

Telemecanique Sensors

The essential guide of Detection



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.



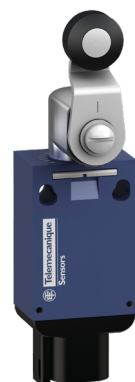
◀ The new **XCSR Range** of RFID contactless safety switches help secure hazardous areas. A high level of safety in a compact size, highly tamper-proof and easy to install.

• Wireless limit switches

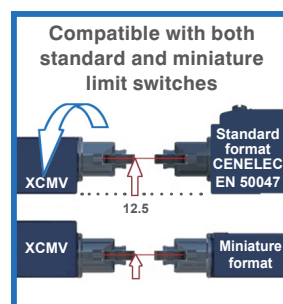


◀ Wireless and battery-less limit switches are now available in miniature format! Enhance machine communication where cabling is difficult, expensive, or unwanted. The **XCMW Range** is also the perfect way to give mobile machines more freedom of movement.

• 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.

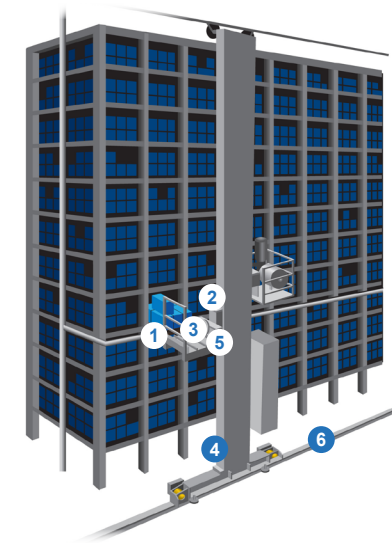


• Ultrasonic sensors



◀ 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



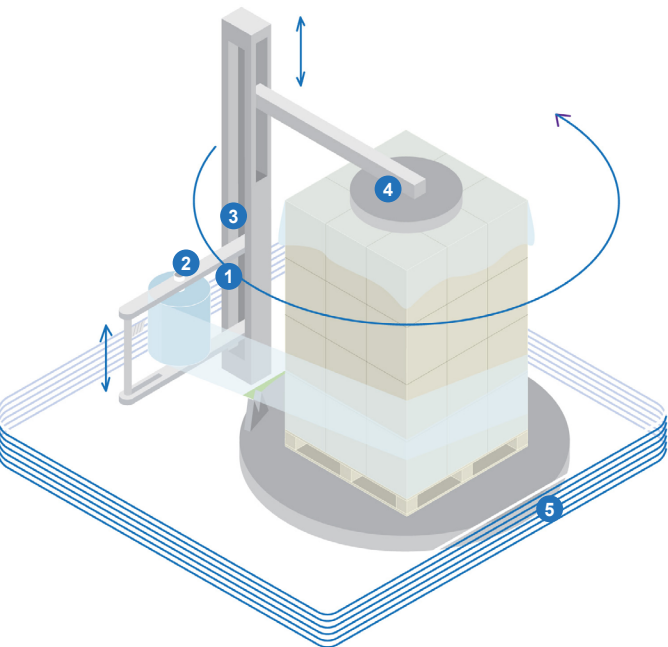
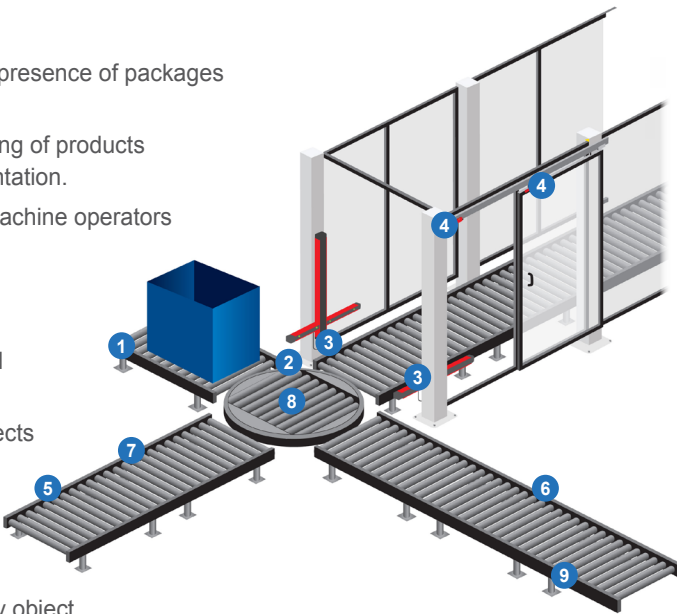
Automated Storage and Retrieval Systems

- 1 **XS Cylindrical Inductive Sensor** verifies the table position to validate the movement authorization.
- 2 **XCMW Wireless & Battery-less Limit Switch** detects the compartment where the lift stops.
- 3 **XUM Miniature Photoelectric Sensor** verifies the presence of load on the table.
- 4 **XUK Photoelectric Laser Sensor** measures distance for the translation travel.
- 5 **XG RFID System** provides traceability of bins in the warehouse.
- 6 **XS Rectangular Inductive Sensor** detects an overtravel.



Conveyors

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



Stretch Wrapper

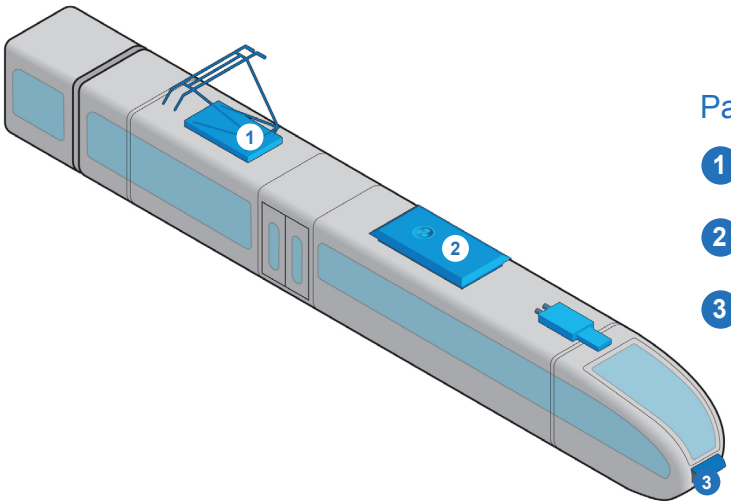
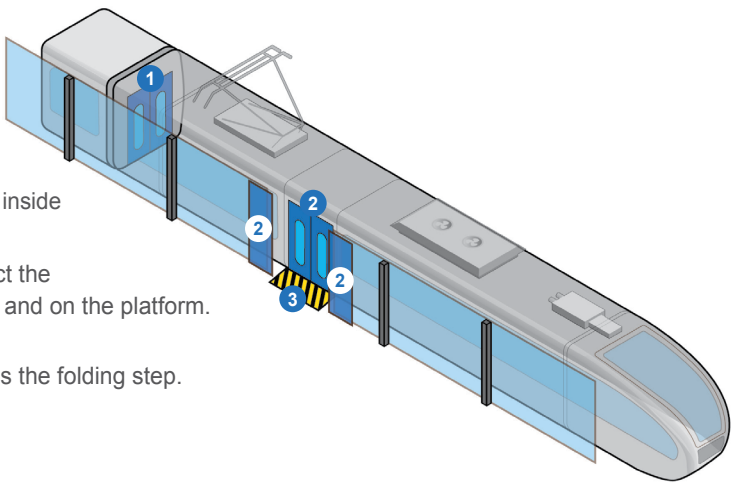
- 1 **XUK Photoelectric Laser Sensor** detects the distance measurement to the pallet.
- 2 **XX Ultrasonic Sensor** detects the end of the film reel or film breakage.
- 3 **XCMD Miniature Limit Switch** detects the end positions.
- 4 **XUX Photoelectric Sensor** detects any package overhang.
- 5 **XUSL Safety Light Curtains** monitor the access of persons to hazardous machine zones.

Sensor Solutions for Railway Applications



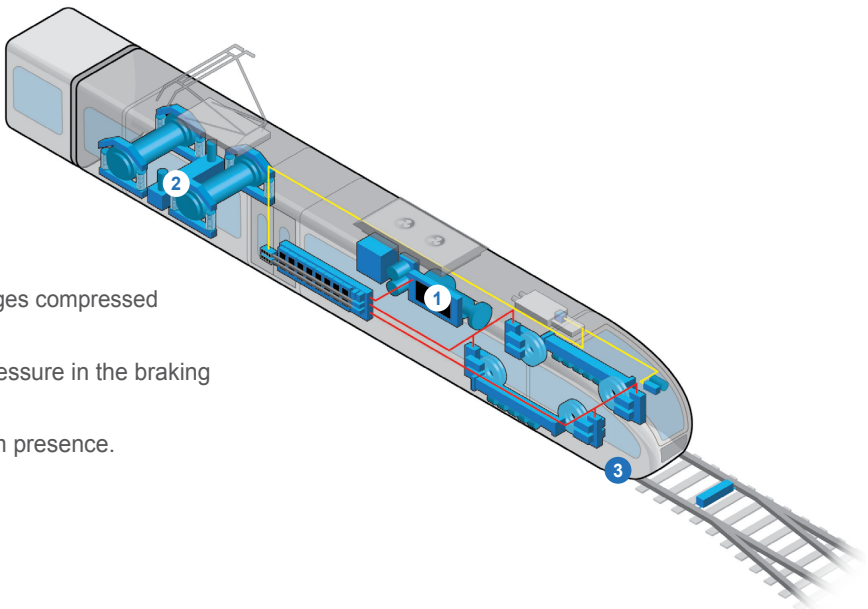
Automatic Doors

- 1 **XUK9 Photoelectric Sensor** detects passengers for doors inside the train.
- 2 **XCMD Limit Switches** detect the position of doors on the train and on the platform.
- 3 **XCKD Limit Switch** activates the folding step.



Pantograph, Air Conditioning & Coupling Systems

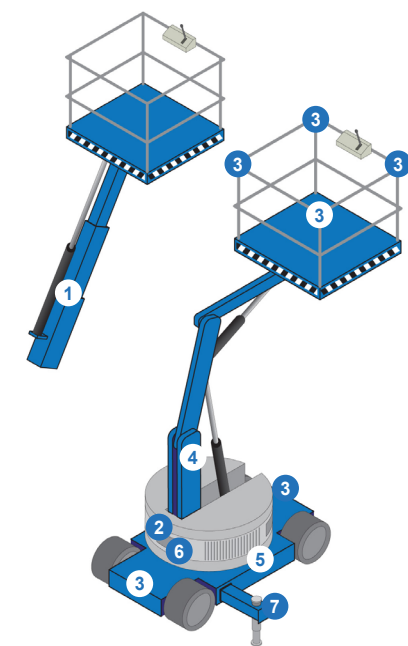
- 1 **XMLC Pressure Sensor** regulates the pressure of the pantograph mechanism.
- 2 **XMLP Pressure Sensor** regulates pressure in the air conditioning systems.
- 3 **XS618 Inductive Sensor** checks the position of the coupling trap doors.



Air Supply and Braking System

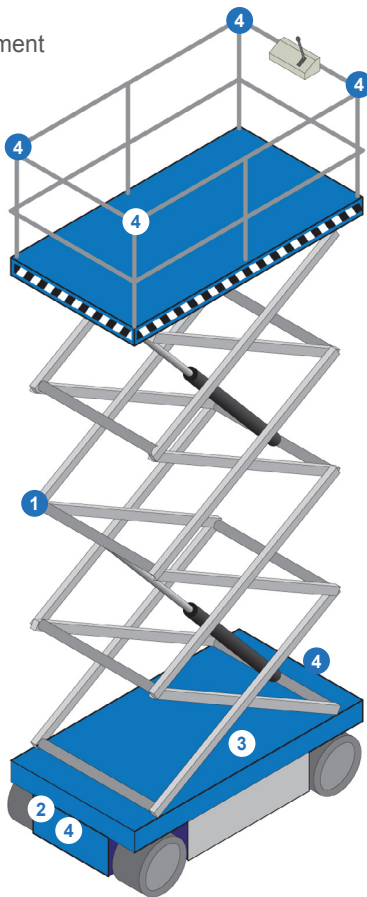
- 1 **XMLA/B or XMLP Pressure Sensor** manages compressed air in the air supply systems.
- 2 **XMLA/B or C Pressure Switch** checks pressure in the braking systems.
- 3 **XX Ultrasonic Sensor** detects the platform presence.

Sensor Solutions for Mobile Lift Applications



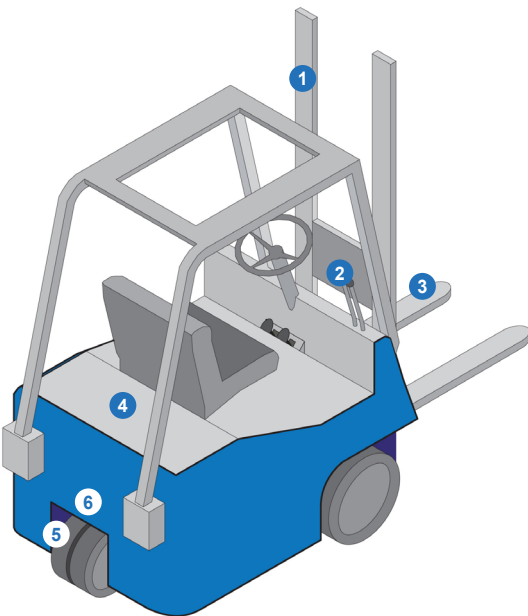
Boom Lift Platforms

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



Scissor Lift Platforms

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



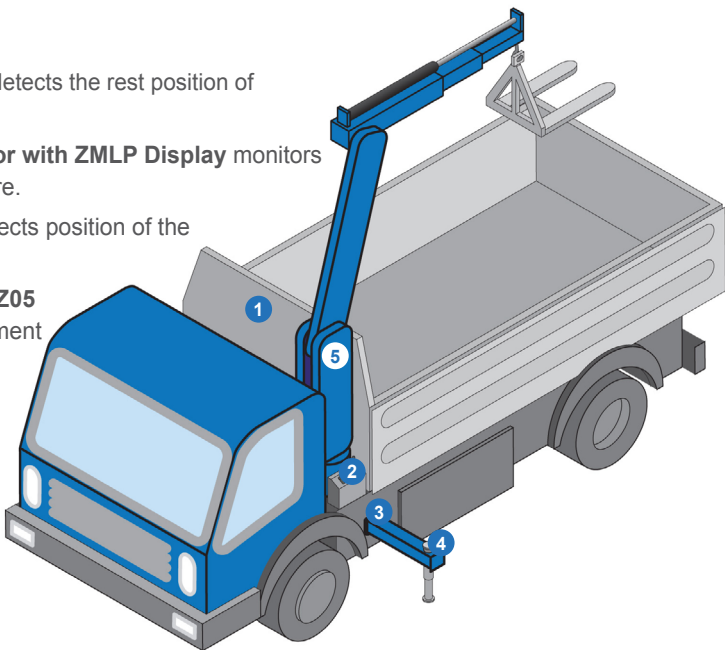
Fork Lifts

- 1 **XCKP or XCMD Limit Switch** detects fork and travel position.
- 2 **XCMV Limit Switch** monitors the position of the operating mechanism.
- 3 **XCMD Limit Switch** detects the distance between the two forks.
- 4 **XMEP Pressure Sensor** monitors and regulates hydraulic pressure.
- 5 **XS Inductive Sensor** detects wheel position.
- 6 **XXW54 Wide Beam Ultrasonic Sensors** detects obstacles on the ground.

Sensor Solutions for Mobile Lift Applications

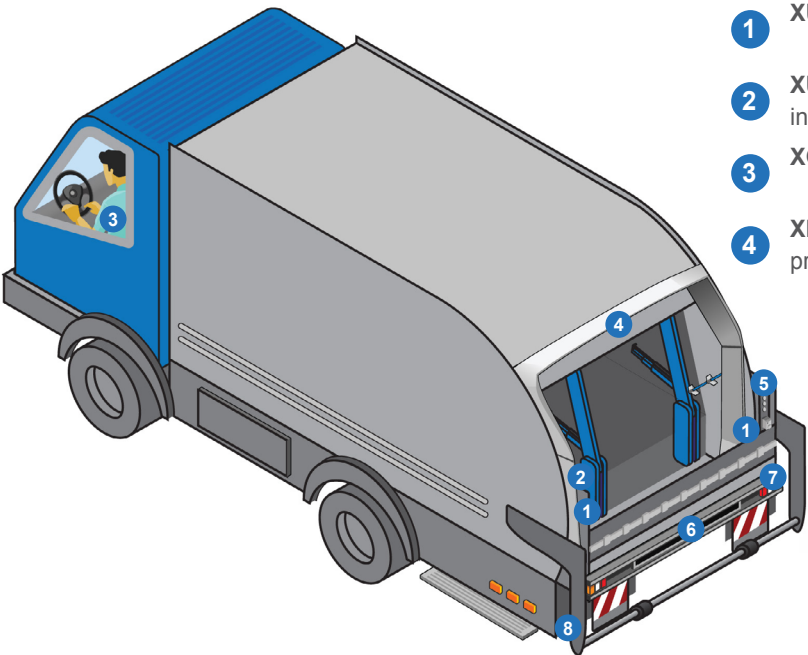
Truck Loading Cranes

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

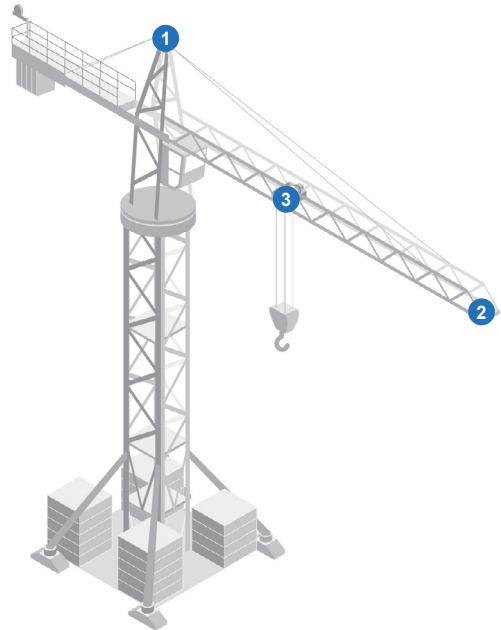


Garbage Trucks

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

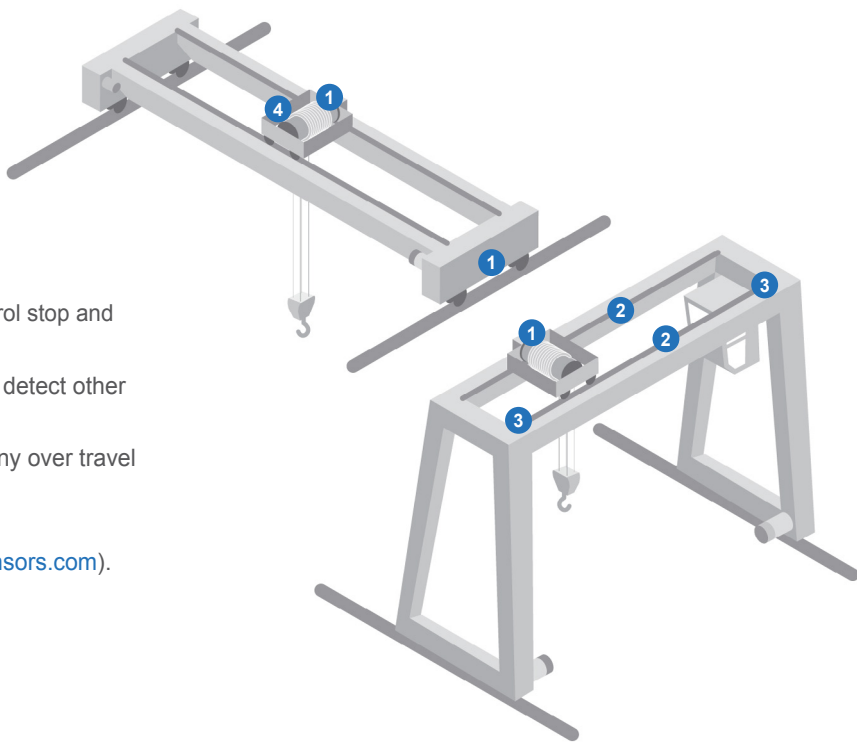
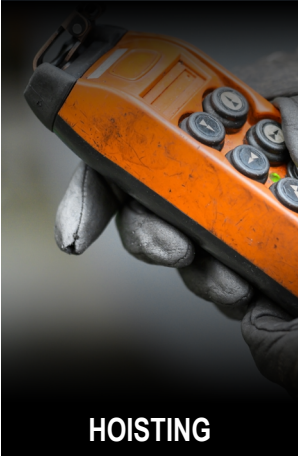
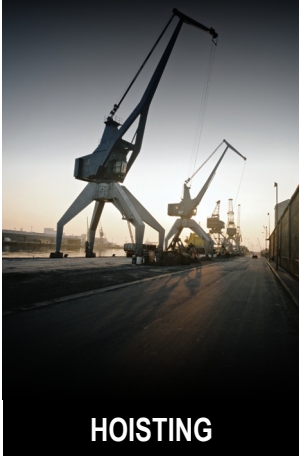


Sensor Solutions for Hoisting Applications



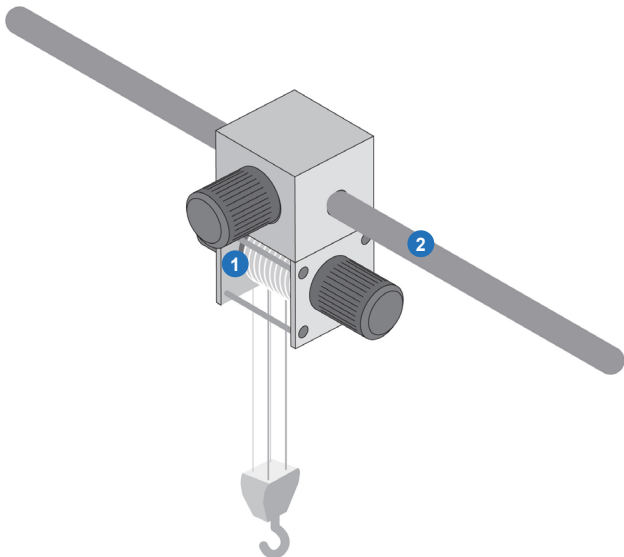
Tower Cranes

- 1 **XCKM / XCR Limit Switch** detects specific position for overload or overtorque control.
- 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.



Overhead and Gantry Cranes

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



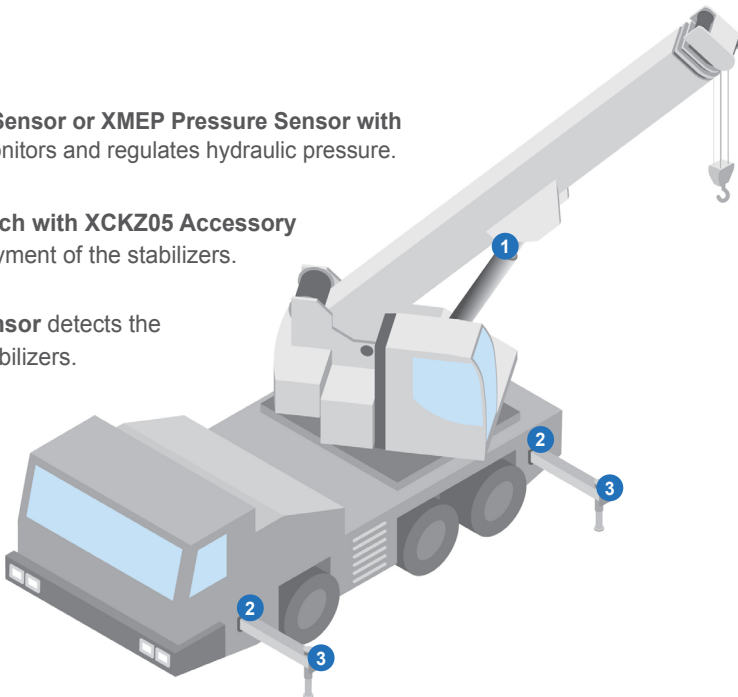
Block Hoists

- 1 **XCMD Limit Switch** controls stop, up, and down of the vertical movement. Miniature switches are incorporated in the hoist winch.
- 2 **XCR Limit Switch** controls the stop of the horizontal movement.

Sensor Solutions for Hoisting Applications

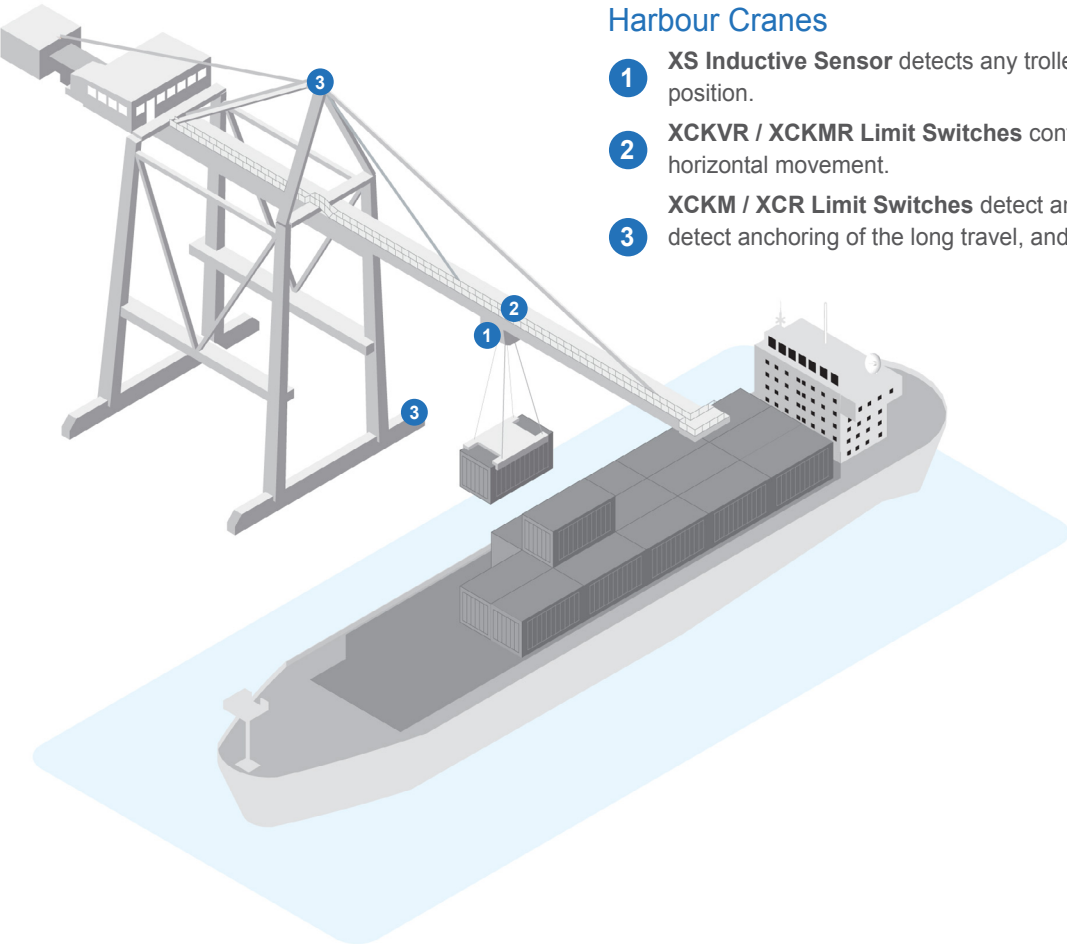
Mobile Cranes

- 1 **XMLR Pressure Sensor or XMEP Pressure Sensor with ZMLP Display** monitors and regulates hydraulic pressure.
- 2 **XCKD Limit Switch with XCKZ05 Accessory** detects the deployment of the stabilizers.
- 3 **XS Inductive Sensor** detects the position of the stabilizers.

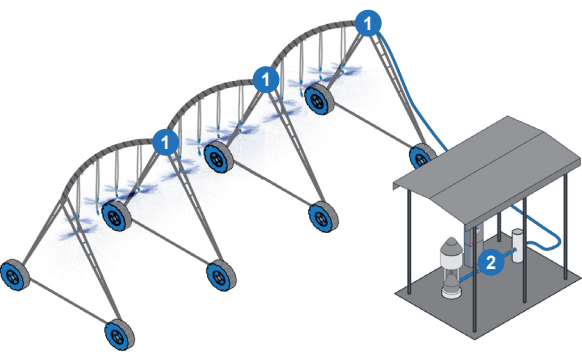


Harbour Cranes

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

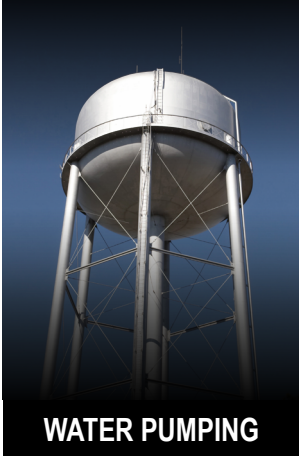


Sensor Solutions for Water Pumping Applications



Irrigation Systems

- 1 **XCMD Limit Switch** controls movement.
- 2 **XMLK Pressure Sensor** monitors and regulates water pressure.



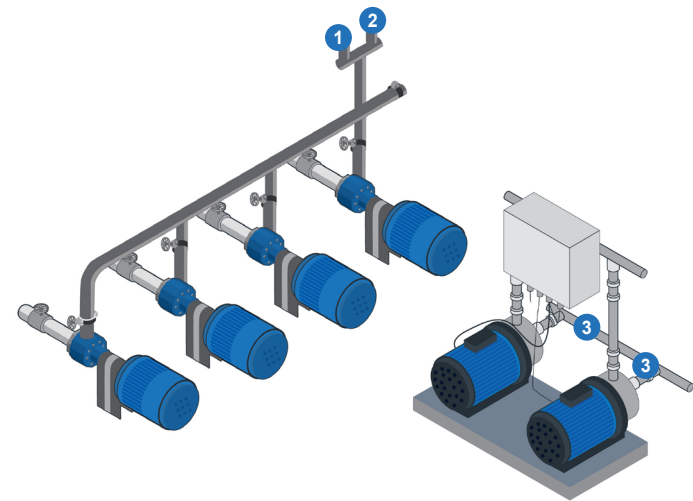
Fire Trucks

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



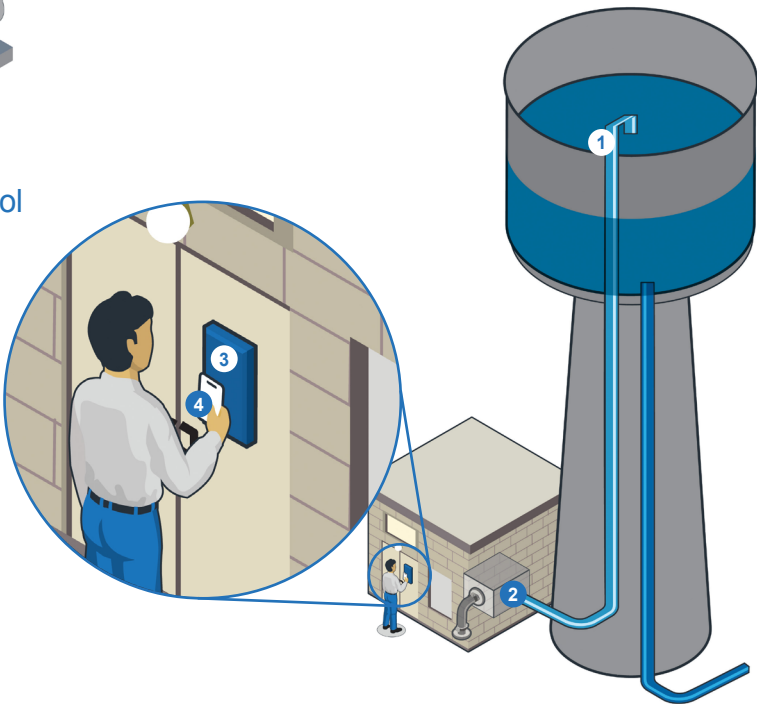
Lifting and Boosting Stations

- 1 **XMLA or XMX Pressure Switch** control a threshold fixing.
- 2 **XMLR Pressure Switch** regulates pressure.
- 3 **XMP Pressure Sensor** monitors pressure threshold with electromechanical switch.



Water Storage Facilities & Access Control

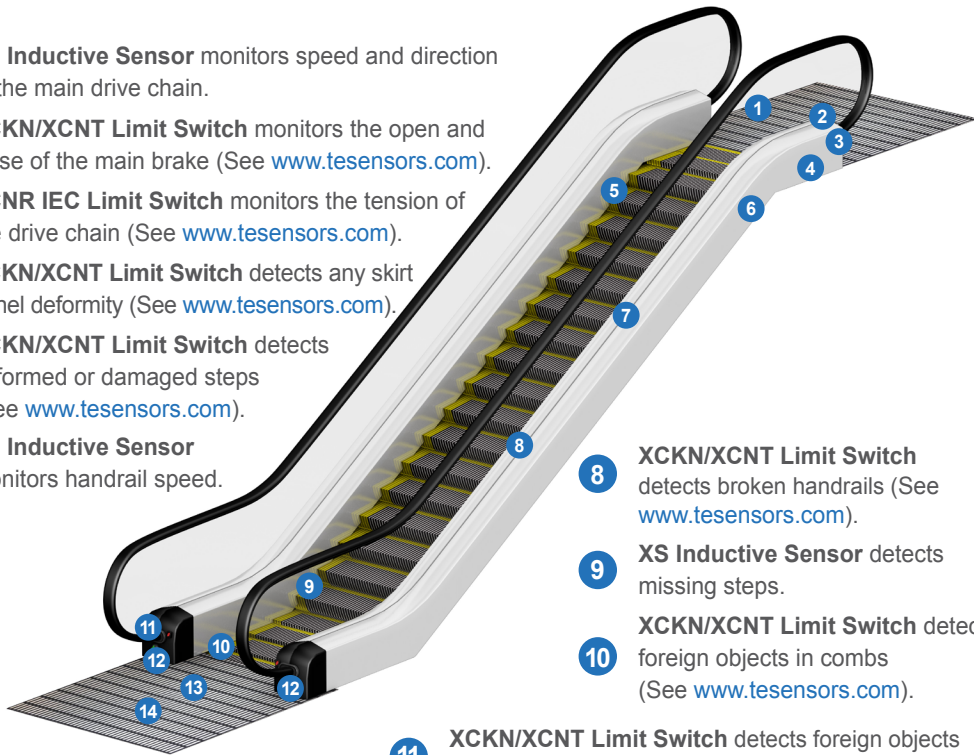
- 1 **XXS30 / XXA30 Ultrasonic Sensor** monitors the water level.
- XMLP Pressure Sensor + ZMLP Display** monitors pressure and provides a remote display.
- 3 **XGCS RFID Reader / Smart Antenna** automatically reads electronic badges/tags.
- 4 **XGHB Electronic Tag** stores data assigned to the individual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



Sensor Solutions for Escalator / Elevator Applications

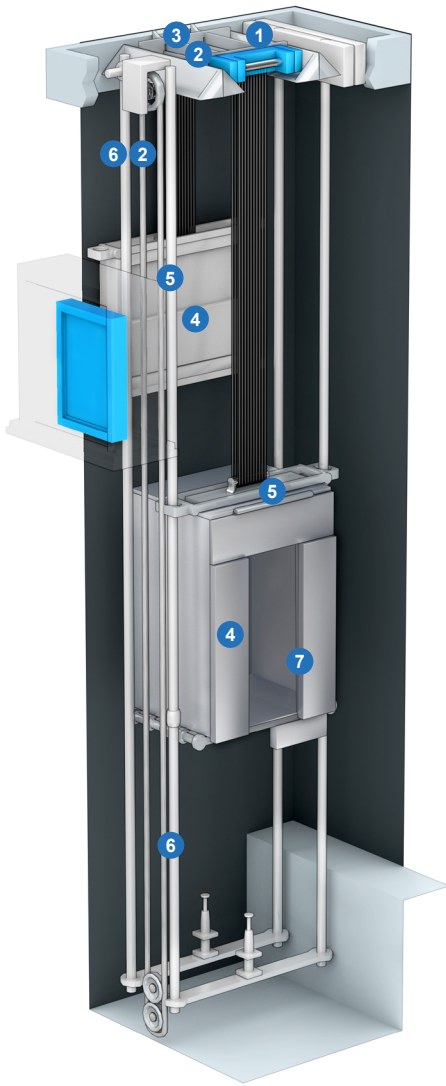
Escalators

- 1 **XU Photoelectric Sensor** detects entrance.
- 2 **XS Inductive Sensor** monitors speed and direction of the main drive chain.
- 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.
- 8 **XCKN/XCNT Limit Switch** detects broken handrails (See www.tesensors.com).
- 9 **XS Inductive Sensor** detects missing steps.
- 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.
- 13 **XCNR IEC Limit Switch** monitors drive chain traction (See www.tesensors.com).
- 14 **XS Inductive Sensor** detects the position of the access cover.



Elevators

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



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

XCMD XCKT
2-pole contact NC+NO snap action
2-pole contact NC+NO slow break
ISO entry (to EN 50262)

Table with 2 main sections: Miniature XCMD metal, Pre-cabled; fixing by the body or by the head and Compact XCKT plastic, 2 cable entries. Columns include Type of operator, Mechanical durability, Actuation speed, Product certification, Degree of protection, Rated operational characteristics, Fixing centres, Body dimensions, Connection, Complete switch, and various model numbers.

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)
Connector Deutsch DT04 4P
Complete switch NC+NO snap (2)
Connector M12
Complete switch NC+NO snap (2)

(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.
(3) Actuation in 1 direction
(4) For Pg 11 pre-cabled entries, replace P16 by G11. Example: XCKT2110P16 becomes XCKT2110G11.

XCKP/XCKD
2-pole contact NC+NO snap action
2-pole contact NC+NO slow break
ISO entry (to EN 50262)

Table with 2 main sections: Compact XCKD metal and XCKP plastic conforming to standard EN 50047 and Application - XCPR and XCDR with manual reset. Columns include Type of operator, Mechanical durability, Actuation speed, Product certification, Degree of protection, Rated operational characteristics, Pre-cabled entry, Fixing centres, Body dimensions, Metal switches, and Plastic, double insulated switches.

(5) For Pg 11 pre-cabled entries, replace P16 by G11. Example: XCKD2110P16 becomes XCKD2110G11.
(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	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"
Reference	ZCE10	ZCE11	ZCE02	ZCE24 (2)	ZCE21	ZCE27	ZCEF0 (2)	ZCEH0 (1)	⊕ ZCEF2 (2)	ZCEH2 (1)	ZCE08	ZCE07	ZCE06

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)	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 thermoplastic roller lever Ø 50 mm
Reference	ZCE01	ZCY15 (2)	ZCY16 (2)	ZCY25 (2)	ZCY26 (2)	ZCY18 (1)	ZCY19 (1)	ZCY22	ZCY45	ZCY55	ZCY91	ZCY39	ZCY49

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

Bodies

Miniature									Compact								
Type of contact									Type of contact								
Reference of metal body									Ref. metal body								
Pre-cabled									Ref. plastic body								
L = 1 m									ZCD21								
L = 2 m									ZCP21								
L = 5 m									ZCP27								

(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)	
L = 1 m	ZCMC21L1	ZCMC39L1	ZCMC25L1	ZCMC37L1	ZCMC4DL1	5-pin	4-pin
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

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	XZCP1164L2	XZCP1141L2	
Plastic	ZCEPE16	ZCEPE20	ZCEPE11	ZCEPE13	ZCPEN12	ZCEPE12			

(1) For PVC cable see page 47

XC Limit switches
Classic - XCKM, XCKL, complete switches

XCKM

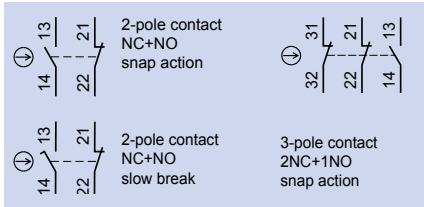


Table with 6 columns: Type of operator, Metal end plunger, Steel roller plunger, Roller lever plunger, Thermoplastic roller lever, and 'Cat's whisker'. Rows include Mechanical durability, Actuation speed, Product certification, Degree of protection, Rated operational characteristics, Cable entry, Fixing centres, and Body dimensions.

Table showing complete switch configurations for XCKM and XCKL. Columns include switch type, configuration (e.g., 2-pole NC+NO), and reference numbers.

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



Table with 5 columns showing different contact block configurations. Columns include Reference of body with contact block, XCKL reference, Reference of contact block only, and specific reference numbers for each configuration.

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

Operating heads, complete or for customer assembly

Diagram showing the assembly equation: Complete switch = Body/contact assembly + Head + Lever. Below this, two rows of diagrams show various operating heads (rotary/multi-directional and plunger) and levers (rotary and separate levers) with their respective reference numbers and descriptions.

(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
ISO entry (to EN 50262)
2-pole contact NC+NO snap action
2-pole contact NC+NO slow break
3-pole contact 2NC+1NO snap action
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, cULus, CCC, UKCA, 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, le = 3 A) / DC 13 ; Q 300 (Ue = 250 V, le = 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, Pg13, 1/2" NPT, M12 (5-pins)
Reference of contact block only: XE2SP2151, XE2NP2151, XE3SP2141, XE3NP2141

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, with steel roller lever plunger, 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, round rod lever, steel, U 3 mm L = 125 mm (2), 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



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



Type XCKS plastic, double insulated, conforming to standard EN 50041							Types XCKMR and XCR "Application - hoisting, materials handling, conveying"							
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	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	
Mechanical durability (millions of operating cycles)	25	15	20	20	20	20	2	1	10	10	10	0,3	0,3	
Actuation speed (in m/s)	0,5	0,5	1,5	1,5	1	1	1,5	1,5	1,5	1,5	1,5	1,5	1,5	
Product certification	CE, cULus, CCC, UKCA						CE, CSA, CCC, UKCA							
Degree of protection conforming to IEC 60529	IP65 / IP67						IP66		IP65		IP54		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)						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)						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)			
Fixing centres (mm)	30 x 60						61,5		85 x 75		105 x 70			
Body dimensions (mm) W x D x H	XCKS : 40 x 37 x 78 / ZCKS: 40 x 36 x 73						118 x 59 x 77		116 x 66 x 77		85 x 75 x 95		85 x 87 x 146	

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	—	—	—	—	—	—	—	—	XCRA11(2)	XCRA15	XCRE18(2)	—
	Both contacts act in each direction of actuation	—	—	—	—	—	—	—	—	XCRB11(2)	—	XCRF17(3)	—
Complete switch	1 contact operates in each direction	—	—	—	—	—	—	—	—	—	—	—	—
	2 C/O staggered snap action contacts	—	—	—	—	—	—	—	—	—	—	XCRT115	XCRT315 (4)
Complete switch	2 x 2 pole NC+NC staggered, slow break contacts	—	—	—	—	—	—	XCKMR54D1H29 (2)	XCKVR54D1H29 (2)(5)	—	—	—	—

Positive opening operation. ZCKS have different designs (1) For Pg 13.5 Cable entry delete the reference suffix H29. Example: XCKS131H29 becomes **XCKS131**. (2) Steel rods, L = 200 mm (3) Steel "T" rods, L = 200 mm, W = 300 mm. (4) Polyester enclosure² (5) Plastic enclosure

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, UKCA, conformity to CE marking				
Radio agreement	FCC, IC				
Max switching operation / hour	3600/h				
Max force for set actuation	5 daN				
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				



Receivers for wireless limit switches					Packages with transmitter and receiver	
Reference	XZBWR2STT24	XZBWRRC*	XZBWRRA*		Package	Reference
Number of emitters	2	32	32		XCMW102 transmitter and XZBWRRA* receiver	XCMWD02
Number and Output type	2 x PNP +2 for diagnostic	4 x PNP	2 x relay RT		XCMW115 transmitter and XZBWRRA* receiver	XCMWD15
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, UKCA FCC, RSS, C-stick, ANATEL, SRRC conformity to CE marking			*XZBWRRA and XZBWRRC will be available on sept 2025	
Ambiant temperature operating // storage	-25°C +55°C // -40°C + 70°C					

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							
Analog output 4...20 mA	M12 4-pins	XMLPM00GD21F	XMLP500MD21F	XMLP001GD21F	XMLP2D5GD21F	XMLP004GD21F	XMLP006GD21F	XMLPM01GD21F	XMLPM05GD21F
	EN175301-803-A	XMLPM00GC21F	XMLP500MC21F	XMLP001GC21F			XMLP006GC21F	XMLPM01GC21F	-
Analog output 0...10 V	M12 4-pins	XMLPM00G-D71F	-	-	-	XMLP004G-D71F	-	-	-

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							
Analog 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
Analog 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 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)	Analog output					
	M12	0,5-4,5V	XMEP060BD11F	XMEP100BD11F	XMEP250BD11F	XMEP400BD11F
		4-20mA	XMEP060BD21F	XMEP100BD21F	XMEP250BD21F	XMEP400BD21F
		0-10V	XMEP060BD71F	XMEP100BD71F	XMEP250BD71F	XMEP400BD71F
Deutsch DT04-3P		0,5-4,5V	XMEP060BT11F	XMEP100BT11F	XMEP250BT11F	XMEP400BT11F
		4-20mA	XMEP060BT21F	XMEP100BT21F	XMEP250BT21F	XMEP400BT21F
		0-10V	XMEP060BT71F	XMEP100BT71F	XMEP250BT71F	XMEP400BT71F
AMP Superseal 1,5 3-Pin		0,5-4,5V	XMEP060BV11F	XMEP100BV11F	XMEP250BV11F	XMEP400BV11F
		4-20mA	XMEP060BV21F	XMEP100BV21F	XMEP250BV21F	XMEP400BV21F
		0-10V	XMEP060BV71F	XMEP100BV71F	XMEP250BV71F	XMEP400BV71F

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

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, cULus							
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							
Analog output	4...20 mA	XMLK006B2C21	XMLK010B2C21	XMLK016B2C21	–	XMLK006B2D21	XMLK010B2D21	XMLK016B2D21
	0...10 V		XMLK010B2C71				XMLK010B2D71	

1) Also available with psi range. (2) Also available with 1/4"-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										
Analog output	4...20 mA	XMLRM01G0T25	XMLR001G0T25	-	XMLR010G0T25	XMLR016G0T25	XMLR025G0T25	-	XMLR250M0T25	XMLR400M0T25
	0...10 V	XMLRM01G0T75	-	-	XMLR010G0T75	-	-	-	-	-
Analog output + commutation		4...20 mA	XMLRM01G1P25	XMLR001G1P25	XMLR2D5G1P25	XMLR010G1P25	XMLR016G1P25	XMLR025G1P25	XMLR040G1P25	XMLR250M1P25
PNP - NO/NC programmable		0...10 V	XMLRM01G1P75	XMLR001G1P75	XMLR2D5G1P75	XMLR010G1P75	XMLR016G1P75	XMLR025G1P75	XMLR040G1P75	XMLR250M1P75
2 switching outputs PNP - NO/NC prog.			XMLRM01G2P05	XMLR001G2P05	XMLR2D5G2P05	XMLR010G2P05	XMLR016G2P05	XMLR025G2P05	XMLR040G2P05	XMLR250M2P05
Analog+2 switching outputs		4...20 mA	XMLRM01G2P25	-	XMLR010G2P25	-	-	-	XMLR250M2P25	XMLR400M2P05
Possible differential (bar)	Min.	0.03		0.08	0.3	0.48	0.8	1.2	7.5	12
	Max.	0.95		2.38	9.5	15	23.8	38	238	380
(pressure switches)										
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 1/4"-18NPT female fluid entry.

Switch with display ZMLP

(Only usable with 4-20mA analog 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	
	Analog 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

Straight

XZCP1241L5

XZCP1141L5

Other connectors

Screw terminal

EN 175301-803-A

XZCC12FCM40B

XZCC43FCP40B

Other versions: please consult our Customer Service.

XM Sensors for pressure control
Electromechanical pressure and vacuum switches
XMLA and XMLB

ISO entry (to EN 50262)										
1 C/O single-pole contact, snap action										
Size (bar)	-1	2.5	4	10	20	35	70	160	300	500
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, cULus, CCC, BV, LROS, UKCA									
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 up to 70°C	Hydraulic oils, fresh water, air up to 70°C	Hydraulic oils, fresh water, air up to 70°C	tapped entry, replace the last number of the reference (2) by 1 (example: XMLA010A2S12 becomes XMLA010A2S11)					

Type XMLA - fixed differential, single threshold detection

Setting range (bar) of upper limit (PH): pressure switches	- 0,28...- 1 (4)	0,15...2,5	0,4...4	0,6...10	1...20	1,5...35	5...70	10...160	20...300	30...500
Dimensions (mm) H x W x D	113 x 35 x 75	158 x 55 x 77,5	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
With setting scale 1 C/O single-pole, snap action contact	XMLAM01V2S12	XMLA002A2S12	XMLA004A2S12	XMLA010A2S12	XMLA020A2S12	XMLA035A2S12	XMLA070D2S12	XMLA160D2S12	XMLA300D2S12	XMLA500D2S12
Natural differential (bar) at low setting	0,24 (2)	0,13	0,35	0,5	0,4	1,25	3	5,5	16,5	20
subtract from PH to give PB at high setting	0,24 (2)	0,13	0,35	0,5	1	1,25	7,5	18	35	45

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	0,25...4	0,7...10	1,3...20	-	-	10...160	22...300	30...500
With setting scale 1 C/O single-pole, snap action contact	XMLBM02V2S12	XMLB002A2S12	XMLB004A2S12	XMLB010A2S12	XMLB020A2S12	-	-	XMLB160D2S12	XMLB300D2S12	XMLB500D2S12
Possible differential (bar) Min. at low setting	0,13 (3)	0,16	0,02	0,57	1	-	-	9,3	19,4	23
subtract from PH to give PB Min. at high setting	0,13 (3)	0,21	0,25	0,85	1,6	-	-	20,8	37	52,6
Max. at high setting	0,8 (3)	1,75	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.

XMLC and XMLD

ISO entry (to EN 50262)										
2 C/O single-pole contacts, simultaneous snap action										
Fluids controlled	Hydraulic oils, fresh water, air up to 70°C	Hydraulic oils, fresh water, air up to 160°C	Hydraulic oils, fresh water, air up to 160°C	Hydraulic oils, fresh water, air up to 160°C	Hydraulic oils up to 160°C					

Type XMLC - adjustable differential, regulation between 2 thresholds

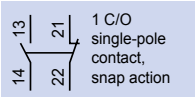
Setting range (bar) of upper limit (PH): pressure switches	0,14...- 1 (4)	0,3...2,5	0,3...4	0,7...10	1,3...20	3,5...35	7...70	12...160	22...300	30...500
Dimensions (mm) H x W x D	113 x 46 x 85	158 x 55 x 90	113 x 46 x 85	113 x 46 x 85	113 x 46 x 85	113 x 46 x 85	113 x 46 x 85	113 x 46 x 85	113 x 46 x 85	113 x 46 x 85
With setting scale 2 C/O single-pole, snap action contacts	-	XMLC002B2S12	XMLC004B2S12	XMLC010B2S12	XMLC020B2S12	XMLC035B2S12	-	XMLC160D2S12	XMLC300D2S12	-
Possible differential (bar) Min. at low setting	-	0,13	0,15	0,45	0,7	1	-	9	16	-
subtract from PH to give PB Min. at high setting	-	0,17	0,17	0,7	1	1,5	-	21	35	-
Max. at high setting	-	2	2,5	8	11	22	-	110	240	-

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

Setting range (bar) 2nd stage switching point (PB2)	- 0,12...- 1 (4)	-	-	-	-	4,4...35	-	-	-	41...500
1st stage switching point (PB1)	- 0,10...- 0,98	-	-	-	-	1,9...32,5	-	-	-	25...484
Spread between 2 stages (PB2 - PB1)	- 0,02...- 0,88	-	-	-	-	2,5...20,4	-	-	-	16...244
Without setting scale 2 C/O single-pole, snap action contacts (1 per stage)	-	-	-	-	-	-	-	-	-	-
Natural differential (bar) at low setting	0,1 (2)	-	-	-	-	1,5	-	-	-	21
Subtract PH 1/2 to give PB 1/2 at high setting	0,1 (2)	-	-	-	-	2,6	-	-	-	65

XM Sensors for pressure control

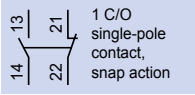
Electromechanical pressure switches XMX, XMA



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, cULus, CCC, UKCA		
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



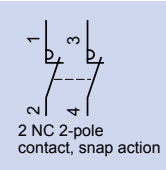
Setting range of upper limit (PH) (bar)	1...6	1,3...12	3,5...25
Fluids controlled	Air, water (fresh water, sea water) from 0...+70°C		
Ambient air temperature	-25...+70°C		
Degree of protection (conforming to IEC 60529)	IP54		
Rated operational characteristics (conforming to EN/IEC 60947-5-1)	AC-15 ; 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, cULus, CCC, UKCA		
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)

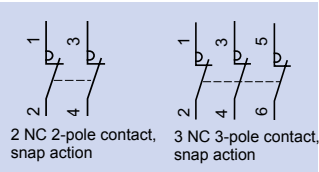
Without setting scale, screw terminal connections				
1 C/O single-pole, snap action contact		XMAV06L2135	XMAV12L2135	XMAV25L2135
Possible differential (bar)	Min. at low setting	0,8	1	3,4
subtract from PH to give PB	Min. at high setting	1,2	1,7	4,5
	Max. at high setting	4,2	8,4	20

XM Sensors for pressure control

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



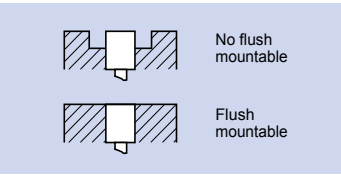
Degree of protection	IP 20		
Size (bar)	4,6	7	10,5
Setting range of upper limit (PH) (bar)	1,4...4,6	2,8...7	5,6...10,5
Fluids controlled	Water (fresh water, sea water) from 0...+55°C		
Electrical connection	Screw terminals, 2 cable entries with grommet!		
Product certification	CE, UKCA		
Ambient air 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)
of controlled		AC 2-pole, 3-phase	1,1 kW (1,5 HP)
motors	230 / 400 V	AC 2-pole, single-phase	1,5 kW (2 HP)
		AC 2-pole, 3-phase	2,2 kW (3 HP)
Dimensions (mm) H x W x D	96/105 x 72 x 102		94 x 72 x 102
Connection	G 1/4 (BSP female)	FSG2	FYG22
hydraulic	R 1/4 (BSP male)	FSG9	—
	G 3/8 (BSP female) rotating nut	—	—
Possible differential (bar)	At low setting	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.
to give PB	At high setting	1,2 min. - 2,3 max.	1,6 min. - 2,7 max.



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 fonctionnement : -25...+70°C. For stockage : -40...+70°C		
Decompression valve / ONOff knob	without	without	with
Fluid connection	G 1/4 (BSP female)	G 1/4 (BSP female)	4xG 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, UKCA		
Rated insulation voltage	Ui = 500 V		
durability	Power	1,5 kW	400 V AC 3-phase : 1 000 000 operating cycles
		2,2 kW	230 VAC 3-phase : 600 000 operating cycles
		3 kW	400 V AC 3-phase : 700 000 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
Type	2 NC 2-pole, snap action contact	XMPA06B2131	XMPA12B2131
of contacts	3 NC 3-pole, snap action contact	XMPA06C2131	XMPA12C2131
Possible differential (bar)	Min. at low setting	0,8	1
subtract from PH	Min. at high setting	1,2	1,7
to give PB	Max. at high setting	4,2	8,4

Available in bulk packs for selling in lots of 10 pcs. Add C suffix to the reference.

XS Inductive proximity sensors



	Flush standard and increased range								Non flush increased range		
	M8		M12	M18		M30		M12	M18	M30	
Nominal sensing distance Sn	1,5 mm	2,5 mm	2 mm	4 mm	5 mm	8 mm	10 mm	15 mm	7/8 mm	12/15 mm	22/30 mm
Usable sensing distance S (mm) flush mountable / No flush mountable	0 ... 1,2	0 ... 2	0...1,6	0 ... 3,2	0...4	0...6,4	0...8	0...12	0...5.6/0...6.4	0...9.6/0...12	0...17.6 / 0...24
Temperature range (°C)	- 25 ... + 70				- 25...+ 70				- 25...+ 70		
Product certification	CE, cULus, CCC,E2(2)								CE, cULus, CCC,E2(2)		
Degree of protection (conforming to IEC 60529)	IP67		Pre-cabled: IP 69K conforming to DIN 40050, IP 68		With connector: IP69K conforming to DIN 40050 (Pre-cabled: IP68)				M12-M30: With connector: IP69K conforming to DIN 40050 (Pre-cabled: IP68)		

Sensors for DC applications

Output function			NO				A		A		A		A		A		A		A		A		A			
			NC				B		B		B		B		B		B		B		B		B			
Dimensions (mm) Ø x L Cable / Connector			M8 x 33 / M8 x 42				M12 x 35 / M12 x 50				M18 x 39 / M18 x 50				M30 x 43 / M30 x 55				M12 x 37 / M12 x 51				M18 x 41 / M18 x 51			
3-wires	PNP	Cable (2 m)	XS508B1P	A L2	XS108B3P	A L2	XS512B1P	A L2	XS112B3P	A L2	XS518B1P	A L2	XS118B3P	A L2	XS530B1P	A L2	XS130B3P	A L2	XS212B4P	A L2	XS218B4P	A L2				
		Connector M8 / M12	XS508B1P	A M8	XS108B3P	A M8	XS512B1P	A M12	XS112B3P	A M12	XS518B1P	A M12	XS118B3P	A M12	XS530B1P	A M12	XS130B3P	A M12	XS212B4P	A M12	XS218B4P	A M12				
	NPN	Cable (2m)	XS508B1N	A L2	XS108B3N	A L2	XS512B1N	A L2	XS112B3N	A L2	XS518B1N	A L2	XS118B3N	A L2	XS530B1N	A L2	XS130B3N	A L2	XS212B4N	A L2	XS218B4P	A L2				
		Connector M8 / M12	XS508B1N	A M8	XS108B3N	A M8	XS512B1N	A M12	XS112B3N	A M12	XS518B1N	A M12	XS118B3N	A M12	XS530B1N	A M12	XS130B3N	A M12	XS212B4N	A M12	XS218B4P	A M12				
2-wires	No polarised (1)	Cable (2 m)	XS508B3C	A L2	XS608B3C	A L2			XS612B3D	A L2			XS618B3D	A L2			XS630B3D	A L2								
		Connector M12	–		–		XS512BSD	A M12	XS612B3D	A M12	XS518BSD	A M12	XS618B3D	A M12			XS630B3D	A M12								
Supply voltage limits, min./max. (V) including ripple			10...36		10...36		10...36		10...36		10...36		10...36		10...36		10...36		10...36		10...36					
Switching capacity, max. (mA) 3-wires / 2-wires			200 / 100		200 / 100		200 / 100		200 / 100		200 / 100		200 / 100		200 / 100		200		200		200					
Overload and short-circuit protection (★) / LED output state indicator (⊗)			★ / ⊗		★ / ⊗		★ / ⊗		★ / ⊗		★ / ⊗		★ / ⊗		★ / ⊗		★ / ⊗		★ / ⊗		★ / ⊗					
Residual current, open state (mA)			≤ 0,5		≤ 0,5		≤ 0,5		≤ 0,5		≤ 0,5		≤ 0,5		≤ 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		≤ 2 / ≤ 4		≤ 2 / ≤ 4		≤ 2 / ≤ 4		≤ 2		≤ 2		≤ 2					
Switching frequency (Hz) 3-wires / 2-wires			5000 / 4000		2500 / 3000		5000 / 4000		2500 / 2000		2000 / 3000		1000 / 1000		1000 / 2000		500 / 500		2500		1000					

Dimensions (mm) Ø x L Pre-cabled / Connector			M8 x 51 / M8 x 62			M12 x 53 / M12 x 62			M18 x 62 / M18 x 74			M30 x 62			M12 x 55 / M12 x 65			M18 x 62 / M18 x 74			M30 x 66 / M30 x 74					
3-wires	PNP	Cable (2 m)	XS508BLP	A L2	XS608B1P	A L2	XS512BLP	A L2	XS612B1P	A L2	XS518BLP	A L2	XS618B1P	A L2	XS530BLP	A L2	XS630B1P	A L2	XS612B4P	A L2	XS618B4P	A L2	XS630B5P	A L2		
		Connector M12	XS508BLP	A M12	XS608B1P	A M12	XS512BLP	A M12	XS612B1P	A M12	XS518BLP	A M12	XS618B1P	A M12	XS530BLP	A M12	XS630B1P	A M12	XS612B4P	A M12	XS618B4P	A M12	XS630B5P	A M12		
	NPN	Cable (2 m)	XS508BLN	A L2	XS608B1N	A L2	XS512BLN	A L2	XS612B1N	A L2	XS518BLN	A L2	XS618B1N	A L2	XS530BLN	A L2	XS630B1N	A L2	XS612B4N	A L2	XS618B4N	A L2	XS630B5N	A L2		
		Connector M12	XS508BLN	A M12	XS608B1N	A M12	XS512BLN	A M12	XS612B1N	A M12	XS518BLN	A M12	XS618B1N	A M12	XS530BLN	A M12	XS630B1N	A M12	XS612B4N	A M12	XS618B4N	A M12	XS630B5N	A M12		
2-wires	No polarised	Cable (2 m)	XS508B1D	A L2	XS608B1D	A L2	XS512B1D	A L2	XS612B1D	A L2	XS518B1D	A L2	XS618B1D	A L2	XS530B1D	A L2	XS630B1D	A L2	–	–	–	–				
		Connector M12	XS508B1D	A M12	XS608B1D	A M12	XS512B1D	A M12	XS612B1D	A M12	XS518B1D	A M12	XS618B1D	A M12	XS530B1D	A M12	XS630B1D	A M12	–	–	–	–				
Supply voltage limits, min./max. (V) including ripple			10...58			10...58			10...58			10...58			10...58			10...58			10...58			10...58		
Switching capacity, max. (mA) 3-wires / 2-wires			200 / 100			200 / 100			200 / 100			200 / 100			200 / 100			200 / 100			200 / –			200 / –		
Overload and short-circuit protection (★) / LED output state indicator (⊗)			★ / ⊗			★ / ⊗			★ / ⊗			★ / ⊗			★ / ⊗			★ / ⊗			★ / ⊗			★ / ⊗		
Residual current, open state (mA) 2-wires			≤ 0,5			≤ 0,5			≤ 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			≤ 2 / ≤ 4			≤ 2 / ≤ 4			≤ 2 / –			≤ 2 / –		
Switching frequency (Hz) 3-wires / 2-wires			5000 / 4000			2500 / 3000			5000 / 4000			2500 / 2000			2000 / 3000			1000 / 1000			1000 / 2000			500 / 500		

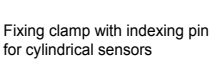
Multi-current/multi-voltage sensors for AC/DC applications

Dimensions (mm) Ø x L	Cable / Connector	—	—	M12 x 53 / M12 x 62		M18 x 62 / M18 x 73		M30 x 62 / M30 x 73		—		M18 x 60 / M18 x 72	M30 x 63 / M30 x 74
2-wires	Cable (2 m)	—	—	XS512B1M A L2	XS612B1M A L2	XS518B1M A L2	XS618B1M A L2	XS530B1M A L2	XS630B1M A L2	—		XS618B4M A L2	XS630B4M A L2
	Connector 1/2"-20 UNF	—	—	XS512B1M A U20	XS612B1M A U20	XS518B1M A U20	XS618B1M A U20	XS530B1M A U20	XS630B1M A U20	—		XS618B4M A U20	XS630B4M A U20
Supply voltage limits, min./max. (V) including ripple		—	—	20...264	20...264	20...264	20...264	20...264	20...264	—		20...264	20...264
Switching capacity, max (mA)		—	—	200	200	300 AC / 200 DC	300 AC / 200 DC	300 AC / 200 DC	300 AC / 200 DC	—		300 AC / 200 DC	300 AC / 200 DC
LED output state indicator (⊗)		—	—	⊗	⊗	⊗	⊗	⊗	⊗	—		⊗	⊗
Residual current, open state (mA)		—	—	≤ 0,8	≤ 0,8	≤ 0,8	≤ 0,8	≤ 0,8	≤ 0,8	—		≤ 0,8	≤ 0,8
Voltage drop, closed state (V) at I nominal		—	—	≤ 5,5	≤ 5,5	≤ 5,5	≤ 5,5	≤ 5,5	≤ 5,5	—		≤ 5,5	≤ 5,5
Switching frequency (Hz)		—	—	25 AC / 1000 DC	25 AC / 1000 DC	25 AC / 1000 DC	25 AC / 1000 DC	25 AC / 500 DC	25 AC / 500 DC	—		25 AC / 1000 DC	25 AC / 300 DC

(1) polarised for M8 short (2) E2 depending on the version, more details on [tesensors.com](https://www.tesensors.com) (3) Also available with M8 connector. Substitute "M12" for "M8" at the end of the reference.

Accessories

Fixing for cylindrical sensors

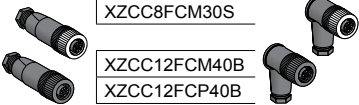


M8	XSZB108
M12	XSZB112
M18	XSZB118
M30	XSZB130



Suitable female plug-in connectors

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



PUR pre-wired connectors (1)

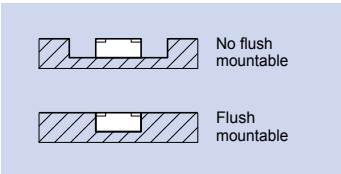


Straight Elbowed
(1) For PVC cable see page 47

M8 (3-pins)		1/2"	M12 (4-pins)						
Straight	Elbowed		Straight	Elbowed					
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

XS Inductive proximity sensors

Rectangulars plastic



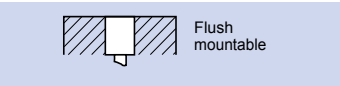
	□ 40 x 40 x 70		□ 40 x 40 x 117	
Nominal sensing distance Sn	20 mm	40 mm	20 mm	40 mm
Operating zone (mm)	0...16	0...32	0...16	0...32
Sas / Sar				
Suitability for flush mounting(metal environment)	flush mountable	No flush mountable	flush mountable	No flush mountable
Temperature range (°C)	- 25...+ 70			
Product certification	CE, cULus, CCC, E2, for PNP versions: TUV Sil 2			
Degree of protection (conforming to IEC 60529)	IP67 and IP69K			
Sensors for DC applications				
Connection	M12		Screw terminals (2)	
Supply voltage limits, min./max. (V) including ripple				
Switching capacity, max (mA)				
Short-circuit protect. (★) / Output state LED (⊗) / Power on LED (⊙)				
Voltage drop, closed state (V) at I nominal cable / Connector	XS8C2A1PDM12 (1)	XS8C2A4PDM12 (1)	XS8C4A1PDP20 (1)	XS8C4A4PDP20 (1)
Switching frequency (Hz) cable / Connector	10 - 58			
	4-wires version = 200 – 2-wires version = 1.5...100			
	4-wires version = ★ / ⊗ / ⊙ – 2-wires version = ★ / ⊗ / –			
	4-wires version = ≤ 2 – 2-wires version = ≤ 4			
	flush mountable : 40 - No flush version : 30			

(1) coming soon

XS Inductive proximity sensors

PNP No+Nc complementary outputs

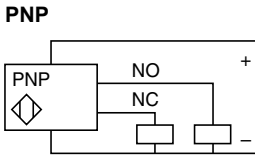
Cylindrical



	M 12	M 18	M 30
Nominal sensing distance Sn	flush	flush	flush
	Increased flush	Increased flush	Increased flush
Operating zone (mm)	flush	flush	flush
Sao / Sar	Increased flush	Increased flush	Increased flush
Suitability for flush mounting(metal environment)	Flush mountable ou No flush mountable depending on model		
Case M (metal) P (plastic)	Metal		
Temperature range (°C)	- 40 to +70		
Degree of protection (conforming to IEC 60529)	Precabled - IP65, IP68 - M12 connector IP65, IP67, IP69K		
Product certification	cULus, E2, CE, for PNP versions: TUV Sil 2		
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	XS512B5PDL2	XS518B5PDL2	XS530B5PDL2
			increased flush	XS112B3PDL2	XS118B3PDL2	XS130B3PDL2
Connection						
4-wires	PNP	NO + NC	Flush	XS512B5PDM12	XS518B5PDM12	XS530B5PDM12
			increased flush	XS112B3PDM12	XS118B3PDM12	XS130B3PDM12
Supply voltage limits, min./max. (V) including ripple	10-36v			10-36v	10-36v	10-36v
Switching capacity, max (mA)	200 mA			200 mA	200 mA	200 mA
LED output state indicator (⊗)	–			–	–	–
Voltage drop, closed state (V) at I nominal	< 2v			< 2v	< 2v	< 2v
Switching frequency (Hz)	85			85	85	80



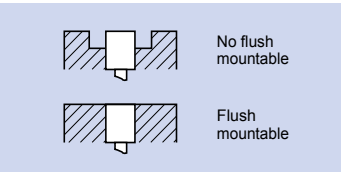
Accessories

Fixing clamps		Suitable female plug-in connectors, including PUR pre-wired versions (1)			
With indexing pin for cylindrical sensors		length 5 m without LED	pre-wired Elbowed	pre-wired Straight	screw terminal
		M12 (ou D)	XZCP1241L5	XZCP1141L5	XZCC12FCM40B

(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, cULus, UKCA, ECOLAB			
Degree of protection (conforming to IEC 60529)	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		XS4P12MA230K	XS4P18MA230K	XS4P30MA230K
not short-circuit protected (1)		NC function			XS4P18MB230K	
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.

Miniature cylindrical metal



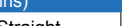
	Ø 4	M5	Ø 6,5
Nominal sensing distance Sn	1 mm	1 mm	1,5 mm
Operating zone (mm)	0...0,8	0...0,8	0...1,2
Suitability for flush mounting(metal environment)	Quasi flush mountable		
Temperature range (°C)	- 25...+ 70		
Product certification	CE, cULus, CCC,E2(2)		
Degree of protection (conforming to IEC 60529)	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		
		NC function	–	–	XS506B1NBL2		
2-wires (polarised)	NO function		–	–		XS606B3CAL2	
	NC function		–	–		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		
		NC function	–	–	XS506B1NBM8		
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

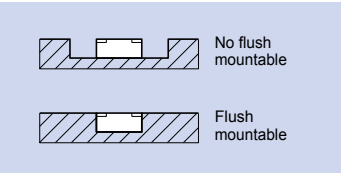
(1) Stainless steel sensors, Sn = 0,8 mm

Accessories

Fixing for cylindrical sensors			Suitable female plug-in connectors				PUR pre-wired connectors (1)				M8 (3-pins)			1/2"			M12 (4-pins)													
Fixing clamp with indexing pin for cylindrical sensors 			M8	XSZB108	Straight		Elbowed		 		Straight		Elbowed		Straight		Elbowed		Straight		Elbowed PNP LED									
			M12	XSZB112	XZCC8FDM30S		XZCC8FCM30S				2 m		XZCP0566L2		XZCP0666L2		2 m		XZCP1865L2		XZCP1965L2		2 m		XZCP1141L2		XZCP1241L2		XZCP1340L2	
			M18	XSZB118	XZCC12FDM40B		XZCC12FCM40B				5 m		XZCP0566L5		XZCP0666L5		5 m		XZCP1865L5		XZCP1965L5		5 m		XZCP1141L5		XZCP1241L5		XZCP1340L5	
			M30	XSZB130	XZCC12FDP40B		XZCC12FCP40B				10 m		XZCP0566L10		XZCP0666L10		10 m		XZCP1865L10		XZCP1965L10		10 m		XZCP1141L10		XZCP1241L10		XZCP1340L10	
							(1) For PVC cable see page 47																							

XS Inductive proximity sensors - Application

Rotation control



	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, cULus, CCC, UKCA		
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)		
			Output 0...10 V	–	–
		Output 4...20 mA	–	–	–
Supply voltage limits, min./max. (V) including ripple			10...36	–	10...58
Switching capacity, max (mA)			100	–	200
Short-circuit protect. (★) / LED output state indicator (⊗) / Power on LED (⊗)			★ / ⊗ / ⊗	–	★ / ⊗ / –
Linearity error			–	–	–
Voltage drop, closed state (V) at I nominal			≤ 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

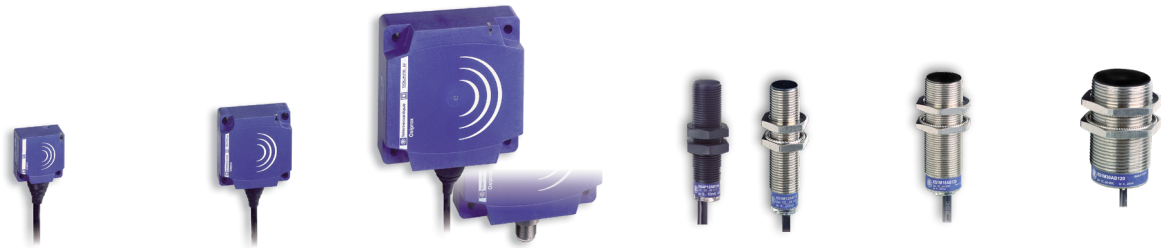
Fixings

Fixing clamp with indexing pin
for cylindrical sensors



M12	XSZB112
M18	XSZB118
M30	XSZB130

Analog (Position control)



26 x 26 x 13	40 x 40 x 15	80 x 80 x 26	M12	M18	M30
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...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 / No flush mountable	flush / No flush mountable	flush / No flush mountable
P	P	P	M ou P	M ou P	M ou P
- 25...+ 70	- 25...+ 70	- 25...+ 70	- 25...+ 70	- 25...+ 70	- 25...+ 70
Pre - cabled; IP68 (with connector IP67)			IP67		
CE, cULus, CCC, UKCA					
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
-	-	-	-	-	-
-	-	-	-	-	-

-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
XS9E111A1L2 (6)	XS9C111A1L2 (6)		XS4P12AB110	XS4P18AB110	XS4P30AB110
-	-	-	XS1M12AB120	XS1M18AB120	XS1M30AB120
XS9E111A2L2 (6)	XS9C111A2L2 (6)	XS9D111A2L2 (6)	-	-	-
-	-	-	XS4P12AB120	XS4P18AB120	XS4P30AB120
-	-	-	-	-	-
-	-	-	-	-	-
XS9E111A1L01M12 (4)(6)	-	-	-	-	-
-	-	XS9D111A2M12 (6)	-	-	-
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					
-	-	-	-	-	-
-	-	-	-	-	-
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)		M8 (3-pins)		1/2"		M12 (4-pins)			
	Straight	2 m	XZCP0566L2	Elbowed	2 m	XZCP1865L2	Elbowed	2 m	XZCP1141L2
			XZCP0666L2			XZCP1965L2			XZCP1241L2
			XZCP0666L5			XZCP1965L5			XZCP1340L2
	Elbowed	5 m	XZCP0566L5	10 m	5 m	XZCP1865L5	10 m	5 m	XZCP1141L5
			XZCP0666L5			XZCP1965L5			XZCP1241L5
			XZCP0666L10			XZCP1965L10			XZCP1340L5
		10 m	XZCP0566L10		10 m	XZCP1865L10		10 m	XZCP1141L10
			XZCP0666L10			XZCP1965L10			XZCP1241L10
									XZCP1340L10

(1) For PVC cable see page 47

Suitable female plug-in connectors

M8	Straight	Elbowed
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	M30
Nominal sensing distance Sn	7 mm	12 mm	22 mm
Operating zone (mm)	0 ... 5,6	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, cULus, CCC, UKCA		
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		
3-wires	PNP	NO function		XS212SAPAL2	XS218SAPAL2	XS230SAPAL2
	NPN	NO function		XS212SANAL2	XS218SANAL2	XS230SANAL2
Connection				par connector M12		
Dimensions (mm)				M12 x 61		
3-wires	PNP	NO function		XS212SAPAM12	XS218SAPAM12	XS230SAPAM12
	NPN	NO function		XS212SANAM12	XS218SANAM12	XS230SANAM12
Supply voltage limits, min./max. (V) including ripple				10...36		
Switching capacity, max (mA)				≤ 200		
Switching frequency (Hz)				2500	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

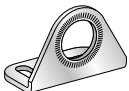
Connection			Pre-cabled, No poisonous (2 m)		
Dimensions (mm)			–	M18 x 60	M30 x 62
2-wires (2)	AC/DC	NO function	–	XS218SAMAL2	XS230SAMAL2
Connection			1/2"-20 UNF connector		
Dimensions (mm)			–	M18 x 72	M30 x 74
2-wires (2)	AC/DC	NO function	–	XS218SAMAU20	XS230SAMAU20
Supply voltage limits, min./max. (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**).

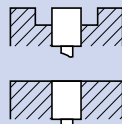
(2) For these sensors without short-circuit protection, it is essential to connect a 0.4 A quick-blow fuse in series with the load.

Accessories

Fixing clamps		M12 pre-wired connector		M12 jumper cable	
Stainless steel		female, 4-pin, stainless steel clamping ring		male, 3-pins, stainless steel clamping ring	
	for sensor	Straight connector		Straight connector	
	Ø 12	XSZBS12		5 m	
	Ø 18	XUZA118		5 m	
	Ø 30	XSZBS30		XZCPA151140A5	
		Elbowed connector		5 m	
				XZCPA1241L5	
				1/2" pre-wired connector	
				Straight	
				5 m	
				Elbowed	
				5 m	

XT Capacitive proximity sensors

Detection of insulating materials or conductive materials

						
		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			
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

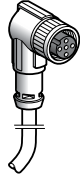
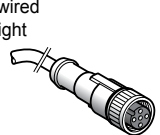
Connection				Pre-cabled PVC (2 m)			
3-wires	PNP	NO function	Flush mountable	XT512B1PAL2	XT518B1PAL2	XT530B1PAL2	–
			No flush mountable	–	XT218A1PAL2	XT230A1PAL2	XT234A1PAL2
		Function NO+NC	Flush mountable	XT512B1PBL2	XT518B1PCL2	XT530B1PCL2	–
	NPN	NO function	Flush mountable	–	–	–	–
			No flush mountable	–	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

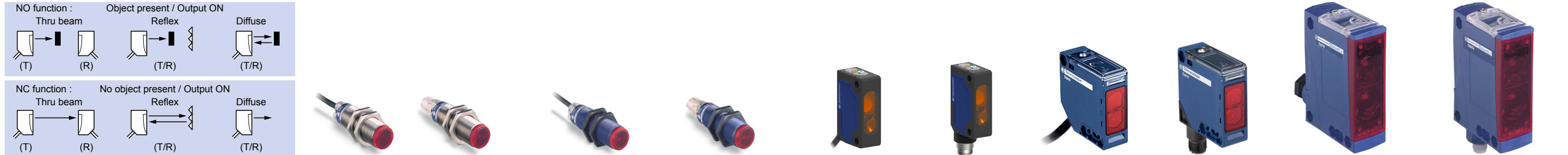
(1) For these sensors without short-circuit protection, it is essential to connect a 0.4 A quick-blow fuse in series with the load.
(2) The operating distance depends on the objet material.
(3) Only for detecting insulating materials. (4) 24...240 VAC or 24 VDC supply (No flush mountable)

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	M12 connector	M18 Plastic cable	M12 connector	Miniature Cable	M8 connector	Compact 50 x 50 mm Cable		M12 connector	Compact 92 x 71 mm Screw terminal		M12 connector				
Output function	NO		NO or NC	NO or NC	NO or NC	NO or NC	NO or NC	NO or NC	A		A		A		A			
	NC								B		B		B		B			
Diffuse	Sensing distance		1 m (2) (3)		1 m (2) (3)		1.9 m (3)		1 m (3)			2,1 m (3)						
Output type	DC3	PNP	XUB5BPXNL2	XUB5BPXNM12	XUB5APXNL2	XUB5APXNM12	XUM5APXBL2	XUM5APXBM8	XUK5AP	A	NL2	XUK5AP	A	NM12	XUX5AP	A	NM12	
		NPN	XUB5BNXNL2		XUB5ANXNL2	XUB5ANXNM12	XUM5ANXBL2	XUM5ANXBM8	XUK5AN	A	NL2	XUK5AN	A	NM12	XUX5AN	A	NM12	
Reflex Polarised	IO-Link		–	–	–	–	–	–	XUK5ARCNL2		–	XUX5ARCNT16		–				
	Sensing distance (4)		7 m		7 m		8 m (3)		5 m			11 m (3)						
	Output type	DC3	PNP	XUB9BPXNL2	XUB9BPXNM12	XUB9APXNL2	XUB9APXNM12	XUM9APXBL2	XUM9APXBM8	XUK9AP	A	NL2	XUK9AP	A	NM12	XUX9AP	A	NM12
			NPN	XUB9BNXNL2	XUB9BNXNM12	XUB9ANXNL2	XUB9ANXNM12	XUM9ANXBL2	XUM9ANXBM8	XUK9AN	A	NL2	XUK9AN	A	NM12	XUX9AN	A	NM12
BGS	AC/DC 1C/O relay		–	–	–	–	–	–	XUK9ARCNL2		–	XUX9ARCNT16		–				
	Sensing distance (4)		0.3 m		0.3 m		–		7 m			14 m (3)						
	Output type	DC3	PNP	XUB8BPXNL2	XUB8BPXNM12	XUB8APXNL2	XUB8APXNM12	XUM8APXBL2	XUM8APXBM8	XUK8AP	A	NL2	XUK8AP	A	NM12	XUX8AP	A	NM12
			NPN	XUB8BNXNL2	XUB8BNXNM12	XUB8ANXNL2	XUB8ANXNM12	XUM8ANXBL2	XUM8ANXBM8	XUK8AN	A	NL2	XUK8AN	A	NM12	XUX8AN	A	NM12
Thru beam	AC/DC 1C/O relay		–	–	–	–	–	–	XUK8AR	C	NL2		XUX1ARCNT16		–			
	Sensing distance		30 m		15 m		30 m (3)(5)		30 m			40 m (3)						
	Output type	DC3	PNP	XUB2BPXNL2	XUB2BPXNM12	XUB2APXNL2	XUB2APXNM12	XUM2APXBL2	XUM2APXBM8	XUK2AP	A	NL2R	XUK2AP	A	NM12R	XUX2AP	A	NT16R
			NPN	XUB2BNXNL2	XUB2BNXNM12	XUB2ANXNL2	XUB2ANXNM12	XUM2ANXBL2	XUM2ANXBM8	XUK2AN	A	NL2R	XUK2AN	A	NM12R	XUX2AN	A	NT16R
	AC/DC 1C/O relay		–	–	–	–	–	–	XUK2ARCNL2R		–	XUX8ARCNT16		–				
	Thru beam Transmitter	DC	–	–	–	–	Transmitters are already included	Transmitters are already included	XUK2AKSNL2T		XUK2AKSNM12T	–	–	–				
		AC/DC	–	–	–	–			XUK2ARCNL2T		–	–	–					
Multimode	Sensing distance		Background suppression: : 0,12 m - Diffuse: 0,3 m Reflex polarised: : 3 m - Thru beam : 20 m				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						
Output type	DC3 NO/NC	PNP	XUB0BPSNL2	XUB0BPSNM12	XUB0APSNL2	XUB0APSNM12	XUM0APSAL2	XUM0APSAM8	–		–	XUX0AKSAT16T		XUX0AKSAM12T				
		NPN	XUB0BNSNL2	XUB0BNSNM12	XUB0ANSNL2	XUB0ANSNM12	XUM0ANSAL2	XUM0ANSAM8	–		–	XUX0ARCTT16T		–				
		PNP/NPN	–	–	–	–	–	–	XUK0AKSAL2		XUK0AKSAM12	XUX0AKSAT16		XUX0AKSAM12				
		AC/DC 1C/O relay	–	–	–	–	–	–	XUK0ARCTL2		–	XUX0ARCTT16		–				
Thru beam Transmitter	DC		XUB0BKSNL2T	XUB0BKSNM12T	XUB0AKSNL2T	XUB0AKSNM12T	XUM0AKSAL2T	XUM0AKSAM8T	XUK0AKSAL2T		XUK0AKSAM12T	XUX0AKSAT16T		XUX0AKSAM12T				
	AC/DC		–	–	–	–	–	–	XUK0ARCTL2T		–	XUX0ARCTT16T		–				

(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	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
Dimensions	pre-cabled / connectors	M18 x 64 mm / M18 x 78 mm	10,8 x 31,5 x 19,5	18 x 50 x 50
Product certifications	CE, cULus, C-TICK	CE, cULus, UKCA	CE, cULus, CCC, C-TICK	CE, cULus, CCC, C-TICK

DC common characteristics			Supply voltage limits, min./max. (V) including ripple	10...36	10...36	10...30	10...30	10...36
			Switching frequency (Hz)	500	500	1000	500	500
Common characteristics for DC versions			Switching capacity, max (mA) : 100 / Overload and short-circuit protection (★) / LED output state			LED output state indicator (⊗) : Yes / power on LED (⊗) : yes		

AC/DC common characteristics			Supply voltage limits, min./max. (V) including ripple	-	-	-	20...264	20...264
			Switching frequency (Hz)	-	-	-	20	20
LED output state indicator (⊗) / power on LED (⊗)			-	-	-	-	⊗ / ⊗	⊗ / ⊗

Accessories

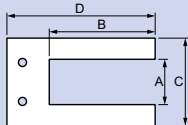
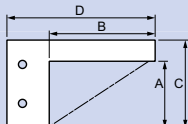
Reflectors			3D fixings with ball joint			Simple fixings			Suitable female plug-in connectors, including PUR pre-wired versions (1)			
												
Reflectors (mm)			for			for			length. 5 m without LED			
Ø 21			XUB...			XUK...			M8			
24 x 21			XUM0...			XUX...			M12			
Ø 39			XUZB2003			XUZK2003			XZCP1041L5			
Ø 80			XUZM2003			XUZX2003			XZCP0941L5			
50 x 50			XUZC2004						XZCP1241L5			
100 x 100									XZCP1141L5			
									XZCC8FCM40S			
									XZCC12FCM40B			

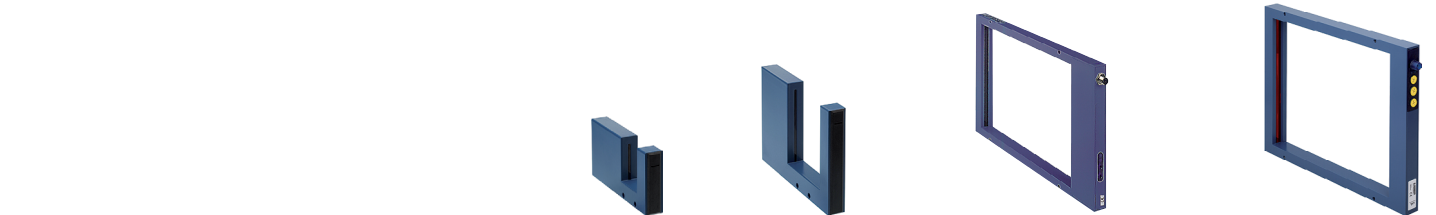
XU Photo-electric sensors
Optical forks without setting and frames

System: Thru-beam with modular red LED light source

Output function	NO / NC	A / 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																				
Transmitter / Receiver			3-wires	NO function	PNP	XUVR0605P	A	NM8	50	60	74	77,5	XUVR0303PANL2		A	B	C	D												
 					NPN	XUVR0605N	A	NM8																						
			NO function	PNP	XUVR0608P	A	NM8	80										60	104	77,5										
					NPN	XUVR0608N	A	NM8																						
			NO function	PNP	XUVR1212P	A	NM8	120										120	144	142										
					NPN	XUVR1212N	A	NM8																						
			NO function	PNP	XUVR1218P	A	NM8	180										120	204	142										
					NPN	XUVR1218N	A	NM8																						
			NO function	PNP	XUVA0505P	A	NM8	44										44	71	71										
			NO function	PNP	XUVA0808P	A	NM8	74										74	101	101										
			NO function	PNP	XUVA1212P	A	NM8	112										112	142	142										
			NO function	PNP	XUVA1515P	A	NM8	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 (⊗)			★ / ⊗																								



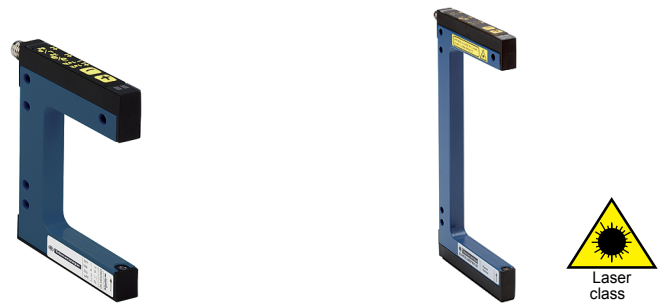
System	Thru-beam with infrared emission				
Passageway dimensions	30 x 30 mm	60 x 60 mm	200 x 120 mm	200 x 180 mm	200 x 250 mm
Connection	M8 (4-pins)		M12 (4-pins)		
Minimum size of object to be detected	Ø 2 mm	XUVF30M8	XUVF60M8	—	—
	Ø 4 mm	—	—	XUVF120M12	XUVF180M12
	Ø 10 mm	—	—	XUYFRS120S	XUYFRS250S
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)						
	M8 (3-pins)		M8 (4-pins)		M12 (4-pins)	
	For optical forks without setting		For optical forks and frame with setting		For frame with setting	
		Straight / Elbowed		Straight / Elbowed		Straight / Elbowed
	2 m	XZCP0566L2 / XZCP0666L2	2 m	XZCP0941L2 / XZCP1041L2	2 m	XZCP1141L2 / XZCP1241L2
	5 m	XZCP0566L5 / XZCP0666L5	5 m	XZCP0941L5 / XZCP1041L5	5 m	XZCP1141L5 / XZCP1241L5

(1) For PVC cable see page 47

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									
		XUYFANEP100002	2	95		110									
		XUYFANEP40005	5	42	35	57	14	XUYFALNEP40005	5	42	44	57	14		
		XUYFANEP60005	5	59		77									
		XUYFANEP100005	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	Thru beam	Thru beam
	Special transparent labels	For all other opaque labels	
Sensing distance	3 mm version	XUVU06M3PSNM8	XUVU04M3BM8
Switching frequency (Hz)	1500	10 000	1100
Sensitivity adjustment	Numeric potentiometer (1)	Numeric potentiometer (1)	Numeric potentiometer (1)
Connection	M8 (4-pins)		M8 (4-pins)
Case M (metal) / Setting-up assistance LEDs ⊗	M / ⊗		M / (x)
Temperature range (°C) / Degree of protection (conforming to IEC 60529)	+5...+55 / IP65	-20...+60 / IP65	+5...+55 °C / IP65
Product certification	CE	CE, cULus	IEC 60947-5-2; CE; UKCA; cULus

(1) remote adjustment available.

XU Photo-electric sensors - Application
Packaging series

Contrast

Application					
Product reference	XUMRAWAYM8	XUMRAGAYM8	XUMRACAYM8	XUM5ALAYM8	XU5M18U1D
System (Detection mode)	Diffuse	Diffuse	Diffuse	Diffuse	Diffuse
Light	White	RGB	RGB	Laser	Ultraviolet
Mark color	Black & white	Black & white	Color	Black & white	Ultraviolet
Mark size	>1mm	>1mm	>1mm	>1mm	>2mm
Sensing distance	12 mm	12 mm	12 mm	1...250 mm	0...80 mm
Material	Housing: ABS, Front and Lens: PMMA	Housing: ABS, Front and Lens: PMMA	Housing: ABS, Front and Lens: PMMA	Housing: ABS, Front and Lens: PMMA	Metal Enclosure: Nickel Plated brass Lens: PMMA
Temperature range (°C) / Degree of protection	- 20...+55 / IP67, IP69K	- 20...+55 / IP67, IP69K	- 20...+55 / IP67, IP69K	- 20...+60 / IP67, IP69K	- 20...+55 / IP67
Product certification	CE - UKCA - cULus - Ecolab	CE - UKCA - cULus - Ecolab	CE - UKCA - cULus - Ecolab	CE - UKCA - cULus - Ecolab	CE - UL - CSA
Dimension (mm)	34 x 12 x 20 (H x W x D)	34 x 12 x 20 (H x W x D)	34 x 12 x 20 (H x W x D)	34 x 12 x 20 (H x W x D)	18 x 95 (ø x L)
Supply voltage	12...24 Vdc	12...24 Vdc	12...24 Vdc	12...24 Vdc	12...24 Vdc
Switching capacity (mA) / Switching frequency (Hz)	100 / 10000	100 / 10000	100 / 2500	100 / 4000	100 / 1000
Setting	Teach Button	Teach Button	Teach Button	Teach Button	Potentiometer
Body type	Miniature	Miniature	Miniature	Miniature	Cylindrical

Transparent

Application						
Product reference	XUMTARAYM8	XUBTAPSNM12	XUK8ABPXM12	XUM8ABAYM8	XUT8ABAYP02	XUM7ABPXM8
System (Detection mode)	Reflex	Reflex	BGS Adjustable	BGS Adjustable	BGS Adjustable	BGS
Light	Red	Red	Blue	Blue	Blue	Blue
Object type	Transparent	Transparent	Transparent	Transparent	Transparent	Transparent
Sensing distance	0...2 m	0...1.4 m	3...1200 mm	1...200 mm	3...100 mm	0...80 mm
Material	Housing: ABS, Front and Lens: PMMA	Plastic Enclosure : PBT Lens : PMMA	Housing: ABS/PC, Lens: PMMA	Housing: ABS, Front and Lens: PMMA	Housing: PUR, Front and Lens: PMMA	Housing: ABS, Front and Lens: PMMA
Temperature range (°C) / Degree of protection	- 20...+60 / IP67, IP69K	0...55 / IP65, IP67	- 20...+60 / IP67, IP69K	- 20...+60 / IP67, IP69K	- 20...+60 / IP67	- 20...+60 / IP67, IP69K
Product certification	CE - UKCA - cULus - Ecolab	UL - CE - CSA	CE - UKCA - cULus - Ecolab	CE - UKCA - cULus - Ecolab	CE - UKCA - cULus - Ecolab	CE - UKCA - cULus - Ecolab
Dimension (mm)	34 x 12 x 20 (H x W x D)	18 x 78 (ø x L)	50 x 23 x 50 (H x W x D)	34 x 12 x 20 (H x W x D)	21 x 14,6 x 8 (H x W x D)	34 x 12 x 20 (H x W x D)
Supply voltage	10...30 Vdc	12...24 Vdc	12...24 Vdc	10...30 Vdc	13...30 Vdc	10...30 Vdc
Switching capacity (mA) / Switching frequency (Hz)	100 / 1000	100 / 10000	100 / 600	100 / 700	50 / 700	100 / 1000
Setting	Teach button	Teach Button	Potentiometer	Teach Button	Potentiometer	Fixed focus without Teach-in
Body type	Miniature	Cylindrical	Compact	Miniature	Sub-miniature	Miniature

(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

XU Photo-electric sensors - Application
Laser series

Laser miniature

Application						
Product reference	XUM5ALAYL2	XUM8ALAYL2	XUT8ALAYL2	XUM9ALAYL2	XUT9ALPXL2	XUBLAPCNM12
System (Detection mode)	Diffuse	BGS	BGS	Reflex	Reflex	Thru-beam
Light	Red (Laser)	Red (Laser)	Red (Laser)	Red (Laser)	Red (Laser)	Red (Laser)
Sensing distance	1...250 mm	4...150 mm	6...70 mm	0,1...15m	0,1...4m	100 m
Material	Housing: ABS, Front and Lens: PMMA	Housing: ABS, Front and Lens: PMMA	Housing: PUR, Front and Lens: PMMA	Housing: ABS, Front and Lens: PMMA	Housing: PUR, Front and Lens: PMMA	Plastic Enclosure : PBT Lens : PMMA
Temperature range (°C) / Degree of protection	- 20...+60 / IP67, IP69K	- 20...+60 / IP67, IP69K	- 20...+50 / IP67	- 20...+60 / IP67	- 20...+50 / IP67	-10...45 / IP67
Product certification	CE - UKCA - cULus - Ecolab	CE - UKCA - cULus - Ecolab	CE - UKCA - cULus - Ecolab	CE - UKCA - cULus - Ecolab	CE - UKCA - cULus - Ecolab	CE - UL - CSA
Dimension (mm)	34 x 12 x 20 (H x W x D)	34 x 12 x 20 (H x W x D)	21 x 14,6 x 8 (ø x L)	34 x 12 x 20 (H x W x D)	34 x 12 x 20 (H x W x D)	18 x 76 18 x 66 (ø x L)
Supply voltage	10...30 Vdc	10...30 Vdc	10...30 Vdc	10...30 Vdc	10...30 Vdc	10...30 Vdc
Switching capacity (mA) / Switching frequency (Hz)	100 / 4000	100 / 1000	50 / 1000	100 / 4000	50 / 1000	100 / 1500
Setting	Teach button	Teach button	Teach button	Teach Button	Teach button	Teach button
Body type	Miniature	Miniature	Sub-miniature	Miniature	Miniature	Cylindrical

Laser Compact

Application				
Product reference	XUK9LAPSM12	XUK2LAPSM12R	XUK8LAPPNM12	XUK5LAPSM12
System (Detection mode)	Polarised reflex	Thru beam	diffuse with background suppression	Diffuse
Light	Red (Laser)	Red (Laser)	Red (Laser)	Red (Laser)
Sensing distance	14m	30m	0,8m	1.2m
Material	Plastic Enclosure : ABS/PC Lens : PMMA	Plastic Enclosure : ABS/PC Lens : PMMA	Plastic Enclosure : ABS/PC Lens : PMMA	Plastic Enclosure : ABS/PC Lens : PMMA Wire : PVC
Temperature range (°C) / Degree of protection	-20...60 / IP67, IP69K	-20...60 / IP67, IP69K	IP67	-20...60 / IP67, IP69K
Product certification	Ecolab - CE - cULus	Ecolab - CE - cULus	Ecolab - CE - cULus	Ecolab - CE - cULus
Dimension (mm) (H x W x D)	50 x 23 x 50	50 x 23 x 50	50 x 23 x 50	50 x 23 x 50
Supply voltage	10...30 Vdc	10...30 Vdc	10...30 Vdc	10...30 Vdc
Switching capacity (mA) / Switching frequency (Hz)	100 / 2000	100 / 500	50 / 1000	100 / 250
Setting	Teach button or remote teaching	Teach button or remote teaching	Teach button or remote teaching	Teach button or remote teaching
Body type	Compact	Compact	Compact	Compact

Laser Analog Output

Application				
Product reference	XUK8TAE2MM12	XUK8TAE1MM12	XUK9TAH2MM12	XUYPCO925L1ANSP
System (Detection mode)	BGS	BGS	Reflex	Diffuse
Light	Red (Laser)	Red (Laser)	Red (Laser)	Red (Laser)
Sensing distance	5 m	5 m	70 m	40...60 mm
Material	Plastic Enclosure : ABS/PC Lens : PMMA	Plastic Enclosure : ABS/PC Lens : PMMA	Plastic Enclosure : ABS/PC Lens : PMMA	Plastic Enclosure : ABS/anti-shock
Temperature range (°C) / Degree of protection	- 20...+50 / IP67, IP69K	- 20...+50 / IP67, IP69K	- 20...+50 / IP67, IP69K	0...45 / IP67
Product certification	Ecolab - cULus - CE	Ecolab - cULus - CE	Ecolab - cULus - CE	CE
Dimension (mm) (H x W x D)	50 x 23 x 50	50 x 23 x 50	50 x 23 x 50	50 x 17 x 50
Supply voltage	10...30 Vdc	18...30 Vdc	18...30 Vdc	18...28 Vdc
Switching capacity (mA) / Switching frequency (Hz)	100 / 500	100 / 500	100 / 500	3 / 40
Setting	Teach button or remote teaching	Teach button or remote teaching	Teach button or remote teaching	Parametering by buttons
Body type	Compact	Compact	Compact	Compact

XU Photo-electric sensors - Application
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, cULus, 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	–	XU5N18PP341	XU2N18PP341
	3-wires NPN	programmable NO / NC	XUB0SNSNL2	–	–	–
Connection	par connector M12					
Transmitter / Receiver	3-wires PNP	programmable NO / NC	XUB0SPSNM12	XU9N18PP341D	XU5N18PP341D	XU2N18PP341D
	3-wires NPN	programmable NO / NC	XUB0SNSNM12	–	–	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	10...30	
Switching capacity, max (mA) / Switching frequency (Hz)	100 / 250		100 / 500	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

Accessories

Pre-wired connectors		Ecolab reflector 50x50 (2)	Stainless steel fixing bracket
L = 5 m	Elbowed XZCPA1241L5	XUZC50CR	XUZA118 (for M18)
	Straight XZCPA1141L5		XUZA51S (for compact)

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

XU Photo-electric sensors - Application
Materials handling series - Conveying
Analog output

High access gain for resistance to accumulation of dirt

System	Diffuse	Thru beam
Sensing distance	0,05...0,40 m	50 m
Sensitivity adjustment	Potentiometer	
Case M (metal), P (plastic) / Setting-up assistance LEDs ☉	M / ☉	
Temperature range (°C) / Degree of protection (conforming to IEC 60529)	- 25...+ 55	
Degree of protection (conforming to IEC 60529)	IP67	
Product certification	CE, cULus	CE, UL , CSA, C-TICK
Dimensions (mm) Ø x L or H x W x D	M18 x 95	

Sensors for DC applications

Connection	M12 - 4-pins	
Transmitter / Receiver	analog 4-20 mA + 1 PNP/NPN	–
	analog 0 - 10 V + 1 PNP/NPN	–
	analog 4-20mA + 2 PNP/NPN	–
	analog 4-20mA	XU5M18AB20D
Supply voltage limits, min./max. (V) including ripple	10...30	
Switching capacity, max (mA) / Switching frequency (Hz)	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.

Application

System	Diffuse
Sensing distance	0...100 mm
Minimum size of object	85 mm
Sensitivity adjustment	No
Case P (plastic) / Setting-up assistance LEDs ☉	Aluminium tube / ☉
Temperature range (°C)	- 10...+ 55
Product certification	CE, cCSAus
Dimensions (mm) H x l x L	Tube Ø 12 , variable length from 200 to 900 mm (example 474 mm)

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

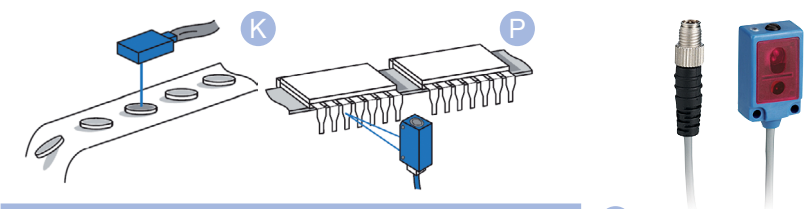
Connection	Remote M12 connector
Transmitter / Receiver	0...10 V
Supply voltage limits, min./max. (V) including ripple	18...30
Switching capacity, max	100 mA
Switching frequency (Hz)	1000
Short-circuit protect. (★) / LED output state indicator (☉)	★ / ☉

Accessories

Suitable female PUR pre-wired plug-in connectors (1)						Female connectors
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
5 m XZCP0941L5	XZCP1141L5	XZCP1041L5	XZCP1241L5	XZCPV11V12L5	XZCP29P12L5	Elbowed XZCC12FDM50B

(1) For PVC cable see page 47

XU Photo-electric sensors
with background suppression



Application	
System	Background suppression
Sensing distance	1,5...80 mm
Minimum size of object	–
Fixing (mm)	2 x Ø 3 holes / fxg. ctrs. 14.5
Sensitivity adjustment	potentiometer
Case P (plastic) / Setting-up assistance LEDs ☉	P / ☉
Temperature range (°C) / Degree of protection (conforming to IEC 60529)	0...+50 / IP65 & IP67
Product certification	CE, cULus
Dimensions (mm) (H x W x D)	20 x 32 x 13

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

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

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

Accessories

PUR Pre-wired connectors (1)						
M8 (4-pins)			M12 (4-pins)		7/8" (5-pins)	
Straight	Elbowed		Straight	Elbowed	Straight	
		2 m	XZCP0941L2	XZCP1041L2	2 m	XZCP1764L2
		5 m	XZCP0941L5	XZCP1041L5	5 m	XZCP1764L5

(1) For PVC cable see page

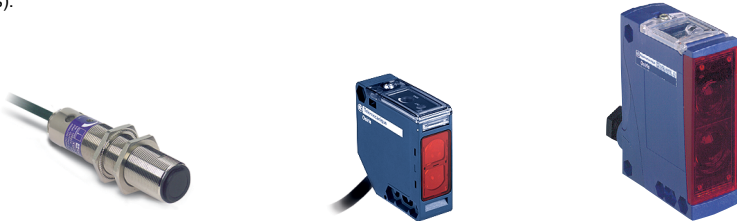


Application		objects on conveyors			
System	Diffuse with adjustable background suppression				
Max. / usable sensing distance	20...300 mm	0...1 m	0...5 m	2 m	
Fixing (mm)	Fixing : M3 holes, fixing centers 24 mm	Direct fixing centres 40 x 40, M4 screws	2 x Ø 4.3 holes / fixing centres 30	Direct: fixing 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, cULus	
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	–
	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)
	PNP	programmable NO / NC	XUM8APXBM8	–	–
	NPN	programmable NO / NC	XUM8ANXBM8	–	–
Supply voltage limits, min./max. (V) including ripple				10...36	18...30
Switching capacity, max (mA) / Switching frequency (Hz)				100 / 250	100 / 500

(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, cULus	CE, cULus	CE, cULus
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	
Switching capacity, max (mA) / Switching frequency (Hz)			200 / 25	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



Table with 4 columns: Feature, +/- potentiometer, Teach, Teach + Timer. Rows include Max. / usable sensing distance, Fixing (mm), Sensitivity adjustment, Case P (plastic) / Setting-up assistance LEDs, Temperature range, Product certification, and Dimensions.

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

Table with 6 columns: Connection, References, Amplifier, Connection par connector, References, Amplifier. Rows include 3-wires PNP/NPN programmable, Supply voltage limits, Switching capacity, and Short-circuit protect.

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

Ecofibre system, assemble your own plastic fibres

Table with 3 columns: Fibre Ø 1 mm, Length = 10 m, Length = 20 m. Rows include References XUFZ910 and XUFZ920.

Table with 2 columns: End fittings, Sensing distance (mm), Type, Thread, Lens, References. Row includes XUYA220 with 1200 sensing distance and 90° mirror.

Accessories

Table with 3 main sections: For fibres plastic System Thru beam (lenses, fixing clamp), For all system plastic fibre optics (trimmer, tubing), Plug-in PUR pre-wired female connectors (cable length 5 m).

XU Photo-electric sensors, fibre optic
Plastic fibre optic light guides (length 2 m)

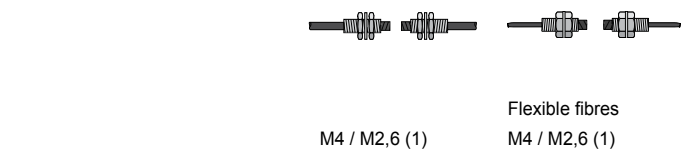


Table with 3 columns: System, Thru beam, Flexible fibres. Rows include Sensing distance, Fibre cross-section, Fibre Ø, Sheath Ø, Temperature range, References, and Fixings.

(1) Can be used with 90° mirror w (see preceding page).
(2) With lens accessory XUFZ01 (see preceding page).

Table with 4 columns: System, Diffuse, M6, M4 / M6, M4 / M2,6. Rows include Sensing distance, Fibre cross-section, Fibre Ø, Sheath Ø, Temperature range, References, and Fixings.

Table with 3 columns: System, Diffuse, Long range fibres. Rows include Sensing distance, Fibre cross-section, Fibre Ø, Sheath Ø, Temperature range, References, and Fixings.

Glass fibre optic light guides (length 0.6 m)

Table with 5 columns: System, Thru beam, Diffuse, M4, M4 / Ø 2,5 x 89. Rows include Sensing distance, Fibre cross-section, End fitting, Fibre Ø, Sheath Ø, Temperature range, References, and Fixings.

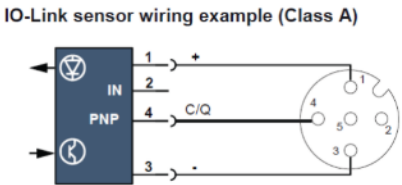
IO-Link Devices
IO-Link Master

IO-Link is a standardized (IEC 61131-9) serial communication protocol for connecting industrial sensors and actuators to control systems. It establishes a point-to-point connection, enabling bidirectional data exchange over standard unshielded cables. This allows for parameterization, diagnostics, and process data transmission, enhancing flexibility and efficiency.

An IO-Link Master is the central interface in an IO-Link system. It connects IO-Link compatible devices (sensors, actuators) to a higher-level control system, such as a PLC, via standard fieldbus protocols.

IO-Link Master devices

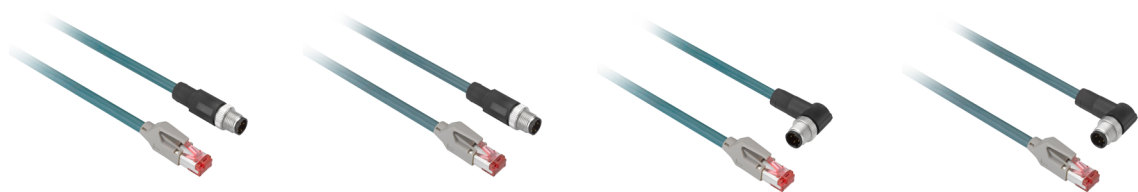
Application		
Category	Parameter	Product reference
		XZIOM8AM12EY XZIOM8AM12PY
Device	Dimension (L x W x H)	200 mm x 60 mm x 32 mm
	Weight	404 g
	Housing	Plastic
	Potting	Solvent-free electro-casting resin system based on 2 K polyurethane
	Degree of protection	IP67 (EN 60529)
	Protection class	III (EN 61140)
Environmental conditions	Mounting	Screw mounting on carrier, 2 x M4
	Location of operation	Indoor
	Ambiant temperature (operation)	−25 °C ... +70 °C
	Ambiant temperature (storage)	−40 °C ... +80 °C
	Maximum temperature change	3K/ min
	Relative humidity	5% ... 95%
	Degree of pollution	3 (EN 60664-1)
	Altitude	0 ... 2000 m
	Overvoltage category	II (EN 60664-1)
	Degree of protection	IP67 (EN 60529)
Electrical safety	Protection class	III (EN 61140)
	Insulation resistance	60 V DC
	Test voltage	550 V AC RMS
	Min. creepage distance	0.7 mm
Ethernet connector	Communication interface	Ethernet
	Autonegotiation, autocrossover	Yes
	Connector	2x M12, D coded, socket, 4-pin
IO-Link connector	Torque	1.0 Nm
	Connector	8x M12, A coded, plug, 5-pin
	Torque	1.0 Nm
Displays	Operating modes	Pin 2: DI or DO
		Pin 4: IO-Link Master, DI or DO
	SYS	System status, green/yellow
	APL	Application status (EtherNet/IP), red/green
	MS	Module status (EtherNet/IP), red/green
	SF	System error (PROFINET), red
	NS	Network status (EtherNet/IP), red/green
	BF	Bus error (PROFINET), red
	LINK	Link status, green
	ACT	Activity status, yellow
	1L, 2L	Supply voltage status, red/green
	A, B	Port status: red/green/yellow (yellow by simultaneous red and green)
	RoHS	Yes
	CE sign	Yes
	UKCA sign	Yes
Compliance with EMC guidelines	Emission	EN 61000-6-4 / BS EN 61000-6-4
	Immunity	EN 61000-6-2 / BS EN 61000-6-2



IO-Link ports (Class A)	Pin	Signal	Description	Wire color
	1	1+	+24 V DC supply voltage U ₀ for sensor/actuator	Brown
	2	DI0 B (DI 0/DO 0)	Digital input/output channel B	White
	3	1L-	Grounded for 1L+	Blue
	4	DO (DO A (DI/DO A))	IO-Link data or Digital input/output channel A	Black
	5	n.c.	Not connected	-



IO-Link Devices
accessories



Communication cables

Application				
Product reference	XGSZ12E4503	XGSZ12E4510	XGSZ22E4503	XGSZ22E4510
Type of connector	M12 D-coded to RJ45, straight/straight		Jumper M12/RJ45, straight/elbowed	
End fittings	5-pin (1+FE)			
Lenght (m)	3	10	3	10

Communication

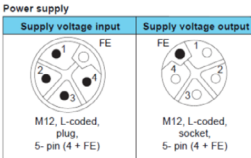
Ethernet	Pin	Signal	Description
 M12, D-coded, socket, 4-pin	1	TX+	Transmit data positive
	2	RX+	Receive data positive
	3	TX-	Transmit data negative
	4	RX-	Receive data negative

L-Coded M12 power cables are used to power the IO-Link Master devices. These cables are designed to carry current upto 16 Amps and facilitates daisy-chaining the power supply to multiple IO-Link Masters.



Power cables

Application				
Product reference	XZCPK75DL2	XZCPK75DL5	XZCPK75CL2	XZCPK75CL5
Type of connector	Female			
End fittings	5-pin (1+FE)			
Lenght (m)	2	5	2	5
	1.5 mm²	1.5 mm²	1.5 mm²	1.5 mm²



XZCR25K25DL2	XZCR25K25DL5	XZCR26K26CL2	XZCR26K26CL5
Male			
M12 5-pin/M12 5-pin			
2	5	2	5
1.5 mm²	1.5 mm²	1.5 mm²	1.5 mm²

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| |B|

XXS** = straight version
 XXA** = angled version

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

“Analog” output for DC applications (24 V)

Connection			M12 connector		
4-wires	Analog	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 programming and connectors, and page 46 for fixing

XX Ultrasonic sensors

Detection of any material



		M30 software-configurable				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
Transmission frequency (kHz)	120	80
		2
		75

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

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

Connection							
4-wires	Analog	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		Suitable female plug-in connectors				
Remote control teach button for use with sensors XX•18A3..., XX•V1..., XX•V..., XXS..., XXA... 	XX Software XXZBOX01	Jumper for XXW54	PUR Pre-wired connectors (4)		Other connectors	
	Configuration interface XXZKIT01	XXZKITDM6	Elbowed	Straight	Screw terminal	
	Configuration Kit					
		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 “Analog” output for DC applications (24 V)

Connection by connector			—	M12	
4-wires	Analog	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)	—	—

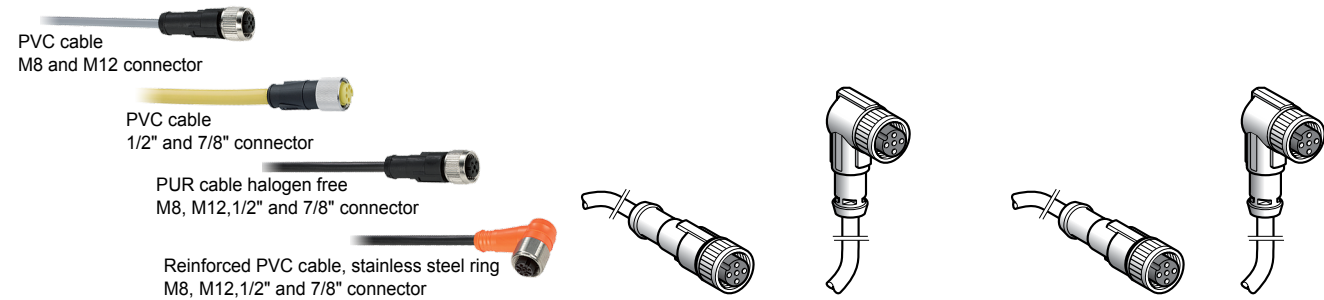
Accessories

Fixings - 3D fixings with ball joint	Simple fixings
XUZ 2001	90° fixing brackets
XUZ B20 ●●	Mounting plates for XX7K
Bracket with ball joint for cylindrical sensors	
M12 rod for ball joint	
Fixing support for M12 rod	
	for
	Ø 12 XXZ12
	Ø 18 XUZA118
	Ø 30 XXZ30
	XX7F XXZ1933
	flat XXZ3074F
	cranked XXZ3074S
3D kit example	
XUZ 2003	
XUZ2001	
XUZ2003	
for	
Ø 12 XUZB2012	
Ø 18 XUZB2003	
Ø 30 XUZB2030	

See page 45 for programming and connectors

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	—

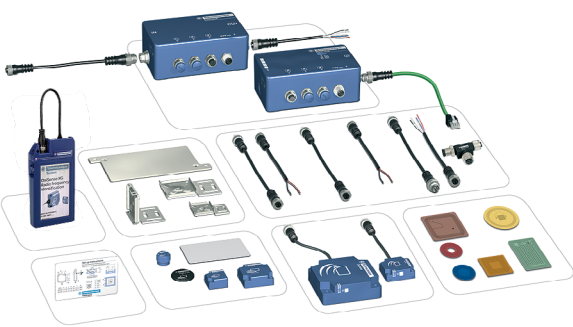
Connector Size		M12			
		Straight 4-pins	Elbowed 4-pins	Straight 5-pins	Elbowed 5-pins
References	PVC cable	XZCPV1141Lp	XZCPV1241Lp	XZCPV1164Lp	XZCPV1264Lp
	PUR cable	XZCP1141Lp	XZCP1241Lp	XZCP1164Lp	XZCP1264Lp
	PVC cable IP69K	XZCPA1141Lp	XZCPA1241Lp	XZCPA1164Lp	–

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 fonctionnement : - 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.		M12 (Ethernet) -	
		Only for connection to the communication network and the supply		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	With station XGCS49.	33	25	70	48	40	18
(Read/Write)	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.



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



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	TCSCNT011M11F
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	RS232/RS485 converter
To be associated with a smart antenna XGCS4901201 for conveying and handling applications	For connecting a PC to an XG RFID smart antenna
 50 x 400 mm XGFEC540	 250 x 250 mm XGFEC2525
	 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)	
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

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

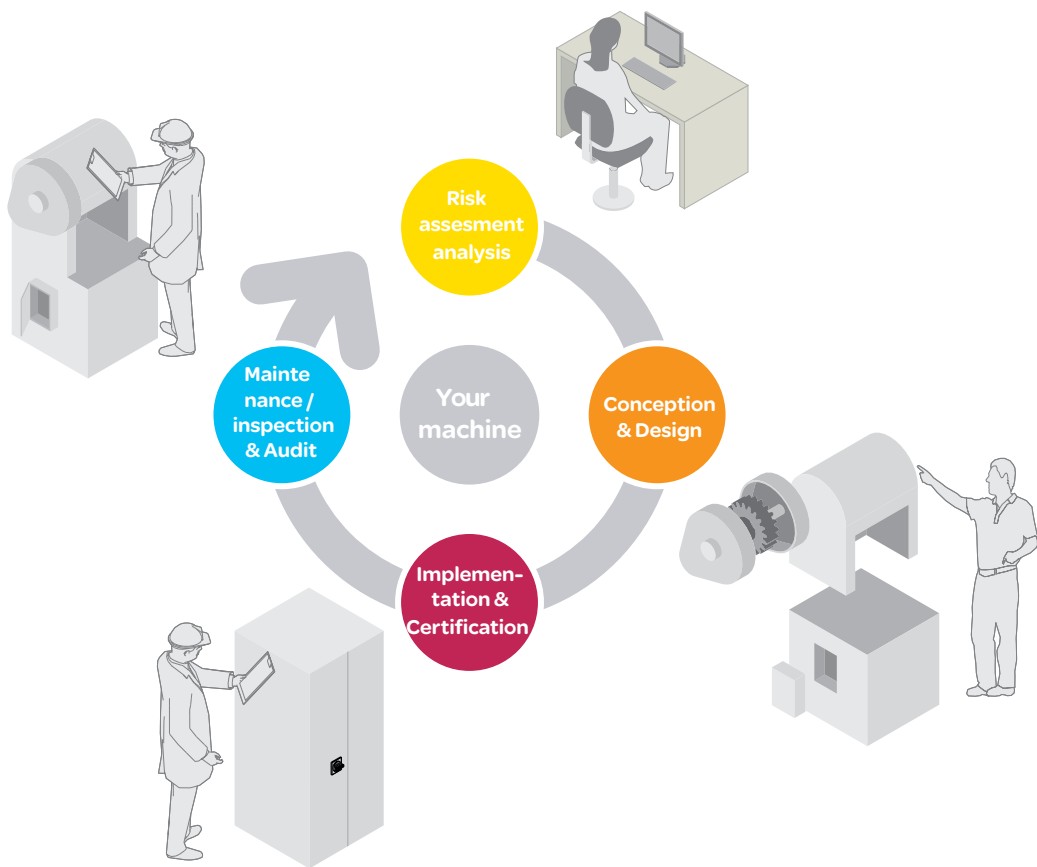
Description	Transmitter only XIOT11SE0MRCL	Prepaid 5-year access to cloud XIOT11SE5MRCL	Subscription services XIOT11SERMRCL
1 standalone transmitter	✓	✓	✓
Activation magnet	✓	✓	✓
Instruction sheet	✓	✓	✓
5-year subscription to Sigfox LPWAN (2)	-	✓	-
Web interface to configure and display data	-	✓	✓
Smartphone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

(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

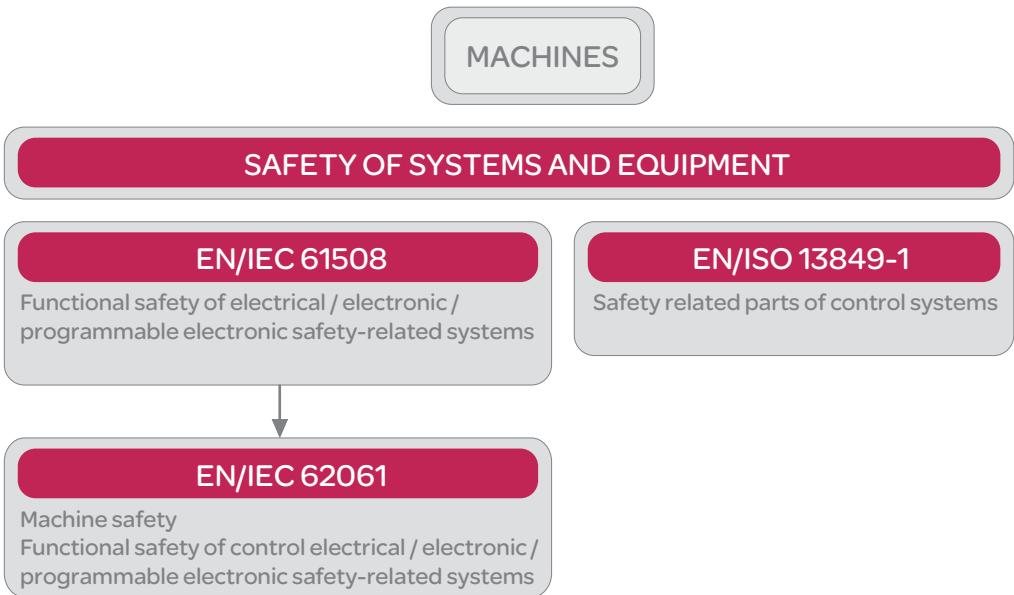
The previous Machinery Directive 98/37/EC was elaborated to help manufacturers ensuring a minimum safety level for machinery and equipment sold within the EU (European Union).

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 :

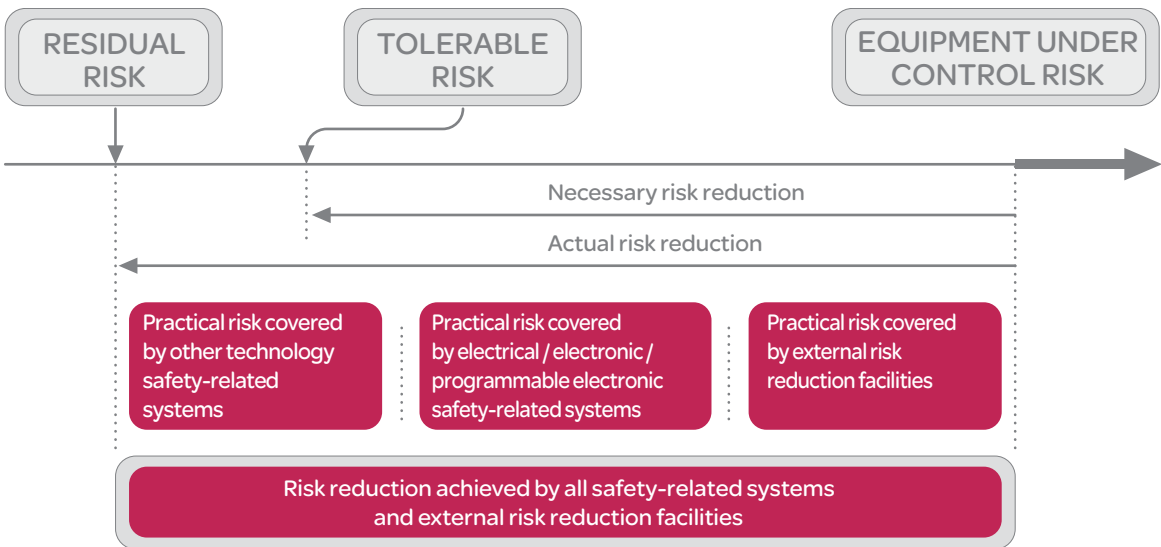
> Safety integrity level (SIL), Performance level (PL)



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.

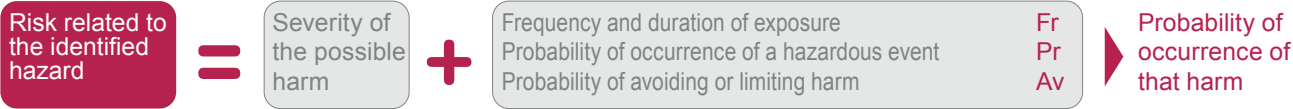
* Electric / Electronic / Programmable electronic



Functional safety of machinery

> Approach according to EN/IEC 62061

Risk estimation for SIL assignment



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)	Probability of occurrence	Probability (Pr)
Frequency of exposure	Very high	5
1 h	Likely	4
> 1 h to 1 day	Possible	3
> 1 day to 2 weeks	Rarely	2
> 2 weeks to 1 year	Negligible	1
> 1 year		

Probability of avoiding or limiting harm (Av)	Probability (Pr)
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 Cl	Frequency and duration	Probability of hzd. Event	Avoidance
Death, losing an eye or arm	4	SIL 2	<= 1 hour	Common	5
Permanent, losing fingers	3	OM	> 1 h to <= 1 day	Likely	4
Reversible, medical attention	2	OM	> 1 day to <= 2 wks	Possible	3
Reversible, first aid	1	OM	2 wks to <= 1 year	Rarely	2
			> 1 year	Negligible	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

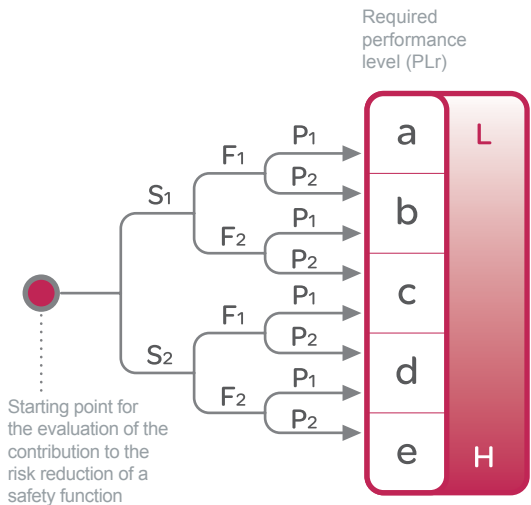
- The rate of failures λ can be expressed as follows: $\lambda = \lambda_s + \lambda_{dd} + \lambda_{du}$
- The calculation of the PFH_D for a system or subsystem depends on several parameters:
 - the dangerous failure rate (λ_d) of the subsystem elements
 - the fault tolerance (e.g. redundancy) of the 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:
 $PFH_D = \lambda_d \times 1/h$

> 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



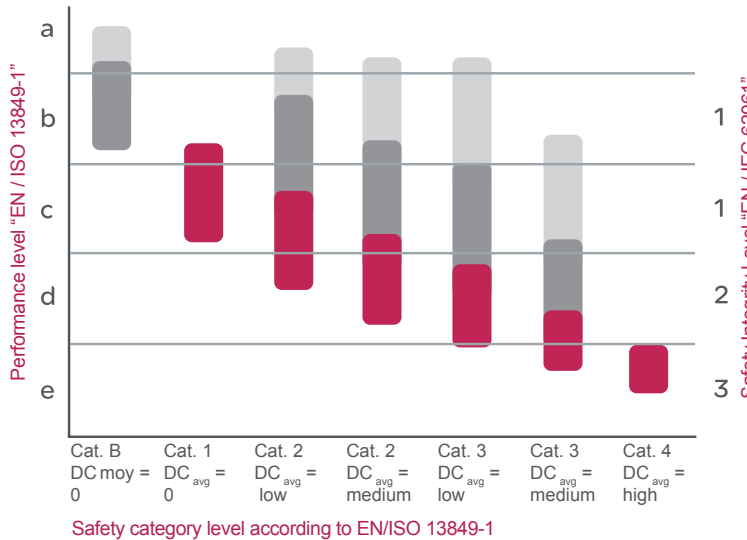
Determination of the PL achieved by the Safety-related parts of control systems (SRP/CS)

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	$\geq 10^{-5} \dots < 10^{-4}$
b	$\geq 3 \times 10^{-6} \dots < 10^{-5}$
c	$\geq 10^{-6} \dots < 3 \times 10^{-6}$
d	$\geq 10^{-7} \dots < 10^{-6}$
e	$\geq 10^{-8} \dots < 10^{-7}$

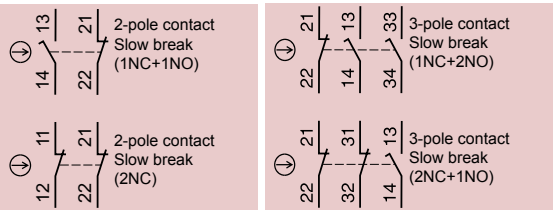
For a SRP/CS (or a combination of SRP/CS) designed according the requirements of the article 6, the PL could be estimated with the figure beside after estimation of several factors such as system structure (categorys), mechanism of failures detection [Diagnosis Coverage (DC)], components reliability [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



Plastic, double insulated switches			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)			0,1m/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 30 x 93,5 mm	52 x 30 x 114,5 mm
Resistance to forcible withdrawal of actuator			10 N (1)	
Connection			1 x ISO M16 entry.	2 x ISO M16 entries. (5) (2)
Safety contacts	1NC+1NO	break before make, slow break	XCSPA592	XCSPA591
	2NC	slow break	XCSPA792	XCSPA791
	1NC+2NO	break before make, slow break	XCSPA892	XCSPA891
	2NC+1NO	break before make, slow break	XCSPA992	XCSPA991
	2NC+1NO	snap action	XCSPA492	XCSPA491
	3NC	slow break	—	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.

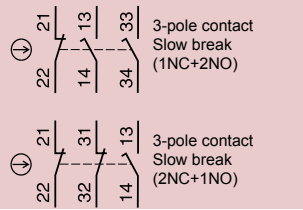


Illustration of contacts with the actuator inserted in the head of the switch



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		
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	
Resistance to forcible withdrawal of actuator			20 N	F _{1max} = 1500N ; F _{2h} = 1150N (when locked)	
Connection (6)			1 x ISO M20 entry	1 x PG13,5 entry	1 x PG13,5 entry
Safety contacts	1NC+2NO	break before make, slow break	XCSA502	XCSA501	XCSC501
	2NC+1NO	break before make, slow break	XCSA702	XCSA701	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



Wide actuator L=40 mm (4)



Right-angled actuator



Pivoting actuator



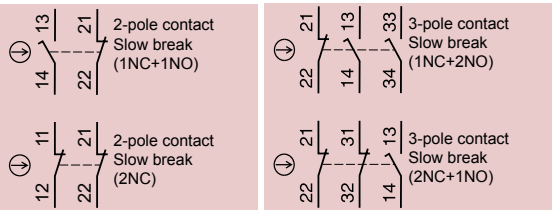
Guard/door retainer

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

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

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			Type XCSLF, metal		Type XCSLE, plastic	
Standard version and Connector version						
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	
Resistance to forcible withdrawal of actuator (Locked)			F _{1max} = 3000 N, f _{2h} = 2300 N		F _{1max} = 1400 N, f _{2h} = 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	–

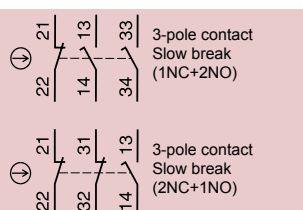


Illustration of the main contacts with the actuator inserted in the head of the switch



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	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	
Resistance 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)
Safety contacts	1NC+2NO	break before make, slow break	XCSLF3535412
	2NC+1NO	break before make, slow break	XCSLF3737412

(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



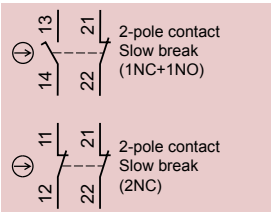
Pivoting actuator



Door lock

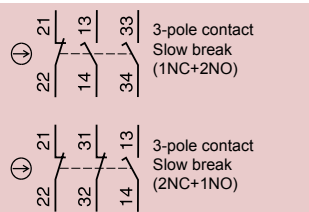
For safety switches XCSA/B/C/LE/LF	Actuators			Door lock
References	XCSZ01	XCSZ02	XCSZ03	XCSZ05

Safety switches
with rotary lever or spindle

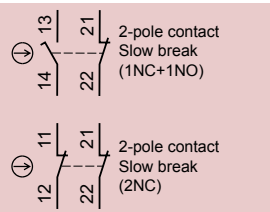


Stainless steel, elbowed (flush with rear of switch) lever Stainless steel straight lever

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

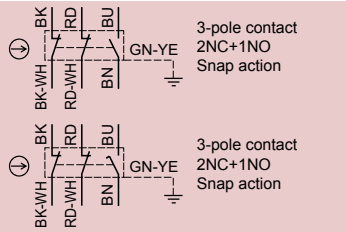


Stainless steel spindle
30 mm length

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

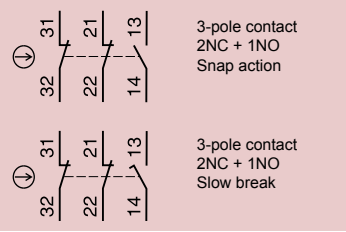


Roller plunger



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			Type XCSP, plastic		
		1 x ISO M20 x 1.5 cable entry (3) (4)			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

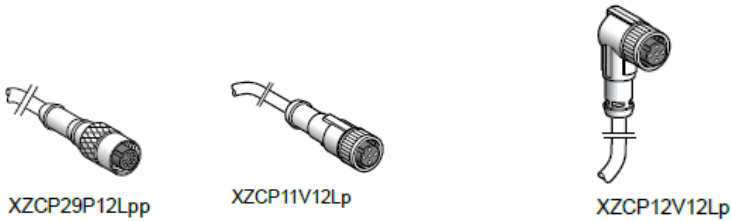
Miniature RFID Safety switch XCSRМ



Type	Single version: For point-to-point connection	Advanced Version: For series connection(Daisy-chain) + Standalone
Maximum safety level	PL=e, category 4 conforming to EN/ISO 13849-1 and SIL CL3 conforming to EN/IEC 62061	
	Functioning in combination with a safety control unit PL=e/Cat4 - SIL 3	Possible functioning without association with a safety control unit
Coding level (conforming to ISO 14119)	High coded level (Unique code) (1)	
Contactors monitoring (EDM) / Start-Restart	Safety control unit management	Auto/Manu restart Embedded
Degree of protection	IP65, IP67, IP69K (for cable version)	
Outputs Safety OSSDs - maximum current	300mA	
Rated operational characteristics	24Vdc -20%...+20%, Ie= 30mA	
Dimensions (mm) W x H x D (Actuator)	42 x 28.5 x 18	
Dimensions L x P x H (Switch)	57 x 28.5 x 18	
Risk time	Max 55ms, addition 12ms per switch in series	
Assured operating sensing distance (Sao) (2)	10mm	
Assured release sensing distance (Sar) (2)	25mm	
Reliability data (PFHD/TM)	2.62 x10^-9 / 20 years	
References		
Connection	Connector M12 male 5-pins /5 wires	Connector M12 male 8-pins
2m cable	XCSRМ10L02	
5m cable	XCSRМ10L05	
10m cable	XCSRМ10L10	
M12 connector	XCSRМ10M12	XCSRМ13M12
100mm cable + M12 connector	XCSRМ10L01M12	XCSRМ13L01M12

(1) For 3 times pairing version which is also classified as high coded, change 6th digit from to 1 to 3, exemple XCSRМ10M12 to XCSRМ30M12. For generic version as low coded level, change 6th digit from to 1 to L, exemple XCSRМ10M12 to XCSRМL0M12.

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



Type	Connection M12 - Pre-wired - for XCSRМ Single version			
	XCSRМ10* - XCSRМ30* - XCSRМL0*			
Contactors monitoring (EDM) / Start-Restart	2m	5m	10m	20m
Connector M12 5-pins Female				
Straight - Pre-wired	XZCP11V12L2	XZCP11V12L5	XZCP11V12L10	XZCP11V12L20
90° - Pre-wired	XZCP53P12L2	XZCP53P12L5	XZCP53P12L10	XZCP53P12L20

Type	Connection M12 - Pre-wired - for XCSRМ Advanced version			
	XCSRМ13* - XCSRМU3* - XCSRМL3*			
Contactors monitoring (EDM) / Start-Restart	2m	5m	10m	20m
Connector M12 8-pins Female				
Straight - Pre-wired	XZCP29P12L2	XZCP29P12L5	XZCP11V12L10	XZCP29P12L20
90° - Pre-wired	XZCP53P12L2	XZCP53P12L5	XZCP53P12L10	XZCP53P12L20

Type	Connection 2xM12 - Jumpers - for XCSRМ Advanced version			
Jumper for serial connection between Y connectors	XCSRМ13* - XCSRМU3* - XCSRМL3*			
Jumper length	1m	2m	5m	10m
2 Straight Connectors Female/Male M 12 / 5 pins	XZCR1511064D1	XZCR1511064D2	XZCR1511064D5	XZCR1511064D10



Type	Y Splitter - for XCSRМ Advanced version	
M12 Y Splitter	XCSRМ13* - XCSRМU3* - XCSRМL3*	
M12, 8-8-5 pins, Female-Male-Female	To connect first and second switches in series	XCSRZY1
M12, 8-5-5 pins, Female-Male-Female	To connect following switches in series	XCSRZY2

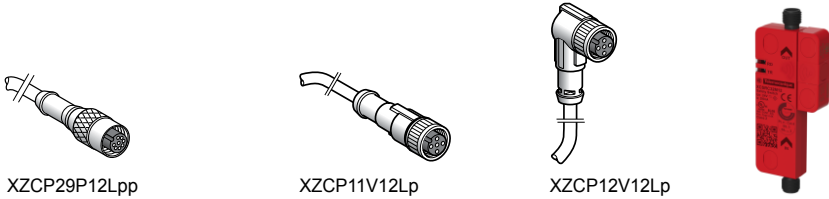
RFID Technology

Compact RFID Safety contact-less switch XCSRC



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			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 _e /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 XCSR210MDB 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.



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	Straight - Pre-wired	XZCP11V12L2	XZCP11V12L5	XZCP11V12L10
5-pins Female		XZCP12V12L2	XZCP12V12L5	XZCP12V12L10

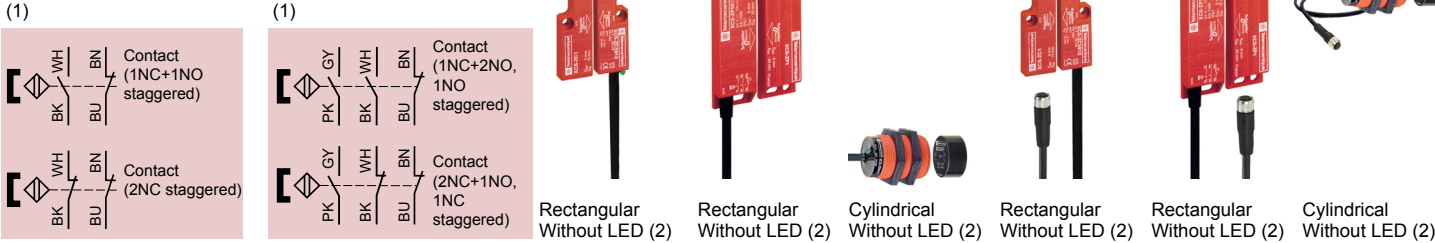
Type	Connection M12 - Pre-wired - for XCSR "Standalone" XCSRC11AM12 - XCSRC31AM12 - XCSRC11MM12 and XCSRC31M12			
Pre-wired length (cable material : PUR)	2 m	5 m	10 m	20 m
Connector M12	Straight - Pre-wired	XZCP29P12L2	XZCP29P12L5	XZCP29P12L10
8-pins Female		XZCP53P12L2	XZCP53P12L5	XZCP53P12L10

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	Pre-cabled for serial link directly between the sensors	XZCR1111064D03	XZCR1111064D3	XZCR1111064D5	XZCR1111064D10
5-pins					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

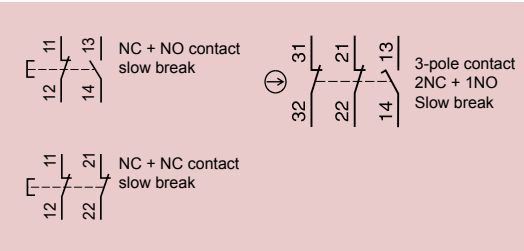


Plastic switches		Type XCSDM coded magnetic Pre-cabled L = 2 m			Connector on flying lead, L = 15 cm (3)		
Maximum safety level (5)		PL=e, category4 conforming to EN/ISO 13849-1 et SIL 3 conforming to EN/IEC 61508					
Switches for actuation		face to face, face to side, side to side		face to face	face 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)
	1 NC + 1 NC slow break	XY2CJS17 (4)	XY2CJR17 (4)
	2 NC + 1 NO slow break	XY2CJS19 (4) (5)	XY2CJR19 (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



Table with 4 columns: For operating cable length ≤ 30 m, Simple anchor, without indicator light, with indicator light, and various technical specifications like Maximum safety level, Mechanical life, Shock / vibration resistance, etc.



Table with 6 columns: For operating cable length ≤ 70 m, Simple anchor, without indicator light, and various technical specifications like Maximum safety level, Mechanical life, Shock / vibration resistance, etc.



Table with 5 columns: For pre-cabled length ≤ 2X100 m, Double latching, without indicator lights, and various technical specifications like Maximum safety level, Mechanical life, Shock / vibration resistance, etc.

(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

Table with 5 columns: Mounting kits, XY2CJ, XY2CH, XY2CE, XY2CED. Row 1: 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.

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



Table with 4 columns: Maximum safety level achieved by the solution, Type, Nominal sensing distance (Sn), Resolution (detection capability), Number of safety outputs, Response time, Operating temperature range, Degree of protection, Connection, Reliability data, Mission time, Height protected (mm), and various model numbers like XUSL2E30H016N, etc.

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.



Table with 4 columns: Maximum safety level achieved by the solution, Type, Height protected, Nominal sensing distance (Sn), Number of circuits, Response time, Reliability data, Thru-beam pairs, axially aligned, and various model numbers like XU2S18PP340L5, etc.

(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	–

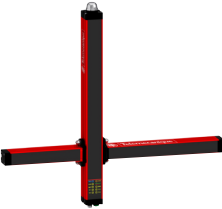
Type		Cascadable models - Slave2 Segments (2)		
Reliability data (depending on model) conforming to EN/IEC 61508		PFHd = 1.52E-8 to 2E-8	PFHd = 9.47E-9 to 1.43E-8	PFHd = 6.89E-9 to 8.21E-9
Response time		Depends on the number and the models of segments used. See the "User Manual" for the calculation		
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

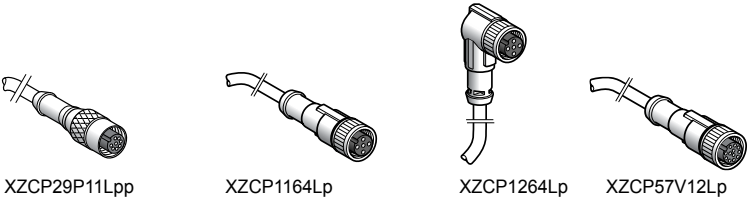
- Main features
- Integrated muting function
 - Automatic or Manual Start/Restart selectable by wiring
 - External Device Monitoring (EDM) selectable by wiring
 - Two maximum Sensing Distance selectable by wiring
 - Test function (beam blocked state simulation)
 - Led indicators for status and diagnosis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



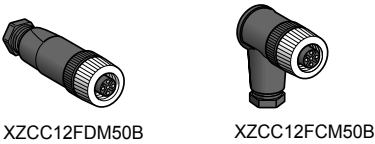
Type		Integrated muting models (1) For body protection (2)	
Nominal sensing distance (Sn)		0...4 m or 0...12 m selectable	
Operating temperature range		-30°C...+55°C	
Package contents		Hardware and software configuration (with SoMute software), partial muting and integrated muting lamp	Hardware configuration 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



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	



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	
				XZCC12FDM50B	
M12 connector 8-pins Female	90° - 8 poles with screw terminals- cable gland	For Receiver		XZCC12FCM80B	
				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

Index

XCMD2110L1	14	XCKD2118M12	15	ZCY91	17	XCKJ561H29	20	ZCKS5H29	22
XCMD2102L1	14	XCKD2145M12	15	ZCY39	17	XCKJ567H29	20	ZCKS5H29	22
XCMD2115L1	14	XCKD2139M12	15	ZCY49	17	XCKJ50511H29	20	ZCKSD39H29	22
XCMD2116L1	14	XCKD2106M12	15	ZCD21	17	XCKJ50513H29	20	ZCKSD39H29	22
XCMD2145L1	14	XCKP2118P16	15	ZCD39	17	XCKJ50541H29	20	ZCKSD39H29	22
XCMD21F0L1	14	XCKP2145P16	15	ZCD25	17	XCKJ50559H29	20	ZCKSD39H29	22
XCMD2510L1	14	XCKP2139P16	15	ZCD27	17	XCKJ161H7	20	ZCKSD39H29	22
XCMD2502L1	14	XCKP2106P16	15	ZCD28	17	XCKJ167H7	20	ZCKSD39H29	22
XCMD2515L1	14	XCPR2110P20	15	ZCD29	17	XCKJ10511H7	20	ZCKD01	22
XCMD2516L1	14	XCPR2102P20	15	ZCD37	17	XCKJ10513H7	20	ZCKD02	22
XCMD2545L1	14	XCPR2121P20	15	ZCD21M12	15	XCKJ10541H7	20	ZCKD31	22
XCMD25F0L1	14	XCPR2127P20	15	ZCP21	17	XCKJ10559H7	20	ZCKD41	22
XCMD2110C12	14	XCPR2118P20	15	ZCP39	17	XCKJ161D	20	ZCKD39	22
XCMD2102C12	14	XCKP2518P16	15	ZCP25	17	XCKJ167D	20	ZCKD59	22
XCMD2115C12	14	XCKP2545P16	15	ZCP27	17	XCKJ10511D	20	ZCKY31	22
XCMD2116C12	14	XCKP2539P16	15	ZCP28	17	XCKJ10513D	20	ZCKY41	22
XCMD2145C12	14	XCPR2510P20	15	ZCP29	17	XCKJ10541D	20	ZCKY39	22
XCMD21F0C12	14	XCPR2502P20	15	ZCP37	17	XCKJ10559D	20	ZCKY59	22
XCMD2110M12	14	XCPR2521P20	15	ZCP21M12	15	ZCKJ1H29	20	XCMW110	22
XCMD2102M12	14	XCPR2527P20	15	ZCDEP16	17	ZCKJ5H29	20	XCMW102	22
XCMD2115M12	14	XCPR2518P20	15	ZCDEP20	17	ZCKJ2H29	20	XCMW115	22
XCMD2116M12	14	XCKP2118M12	15	ZCDEG11	17	ZCKJD39H29	20	XCMW116	22
XCMD2145M12	14	XCKP2145M12	15	ZCDEG13	17	ZCKJD37H29	22	XCMW145	22
XCMD21F0M12	14	XCKP2106M12	15	ZCDEN12	17	ZCKJ1	20	XCRA11	23
XCMD2110AM4	14	ZCE10	16	ZCDEF12	17	ZCKJ5	20	XCRA15	23
XCMD2102AM4	14	ZCE11	16	ZCPEP16	17	ZCKJ2	20	XCRE18	23
XCMD2115AM4	14	ZCE02	16	ZCPEP20	17	ZCKJ1H7	20	XCRB11	23
XCMV2110D44	14	ZCE24	16	ZCPPEG11	17	ZCKJ5H7	20	XCRF17	23
XCMV2102D44	14	ZCE21	16	ZCPPEG13	17	ZCKJ2H7	20	XCRT115	23
XCMV2115D44	14	ZCE01	16	ZCPEN12	17	ZCKJ1D	20	XCRT315	23
XCMV2110M12	14	ZCY15	16	ZCPEF12	17	ZCKJ5D	20	XCKMR54D1H29	23
XCMV2102M12	14	ZCY16	16	XZCP1164L2	17	XE2SP2151	20	XCKVR54D1H29	23
XCMV2115M12	14	ZCY25	16	XZCP1141L2	17	XE2NP2151	20	XZBWR2STT24	23
XCKD2110P16	14	ZCY26	16	XCKM110H29	18	XE3SP2141	20	XZBWRRC*	23
XCKD2102P16	14	ZCMD21	16	XCKM102H29	18	XE3NP2141	20	XZBWRRR*	23
XCKD2121P16	14	ZCMD39	16	XCKM121H29	18	ZCKE67	21	XCMWD02	23
XCKD21H0P16	14	ZCMD25	16	XCKM115H29	18	ZCKE61	21	XCMWD15	23
XCKD21H2P16	14	ZCMD37	16	XCKM106H29	18	ZCKE21	21	XCLPM00GD21F	24
XCKD2510P16	14	ZCMD4D	16	XCKM510H29	18	ZCKE23	21	XMLP500MD21F	24
XCKD2502P16	14	ZCMD21C12	16	XCKM502H29	18	ZCKE62	21	XMLOK025B2D21	24
XCKD2521P16	14	ZCMD21M12	16	XCKM521H29	18	ZCKE66	21	XMLOK010B2C71	24
XCKD25H2P16	14	ZCMD21L1	16	XCKM515H29	18	ZCKE629	21	XMLOK010B2D71	24
XCKD2110M12	14	ZCMD41L1	16	XCKL110	18	ZCKE63	21	XMMLR001G0T25	24
XCKD2102M12	14	ZCMD21L2	16	XCKL102	18	ZCKE64	21	XMMLR001G0T25	24
XCKD2121M12	14	ZCMD41L2	16	XCKL121	18	ZCKE65	21	XMMLR010G0T25	24
XCKD21H0M12	14	ZCMD21L5	16	XCKL115	18	ZCKE08	21	XMMLR025G0T25	24
XCKD21H2M12	14	ZCMD41L5	16	XCKL106	18	ZCKE06	21	XMMLR250M0T25	24
XCKP2110P16	14	ZCMD21	16	ZCKM1H29	18	ZCKE05	21	XMMLP001GC21F	24
XCKP2102P16	14	ZCMD39	16	ZCKM5H29	18	ZCKY11	21	XMMLP006GD21F	24
XCKP2121P16	14	ZCMD25	16	ZCKMD39H29	18	ZCKY13	21	XMMLP001GC21F	24
XCKP21H0P16	14	ZCMD37	16	ZCKMD37H29	18	ZCKY41	21	XMMLP000GD71F	24
XCKP21H2P16	14	ZCMD4D	16	ZCKL1	18	ZCKY43	21	XMMLP004GD71F	24
XCKP2510P16	14	ZCMC21L1	16	ZCKL5	18	ZCKY59	21	XMMLP009BD21F	24
XCKP2502P16	14	ZCMC39L1	16	XE2SP2151	18	ZCKY51	21	XMMLP010BD21F	24
XCKP2521P16	14	ZCMC25L1	16	XE2NP2151	18	ZCKY53	21	XMMLP016BD21F	24
XCKP2110M12	14	ZCMC37L1	16	XE3SP2141	18	ZCKY81	21	XMMLP025BD21F	24
XCKP2102M12	14	ZCMC4D0L1	16	XE3NP2141	18	ZCKY91	21	XMMLP060BD21F	24
XCKP2121M12	14	ZCMC21L2	16	ZCKD15	19	ZCKE09	21	XMMLP100BD21F	24
XCMD2124L1	15	ZCMC39L2	16	ZCKD16	19	ZCKY71	21	XMMLP250BD21F	24
XCMD21F2L1	15	ZCMC25L2	16	ZCKD41	19	ZCKY61	21	XMMLP400BD21F	24
XCMD2106L1	15	ZCMC37L2	16	ZCKD59	19	XCKS101H29	22	XMMLP09BC21F	24
XCKT2110P16	15	ZCMC4D0L2	16	ZCKD31	19	XCKS102H29	22	XMMLP010BC21F	24
XCKT2102P16	15	ZCMC21L5	16	ZCKD06	19	XCKS131H29	22	XMMLP016BC21F	24
XCKT2118P16	15	ZCMC39L5	16	ZCKD08	19	XCKS141H29	22	XMMLP025BC21F	24
XCKT2145P16	15	ZCMC25L5	16	ZCKD10	19	XCKS139H29	22	XMMLP060BC21F	24
XCKT2121P16	15	ZCMC37L5	16	ZCKD109	19	XCKS159H29	22	XMMLP100BC21F	24
XCKT2106P16	15	ZCMC4D0L5	16	ZCKD02	19	XCKS501H29	22	XMMLP250BC21F	24
XCMD25F2L1	15	XZCP1164L2	16	ZCKD029	19	XCKS502H29	22	XMMLP400BC21F	24
XCMD2124C12	15	XZCP1141L2	16	ZCKD21	19	XCKS531H29	22	XMMLP09BD71F	24
XCMD21F2C12	15	ZCE27	17	ZCKD23	19	XCKS541H29	22	XMMLP010BD71F	24
XCMD2106C12	15	ZCEFO	17	ZCKD05	19	XCKS539H29	22	XMMLP016BD71F	24
XCMD2124M12	15	ZCEH0	17	ZCKY31	19	XCKS559H29	22	XMMLP025BD71F	24
XCMD21F2M12	15	ZCEH2	17	ZCKY33	19	ZCKS1H29	22	XMMLP250BD71F	24
XCMD2106M12	15	ZCEH2	17	ZCKY41	19	ZCKS1H29	22	XMMLP400BD71F	24
XCKD2118P16	15	ZCE08	17	ZCKY43	19	ZCKS1H29	22	XMMLP010BC71F	24
XCKD2145P16	15	ZCE07	17	ZCKY59	19	ZCKS1H29	22	XMMLP016BC71F	24
XCKD2139P16	15	ZCE06	17	XCKJ161H29	20	ZCKS1H29	22	XMMLP250BC71F	24
XCKD2106P16	15	ZCY18	17	XCKJ167H29	20	ZCKS1H29	22	XMMLP400BC71F	24
XCKD2518P16	15	ZCY19	17	XCKJ10511H29	20	ZCKS5H29	22	XMPEP060BD11F	24
XCKD2545P16	15	ZCY22	17	XCKJ10513H29	20	ZCKS5H29	22	XMPEP100BD11F	24
XCKD2539P16	15	ZCY45	17	XCKJ10541H29	20	ZCKS5H29	22	XMPEP250BD11F	24
XCKD2506P16	15	ZCY55	17	XCKJ10559H29	20	ZCKS5H29	22	XMPEP400BD11F	24

XMPEP600BD11F	24	ZMLPA1N2SH	25	XS608B1D	30	XS630B1M	31	XZCP1865L2	35
XMPEP060BD21F	24	ZMLPA1N2SW	25	XS512B1D	30	XS618B4M	31	XZCP1965L2	35
XMPEP100BD21F	24	ZMLPA2P0SH	25	XS612B1D	30	XS630B4M	31	XZCP1141L2	35
XMPEP250BD21F	24	ZMLPA2N0SH	25	XS512B1M	30	XZCP0566L2	31	XZCP1241L2	35
XMPEP400BD21F	24	XZCP1241L5	25	XS612B1M	30	XZCP0666L2	31	XZCP1340L2	35
XMPEP600BD21F	24	XZCP1141L5	25	XS512B1M	30	XZCP1865L2	31	XZCP0566L5	35
XMPEP060BD71F	24	XZCC12FCM40B	25	XS612B1M	30	XZCP1965L2	31	XZCP0666L5	35
XMPEP100BD71F	24	XZCC43FCP40B	25	XS2B108	30	XZCP1141L2	31	XZCP1865L5	35
XMPEP250BD71F	24	XMLAM01V2S12	26	XZCC8FDM30S	30	XZCP1241L2	31	XZCP1965L5	35
XMPEP400BD71F	24	XMLA002A2S12	26	XZCC8FCM30S	30	XZCP1340L2	31	XZCP1141L5	35
XMPEP600BD71F	24	XMLB002V2S12	26	XS2B112	30	XZCP0566L5	31	XZCP1241L5	35
XMPEP060BT11F	24	XMLB002A2S12	26	XS2B118	30	XZCP0666L5	31	XZCP1340L5	35
XMPEP100BT11F	24	XMLC002B2S12	26	XZCC12FDM40B	30	XZCP1865L5	31	XZCP0566L10	35
XMPEP250BT11F	24	XMLA004A2S12	27	XZCC12FCM40B	30	XZCP1965L5	31	XZCP0666L10	35
XMPEP400BT11F	24	XMLA010A2S12	27	XS2B130	30	XZCP1141L5	31	XZCP1865L10	35
XMPEP600BT11F	24	XMLA020A2S12	27	XZCC12FDP40B	30	XZCP1241L5	31	XZCP1965L10	35
XMPEP060BT21F	24	XMLA035A2S12	27	XZCC12FCP40B	30	XZCP1340L5	31	XZCP1141L10	35
XMPEP100BT21F	24	XMLA070D2S12	27	XS518B1P	31	XZCP0566L10	31	XZCP1241L10	35
XMPEP250BT21F	24	XMLA160D2S12	27	XS118B3P	31	XZCP0666L10	31	XZCP1340L10	35
XMPEP400BT21F	24	XMLA300D2S12	27	XS530B1P	31	XZCP1865L10	31	XS1L04PA310	35
XMPEP060BT71F	24	XMLA500D2S12	27	XS130B3P	31	XS130B3P	31	XS1N05PA310	35
XMPEP100BT71F	24	XMLB004A2S12	27	XS212B4P	31	XS212B4P	31	XZCP1141L10	35
XMPEP250BT71F	24	XMLB010A2S12	27	XS218B4P	31	XZCP1241L10	31	XS106B3PAL2	35
XMPEP400BT71F	24	XMLB020A2S12	27	XS518B1P	31	XZCP1340L10	31	XS506B1PBL2	35
XMPEP600BT71F	24	XMLB160D2S12	27	XS118B3P	31	XS8C2A1PDM12	32	XS106B3PBL2	35
XMPEP060BV11F	24	XMLB300D2S12	27	XS530B1P	31	XS8C2A4PDM12	32	XS1L04NA310	35
XMPEP100BV11F	24	XMLB500D2S12	27	XS130B3P	31	XS8C4A1PDP20	32	XS1N05NA310	35
XMPEP250BV11F	24	XMLC004B2S12	27	XS212B4P	31	XS8C4A4PDP20	32	XS506B1NAL2	35
XMPEP400BV11F	24	XMLC010B2S12	27	XS218B4P	31	XS512B5PDL2	33	XS506B1NBL2	35
XMPEP600BV11F	24	XMLC020B2S12	27	XS518B1N	31	XS518B5PDL2	33	XS606B3CAL2	35
XMPEP060BV21F	24	XMLC035B2S12	27	XS118B3N	31	XS60B3PDL2	33	XS606B3CBL2	35
XMPEP100BV21F	24	XMLC160D2S12	27	XS530B1N	31	XS112B3PDL2	33	XS1L04PA310S	35
XMPEP250BV21F	24	XMLC300D2S12	27	XS130B3N	31	XS118B3PDL2	33	XS1N05PA311S	35
XMPEP400BV21F	24	XMXA06L2135	28	XS212B4N	31	XS130B3PDL2	33	XS506B1PAM8	35
XMPEP060BV21F	24	XMXA12L2135	28	XS218B4P	31	XS512B5PDM12	33	XS106B3PAM8	35
XMPEP100BV21F	24	XMXA25L2135	28	XS518B1N	31	XS518B5PDM12	33	XS506B1PBM8	35
XMPEP250BV21F	24	XMAV06L2135	28	XS118B3N	31	XS630B5PDM12	33	XS106B3PBM8	35
XMPEP400BV21F	24	XMAV12L2135	28	XS530B1N	31	XS112B3PDM12	33	XS1N05NA311S	35
XMPEP060BV71F	24	XMAV25L2135	28	XS130B3N	31	XS118B3PDM12	33	XS506B1NAM8	35
XMPEP100BV71F	24	FSG2	29	XS212B4N	31	XS130B3PDM12	33	XS506B1NBM8	

XS9E111A1L01M12(6)	37	XUX9AN	40	XUVA1212P	42	XUM8ALAYL2	46	TC SCTN011M11F	53
XS9D111A2M12(6)	37	XUX9AN	40	XUVA1515P	42	XUT8ALAYL2	46	XX512A2PAM8(10cm)	54
XS212SAPAL2	38	XUX9ARCNL2	40	XUVF30M8	42	XUM8ALAYL2	46	XX518A3PAM12(50cm)	54
XS218SAPAL2	38	XUX9ARCNT16	40	XUVF60M8	42	XUT9ALPXL2	46	XX-18-1PM12	54
XS230SAPAL2	38	XUB8BPXNL2	40	XUVF120M12	42	XUBLAPCNM12	46	XX512A2NAM8(10cm)	54
XS212SANAL2	38	XUK8AP	40	XUVF180M12	42	XUK9LAPSM12	46	XX518A3NAM12(50cm)	54
XS218SANAL2	38	XUK8AP	40	XUVF250M12	42	XUK2LAPSM12R	46	XX512A1KAM8(5cm)	54
XS230SANAL2	38	XUX8AP	40	XUYFRS120S	42	XUK8LAPPNM12	46	XX518A1KAM12(15cm)	54
XS212SAPAM12	38	XUX1AP	40	XUYFRS250S	42	XUK5LAPSM12	46	XX218A3PHM12(50cm)	54
XS218SAPAM12	38	XUB8BNXNL2	40	XZCP0566L2	42	XUK8TAE2MM12	46	XX218A3PFM12(50cm)	54
XS230SAPAM12	38	XUB8BNXNM12	40	XZCP0666L2	42	XUK8TAE1MM12	46	XX918A3F1M12(50cm)	54
XS212SANAM12	38	XUK8AN	40	XZCP0941L2	42	XUK9TAH2MM12	46	XX-18-1VM12	54
XS218SANAM12	38	XUK8AN	40	XZCP1041L2	42	XUYPCO925L1ANSP	46	XX918A3C2M12(50cm)	54
XS230SANAM12	38	XUX8AN	40	XZCP1141L2	42	XUB0SPSNL2	47	XX-18-1AM12	54
XS218SAMAL2	38	XUX1AN	40	XZCP1241L2	42	XU5N18PP341	47	XXR12A8KAM8	54
XS230SAMAL2	38	XUK8AR	40	XZCP0566L5	42	XU2N18PP341	47	XXR18A3KAM12(0,61m)	54
XZCPA1141L5	38	XUX1ARCNT16	40	XZCP0666L5	42	XUB0SNSNL2	47	XXR18A4KAM12(1m)	54
XZCRA151140A5	38	XUM2APXBL2	40	XZCP0941L5	42	XUB0SPSNM12	47	XXR12A8KBM8	54
XSZBS12	38	XUM2APXBM8	40	XZCP1041L5	42	XU9N18PP341D	47	XXR18A3KBM12(0,61m)	54
XUZA118	38	XUK2AP	40	XZCP1141L5	42	XU5N18PP341D	47	XXR18A4KBM12(1m)	54
XSZBS30	38	XUK2AP	40	XZCP1241L5	42	XU2N18PP341D	47	XXT12A8M8	54
XZCPA1241L5	38	XUX2AP	40	XUYFANEP40002	43	XUB0SNSNM12	47	XXT18A3M12(0,61m)	54
XZCP1865L5	38	XUX8AP	40	XUYFALNEP40002	43	XU2N18NP341D	47	XXT18A4M12(1m)	54
XZCP1965L5	38	XUM2ANXBL2	40	XUYFANEP60002	43	XUBOSKSNL2T	47	XX-30-1PM12	55
XT512B1PAL2	39	XUM2ANXBM8	40	XUYFANEP100002	43	XUBOSKSNM12T	47	XX-30-2PM12	55
XT518B1PAL2	39	XUK2AN	40	XUYFANEP40005	43	XZCP0666L5	47	XXS30-4PM12	55
XT530B1PAL2	39	XUK2AN	40	XUYFALNEP40005	43	XZCP0566L5	47	XXS30P8PPM12	55
XT218A1PAL2	39	XUX2AN	40	XUYFANEP60005	43	XZCC8FCM30S	47	XXS30P8NNM12	55
XT230A1PAL2	39	XUX8AN	40	XUYFANEP100005	43	XZCP1241L5	47	XX-30-1VM12	55
XT234A1PAL2	39	XUK2ARCNL2R	40	XUYFANEP40015	43	XZCP1141L5	47	XX-30-2VM12	55
XT512B1PBL2	39	XUX8ARCNT16	40	XUYFALNEP40015	43	XZCC12FCM40B	47	XXS30-4VM12	55
XT518B1PCL2	39	XUK2AKSNL2T	40	XUYFANEP60015	43	XSZMCR03(3m)	47	XXS30P8VPM12	55
XT530B1PCL2	39	XUK2AKSNM12T	40	XUYFALNEP60015	43	XZCPA1241L5	47	XXW54P3HP01DM6	55
XT218A1NAL2	39	XUK2ARCNL2T	40	XUYFANEP100015	43	XZCPA1141L5	47	XX-30-1AM12	55
XT230A1NAL2	39	XUM0APPSAL2	40	XUYFALNEP100015	43	XUZC50CR	47	XX-30-2AM12	55
XT512B1PAM12	39	XUM0APSAM8	40	XUYFANEP40030	43	XUZA51S(forcompact)	47	XXS30-4AM12	55
XT518B1PCM12	39	XUX0AKSAT16T	40	XUYFALNEP40030	43	XUYPSC0989SP	48	XXS30P8APM12	55
XT530B1PCM12	39	XUX0AKSAM12T	40	XUYFANEP60030	43	XZCP0941L2	48	XXW54P3AP01DM6	55
XT218A1PCM12	39	XUM0ANSAL2	40	XUYFALNEP60030	43	XZCP1041L2	48	XX7F1A2PAL01M12	56
XT230A1PCM12	39	XUM0ANSAM8	40	XUYFANEP100030	43	XZCP1141L2	48	XX7K1A2PAM12	56
XT518B1FAL2	39	XUX0ARCTT16T	40	XUYFALNEP100030	43	XZCP1241L2	48	XX7V1A1PAM12	56
XT530B1FAL2	39	XUK0AKSAL2	40	XUYFANEP40050	43	XZCP1764L2	48	XX8D1A1PAM12	56
XT132B1FAL2	39	XUX0AKSAM12	40	XUYFALNEP40050	43	XZCP0941L5	48	XX7F1A2NAL01M12	56
XT218A1FAL2	39	XUX0AKSAT16	40	XUYFANEP60050	43	XZCP1041L5	48	XX7V1A1NAM12	56
XT230A1FAL2	39	XUX0AKSAM12	40	XUYFALNEP60050	43	XZCP1141L5	48	XX8D1A1NAM12	56
XT232A1FAL2	39	XUX0ARCTL2	40	XUYFANEP100050	43	XZCP1241L5	48	XXRF1A8KAM12L	56
XT518B1FBL2	39	XUX0ARCTT16	40	XUYFALNEP100050	43	XZCP1764L5	48	XXRK1A3KAM12(0,61m)	56
XT530B1FBL2	39	XUM0AKSAL2T	40	XUYFANEP40080	43	XUK8AKSNL2	49	XXRK1A4KAM12(1m)	56
XT230A1FBL2	39	XUM0AKSAM8T	40	XUYFALNEP40080	43	XUX8AKSAT16	49	XXRK1A3KBM12(0,61m)	56
XT232A1FBL2	39	XUK0AKSAL2T	40	XUYFANEP60080	43	XUM8APXBL2	49	XXTF1A8M12L	56
XT230A2MDB	39	XUK0AKSAM12T	40	XUYFALNEP60080	43	XUM8ANXBL2	49	XXTK1A3M12(0,61m)	56
XZCP1241L5	39	XUX0AKSAT16T	40	XUYFANEP100080	43	XUK8AKSNM12	49	XXTK1A4M12(1m)	56
XZCC12FCM40B	39	XUX0AKSAM12T	40	XUYFALNEP100080	43	XUK8TAKSM12	49	XZCPV0566Lp	57
XUB5BPXNM12	40	XUK0ARCTL2T	40	XUYFANEP40120	43	XUX8AKSAM12	49	XZCPV0666Lp	57
XUB5APXNL2	40	XUX0ARCTT16T	40	XUYFALNEP40120	43	XUM8APXBM8	49	XZCPV0941Lp	57
XUB5APXNM12	40	XUZC21	40	XUYFANEP60120	43	XUM8ANXBM8	49	XZCPV1041Lp	57
XUM5APXBL2	40	XUZC24	40	XUYFALNEP60120	43	XU8M18MA230	49	XZCP0566Lp	57
XUM5APXBM8	40	XUZC39	40	XUYFANEP100120	43	XUK8ARCTL2	49	XZCP0666Lp	57
XUK5AP	40	XUZC80	40	XUYFALNEP100120	43	XUX8ARCTT16	49	XZCP0941Lp	57
XUK5AP	40	XUZC50	40	XUVU06M3PSNM8	43	XUDA1PSML2	50	XZCP1041Lp	57
XUX5AP	40	XUZC100	40	XUVE04M3PSNM8	43	XUDA1NSML2	50	XZCPA0566Lp	57
XUX5AP	40	XUZB2003	40	XUMRAWAYM8	44	XUYAFVCO966S()	50	XZCPA0941Lp	57
XUB5BNXNL2	40	XUZM2003	40	XUMRAGAYM8	44	XUYAFVCO946S()	50	XZCPV1141Lp	57
XUB5ANXNL2	40	XUZK2003	40	XUMRACAYM8	44	XUYAFPCO966S()	50	XZCPV1241Lp	57
XUB5ANXNM12	40	XUZX2003	40	XUM5ALAYM8	44	XUYAFPCO946S()	50	XZCPV1164Lp	57
XUM5ANXBL2	40	XUZK2004	40	XU5M18U1D	44	XUYA220	50	XZCPV1264Lp	57
XUM5ANXBM8	40	XUZX2004	40	XUMTARAYM8	44	XUFZ210	50	XZCP1141Lp	57
XUK5AN	40	XUZ2001	40	XUBTAPSNM12	44	XUFZ310	50	XZCP1241Lp	57
XUK5AN	40	XUZ2003	41	XUK8ABPXM12	44	XZCP1041L5	50	XZCP1164Lp	57
XUX5AN	40	XUZA118(stnls.steel)	41	XUM8ABAYM8	44	XZCP0941L5	50	XZCP1264Lp	57
XUX5AN	40	XUZA218(plastic)	41	XUT8ABAYP02	44	XUFN12301	51	XZCPA1141Lp	57
XUK5ARCNL2	40	XUZA50	41	XUMTABPXM8	44	XUFN2P01L2	51	XZCPA1241Lp	57
XUX5ARCNT16	40	XUZA51	41	XUMRAWAYM8	45	XUFN05321	51	XZCPA1164Lp	57
XUB9BPXNL2	40	XUZX2000	41	XZCP0941L2	45	XUFN05323	51	XZCPV1865Lp	57
XUB9BPXNM12	40	XZCP1041L5	41	XZCP1141L2	45	XUFN02323	51	XZCPV1965Lp	57
XUB9APXNL2	40	XZCP0941L5	41	XZCP1041L2	45	XUYFVERSD61	51	XZCPV1670Lp	57
XUB9APXNM12	40	XZCC8FCM40S	41	XZCP1241L2	45	XUYFVPTD61	51	XZCP1865Lp	57
XUM9APXBL2	40	XZCP1241L5	41	XZCPV11V12L2	45	XZIOM8AM12EY	52	XZCP1965Lp	57
XUM9APXBM8	40	XZCP1141L5	41	XZCP29P12L2	45	XZIOM8AM12PY	52	XZCP1670Lp	57
XUK9AP	40	XZCC12FCM40B	41	XZCP1764Lp	45	XZCR25K5DL2	52	XZCP1764Lp	57
XUK9AP	40	XUVR0605P	42	XZCP0941L5	45	XZCPK75DL5	52	XZCPA1865Lp	57
XUX9AP	40	XUVR0303PANL2	42	XZCP1141L5	45	XZCPK75CL2	52	XZCPA1965Lp	57
XUX9AP	40	XUVR0605N	42	XZCP1041L5	45	XZCPK75CL5	52	XZCR...	57
XUB9BNXNL2	40	XUVR0608P	42	XZCP1241L5	45	XGSZ12E4503	53	XZCC...	57
XUB9BNXNM12	40	XUVR0608N	42	XZCPV11V12L5	45	XGSZ12E4510	53	XZCE...	57
XUB9ANXNL2	40	XUVR1212P	42	XZCP29P12L5	45	XGSZ22E4503	53	XGCS4901201	58
XUB9ANXNM12	40	XUVR1212N	42	XZCC12FDM50B	45	XGSZ22E4510	53	XGCS8901201	58
XUM9ANXBL2	40	XUVR1218P	42	XU2M18AP20D	45	XZCR25K25DL2	53	XGCS850C201	58
XUM9ANXBM8	40	XUVR1218N	42	XU5M18AB20D	45	XZCR25K25DL5	53	XGHB444345	58
XUK9AN	40	XUVA0505P	42	XUY474NB4H03M12	45	XZCR26K26CL2	53	XGHB443245	58
XUK9AN	40	XUVA0808P	42	XUM5ALAYL2	46	XZCR26K26CL5	53	XGHB90E340	58

XGHB320345	58	XCSPR952	68	XY2CEDA590	74
XGHB221346	58	XCSM3910L1	69	XY2CEDC590	74
XGHB211345	58	XCSM3902L1	69	XY2CZ9425	74
XGSZ33ETH	59	XCSM3915L1	69	XY2CZ9330	74
TCSMCN1M1F2	59	XCSM3710L1	69	XY2CZ9570	74
TCSMCN1F2	59	XCSM3702L1	69	XY2CZ96200	74
XGSZ12E4503	59	XCSM3715L1	69	XUSL2E30H016N	75
XZCP0941L5	59	XCSD3910P20	69	XUSL2E30H026N	75
XGSZ09L2	59	XCSD3902P20	69	XUSL2E30H031N	75
TCSCNT011M11F	59	XCSD3918P20	69	XUSL2E30H046N	75
TCSMCN1M1F5	59	XCSP3910P20	69	XUSL2E2BB051N	75
TCSMCN1F5	59	XCSF3902P20	69	XUSL2E30H061N	75
XGSZ12E4510	59	XCSP3918P20	69	XUSL2E30H076N	75
XZCP0941L2	59	XCSD3710P20	69	XUSL2E3BB081N	75
XGSZ09L5	59	XCSD3702P20	69	XUSL2E30H091N	75
XGCS490B201	60	XCSD3718P20	69	XUSL2E4BB091N	75
XGCS49LB201	60	References	70	XUSL2E30H106N	75
XGCS491B201	60	XCSRC11AM12	72	XUSL2E30H121N	75
XGHBPB3345	60	XCSRC11MM12	72	XUSL2E30H136N	75
XGHB90E340	60	XCSRC12M12	72	XUSL2E30H151N	75
XGHB90E341	60	XCSRC10M12	72	XUSL2E30H166N	75
XCSPA592	66	XZCP11V12L2	72	XUSL2E30H181N	75
XCSPA591	66	XZCP11V12L5	72	XU2S18PP340L5	75
XCSPA792	66	XZCP11V12L10	72	XU2S18PP340D	75
XCSPA791	66	XZCP11V12L20	72	XUSL4E14F016N	76
XCSPA892	66	XZCP12V12L2	72	XUSL4E30H016N	76
XCSPA891	66	XZCP12V12L5	72	XUSL4E30H026N	76
XCSA592	66	XZCP12V12L10	72	XUSL4E14F031N	76
XCSPA992	66	XZCP12V12L20	72	XUSL4E30H031N	76
XCSPA991	66	XZCP29P12L2	72	XUSL4E14F046N	76
XCSA792	66	XZCP29P12L5	72	XUSL4E30H046N	76
XCSPA492	66	XZCP29P12L10	72	XUSL4E2BB051N	76
XCSPA491	66	XZCP29P12L20	72	XUSL4E14F061N	76
XCSA892	66	XZCP53P12L2	72	XUSL4E30H061N	76
XCSA502	66	XZCP53P12L5	72	XUSL4E14F076N	76
XCSA501	66	XZCP53P12L10	72	XUSL4E30H076N	76
XCSB502	66	XZCP53P12L20	72	XUSL4E3BB081N	76
XCSC501	66	XZCR1111064D03	72	XUSL4E14F091N	76
XCSA702	66	XZCR1111064D03	72	XUSL4E30H091N	76
XCSA701	66	XZCR1111064D5	72	XUSL4E4BB091N	76
XCSB702	66	XZCR1111064D10	72	XUSL4E14F106N	76
XCSC701	66	XZCR1111064D25	72	XUSL4E30H106N	76
XCSA802	66	XCSDMC5902	73	XUSL4E14F121N	76
XCSA801	66	XCSDMP5902	73	XUSL4E30H121N	76
XCSC801	66	XCSDMR5902	73	XUSL4E14F136N	76
XCSZ11	66	XCSDMC590L01M8	73	XUSL4E30H136N	76
XCSZ12	66	XCSDMP590L01M12	73	XUSL4E14F151N	76
XCSZ14	66	XCSDMR590L01M12	73	XUSL4E30H151N	76
XCSZ13	66	XCSDMC7902	73	XUSL4E14F166N	76
XCSZ21	66	XCSDMP7902	73	XUSL4E30H166N	76
XCSLF2525312	67	XCSDMR7902	73	XUSL4E14F181N	76
XCSLE2525312	67	XCSDMC790L01M8	73	XUSL4E30H181N	76
XCSLF2727312	67	XCSDMP790L01M12	73	XUSL4E30H016L	76
XCSLE2727312	67	XCSDMR790L01M12	73	XUSL4E30H031L	76
XCSLF3535312	67	XCSDMP5002	73	XUSL4E30H046L	76
XCSLF353531M3	67	XCSDMP500L01M12	73	XUSL4E2BB051L	76
XCSLE3535312	67	XCSDMP7002	73	XUSL4E30H061L	76
XCSLF353531M3	67	XCSDMP700L01M12	73	XUSL4E30H076L	76
XCSLF3737312	67	XY2CJS15	73	XUSL4E3BB081L	76
XCSLF373731M3	67	XY2CJR15	73	XUSL4E30H091L	76
XCSLF3737312	67	XY2CJL17	73	XUSL4E4BB091L	76
XCSLE373731M3	67	XY2CJS17	73	XUSL4E30H106L	76
XCSLF3838312	67	XY2CJR17	73	XUSL4E30H121L	76
XCSLF383831M3	67	XY2CJL17	73	XUSL4E30H136L	76
XCSLE3838312	67	XY2CJS19	73	XUSL4E30H151L	76
XCSLF3535412	67	XY2CJR19	73	XUSL4E30H166L	76
XCSLF353541M3	67	XY2CJL19	73	XUSL4E30H181L	76
XCSLF3535612	67	XY2CH13250	74	XUSL4E14F031NM	77
XCSLF3737412	67	XY2CH13450	74	XUSL4E14F046NM	77
XCSLF373741M3	67	XY2CH13253	74	XUSL4E30H046NM	77
XCSLF3737612	67	XY2CH13270	74	XUSL4E2BB051NM	77
XCSZ01	67	XY2CH13470	74	XUSL4E14F061NM	77
XCSZ02	67	XY2CH13273	74	XUSL4E30H061NM	77
XCSZ03	67	XY2CH13290	74	XUSL4E14F076NM	77
XCSZ05	67	XY2CH13293	74	XUSL4E30H076NM	77
XCSPL592	68	XY2CE2A250	74	XUSL4E3BB081NM	77
XCSPL582	68	XY2CE1A250	74	XUSL4E30H091NM	77
XCSPL572	68	XY2CE2A450	74	XUSL4E4BB091NM	77
XCSPL562	68	XY2CE1A450	74	XUSL4E30H106NM	77
XCSPL552	68	XY2CE2A270	74	XUSL4E14F031NS1	77
XCSPL792	68	XY2CE1A270	74	XUSL4E14F046NS1	77
XCSPL782	68	XY2CE2A470	74	XUSL4E30H046NS1	77
XCSPL772	68	XY2CE2A470	74	XUSL4E2BB051NS1	77
XCSPL762	68	XY2CE1A470	74	XUSL4E14F061NS1	77
XCSPL752	68	XY2CE2A290	74	XUSL4E30H061NS1	77
XCSPL862	68	XY2CE1A290	74	XUSL4E14F076NS1	77
XCSPL962	68	XY2CE2A490	74	XUSL4E30H078NS1	77
XCSTR552	68	XY2CE1A490	74	XUSL4E3BB081NS1	77
XCSTR752	68	XY2CEDA290	74	XUSL4E30H091NS1	77
XCSPR552	68	XY2CEDC290	74	XUSL4E4BB091NS1	77
XCSPR752	68			XUSL4E30H106NS1	77

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