

# XCSRC12M12

Preventa RFID safety switch, Telemecanique  
Safety switches XCS, contactless Daisy Chain  
model, Unique pairing



## Main

Range of product	Telemecanique Safety switches XCS
Product or component type	Preventa RFID safety switch
Component name	XCSRC

## Complementary

Design	Rectangular, standard
Size	Transponder: 50 x 15 x 15 mm Reader: 119.6 x 30 x 15 mm
Material	Valox
Electrical connection	2 male connectors
Connector type	M12 male
Type of output stage	Solid-state, PNP
Safety outputs	2 NO
Number of poles	5
Local signalling	Green, orange and red 2 multi-colour LEDs
[Sao] assured operating sensing distance	10 mm face to face
[Sar] assured release sensing distance	35 mm face to face
Approach directions	3 directions-transponder with rotary sensing face
[Ue] rated operational voltage	24 V DC (- 20...10 %)SELV or PELV conforming to EN/IEC 60204-1
[Ie] rated operational current	60 mA
[Ui] rated insulation voltage	30 V DC
[Uimp] rated impulse withstand voltage	0.8 kV conforming to IEC 60947-5-2
Protection type	Short-circuit protection
Maximum switching voltage	26.4 V DC
Switching capacity in mA	200 mA
Switching frequency	<= 0.5 Hz
risk time	120 ms + 18 ms per additional switch connected in series
Response time	120 ms + 50 ms typical per additional switch connected in series
Maximum delay first up	5 s
Tightening torque	< 1.5 N.m
Standards	ISO 14119 EN/IEC 60947-5-2 EN/IEC 60947-5-3
Product certifications	Ecolab IC TÜV EAC E2 RCM FCC CSA 22-2

The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein. This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications. It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof. Neither TWSS Holding nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information contained herein.

Marking	IC TÜV FCC CULus RCM EAC CE
Safety level	SIL 3 conforming to EN/IEC 61508 SILCL 3 conforming to EN/IEC 62061 PL = e conforming to EN/ISO 13849-1 Category 4 conforming to EN/ISO 13849-1
Safety reliability data	PFH<SUB>D</SUB> = 5E-10/h conforming to EN/IEC 62061 PFH<SUB>D</SUB> = 5E-10/h conforming to EN/ISO 13849-1
Mission time	20 year(s)
Ambient air temperature for operation	-25...70 °C
Ambient air temperature for storage	-40...85 °C
Vibration resistance	10 gn (f= 10...150 Hz) conforming to EN/IEC 60068-2-6
Shock resistance	30 gn for 11 ms conforming to EN/IEC 60068-2-27
Electrical shock protection class	Class III conforming to EN/IEC 61140
IP degree of protection	IP65 conforming to EN/IEC 60529 IP66 conforming to EN/IEC 60529 IP67 conforming to EN/IEC 60529 IP69K conforming to DIN 40050

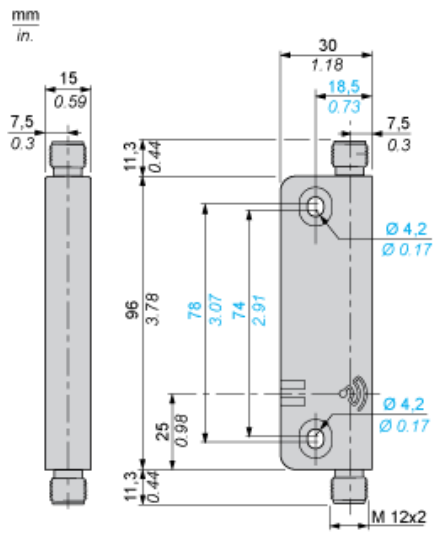
## Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	2.500 cm
Package 1 Width	13.000 cm
Package 1 Length	15.000 cm
Package 1 Weight	107.000 g
Unit Type of Package 2	S01
Number of Units in Package 2	12
Package 2 Height	15.000 cm
Package 2 Width	15.000 cm
Package 2 Length	40.000 cm
Package 2 Weight	1.462 kg

## Offer Sustainability

Sustainable offer status	Green Premium product
REACH Regulation	<a href="#">REACH Declaration</a>
EU RoHS Directive	Pro-active compliance (Product out of EU RoHS legal scope) <a href="#">EU RoHS Declaration</a>
Mercury free	Yes
RoHS exemption information	<a href="#">Yes</a>
Environmental Disclosure	<a href="#">Product Environmental Profile</a>
Circularity Profile	No need of specific recycling operations
California proposition 65	WARNING: This product can expose you to chemicals including: Diisononyl phthalate (DINP), which is known to the State of California to cause cancer, and Di-isodecyl phthalate (DIDP), which is known to the State of California to cause birth defects or other reproductive harm. For more information go to <a href="http://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a>

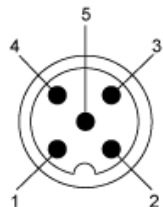
## Dimensions



## Connections

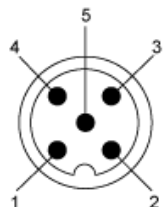
### M12 Connectors, 5-pin

#### Output Connector



- (1) + 24 VDC
- (2) OSSD2 (O2)
- (3) 0 VDC
- (4) OSSD1 (O1)
- (5) Diagnosis Out (Do)

#### Input Connector

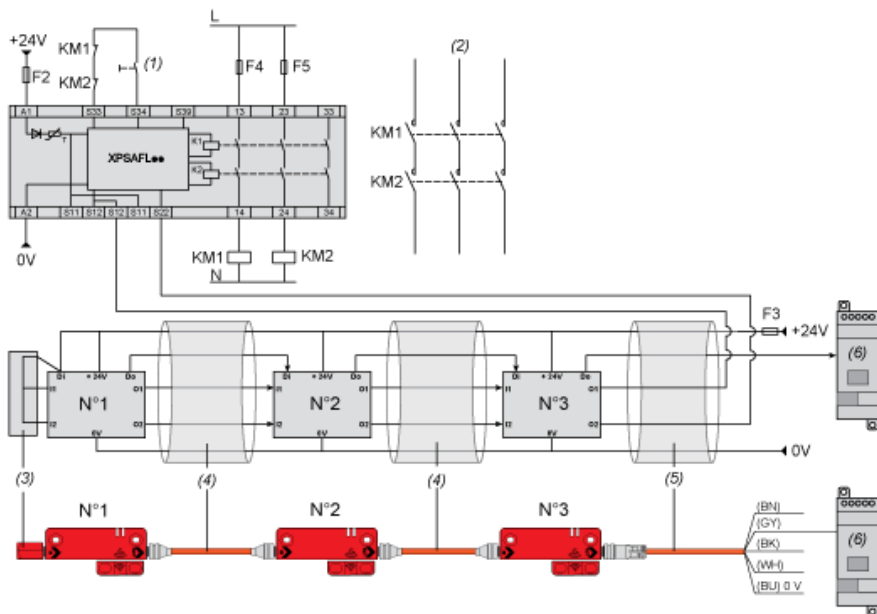


- (1) + 24 VDC
- (2) INPUT 2 (I2)
- (3) 0 VDC
- (4) INPUT 1 (I1)
- (5) Diagnosis In (Di)

## Connections

### Wiring Diagram: Series Connection

Cat. 4 / PL=e (EN/ISO 13849-1) / SIL3 (IEC 61508) / SILCL3 IEC 62061), if combined with an appropriate Preventa XPS Safety module  
PL=e / SIL3

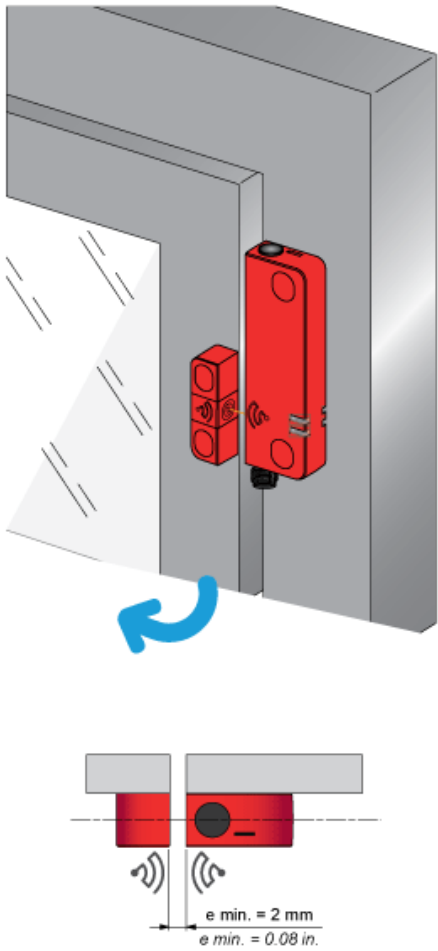
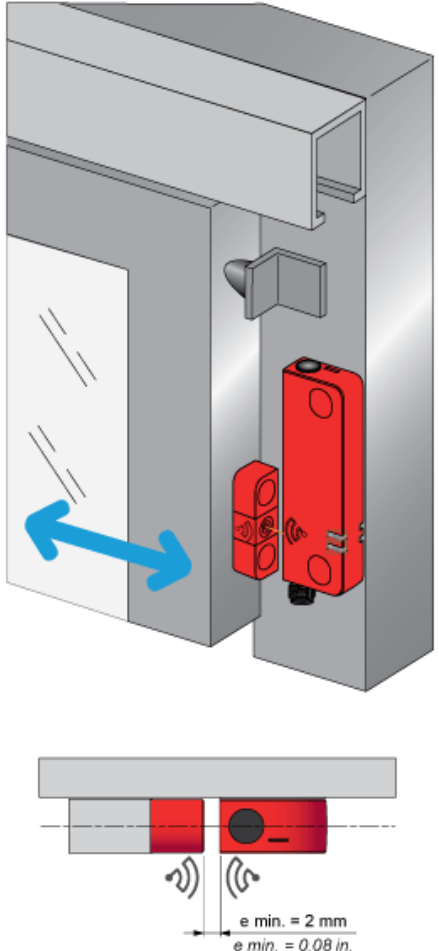


- (1) Start
- (2) Power circuit
- (3) Loopback device
- (4) M12/M12 female jumpers
- (5) Pre-wired female connectors
- (6) Diagnostic module (option)

NOTE: KM1 and KM2 contactors must have force-guided contacts.

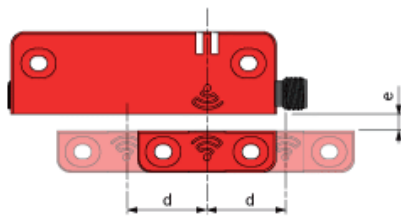
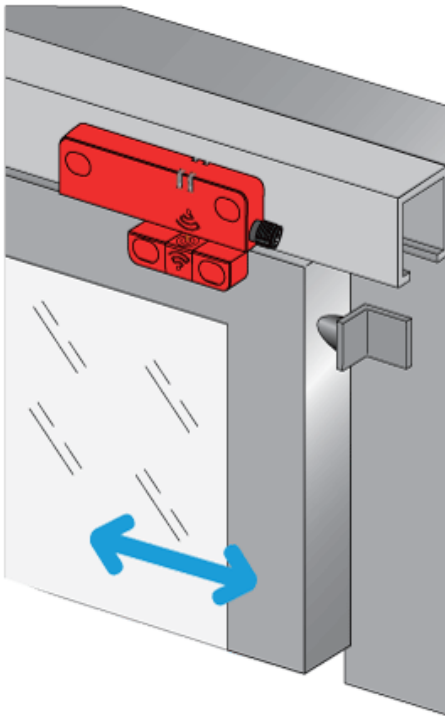
## Mounting and Clearance

### Face to Face Mounting (Preferred Configuration)

Example n°1	Example n°2
 <p><math>e \text{ min.} = 2 \text{ mm}</math> <math>e \text{ min.} = 0.08 \text{ in.}</math></p>	 <p><math>e \text{ min.} = 2 \text{ mm}</math> <math>e \text{ min.} = 0.08 \text{ in.}</math></p>
<p>e: Recommended minimum mounting distance between transponder and reader.</p>	<p>e: Recommended minimum mounting distance between transponder and reader.</p>

## Face to Face Mounting (Preferred Configuration)

Example n°3



$e > 2 \text{ mm}$ . (e: recommended minimum mounting distance between transponder and reader)  
min.

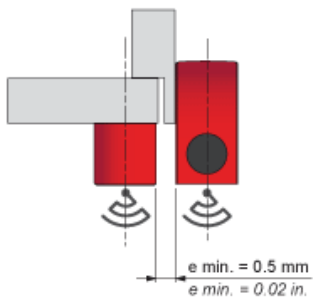
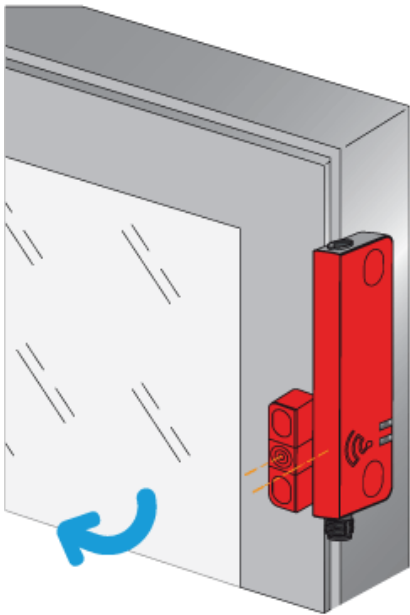
d : Detection limit

## Mounting and Clearance

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### Side by Side Mounting

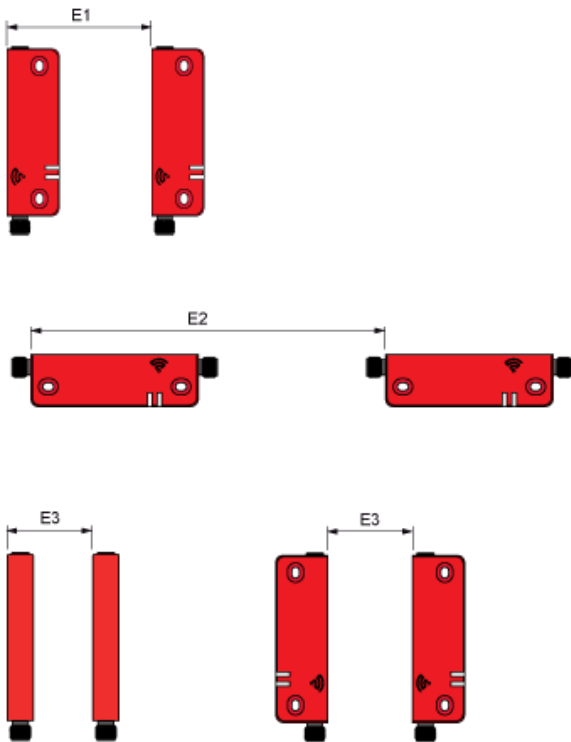
Correct Mounting Configuration



e: Recommended minimum mounting distance between transponder and reader.

## Mounting and Clearance

### Minimum Mounting Clearances between Safety Switches



Dimensions in mm

E1 min.	E2 min.	E3 min.
45	150	65



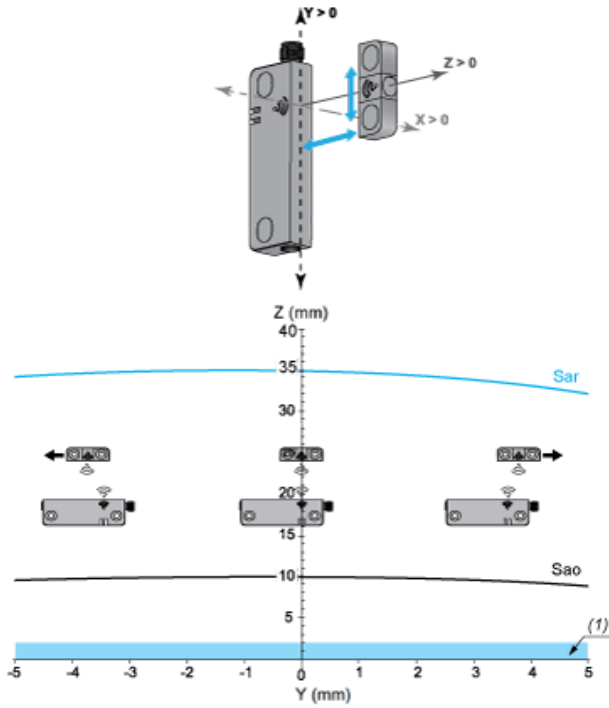
Dimensions in in.

E1 min.	E2 min.	E3 min.
1.77	5.91	2.56

Detection Curves

Face to Face Mounting (Preferred Configuration)

Sao and Sar sensing distances along Y axis as function of Z (longitudinal misalignment for X=0)

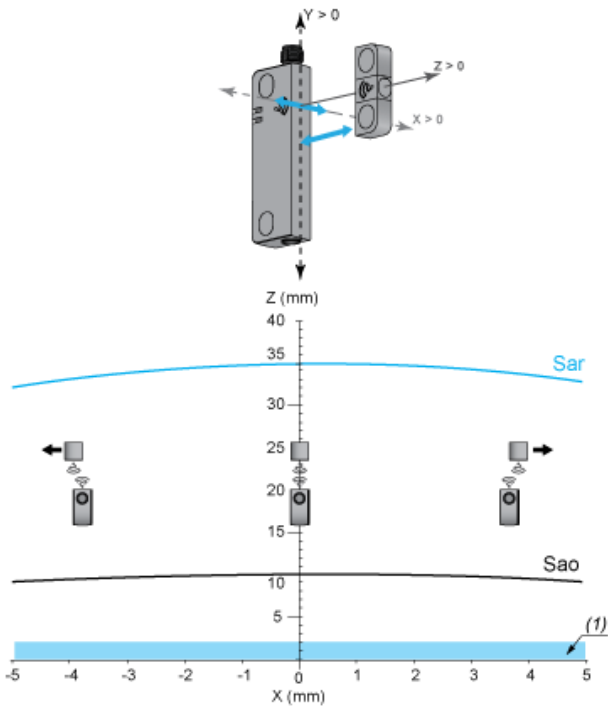


Sar: Assured release distance

Sao: Assured operating distance

(1) Recommended minimum mounting distance between transponder and reader.

Sao and Sar sensing distances along X axis as function of Z (transverse misalignment for Y=0)

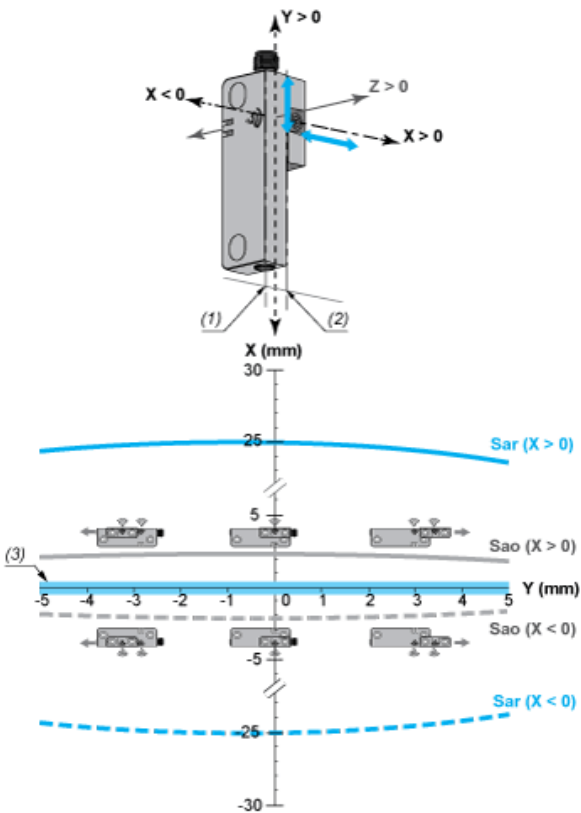


Sar: Assured release distance  
 Sao: Assured operating distance  
 (1) Recommended minimum mounting distance between transponder and reader.

## Detection Curves

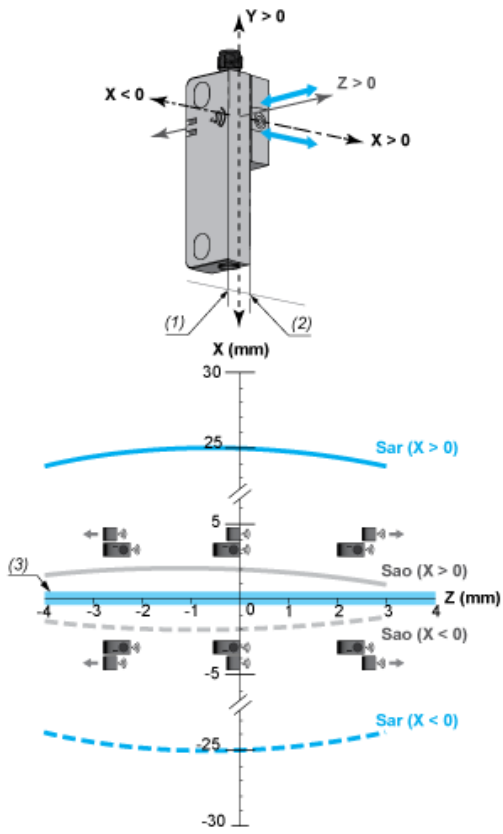
### Side by Side Mounting

Sao and Sar sensing distances along Y axis as function of X (longitudinal misalignment for Z=0mm)



Sar: Assured release distance  
 Sao: Assured operating distance  
 (1)  $X=0$  for  $X < 0$   
 (2)  $X=0$  for  $X > 0$   
 (3) Recommended minimum mounting distance between transponder and reader.

Sao and Sar sensing distances along Z axis as function of X (transverse misalignment for Y=0mm)



Sar: Assured release distance

Sao: Assured operating distance

(1)  $X=0$  for  $X < 0$

(2)  $X=0$  for  $X > 0$

(3) Recommended minimum mounting distance between transponder and reader.