

# Sensor Solutions for Material Handling Applications



**Telemecanique**

**Sensors**

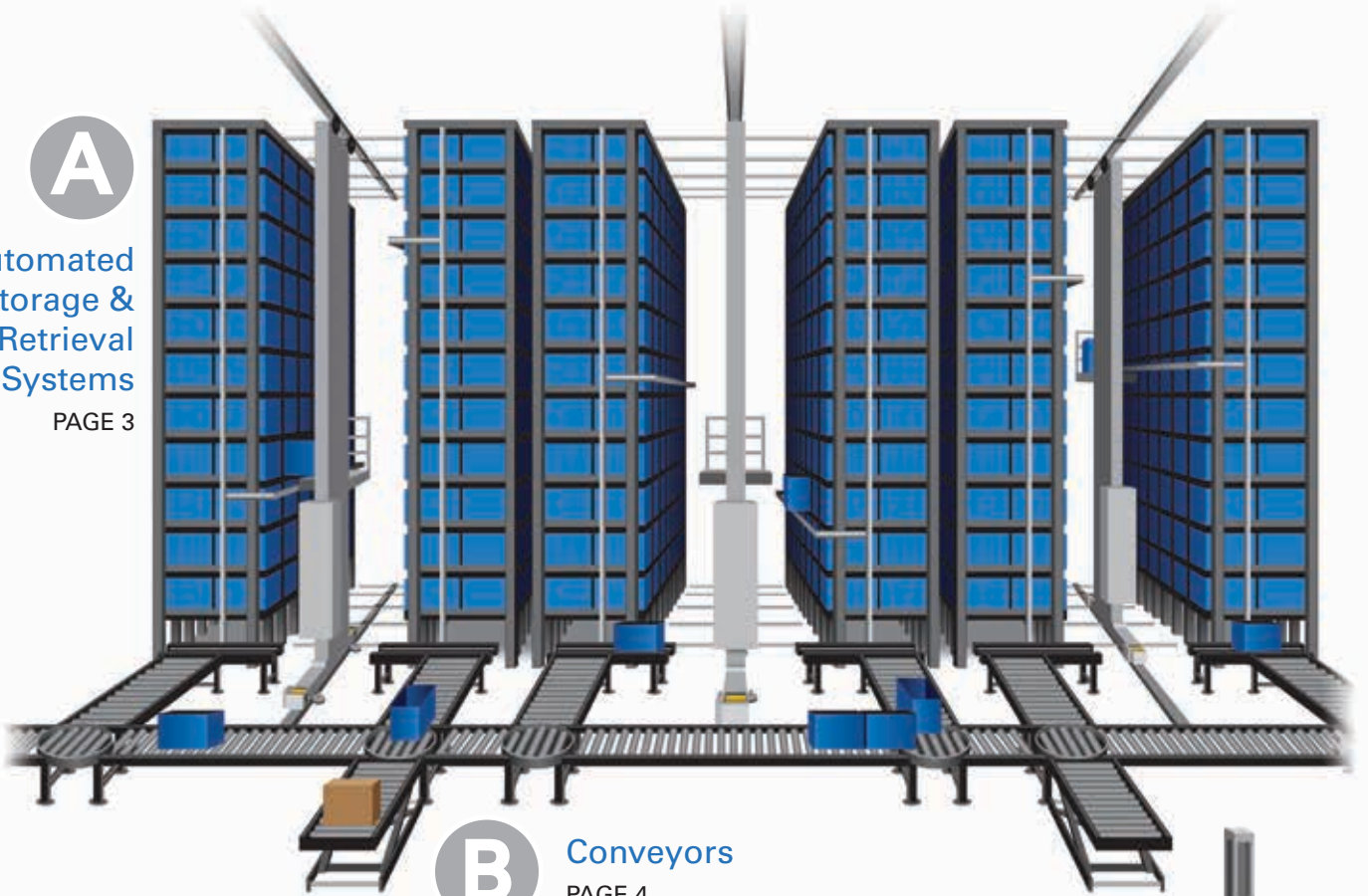
Simply easy!

# Material Handling Automated Warehouse

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Automated Storage & Retrieval Systems

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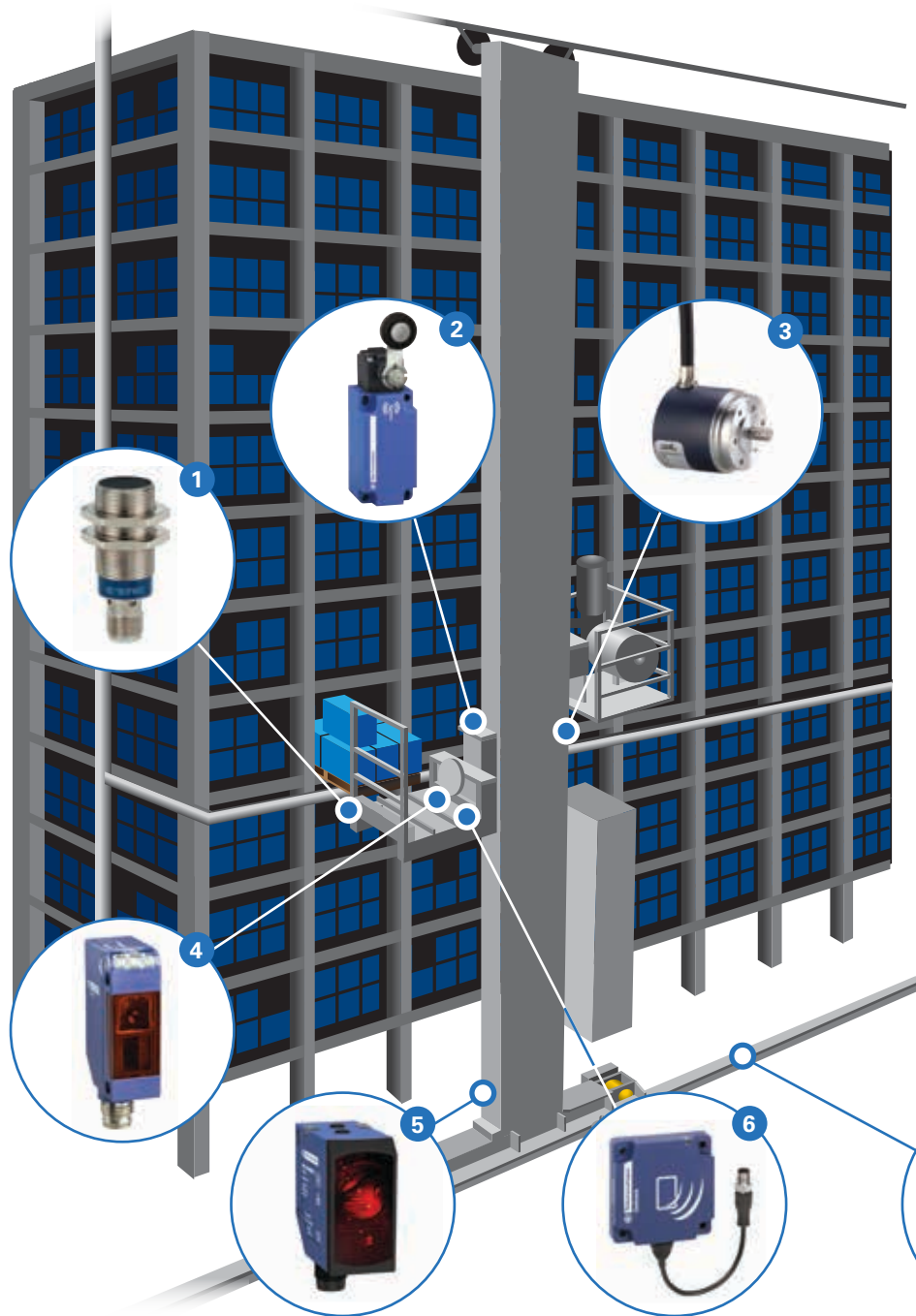
**Telemecanique Sensors** is a world-class global brand offering a comprehensive line of products to support your material handling applications. Whether you are specifying a detection solution for an automated storage and retrieval system, a conveyor system, or a stretch wrapper machine, Telemecanique Sensors has a sensor solution for you!

On the following pages, the sensors used to operate these three primary material handling machine systems are identified by the function they perform. Locate the sensor performing the specific task you are addressing and then find the specification details for that sensor in the product index section beginning on Page 6.

We make the process of choosing a sensor **Simply easy!**



# A Automated Storage & Retrieval Systems



## 1 XS Cylindrical Inductive

Verifying the table position to validate the movement authorization.

## 2 XCKW Wireless Limit Switch

Battery-less switch for detecting the compartment where the lift stops.

## 3 XCC Encoder

Detecting the transtorage unit position in front of a pigeonhole before picking up or depositing.

## 4 XUM Photoelectric Miniature

Verifying the presence of load on the table.

## 5 XUK Photoelectric Laser

Distance measurement for translation travel.

## 6 XG Radio Frequency Identification

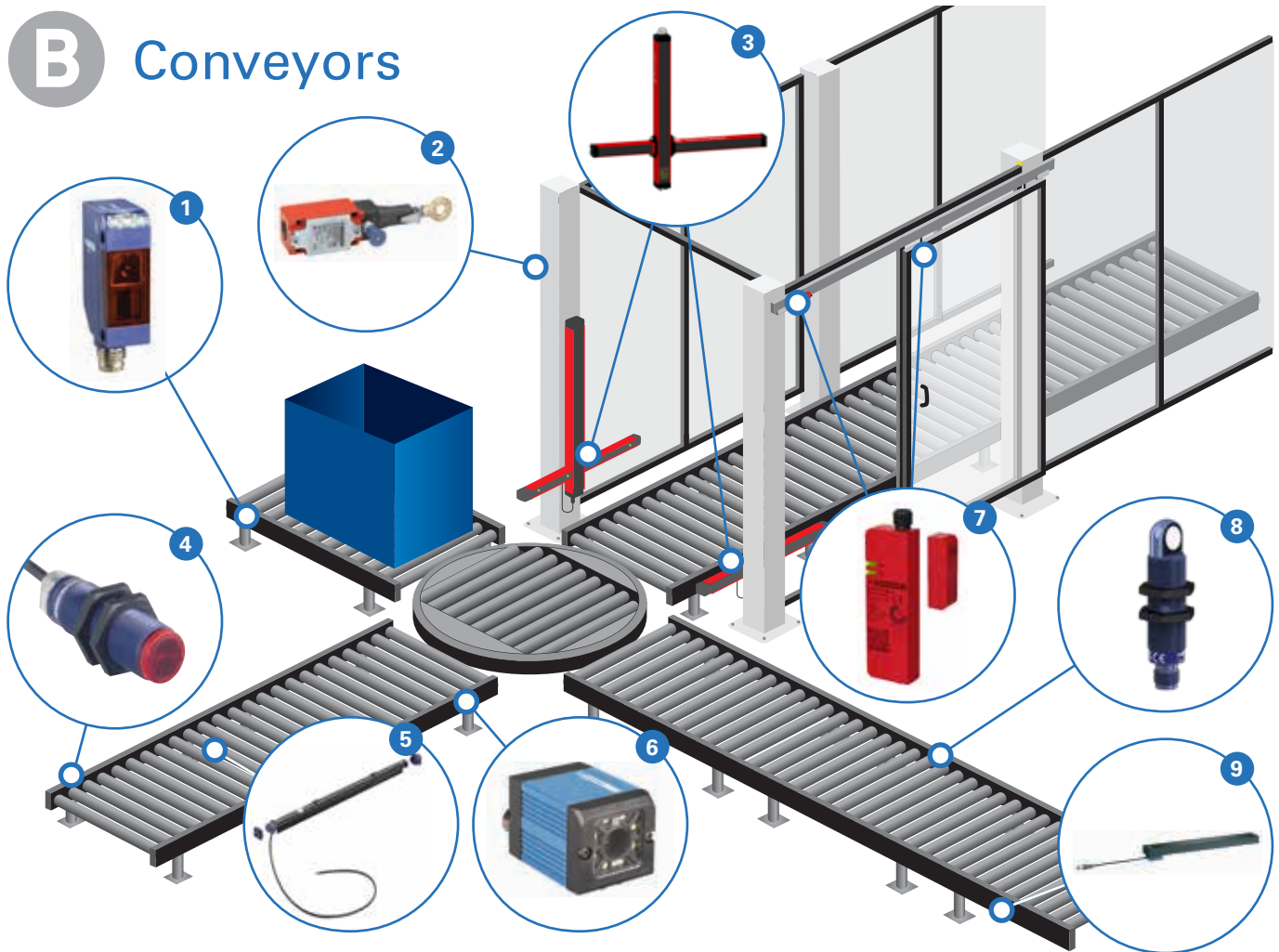
Traceability of bins in the warehouse.

## 7 XS Rectangular Inductive

Detecting an overtravel.



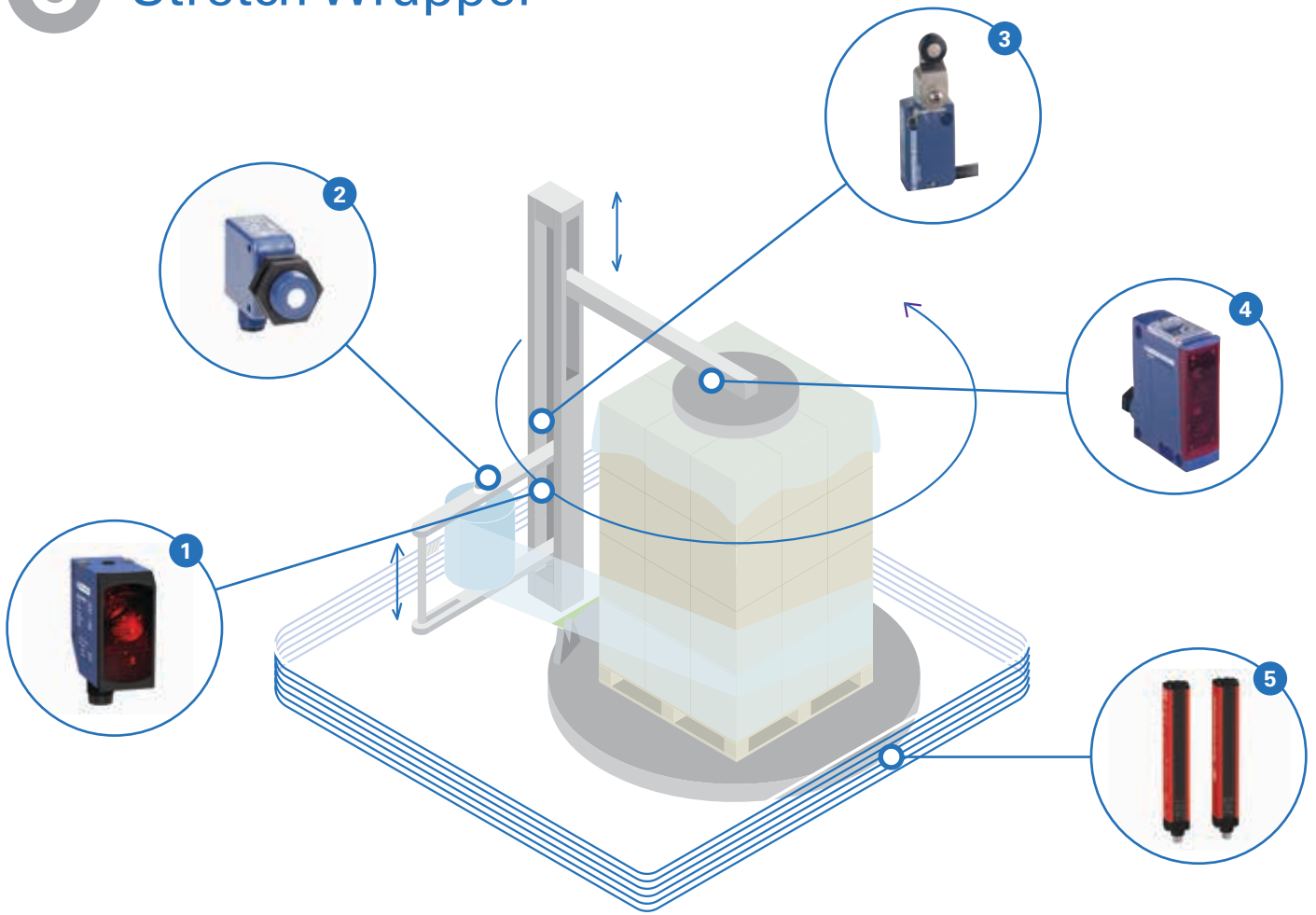
## B Conveyors



- |   |  |  |
|---|--|--|
| 1 | XUM Miniature Photoelectric Sensor       | Detecting the passage and presence of packages with background suppression.                    |
| 2 | Preventa XY2 Emergency Stop              | Emergency stop cable switch.   |
| 3 | XUSL4M Safety Light Curtains with Muting | Efficient detection of machine operators with uninterrupted automation processes.              |
| 4 | XUB Cylindrical Photoelectric Sensor     | Detecting the passage and presence of packages using a reflector.                              |
| 5 | XUY Roller Photoelectric Sensor          | Integrated, between-the-rollers detection of the passage and presence of virtually any object. |
| 6 | XUW Vision Sensor                        | Quality checking of the packages.  |
| 7 | Preventa XCSR RFID Safety Sensor         | Shuts down the machine if the door opens.  |
| 8 | XX Ultrasonic Sensor                     | Detecting the passage and presence of objects of various colors, shapes, or orientations.      |
| 9 | XG Radio Frequency Identification        | Traceability of packages in the warehouse.   |



# C Stretch Wrapper



- 1 XUK Laser Photoelectric Sensor Distance measurement to the pallet.
- 2 XX Ultrasonic Sensor Detecting end of film reel or film breakage.
- 3 XCMD Miniature Limit Switch Detecting of the end positions.
- 4 XUX Photoelectric Sensor Detection of package overhang.
- 5 Preventa XUSL Safety Light Curtains Monitoring access of persons to restricted areas of the machine.





# > XU Photoelectric Sensors

## XUB Cylindrical



Sensing mode	Sensing distance	Output	Catalog Part Number	
			Pre-Cabled	M12 Connector
Reflex, polarized	2 m	DC3 NO PNP	XUB9APANL2	XUB9APANM12
Background, supression	0.12 m	AC/DC NO	XU8M18MA230	XU8M18MA230K(1)
Reflex, polarized for transparent objects	0.8 m	DC3 NO/NC PNP	XUBT1PSNL2	XUBT1PSNM12

(1) - 1/2" 20 UNF connector

## XUM Miniature



Sensing mode	Sensing distance	Output	Catalog Part Number	
			Pre-Cabled	M8 Connector
Multimode		DC3 NO/NC PNP	XUM0APSAL2	XUM0APSAM8
Background, supression	0.3 m	DC3 NO/NC PNP	XUM8APCNL2	XUM8APCNM8
Reflex, polarized for transparent objects	2 m	DC3 NO/NC PNP	XUMTAPCNL2	XUMTAPCNM8

## XUK Laser



Sensing mode	Sensing distance	Output	Catalog Part Number	
				M12 Connector
Reflex, polarized	12 m	DC4 NO/NC PNP		XUK9LAPSMM12
Reflex, polarized for distance measurement	70 m	4-20 mA + NO/NC		XUK9TAH2MM12
Background, supression	0.8 m	DC4 NO/NC PNP		XUK8LAPPNM12
Background supression for distance measurement	5 m	4-20 mA + NO/NC		XUK8TAE2MM12

## XUX General Purpose



Sensing mode	Sensing distance	Output	Catalog Part Number (2)	
			Screw terminals	
Background supression	2 m	AC/DC RELAY NO/NC	XUX8ARCTT16	
Reflex, polarized	11 m	AC/DC RELAY NO/NC	XUX9ARCNT16	

(2) - Contact your sales person for different length

## XUY Roller



Sensing mode	Sensing distance	Output	Catalog Part Number	
			Pre-Cabled	M12 Connector
Diffuse	0.1 m	DC3 NO/NC PNP/NPN	XUY415NC4H2	XUY415NC4H03M12

# > XS Inductive Sensors

## XS Cylindrical



Body size	Sensing distance	Output	Catalog Part Number	
			Pre-Cabled	M12 Connector
Short M18	5 mm	DC3 NO PNP	XS518B1PAL2	XS518B1PAM12
	8 mm	DC3 NO PNP	XS118B3PAL2	XS118B3PAM12
	5 mm	DC2 NO	XS518BSDAL2	XS518BSDAM12
	8 mm	DC2 NO	XS618B3DAL2	XS618B3DAM12
Long M18	5 mm	DC3 NO PNP	XS518BLPAL2	XS518BLPAM12
	8 mm	DC3 NO PNP	XS618B1PAL2	XS618B1PAM12
	5 mm	DC2 NO	XS518B1DAL2	XS518B1DAM12
	8 mm	DC2 NO	XS618B1DAL2	XS618B1DAM12
	5 mm	AC/DC NO	XS518B1MAL2	XS518B1MAU20(3)
	8 mm	AC/DC NO	XS618B1MAL2	XS618B1MAU20(3)

## XS Rectangular



Body size	Sensing distance	Output	Catalog Part Number	
				M12 Connector
40 x 40 x 70 mm	15 mm	DC4 NO/NC PNP		XS7C2A1PCM12
	15 mm	DC2 NO		XS7C2A1DAM12
	15 mm	AC/DC NO		XS7C2A1MAU20(4)
	20 mm	DC4 NO/NC PNP		XS8C2A1PCM12
	20 mm	DC2 NO		XS8C2A1DAM12
	20 mm	AC/DC NO		XS8C2A1MAU20(3)

# > XX Ultrasonic Sensors

## XX Cylindrical



Sensing mode	Sensing distance	Output	Catalog Part Number (5)	
			Straight	Angled
Diffuse (6)	1 m (6)	PNP, NO or NC (6)	XXS18P1PM12	XXA18P1PM12
Window (6)		4...20 mA	XXS18P1AM12	XXA18P1AM12
Reflex (6)		0-10V	XXS18P1VM12	XXA18P1VM12

## XX Cylindrical / Dual mount



Sensing mode	Sensing distance	Output	Catalog Part Number	
			M18 barrel	Dual mount (7)
Diffuse	0.5 m (8)	DC3 NO PNP	XXS18A3PAM12	XX7V1A1PAM12
		4 - 20 mA	XX918A3C2M12	XX9V1A1C2M12
		0-10V	XX918A3F1M12	XX9V1A1F1M12

(3) - 1/2» 20 UNF connector  
 (4) - Body format M30  
 (5) - 18mm barrel, plastic (P1), Nickel brass (B1)  
 stainless steel (S1) versions available

(6) - Configurable with XX Software / remote teach push-button  
 (7) - Body format 60 x 30 x 18mm + M18  
 (8) - Adjustable with remote teach push-button

# > XC Limit Switches

## XCMD & XCMN Miniature



Body size	Contact	Connection	Catalog Part Number			
Miniature Metal	NO+NC Snap action	1 m cable	XCMD2110L1	XCMD2102L1	XCMD2121L1	XCMD2115L1
		M12 4 Pins	XCMD2110M12	XCMD2102M12	XCMD2121M12	XCMD2115M12
Miniature Plastic	NO+NC Snap action	1 m cable	XCMN2110L1	XCMN2102L1	XCMN2121L1	XCMN2115L1

## XCKP & XCKD Compact



Body size	Contact	Connection	Catalog Part Number			
Compact Metal	NO+NC Snap action	1/2" NPT	XCKD2110N12	XCKD2102N12	XCKD2121N12	XCKD2118N12
		M12 4 Pins	XCKD2110M12	XCKD2102M12	XCKD2121M12	XCKD2118M12
		M20	XCKP2110P20	XCKP2102P20	XCKP2121P20	XCKP2118P20
		PG11	XCKP2110G11	XCKP2102G11	XCKP2121G11	XCKP2118G11
Compact Plastic	NO+NC Snap action	1/2" NPT	XCKP2110N12	XCKP2102N12	XCKP2121N12	XCKP2118N12
		M12 4 Pins	XCKP2110M12	XCKP2102M12	XCKP2121M12	XCKP2118M12
		M20	XCKP2110P20	XCKP2102P20	XCKP2121P20	XCKP2118P20
		PG11	XCKP2110G11	XCKP2102G11	XCKP2121G11	XCKP2118G11

## XCKW & XCMW Wireless & Battery-less



Body size	Description	Catalog Part Number
EN50041 format	Metal end plunger	XCKW101
	Steel roller plunger	XCKW102
	Plastic roller lever	XCKW131
	Elastomer roller Ø 50mm lever	XCKW139
	Variable length roller lever	XCKW141
	Variable length elastomer roller Ø 50mm lever	XCKW149
	Plastic round Ø 6mm lever	XCKW159
	Miniature format	Metal end plunger
Miniature format	Metal roller plunger	XCMW102
	Plastic roller lever	XCMW115
	Metal roller lever	XCMW116
	Adjustable length plastic roller lever	XCMW145



## > XCC Encoders



Housing	Resolution	Output	Catalog Part Number	
Diameter 40 mm solid shaft Ø 6 mm	360 points	5 V, RS 422	XCC1406PR03R	
	360 points	Push-pull	XCC1406PR03K	
	500 points	5 V, RS 422	XCC1406PR05R	
	500 points	Push-pull	XCC1406PR05K	
	1000 points	5 V, RS 422	XCC1406PR10R	
	1000 points	Push-pull	XCC1406PR10K	
	1024 points	5 V, RS 422	XCC1406PR11R	
	1024 points	Push-pull	XCC1406PR11K	
	Diameter 58 mm solid shaft Ø 6 mm	360 points	5 V, RS 422	XCC1506PS03X
		360 points	Push-pull	XCC1506PS03Y
500 points		5 V, RS 422	XCC1506PS05X	
500 points		Push-pull	XCC1506PS05Y	
1000 points		5 V, RS 422	XCC1506PS10X	
1000 points		Push-pull	XCC1506PS10Y	
1024 points		5 V, RS 422	XCC1506PS11X	
1024 points		Push-pull	XCC1506PS11Y	

## > XG Radio Frequency Identification



Smart antenna 13.56 MHz	Sensing distance	Protocol	Speed	Catalog Part Number
Flat form 40 x 40 x 15 mm	18 to 70 mm	Modbus & Uni-Telway	9600 to 115,200 Bauds	XGCS4901201
Flat form 80 x 80 x 26 mm	18 to 70 mm	Modbus & Uni-Telway	9600 to 115,200 Bauds	XGCS8901201
	20 to 100 mm	Modbus TCP/IP & EtherNet IP	10/100 MB	XGCS850C201



Electronic tags	Sensing distance	Memory capacity	Memory type	Catalog Part Number
Disc Ø 30 x 3 mm	45 to 80 mm	2000 bytes	FeRAM	XGHB320246
Disc Ø 50 x 3 mm	70 to 150 mm	2000 bytes	FeRAM	XGHB520246
Flat form 40 x 40 x 15 mm	25 to 39 mm	32000 bytes	FeRAM	XGHB443245



Field expander	Catalog Part Number
50 x 400 mm	XGFEC540
50 x 200 mm	XGFEC520

## > XUW Vision Sensor



Type	Focal Length	Output/Inputs	Jobs	Tools	Repositioning	Catalog Part Number
Standard	6 mm	4 Out/2 In + Ethernet IP	2	32	No	XUWSA06W
	12 mm	4 Out/2 In + Ethernet IP	2	32	No	XUWSA12W
Advance	6 mm	6 Out/2 In + Ethernet IP	64	64	Yes	XUWAA06W
	12 mm	6 Out/2 In + Ethernet IP	64	64	Yes	XUWAA12W

Pre-processing filters: Gauss, Erosion, Dilatation, Mean, Median, Mirror, Flip and Inversion.

Tools: pattern matching, contour, contrast, brightness and grey-scale level.

Configuration of XUW vision sensors requires the use of software installed on a PC. The software is provided on a CD-ROM supplied with the sensor. Updates are available from our web site [www.tesensors.com](http://www.tesensors.com).

## > XZ Cables



Orientation	Cable Length	Connector	Catalog Part Number	
Straight	2 m	4 pins	M8 Connector XZCPV0941L2	M12 Connector XZCPV1141L2
	5 m	4 pins	XZCPV0941L5	XZCPV1141L5
Elbowed	2 m	4 pins	XZCPV1041L2	XZCPV1241L2
	5 m	4 pins	XZCPV1041L5	XZCPV1241L5

## > Accessories



Dimensions	Reflector Catalog Part Number
Ø 16 mm	XUZC16
Ø 21 mm	XUZC21
24 x 21 mm	XUZC24
50 x 50 mm	XUZC50
100 x 100 mm	XUZC100



Mounting brackets	Catalog Part Number
XUB Cylindrical	XUZA118
XUM Miniature	XUMZAM01
XUK Laser	XUZASK001
XUX Compact	XUZX2000
XS Cylindrical	XSZB118



Adaptor	Catalog Part Number
XUM Ø 18 mm	XUZASM001

## > Preventa XY2 Emergency Stop



Cable length	Contact	Anchoring point	Connection	Catalog Part Number
< 20 m	2 NC+ 1 NO Slow break	To right or to left	Pg13.5	XY2CJS19 (9)



Cable length	Contact	Anchoring point	Connection	Catalog Part Number
< 30 m	2 NC+ 1 NO Slow break	To right	Pg13.5	XY2CJR19 (9)
< 30 m	2 NC+ 1 NO Slow break	To left	Pg13.5	XY2CJL19 (9)

(9) - For ISO M20, just add "H29" to the part number (example: XY2CJS19 becomes XY2CJS19H29).  
For 1/2" NPT, just add "H7" to the part number (example: XY2CJS19 becomes XY2CJS19H7).



Cable length	Contact	Anchoring point	Connection	Catalog Part Number
< 30 m	2 NC+ 1 NO Slow break	To right or to left	Pg13.5	XY2CH13290 (10)

(10) - Also available with pilot light.  
For ISO M20, just add "H29" to the part number (example: XY2CH13290 becomes XY2CH13290H29).  
For 1/2" NPT, just add "H7" to the part number (example: XY2CH13290 becomes XY2CH13290H7).



Cable length	Contact	Anchoring point	Connection	Catalog Part Number
< 70 m	2 NC+ 2 NO Slow break	To right	Pg13.5 or ISO M20	XY2CE1A290 (11)
< 70 m	2 NC+ 2 NO Slow break	To left	Pg13.5 or ISO M20	XY2CE2A290 (11)

(11) - Also available with pilot light.  
For 1/2" NPT, just add "H7" to the part number (example: XY2CE1A290 becomes XY2CE1A290H7).



Cable length	Contact	Anchoring point	Connection	Catalog Part Number
2 x 100 m	2 NC+ 2 NO Slow break	To right & to left	Pg13.5 or ISO M20	XY2CEDA290 (12)

(12) - Also available with pilot light.  
For 1/2" NPT, just add "H7" to the part number (example: XY2CEDA290 becomes XY2CEDA290H7).

# > Preventa XUSL Light Curtains

Safety level	Height protected	Sensing distance	Catalog Part Number	
			Hand detection	Body detection
Type 2 PLd/cat2	910 mm	0...4 m or 0...12 m		XUSL2E4BB091N
	1060 mm		XUSL2E30H106N	
	1210 mm		XUSL2E30H121N	
	1360 mm		XUSL2E30H136N	
	1510 mm		XUSL2E30H151N	
	1660 mm		XUSL2E30H166N	
	1810 mm		XUSL2E30H181N	
Type 4 PLe/ca4	910 mm	0...4 m or 0...12 m		XUSL4E4BB091N
	1060 mm		XUSL4E30H106N	
	1210 mm		XUSL4E30H121N	
	1360 mm		XUSL4E30H136N	
	1510 mm		XUSL4E30H151N	
	1660 mm		XUSL4E30H166N	
	1810 mm		XUSL4E30H181N	
Type 4 PLe/ca4	910 mm	0...10 m or 3...20 m		XUSL4E4BB091L
	1060 mm		XUSL4E30H106L	
	1210 mm		XUSL4E30H121L	
	1360 mm		XUSL4E30H136L	
	1510 mm		XUSL4E30H151L	
	1660 mm		XUSL4E30H166L	
	1810 mm		XUSL4E30H181L	
Type 4 PLe/ca4	510 mm			Integrated muting (13) (16)
	810 mm		XUSL4MA2BB051N (14)	
	910 mm		XUSL4MB2BB051N (15)	
				XUSL4MA3BB081N (14)
				XUSL4MB2BB081N (15)
				XUSL4MA4BB091N (14)
				XUSL4MB4BB091N (15)

- (13) - Possible association with pre-built/pre-adjusted muting arms XUSZAS\* (single beam muting sensors) and XUSZAM\* (multi-beam muting sensors).
- (14) - Hardware and software configuration (with SoMute free software), partial muting and integrated muting lamp.
- (15) - Hardware configuration only
- (16) - For hand detection, some models are available in 30mm and 40mm resolutions, in different protected heights.

# > Preventa XCSR RFID Safety Sensor

Type	EDM + Start	Pairing	Connection	Catalog Part Number
SINGLE		Unique	M12	XCSRC10M12
SINGLE		2 new possible	M12	XCSRC30M12
STANDALONE	EDM + Auto Start	Unique	M12	XCSRC11AM12
STANDALONE	EDM + Auto Start	2 new possible	M12	XCSRC31AM12
STANDALONE	EDM + Manual Start	Unique	M12	XCSRC11MM12
STANDALONE	EDM + Manual Start	2 new possible	M12	XCSRC31MM12
DAISY-CHAIN		Unique	M12	XCSRC12M12
DAISY-CHAIN		2 new possible	M12	XCSRC32M12

# > Telemecanique Sensors

## Simply easy!

Simplicity



Expertise



Proximity



**Telemecanique Sensors** is a world-class global brand offering a comprehensive line of over 25,000 types of sensors, including limit switches, pressure sensors, photoelectric and proximity sensors. In addition, we provide industrial encoders and state-of-the-art RFID systems compatible with most PLC manufacturers.

**Telemecanique Sensors** is focused on 3 core values - Simplicity, Expertise, and Proximity. Our focus on **Simplicity** is reflected in the ease with which our products can be specified, installed, and used. Our focus on **Expertise** is reflected in our 70+ years of securing all the necessary and applicable certifications and our long history of addressing some of the most demanding machine applications in the industry. Our focus on **Proximity** can be seen in the worldwide availability of our products and technical support.

In short, we make sensing technology simple. We have the experience to address the most challenging applications. And we are there to help.

We make detection solutions “Simply easy!”

Schneider Electric Industries SAS

Head Office  
35, rue Joseph Monier – CS 30323  
F92506 Rueil-Malmaison Cedex  
FRANCE

[www.tesensors.com](http://www.tesensors.com)

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