XUM2AKCNM8T	XUM2AKCNL2T	XUK2AKSNL2T	XUK2AKSNM12T	XUX0AKSAT16T	XUX0AKSAM12T
-	-	XUM2ARCNL2T	XUK2ARCNL2T	-	XUX0ARCTT16T	-
Background suppression: 0.1 m. Diffuse: 0.4 m.		Background suppression: 0.28 m. Diffuse: 0.8 m.		Background suppression: 1.3 m. Diffuse: 2 m.		
Polarized retroreflective: 3 m. Thru-beam: 10 m.		Polarized retroreflective: 4 m. Thru-beam: 30 m.		Polarized retroreflective: 11 m. Thru-beam: 40 m.		
XUM0APSAL2	XUM0APSAM8	-	-	-	-	
XUM0ANSAL2	XUM0ANSAM8	-	-	-	-	
-	-	XUM0AKSAL2	XUK0AKSAL2	XUK0AKSAM12	XUX0AKSAT16	XUX0AKSAM12
-	-	XUM0ARCTL2	XUK0ARCTL2	-	XUX0ARCTT16	-
XUM0AKSAL2T	XUM0AKSAM8T	XUM0AKSAL2T	XUK0AKSAL2T	XUK0AKSAM12T	XUX0AKSAT16T	XUX0AKSAM12T
-	-	XUM0ARCTL2T	XUK0ARCTL2T	-	XUX0ARCTT16T	-
Direct mounting centers 25.5, M3 screws 12 x 34 x 20 (0.47 x 1.34 x 0.79) CE, UL, CSA, C-Tick		Direct mounting centers 40 x 40, M4 screws 18 x 50 x 50 (0.71 x 1.97 x 1.97) CE, UL, CSA, CCC, C-Tick		Direct mounting centers 30/38 to 40/50/74, M5 screws 30 x 92 x 71 (1.18 x 3.62 x 2.80) CE, UL, CSA, CCC, C-Tick		
10-30		10-30		10-36		
1000		500		500		
indicator (⊗): yes / power on LED (⊗): yes						
-		20-264		20-264		
-		20		20		
-		⊗ / ⊗		⊗ / ⊗		

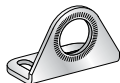
Simple mounting devices

Mounting support for M12 rod



XUZ2003

Single bracket



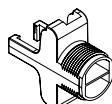
for	standard
XUB●●●	XUZA118 (stainless steel)
XUM●●●	XUZAM02
XUK●●●	XUZA51
XUX●●●	XUZX2000

Conduit adapter (ISO 16 to 1/2" NPT)



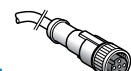
XUZX2001

Plastic Ø18 mounting adapter (XUM2, XUM5, and XUM9)

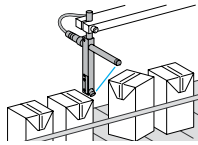
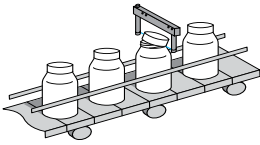


XUZASM001

Adaptable female plug-in connectors, including PUR prewired versions (5)



5 m without LED	prewired, elbowed	prewired, straight
M8	XZCP1041L5	XZCP0941L5
M12	XZCP1241L5	XZCP1141L5



System	Thru-beam with modular red LED light source
Sensing distance	30–150 mm
Minimum size of object detected, mm (in.)	0.8 (0.03)
Case: M (metal)	M
Temperature range / Degree of protection, conforming to IEC 60529	+14 to +140 °F (-10 to +60 °C) / IP65 & IP67
Product certification	CE, cULus

Sensors for DC applications (solid-state output: transistor)

Connection	M8 connector 3-pin				Precabled: 2 m.						
Dimensions, mm (in.)	A	B	C	D	A	B	C	D			
Transmitter / Receiver 3 wire NO PNP 	XUVR0605P ANM8	50 (1.97)	60 (2.36)	74 (2.91)	77.5 (3.05)	XUVR0303PANL2	30 (1.18)	40 (1.58)	54 (2.13)	57.5 (2.26)	
	XUVR0605N ANM8										
	NO PNP XUVR0608P ANM8	80 (3.15)	60 (2.36)	104 (4.09)	77.5 (3.05)						
	NPN XUVR0608N ANM8										
	NO PNP XUVR1212P ANM8	120 (4.72)	120 (4.72)	144 (5.67)	142 (5.59)						
	NPN XUVR1212N ANM8										
	NO PNP XUVR1218P ANM8	180 (7.09)	120 (4.72)	204 (8.03)	142 (5.59)						
	NPN XUVR1218N ANM8										
	NO PNP XUVA0505P ANM8	44 (1.73)	44 (1.73)	71 (2.80)	71 (2.80)						
	NPN XUVA0808P ANM8	74 (2.91)	74 (2.91)	101 (3.98)	101 (3.98)						
	NO PNP XUVA1212P ANM8	112 (4.41)	112 (4.41)	142 (5.59)	142 (5.59)						
	NPN XUVA1515P ANM8	142 (5.59)	142 (5.59)	172 (6.77)	172 (6.77)						
	Output function	NO					A				
		NC					B				
Supply voltage range (V), including ripple	10–30										
Switching capacity, max. (mA) / Switching frequency (Hz)	100 mA / 4 kHz										
Overload and short-circuit protection (★) / Output state LED (⊗)	★ / ⊗										



System	Thru-beam with infrared emission				
Passageway dimensions, mm (in.)	30 x 30 (1.18 x 1.18)	60 x 60 (2.36 x 2.36)	200 x 120 (7.87 x 4.72)	200 x 180 (7.87 x 7.09)	200 x 250 (7.87 x 9.84)
Connection	M8 (4 pin)		M12 (4 pin)		
Minimum size of object to be detected	Ø2 mm	XUVF30M8	XUVF60M8	–	–
	Ø4 mm	–	–	XUVF120M12	XUVF180M12
	Ø10 mm	–	–	XUYFRS120S	XUYFRS180S
Type and output function	4-wire, PNP and NPN Output function On or Off on passage of object, programmable				
Function type	Dynamic (XUVF30M8, XUVF60M8), Dynamic or static (XUVF120M12, XUVF180M12, XUVF250M12)				
Supply voltage range (V), including ripple	18–30				
Switching capacity, max. (mA) / Switching frequency (Hz)	≤ 100 mA / 500 Hz				
Overload and short-circuit protection (★) / Output state LED (⊗)	★ / ⊗				

Accessories

Adaptable female PUR prewired plug-in connectors (1)



Straight

Elbowed

M8 (3 pin)

For optical forks without setting

	Straight	Elbowed
2 m	XZCP0566L2	XZCP0666L2
5 m	XZCP0566L5	XZCP0666L5

M8 (4 pin)

For optical forks and frame with setting

	Straight	Elbowed
2 m	XZCP0941L2	XZCP1041L2
5 m	XZCP0941L5	XZCP1041L5

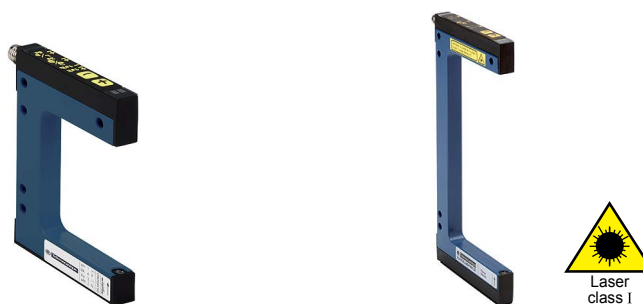
M12 (4 pin)

For frame with setting

	Straight	Elbowed
2 m	XZCP1141L2	XZCP1241L2
5 m	XZCP1141L5	XZCP1241L5

(1) For other cable options, see page 55.

Forks with teach mode (1)



System, with teach mode	Thru-beam	Thru-beam laser
Sensing distance	2–120 mm	2–120 mm
Mounting, mm (in.)	(see column E below)	
Minimum size of object detected, mm (in.)	0.2 (0.008)	0.05 (0.002)
Case: M (metal) / Setup assistance LEDs ☉	M / ☉	
Temperature range / Degree of protection (conforming to IEC 60529)	–13 to +140 °F (–25 to +60 °C) / IP65	
Product certification	CE, cULus	

Sensors for DC applications (solid-state output: transistor)

Connection	M8 connector – 4 Pin											
Type of output	3-wire PNP/NPN programmable NO/NC											
Dimensions, mm (in.)	A	B	C	D	E	A	B	C	D	E		
Transmitter / Receiver	XUYFANEP40002	2 (0.1)	42 (1.7)	32 (1.3)	57 (2.2)	14 (0.6)	XUYFALNEP40002	2 (0.1)	42 (1.7)	41 (1.6)	57 (2.2)	14 (0.6)
	XUYFANEP60002	2 (0.1)	59 (2.3)		77 (3.0)		XUYFALNEP60002	2 (0.1)	59 (2.3)		77 (3.0)	
	XUYFANEP100002	2 (0.1)	95 (3.7)		110 (4.3)		XUYFALNEP100002	2 (0.1)	95 (3.7)		110 (4.3)	
	XUYFANEP40005	5 (0.2)	42 (1.7)	35 (1.4)	57 (2.2)	14 (0.6)	XUYFALNEP40005	5 (0.2)	42 (1.7)	44 (1.7)	57 (2.2)	14 (0.6)
	XUYFANEP60005	5 (0.2)	59 (2.3)		77 (3.0)		XUYFALNEP60005	5 (0.2)	59 (2.3)		77 (3.0)	
	XUYFANEP100005	5 (0.2)	95 (3.7)		110 (4.3)		XUYFALNEP100005	5 (0.2)	95 (3.7)		110 (4.3)	
	XUYFANEP40015	15 (0.6)	42 (1.7)	45 (1.8)	57 (2.2)	27 (1.1)	XUYFALNEP40015	15 (0.6)	42 (1.7)	54 (2.1)	57 (2.2)	27 (1.1)
	XUYFANEP60015	15 (0.6)	59 (2.3)		77 (3.0)		XUYFALNEP60015	15 (0.6)	59 (2.3)		77 (3.0)	
	XUYFANEP100015	15 (0.6)	95 (3.7)		110 (4.3)		XUYFALNEP100015	15 (0.6)	95 (3.7)		110 (4.3)	
	XUYFANEP40030	30 (1.2)	42 (1.7)	60 (2.4)	57 (2.2)	42 (1.7)	XUYFALNEP40030	30 (1.2)	42 (1.7)	69 (2.7)	57 (2.2)	42 (1.7)
	XUYFANEP60030	30 (1.2)	59 (2.3)		77 (3.0)		XUYFALNEP60030	30 (1.2)	59 (2.3)		77 (3.0)	
	XUYFANEP100030	30 (1.2)	95 (3.7)		110 (4.3)		XUYFALNEP100030	30 (1.2)	95 (3.7)		110 (4.3)	
	XUYFANEP40050	50 (2.0)	42 (1.7)	80 (3.1)	57 (2.2)	40 (1.6)	XUYFALNEP40050	50 (2.0)	42 (1.7)	89 (3.5)	57 (2.2)	40 (1.6)
	XUYFANEP60050	50 (2.0)	59 (2.3)		77 (3.0)		XUYFALNEP60050	50 (2.0)	59 (2.3)		77 (3.0)	
	XUYFANEP100050	50 (2.0)	95 (3.7)		110 (4.3)		XUYFALNEP100050	50 (2.0)	95 (3.7)		110 (4.3)	
	XUYFANEP40080	80 (3.1)	42 (1.7)	110 (4.3)	57 (2.2)	70 (2.8)	XUYFALNEP40080	80 (3.1)	42 (1.7)	119 (4.7)	57 (2.2)	70 (2.8)
	XUYFANEP60080	80 (3.1)	59 (2.3)		77 (3.0)		XUYFALNEP60080	80 (3.1)	59 (2.3)		77 (3.0)	
	XUYFANEP100080	80 (3.1)	95 (3.7)		110 (4.3)		XUYFALNEP100080	80 (3.1)	95 (3.7)		110 (4.3)	
	XUYFANEP40120	120 (4.7)	42 (1.7)	150 (5.9)	57 (2.2)	110 (4.3)	XUYFALNEP40120	120 (4.7)	42 (1.7)	159 (6.3)	57 (2.2)	110 (4.3)
	XUYFANEP60120	120 (4.7)	59 (2.3)		77 (3.0)		XUYFALNEP60120	120 (4.7)	59 (2.3)		77 (3.0)	
	XUYFANEP100120	120 (4.7)	95 (3.7)		110 (4.3)		XUYFALNEP100120	120 (4.7)	95 (3.7)		110 (4.3)	
Supply voltage range (V), including ripple	10–30					10–30						
Switching capacity, max. (mA) / Switching frequency (Hz)	100/10 kHz					100/10 kHz						
Overload and short-circuit protection (★) / Output state LED (☉)	★ / ☉					★ / ☉						

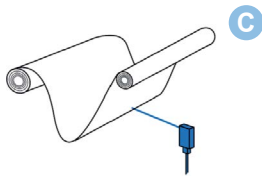


System	Ultrasonic thru-beam	Thru-beam
	Special transparent labels	For all other opaque labels
Sensing distance	3 mm version	
	XUVU06M3•SNM8 (2)	XUVE04M3•SNM8 (2)
Switching frequency (Hz)	1500	10,000
Sensitivity adjustment	numeric potentiometer (3)	numeric potentiometer (3)
Connection	M8 (4 pin)	
Temperature range / Degree of protection, conforming to IEC 60529	+41 to +131 °F (+5 to +55 °C) / IP65	–4 to +140 °F (–20 to +60 °C) / IP65
Product certification	CE	CE, cULus

(1) To order a fork without teach mode, delete **A** from the catalog number. Example: XUYFANEP40002 becomes XUYFNPEP40002.

(2) Replace • with **P** for PNP, **N** for NPN, or **K** for PNP/NPN for output type.

(3) Remote adjustment available for P (PNP) or N (NPN) versions.



Analog output
Position control



High excess gain
for resistance to
accumulation of dirt

Application	Anti-collision/Tandem mode				
System	Diffuse distance	Diffuse w/ background suppression	Reflective time-of- flight	Diffuse	Thru-beam
Sensing distance	0.20–0.80 m	0.20–30 m (1)	0.20–6 m (2)	0.05–0.40 m	50 m
Mounting, mm <i>(MC = mounting centers)</i>	MC: 30–11P cable connector	3 holes, 5.8 mm		M18 x 1	M18 x 1
Sensitivity adjustment	–	Teach mode		Potentiometer	Potentiometer
Case: M (metal), P (plastic) / Setup assistance LEDs ☉	P / ☉	P / ☉		M / ☉	M / ☉
Temperature range / Degree of protection, conforming to IEC 60529	–25 to +140 °F (–25 to +60 °C) / IP67	–4 to +122 °F (–20 to +50 °C) / IP67		–13 to +131 °F (–25 to +55 °C) / IP67	
Product certification	CE, UL, CSA	CE, cULus		CE, UL, CSA	CE, UL, CSA, C-TICK
Dimensions, Ø x L or H x W x D, mm (in.)	86 x 27 x 83 (3.39 x 1.06 x 3.27)	93 x 42 x 95 (3.66 x 1.65 x 3.74)		M18 x 95 (3.74)	

Sensors for DC applications

Connection	Screw terminals	M12 connector – 5 pins	M12 connector	M12 connector	
Transmitter / Receiver	analog 1 PNP/NPN	XUK8TAE1MM12	XUK8TAKSMM12	–	
	4–20 mA / 0–10 V 2 PNP/NPN	–	XUK8TAKDMM12	–	
	analog 4–20 mA	–	–	XU5M18AB20D	
	analog 4–20 mA + 1 PNP	XUK8TAE2MM12 (3)	–	–	XU2M18AP20D (2)
	analog 4–20 mA + 2 PNP/NPN, NO/NC (5)	–	–	XUK9TAH2MM12	–
Supply voltage range (V), including ripple	20–30	18–30	10–30	10–30	
Switching capacity, max. (mA) / Switching frequency (Hz)	max: 20, min: 4 / 10000	100 / 38 (fast mode), 16 (slow mode)	max: 20, min: 4 / 20	100 / 30	
Overload and short-circuit protection (★) / Output state LED (☉)	★ / ☉	★ / ☉	★ / ☉	★ / ☉	



Application				
System	Retroreflective polarized	Thru-beam	Background suppression	Diffuse
Sensing distance	12 m (5)	25 m	0.8 m	1.2 m
Mounting (mm)	2 x Ø4.3 holes / mounting centers 30			
Sensitivity adjustment	Teach mode	Teach mode	Potentiometer	Teach mode
Case P (plastic) / Setup assistance LEDs ☉	P / ☉			
Temperature range / Degree of protection, conforming to IEC 60529	–4 to +140 °F (–20 to +60 °C) / IP67 and IP69K			
Product certification	CE, Ecolab			
Dimensions, H x W x D, mm (in.)	50 x 50 x 23 (1.97 x 1.97 x 0.91)			

Sensors for DC applications (solid-state output: transistor)

Connection	M12 connector – 4 pin				
Transmitter	PNP NO	–	–	–	–
	NPN NO	–	–	–	–
	PNP programmable NO / NC	XUK9LAPSMM12 (4)	XUK2LAPSMM12R (4)	XUK8LAPPNM12 (4)	XUK5LAPSMM12 (4)
Supply voltage range (V), including ripple	12–30				
Switching capacity, max. (mA) / Switching frequency (Hz)	100 / ≤ 2000	100 / ≤ 3500	100 / ≤ 1000	100 / ≤ 600	
Overload and short-circuit protection (★) / Output state LED (☉)	★ / ☉				

(1) Retroreflective and thru-beam systems also available.
 (2) Or min. size of object: 0.2 mm.
 (3) With specific reflector XUY1111, format 50 x 50 mm, ordered separately.
 (4) Mounting bracket: XUZA51S, ordered separately.
 (5) With reflector XUZC50HP, ordered separately.

Material handling series—Conveying

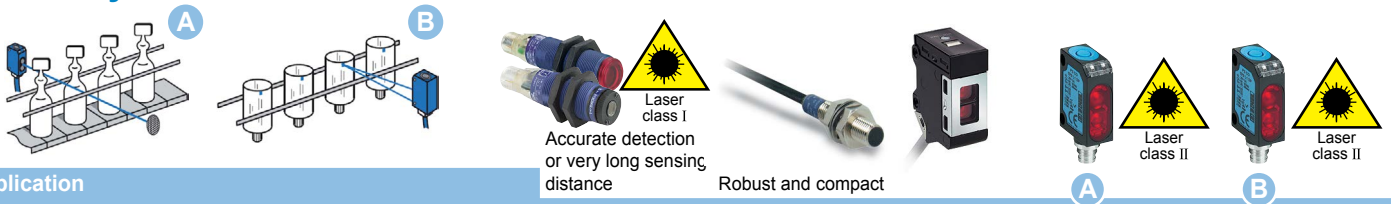


Application	D E		F
System	Diffuse, analog output		Diffuse
	0–10 V	4–20 mA	
Sensing distance	40–60 mm	80–300 mm	0–100 mm
Minimum size of object	1 mm	1.5 x 3.5 mm	93.1 mm
Mounting (mm)	direct: 3 M4 holes, mounting centers 40 mm		direct on conveyor with specific mounting parts
Sensitivity adjustment	Potentiometer		No
Case P (plastic) / Setup assistance LEDs ☒	P / ☒		Aluminum tube / x
Temperature range	+32 to +113 °F (0 to +45 °C)		–13 to +131 °F (–25 to +55 °C)
Product certification	CE, cULus		CE, UL
Dimensions, H x W x D, mm (in.)	50 x 17 x 50 (1.97 x 0.67 x 1.97)		Tube Ø12, variable length 200–900 mm (7.87–35.43 in.)

Sensors for DC applications (solid-state output: transistor)

Connection	M12 connector	M12 connector	Remote M12 connector
Transmitter / Receiver 0–10 V	XUYPCO925L1ANSP	XUYPCO925L3ANSP	XUY609NB6H03M12
Supply voltage limits, min./max (V) including ripple	18–28		18–30
Switching capacity, max.	3 mA		100 mA
Switching frequency (Hz)	40		1000
Overload and short-circuit protection (★) / Output state LED (☒)	★ / ☒		★ / ☒

Assembly series (for footnote references, see page 44)



Application	A B				
System	Thru-beam	Diffuse	Diffuse (1)	Retroreflective	Diffuse contrast
Sensing distance	100 m (2)	0.07 m	0.07 m	10–1000 mm (3)	40–150 mm
Mounting (mm)	M18 x 1	M8 x 1	Direct, 2 M3 holes, mtg. centers 20 mm	Direct, 2 M3 holes, mounting centers 24 mm	
Sensitivity adjustment	Teach mode	–	Potentiometer	Teach mode	
Case: M (metal), P (plastic) / Setup assistance LEDs ☒	P / ☒	M / –	M / ☒	P	
Temperature range	+14 to +113 °F (–10 to +45 °C)	–13 to +131 °F (–25 to +55 °C)	–25 to +140 °F (–25 to +60 °C)	–4 to +140 °F (–20 to +60 °C)	
Degree of protection, conforming to IEC 60529	IP67	IP67	IP67, IP69K	IP67	
Product certification	CE, UL, CSA	CE, cULus	CE, cULus, C-TICK	CE, cULus	
Dimensions, Ø x L or H x W x D, mm (in.)	Ø18 x 64 (2.52)	Ø8 x 40 (1.58)	40.8 x 16.2 x 29.5 (1.61 x 0.64 x 1.16)	35.8 x 12 x 20 (1.41 x 0.47 x 0.79)	

Sensors for DC applications (solid-state output: transistor)

Connection	Precabled		PVR (2 m)	PVC (2 m)		
Transmitter / Receiver 3-wire PNP	NO		XUAH0515	XUM5BPANL2	–	–
Connection		Connector	M12	M8 4-pin		
Transmitter / Receiver 3-wire PNP	NO		XUAH0515S	–	–	–
	3-wire PNP programmable NO / NC		XUBLAPCNM12	–	XUYBCO929LSP	XUYPCO929LSP
	3-wire NPN programmable NO / NC		XUBLANCNM12	–	–	–
Supply voltage range (V), including ripple			10–30	10–30	10–30	10–30
Switching capacity, max. (mA) / Switching frequency (Hz)			100 / 1500	100 / 700	100 / 1000	100 / 1000
Overload and short-circuit protection (★) / Output state LED (☒)			★ / ☒	★ / ☒	★ / ☒	★ / ☒

Accessories

Adaptable female PUR prewired plug-in connectors (4) Female connectors Mounting for XUYPCO925 Mounting for XUE

M8 straight		M12 straight		M8 elbowed		M12 elbowed		M12 (5 pin)		With protective cover		Simple		For compact	
2 m	XZCP0941L2	XZCP1141L2	XZCP1041L2	XZCP1241L2	straight	XZCC12FCM50B	elbowed	XZCC12FDM50B	straight	XUY 9251-DF525567	XUY 925-DF525568	XUYA618			
5 m	XZCP0941L5	XZCP1141L5	XZCP1041L5	XZCP1241L5											

(1) With reflector XUZC250, ordered separately.

(2) On white and gray object 0.2–6 m, on black object 0.2–2.5 m.

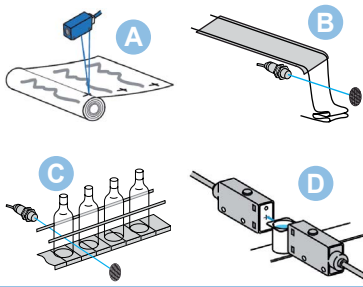
(3) 1 PNP/NPN

(4) For other cable options, see page 55.

(5) Anti-collision/tandem

OsiSense XU

Photoelectric sensors—Application specific Packaging series



Application	A Contrast sensors		Color sensors	D Detection of aqueous liquids
System	Diffuse (with teach mode)	Diffuse (with teach mode)	Diffuse	Thru-beam infrared
Sensing distance	19 mm	9 mm (2)	0.02 m	0.2 m (1)
Mounting (mm) (MC = mounting centers)	direct: MC = 40 x 40	direct: 21 x 28, M5 screws	direct: MC = 40x40	direct: MC = 20
Sensitivity adjustment	Teach button	Teach button	Teach button	Potentiometer
Case: M (metal), P (plastic) / Setup assistance LEDs ☒	P / ☒	M / ☒	P / ☒	P / ☒
Temperature range / Degree of protection, conforming to IEC 60529	+14 to +131 °F (-10 to +55 °C) / IP65	+14 to +131 °F (-10 to +55 °C) / IP67	+14 to +131 °F (-10 to +55 °C) / IP65	+32 to +104 °F (0 to +40 °C) / IP65
Product certification	CE, cULus	CE	CE, cULus	CE
Dimensions (mm) Ø x L or H x W x D	50 x 15 x 50 (1.97 x 0.59 x 1.97)	96 x 31 x 64 (3.78 x 1.22 x 2.52)	50 x 25 x 50 (1.97 x 0.98 x 1.97)	47 x 13 x 33 (1.85 x 0.51 x 1.30)

Sensors for DC applications (solid-state output: transistor)

Connection	M12 connector	M12 connector	M12 connector – 8 pin	Precabled (2 m)
Transmitter / Receiver	3-wire PNP NO	XUKR1PSMM12	–	XUKC1PSMM12
	3-wire NPN NO	XUKR1NSMM12	–	XUKC1NSMM12
	3-wire PNP / NPN programmable NO / NC	–	XURK1KSMM12	–
Supply voltage range (V), including ripple	10–30	10–30	10–30	10.8–26.4
Switching capacity, max. (mA) / Switching frequency (Hz)	100 / 5000	200 / 10000	100 / 1500	100 / 1000



Application	B C		B C	B C
System	Diffuse (manual)	Retroreflective (potentiometer)	Retroreflective (with teach mode) (50 x 50 reflector included)	
Sensing distance	0.02–0.08 m	0.1–2 m	0–1.4 m (4)	1.5 m
Mounting (mm) (MC = mounting centers)	M18 x 1	M3 holes, MC = 24	M18 x 1	direct: MC = 40 x 40
Sensitivity adjustment	Potentiometer	Potentiometer	Teach button	
Case: M (metal), P (plastic) / Setup assistance LEDs ☒	M / ☒	P / ☒	P / ☒	
Temperature range / Degree of protection (conforming to IEC 60529)	–13 to +131 °F (–25 to +55 °C) / IP67		+32 to +131 °F (0 to +55 °C) / IP67	–13 to +131 °F (–25 to +55 °C) / IP65
Product certification	CE, CSA, UL	CE, cURus	CE, UL, CSA, C-TICK	
Dimensions, Ø x L or H x W x D, mm (in.)	Ø18 x 95 (3.74)	33 x 20 x 11 (1.30 x 0.79 x 0.43)	Ø18 x 64 (2.52)	50 x 18 x 50 (1.97 x 0.71 x 1.97)

Sensors for DC applications (solid-state output: transistor)

Connection	Precabled, PVC (2 m)			
Transmitter / Receiver	3-wire PNP programmable NO / NC	–	XUMTAPCNL2	XUBTAPSNL2 (5)
	3-wire NPN programmable NO / NC	–	XUMTANCNL2	XUBTANSNL2 (5)
	3-wire PNP / NPN programmable NO / NC	–	–	–
Connection	M12 connector	M8 connector	M12 connector	M12 connector
	Transmitter / Receiver	3-wire PNP NO	XU5M18U1D	–
	3-wire PNP programmable NO / NC	–	XUMTAPCNM8 (3)	XUBTAPSNM12 (5)
3-wire NPN programmable NO / NC	–	XUMTANCNM8 (3)	XUBTANSNM12 (5)	
3-wire PNP / NPN programmable NO / NC	–	–	–	
Supply voltage range (V), including ripple	10–30	10–30	10–32	10–30
Switching capacity, max. (mA) / Switching frequency (Hz)	100 / 1000	100 / 1000	100 / 1000	100 / 1500

Accessories

Adaptable female plug-in connectors, including PUR prewired versions (6)

5 m, without LED	Wired, elbowed	Wired, straight	Screw terminal
M8 (or S) 4 pin	XZCP0666L5	XZCP0566L5	XZCC8FCM30S
M12 (or D) 4 pin	XZCP1241L5	XZCP1141L5	XZCC12FCM40B
M12 8 pin	–	XSZMCR03 (3 m)	–

Lenses for color mark

Lens for 18 mm sensing distance	Lens for 7 mm sensing distance
XURZ01	XURZ02

- (1) Nominal sensing distance 50 m. Use between 10 and 20 cm, depending on the application. (5) Also available in stainless steel for food/beverage processing applications. To order, replace the letter A with S in the catalog number. Example: XUBTAPSNL2 becomes XUBTSPSNL2.
- (2) 7 mm with XURZ02; 18 mm with XURZ01.
- (3) Also available with M12 remote connector with 0.3 m cable: replace M8 with L03M12.
- (4) 0–0.8 m for versions with 90° head. To order, replace N with W in the 8th position in the catalog number. Example: XUBTAPSNL2 becomes XUBTAPSWL2.
- (6) For other cable options, see page 55.

Ecolab® food/beverage processing series



Stainless steel version for resistance to harsh agents

Application	Stainless steel version for resistance to harsh agents		
System	Retroreflective polarized	Background suppression	Thru-beam
Sensing distance	0.4–11 m (1)	0.03–0.55 m	0–15 m
Mounting (mm)	2 x Ø4.3 holes		
Case: M (metal)	M (stainless steel 316L)		
Temperature range / Degree of protection, conforming to IEC 60529	-4 to +140 °F (-20 to +60 °C) / +212 °F (+100 °C) for cleaning and sterilization phase while not in service / IP67, IP69K		
Product certification	CE, Ecolab		
Dimensions, H x W x D, mm (in.)	50 x 50 x 23 (1.97 x 1.97 x 0.91)		

Sensors for DC applications (solid-state output: transistor)

Connection	M12 connector – 4 pin		
Transmitter / Receiver 4-wire PNP	XUK9SPSMM12	XUK8SPSMM12	XUK2SKSMM12T (transmitter) XUK2SPSMM12R (receiver)
Supply voltage range (V), including ripple	10–30		
Switching capacity, max. (mA) / Switching frequency (Hz)	100 / 600	100 / 400	100 / 500



Stainless steel version for resistance to harsh agents

System	Multimode (3)	Retroreflective polarized 50x50 mm reflector included (2)	Diffuse (2)	Thru-beam (2)
Sensing distance	(4)	3 / 2 m	0.15 / 0.10 m	20 / 15 m
Mounting (mm)	M18 x 1	M18 x 1	M18 x 1	M18 x 1
Case: M (metal)	M (stainless steel)	M (stainless steel)	M (stainless steel)	M (stainless steel)
Temperature range (°C) / Degree of protection, conforming to IEC 60529	(6)	-13 to +131 °F (-25 to +55 °C) / IP67		
Product certification	CE, UL, CSA, C-TICK			
Dimensions Ø x L, mm (in.)	Ø18 x 64 (2.52)	Ø18 x 62 (2.44)	Ø18 x 62 (2.44)	Ø18 x 64 (2.52)

Sensors for DC applications (solid-state output: transistor)

Connection	Precabled, PvR (2 m)				
Transmitter / Receiver 3-wire PNP programmable NO / NC	XUB0SPSNL2	XU9N18PP341	XU5N18PP341	XU2N18PP341	
	XUB0SNSNL2	XU9N18NP341	XU5N18NP341	XU2N18NP341	
Connection Transmitter / Receiver 3-wire PNP programmable NO / NC	XUB0SPSNM12	XU9N18PP341D	XU5N18PP341D	XU2N18PP341D	
	XUB0SNSNM12	XU9N18NP341D	XU5N18NP341D	XU2N18NP341D	
Thru-beam transmitter accessory	precabled (2 m)	XUB0SKSNL2T	–	–	–
	connector	XUB0SKSNM12T	–	–	–
Supply voltage range (V), including ripple	10–36	10–30	10–30	–	
Switching capacity, max. (mA) / Switching frequency (Hz)	100 / 250	100 / 500	100 / 500	–	

Accessories

Prewired connectors		Ecolab reflector 50x50 (5)		Stainless steel mounting bracket	
5 m	Elbowed XZCPA1241L5	Straight XZCPA1141L5	XUZC50CR	For M18 XUZA118	For Compact XUZA51S

(1) With reflector XUZC100, ordered separately.

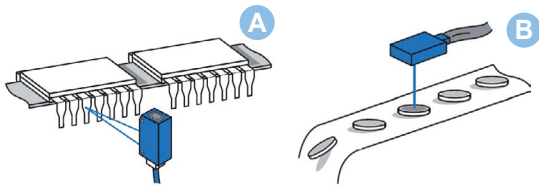
(2) Also available with 90° head. To order, add the letter **W** after the numbers 341 in the catalog number. Example: XU9N18PP341 becomes XU9N18PP341W or XU9N18PP341DW.

(3) Also available with 90° head. To order, replace **N** with **W** in the 8th position in the catalog number. Example: XUB0SPSNL2 becomes XUB0SPSWL2.

(4) Background suppression: **0.12 m**. Diffuse: **0.3 m**. Polarized retroreflective: **3 m**. Thru-beam: **20 m**.

(5) Sensing distance for XUK9S: 3 m with XUZC50CR or 6 m with DINZC50.

(6) -13 to +131 °F (-25 to +55 °C) / IP65, IP67 double insulation conforming to IEC 60529; IP69K double insulation conforming to DIN 40050.



Application	Diffuse with background suppression	
System	Sensing distance 1	Sensing distance 2
Sensing distance	10–60 mm	30–110 mm
Minimum size of object	0.3 mm	0.7 mm
Mounting (mm)	direct: 2 M3 holes, mounting centers 24 mm	
Sensitivity adjustment	Teach mode	
Case P (plastic) / Setup assistance LEDs ☒	P	
Temperature range / Degree of protection, conforming to IEC 60529	-4 to +140 °F (-20 to +60 °C) / IP67	
Product certification	CE, cULus	
Dimensions, H x W x D, mm (in.)	35.8 x 12 x 20 (1.41 x 0.47 x 0.79)	

Sensors for DC applications (solid-state output: transistor)

Connection	M8 connector, 4 Pin		M8 connector, 4 Pin
Transmitter / Receiver	PNP	NO	–
	NPN	NO	–
	PNP	programmable NO / NC	XUYPSCO929L1SP
Supply voltage range (V), including ripple	10–30		10–30
Switching capacity, max. (mA) / Switching frequency (Hz)	100 / 1000		100 / 1000
Overload and short-circuit protection (★) / Output state LED (☒)	★ / ☒		★ / ☒



XUWSA●●W
XUWSA●●R



XUZL●002



XUZL●001



XUZLR033

Vision sensors

Description	Nominal voltage	Focal length	Catalog number	Weight kg
Vision sensors with white light				
Vision sensor	24 V $\overline{\text{---}}$	6 mm	XUWSA06W (1)	0.160
		12 mm	XUWSA12W (1)	0.160
Vision sensors with red light				
Vision sensor	24 V $\overline{\text{---}}$	6 mm	XUWSA06R (1)	0.160
		12 mm	XUWSA12R (1)	0.160

Configuration software

Configuration of XUW vision sensors requires the use of software installed on a PC. The software comes on a CD-ROM included with the sensor. Updates are available from TEensors.us.

Additional lighting (if necessary, depending on the application)

Description	Nominal voltage	Size, mm	Catalog number	Weight kg
Direct linear lighting by LED				
White light	24 V $\overline{\text{---}}$	45 x 45	XUZLW001 (2)	0.060
Red light	24 V $\overline{\text{---}}$	45 x 45	XUZLR001 (2)	0.060
Ring lighting by LED				
White light	24 V $\overline{\text{---}}$	Ø115	XUZLW002	0.150
Red light	24 V $\overline{\text{---}}$	Ø115	XUZLR002	0.150
Back-lighting by LED				
Red light	24 V $\overline{\text{---}}$	47 x 47 x 15	XUZLR033	0.045
		94 x 94 x 10	XUZLR063	0.160
		133 x 133 x 10	XUZLR103	0.290

Accessories

PUR Prewired connectors (1)							
M8 (4 pin)			M12 (4 pin)		7/8" (5 pin)		
	Straight	Elbowed	Straight	Elbowed	Straight		
2 m	XZCP0941L2	XZCP1041L2	2 m	XZCP1141L2	XZCP1241L2	2 m	XZCP1764L2
5 m	XZCP0941L5	XZCP1041L5	5 m	XZCP1141L5	XZCP1241L5	5 m	XZCP1764L5



Straight



Elbowed

(1) For other cable options, see page 55.



XUZASW003

XUZASW002

XUZASW001



XUZASW009

XUZASW008



XUZASW006

Mounting accessories

Description	Catalog number	Weight kg
Vision sensor mounting accessories		
Dovetail bracket included with sensor XUW SA●●●	XUZASW001	0.014
Simple bracket	XUZASW002	0.017
2-axis dovetail clamp	XUZASW003	0.210
Lighting system mounting and connection accessories		
Clamp for direct lighting XUZ LW001 and XUZ LR001 (included with the lighting system)	XUZASW001	0.014
Bracket for ring lighting XUZ LW002 and XUZ LR002	XUZASW009	0.140
Assembly accessories		
Ø12 mm mounting rod Length: 30 cm	XUZASW006	0.260
Mounting clamp for Ø12 mm rod XUZ ASW006	XUZASW008	0.039
Mounting and adjustment clamp for 2 x Ø12 mm tubes XUZ ASW006	XUZASW005	0.300

(1) The sensor comes with:

- a dovetail mounting clamp, **XUZASW001**
- a CD-ROM containing the configuration software, and a user guide for the software and sensor (in French, English, and German)
- a screwdriver and a hexagon key (Allen wrench).

(2) Lighting systems **XUZLW001** and **XUZLR001** include mounting clamp **XUZASW001** and a hexagon key (Allen wrench).

Cabling accessories



XZCPB44P14L●●

XZCPB45P14L●●



XGS Z12E45●●

XGS Z22E45●●



XZCRB4444P14L●●

XZCRB4545P14L●●



XUZSW003

Description	Cable material	Length	Catalog number	Weight kg
For connecting the vision sensor: power supply and I/O				
Straight pre-wired connectors shielded female M12 connector, 12-wire	PUR	5 m	XZCPB44P14L5	0.460
		10 m	XZCPB44P14L10	0.870
Pre-wired elbowed connectors shielded female M12 connector, 12-wire	PUR	5 m	XZCPB45P14L5	0.460
		10 m	XZCPB45P14L10	0.870
For connecting the vision sensor directly to the PC when configuring, or to a network				
Ethernet jumper cables, M12 straight/RJ45 shielded cable, straight cabling	PUR	3 m	XGSZ12E4503	0.140
		10 m	XGSZ12E4510	0.440
Ethernet jumper cables, M12 elbowed/RJ45 shielded cable, straight cabling	PUR	3 m	XGSZ22E4503	0.140
		10 m	XGSZ22E4510	0.440
For connecting the vision sensor to additional lighting				
Jumper cable, female M12 straight / female M12 straight shielded cable, 12-wire	PUR	0.5 m	XZCRB4444P14L05	0.030
		2 m	XZCRB4444P14L2	0.120
Jumper cable, female M12 elbowed / female M12 elbowed shielded cable, 12-wire	PUR	0.5 m	XZCRB4545P14L05	0.030
		2 m	XZCRB4545P14L2	0.120
For linking an XZCRB4●●●P14L● jumper cable, a back-lighting device, and the sensor (see instruction sheet HRB43229)				
Description	Material	Size, mm	Catalog number	Weight kg
Connection adapter for back-lighting devices (includes dovetail mounting clamp XUZASW001)	ABS	45 x 45 x 25	XUZSW003	0.060



	+/-potentiometer	Teach	Teach + Timer	Teach + Timer
Max. / usable sensing distance	Depending on fiber used, plastic only			
Mounting (mm)	DIN rail or direct: mounting centers 25, M3 screws			
Sensitivity adjustment	+/- numeric potentiometer	using teach mode	+/- numeric potentiometer	using teach mode
Case P (plastic) / Setup assistance LEDs ☒	P / ☒	P / ☒	P / ☒	P / ☒ and 4-digit display
Temperature range	+32 to +140 °F (0 to +60 °C)	+14 to +131 °F (-10 to +55 °C)	+32 to +140 °F (0 to +60 °C)	+14 to +131 °F (-10 to +55 °C)
Degree of protection, conforming to IEC 60529	IP65	IP65 (1)	IP65	IP65 (1)
Product certification	CE, cULus	CE, cULus, cURus	CE, cULus	CE, cULus, cURus
Dimensions L x H x W, mm (in.)	60 x 30 x 13 (2.36 x 1.18 x 0.51)	65 x 40 x 10 (2.56 x 1.58 x 0.39)	60 x 30 x 13 (2.36 x 1.18 x 0.51)	65 x 40 x 10 (2.56 x 1.58 x 0.39)

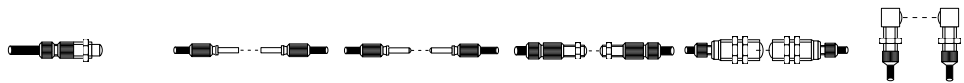
Sensors for DC applications (solid-state output: transistor)

Connection			Precabled, PVC (2 m)			
Catalog numbers	3-wire PNP, programmable	NO / NC	–	XUDA1PSML2	–	XUDA2PSML2
Amplifier	3-wire NPN, programmable	NO / NC	–	XUDA1NSML2	–	XUDA2NSML2
Connection			M8 connector – 4 Pin			
Catalog numbers	3-wire PNP, programmable	NO / NC	–	XUDA1PSMM8	–	XUDA2PSMM8
Amplifier	3-wire NPN, programmable	NO / NC	–	XUDA1NSMM8	–	XUDA2NSMM8
	3-wire PNP/NPN, programmable	NO / NC	XUYAFVCO966S (Glass)	–	XUYAFVCO946S (Glass)	–
			XUYAFPCO966S (Plastic)	–	XUYAFPCO946S (Plastic)	–
Supply voltage range (V), including ripple			10–30	10.8–26.4	10–30	10.8–26.4
Switching capacity, max. (mA) / Switching frequency (Hz)			100 / 1000	100 / 1000	100 / 1000 time delayable	100 / 1000 time delayable
Overload and short-circuit protection (★) / Output state LED (☒)			★ / ☒	★ / ☒	★ / ☒	★ / ☒



Ecofiber system—assemble your own plastic fibers

Fiber Ø1 mm	10 m	20 m	50 m
Catalog numbers	XUFZ910	XUFZ920	XUFZ950



End fittings							
Sensing distance (mm)	70	200	800	1200	4000	1200	
Type	threaded end fitting	plain end fitting, Ø3, 9 mm	plain end fitting, Ø3, 9 mm	threaded end fitting	threaded end fitting	90 ° mirror, threaded end fitting	
Thread	M8 x 1, 10 mm	–	–	M6 x 1, 10 mm	M6 x 1, 10 mm	M6 x 1, 3–10 mm	
Lens	yes	no	yes	yes	yes	yes	
Catalog numbers	XUYA110	XUYA210	XUYA211	XUYA212	XUYA213	XUYA220	

Accessories

For thru-beam system plastic fiber optics

Lenses
For increasing sensing distance (pair) **XUFZ01**

With 90° mirror (pair) **XUFZ02**

Mounting clamp with lens (set of 2)
Front screw mounting for fiber optics **XUFZ920 XUFZ04**

For all system plastic fiber optics

Fiber trimmer
For trimming fibers to length (included with all fiber optics) **XUFZ11**

Protective metal tubing
1 m, for fibers with threaded end fittings
For M4 thread **XUFZ210**
For M6 thread **XUFZ310**

Plug-in PUR prewired female connectors (2)

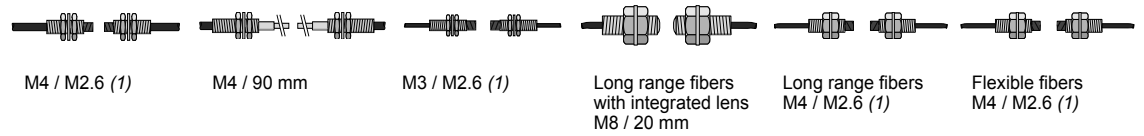
Cable length 5 m, without LED
prewired, elbowed prewired, straight

XZCP1041L5

XZCP0941L5

(1) IP65 with Ø1 fiber / IP64 with Ø0.5 fiber.
(2) For other cable options, see page 55.

Plastic fiber optic light guides (2 m)



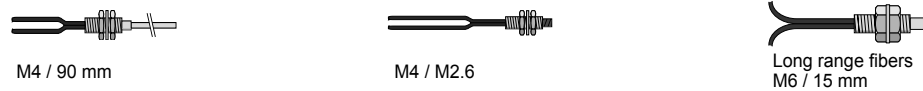
System	Thru-beam					
Sensing distance (mm)	200 or 1500 (2)	180	50 or 1000 (2)	2500	300 or 2000 (2)	100 or 750 (2)
Fiber cross-section						
Fiber Ø (mm)	Ø1	Ø1	Ø0.5	Ø1	Ø1.5	Ø1
Sheath Ø (mm)	Ø2.2	Ø2.2	Ø1	Ø2.2	Ø2.2	Ø2.2
Temperature range	-13 to +140 °F (-25 to +60 °C)					
Catalog numbers	XUFN12301	XUFN12311	XUFN35301	XUFN2L01L2	XUFN2P01L2	XUFN2S01L2
Mounting	M4 x 0.7	M4 x 0.7	M3 x 0.5	M8 x 1.25	M2.6 x 0.45 / M4 x 0.7	M2.6 x 0.45 / M4 x 0.7

(1) Can be used with 90° mirror XUFZ02 (see page 50).

(2) With lens accessory XUFZ01 (see page 50).

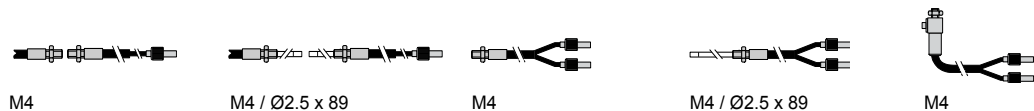


System	Diffuse			
Sensing distance (mm)	70	60	60	15
Fiber cross-section				
Fiber Ø (mm)	Ø1	Ø1 / Ø0.265 x 16	Ø1	Ø0.5 / Ø0.23 x 4
Sheath Ø (mm)	Ø2.2 x 2	Ø2.2 x 2	Ø2.2 x 2	Ø1 x 2
Temperature range (°C)	-13 to +140 °F (-25 to +60 °C)			
Catalog numbers	XUFN05321	XUFN05323	XUFN05331	XUFN02323
Mounting	M6 x 0.75	M6 x 0.75 / M4 x 0.7	M6 x 0.75	M4 x 0.7



System	Diffuse		
Sensing distance (mm)	18	18	95
Fiber cross-section			
Fiber Ø (mm)	Ø0.5	Ø0.5	Ø1.5
Sheath Ø (mm)	Ø1 x 2	Ø1 x 2	Ø2.2 x 2
Temperature range	-13 to +140 °F (-25 to +60 °C)		
Catalog numbers	XUFN01331	XUFN01321	XUFN5P01L2
Mounting	M4 x 0.7	M4 x 0.7	M6 x 0.75

Glass fiber optic light guides (0.6 m)



System	Thru-beam		Diffuse			
Sensing distance (mm)	200		80			
Fiber cross-section						
End fitting	Straight	Adaptable	Straight	Adaptable	90°	
Fiber Ø (mm)	1		1			
Sheath Ø (mm)	2.2		2.2			
Temperature range	PVC sheath: -13 to +140 °F (-25 to +60 °C) / Metal wound: -13 to +248 °F (-25 to +120 °C) / Flexible stainless steel: -13 to +392 °F (-25 to +200 °C)					
Catalog numbers	PVC sheath	XUYFVERSD61	XUYFVERSC61	XUYFVPSD61	XUYFVPSC61	XUYFVPSL61
	Metal wound	XUYFVERMD61	XUYFVERSC61	XUYFVPM61	XUYFVPMC61	XUYFVPM61
	Flexible stnl. steel	XUYFVERTD61	XUYFVERTC61	XUYFVPTD61	XUYFVPTC61	XUYFVPTL61



	M12	M18	M18	
Nominal sensing distance, Sn	Diffuse or retroreflective	5 or 10 cm (2 or 4 in.) depending on the model	15, 25, or 50 cm (6, 10, or 20 in.) depending on the model	5 cm (2.0 in.)
	Thru-beam	10 or 20 cm (4 or 8 in.)	10, 30, 61, or 100 cm (4, 12, 24, or 40 in.) depending on the model	–
Operating zone for Diffuse mode	XX512A1: 0.64–5.1 cm (0.25– 2 in.) XX512A2: 0.64–10.2 cm (0.25– 4 in.)	XX518A2: 1.9–15.2 cm (1.25– 10 in.) XX518A3: 5.1–50.8 cm (2–20 in.)	0.2–5.0 cm (0.08– 2 in.)	
Detection zone	Fixed	XX518A3: adjustable with remote push button XX518A1, XXT18, XXR18: fixed	Fixed	
Case: M (metal), P (plastic)	P	P or M, depending on the model	M	
Product certification	CE, UL	CE, UL, CSA	CE, UL, CSA	
Temperature range	–4 to +149 °F (–20 to +65 °C)	XX518A1●●●: +32 to +122 °F (0 to +50 °C) XX518A3●●●: –4 to 149 °F (–20 to +65 °C) XXT18, XXR18: +32 to +140 °F (0 to +60 °C)	+32 to +140 °F (0 to +60 °C)	
Degree of protection	IP67 (conforming to IEC 60529)			
Dimensions Ø x L, mm (in.)	M12 x 50 (1.97)	M18 x 65 (2.56)	M12: M18 x 75 (2.95) Cable: M18 x 65 (2.56)	

Diffuse or Retroreflective mode with Discrete output for DC applications (24 V)

Connection		2 m precabled, M8 or M12 connector	2 m precabled, M12 connector	2 m precabled, M12 connector
3-wire PNP	NO	XX512A2PAM8 (Sn = 10 cm / 4 in.)	XX518A3PAM12 (Sn = 50 cm / 20 in.) XXB18A3PAM12	XXV18B1PAL2 (cable) (Sn = 5 cm / 2 in.) XXV18B1PAM12 (M12) (Sn = 5 cm / 2 in.)
	NPN	XX512A2NAM8 (Sn = 10 cm / 4 in.)	XX518A3NAM12 (Sn = 50 cm / 20 in.)	XXV18B1NAL2 (cable), (Sn = 5 cm / 2 in.) XXV18B1NAM12 (M12) (Sn = 5 cm / 2 in.)
4-wire PNP/NPN	NO	XX512A1KAM8 (Sn = 5 cm / 2 in.)	XX518A1KAM12 (Sn = 15 cm / 6 in.)	–
		XX512A2KAM8 (Sn = 10 cm / 4 in.)	XX518A20KAM12 (Sn = 25 cm / 10 in.)	–

Application—monitoring levels

		XX512A208PAFM8	XX218A3PHM12 (1 NO)	–
emptying (pump out)	PNP, NO			
filling (pump in)	PNP, NO	XX512A208PAHM8	XX218A3PFM12 (1 NO)	–
Supply voltage range (V), including ripple		12–24, ±10%		
Switching capacity, max. (mA)		<100		
Short-circuit protection (★)		★		
Output state LED (⊗) / Power on LED (⊗)		⊗ / ⊗	⊗ / ⊗ except XX518A1●● (– / –)	
Voltage drop, closed state (V) at I nominal		<1		
Response time (ms)		4	4 or 15, depending on the model	4
Transmission frequency (kHz)		500	300 or 500, depending on the model	360

Diffuse mode with Analog output for DC applications (24 V)

Connection		M12 connector		
4-wire Analog	0–10 V output	–	XX918A3F1M12	–
	4–20 mA output	–	XX918A3C2M12	–
Supply voltage range (V), including ripple		–	15–24, ±10%	–
Short-circuit protection (★)		–	★	–
Output state LED (⊗) / Power on LED (⊗)		–	⊗ / ⊗	–
Transmission frequency (kHz)		–	300 or 500, depending on the model	–

Thru-beam mode with Discrete output for DC applications (24 V)

Connection		M8 connector	M12 connector	
4-wire Receiver (NO/PNP + NO/NPN)		XXR12A8KAM8	XXR18A3KAM12 (Sn = 61 cm / 24 in.) XXR18A4KAM12 (Sn = 100 cm / 40 in.)	–
		XXR12A8KBM8	XXR18A3KBM12 (Sn = 61 cm / 24 in.) XXR18A4KBM12 (Sn = 100 cm / 40 in.)	–
Transmitter		XXT12A8M8	XXT18A3M12 (Sn = 61 cm / 24 in.) XXT18A4M12 (Sn = 100 cm / 40 in.)	–

Accessories

See page 53 for programming and connectors, and page 54 for mounting.

Ultrasonic sensors

Detection of any material



	M30	M30	M30	M30: Long range
Nominal sensing distance, Sn	1 m (39 in.)	1 m (39 in.)	2 m (79 in.)	8 m (315 in. / 26 ft)
Operating zone for Diffuse mode	0.1–1 m (4–39 in.)	0.05–0.99 m (2–39 in.)	0.12–2 m (4.7–79 in.)	0.2–8 m (8–315.0 in.)
Detection zone—adjustable using a push button	remote push button	built-in push button		
Case: M (metal), P (plastic)	P	P or M	P	
Product certification	CE, UL, CSA			
Temperature range	+32 to +158 °F (0 to +70 °C)	+32 to +122 °F (0 to +50 °C)		–4 to +140 °F (–20 to +60 °C) Option: min. –40 °F (–40 °C)
Degree of protection, conforming to IEC 60529	IP67			
Dimensions Ø x L, mm (in.)	M30 x 78 (3.07)	M30 x 85 (3.35)	M30 x 106 (4.17)	

Diffuse or Retroreflective mode with Discrete output for DC applications (24 V)

Connection			precabled (2 m) or M12 connector			
3-wire	PNP	NO	XX6V3A1PAM12 XXBV3A1PAM12	–	–	–
		NPN	NO	XX6V3A1NAM12	–	–
	4-wire	PNP/NPN	NO	–	XX630A1KAM12	XX630A2KAM12
PNP		NO + NC	–	XX630A1PCM12 (1)	XX630A2PCM12	XX630A3PCM12
NPN		NO + NC	–	XX630A1NCM12 (1)	XX630A2NCM12	XX630A3NCM12

Application—monitoring levels

emptying	PNP, 2 NO	XX2V3A1PFM12	XX230A10PA00M12	XX230A20PA00M12	XX230A30PA00M12
filling	PNP, 2 NO	XX2V3A1PHM12	XX230A11PA00M12	XX230A21PA00M12	XX230A31PA00M12
Supply voltage range (V), including ripple	12–24, ±10%				
Switching capacity, max. (mA)	<100				
Short-circuit protection (★)	★				
Output state LED (⊗) / Power on LED (⊗)	⊗ / ⊗				
Voltage drop, closed state (V) at I nominal	<1				
Response time (ms)		30	20	30	200
Transmission frequency (kHz)		180	200		75

Proximity mode with Analog output for DC applications (24 V)

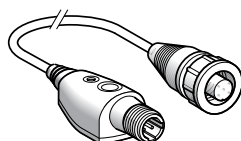
Connection			M12 connector			
4-wire	Analog	0–10 V output	XX9V3A1F1M12	XX930A1A1M12 (1)	XX930A2A1M12	XX930A3A1M12
		4–20 mA output	XX9V3A1C2M12	XX930A1A2M12 (1)	XX930A2A2M12	XX930A3A2M12
Supply voltage range (V), including ripple		15–24, ±10%				
Short-circuit protection (★)		★				
Output state LED (⊗) / Power on LED (⊗)		⊗ / ⊗				
Transmission frequency (kHz)		180	200	200	75	

Accessories

Programming

Remote control

teach button for use with sensors XX•18A3•••, XX•V1•••, XX•V3••• and XX•D1



XXZPB100

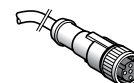
Adaptable female plug-in connectors

PUR Prewired connectors (2)

elbowed



straight



Other connectors

screw terminal



5 m (without LED)

M8	for XX512A1•••	XZCP1041L5	XZCP0941L5	XZCC8FCM40V
	for XX512A2•••	XZCP0666L5	XZCP0566L5	XZCC8FCM30V
M12	for all sensors except XX512•••	XZCP1241L5	XZCP1141L5	XZCC12FCM40B
M12	for analog sensors	XZCPVB1241L5	XZCPVB1141L5	–

For mounting, see page 54.

(1) Stainless steel 303 version also available. To order, replace the first letter **A** in the catalog number with **S**. Example: XX630A1PCM12 becomes XX630S1PCM12.

(2) For PVC cable, see page 55.



	Mini flat	Flat	Combined multi-mounting	Flat 80 x 80	
Nominal sensing distance, S _n	Diffuse or Retroreflective	10 cm (1–4 in.)	5–25 cm (2–10 in.)	5–50 cm (2–20 in.)	10–100 cm (4–39 in.)
	Thru-beam	20 cm (4 or 8 in.)	10, 30, 61, or 100 cm (4, 12, 24, or 40 in.) depending on the model	–	–
Operating zone for Diffuse mode	0.62–10.2 cm (0.24–4 in.)	5.1–25.4 cm (2–10 in.)	5.1–50.8 cm (2–20 in.)	10–100 cm (4–39 in.)	
Detection zone	Fixed (option: adjustable)		Adjustable with remote push button		
Case, P (plastic)	P				
Product certification	CE, UL, CSA				
Temperature range	–4 to +149 °F (–20 to +65 °C)	+32 to +122 °F (0 to +50 °C)	–22 to +158 °F (–30 to +70 °C)	+32 to +158 °F (0 to +70 °C)	
Degree of protection, conforming to IEC 60529	IP67				
Dimensions, Ø x L or H x W x D, mm (in.)	33 x 19 x 7.6 (1.30 x 0.75 x 0.30)	74 x 30 x 16 (2.91 x 1.18 x 0.63)	M18 / 18 x 33 x 60 (0.71 x 1.30 x 2.36)	80 x 80 x 34 (3.15 x 3.15 x 1.34)	

Proximity or Retroreflective mode with Discrete output for DC applications (24 V)

Connection	precabled, M8 or M12 on 0.15 m pigtail	precabled or M12 connector		
3-wire PNP NO Retroreflective mode	XX7F1A2PAL01M12	XX7K1A2PAM12	XX7V1A1PAM12	XX8D1A1PAM12
	–	–	XXBV1A1PAM12	XXBD1A1PAM12
	XX7F1A2NAL01M12	XX7K1A2NAM12	XX7V1A1NAM12	XX8D1A1NAM12
Supply voltage range (V), including ripple	12–24, ±10%			
Switching capacity, max. (mA)	<100			
Short-circuit protection (★)	★			
Output state LED (⊗) / Power on LED (⊗)	⊗ / ⊗			
Voltage drop, closed state (V) at I nominal	<1			
Response time (ms)	4	4	15	30
Transmission frequency (Hz)	500	500	300	180

Proximity mode with Analog output for DC applications (24 V)

Connection	–		M12 connector	
4-wire Analog	0–10 V output	XX9K1A224A3M12	XX9V1A1F1M12	XX9D1A1F1M12
	4–20 mA output	XX9K1A224A4M12	XX9V1A1C2M12	XX9D1A1C2M12
Supply voltage range (V), including ripple	–	15–24, ±10%	15–24, ±10%	15–24, ±10%
Short-circuit protection (★)	–	★	★	★
Output state LED (⊗) / Power on LED (⊗)	–	⊗ / ⊗	⊗ / ⊗	⊗ / ⊗
Transmission frequency (kHz)	–	500	300	180

Thru-beam mode with Discrete output for DC applications (24 V)

Connection	–			
4-wire Receiver (NO/PNP + NO/NPN)	XXRF1A8KAM12L	XXRK1A3KAM12 (S _n = 0.61 m / 24.0 in.) XXRK1A4KAM12 (S _n = 1 m / 39.4 in.)	–	–
	Receiver (NC/PNP + NC/NPN)	XXRF1A8KBM12L	XXRK1A3KBM12 (S _n = 0.61 m / 24.0 in.) XXRK1A4KBM12 (S _n = 1 m / 39.4 in.)	–
Transmitter	XXT1A8M12L	XXTK1A3M12 (S _n = 0.61 m / 24.0 in.) XXTK1A4M12 (S _n = 1 m / 39.4 in.)	–	–

Accessories

Mountings—3D mountings with ball joint

<p>XUZ 2001 XUZ B2000</p> <p>Bracket with ball joint for cylindrical sensors</p>	<p>XUZ 2003</p> <p>3D kit example</p>	<p>for Ø12 XUZB2012 Ø18 XUZB2003 Ø30 XUZB2030</p>	<p>M12 rod for ball joint</p> <p>XUZ2001</p>	<p>Mounting support for M12 rod</p> <p>XUZ2003</p>
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Simple mounting devices

<p>90° mounting brackets</p> <p>for Ø12 XXZ12 Ø18 XUZA118 Ø30 XXZ30 XX7F XXZ1933</p>	<p>Mounting plates for XX7K</p> <p>flat XXZ3074F cranked XXZ3074S</p>
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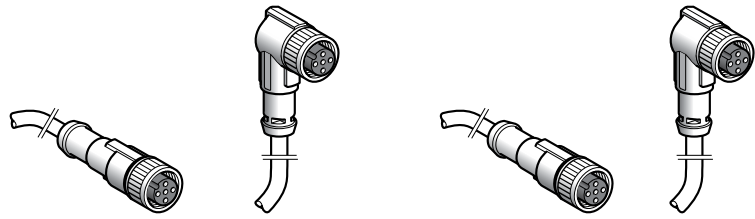
See page 53 for programming and connectors.

PVC cable
M8 and M12 connector

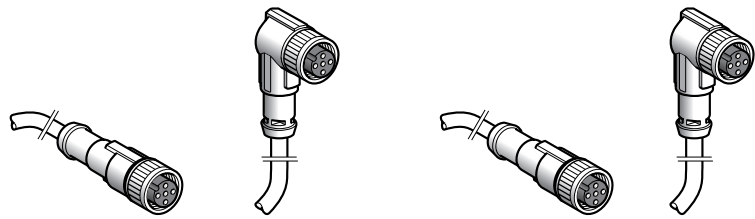
PVC cable
1/2" and 7/8" connector

PUR cable halogen free
M8, M12, 1/2" and 7/8" connector

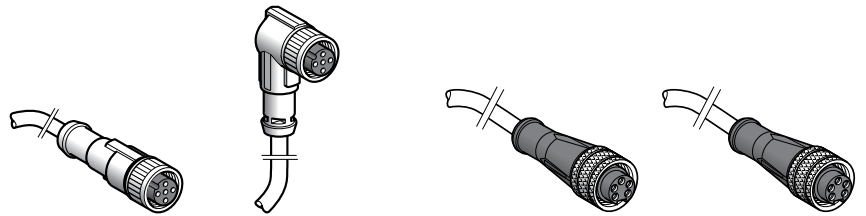
Reinforced PVC cable, stainless steel ring
M8, M12, and 1/2" connector (IP69K)



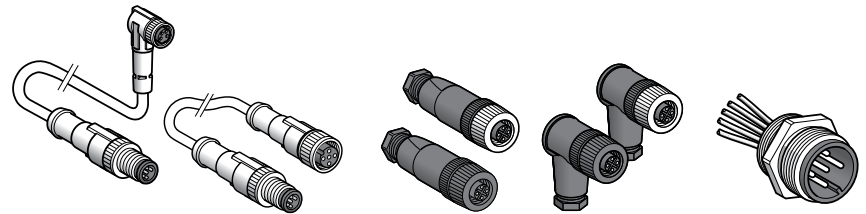
Connector Size		M8	M8	M8	M8
		Straight 3 pin	Elbowed 3 pin	Straight 4 pin	Elbowed 4 pin
Catalog numbers	PVC cable	XZCPV0566L●	XZCPV0666L●	XZCPV0941L●	XZCPV1041L●
	PUR cable	XZCP0566L●	XZCP0666L●	XZCP0941L●	XZCP1041L●
	PVC cable IP69K	XZCPA0566L●	-	XZCPA0941L●	-



Connector Size		M12	M12	M12	M12
		Straight 4 pin	Elbowed 4 pin	Straight 5 pin	Elbowed 5 pin
Catalog numbers	PVC cable	XZCPV1141L●	XZCPV1241L●	XZCPV1164L●	XZCPV1264L●
	PUR cable	XZCP1141L●	XZCP1241L●	XZCP1164L●	XZCP1264L●
	PVC cable IP69K	XZCPA1141L●	XZCPA1241L●	XZCPA1164L●	-
	PVC shielded for analog sensors	XZCPVB1141L●	XZCPVB1241L●	-	-



Connector Size		1/2"	1/2"	7/8"	7/8"
		Straight 3 pin	Elbowed 3 pin	Straight 3 pin	Straight 5 pin
Catalog numbers (2)	PVC cable	XZCPV1865L●	XZCPV1965L●	XZCPV1670L●	XZCPY1764L● (1)
	PUR cable	XZCP1865L●	XZCP1965L●	XZCP1670L●	XZCP1764L●
	PVC cable IP69K	XZCPA1865L●	XZCPA1965L●	-	-



Other accessories (3)	Jumpers	Connector	Receptacle
Catalog numbers	XZCR●●●	XZCC●●●	XZCE●●●

(1) Cable material is yellow PVC and STOOW.

(2) Complete each catalog number by adding the length of cable: **2** for 2 m (6.6 ft), **5** for 5 m (16.4 ft) and **10** for 10 m (32.8 ft).

Example: XZCPV1141L2 is a prewired M12 connector with 4 contacts and a 2 m PVC cable.

(3) For more information on XZ jumpers, connectors, and receptacles, see TEensors.us or the Sensors master catalog, 9006CT1007.

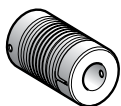


Diameter of housing (mm)	Ø40	Ø40	Ø58	Ø58	Stainless steel	Ø58 Parametrable	Ø90
Shaft Ø (mm)	Ø6	Ø6	Ø6	Ø10		Ø14 (1)	Ø12
Type of shaft (2)	solid-shaft	through-shaft	solid-shaft	solid-shaft		through-shaft	solid-shaft
Maximum rotational speed (rpm)	9000	9000	9000	9000		6000	6000
Maximum frequency (kHz)	100	100	300	300		300	100
Maximum load (daN)	2	2	10	10	25	5	20
Torque (N•cm)	0.2	0.25	0.4	0.4		0.6	1
Product certification	CE	CE	CE	CE		CE	CE
Temperature range	-4 to +176 °F (-20 to +80 °C)	-4 to +176 °F (-20 to +80 °C)	-22 to +212 °F (-30 to +100 °C)	-22 to +212 °F (-30 to +100 °C)		-22 to +158 °F (-30 to +70 °C)	-4 to +176 °F (-20 to +80 °C)
Degree of protection, conforming to IEC 60529	IP54	IP52	IP65 / IP67 (3)	IP65 / IP67 (3)	IP69K	IP65	IP66
Supply voltage	5 V, RS-422	4.5–5.5 V	4.5–5.5 V	4.75–30 V	4.75–30 V	4.75–30 V	4.5–5.5 V
	Push-pull	11–30 V	11–30 V	5–30 V	5–30 V	5–30 V	11–30 V
Connection	Precabled = 2 m Precabled, radial		M23 male connector, radial		Precabled, axial	M23 male connector, radial	

Resolution (Points)	Output stage	Ø40	Ø40	Ø58	Ø58	Stainless steel	Ø58 Parametrable	Ø90
100	5 V, RS-422	XCC1406PR01R	XCC1406TR01R	XCC1506PS01X	XCC1510PS01X	–	–	XCC1912PS01RN
	Push-pull	XCC1406PR01K	XCC1406TR01K	XCC1506PS01Y	XCC1510PS01Y	–	–	XCC1912PS01KN
360	5 V, RS-422	XCC1406PR03R	XCC1406TR03R	XCC1506PS03X	XCC1510PS03X	–	–	XCC1912PS03RN
	Push-pull	XCC1406PR03K	XCC1406TR03K	XCC1506PS03Y	XCC1510PS03Y	XCC1510SPA03Y	–	XCC1912PS03KN
500	5 V, RS-422	XCC1406PR05R	XCC1406TR05R	XCC1506PS05X	XCC1510PS05X	–	–	XCC1912PS05RN
	Push-pull	XCC1406PR05K	XCC1406TR05K	XCC1506PS05Y	XCC1510PS05Y	–	–	XCC1912PS05KN
1000	5 V, RS-422	XCC1406PR10R	XCC1406TR10R	XCC1506PS10X	XCC1510PS10X	–	–	XCC1912PS10RN
	Push-pull	XCC1406PR10K	XCC1406TR10K	XCC1506PS10Y	XCC1510PS10Y	–	–	XCC1912PS10KN
1024	5 V, RS-422	XCC1406PR11R	XCC1406TR11R	XCC1506PS11X	XCC1510PS11X	–	–	XCC1912PS11RN
	Push-pull	XCC1406PR11K	XCC1406TR11K	XCC1506PS11Y	XCC1510PS11Y	XCC1501SPA11Y	–	XCC1912PS11KN
2500	5 V, RS-422	–	–	XCC1506PS25X	XCC1510PS25X	–	–	XCC1912PS25RN
	Push-pull	–	–	XCC1506PS25Y	XCC1510PS25Y	–	–	XCC1912PS25KN
3600	5 V, RS-422	–	–	–	–	–	–	XCC1912PS36RN
	Push-pull	–	–	–	–	–	–	XCC1912PS36KN
256–4096	5 V, RS-422	–	–	–	–	–	XCC1514TSM02X	–
	Push-pull	–	–	–	–	–	XCC1514TSM02Y	–
5000	5 V, RS-422	–	–	XCC1506PS50X	XCC1510PS50X	–	–	XCC1912PS50RN
	Push-pull	–	–	XCC1506PS50Y	XCC1510PS50Y	XCC1510SPA50Y	–	XCC1912PS50KN
360–5760	5 V, RS-422	–	–	–	–	–	XCC1514TSM03X	–
	Push-pull	–	–	–	–	–	XCC1514TSM03Y	–
500–8000	5 V, RS-422	–	–	–	–	–	XCC1514TSM05X	–
	Push-pull	–	–	–	–	–	XCC1514TSM05Y	–
10000	5 V, RS-422	–	–	–	–	–	–	XCC1912PS00RN
	Push-pull	–	–	–	–	–	–	XCC1912PS00KN
1024–16,384	5 V, RS-422	–	–	–	–	–	XCC1514TSM11X	–
	Push-pull	–	–	–	–	–	XCC1514TSM11Y	–
5000–80,000	5 V, RS-422	–	–	–	–	–	XCC1514TSM50X	–
	Push-pull	–	–	–	–	–	XCC1514TSM50Y	–

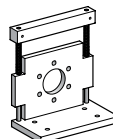
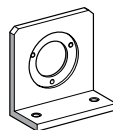
Accessories

Shaft couplings



with spring	Bore diameter	Catalog number
	encoder side machine side	
	6 mm 6 mm	XCCRAR0606
	6 mm 8 mm	XCCRAR0608
	6 mm 10 mm	XCCRAR0610
	10 mm 10 mm	XCCRAR1010
	10 mm 12 mm	XCCRAR1012
elastic		
	6 mm 6 mm	XCCRAE0606

Mounting brackets

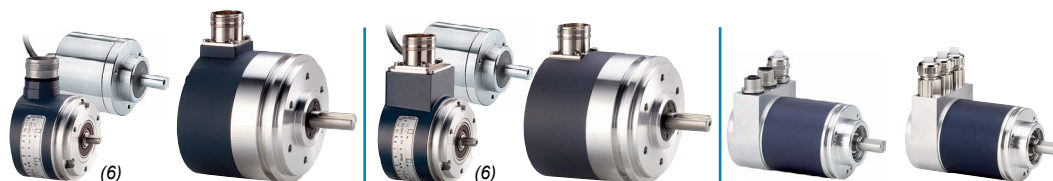


Plain bracket	
	for Ø58 mm XCCRE5SN
	for Ø90 mm XCCRE9SN
Bracket with play compensator	
	for Ø58 mm XCCRE5RN
	for Ø90 mm XCCRE9RN

Absolute - single turn

Absolute - multiturn

Communicating multiturn absolute



Diameter of housing (mm)	Ø58	Ø90	Ø58	Ø90	Ø58 CANopen	Ø58 Profibus-DP
Shaft Ø (mm)	Ø10	Ø12	Ø10	Ø12	Ø10	Ø10
Type of shaft (2)	solid-shaft	solid-shaft	solid-shaft	solid-shaft	solid-shaft (4)	solid-shaft (4)
Maximum rotational speed (rpm)	9000	6000	6000	6000	6000	6000
Maximum frequency (kHz)	100	100 (1000 SSI)	100 (500 SSI)	100 (500 SSI)	800	800
Maximum load (daN)	10 / 25 (6)	20	10	20	11	11
Torque (N•cm)	0.4	1	0.4	1	0.3	0.3
Product certification	CE	CE	CE	CE	CE	CE
Temperature range	-4 to +194 °F (-20 to +90 °C)	-4 to +185 °F (-20 to +85 °C)	-4 to +185 °F (-20 to +85 °C)	-4 to +185 °F (-20 to +85 °C)	-40 to +185 °F (-40 to +85 °C)	-40 to +185 °F (-40 to +85 °C)
Degree of protection, conforming to IEC 60529	IP65 / IP67 (3) / IP69K (6)	IP66	IP65 / IP67 (3) / IP69K (6)	IP66	IP64	IP64
Supply voltage	11 to 30 V					
Connection	M23 male connector, radial / 2 m Axial cable (6)				2 x M12 + 1 x Pg 9	3 x Pg 9
Resolution	Output stage	Code				
to 8192 points	Push-pull	Binary	XCC2510PS81KB	XCC2912PS81KBN	–	–
		Gray	XCC2510PS81KGN	XCC2912PS81KGN	–	–
		(6) XCC2510SPA81KGN	–			
	SSI, 13 bits	Binary	XCC2510PS81SBN	XCC2912PS81SBN	–	–
		Gray	XCC2510PS81SGN	XCC2912PS81SGN	–	–
		(6) XCC2510SPA81SGN	–			
4096 points / 8192 turns	SSI, 25 bits (5)	Gray	–	–	XCC3510PS48SGN	–
		(6)			XCC3510SPA48SGN	–
8192 points / 4096 turns	SSI, 25 bits (5)	Binary	–	–	XCC3510PS84SBN	XCC3912PS84SBN
		Gray	–	–	XCC3510PS84SGN	XCC3912PS84SGN
8192 points / 4096 turns	CANopen, 25 bits	Binary	–	–	–	XCC3510PS84CBN
	Profibus-DP, 25 bits	Binary	–	–	–	XCC3510PV84FBN

(1) Anti-rotation device included with through-shaft version encoders. To achieve Ø6, Ø8, Ø10, or Ø12 mm through-shafts, use the reduction collars.

(2) All versions are also available with through-shaft and anti-rotation device.

(3) IP67 with sealed collar XCCRB3.

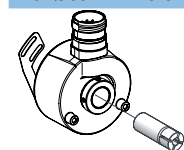
(4) Versions available with hollow shaft and anti-rotation device.

(5) Parallel outputs possible for multiturn absolute encoders using deserialization jumper cables XCCRM23SUB37●●.

(6) Product in stainless steel 316L.

Reduction collars

For Ø58 mm incremental encoders with through-shaft



Ø14 to Ø6 mm	XCCR158RDA06
Ø14 to Ø8 mm	XCCR158RDA08
Ø14 to Ø10 mm	XCCR158RDA10
Ø14 to Ø12 mm	XCCR158RDA12

IP67 sealed collar

For encoders XCC1510, 2510, 3510

Ø58 mm	XCCRB3
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Prewired connectors and jumper cables

Prewired M23 female connectors (cable length 5 m)



8-wire for SSI encoders	XCCPM23122L5
10-wire for incremental encoders	XCCPM23121L5
16-wire for parallel single turn absolute encoders	XCCPM23161L5

Deserialization jumper cables (M23 F – SUB-D37 M) (0.5 m)



SSI Gray – // Gray PNP	XCCRM23SUB37PG
SSI binary – // binary NPN	XCCRM23SUB37PB



Introduction

The OsiSense XG RFID is compatible with the majority of ISO 18000-3, ISO 15693, and ISO 14443 electronic tags. OsiSense XG is designed to provide easy integration. The smart antennas communicate directly with Modbus™ RTU and Uni-Telway network protocols over an RS-485 serial interface, or connect easily to other communication protocols using a network connection box: XGSZ33ETH for Modbus TCP/IP; XGSZ33EIP for Ethernet/IP; and XGSZ33PDP for Profibus-DP.

The OsiSense XG RFID offer includes:

- 2 models of 13.56 MHz smart antennas (read/write station)
- 11 models of 13.56 MHz electronic tags
- 1 portable RFID diagnostics terminal
- 3 models of network connection boxes plus connection and mounting accessories

Setup

OsiSense XG smart antennas are simple to set up:

- Integrated RFID and network functions
- Programming performed in user PLC language
- Automatic detection of the RFID electronic tags (read or write)
- Automatic setting of the communication parameters such as speed, format, parity, and protocol
- Configuration of the network address (1–15) using the badge included with the smart antenna
- Low sensitivity to metal environments

Installation

OsiSense XG smart antennas easily integrate into flexible manufacturing production lines:

- Quick connection using an M12 connector
- Screw mounting or clip-on mounting



Smart antenna, 13.56 MHz		Flat form 40	Flat form 80
Dimensions, W x H x D, mm (in.)		40 x 40 x 15 (1.58 x 1.58 x 0.59)	80 x 80 x 26 (3.15 x 3.15 x 1.02)
Nominal sensing distance, depending on the tag (mm)		18–70	20–100
Type of associated tag		ISO 15693 and ISO 14443 standard tags. Automatic detection of the type of tag.	
Display		Dual colour LED for network communication, and dual colour LED for RFID communication	
Conformity to standards		CE, EN 301489-1, EN 301489-3, ETS 300330-1 and ETS 300330-2, FCC part 15 - UL	
Degree of protection conforming to IEC 60529		IP67	
Serial link	Type	RS-485	Ethernet (dual port)
	Protocol	Modbus and Uni-Telway	Modbus TCP/IP and Ethernet/IP
	Speed (baud rate)	9600–115,200 (automatic detection)	10/100MB
Ambient air temperature		Operation: -13 to +158 °F (-25 to +70 °C); Storage: -40 to +185 °F (-40 to +85 °C)	
Nominal supply voltage		24 Vdc PELV (protective extra-low voltage)	
Connection		Shielded M12 5-pin male connector on pigtail. Only for connection to the communication network and the supply.	Ethernet: 2 female M12, D-coded. Power supply: 1 male M8, 4-pin.
Catalog numbers		XGCS4901201	XGCS8901201 XGCS850C201



Electronic tags	Flat form 40			ISO badge (1)	Disc		Flat form 26	Cylindrical			
Dimensions, W x H x D, mm (in.)	40 x 40 x 15 (1.58 x 1.58 x 0.59)	40 x 40 x 15 (1.58 x 1.58 x 0.59)	40 x 40 x 15 (1.58 x 1.58 x 0.59)	54 x 85.5 x 0.8 (2.13 x 3.37 x 0.03)	Ø30 x 3 (0.12)	Ø30 x 3 (0.12)	26 x 26 x 13 (1.02 x 1.02 x 0.51)	M18 x 1 x 12 (M18 x 0.04 x 0.47)	Ø40 x 11 (1.58 x 0.43)		
Type of memory	FRAM	FRAM	FRAM	EEPROM	EEPROM	FRAM			EEPROM		
Memory capacity (bytes)	2000	8192	32768	256	112	2000	256	256	64		
Nominal sensing distance (mm)	(Read/Write)	with station XGCS49●	45	25	25	70	48	45	40	18	30 – 39
		with station XGCS89●	65	39	39	100	65	65	55	20	35 – 46
Time (ms) (2)	Read	7 + 2 x n	6 + 0.25 x n	6 + 0.25 x n	12 + 0.825 x n	12 + 0.825 x n	7 + 2 x n	12 + 0.825 x n	12 + 0.825 x n	12 + 0.825 x n	
	Write	7 + 2.4 x n	6 + 0.25 x n	6 + 0.25 x n	20 + 11.8 x n	12 + 5.6 x n	7 + 2.4 x n	20 + 11.8 x n	19 + 4.1 x n	20 + 11.8 x n	
Degree of protection conforming to IEC 60529		IP68	IP68	IP68	IP65	IP65	IP68	IP68	IP68		
Standard supported		ISO 15693	ISO 14443B	ISO 14443B	ISO 15693	ISO 15693	ISO 15693				
Mounting on metal support		Yes	Yes	Yes	Insulator req'd	Insulator req'd	Yes	No	Yes		
Catalog numbers		XGHB440245	XGHB440845	XGHB443245	XGHB90E340	XGHB320345	XGHB320246	XGHB221346	XGHB211345	XGHB411346	

(1) Customized versions on request.

(2) n = number of 16-bit words.



Connection boxes	Ethernet Modbus™ TCP/IP box	Profibus box	Ethernet/IP box
Dimensions, W x H x D, mm (in.)	130 x 80 x 51 (5.19 x 3.15 x 2.01)	158 x 100 x 60 (6.22 x 3.94 x 2.36)	130 x 80 x 51 (5.19 x 3.15 x 2.01)
Protocols	Modbus TCP/IP	Profibus DP	Ethernet/IP
Supply voltage	24 Vdc PELV, M12, 4-pin male, A coding connector		
Conformity to standards	CE, UL	CE	CE
Station connection	M12, 5-pin female, A coding connector		
Degree of protection conforming to IEC 60529	IP65		
Catalog numbers	XGSZ33ETH	XGSZ33PDP	XGSZ33EIP



Terminal	Portable 13.56 MHz RFID diagnostics terminal
Dimensions W x H x D, mm (in.)	78 x 153 x 27 (3.07 x 6.02 x 1.06)
Function	Read/Write operations on electronic tags
Operating system	Proprietary OS
Conformity to standards	CE, FCC class A, Part 15
Display	53 x 95 mm color OLED touchscreen, 272 x 480 pixels resolution
Degree of protection conforming to IEC 60529	IP40
Memory	RAM: 256 Mb Storage: internal 2 GB + USB socket for memory stick
Catalog number	XGST2422 (includes terminal plus battery, battery charger, 2 GB USB memory stick, and carrying case). RFID reader, ordered separately: XGCS4901201 integrated reader or XGW4F111 remote reader



Description	for Modbus network		for Profibus	for Ethernet	Prewired connector	T connector
	Modbus connecting cable, M12 connectors, male to female	Prewired connector M12 male to bare wires	Modbus connecting cable, M12 female to mini-DIN 8	Profibus connecting cables, M12 connectors, male to female	Ethernet connecting cable, M12 male to RJ45	Prewired supply connector, M12 female
Application	RS-485 connection between a smart antenna and a connection box or between 2 Modbus boxes	Connection between a Modbus box and a Modbus / Uni-Telway network	Connection between a Modbus box and a PLC	Connection between a Profibus box and a Profibus network	24 Vdc supply to connection boxes	For chaining of smart antennas on RS-485 network
2 m cable	TCSMCN1M1F2	TCSMCN1F2	TCSMCN1F9M2P	FTXDP1220	XGSZ09L2	TCSCNT011M11F
5 m cable	TCSMCN1M1F5	TCSMCN1F5	–	FTXDP1250	XGSZ09L5	(no cable)

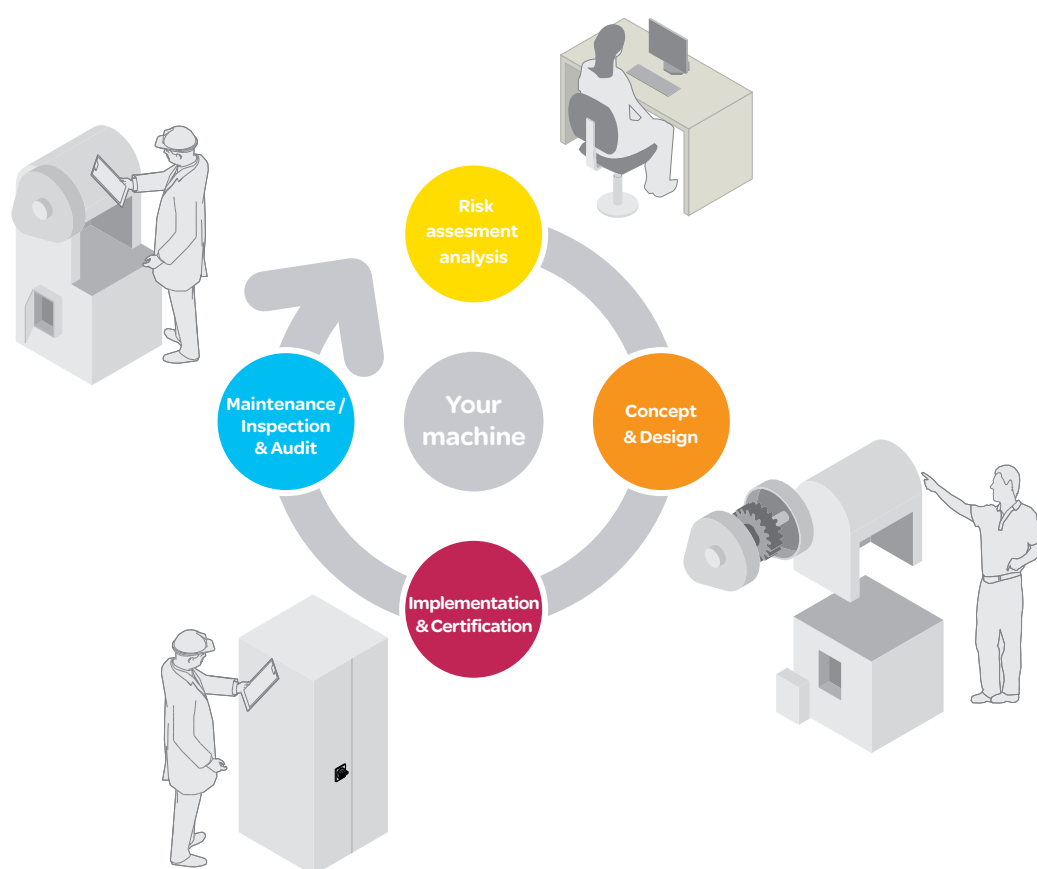
(3) 3 m cable. (4) 10 m cable.

Field expander	RS-232/RS-485 converter	Technical documentation
To be associated with a smart antenna XGCS4901201 for conveying and handling applications	For connecting a PC to an OsiSense XG smart antenna	OsiSense XG RFID catalog
 50 x 400 mm XGFEC540	 XGSZ24	 9006CT0902
 50 x 200 mm XGFEC520		
 250 x 250 mm XGFEC2525		

Preventa products: offering 360° safeguarding throughout the life cycle of your machine

The Preventa range enhances safety throughout a machine's entire life cycle—from design, manufacture, installation, adjustment, operation, and servicing, right through to decommissioning.

The Preventa product line offers an extensive range of safety products, compliant with U.S., Canadian, and international standards, designed to provide the most comprehensive protection for personnel and equipment.



> New machines—the Machinery Directive

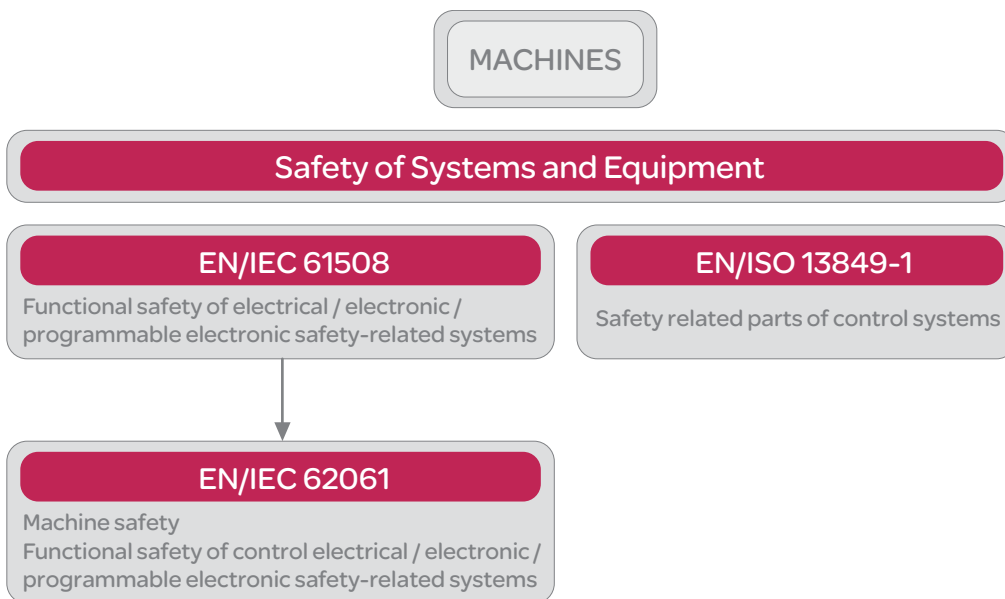
The **previous** Machinery Directive, 98/37/EC, was developed to help manufacturers ensure a minimum safety level for machinery and equipment sold within the EU (European Union).

The **new** European Machinery Directive, 2006/42/EC, went into effect on December 29, 2009. Machines must comply with the Essential Health and Safety Requirements (EHSRs) listed in Annex I of the Directive, which sets a common minimum level of protection across the EEA (European Economic Area).

Machine manufacturers, or their authorized representatives within the EU, must ensure that the machine is compliant with all requirements of this Directive.

Functional safety

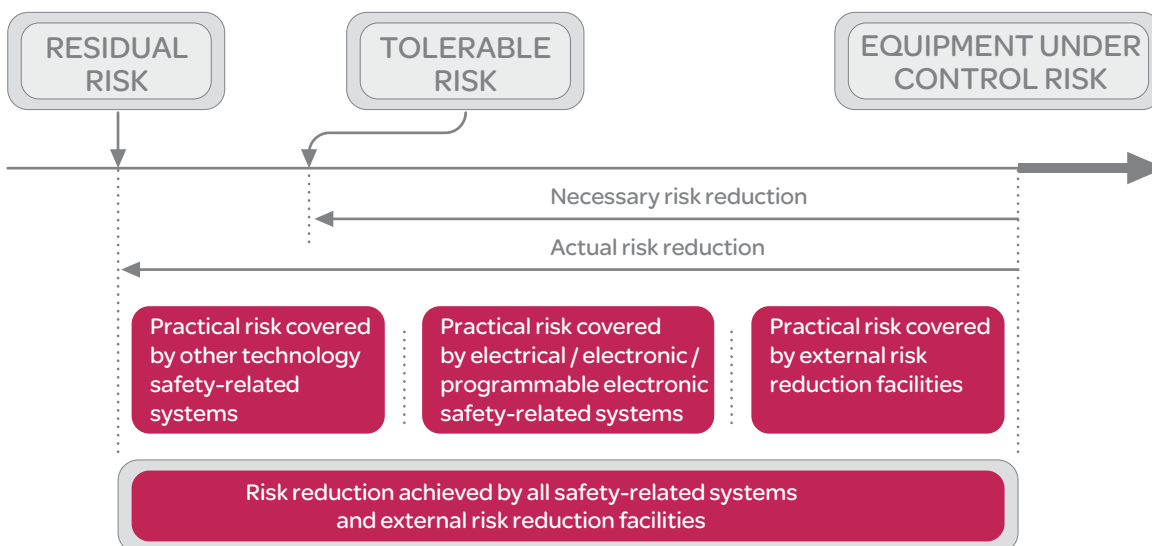
> Safety integrity level (SIL), Performance level (PL)



Risk reduction according to EN/IEC 61508 and EN/ISO 13849-1

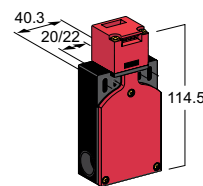
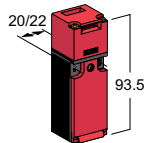
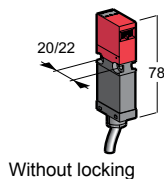
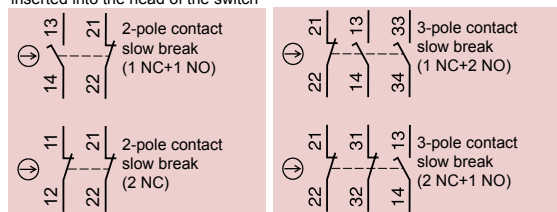
- **Safety** is achieved by reducing the risk (for those hazards that cannot be designed out).
- **Residual risk** is the risk remaining after protective measures have been taken.
- **Protective measures** realized by E/E/PE* safety related systems contribute to risk reduction.

* Electric / Electronic / Programmable electronic



For more information on Machine Safety, refer to the *Preventa Machine Safety Products catalog* (MKTED208051EN-US).

Illustration of contacts with the actuator inserted into the head of the switch



Without locking

Plastic, double insulated switches	Type XCSMP	Type XCSPA	Type XCSTA	
Maximum safety level (3)	PL=e, category 4 conforming to EN/ISO 13849-1; SIL CL3 conforming to EN/IEC 62061			
Actuation speed	0.05–1.5 m/s	0.1–0.5 m/s	0.1–0.5 m/s	
Rated operational specifications (conforming to EN IEC 60947-5-1)	AC 15, C 300 / DC 13, Q 300			
Degree of protection conforming to IEC 60529	IP67			
Reliability data B10d	5,000,000 (given value for a service life of 20 years, limited by mechanical or contact wear)			
Dimensions (body + head), W x D x H, mm (in.)	30 x 15 x 87 (1.18 x 0.59 x 3.43)	30 x 30 x 93.5 (1.18 x 1.18 x 3.68)	52 x 30 x 114.5 (2.05 x 1.18 x 4.51)	
Resistance to forcible withdrawal of actuator	8 N	10 N (1)	10 N (1)	
Wiring connection	precabled, 2 m	1 x 1/2"-14 NPT entry	1 x PG 11 entry	
Safety contacts	1 NC+1 NO break before make, slow break	XCSP59L2 →	XCSPA591 →	–
	2 NC slow break	XCSP79L2 →	XCSPA791 →	–
	1 NC+2 NO break before make, slow break	–	–	XCSTA593 →
	2 NC+1 NO break before make, slow break	XCSP70L2 →	–	XCSTA793 →
	3 NC slow break	XCSP80L2 →	–	XCSTA893 →

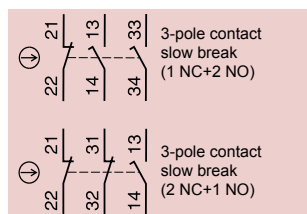
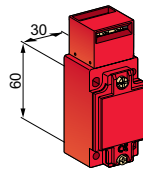
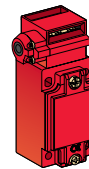


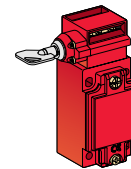
Illustration of contacts with the actuator inserted into the head of the switch



Without locking



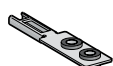
With interlocking, manual unlocking
By button



By key lock

Metal, double insulated switches	Type XCSA	Type XCSB	Type XCSC	
Maximum safety level (3)	PL=e, category 4 conforming to EN/ISO 13849-1; SIL CL3 conforming to EN/IEC 62061			
Actuation speed	0.01–0.5 m/s	0.01–0.5 m/s		
Rated operational specifications (conforming to EN IEC 60947-5-1)	AC 15, A 300 / DC 13, Q 300			
Degree of protection conforming to IEC 60529	IP67			
Reliability data B10d	5,000,000 (given value for a service life of 20 years, limited by mechanical or contact wear)			
Dimensions (body + head), W x D x H, mm (in.)	40 x 44 x 113.5 (1.58 x 1.73 x 4.47)	52 x 44 x 113.5 (2.05 x 1.73 x 4.47)		
Resistance to forcible withdrawal of actuator	20 N	1500 N		
Wiring connection	1 x 1/2"-14 NPT entry	1 x Pg 13.5	1 x 1/2"-14 NPT entry (4)	
Safety contacts	1 NC+2 NO break before make, slow break	XCSA503 →	XCSB503 →	XCSC503 →
	2 NC+1 NO break before make, slow break	XCSA703 →	XCSB703 →	XCSC703 →
	3 NC slow break	XCSA803 →	XCSB803 →	XCSC803 →

Accessories



Straight actuator



Right-angled actuator



Pivoting actuator, right door



Pivoting actuator, left door

For safety interlock switches XCSMP	Actuators			
Catalog numbers	XCSZ81	XCSZ84	XCSZ83	XCSZ85



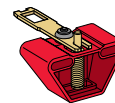
Straight actuator



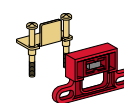
Wide actuator, 40 mm (5)



Right-angled actuator



Pivoting actuator



Guard/door retainer

For safety interlock switches XCSPA/TA	Actuators				Retaining device
Catalog numbers	XCSZ11	XCSZ12	XCSZ14	XCSZ13	XCSZ21

(1) In order to increase the resistance to 50 N, you must add accessory XCSZ21 to key actuators XCSZ12.

(2) For a no. 11 (Pg 11) cable connector entry, replace the last digit in the catalog number with 1. Example: XCSTA593 becomes XCSTA591.

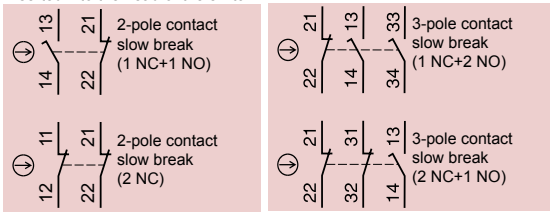
Each device includes two Pg 11 cable connector entries: one Pg 11 to 1/2"-14 DE9RA1012 adapter, and one Pg 11 end cap.

(3) Using an appropriate and correctly connected control system.

(4) For Pg 13.5 entry, change the last digit in the catalog number to 1. Example: XCSC503 becomes XCSC501.

(5) For 29 mm, catalog number = **XCSZ15**.

Illustration of contacts with the actuator inserted into the head of the switch



Safety interlock switches		Type XCSLF, metal	Type XCSLE, plastic
Standard version and Connector version			
Maximum safety level (2)		PL=e, category 4 conforming to EN/ISO 13849-1; SIL CL3 conforming to EN/IEC 62061	
Degree of protection conforming to IEC 60529		IP66 and IP67	
Reliability data B10d		5,500,000 (given value for a service life of 20 years, limited by mechanical or contact wear)	
Dimensions (body + head), W x D x H, mm (in.)		43.5 x 51 x 205 (1.71 x 2.01 x 8.07)	
Resistance to forcible withdrawal of actuator		3,000 N	1,400 N
Locking		on de-energization (1)	
Power supply for the solenoid and LEDs		24 Vac/Vdc	
Material case		Zamak	Polyamide
Wiring connection (3)		1/2"-14 NPT entry	
Safety contacts	2 NC (simultaneous, slow break)	XCSLF2727313 →	XCSLE2727313 →
	1 NC+2 NO (break before make, slow break)	XCSLF3535313 →	—
	2 NC+1 NO (break before make, slow break)	XCSLF3737313 →	XCSLE3737313 →
	3 NC (simultaneous, slow break)	XCSLF3838313 →	—

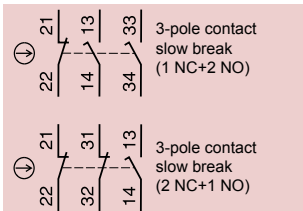


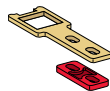
Illustration of contacts with the actuator inserted into the head of the switch



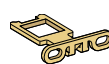
New

Safety interlock switches		Type XCSLF, metal
Push button version and Push button with connector version		
Maximum safety level (2)		PL=e, category 4 conforming to EN/ISO 13849-1; SIL CL3 conforming to EN/IEC 62061
Degree of protection conforming to IEC 60529		IP66
Reliability data B10d		5,500,000 (given value for a service life of 20 years, limited by mechanical or contact wear)
Dimensions (body + head), W x D x H, mm (in.)		43.5 x 51 x 205 (1.71 x 2.01 x 8.07)
Resistance to forcible withdrawal of actuator		3,000 N
Locking		on de-energization (1)
With/without key no. 455 to release		Without With
Power supply for the solenoid and LEDs		24 Vac/Vdc
Material case		Zamak
Wiring connection (3)		1/2"-14 NPT entry
Safety contacts	2 NC+1 NO (break before make, slow break)	XCSLF3737413 →
		XCSLF3737613 →

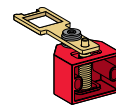
Accessories



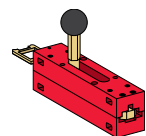
Straight actuator



Wide actuator



Pivoting actuator

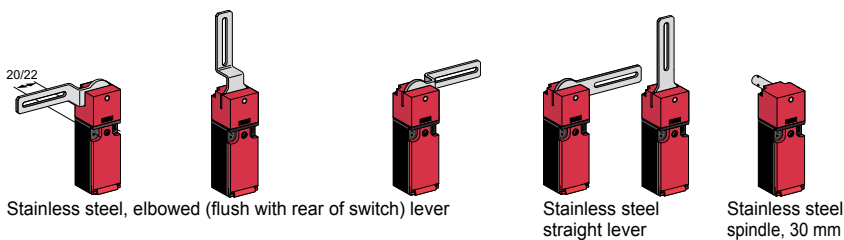
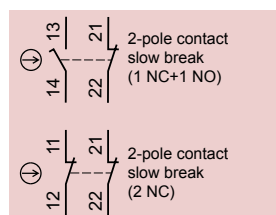


For safety interlock switches XCSA/B/C/LE/LF	Actuators		Padlockable actuator
Catalog numbers	XCSZ01	XCSZ02	XCSZ05

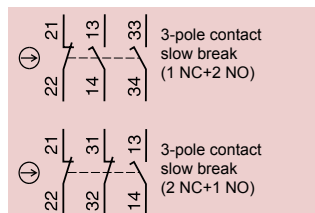
(1) For locking on energization of the solenoid, refer to TE sensors.us.

(2) Using an appropriate and correctly connected control system.

(3) For other connections, consult the Customer Care Center.



Plastic switches		Type XCSPL with rotary lever or XCSPR with spindle 1 x 1/2"-14 NPT entry (1)				
Maximum safety level (3)		PL=e, category 4 conforming to EN/ISO 13849-1; SIL CL3 conforming to EN/IEC 62061				
Minimum torque	actuation	0.1 N•m (0.89 lb-in)				
	positive opening	0.25 N•m (2.21 lb-in)				
Degree of protection		IP67				
Rated operational specifications (conforming to EN IEC 60947-5-1)		AC 15, A 300 / DC 13, Q 300				
Dimensions (body + head) W x D x H, mm (in.)		30 x 30 x 160 (1.18 x 1.18 x 6.30)			30 x 30 x 96 (1.18 x 1.18 x 3.78)	
Lever position		Left	Centered	Right	Left, right, or centered	
Tripping angle		5°				
Reliability data B10d		5,000,000 (given value for a service life of 20 years, limited by mechanical or contact wear)				
Complete switch	1 NC+1 NO break before make, slow break	XCSPL593 →	XCSPL583 →	XCSPL573 →	XCSPL563 →	XCSPR553 →
	2 NC slow break	XCSPL793 →	XCSPL783 →	XCSPL773 →	XCSPL763 →	XCSPR753 →



Plastic switches		Type XCSTL with rotary lever or XCSTR with spindle 2 x 1/2"-14 NPT entry (1) (2)		
Maximum safety level (3)		PL=e, category 4 conforming to EN/ISO 13849-1; SIL CL3 conforming to EN/IEC 62061		
Minimum torque	actuation	0.1 N•m (0.89 lb-in)		
	positive opening	0.45 N•m (3.98 lb-in)		
Degree of protection		IP67		
Rated operational specifications (conforming to EN IEC 60947-5-1)		AC 15, A 300 / DC 13, Q 300		
Dimensions (body + head) W x P x H, mm (in.)		52 x 30 x 180 (2.05 x 1.18 x 7.09)		52 x 30 x 117 (2.05 x 1.18 x 4.61)
Lever position		Centered	Centered	-
Tripping angle		5°		
Reliability data B10d		5,000,000 (given value for a service life of 20 years, limited by mechanical or contact wear)		
Complete switch	1 NC+2 NO break before make, slow break	XCSTL583 →	XCSTL553 →	XCSTR553 →
	2 NC+1 NO break before make, slow break	XCSTL783 →	XCSTL753 →	XCSTR753 →

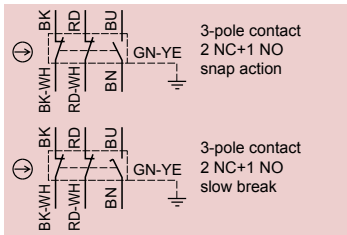
(1) For a no. 11 (Pg 11) cable connector entry, replace the last digit in the catalog number with 1. Example: XCSPL593 becomes XCSPL591.

(2) Each device comes with two Pg 11 cable connector entries: one Pg 11 to 1/2"-14 DE9RA1012 adapter, and one Pg 11 end cap.

(3) Using an appropriate and correctly connected control system.

Limit switches

Safety limit switches



Metal end plunger

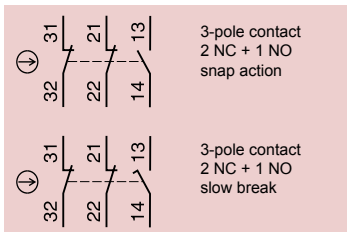


Roller plunger



Thermoplastic roller lever

Miniature switches		Type XCSM, metal precabled, 2 m (1)		
Maximum safety level (2)		PL=e, category 4 conforming to EN/ISO 13849-1; SIL CL3 conforming to EN/IEC 62061		
Maximum actuation speed		0.5 m/s	0.5 m/s	1.5 m/s
Minimum force or torque	actuation	8.5 N	7 N	0.5 N•m (4.43 lb-in)
	positive opening	42.5 N	35 N	0.1 N•m (0.89 lb-in)
Degree of protection		IP66 + IP67 + IP68		
Dimensions (body + head) W x D x H, mm (in.)		30 x 16 x 60 (1.18 x 0.63 x 2.36)	30 x 16 x 70.5 (1.18 x 0.63 x 2.78)	30 x 32 x 92.5 (1.18 x 1.26 x 3.64)
Reliability data B10d		50,000,000 (given value for a service life of 20 years, limited by mechanical or contact wear)		
Complete switch	2 NC+1 NO snap action	XCSM3910L2 (↻)	XCSM3902L2 (↻)	XCSM3915L2 (↻)
	2 NC+1 NO slow break	XCSM3710L2 (↻)	XCSM3702L2 (↻)	XCSM3715L2 (↻)



Metal end plunger



Roller plunger



Thermoplastic roller lever



Metal end plunger



Roller plunger



Thermoplastic roller lever

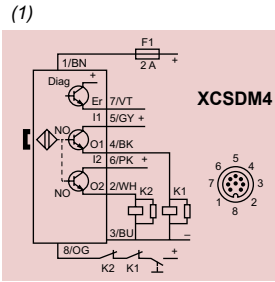
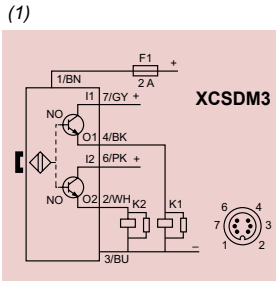
Compact switches		Type XCSD, metal 1/2"-14 NPT conduit entry (3)			Type XCSP, plastic 1/2"-14 NPT conduit entry (3)		
Maximum safety level (2)		PL=e, category 4 conforming to EN/ISO 13849-1; SIL CL3 conforming to EN/IEC 62061					
Maximum actuation speed		0.5 m/s		1.5 m/s	0.5 m/s		1.5 m/s
Minimum force or torque	actuation	15 N (3.37 lb)	12 N (2.70 lb)	10 N•m (88.51 lb-in)	15 N (3.37 lb)	12 N (2.70 lb)	10 N•m (88.51 lb-in)
	positive opening	45 N (10.12 lb)	36 N (8.09 lb)	0.1 N•m (0.89 lb-in)	45 N (10.12 lb)	36 N (8.09 lb)	0.1 N•m (0.89 lb-in)
Degree of protection		IP66 + IP67			IP66 + IP67		
Dimensions (body + head) W x D x H, mm (in.)		34 x 34.5 x 89 (1.34 x 1.34 x 3.50)	34 x 34.5 x 99.5 (1.34 x 1.34 x 3.92)	34 x 43 x 121.5 (1.34 x 1.69 x 4.78)	34 x 34.5 x 89 (1.34 x 1.39 x 3.50)	34 x 34.5 x 99.5 (1.34 x 1.39 x 3.92)	34 x 43 x 121.5 (1.34 x 1.69 x 4.78)
Reliability data B10d		50,000,000 (given value for a service life of 20 years, limited by mechanical or contact wear)					
Complete switch	2 NC+1 NO snap action	XCSD3910N12	XCSD3902N12	XCSD3918N12	XCSP3910N12	XCSP3902N12	XCSP3918N12
	2 NC+1 NO slow break	XCSD3710N12	XCSD3702N12	XCSD3718N12	XCSP3710N12	XCSP3702N12	XCSP3718N12

(1) For a 1 m cable, replace the last digit of the catalog number with **1**. Example: XCSM3910L2 becomes XCSM3910L1.

For a 5 m cable, replace the last digit of the catalog number with **5**. Example: XCSM3910L2 becomes XCSM3910L5.

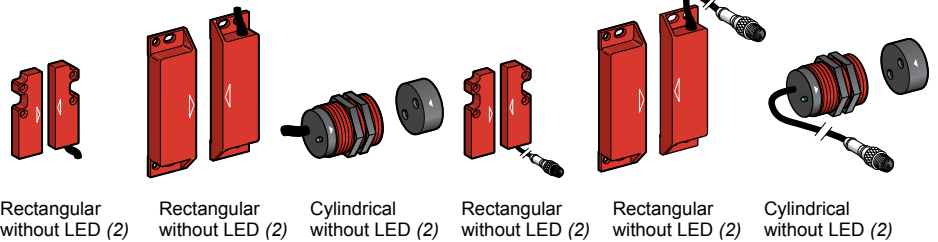
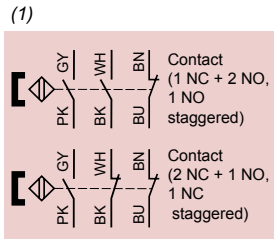
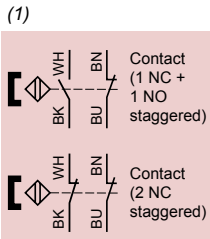
(2) Using an appropriate and correctly connected control system.

(3) For a Pg 13.5 entry, change suffix **N12** to **G13**. Example: XCSP3710N12 becomes XCSP3710G13.



Type of system with integrated safety module		SIL2/Category 3 XCSDM3	SIL3/Category 4 XCSDM4	
Maximum safety level		SIL 2 conforming to EN/IEC 61508, PL=d, category 3 conforming to EN/ISO 13849-1	SIL 3 conforming to EN/IEC 61508, PL=e, category 4 conforming to EN/ISO 13849-1	
Switches for actuation		Face to face, face to side, side to side		
Degree of protection		Precabled: IP66 / IP67, IP69K; connector: IP67		
Type of contact		2 solid-state output PNP / NO, 1.5 A / 24 Vdc (2 A up to 60 °C)		
Rated operational specifications (conforming to EN IEC 60947-5-1)		Ub: 24 Vdc +10%, -20%		
Dimensions, W x D x H, mm (in.)		34 x 27 x 100 (1.34 x 1.06 x 3.94)		
Operating zone		Sao= 10 mm / Sar= 20 mm		
Reliability data		MTTFd = 182 years; PFH = 3.94E -9; PFD = 1.15E -5; SFF = 92.5%; HFT = 1		
Catalog numbers	Connection	2 m cable	XCSDM379102	XCSDM480102
		5 m cable	XCSDM379105	XCSDM480105
		10 m cable	XCSDM379110	XCSDM480110
		M12 connector	XCSDM3791M12 (3)	XCSDM4801M12 (3)

Plastic coded magnetic



Plastic switch-es	Type XCSDM coded magnetic					
	Precabled, 2 m			Connector on pigtail connector, 10 cm (3)		
Maximum safety level (5)	PL=e, category 4 conforming to EN/ISO 13849-1; SIL 3 conforming to EN/IEC 61508					
Switches for actuation	Face to face, face to side, side to side		Face to face	Face to face, face to side, side to side		Face to face
Degree of protection	IP66 + IP67			IP66 + IP67		
Type of contact	REED			REED		
Rated operational specifications (conforming to EN IEC 60947-5-1)	Ue = 24 Vdc, Ie = 100 mA			Ue = 24 Vdc, Ie = 100 mA		
Dimensions, W x D x H, mm (in.)	16 x 7 x 51 (0.63 x 0.28 x 2.01)	25 x 13 x 88 (0.98 x 0.51 x 3.47)	M30 x 38.5 (1.52)	16 x 7 x 51 (0.63 x 0.28 x 2.01)	25 x 13 x 88 (0.98 x 0.51 x 3.47)	M30 x 38.5 (1.52)
Operating zone (4)	Sao = 5 / Sar = 15	Sao = 8 / Sar = 20		Sao = 5 / Sar = 15	Sao = 8 / Sar = 20	
Reliability data B10d	50,000,000 (given value for a service life of 20 years, limited by mechanical or contact wear)					
Switch with coded magnet	1 NC+1 NO staggered	XCSDMC5902	XCSDMP5902	XCSDMR5902	XCSDMC590L01M8	XCSDMP590L01M12
	2 NC staggered	XCSDMC7902	XCSDMR7902	XCSDMR7902	XCSDMC790L01M8	XCSDMP790L01M12
	1 NC+2 NO, 1 NO staggered	-	XCSDMP5002	-	-	XCSDMP500L01M12
	2 NC+1 NO, 1 NC staggered	-	XCSDMP7002	-	-	XCSDMP700L01M12

(1) Illustration of contacts with the magnet in front of the switch.

(2) For a version with an LED indicator, replace the last 0 in the catalog number with 1. Example: XCSDMC5902 becomes XCSDMC5912.

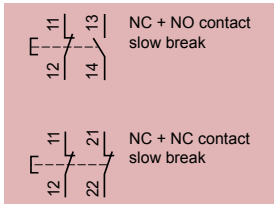
(3) For associated prewired female connectors, refer to the Sensors catalog.

(4) Sao: assured operating distance. Sar: assured release distance.

(5) Using an appropriate and correctly connected control system.

Emergency stops

Emergency stop cable pull switches



⊕ Positive opening operation



For operating cable length < 20 or 30 m depending on the model		Latching, without indicator light		
Maximum safety level using an appropriate and correctly connected control system		Pg 13.5 threaded cable entry		
Mechanical life		PL=e, category 4 conforming to EN/ISO 13849-1; SIL CL3 conforming to EN/IEC 62061		
Shock / vibration resistance		100,000 operating cycles		
Degree of protection		50 gn / 10 gn		
Conformity to standards		IP66 and IP67		
Dimensions W x D x H		EN/IEC 60947-5-5, EN/ISO 13850, UL (NiSD), CSA, CCC		
Operating cable length		200.9 x 40 x 64.2 mm		
Operating cable anchoring point		< 20 m	< 30 m	< 30 m
Reliability data B10d		straight	right side	left side
Contact		500,000 (for a service life of 20 years, limited by mechanical or contact wear)		
	1 NC + NO slow break	XY2CJS15 (4)	XY2CJR15 (4)	XY2CJL15 (4)
	1 NC + NC slow break	XY2CJS17 (4)	XY2CJR17 (4)	XY2CJL17 (4)
	2 NC + 1 NO slow break	XY2CJS19 (4) (5)	XY2CJR19 (4) (5)	XY2CJL19 (4) (5)

(4) For ISO M20 threaded cable entry version, add H29 to the end of the reference selected. Example: XY2CJS15 becomes XY2CJS15H29.

(5) For 1/2" NPT threaded cable entry version, add H7 to the end of the reference selected. Example: XY2CJS19 becomes XY2CJS19H7



Booted push button reset

For operating cable ≤ 30 m		Latching, without indicator light		
Maximum safety level using an appropriate and correctly connected control system		3 x 1/2"-14 NPT conduit entries (1)		
Mechanical life		PL=e, category 4 conforming to EN/ISO 13849-1; SIL 3 conforming to EN/IEC 61508		
Shock / vibration resistance		1 million operating cycles		
Degree of protection		50 gn / 10 gn		
Conformity to standards		IP65		
Dimensions, W x D x H, mm (in.)		EN/IEC 60947-5-5, EN/ISO 13850: 2006, UL 508 and CSA C 22-2 no. 14 (with suffix H7)		
Operating cable length		201 x 71 x 68 (7.91 x 2.80 x 2.68)		
Operating cable anchoring point		≤ 30 m		
Reliability data B10d		To right or to left		
Contact		5,000,000 (for a service life of 20 years, limited by mechanical or contact wear)		
	1 NC + NO slow break	XY2CH13250H7		
	1 NC + NC slow break	XY2CH13270H7		
	2 NC+1 NO slow break	XY2CH13290H7		



Booted pushbutton reset

For operating cable ≤ 70 m		Latching, without indicator light		
Maximum safety level using an appropriate and correctly connected control system		3 x 1/2"-14 NPT conduit entries		
Mechanical life (millions of operating cycles)		PL=e, category 4 conforming to EN/ISO 13849-1; SIL 3 conforming to EN/IEC 61508		
Shock / vibration resistance		0.01		
Degree of protection		50 gn / 10 gn		
Conformity to standards		IP65		
Dimensions, W x D x H, mm (in.)		EN/IEC 60947-5-5, EN/ISO 13850: 2006, UL 508 and CSA C 22-2 no. 14 (with suffix H7)		
Operating cable length		229 x 82 x 142 (9.02 x 3.23 x 5.59)		
Operating cable anchoring point		≤ 70 m		
Reliability data B10d		To left	To right	
Contact		50,000 (for a service life of 20 years, limited by mechanical or contact wear)		
	1 NC + NO slow break	XY2CE2A250H7	XY2CE1A250H7	
	1 NC + NC slow break	XY2CE2A270H7	XY2CE1A270H7	
	2 NC + NO slow break	XY2CE2A290H7 (2)	XY2CE1A290H7 (2)	

(1) For a no. 13 (Pg 13.5) cable entry, delete H7 from the end of the catalog number. Example: XY2CH13250H7 becomes XY2CH13250.

(2) With protected LED, 24 V or 130 V supply voltage pilot light, replace the 0 in the catalog number with 6. Example: XY2CE1A290H7 becomes XY2CE1A296H7.

With protected LED, 230 V supply voltage pilot light, replace the 0 in the catalog number with 7. Example: XY2CE1A290H7 becomes XY2CE1A297H7.



Main features (1)

- Automatic or manual start/restart, selectable by wiring
- External device monitoring (EDM), selectable by wiring
- Two ranges for maximum sensing distance, selectable by wiring
- Test function (beam blocked state simulation)
- LED indicators for status and diagnosis
- Muting possible with dedicated safety module

Maximum safety level attained by the solution EN ISO 13849-1		PLd/cat2	
Maximum safety level attained by the solution IEC 61508/IEC 62061		SIL2/SILCL2	
Type IEC 61496-1 & IEC 61496-2		Type 2 Multi-beam, infrared transmission	
Nominal sensing distance (Sn)		0–4 m or 0–12 m, selectable	
Resolution (detection capability)		30 mm (Hand detection)	2–3 or 4 Beams (Body detection)
Number of safety outputs		2 solid-state PNP	
Response time (depending on the model)		4.5 to 23.5 ms	3 to 3.5 ms
Operating temperature range		+14 to +131 °F (-10 to +55 °C)	
Degree of protection		IP65-IP67	
Connection		M12 connector	
Reliability data		PFHd = 2.04E-8 to 8.98E-8	PFHd = 1.71E-8 to 2.02E-8
Mission time (TM)		20 years	
Height protected (mm)	160	XUSL2E30H016N	–
	260	XUSL2E30H026N	–
	310	XUSL2E30H031N	–
	460	XUSL2E30H046N	–
	510, 2 beams	–	XUSL2E2BB051N
	610	XUSL2E30H061N	–
	760	XUSL2E30H076N	–
	810, 3 beams	–	XUSL2E3BB081N
	910	XUSL2E30H091N	–
	910, 4 beams	–	XUSL2E4BB091N
	1060	XUSL2E30H106N	–
	1210	XUSL2E30H121N	–
	1360	XUSL2E30H136N	–
	1510	XUSL2E30H151N	–
	1660	XUSL2E30H166N	–
1810	XUSL2E30H181N	–	

Type 2 conforming to IEC 61496-1 et 2

Light curtain functions

- Auto/manual
- Monitoring of external switching devices
(EDM: external device monitoring)
- LED display of operating modes
- Integral muting function



Maximum safety level achieved by the solution (EN ISO 13849-1, EN/IEC 62061)		PLc/cat2, SILCL1	
Type		Single-beam with infrared emission	
Height protected (conforming to prEN 999)		750–1200 mm (1–4 beams)	
Nominal sensing distance (Sn)		8 m	
Number of circuits	Safety	2 NO	
	Additional	4 solid-state	
Response time		< 25 ms	
Reliability data		PFHd = 4.6E -7 conforming to EN/IEC 61508 PFHd = 5.5E -7 conforming to EN/IEC 61508, with "muting" function	
Modules (integral muting function)		24 Vdc	XPSCM1144P (2)
Thru-beam pairs, axially aligned	Precabled, 5m	PNP	XU2S18PP340L5 (3)
	M12 connector	PNP	XU2S18PP340D (3)

(1) Also available in IP69K model. (2) For a non-removable terminal block, delete the letter P from the end of the catalog number. Example: XPSCM1144P becomes XPSCM1144).
(3) For alignment at 90° to the mounting axes, insert the letter W in the catalog number before the last letter. Example: XU2S18PP340L5 becomes XU2S18PP340WL5).

Type 4 conforming to IEC 61496-1 & IEC 61496-2



Main features (1)

- Automatic or manual start/restart, selectable by wiring
- External device monitoring (EDM), selectable by wiring
- Two ranges for maximum sensing distance, selectable by wiring
- Test function (beam blocked state simulation)
- LED indicators for status and diagnosis
- Muting possible with dedicated safety module

NOTE: Cables are sold separately.

Maximum safety level attained by the solution EN ISO 13849-1		PLe/cat4		
Maximum safety level attained by the solution IEC 61508/IEC 62061		SIL3/SILCL3		
Type IEC 61496-1 & IEC 61496-2		Type4 Multi-beam, infrared transmission		
Nominal sensing distance (Sn)		0–3 m or 1–6 m, selectable	0–4 m or 0–12 m, selectable	0–4 m or 0–12 m, selectable
Resolution (detection capability)		14 mm (Finger detection)	30 mm (Hand detection)	2-3 or 4 Beams (Body detection)
Number of safety outputs		2 solid-state PNP		
Response time (depending on the model)		4–23.5 ms	4–22 ms	2.5–3 ms
Operating temperature range		+14 to +131 °F (-10 to +55 °C)		
Degree of protection		IP65-IP67		
Connection		M12 connector		
Reliability data (depending on the model) conforming to EN/IEC 61508		PFHd = 1.03E-8 to 3.71E-8	PFHd = 7.08E-9 to 2.02E-8	PFHd = 6.89E-9 to 8.21E-9
Mission time (TM)		20 years		
Height protected (mm)	160	XUSL4E14F016N	XUSL4E30H016N	–
	260	–	XUSL4E30H026N	–
	310	XUSL4E14F031N	XUSL4E30H031N	–
	460	XUSL4E14F046N	XUSL4E30H046N	–
	510, 2 beams	–	–	XUSL4E2BB051N
	610	XUSL4E14F061N	XUSL4E30H061N	–
	760	XUSL4E14F076N	XUSL4E30H076N	–
	810, 3 beams	–	–	XUSL4E3BB081N
	910	XUSL4E14F091N	XUSL4E30H091N	–
	910, 4 beams	–	–	XUSL4E4BB091N
	1060	XUSL4E14F106N	XUSL4E30H106N	–
	1210	XUSL4E14F121N	XUSL4E30H121N	–
	1360	XUSL4E14F136N	XUSL4E30H136N	–
	1510	XUSL4E14F151N	XUSL4E30H151N	–
	1660	XUSL4E14F166N	XUSL4E30H166N	–
	1810	XUSL4E14F181N	XUSL4E30H181N	–

Type		Long Range models		
		For hand and body protection		
Nominal sensing distance (Sn)		0–10 m or 3–20 m, selectable		0–10 m or 3–20 m, selectable
Reliability data (depending on the model) conforming to EN/IEC 61508		PFHd = 9.13E-9 to 2.29E-8		PFHd = 9.15E-9 to 1.08E-8
Response time (depending on the model)		3–13 ms		2.5 ms
Height protected (mm)	160	XUSL4E30H016L		–
	310	XUSL4E30H031L		–
	460	XUSL4E30H046L		–
	510, 2 beams	–		XUSL4E2BB051L
	610	XUSL4E30H061L		–
	760	XUSL4E30H076L		–
	810, 3 beams	–		XUSL4E3BB081L
	910	XUSL4E30H091L		–
	910, 4 beams	–		XUSL4E4BB091L
	1060	XUSL4E30H106L		–
	1210	XUSL4E30H121L		–
	1360	XUSL4E30H136L		–
	1510	XUSL4E30H151L		–
	1660	XUSL4E30H166L		–
	1810	XUSL4E30H181L		–

(1) Also exists in IP69K model.



Main features (1)

- Automatic or manual start/restart, selectable by wiring
- External device monitoring (EDM), selectable by wiring
- Two ranges for maximum sensing distance, selectable by wiring
- Test function (beam blocked state simulation)
- LED indicators for status and diagnosis
- Muting possible with dedicated safety module

Type		Cascadable models—master segments (2)		
Nominal sensing distance (Sn)		0–3 m or 1–6 m, selectable	0–4 m or 0–12 m, selectable	0–4 m or 0–12 m, selectable
Resolution (detection capability)		14 mm (Finger detection)	30 mm (Hand detection)	2–3 or 4 beams (Body detection)
Number of safety outputs		2 solid-state PNP		
Response time		Depends on the model and the number of segments used. See the user manual for the calculation.		
Operating temperature range		+14 to +131 °F (–10 to +55 °C)		
Degree of protection		IP65-IP67		
Connection		2 x M12 connector		
Reliability data (depending on the model) conforming to EN/IEC 61508		PFHd = 1.27E-8 to 2E-8	PFHd = 9.47E-9 to 1.43E-8	PFHd = 6.89E-9 to 8.21E-9
Mission time (TM)		20 years		
Height protected (mm) (2)	310	XUSL4E14F031NM	–	–
	460	XUSL4E14F046NM	XUSL4E30H046NM	–
	510, 2 beams	–	–	XUSL4E2BB051NM
	610	XUSL4E14F061NM	XUSL4E30H061NM	–
	760	XUSL4E14F076NM	XUSL4E30H076NM	–
	810, 3 beams	–	–	XUSL4E3BB081NM
	910	–	XUSL4E30H091NM	–
	910, 4 beams	–	–	XUSL4E4BB091NM
	1060	–	XUSL4E30H106NM	–

Type		Cascadable models—Slave1 Segments (2)		
Reliability data (depending on the model) conforming to EN/IEC 61508		PFHd = 1.27E-8 to 2E-8	PFHd = 9.47E-9 to 1.43E-8	PFHd = 6.89E-9 to 8.21E-9
Response time		Depends on the model and the number of segments used. See the user manual for the calculation.		
Connection		M12 connector		
Height protected (mm) (1)	310	XUSL4E14F031NS1	–	–
	460	XUSL4E14F046NS1	XUSL4E30H046NS1	–
	510, 2 beams	–	–	XUSL4E2BB051NS1
	610	XUSL4E14F061NS1	XUSL4E30H061NS1	–
	760	XUSL4E14F076NS1	XUSL4E30H076NS1	–
	810, 3 beams	–	–	XUSL4E3BB081NS1
	910	–	XUSL4E30H091NS1	–
	910, 4 beams	–	–	XUSL4E4BB091NS1
	1060	–	XUSL4E30H106NS1	–

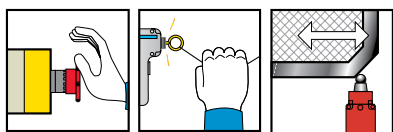
Type		Cascadable models—Slave2 Segments (2)		
Reliability data (depending on the model) conforming to EN/IEC 61508		PFHd = 1.52E-8 to 2E-8	PFHd = 9.47E-9 to 1.43E-8	PFHd = 6.89E-9 to 8.21E-9
Response time		Depends on the model and the number of segments used. See the user manual for the calculation.		
Connection		2 x M12 connector		
Height protected (mm) (1)	310	–	–	–
	460	XUSL4E14F046NS2	XUSL4E30H046NS2	–
	510, 2 beams	–	–	XUSL4E2BB051NS2
	610	XUSL4E14F061NS2	XUSL4E30H061NS2	–
	760	XUSL4E14F076NS2	XUSL4E30H076NS2	–
	810, 3 beams	–	–	XUSL4E3BB081NS2
	910	–	XUSL4E30H091NS2	–
	910, 4 beams	–	–	XUSL4E4BB091NS2
	1060	–	XUSL4E30H106NS2	–

(1) Other heights available on request.

(2) Cable sold separately. Refer to page 65.

Safety modules for monitoring

Emergency stops and limit switches



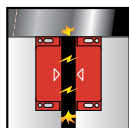
Maximum safety level attained by the solution (EN ISO 13849-1, EN/IEC 62061)		PL e / Cat. 4, SILCL 3							
Number of circuits	Safety	3 NO	3 NO	3 NO	3 NO	7 NO	3 NO + 3 NO time delay	2 NO + 1 NO time delay	2 NO + 3 NO time delay
	Additional	1 solid-state	1 NC	–	1 NC + 4 solid-state	2 NC + 4 solid-state	3 solid-state	–	4 solid-state
Display (number of LEDs)		2	2	3	4	4	11	3	4
Width of housing		22.5 mm	22.5 mm	22.5 mm	45 mm	90 mm	45 mm	22.5 mm	45 mm

Optimum solutions: safety modules (for monitoring 1 safety function)

Supply voltage	24 Vdc	–	–	–	–	–	XPSAV11113P	XPSABV11330P (1)	–
	24 Vac/Vdc	XPSAC5121P	XPSAXE5120P (1)	XPSAF5130P	XPSAK311144P	XPSAR311144P	–	–	XPSATE5110P

(1) For a version with spring terminals, replace the letter P with C at the end of the catalog number. Example: XPSAXE5120P becomes XPSAXE5120C.

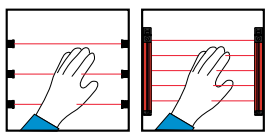
Coded magnetic switches



Maximum safety level attained by the solution (EN ISO 13849-1, EN/IEC 62061)		PL e / Cat. 4, SILCL 3	
For monitoring		2 coded magnetic switches maximum, NC + NO	6 coded magnetic switches maximum, NC + NO
Number of circuits	Safety	2 NO	2 NO
	Additional	2 solid-state	2 solid-state
Display (number of LEDs)		3	15
Width of housing, mm (in.)		22.5 (0.89)	45 (1.77)

Optimum solutions: safety modules (for monitoring 1 safety function)

Supply voltage	24 Vdc	XPSDMB1132P	XPSDME1132P
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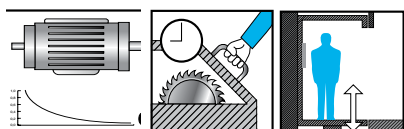


Maximum safety level of the solution attained (EN ISO 13849-1, EN/IEC 62061)		PL c / Cat. 2, SILCL 1	PL e / Cat. 4, SILCL 3		
Number of circuits	Safety	2 NO	3 NO	3 NO	7 NO
	Additional	4 solid-state	–	1 NC + 4 solid-state	1 NC + 4 solid-state
Display (number of LEDs)		4	3	4	4
Width of housing, mm (in.)		45 (1.77)	22.5 (0.89)	45 (1.77)	90 (3.54)
Integral Muting function		Yes	No	No	No

Optimum solutions: safety modules (for monitoring 1 safety function)

Supply voltage	24 Vdc	XPSCM1144P	–	–	–
	24 Vac/Vdc	–	XPSAFL5130P	XPSAK311144P	XPSAR311144P

Zero speed and time delay



Maximum safety level of the solution attained (EN ISO 13849-1, EN/IEC 62061)		PL d / Cat. 3, SILCL 2		
For monitoring		Motor zero speed condition	Safety time delay	
Number of circuits	Safety	1 NO + 1 NC	1 NO time delay	1 NO pulse
	Additional	2 solid-state	2 NC + 2 solid-state	2 NC + 2 solid-state
Display (number of LEDs)		4	4	4
Width of housing, mm (in.)		45 (1.77)	45 (1.77)	45 (1.77)

Optimum solutions: safety modules (for monitoring 1 safety function)

Supply voltage	24 Vdc	XPSVNE1142P (1)	–	–
	24 Vac/Vdc	–	XPSTSA5142P	XPSTSW5142P

(1) Motor frequency ≤ 60 Hz. For frequencies ≥ 60 Hz, refer to the *Sensors* catalog, 9006CT1007.

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