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Design	Miniature format	Compact format, CENELEC EN50047	
	Metal, pre-cabled	Plastic, 1 cable entry	Plastic, 2 cable entries



Enclosure	Metal		Plastic, double insulated	
Modularity	Head, body and connection modularity		Head, body and cable entry modularity	Head and body modularity
Conformity/Certifications	UL, CSA, CCC, GOST		CENELEC EN 50047 UL, CSA, CCC, GOST	
Body dimensions (w x h x d) in mm	30 x 50 x 16		31 x 65 x 30	58 x 51 x 30
Head	Linear movement (plunger) Rotary movement (lever) Rotary movement, multidirectional Same heads for ranges XCMD, XCKD, XCKP and XCKT			
Contact blocks	2 electrically separate contacts	snap action with positive opening operation	p	p
		slow break with positive opening operation	p	p
2 same polarity contacts	snap action	-	-	-
	slow break	-	-	-
3 electrically separate contacts	snap action with positive opening operation	p	p	p
	slow break with positive opening operation	p	p	p
4 electrically separate contacts	snap action with positive opening operation	p	-	-
	slow break with positive opening operation	-	-	-
4 contacts (2 x 2 same polarity contacts)	snap action	-	-	-
Degree of protection IP/IK	IP 66, IP 67, IP 68, IK 06		IP 66, IP 67, IK 04	
Operating temperature	- 25°C... + 70°C			
Connection	Screw terminals	-	1 entry for ISO M16 or M20, Pg 11, Pg 13.5 cable gland or 1/2" NPT, PF 1/2	2 entries for ISO M16 or Pg 11 cable gland or 1/2" NPT (using adaptor)
	Pre-cabled	Ø 7.5 PvR, CEI, halogen free, depending on model	-	
	Connector	Integral or remote M12 or remote 7/8"-16UN	M12	-
Type reference	<b>XCMD</b>	<b>XCKP</b>	<b>XCKT</b>	
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# Limit switches

OsiSense XC

Variable composition: simplicity through innovation

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## Principle

### Variable composition principle

■ The Miniature design XCMD and Compact design XCKD, XCKP and XCKT ranges benefit from the variable composition concept.

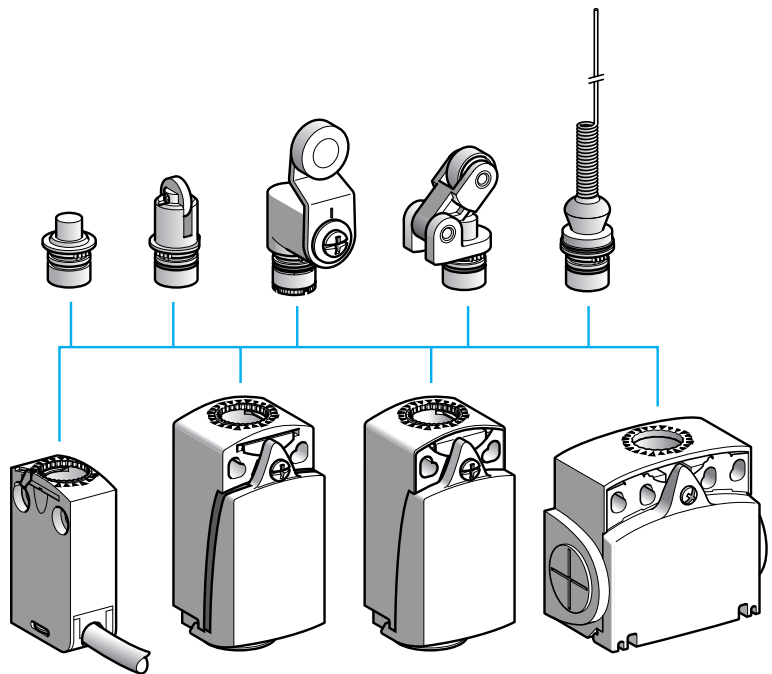
■ A worldwide detection first for improving productivity.

A complete offer for resolving the most commonly encountered detection problems:

- product selection simplified,
- product availability simplified,
- installation and setting-up simplified,
- maintenance simplified.

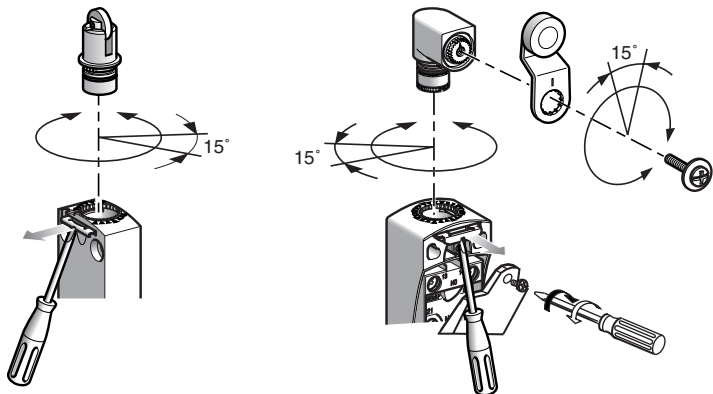
### Heads

■ A single metal operating head type for the Miniature design XCMD and Compact design XCKD, XCKP and XCKT ranges.



■ Interchanging of heads achieved by simple operation of forked metal latch.

■ Adjustable in 3 planes:



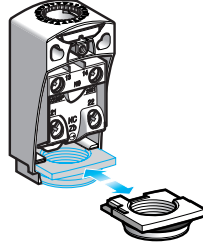
*All the heads can be adjusted in 15° steps throughout 360°, in relation to the body.*

*All the levers can be adjusted in 15° steps throughout 360°, in relation to the horizontal axis of the head.*

Principle (continued)

Cable entries

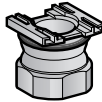
- The cable entries for Compact design XCKD and XCKP switches enable:
  - simple cabling due to unrestricted access to contacts,



- simple adaptation to the various worldwide markets:
  - 6 models are available:



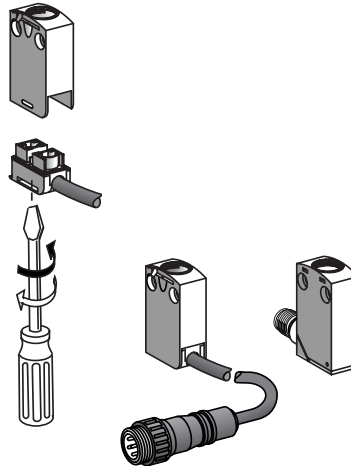
- ISO M16 x 1.5
- Pg 11



- ISO M20 x 1.5
- Pg 13.5
- 1/2" NPT
- PF 1/2 (G 1/2)

Each model is available in metal or plastic, respectively suited to Compact design XCKD and XCKP.

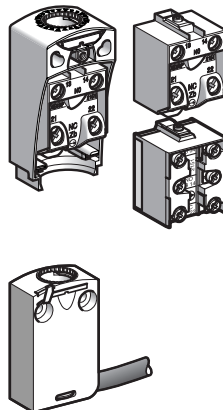
Connection components



- The miniature XCMD range allows interchanging of these pre-cabled connection components:
  - a 1/4 of a turn is all that is required for removing the connection component on XCMD bodies with 2 and 3 contacts,
  - 6 alternative cable lengths are available as standard.

- The miniature XCMD range also includes an integral or remote connector solution.

Contact block or bodies with contact



- 2 and 3 snap action and slow break contact blocks, with positive opening operation, are interchangeable between the Compact design XCKD and XCKP and Classic XCKJ, XCKS, XCKM and XCKL ranges.

- For the miniature design XCMD range, the contacts are an integral part of the body:
  - 2 and 3 snap action and slow break contacts, with positive opening operation, and interchangeable connection component,
  - 4 snap action contacts, with positive opening operation, with monolithic body and connection components.

# Limit switches

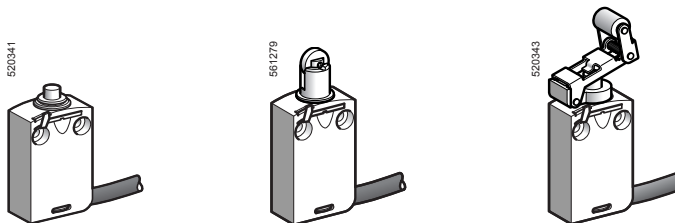
## OsiSense XC Standard

Miniature design, metal, type XCMD

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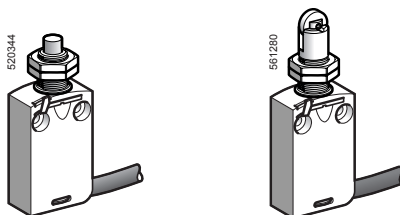
■ XCMD pre-cabled

□ With head for linear movement (plunger). Fixing by the body



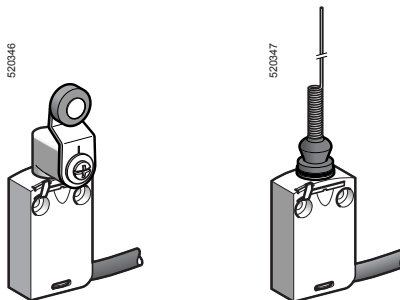
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□ With head for linear movement (plunger). Fixing by the head



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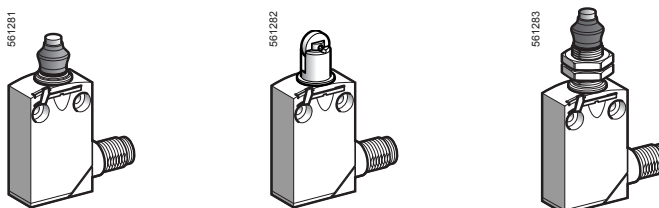
□ With head for rotary movement (lever) or multi-directional. Fixing by the body



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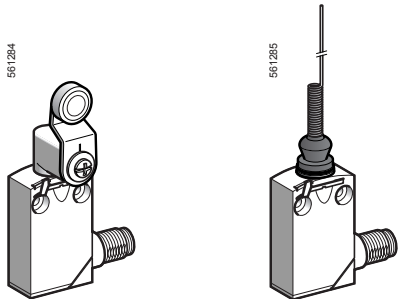
■ XCMD with connector

□ With head for linear movement (plunger)  
Fixing by the body | Fixing by the head



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□ With head for rotary movement (lever) or multi-directional. Fixing by the body



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### Environment characteristics

Conformity to standards	Products	IEC 60947-5-1, EN 60947-5-1, UL 508, CSA C22-2 n° 14
	Machine assemblies	IEC 60204-1, EN 60204-1
Product certifications		UL, CSA (except products with special cables), CCC
Protective treatment		Standard version: "TC"
Ambient air temperature		For operation: - 25... + 70°C. For storage: - 40... + 70°C
Vibration resistance		XCMD snap action: 5 gn. XCMD slow break: 25 gn (10...500 Hz) conforming to IEC 60068-2-6
Shock resistance		25 gn (18 ms) conforming to IEC 60068-2-27 except head ZCE08: 15 gn (18 ms)
Electric shock protection		Class I conforming to IEC 61140 and NF C 20-030
Degree of protection		<b>IP 66, IP 67 and IP 68 (1) conforming to IEC 60529; IK 06 conforming to EN 50102</b>
Materials		Bodies: Zamak, heads: Zamak
Repeat accuracy		0.05 mm on the tripping points, with 1 million operations for head with end plunger

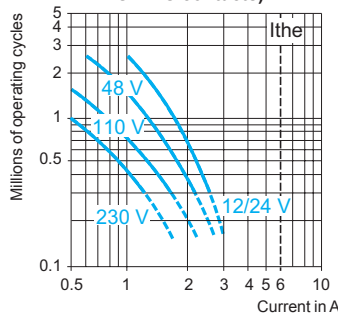
(1) Protection against prolonged immersion: the test conditions are subject to agreement between the manufacturer and the user.

### Contact block characteristics

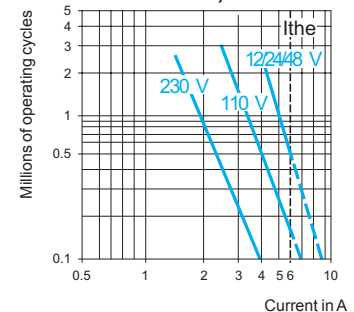
Rated operational characteristics	Switches with 2 contacts	~ AC-15; B300 (Ue = 240 V, Ie = 1.5 A) ⋮ DC-13; R300 (Ue = 250 V, Ie = 0.1 A), conforming to IEC 60947-5-1 Appendix A, EN 60947-5-1
	Switches with 3 and 4 contacts	~ AC-15; C300 (Ue = 240 V, Ie = 0.75 A) ⋮ DC-13; R300 (Ue = 250 V, Ie = 0.1 A), conforming to IEC 60947-5-1 Appendix A, EN 60947-5-1
	Pre-cabled switches	<b>Ithe = 6 A for 2 contacts, 4 A for 3 contacts, 3 A for 4 contacts</b>
	Switches with M12, 4-pin connector	Ui = 250 V, Ie = 3 A maximum, Ithe = 3 A
	Switches with M12, 5-pin connector	Ui = 60 V, Ie = 4 A maximum, Ithe = 4 A
	Switches with 7/8"-16UN, 5-pin connector	Ui = 250 V, Ie = 6 A maximum, Ithe = 6 A
Rated insulation voltage		Ui = 400 V degree of pollution 3 conforming to IEC 60947-5-1 Ui = 300 V conforming to UL 508, CSA C22-2 n° 14
Rated impulse withstand voltage		U imp = 4 kV conforming to IEC 60947-1, IEC 60664
Positive operation (depending on model)		NC contacts with positive opening operation conforming to IEC 60947-5-1 Appendix K, EN 60947-5-1
Resistance across terminals		≤ 25 mΩ conforming to IEC 60255-7 category 3
Short-circuit protection		6 A cartridge fuse type gG (gl)
Minimum actuation speed (for head with end plunger)		Snap action contact: 0.01 m/minute, slow break contact: 6 m/minute
Electrical durability		<ul style="list-style-type: none"> <li>■ Conforming to IEC 60947-5-1 Appendix C</li> <li>■ Utilisation categories AC-15 and DC-13</li> <li>■ Maximum operating rate: 3600 operating cycles/hour</li> <li>■ Load factor: 0.5</li> </ul>

AC supply  
50/60 Hz ~  
~m inductive circuit

**XCMD snap action (NC + NO, NC + NC, NC + NC + NO, NC + NC + NO + NO contacts)**



**XCMD slow break (NC + NO, NC + NC + NO contacts)**



DC supply ⋮

Power broken in W for 5 million operating cycles				
Voltage	V	24	48	120
~m	W	3	2	1

Power broken in W for 5 million operating cycles				
Voltage	V	24	48	120
~m	W	4	3	3

# Limit switches

OsiSense XC Standard  
Miniature design, metal, type XCMD  
Pre-cabled

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Type of head	Plunger (fixing by the body)			Plunger (fixing by the head)			
Type of operator	Metal end plunger	Metal end plunger with elastomer boot (1)	Steel roller plunger	Retractable steel roller lever plunger	M12 with metal end plunger	M16 with metal end plunger with elastomer boot (1)	M12 with steel roller plunger

References							
<b>2-pole NC + NO snap action</b> 	<b>XCMD2110L1</b> 	<b>XCMD2111L1</b> 	<b>XCMD2102L1</b> 	<b>XCMD2124L1</b> 	<b>XCMD21F0L1</b> 	<b>XCMD21G1L1</b> 	<b>XCMD21F2L1</b> 
<b>2-pole NC + NO break before make, slow break</b> 	<b>XCMD2510L1</b> 	<b>XCMD2511L1</b> 	<b>XCMD2502L1</b> 	<b>XCMD2524L1</b> 	<b>XCMD25F0L1</b> 	<b>XCMD25G1L1</b> 	<b>XCMD25F2L1</b> 
<b>2-pole NC + NC snap action</b> 	<b>ZCMD29L1 + ZCE10</b> 	<b>ZCMD29L1 + ZCE11</b> 	<b>ZCMD29L1 + ZCE02</b> 	<b>ZCMD29L1 + ZCE24</b> 	<b>ZCMD29L1 + ZCEF0</b> 	<b>ZCMD29L1 + ZCEG1</b> 	<b>ZCMD29L1 + ZCEF2</b> 
<b>3-pole NC + NC + NO snap action</b> 	<b>ZCMD39L1 + ZCE10</b> 	<b>ZCMD39L1 + ZCE11</b> 	<b>ZCMD39L1 + ZCE02</b> 	<b>ZCMD39L1 + ZCE24</b> 	<b>ZCMD39L1 + ZCEF0</b> 	<b>ZCMD39L1 + ZCEG1</b> 	<b>ZCMD39L1 + ZCEF2</b> 
<b>3-pole NC + NC + NO break before make, slow break</b> 	<b>ZCMD37L1 + ZCE10</b> 	<b>ZCMD37L1 + ZCE11</b> 	<b>ZCMD37L1 + ZCE02</b> 	<b>ZCMD37L1 + ZCE24</b> 	<b>ZCMD37L1 + ZCEF0</b> 	<b>ZCMD37L1 + ZCEG1</b> 	<b>ZCMD37L1 + ZCEF2</b> 
<b>Weight (kg)</b>	0.180	0.180	0.185	0.200	0.195	0.220	0.205
<b>4-pole NC + NC + NO + NO snap action</b> 	<b>ZCMD41L1 + ZCE10</b> 	<b>ZCMD41L1 + ZCE11</b> 	<b>ZCMD41L1 + ZCE02</b> 	<b>ZCMD41L1 + ZCE24</b> 	<b>ZCMD41L1 + ZCEF0</b> 	<b>ZCMD41L1 + ZCEG1</b> 	<b>ZCMD41L1 + ZCEF2</b> 
<b>Weight (kg)</b>	0.160	0.160	0.165	0.180	0.175	0.200	0.185

Contact operation closed open (A) = cam displacement (P) = positive opening point  $\Rightarrow$  NC contact with positive opening operation

Characteristics					
<b>Switch actuation</b>	On end		By 30° cam		On end
<b>Type of actuation</b>					
<b>Maximum actuation speed</b>	0.5 m/s				0.1m/s
<b>Mechanical durability</b>	10 million operating cycles				
<b>Minimum force or torque</b>	For tripping	8.5 N	7 N	2.5 N	8.5 N
	For positive opening	42.5 N	35 N	12.5 N	35 N
<b>Cabling</b>	PvR cable, 5 x 0.75 mm <sup>2</sup> , length 1 metre for 2-pole contact versions, 7 x 0.5 mm <sup>2</sup> , length 1 metre for 3-pole contact versions, 9 x 0.34 mm <sup>2</sup> , length 1 metre for 4-pole contact versions. For other lengths see page 1/22.				

(1) Nitrile for indoor use.