Telemecanique Sensors
The essential guide of Detection

Simply easy!

Telemecanique
Sensors

Telemecanique Sensors

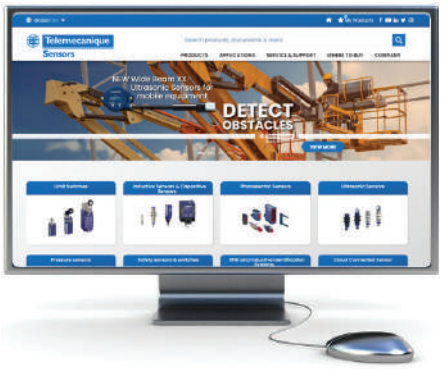
Simply easy!

Founded over 90 years ago, Telemecanique Sensors specializes in sensors and sensor-related technology.

As a global leader in the sensors business, we help our customers select the right technology to get the best performance and reliability from their machines.

Focused on 3 core values – Simplicity, Proximity and Expertise – we have become experts in factory automation sensors as well as specialists in demanding applications, making our customers' lives Simply easy!

Connect with the experts



Telemecanique Sensors team is available for pre and post sales support. We become an extension of your team and share our expertise with you.

www.tesensors.com

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Telemecanique Sensors
Innovation focus...

• Safety sensors and switches

The new XUSL4M Range of safety Light Curtains help protect machine operators while allowing the temporary suspension of safety-related functions for designed automated processes.

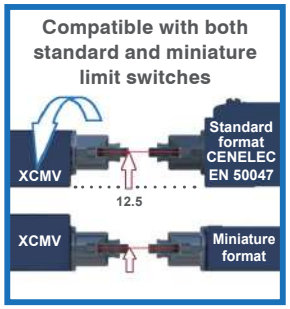
The new XCSR Range of RFID contactless safety switches help secure hazardous areas. A high level of safety in a compact size, highly tamper-proof and easy to install.

• Wireless limit switches

Wireless and battery-less limit switches are now available in miniature format! Enhance machine communication where cabling is difficult, expensive, or unwanted. The XCMW Range is also the perfect way to give mobile machines more freedom of movement.

• Mobile equipment limit switches

Plugging quality and reliability into your mobile equipment has never been easier with XCMV Limit switches. The new line of XC limit switches has been engineered for quality and compatibility featuring a universal, flexible mounting design, compatible with both standard and miniature limit switches.



• Smart RFID system

◀ The new XG Range of Telemecanique Sensors RFID Readers strengthen the machine's safety via an innovative and easy-to-configure system. This new solution can be easily integrated into a control panel via a standard 22mm hole. It will allow each user the appropriate machine functions based on their assigned profile.

• Cloud Connected Sensors

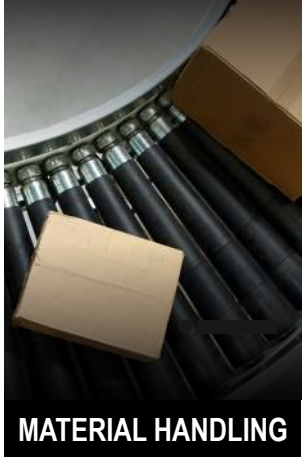
The new Cloud Connected Sensor XIOT is the "Simply easy!" way to monitor your industrial assets! The XIOT captures event information at your remote locations and sends data to the internet cloud, which sends an alert directly to your phone or other mobile device.

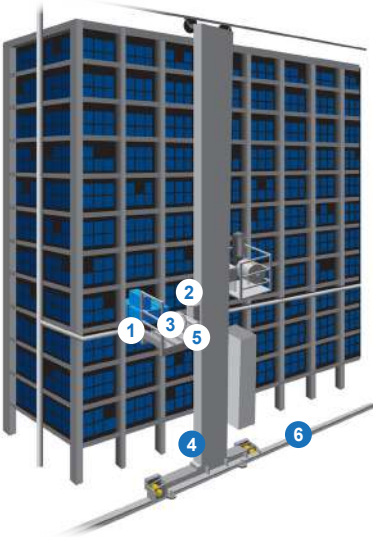
▶

• Ultrasonic sensors

◀ The innovative XX Range of software-configurable ultrasonic sensors now includes a wide beam sensor ideal for mobile equipment and material handling. This wide beam sensor detects in harsh environments, is highly immune to electromagnetic interference, and can be installed side-by-side for wider areas.

Sensor Solutions for Material Handling Applications



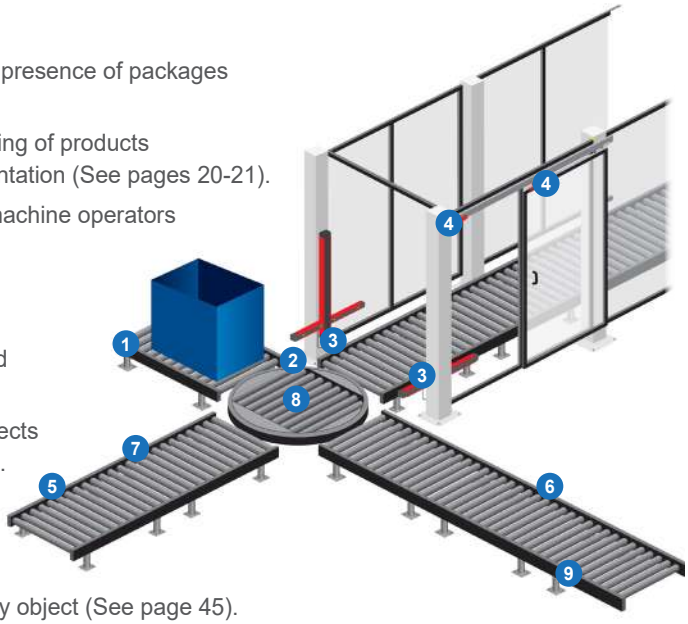


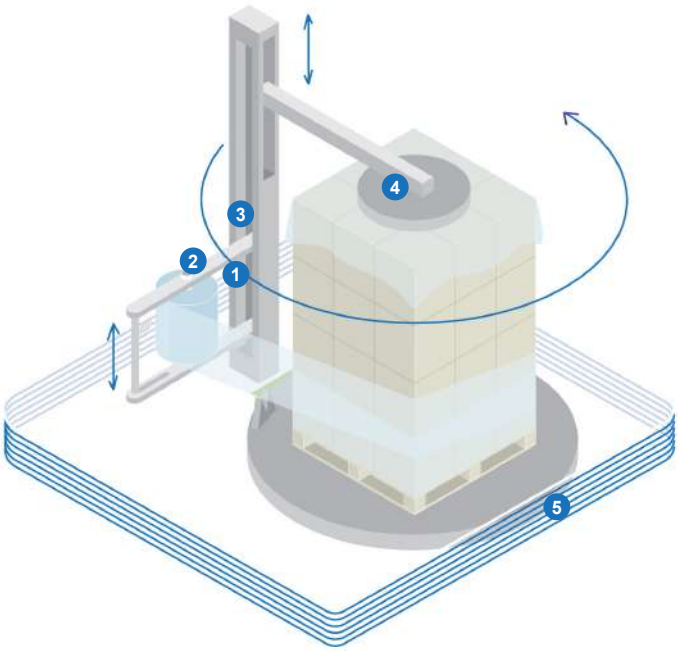
Automated Storage and Retrieval Systems

1. **XS Cylindrical Inductive Sensor** verifies the table position to validate the movement authorization (See pages 29 & 35).
2. **XCMW Wireless & Battery-less Limit Switch** detects the compartment where the lift stops (See pages 20-21).
3. **XUM Miniature Photoelectric Sensor** verifies the presence of load on the table (See pages 41, 46, & 49).
4. **XUK Photoelectric Laser Sensor** measures distance for the translation travel (See pages 44-45).
5. **XG RFID System** provides traceability of bins in the warehouse (See page 56).
6. **XS Rectangular Inductive Sensor** detects an overtravel (See page 31).

Conveyors

1. **XUM Miniature Photoelectric Sensor** detects the passage and presence of packages with background suppression (See pages 41, 46, & 49).
2. **XCMW Wireless & Battery-less Limit Switch** enables transferring of products from conveyor to conveyor without losing the exact direction orientation (See pages 20-21).
3. **XUSL4M Safety Light Curtains with Muting** efficiently detect machine operators with uninterrupted automation processes (See page 74).
4. **XCSR RFID Safety Sensor** shuts down the machine if the door opens (See page 68).
5. **XUB Cylindrical Photoelectric Sensor** detects the passage and presence of packages using a reflector (See pages 40 & 49).
6. **XX Ultrasonic Sensor** detects the passage and presence of objects regardless of their color, shape, or orientation (See pages 52-53).
7. **XG RFID System** provides traceability of packages in the warehouse (See page 56).
8. **XUY Photoelectric Roller Sensor** provides integrated, between-the-rollers detection of the passage and presence of any object (See page 45).
9. **XY2 Emergency Stop Cable Pull Switch** provides a readily-accessible, quick emergency stop (See pages 69-70).

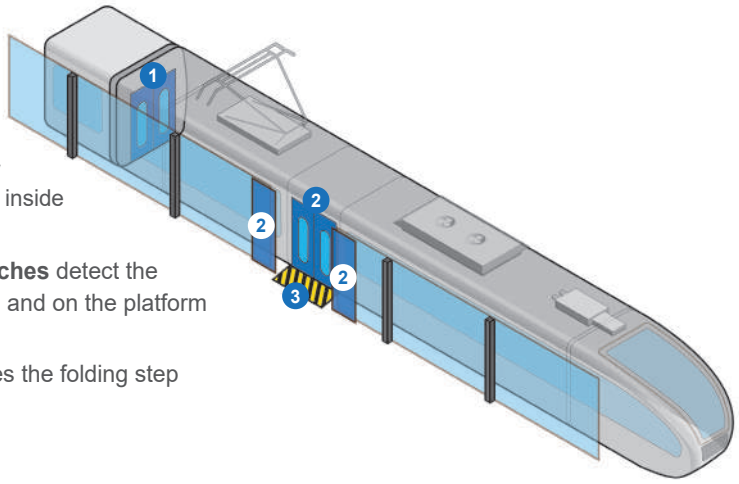




Stretch Wrapper

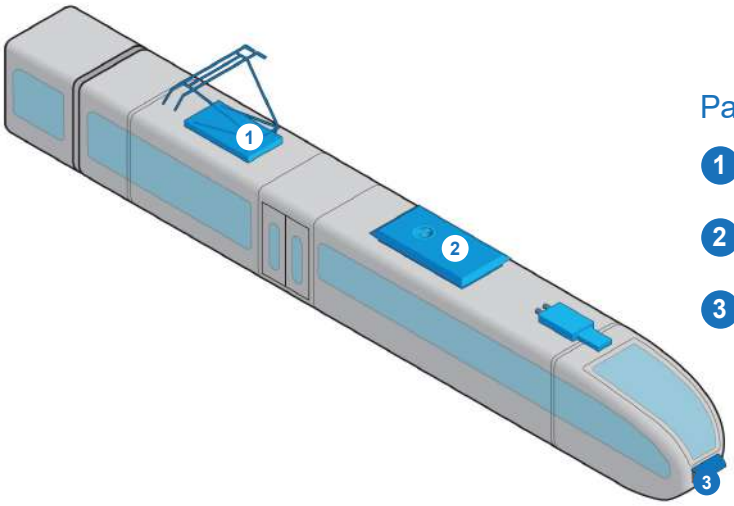
1. **XUK Photoelectric Laser Sensor** detects the distance measurement to the pallet (See pages 44-45).
2. **XX Ultrasonic Sensor** detects the end of the film reel or film breakage (See pages 52-53).
3. **XCMD Miniature Limit Switch** detects the end positions (See pages 12-13).
4. **XUX Photoelectric Sensor** detects any package overhang (See pages 41 & 49).
5. **XUSL Safety Light Curtains** monitor the access of persons to hazardous machine zones (See pages 71-73).

Sensor Solutions for Railway Applications



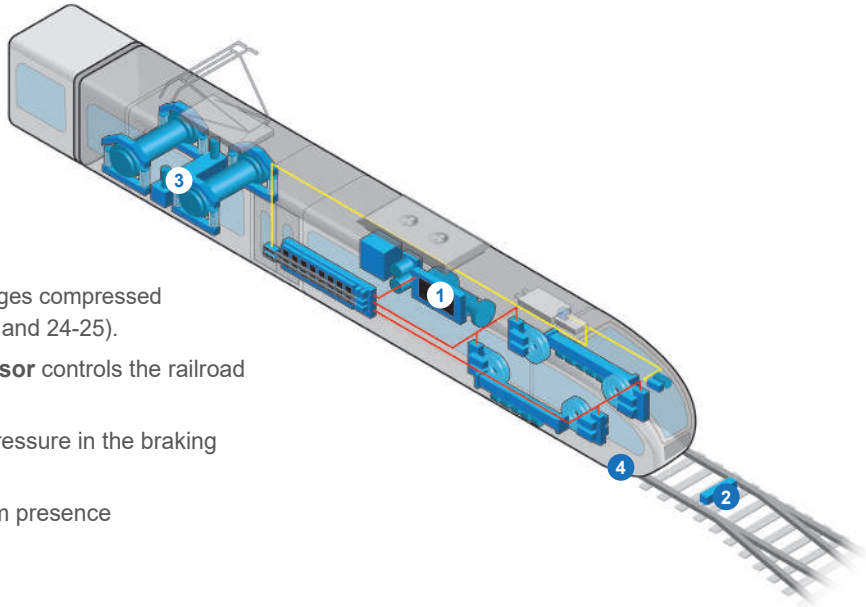
Automatic Doors

1. **XUK9 Photoelectric Sensor** detects passengers for doors inside the train (See page 41).
2. **XCMD or XCMN Limit Switches** detect the position of doors on the train and on the platform (See pages 12-13).
3. **XCKD Limit Switch** activates the folding step (See page 12).



Pantograph, Air Conditioning & Coupling Systems

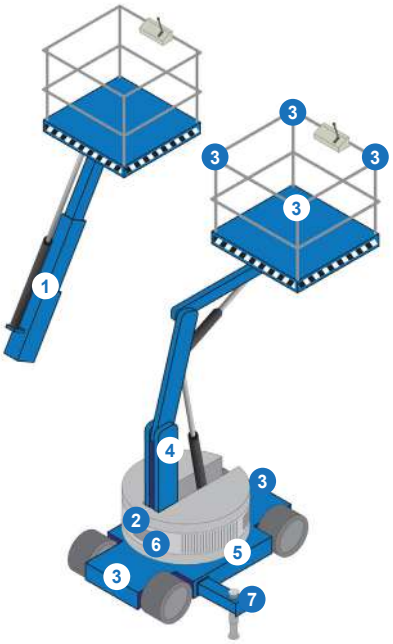
1. **XMLC Pressure Sensor** regulates the pressure of the pantograph mechanism (See page 25).
2. **XMEP Pressure Sensor** regulates pressure in the air conditioning systems (See page 22).
3. **XS618 Inductive Sensor** checks the position of the coupling trap doors (See page 29).



Air Supply and Braking System

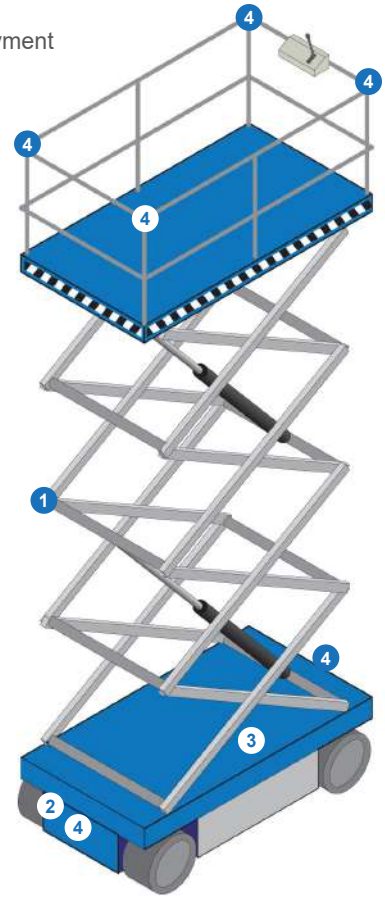
1. **XMLA/B or XMEP Pressure Sensor** manages compressed air in the air supply systems (See pages 22 and 24-25).
2. **XCMD Limit Switch or XS Inductive Sensor** controls the railroad turnout system (See pages 12-13 & 31).
3. **XMLA/B or C Pressure Sensor** checks pressure in the braking systems (See pages 24-25).
4. **XX Ultrasonic Sensor** detects the platform presence (See page 52).

Sensor Solutions for Mobile Lift Applications



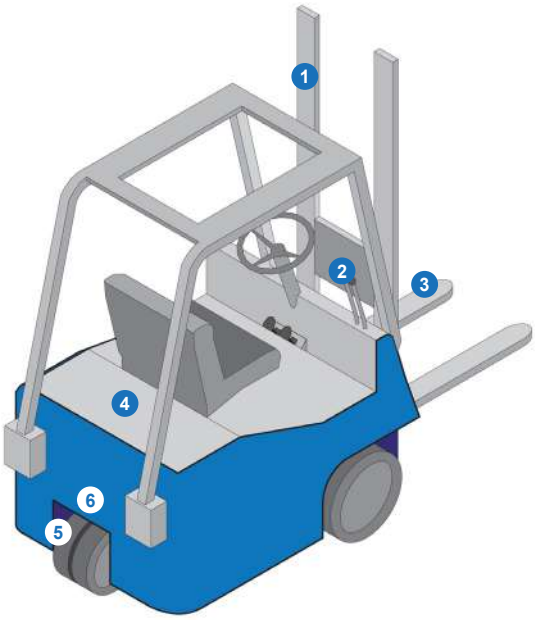
Boom Lift Platforms

1. **XCKP or XCMD Limit Switch** detects the extension or retraction of the telescopic arm (See pages 12-13).
2. **XCKP Limit Switch** detects the rest position of the boom (See pages 12-13).
3. **XXW54 Wide Beam Ultrasonic Sensors** detect obstacles on or above the ground (See page 53).
4. **XCKP or XCMD Limit Switch** detects the boom position (See pages 12-13).
5. **XMEP Pressure Transmitter** monitors and regulates hydraulic pressure (See page 22).
6. **XS Inductive Sensors** detect the turret rotation (See page 35).
7. **XCMD Limit Switch** detects the deployment of stabilizers (See pages 12-13).



Scissor Lift Platforms

1. **XCMD Limit Switch with XCMZ06 Accessory** monitors height (See pages 12-13).
2. **XMEP Pressure Sensor** monitors and regulates hydraulic pressure (See page 22).
3. **XCMV or XCKP Limit Switch** monitors wheel contact with the ground (See pages 12-13).
4. **XXW54 Wide Beam Ultrasonic Sensors** detect obstacles above and on the ground (See page 53).



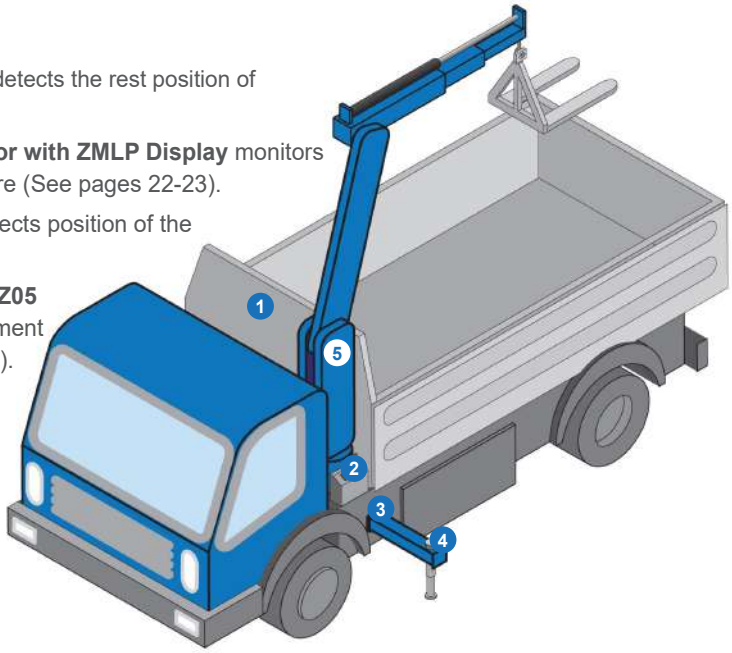
Fork Lifts

1. **XCKP or XCMD Limit Switch** detects fork and travel position (See pages 12-13).
2. **XCMV Limit Switch** monitors the position of the operating mechanism (See page 12).
3. **XCMD Limit Switch** detects the distance between the two forks (See pages 12-13).
4. **XMEP Pressure Sensor** monitors and regulates hydraulic pressure (See page 22).
5. **XS Inductive Sensor** detects wheel position (See pages 30 & 35).
6. **XXW54 Wide Beam Ultrasonic Sensors** detects obstacles on the ground (See page 53).

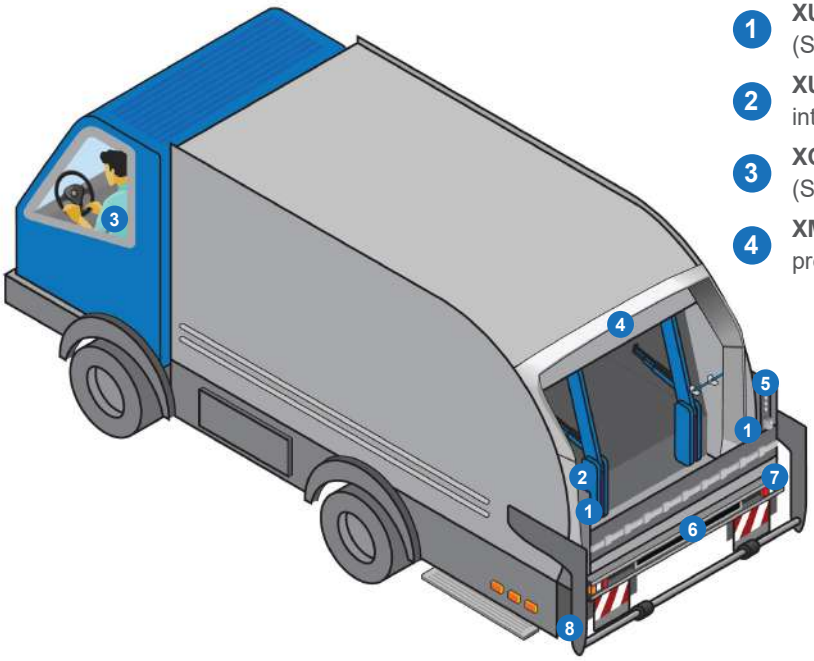
Sensor Solutions for Mobile Lift Applications

Truck Loading Cranes

1. **XCMV or XCMD Limit Switch** detects the rest position of the arm (See pages 12-13).
2. **XMLR Sensor or XMEP Sensor with ZMLP Display** monitors and regulates hydraulic pressure (See pages 22-23).
3. **XS SIL2 Inductive Sensor** detects position of the stabilizer (See page 35).
4. **XCKD Limit Switch with XCKZ05 Accessory** detects the deployment of stabilizers (See pages 12-13).
5. **XS Inductive Sensor** detects the position of the rotary arm (See page 35).

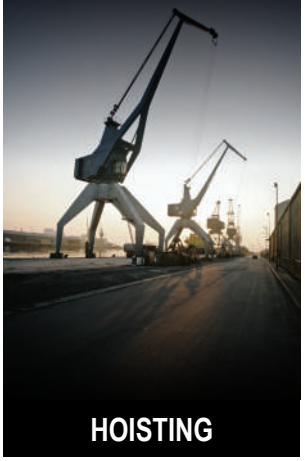


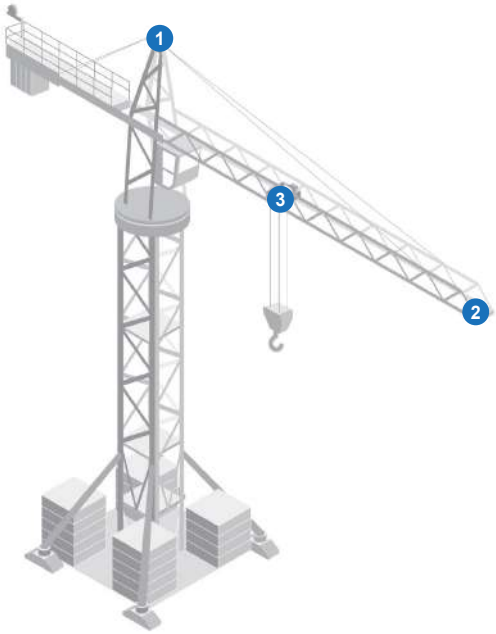
Garbage Trucks



1. **XUSL Light Curtains** enables hand and people protection (See pages 71-73).
2. **XU2S Photoelectric Sensor** detects the shovel movement interruption (See page 71).
3. **XG RFID Systems** detect the driver's presence (See page 56).
4. **XMEP Pressure Transmitter** detects hydraulic pressure while compacting (See page 22).
5. **XS Inductive Sensor** detects the loader's end point (See page 35).
6. **XG RFID System** identifies the garbage (See page 56).
7. **XS Inductive Sensor** detects the presence of the operator (See page 35).
8. **XX Ultrasonic Sensor** detects obstacles on the road (See page 52).

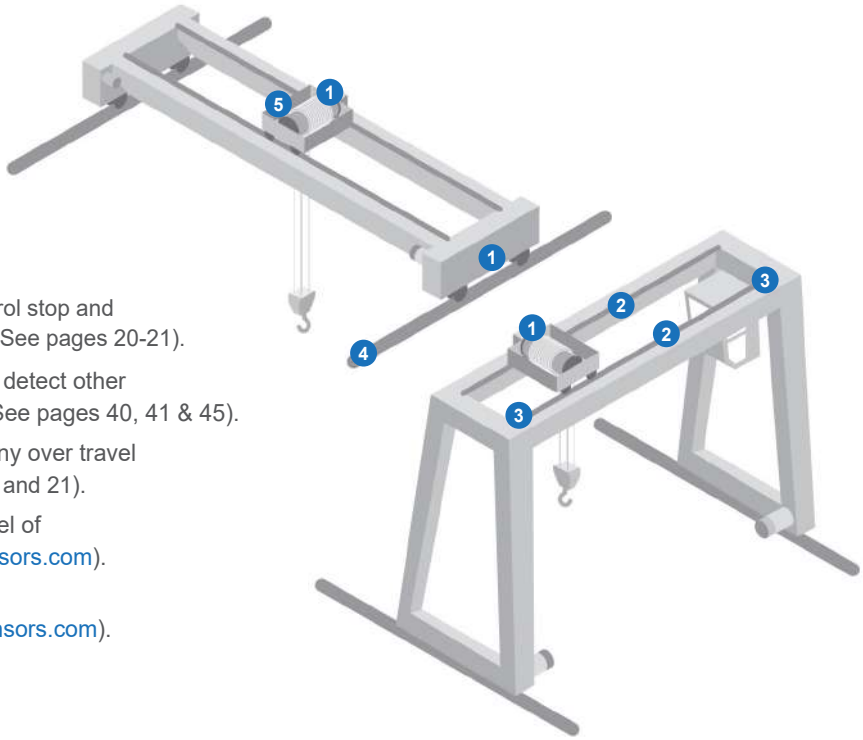
Sensor Solutions for Hoisting Applications





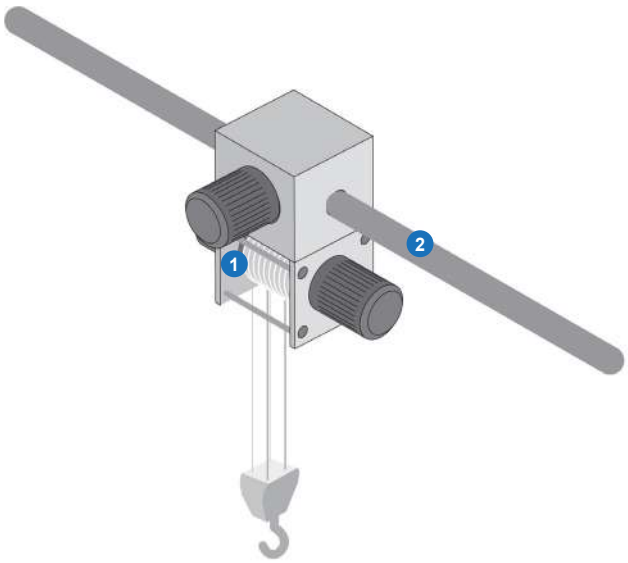
Tower Cranes

1. **XCKM / XCR Limit Switch** detects specific position for overload or overtorque control (See pages 16 and 21).
2. **XF Limit Switch** detects any overtravel of trolley movement (See www.tesensors.com).
3. **XCKVR / XCKMR Limit Switches** control stop and slow down of the horizontal movement (See pages 20-21).



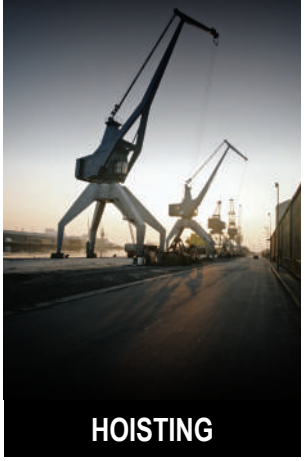
Overhead and Gantry Cranes

1. **XCKVR / XCKMR Limit Switches** control stop and slow down of the horizontal movement (See pages 20-21).
2. **XUX / XUK9T Photoelectric Sensors** detect other cranes; provide anticollision function (See pages 40, 41 & 45).
3. **XCKM / XCR Limit Switches** detect any over travel of the trolley movement (See pages 16 and 21).
4. **XF Limit Switch** detects any over travel of translation movement (See www.tesensors.com).
5. **XF Limit Switch** detects an over up of the vertical movement (See www.tesensors.com).



Block Hoists

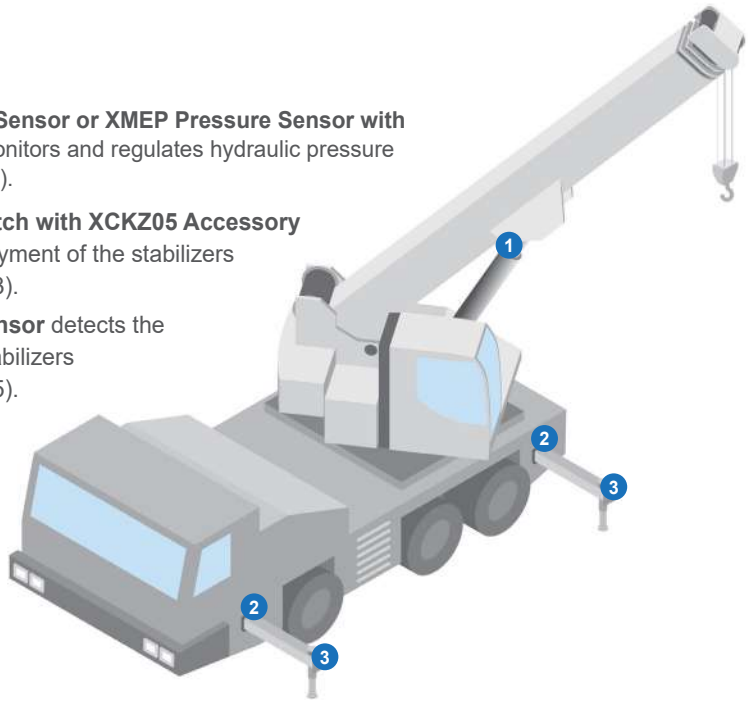
1. **XCMD Limit Switch** controls stop, up, and down of the vertical movement. Miniature switches are incorporated in the hoist winch. (See pages 12 & 13).
2. **XCR Limit Switch** controls the stop of the horizontal movement (See page 21).



Sensor Solutions for Hoisting Applications

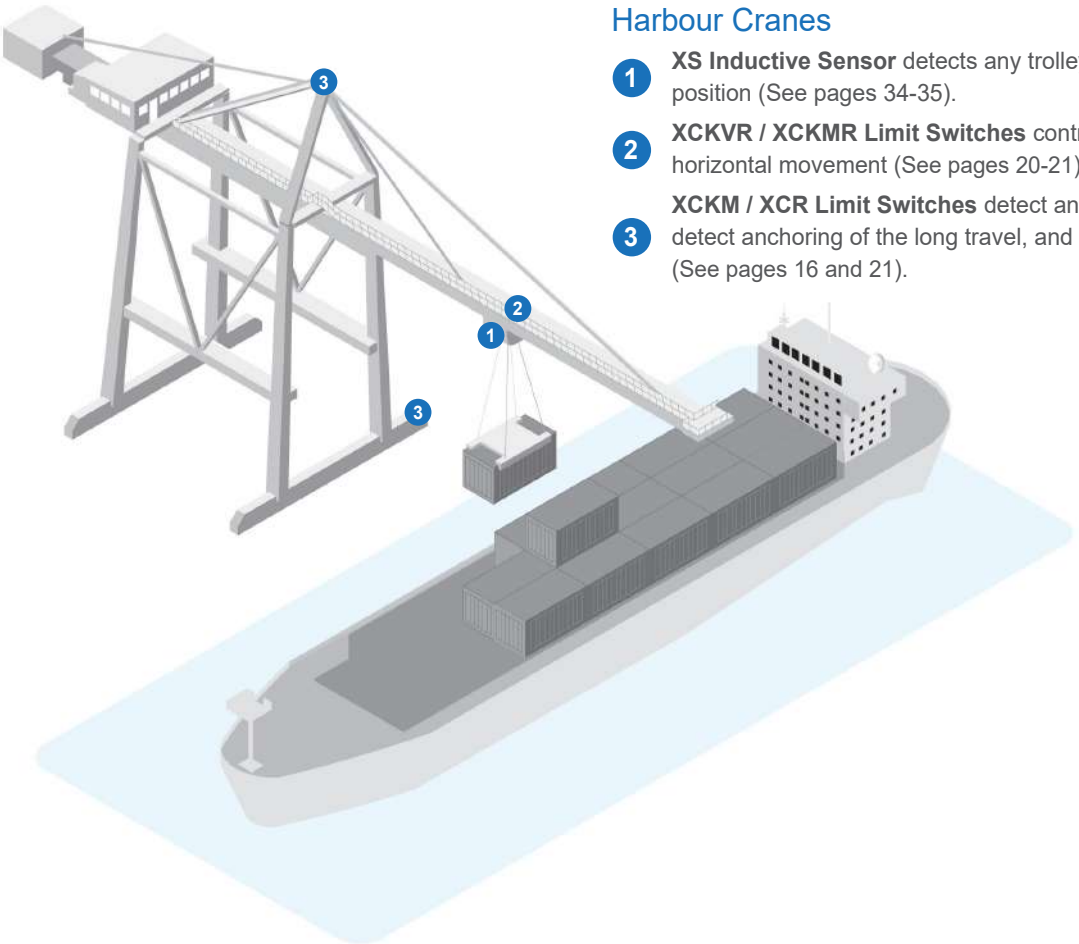
Mobile Cranes

1. **XMLR Pressure Sensor or XMEP Pressure Sensor with ZMLP Display** monitors and regulates hydraulic pressure (See pages 22-23).
2. **XCKD Limit Switch with XCKZ05 Accessory** detects the deployment of the stabilizers (See pages 12-13).
3. **XS Inductive Sensor** detects the position of the stabilizers (See pages 34-35).

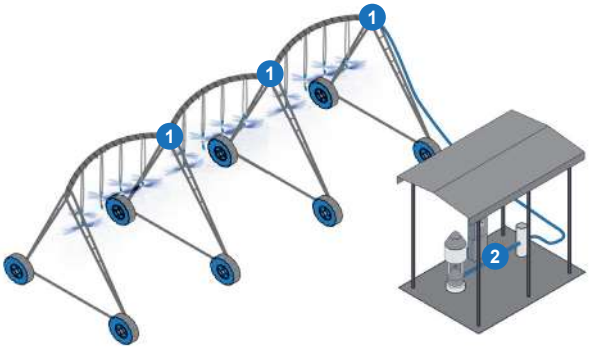


Harbour Cranes

1. **XS Inductive Sensor** detects any trolley position with resynchronization position (See pages 34-35).
2. **XCKVR / XCKMR Limit Switches** controls the stop and slowdown of the horizontal movement (See pages 20-21).
3. **XCKM / XCR Limit Switches** detect an over travel of trolley movement, detect anchoring of the long travel, and monitor the boom sequence (See pages 16 and 21).

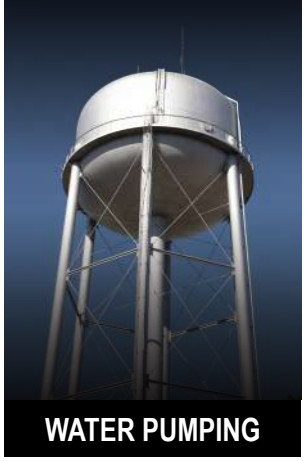


Sensor Solutions for Water Pumping Applications



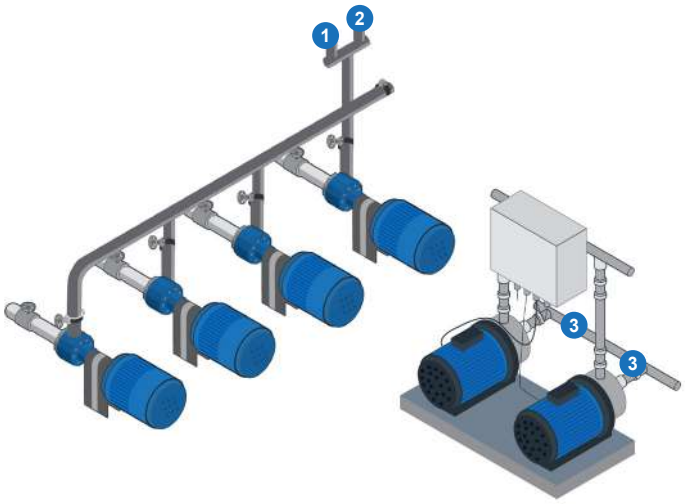
Irrigation Systems

1. **XCMD Limit Switch** controls movement (See pages 12-13).
2. **XMLP Pressure Sensor** monitors and regulates hydraulic pressure (See page 22).



Fire Trucks

1. **XS Inductive Sensor** provides speed monitoring on the chemical mix pump (See pages 28-29).
2. **XCMD Limit Switch** controls the valve opening / closing (See pages 12-13).
3. **XCMD Limit Switch** checks to see if the hose is in place (See pages 12-13).
4. **XMLP Pressure Sensor** measures level in the water tank (See page 22).
5. **XMLP Pressure Sensor** measures water pressure for managing the chemical mix (See page 22).
6. **XCMD Limit Switch** controls door opening / closing (See pages 12-13).

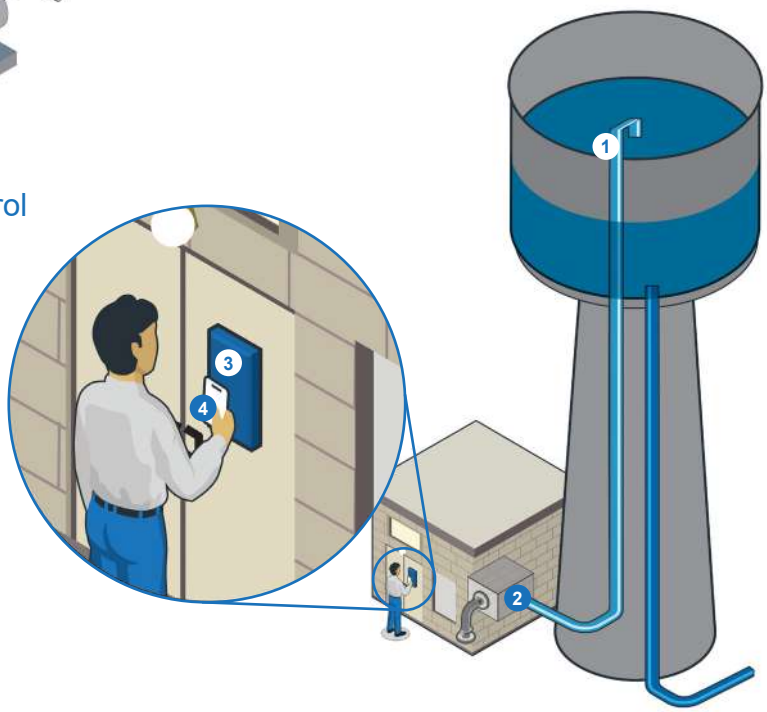


Lifting and Boosting Stations

1. **XMLA or XMX Pressure Sensor** controls threshold fixing (See pages 24-26).
2. **XMLR Pressure Switch** regulates pressure (See page 23).
3. **XMP Pressure Sensor** monitors pressure threshold with electromechanical switch (See page 27).

Water Storage Facilities & Access Control

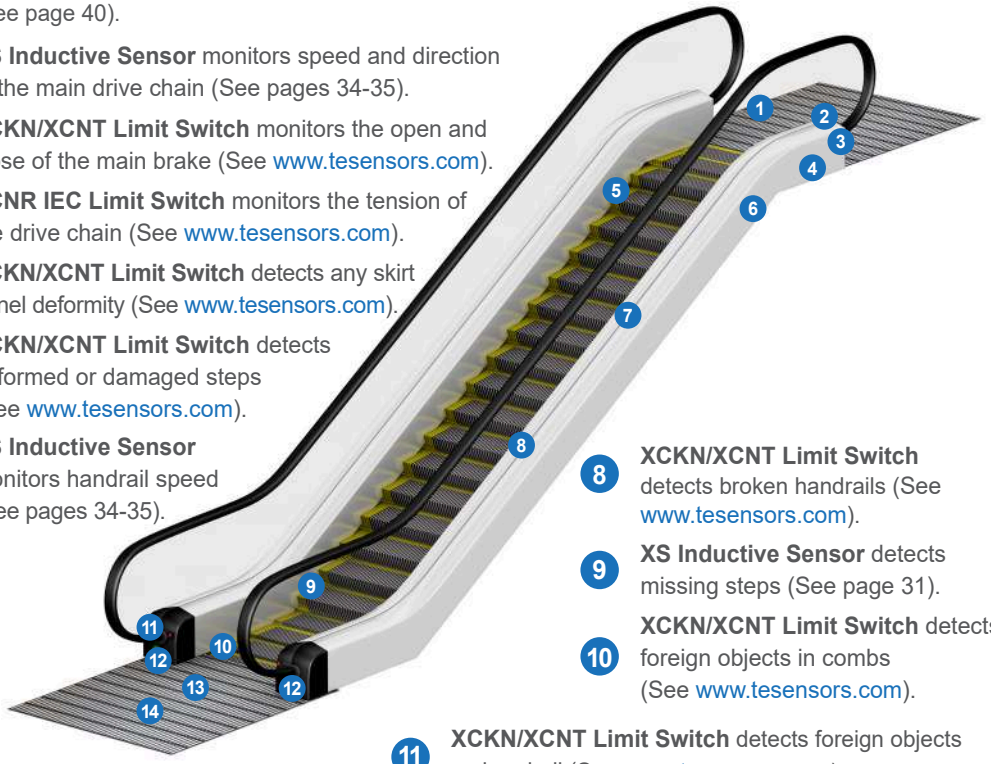
1. **XXS30 / XXA30 Ultrasonic Sensor** monitors the water level (See page 53).
2. **XMLP Pressure Sensor + ZMLP Display** monitors pressure and provides a remote display (See pages 22-23).
3. **XGCS RFID Reader / Smart Antenna** automatically reads electronic badges/tags (See pages 56-57).
4. **XGHB Electronic Tag** stores data assigned to the individual tag owner (See page 56).



Sensor Solutions for Escalator / Elevator Applications

Escalators

1. **XU Photoelectric Sensor** detects entrance (See page 40).
2. **XS Inductive Sensor** monitors speed and direction of the main drive chain (See pages 34-35).
3. **XCKN/XCNT Limit Switch** monitors the open and close of the main brake (See www.tesensors.com).
4. **XCNR IEC Limit Switch** monitors the tension of the drive chain (See www.tesensors.com).
5. **XCKN/XCNT Limit Switch** detects any skirt panel deformity (See www.tesensors.com).
6. **XCKN/XCNT Limit Switch** detects deformed or damaged steps (See www.tesensors.com).
7. **XS Inductive Sensor** monitors handrail speed (See pages 34-35).



8. **XCKN/XCNT Limit Switch** detects broken handrails (See www.tesensors.com).
9. **XS Inductive Sensor** detects missing steps (See page 31).
10. **XCKN/XCNT Limit Switch** detects foreign objects in combs (See www.tesensors.com).
11. **XCKN/XCNT Limit Switch** detects foreign objects on handrail (See www.tesensors.com).
12. **XX Ultrasonic Sensor** detects presence to activate escalator (See pages 52-53).
13. **XCNR IEC Limit Switch** monitors drive chain traction (See www.tesensors.com).
14. **XS Inductive Sensor** detects the position of the access cover (See pages 30-31).

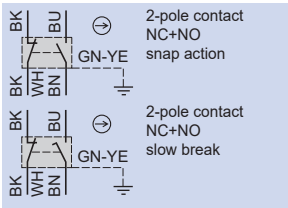
Elevators

1. **XS Inductive Sensor** detects car position and/or motor speed (See pages 34-35).
2. **XIOT Cloud Connected Sensor** sends remote alerts when overrun or secure area access is detected (See page 59).
3. **XCS Safety Switch** secures access to maintenance area (See page 69).
4. **XU Photoelectric Sensor** detects anyone in doorway before closing (See pages 40-41).
5. **XCK IEC Limit Switch, XU Photoelectric Sensor, or XS Inductive Sensor** detects car positioning (See pages 20-21, 34-35, & 40-41).
6. **XCNR IEC Limit Switch** detects overrun (See www.tesensors.com).
7. **XG Compact RFID Sensor** secures access to restricted levels (See pages 56-57).

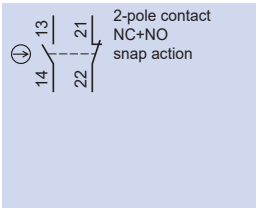
XC Limit switches

Compact and miniature, complete switches (variable composition, see pages 6-7)

XCMD



XCKT



Miniature XCMD metal, Pre-cabled; fixing 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
Mechanical durability (millions of operating cycles)		10	10	10	10	10	10
Actuation speed (in 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 characteristics (conforming to EN IEC 60947-5-1)		AC 15 ; B 300 (Ue = 240 V, Ie = 1,5 A) / DC 13 ; R 300 (Ue = 250 V, Ie = 0,1 A)					
Fixing centres (mm)		20					M12 x 1
Body dimensions (mm) W x D x H		30 x 16 x 50					
Connection	Pre-cabled	Pre-cabled, adjustable direction, length = 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	NO+NC 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

New

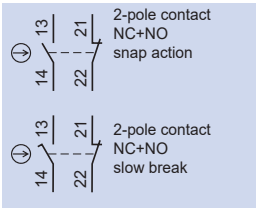
Miniature mobile equipment metal range, Pre-cabled; fixing by the body or by the head

	Connector	AMP 4P		
Complete switch	NC+NO snap (2)	XCMD2110AM4	XCMD2102AM4	XCMD2115AM4
	Connector	Deutsch DT04 4P		
Complete switch	NC+NO snap (2)	XCMV2110D44	XCMV2102D44	XCMV2115D44
	Connector	M12		
Complete switch	NC+NO snap (2)	XCMV2110M12	XCMV2102M12	XCMV2115M12

(1) Although their design is identical to the Pre-cabled switches, the switches incorporating an M12 4-pin connector cannot be marked ⊖ because they are single-pole C/O.

(2) Also available in NC + NO slow versions. Replace the first "1" with a "5". Example: XCMD2110AM4 becomes **XCMD2510AM4**.

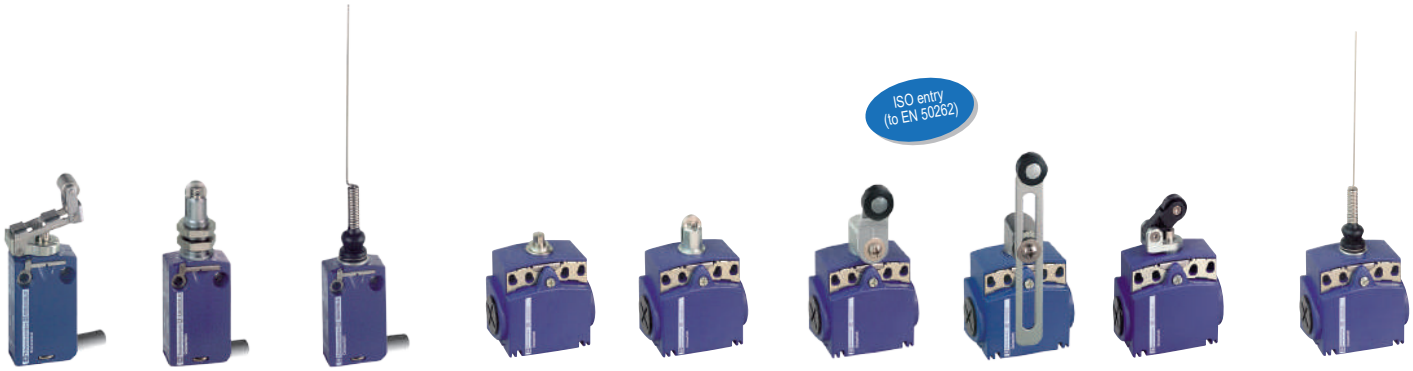
XCKP/XCKD



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 (6)	M18 head metal end plunger	M18 head steel roller plunger
Mechanical durability (millions of operating cycles)		15	10	15	10	10
Actuation speed (in 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, EAC				
Degree of protection conforming to IEC 60529		IP66 and IP67				
Rated operational characteristics (conforming to EN IEC 60947-5-1)		AC 15 ; A 300 (Ue = 240 V, Ie = 3 A) / DC 13 ; Q 300 (Ue = 250 V, Ie = 0,27 A)				
Pre-cabled entry		1 tapped entry for ISO M16 x 1.5 pre-cabled gland (5) or M12 connector				
Fixing centres (mm)		20	20	20	M18 x 1	M18 x 1
Body dimensions (mm) W x D x H		31 x 30 x 65				
Metal switches						
Complete switch	2-pole NC+NO snap action	XCKD2110P16	XCKD2102P16	XCKD2121P16	XCKD21H0P16	XCKD21H2P16
	2-pole NC+NO break before make, slow break	XCKD2510P16	XCKD2502P16	XCKD2521P16	–	XCKD25H2P16
	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	XCKP2110P16	XCKP2102P16	XCKP2121P16	XCKP21H0P16	XCKP21H2P16
	2-pole NC+NO break before make, slow break	XCKP2510P16	XCKP2502P16	XCKP2521P16	–	–
	2-pole NC+NO snap action (M12-4-pins)	XCKP2110M12	XCKP2102M12	XCKP2121M12	–	–

(5) For Pg 11 pre-cabled entries, replace P16 by G11. Example: XCKD2110P16 becomes **XCKD2110G11**.
For other pre-cabled entries, see customised assembly on page 7.



			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	Variable length thermoplastic roller lever	Thermoplastic roller lever plunger, horizontal actuation (3)	"Cat's whisker"
10	10	5	15	10	10	10	15	5
0,5	0,1	1	0,5	0,5	1,5	1.5	1	1
⊖	⊖	–	⊖	⊖	⊖	⊖	⊖	–
			CE, CSA, CCC, EAC					
			IP66 and IP67					
			AC 15 ; A 300 (Ue = 240 V, Ie = 3 A) / DC 13 ; Q 300 (Ue = 250 V, Ie = 0,27 A)					
20	M12 x 1	20	20 ou 40					
			58 x 30 x 51					
			2 tapped entries for ISO M16 x 1.5 pre-cabled gland (4)					
XCMD2124L1	XCMD21F2L1	XCMD2106L1	XCKT2110P16	XCKT2102P16	XCKT2118P16	XCKT2145P16	XCKT2121P16	XCKT2106P16
–	XCMD25F2L1	–	–	–	–	–	–	–
XCMD2124C12	XCMD21F2C12	XCMD2106C12	–	–	–	–	–	–
XCMD2124M12	XCMD21F2M12	XCMD2106M12	–	–	–	–	–	–

(3) Actuation in 1 direction

(4) For Pg 11 pre-cabled entries, replace P16 by G11. Example: XCKT2110P16 becomes **XCKT2110G11**.

				Application - XCPR and XCDR with manual reset				
Thermoplastic roller lever	Variable length Thermoplastic roller lever	Thermoplastic roller lever Ø 50 mm	"Cat's whisker"	Metal end plunger	Steel roller plunger	Thermoplastic roller lever plunger, horizontal actuation (6)	Thermoplastic roller lever plunger, vertical actuation (6)	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, EAC				
				IP66 and IP67				
				AC 15 ; A 300 (Ue = 240 V, Ie = 3 A) / DC 13 ; Q 300 (Ue = 250 V, Ie = 0,27 A)				
				1 tapped entry for ISO M20 x 1.5 pre-cabled gland (7)				
20	20	20	20	20	20	20	20	20
				31 x 30 x 95				
XCKD2118P16	XCKD2145P16	XCKD2139P16	XCKD2106P16	–	–	–	–	–
XCKD2518P16	XCKD2545P16	XCKD2539P16	XCKD2506P16	–	–	–	–	–
XCKD2118M12	XCKD2145M12	XCKD2139M12	XCKD2106M12	–	–	–	–	–
XCKP2118P16	XCKP2145P16	XCKP2139P16	XCKP2106P16	XCPR2110P20	XCPR2102P20	XCPR2121P20	XCPR2127P20	XCPR2118P20
XCKP2518P16	XCKP2545P16	XCKP2539P16	–	XCPR2510P20	XCPR2502P20	XCPR2521P20	XCPR2527P20	XCPR2518P20
XCKP2118M12	XCKP2145M12	–	XCKP2106M12	–	–	–	–	–

(6) Actuation in 1 direction.

(7) For Pg 13.5 pre-cabled entries, replace P20 by G13. Example: XCPR2110P20 becomes **XCPR2110G13**.
For other pre-cabled entries, see customised assembly on page 7.

XC Limit switches

Customised assembly of miniature and compact

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
Reference	⊖ ZCE10	⊖ ZCE11	⊖ ZCE02	⊖ ZCE24 (2)	⊖ ZCE21

Metal rotary heads and levers

Description	Rotary head without lever, spring return, for actuation from LH and RH side	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)
Reference	⊖ ZCE01	⊖ ZCY15 (2)	⊖ ZCY16 (2)	⊖ ZCY25 (2)	⊖ ZCY26 (2)

(1) Recommended for use with bodies:: ZCD... / ZCP... / ZCT... (2) Recommended for use with bodies: : ZCMD...

Bodies

Miniature

Type of contact	2-pole NO+NC Snap action	3-pole 2NC+1NO Snap action	2-pole NC+NO Slow break	3-pole 2NC+1NO Slow break	3-pole 2NC+1NO Slow break	2-pole NO+NC Snap action	2-pole NC+NO Snap action Connector 5-pins	1-pole 1C/O Snap action Connector 4-pins	4-pole 2NC+2NO Snap action
Reference of metal body	ZCMD21	ZCMD39	ZCMD25	ZCMD37	ZCMD4D	–	ZCMD21C12	ZCMD21M12	–
Pre-cabled L = 1 m	–	–	–	–	–	ZCMD21L1 (3)	–	–	ZCMD41L1
L = 2 m	–	–	–	–	–	ZCMD21L2 (3)	–	–	ZCMD41L2
L = 5 m	–	–	–	–	–	ZCMD21L5 (3)	–	–	ZCMD41L5

(3) For contact 2-pole NC+NO slow break, replace 21 by 25. Example: ZCMD21L1 becomes ZCMD25L1

(4) For contact 2NC+NO or 2NC+2NO, replace 21 by 37, 39 or 4D. Example ZCMD21L1 becomes ZCMD4DL1

Connection of miniature bodies

Specific Pre-cabled connection components	for ZCMD21	for ZCMD39	for ZCMD25	for ZCMD37	for ZCMD4D	Option : PUR pre-wired M12 connector, L = 2 m (1) 5-pin	4-pin
L = 1 m	ZCMC21L1	ZCMC39L1	ZCMC25L1	ZCMC37L1	ZCMC4DL1		
L = 2 m	ZCMC21L2	ZCMC39L2	ZCMC25L2	ZCMC37L2	ZCMC4DL2		
L = 5 m	ZCMC21L5	ZCMC39L5	ZCMC25L5	ZCMC37L5	ZCMC4DL5	XZCP1164L2	XZCP1141L2

⊖ Positive opening operation. (1) For PVC cable see page 47

Telemecanique Sensors

Other versions: please consult our Customer Care Centre.

Thermoplastic roller lever plunger, vertical actuation	M12 head metal end plunger	M18 head metal end plunger	M12 head steel roller plunger	M18 head steel roller plunger	Spring rod	Spring rod with plastic end	"Cat's whisker"
ZCE27	ZCEF0 (2)	ZCEH0 (1)	ZCEF2 (2)	ZCEH2 (1)	ZCE08	ZCE07	ZCE06

Thermoplastic roller lever, track: 20/36 mm (ZCMD) 24/40 mm (ZCD/P/T)	Steel roller lever, track: 20/36 mm (ZCMD) 24/40 mm (ZCD/P/T)	Ceramic roller lever	Variable length thermoplastic roller lever	Round, glass fibre rod lever Ø 3 mm L = 125 mm	Metal spring-rod lever	Thermoplastic roller lever Ø 50 mm	Adjustable ther-moplastic roller lever Ø 50 mm
ZCY18 (1)	ZCY19 (1)	ZCY22	ZCY45	ZCY55	ZCY91	ZCY39	ZCY49

Compact

Type of contact	2-pole NC+NO Snap action	3-pole 2NC+1NO Snap action	2-pole NC+NO Slow break	2-pole NC+NC Slow break	2-pole NO+NO Slow break	2-pole NC+NC Snap action	3-pole 2NC+1NO Slow break	2-pole NC+NO - Snap action Connector 5-pin	2-pole NC+NO - Snap action Connector 4-pin
	13 21 / 14 22	31 21 13 / 32 22 14	13 21 / 14 22	11 21 / 12 22	13 23 / 14 24	11 21 / 12 22	31 21 13 / 32 22 14	13 21 / 14 22	
Ref. metal body	ZCD21	ZCD39	ZCD25	ZCD27	ZCD28	ZCD29	ZCD37	ZCD21M12	–
Ref. plastic body	ZCP21	ZCP39	ZCP25	ZCP27	ZCP28	ZCP29	ZCP37	–	ZCP21M12

Connection of compact bodies

Interchangeable outlet for cable gland						
Description	For ISO M16 cable gland	For ISO M20 cable gland	For Pg 11 cable gland	For Pg 13.5 cable gland	For 1/2" NPT cable gland	For PF 1/2 (G12) cable gland
Metal	ZCDEP16	ZCDEP20	ZCDEG11	ZCDEG13	ZCDEN12	ZCDEF12
Plastic	ZCPEP16	ZCPEP20	ZCPEG11	ZCPEG13	ZCPEN12	ZCPEF12

Option : PUR prolongateur M12, L = 2 m (1)

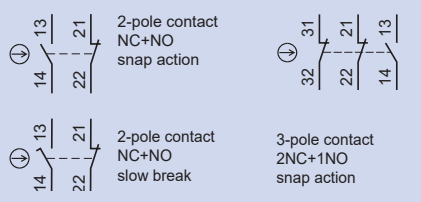
5-pin	4-pin
XZCP1164L2	XZCP1141L2

(1) For PVC cable see page 47

XC Limit switches

Classic - XCKM, XCKL, complete switches

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)		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, EAC, C-TICK, BV				
Degree of protection conforming to IEC 60529		IP66				
Rated operational characteristics (conforming to EN IEC 60947-5-1)		AC 15 ; A 300 (Ue = 240 V, Ie = 3 A) / DC 13 ; Q 300 (Ue = 250 V, Ie = 0,27 A)				
Cable entry (1)	XCKM	3 tapped entries for ISO M20 x 1.5 cable gland (2 entries fitted with blanking plugs)				
	XCKL	1 cable entry with cable gland				
Fixing centres (mm)		41				
Body dimensions (mm) W x D x H	XCKM / XCKL	64 x 30 x 64 / 52 x 30 x 72				

Complete switch	XCKM					
	2-pole NC+NO snap action	⊖ XCKM110H29	⊖ XCKM102H29	⊖ XCKM121H29	⊖ XCKM115H29	XCKM106H29
	2-pole NC+NO, break before make, slow break	⊖ XCKM510H29	⊖ XCKM502H29	⊖ XCKM521H29	⊖ XCKM515H29	–
Complete switch	XCKL					
	2-pole NC+NO snap action	⊖ XCKL110	⊖ XCKL102	⊖ XCKL121	⊖ XCKL115	XCKL106

1) For Pg 11 pre-cabled entries delete the reference suffix H29. Example : XCKM110H29 becomes **XCKM110**

Classic - XCKM, XCKL,
Customised assembly - Body/contact sub-assemblies

Type XCKM metal, 3 pre-cabled entries

Type of contact

	2-pole NC+NO snap action	2-pole NC+NO slow break	3-pole 2NC+1NO snap action	3-pole 2NC+1NO slow break
Reference of body with contact block	⊖ ZCKM1H29	⊖ ZCKM5H29	⊖ ZCKMD39H29	⊖ ZCKMD37H29
XCKL reference of body with contact block (2)	⊖ ZCKL1	⊖ ZCKL5	–	–
Reference of contact block only	⊖ XE2SP2151	⊖ XE2NP2151	⊖ XE3SP2141	⊖ XE3NP2141

(2) For cable entry 1/2" NPT, add H7. Example: XCKL1 becomes **XCKL1H7.** ⊖ Positive opening operation.

Telemecanique Sensors

Other versions: please consult our Customer Care Centre.

Operating heads, complete or for customer assembly

Complete switch

=

Body/contact assembly

+

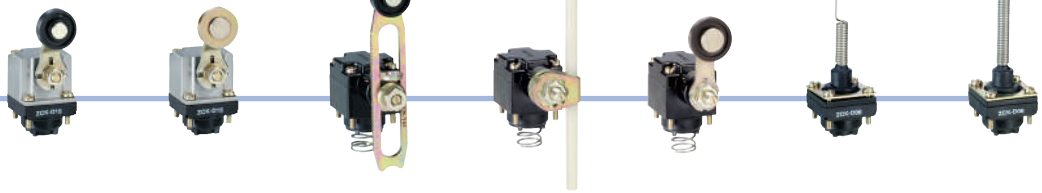
Head

+

Lever

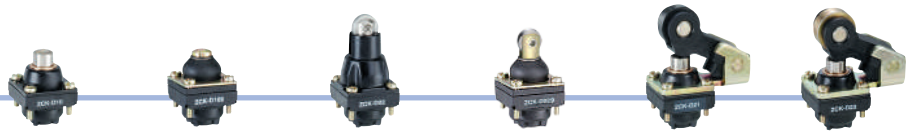
Rotary or multi-directional heads

	metal head with thermoplastic roller lever	metal head with steel roller lever	with variable length thermoplastic roller lever (2)	with Ø 6 mm thermoplastic rod L = 200 mm (3)	with thermoplastic roller lever (3) for actuation from left AND right or left OR right	with "Cat's whisker"	with spring rod
Reference	ZCKD15	ZCKD16	ZCKD41	ZCKD59	ZCKD31	ZCKD06	ZCKD08



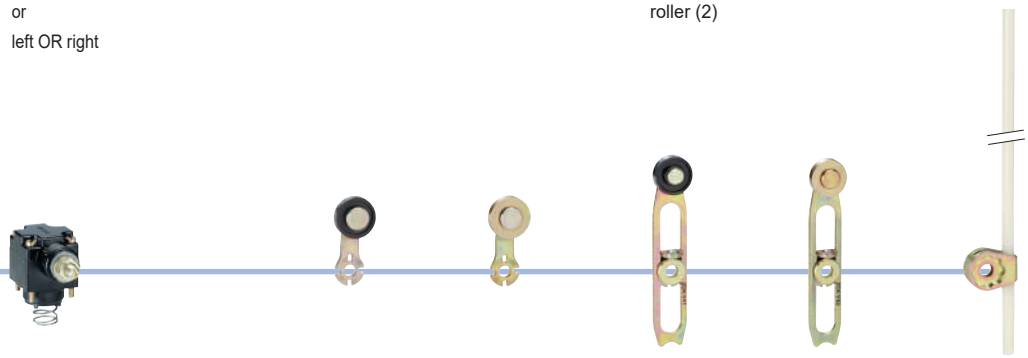
Plunger heads

	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
Reference	ZCKD10	ZCKD109	ZCKD02	ZCKD029	ZCKD21	ZCKD23



Rotary heads and separate levers

	spring return, for actuation from left AND right or left OR right		lever with thermoplastic roller (2)	lever with steel roller (2)	variable length lever with thermoplastic roller (2)	variable length lever with steel roller (2)	rod, Ø 6 mm thermoplastic L = 200 mm (3)
Reference	ZCKD05		ZCKY31	ZCKY33	ZCKY41	ZCKY43	ZCKY59



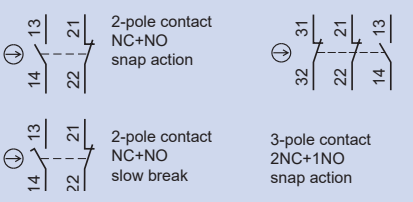
(2) Adjustable throughout 360° in 5° steps, or in 90° steps by reversing the notched washer.

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

XC Limit switches

Industrial - XCKJ, complete switches

XCKJ



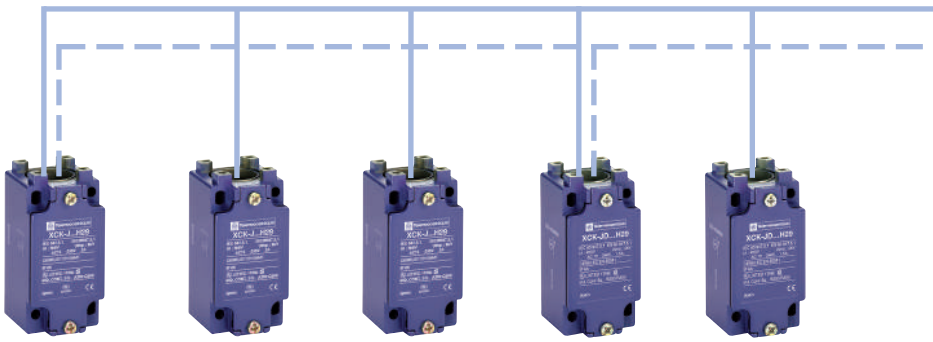
Type XCKJ metal, fixed body, conforming to standard EN 50041

Type of operator	Metal end plunger	Steel roller plunger	Thermoplastic roller lever	Steel roller lever	Variable length thermoplastic roller lever	Polyamide Ø 6 mm rod lever L = 200 mm
Mechanical durability (millions of operating cycles)	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, EAC, C-TICK, BV					
Degree of protection conforming to IEC 60529	IP 66					
Rated operational characteristics (conforming to EN IEC 60947-5-1)	AC 15 ; A 300 (Ue = 240 V, Ie = 3 A) / DC 13 ; Q 300 (Ue = 250 V, Ie = 0,27 A).					
Cable entry (1)	1 tapped entry for ISO M20 x 1.5 cable gland					
Fixing centres (mm)	30 x 60					
Body dimensions (mm) W x D x H	40 x 44 x 77					

Complete switch	M20	2-pole NC+NO snap action	⊖ XCKJ161H29	⊖ XCKJ167H29	⊖ XCKJ10511H29	⊖ XCKJ10513H29	XCKJ10541H29	XCKJ10559H29
		2-pole NC+NO break before make, slow break	⊖ XCKJ561H29	⊖ XCKJ567H29	⊖ XCKJ50511H29	⊖ XCKJ50513H29	XCKJ50541H29	XCKJ50559H29
	1/2" NPT	2-pole NC+NO snap action	⊖ XCKJ161H7	⊖ XCKJ167H7	⊖ XCKJ10511H7	⊖ XCKJ10513H7	XCKJ10541H7	XCKJ10559H7
	M12 5P	2-pole NC+NO snap action	⊖ XCKJ161D	⊖ XCKJ167D	⊖ XCKJ10511D	⊖ XCKJ10513D	XCKJ10541D	XCKJ10559D

(1) For Pg 13.5 pre-cabled entry delete the reference suffix H29. Example: XCKJ161H29 becomes **XCKJ161**.⊖ Positive opening operation.

Industrial - XCKJ,
Customised assembly - Body/contact sub-assemblies



Type XCKJ metal, 1 cable entry

Type of contact						
		2-pole NC+NO snap action	2-pole NC+NO slow break	2 C/O snap action Simultaneous	3-pole 2NC+1NO snap action	3-pole 2NC+1NO slow break
Cable entry (1)		1 tapped entry for ISO M20 x 1.5 cable gland				
Reference of body with contact block	M20	⊖ ZCKJ1H29	⊖ ZCKJ5H29	ZCKJ2H29	⊖ ZCKJD39H29	⊖ ZCKJD37H29
	Pg13	⊖ ZCKJ1	⊖ ZCKJ5	ZCKJ2	–	–
	1/2" NPT	⊖ ZCKJ1H7	⊖ ZCKJ5H7	ZCKJ2H7	–	–
	M12 (5-pins)	⊖ ZCKJ1D	⊖ ZCKJ5D	–	–	–
Reference of contact block only		⊖ XE2SP2151	⊖ XE2NP2151	–	⊖ XE3SP2141	⊖ XE3NP2141

Telemecanique Sensors

Other versions: please consult our Customer Care Centre.

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 direct. of actuation	with steel roller lever plunger, 1 direct. of actuation	with steel roller end plunger	with steel ball bearing end plunger	End steel roller plunger with protective boot
Reference	ZCKE67	ZCKE61	ZCKE21	ZCKE23	ZCKE62	ZCKE66	ZCKE629

	with metal side plunger	Side steel roller plunger, horizontal	Side steel roller plunger, vertical	with spring rod	with “Cat’s whisker”
Reference	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 (2)	variable length lever with thermoplastic roller (2)	variable length lever with steel roller (2)	rod, Ø 6 mm thermoplastic L = 200 mm (2)	square rod lever, steel, U 3 mm L = 125 mm (2)	round rod lever, steel, Ø 3 mm L = 125 mm (2)	spring lever with thermoplastic end (3)	spring-metal rod lever
Reference	ZCKE05	ZCKY11	ZCKY13	ZCKY41	ZCKY43	ZCKY59	ZCKY51	ZCKY53	ZCKY81	ZCKY91

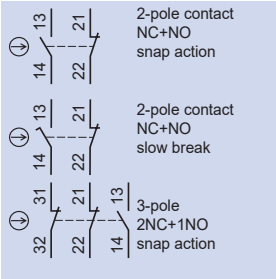
	stay put for actuation from left AND right	forked arm lever with thermoplastic rollers, 1 track (2)	forked arm lever with thermoplastic rollers, 2 track (2)
Reference	ZCKE09	ZCKY71	ZCKY61

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

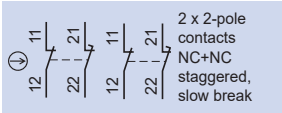
XC Limit switches

Classic - XCKS, complete switches

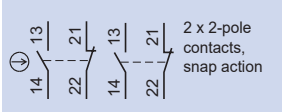
XCKS



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 Ø 50 mm	Polyamide Ø 6 mm rod lever L = 200 mm
Mechanical durability (millions of operating cycles)	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, EAC					
Degree of protection conforming to IEC 60529	IP65 / IP67					
Rated operational characteristics (conforming to EN IEC 60947-5-1)	AC 15 ; A 300 (Ue = 240 V, Ie = 3 A) / DC 13 ; Q 300 (Ue = 250 V, Ie = 0,27 A)					
Cable entry	1 tapped entry for ISO M20 x 1.5 pre-cabled gland (1)					
Fixing centres (mm)	30 x 60					
Body dimensions (mm) W x D x H	XCKS : 40 x 37 x 78 / ZCKS: 40 x 36 x 73					

Complete switch	2-pole NC+NO snap action	⊖ XCKS101H29	⊖ XCKS102H29	⊖ XCKS131H29	⊖ XCKS141H29	XCKS139H29	XCKS159H29
	2-pole NC+NO break before make, slow break	⊖ XCKS501H29	⊖ XCKS502H29	⊖ XCKS531H29	⊖ XCKS541H29	XCKS539H29	XCKS559H29
Corps	2-pole NC+NO snap action	⊖ ZCKS1H29	⊖ ZCKS1H29	⊖ ZCKS1H29	⊖ ZCKS1H29	⊖ ZCKS1H29	⊖ ZCKS1H29
	2-pole NC+NO break before make, slow break	⊖ ZCKS5H29	⊖ ZCKS5H29	⊖ ZCKS5H29	⊖ ZCKS5H29	⊖ ZCKS5H29	⊖ ZCKS5H29
	3-pole 2NC+1NO snap action	⊖ ZCKSD39H29	⊖ ZCKSD39H29	⊖ ZCKSD39H29	⊖ ZCKSD39H29	⊖ ZCKSD39H29	⊖ ZCKSD39H29
Associated head (including operator)		⊖ ZCKD01	⊖ ZCKD02	⊖ ZCKD31	⊖ ZCKD41	ZCKD39	ZCKD59
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	–	–	–	–	–	–

⊖ Positive opening operation. ZCKS have different designs (1) For Pg 13.5 Cable entry delete the reference suffix H29. Example: XCKS131H29 becomes **XCKS131**.

Wireless & battery-less - XCMW

XCMW (Miniature format)

Type of operator	Metal end plunger	Metal roller plunger	Plastic roller plunger	Metal roller lever	Variable length plastic roller lever
References of plastic body	XCMW110	XCMW102	XCMW115	XCMW116	XCMW145
Communication protocol	Zigbee (Green Power) to 2.4 Ghz (IEEE 802.15.4)				
Sensing distance	100 m free field / 300 m with relay antenna ZBRA1 / 25 m with receiver in metallic enclosure				
Product certification	EN/IEC 60947-5-1, EC directive 2004/108/EC, R&TTE directive 1999/5/EC, EAC, conformity to CE marking				
Radio agreement	FCC, IC				
Max switching operation / hour	3600/h				
Max force for set actuation	5 daN		0,5 N.m		
Fixing dimensions	30 x 70 mm				
Ambiant temperature operating // storage	-25°C + 55°C // -40°C + 70°C				
IP degree of protection IEC	IP66, IP67 according to IEN/IEC 60529				

Other versions: please consult our Customer Care Centre.

Severe duty for hoisting and materials handling applications
XCKMR and XCR, complete switches

Types XCKMR and XCR “Application - hoisting, materials handling, conveying”						
Square rod levers U 6 mm, “crossed”	Square rod levers U 6 mm, “crossed”	Square rod lever U 6 mm	Large roller rod lever Ø 50 mm	Square rod levers U 6 mm, “crossed” or “T”	Conveyor belt shift monitoring switches Galvanised steel operating lever	Stainless steel operating lever
2	1	10	10	10	0,3	0,3
1,5	1,5	1,5	1,5	1,5	1,5	1,5
CE, CSA, CCC, EAC						
IP66	IP65	IP54			IP66	
AC 15 ; A 300 (Ue = 240 V, Ie = 3 A) / DC 13 ; Q 300 (Ue = 250 V, Ie = 0,27 A)						
3 x ISO M20 x 1.5 entries	1x ISO M20x1.5 entry & 2 holes for ISO M20 cable gland	1 tapped entry for n° 13 pre-cabled gland (for ISO M20 x 1.5, adaptor DE9RA1620 must be ordered separately)				
61,5		85 x 75				105 x 70
118 x 59 x 77	116 x 66 x 77	85 x 75 x 95				85 x 87 x 146
–	–	–	–	–	–	–
–	–	–	–	–	–	–
–	–	–	–	–	–	–
–	–	–	–	–	–	–
–	–	–	–	–	–	–
–	–	–	–	–	–	–
–	–	–	–	–	–	–
–	–	⊖ XCRA11(2)	⊖ XCRA15	⊖ XCRE18(2)	–	–
–	–	⊖ XCRB11(2)	–	⊖ XCRF17(3)	–	–
–	–				XCRT115	XCRT315 (4)
XCKMR54D1H29 (2)	XCKVR54D1H29 (2)(5)	–	–	–	–	–

(2) Steel rods, L = 200 mm (3) Steel “T” rods, L = 200 mm, W = 300 mm. (4) Polyester enclosure² (5) Plastic enclosure

Receivers for wireless limit switches				
Reference	XZBWR2STT24	ZBRRC	ZBRRD	ZBRN1/2
Number of emitters	2	32	32	60
Number and Output type	2 x PNP +2 for diagnostic	4 x PNP	2 x relay RT	60 modbus TCP protocol and serial line
Supply voltage supply	24VDC (-15...+ 15%)		24...240V AC/DC (-10...+ 10%)	
Nominal current and voltage of output	0.2A / 24V DC		0.3A / 48V DC 3A / 120V AC according to IEC 90947-5-1 3A / 250V AC according toUL 508 & CSA C22.14	
Product and radio certification	EN/IEC 60947-5-1 conformity to CE marking	EN/IEC 60947-5-1, UL508, CSA C22.2 n° 14, CCC, EAC FCC, RSS, C-stick, ANATEL, SRRC conformity to CE marking		
Ambiant temperature operating // storage	-25°C +55°C // -40°C + 70°C			

Packages with transmitter and receiver	
Package	Reference
XCMW102 transmitter and ZBRRD receiver	XCMWD02
XCMW115 transmitter and ZBRRD receiver	XCMWD15

XM Sensors for pressure control

Electronic sensors XMLP Low pressure

For industrial applications (hydraulic circuits, water pumping)

Pressure range (bar) (1)		-1…0	0…0,5	0…1	0…2,5	0…4	0…6	-1…+1	-1…+5
Fluids controlled		Hydraulic oils, air, fresh water							
Ambient air temperature		- 30…+ 85°C							
Degree of protection		IP65 (EN175301-803-A), IP65, IP67, IP69K (M12 connector)							
Product certification		CE, cULus conforming to UL 61010-1, NSF61							
Voltage limits (V)		7...33 Vdc for 4…20 mA, 12…33 Vdc for 0…10 V							
Dimensions (mm) H x W x D		26 x 34,3 (M12), 26 x 55 (EN175301-803-A)							
Fluid connection (2)		G1/4A (male)							
Electrical connection (3)		M12 4-pin, EN175301-803-A							
Output type (4)		4…20 mA 2-wires technique, 0…10V 3-wires technique							
Analogue output 4...20 mA	M12 4-pins	XMLPM00GD21F	XMLP500MD21F	XMLP001GD21F	XMLP2D5GD21F	XMLP004GD21F	XMLP006GD21F	XMLPM01GD21F	XMLPM05GD21F
	EN175301-803-A	XMLPM00GC21F	XMLP500MC21F	XMLP001GC21F	XMLP2D5GC21F	XMLP004GC21F	XMLP006GC21F	XMLPM01GC21F	–
Analogue output 0…10 V	M12 4-pins	XMLPM00GD71F	–	–	–	XMLP004GD71F	–	–	–

1) Also available with psi range (2) Also available with 1/4"-18NPT male or 7/16-20UNF female (3) Also available with 3-pins packard connector (4) Also available with 0.5…4.5 V ratiometric output Available in bulk packs for selling in lots of 25 pcs. Add Q suffix to the reference, ex: XMLP001GD21F becomes **XMLP001GD21FQ**

Electronic sensors XMLP High pressure

For industrial applications (hydraulic circuits, HVAC)

Pressure range (bar) (1)		-1…+9	0…10	0…16	0…25	0…60	0…100	0…250	0…400
Fluids controlled		Hydraulic oils, air, fresh water, gas, refrigeration fluids from - 30…+ 135°C							
Ambient air temperature		- 30…+ 85°C							
Degree of protection (IEC 60529)		IP65 (EN175301-803-A), IP65, IP67 and IP69K (connector M12)							
Product certification		CE, cULus conforming to UL61010-1, NSF61							
Voltage limits (V)		7...33 V DC for 4…20 mA, 12...33 V DC for 0…10 V							
Dimensions (mm) Ø x L		26 x 38 (M12), 26 x 60,5 (EN175301-803-A)							
Fluid connection (2)		G 1/4 A (male)							
Electrical connection (3)		connector M12 4-pins, EN 175301-803-A							
Output type (4)		4…20 mA, technique 2-wires, 0…10V, technique 3-wires							
Analogue output 4…20 mA	M12 4-pins	XMLPM09BD21F	XMLP010BD21F	XMLP016BD21F	XMLP025BD21F	XMLP060BD21F	XMLP100BD21F	XMLP250BD21F	XMLP400BD21F
	EN175301-803-A	XMLPM09BC21F	XMLP010BC21F	XMLP016BC21F	XMLP025BC21F	XMLP060BC21F	XMLP100BC21F	XMLP250BC21F	XMLP400BC21F
Analogue output 0…10 V	M12 4-pins	XMLPM09BD71F	XMLP010BD71F	XMLP016BD71F	XMLP025BD71F	–	–	XMLP250BD71F	XMLP400BD71F
	EN175301-803-A	–	XMLP010BC71F	XMLP016BC71F	–	–	–	XMLP250BC71F	XMLP400BC71F

(1) Also available with psi range (2) Also available with 1/4"-18NPT male or 7/16-20UNF female (3) Also available with 3-pins packard connector (4) Also available with 0.5…4.5 V ratiometric output. Available in bulk packs for selling in lots of 25 pcs. Add Q suffix to the reference, ex: XMLP001GD21F becomes **XMLP001GD21FQ**

Electronic sensors XMEP

For mobile lift applications

Pressure range (bar) (1)		0...60	0…100	0…250	0…400	0…600
Fluids controlled		Hydraulic oils, air, fresh water				
Operating temperature range		- 40…+ 100°C				
Degree of protection		Up to IP69K				
Product certification		E2 certified				
Voltage limits (V)		Electromagnetic protection up to 100V/m				
Dimensions (mm) H x W		From 26mm x 38mm				
Fluid entry		G1/4A (male)				
Connectors (3)	Analogue output					
M12	0,5-4,5V	XMEP060BD11F	XMEP100BD11F	XMEP250BD11F	XMEP400BD11F	XMEP600BD11F
	4-20mA	XMEP060BD21F	XMEP100BD21F	XMEP250BD21F	XMEP400BD21F	XMEP600BD21F
	0-10V	XMEP060BD71F	XMEP100BD71F	XMEP250BD71F	XMEP400BD71F	XMEP600BD71F
Deutsch DT04-3P	0,5-4,5V	XMEP060BT11F	XMEP100BT11F	XMEP250BT11F	XMEP400BT11F	XMEP600BT11F
	4-20mA	XMEP060BT21F	XMEP100BT21F	XMEP250BT21F	XMEP400BT21F	XMEP600BT21F
	0-10V	XMEP060BT71F	XMEP100BT71F	XMEP250BT71F	XMEP400BT71F	XMEP600BT71F
AMP Superseal 1,5 3-Pin	0,5-4,5V	XMEP060BV11F	XMEP100BV11F	XMEP250BV11F	XMEP400BV11F	XMEP600BV11F
	4-20mA	XMEP060BV21F	XMEP100BV21F	XMEP250BV21F	XMEP400BV21F	XMEP600BV21F
	0-10V	XMEP060BV71F	XMEP100BV71F	XMEP250BV71F	XMEP400BV71F	XMEP600BV71F

For more fluid entry, output, and size options, visit www.tesensors.com

Other versions: please consult our Customer Care Centre.

Electronic sensors XMLK

Electrical connection by EN 175301-803-A connector, M12 connector

For pumping applications

Pressure range (bar) (1)		0…6	0…10	0…16	0…25	0…6	0…10	0…16	0…25
Fluids controlled		air, fresh water							
Ambient air temperature		0…+ 80°C							
Degree of protection (IEC 60529)		IP65							
Product certification		CE, UL, CSA							
Voltage limits (V)		8…33 V DC for 4…20 mA, 16,2…33V DC for 0…10 V							
Dimensions (mm) Ø x L		36 x 67,5 (not including connector)							
Fluid connection (2)		G 1/4" A (male)							
Electrical connection (3)		EN 175301-803-A				M12 3-pins male			
Output type (4)		4…20 mA, 2-wires technique, 0…10V, 3-wires technique							
Analogue output	4…20 mA	XMLK006B2C21	XMLK010B2C21	XMLK016B2C21	–	XMLK006B2D21	XMLK010B2D21	XMLK016B2D21	XMLK025B2D21
	0…10 V	XMLK006B2C71	XMLK010B2C71	XMLK016B2C71	XMLK025B2C71	XMLK006B2D71	XMLK010B2D71	XMLK016B2D71	XMLK025B2D71

(1) Also available with psi range. psi (2) Also available with ¼"-18NPT male fluid entry. 3) Also available with 3-pins packard connector. (4) Other types of output; 0…5 V, 0…10 V, etc. Available in bulk packs for selling in lots. Add TQ suffix to the reference. ex: XMLK006B2C21 becomes **XMLK006B2C21TQ**.

Electronic sensors XMLR

Electronic + Display

Adjustable pressure range (bar) (1)		-1…0	0…1	0…2,5	0…10	0…16	0…25	0…40	0…250	0…400
Fluids controlled		Hydraulic oils, air, fresh water, refrigerant fluids, gas								
Ambient air temperature		- 20…+ 80°C								
Degree of protection (conforming to IEC 60529)		IP65, IP67 conforming to EN/IEC 60529								
Product certification		CE, cULus conforming to UL 61010-1, NSF61								
Voltage limits (V)		17...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-pins or 5-pins								
Configurable with 4-digit display										
Analogue output	4...20 mA	XMLRM01G0T25	XMLR001G0T25	–	XMLR010G0T25	XMLR016G0T25	XMLR025G0T25	–	XMLR250M0T25	XMLR400M0T25
	0...10 V	XMLRM01G0T75	–	–	XMLR010G0T75	–	–	–	–	–
Analogue output + commutation	4...20 mA	XMLRM01G1P25	XMLR001G1P25	XMLR2D5G1P25	XMLR010G1P25	XMLR016G1P25	XMLR025G1P25	XMLR040G1P25	XMLR250M1P25	XMLR400M1P25
PNP - NO/NC programmable	0...10 V	XMLRM01G1P75	XMLR001G1P75	XMLR2D5G1P75	XMLR010G1P75	XMLR016G1P75	XMLR025G1P75	XMLR040G1P75	XMLR250M1P75	XMLR400M1P75
2 switching outputs PNP - NO/NC prog.		XMLRM01G2P05	XMLR001G2P05	XMLR2D5G2P05	XMLR010G2P05	XMLR016G2P05	XMLR025G2P05	XMLR040G2P05	XMLR250M2P05	XMLR400M2P05
Analogue+2 switching outputs	4...20 mA	XMLRM01G2P25	–	–	XMLR010G2P25	–	–	XMLR040G2P25	XMLR250M2P25	XMLR400M2P25
Possible differential (bar)	Min.	0.03		0.08	0.3	0.48	0.8	1.2	7.5	12
(pressure switches)	Max.	0.95		2.38	9.5	15	23.8	38	238	380
Maximum permissible accidental pressure		3	7.5	12	40	62	100	150	750	1200

(1) For other pressure ranges consult our web site. (2) Also available with ¼"-18NPT female fluid entry.

Switch with display ZMLP

(Only usable with 4-20mA analogue output pressure transmitter)

Type of switching mode		Hysteresis	Windows
Displayed value range		-14,5 to 6000 with 27 selectable value ranges	
Degree of protection		IP65, IP67 and IP69K	
Product certification		CE cULus	
Supply voltage		24 VDC (17 ... 33 VDC)	
Electrical connection		Input: M12 female, 4-pins. Output: M12 male, 4-pins	
Analogue output	Switching output		
4…20 mA	PNP	ZMLPA1P2SH	ZMLPA1P2SW
4…20 mA	NPN	ZMLPA1N2SH	ZMLPA1N2SW
–	2 PNP	ZMLPA2P0SH	–
–	2 PNP	ZMLPA2N0SH	–

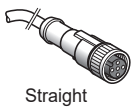
Suitable female plug-in connectors

PUR Pre-wired connectors, L = 5 m (without LED) (1)

(1) For PVC cable see page 47

Elbowed

XZCP1241L5



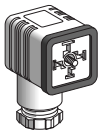
Straight

XZCP1141L5

Other connectors

Screw terminal

XZCC12FCM40B



EN 175301-803-A

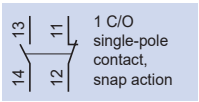
XZCC43FCP40B

Other versions: please consult our Customer Care Centre.

XM Sensors for pressure control

Electromechanical pressure and vacuum switches

XMLA and XMLB



1 C/O single-pole contact, snap action

ISO entry (to EN 50262)

Size (bar)	-1	2.5
Environmental characteristics	Ambient air temperature (°C) : -25…+70 Degree of protection (conforming to IEC 60529) : IP66	
Rated operational characteristics (conforming to EN/IEC 60947-5-1)	AC-15 ; B300 (Ue = 240V, Ie = 1,5A - Ue = 120V, Ie = 3A) / DC-13 ; R300 (Ue = 250V, Ie = 0,1A)	
Product certification	CE, UL, CSA, CCC, BV, LROS, EAC	
Fluid connection	G 1/4" (female) (other connections possible, please consult us)	
Electrical connection	Screw terminals (1), tapped entry for ISO M20 x 1.5 cable gland - For n° 13 (DIN Pg 13.5) cable gland	

Fluids controlled	Hydraulic oils, fresh water, air up to 70°C	Hydraulic oils, fresh water, air to70°C

Type XMLA - fixed differential, single threshold detection

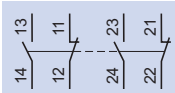
Setting range (bar) of upper limit (PH): pressure switches		– 0,28…- 1 (4)	0,15…2,5
Dimensions (mm) H x W x D		113 x 35 x 75	158 x 55 x77,5
With setting scale	1 C/O single-pole, snap action contact	XMLAM01V2S12	XMLA002A2S12
Natural differential (bar)	at low setting	0,24 (2)	0,13
subtract from PH to give PB	at high setting	0,24 (2)	0,13

Type XMLB - adjustable differential, regulation between 2 thresholds

Setting range (bar) of upper limit (PH): pressure switches		– 0,14...– 1 (4)	0,3...2,5
With setting scale	1 C/O single-pole, snap action contact	XMLBM02V2S12	XMLB002A2S12
Possible differential (bar)	Min. at low setting	0,13 (3)	0,16
subtract from PH to give PB	Min. at high setting	0,13 (3)	0,21
	Max. at high setting	0,8 (3)	1,75

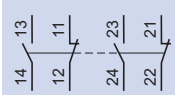
XMLC and XMLD

XMLC



2 C/O single-pole contacts, simultaneous snap action

XMLD



2 C/O single-pole contacts, snap action (1 per stage)

ISO entry (to EN 50262)

Fluids controlled	Hydraulic oils, fresh water, air up to 70°C	Hydraulic oils, fresh water, air up to 160°C

Type XMLC - adjustable differential, regulation between 2 thresholds

Setting range (bar) of upper limit (PH): pressure switches		0,14...– 1 (4)	0,3...2,5
Dimensions (mm) H x W x D		113 x 46 x 85	158 x 55 x 90
With setting scale	2 C/O single-pole, snap action contacts	–	XMLC002B2S12
Possible differential (bar)	Min. at low setting	–	0,13
subtract from PH to give PB	Min. at high setting	–	0,17
	Max. at high setting	–	2

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

Setting range (bar)	2nd stage switching point (PB2)	– 0,12...– 1 (4)	–
	1st stage switching point (PB1)	– 0,10...– 0,98	–
	Spread between 2 stages (PB2 – PB1)	– 0,02...– 0,88	–
Without setting scale 2 C/O single-pole, snap action contacts (1 per stage)		XMLDM02V1S12	–
Natural differential (bar)	at low setting	0,1 (2)	–
Subtract PH 1/2 to give PB 1/2	at high setting	0,1 (2)	–

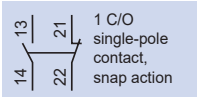
	4	10	20	35	70	160	300	500
	conforming to IEC 947-5-1 Annexe A, En 60 947-5-1							
	tapped entry, replace the last number of the reference (2) by 1 (example: XMLA010A2S12 becomes XMLA010A2S11)							
	Hydraulic oils, fresh water, air up to 70°C				Hydraulic oils up to 160°C			
	0,4…4	0,6…10	1…20	1,5…35	5…70	10…160	20…300	30…500
	113 x 35 x 75	113 x 35 x 75	113 x 35 x 75	113 x 35 x 75	113 x 35 x 75	113 x 35 x 75	113 x 35 x 75	113 x 35 x 75
	XMLA004A2S12	XMLA010A2S12	XMLA020A2S12	XMLA035A2S12	XMLA070D2S12	XMLA160D2S12	XMLA300D2S12	XMLA500D2S12
	0,35	0,5	0,4	1.25	3	5,5	16,5	20
	0,35	0,5	1	1.25	7.5	18	35	45
	0,25...4	0,7...10	1,3...20	–	–	10...160	22...300	30...500
	XMLB004A2S12	XMLB010A2S12	XMLB020A2S12	–	–	XMLB160D2S12	XMLB300D2S12	XMLB500D2S12
	0,02	0,57	1	–	–	9,3	19,4	23
	0,25	0,85	1,6	–	–	20,8	37	52,6
	2,4	7,5	11	–	–	100	200	300

(1) For electrical connection DIN 43650A (IP65), replace the suffix “S12” in the reference by“C11”. Example XMLB010A2S12 becomes **XMLB010A2C11**
(2) For vacuum switch: natural differential to be added to PB to give PH.
(3) For vacuum switch: possible differential to be added to PB to give PH.
(4) Setting range (bar) of lower limit (PB): vacuum switch.

	Hydraulic oils, fresh water, air up to 160°C				Hydraulic oils up to 160°C			
	0,3...4	0,7...10	1,3...20	3,5...35	7...70	12...160	22...300	30...500
	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	113 x 46 x 85
	XMLC004B2S12	XMLC010B2S12	XMLC020B2S12	XMLC035B2S12	–	XMLC160D2S12	XMLC300D2S12	–
	0,15	0,45	0,7	1	–	9	16	–
	0,17	0,7	1	1,5	–	21	35	–
	2,5	8	11	22	–	110	240	–
	–	–	–	4,4...35	–	–	–	41...500
	–	–	–	1,9...32,5	–	–	–	25...484
	–	–	–	2,5...20,4	–	–	–	16...244
	–	–	–	XMLD035B1S12	–	–	–	XMLD500D1S12
	–	–	–	1,5	–	–	–	21
	–	–	–	2,6	–	–	–	65

XM Sensors for pressure control

Electromechanical pressure switches XMX, XMA

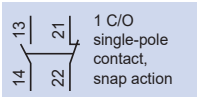


1 C/O single-pole contact, snap action

Setting range of upper limit (PH) (bar)	1…6	1,3…12	3,5…25
Fluids controlled	Air, water (fresh water, sea water) from 0…+70°C		
Ambient air temperature	-25…+70°C		
Degree of protection (conforming to IEC 60529)	IP54		
Rated operational characteristics (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, EAC		
Dimensions (mm) H x W x D	106 x 57 x 98		126 x 57 x 98
Fluid connection	1/4" BSP female		
Electrical connection	Screw terminals, 2 tapped entries for n° 13 (DIN Pg 13.5) cable gland		

Type XMX-with internal setting screw

Without setting scale, screw terminal connections				
1 C/O single-pole, snap action contact		XMXA06L2135	XMXA12L2135	XMXA25L2135
Possible differential (bar)	Min. at low setting	0,8	1	3,4
subtract from PH to give PB	Min. at high setting	1,2	1,7	4,5
	Max. at high setting	4,2	8,4	20



1 C/O single-pole contact, snap action

Setting range of upper limit (PH) (bar)	1…6	1,3…12	3,5…25
Fluids controlled	Air, water (fresh water, sea water) from 0…+70°C		
Ambient air temperature	-25…+70°C		
Degree of protection (conforming to IEC 60529)	IP54		
Rated operational characteristics (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, EAC		
Dimensions (mm) H x W x D	113 x 57 x 98		133 x 57 x 98
Fluid connection	1/4" BSP female		
Electrical connection	Screw terminals, tapped entry for n° 13 (DIN Pg 13.5) cable gland		

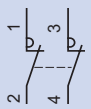
Type XMA with external setting screw (transparent cover)

Without setting scale, screw terminal connections				
1 C/O single-pole, snap action contact		XMAV06L2135	XMAV12L2135	XMAV25L2135
Possible differential (bar)	Min. at low setting	0,8	1	3,4
subtract from PH to give PB	Min. at high setting	1,2	1,7	4,5
	Max. at high setting	4,2	8,4	20

Telemecanique Sensors

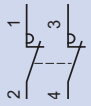
Other versions: please consult our Customer Care Centre.

Electromechanical pressure switches for power circuits, adjustable differential for regulation between 2 thresholds

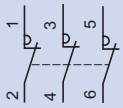


2 NC 2-pole contact, snap action

Degree of protection Size (bar)			IP 20 4,6	7	10,5	IP65 4,6	7
Setting range of upper limit (PH) (bar)			1,4…4,6	2,8…7	5,6…10,5	1,4…4,6	2,8…7
Fluids controlled			Water (fresh water, sea water) from 0…+55°C				
Electrical connection			Screw terminals, 2 cable entries with grommetl			Screw terminals, 2 tapped entries for n° 13 (DIN Pg 13.5) cable gland	
Product certification			CE, EAC				
Ambient air temperature			For operation : 0…+50°C. For storage: - 30…+80°C				
Rated operational characteristics (conforming to EN/IEC 60947-5-1)			Ie = 10 A, Ue = 250 V AC				
Power rating	110 V	AC 2-pole, single-phase	0,75 kW (1 HP)			0,75 kW (1 HP)	
of controlled		AC 2-pole, 3-phase	1,1 kW (1,5 HP)			1,1 kW (1,5 HP)	
motors	230 / 400 V	AC 2-pole, single-phase	1,5 kW (2 HP)			1,5 kW (2 HP)	
		AC 2-pole, 3-phase	2,2 kW (3 HP)			2,2 kW (3 HP)	
Dimensions (mm) H x W x D			96/105 x 72 x 102	94 x 72 x 102		115 x 72 x 106	115 x 72 x 106
Connection	G 1/4 (BSP female)		FSG2	FYG22	FYG32	–	FYG22NE
hydraulique	R 1/4 (BSP male)		FSG9	FYG29	–	–	–
	G 3/8 (BSP female) rotating nut		–	–	–	FSG2NEG	–
Possible differential (bar)		At low setting	1 min. - 2,1 max.	1,2 min. - 2,3 max.	1,9 min. - 3 max.	1 min. - 2,1 max.	1,2 min. - 2,3 max.
subtract from PH		At middle setting	1,1 min. - 2,2 max.	1,4 min. - 2,5 max.	2,1 min. - 3,2 max.	1,1 min. - 2,2 max.	1,4 min. - 2,5 max.
to give PB		At high setting	1,2 min. - 2,3 max.	1,6 min. - 2,7 max.	2,3 min. - 3,4 max.	1,2 min. - 2,3 max.	1,6 min. - 2,7 max



2 NC 2-pole contact, snap action

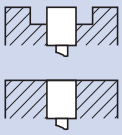


3 NC 3-pole contact, snap action

Size (bar)			6	12		25
Setting range of upper limit (PH) (bar)			1…6	1,3…12		3,5…25
Fluids controlled			Air, water (fresh water, sea water) from 0…+70°C			
Ambient air temperature			For functionnement : -25…+70°C. For stockage : -40…+70°C			
Decompression valve / ONOff knob			without	without	with	without
Fluid connection			G 1/4 (BSP female)	G 1/4 (BSP female)	4xG 1/4 (BSP female)	G 1/4 (BSP female)
Electrical connection			Screw terminals, 2 tapped entries for n° 13 (DIN Pg 13.5) cable gland			
Degree of protection			IP 54	IP 54		IP 54
Product certification			CE, EAC			
Rated insulation voltage			Ui = 500 V			
Electrical	Power	1,5 kW	400 V AC 3-phase : 1 000 000 operating cycles			
durability			230 VAC 3-phase : 600 000 operating cycles			
		2,2 kW	400 V AC 3-phase : 700 000 operating cycles			
		3 kW	400 V AC 3-phase : 500 000 operating cycles			
Dimensions (mm) H x W x D			106 x 57 x 97,5	106 x 57 x 97,5	138 x 57 x 97,5	126 x 57 x 97,5
Type	2 NC 2-pole, snap action contact		XMPA06B2131	XMPA12B2131	–	XMPA25B2131
of contacts	3 NC 3-pole, snap action contact		XMPA06C2131	XMPA12C2131	XMPE12C2431	–
Possible differential (bar)		Min. at low setting	0,8	1	1	3,4
subtract from PH		Min. at high setting	1,2	1,7	1,7	4,5
to give PB		Max. at high setting	4,2	8,4	8,4	20

XS Inductive proximity sensors

Cylindrical metal



	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 / No flush mountable	0 … 1,2	0 … 2	0…1,6	0 … 3,2
Temperature range (°C)	- 25 … + 70			
Product certification	CE, UL, CSA, CCC, C-TICK, E2 (2)			
Degree of protection (conforming to IEC 60529)	IP67		Pre-cabled: IP 69K conforming to DIN 40050, IP 68	

Sensors for DC applications

Output function	NO		A	A	A	A
	NC		B	B	B	B
Dimensions (mm) Ø x L Cable / Connector			M8 x 33 / M8 x 42		M12 x 35 / M12 x 50	
3-wires	PNP	Cable (2 m)	XS508B1P A L2	XS108B3P A L2	XS512B1P A L2	XS112B3P A L2
		Connector M8 / M12	XS508B1P A M8	XS108B3P A M8	XS512B1P A M12	XS112B3P A M12
	NPN	Cable (2m)	XS508B1N A L2	XS108B3N A L2	XS512B1N A L2	XS112B3N A L2
		Connector M8 / M12	XS508B1N A M8	XS108B3N A M8	XS512B1N A M12	XS112B3N A M12
2-wires	No polarised (1)	Cable (2 m)	XS508BSC A L2	XS608B3C A L2	XS512BSD A L2	XS612B3D A L2
		Connector M12	–	–	XS512BSD A M12	XS612B3D A M12
Supply voltage limits, min./max. (V) including ripple			10…36	10…36	10…36	10…36
Switching capacity, max. (mA) 3-wires / 2-wires			200 / 100	200 / 100	200 / 100	200 / 100
Overload and short-circuit protection (★) / LED output state indicator (⊗)			★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗
Residual current, open state (mA)			≤ 0,5	≤ 0,5	≤ 0,5	≤ 0,5
Voltage drop, closed state (V) at I nominal 3-wires / 2-wires			≤ 2 / ≤ 4	≤ 2 / ≤ 4	≤ 2 / ≤ 4	≤ 2 / ≤ 4
Switching frequency (Hz) 3-wires / 2-wires			5000 / 4000	2500 / 3000	5000 / 4000	2500 / 2000
Dimensions (mm) Ø x L Pre-cabled / Connector			M8 x 51 / M8 x 62		M12 x 53 / M12 x 62	
3-wires	PNP	Cable (2 m)	XS508BLP A L2	XS608B1P A L2	XS512BLP A L2	XS612B1P A L2
		Connector M12	XS508BLP A M12	XS608B1P A M12	XS512BLP A M12	XS612B1P A M12
	NPN	Cable (2 m)	XS508BLN A L2	XS608B1N A L2	XS512BLN A L2	XS612B1N A L2
		Connector M12	XS508BLN A M12	XS608B1N A M12	XS512BLN A M12	XS612B1N A M12
2-wires	No polarised	Cable (2 m)	XS508B1D A L2	XS608B1D A L2	XS512B1D A L2	XS612B1D A L2
		Connector M12	XS508B1D A M12	XS608B1D A M12	XS512B1D A M12	XS612B1D A M12
Supply voltage limits, min./max. (V) including ripple			10…58	10…58	10…58	10…58
Switching capacity, max. (mA) 3-wires / 2-wires			200 / 100	200 / 100	200 / 100	200 / 100
Overload and short-circuit protection (★) / LED output state indicator (⊗)			★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗
Residual current, open state (mA) 2-wires			≤ 0,5	≤ 0,5	≤ 0,5	≤ 0,5
Voltage drop, closed state (V) at I nominal 3-wires / 2-wires			≤ 2 / ≤ 4	≤ 2 / ≤ 4	≤ 2 / ≤ 4	≤ 2 / ≤ 4
Switching frequency (Hz) 3-wires / 2-wires			5000 / 4000	2500 / 3000	5000 / 4000	2500 / 2000

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

Dimensions (mm) Ø x L Cable / Connector		–	–	M12 x 53 / M12 x 62	
2-wires	Cable (2 m)	–	–	XS512B1M A L2	XS612B1M A L2
	Connector 1/2"-20 UNF	–	–	XS512B1M A U20	XS612B1M A U20
Supply voltage limits, min./max. (V) including ripple		–	–	20…264	20…264
Switching capacity, max (mA)		–	–	200	200
LED output state indicator (⊗)		–	–	⊗	⊗
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) polarised for M8 short

(2) E2 depending on the version, more details on tesensors.com

Accessories

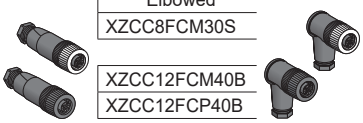
Fixing for cylindrical sensors

Fixing clamp with indexing pin for cylindrical sensors

M8	XSZB108
M12	XSZB112
M18	XSZB118
M30	XSZB130

Suitable female plug-in connectors

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



Other versions: please consult our Customer Care Centre.

	M18		M30		No flush increased range M8	M12	M18	M30
	5 mm	8 mm	10 mm	15 mm	4 mm	7/8 mm	12/15 mm	22/30 mm
	0…4	0…6,4	0…8	0…12	0 … 3,2	0...5.6/0…6.4	0…9.6/0...12	0...17.6 / 0…24
	- 25…+ 70				- 25…+ 70			
					CE, UL , CSA , CCC, C-TICK, E2 (2)			
(with connector: IP67)					Pre-cabled: IP 69K conforming to DIN 40050, IP 68 (with connector: IP67)			

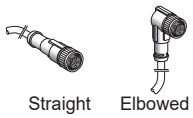
A	A	A	A	A	A	A	A
B	B	B	B	B	B	B	B
M18 x 39 / M18 x 50		M30 x 43 / M30 x 55			M12 x 37 / M12 x 51	M18 x 41 / M18 x 51	
XS518B1PAL2	XS118B3PAL2	XS530B1PAL2	XS130B3PAL2	–	XS212B4PAL2	XS218B4PAL2	
XS518B1PAM12	XS118B3PAM12	XS530B1PAM12	XS130B3PAM12	–	XS212B4PAM12	XS218B4PAM12	
XS518B1NAL2	XS118B3NAL2	XS530B1NAL2	XS130B3NAL2	–	XS212B4NAL2	XS218B4PAL2	
XS518B1NAM12	XS118B3NAM12	XS530B1NAM12	XS130B3NAM12	–	XS212B4NAM12	XS218B4PAM12	
XS518BSDAL2	XS618B3DAL2	XS530BSDAL2	XS630B3DAL2	–			
XS518BSDAM12	XS618B3DAM12	XS530BSDAM12	XS630B3DAM12	–			
10…36	10…36	10…36	10…36	–	10…36	10…36	
200 / 100	200 / 100	200 / 100	200 / 100	–	200	200	
★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗	–	★ / ⊗	★ / ⊗	
≤ 0,5	≤ 0,5	≤ 0,5	≤ 0,5	–	≤ 0.5	≤ 0.5	
≤ 2 / ≤ 4	≤ 2 / ≤ 4	≤ 2 / ≤ 4	≤ 2 / ≤ 4	–	≤ 2	≤ 2	
2000 / 3000	1000 / 1000	1000 / 2000	500 / 500	–	2500	1000	

M18 x 62 / M18 x 74		M30 x 62		M8 x 51 / M8 x 61	M12 x 55 / M12 x 65	M18 x 62 / M18 x 74	M30 x 66 / M30 x 74
XS518BLPAL2	XS618B1PAL2	XS530BLPAL2	XS630B1PAL2	XS608B4PAL2	XS612B4PAL2	XS618B4PAL2	XS630B5PAL2
XS518BLPAM12	XS618B1PAM12	XS530BLPAM12	XS630B1PAM12	XS608B4PAM12 (3)	XS612B4PAM12	XS618B4PAM12	XS630B5PAM12
XS518BLNAL2	XS618B1NAL2	XS530BLNAL2	XS630B1NAL2	XS608B4NAL2	XS612B4NAL2	XS618B4NAL2	XS630B5NAL2
XS518BLNAM12	XS618B1NAM12	XS530BLNAM12	XS630B1NAM12	XS608B4NAM12 (3)	XS612B4NAM12	XS618B4NAM12	XS630B5NAM12
XS518B1DAL2	XS618B1DAL2	XS530B1DAL2	XS630B1DAL2	–	–	–	–
XS518B1DAM12	XS618B1DAM12	XS530B1DAM12	XS630B1DAM12	–	–	–	–
10…58	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 / –	200 / –
★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗
≤ 0,5	≤ 0,5	≤ 0,5	≤ 0,5	–	–	–	–
≤ 2 / ≤ 4	≤ 2 / ≤ 4	≤ 2 / ≤ 4	≤ 2 / ≤ 4	≤ 2 / –	≤ 2 / –	≤ 2 / –	≤ 2 / –
2000 / 3000	1000 / 1000	1000 / 2000	500 / 500	2500 / –	2500 / –	1000 / –	500 / –

M18 x 62 / M18 x 73		M30 x 62 / M30 x 73		–	–	M18 x 60 / M18 x 72	M30 x 63 / M30 x 74
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

(3) Also available with M8 connector. Substitute "M12" for "M8" at the end of the reference.

PUR pre-wired connectors (1)



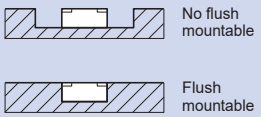
Straight Elbowed

	M8 (3-pins)			1/2"			M12 (4-pins)			
	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 PVC cable see page 47

XS Inductive proximity sensors

Rectangulars plastic



				⌀ 8 x 22 x 8	⌀ 15 x 32 x 8	⌀ 26 x 26 x 13	⌀ 40 x 40 x 15	⌀ 80 x 80 x 26
Nominal sensing distance Sn				2.5 mm	5 mm	10 mm	15 mm	40 mm
Operating zone (mm)				0...2	0...4	0…8	0…12	0…32
Fine adjustment zone (mm) flush mountable / No flush mountable				–	–	–	–	–
Suitability for flush mounting(metal environment)				flush mountable	flush mountable	flush mountable	flush mountable	flush mountable
Temperature range (°C)				- 25…+ 70	- 25…+ 70	- 25…+ 70	- 25…+ 70	- 25…+ 70
Product certification				CE	CE, UL, CSA, C-TICK			
Degree of protection (conforming to IEC 60529)				pre-cabled : IP68 (with connector : IP67)				

Sensors for DC applications

Connection				Pre-cabled PvR (2 m)				
2-wires (No polarised)		NO or NC	programmable	–	–	–	–	–
2-wires	No polarised	NO function		XS7J1A1DAL2	XS7F1A1DAL2	XS7E1A1DAL2 (3)	XS7C1A1DAL2 (3)	XS7D1A1DAL2 (3)
		NC function		XS7J1A1DBL2	–	XS7E1A1DBL2 (3)	XS7C1A1DBL2 (3)	XS7D1A1DBL2 (3)
4-wires	PNP	NO + NC	complementary outputs	–	–	–	–	–
	NPN	NO + NC	complementary outputs	–	–	–	–	–
3-wires	PNP	NO function		XS7J1A1PAL2	XS7F1A1PAL2	XS7E1A1PAL2 (3)	XS7C1A1PAL2 (3)	XS7D1A1PAL2 (3)
		NC function		XS7J1A1PBL2	XS7F1A1PBL2	XS7E1A1PBL2 (3)	XS7C1A1PBL2 (3)	XS7D1A1PBL2 (3)
	NPN	NO function		XS7J1A1NAL2	XS7F1A1NAL2	XS7E1A1NAL2 (3)	XS7C1A1NAL2 (3)	XS7D1A1NAL2 (3)
		NC function		–	–	XS7E1A1NBL2 (3)	XS7C1A1NBL2 (3)	XS7D1A1NBL2 (3)
Connection				M8				M12
2-wires	No polarised	NO function		XS7J1A1DAL01M8 (1)	XS7F1A1DAL01M8 (1)	XS7E1A1DAM8 (3)	XS7C1A1DAM8 (3)	XS7D1A1DAM12 (3)
		NC function		–	XS7F1A1DBL01M8 (1)	XS7E1A1DBM8 (3)	XS7C1A1DBM8 (3)	XS7D1A1DBM12 (3)
3-wires	PNP	NO function		XS7J1A1PAL01M8 (1)	XS7F1A1PAL01M8 (1)	XS7E1A1PAM8 (3)	XS7C1A1PAM8 (3)	XS7D1A1PAM12 (3)
		NC function		XS7J1A1PBL01M8 (1)	XS7F1A1PBL01M8 (1)	XS7E1A1PBM8 (3)	XS7C1A1PBM8 (3)	XS7D1A1PBM12 (3)
	NPN	NO function		–	XS7F1A1NAL01M8 (1)	XS7E1A1NAM8 (3)	XS7C1A1NAM8 (3)	XS7D1A1NAM12 (3)
		NC function		–	–	XS7E1A1NBM8 (3)	XS7C1A1NBM8 (3)	–
Supply voltage limits, min./max. (V) including ripple				10…36	10…36	10…36	10…36	10…36
Switching capacity, max (mA)				100	100	100	100	100
Short-circuit protect. (★) / 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-wires		AC/DC	NO function	–	–	–	–	–
			NC function	–	–	–	–	–
		AC	NO or NC programmable	–	–	–	–	–
		AC/DC	NO or NC programmable	–	–	–	–	–
Connection								
2-wires		AC/DC	NO function	–	–	–	–	–
			NC function	–	–	–	–	–
Supply voltage limits, min./max. (V) including ripple				–	–	–	–	–
Switching capacity, max (mA)				–	–	–	–	–
Short-circuit protect. (★) / 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 flying lead L = 0,15m

Accessories

Suitable female plug-in connectors

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

Other versions: please consult our Customer Care Centre.

	Ø 40 x 40 x 70		Ø 40 x 40 x 117		Ø 26 x 26 x 13	Ø 40 x 40 x 15	Ø 80 x 80 x 26
	20 mm	40 mm	20 mm	40 mm	15 mm	25 mm	60 mm
	0…16	0…32	0…16	0…32	0…8 / 0...12	0…12 / 0...20	0…32 / 0...48
					5...10 / 5...15	8...15 / 8...25	20...40 / 20...60
	flush mountable	No flush mountable	flush mountable	No flush mountable	flush mountable or No flush mountable via teach mode		
	- 25…+ 70				- 25…+ 70		
	CE, UL, CSA, CCC, C-TICK, E2, for PNP versions: TUV Sil 2				CE, UL, CSA, CCC, C-TICK		
	IP67 and IP69K				pre-cabled : IP68 (with connector : IP67)		
	M12		Screw terminals (2)		Pre-cabled (2m)		
	–	–	XS8C4A1DPP20	XS8C4A4DPP20	–	–	–
	XS8C2A1DAM12	XS8C2A4DAM12	–	–	–	–	–
	XS8C2A1DBM12	XS8C2A4DBM12	–	–	–	–	–
	XS8C2A1PCM12	XS8C2A4PCM12	XS8C4A1PCP20	XS8C4A4PCP20	–	–	–
	XS8C2A1NCM12	XS8C2A4NCM12	XS8C4A1NCP20	XS8C4A4NCP20	–	–	–
	–	–	–	–	XS8E1A1PAL2 (3)	XS8C1A1PAL2 (3)	XS8D1A1PAL2 (3)
	–	–	–	–	XS8E1A1PBL2 (3)	XS8C1A1PBL2 (3)	XS8D1A1PBL2 (3)
	–	–	–	–	XS8E1A1NAL2 (3)	XS8C1A1NAL2 (3)	XS8D1A1NAL2 (3)
	–	–	–	–	XS8E1A1NBL2 (3)	XS8C1A1NBL2 (3)	XS8D1A1NBL2 (3)
					M8		M12
	–	–	–	–	–	–	–
	–	–	–	–	–	–	–
	–	–	–	–	XS8E1A1PAM8 (3)	XS8C1A1PAM8 (3)	XS8D1A1PAM12 (3)
	–	–	–	–	XS8E1A1PBM8 (3)	XS8C1A1PBM8 (3)	XS8D1A1PBM12 (3)
	–	–	–	–	XS8E1A1NAM8 (3)	XS8C1A1NAM8 (3)	XS8D1A1NAM12 (3)
	–	–	–	–	–	XS8C1A1NBM8 (3)	XS8D1A1NBM12 (3)
	12…48				10…36	10…36	10…36
	4-wires version = 200 – 2-wires version = 1.5…100				100	200	200
	4-wires version = ★ / ⊗ / ⊗ – 2-wires version = ★ / ⊗ / –				★ / ⊗ / ⊗	★ / ⊗ / ⊗	★ / ⊗ / ⊗
	4-wires version = ≤ 2 – 2-wires version = ≤ 4				≤ 2	≤ 2	≤ 2
	flush mountable : 300 - No flush version : 200				2000	1000	150
	1/2" - 20 UNF connector		Screw terminals (2)		Pre-cabled (2m)		
	XS8C2A1MAU20	XS8C2A4MAU20	–	–	XS8E1A1MAL2	XS8C1A1MAL2	XS8D1A1MAL2
	–	–	–	–	XS8E1A1MBL2	XS8C1A1MBL2	XS8D1A1MBL2
	–	–	–	–	–	–	–
	–	–	XS8C4A1MPP20	XS8C4A4MPP20	–	–	–
					1/2" - 20 UNF connector		
	–	–	–	–	XS8E1A1MAL01U20 (3)	XS8C1A1MAL01U20 (3)	XS8D1A1MAU20 (3)
	–	–	–	–	XS8E1A1MBL01U20 (3)	XS8C1A1MBL01U20 (3)	XS8D1A1MBU20 (3)
	20…264				20…264	20…264	20…264
	AC/DC version = 300 / 200				200 AC ou 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 supplied without cable gland. Suitable cable gland: M20. Also available in13P, 1/2" NPT output and M12, 7/8" connectors. (3) ECOLAB certified

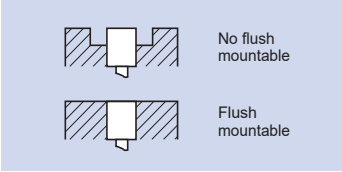
PUR pre-wired connectors (1)	M8 (3-pins)		1/2"		M12 (4-pins)		
	Straight	Elbowed	Straight	Elbowed	Straight	Elbowed	Elbowed PNP LED
2 m	XZCP0566L2	XZCP0666L2	XZCP1865L2	XZCP1965L2	XZCP1141L2	XZCP1241L2	XZCP1340L2
5 m	XZCP0566L5	XZCP0666L5	XZCP1865L5	XZCP1965L5	XZCP1141L5	XZCP1241L5	XZCP1340L5
10 m	XZCP0566L10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

Straight Elbowed

(1) For PVC cable see page 47

XS Inductive proximity sensors

Cylindrical Plastic



	M8	M12	M18	M30
Nominal sensing distance Sn	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 (°C)	- 25…+ 70			
Product certification	CE, UL, CSA, CCC, C-TICK, ECOLAB			
Degree of protection (conforming to IEC 60529)	IP67	pre-cabled : IP68 (with connector : IP67)		

Sensors for DC applications

Connection			Pre-cabled PvR (2 m)			
Dimensions (mm) Ø x L			M8 x 33	M12 x 33	M18 x 33,5	M30 x 40,5
3-wires	PNP	NO function	XS4P08PA340	XS4P12PA340	XS4P18PA340	XS4P30PA340
		NC function	–	XS4P12PB340	–	XS4P30PB340
	NPN	NO function	–	XS4P12NA340	XS4P18NA340	XS4P30NA340
		NC function	XS4P08NB340	–	–	–
Connection			M8	M12		
Dimensions (mm) Ø x L			M8 x 42	M12 x 48	M18 x 48	M30 x 50
3-wires	PNP	NO function	XS4P08PA340S	XS4P12PA340D	XS4P18PA340D	XS4P30PA340D
		NC function	–	XS4P12PB340D	XS4P18PB340D	XS4P30PB340D
	NPN	NO function	–	XS4P12NA340D	XS4P18NA340D	–
		NC function	–	–	XS4P18NB340D	–
Supply voltage limits, min./max. (V) including ripple			10…38	10…38	10…38	10…38
Switching capacity, max (mA)			200	200	200	200
Short-circuit protect. (★) / LED output state indicator (⊗)			★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗
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			Pre-cabled PvR (2 m)			
Dimensions (mm) Ø x L			M8 x 50	M12 x 50	M18 x 60	M30 x 60
2-wires	AC/DC	NO function	XS4P08MA230	XS4P12MA230	XS4P18MA230	XS4P30MA230
not short-circuit protected (1)		NC function	XS4P08MB230	XS4P12MB230	XS4P18MB230	XS4P30MB230
Connection			1/2"			
Dimensions (mm) Ø x L			M8 x 61	M12 x 61	M18 x 70	M30 x 70
2-wires	AC/DC	NO function	XS4P08MA230K	XS4P12MA230K	XS4P18MA230K	XS4P30MA230K
not short-circuit protected (1)		NC function	XS4P08MB230K	XS4P12MB230K	XS4P18MB230K	XS4P30MB230K
Supply voltage limits, min./max. (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
LED output state indicator (⊗)			⊗	⊗	⊗	⊗
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

Fixing for cylindrical sensors

Fixing clamp with indexing pin for cylindrical sensors

M8	XSZB108
M12	XSZB112
M18	XSZB118
M30	XSZB130

Suitable female plug-in connectors

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

Other versions: please consult our Customer Care Centre.

Miniature cylindrical metal (assembly)

	Ø 4	M5	Ø 6,5	
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 (°C)	- 25…+ 70			
Product certification	CE, UL, CSA, CCC, C-TICK			
Degree of protection (conforming to IEC 60529)	IP67			

Sensors for DC applications

Dimensions (mm) Ø x L			Ø 4 x 29	M5 x 29	Ø 6,5 x 33	
Connection			Pre-cabled PvR (2 m)			
3-wires	PNP	NO function	XS1L04PA310	XS1N05PA310	XS506B1PAL2	XS106B3PAL2
		NC function	–	–	XS506B1PBL2	XS106B3PBL2
	NPN	NO function	XS1L04NA310	XS1N05NA310	XS506B1NAL2	XS106B3NAL2
		NC function	–	–	XS506B1NBL2	XS106B3NBL2
2-wires (polarised)		NO function	–	–	XS506BSCAL2	XS606B3CAL2
		NC function	–	–	XS506BSCBL2	XS606B3CBL2
Dimensions (mm) Ø x L			Ø 4 x 41	M5 x 41	Ø 6,5 x 42	
Connection			M8			
3-wires	PNP	NO function	XS1L04PA310S	XS1N05PA311S (1)	XS506B1PAM8	XS106B3PAM8
		NC function	–	–	XS506B1PBM8	XS106B3PBM8
	NPN	NO function	–	XS1N05NA311S (1)	XS506B1NAM8	XS106B3NAM8
		NC function	–	–	XS506B1NBM8	XS106B3NBM8
Connection			M12			
Supply voltage limits, min./max. (V) including ripple			5…30	5…30	10…36	
Switching capacity, max. (mA) 3-wires / 2-wires			100 / –	100 / –	200 / 100	
Short-circuit protect. (★) / LED output state indicator (⊗)			★ / ⊗	★ / ⊗	★ / ⊗	
Voltage drop, closed state (V) at I nominal 3-wires / 2-wires			≤ 2 / –	≤ 2 / –	≤ 2 / ≤ 4	
Switching frequency (Hz) 3-wires / 2-wires			5000 / –	5000 / –	5000 / 4000	2500 / 3000

(1) Stainless steel sensors, Sn = 0,8 mm

PUR pre-wired connectors (1)

Straight Elbowed

(1) For PVC cable see page 47

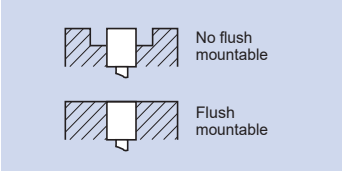
M8 (3-pins)		
	Straight	Elbowed
2 m	XZCP0566L2	XZCP0666L2
5 m	XZCP0566L5	XZCP0666L5
10 m	XZCP0566L10	XZCP0666L10

1/2"		
	Straight	Elbowed
2 m	XZCP1865L2	XZCP1965L2
5 m	XZCP1865L5	XZCP1965L5
10 m	XZCP1865L10	XZCP1965L10

M12 (4-pins)			
	Straight	Elbowed	Elbowed PNP LED
2 m	XZCP1141L2	XZCP1241L2	XZCP1340L2
5 m	XZCP1141L5	XZCP1241L5	XZCP1340L5
10 m	XZCP1141L10	XZCP1241L10	XZCP1340L10

XS Inductive proximity sensors

Multi-voltage with short-circuit protection



		M 12	M 18	M 30
Nominal sensing distance Sn	flush	2 mm	5 mm	10 mm
	No flush or increased flush	4 mm	8 mm	15 mm
Operating zone (mm)	flush	0…1,6	0…4	0…8
	No flush or increased flush	0…3,2	0…6,4	0…12
Suitability for flush mounting(metal environment)		Flush mountable ou No flush mountable depending on model		
Case M (metal) P (plastic)		M		
Temperature range (°C)		- 25…+ 70		
Degree of protection (conforming to IEC 60529)		IP68 (with connector : IP67)		
Product certification		CE, UL, CSA, CCC, C-TICK		
Dimensions (mm) Ø x L Cable (Connector)		M12 x 55 (M12 x 66)	M18 x 60 (M18 x 72)	M30 x 60 (M30 x 72)

Sensors for DC applications

Connection						
4-wires	PNP	NO + NC	Flush	–	–	–
			increased flush			
			No flush	–	–	–
	NPN	NO + NC	Flush	–	–	–
			No flush	–	–	–
	PNP+NPN programmable	NO/NC	Flush (metal)	–	–	–
			No flush (metal)	–	–	–
			No flush (plastic)	–	–	–
Connection						
4-wires	PNP	NO + NC	Flush	–	–	–
			increased flush			
			No flush	–	–	–
	NPN	NO + NC	Flush	–	–	–
			No flush	–	–	–
	PNP+NPN programmable	NO/NC	Flush (metal)	–	–	–
			No flush (metal)	–	–	–
			No flush (plastic)	–	–	–
Supply voltage limits, min./max. (V) including ripple				–	–	–
Switching capacity, max (mA)				–	–	–
Short-circuit protection (★) / LED output state indicator (⊗)				–	–	–
Voltage drop, closed state (V) at I nominal				–	–	–
Switching frequency (Hz)				–	–	–

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

Connection			Pre-cabled PvR (2 m)		
2-wires AC/DC	NO function	Flush	XS1M12MA250	XS1M18MA250	XS1M30MA250
		No flush	XS2M12MA250	XS2M18MA250	XS2M30MA250
	NC function	Flush	XS1M12MB250	XS1M18MB250	XS1M30MB250
		No flush	XS2M12MB250	XS2M18MB250	XS2M30MB250
Connection			1/2”-20UNF		
2-wires AC/DC	NO function	Flush	XS1M12MA250K	XS1M18MA250K	XS1M30MA250K
		No flush	XS2M12MA250K	XS2M18MA250K	XS2M30MA250K
	NC function	Flush	XS1M12MB250K	XS1M18MB250K	XS1M30MB250K
		No flush	–	XS2M18MB250K	XS2M30MB250K
Supply voltage limits, mini/maxi (V) 50-60 Hz			20…264		
Switching capacity, max (mA)			5…200	5…200 AC, 5…300 DC	
LED output state indicator (⊗) / 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 Ø 30 mm.

Telemecanique Sensors

Other versions: please consult our Customer Care Centre.

PNP or NPN
NO + NC Complementary outputs

PNP + NPN outputs,
NO or NC programmable

	M 8	M 12	M 18	M 30	M 12	M 18	M 30
	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 no flush mountable depending on model				flush mountable or no flush mountable depending on model		
	M				M ou P depending on model		
	- 25…+ 70				- 25…+ 70		
	IP67	IP68 (with connector : IP67)			IP68 (with connector : IP67)		
	CE, UL, CSA, CCC, C-TICK, E2 - for versions PNP : TÜV SIL2 (SIL2 only for M12, M18, M30)				CE, UL, CSA, CCC, C-TICK		
	M8 x 50 (M8 x 61)	M12 x 33 (M12 x 48)	M18 x 36.5 (M18 x 49)	M30 x 40.5 (M30 x 53)	M12 x 50 (M12 x 61)	M18 x 60 (M18 x 72)	M30 x 60 (M30 x 72)
	Pre-cabled PvR (2 m)				Pre-cabled PvR (2 m)		
	XS1M08PC410	XS1N12PC410	XS1N18PC410	XS1N30PC410	–	–	–
	–	XS112B3PCL2	XS118B3PCL2	XS130B3PCL2			
	XS2M08PC410	–	–	–	–	–	–
	XS1M08NC410	XS1N12NC410	–	XS1N30NC410	–	–	–
	–	XS2N12NC410	–	–	–		
	–	–	–	–	XS1M12KP340	XS1M18KP340	XS1M30KP340
	–	–	–	–	XS2M12KP340	XS2M18KP340	XS2M30KP340
	–	–	–	–	XS4P12KP340	XS4P18KP340	XS4P30KP340
	M12				M12		
	XS1M08PC410D	XS1N12PC410D	XS1N18PC410D	XS1N30PC410D	–	–	–
	–	XS112B3PCM12	XS118B3PCM12	XS130B3PCM12			
	XS2M08PC410D	–	–	–	–	–	–
	–	–	–	XS1N30NC410D	–	–	–
	–	–	XS2N18NC410D	–	–	–	–
	–	–	–	–	XS1M12KP340D	XS1M18KP340D	XS1M30KP340D
	–	–	–	–	XS2M12KP340D	XS2M18KP340D	XS2M30KP340D
	–	–	–	–	XS4P12KP340D	XS4P18KP340D	XS4P30KP340D
	10…36	9…36 for PNP version			10…36		
	200				200		
	★ / ⊗				★ / –		
	≤ 2				≤ 2,6		
	5000	5000	2000	1000	5000	2000	1000

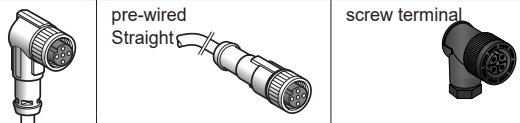
Accessories

Fixing clamps

With indexing pin for cylindrical sensors

M8	XSZB108
M12	XSZB112
M18	XSZB118
M30	XSZB130

Suitable female plug-in connectors, including PUR pre-wired versions (1)



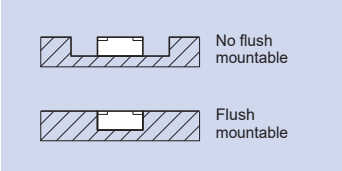
length 5 m without LED	pre-wired Elbowed	pre-wired Straight	screw terminal
M8 (ou S)	XZCP0666L5	XZCP0566L5	XZCC8FCM30S
M12 (ou D)	XZCP1241L5	XZCP1141L5	XZCC12FCM40B
1/2" (ou K)	XZCP1965L5	XZCP1865L5	XZCC20FCM30B

(1) For PVC cable see page 47

XS Inductive proximity sensors - Application

Rotation control

Fixed sensing distance
(for ferrous or no ferrous materials)



	26 x 26 x 13	40 x 40 x 15	M30
Nominal sensing distance Sn	10 mm	15 mm	10 mm
Operating zone (mm)	0...8	0...12	0...8
Suitability for flush mounting(metal environment)	flush mountable		
Case M (metal) P (plastic)	P	P	M
Temperature range (°C)	– 25…+ 60		
Degree of protection (conforming to IEC 60529)	IP67		
Product certification	CE, UL, CSA, CCC, C-TICK		
Dimensions (mm) Ø x L or W x H x D Cable (Connector)	26 x 26 x 13	40 x 40 x 15	M30 x 81
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			Pre-cabled PvR (2 m)		
4 wires	PNP/NPN NO/NC	programmable	–	–	–
3-wires	PNP NC function	slow version	–	–	XSAV11373
		fast version	–	–	XSAV12373
	Output 0…10 V	plastic	–	–	–
	Output 4…20 mA	metal flush mountable	–	–	–
		plastic flush mountable	–	–	–
		plastic no flush mountable	–	–	–
Connection par connector			M8 ou M12		
4 wire	PNP/NPN NO/NC	programmable	–	–	–
3-wires	PNP NC function		XS9E11RPBL01M12 (3)	XS9C11RPBL01M12 (3)	–
	Output 0…10 V		–	–	–
	Output 4…20 mA		–	–	–
Supply voltage limits, min./max. (V) including ripple			10...36	10...36	10...58
Switching capacity, max (mA)			100	200	200
Short-circuit protect. (★) / LED output state indicator (⊗) / Power on LED (⊗)			★ / ⊗ / ⊗	★ / ⊗ / ⊗	★ / ⊗ / –
Linearity error			–	–	–
Voltage drop, closed state (V) at I nominal			≤ 2	≤ 2	≤ 2
Switching frequency (Hz)			–	–	–
Operating frequency (Hz)			–	–	–

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

Connection			Pre-cabled PvR (2 m)		
2-wires	AC/DC NC function		XS9E11RMBL01U20 (5)	XS9C11RMBL01U20 (5)	–
not short-circuit protected (2)	NC function	slow version	–	–	XSAV11801
		fast version	–	–	XSAV12801
Supply voltage limits, mini/maxi (V) 50–60 Hz			20...264	20...264	20...264
Switching capacity, max (mA)			100	300 AC / 200 DC	300 AC / 200 DC
LED output state indicator (⊗) / 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

Fixings

Fixing clamp with indexing pin
for cylindrical sensors

M12	XSZB112
M18	XSZB118
M30	XSZB130

Other versions: please consult our Customer Care Centre.

Analogue (Position control)

	8 x 32 x 8	26 x 26 x 13	40 x 40 x 15	80 x 80 x 26	M12	M18	M30
	5 mm	10 mm	15 mm	40 mm	M: 2 mm / P: 4 mm	M: 5 mm / P: 8 mm	M: 10 mm / P: 15 mm
	1...4	1...10	2...15	5...40	M : 0,2…2 / P : 0,4…4	M : 0,5…5 / P : 0,8…8	M : 1…10 / P : 1,5…15
	flush mountable	flush mountable	flush mountable	flush mountable	flush / No flush mountable	flush / No flush mountable	flush / No flush mountable
	P	P	P	P	M ou P	M ou P	M ou P
	- 25…+ 60	- 25…+ 70	- 25…+ 70	- 25…+ 70	- 25…+ 70	- 25…+ 70	- 25…+ 70
	Pre - cabled : IP68 (with connector: IP67)				IP67		
	CE, UL, CSA, CCC, C-TICK						
	15 x 32 x 8	26 x 26 x 13	40 x 40 x 15	80 x 80 x 26	Ø 12 x 50	Ø 18 x 50	Ø 30 x 52.5
	–	–	–	–	–	–	–
	–	–	–	–	–	–	–
	–	–	–	–	–	–	–
	–	–	–	–	–	–	–
	–	–	–	–	–	–	–
	XS9F111A1L2	XS9E111A1L2 (6)	XS9C111A1L2 (6)	XS9D111A1L2 (6)	XS4P12AB110	XS4P18AB110	XS4P30AB110
	–	–	–	–	XS1M12AB120	XS1M18AB120	XS1M30AB120
	XS9F111A2L2	XS9E111A2L2 (6)	XS9C111A2L2 (6)	XS9D111A2L2 (6)	–	–	–
	–	–	–	–	XS4P12AB120	XS4P18AB120	XS4P30AB120
	M8 ou M12						
	–	–	–	–	–	–	–
	–	–	–	–	–	–	–
	XS9F111A1L01M8 (4)(6)	XS9E111A1L01M12 (4)(6)	–	XS9D111A1M12 (6)	–	–	–
	–	XS9E111A2L01M12 (4)(6)	XS9C111A2L01M12 (4)(6)	XS9D111A2M12 (6)	–	–	–
	15...36	15...36	15...36	15...36	10…36 for XS..AB110 / 15…58 for XS..AB120 (6)		
	–	–	–	–	–	–	–
	–	–	–	–	–	–	–
	± 1 V for 0…10 V version / ± 2 mA for 4…20 mA version						
	–	–	–	–	–	–	–
	–	–	–	–	–	–	–
	2000	1000	1000	100	1500	500	300

(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.

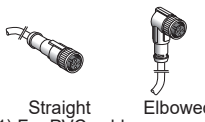
(3) Flying lead (L = 0.15 m) with end mounted remote control incorporating M12 connector.

(4) Flying lead (L = 0.15 m) with end connector.

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

(6) ECOLAB certified.

PUR pre-wired connectors (1)



Straight Elbowed

(1) For PVC cable see page 47

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

Suitable female plug-in connectors

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

XS Inductive proximity sensors - Application

Food and beverage processing

Type	M12	M18	Ø 18 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)	No-flush mountable			
Case M (metal) (1)	M stainless steel 316 L			
Product certification	CE, UL, CSA, CCC, C-TICK			
Temperature range (°C)	- 25…+ 85°C			
Degree of protection (conforming to IEC 60529)	pre-cabled : IP68 (with connector : IP67) and IP69K conforming to DIN 40050			

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

Connection			Pre-cabled, No poisonous PVC (2 m)			
Dimensions (mm)			M12 x 55	M18 x 60	Ø 18 x 60	M30 x 62
3-wires	PNP	NO function	XS212SAPAL2	XS218SAPAL2	XS2L2SAPAL2	XS230SAPAL2
	NPN	NO function	XS212SANAL2	XS218SANAL2	XS2L2SANAL2	XS230SANAL2
Connection			par connector M12			
Dimensions (mm)			M12 x 61	M18 x 70	Ø 18 x 70	M30 x 70
3-wires	PNP	NO function	XS212SAPAM12	XS218SAPAM12	XS2L2SAPAM12	XS230SAPAM12
	NPN	NO function	XS212SANAM12	XS218SANAM12	XS2L2SANAM12	XS230SANAM12
Supply voltage limits, min./max. (V) including ripple			10…36			
Switching capacity, max (mA)			≤ 200			
Switching frequency (Hz)			2500	1000	1000	500
Short-circuit protection (★) / LED output state indicator (⊗)			★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗
Voltage drop, closed state (V) at I nominal			≤ 2			

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

Connection			Pre-cabled, No poisonous (2 m)			
Dimensions (mm)			–	M18 x 60	–	M30 x 62
2-wires (2)	AC/DC	NO function	–	XS218SAMAL2	–	XS230SAMAL2
Connection			1/2"-20 UNF connector			
Dimensions (mm)			–	M18 x 72	–	M30 x 74
2-wires (2)	AC/DC	NO function	–	XS218SAMAU20	–	XS230SAMAU20
Supply voltage limits, min./max. (V) 50-60 HZ			–	20 … 264	–	20 … 264
Switching capacity, max (mA)			–	300 AC / 200 DC	–	300 AC / 200 DC
Switching frequency (Hz)			–	25 AC / 1000 DC	–	25 AC / 300 DC
LED output state indicator (⊗)			–	⊗	–	⊗
Voltage drop, closed state (V) at I nominal			–	≤ 5,5	–	≤ 5,5
Residual current, open state (mA)			–	≤ 0,8	–	≤ 0,8

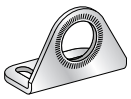
(1) Plastic range available. M12, M18, M30: :
To order, replace the second letter S in the reference by A
(example: XS212SAPAL2 becomes **XS212AAPAL2**).

(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.

Accessories

Fixing clamps

Stainless steel



for sensor	
Ø 12	XSZBS12
Ø 18	XUZA118
Ø 30	XSZBS30

M12 pre-wired connector

female, 4-pin, stainless steel clamping ring

Straight connector	5 m	XZCPA1141L5

Elbowed connector	5 m	XZCPA1241L5

M12 jumper cable

male, 3-pins, stainless steel clamping ring

Straight connector	5 m	XZCRA151140A5

1/2" pre-wired connector

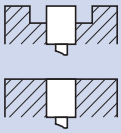
Straight	5 m	XZCP1865L5
Elbowed	5 m	XZCP1965L5

Telemecanique Sensors

Other versions: please consult our Customer Care Centre.

XT Capacitive proximity sensors

Detection of insulating materials or conductive materials



No-flush mountable (plastic)

Flush mountable (metal)

		Suitability for flush mtg.	M12	M18	M30	Ø 32 / 34
Nominal sensing distance Sn		flush mountable	2 mm	5 mm	10 mm	15 mm
		No flush mountable	–	8 mm	15 mm	20 mm
Operating zone Sa (mm) (2)		flush mountable	0…1,44	0…3,6	0…7,2	0…11
		No flush mountable	–	0…5,8	0…11	0…15
Case M (metal) P (plastic)		flush mountable	M	M	M	M
		No flush mountable	–	P	P	P
Product certification			CE, UKCA, cULus, EAC			
Temperature range (°C)			- 25…+ 70			
Degree of protection (conforming to IEC 60529)			IP67			
Dimensions (mm) Ø x L or H x W x D	Metal	Cable	M12 x 63	M18 x 70	M30 x 64	M32 x 80
		Connector	M12 x 75	M18 x 85	M30 x 81	–
	Plastic	Cable	–	M18 x 78	M30 x 75	–
		Connector	–	M18 x 92	M30 x 92	–

Sensors for DC applications

Connection				Pre-cabled PVC (2 m)			
3-wires	PNP	NO function	Flush mountable	XT512B1PAL2	XT518B1PAL2	XT530B1PAL2	–
			No flush mountable	–	XT218A1PAL2	XT230A1PAL2	XT234A1PAL2
		Function NO+NC	Flush mountable	XT512B1PBL2	XT518B1PCL2	XT530B1PCL2	–
	NPN	NO function	Flush mountable	–	XT518B1NAL2	XT530B1NAL2	–
			No flush mountable	–	XT218A1NAL2	XT230A1NAL2	–
Connection				M12			
3-wires	PNP	Function NO+NC	Flush mountable	XT512B1PAM12	XT518B1PCM12	XT530B1PCM12	–
			No flush mountable	–	XT218A1PCM12	XT230A1PCM12	–
Supply voltage limits, min./max. (V) including ripple				10...30			
Switching capacity, max (mA)				200			
Short-circuit protection (★) / LED output state indicator (⊗)				★ / ⊗			
Voltage drop, closed state (V) at I nominal				≤ 2			
Switching frequency (Hz)				50	30	25	25

Multi-current/multi-voltage sensors for AC applications

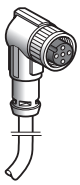
Connection				Pre-cabled PVC (2 m)			
2-wires AC (1)		NO function	Flush mountable	–	XT518B1FAL2	XT530B1FAL2	XT132B1FAL2
			No flush mountable	–	XT218A1FAL2	XT230A1FAL2	XT232A1FAL2
		NC function	Flush mountable	–	XT518B1FBL2	XT530B1FBL2	–
			No flush mountable	–	–	XT230A1FBL2	XT232A1FBL2
Connection				Screw terminals			
2-wires AC (1)		NO or NC programmable	Flush mountable	–	–	XT230A2MDB (4)	–
Supply voltage limits, min./max.(V) 50-60 Hz				–	20…264	20…264	20…264
Switching capacity, max (mA)				–	300		
LED output state indicator (⊗) / Power on LED (⊗)				⊗ / –			
Voltage drop, closed state (V) at I nominal				–	≤ 5,5	≤ 5,5	≤ 9
Switching frequency (Hz)				–	15	10	10

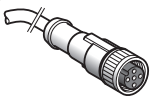
(1) For these sensors without short-circuit protection, it is essential to connect a 0.4 A quick-blow fuse in series with the load.
(2) The operating distance depends on the objet material.
(3) Only for detecting insulating materials.
(4) 24…240 VAC or 24 VDC supply (No flush mountable)

Accessories

Suitable female plug-in connectors, including PUR pre-wired versions (1)

long. 5 m without DEL	pre-wired Elbowed	pre-wired Straight	screw terminal
M12	XZCP1241L5	XZCP1141L5	XZCC12FCM40B

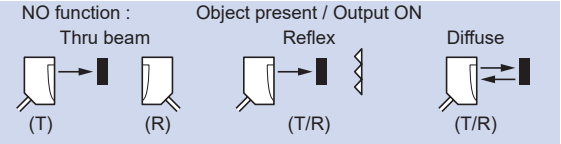


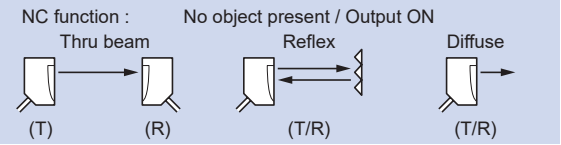


(1) For PVC cable see page 47

XU Photo-electric sensors

General Purpose





				M18 Metal (1) cable	M18 Metal (1) M12 connector	M18 Plastic cable	M18 Plastic M12 connector
Output function		NO		A	A	A	A
		NC		B	B	B	B
Diffuse		Sensing distance		0,6 m (2) (3)		0,6 m (2) (3)	
	Output type	DC3 NO	PNP	XUB5BP A NL2	XUB5BP A NM12	XUB5AP A NL2	XUB5AP A NM12
			NPN	XUB5BN A NL2	XUB5BN A NM12	XUB5AN A NL2	XUB5AN A NM12
		AC/DC 1C/O relay		–	–	–	–
Reflex Polarised		Sensing distance (4)		2 m		2 m	
	Output type	DC3 NO	PNP	XUB9BP A NL2	XUB9BP A NM12	XUB9AP A NL2	XUB9AP A NM12
			NPN	XUB9BN A NL2	XUB9BN A NM12	XUB9AN A NL2	XUB9AN A NM12
		AC/DC 1C/O relay		–	–	–	–
Reflex		Sensing distance (4)		4 m		4 m	
	Output type	DC3 NO	PNP	XUB1BP A NL2	XUB1BP A NM12	XUB1AP A NL2	XUB1AP A NM12
			NPN	XUB1BN A NL2	XUB1BN A NM12	XUB1AN A NL2	XUB1AN A NM12
		AC/DC 1C/O relay		–	–	–	–
Thru beam		Sensing distance		15 m		15 m	
	Output type	DC3 NO	PNP	XUB2BP A NL2R	XUB2BP A NM12R	XUB2AP A NL2R	XUB2AP A NM12R
			NPN	XUB2BN A NL2R	XUB2BN A NM12R	XUB2AN A NL2R	XUB2AN A NM12R
		AC/DC 1C/O relay		–	–	–	–
Thru beam Transmitter			DC	XUB2BKSNL2T	XUB2BKSNM12T	XUB2AKSNL2T	XUB2AKSNM12T
			AC/DC	–	–	–	–
Multimode		Sensing distance		Background suppression: : 0,12 m - Diffuse: 0,3 m Reflex polarised: : 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	–	–	–	–

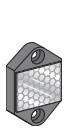
(1) Brass metal, available also in stainless steel, see page food/beverage processing series

(2) For a sensing distance 0,1 m without sensitivity adjustment, change digit 5 by 4 into the reference (ex: XUB5BPANL2 becomes **XUB4BPANL2**)

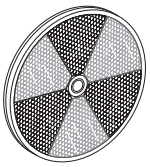
Fixing		M18 x1	
Dimensions	pre-cabled / connectors	M18 x 64 mm / M18 x 78 mm	
Product certifications		CE, UL, CSA, C-TICK	
DC common characteristics			
	Supply voltage limits, min./max. (V) including ripple	10…36	10…36
	Switching frequency (Hz)	500	500
	Common characteristics for DC versions	Switching capacity, max (mA) : 100 / Overload and short-circuit protection (★) / LED output state	
AC/DC common characteristics			
	Supply voltage limits, min./max. (V) including ripple	–	–
	Switching frequency (Hz)	–	–
	LED output state indicator (⊗) / power on LED (⊗)	–	–

Accessories

Reflectors



XUZC24



XUZC80

XUZC50

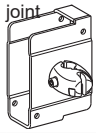
Reflectors (mm)	
Ø 21	XUZC21
24 x 21	XUZC24
Ø 39	XUZC39
Ø 80	XUZC80
50 x 50	XUZC50
100 x 100	XUZC100

3D fixings with ball joint

Bracket with ball joint for sensors and reflector XUZC50

for	
XUB…	XUZB2003
XUM0…	XUZM2003
XUK…	XUZK2003
XUX…	XUZX2003

Protective housing with ball joint



for	
XUK…	XUZK2004
XUX…	XUZX2004

M12 rod for ball joint

XUZ2001

Telemecanique Sensors

Other versions: please consult our Customer Care Centre.

	Miniature		Compact 50 x 50 mm		Compact 92 x 71 mm	
	Cable	M8 connector	Cable	M12 connector	Screw terminal	M12 connector
	NO or NC	NO or NC	A B	A B	A B	A B
	1.9 m (3)		1 m (3)		2,1 m (3)	
	XUM5APXBL2	XUM5APXBM8	XUK5AP ANL2	XUK5AP ANM12	XUX5AP ANT16	XUX5AP ANM12
	XUM5ANXBL2	XUM5ANXBM8	XUK5AN ANL2	XUK5AN ANM12	XUX5AN ANT16	XUX5AN ANM12
	–	–	XUK5ARCNL2	–	XUX5ARCNT16	–
	8 m (3)		5 m		11 m (3)	
	XUM9APXBL2	XUM9APXBM8	XUK9AP ANL2	XUK9AP ANM12	XUX9AP ANT16	XUX9AP ANM12
	XUM9ANXBL2	XUM9ANXBM8	XUK9AN ANL2	XUK9AN ANM12	XUX9AN ANT16	XUX9AN ANM12
	–	–	XUK9ARCNL2	–	XUX9ARCNT16	–
	–		7 m		14 m (3)	
	–	–	XUK1AP ANL2	XUK1AP ANM12	XUX1AP ANT16	XUX1AP ANM12
	–	–	XUK1AN ANL2	XUK1AN ANM12	XUX1AN ANT16	XUX1AN ANM12
	–	–	XUK1ARCNL2	–	XUX1ARCNT16	–
	30 m (3)(5)		30 m		40 m (3)	
	XUM2APXBL2	XUM2APXBM8	XUK2AP ANL2R	XUK2AP ANM12R	XUX2AP ANT16R	XUX2AP ANM12R
	XUM2ANXBL2	XUM2ANXBM8	XUK2AN ANL2R	XUK2AN ANM12R	XUX2AN ANT16R	XUX2AN ANM12R
	–	–	XUK2ARCNL2R	–	XUX2ARCNT16R	–
	Transmitters are already included	Transmitters are already included	XUK2AKSNL2T	XUK2AKSNM12T	–	–
			XUK2ARCNL2T	–	–	–
	Background suppression: : 0,1 m - Diffuse: 0,4 m Reflex Polarised : 3 m - Thru beam : 10 m		Background suppression: : 0,28 m - Diffuse: 0,8 m Reflex Polarised : 4 m - Thru beam : 30 m		Background suppression: : 1,3 m - Diffuse: 2 m Reflex Polarised : 11 m - Thru beam : 40 m	
	XUM0APSAL2	XUM0APSAM8	–	–	XUX0AKSAT16T	XUX0AKSAM12T
	XUM0ANSAL2	XUM0ANSAM8	–	–	XUX0ARCTT16T	–
	–	–	XUK0AKSAL2	XUK0AKSAM12	XUX0AKSAT16	XUX0AKSAM12
	–	–	XUK0ARCTL2	–	XUX0ARCTT16	–
	XUM0AKSAL2T	XUM0AKSAM8T	XUK0AKSAL2T	XUK0AKSAM12T	XUX0AKSAT16T	XUX0AKSAM12T
	–	–	XUK0ARCTL2T	–	XUX0ARCTT16T	–

(3) with sensitivity adjustment

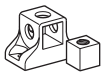
(4) with reflector XUZC50 to be ordered separatly

(5) Some references are available with Transmitter and Receiver together (ex: XUM2APSBL2)

Direct fixing centres 25.5, M3 screws	Direct fixing centres 40 x 40, M4 screws	Direct fixing centres 30/38 to 40/50/74, M5 screws
10,8 x 31,5 x 19,5	18 x 50 x 50	30 x 92 x 71
CE, UL, CSA, UKCA	CE, UL, CSA, CCC, C-TICK	CE, UL, CSA, CCC, C-TICK
10…30	10…30	10…36
1000	500	500
LED output state indicator (⊗) : Yes / power on LED (⊗) : yes		
–	20…264	20…264
–	20	20
–	⊗ / ⊗	⊗ / ⊗

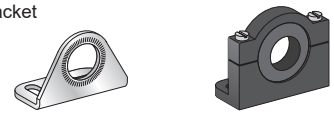
Simple fixings

Fixing support for M12 rod



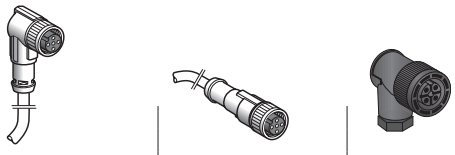
XUZ2003

Single bracket



for	standard	with ball joint
XUB...	XUZA118 (stnls. steel)	XUZA218 (plastic)
XUM...	XUZA50	–
XUK...	XUZA51	–
XUX...	XUZX2000	–

Suitable female plug-in connectors, including PUR pre-wired versions (1)

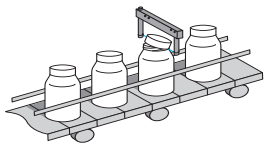
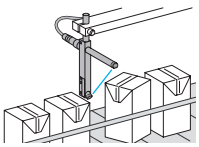


length. 5 m without LED	pre-wired Elbowed	pre-wired Straight	Screw terminal
M8	XZCP1041L5	XZCP0941L5	XZCC8FCM40S
M12	XZCP1241L5	XZCP1141L5	XZCC12FCM40B

(1) For PVC cable see page 47

XU Photo-electric sensors

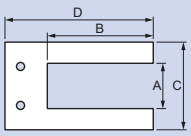
Optical forks without setting and frames

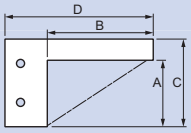



System		Thru-beam with modular red LED light source
Output function	NO	A
	NC	B
Sensing distance		30…150 mm
Minimum size of objet detected		0,8 mm
Case M (metal)		M
Temperature range (°C) / Degree of protection (conforming to IEC 60529)		- 10…+ 60 / IP65 and IP67
Product certification		CE, cULus

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

Connection				M8 connector 3-pins					Pre-cabled L = 2 m.				
Dimensions (mm)					A	B	C	D		A	B	C	D
Transmitter / Receiver	3-wires	NO function	PNP	XUVR0605P ANM8	50	60	74	77,5	XUVR0303PANL2	30	40	54	57,5
			NPN	XUVR0605N ANM8									
		NO function	PNP	XUVR0608P ANM8	80	60	104	77,5					
			NPN	XUVR0608N ANM8									
		NO function	PNP	XUVR1212P ANM8	120	120	144	142					
			NPN	XUVR1212N ANM8									
		NO function	PNP	XUVR1218P ANM8	180	120	204	142					
			NPN	XUVR1218N ANM8									
		NO function	PNP	XUVA0505P ANM8	44	44	71	71					
		NO function	PNP	XUVA0808P ANM8	74	74	101	101					
		NO function	PNP	XUVA1212P ANM8	112	112	142	142					
		NO function	PNP	XUVA1515P ANM8	142	142	172	172					
Supply voltage limits, min./max. (V) including ripple				10…30									
Switching capacity, max (mA) / Switching frequency (Hz)				100/4kHz									
Short-circuit protect. (★) / LED output state indicator (⊗)				★ / ⊗									





System		Thru-beam with infrared emission				
Passageway dimensions		30 x 30 mm	60 x 60 mm	200 x 120 mm	200 x 180 mm	200 x 250 mm
Connection		M8 (4-pins)		M12 (4-pins)		
Minimum size of object to be detected	Ø 2 mm	XUVF30M8	XUVF60M8	–	–	–
	Ø 4 mm	–	–	XUVF120M12	XUVF180M12	XUVF250M12
	Ø 10 mm	–	–	XUYFRS120S	XUYFRS180S	XUYFRS250S
Type et Output function		4-wires, 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 limits, min./max. (V) including ripple		18…30				
Switching capacity, max (mA) / Switching frequency (Hz)		≤ 100 / 500 Hz				
Short-circuit protect. (★) / LED output state indicator (⊗)		★ / ⊗				

Accessories

Suitable female PUR pre-wired plug-in connectors (1)

Straight Elbowed

	M8 (3-pins) For optical forks without setting		M8 (4-pins) For optical forks and frame with setting		M12 (4-pins) For frame with setting	
	Straight	Elbowed	Straight	Elbowed	Straight	Elbowed
2 m	XZCP0566L2	XZCP0666L2	XZCP0941L2	XZCP1041L2	XZCP1141L2	XZCP1241L2
5 m	XZCP0566L5	XZCP0666L5	XZCP0941L5	XZCP1041L5	XZCP1141L5	XZCP1241L5

(1) For PVC cable see page 47

Telemecanique Sensors

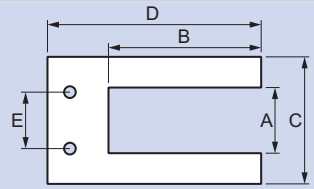
Other versions: please consult our Customer Care Centre.

Forks with teach mode (1)

System, with teach mode	Thru beam	Thru beam laser
Sensing distance	2…120 mm	2…120 mm
Fixings (mm)	(see column E below)	
Minimum size of objet detected	0,2 mm	0,05 mm
Case M (metal) / Setting-up assistance LEDs ⊗	M / ⊗	
Temperature range (°C) / Degree of protection (conforming to IEC 60529)	-25…+60 / IP65	
Product certification	CE, cULus	

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

Connection	M8 connector - 4-pins											
Output type	3-wires PNP/NPN programmable NO / NC											
Dimensions (mm)		A	B	C	D	E		A	B	C	D	E
Transmitter / Receiver	XUYFANEP40002	2	42	32	57	14	XUYFALNEP40002	2	42	41	57	14
	XUYFANEP60002	2	59		77		XUYFALNEP60002	2	59		77	
	XUYFANEP100002	2	95		110		XUYFALNEP100002	2	95		110	
	XUYFANEP40005	5	42	35	57	14	XUYFALNEP40005	5	42	44	57	14
	XUYFANEP60005	5	59		77		XUYFALNEP60005	5	59		77	
	XUYFANEP100005	5	95		110		XUYFALNEP100005	5	95		110	
	XUYFANEP40015	15	42	45	57	27	XUYFALNEP40015	15	42	54	57	27
	XUYFANEP60015	15	59		77		XUYFALNEP60015	15	59		77	
	XUYFANEP100015	15	95		110		XUYFALNEP100015	15	95		110	
	XUYFANEP40030	30	42	60	57	42	XUYFALNEP40030	30	42	69	57	42
	XUYFANEP60030	30	59		77		XUYFALNEP60030	30	59		77	
	XUYFANEP100030	30	95		110		XUYFALNEP100030	30	95		110	
	XUYFANEP40050	50	42	80	57	40	XUYFALNEP40050	50	42	89	57	40
	XUYFANEP60050	50	59		77		XUYFALNEP60050	50	59		77	
	XUYFANEP100050	50	95		110		XUYFALNEP100050	50	95		110	
	XUYFANEP40080	80	42	110	57	70	XUYFALNEP40080	80	42	119	57	70
	XUYFANEP60080	80	59		77		XUYFALNEP60080	80	59		77	
	XUYFANEP100080	80	95		110		XUYFALNEP100080	80	95		110	
	XUYFANEP40120	120	42	150	57	110	XUYFALNEP40120	120	42	159	57	110
	XUYFANEP60120	120	59		77		XUYFALNEP60120	120	59		77	
	XUYFANEP100120	120	95		110		XUYFALNEP100120	120	95		110	
Supply voltage limits, min./max. (V) including ripple	10…30						10…30					
Switching capacity, max (mA) / Switching frequency (Hz)	100/10kHz						100/10kHz					
Short-circuit protect. (★) / LED output state indicator (⊗)	★ / ⊗						★ / ⊗					



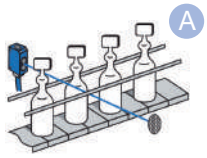
(1) To order a fork without teach mode, delete A of the reference. Ex: XUYFANEP40002 becomes **XUYFNEP40002**

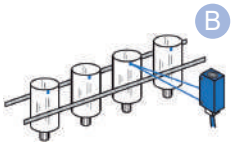
System		Thru beam Ultrason Special transparent labels	Thru beam For all other opaque labels
Sensing distance	3 mm version	XUVU06M3PSNM8	XUVE04M3PSNM8
Switching frequency (Hz)		1500	10 000
Sensitivity adjustment		Numeric potentiometer (1)	Numeric potentiometer (1)
Connection		M8 (4-pins)	
Case M (metal) / Setting-up assistance LEDs ⊗		M / ⊗	
Temperature range (°C) / Degree of protection (conforming to IEC 60529)		+5…+55 / IP65	-20…+60 / IP65
Product certification		CE	CE, cULus

(1) remote adjustment available.

XU Photo-electric sensors - Application

Assembly series





Accurate detection or very long sensing distance

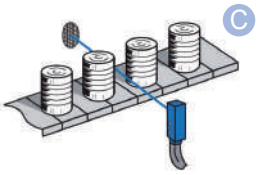
Robustness and compactness

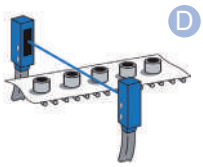
Application				A	B
System	Thru beam	Diffuse	Reflex		Diffuse contrast
Sensing distance	100 m (1)	0,07 m	10…1000 mm (2)		40…150 mm
Fixings (mm)	M18 x 1	M8 x 1	Directe, 2 trous M3, entraxe 24 mm		
Sensitivity adjustment	Teach mode	–	Teach mode		
Case M (metal) P (plastic) / Setting-up assistance LEDs ⊗	P / ⊗	M / –	P		
Temperature range (°C)	- 10…+ 45°C	- 25…+ 55	- 20…+ 60°C		
Degree of protection (conforming to IEC 60529)	IP67	IP67	IP67		
Product certification	CE, UL, CSA	CE, cULus	CE, cULus		
Dimensions (mm) Ø x L or H x W x D	Ø 18 x 64	Ø8 x 40	20 x 35,8 x 12		

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

Connection		Connector	M 12	M 8 - 4-pins		
Transmitter / Receiver	3-wires PNP	programmable NO / NC	XUBLAPCNM12	–	XUYBCO929LSP	XUYPCCO929LSP
	3-wires NPN	programmable NO / NC	XUBLANCNM12	–	–	–
Supply voltage limits, min./max. (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
Short-circuit protect. (★) / LED output state indicator (⊗)			★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗

(1) or min. size of object: 0.2 mm
(2) With specific reflector XUY1111, format 50 x 50 mm. To be ordered separately.





Miniature series sensors

compact 50x50mm

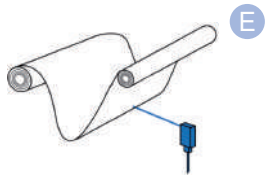
Application	C	D				
System	Polarised preflex	Thru beam	Polarised preflex	Thru beam	Back ground suppression	Diffuse
Sensing distance	1…1.5 m (4)	4 m	12 m (7)	25 m	0.8 m	1.2 m
Sensitivity adjustment	potentiometer	potentiometer	Teach mode	Teach mode	potentiometer	Teach mode
P (plastic) / Setting-up assistance LEDs ⊗	P / ⊗					
Temperature range (°C) / Degree of protection (conforming to IEC 60529)	0…+ 50°C / IP65 and IP67		-20…+ 60°C / IP67 and IP69K			
Product certification	CE, cULus		CE, Ecolab			
Dimensions (mm) H x W x D	40 x 10 x 13.5		50 x 50 X 23			

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

Connection			M8 connector (5) - 4-pins		M12 connector - 4-pins			
	PNP	NO function	XUYBCO989SP	XUYRCO989SP	–	–	–	–
	NPN	NO function	XUYBCO989SN	XUYRCO989SN	–	–	–	–
	PNP/NPN	Programmable NO / NC			XUK9LAPSMM12 (6)	XUK2LAPSMM12R (6)	XUK8LAPPNM12 (6)	XUK5LAPSMM12 (6)
Émetteur			–	XUYECO989	–	XUK2LAKSMM12T (6)	–	–
Supply voltage limits, min./max. (V) including ripple			10…30		12…30			
Switching capacity, max (mA) / Switching frequency (Hz)			100 / 500		100 / ≤ 2000	100 / ≤ 3500	100 / ≤ 1000	100 / ≤ 600
Short-circuit protect. (★) / LED output state indicator (⊗)			★ / ⊗					

(4) 50 x 50 reflector included.
(5) For 2 m pre-cabled version, delete CO from the reference. (Example: XUYBCO989SP becomes **XUYB989SP** or XUYRCO989SP becomes **XUYR989SP**).
(6) Fixing braket: XUZA51S to be ordered separately
(7) With reflector XUZC50HP to be ordered separately

Materials handling series - Conveying
Analogue output



Analogue output
Position control

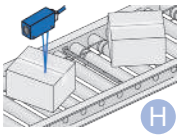
High access
gain for resistance
to accumulation of dirt

Application	E		E	
System	**Diffuse**	**Reflex**	**Diffuse**	**Thru beam**
Sensing distance	0,1...5 m	0.3...70 m (1)	0,05...0,40 m	50 m
Sensitivity adjustment	Teach mode		Potentiometer	
Case M (metal), P (plastic) / Setting-up assistance LEDs ⊗	P / ⊗		M / ⊗	
Temperature range (°C) / Degree of protection (conforming to IEC 60529)	- 40...+ 50	- 10...+ 50	- 25…+ 55	
Degree of protection (conforming to IEC 60529)	IP67 and IP69K		IP67	
Product certification	CE, cULus		CE, UL, CSA	CE, UL , CSA, C-TICK
Dimensions (mm) Ø x L or H x W x D	50 x 50 x 23		M18 x 95	

Sensors for DC applications

Connection		M12 - 5-pins	M12 - 8-pins	M12 - 4-pins	
Transmitter / Receiver	analogue 4-20 mA + 1 PNP/NPN	XUK8TAE2MM12 (4)	–		XU2M18AP20D (2)
	analogue 0 - 10 V + 1 PNP/NPN	XUK8TAE1MM12 (4)	–		–
	analogue 4-20mA + 2 PNP/NPN	–	XUK9TAH2MM12	–	
	analogue 4-20mA	–		XU5M18AB20D	–
Supply voltage limits, min./max. (V) including ripple		18…30		10…30	
Switching capacity, max (mA) / Switching frequency (Hz)		100 / 500	100 / 100	20 / 20	100 / 30
Short-circuit protect. (★) / LED output state indicator (⊗)		★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗

(1) with reflector XUZC250 to be ordered separately. (2) on white and grey object 0,2 … 6m, on black object 0,2 … 2,5m (3) 2 PNP outputs. (4) ECOLAB certified.



Laser
classe II

Application	F G		H
System	**Diffuse, Analogue 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	85 mm
Sensitivity adjustment	potentiometer		No
Case P (plastic) / Setting-up assistance LEDs ⊗	P / ⊗		Aluminium tube / ⊗
Temperature range (°C)	0…+ 45°		- 10...+ 55
Product certification	CE, cULus		CE, cCSAus
Dimensions (mm) H x I x L	50 x 17 x 50		Tube Ø 12 , variable length from 200 to 900 mm (example 474 mm)

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

Connection	par connector M12	par connector M12	Remote M12 connector
Transmitter / Receiver 0…10 V	XUYPCO925L1ANSP	XUYPCO925L3ANSP	XUY474NB4H03M12
Supply voltage limits, min./max. (V) including ripple	18…28		18…30
Switching capacity, max	3 mA / Analogue output 0…10 V	3 mA / Analogue output 04…20 mA	100 mA
Switching frequency (Hz)	40		1000
Short-circuit protect. (★) / LED output state indicator (⊗)	★ / ⊗		★ / ⊗

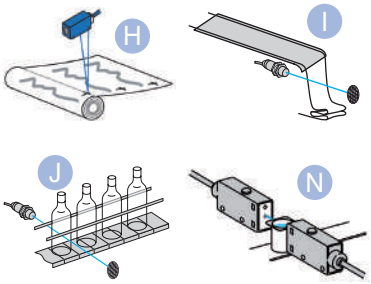
Accessories

Suitable female PUR pre-wired plug-in connectors (1)							Female connectors		Fixing for XUE
	M8 Straight	M12 Straight	M8 Elbowed	M12 Elbowed	5-pins M12	8-pins M12	M12 (5-pins)		
2 m	XZCP0941L2	XZCP1141L2	XZCP1041L2	XZCP1241L2	XZCPV11V12L2	XZCP29P12L2	Straight	XZCC12FCM50B	For compact
5 m	XZCP0941L5	XZCP1141L5	XZCP1041L5	XZCP1241L5	XZCPV11V12L5	XZCP29P12L5	Elbowed	XZCC12FDM50B	XUZA618

(1) For PVC cable see page 47

XU Photo-electric sensors - Application

Packaging series



Application	H Contrast sensors	
System	**Diffuse** (with Teach mode)	**Diffuse** (with Teach mode)
Sensing distance	19 mm	9 mm (2)
Fixings (mm)	direct: fixing centres 40x40	direct : 21 x 28 vis M5
Sensitivity adjustment	Teach button	
Case M (metal) P (plastic) / Setting-up assistance LEDs ⊗	P / ⊗	M / ⊗
Temperature range (°C) / Degree of protection (conforming to IEC 60529)	- 10…+ 55 / IP65	- 10…+ 55 / IP67
Product certification	CE, cULus	CE
Dimensions (mm) Ø x L or H x W x D	50 x 50 x 15	96 x 64 x 31

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

Connection			M12 connector	
Transmitter / Receiver	3-wires PNP	NO function	XUKR1PSMM12	–
	3-wires NPN	NO function	XUKR1NSMM12	–
	3-wires PNP / NPN	programmable NO / NC	–	XURK1KSMM12
Supply voltage limits, min./max. (V) including ripple			10…30	10…30
Switching capacity, max (mA) / Switching frequency (Hz)			100 / 5000	200 / 10000

(1) Nominal sensing distance 50 m. Use between 10 and 20 cm, depending on application.
(2) 7 mm with XURZ02; 18 mm with XURZ01.

Application	Luminescence sensors	Detection of transparent materials		
	I J	I J	I J	
System	**Diffuse** (manual)	**Reflex** (potentiometer)	**Reflex (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
Fixings (mm)	M18x1	M3 holes, fixing centers 24	M18 x 1 (5)	direct: fixing ctrs. 40 x 40
Sensitivity adjustment	potentiometer	potentiometer	Teach button	
Case M (metal) P (plastic) / Setting-up assistance LEDs ⊗	M / ⊗	P / ⊗	P / ⊗	
Temperature range (°C) / Degree of protection (conforming to IEC 60529)	- 25…+ 55 / IP67	- 25...+ 55 / IP67	0…+ 55 / IP67	- 25…+ 55 / IP65
Product certification	CE, CSA, UL	CE, cURus	CE, UL, CSA, C-TICK	
Dimensions (mm) Ø x L ou H x l x L	Ø18 x 95	33 x 20 x 11	Ø18 x 64	50 x 50 x 18

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

Connection			Pre-cabled PVC (2 m)			
Transmitter / Receiver	3-wires PNP	programmable NO / NC	–	XUMTAPCNL2	XUBTAPSNL2 (5)(6)	–
	3-wires NPN	programmable NO / NC	–	XUMTANCNL2	XUBTANSNL2 (5)(6)	–
	3-wires PNP / NPN	programmable NO / NC	–	–	–	XUKT1KSML2
Connection			M12 connector	M8 connector	M12 connector	M12 connector
Transmitter / Receiver	3-wires PNP	NO function	XU5M18U1D	–	–	–
	3-wires PNP	programmable NO / NC	–	XUMTAPCNM8 (3)	XUBTAPSNM12 (5)(6)	–
	3-wires NPN	programmable NO / NC	–	XUMTANCNM8	XUBTANSNM12 (5)(6)	–
	3-wires PNP / NPN	programmable NO / NC	–	–	–	XUKT1KSMM12
Supply voltage limits, min./max. (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

(3) also available with M12 remote connector with 0.3 m cable : replace M8 by L03M12.
(4) 0…0.8 m for versions with 90° head, to order replace the 8e digit N by W. Example XUBTAPSNL2 becomes **XUBTAPSWL2**
(5) Also available in stainless steel for food and beverage processing applications. To order, replace the letter A by S in the ref. Example: XUBTAPSNL2 becomes **XUBTSPSNL2**.
(6) ECOLAB certified.

Food/beverage processing series

Stainless steel version for resistance to harsh agents

System	Multimode (3)	Polarised reflex 50x50 mm reflector included (2)	Diffuse (2)	Thru beam (2)
Sensing distance	(4)	3 / 2 m	0,15 / 0,10 m	20 / 15 m
Fixings (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)		- 25…+ 55 / IP67	- 25…+ 55 / IP67	- 25…+ 55 / IP67
Product certification	CE, UL, CSA, C-TICK			
Dimensions (mm) Ø x L	Ø 18 x 64	Ø18 x 62	Ø18 x 62	Ø18 x 64

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

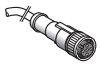
Connection			Pre-cabled PvR (2 m)			
Transmitter / Receiver	3-wires PNP	programmable NO / NC	XUB0SPSNL2	XU9N18PP341	XU5N18PP341	XU2N18PP341
	3-wires NPN	programmable NO / NC	XUB0SNSNL2	XU9N18NP341	XU5N18NP341	XU2N18NP341
Connection			par connector M12			
Transmitter / Receiver	3-wires PNP	programmable NO / NC	XUB0SPSNM12	XU9N18PP341D	XU5N18PP341D	XU2N18PP341D
	3-wires NPN	programmable NO / NC	XUB0SNSNM12	XU9N18NP341D	XU5N18NP341D	XU2N18NP341D
Thru-beam transmitter accessory		pre-cabled (2 m)	XUB0SKSNL2T	–	–	
		connector	XUB0SKSNM12T	–	–	
Supply voltage limits, min./max. (V) including ripple			10…36	10…30	10…30	
Switching capacity, max (mA) / Switching frequency (Hz)			100 / 250	100 / 500	100 / 500	

(2) Also available with 90° head. To order, add the letter W after the numbers 341 in the reference. Example: XU9N18PP341 becomes **XU9N18PP341W** or **XU9N18PP341WD**.
(3) Also available with 90° head, to order replace the 8e digit N by W. Example XUB0SPSNL2 becomes **XUB0SPSWL2**
(4) Background suppression: 0.12 m - Diffuse: 0.3 m - Reflex polarised: 3 m - Thru beam: 20 m

Accessories

Suitable female plug-in connectors, including PUR pre-wired versions (1)

L = 5 m, without LED	Wired, Elbowed	Wired, Straight	Screw terminal
M8 (ou S) 4-pins	XZCP0666L5	XZCP0566L5	XZCC8FCM30S
M12 (ou D) 4-pins	XZCP1241L5	XZCP1141L5	XZCC12FCM40B
M12 8-pins	–	XSZMCR03 (3 m)	–



(1) For PVC cable see page 47

Lenses for colour mark

Lens for 18 mm sensing distance

XURZ01

Lens for 7 mm sensing distance

XURZ02

Accessories

Pre-wired connectors

L = 5 m	Elbowed	Straight
	XZCPA1241L5	XZCPA1141L5

Ecolab reflector 50x50 (2)

XUZC50CR

Stainless steel fixing bracket

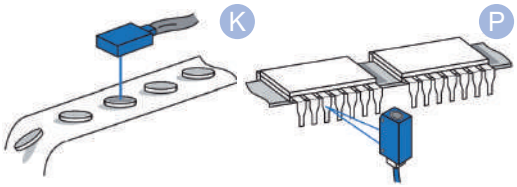
XUZA118
(for M18)

XUZA51S
(for compact)

(2) Sensing distance for XUK9S: 3m with XUZC50CR or 6m with **XUZC50**.

XU Photo-electric sensors

with background suppression

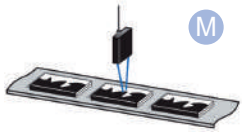


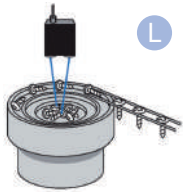
Application	K	P	K
System	Background suppression	Diffuse with Background suppression Sensing distance 1	Sensing distance 2
Sensing distance	1,5…80 mm	10…60 mm	30…110 mm
Minimum size of object	–	0,3 mm	0,7 mm
Fixing (mm)	2 x Ø 3 holes / fxg. ctrs. 14.5	direct: 2 M3 holes, fixing centres 24 mm	
Sensitivity adjustment	potentiometer	Teach mode	
Case P (plastic) / Setting-up assistance LEDs ⊗	P / ⊗	P	
Temperature range (°C) / Degree of protection (conforming to IEC 60529)	0…+50 / IP65 & IP67	- 20…+ 60°C / IP67	
Product certification	CE, cULus	CE, cULus	
Dimensions (mm) H x W x D	20 x 32 x 13	20 x 35,8 x 12	

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

Connection			M8 connector (1) - 4-pins	M8 connector- 4-pins	M8 connector- 4-pins
Transmitter / Receiver	PNP	NO function	XUYPSCO989SP	–	–
	PNP	Programmable NO / NC	–	XUYPSCO929L1SP	XUYPSCO929L2SP
Supply voltage limits, min./max. (V) including ripple			10…30	10…30	10…30
Switching capacity, max (mA) / Switching frequency (Hz)			100 / 500	100 / 1000	100 / 1000
Short-circuit protect. (★) / LED output state indicator (⊗)			★ / ⊗	★ / ⊗	★ / ⊗

(1) For 2 m pre-cabled connection delete CO from the reference. Example: XUYPS 989SP becomes **XUYPS989SP**.





Application		M L
System	Background suppression	Background suppression, 2 chnls.
Sensing distance	50…300 mm	50…600 mm
Minimum size of object	0,5 mm	–
Fixings (mm)	direct: 2 M4 holes, ctrs. 54 mm	2 x Ø 4 holes, fixing ctrs. 54
Sensitivity adjustment	potentiometer	potentiometer
Case P (plastic) / Setting-up assistance LEDs ⊗	P / ⊗	P / ⊗
Temperature range (°C) / Degree of protection (conforming to IEC 60529)	0…+ 50°C / IP65	0…+60 / IP40
Product certification	CE, cULus	
Dimensions (mm) H x W x D	60 x 60 x 18	60 x 60 x 18

Sensors for DC applications (solid-state output: transistor) Sensors with overload and short-circuit protection

Connection			M8 connector	
Transmitter / Receiver	3-wires PNP / NPN	programmable NO / NC	XUYPS1LCO965S	XUYPS2CO945S
Supply voltage limits, min./max. (V) including ripple			10…30	10…30
Switching capacity, max (mA) / Switching frequency (Hz)			100 / 5000	100 / 370

Accessories

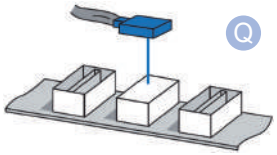
PUR Pre-wired connectors (1)

Straight

Elbowed

	M8 (4-pins)		M12 (4-pins)			7/8" (5-pins)	
	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

(1) For PVC cable see page



Application	objects on conveyors			
System	Diffuse with adjustable background suppression			
Max. / usable sensing distance	20…300 mm	0…1 m	0...5 m	2 m
Fixing (mm)	Fixing : M3 holes, fixing centers 24 mm	Direct fixing centres 40 x 40, M4 screws	2 x Ø 4.3 holes / fixing centres 30	Direct: fixing ctrs. 30/38 to 40/50/74 M5 screw
Sensitivity adjustment	potentiometer	–	Teach mode	–
Case P (plastic) / Setting-up assistance LEDs ⊗	P / ⊗	P / ⊗	P / ⊗	P / ⊗
Temperature range (°C) / Degree of protection (conforming to IEC 60529)	- 25…+ 55 / IP67	- 25…+ 55 / IP65	- 40...+ 60 / IP67 & IP69K	- 25...+ 55 / IP67
Product certification	CE, cURus	CE, UL,CSA	CE, cULus	CE, UL, CSA
Dimensions (mm) H x W x D	33 x 20 x 11	50 x 50 x 18	50 x 50 x 23	92 x 30,5 x 71

Sensors for DC applications (solid-state output: transistor). Sensors with overload and short-circuit protection

Connection			Pre-cabled	Pre-cabled PVC (2 m)		Screw terminals
Transmitter / Receiver	3-wires PNP / NPN	programmable NO / NC	–	XUK8AKSNL2	–	XUX8AKSAT16
	PNP	programmable NO / NC	XUM8APXBL2	–	–	–
	NPN	programmable NO / NC	XUM8ANXBL2	–	–	–
Connection			M8 connector	M12 connector		
Transmitter / Receiver	3-wires PNP / NPN	programmable NO / NC	–	XUK8AKSNM12	XUK8TAKSMM12 (1)	XUX8AKSAM12
	PNP	programmable NO / NC	XUM8APXBM8	–	–	–
	NPN	programmable NO / NC	XUM8ANXBM8	–	–	–
Supply voltage limits, min./max. (V) including ripple				10…36	18...30	10…36
Switching capacity, max (mA) / Switching frequency (Hz)				100 / 250	100 / 500	100 / 150

(1) also existing with 2 independant outputs: XUK8TAKDMM12 (M12 - 5-pins).

System	Diffuse with adjustable background suppression		
Sensing distance	70…120 mm	10…750 mm	2 m
Fixing (mm)	M18 x 1	Direct fixing centres 40 x 40, M4 screws	Direct: fixing ctrs. 30/38 to 40/50/74 M5 screw
Sensitivity adjustment	potentiometer	Teach mode	–
Case M (metal) P (plastic) / Setting-up assistance LEDs ⊗	M / ⊗	P / ⊗	P / ⊗
Temperature range (°C) / Degree of protection (conforming to IEC 60529)	- 25…+ 55°C / IP67	- 25…+ 55°C / IP65	- 25...+ 55 / IP67
Product certification	CE, UL, CSA	CE, UL, CSA	CE, UL, CSA
Dimensions (mm) Ø x L or H x W x D	M18 x 82	50 x 18 x 50	92 x 30,5 x 71

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

Connection			Cable L = 2m	Cable	Screw terminals
Transmitter / Receiver	AC/DC	NO function	XU8M18MA230	–	–
		Programmable NO / NC	–	XUK8ARCTL2	XUX8ARCTT16
Supply voltage limits, min./max. (V) including ripple			20…264	20…264	20…264
Switching capacity, max (mA) / Switching frequency (Hz)			200 / 25	3000 / 20	3000 / 20
Short-circuit protect. (★) / LED output state indicator (⊗)			(1) / ⊗	–	–

(1) Sensor not short-circuit protected. Therefore, it is essential to connect a 0.4 A quick-blow fuse in series with the load.

XU Photo-electric sensors, fibre optic
Amplifier

	+/- potentiometer	Teach	Teach + Timer
Max. / usable sensing distance	Depending on fibre used, plastic only		
Fixing (mm)	DIN rail or direct: fixing centres 25, M3 screws		
Sensitivity adjustment	+/- numeric potentiometer	using teach mode	+/- numeric potentiometer
Case P (plastic) / Setting-up assistance LEDs ⊗	P / ⊗	P / ⊗	P / ⊗
Temperature range (°C) / Degree of protection (conforming to IEC 60529)	0…+60 / IP65	- 10…+ 55 / IP65 (1)	0…+60 / IP65
Product certification	CE, cULus	CE, cULus, cURus	CE, cULus
Dimensions (mm) L x H x W	60 x 30 x 13	65 x 40 x 10	60 x 30 x 13

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

Connection			Pre-cabled PVC (2 m)		
References	3-wires PNP	programmable	NO / NC	–	XUDA1PSML2	–
Amplifier	3-wires NPN	programmable	NO / NC	–	XUDA1NSML2	–
Connection par connector				M8 connector - 4-pins		
References	3-wires PNP	programmable	NO / NC	–	XUDA1PSMM8	–
Amplifier	3-wires NPN	programmable	NO / NC	–	XUDA1NSMM8	–
	3-wires PNP/NPN programmable		NO / NC	XUYAFVCO966S (Glass) XUYAFPCO966S (Plastic)	– –	XUYAFVCO946S (Glass) XUYAFPCO946S (Plastic)
Supply voltage limits, min./max. (V) including ripple				10…30	10,8…26,4	10…30
Switching capacity, max (mA) / Switching frequency (Hz)				100 / 1000	100 / 1000	100 / 1000 time delayable
Short-circuit protect. (★) / LED output state indicator (⊗)				★ / ⊗	★ / ⊗	★ / ⊗

(1) IP65 with fibre Ø 1 / IP64 with fibre Ø 0,5

Ecofibre system, assemble your own plastic fibres

Fibre Ø 1 mm	Length = 10 m	Length = 20 m
References	XUFZ910	XUFZ920

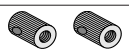
End fittings						
Sensing distance (mm)	70	200	800	1200	4000	1200
Type	with threaded end fitting	with plain end fitting Ø 3, L = 9 mm	with plain end fitting Ø 3, L = 9 mm	with threaded end fitting	with threaded end fitting	90° mirror, with threaded end fitting
Thread	M8 x 1, L = 10 mm	–	–	M6 x 1, L = 10 mm	M12 x 1, L = 25 mm	M6 x 1, L = 3 to10 mm
Lens	Yes	No	Yes	Yes	Yes	Yes
References	XUYA110	XUYA210	XUYA211	XUYA212	XUYA213	XUYA220

Accessories

For fibres plastic System Thru beam

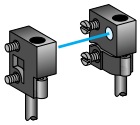
Lenses

For increasing sensing distance (pair) XUFZ01



With 90° mirror (pair) XUFZ02

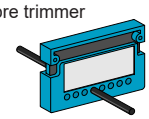
Fixing clamp with lens (set of 2)



Front screw fixing for fibre optics XUF-Z920 XUFZ04

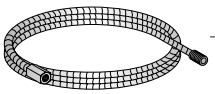
For all system plastic fibre optics

Fibre trimmer



For trimming fibres to length (included with all fibre optics) XUFZ11

Protective metal tubing



Length 1 m, for fibres with threaded end fittings

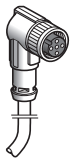
For M4 thread XUFZ210

For M6 thread XUFZ310

Plug-in PUR pre-wired female connectors (1)

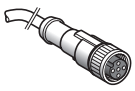
Cable length 5 m, without LED

pre-wired, elbowed



XZCP1041L5

pre-wired, straight



XZCP0941L5

(1) For PVC cable see page 47

Telemecanique Sensors

Other versions: please consult our Customer Care Centre.

Plastic fibre optic light guides (length 2 m)

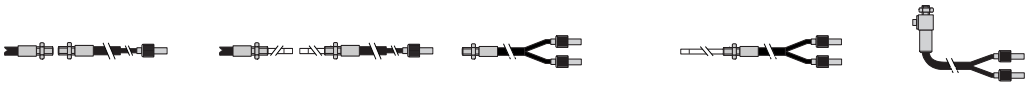
	M4 / M2,6 (1)	M4/L = 90 mm	M3 / M2,6 (1)	Long range fibres with integrated lens M8 / L = 20 mm	Long range fibres M4 / M2.6 (1)	Flexible fibres M4 / M2,6 (1)
System	Thru beam					
Sensing distance (mm)	200 ou 1500 (2)	180	50 ou 1000 (2)	2500	300 ou 2000 (2)	100 ou 750 (2)
Fibre cross-section						
Fibre Ø (mm)	Ø 1	Ø 1	Ø 0,5	Ø 1	Ø 1,5	Ø 1
Sheath Ø (mm)	Ø 2,2	Ø 2,2	Ø 1	Ø 2,2	Ø 2,2	Ø 2,2
Temperature range (°C)	- 25...+ 60	- 25...+ 60	- 25...+ 60	- 25...+ 60	- 25...+ 60	- 25...+ 60
References	XUFN12301	XUFN12311	XUFN35301	XUFN2L01L2	XUFN2P01L2	XUFN2S01L2
Fixings	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 preceding page).
(2) With lens accessory XUFZ01 (see preceding page).

	M6	M4 / M6	M6/L = 90 mm	M4 / M2,6
System	Diffuse			
Sensing distance (mm)	70	60	60	15
Fibre cross-section				
Fibre Ø (mm)	Ø 1	Ø1+16 Ø 0,265	Ø 1	Ø 0,5 + 4 Ø 0,23
Sheath Ø (mm)	Ø 2,2 x 2	Ø 2,2 x 2	Ø 2,2 x 2	Ø 1 x 2
Temperature range (°C)	- 25...+ 60	- 25...+ 60	- 25...+ 60	- 25...+ 60
References	XUFN05321	XUFN05323	XUFN05331	XUFN02323
Fixings	M6 x 0,75	M6 x 0,75 / M4 x 0,7	M6 x 0,75	M4 x 0,7

	M4/L = 90 mm	M4 / M2,6	Long range fibres M6 / L = 15 mm
System	Diffuse		
Sensing distance (mm)	18	18	95
Fibre cross-section			
Fibre Ø (mm)	Ø 0,5	Ø 0,5	Ø 1,5
Sheath Ø (mm)	Ø 1 x 2	Ø 1 x 2	Ø 2,2 x 2
Temperature range (°C)	- 25...+ 60	- 25...+ 60	- 25...+ 60
References	XUFN01331	XUFN01321	XUFN5P01L2
Fixings	M4 x 0,7	M4 x 0,7	M6 x 0,75

Glass fibre optic light guides (length 0.6 m)



		M4	M4 / Ø 2,5 x 89	M4	M4 / Ø 2,5 x 89	M4
System		Thru beam		Diffuse		
Sensing distance (mm)		200		80		
Fibre cross-section						
End fitting		Straight	Adaptable	Straight	Adaptable	90°
Fibre Ø (mm)		1		1		
Sheath Ø (mm)		2,2		2,2		
Temperature range (°C)		PVC sheath : - 25…+ 60°C / Metal wound : - 25…+ 120°C / Flexible (stainless steel) : - 25…+ 200°C				
References	PVC sheath	XUYFVERSD61	–	XUYFVPSD61	XUYFVPSC61	XUYFVPSL61
	Metal wound	XUYFVERMD61	XUYFVERMC61	XUYFVPMD61	XUYFVPMC61	XUYFVPML61
	Flexible stnl.steel	XUYFVERTD61	–	XUYFVPTD61	XUYFVPTC61	XUYFVPTL61

XX Ultrasonic sensors

Detection of any material

		M12	M18	M18 software-configurable
Nominal sensing distance Sn	Mode proximity or reflex	5 ou 10 cm depending on model	15 ou 50 cm depending on model	–
	Mode Thru beam	20 cm	61 ou 100 cm depending on model	–
	Window or proximity or reflex or pump	–	–	1m
Operating zone for proximity mode		0,64…5,1 cm (XX512A1…) 0,64…10,2 cm (XX512A2…)	1,9…15,2 cm (XX518A1…) 5,1…50,8 cm (XX518A3…)	0,105...1m
Sensitivity adjustment		Fixed	Adjustable using remote control for XX518 A3. Fixe for XX518A1, XXT18, XXR18	adjustable usign teach button or software
Case M (metal), P (plastic)		P	P	P or M
Product certification		CE, UL		CE, UL, ECOLAB, E2
Temperature range (°C)		- 20…+ 65	0…+ 50 (XX518A1…) / - 20…+ 65 (XX518A3…) / 0... 60 (XXT18, XXR18)	-25...+70
Degree of protection (conforming to IEC 60529)		IP67		
Dimensions (mm) Ø x L		M12 x 50	M18 x 65	M18 x 52

"Discrete" output for DC applications (24 V)

Connection			M8 connector	M12 connector	M12 connector
3-wires	PNP	NO function NO or NC	XX512A2PAM8 (10 cm)	XX518A3PAM12 (50 cm)	XX•18•1PM12 (4)
	NPN	NO function	XX512A2NAM8 (10 cm)	XX518A3NAM12 (50 cm)	–
4-wires	PNP/NPN	NO function	XX512A1KAM8 (5 cm)	XX518A1KAM12 (15 cm)	–
Application - monitoring levels					
	2 emptying levels	PNP NO function	–	XX218A3PHM12 (50 cm) (2)	–
	2 filling levels	PNP NO function	–	XX218A3PFM12 (50 cm) (2)	–
Supply voltage limits, min./max. (V) including ripple			10...28		10...30
Switching capacity, max (mA)			<100		
Short-circuit protection (★)			★		
LED output state indicator (⊗)			⊗		
Voltage drop, closed state (V) at I nominal			<1		<2
Switching frequency (Hz)			125	40/80 (XX518A1...)	11
Transmission frequency (kHz)			500		200

(1) Reflex mode only for sensor with adjustable sensitivity. (2) 1 NO (3) Brass metal versions and SS316L are also available

(4) XX|A|18|P|1PM12 — |S| |S| |B|

XXS•• = straight version
XXA•• = angled version

XX•30•P = plastic
XX•30•S = stainless steel
XX•30•B = brass

"Analogue" output for DC applications (24 V)

Connection			M12 connector		
4-wires	Analogue	0…10 V output	–	XX918A3F1M12 (50 cm)	XX•18•1VM12 (4)
		4…20 mA output	–	XX918A3C2M12 (50 cm)	XX•18•1AM12 (4)
Supply voltage limits, min./max. (V) including ripple			–	10…28	10...30 (4...20mA) 14...30 (0...10V)
Short-circuit protection (★)			–	★	★
LED output state indicator (⊗)			–	⊗	⊗
Transmission frequency (kHz)			–	300	200

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

Connection		M8 connector	M12 connector	M12 connector
4-wires	Receiver (NO/PNP + NO NPN)	XXR12A8KAM8	XXR18A3KAM12 (0,61 m) XXR18A4KAM12 (1 m)	–
	Receiver (NC/PNP + NC NPN)	XXR12A8KBM8	XXR18A3KBM12 (0,61 m) XXR18A4KBM12 (1 m)	–
	Transmitter	XXT12A8M8	XXT18A3M12 (0,61 m) XXT18A4M12 (1 m)	–

Accessories

See page 45 for progamming and connectors, and page 46 for fixing

Other versions: please consult our Customer Care Centre.

XX Ultrasonic sensors

Detection of any material

		M30 software-configurable				D54 Wide beam
Nominal sensing distance Sn	Mode proximity or reflex (1)	–	–	–	8m	3m (2)
	Window or proxiity or reflex or pump	1m	2m	4m		
Operating zone for proximity mode		0,155...1m (M) 0,105...1m (P)	0,155...2m	0,420...4m	0,3...8 m	0,425...4m
Sensitivity adjustment		using teach button or software			Integrated push button	Software
Case M (metal), P (plastic)		M or P			P	P
Product certification		CE, cULus, ECOLAB			CE, cULus, ECOLAB, E2	CE, cULus, E2
Temperature range (°C)		-25...+70			-25...+70	-40...+70
Degree of protection (conforming to IEC 60529)		IP67			IP65 and IP67	IP67 and IP69K
Dimensions (mm) Ø x L		M30 x 88.25	M30 x 52 (1m plastic only)		M30 x 106	54 x 79 x 32.5

"Discrete" output for DC applications (24 V)

Connection			M12 connector				
4-wires	PNP	NO or NC programmable	XX•30•1PM12 (3)	XX•30•2PM12 (3)	XXS30•4PM12 (3)	–	–
	2 x PNP	NO or NC programmable	–	–	–	XXS30P8PPM12	–
	2 x NPN	NO or NC programmable	–	–	–	XXS30P8NNM12	–
Supply voltage limits, min./max. (V) including ripple			10...30			10...30	
Switching capacity, max (mA)			<100				
Short-circuit protection (★)			★				
LED output state indicator (⊗)			⊗				
Voltage drop, closed state (V) at I nominal			<2				
Switching frequency (Hz)			11	5.5	2.7	2	
Transmission frequency (kHz)			120		80	75	

(1) Reflex mode only for sensor with adjustable sensitivity. (2) 3m by default as factory setting

Proximity mode with "Analogue" output for DC applications (24 V)

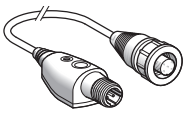
Connection							
4-wires	Analogue	Output 0…10 V	XX•30•1VM12 (3)	XX•30•2VM12 (3)	XXS30•4VM12 (3)	XXS30P8VPM12	–
		Output 0.5...4.5 V	–	–	–	–	XXW54P3HP01DM6
		Output 4…20 mA	XX•30•1AM12 (3)	XX•30•2AM12 (3)	XXS30•4AM12 (3)	XXS30P8APM12	XXW54P3AP01DM6
Supply voltage limits, min./max. (V) including ripple			10...30 (4...20mA)	14...30 (0...10V)			9...32
Short-circuit protection (★)			★				
LED output state indicator (⊗)			⊗				
Transmission frequency (kHz)			120		80	75	48

(3) XX|A|30|P|1PM12 XXS•• = straight version XX•30•P = plastic
|S| |S| XXA•• = angled version XX•30•S = stainless steel
|B| XX•30•B = brass

Accessories

Programming

Remote control
teach button for use with sensors XX•18A3•••, XX•V1•••, XX•V••• XXS•••, XXA•••



XXZPB100

XX Software
XXZBOXO1
Configuration interface
XXZKIT01
Configuration Kit

Jumper for
XXW54
XXZKITDM6

Suitable female plug-in connectors

		PUR Pre-wired connectors (4) Elbowed	PUR Pre-wired connectors (4) Straight	Other connectors Screw terminal
L = 5m (without LED)				
M 8	for XX512A1…	XZCP1041L5	XZCP0941L5	XZCC8FCM40V
	for XX512A2…	XZCP0666L5	XZCP0566L5	XZCC8FCM30V
M 12	for all sensors except XX512…)	XZCP1241L5	XZCP1141L5	XZCC12FCM40B

(4) For PVC cable see page 47

For fixing see page 46

XX Ultrasonic sensors

Detection of any material

		Mini flat	Flat	Combined multi-fixing	Flat 80 x 80
Nominal sensing distance Sn	Mode proximity or reflex (1)	10 cm	25 cm	50 cm	1 m
	Mode Thru beam	20 cm	61 ou 100 cm conforming to model	–	–
Operating zone for proximity mode		0,62…10,2 cm –	5,1…25,4 cm –	5,1…50,8 cm –	0.,1…1 m –
Sensitivity adjustment		Fixed		Adjustable using remote control	
Case P (plastic)		P			
Product certification		CE, UL			
Temperature range (°C)		- 20…+ 65	0…+ 50	- 20…+ 65	0...+ 70
Degree of protection (conforming to IEC 60529)		IP67			
Dimensions (mm) Ø x L or H x W x D		33 x 19 x 7,6	74 x 30 x 16	M 18 / 18 x 33 x 60	80 x 80 x 34

Proximity or Reflex (1) mode with “Discrete” output for DC applications (24 V)

Connection			M12 on 0.15 m flying lead 0,15m	M12		
3-wires	PNP	NO function	XX7F1A2PAL01M12	XX7K1A2PAM12	XX7V1A1PAM12	XX8D1A1PAM12
	NPN	NO function	XX7F1A2NAL01M12	–	XX7V1A1NAM12	XX8D1A1NAM12
Supply voltage limits, min./max. (V) including ripple			10…28			
Switching capacity, max (mA)			<100			
Short-circuit protection (★)			★			
LED output state indicator (⊗)			⊗			
Voltage drop, closed state (V) at I nominal			<1			
Switching frequency (Hz)			100	80	40	70
Transmission frequency (kHz)			500	500	300	180

(1) Reflex mode only for sensor with adjustable sensitivity.

Proximity mode with “Analogue” output for DC applications (24 V)

Connection by connector			–		M12	
4-wires	Analogue	0…10 V output	–	–	XX9V1A1F1M12	XX9D1A1F1M12
		4…20 m A output	–	–	XX9V1A1C2M12	XX9D1A1C2M12
Supply voltage limits, min./max. (V) including ripple			–		10…28	
Short-circuit protection (★)			–		★	
LED output state indicator (⊗)			–		⊗	
Transmission frequency (kHz)			–		300	180

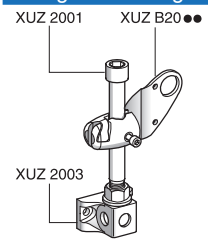
Thru beam mode with “Discrete” output for DC applications (24 V)

Connection by connector		–			
4-wires	Receiver (NO/PNP + NO/NPN)	XXRF1A8KAM12L	XXRK1A3KAM12 (0,61m) XXRK1A4KAM12 (1m)	–	–
	Receiver (NC/PNP + NC/NPN)	–	XXRK1A3KBM12 (0,61m)	–	–
	Transmitter	XXTF1A8M12L	XXTK1A3M12 (0,61m) XXTK1A4M12 (1m)	–	–

Accessories

Fixings - 3D fixings with ball joint

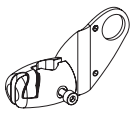
XUZ 2001 XUZ B20●●



XUZ 2003

3D kit example

Bracket with ball joint for cylindrical sensors

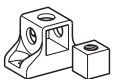


for	
Ø 12	XUZB2012
Ø 18	XUZB2003
Ø 30	XUZB2030

M12 rod for ball joint

XUZ2001

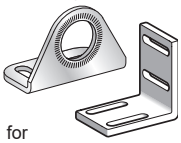
Fixing support for M12 rod



XUZ2003

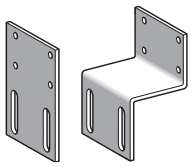
Simple fixings

90° fixing brackets



for	
Ø 12	XXZ12
Ø 18	XUZA118
Ø 30	XXZ30
XX7F	XXZ1933

Mounting plates for XX7K



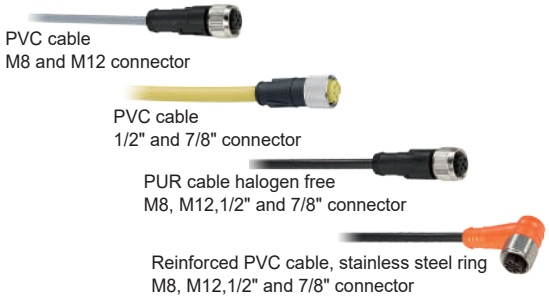
flat	XXZ3074F
cranked	XXZ3074S

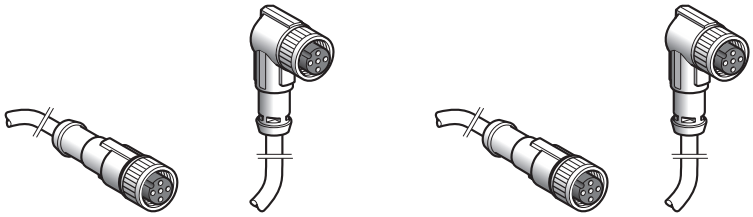
See page 45 for progamming and connectors

Other versions: please consult our Customer Care Centre.

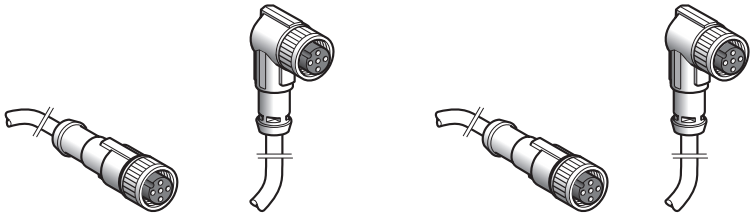
XZ Cabling system

Pre-wired female connectors

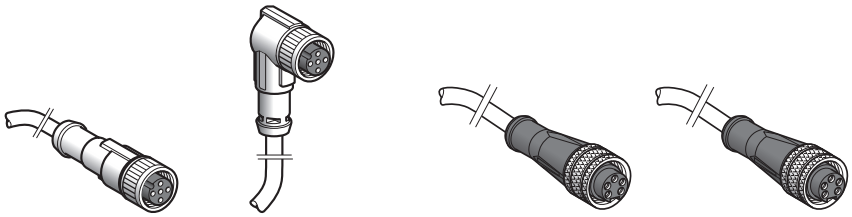




Connector Size		M8			
		Straight 3-pins	Elbowed 3-pins	Straight 4-pins	Elbowed 4-pins
References	PVC cable	XZCPV0566Lp	XZCPV0666Lp	XZCPV0941Lp	XZCPV1041Lp
	PUR cable	XZCP0566Lp	XZCP0666Lp	XZCP0941Lp	XZCP1041Lp
	PVC cable IP69K	XZCPA0566Lp	–	XZCPA0941Lp	–

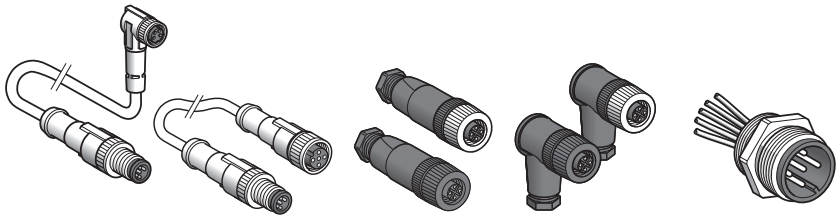


Connector Size		M12			
		Straight 4-pins	Elbowed 4-pins	Straight 5-pins	Elbowed 5-pins
References	PVC cable	XZCPV1141Lp	XZCPV1241Lp	XZCPV1164Lp	XZCPV1264Lp
	PUR cable	XZCP1141Lp	XZCP1241Lp	XZCP1164Lp	XZCP1264Lp
	PVC cable IP69K	XZCPA1141Lp	XZCPA1241Lp	XZCPA1164Lp	–



Connector Size		1/2"		7/8"	
		Straight 3-pins	Elbowed 3-pins	Straight 3-pins	Straight 5-pins
References	PVC cable	XZCPV1865Lp	XZCPV1965Lp	XZCPV1670Lp	–
	PUR cable	XZCP1865Lp	XZCP1965Lp	XZCP1670Lp	XZCP1764Lp
	PVC cable IP69K	XZCPA1865Lp	XZCPA1965Lp	–	–

Complete each reference by adding the length of cable, as 2 for 2 m, 5 for 5 m and 10 for 10 m,
Eg: XZCPV1141L2 is pre-wired connector M12 connectors with 4 contacts and 2 m PVC cable



Other accessories	Jumpers	Connector	Receptacle
References	XZCR...	XZCC...	XZCE...

XG Radio frequency identification
13.56 MHz RFID

Presentation
XG RFID is open to the majority of ISO 18000-3, ISO 15693 and ISO 14443 electronic tags.
XG RFID integrates Modbus RTU, Uni-Telway, Modbus TCP/IP (using Ethernet box XGSZ33ETH) and Profibus DP (with box XGSZ33PDP) protocols.
The XG RFID offer comprises:
- 3 models of 13.56 MHz smart antenna (read/write)
- 12 models of 13.56 MHz electronic tags
- 1 portable RFID diagnostics terminal
- 3 models of network connection boxes plus connection and mounting accessories.

Setting-up
XG RFID smart antenna are simple to set-up:
- Integrated RFID and network Function
- No programming
- Automatic detection of the RFID electronic tags (read or write)
- Automatic setting of the communication parameters (speed, format, parity, protocol, etc.)
- Configuration of the network address (1 to 15) using badge included with the smart antenna
- Low sensitivity to metal environments.

Installation
The XG smart antenna easily integrate in flexible manufacturing production lines:
- quick connection using M12 connector
- screw fixing or clip-on mounting.

Smart antenna,13,56 MHz		Flat form 40	Flat form 80	
Dimensions (mm), W x H x D		40 x 40 x 15	80 x 80 x 26	
Nominal sensing distance depending on tag (mm)		18 to 70	20 to 100	
Type of associated tag		ISO 15693 and ISO 14443 standard tags. Automatic detection of the type of tag.		
Display		dual colour LED for the communication network, dual colour LED for the 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 et Uni-Telway		MODBUS TCP/IP et EtherNet/IP
	Speed (Bauds)	9600…115 200 (automatic detection)		10/100MB
Ambient air temperature (°C)		For functionnement : - 25…+ 70 °C, for stockage : - 40…+ 85 °C		
Nominal Supply voltage		24 VDC TBTP (Protective Extra Low Voltage)		
Connection		M12, 5-pins male, shielded connector on flying lead. Only for connection to the communication network and the supply		M12 (Ethernet) - M8 4-pins (Supply voltage)
References		XGCS4901201	XGCS8901201	XGCS850C201

Electronic tags		Format flat 40		Badge ISO (1)	Disque (3)	Format flat 26	Cylindrical
Dimensions (mm), W x H x D		40 x 40 x 15		54 x 85,5 x 0,8	Ø 30 x 3	26 x 26 x 13	M18 x 1 x 12
Type of memory		EEPROM	FRAM	EEPROM			
Memory capacity (bytes)		3 408	32 768	256	112	256	256
Nominal sensing distance (Read/Write)	With station XGCS49.	33	25	70	48	40	18
	With station XGCS89.	48	39	100	65	55	20
Time (ms)	Read	9,25 + 0,375 x n (2)	6 + 0,25 x n (2)	12 + 0,825 x n (2)			
	Write	13 + 0,8 x n (2)	6 + 0,25 x n (2)	20 + 11,8 x n (2)	12 + 5,6 x n (2)	20 + 11,8 x n (2)	19 + 4,1 x n (2)
Degree of protection conforming to IEC 60529		IP68		IP65		IP68	
Standard supported		ISO 14443		ISO 15693			
Mounting on metal support		Yes		No		Yes	No
References		XGHB444345	XGHB443245	XGHB90E340	XGHB320345	XGHB221346	XGHB211345

(1) Customised versions on request. (2) n = number of 16-bit words. (3) Also exists in diameter 50.

Other versions: please consult our Customer Care Centre.

Connection boxes	Ethernet Modbus TCP/IP box	Profibus box	EtherNet/IP box
Dimensions (mm), W x H x D	130 x 80 x 51	130 x 80 x 51	130 x 80 x 51
Protocols	Modbus TCP/IP	Profibus DP	EtherNet/IP
Supply voltage	24 VDC PELV. M12, 4-pins male, A coding, connector		
Conformity to standards	CE, UL	CE	CE
Station connection	M12, 5-pins female, A coding, connector		
Degree of protection conforming to IEC 60529	IP65		
References	XGSZ33ETH	XGSZ33PDP	XGSZ33EIP

Terminal		Portable 13.56 MHz RFID diagnostics terminal
Dimensions (mm), W x H x P		78 x 153 x 27
Function		Read/Write operations on electronic tags
Operating system		Proprietary OS
Conformity to standards		CE, FCC classe A, Part 15
Display		53 x 95 mm colour OLED touchscreen 272 x 480 pixels resolution
Degree of protection conforming to IEC 60529		IP 40
Memory	RAM	256 Mb
	Storage	internal 2 GB + USB socket for memory stick
Reference		XGST2422 (battery, battery charger, 2 GB USB memory stick, and carrying case included with terminal). RFID reader to be ordered separately: XGCS4901201 (integrated reader) or XGW4F111 (remote reader)

Connection accessories	for Modbus network		for Ethernet	Pre-wired connector		"T" connector
Description	Modbus connecting cable M12 connectors Male / Female	Pre-wired connector M12 male / Bare wires	Ethernet connecting cable M12 male / RJ 45	Pre-wired supply connector M8 female	Pre-wired supply connector M12 female	Network M12 "T" connector 1 male / 2 female
Application	RS485 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 an Ethernet box and the Ethernet network	24 VDC supply to Ethernet smart antenna XGCS850C201	24 VDC supply to connection boxes	For chaining of smart antennas on RS485 network
L = 2 m	TCSMCN1M1F2	TCSMCN1F2	XGSZ12E4503 (1)	XZCP0941L5 (3)	XGSZ09L2	TCSCTN011M11F
L = 5 m	TCSMCN1M1F5	TCSMCN1F5	XGSZ12E4510 (2)	XZCP0941L2 (4)	XGSZ09L5	

(1) L = 3 m (2) L = 10 m (3) L = 5 m (4) L =2 m

Field expander

To be associated with a smart antenna XGCS4901201 for conveying and handling applications

50 x 400 mm
XGFEC540

250 x 250 mm
XGFEC2525

RS232/RS485 converter

For connecting a PC to an XG RFID smart antenna

XGSZ24

XG Radio frequency identification

RFID 13,56 MHz, Fixing Ø 22 mm

RFID Stations 13,56 MHZ, Fixing Ø 22 mm		Compact station for panel fixing (1)	Compact station for panel fixing with indicator light (1)	Standalone compact station for panel fixing (2)
Dimensions (mm) W x H x D		40 x 40 x 40		
Nominal sensing distance depending on tag (mm)		20 to 70		
Type of associated tag		ISO 15693 to ISO 14443 standard tags. Automatic detection of the type tag.		
Interface	Physical interface	RS485		PNP discrete output 300 mA protected against short-circuits and overloads
	Protocol	Modbus RTU		-
Display	For informing the operator		2 LEDs (7 selectable colors) driven by Modbus requests	
	For the communication	1 dual color LED (Modbus network activity)		1 dual color LED (output/status)
Conformity to standards		EN 301489-1, EN 301489-3, EN 300330-1 et EN 300330-2		
Degree of protection conforming to IEC 60529		IP 65	IP 69K (face) - IP 65 (back)	IP 65
Ambient air temperature (°C)		For function : - 25…+ 70 °C, for storage : - 40…+ 85 °C		For function : - 40…+ 70 °C, for storage : - 40…+ 85 °C
Nominal Supply voltage		24 TBTP (Protective Extra Low Voltage)		
Connection		1 connector M12 male, 5-pins		
References		XGCS490B201	XGCS49LB201	XGCS491B201

(1) Delivered with a fixing nut and a configuration badge for the network address.

(2) Delivered with a fixing nut - Configuration kit of badges for access control setup ref. **XGSZCNFAC** to order separately

Electronic tags		EEPROM type memory tag	ISO RFID card	ISO RFID card
Dimensions (mm) W x H x D		40 x 31 x 4,8	54 x 85.5 x 1	
Type of memory		EEPROM		
Memory capacity (bytes)		736	256	736
Nominal sensing distance (Read/Write)	With compact stations, Fixing Ø 22 mm	30 mm	70 mm	30 mm
Degree of protection		IP67	IP65	IP65
Supported standard		ISO 14443	ISO 15693	ISO 14443
Order by multiples of		10		25
Reference		XGHBPB3345	XGHB90E340	XGHB90E341

XIOT Cloud Connected Sensors

New

The groundbreaking Cloud-Connected Sensor technology from Telemecanique Sensors enables real-time remote monitoring from anywhere you can receive a signal!

1. The XIOT captures the event information at your remote locations

Whether you are monitoring the pressure threshold of an irrigation system, the emergency stop trigger on a long distance conveyor chain, or the opening of a lock on a secure gate or other industrial application, the information about the event is captured by the XIOT Cloud Connected Sensor.

2. Data and alerts are sent to the internet cloud

The information recorded by the sensor is sent to the internet cloud. This "smart alert" can then be immediately forwarded to any mobile device or platform anywhere you can receive a signal!

3. You receive the information on your computer or phone

In real time, from the convenience of your phone or other mobile device, you can get an overview of all your connected sensors and get alerts if there are any status changes on your installed base. These real time alarms, historical data, and data analytics about your connected assets are all available to multiple users through a secure, Cloud-Connected Sensor Application. The immediate information and data analysis provided by the Cloud Connected Sensors app help reduce operational downtime!

It's smart information at your fingertips!

Three options to choose from

Description	Transmitter only XIOT11SE0MRCL	Prepaid 5-year access to cloud XIOT11SE5MRCL	Subscription services (1) XIOT11SERMRCL
1 standalone transmitter Activation magnet Instruction sheet	✓	✓	✓
5-year subscription to Sigfox LPWAN (2)	-	✓	-
Web interface to configure and display data	-	✓	✓
Smartphone apps for alert notifications (IOS and Android)	-	✓	✓
Connection to Telemecanique Sensors secure servers via external SCADA system for data processing	-	-	✓

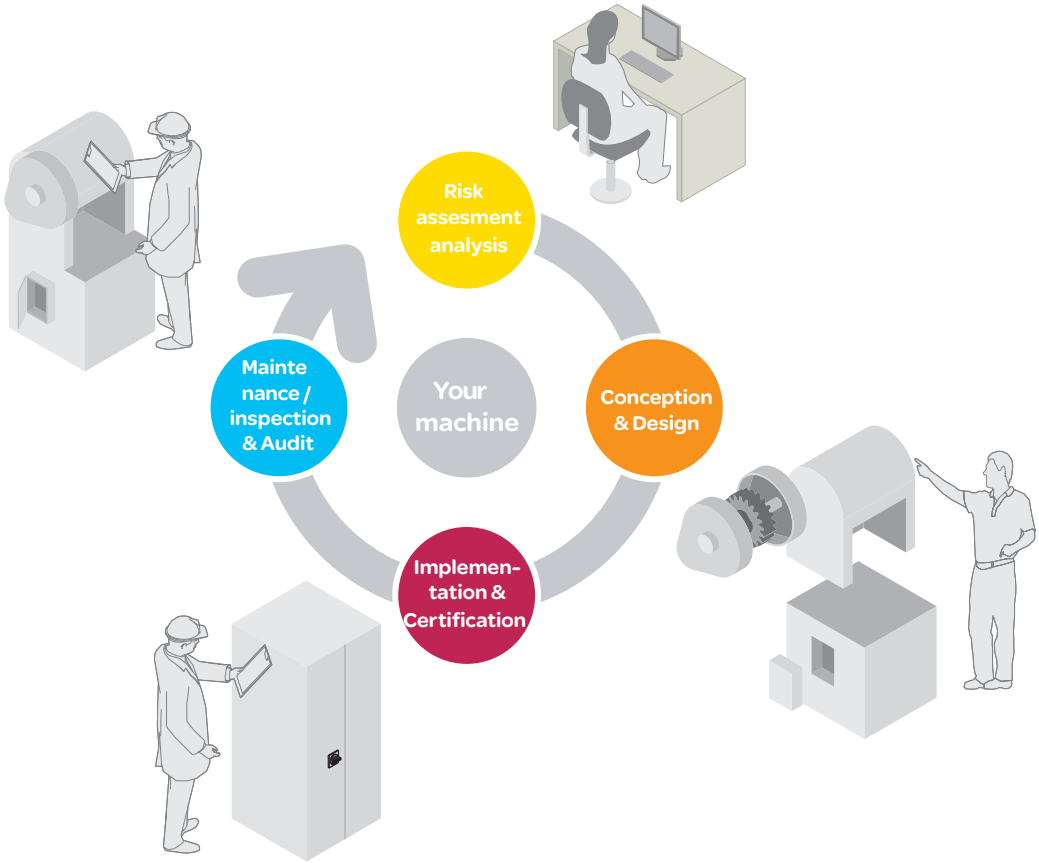
(1) Pricing and terms and conditions available on the online payment site: https://godigital.schneider-electric.com/smp/home/home-page

(2) LPWAN: Low power wide area network

Telemecanique Sensors safety products for your machine's entire life cycle

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

In addition to moral obligation and economic consequences, the law requires that machinery is safe in regard to accident prevention. Telemecanique Sensors offers an extensive range of safety products, compliant with international standards, designed to provide the most comprehensive protection for personnel and equipment.



> New machines - the Machinery Directive

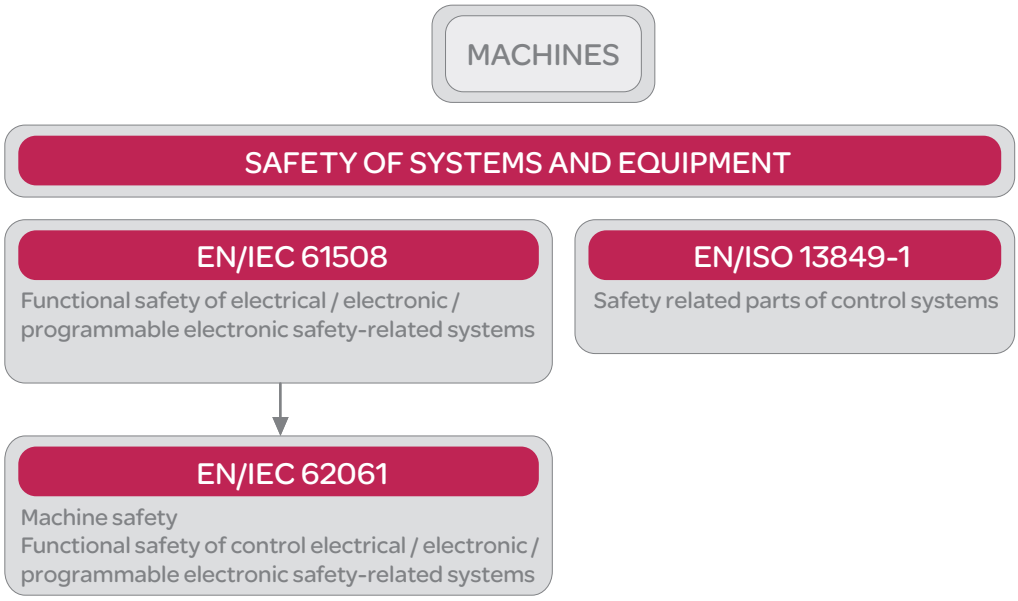
The previous Machinery Directive 98/37/EC was elaborated to help manufacturers ensuring a minimum safety level for machinery and equipment sold within the EU (European Union).

From 29 December 2009 on, the new European Machinery Directive 2006/42/EC is effective. Machines must comply with the Essential Health and Safety Requirements (EHSRs) listed in Annex I of the Directive, thus setting a common minimum level of protection across the EEA (European Economic Area).

Machine manufacturers, or their authorised representatives within the EU, must ensure that the machine is compliant with all requirements from this Directive. This technical file is available to reinforce authorities requests as well as the CE marking must be affixed and a Declaration of Conformity has been signed before the machine may be placed on the market within the EU.

Functional safety :

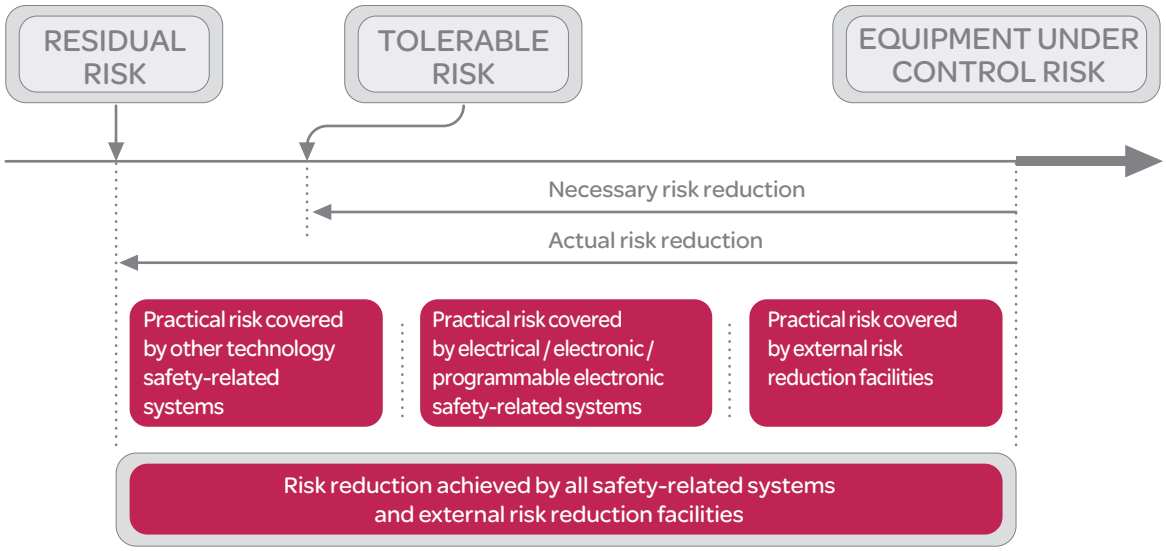
> Safety integrity level (SIL), Performance level (PL)



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

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

* Electric / Electronic / Programmable electronic



Functional safety of machinery

> Approach according to EN/IEC 62061

Risk estimation for SIL assignment

Risk related to the identified hazard = Severity of the possible harm + Frequency and duration of exposure (Fr) / Probability of occurrence of a hazardous event (Pr) / Probability of avoiding or limiting harm (Av) ▶ Probability of occurrence of that harm

Example of SIL assignment

This assignment should be carried by determining the risk parameters that are shown below in an example.

Consequences	Severity (Se)
Irreversible: death, losing an eye or arm	4
Irreversible: broken limb(s), losing a finger(s)	3
Reversible: requiring attention from a medical practitioner	2
Reversible: requiring first aid	1

Frequency and duration of exposure (Fr)	
Frequency of exposure	> 10 min
1 h	5
> 1 h to 1 day	5
> 1 day to 2 weeks	4
> 2 weeks to 1 year	3
> 1 year	2

Probability of occurrence	Probability (Pr)
Very high	5
Likely	4
Possible	3
Rarely	2
Negligible	1

Probability of avoiding or limiting harm (Av)	
Impossible	5
Rarely	3
Probable	1

Serial no.	Hazard	Se	Fr	Pr	Av	CI
1	Hazard X	4	5 +	4 +	3 =	12
2						

Consequences	(Se)	Classe CI 3-4	5-7	8-10	11-13	14-15	Frequency and duration Fr		Probability of hzd. Event Pr		Avoidance Av	
Death, losing an eye or arm	4	SIL 2	SIL 2	SIL 2	SIL 3	SIL 3	<= 1 hour	5	Common	5		
Permanent, losing fingers	3		OM	SIL 1	SIL 2	SIL 3	> 1 h to <= 1 day	5	Likely	4		
Reversible, medical attention	2			OM	SIL 1	SIL 2	> 1 day to <= 2 wks	4	Possible	3	Impossible	5
Reversible, first aid	1				OM	SIL 1	2 wks to <= 1 year	3	Rarely	2	Possible	3
							> 1 year	2	Negligible	1	Likely	1

In this example the SIL 3 must be achieved by the safety-related control function intended to reduce the risk related to the identified hazard.

Determination of the SIL level achieved by the Safety-related control function (SRCF)

According to standard EN/IEC 62061 for each safety related control function, the SIL level is linked to:
- a target failure value for the probability of dangerous failure by hour of the SRCF: PFH_D
- architectural constraints (hardware fault tolerance, diagnosis)
- a set of requirements related to the lifecycle of the safety related electrical control system

Safety integrity level (SIL)	Probability of a dangerous Failure per Hour PFH_D
3	$>10^{-8}$ to $<10^{-7}$
2	$>10^{-7}$ to $<10^{-6}$
1	$>10^{-6}$ to $<10^{-5}$

λ_s = rate of safe failures,
λ_{dd} = rate of detected dangerous failures,
λ_{du} = rate of undetected dangerous failures
$\lambda_d = \lambda_{dd} + \lambda_{du}$

In practice, detected dangerous failure are dealt with by fault

- The rate of failures λ can be expressed as follows: $\lambda = \lambda_s + \lambda_{dd} + \lambda_{du}$
- The calculation of the PFH_D for a system or subsystem depends on several parameters:
  - the dangerous failure rate (λ_d) of the subsystem elements
  - the fault tolerance (e.g. redundancy) of the system
  - the diagnostic test interval (T2)
  - the proof test interval (T1) or lifetime whichever is smaller
  - the susceptibility to common cause failures (β)
- For each of the four different logical architectures A to D there is a different formula to calculate the PFH_D. (see EN/IEC 62061)
- For a simple system without redundancy and without diagnostic: $PFH_D = \lambda_d \times 1/h$

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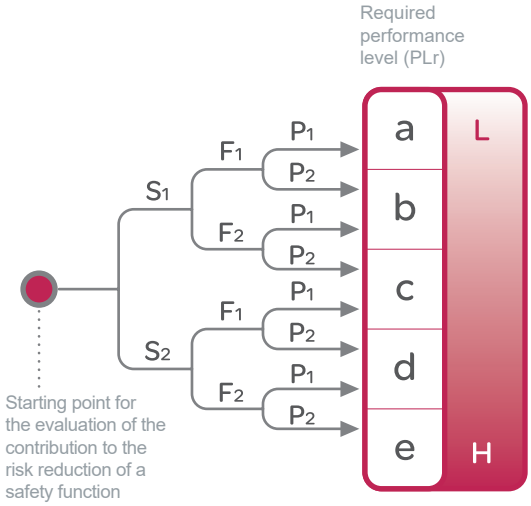
Other versions: please consult our Customer Care Centre.

> Approach according to EN/ISO 13849-1

Determination of the Performance Level requested (PLr)

Done using the risk graphic opposite

S = Severity of injury
S1 = Slight (normally reversible injury)
S2 = Serious (normally irreversible) injury including death
F = Frequency and/or exposure time to the hazard
F1 = Seldom to less often and/or the exposure time is short
F2 = Frequent to continuous and/or the exposure time is long
P = Possibility of avoiding the hazard or limiting the harm
P1 = Possible under specific conditions
P2 = Scarcely possible
L = Low contribution to risk reduction
H = High contribution to risk reduction

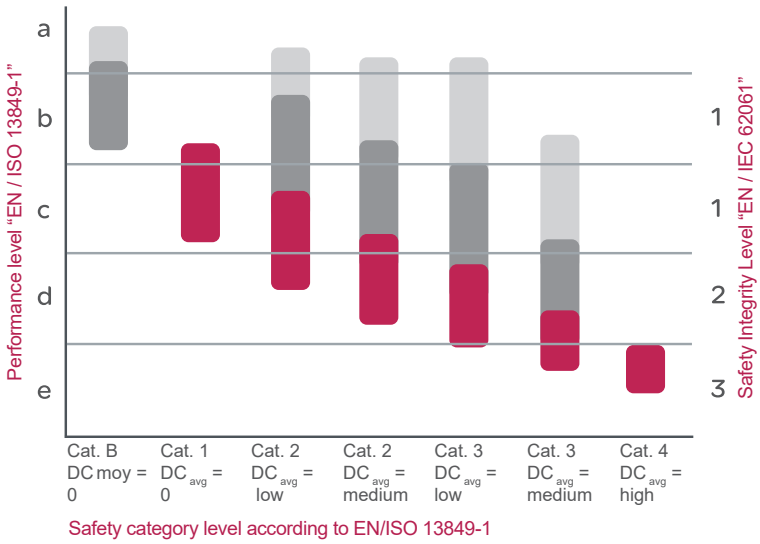


Determination of the PL achieved by the Safety-related parts of control systems (SRP/CS)

According to standard EN/ISO 13849-1, the Performance level (PL) is linked to a target failure value of probability of dangerous failure per hour for each safety related control function.

Performance level (PL)	Probability of a dangerous Failure per Hour
a	$\geq 10^{-5} \ldots < 10^{-4}$
b	$\geq 3 \times 10^{-6} \ldots < 10^{-5}$
c	$\geq 10^{-6} \ldots < 3 \times 10^{-6}$
d	$\geq 10^{-7} \ldots < 10^{-6}$
e	$\geq 10^{-8} \ldots < 10^{-7}$

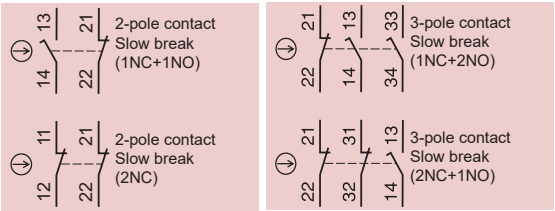
For a SRP/CS (or a combination of SRP/CS) designed according the requirements of the article 6, the PL could be estimated with the figure beside after estimation of several factors such as system structure (categorys), mechanism of failures detection [Diagnosis Coverage (DC)], components reliability [mean time to dangerous failure (MTTFd), Common Cause Failure (CCF)]…



- $MTTF_d$ of each channel = low
- $MTTF_d$ of each channel = medium
- $MTTF_d$ of each channel = high

Key-operated safety switches without solenoid
and actuators

Illustration of contacts with the actuator inserted in 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 et SIL CL3 conforming to EN/IEC 62061			
Actuation speed (min>max)			0,05m/s --> 1,5m/s	0,1m/s --> 0,5m/s		0,1m/s --> 0,5m/s
Rated operational characteristics (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 B_{10d}			5 000 000 value given for a service life of 20 years, limited by mechanical or contact wear			
Body + Head dimensions (mm) W x D x H			30 x 15 x 87 mm	30 x 30 x 93,5 mm		52 x 30 x 114,5 mm
Resistence to forcible withdrawal of actuator			8 N	10 N (1)		10 N (1)
Connection			pre-cabled, L = 2m	1 x ISO M16 entry.	1 x PG11 entry (5)	2 x ISO M16 entries. (5) (2)
Safety contacts	1NC+1NO	break before make, slow break	XCSMP59L2	XCSPA592	XCSPA591	–
	2NC	slow break	XCSMP79L2	XCSPA792	XCSPA791	–
	1NC+2NO	break before make, slow break	–	XCSPA892	XCSPA891	XCSTA592
	2NC+1NO	break before make, slow break	XCSMP70L2	XCSPA992	XCSPA991	XCSTA792
	2NC+1NO	snap action	–	XCSPA492	XCSPA491	–
	3NC	slow break	XCSMP80L2	–	–	XCSTA892

(1) In order to increase the resistance to 50 N, you must add the accessory XCSZ21 to the key actuators XCSZ12
(2) With entry for Pg 11 cable gland, replace the last digit in the reference by 1 (example: XCSTA592 becomes **XCSTA591**). Some PG11 references may not be available.
(5) To order a switch with 1 or 2 cable entries for 1/2" NPT conduit (one Pg11 tapped entry fitted with metal adapter DE9RA1012), replace the last number (2) by 3 in the selected reference. Example: XCSTA592 becomes **XCSTA593**. Some 1/2" NPT references may not be available.

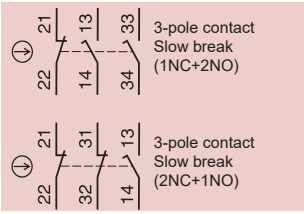


Illustration of contacts with the actuator inserted in the head of the switch

Without locking

With interlocking, manual unlocking
By button — By key lock

Interrupteurs metal to double isolation			Type XCSA		Type XCSB	Type XCSC
Maximum safety level (3)			PL=e, category 4 conforming to EN/ISO 13849-1 and SIL CL3 conforming to EN/IEC 62061			
Actuation speed (min>max)			0,01m/s --> 0,5m/s		0,01m/s --> 0,5m/s	
Rated operational characteristics (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 B_{10d}			XCSA: 5 000 000 XCSB/C: 3 000 000 values given for a service life of 20 years, limited by mechanical or contact wear			
Body + Head dimensions (mm) W x D x H			40 x 44 x 113,5 mm		52 x 44 x 113,5 mm	
Resistence to forcible withdrawal of actuator			20 N		$F1_{max}$ = 1500N ; F_{zh} = 1150N (when locked)	
Connection (6)			1 x ISO M20 entry	1 x PG13,5 entry	1 x ISO M20	1 x PG13,5 entry
Safety contacts	1NC+2NO	break before make, slow break	XCSA502	XCSA501	XCSB502	XCSC501
	2NC+1NO	break before make, slow break	XCSA702	XCSA701	XCSB702	XCSC701
	3NC	slow break	XCSA802	XCSA801	–	XCSC801

(6) To order a switch with a 1/2" NPT cable entry, replace the last number (2) by 3 in the selected reference. Example: XCSA502 becomes **XCSA503**. Some 1/2" NPT references may not be available.
(3) Using an appropriate and correctly connected safety control unit.

Accessories

Straight actuator

Right-angled actuator

Pivoting actuator, RH door

Pivoting actuator, LH door

For safety switches XCSMP	Actuators			
References	XCSZ81	XCSZ84	XCSZ83	XCSZ85

Straight actuator

Wide actuator L=40 mm (4)

Right-angled actuator

Pivoting actuator

Guard/door retainer

For safety switches XCSPA/TA	Actuators				Retaining device
References	XCSZ11	XCSZ12	XCSZ14	XCSZ13	XCSZ21

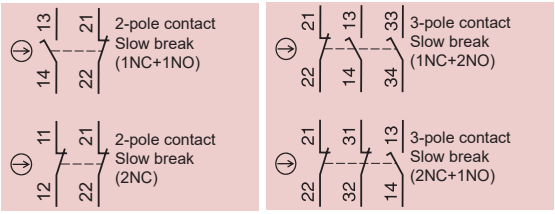
(4) For L = 29 mm, reference = XCSZ15.

Other versions: please consult our Customer Care Centre.

Telemecanique Sensors

Key-operated safety switches with solenoid
and actuators

Illustration of the main contacts with the actuator inserted in the head of the switch



Safety interlock switches Standard version and Connector version			Type XCSLF, metal		Type XCSLE, plastic	
Maximum safety level (3)			PL=e, category 4 conforming to EN/ISO 13849-1 and SIL CL3 conforming to EN/IEC 62061			
Degree of protection conforming to IEC 60529			IP66 and IP67	IP65	IP66 and IP67	IP65
Reliability data B_{10d}			5 500 000 value given for a service life of 20 years, limited by mechanical or contact wear			
Body + Head dimensions (mm) W x D x H			43,5 x 51 x 205 mm		43,5 x 51 x 205 mm	
Resistence to forcible withdrawal of actuator (Locked)			F_{1max} = 3000 N, f_{zh} = 2300 N		F_{1max} = 1400 N, f_{zh} = 1100 N	
Locking			on de-energization (1)		on de-energization (1)	
Supply voltage for the solenoid and the LEDs			24VAC/DC			
Material case			Zamak		Polyamide	
Wiring Connection (2)			3 x ISO M20	Connector M23 (4)	3 x ISO M20	Connector M23 (4)
Main and auxiliary contacts. (Main contacts actuated by the key. Auxiliary contacts actuated by the solenoid.)	1NC+1NO	break before make, slow break	XCSLF2525312 ⊖	–	XCSLE2525312 ⊖	–
	2NC	simultaneous, slow break	XCSLF2727312 ⊖	–	XCSLE2727312 ⊖	–
	1NC+2NO	break before make, slow break	XCSLF3535312 ⊖	XCSLF353531M3 ⊖	XCSLE3535312 ⊖	XCSLE353531M3 ⊖
	2NC+1NO	break before make, slow break	XCSLF3737312 ⊖	XCSLF373731M3 ⊖	XCSLE3737312 ⊖	XCSLE373731M3 ⊖
	3NC	simultaneous, slow break	XCSLF3838312 ⊖	XCSLF383831M3 ⊖	XCSLE3838312 ⊖	–

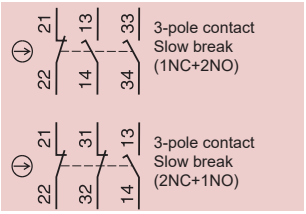


Illustration of the main contacts with the actuator inserted in the head of the switch

Safety interlock switches. Push button version and Push button with connector version			Type XCSLF, metal		
Maximum safety level (3)			PL=e, category 4 conforming to EN/ISO 13849-1 et SIL CL3 conforming to EN/IEC 62061		
Degree of protection conforming to IEC 60529			IP66	IP65	IP66
Reliability data B_{10d}			5 500 000 value given for a service life of 20 years, limited by mechanical or contact wear		
Body + Head dimensions (mm) W x D x H			43,5 x 51 x 205 mm		
Resistence to forcible withdrawal of actuator			3 000 N		
Locking			on de-energization (1)		on de-energization (1)
Push button with or without key no. 455 to release			Without		With
Supply voltage for the solenoid and the LEDs (5)			24VAC/DC		
Material case			Zamak		
Connection (2)			3 x ISO M20	Connector M23 (4)	3 x ISO M20
Safety contacts	1NC+2NO	break before make, slow break	XCSLF3535412 ⊖	XCSLF353541M3 ⊖	XCSLF3535612 ⊖
	2NC+1NO	break before make, slow break	XCSLF3737412 ⊖	XCSLF373741M3 ⊖	XCSLF3737612 ⊖

(1) For locking on energisation of solenoid, please refer to www.tesensors.com
(2) To order a switch with 3 1/2" NPT cable entries, replace the last number in the reference by 3. Example: XCSLF3535312 becomes **XCSLF3535313**. Some 1/2" NPT references may not be available.
(3) Using an appropriate and correctly connected safety control unit.
(4) Connector M23, 19 pins
(5) For 120V~ and 240V~ solenoid supply voltages, please refer to www.tesensors.com

Accessories

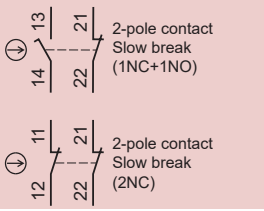
Straight actuator

Wide actuator

Pivoting actuator

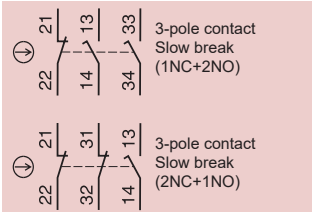
For safety switches XCSA/B/C/LE/LF	Actuators			Door lock
References	XCSZ01	XCSZ02	XCSZ03	XCSZ05

Safety switches
with rotary lever or spindle

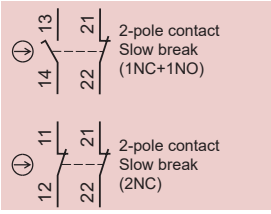


Stainless steel, elbowed (flush with rear of switch) lever Stainless steel straight lever

Plastic switches (lever-operated)		XCSPL 1 x ISO M16 cable entry (1) (2) (4)				
Maximum safety level (3)		PL=e, category 4 conforming to EN/ISO 13849-1 and SIL CL3 conforming to EN/IEC 62061				
Minimum torque (actuation / positive opening)		0,1 / 0,25 N.m				
Degree of protection		IP67				
Rated operational characteristics (conforming to EN/IEC 60947-5-1)		AC 15, A 300 / DC 13, Q 300				
Dimensions (body + head) W x D x H		30 x 30 x 160 mm				
Lever position		Lever to left	Lever centred	Lever to right	Lever to left or right	Lever centred
Tripping angle		5°				
Reliability data B_{10d}		5 000 000 (value given for a service life of 20 years, limited by mechanical or contact wear)				
Complete switch	1NC+1NO break before make, slow break	XCSPL592 ⊖	XCSPL582 ⊖	XCSPL572 ⊖	XCSPL562 ⊖	XCSPL552 ⊖
	2NC slow break	XCSPL792 ⊖	XCSPL782 ⊖	XCSPL772 ⊖	XCSPL762 ⊖	XCSPL752 ⊖
	1NC+2NO slow break	–	–	–	XCSPL862 ⊖	–
	2NC+1NO slow break	–	–	–	XCSPL962 ⊖	–



Stainless steel spindle
30 mm length



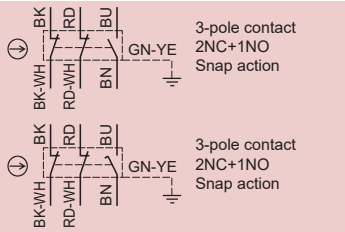
Stainless steel spindle
30 mm length

Plastic switches (spindle-operated)		XCSTR 2 x ISO M16 cable entries (1) (2) (4)	XCSPR
Maximum safety level (3)		PL=e, category 4 conforming to EN/ISO 13849-1 and SIL CL3 conforming to EN/IEC 62061	
Minimum torque (actuation / positive opening)		0,1 / 0,45 N.m	0,1 / 0,25 N.m
Degree of protection		IP67	
Rated operational characteristics (conforming to EN/IEC 60947-5-1)		AC 15, A 300 / DC 13, Q 300	
Dimensions (body + head) W x P x H		52 x 30 x 117 mm	30 x 30 x 96 mm
Tripping angle		5°	
Reliability data B_{10d}		5 000 000 (value given for a service life of 20 years, limited by mechanical or contact wear)	
Complete switch	1NC+2NO break before make, slow break	XCSTR552 ⊖	–
	2NC+1NO break before make, slow break	XCSTR752 ⊖	–
	1NC+1NO break before make, slow break	–	XCSPR552 ⊖
	2NC slow break	–	XCSPR752 ⊖
	2NC+1NO slow break	–	XCSPR952 ⊖

(1) With entry for Pg 11 cable gland, replace the last digit in the reference by 1 (Example: XCSPL592 becomes **XCSPL591**). Some Pg11 references may not be available.
(2) For entry for ISO M20 cable gland, also order adaptor DE9RA1620 (sold in lots of 5).
(3) Using an appropriate and correctly connected safety control unit.
(4) With entry for 1/2" NPT conduit, replace the last digit in the reference by 3 (Example: XCSPL592 becomes **XCSPL593**). Some 1/2" NPT references may not be available.

Limit switches

Safety limit switches

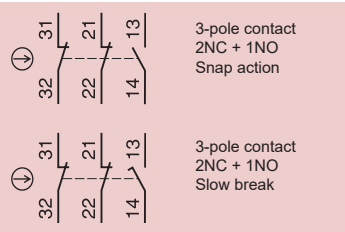


Metal
end plunger

Roller plunger

Thermoplastic
roller lever

Miniatures switches		Type XCSM metal cable length = 1m (1)		
Maximum safety level (2)		PL=e, category 4 conforming to EN/ISO 13849-1 and 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 / positive opening)		8,5 N / 42,5 N	7 N / 35 N	0,5 N.m / 0,1 N.m
Degree of protection		IP66 + IP67 + IP68	IP66 + IP67 + IP68	IP66 + IP67 + IP68
Dimensions (body + head) W x D x H		30 x 16 x 60 mm	30 x 16 x 70,5 mm	30 x 32 x 92,5 mm
Reliability data B_{10d}		50 000 000 (value given for a service life of 20 years, limited by mechanical or contact wear)		
Complete switch	2NC+1NO snap action	XCSM3910L1 ➔	XCSM3902L1 ➔	XCSM3915L1 ➔
	2NC+1NO slow break	XCSM3710L1 ➔	XCSM3702L1 ➔	XCSM3715L1 ➔



Metal
plunger

Roller
plunger

Thermoplastic
roller lever

Metal
end plunger

Roller
plunger

Thermoplastic
roller lever

Compact switches		Type XCSD metal 1 x ISO M20 x 1.5 cable entry (3) (4)			Type XCSP, plastic 1 x ISO M20 x 1.5 cable entry (2) (3) (4)		
Maximum safety level (2)		PL=e, category 4 conforming to EN/ISO 13849-1 and 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 / positive opening)		15 N / 45 N	12 N / 36 N	10 N.m / 0,1 N.m	15 N / 45 N	12 N / 36 N	10 N.m / 0,1 N.m
Degree of protection		IP66 + IP67			IP66 + IP67		
Dimensions (body + head) W x D x H (mm)		34 x 34,5 x 89	34 x 34,5 x 99,5	34 x 43 x 121,5	34 x 34,5 x 89	34 x 34,5 x 99,5	34 x 43 x 121,5
Reliability data B_{10d}		50 000 000 (value given for a service life of 20 years, limited by mechanical or contact wear)					
Complete switch	2NC+1NO snap action	XCSD3910P20	XCSD3902P20	XCSD3918P20	XCSP3910P20	XCSP3902P20	XCSP3918P20
	2NC+1NO slow break	XCSD3710P20	XCSD3702P20	XCSD3718P20	–	–	–

(1) For a 2 m long cable, replace the last digit of the reference by 2 (example: XCSM3910L1 becomes **XCSM3910L2**).
For a 5 m long cable, replace the last digit of the reference by 5 (example: XCSM3910L1 becomes **XCSM3910L5**).
(2) Using an appropriate and correctly connected safety control unit.
(3) To order a switch with 1/2" NPT cable entry, replace P20 with N12. Example: XCSD3910P20 becomes **XCSD3910N12**. Some 1/2" NPT references may not be available.
(4) To order a switch with Pg13.5 cable entry, replace P20 with G13. Example: XCSD3702P20 becomes **XCSD3702G13**. Some Pg 13.5 references may not be available.

RFID Technology

RFID Safety contact-less switch XCSR

New

Type	Standalone	For series connection (Daisy-chain) (2) (3)	For point-to-point connection (Single)
Maximum safety level	PL=e, category4 conforming to EN/ISO 13849-1 and SIL 3 conforming to EN/IEC 61508		
	Possible functioning without association with a safety control unit	Functioning in combination with a safety control unit PL=e/Cat4 - SIL 3	
Coding level (conforming to ISO 14119)	High level (Unique code) (for every model)		
Contactors monitoring (EDM) / Start-Restart	embedded	Safety control unit management	
Degree of protection	IP65, IP66, IP67 and IP69K - Ecolab		
Outputs Safety OSSDs - maximum current	400 mA	200 mA	
Rated operational characteristics	Ue=24Vdc - 20%...+1%, Ie=60mA		
Dimensions (mm) W x H x D (Transponder)	50 x 15 x 15 mm		
Dimensions L x P x H (Reader)	108,3 x 30 x 15 mm	118,6 x 30 x 15 mm	108,3 x 30 x 15 mm
Assured operating sensing distance (Sao) (4)	10 mm		
Assured release sensing distance (Sar) (4)	35 mm		
Reliability data (PFH_D/TM)	5.10^{-10} / 20 year		
Connection	Connector M12 male 8-pins	2 connectors M12 males 5-pins	Connector M12 male 5-pins
References			
Transponder + Reader matched in factory - Single matching - Start automatique + EDM	XCSRC11AM12 (1)		
Transponder + Reader matched in factory - Single matching - Start manual monitored + EDM	XCSRC11MM12 (1)		
Transponder + Reader matched in factory - Single matching		XCSRC12M12 (1)	XCSRC10M12 (1)

(1) For the versions allowing a new pairing (maximum 2 new pairings) of a blank transponder XCSRK2A3, replace the first reference digit '1' by '3'

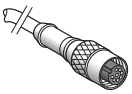
For example, reference XCSRC10M12 becomes **XCSRC30M12**

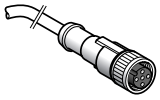
As soon as a blank transponder has been paired, the former transponder is no longer valid. A blank transponder can be matched only once

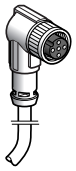
(2) The using of the serial diagnosis unit XCSRD210MDB is optionnal but highly recommanded. This diagnosis unit provides and localizes the state of every XCSR sensors of the chain (open/close safe guard status, presence of errors, cabling issue, ...).

(3) The first sensor of serial connexion must be coupled with the loopback chain adaptator XCSRZE

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


XZCP29P12Lpp


XZCP11V12Lp


XZCP12V12Lp

Type		Connection M12 - Pre-wired - for XCSR "Single" et "Daisy-chain" (1) XCSRC10M12 - XCSRC30M12 - XCSRC12M12 (1) and XCSRC32M12 (1)			
Pre-wired length (cable material : PUR)		2 m	5 m	10 m	20 m
Connector M12 5-pins Female	Straight - Pre-wired	XZCP11V12L2	XZCP11V12L5	XZCP11V12L10	XZCP11V12L20
	90° - Pre-wired	XZCP12V12L2	XZCP12V12L5	XZCP12V12L10	XZCP12V12L20

Type		Connection M12 - Pre-wired - for XCSR "Standalone" XCSRC11AM12 - XCSRC31AM12 - XCSRC11MM12 and XCSRC31M12			
Pre-wired length (cable material : PUR)		2 m	5 m	10 m	20 m
Connector M12 8-pins Female	Straight - Pre-wired	XZCP29P12L2	XZCP29P12L5	XZCP29P12L10	XZCP29P12L20
	90° - Pre-wired	XZCP53P12L2	XZCP53P12L5	XZCP53P12L10	XZCP53P12L20

Type		Connection 2xM12 - Jumpers for XCSR "Daisy-chain" XCSRC12M12 - XCSRC32M12				
Pre-wired length (cable material : PUR)		0.3 m	3 m	5 m	10 m	25 m
2 connectors Straight female M12 5-pins	Pre-cabled for serial link directly between the sensors	XZCR1111064D03	XZCR1111064D3	XZCR1111064D5	XZCR1111064D10	XZCR1111064D25

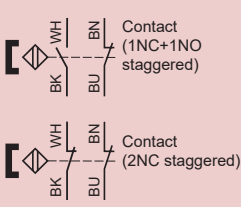
(1) For the connection of the last safety switch of the chain (XCSRC12M12 or XCSRC32M12) to the safety control unit

Coded magnetic technology

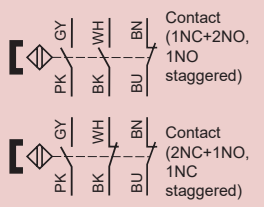
Plastic coded magnetic switches

ECOLAB

(1)



(1)



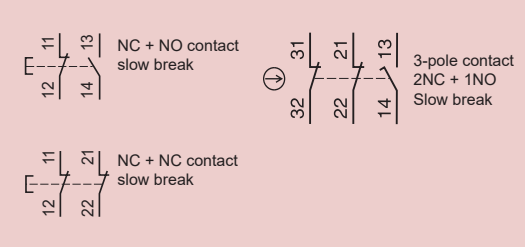
Rectangular Without LED (2)	Rectangular Without LED (2)	Cylindrical Without LED (2)	Rectangular Without LED (2)	Rectangular Without LED (2)	Cylindrical Without LED (2)

Plastic switches		Type XCSDM coded magnetic Pre-cabled L = 2 m			Connector on flying lead, L = 15 cm (3)		
Maximum safety level (5)		PL=e, category4 conforming to EN/ISO 13849-1 et 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 - Ecolab			IP66 + IP67 - Ecolab		
Type of contact		REED			REED		
Rated operational characteristics (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		16 x 7 x 51 mm	25 x 13 x 88 mm	M30 x 38,5 mm	16 x 7 x 51 mm	25 x 13 x 88 mm	M30 x 38.5 mm
Operating zone (4)		Sao = 5 / Sar = 15	Sao = 8 / Sar = 20		Sao = 5 / Sar = 15	Sao = 8 / Sar = 20	
Reliability data B_{10d}		50 000 000 (value given for a service life of 20 years, limited by mechanical or contact wear)					
Switch with coded magnet	1NC+1NO staggered	XCSDMC5902	XCSDMP5902	XCSDMR5902	XCSDMC590L01M8	XCSDMP590L01M12	XCSDMR590L01M12
	2NC staggered	XCSDMC7902	XCSDMP7902	XCSDMR7902	XCSDMC790L01M8	XCSDMP790L01M12	XCSDMR790L01M12
	1NC+2NO, 1NO staggered	–	XCSDMP5002	–	–	XCSDMP500L01M12	–
	2NC+1NO, 1NC staggered	–	XCSDMP7002	–	–	XCSDMP700L01M12	–

(1) Illustration of contacts with the magnet in front of the switch.
(2) For version with LED indicator, replace the last 0 in the reference by 1 (example: XCSDMC5902 becomes **XCSDMC5912**).
(3) For associated pre-wired female connectors, please refer to the “Safety switches - XCS range” catalogue.
(4) Sao: assured operating distance. Sar: assured release distance.
(5) Using an appropriate and correctly connected safety control unit

Emergency stops

Emergency stop rope pull switches



For operating cable length < 20 - 30m		Without indicator light Pg 13.5 threaded cable entry		
Maximum safety level (2)		PL=e, category 4 conforming to EN/ISO 13849-1 and SIL3 conforming to EN/IEC 61508		
Mechanical life		100 000 cycles		
Shock / vibration resistance		50 gn / 10 gn		
Degree of protection		IP66 and IP67		
Conformity to standards		EN/IEC 60947-5-5, EN/ISO 13850, UL (NiSD) - CSA, CCC		
Dimensions W x D x H		200.9 x 40 x 64.2 mm		
Operating cable length		< 20 m	< 30 m	
Operating cable anchoring point		Straight	right side	left side
Reliability data B_{10D}		500 000 (value given for a service life of 20 years, limited by mechanical or contact wear)		
Contact	1 NC + 1 NO slow break	XY2CJS15 (4)	XY2CJR15 (4)	XY2CJL15 (4)
	1 NC + 1 NC slow break	XY2CJS17 (4)	XY2CJR17 (4)	XY2CJL17 (4)
	2 NC + 1 NO slow break	XY2CJS19 (4) (5)	XY2CJR19 (4) (5)	XY2CJL19 (4) (5)

(2) Using an appropriate and correctly connected safety control unit. (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**.

Emergency stops

Emergency stop rope pull switches

Booted pushbutton reset

Key release pushbutton reset (key n° 421)

For operating cable length ≤ 30 m		Simple anchor, without indicator light 3 entries of pre-cabled Pg13.5 (4)(5)		with indicator light
Maximum safety level (2)		PL=e, category4 conforming to EN/ISO 13849-1 and SIL 3 conforming to EN/IEC 61508		
Mechanical life		800 000 cycles		
Shock / vibration resistance		50 gn / 10 gn		
Degree of protection		IP65		
Conformity to standards		EN/IEC 60947-5-5, EN/ISO 13850, UL NISD and CSA C 22-2 n° 14 (with suffix H7)		
Dimensions W x D x H		201 x 71 x 68 mm		
Operating cable length		≤ 30 m		
Operating cable anchoring point		To right or to left		
Reliability data B_{10d}		4 000 000 (value given for a service life of 20 years, limited by mechanical or contact wear)		
Contact	1 NC + 1 NO slow break	XY2CH13250 (4) (5)	XY2CH13450 (4) (5)	XY2CH13253 (4)
	1 NC + 1 NC slow break	XY2CH13270 (4) (5)	XY2CH13470 (4) (5)	XY2CH13273
	2 NC + 1 NO slow break	XY2CH13290 (4) (5)	–	XY2CH13293 (4)

Booted pusbutton reset

Key release pushbutton reset (key n° 421)

For operating cable length ≤ 70 m		Simple anchor, without indicator light 3 plain holes with Pg13,5 or ISO M20 cable entries (3)(5)			
Maximum safety level (2)		PL=e, category 4 conforming to EN/ISO 13849-1 and SIL 3 conforming to EN/IEC 61508			
Mechanical life		60 000 cycles			
Shock / vibration resistance		50 gn / 10 gn			
Degree of protection		IP66			
Conformity to standards		EN/IEC 60947-5-5, EN/ISO 13850, UL NISD and CSA C 22-2 n° 14 (with suffix H7)			
Dimensions W x D x H		229 x 82 x 142 mm			
Pre-cabled length		≤ 70 m			
Operating cable anchoring point		To left	To right	To left	To right
Reliability data B10d		300 000 (value given for a service life of 20 years, limited by mechanical or contact wear)			
Contact	1 NC + 1 NO slow break	XY2CE2A250 (5)	XY2CE1A250 (5)	XY2CE2A450 (5)	XY2CE1A450
	1 NC + 1 NC slow break	XY2CE2A270 (5)	XY2CE1A270 (5)	XY2CE2A470	XY2CE1A470
	2 NC + 2 NO slow break	XY2CE2A290 (3) (5)	XY2CE1A290 (3) (5)	XY2CE2A490 (3)	XY2CE1A490 (3)

Booted pushbutton reset

Key release pushbutton reset (key n° 455)

For pre-cabled length ≤ 2X100 m		Double latching, without indicator lights 3 entries of pre-cabled ISO M20 or cable gland 13 (Pg13,5) (3) (5)			
Maximum safety level (2)		PL=e, category 4 conforming to EN/ISO 13849-1 and SIL 3 conforming to EN/IEC 61508			
Mechanical life		60 000 cycles			
Shock / vibration resistance		50 gn / 10 gn			
Degree of protection		IP66			
Conformity to standards		EN/IEC 60947-5-5, EN/ISO 13850, UL NISD and CSA C 22-2 n° 14 (with suffix H7)			
Dimensions W x D x H		327.4 x 82 x 142 mm			
Pre-cabled length		>= 2 x 35 m et ≤ 2 x 100 m			
Bellows matter		Nitrile	Silicone	Nitrile	Silicone
Reliability data B_{10d}		300 000 (value given for a service life of 20 years, limited by mechanical or contact wear)			
Contact	2 NC + 2 NO slow break	XY2CEDA290 (3) (5)	XY2CEDC290 (3)	XY2CEDA590 (3)	XY2CEDC590

(2) Use an appropriated and well connected control system
(3) With protected LED, supply voltage light 24 V or 130 V, add 6 at the end of the reference (Example: XY2CE1A290 becomes **XY2CE1A296**). / With DEL protected, Supply voltage indicator 230 V, add 7 at the end of the reference (Example. : XY2CE1A290 becomes **XY2CE1A297**)
(4) For the threaded entry cable version ISO M20, add H29 at the end of the reference. Example. : XY2CH13250 becomes **XY2CH13250H29**.
(5) For the threaded entry cable version 1/2" NPT, add H7 at the end of the reference. Example. : XY2CE2A250 becomes **XY2CE2A250H7**

Accessories

Mounting kits	XY2CJ	XY2CH	XY2CE	XY2CED
References	XY2CZ9425 (1)	XY2CZ9330 (2)	XY2CZ9570 (3)	XY2CZ96200 (4)

(1) Kit contents: 1 galvanised cable L:30.5 (Ø 3.2 mm), quick tensioner, cable supports, and end spring.
(2) Kit contents: 1 galvanised cable L: 30.5 m (Ø 3.2 mm) and end spring.
(3) Kit contents: 1 galvanised cable L: 70.5 m (Ø 5 mm), turnbuckle, cable supports, cable end protectors and end spring.
(4) Kit contents: 2 galvanised cables L: 100.5m (D 5mm) and quick tensioners.

Other versions: please consult our Customer Care Centre.

Light curtains

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

Main features
- Automatic or Manual Start/Restart selectable by wiring
- External Device Monitoring (EDM) selectable by wiring
- Two maximum Sensing Distance selectable by wiring
- Test function (beam blocked state simulation)
- Led indicators for status and diagnosis
- Muting possible with dedicated Safety module XPSLCMUT1160
- 2 outputs solid-state PNP OSSD (*)
  (NO when the sensing area is occupied)

(*) Output Signal Switching Devices

Maximum safety level achieved by the solution EN ISO 13849-1 (3)		PLc/cat2	
Maximum safety level achieved by the solution IEC 61508/IEC 62061 (3)		SIL1/SILCL1	
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 (Body Detection)
Number of safety outputs		2 solid-state PNP	
Response time (depending on model)		4.5…22.5 ms	3…3.5 ms
Operating temperature range		-30°C…+55°C	
Degree of protection (1)		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 year	
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 and 2

Light curtain functions
- Auto/Manual
- Monitoring of external switching devices
  (EDM: External Devices 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 (For use with XPSCM1144* - See p70)
Type			Single-beam with infrared emission
Height protected (conforming to prEN 999)			up to 1200 mm (1 to 4 beams)
Nominal sensing distance (Sn)			8 m
Number of circuits	Safety		2“F”
	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 function "muting"
Thru-beam pairs, axially aligned	Pre-cabled L = 5 m	PNP	XU2S18PP340L5 (2)
	M12 connector	PNP	XU2S18PP340D (2)

(1) Also exists in IP69k model, ECOLAB certified.
(2) For viewfindig to 90°, add W in the reference. Example XU2S18PP340L5 becomes **XU2S18PP340WL5**
(3) Achievable in standalone operation (without safety control unit).

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

Main features
- Automatic or Manual Start/Restart selectable by wiring
- External Device Monitoring (EDM) selectable by wiring
- Two maximum Sensing Distance selectable by wiring
- Test function (beam blocked state simulation)
- Led indicators for status and diagnosis
- Muting possible with dedicated Safety module XPSLCMUT1160
- Integrated muting function available on XUSL4M* range (see p68)
- 2 outputs solid-state PNP OSSD (*)
  (NO when the sensing area is occupied)
  (*) Output Signal Switching Devices

Maximum Safety level achieved by the solution EN ISO 13849-1 (2)		PLe/cat4		
Maximum Safety level achieved by the solution IEC 61508/IEC 62061 (2)		SIL3/SILCL3		
Type IEC 61496-1 & IEC 61496-2		Type 4 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 model)		4…23.5 ms	4…22 ms	2.5…3 ms
Operating temperature range		-20°C…+55°C	-30°C…+55°C	
Degree of protection (1)		IP65 - IP67		
Connection		M12 Connector		
Reliability data (depending on 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
Operating temperature range		-20°C…+55°C	
Reliability data (depending on model) conforming to EN/IEC 61508		PFHd = 9.13E-9 to 2.29E-8	PFHd = 9.15E-9 to 1.08E-8
Mission time (conforming to modèle)		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, ECOLAB certified.
(2) Achievable in standalone operation (without safety control unit)

Light curtains

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

Main features
- Automatic or Manual Start/Restart selectable by wiring
- External Device Monitoring (EDM) selectable by wiring
- Two maximum Sensing Distance selectable by wiring
- Test function (beam blocked state simulation)
- Led indicators for status and diagnosis
- Muting possible with dedicated Safety module (XPSLCMUT1160)
- 2 outputs solid-state PNP OSSD (*)
  (NO when the sensing area is occupied)

(*) Output Signal Switching Devices

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 circuits Safety		2 solid-state PNP		
Response time		Depends on the number and the model of segments used. See the “User Manual” for the calculation		
Operating temperature range		-20°C…+55°C	-30°C...+55°C	
Degree of protection		IP65 - IP67		
Connection		2xM12 Connector		
Reliability data (depending on 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) (1)	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 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 number and the models 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 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 number and the models of segments used. See the “User Manual” for the calculation		
Connection		2xM12 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, please refer to Page 47

Light curtains

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

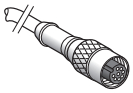
Main features
- Integrated muting function
- Automatic or Manual Start/Restart selectable by wiring
- External Device Monitoring (EDM) selectable by wiring
- Two maximum Sensing Distance selectable by wiring
- Test function (beam blocked state simulation)
- Led indicators for status and diagnosis
- 2 outputs solid-state PNP OSSD (*)
  (NO when the sensing area is occupied)

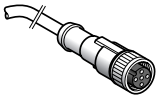
(*) Output Signal Switching Devices

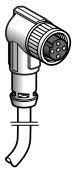
Type		Integrated muting models (1) For body protection (2)	
Nominal sensing distance (Sn)		0…4 m or 0…12 m selectable	
Operating temperature range		-30°C…+55°C	
Package contents		Hardware and software configuration (with SoMute software), partial muting and integrated muting lamp	Hardware configuration only
Height protected (mm)	510 - 2 beams	XUSL4MA2BB051N	XUSL4MB2BB051N
	810 - 3 beams	XUSL4MA3BB081N	XUSL4MB3BB081N
	910 - 4 beams	XUSL4MA4BB091N	XUSL4MB4BB091N

(1) Possible association with pre-built/pre-adjusted muting arms XUSZAS* (single beam muting sensors) and XUSZAM* (multi-beam muting sensors).
(2) For hand detection, some models are available in 30mm and 40mm resolutions, in different protected heights.

Cabling accessories


XZCP29P11Lpp


XZCP1164Lp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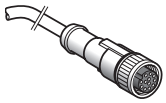
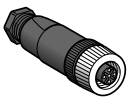

XZCP57V12L●

Type					M12 connector - Pre-wired				
PUR cable length					2 m	5 m	10 m	15 m	25 m
M12 connector 5-pins Female	XUSL2E* / 4E*	/ 4M*	Straight - Pre-wired	For transmitter	XZCP1164L2	XZCP1164L5	XZCP1164L10	XZCP1164L15	XZCP1164L25
			90° - Pre-wired	For transmitter	XZCP1264L2	XZCP1264L5	XZCP1264L10	XZCP1264L15	XZCP1264L25
M12 connector 8-pins Female	XUSL2E* / 4E*		Straight - Pre-wired	For Receiver	XZCP29P11L2	XZCP29P11L5	XZCP29P11L10	XZCP29P11L15	XZCP29P11L25
			90° - Pre-wired	For Receiver	XZCP53P11L2	XZCP53P11L5	XZCP53P11L10	XZCP53P11L15	XZCP53P11L25
M12 connector 12-pins Female	XUSL4M*		Straight - Pre-wired	For Receiver		XZCP57V12L5	XZCP57V12L10	XZCP57V12L15	


XZCC12FDM50B

XZCC12FCM50B

Type			M12 connector - with screw terminals
Cable length			2 m
M12 connector 5-pins Female	90° - 5 poles with screw terminals- cable gland	For transmitter	XZCC12FCM50B
	Straight - 5 poles with screw terminals- cable gland	For transmitter	XZCC12FDM50B
M12 connector 8-pins Female	90° - 8 poles with screw terminals- cable gland	For Receiver	XZCC12FCM80B
	Straight - 8 poles with screw terminals- cable gland	For Receiver	XZCC12FDM80B

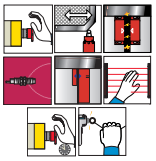
Type		2xM12 connectors - Jumpers				
PUR cable length		0.3 m	3 m	5 m	10 m	25 m
2 straight M12 - Female/Female connectors - 5 poles	For Master/Slave cascadable	XZCR1111064D03	XZCR1111064D3	XZCR1111064D5	XZCR1111064D10	XZCR1111064D25

Safety modules for monitoring

Universal safety relays XPSU

XPSUAF

XPSUAK



XPSUAT

XPSUDN

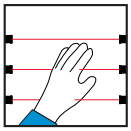
XPSUS

Maximum acheivable safety level	PL e / Category 4 conforming to ISO 13849-1 SILCL3 conforming to IEC 62061 SIL3 conforming to IEC61508				
Number of outputs	3 NO 1 pulsed output	2 NO 1 redundant NC, 1 pulsed output	3 NO immediate 3 NO delayed (selectable from 0.1 s to 15 min. by 10 steps of 0.1 s which can be multiplied by 1, 10, 100, and 1,000) or immediate + 1 NC	3 NO 1 redundant NC, 1 pulsed output	2 NO 1 pulsed output
Display	6 LEDS	6 LEDS	8 LEDS	16 LEDS	6 LEDS
Supply voltage	24 V AC/DC and 48-240 V AC/DC				
Synchronization time between inputs	Selectable				
Input channels	2	2	3	12	4
Start input	Automatic, manual & monitored start				
Control configurable pulsed outputs	3 ON/OFF		4 ON/OFF	7 ON/OFF	3 ON/OFF
Module width	22.5 mm/0.886 in.		45 mm/1.77 in.	45 mm/1.77 in.	22.5 mm/0.886 in.

Complete references and other XPSU safety universal modules are available on www.schneider-electric.com

Safety relay for monitoring

XU2S single beam Type 2 photoelectric sensors

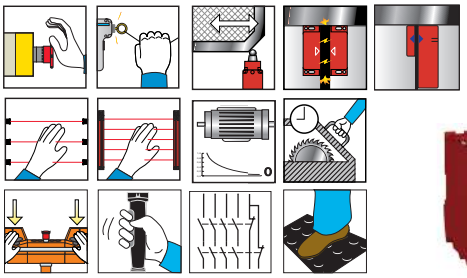


Maximum safety level of the solution attained (EN/ISO 13849-1, EN/IEC 62061)		PL c / Cat. 2, SILCL 1
Number of circuits	Safety	2“F”
	Additional	4 solid-state
Display (number of LEDs)		4
Width of housing		45 mm
Integral Muting function		Yes
For utilisation with		XU2S18*
Supply voltage	24 VDC	XPSCM1144P (1)

(1) For version with non removable terminal block, delete the letter P from the end of the reference (example: XPSCM1144P becomes **XPSCM1144**).

Modules for monitoring

Modular safety controler XPSMCM



Maximum safety level reached by the solution	PL e / Cat. 4, SILCL 3 5 (EN/ISO 13849-1, EN/IEC 62061)					Without safety level
Function	Central Unit (CPU) (standalone) (2)	Extension units input/output	Extension units Outputs Relay	Extension units speed control	Extension units Communication	Extension units communication bus
Case dimensions	22,5 x 99 x 114,5					
References	XPSMCMCP0802 (1)	XPSMCMMX	XPSMCMER	XPSMCMEN	XPSMCMCO0000S	XPSMCMCO0000
Main characteristics	- 8 digitals inputs - 2 OSSD pairs 400 mA - 4 Test outputs - 2 Status outputs - 2 EDM inputs	- 8 digitals inputs - 2 OSSD pairs 400 mA - 4 Test outputs - 2 Status outputs - 2 EDM inputs	- 2 or 4 Safety relay outputs 2NO + 1NC (without connection to the extension bus) - 1 or 2 EDM inputs	- 1 or 2 Inputs for coder (TTL or HTL or Sin/Cos) or 1 or 2 Inputs for proximity sensors - 2 Outputs digital configurables	- for connection XPSM-CMCP0802● to remote modules (≤ 50 m) - creation to 6 islands, with full length of 250 m and maximum 50 m between 2 communication modules	- for data exchange and network systems diagnosis or field-bus - available interfaces (CAN open, Ethernet IP, Modbus RTU, Modbus TCP, Profibus DP et USB)
References	XPSMCMC10804 (1)	XPSMCMDI	XPSMCMRO			
Main characteristics	- 8 digital inputs - 4 OSSD pairs 400mA - 4 Test outputs - 4 EDM inputs - Compatible with Extension module XPSMCMAI0400, channels analogic input	- 8 or 16 digital inputs - 4 Test outputs	- 4 modules Safety relay outputs 2NO + 1NC (with onnection to the extension bus) - 4 Independent safety relay outputs and 4 EDM outputs corres-ponding - 0 or 8 Status outputs			
References		XPSMCMDO				
Main characteristics		- 2 or 4 OSSD pairs 400 mA - 2 or 4 Status outputs - 2 or 4 EDM inputs				

(1) Configuration, Programming, simulation and documentation by means of an intuitive software (SoSafe)

(2) Extension units available (input, output, relay, speed control, communication).

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