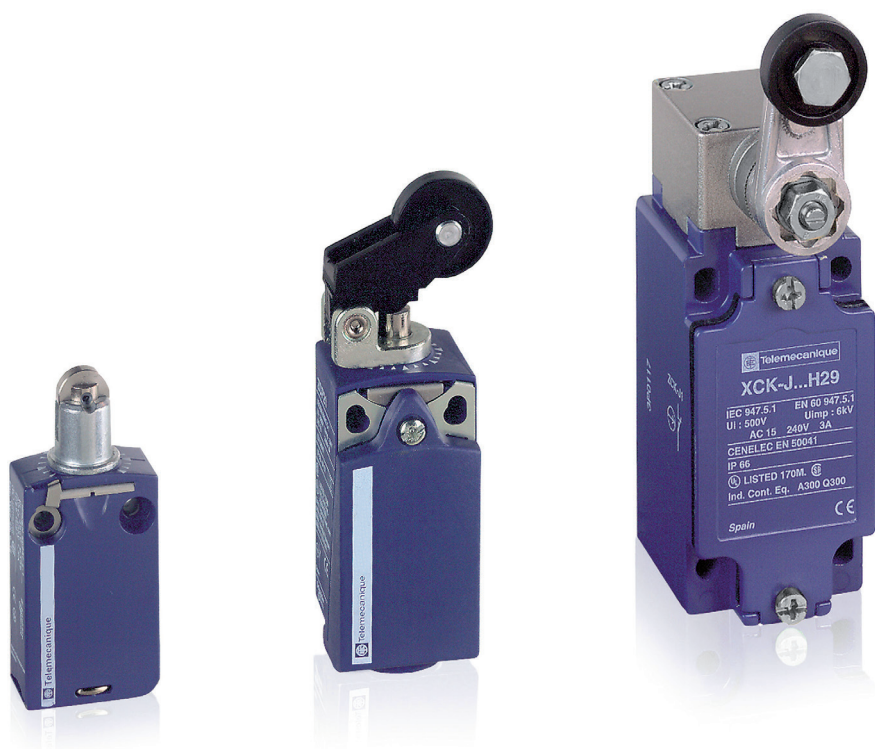


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# Limit switches

## XC Standard range

### Catalogue



Simply easy!™

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# Limit switches

## XC Standard range

Design/Applications	Miniature format	Miniature format for mobile equipments	Compact format, CENELEC EN 50047
	Metal, pre-cabled	Metal, pre-cabled	Plastic, 1 cable entry



Enclosure	Metal	Metal	Plastic, double insulated
Modularity	Head, body and connection modularity	Head, body and connection modularity	Head, body and cable entry modularity
Conformity/Certifications	CE, UL, CSA, CCC, EAC	CE, UL, CSA	CENELEC EN 50047 UL, CSA, CCC, EAC
Body dimensions (w x h x d) in mm	30 x 50 x 16	30 x 50 x 20.5	31 x 65 x 30
Head	Linear movement (plunger) Rotary movement (lever) Rotary movement, multidirectional Same heads for ranges XCMD, XCMV, XCKD, XCKP and XCKT		
Contact blocks			
2 electrically separate contacts	• snap action with positive opening operation • slow break with positive opening operation	•	•
2 same polarity contacts	– snap action – slow break	–	–
3 electrically separate contacts	• snap action with positive opening operation • slow break with positive opening operation	–	•
4 electrically separate contacts	• snap action with positive opening operation – 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, IP 69, IK 04, IK 06 depending on model	IP 66, IP 67, IK 04,
Operating temperature	- 25 °C... + 70 °C		
Raccordement			
Screw terminals	–	–	1 entry for ISO M16 or M20, Pg 11, Pg 13.5 cable gland or 1/2" NPT, PF 1/2
Pre-cabled	Ø 7.5 PVR, CEI, halogen free, depending on model	Ø 6.4 PVR	–
Connector	Integral or remote M12 or remote 7/8"-16UN	M12, Deutsch DT04-4P or AMP Superseal 1.5	M12
Type reference	<b>XCMD</b>	<b>XCMV</b>	<b>XCKP</b>
Pages	28	50	74 and 78

Compact format, CENELEC EN 50047		Compact format, with reset		
Plastic, 2 cable entries	Metal, 1 cable entry	Plastic, 1 cable entry	Plastic, 2 cable entries	Metal, 1 cable entry



Enclosure	Plastic, double insulated	Metal	Plastic, double insulated	Metal
Modularity	Head and body modularity	Head, body and connection modularity	–	–
Conformity/Certifications	CENELEC EN 50047, UL, CSA, CCC, EAC		CE, UL, CSA, EAC	
Body dimensions (w x h x d) in mm	58 x 51 x 30	31 x 65 x 30	31 x 65 x 30	58 x 51 x 30 31 x 65 x 30
Head	Linear movement (plunger) Rotary movement (lever) Rotary movement, multidirectional Same heads for ranges XCMD, XCMV, XCKD, XCKP and XCKT		Linear movement (plunger) Rotary movement (lever)	
Contact blocks				
2 electrically separate contacts	•	•	•	•
2 same polarity contacts	–	–	–	–
3 electrically separate contacts	•	•	–	–
4 electrically separate contacts	–	–	–	–
4 contacts (2 x 2 same polarity contacts)	–	–	–	–
Degree of protection IP/IK	IP 66, IP 67, IK 04	IP 66, IP 67, IK 06	IP 66, IP 67, IK 04 and IK06 (for XCDR)	
Operating temperature	- 25 °C... + 70 °C			
Raccordement				
Screw terminals	2 entries for ISO M16 or Pg 11 cable gland or 1/2" NPT (using adaptor)	1 entry for ISO M16 or M20, Pg 11, Pg 13.5 cable gland or 1/2" NPT, PF 1/2	1 entry for ISO M20 or Pg 13.5 cable gland or 1/2" NPT	2 entries for ISO M16 or Pg 11 cable gland or 1/2" NPT (using adaptor)
Pre-cabled	–	–	–	–
Connector	–	M12	–	–
Type reference	<b>XCKT</b>	<b>XCKD</b>	<b>XCPR</b>	<b>XCTR</b> <b>XCDR</b>
Pages	86	80 and 84	96	100 98

# Limit switches

## XC Standard range

Design	"Classic" format		Industrial EN 50041 format	
	Metal, 3 cable entries	Metal, 1 cable entry	Plastic, 1 cable entry	Metal, 1 cable entry or connector



<b>Enclosure</b>	Metal		Plastic, double insulated	Metal																																																						
<b>Modularity</b>	Head, body and operator modularity																																																									
<b>Conformity/Certifications</b>	CE, UL, CSA, CCC (XCKM), EAC		CENELEC EN 50041 UL, CSA, CCC, EAC																																																							
<b>Body dimensions (w x h x d) in mm</b>	63 x 64 x 30	52 x 72 x 30	40 x 72.5 x 36	40 x 77 x 44 42.5 x 84 x 36																																																						
<b>Head</b>	Linear movement (plunger) Rotary movement (lever) Rotary movement, multidirectional																																																									
<b>Contact blocks</b>	<table border="1"> <tr> <td>2 electrically separate contacts</td> <td>snap action with positive opening operation</td> <td>•</td> <td>•</td> <td>•</td> <td>•</td> </tr> <tr> <td></td> <td>slow break with positive opening operation</td> <td>•</td> <td>•</td> <td>•</td> <td>•</td> </tr> <tr> <td>2 same polarity contacts</td> <td>snap action</td> <td>-</td> <td>-</td> <td>-</td> <td>•</td> </tr> <tr> <td></td> <td>slow break</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>3 electrically separate contacts</td> <td>snap action with positive opening operation</td> <td>•</td> <td>•</td> <td>•</td> <td>•</td> </tr> <tr> <td></td> <td>slow break with positive opening operation</td> <td>•</td> <td>•</td> <td>•</td> <td>•</td> </tr> <tr> <td>4 electrically separate contacts</td> <td>snap action with positive opening operation</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td></td> <td>slow break with positive opening operation</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>4 contacts (2 x 2 same polarity contacts)</td> <td>snap action</td> <td>-</td> <td>-</td> <td>•</td> <td>•</td> </tr> </table>				2 electrically separate contacts	snap action with positive opening operation	•	•	•	•		slow break with positive opening operation	•	•	•	•	2 same polarity contacts	snap action	-	-	-	•		slow break	-	-	-	-	3 electrically separate contacts	snap action with positive opening operation	•	•	•	•		slow break with positive opening operation	•	•	•	•	4 electrically separate contacts	snap action with positive opening operation	-	-	-	-		slow break with positive opening operation	-	-	-	-	4 contacts (2 x 2 same polarity contacts)	snap action	-	-	•	•
2 electrically separate contacts	snap action with positive opening operation	•	•	•	•																																																					
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3 electrically separate contacts	snap action with positive opening operation	•	•	•	•																																																					
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4 electrically separate contacts	snap action with positive opening operation	-	-	-	-																																																					
	slow break with positive opening operation	-	-	-	-																																																					
4 contacts (2 x 2 same polarity contacts)	snap action	-	-	•	•																																																					
<b>Degree of protection IP/IK</b>	IP 66, IK 06		IP 65, IK 03	IP 66, IK 07																																																						
<b>Operating temperature</b>	- 25°C... + 70°C		- 25°C... + 70°C - 40°C or + 120°C depending on model																																																							
<b>Connection</b>	<b>Screw terminals (entry for cable gland)</b>	3 entries for ISO M20, Pg 11 cable gland or 1/2" NPT	1 entry incorporating cable gland or tapped 1/2" NPT	1 entry for ISO M20, Pg 13.5 cable gland or 1/2" NPT	1 entry for ISO M20, Pg 13.5 cable gland or 1/2" NPT																																																					
	<b>Connector</b>	-		Integral M12 or 7/8"-16UN																																																						
<b>Type reference</b>	<b>XCKM</b>	<b>XCKL</b>	<b>XCKS</b>	<b>XCKJ</b>																																																						
<b>Pages</b>	116	116	132	144																																																						

Miniature format	Compact format EN 50047		Compact format, with reset knob	
	Plastic, pre-cabled	Plastic, 1 cable entry	Plastic, 2 cable entries	Plastic, 1 cable entry



Plastic, double insulated																																												
-																																												
CE, UL, CSA, CCC, EAC		CENELEC EN 50047, UL, CSA, CCC, EAC		CE, UL, CSA, CCC, EAC																																								
30 x 50 x 16	31 x 65 x 30	59 x 51 x 30	31 x 65 x 30	59 x 51 x 30																																								
Linear movement (plunger) Rotary movement (lever) Rotary movement, multidirectional																																												
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IP 65, IK 04																																												
- 25°C... + 70 °C																																												
-	1 entry for ISO M20 or Pg 11 cable gland Other cable entries: ISO M16 x 1.5 or PF 1/2 (G1/2)	2 entries for ISO M16 or Pg 11 cable gland or 1/2" NPT (using adaptor)	1 entry for ISO M20 or Pg 11 cable gland Other cable entries: ISO M16 x 1.5 or PF 1/2 (G1/2)	2 entries for ISO M16 or Pg 11 cable gland or 1/2" NPT (using adaptor)																																								
Ø 7.5 PvR, CEI, halogen free, depending on model	-																																											
<b>XCMN</b>	<b>XCKN</b>	<b>XCNT</b>	<b>XCNR</b>	<b>XCNTR</b>																																								
70	104	106	112	113																																								

# Limit switches

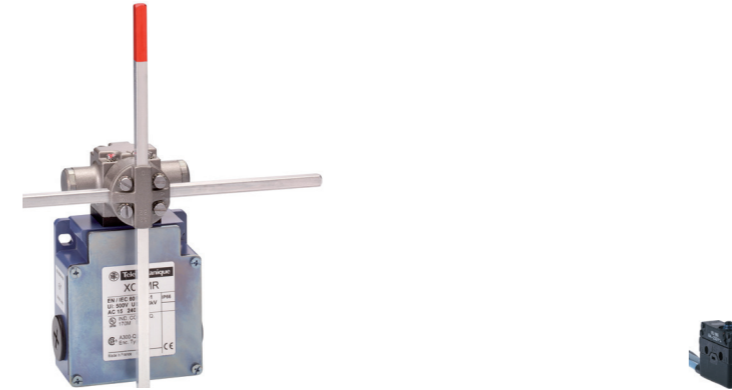
## XC Special range

Design/Applications	Very severe applications	Very severe material handling applications	For hoisting and material handling applications (XCR); for conveyor belt shift monitoring (XCRT)
	Metal, 1 cable entry	Metal, 3 cable entries	Metal or polyester, 1 cable entry



Enclosure	Metal	Metal	Metal or polyester
Modularity	Head and body modularity	–	–
Conformity/Certifications	CE, UL, CSA, EAC	CE, CSA, EAC	CE, CSA (XCR), CCC (XCR), EAC
Body dimensions (w x h x d) in mm	40 x 81 x 41	77 x 83 x 44	85 x 95 x 75
Head	Linear movement (plunger) or rotary movement (lever)	Linear movement (plunger)	Rotary movement (lever)
Contact blocks			
2 electrically separate contacts			
snap action with positive opening operation	–	–	–
slow break with positive opening operation	–	•	–
2 same polarity contacts			
snap action	•	–	–
slow break	–	•	–
3 electrically separate contacts			
snap action with positive opening operation	–	–	–
slow break with positive opening operation	–	–	–
4 electrically separate contacts			
snap action with positive opening operation	–	–	•
slow break with positive opening operation	–	–	•
4 contacts (2 x 2 same polarity contacts), snap action	•	–	•
Degree of protection IP/IK	IP 65, IK 08	IP 65	IP 54, IK 07 or IP 65, depending on model
Operating temperature	- 25°C... + 70°C; - 40° C or + 120° C (XC2J depending on model)		
Connection			
Screw terminals (entry for cable gland)	1 entry with integral cable gland	3 tapped entries for Pg 13.5 cable gland	1 tapped entry for Pg 13.5 cable gland
Pre-cabled	–	–	–
Connector	–	–	–
Type reference	<b>XC2J</b>	<b>XC1AC</b>	<b>XCR</b> <b>XCRT</b>
Pages	Please refer to our catalogue "Limit switches XC Special".		


Design/Applications	For hoisting and material handling applications	Subminiature format and microswitch. Applications requiring high precision and a low operating force
	Metal or plastic, 3 cable entries	Plastic, pre-cabled




Enclosure	Metal or plastic	Polyester
Modularity	–	–
Conformity/Certifications	CE, UL, CSA, CCC, EAC	CE, UL
Body dimensions (w x h x d) in mm	118 x 77 x 59 (metal) 118 x 77 x 67 (plastic)	Depending on type
Head	Rotary movement (lever)	–
Contact blocks		
2 electrically separate contacts		
snap action with positive opening operation	–	–
slow break with positive opening operation	–	–
2 same polarity contacts		
snap action	–	•
slow break	–	–
3 electrically separate contacts		
snap action with positive opening operation	–	–
slow break with positive opening operation	–	–
4 electrically separate contacts		
snap action with positive opening operation	–	–
slow break with positive opening operation	•	–
4 contacts (2 x 2 same polarity contacts), snap action	–	–
Degree of protection IP/IK	IP 66, IK 07 (metal) IP 65, IK 04 (plastic)	IP 67 or IP 40 depending on model IP 00 (tags)
Operating temperature		
Connection		
Screw terminals (entry for cable gland)	3 tapped entries for Pg 13.5 cable gland or tapped M20 x 1.5	Tag connections or pre-wired, depending on model
Pre-cabled	–	–
Connector	–	–
Type reference	<b>XCKMR</b> <b>XCKVR</b>	<b>XEP</b>
Pages	Please refer to our catalogue "Limit switches XC Special".	

# Safety limit switches

## XCS range

<b>Switch type</b>	<b>XCS safety limit switches</b>		
<b>Applications</b>	Protection of operators by stopping the machine when the gate is opened. All machines with quick rundown time.		
<b>Design</b>	<b>Miniature format</b>	<b>Compact format</b>	
	Pre-cabled	With 1 cable entry	
			
<b>Case</b>	Metal	Plastic	Metal
<b>Features</b>	-		
<b>Conformity to standards</b>	EN/IEC 60947-5-1, EN/ISO 13849-1, EN/IEC 62061, UL 508, CSA C22-2 no. 14		
<b>Product certifications</b>	EN/IEC 60204-1, EN/ISO 14119		
<b>Product certifications</b>	UL, CSA, CCC, EAC		
<b>Dimensions (w x h x d) in mm</b>	Switch	Centers	
	Fixings	Centers	
	30 x 50 x 16	31 x 34 x 89	
	20	20/22	
<b>Head</b>	Plunger or rotary head Head adjustable in 15° steps through 360° Linear (plunger) or rotary (lever) actuation.		
<b>Contact blocks</b>	NC contacts with positive opening operation		
	2 NC + 1 NO break before make, slow break 2 NC + 1 NO and 2 NC + 2 NO snap action	XCSD: 2 NC + 1 NO break before make, slow break or snap action XCSP: 2 NC + 1 NO snap action	
<b>Degree of protection</b>	IP 66, IP 67 and IP 68	IP 66 and IP 67	
<b>Ambient air temperature</b>	For operation -25...+70 °C		
<b>Connection</b>	Screw terminals (cable entry via cable gland)	Tapped entry for Pg 13.5, ISO M20 cable gland or tapped 1/2" NPT	
	Pre-cabled	-	
	L = 1, 2 or 5 m	-	
<b>Type reference</b>	<b>XCSM</b>	<b>XCSP</b>	<b>XCSD</b>
<b>Pages</b>	Please refer to our catalogue " <a href="#">Safety switches XCS range</a> ".		

<b>XCS lever or spindle-operated safety switches</b>		
Protection of operators by stopping the machine when the operating lever (attached to hinged machine guard) is displaced by 5°. All light industrial machines fitted with hinged or rotary protective covers with small opening radius.		Protection of operators by stopping the machine when the guard hinge rotates through 5°. All light industrial machines fitted with hinged access doors.
<b>Compact format</b>		
With 1 or 2 cable entries		
		
Plastic, double insulated		
2 types of lever: straight or elbowed (flush with rear of switch) 3 lever positions: to left, center or to right		2 types of spindle: length 30 mm or 80 mm
EN/IEC 60947-5-1, EN/ISO 13849-1, EN/IEC 62061, UL 508, CSA C22-2 no. 14, JIS C4520		
EN/IEC 60204-1, EN/ISO 14119		
UL, CSA, CCC, EAC		
30 x 87.5 x 30	30 x 96 x 30	52 x 117 x 30
20/22	20/22	20/22 or 40.3
Turret head: 4 positions Rotary actuation (lever)	Turret head: 4 positions Rotary actuation (spindle)	
Slow break safety contacts with positive opening operation NC contacts open when lever or spindle displaced by more than 5°		
1 NC + 1 NO break before make 2 NC 1 NC + 2 NO break before make 2 NC + 1 NO break before make	1 NC + 1 NO break before make 2 NC 1 NC + 2 NO break before make 2 NC + 1 NO break before make	1 NC + 2 NO break before make 2 NC + 1 NO break before make 3 NC
IP 67	IP 67	
-25...+70 °C		
1 tapped entry for Pg 11, ISO M16 cable gland or tapped 1/2" NPT	1 tapped entry for Pg 11, ISO M16 cable gland or tapped 1/2" NPT	2 tapped entries for Pg 11, ISO M16 cable gland or tapped 1/2" NPT
-	-	-
<b>XCSPL</b>	<b>XCSPR</b>	<b>XCSTR</b>
Please refer to our catalogue " <a href="#">Safety switches XCS range</a> ".		

# Safety limit switches

## XCS range

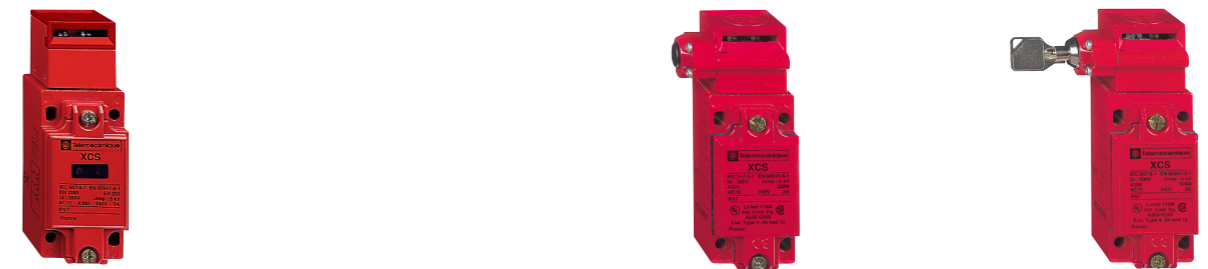
<b>Switch type</b>	<b>XCS key-operated safety switches</b>	
<b>Applications</b>	Protection of operators by stopping the machine when the actuating key (attached to machine guard) is withdrawn from the head of the switch. All light industrial machines with quick rundown time (1).	
<b>Design</b>	<b>Miniature format</b>	<b>Compact format</b>
	<b>Pre-cabled</b>	<b>With 1 or 2 cable entries</b>



<b>Case</b>	Plastic		
<b>Features</b>	Without locking of actuating key.	Without locking of actuating key. Optional accessory: guard retaining device.	
<b>Conformity to standards</b>	Products Machine assemblies	EN/IEC 60947-5-1, EN/ISO 13849-1, EN/IEC 62061, UL 508, CSA C22-2 no. 14 EN/IEC 60204-1, EN/ISO 14119	
<b>Product certifications</b>		cULus UL, CSA, CCC, EAC	
<b>Dimensions (w x h x d) in mm</b>	Switch	30 x 87 x 15	30 x 93.5 x 30
	Fixings	Centers: 20/22	Centers: 20/22 or 40.3
<b>Head</b>		Fixed head: 2 positions for insertion of actuating key.	Turret head: 8 positions for insertion of actuating key.
<b>Contact blocks</b>	Safety contacts actuated by the actuating key. Slow break and NC positive opening operation.		
	1 NC + 1 NO break before make 2 NC 2 NC + 1 NO break before make 3 NC	1 NC + 1 NO slow break contacts, break before make or make before break, or snap action 2 NC slow break or snap action 2 NC + 1 NO slow break contacts, break before make, or snap action 1 NC + 2 NO slow break contacts, break before make, or snap action	1 NC + 2 NO break before make 2 NC + 1 NO break before make 3 NC
<b>Degree of protection</b>	IP 67		
<b>Ambient air temperature</b>	For operation	-25...+70 °C	
<b>Connection</b>	Screw terminals (cable entry via cable gland)	Tapped entry for Pg 11, ISO M16 cable gland or tapped 1/2" NPT	
	Pre-cabled	L = 2, 5 or 10 m	
<b>Type reference</b>	<b>XCSMP</b>	<b>XCSPA</b>	<b>XCSTA</b>
<b>Pages</b>	Please refer to our catalogue "Safety switches XCS range".		

(1) Machine stopping time less than time taken for operator to access hazardous zone.

<b>XCS key-operated safety switches</b>		
All heavy industrial machines with quick rundown time (1)		
<b>Industrial format with or without locking</b>		
<b>With 1 cable entry, without locking</b>	<b>With 1 cable entry and manual locking/unlocking</b>	



<b>Case</b>	Metal		
<b>Features</b>	Without locking of actuating key.	Manual locking and unlocking of actuating key by pushbutton (can be mounted on left or right-hand side of switch head).	Manual locking and unlocking of actuating key by key-operated lock (can be mounted on left or right-hand side of switch head).
<b>Conformity to standards</b>	Products Machine assemblies	EN/IEC 60947-5-1, EN/ISO 13849-1, EN/IEC 62061, UL 508, CSA C22-2 no. 14 EN/IEC 60204-1, EN/ISO 14119	
<b>Product certifications</b>		UL, CSA, CCC, EAC	
<b>Dimensions (w x h x d) in mm</b>	Switch	40 x 113.5 x 44	52 x 113.5 x 44
	Fixings	30 x 60	30 x 60
<b>Head</b>		Turret head: 8 positions for insertion of actuating key.	Turret head: 8 positions for insertion of actuating key.
<b>Contact blocks</b>	Safety contacts actuated by the actuating key. Slow break and NC positive opening operation.		
	1 NC + 2 NO break before make 2 NC + 1 NO break before make 3 NC	1 NC + 2 NO break before make 2 NC + 1 NO break before make 3 NC	1 NC + 2 NO break before make 2 NC + 1 NO break before make 3 NC
<b>Degree of protection</b>	IP 67		
<b>Ambient air temperature</b>	For operation	-25...+70 °C	
<b>Connection</b>	Screw clamp terminals. Tapped entry for Pg 13.5, ISO M20 cable gland or tapped 1/2" NPT	Screw clamp terminals. Tapped entry for Pg 13.5 cable gland, ISO M20 or tapped 1/2" NPT.	
<b>Type reference</b>	<b>XCSA</b>	<b>XCSB</b>	<b>XCSC</b>
<b>Pages</b>	Please refer to our catalogue "Safety switches XCS range".		

# Safety limit switches

## XCS range

Switch type	XCS key-operated safety switches, locking and unlocking by solenoid	
Applications	Protection of operators by stopping the machine when the actuating key (attached to machine guard) is withdrawn from the head of the switch. All industrial machines with long rundown time (1)	
Design	Slim format	
	With 3 cable entries	With 3 cable entries



Case	Plastic	Metal
Features	Locking and unlocking of actuating key using a solenoid (either on energization or on de-energization). Manual unlocking (auxiliary release using special tool) of actuating key in abnormal conditions.	Locking and unlocking of actuating key by solenoid (either on energization or on de-energization). Manual unlocking (auxiliary release using key lock) of actuating key in abnormal conditions. <b>1</b> Emergency release mushroom head pushbutton (only for XCSLF●●●●4●● and XCSLF●●●●6●●).
Conformity to standards	EN/IEC 60947-5-1, EN/ISO 13849-1, EN/IEC 62061, UL 508 and CSA C22-2 no. 14	
Products	EN/IEC 60204-1, EN/ISO 14119	
Machine assemblies	UL, CSA, CCC, EAC	
Product certifications	51 x 205 x 43.5	
Dimensions (w x h x d or Ø) in mm	Switch	Centers
	Fixings	Centers
	30 x 153.3	
Head	Turret head: 8 positions for insertion of actuating key.	
Resistance to forcible withdrawal of the actuator	F <sub>1max</sub>	3000 N
	F <sub>Zh</sub>	2300 N
Contact blocks or outputs	Main safety contacts actuated by the actuating key; auxiliary contacts actuated by solenoid. Contact states given with key inserted and solenoid not energized. Slow break and NC positive opening operation	
	Main contacts	1 NC + 1 NO break before make 2 NC 1 NC + 2 NO break before make 2 NC + 1 NO break before make 3 NC
	Auxiliary contacts	1 NC + 1 NO break before make 2 NC 1 NC + 2 NO break before make 2 NC + 1 NO break before make 3 NC
Degree of protection	IP 66/IP 67	
Ambient air temperature	For operation	-25...+60 °C
	For storage	-40...+70 °C
Connection	Terminals	Spring terminals, 3 cable entries. Tapped entry for ISO M20 cable gland or tapped 1/2" NPT.
	Connector	M23 (18 + 1 PE)
Type reference	<b>XCSLE</b>	<b>XCSLF</b>
Pages	Please refer to our catalogue "Safety switches XCS range".	

(1) Machine stopping time greater than time taken for operator to access hazardous zone.

Switch type	XCS key-operated safety switches, locking and unlocking by solenoid (continued)	
Applications	Protection of operators by stopping the machine when the actuating key (attached to machine guard) is withdrawn from the head of the switch. All industrial machines with long rundown time (1)	
Design	Rectangular	
	With 2 cable entries	With 2 cable entries



Case	Plastic, double insulated	Metal
Features	Locking and unlocking of actuator by solenoid (either on de-energization or on energization). Manual unlocking (auxiliary release using special tool) of actuating key in abnormal conditions.	Locking and unlocking of actuating key by solenoid (either on energization or on de-energization). Manual unlocking (auxiliary release using key lock) of actuating key in abnormal conditions.
Conformity to standards	EN/IEC 60947-5-1, EN/ISO 13849-1, UL 508, CSA C22-2 no. 14, EN/IEC 62061, EN/IEC 60947-1	
Products	EN/IEC 60204-1, EN/ISO 14119	
Machine assemblies	UL, CSA, CCC, EAC	UL, CSA, CCC, EAC
Product certifications	110 x 93.5 x 33	98 x 146 x 44
Dimensions (w x h x d or Ø) in mm	Switch	Centers
	Fixings	Centers
	30 x 153.3	88 x 95
Head	Turret head: 8 positions for insertion of actuating key	
Resistance to forcible withdrawal of the actuator	650 N	2600 N
	500 N	2000 N
Contact blocks or outputs	Main safety contacts actuated by the actuating key; auxiliary contacts actuated by solenoid. Slow break and NC positive opening operation	
	1 NC + 1 NO break before make 1 NC + 1 NO make before break 2 NC	1 NC + 2 NO break before make 2 NC + 1 NO break before make 3 NC
	1 NC	1 NC + 1 NO 2 NC
Degree of protection	IP 67	
Ambient air temperature	For operation	-25...+40 °C
	For storage	-40...+70 °C
Connection	Terminals	Screw clamp terminals. 2 tapped entries for Pg 13.5 ISO M20 cable gland or tapped 1/2" NPT.
	Connector	
Type reference	<b>XCSTE</b>	<b>XCSE</b>
Pages	Please refer to our catalogue "Safety switches XCS range".	

# Safety limit switches

## XCS range

<b>Switch type</b>	<b>XCSR contactless RFID safety switches</b>		
<b>Applications</b>	Highly tamper-proof protection of operators by stopping the machine when the gate is opened (transfer lines, assembly lines, automated equipment, machine tools, etc.). All light industrial machines fitted with access gates with imprecise guidance and/or subjected to frequent washing, shocks and vibrations. This Safety sensor is suitable for machine with low inertia.		
<b>Design</b>	Miniature rectangular format	Compact rectangular format	Cylindrical format
	Unique pairing or 2 new pairings possible		



<b>Case</b>	Thermoplastic housing (Valox TM)		
<b>Features</b>	Contactless system composed of a microprocessor-controlled switch and a transponder factory-paired with a unique code. Multiposition sensor transponder.		
Assured operating sensing distance (Sao)	15 mm		
Assured release distance (Sar)	35 mm		
Type of switch	Standalone RFID switch	Daisy-chain RFID switch for direct series connection	Single RFID switch for point-to-point connection
Operating mode	Possible functioning without association with a safety control unit (Integrated External Device Monitoring (EDM) and Start/Restart function)		
	Functioning in combination with a safety control unit PL=e/Cat4 - SIL 3		
<b>Conformity to standards</b>	EN/IEC 60947-5-2, EN/IEC 60947-5-3, UL 508, CSA C22.2 SIL 3 (IEC 61508), SILCL 3 (IEC 62061), PL=Cat. 4 (EN ISO 13849-1)		
Products	EN/IEC 60204-1, EN/ISO 14119		
Machine assemblies	Based on ISO 15693		
RFID protocol	CE, cULus, TÜV, FCC, EAC, IC, RCM, E2, ECOLAB		
<b>Product certifications</b>	CE, cULus, TÜV, FCC, EAC, IC, RCM, E2, ECOLAB		
<b>Dimensions (w x h x d or Ø) in mm</b>	Switch	30 x 108.3 x 15	30 x 118.6 x 5
	Transponder	50 x 15 x 15	30 x 108.3 x 15
	Fixings	Centers	
		Reader	74...78
		Transponder	30...34
<b>Contact blocks or outputs</b>	Safety output	2 OSSDs (Safety outputs PNP NO). OSSDs are in the ON state when the gate is closed	
	Contact states given in presence of magnet	Maximum current 400mA	Maximum current 200 mA
<b>Degree of protection</b>	Conforming to EN/IEC 60529	IP 65, IP 66, IP 67	
	Conforming to DIN 40050	IP 69K	
<b>Ambient air temperature</b>	For operation	-25...+70 °C	
	For storage	-40...+85 °C	
<b>Connection</b>	Pre-cabled		
	Connector		
	Conforming to EN/IEC 60947-5-2-A3 and EN/IEC 61076	1 M12 8-pin connector (A coding)	2 M12 5-pin connector (A coding)
			1 M12 5-pin connector (A coding)
<b>Type reference</b>		<b>XCSRC•1•M12</b>	<b>XCSRC•2M12</b>
			<b>XCSRC•0M12</b>
<b>Pages</b>	Please refer to our catalogue "Safety switches XCS range".		

<b>XCS safety coded magnetic safety switches for detection without contact</b>		
Protection of operators by stopping the machine when the gate is opened. All light industrial machines fitted with access gates with imprecise guidance and/or subjected to frequent washing. This Safety sensor is suitable for machine with low inertia.		
Miniature rectangular format	Compact rectangular format	Cylindrical format
Pre-cabled or M8 connector on flying lead	Pre-cabled or M12 connector on flying lead	



<b>Case</b>	Plastic	
<b>Features</b>	3 approach directions	
	1 approach direction	
5 mm	8 mm	
15 mm	20 mm	
<b>Conformity to standards</b>	EN/IEC 60947-5-1, EN/ISO 13849-1, EN/IEC 62061, UL 508 and CSA C22-2 no. 14	
	EN/IEC 60204-1, EN/ISO 14119	
<b>Product certifications</b>	UL, CSA, EAC, ECOLAB	
16 x 51 x 7	25 x 88 x 13	Ø 30, L 38.5
16	78	
	1 NC + 1 NO staggered 2 NC staggered Independent Reed-type contacts operated by coded magnet.	1 NC + 1 NO staggered 2 NC staggered 2 NC + 1 NO (NC staggered) 1 NC + 2 NO (NO staggered)
	To be used with safety control units.	
<b>Degree of protection</b>	IP 66 and IP 67 for pre-cabled version, IP 67 for connector on flying lead version	
<b>Ambient air temperature</b>	-25...+85 °C	
<b>Connection</b>	L = 2, 5 or 10 m	
	M8, on 0.15 m flying lead	M12, on 0.15 m flying lead
<b>Type reference</b>	<b>XCSDMC</b>	<b>XCSDMP</b>
		<b>XCSDMR</b>
<b>Pages</b>	Please refer to our catalogue "Safety switches XCS range".	

# Limit switches

XC range

**Variable composition:** simplicity through innovation

## Principle

### Variable composition principle

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

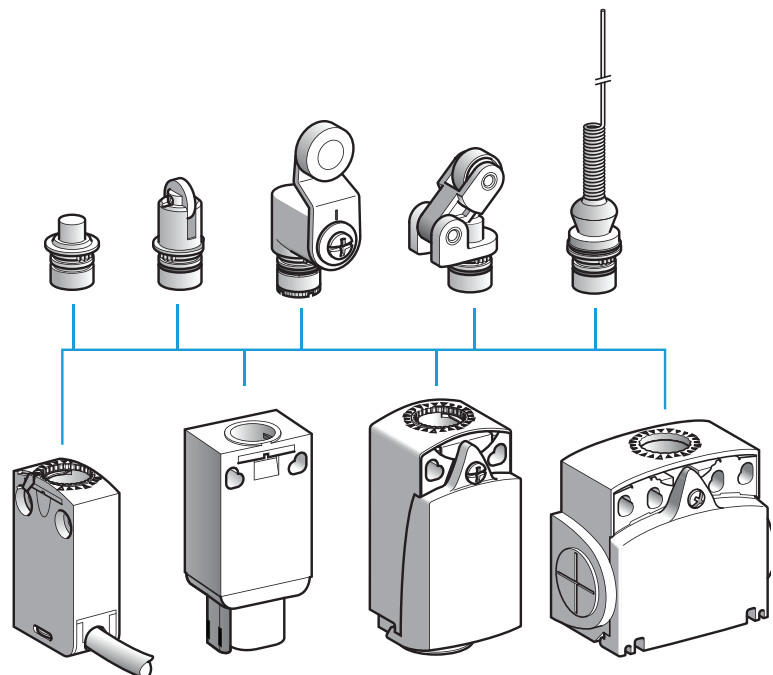
■ A worldwide detection first for improving productivity.

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

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

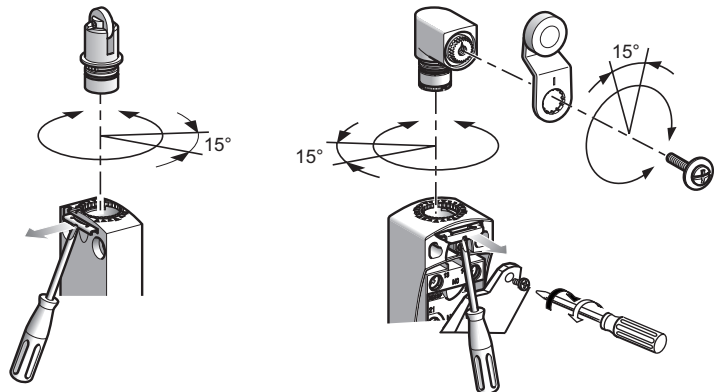
### Heads

■ A single metal operating head type for the Miniature design XCMD and XCMV, 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.*

# Limit switches

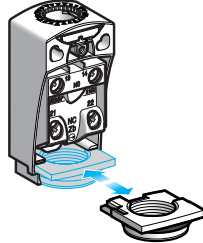
XC range

Variable composition: simplicity through innovation

## Principle (continued)

### Cable entries

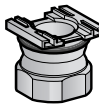
- The cable entries for Compact design XCKD and XCKP switches enable:
  - simple cabling due to unrestricted access to contacts,



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



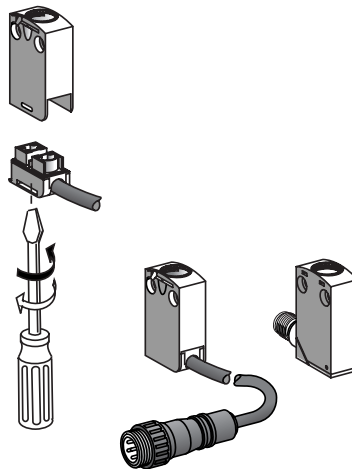
- ISO M16 x 1.5
- Pg 11



- 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.

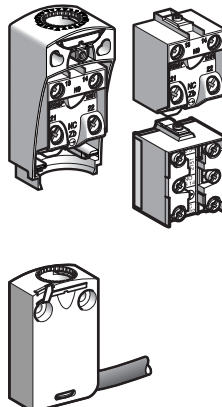
### Connection components



- 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.

#### Presentation

#### Electromechanical detection

Limit switches are used in all automated installations and also in a wide variety of applications, due to the numerous advantages inherent to their technology. They transmit data to the logic processing system regarding:

- presence/absence,
- passing,
- positioning,
- end of travel.

#### Simplicity of installation, advantages

##### ■ From an electrical viewpoint

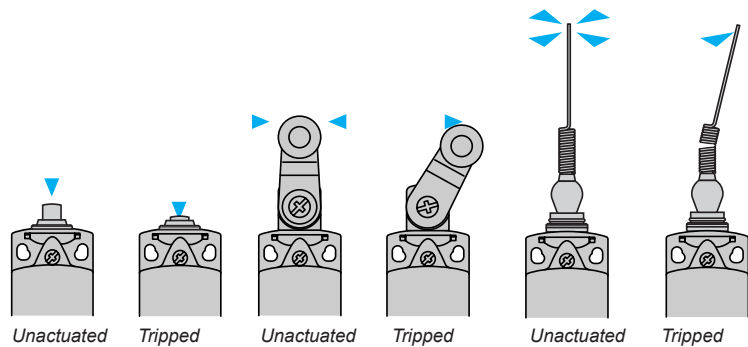
- galvanic separation of circuits,
- models suitable for low power switching combined with good electrical durability,
- very good short-circuit withstand in coordination with appropriate fuses,
- total immunity to electromagnetic interference,
- high rated operational voltage.

##### ■ From a mechanical viewpoint

- NC contacts with positive opening operation,
- high resistance to the different ambient conditions encountered in industry (standard tests and specific tests under laboratory conditions),
- high repeat accuracy, up to 0.01 mm on the tripping points.

#### Detection movements

- Linear movement (plunger)
- Rotary movement (lever)
- Multi-directional movement



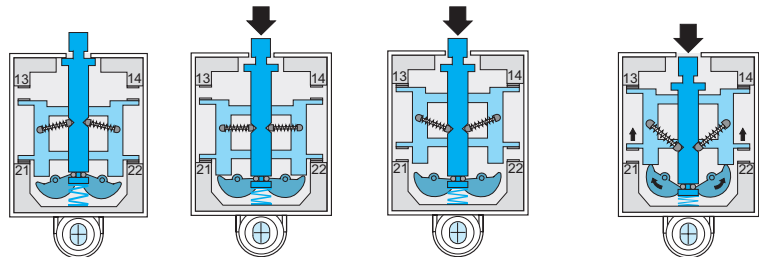
#### Terminology

<b>Rated value of a quantity</b>	<ul style="list-style-type: none"> <li>■ This replaces the term “nominal value”.</li> <li>■ It is the fixed value for a specific function.</li> </ul>
<b>Utilisation categories:</b>	<ul style="list-style-type: none"> <li>■ AC-15 replaces AC-11: control of an electromagnet on AC, test 10 Ie/Ie.</li> <li>■ AC-12: control of a resistive load on AC or static load isolated by opto-coupler.</li> <li>■ DC-13 replaces DC-11: control of an electromagnet on DC, test Ie/Ie.</li> </ul>
<b>Positive opening travel</b>	<ul style="list-style-type: none"> <li>■ Minimum travel from the initial movement of contact actuator to the position required to accomplish positive opening operation.</li> </ul>
<b>Positive opening force</b>	<ul style="list-style-type: none"> <li>■ The force required on the contact actuator to accomplish positive opening operation.</li> </ul>
<b>Switching capacity</b>	<ul style="list-style-type: none"> <li>■ I<sub>th</sub> is no longer a rated value but a conventional current used for heating tests.</li> </ul> <p><b>Example:</b> for category A300 the corresponding operational current, I<sub>e</sub> maximum, is 6 A-120 V or 3 A-240 V, the equivalent I<sub>th</sub> being 10 A.</p>
<b>Positive opening operation</b>	<ul style="list-style-type: none"> <li>■ A limit switch complies to this specification when all the closed contact elements of the switch can be changed, with certainty, to the open position (no flexible link between the moving contacts and the operator of the switch, to which an actuating force is applied).</li> <li>■ All limit switches incorporating either a slow break contact block or a snap action NC + NO (form Zb), NC + NO + NO, NC + NC + NO, NC + NC + NO + NO contact block are positive opening operation, in complete conformity with standard IEC 60947-5-1 Appendix K.</li> </ul>

#### Contact blocks

#### Snap action contacts

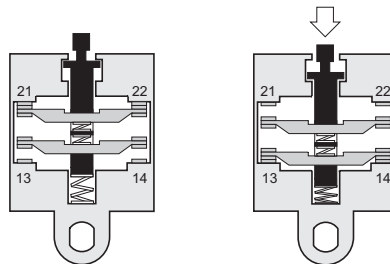
- Snap action contacts are characterised by different tripping and reset points (differential travel).
- The displacement speed of the moving contacts is not related to the speed of the operator.
- This feature ensures satisfactory electrical performance in applications involving low speed actuators.



Unactuated state    Approach travel    Contact change of state    Positive opening

#### Slow break contacts

- Slow break contacts are characterised by identical tripping and resetting points.
  - The displacement speed of the moving contacts is equal, or proportional, to the speed of the operator (which must not be less than 0.1 m/s = 6 m/minute).
- The opening distance is also dependent on the distance travelled by the operator.



#### Electrical durability for normal loads

- Normally, for inductive loads, the current value is less than 0.1 A (sealed), i.e. values of 3 to 40 VA sealed and 30 to 1000 VA inrush, depending on the voltage.

For this type of application the electrical durability will exceed 10 million operating cycles.

**Application example:** XCKJ161 + LC1D12●●●● (7 VA sealed, 70 VA inrush).

Electrical durability = 10 million operating cycles.

#### Switching capacity

- 1 Normal industrial PLC input type 1 (PLC: industrial programmable logic controllers)
- 2 Normal industrial PLC input type 2

3 Switching capacity conforming to IEC 60947-5-5, utilisation category AC-15, DC-13

A300	240 V	3 A	B300	240 V	1.5 A
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Q300	250 V	0.27 A	R300	250 V	0.13 A
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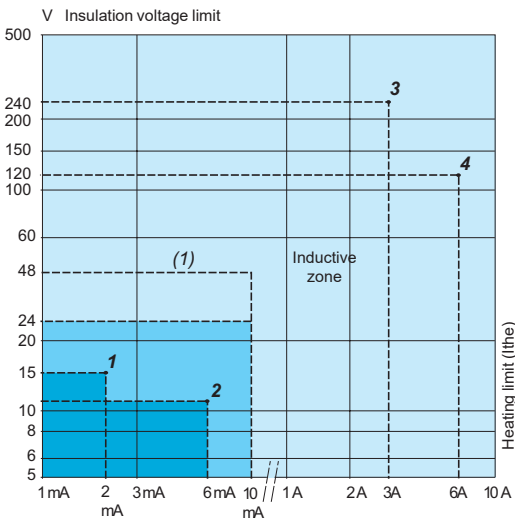
4 Switching capacity conforming to IEC 60947-5-1, utilisation category AC-15, DC-13

A300	120 V	6 A	B300	120 V	3 A
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Q300	125 V	0.55 A	R300	125 V	0.27 A
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#### Electrical durability for small loads

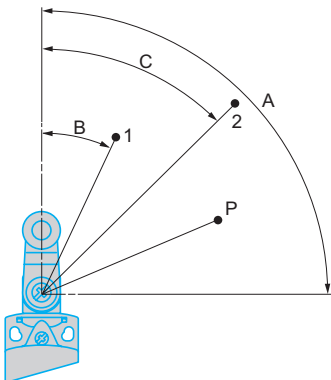
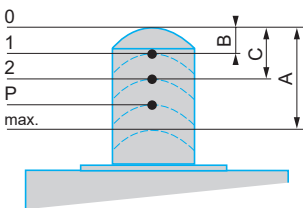
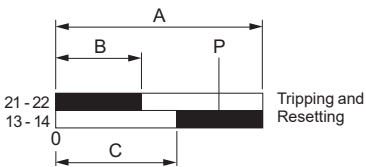
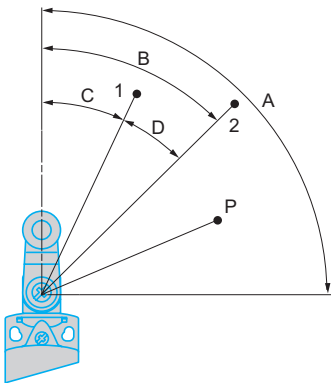
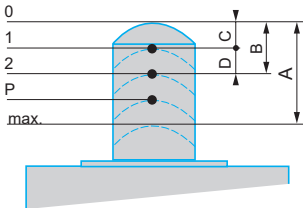
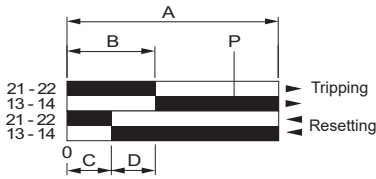
- The use of limit switches with programmable controllers is becoming more common.
- With small loads, limit switches offer the following levels of reliability:
  - failure rate of less than 1 for 100 million operating cycles using snap action contacts (contacts XE2SP),
  - failure rate of less than 1 for 20 million operating cycles using slow break contacts (contacts XE●NP and XE3SP).
  - failure rate of less than 1 for 5 million operating cycles using contacts XCMD.



		Range of use
<b>Standard contacts</b>	XE2SP2151, P3151	[Blue bar]
	XE2NP●●●●	[Light blue bar]
Continuous service (frequent switching)	Contacts of XCMD	[Light blue bar]
	XE3●P●●●●	[Light blue bar]
<b>Gold flashed contacts</b> on resistive load	Occasional service Infrequent switching, ≤ 1 operating cycle/ day, and/or corrosive atmosphere	[Dark blue bar] (1)

(1) Usable up to 48 V/10 mA.

Contact blocks (continued)



Functional diagrams of snap action contacts

■ Example: NC + NO

- A - Maximum travel of operator in millimetres or degrees.
- B - Tripping travel of contact.
- C - Resetting travel of contact.
- D - Differential travel = B - C.
- P - Point from which positive opening is assured.

□ Linear movement (plunger)

- 1 - Resetting point of contact.
- 2 - Tripping point of contact.
- A - Maximum travel of operator in millimetres.
- B - Tripping travel of contact.
- C - Resetting travel of contact.
- D - Differential travel = B - C.
- P - Point from which positive opening is assured.

□ Rotary movement (lever)

- 1 - Resetting point of contact.
- 2 - Tripping point of contact.
- A - Maximum travel of operator in degrees.
- B - Tripping travel of contact.
- C - Resetting travel of contact.
- D - Differential travel = B - C.
- P - Point from which positive opening is assured.

Functional diagrams of slow break contacts

■ Example: NC + NO break before make

- A - Maximum travel of operator in millimetres or degrees.
- B - Tripping and resetting travel of contact 21-22.
- C - Tripping and resetting travel of contact 13-14.
- P - Point from which positive opening is assured.

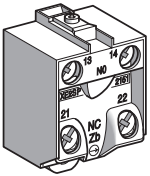
□ Linear movement (plunger)

- 1 - Tripping and resetting points of contact 21-22.
- 2 - Tripping and resetting points of contact 13-14.
- A - Maximum travel of operator in millimetres.
- B - Tripping and resetting travel of contact 21-22.
- C - Tripping and resetting travel of contact 13-14.
- P - Positive opening point.

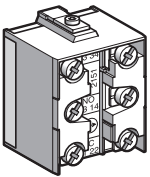
□ Rotary movement (lever)

- 1 - Tripping and resetting points of contact 21-22.
- 2 - Tripping and resetting points of contact 13-14.
- A - Maximum travel of operator in degrees.
- B - Tripping and resetting travel of contact 21-22.
- C - Tripping and resetting travel of contact 13-14.
- P - Positive opening point.

Contact blocks (continued)



XE2•P screw clamp terminal connections

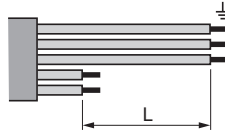


XE3•P screw clamp terminal connections

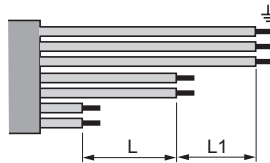
Mounting

Contact connections

- Tightening torque:
  - minimum tightening torque ensuring the nominal characteristics of the contact: 0.8 N.m,
  - maximum tightening torque without damage to the terminals: 1.2 N.m for XE2•P, 1 N.m for XE3•P.
- Connecting cable: cable preparation lengths:
  - for XE2•P, L = 22 mm,
  - for XE2•P3•••, L = 45 mm,

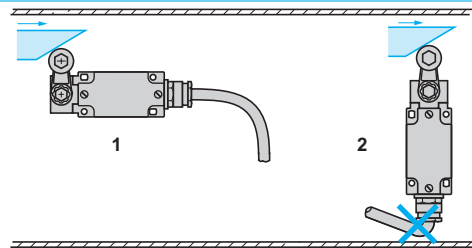


- for XE3•P, L = 14 mm, L1 = 11 mm.



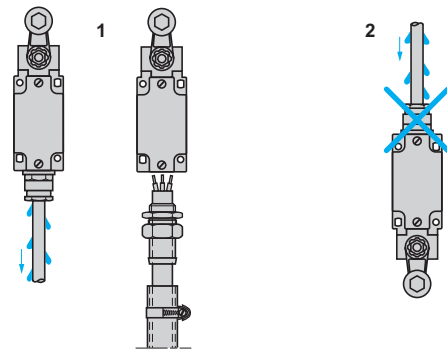
Sweep of connecting cable

- 1 Recommended
- 2 To be avoided



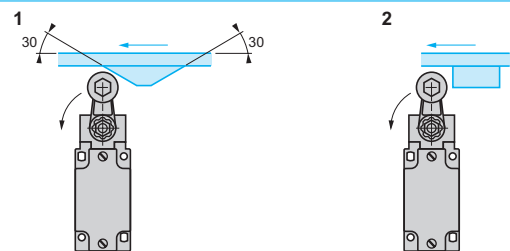
Position of cable gland

- 1 Recommended
- 2 To be avoided



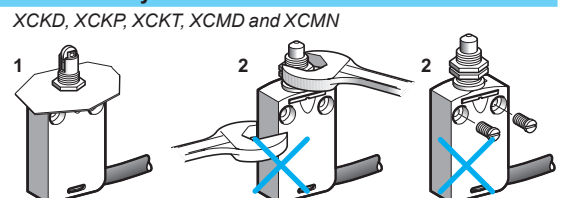
Type of cam

- 1 Recommended
- 2 To be avoided



Mounting and fixing limit switches by the head

- 1 Recommended
- 2 Forbidden



XCKD, XCKP, XCKT, XCMD and XCMN

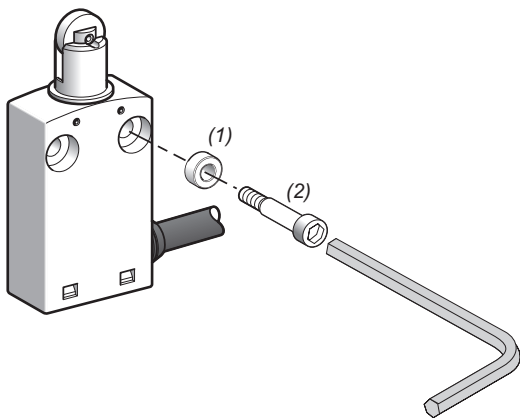
### Setting-up

#### Tightening torque

- The minimum torque is that required to ensure correct operation of the switch.
- The maximum torque is the value which, if exceeded, will damage the switch.

Range	Item	Torque (N.m)		Torque (lb-in)	
		Min.	Max.	Min.	Max.
Compact design XCKD, XCKP, XCKT	Cover	0.8	1.2	7.08	10.62
	Fixing screw for lever on rotary head	1	1.5	8.85	13.27
Miniature design XCMD, XCMN, XCMV	–	–	–	–	–
	Fixing screw for lever on rotary head	1	1.5	8.85	13.27
Compact design XCKN	Cover	0.8	1.2	7.08	10.62
	Fixing screw for lever on rotary head	1	1.5	8.85	13.27
Classic design XCKJ	Cover	1	1.5	8.85	13.27
	Fixing nut for lever on rotary head	1	1.5	8.85	13.27
Classic design XCKS	Cover	0.8	1.2	7.08	10.62
	Fixing nut for lever on rotary head ZCKD	1	1.5	8.85	13.27
	Fixing nut for lever on rotary head XCKS	0.8	1.2	7.08	10.62
	Fixing head on body	0.8	1.2	7.08	10.62
Classic design XCKM, XCKML, XCKL	Cover	0.8	1.2	7.08	10.62
	Fixing nut for lever on rotary head	1	1.5	8.85	13.27

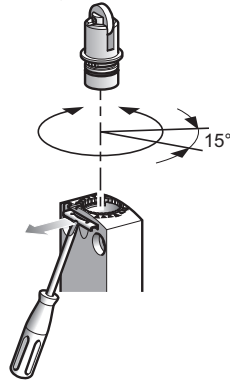
#### XCMN



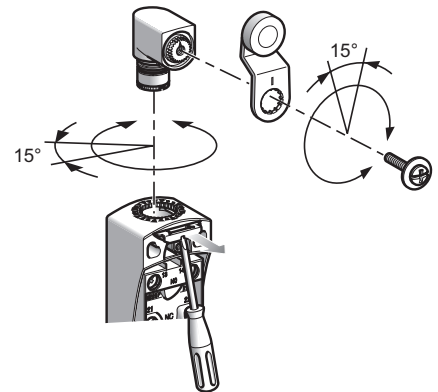
(1) 2 spacers supplied with the XCMN switch.  
(2) 2 screws Ø 4mm (not included).

#### XCKD, XCKP, XCKT, XCMD, XCMV

- Adjustable in 3 planes:



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

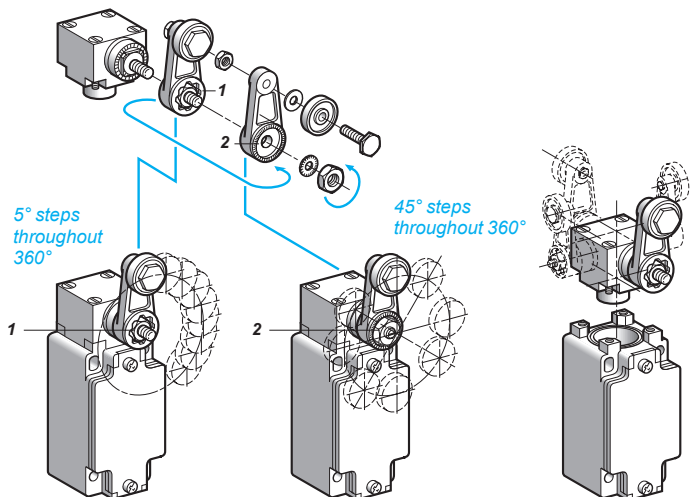


All the levers can be adjusted in 15° steps throughout 360°, in relation to the horizontal axis of the head.

#### XCKJ

- Adjustable throughout 360° in 5° steps, or in 45° steps by reversing the lever or its mounting.

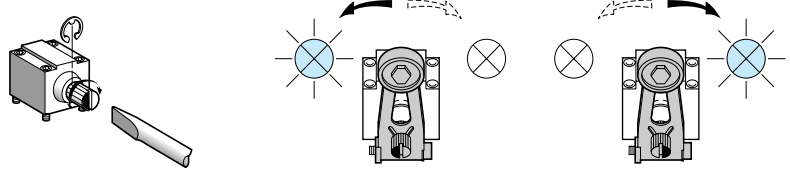
- 1 Reversed  $\alpha = 5^\circ$
- 2 Forward  $\alpha = 45^\circ$



Setting-up (continued)

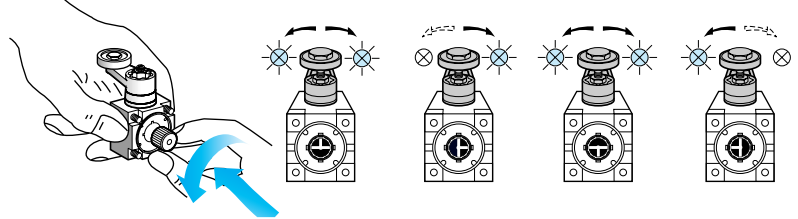
Direction of actuation programming

■ XC2J



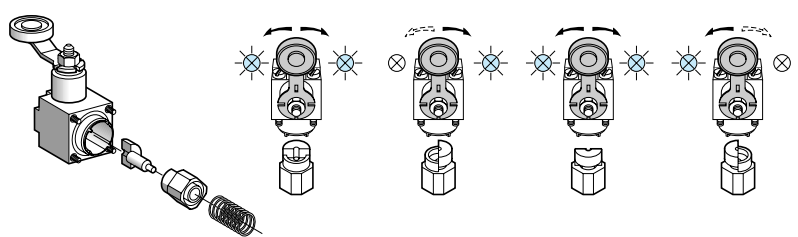
Head ZC2JE05

■ XCKJ



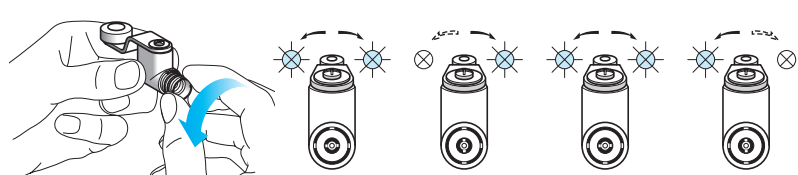
Head ZCKE05

■ XCKS



Head ZCKD05

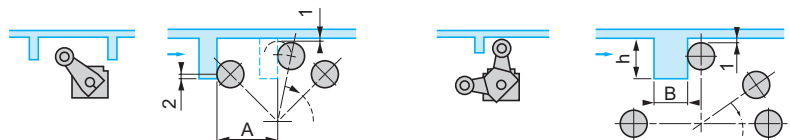
■ XCKD, XCKP, XCKT and XCMD



Head ZCE05

Specific cams for heads ZCKE09 and ZC2JE09

- 1 0.5 mm min.
- 2 2 mm min.



A = length of lever + 11 mm  
**ZCKE09:**  $13 < h < 18$  mm and  $B = 12$  mm max.  
**ZC2JE09:**  $14 < h < 24$  mm and  $B = 6$  mm max.

### Reminder of the standards

The majority of Telemecanique Sensors products comply to national standards (for example French NF C standards, German DIN standards), European standards (for example CENELEC) or international standards (for example IEC). These standards rigidly stipulate the characteristic requirements of the designated products (for example IEC 60947 relating to low voltage switchgear and control gear). These products, when correctly used, enable the production of control equipment assemblies, machine control equipment or installations conforming to their own specific standards (for example IEC 60204 for the electrical equipment of industrial machines).

#### IEC 60947-5-1

##### Insulation coordination (and dielectric strength)

- The standard IEC 60664 defines 4 categories of prospective transient overvoltages. It is important for the user to select control circuit components which are able to withstand these overvoltages. To these ends, the manufacturer states the rated impulse withstand voltage (U imp) applicable to the product.

##### Terminal connections

- The cabling capacity, mechanical robustness and durability of the terminals, as well as the ability to resist loosening, are verified by standardised tests.
- Terminal reference marking conforms to standard IEC 60947-5-1 Appendix M.

##### Switching capacity

- With maximum electrical load. A single designation (A300 for example) enables indication of the contact block characteristics related to its utilisation category.

##### Positive opening operation (IEC 60947-5-1 Appendix K)

- For contacts used in safety applications (end of travel, emergency stop device, etc.) the assurance of positive opening is required (see IEC 60204, EN 60204) after each test, the opening of the contact being verified by testing with an impulse voltage (2500 V).

##### Electrical symbols for contacts



- Form Za, the 2 contacts (NO + NC) are the same polarity.



- Form Zb, the 2 contacts (NO + NC) are electrically separate.

##### Symbol for positive opening



- Simplified version



- Complete symbol

### CENELEC EN 50047

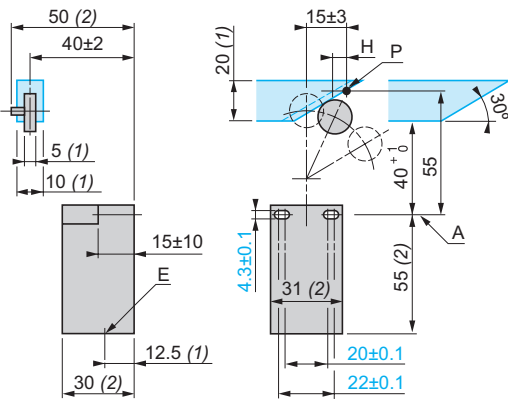
The European standards organisation CENELEC, which has 14 member countries, has defined in this standard the first type of limit switch.

It defines 4 variants of devices (forms A, B, C, E).  
Limit switches XCKP, XCKD and XCKT conform to standard EN 50047.

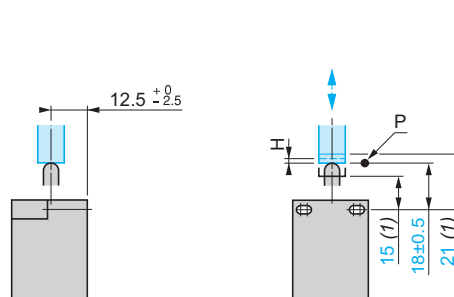
- (1) Minimum value
- (2) Maximum value

- A: reference axis
- H: differential travel
- P: tripping point
- E: cable entry

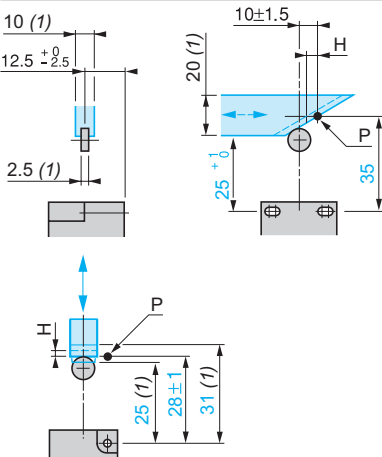
#### Form A, with roller lever



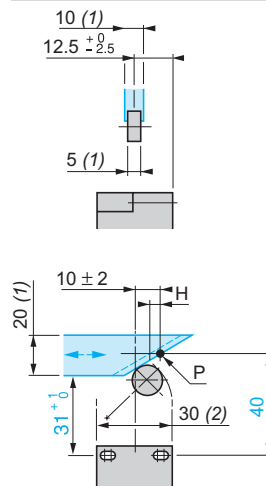
#### Form B, with end plunger (rounded)



#### Form C, with end roller plunger



#### Form E, with roller lever for 1 direction of actuation



Reminder of the standards (continued)

CENELEC EN 50041

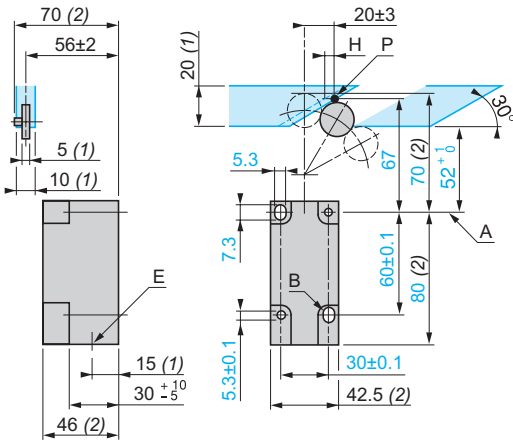
The European standards organisation CENELEC, which has 14 member countries, has defined in this standard the second type of limit switch.

It defines 6 variants of devices (forms A, B, C, D, F, G).  
Limit switches XCKJ and XCKS conform to standard EN 50041.

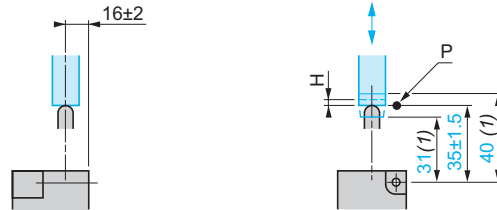
(1) Minimum value  
(2) Maximum value

A: reference axis  
B: optional elongated holes  
H: differential travel  
P: tripping point  
E: cable entry  
Za: tripping zone  
Sa: tripping threshold

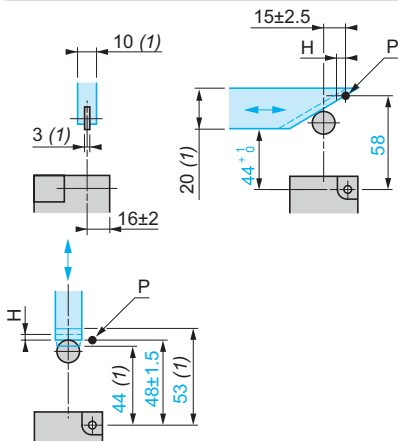
Form A, with roller lever



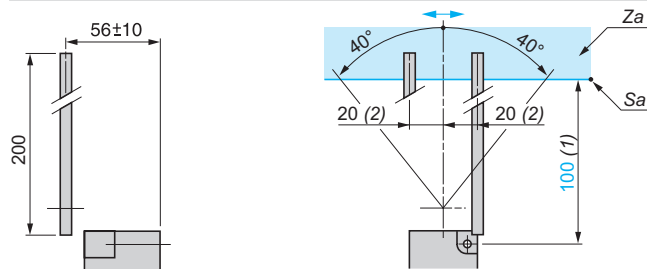
Form B, with end plunger (rounded)



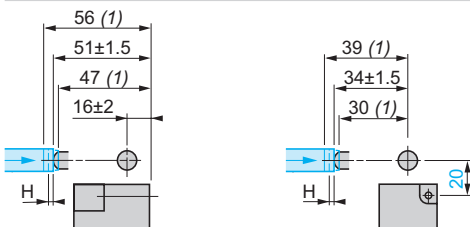
Form C, with end roller plunger



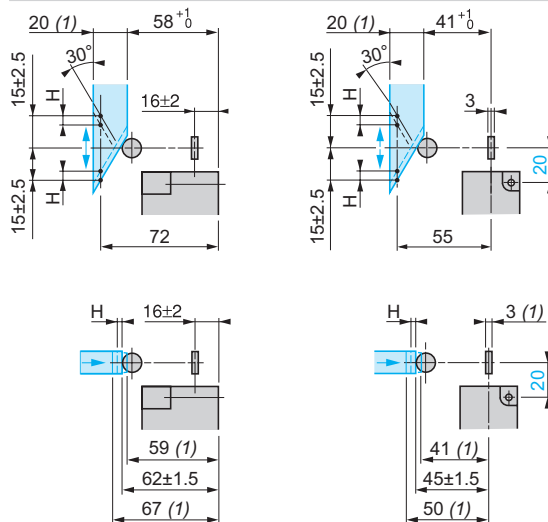
Form D, with rod lever



Form F, with side plunger (rounded)



Form G, with side roller plunger



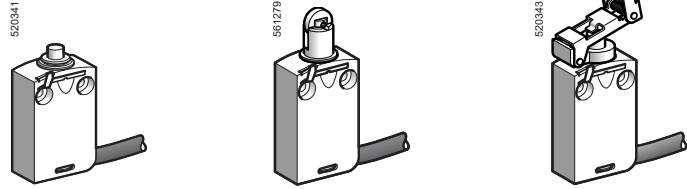
# Limit switches

## XC Standard range

Miniature design, metal, XCMD

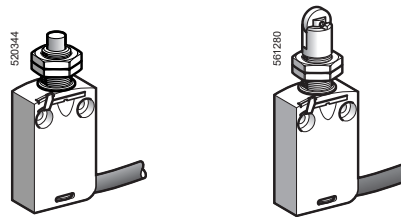
■ **XCMD**  
pre-cabled

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



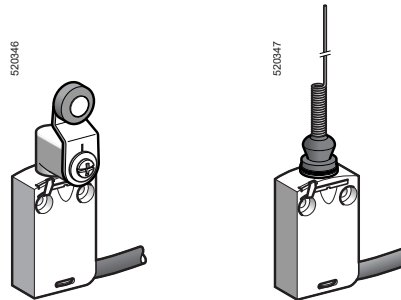
Complete switches: page 28. Variable composition: page 30

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



Complete switches: page 28. Variable composition: page 30

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

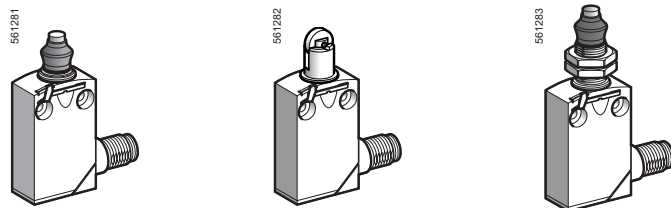


Complete switches: page 29. Variable composition: page 31

■ **XCMD**  
with connector

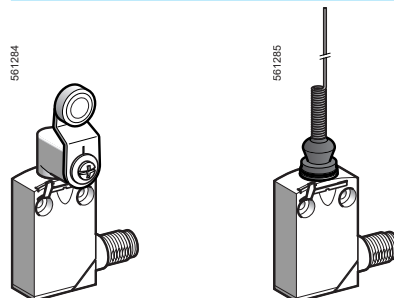
□ With head for linear movement (plunger)  
Fixing by the body

Fixing by the head



Complete switches: page 36. Variable composition: page 38

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



Complete switches: page 37. Variable composition: page 39

# Limit switches

## XC Standard range

### Miniature design, metal, XCMD

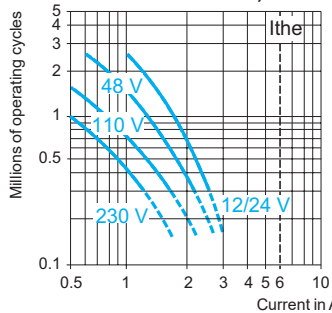
Environment characteristics		
Conformity to standards	Products	CE, IEC 60947-5-1, EN 60947-5-1, UL 508, CSA C22-2 n° 14, EAC
	Machine assemblies	IEC 60204-1, EN 60204-1
Product certifications		UL, CSA (except products with special cables), CCC
Protective treatment		Standard version: "TC"
Ambient air 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 IEC 62262</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.

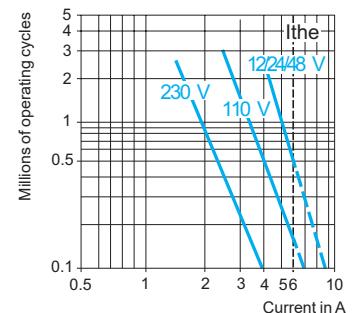
Contact block characteristics		
Rated operational characteristics	Switches with 2 contacts	~ AC-15; B300 (Ue = 240 V, Ie = 1.5 A) ::: DC-13; R300 (Ue = 250 V, Ie = 0.1 A), conforming to IEC 60947-5-1 Appendix A, EN 60947-5-1
	Switches with 3 and 4 contacts	~ AC-15; C300 (Ue = 240 V, Ie = 0.75 A) ::: 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

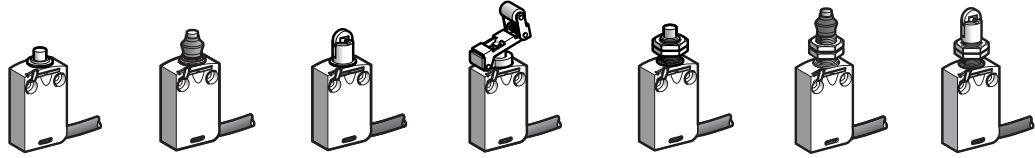
Power broken in W for 5 million operating cycles

Voltage	V	24	48	120
m. W		4	3	3

# Limit switches

XC Standard range  
Miniature design, metal, XCMD  
Complete units  
Pre-cabled

Type of head	Plunger (fixing by the body)				Plunger (fixing by the head)		
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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
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### 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>Weight (kg)</b>	0.180	0.180	0.185	0.200	0.195	0.220	0.205
<b>Contact operation</b>			(A) = cam displacement (P) = positive opening point				

### Complementary characteristics not shown under general characteristics (see page 27)

<b>Switch actuation</b>	On end	By 30° cam		On end	By 30° cam	
<b>Type of actuation</b>						
<b>Maximum actuation speed</b>	0.5 m/s				0.1 m/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	7 N
	For positive opening	42.5 N	35 N	12.5 N	42.5 N	35 N
<b>Cabling</b>	PvR cable, 5 x 0.75 mm <sup>2</sup> , length 1 m					

(1) Nitrile for indoor use

# Limit switches

XC Standard range  
Miniature design, metal, XCMD  
Complete units  
Pre-cabled

Type of head	Rotary (fixing by the body)				Multi-directional

Type of operator	Thermoplastic roller lever	Steel roller lever	Roller lever with ball bearing mounted roller	Variable length thermoplastic roller lever	"Cat's whisker" (1)
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References					
<b>2-pole NC + NO snap action</b> 	<b>XCMD2115L1</b> 	<b>XCMD2116L1</b> 	<b>XCMD2117L1</b> 	<b>XCMD2145L1</b> 	<b>XCMD2106L1</b> 
	<b>2-pole NC + NO break before make, slow break</b> 	<b>XCMD2515L1</b> 	<b>XCMD2516L1</b> 	<b>XCMD2517L1</b> 	<b>XCMD2545L1</b> 
Weight (kg)	0.220	0.225	0.220	0.230	0.180
Contact operation			(A) = cam displacement (P) = positive opening point		

Complementary characteristics not shown under general characteristics (see page 27)		
Switch actuation	By 30° cam	
Type of actuation		
Maximum actuation speed	1.5 m/s	1 m/s
Mechanical durability	10 million operating cycles	5
Minimum force or torque	For tripping	0.1 N.m
	For positive opening	0.5 N.m
Cabling	PvR cable, 5 x 0.75 mm <sup>2</sup> , length 1 m	

(1) Value taken with actuation by moving part at 100 mm from the fixing.

# Limit switches

XC Standard range  
Miniature design, metal, XCMD  
Modular units  
Pre-cabled

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 (combined with removable terminal block)							
<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>ZCMD29L1 + 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 2 NC + 2 NO snap action</b> 	<b>ZCMD4DL1 + ZCE10</b> 	<b>ZCMD4DL1 + ZCE11</b> 	<b>ZCMD4DL1 + ZCE02</b> 	<b>ZCMD4DL1 + ZCE24</b> 	<b>ZCMD4DL1 + ZCEF0</b> 	<b>ZCMD4DL1 + ZCEG1</b> 	<b>ZCMD4DL1 + ZCEF2</b> 
<b>Weight (kg)</b>	0.160	0.160	0.165	0.180	0.175	0.200	0.185

References (combined with fixed terminal block)							
<b>4-pole 2 NC + 2 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
<b>Contact operation</b>	closed open		(A) = cam displacement (P) = positive opening point			NC contact with positive opening operation	

Complementary characteristics not shown under general characteristics (see page 27)					
Switch actuation	On end	By 30° cam		On end	By 30° cam
<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	42.5 N
<b>Cabling</b>	PvR cable, 5 x 0.75 mm <sup>2</sup> length 1 m for 2-pole contact versions, 7 x 0.5 mm <sup>2</sup> length 1 m for 3-pole contact versions, 9 x 0.34 mm <sup>2</sup> length 1 m for 4-pole contact versions. For other lengths, see page 48.				

(1) Nitrile for indoor use

# Limit switches

XC Standard range  
Miniature design, metal, XCMD  
Modular units  
Pre-cabled

Type of head	Rotary (fixing by the body)				Multi-directional
Type of operator	Thermoplastic roller lever	Steel roller lever	Roller lever with ball bearing mounted roller	Variable length thermoplastic roller lever	"Cat's whisker" (1)

References (combined with removable terminal block)					
<b>2-pole NC + NC snap action</b> 	<b>ZCMD29L1 + ZCE01 + ZCY15</b> ⊖ 	<b>ZCMD29L1 + ZCE01 + ZCY16</b> ⊖ 	<b>ZCMD29L1 + ZCE01 + ZCY17</b> ⊖ 	<b>ZCMD29L1 + ZCE01 + ZCY45</b> ⊖ 	<b>ZCMD29L1 + ZCE06</b> 
<b>3-pole NC + NC + NO snap action</b> 	<b>ZCMD39L1 + ZCE01 + ZCY15</b> ⊖ 	<b>ZCMD39L1 + ZCE01 + ZCY16</b> ⊖ 	<b>ZCMD39L1 + ZCE01 + ZCY17</b> ⊖ 	<b>ZCMD39L1 + ZCE01 + ZCY45</b> ⊖ 	<b>ZCMD39L1 + ZCE06</b> 
<b>3-pole NC + NC + NO break before make, slow break</b> 	<b>ZCMD37L1 + ZCE01 + ZCY15</b> ⊖ 	<b>ZCMD37L1 + ZCE01 + ZCY16</b> ⊖ 	<b>ZCMD37L1 + ZCE01 + ZCY17</b> ⊖ 	<b>ZCMD37L1 + ZCE01 + ZCY45</b> ⊖ 	<b>ZCMD37L1 + ZCE06</b> 
<b>Weight (kg)</b> <b>4-pole 2 NC + 2 NO snap action</b> 	0.220	0.225	0.220	0.230	0.180
<b>Weight (kg)</b>	0.200	0.205	0.200	0.210	0.160

References (combined with fixed terminal block)					
<b>4-pole 2 NC + 2 NO snap action</b> 	<b>ZCMD41L1 + ZCE01 + ZCY15</b> ⊖ 	<b>ZCMD41L1 + ZCE01 + ZCY16</b> ⊖ 	<b>ZCMD41L1 + ZCE01 + ZCY17</b> ⊖ 	<b>ZCMD41L1 + ZCE01 + ZCY45</b> ⊖ 	<b>ZCMD41L1 + ZCE06</b> 
<b>Weight (kg)</b>	0.200	0.205	0.200	0.210	0.160
<b>Contact operation</b>			(A) = cam displacement (P) = positive opening point		

Complementary characteristics not shown under general characteristics (see page 27)		
Switch actuation	By 30° cam	
Type of actuation		
Maximum actuation speed	1.5 m/s	
Mechanical durability	10 million operating cycles	
Minimum force or torque	For tripping	0.1 N.m
	For positive opening	0.5 N.m
Cabling	PvR cable, 5 x 0.75 mm <sup>2</sup> length 1 m for 2-pole contact versions, 7 x 0.5 mm <sup>2</sup> length 1 m for 3-pole contact versions, 9 x 0.34 mm <sup>2</sup> length 1 m for 4-pole contact versions. For other lengths, see page 48.	

(1) Value taken with actuation by moving part at 100 mm from the fixing.

## Limit switches

XC Standard range

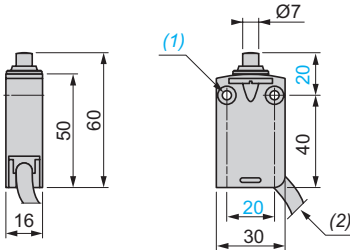
Miniature design, metal, XCMD

Complete units

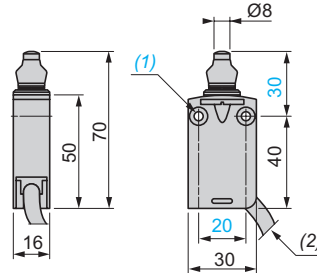
Pre-cabled

### Dimensions

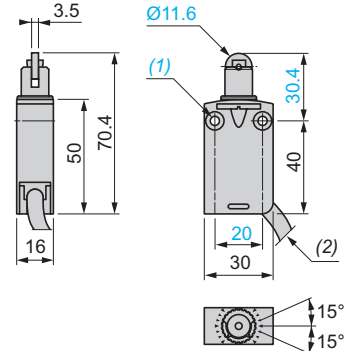
**XCMD2•10L1**



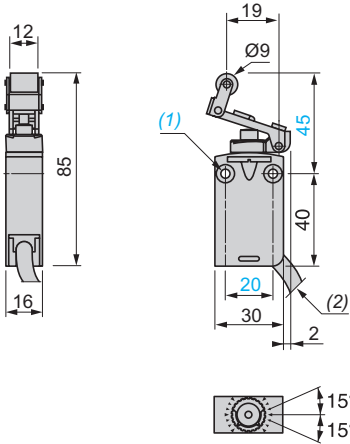
**XCMD2•11L1**



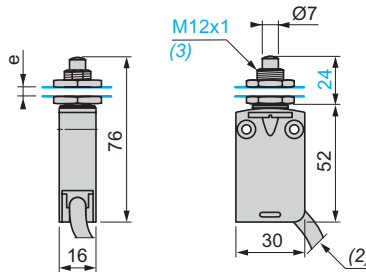
**XCMD2•02L1**



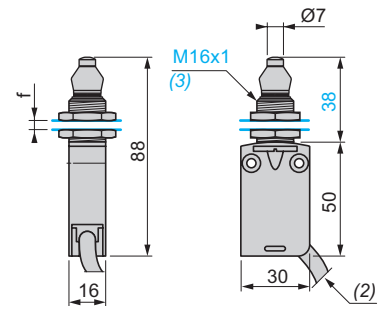
**XCMD2•24L1**



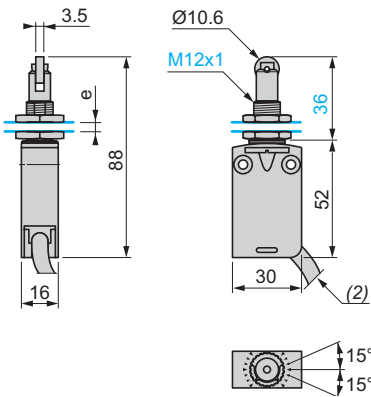
**XCMD2•F0L1**



**XCMD2•G1L1**



**XCMD2•F2L1**



(1) 2 fixing holes  $\varnothing$  4.2 mm, counterbored  $\varnothing$  8 mm by 4 mm deep

(2) External diameter of cable 7.5 mm

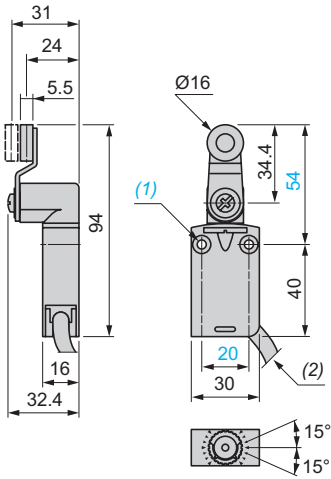
(3) Fixing nut thickness 3.5 mm

e: 8 mm max, panel cut-out  $\varnothing$  12.5 mm

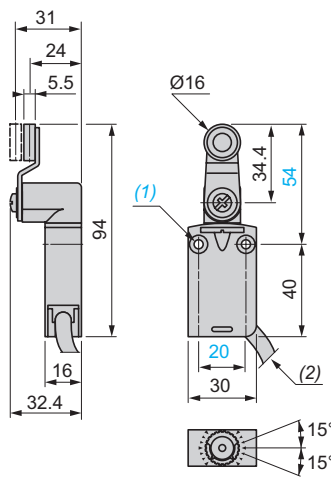
f: 8 mm max, panel cut-out  $\varnothing$  16.5 mm

**Dimensions (continued)**

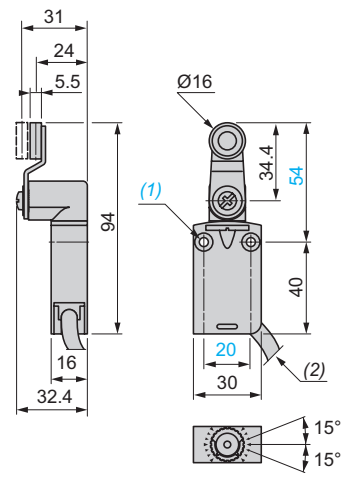
**XCMD2●15L1**



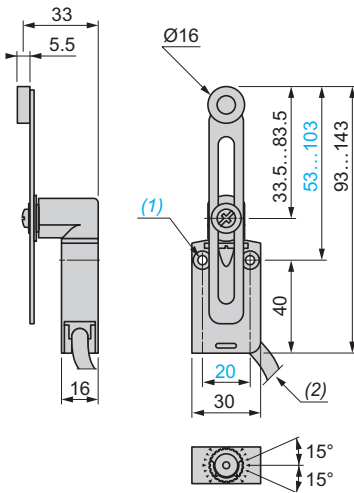
**XCMD2●16L1**



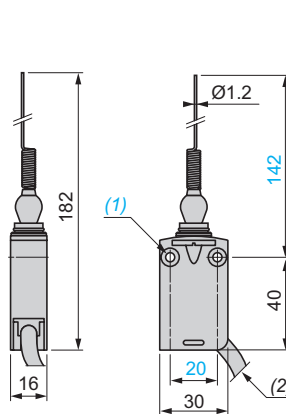
**XCMD2●17L1**



**XCMD2●45L1**

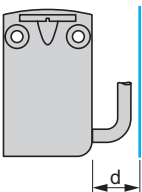


**XCMD2●06L1**



**Mounting: distance required for connection**

**XCMD2●●●L1**



d: 20 mm min.

**Note:** For modular switches ZCMD4D, ZCMD4DL● and ZCMC4DL●: d: 35 mm min.

(1) 2 fixing holes Ø 4.2 mm, counterbored Ø 8 mm by 4 mm deep

(2) External diameter of cable 7.5 mm

e: 8 mm max, panel cut-out Ø 12.5 mm

f: 8 mm max, panel cut-out Ø 16.5 mm

# Limit switches

XC Standard range

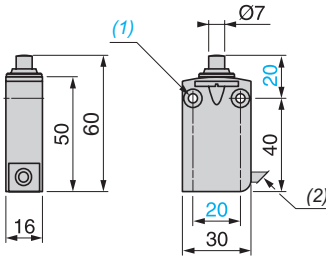
Miniature design, metal, XCMD

Modular units

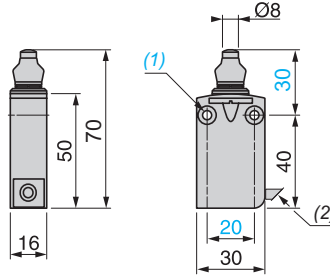
Pre-cabled

## Dimensions

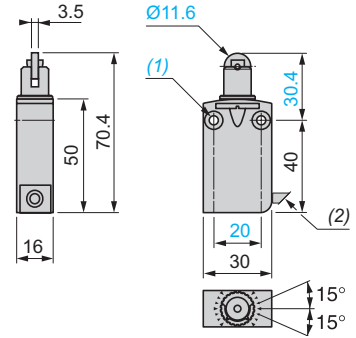
ZCMD●●L1 + ZCE10,  
ZCMD4DL1 + ZCE10,  
ZCMD41L1 + ZCE10



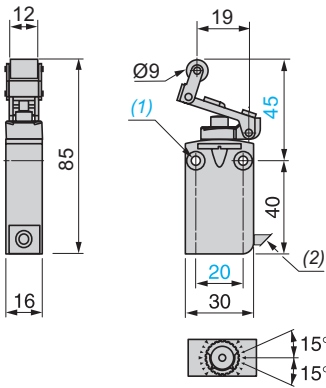
ZCMD●●L1 + ZCE11,  
ZCMD4DL1 + ZCE11,  
ZCMD41L1 + ZCE11



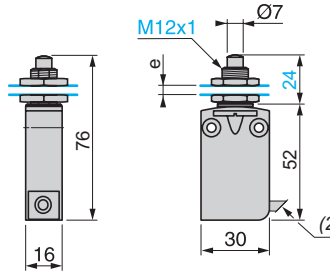
ZCMD●●L1 + ZCE02,  
ZCMD4DL1 + ZCE02,  
ZCMD41L1 + ZCE02



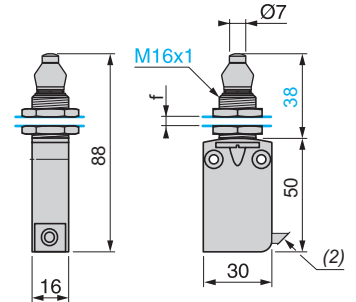
ZCMD●●L1 + ZCE24,  
ZCMD4DL1 + ZCE24,  
ZCMD41L1 + ZCE24



ZCMD●●L1 + ZCEF0,  
ZCMD4DL1 + ZCEF0,  
ZCMD41L1 + ZCEF0



ZCMD●●L1 + ZCEG1,  
ZCMD4DL1 + ZCEG1,  
ZCMD41L1 + ZCEG1



(1) 2 fixing holes Ø 4.2 mm, counterbored Ø 8 mm by 4 mm deep

(2) External diameter of cable 7.5 mm

e: 8 mm max, panel cut-out Ø 12.5 mm, fixing nut thickness 3.5 mm.

f: 8 mm max, panel cut-out Ø 16.5 mm, fixing nut thickness 3.5 mm.

# Limit switches

XC Standard range

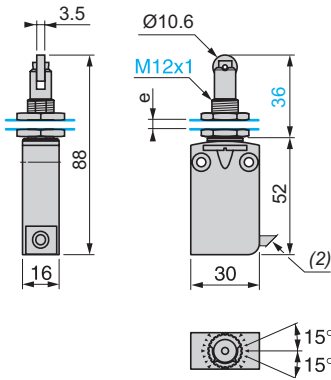
Miniature design, metal, XCMD

Modular units

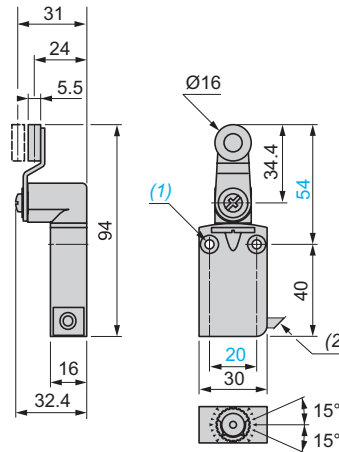
Pre-cabled

## Dimensions (continued)

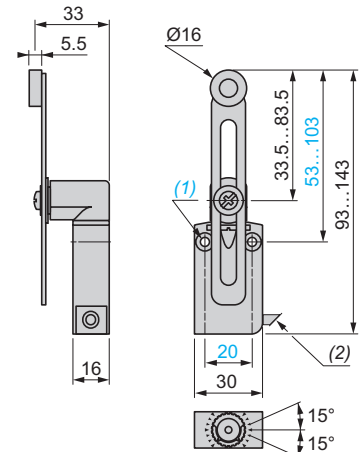
ZCMD●●L1 + ZCEF2,  
ZCMD4DL1 + ZCEF2,  
ZCMD41L1 + ZCEF2



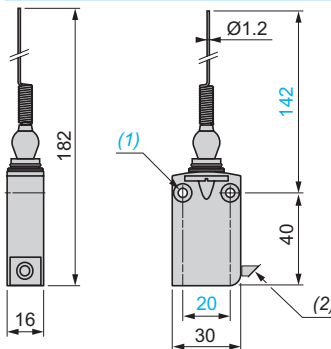
ZCMD●●L1 + ZCE01 + ZCY15/16/17,  
ZCMD4DL1 + ZCE01 + ZCY15/16/17,  
ZCMD41L1 + ZCE01 +  
ZCY15/16/17



ZCMD●●L1 + ZCE01 + ZCY45,  
ZCMD4DL1 + ZCE01 + ZCY45,  
ZCMD41L1 + ZCE01 + ZCY45



ZCMD●●L1 + ZCE06,  
ZCMD4DL1 + ZCE06,  
ZCMD41L1 + ZCE06



(1) 2 fixing holes Ø 4.2 mm, counterbored Ø 8 mm by 4 mm deep

(2) External diameter of cable 7.5 mm

e: 8 mm max, panel cut-out Ø 12.5 mm, fixing nut thickness 3.5 mm.

f: 8 mm max, panel cut-out Ø 16.5 mm, fixing nut thickness 3.5 mm.

# Limit switches

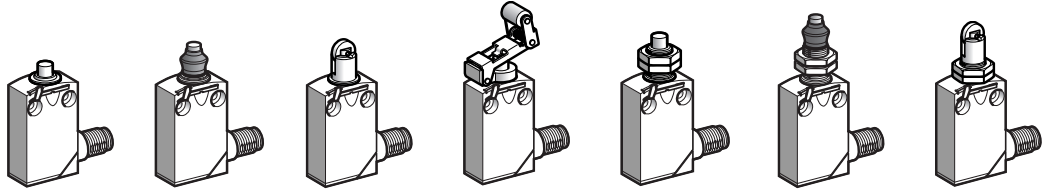
XC Standard range

Miniature design miniature, metal, XCMD

Complete units

Connector

Type of head	Plunger (fixing by the body)				Plunger (fixing by the head)		
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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
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## References

<p>Single-pole CO snap action + integral M12 4-pin connector</p>	<p>XCMD2110M12</p>	<p>XCMD2111M12</p>	<p>XCMD2102M12</p>	<p>XCMD2124M12</p>	<p>XCMD21F0M12</p>	<p>XCMD21G1M12</p>	<p>XCMD21F2M12</p>
	<p>2-pole NC + NO snap action + integral M12 5-pin connector</p>	<p>XCMD2110C12</p>	<p>XCMD2111C12</p>	<p>XCMD2102C12</p>	<p>XCMD2124C12</p>	<p>XCMD21F0C12</p>	<p>XCMD21G1C12</p>
Weight (kg)	0.085	0.085	0.090	0.105	0.100	0.125	0.110
Contact operation	closed open		(A) = cam displacement (P) = positive opening point		NC contact with positive opening operation		

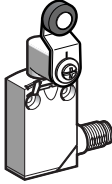
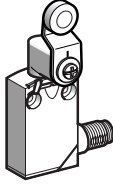
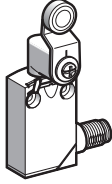
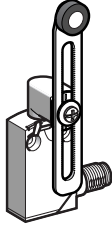
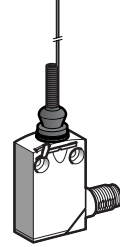
## Complementary characteristics not shown under general characteristics (see page 27)


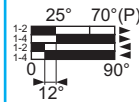
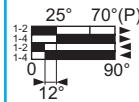
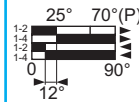
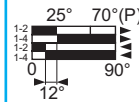
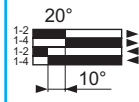

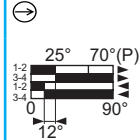
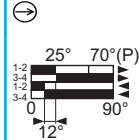
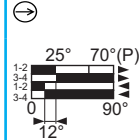
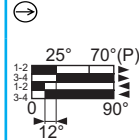
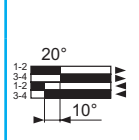



Switch actuation	On end	By 30° cam		On end	By 30° cam	
Type of actuation						
Maximum actuation speed	0.5 m/s				0.1 m/s	
Mechanical durability	10 million operating cycles					
Minimum force or torque	For tripping	8.5 N	7 N	2.5 N	8.5 N	7 N
	For positive opening	42.5 N	35 N	12.5 N	42.5 N	35 N
Positive operation	Although their design is identical to the pre-cabled switches, the switches incorporating an M12 4-pin connector cannot be marked with the  symbol because they are single-pole CO.					

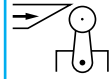


(1) Nitrile for indoor use.

# Limit switches

XC Standard range  
Miniature design miniature, metal, XCMD  
Complete units  
Connector

Type of head	Rotary (fixing by the body)				Multi-directional
					
Type of operator	Thermoplastic roller lever	Steel roller lever	Roller lever with ball bearing mounted roller	Variable length thermoplastic roller lever	"Cat's whisker" (1)

References	XCMD2115M12	XCMD2116M12	XCMD2117M12	XCMD2145M12	XCMD2106M12
 <p>Single-pole CO snap action With integral M12 4-pin connector</p>					
 <p>2-pole NC + NO snap action With integral M12 5-pin connector</p>					
Weight (kg)	0.125	0.130	0.125	0.135	0.085
Contact operation	 closed  open		(A) = cam displacement (P) = positive opening point	 NC contact with positive opening operation	

Complementary characteristics not shown under general characteristics (see page 27)		
Switch actuation	By 30° cam	By any moving part
Type of actuation		
Maximum actuation speed	1.5 m/s	1 m/s
Mechanical durability	10 million operating cycles	5
Minimum force or torque	For tripping	0.1 N.m
	For positive opening	0.5 N.m
Positive operation	Although their design is identical to the pre-cabled switches, the switches incorporating an M12 4-pin connector cannot be marked with the  symbol because they are single-pole CO.	

(1) Value taken with actuation by moving part at 100 mm from the fixing.

# Limit switches

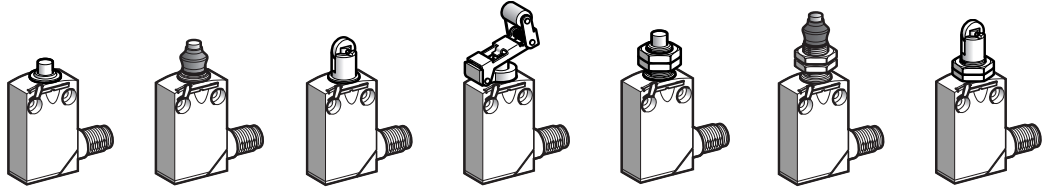
XC Standard range

Miniature design miniature, metal, XCMD

Modular units

Connector

Type of head	Plunger (fixing by the body)				Plunger (fixing by the body)		
--------------	------------------------------	--	--	--	------------------------------	--	--



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
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## References

	<b>Single-pole CO snap action + integral M12 4-pin connector</b>	ZCMD21M12 + ZCE10 ⊖	ZCMD21M12 + ZCE11 ⊖	ZCMD21M12 + ZCE02 ⊖	ZCMD21M12 + ZCE24 ⊖	ZCMD21M12 + ZCEF0 ⊖	ZCMD21M12 + ZCEG1 ⊖	ZCMD21M12 + ZCEF2 ⊖
	<b>2-pole NC + NO snap action + integral M12 5-pin connector</b>	ZCMD21C12 + ZCE10 ⊖	ZCMD21C12 + ZCE11 ⊖	ZCMD21C12 + ZCE02 ⊖	ZCMD21C12 + ZCE24 ⊖	ZCMD21C12 + ZCEF0 ⊖	ZCMD21C12 + ZCEG1 ⊖	ZCMD21C12 + ZCEF2 ⊖
	<b>2-pole NC + NC snap action + integral M12 5-pin connector</b>	ZCMD29C12 + ZCE10 ⊖	ZCMD29C12 + ZCE11 ⊖	ZCMD29C12 + ZCE02 ⊖	ZCMD29C12 + ZCE24 ⊖	ZCMD29C12 + ZCEF0 ⊖	ZCMD29C12 + ZCEG1 ⊖	ZCMD29C12 + ZCEF2 ⊖
<b>Weight (kg)</b>		0.085	0.085	0.090	0.105	0.100	0.125	0.110
	<b>2-pole NC + NO snap action + M12 5-pin connector on 0.8 m flying lead</b>	ZCMD21L08R12 + ZCE10 ⊖	ZCMD21L08R12 + ZCE11 ⊖	ZCMD21L08R12 + ZCE02 ⊖	ZCMD21L08R12 + ZCE24 ⊖	ZCMD21L08R12 + ZCEF0 ⊖	ZCMD21L08R12 + ZCEG1 ⊖	ZCMD21L08R12 + ZCEF2 ⊖
	<b>2-pole NC + NO snap action + 7/8"-16 UN 5-pin connector on 0.8 m flying lead</b>	ZCMD21L08U78 + ZCE10 ⊖	ZCMD21L08U78 + ZCE11 ⊖	ZCMD21L08U78 + ZCE02 ⊖	ZCMD21L08U78 + ZCE24 ⊖	ZCMD21L08U78 + ZCEF0 ⊖	ZCMD21L08U78 + ZCEG1 ⊖	ZCMD21L08U78 + ZCEF2 ⊖
<b>Weight (kg)</b>		0.150	0.150	0.155	0.170	0.165	0.190	0.175
<b>Contact operation</b>		(A) = cam displacement (P) = positive opening point				⊖ NC contact with positive opening operation		

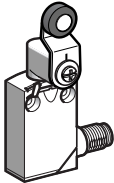
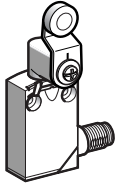
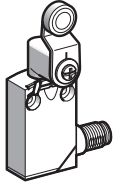
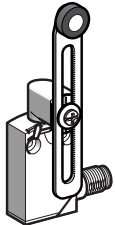
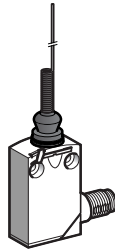
## Complementary characteristics not shown under general characteristics (see page 27)








<b>Switch actuation</b>	On end	By 30° cam		On end	By 30° cam
<b>Type of actuation</b>					
<b>Maximum actuation speed</b>	0.5 m/s				0.1 m/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	42.5 N
<b>Positive operation</b>	Although their design is identical to the pre-cabled switches, the switches incorporating an M12 4-pin connector cannot be marked with the ⊖ symbol because they are single-pole CO.				

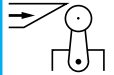

(1) Nitrile for indoor use.

# Limit switches

XC Standard range  
Miniature design miniature, metal, XCMD  
Modular units  
Connector

Type of head	Rotary (fixing by the body)				Multi-directional
					
Type of operator	Thermoplastic roller lever	Steel roller lever	Roller lever with ball bearing mounted roller	Variable length thermoplastic roller lever	"Cat's whisker" (1)

References					
 Single-pole CO snap action With integral M12 4-pin connector	ZCMD21M12 + ZCE01 + ZCY15 ⊖	ZCMD21M12 + ZCE01 + ZCY16 ⊖	ZCMD21M12 + ZCE01 + ZCY17 ⊖	ZCMD21M12 + ZCE01 + ZCY45 ⊖	ZCMD21M12 + ZCE06
 2-pole NC + NO snap action With integral M12 5-pin connector	ZCMD21C12 + ZCE01 + ZCY15 ⊖	ZCMD21C12 + ZCE01 + ZCY16 ⊖	ZCMD21C12 + ZCE01 + ZCY17 ⊖	ZCMD21C12 + ZCE01 + ZCY45 ⊖	ZCMD21C12 + ZCE06
 2-pole NC + NC snap action With integral M12 5-pin connector	ZCMD29C12 + ZCE01 + ZCY15 ⊖	ZCMD29C12 + ZCE01 + ZCY16 ⊖	ZCMD29C12 + ZCE01 + ZCY17 ⊖	ZCMD29C12 + ZCE01 + ZCY45 ⊖	ZCMD29C12 + ZCE06
Weight (kg)	0.125	0.130	0.125	0.135	0.085
 2-pole NC + NO snap action With M12 5-pin connector on 0.8 m flying lead	ZCMD21L08R12 + ZCE01 + ZCY15 ⊖	ZCMD21L08R12 + ZCE01 + ZCY16 ⊖	ZCMD21L08R12 + ZCE01 + ZCY17 ⊖	ZCMD21L08R12 + ZCE01 + ZCY45 ⊖	ZCMD21L08R12 + ZCE06
 2-pole NC + NO snap action With 7/8"-16 UN 5-pin connector on 0.8 m flying lead	ZCMD21L08U78 + ZCE01 + ZCY15 ⊖	ZCMD21L08U78 + ZCE01 + ZCY16 ⊖	ZCMD21L08U78 + ZCE01 + ZCY17 ⊖	ZCMD21L08U78 + ZCE01 + ZCY45 ⊖	ZCMD21L08U78 + ZCE06
Weight (kg)	0.200	0.205	0.200	0.210	0.160
Contact operation	 closed  open		(A) = cam displacement (P) = positive opening point	⊖ NC contact with positive opening operation	

Complementary characteristics not shown under general characteristics (see page 27)		
Switch actuation	By 30° cam	
Type of actuation		
Maximum actuation speed	1.5 m/s	
Mechanical durability	10 million operating cycles	
Minimum force or torque	For tripping	0.1 N.m
	For positive opening	0.5 N.m
Positive operation	Although their design is identical to the pre-cabled switches, the switches incorporating an M12 4-pin connector cannot be marked with the ⊖ symbol because they are single-pole CO.	

(1) Value taken with actuation by moving part at 100 mm from the fixing.

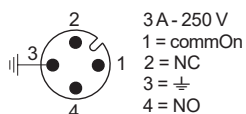
## References of suitable pre-wired female connectors

Type of connector	M12 straight, 4-pin 4 A, 250 V	M12 straight, 5-pin 4 A, 24 V	M12 elbowed, 5-pin 4 A, 24 V	7/8"-16 UN straight, 5-pin 6 A, 250 V
With cable	L = 2 m	XZCP1169L2	XZCP1164L2	XZCP1264L2
	L = 5 m	XZCP1169L5	XZCP1164L5	XZCP1264L5
	L = 10 m	XZCP1169L10	XZCP1164L10	XZCP1264L10
Weight (kg)	0.105	0.115	0.115	0.190

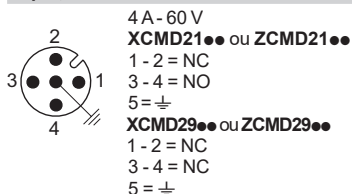
## Connections

### XCMD with connector

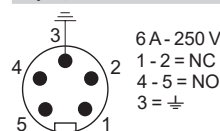
#### 4-pin, M12



#### 5-pin, M12

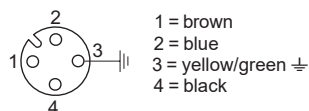


#### 5-pin, 7/8"-16 UN

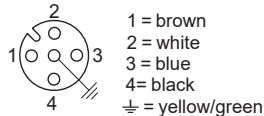


### XZCP pre-wired female connectors

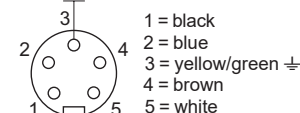
#### 4-pin, M12



#### 5-pin, M12

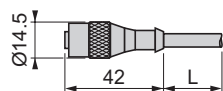


#### 5-pin, 7/8"-16 UN

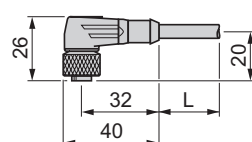


## Dimensions

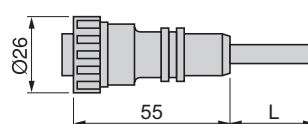
### XZCP116●L●



### XZCP1264L●



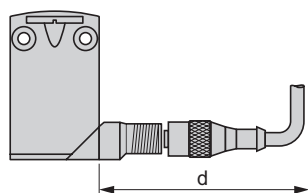
### XZCP1771L●



L: cable length 2, 5 or 10 m.

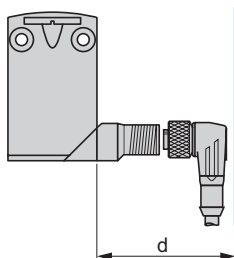
### Distances required for plug-in connectors

#### M12 straight connector



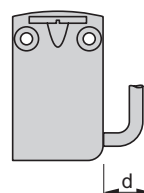
d: min. 65 mm, recommended 69 mm

#### M12 elbowed connector



d: min. 42 mm, recommended 45 mm

#### Connector on flying lead



d: min. 20 mm

# Limit switches

XC Standard range

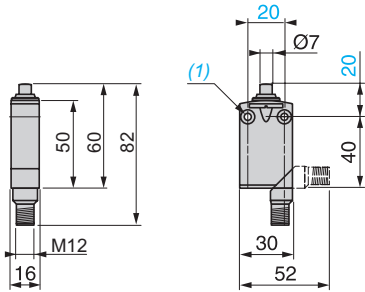
Miniature design, metal, XCMD

Complete units

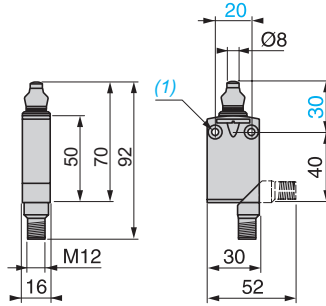
Connector

## Dimensions

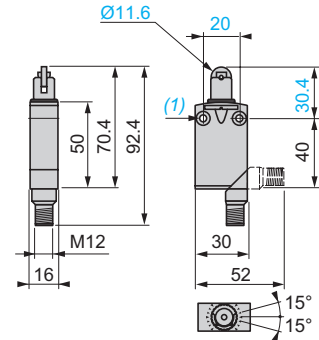
XCMD2110M12 and XCMD2110C12



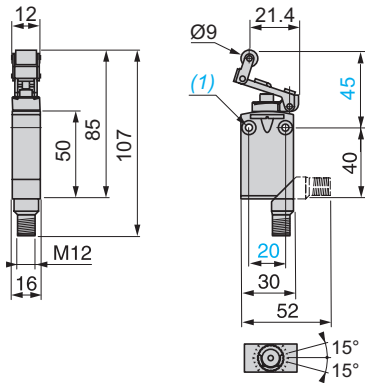
XCMD2111M12 and XCMD2111C12



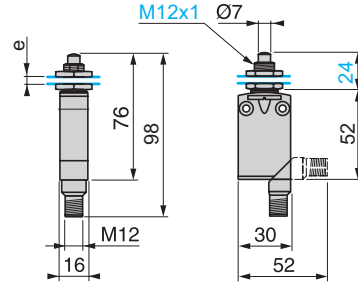
XCMD2102M12 and XCMD2102C12



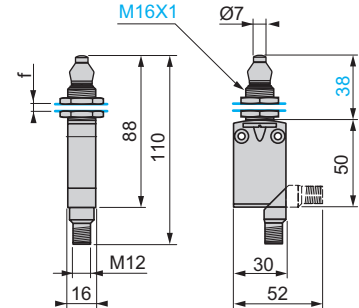
XCMD2124M12 and XCMD2124C12



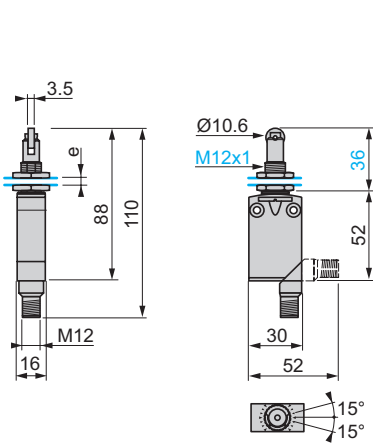
XCMD21F0M12 and XCMD21F0C12



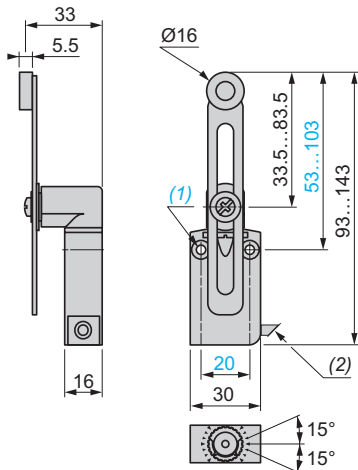
XCMD21G1M12 and XCMD21G1C12



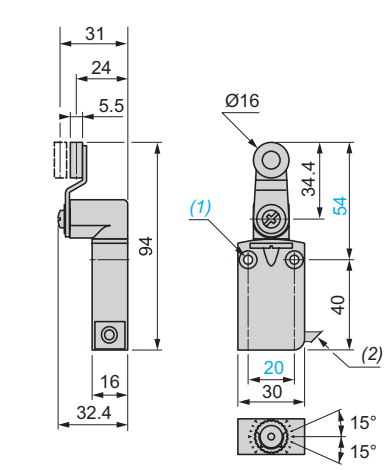
XCMD21F2M12 and XCMD21F2C12



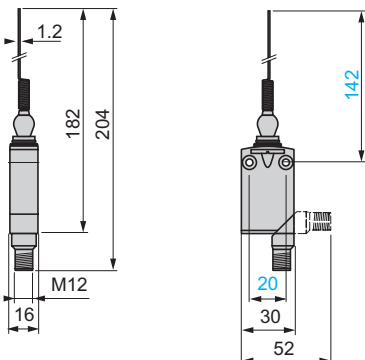
XCMD2145M12 and XCMD2145C12



XCMD2115M12 /116M12 /117M12  
XCMD2115C12 /116C12 /117C12



XCMD2106M12 and XCMD2106C12



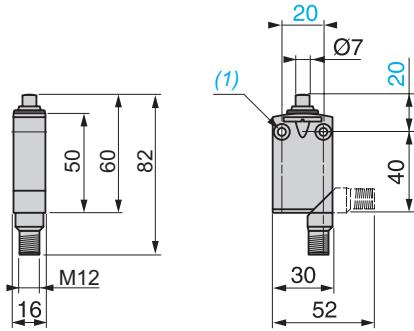
(1) 2 fixing holes  $\varnothing 4.2$  mm, counterbored  $\varnothing 8$  mm by 4 mm deep.  
e: 8 mm max., panel cut-out  $\varnothing 12.5$  mm, fixing nut thickness 3.5 mm.  
f: 8 mm max., panel cut-out  $\varnothing 16.5$  mm, fixing nut thickness 3.5 mm.

# Limit switches

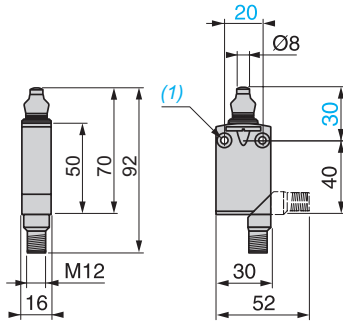
XC Standard range  
Miniature design, metal, XCMD  
Modular units  
Connector

## Dimensions (continued)

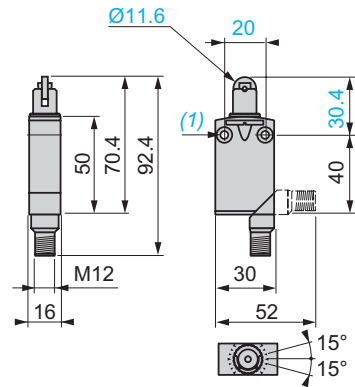
ZCMD21M12 + ZCE10  
ZCMD2●C12 + ZCE10  
ZCMD21L08●●● + ZCE10



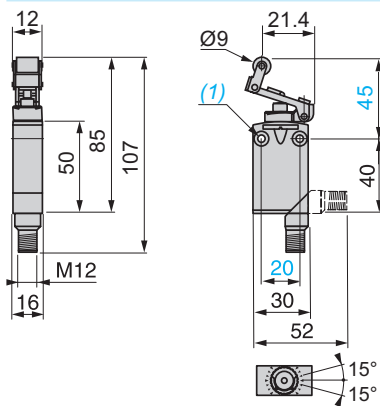
ZCMD21M12 + ZCE11  
ZCMD2●C12 + ZCE11  
ZCMD21L08●●● + ZCE11



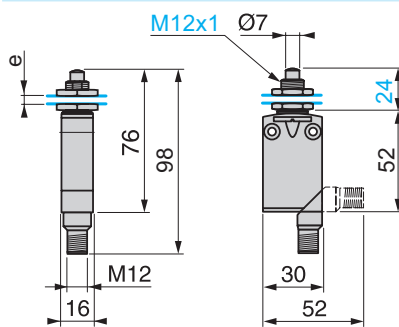
ZCMD21M12 + ZCE02  
ZCMD2●C12 + ZCE02  
ZCMD21L08●●● + ZCE02



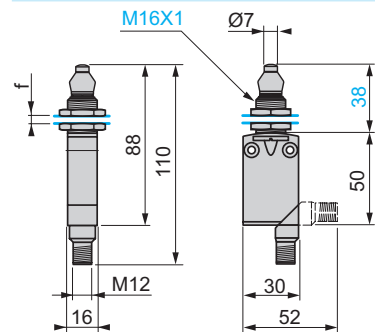
ZCMD21M12 + ZCE24  
ZCMD2●C12 + ZCE24  
ZCMD21L08●●● + ZCE24



ZCMD21M12 + ZCEF0  
ZCMD2●C12 + ZCEF0  
ZCMD21L08●●● + ZCEF0



ZCMD21M12 + ZCEG1  
ZCMD2●C12 + ZCEG1  
ZCMD21L08●●● + ZCEG1



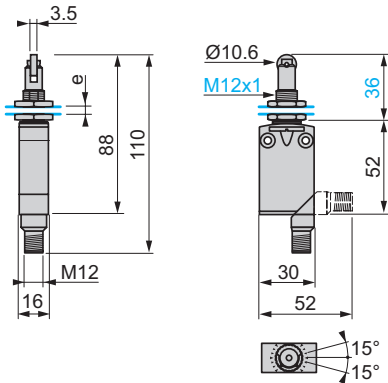
(1) 2 fixing holes Ø 4.2 mm, counterbored Ø 8 mm by 4 mm deep.  
e: 8 mm max., panel cut-out Ø 12.5 mm, fixing nut thickness 3.5 mm.  
f: 8 mm max., panel cut-out Ø 16.5 mm, fixing nut thickness 3.5 mm.

# Limit switches

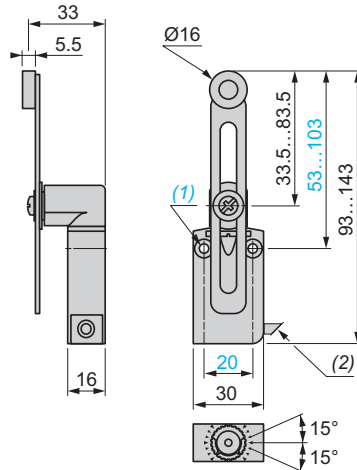
XC Standard range  
Miniature design, metal, XCMD  
Modular units  
Connector

## Dimensions (continued)

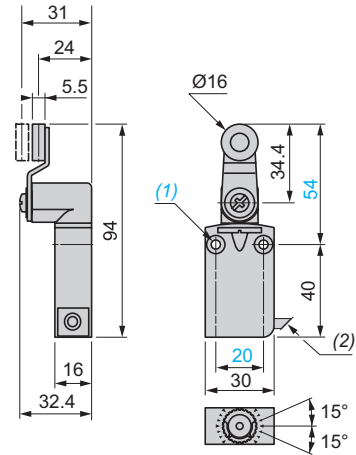
ZCMD21M12 + ZCEF2  
ZCMD2●C12 + ZCEF2  
ZCMD21L08●●● + ZCEF2



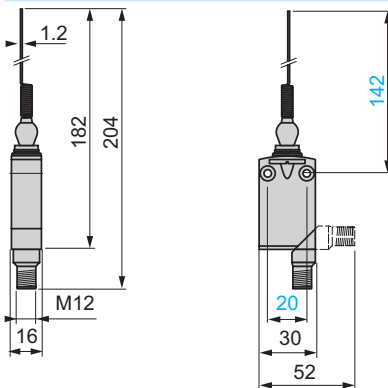
ZCMD21M12 + ZCE01 + ZCY45  
ZCMD2●C12 + ZCE01 + ZCY45  
ZCMD21L08●●● + ZCE01 + ZCY45



ZCMD21M12 + ZCE01 + ZCY1●  
ZCMD2●C12 + ZCE01 + ZCY1●  
ZCMD21L08●●● + ZCE01 + ZCY1●



ZCMD21M12 + ZCE06  
ZCMD2●C12 + ZCE06  
ZCMD21L08●●● + ZCE06

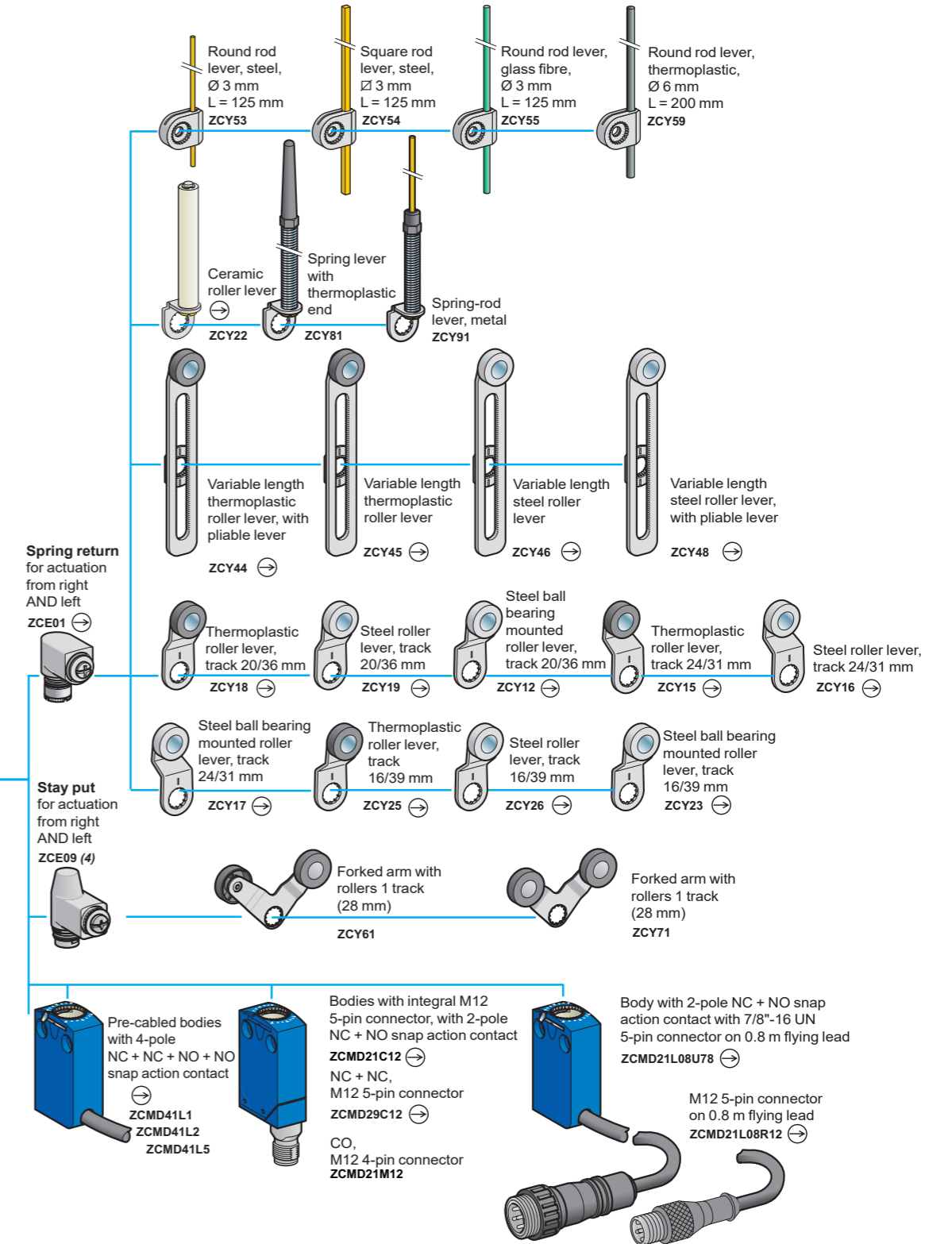
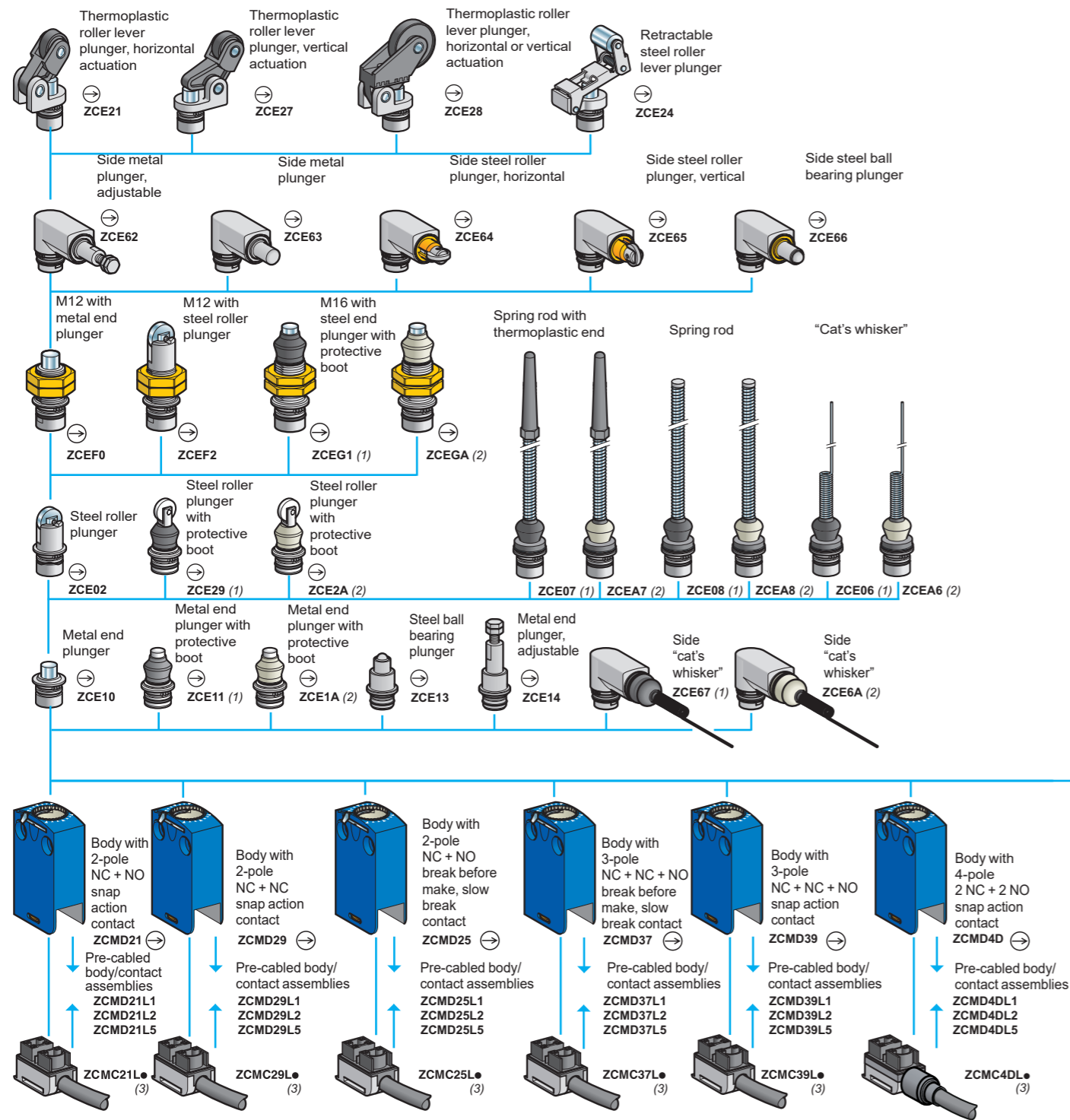


(1) 2 fixing holes Ø 4.2 mm, counterbored Ø 8 mm by 4 mm deep.  
e: 8 mm max., panel cut-out Ø 12.5 mm, fixing nut thickness 3.5 mm.  
f: 8 mm max., panel cut-out Ø 16.5 mm, fixing nut thickness 3.5 mm.

# Limit switches

## XC Standard range

Miniature design, metal, XCMD  
Variable composition



(1) Nitrile boot for indoor use.  
 (2) Silicone boot for outdoor use.  
 (3) Connection components: replace the "●" in the reference with the required cable length in metres (1, 2, 3, 5, 7 or 10 m).  
 For example, ZCMC21L● becomes ZCMC21L7 for a 7 m cable.  
 Note: Only cable lengths of 1, 2 and 5 m are available for connection components ZCMC37L●, ZCMC39L● and ZCMC4DL●.

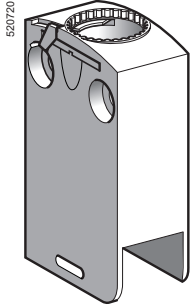
(4) Cannot be used on bodies ZCMD21, ZCMD29, ZCMD39, ZCMD41, ZCMD21C12, ZCMD21M12, ZCMD29C12 or ZCMD21L08●●●.

# Limit switches

XC Standard range

Miniature design, metal, XCMD

Body/contact assemblies



ZCMD6●  
ZCMD7●  
ZCMD4D

## Body/contact assemblies

Type of contact	Positive operation (1)	Scheme	Type of contact	Reference	Weight kg
<b>2-pole</b>					
NC + NO snap action	⊕		Standard	<b>ZCMD21</b>	0.055
			Gold plated	<b>ZCMD61</b>	0.055
NC + NC snap action	⊕		Standard	<b>ZCMD29</b>	0.055
			Gold plated	<b>ZCMD69</b>	0.055
NC + NO break before make, slow break	⊕		Standard	<b>ZCMD25</b>	0.055
			Gold plated	<b>ZCMD65</b>	0.055
<b>3-pole</b>					
NC + NC + NO break before make, slow break	⊕		Standard	<b>ZCMD37</b>	0.055
			Gold plated	<b>ZCMD77</b>	0.055
NC + NC + NO snap action	⊕		Standard	<b>ZCMD39</b>	0.055
			Gold plated	<b>ZCMD79</b>	0.055
<b>4-pole</b>					
2 NC + 2 NO snap action	⊕		Standard	<b>ZCMD4D</b>	0.055

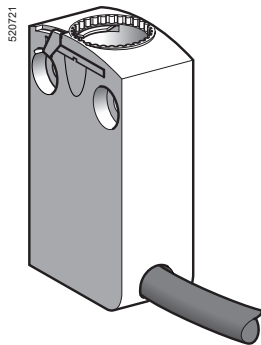
(1) ⊕ bodies with contacts assuring positive opening operation.

## Limit switches

XC Standard range

Miniature design, metal, XCMD

Pre-cabled body/contact assemblies



XCMD●●●●

## Body/contact assemblies with removable cable

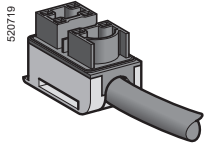
Type of contact	Positive operation (1)	Scheme	Length of cable in metres	Reference	Weight kg
<b>2-pole</b>					
NC + NO snap action	⊕		1	ZCMD21L1	0.160
			2	ZCMD21L2	0.250
			5	ZCMD21L5	0.520
NC + NC snap action	⊕		1	ZCMD29L1	0.160
			2	ZCMD29L2	0.250
			5	ZCMD29L5	0.520
NC + NO break before make, slow break	⊕		1	ZCMD25L1	0.160
			2	ZCMD25L2	0.250
			5	ZCMD25L5	0.520
<b>3-pole</b>					
NC + NC + NO break before make, slow break	⊕		1	ZCMD37L1	0.160
			2	ZCMD37L2	0.250
			5	ZCMD37L5	0.520
NC + NC + NO snap action	⊕		1	ZCMD39L1	0.160
			2	ZCMD39L2	0.250
			5	ZCMD39L5	0.520
<b>4-pole</b>					
2 NC + 2 NO snap action	⊕		1	ZCMD4DL1	0.160
			2	ZCMD4DL2	0.250
			5	ZCMD4DL5	0.520
<b>Pre-cabled bodies/contact assemblies (fixed cable)</b>					
<b>4-pole</b>					
2 NC + 2 NO snap action	⊕		1	ZCMD41L1	0.160
			2	ZCMD41L2	0.250
			5	ZCMD41L5	0.520
<b>Pre-cabled bodies with gold contacts (fixed cable)</b>					
<b>4-pole</b>					
2 NC + 2 NO snap action	⊕		1	ZCMD81L1	0.160
			2	ZCMD81L2	0.250
			5	ZCMD81L5	0.520

(1) ⊕ bodies with contacts assuring positive opening operation.

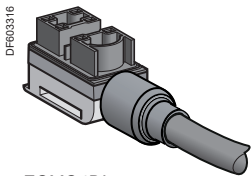
# Limit switches

## XC Standard range

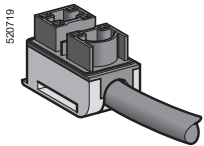
Miniature design, metal, XCMD  
Connection components



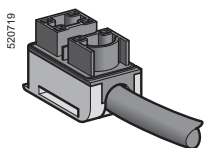
ZCMC2●L●●  
ZCMC3●L●●



ZCMC4DL●



ZCMC21E●



ZCMC25T06  
ZCMC21T●

### Pre-cabled connection components with PVC cable

#### 2-pole

Type of contact	Scheme	Length of cable in metres	Reference	Weight kg
NC + NO snap action		1	ZCMC21L1	0.100
		2	ZCMC21L2	0.190
		3	ZCMC21L3	0.280
		5	ZCMC21L5	0.460
		7	ZCMC21L7	0.700
10	ZCMC21L10	0.970		

NC + NC snap action		1	ZCMC29L1	0.100
		2	ZCMC29L2	0.190
		3	ZCMC29L3	0.280
		5	ZCMC29L5	0.460
		7	ZCMC29L7	0.700
10	ZCMC29L10	0.970		

NC + NO break before make, slow break		1	ZCMC25L1	0.100
		2	ZCMC25L2	0.190
		3	ZCMC25L3	0.280
		5	ZCMC25L5	0.460
		7	ZCMC25L7	0.700
10	ZCMC25L10	0.970		

#### 3-pole

NC + NC + NO break before make, slow break		1	ZCMC37L1	0.100
		2	ZCMC37L2	0.190
		5	ZCMC37L5	0.460

NC + NC + NO snap action		1	ZCMC39L1	0.100
		2	ZCMC39L2	0.190
		5	ZCMC39L5	0.460

#### 4-pole

2 NC + 2 NO snap action		1	ZCMC4DL1	0.100
		2	ZCMC4DL2	0.190
		5	ZCMC4DL5	0.460

### Pre-cabled connection components with CEI cable

(Connitato Elettrotecnico Italiano) (1)

Type of contact	Scheme	Length of CEI cable in metres	Reference	Weight kg
2-pole NC + NO snap action		1	ZCMC21E1	0.100
		2	ZCMC21E2	0.190
		3	ZCMC21E3	0.280
		5	ZCMC21E5	0.460
		7	ZCMC21E7	0.700
		10	ZCMC21E10	0.970

### Pre-cabled connection components with halogen free cable (2)

Type of contact	Positive operation (3)	Scheme	Length of cable in metres	Reference	Weight kg
2-pole NC + NO break before make, slow break	⊕		0.6	ZCMC25T06	0.080
			1	ZCMC21T1	0.130
NC + NO snap action	⊕		1	ZCMC21T2	0.250
			2	ZCMC21T5	0.520
			5	ZCMC21T5	0.520

(1) Cable not UL or CSA certified.

(2) For other types of contacts and cable, please contact our Customer Care Centre.

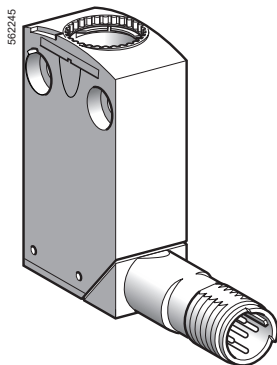
(3) ⊕ bodies with contacts assuring positive opening operation.

# Limit switches

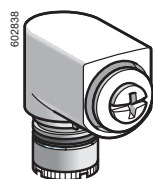
XC Standard range

Miniature design, metal, XCMD

Separate parts



ZCMD61●●●



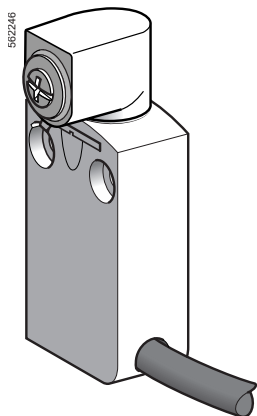
ZCE05



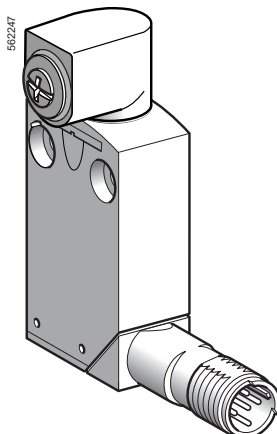
XCMZ06



XCMZ07



XCMD2●01L1



XCMD2101●12

## Bodies with gold contacts, connector

Type of contact	Positive operation (1)	Scheme	Connector	Reference	Weight kg
<b>2-pole</b>					
NC + NO snap action	—		M12 5-pin	ZCMD61C12	0.065
NC + NC snap action	—		M12 5-pin	ZCMD69C12	0.065
<b>Single-pole</b>					
CO snap action	—		M12 4-pin	ZCMD61M12	0.065

## Accessories

Description	Positive operation (1)	Suitable levers for use with head	Reference	Weight kg
Rotary head, without lever, spring return, for actuation from right AND left or from right OR left		ZCY12, ZCY15, ZCY16, ZCY17, ZCY18, ZCY19, ZCY22, ZCY23, ZCY25, ZCY26, ZCY39, ZCY53, ZCY54, ZCY55, ZCY81	ZCE05	0.045
Spacer for mounting multi-track XCMD	—	—	XCMZ06	0.005
Spacer for angular positioning of heads with adjustable levers, for values other than -90°, 0° and 90°	—	—	XCMZ07	0.005

## Pre-cabled body/contact assemblies, with rotary head (without operating lever)

Type of contact	Positive operation (1)	Scheme	Length of cable in metres	Reference	Weight kg
<b>2-pole</b>					
NC + NO snap action			1	XCMD2101L1	0.180
NC + NO break before make, slow break			1	XCMD2501L1	0.180

## Body/contact assemblies with rotary head (without operating lever), connector

Type of contact	Positive operation (1)	Scheme	Connector	Reference	Weight kg
<b>2-pole</b>					
NC + NO snap action			M12 5-pin	XCMD2101C12	0.110
<b>Single-pole</b>					
CO snap action	—		M12 4-pin	XCMD2101M12	0.110

(1) bodies with contacts or head assuring positive opening operation.

# Limit switches

XC Standard range

Miniature design, metal, XCMV

for mobile equipment

The range of XCMV limit switches is an offer dedicated to mobile equipment:

- special connectors
- a metal body for robustness
- compact dimensions (among the smallest on the market)
- IP 69 degree of protection, for high-pressure cleaning
- for outdoor use at -25 °...+70 °C

**Complete units**  
with Deutsch DT04-4P connector

□ With head for linear (plunger) and rotary (lever) movement



Page 53

**Complete units**  
with AMP Superseal 1.5 connector

□ With head for linear (plunger) and rotary (lever) movement



Page 54

**Complete units**  
with M12 connector

□ With head for linear (plunger) and rotary (lever) movement



Page 55

## Limit switches

XC Standard range  
Miniature design, metal, XCMV  
for mobile equipment

### Modular units

Body with Deutsch DT04-4P connector

□ With head for linear (plunger) and rotary (lever) movement



Pages 56 and 57

### Modular units

Body with AMP Superseal 1.5 connector

□ With head for linear (plunger) and rotary (lever) movement



Pages 58 and 59

### Modular units

Body with M12 connector

□ With head for linear (plunger) and rotary (lever) movement



Pages 60 and 61

### Modular units

Pre-cabled body

□ With head for linear (plunger) and rotary (lever) movement



Pages 62 and 63

# Limit switches

## XC Standard range

Miniature design, metal, XCMV  
for mobile equipment

Environmental characteristics		
Product certifications		CE, cURus
Conformity to standards	Products	EN/IEC 60947-5-1, UL 508, CSA C22-2 n°14, GB/T 14048.5
	Machine assemblies	EN/IEC 60204-1
Protective treatment		Standard version: "TC"
Ambient air temperature	For operation	- 25...+ 70 °C (- 40...+ 70 °C with ZCE106, ZCE026 and ZCE016 heads)
	For storage	- 40...+ 70 °C
Vibration resistance		± 1.76 mm (10...60 Hz), 25 gn (61...500 Hz) conforming to IEC 60068-2-6
Shock resistance		40 gn (11 ms) conforming to IEC 60068-2-27
Protection against electric shock		Class III conforming to IEC 61140, class 2 conforming to UL 508
Degree of protection	Switches with 4-pin M12 connector	IP 66, IP 67 and IP 69 conforming to EN/IEC 60529 ; IK 04 conforming to EN 62262
	Switches with 4-pin Deutsch DT04-4P or AMP Superseal 1.5 connector	IP 66, IP 67 and IP 69 conforming to EN/IEC 60529 ; IK 06 conforming to EN 62262
	Pre-cabled switches	IP 66 and IP 67 conforming to EN/IEC 60529
Materials		Body: Zamak, heads: Zamak, connectors: thermoplastic, cable: PvR
Repeat accuracy		0.1 mm on the tripping points, with 1 million operating cycles for head with end plunger

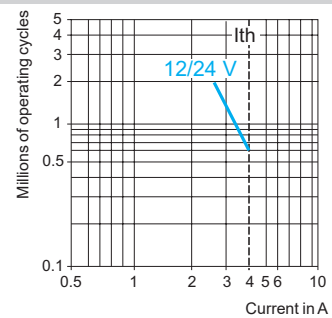
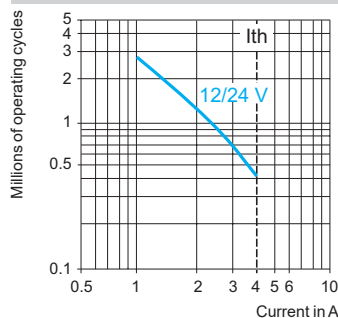
Contact block characteristics		
Rated operational characteristics	Switches with 4-pin M12 connector	~ AC-14; Ue = 24 V, Ie = 3 A, Ith = 4 A --- DC-13; Ue = 24 V, Ie = 1 A, conforming to IEC 60947-5-1, EN 60947-5-1
	Pre-cabled switches or switches with 4-pin Deutsch DT04-4P or AMP Superseal 1.5 connector	~ AC-14; Ue = 24 V, Ie = 3 A, Ith = 6 A --- DC-13; Ue = 24 V, Ie = 1 A, conforming to IEC 60947-5-1, EN 60947-5-1
Rated insulation voltage		Ui = 36 V degree of pollution 3 conforming to IEC 60947-5-1 Ui = 36 V conforming to UL 508, CSA C22-2 no. 14
Rated impulse withstand voltage		U imp = 0.8 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
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-14 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

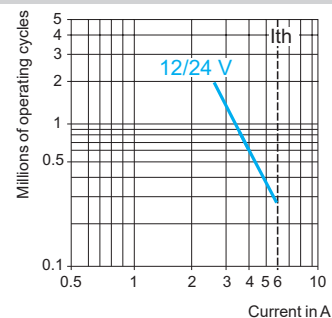
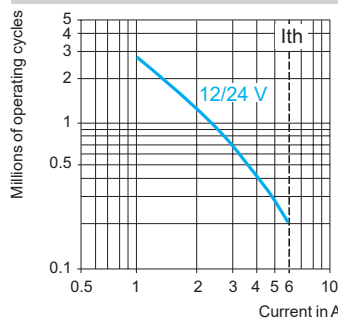
### XCMV snap-action (NC+NO contact)

### XCMV slow-break (NC+NO contact)

#### Switches with M12 connector



#### Pre-cabled switches or switches with Deutsch DT04-4P or AMP Superseal 1.5 connector



DC supply ---

Power broken in W for  
0.1 million operating cycles

Voltage	V	24
m	A	2

Power broken in W for  
1.3 million operating cycles

Voltage	V	24
m	A	0.5

# Limit switches

XC Standard range  
Miniature design, metal, XCMV  
Complete units for mobile equipment

Type of head	Plunger (fixing by the body)	Rotary (fixing by the body)
--------------	------------------------------	-----------------------------



Form conforming to EN 50047	B	C	A
Type of operator	Metal end plunger	Steel roller plunger	Thermoplastic roller lever (1)
Positive operation			

**References of complete units with male Deutsch DT04-4P connector**

2-pole NC + NO snap action	XCMV2110D44 	XCMV2102D44 	XCMV2115D44 
2-pole NC + NO break before make, slow break	XCMV2510D44 	XCMV2502D44 	XCMV2515D44 
Weight (kg)	0.090	0.090	0.130

Contact operation closed open (A) = cam displacement (P) = positive opening point

**Complementary characteristics not shown under general characteristics (see page 51)**

Switch actuation	On end	By 30° cam		
Type of actuation				
Maximum actuation speed	0.5 m/s	0.5 m/s	1.5 m/s	
Mechanical durability (in millions of operating cycles)	10			
Minimum force or torque	For tripping	8.5 N	7 N	0.1 N.m
	For positive opening	42.5 N	35 N	0.5 N.m

(1) Can be adjusted throughout 360° in 15° steps.

# Limit switches

XC Standard range  
Miniature design, metal, XCMV  
Complete units for mobile equipment

Type of head	Plunger (fixing by the body)	Rotary (fixing by the body)
--------------	------------------------------	-----------------------------



Form conforming to EN 50047	B	C	A
Type of operator	Metal end plunger	Steel roller plunger	Thermoplastic roller lever (1)
Positive operation			

### References of complete units with male AMP Superseal 1.5 connector

2-pole NC + NO snap action	<b>XCMD2110AM4</b> 	<b>XCMD2102AM4</b> 	<b>XCMD2115AM4</b> 
2-pole NC + NO break before make, slow break	<b>XCMD2510AM4</b> 	<b>XCMD2502AM4</b> 	<b>XCMD2515AM4</b> 
Weight (kg)	0.090	0.090	0.130
Contact operation			(A) = cam displacement (P) = positive opening point

### Characteristics

Switch actuation	On end	By 30° cam	
Type of actuation			
Maximum actuation speed	0.5 m/s	0.5 m/s	1.5 m/s
Mechanical durability (in millions of operating cycles)	10		
Minimum force or torque	For tripping	8.5 N	7 N
	For positive opening	42.5 N	35 N
			0.1 N.m
			0.5 N.m

(1) Can be adjusted throughout 360° in 15° steps.

# Limit switches

XC Standard range

Miniature design, metal, XCMV

Complete units for mobile equipment

Type of head	Plunger (fixing by the body)	Rotary (fixing by the body)
--------------	------------------------------	-----------------------------



Form conforming to EN 50047	B	C	A
Type of operator	Metal end plunger	Steel roller plunger	Thermoplastic roller lever (1)
Positive operation			

### References of complete units with M12 connector

2-pole NC + NO snap action	<b>XCMV2110M12</b> 	<b>XCMV2102M12</b> 	<b>XCMV2115M12</b> 
2-pole NC + NO break before make, slow break	<b>XCMV2510M12</b> 	<b>XCMV2502M12</b> 	<b>XCMV2515M12</b> 
Weight (kg)	0.090	0.090	0.130

Contact operation		(A) = cam displacement (P) = positive opening point	
-------------------	--	--	--

### Complementary characteristics not shown under general characteristics (see page 51)

Switch actuation	On end	By 30° cam	
Type of actuation			
Maximum actuation speed	0.5 m/s	0.5 m/s	1.5 m/s
Mechanical durability (in millions of operating cycles)	10		
Minimum force or torque	For tripping	8.5 N	7 N
	For positive opening	42.5 N	35 N
			0.1 N.m
			0.5 N.m

(1) Can be adjusted throughout 360° in 15° steps.

# Limit switches

XC Standard range  
Miniature design, metal, XCMV  
Modular units for mobile equipment

Type of head	Plunger (fixing by the body)							Plunger (fixing by the head)	Rotary (fixing by the body)						Multi-directional
Type of operator	Metal end plunger	Metal end plunger -40 °C (1)	Metal end plunger with elastomer boot (2)	Steel roller plunger	Steel roller plunger -40 °C (1)	Retractable steel roller lever plunger	M12 with metal end plunger	M16 with metal end plunger with elastomer boot	M12 with steel roller plunger	Thermoplastic roller lever	Thermoplastic roller lever -40 °C (1)	Steel roller lever	Roller lever with ball bearing mounted roller	Variable length thermoplastic roller lever	"Cat's whisker" (3)

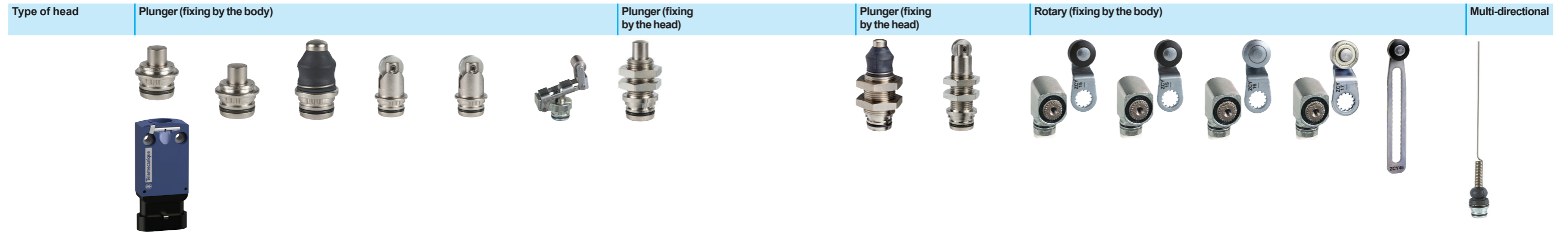
References of modular units (body with male Deutsch DT04-4P connector and removable terminal block)															
2-pole NC + NO snap action	ZCMV21D44 + ZCE10	ZCMV21D44 + ZCE106	ZCMV21D44 + ZCE11	ZCMV21D44 + ZCE02	ZCMV21D44 + ZCE026	ZCMV21D44 + ZCE24	ZCMV21D44 + ZCEF0	ZCMV21D44 + ZCEG1	ZCMV21D44 + ZCEF2	ZCMV21D44 + ZCY15	ZCMV21D44 + ZCE016 + ZCY15	ZCMV21D44 + ZCE01 + ZCY16	ZCMV21D44 + ZCE01 + ZCY17	ZCMV21D44 + ZCE01 + ZCY45	ZCMV21D44 + ZCE06
2-pole NC + NO break before make, slow break	ZCMV25D44 + ZCE10	ZCMV25D44 + ZCE106	ZCMV25D44 + ZCE11	ZCMV25D44 + ZCE02	ZCMV25D44 + ZCE026	ZCMV25D44 + ZCE24	ZCMV25D44 + ZCEF0	ZCMV25D44 + ZCEG1	ZCMV25D44 + ZCEF2	ZCMV25D44 + ZCY15	ZCMV25D44 + ZCE016 + ZCY15	ZCMV25D44 + ZCE01 + ZCY16	ZCMV25D44 + ZCE01 + ZCY17	ZCMV25D44 + ZCE01 + ZCY45	ZCMV25D44 + ZCE06
2-pole NC + NC snap action	ZCMV29D44 + ZCE10	ZCMV29D44 + ZCE106	ZCMV29D44 + ZCE11	ZCMV29D44 + ZCE02	ZCMV29D44 + ZCE026	ZCMV29D44 + ZCE24	ZCMV29D44 + ZCEF0	ZCMV29D44 + ZCEG1	ZCMV29D44 + ZCEF2	ZCMV29D44 + ZCY15	ZCMV29D44 + ZCE016 + ZCY15	ZCMV29D44 + ZCE01 + ZCY16	ZCMV29D44 + ZCE01 + ZCY17	ZCMV29D44 + ZCE01 + ZCY45	ZCMV29D44 + ZCE06
Contact operation	(A) = cam displacement (P) = positive opening point							(A) = cam displacement (P) = positive opening point			(A) = cam displacement (P) = positive opening point				

Complementary characteristics not shown under general characteristics (see page 51)					
Switch actuation	On end	By 30° cam		On end	
Type of actuation					
Maximum actuation speed	0.5 m/s	0.1 m/s	1.5 m/s	1.5 m/s	1 m/s
Mechanical durability	10 million operating cycles		10 million	5 million	
Nominal force or torque	For tripping	8.5 N	7 N	0.1 N.m	0.1 N.m
	For positive opening	42.5 N	35 N	0.5 N.m	-
Connection	Deutsch DT04-4P connector				

(1) For use at -40 °C.  
(2) Nitrile for indoor use.  
(3) Value taken with actuation by moving part at 100 mm from the fixing.

# Limit switches

XC Standard range  
Miniature design, metal, XCMV  
Modular units for mobile equipment



Type of head	Plunger (fixing by the body)							Plunger (fixing by the head)	Plunger (fixing by the head)	Rotary (fixing by the body)					Multi-directional
Type of operator	Metal end plunger	Metal end plunger -40 °C (1)	Metal end plunger with elastomer boot (2)	Steel roller plunger	Steel roller plunger -40 °C (1)	Retractable steel roller lever plunger	M12 with metal end plunger	M16 with metal end plunger with elastomer boot	M12 with steel roller plunger	Thermoplastic roller lever	Thermoplastic roller lever -40 °C (1)	Steel roller lever	Roller lever with ball bearing mounted roller	Variable length thermoplastic roller lever	"Cat's whisker" (3)

**References of modular units (body with male AMP Superseal 1.5 connector and removable terminal block)**

2-pole "NC + NO" snap action	ZCMD21AM4 + ZCE10	ZCMD21AM4 + ZCE106	ZCMD21AM4 + ZCE11	ZCMD21AM4 + ZCE02	ZCMD21AM4 + ZCE026	ZCMD21AM4 + ZCE24	ZCMD21AM4 + ZCEF0	ZCMD21AM4 + ZCEG1	ZCMD21AM4 + ZCEF2	ZCMD21AM4 + ZCE01 + ZCY15	ZCMD21AM4 + ZCE016 + ZCY15	ZCMD21AM4 + ZCE01 + ZCY16	ZCMD21AM4 + ZCE01 + ZCY17	ZCMD21AM4 + ZCE01 + ZCY45	ZCMD21AM4 + ZCE06	
2-pole NC + NO break before make, slow break	ZCMD25AM4 + ZCE10	ZCMD25AM4 + ZCE106	ZCMD25AM4 + ZCE11	ZCMD25AM4 + ZCE02	ZCMD25AM4 + ZCE026	ZCMD25AM4 + ZCE24	ZCMD25AM4 + ZCEF0	ZCMD25AM4 + ZCEG1	ZCMD25AM4 + ZCEF2	ZCMD25AM4 + ZCE01 + ZCY15	ZCMD25AM4 + ZCE016 + ZCY15	ZCMD25AM4 + ZCE01 + ZCY16	ZCMD25AM4 + ZCE01 + ZCY17	ZCMD25AM4 + ZCE01 + ZCY45	ZCMD25AM4 + ZCE06	
2-pole NC + NC snap action	ZCMD29AM4 + ZCE10	ZCMD29AM4 + ZCE106	ZCMD29AM4 + ZCE11	ZCMD29AM4 + ZCE02	ZCMD29AM4 + ZCE026	ZCMD29AM4 + ZCE24	ZCMD29AM4 + ZCEF0	ZCMD29AM4 + ZCEG1	ZCMD29AM4 + ZCEF2	ZCMD29AM4 + ZCE01 + ZCY15	ZCMD29AM4 + ZCE016 + ZCY15	ZCMD29AM4 + ZCE01 + ZCY16	ZCMD29AM4 + ZCE01 + ZCY17	ZCMD29AM4 + ZCE01 + ZCY45	ZCMD29AM4 + ZCE06	
Contact operation																
	(A) = cam displacement (P) = positive opening point							(A) = cam displacement (P) = positive opening point							(A) = cam displacement (P) = positive opening point	

**Complementary characteristics not shown under general characteristics (see page 51)**

Switch actuation	On end	By 30° cam	On end	On end	By 30° cam	By any moving part	
Type of actuation							
Maximum actuation speed	0.5 m/s				0.1 m/s	1.5 m/s	
Mechanical durability	10 million operating cycles					10 million	5 million
Nominal force or torque	For tripping	8.5 N	7 N	2.5 N	8.5 N	0.1 N.m	0.1 N.m
	For positive opening	42.5 N	35 N	12.5 N	42.5 N	0.5 N.m	-
Connection	Male AMP Superseal 1.5 connector			Male AMP Superseal 1.5 connector			

(1) For use at -40 °C.  
(2) Nitrile for indoor use.  
(3) Value taken with actuation by moving part at 100 mm from the fixing.

# Limit switches

XC Standard range  
Miniature design, metal, XCMV  
Modular units for mobile equipment

Type of head	Plunger (fixing by the body)							Plunger (fixing by the head)	Rotary (fixing by the body)					Multi-directional	
Type of operator	Metal end plunger	Metal end plunger -40 °C (1)	Metal end plunger with elastomer boot (2)	Steel roller plunger	Steel roller plunger -40 °C (1)	Retractable steel roller lever plunger	M12 with metal end plunger	M16 with metal end plunger with elastomer boot	M12 with steel roller plunger	Thermoplastic roller lever	Thermoplastic roller lever -40 °C (1)	Steel roller lever	Roller lever with ball bearing mounted roller	Variable length thermoplastic roller lever	"Cat's whisker" (3)

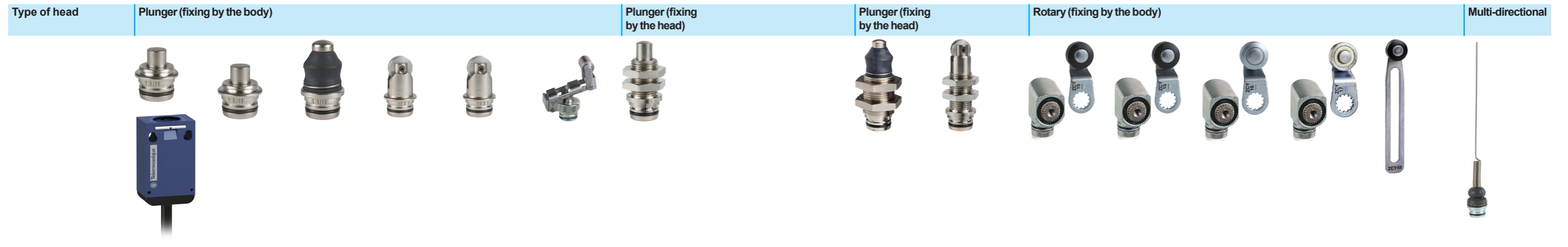
References of modular units (body with male M12 connector and removable terminal block)															
2-pole "NC + NO" snap action	ZCMV21M12 + ZCE10	ZCMV21M12 + ZCE106	ZCMV21M12 + ZCE11	ZCMV21M12 + ZCE02	ZCMV21M12 + ZCE026	ZCMV21M12 + ZCE24	ZCMV21M12 + ZCEF0	ZCMV21M12 + ZCEG1	ZCMV21v + ZCEF2	ZCMV21M12 + ZCE01 + ZCY15	ZCMV21M12 + ZCE016 + ZCY15	ZCMV21M12 + ZCE01 + ZCY16	ZCMV21M12 + ZCE01 + ZCY17	ZCMV21M12 + ZCE01 + ZCY45	ZCMV21M12 + ZCE06
2-pole NC + NO break before make, slow break	ZCMV25M12 + ZCE10	ZCMV25M12 + ZCE106	ZCMV25M12 + ZCE11	ZCMV25M12 + ZCE02	ZCMV25M12 + ZCE026	ZCMV25M12 + ZCE24	ZCMV25M12 + ZCEF0	ZCMV25M12 + ZCEG1	ZCMV25M12 + ZCEF2	ZCMV25M12 + ZCE01 + ZCY15	ZCMV25M12 + ZCE016 + ZCY15	ZCMV25M12 + ZCE01 + ZCY16	ZCMV25M12 + ZCE01 + ZCY17	ZCMV25M12 + ZCE01 + ZCY45	ZCMV25M12 + ZCE06
2-pole NC + NC snap action	ZCMV29M12 + ZCE10	ZCMV29M12 + ZCE106	ZCMV29M12 + ZCE11	ZCMV29M12 + ZCE02	ZCMV29M12 + ZCE026	ZCMV29M12 + ZCE24	ZCMV29M12 + ZCEF0	ZCMV29M12 + ZCEG1	ZCMV29M12 + ZCEF2	ZCMV29M12 + ZCE01 + ZCY15	ZCMV29M12 + ZCE016 + ZCY15	ZCMV29M12 + ZCE01 + ZCY16	ZCMV29M12 + ZCE01 + ZCY17	ZCMV29M12 + ZCE01 + ZCY45	ZCMV29M12 + ZCE06
Contact operation	closed open (A) = cam displacement (P) = positive opening point NC contact with positive opening operation							closed open (A) = cam displacement (P) = positive opening point NC contact with positive opening operation							

Complementary characteristics not shown under general characteristics (see page 51)															
Switch actuation	On end				By 30° cam				On end				By any moving part		
Type of actuation															
Maximum actuation speed	0.5 m/s								0.5 m/s				1.5 m/s		
Mechanical durability	10 million operating cycles								10 million operating cycles				10 million		
Nominal force or torque	8.5 N				7 N				8.5 N				0.1 N.m		
	42.5 N				35 N				42.5 N				0.5 N.m		
Connection	M12 connector														

(1) For use at -40 °C.  
 (2) Nitrile for indoor use.  
 (3) Value taken with actuation by moving part at 100 mm from the fixing.

# Limit switches

XC Standard range  
Miniature design, metal, XCMV  
Modular units for mobile equipment



Type of head	Plunger (fixing by the body)							Plunger (fixing by the head)		Rotary (fixing by the body)					Multi-directional
Type of operator	Metal end plunger	Metal end plunger -40 °C (1)	Metal end plunger with elastomer boot (2)	Steel roller plunger	Steel roller plunger -40 °C (1)	Retractable steel roller plunger	M12 with metal end plunger	M16 with metal end plunger with elastomer boot	M12 with steel roller plunger	Thermoplastic roller lever	Thermoplastic roller lever -40 °C (1)	Steel roller lever	Roller lever with ball bearing mounted roller	Variable length thermoplastic roller lever	"Cat's whisker" (3)

References of modular units (pre-cabled body and removable terminal block)															
4-pole 2 NC + 2 NO snap action	ZCMV41L03 + ZCE10	ZCMV41L03 + ZCE106	ZCMV41L03 + ZCE11	ZCMV41L03 + ZCE02	ZCMV41L03 + ZCE026	ZCMV41L03 + ZCE24	ZCMV41L03 + ZCE00	ZCMV41L03 + ZCE01	ZCMV41L03 + ZCE02	ZCMV41L03 + ZCE01 + ZCY15	ZCMV41L03 + ZCE016 + ZCY15	ZCMV41L03 + ZCE01 + ZCY16	ZCMV41L03 + ZCE01 + ZCY17	ZCMV41L03 + ZCE01 + ZCY45	ZCMV41L03 + ZCE06
Contact operation															
	■ closed □ open (A) = cam displacement (P) = positive opening point ⊖ NC contact with positive opening operation							■ closed □ open (A) = cam displacement (P) = positive opening point ⊖ NC contact with positive opening operation							

Complementary characteristics not shown under general characteristics (see page 52)																	
Switch actuation	On end			By 30° cam			On end			On end		By 30° cam		By any moving part			
Type of actuation																	
Maximum actuation speed	0.5 m/s									0.5 m/s		0.1 m/s		1.5 m/s			
Mechanical durability	10 million operating cycles									10 million operating cycles		10 million		5 million			
Nominal force or torque	For tripping: 8.5 N			7 N			2.5 N			8.5 N		42.5 N		7 N.m		0.1 N.m	
	For positive opening: 42.5 N			35 N			12.5 N			42.5 N		42.5 N		35 N.m		0.5 N.m	
Connection	PvR cable, length 30 cm																

(1) For use at -40 °C.  
(2) Nitrile for indoor use.  
(3) Value taken with actuation by moving part at 100 mm from the fixing.

# Limit switches

XC Standard range

Miniature design, metal, XCMV

Complete units for mobile equipment

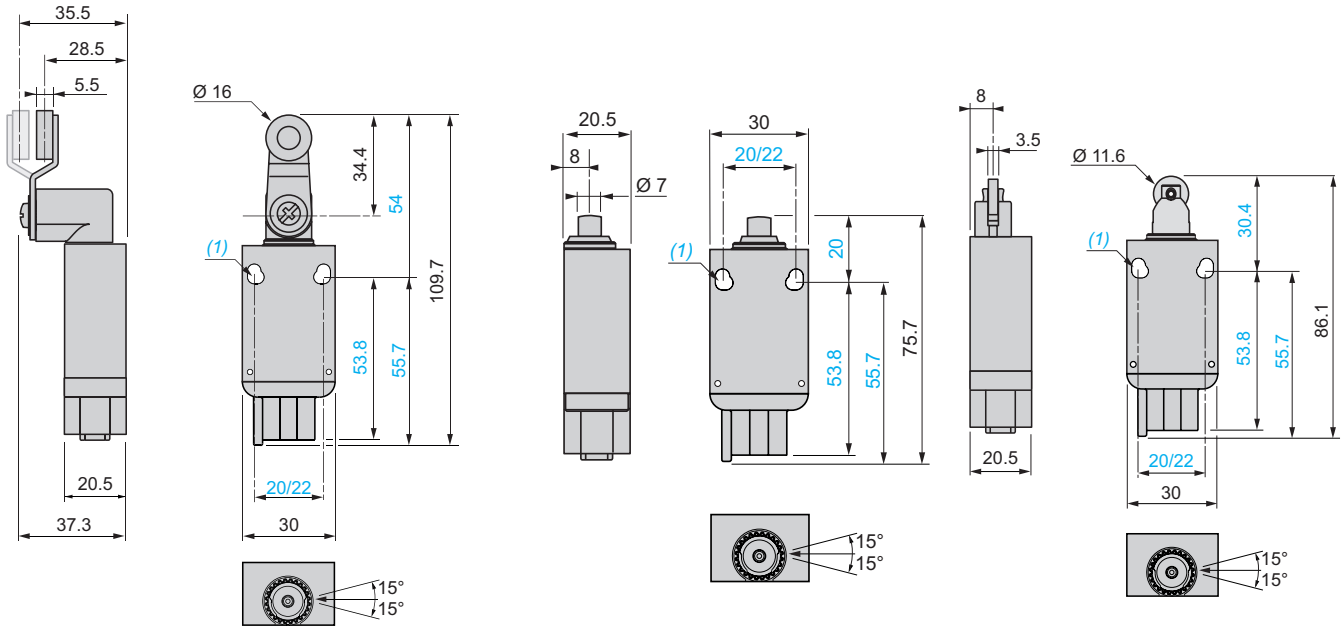
## Dimensions

### Switches with Deutsch DT04-4P connector

XCMV2115D44, XCMV2515D44

XCMV2110D44, XCMV2510D44

XCMV2102D44, XCMV2502D44

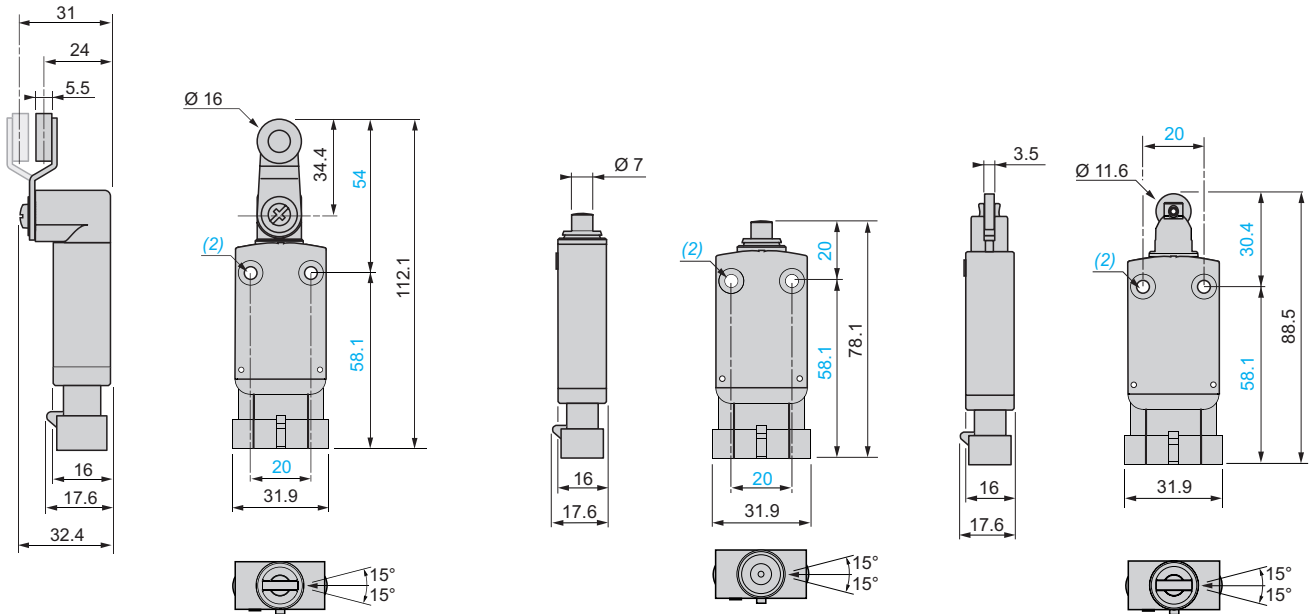


### Switches with AMP Superseal 1.5 connector

XCMD2115AM4, XCMD2515AM4

XCMD2110AM4, XCMD2510AM4

XCMD2102AM4, XCMD2502AM4



(1) 2 elongated fixing holes  $\varnothing 4.3 \times 6.3$  mm on 22 mm centres, 2 elongated fixing holes  $\varnothing 4.3$  on 20 mm centres.  
 (2) 2 fixing holes  $\varnothing 4.2$  mm, counterbored  $\varnothing 8$  mm by 4 mm deep.

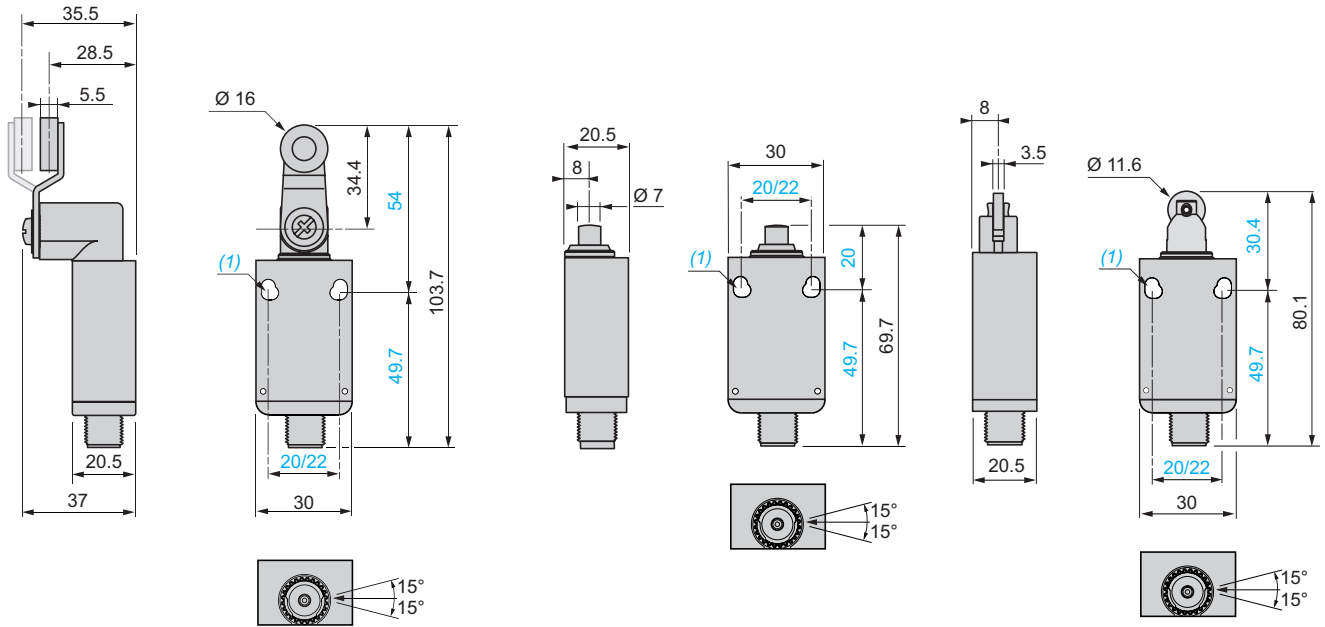
**Dimensions (continued)**

**Switches with M12 connector**

XCMV2115M12, XCMV2515M12

XCMV2110M12, XCMV2510M12

XCMV2102M12, XCMV2502M12



(1) 2 elongated fixing holes Ø 4.3 x 6.3 mm on 22 mm centres, 2 elongated fixing holes Ø 4.3 on 20 mm centres.

**Connections**

Male AMP Superseal 1.5 connector

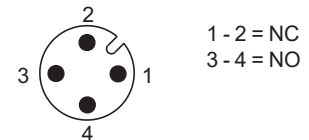
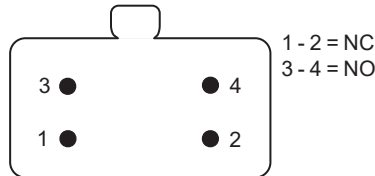
XCMV2●●●AM4

Male Deutsch DT04-4P connector

XCMV2●●●D44

Male M12 connector

XCMV2●●●M12



# Limit switches

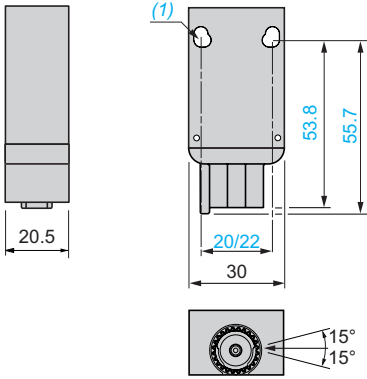
XC Standard range

Miniature design, metal, XCMV

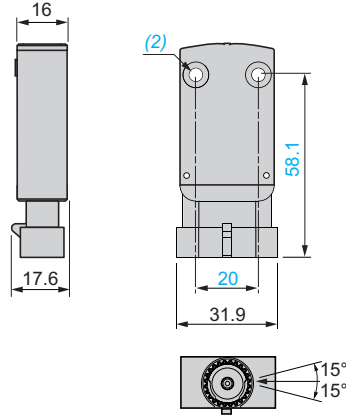
Modular units for mobile equipment

## Dimensions of bodies

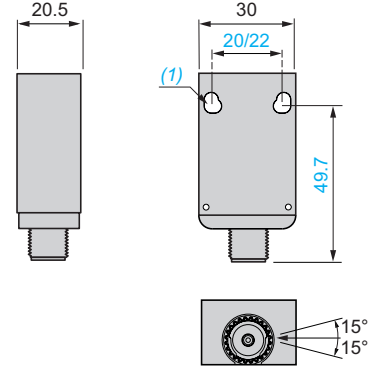
### ZCMV2•D44



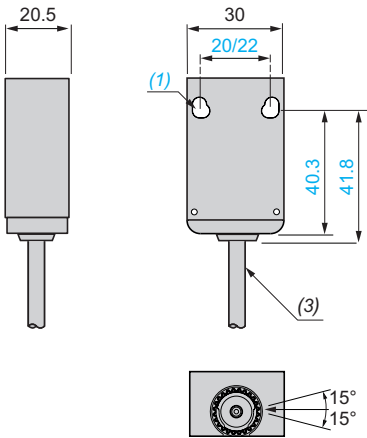
### ZCMD2•AM4



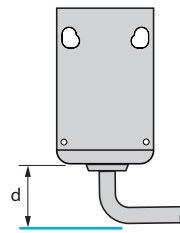
### ZCMV2•M12



### ZCMV41L03



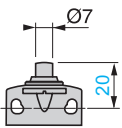
Mounting: distance required for connection



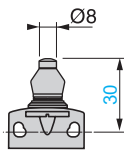
d: min. 20 mm

## Dimensions of heads

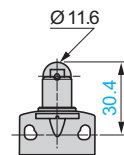
### ZCE106, ZCE10



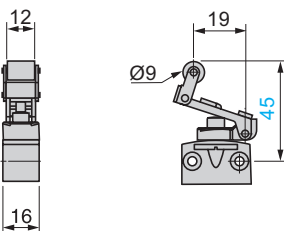
### ZCE11



### ZCE02, ZCE026



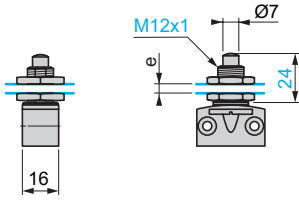
### ZCE24



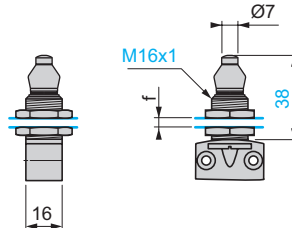
(1) 2 elongated fixing holes  $\text{Ø} 4.3 \times 6.3$  mm on 22 mm centres, 2 elongated fixing holes  $\text{Ø} 4.3$  on 20 mm centres.  
 (2) 2 fixing holes  $\text{Ø} 4.2$  mm, counterbored  $\text{Ø} 8$  mm by 4 mm deep.  
 (3) External diameter of cable 6.4 mm.

### Dimensions of heads (continued)

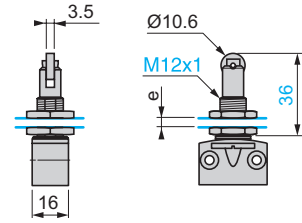
ZCEF0



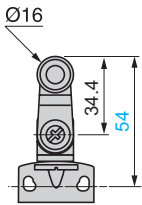
ZCEG1



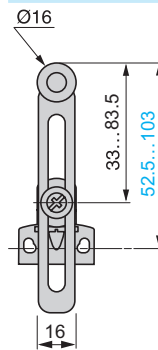
ZCEF2



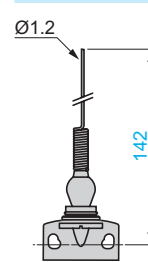
ZCE01 + ZCY15, ZCE01 + ZCY16  
or ZCE01 + ZCY17



ZCE01 + ZCY45



ZCE06



e: 8 mm max., panel cut-out Ø 12.5 mm, fixing nut thickness 3.5 mm.  
f: 8 mm max., panel cut-out Ø 16.5 mm, fixing nut thickness 3.5 mm.

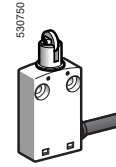
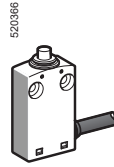
# Limit switches

XC Basic range

Miniature design, plastic, XCMN

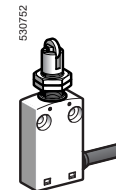
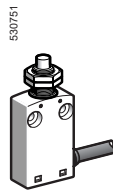
■ XCMN  
pre-cabled

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



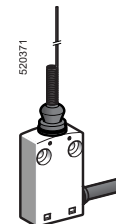
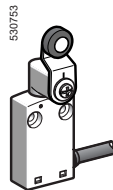
Page 70

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



Page 70

□ With head for rotary movement (lever) or multi-directional



Page 71

Environment characteristics		
<b>Conformity to standards</b>	Products	CE, IEC 60947-5-1, EN 60947-5-1, UL 508, CSA C22-2 n° 14, EAC
	Machine assemblies	IEC 60204-1, EN 60204-1
<b>Product certifications</b>		UL, CSA, CCC
<b>Protective treatment</b>	Standard version	"TC"
<b>Ambient air temperature</b>	For operation	- 25...+ 70°C
	For storage	- 40...+ 70°C
<b>Vibration resistance</b>	Conforming to IEC 60068-2-6	5 gn (10...500 Hz)
<b>Shock resistance</b>	Conforming to IEC 60068-2-27	25 gn (18 ms)
<b>Electric shock protection</b>		Class II conforming to IEC 61140 and NF C 20030
<b>Degree of protection</b>		<b>IP 65 conforming to IEC 60529; IK 04 conforming to IEC 62262</b>
<b>Materials</b>	Bodies	Plastic
	Heads	Zamak
Contact block characteristics		
<b>Rated operational characteristics</b>		~ AC-15; B300 (Ue = 240 V, Ie = 1.5 A); Ithe = 6 A
		⋮ DC-13; R300 (Ue = 250 V, Ie = 0.1 A), conforming to IEC 60947-5-1 Appendix A, EN 60947-5-1
<b>Rated insulation voltage</b>		Ui = 400 V degree of pollution 3 conforming to IEC 60947-1 Ui = 300 V conforming to UL 508, CSA C22-2 n° 14
<b>Rated impulse withstand voltage</b>		U imp = 4 kV conforming to IEC 60947-1, IEC 60664
<b>Short-circuit protection</b>		6 A cartridge fuse type gG (gl)

# Limit switches

XC Basic range

Miniature design, plastic, XCMN

Pre-cabled

Type of head	Plunger (fixing by the body)				Plunger (fixing by the head)		
Type of operator	Metal end plunger	Steel roller plunger for lateral cam approach	Steel roller plunger for traverse cam approach	Thermoplastic roller lever plunger, horizontal actuation in 1 direction	M12 with metal end plunger	M12 with steel roller plunger for lateral cam approach	M12 with steel roller plunger for traverse cam approach

References	XCMN2110L1	XCMN2102L1	XCMN2103L1	XCMN2121L1	XCMN21F0L1	XCMN21F2L1	XCMN21F3L1
<p>2-pole NC + NO snap action</p>	<p>1.8 4.2(P) 0.8 5mm</p>	<p>3.1(A) 7(P) 0 1.4 mm</p>	<p>3.1(A) 7(P) 0 1.4 mm</p>	<p>65(A)14(P) 0 2.8 mm</p>	<p>1.8 4.2(P) 0.8 5mm</p>	<p>3.1(A) 7(P) 0 1.4 mm</p>	<p>3.1(A) 7(P) 0 1.4 mm</p>
Weight (kg)	0.080	0.080	0.080	0.090	0.065	0.095	0.095
Contact operation	closed open			(A) = cam displacement (P) = positive opening point	NC contact with positive opening operation		

Characteristics	Plunger (fixing by the body)			Plunger (fixing by the head)	
Switch actuation	On end	By 30° cam		On end	By 30° cam
Type of actuation					
Maximum actuation speed	0.5 m/s	0.1 m/s		0.5 m/s	0.1 m/s
Mechanical durability	5 million operating cycles				
Minimum force or torque	For tripping For positive opening	8.5 N 42.5 N	7 N 35 N	2.5 N 12.5 N	8.5 N 42.5 N 7 N 35 N
Cabling	PvR cable, 4 x 0.75 mm <sup>2</sup> , length 1 metre				

Dimensions	XCMN2110L1	XCMN2102L1, XCMN2103L1	XCMN21F2L1, XCMN21F3L1
	<p>Ø7, 20, 40, 50, 60, 16, 20, 30, (1), (2)</p>	<p>3.5, Ø11.6, 30.4, 40, 50, 70.4, 16, 20, 30, (1), (2)</p>	<p>3.5, Ø10.6, 36, 52, 88, 16, 20, 30, (1), (2), M12x1, e</p>
	<p>16, 5.5, 20.2, Ø14, 39, 40, 50, 16, 20, 30, (1), (2)</p>	<p>M12x1, Ø7, 24, 52, 76, 16, 30, (1), (2), e</p>	

(1) 2 fixing holes Ø 4.2 mm, counterbored Ø 8 mm by 4 mm deep.

(2) External diameter 7.5 mm.

e: 8 mm max, panel cut-out Ø 12.5 mm. Fixing nut thickness 3.5 mm.

Type of head	Rotary (fixing by the body)			Multi-directional	
Type of operator	Thermoplastic roller lever	Variable length thermoplastic roller lever	Round thermoplastic roller lever, Ø 6 mm (1)	Spring lever with thermoplastic end (1)	"Cat's whisker" (1)

References	XCMN2115L1	XCMN2145L1	XCMN2159L1	XCMN2107L1	XCMN2106L1
<p>2-pole NC + NO snap action</p>	<p>25° 70°(P) 90° 12°</p>	<p>25° 70°(P) 90° 12°</p>	<p>25° 90° 12°</p>	<p>20° 10°</p>	<p>20° 10°</p>
Weight (kg)	0.100	0.105	0.080	0.085	0.080
Contact operation	<p>(A) = cam displacement (P) = positive opening point</p> <p>⊖ NC contact with positive opening operation</p>				
	(1) Value taken with actuation by moving part at 100 mm from the fixing.				

Characteristics	By 30° cam		By any moving part	
Switch actuation	By 30° cam		By any moving part	
Type of actuation				
Maximum actuation speed	1.5 m/s		1 m/s	1 m/s (any direction)
Mechanical durability	5 million operating cycles			
Minimum force or torque	For tripping	0.1 N.m		
	For positive opening	0.5 N.m	-	-
Cabling	PvR cable, 4 x 0.75 mm <sup>2</sup> , length 1 metre			

Dimensions	XCMN2115L1	XCMN2159L1	XCMN2107L1	XCMN2145L1	XCMN2106L1
	<p>31, 24, 5.5, Ø16, 34.4, 54, 94, 40, 16, 32.4, 20, 30, (1), (2)</p>	<p>30, 232 max., Ø6, 192 max., 40, 16, 40.5, 20, 30, (1), (2)</p>	<p>168, 128, Ø6.4, 40, 16, 20, 30, (1), (2)</p>	<p>33, 5.5, Ø16, 33.5...83.5, 53...103, 93...143, 16, 20, 30, (1), (2)</p>	<p>182, Ø1.2, 142, 40, 16, 20, 30, (1), (2)</p>

(1) 2 fixing holes Ø 4.2 mm, counterbored Ø 8 mm by 4 mm deep.  
(2) External diameter 7.5 mm.

## Limit switches

XC Standard range

Compact design, plastic, XCKP and XCKT

Compact design, metal, XCKD

### ■ XCKP, XCKD

with 1 cable entry

Conforming to CENELEC EN 50047

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

XCKD

XCKP



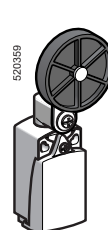
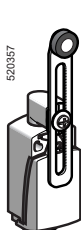
Pages 80 and 84

Pages 74 and 78

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

XCKD

XCKP



Pages 81 and 85

Pages 75 and 79

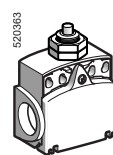
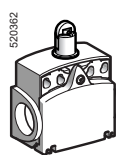
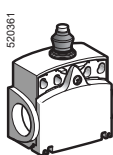
### ■ XCKT

with 2 cable entries

Tripping/resetting points and fixing centres conform to CENELEC EN 50047

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

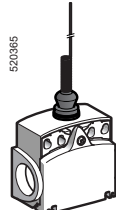
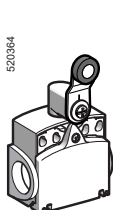
XCKT



Page 86

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

XCKT



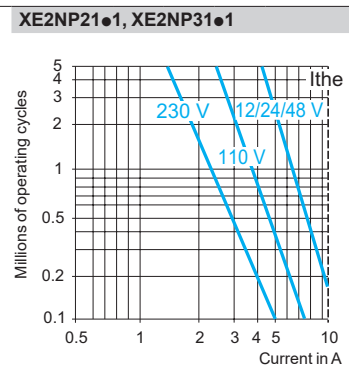
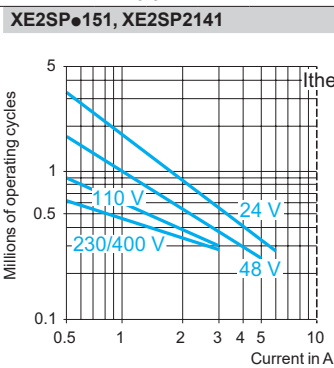
Page 86

### 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, CCC
Protective treatment	Standard version	"TC"
Ambient air temperature	For operation	- 25...+ 70°C
	For storage	- 40...+ 70°C
Vibration resistance	Conforming to IEC 60068-2-6	25 gn (10...500 Hz) except product with head ZCE24: 20 gn
Shock resistance	Conforming to IEC 60068-2-27	50 gn (11 ms) except head ZCE08: 15 gn (11 ms) and ZCE24: 30 gn (18 ms)
Electric shock protection		Class II conforming to IEC 61140 and NF C 20-030 for XCKP and XCKT
		Class I conforming to IEC 61140 and NF C 20-030 for XCKD
Degree of protection		IP 66 and IP 67 conforming to IEC 60529; IK 04 conforming to IEC 62262 for XCKP and XCKT, IK 06 conforming to IEC 62262 for XCKD
Repeat accuracy		0.1 mm on the tripping points, with 1 million operating cycles for head with end plunger
Cable entry or connector	Depending on model	Either tapped entry for n° 11 or n° 13 cable gland, tapped ISO M16 x 1.5 or ISO M20 x 1.5, tapped 1/2" NPT or PF 1/2 (G1/2) or M12 connector
Materials		XCKD Zamak bodies and heads, XCKP and XCKT plastic bodies, Zamak heads

Contact block characteristics		
Rated operational characteristics	XE2●P	~AC-15; A300 (Ue = 240 V, Ie = 3 A); Ithe = 10 A ---DC-13; Q300 (Ue = 250 V, Ie = 0.27 A), conforming to IEC 60947-5-1 Appendix A, EN 60947-5-1
	XE3●P	~AC-15; B300 (Ue = 240 V, Ie = 1.5 A); Ithe = 6 A ---DC-13; R300 (Ue = 250 V, Ie = 0.1 A), conforming to IEC 60947-5-1 Appendix A, EN 60947-5-1
Rated insulation voltage	XE2●P	Ui = 500 V degree of pollution 3 conforming to IEC 60947-1 Ui = 300 V conforming to UL 508, CSA C22-2 n° 14
	XE3●P	Ui = 400 V degree of pollution 3 conforming to IEC 60947-1 Ui = 300 V conforming to UL 508, CSA C22-2 n° 14
Rated impulse withstand voltage	XE2●P	U imp = 6 kV conforming to IEC 60947-1, IEC 60664
	XE3●P	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	XE2●P	10 A cartridge fuse type gG (gl)
	XE3●P	6 A cartridge fuse type gG (gl)
Connection (screw clamp terminals)	XE2SP●151 and XE2SP2141	Clamping capacity, min: 1 x 0.34 mm <sup>2</sup> , max: 2 x 1.5 mm <sup>2</sup>
	XE2NP21●1 and XE2NP31●1	Clamping capacity, min: 1 x 0.5 mm <sup>2</sup> , max: 2 x 2.5 mm <sup>2</sup>
	XE3NP and XE3SP	Clamping capacity, min: 1 x 0.34 mm <sup>2</sup> , max: 1 x 1 mm <sup>2</sup> or 2 x 0.75 mm <sup>2</sup>
Minimum actuation speed (for head with end plunger)		<b>XE2SP●151, XE2SP2141 and XE3SP:</b> 0.01 m/minute
		<b>XE2NP21●1, XE2NP31●1 and XE3NP:</b> 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 ~  
mm. inductive circuit



DC supply ---

**Power broken in W for 5 million operating cycles.**

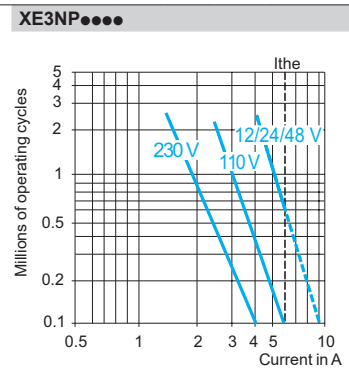
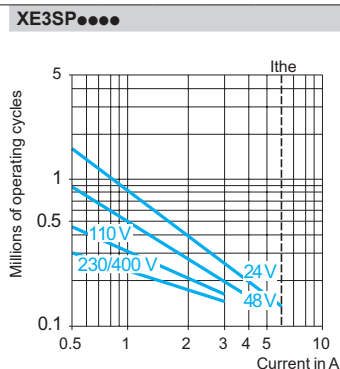
Voltage V	24	48	120
mm. W	10	7	4

**Power broken in W for 5 million operating cycles.**

Voltage V	24	48	120
mm. W	13	9	7

For XE2SP●151 on ~ or ---, NC and NO contacts simultaneously loaded to the values shown with reverse polarity.

AC supply  
50/60 Hz ~  
mm. inductive circuit



DC supply ---

**Power broken in W for 5 million operating cycles.**

Voltage V	24	48	120
mm. W	3	2	1

**Power broken in W for 5 million operating cycles.**

Voltage V	24	48	120
mm. W	4	3	2

# Limit switches

## XC Standard range

Compact design, plastic, XCKP  
Complete switches with 1 cable entry

Type of head	Plunger (fixing by the body)					
	Form B (1)		Form C (1)		Form E (1)	
Type of operator	Metal end plunger	Metal end plunger with elastomer boot	Steel roller plunger	Thermoplastic roller lever plunger, horizontal actuation in 1 direction	Thermoplastic roller lever plunger, vertical actuation in 1 direction	Thermoplastic roller lever plunger, horiz. or vert. actuation in 1 direction

References of complete switches with 1 ISO M16 x 1.5 cable entry (2)							
	2-pole NC + NO snap action (XE2SP2151)	XCKP2110P16 	XCKP2111P16 	XCKP2102P16 	XCKP2121P16 	XCKP2127P16 	XCKP2128P16 
	2-pole NC + NO break before make, slow break (XE2NP2151)	XCKP2510P16 	XCKP2511P16 	XCKP2502P16 	XCKP2521P16 	XCKP2527P16 	XCKP2528P16 
	2-pole NC + NC snap action (XE2SP2141)	ZCP29 + ZCPEP16 + ZCE10 	ZCP29 + ZCPEP16 + ZCE11 	ZCP29 + ZCPEP16 + ZCE02 	ZCP29 + ZCPEP16 + ZCE21 	ZCP29 + ZCPEP16 + ZCE27 	ZCP29 + ZCPEP16 + ZCE28 
	2-pole NC + NC simultaneous, slow break (XE2NP2141)	ZCP27 + ZCPEP16 + ZCE10 	ZCP27 + ZCPEP16 + ZCE11 	ZCP27 + ZCPEP16 + ZCE02 	ZCP27 + ZCPEP16 + ZCE21 	ZCP27 + ZCPEP16 + ZCE27 	ZCP27 + ZCPEP16 + ZCE28 
	3-pole NC + NC + NO snap action (XE3SP2141)	ZCP39 + ZCPEP16 + ZCE10 	ZCP39 + ZCPEP16 + ZCE11 	ZCP39 + ZCPEP16 + ZCE02 	ZCP39 + ZCPEP16 + ZCE21 	ZCP39 + ZCPEP16 + ZCE27 	ZCP39 + ZCPEP16 + ZCE28 
	3-pole NC + NC + NO break before make, slow break (XE3NP2141)	ZCP37 + ZCPEP16 + ZCE10 	ZCP37 + ZCPEP16 + ZCE11 	ZCP37 + ZCPEP16 + ZCE02 	ZCP37 + ZCPEP16 + ZCE21 	ZCP37 + ZCPEP16 + ZCE27 	ZCP37 + ZCPEP16 + ZCE28 
Weight (kg)		0.090	0.090	0.095	0.105	0.100	0.105

### References of complete switches with 1 entry for n° 11 cable gland

For an entry tapped for a n° 11 cable gland, replace P16 in the reference by G11. Example: XCKP2110P16 becomes XCKP2110G11 or ZCPEP16 becomes ZCEG11.

Contact operation	closed open	(A) (B) = cam displacement (P) = positive opening point	NC contact with positive opening operation
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Characteristics	
Switch actuation	On end
Type of actuation	By 30° cam
Maximum actuation speed	0.5 m/s
Mechanical durability (in millions of operating cycles)	15
Minimum force or torque	15 N
For tripping	45 N
For positive opening	12 N
Cable entry (3)	1 entry tapped M16 x 1.5 mm for ISO cable gland, clamping capacity 4 to 8 mm

(1) Form conforming to EN 50047, see page 24.

(2) Switches with gold contacts or eyelet type connections: please consult our Customer Care Centre.

# Limit switches

XC Standard range  
Compact design, plastic, XCKP  
Complete switches with 1 cable entry

Type of head	Plunger (fixing by the head)	Rotary (fixing by the body)					Multi-directional
		Form A (1)					
Type of operator	M18 with metal end plunger	M18 with steel roller plunger	Thermoplastic roller lever	Variable length thermoplastic roller lever	Thermoplastic roller lever, Ø 50 mm	Variable length thermoplastic roller lever, Ø 50 mm	"Cat's whisker" (2)

References of complete switches with 1 ISO M16 x 1.5 cable entry (3)								
	2-pole NC + NO snap action (XE2SP2151)	XCKP21H0P16 	XCKP21H2P16 	XCKP2118P16 	XCKP2145P16 	XCKP2139P16 	XCKP2149P16 	XCKP2106P16 
	2-pole NC + NO break before make, slow break (XE2NP2151)	XCKP25H0P16 	XCKP25H2P16 	XCKP2518P16 	XCKP2545P16 	XCKP2539P16 	XCKP2549P16 	XCKP2506P16 
	2-pole NC + NC snap action (XE2SP2141)	ZCP29 + ZCPEP16 + ZCEH0 	ZCP29 + ZCPEP16 + ZCEH2 	ZCP29 + ZCPEP16 + ZCE01 + ZCY18 	ZCP29 + ZCPEP16 + ZCE01 + ZCY45 	ZCP29 + ZCPEP16 + ZCE01 + ZCY39 	ZCP29 + ZCPEP16 + ZCE01 + ZCY49 	ZCP29 + ZCPEP16 + ZCE06 
	2-pole NC + NC simultaneous, slow break (XE2NP2141)	ZCP27 + ZCPEP16 + ZCEH0 	ZCP27 + ZCPEP16 + ZCEH2 	ZCP27 + ZCPEP16 + ZCE01 + ZCY18 	ZCP27 + ZCPEP16 + ZCE01 + ZCY45 	ZCP27 + ZCPEP16 + ZCE01 + ZCY39 	ZCP27 + ZCPEP16 + ZCE01 + ZCY49 	ZCP27 + ZCPEP16 + ZCE06 
	3-pole NC + NC + NO snap action (XE3SP2141)	ZCP39 + ZCPEP16 + ZCEH0 	ZCP39 + ZCPEP16 + ZCEH2 	ZCP39 + ZCPEP16 + ZCE01 + ZCY18 	ZCP39 + ZCPEP16 + ZCE01 + ZCY45 	ZCP39 + ZCPEP16 + ZCE01 + ZCY39 	ZCP39 + ZCPEP16 + ZCE01 + ZCY49 	ZCP39 + ZCPEP16 + ZCE06 
	3-pole NC + NC + NO break before make, slow break (XE3NP2141)	ZCP37 + ZCPEP16 + ZCEH0 	ZCP37 + ZCPEP16 + ZCEH2 	ZCP37 + ZCPEP16 + ZCE01 + ZCY18 	ZCP37 + ZCPEP16 + ZCE01 + ZCY45 	ZCP37 + ZCPEP16 + ZCE01 + ZCY39 	ZCP37 + ZCPEP16 + ZCE01 + ZCY49 	ZCP37 + ZCPEP16 + ZCE06 
Weight (kg)	0.130	0.130	0.135	0.145	0.145	0.155	0.085	

### References of complete switches with 1 entry for n° 11 cable gland

For an entry tapped for a n° 11 cable gland, replace P16 in the reference by G11. Example: XCKP21H0P16 becomes XCKP21H0G11 or ZCPEP16 becomes ZCPEG11.

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

Characteristics					
Switch actuation	On end	By 30° cam			By any moving part
Type of actuation					
Maximum actuation speed	0.5 m/s	1.5 m/s			1 m/s (any direct.)
Mechanical durability	10 million operating cycles				5 million
Minimum force or torque	For tripping For positive opening	15 N 45 N	10 N 36 N	0.1 N.m 0.25 N.m	0.13 N.m -
Cable entry	1 entry tapped M16 x 1.5 mm for ISO cable gland, clamping capacity 4 to 8 mm				

(1) Form conforming to EN 50047, see page 24.  
 (2) Value taken with actuation by moving part at 100 mm from the fixing.  
 (3) Switches with gold contacts or eyelet type connections: please consult our Customer Care Centre.

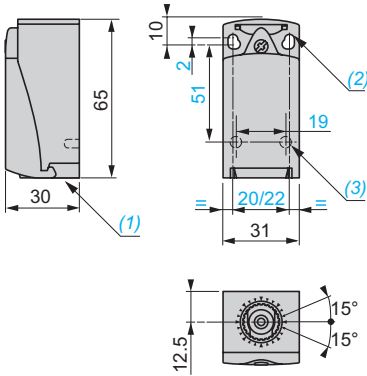
## Limit switches

XC Standard range

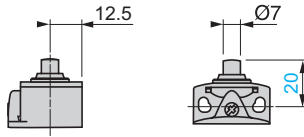
Compact design, plastic, XCKP

Complete switches with 1 cable entry

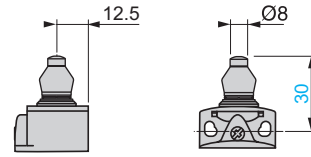
**ZCP2● + ZCPEP16/ZCP3● + ZCPEP16**



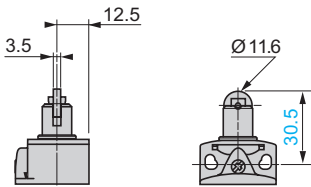
**ZCE10**



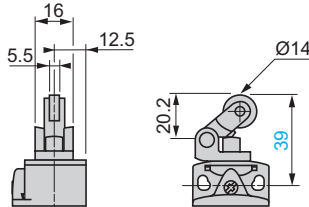
**ZCE11**



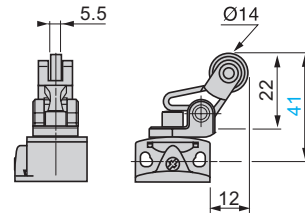
**ZCE02**



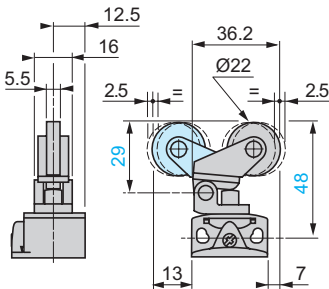
**ZCE21**



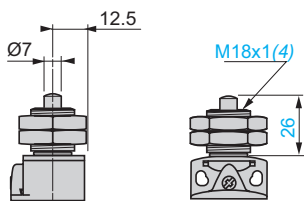
**ZCE27**



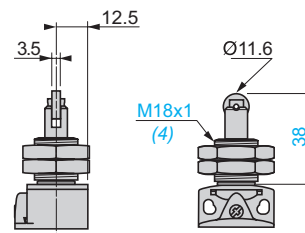
**ZCE28**



**ZCEH0**



**ZCEH2**



- (1) Tapped entry for ISO M16 x 1.5 or Pg 11 cable gland.  
 (2) 2 elongated holes Ø 4.3 x 6.3 mm on 22 mm centres, 2 holes Ø 4.3 on 20 mm centres.  
 (3) 2 x Ø 3 holes for support studs, depth 4 mm.  
 (4) Fixing nut thickness 3.5 mm.

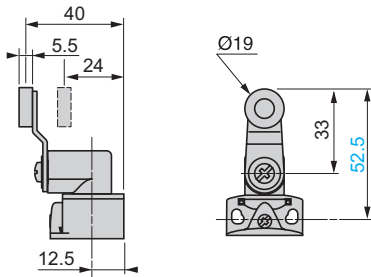
# Limit switches

XC Standard range

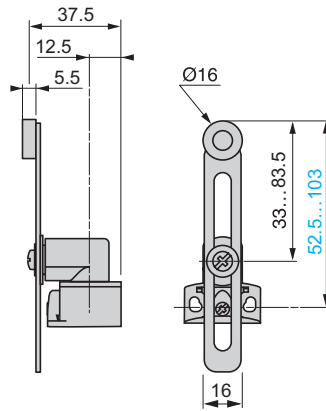
Compact design, plastic, XCKP

Complete switches with 1 cable entry

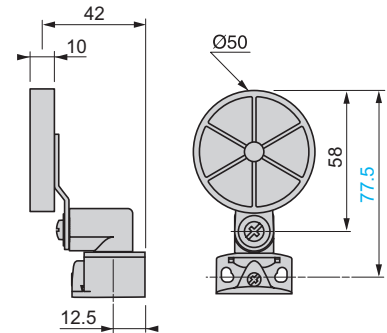
ZCE01 + ZCY18



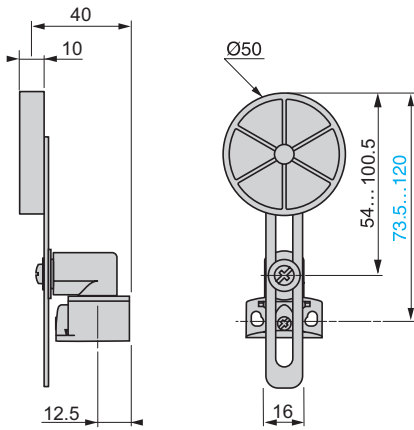
ZCE01 + ZCY45



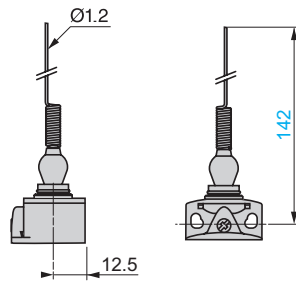
ZCE01 + ZCY39



ZCE01 + ZCY49



ZCE06



# Limit switches

XC Standard range  
Compact design, plastic, XCKP  
M12 connector

Type of head	Plunger (fixing by the body)					
	Form B (1)		Form C (1)	Form E (1)		
Type of operator	Metal end plunger	Metal end plunger with elastomer boot (2)	Steel roller plunger	Thermoplastic roller lever plunger, horizontal actuation in 1 direction	Thermoplastic roller lever plunger, vertical actuation in 1 direction	Thermoplastic roller lever plunger, horiz. or vert. actuation in 1 direction

References						
2-pole NC + NO snap action (XE2SP2151)	XCKP2110M12	XCKP2111M12	XCKP2102M12	XCKP2121M12	XCKP2127M12	XCKP2128M12
2-pole NC + NC snap action (XE2SP2141)	ZCP29M12 + ZCE10	ZCP29M12 + ZCE11	ZCP29M12 + ZCE02	ZCP29M12 + ZCE21	ZCP29M12 + ZCE27	ZCP29M12 + ZCE28
Weight (kg)	0.100	0.100	0.100	0.110	0.110	0.110
Contact operation	closed open		(A) (B) = cam displacement (P) = positive opening point		NC contact with positive opening operation	

(1) Form conforming to EN 50047, see page 24.  
(2) Nitrile for indoor use.

Characteristics			
Switch actuation	On end	By 30° cam	
Type of actuation			
Maximum actuation speed	0.5 m/s	1 m/s	
Mechanical durability (in millions of operating cycles)	15	10	15
Minimum force or torque	For tripping: 15 N For positive opening: 45 N	12 N 36 N	6 N 18 N
Connection	M12 connector, U <sub>i</sub> = 250 V, I <sub>e</sub> = 3 A maximum, I <sub>th</sub> = 3 A		

## Connections

### M12 connector

	<b>XE2SP2151</b> 1-2: NC 3-4: NO	<b>XE2SP2141</b> 1-2: NC 3-4: NC
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## Dimensions

ZCP2●M12	ZCE10	ZCE11	ZCE02	ZCE21
	<b>ZCE27</b>	<b>ZCE28</b>		<b>ZCEH0</b>

(1) 2 elongated holes  $\varnothing 4.3 \times 6.3$  mm on 22 mm centres, 2 holes  $\varnothing 4.3$  on 20 mm centres.  
(2)  $2 \times \varnothing 3$  holes for support studs, depth 4 mm.  
(3) Fixing nut thickness 3.5 mm.

# Limit switches

XC Standard range  
Compact design, plastic, XCKP  
M12 connector

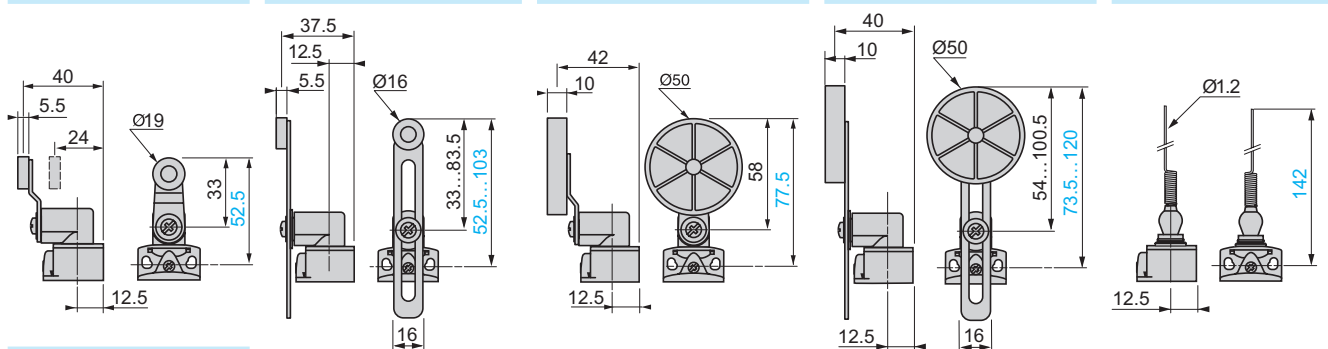
Type of head	Plunger (fixing by the head)	Rotary (fixing by the body)					Multi-directional
		Form A (1)					
Type of operator	M18 with metal end plunger	M18 with steel roller plunger	Thermoplastic roller lever	Variable length thermoplastic roller lever	Thermoplastic roller lever, Ø 50 mm	Variable length thermoplastic roller lever, Ø 50 mm	"Cat's whisker" (2)

References								
2-pole NC + NO snap action (XE2SP2151)		<b>XCKP21H0M12</b> 	<b>XCKP21H2M12</b> 	<b>XCKP2118M12</b> 	<b>XCKP2145M12</b> 	<b>XCKP2139M12</b> 	<b>XCKP2149M12</b> 	<b>XCKP2106M12</b> 
	2-pole NC + NC snap action (XE2SP2141)		<b>ZCP29M12 + ZCEH0</b> 	<b>ZCP29M12 + ZCEH2</b> 	<b>ZCP29M12 + ZCE01 + ZCY18</b> 	<b>ZCP29M12 + ZCE01 + ZCY45</b> 	<b>ZCP29M12 + ZCE01 + ZCY39</b> 	<b>ZCP29M12 + ZCE01 + ZCY49</b> 
<b>Weight (kg)</b>		0.140	0.140	0.140	0.150	0.155	0.160	0.090
<b>Contact operation</b>	closed open		(A) = cam displacement (P) = positive opening point		NC contact with positive opening operation			

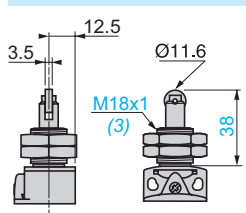
(1) Form conforming to EN 50047, see page 24.  
(2) Value taken with actuation by moving part at 100 mm from the fixing.

Characteristics					
<b>Switch actuation</b>	On end	By 30° cam			By any moving part
<b>Type of actuation</b>					
<b>Maximum actuation speed</b>	0.5 m/s	1.5 m/s			1 m/s (any direct.)
<b>Mechanical durability</b> (in millions of operating cycles)	10				5
<b>Minimum force or torque</b>	For tripping	15 N	10 N	0.1 N.m	0.13 N.m
	For positive opening	45 N	36 N	0.25 N.m	–
<b>Connection</b>	M12 connector, U <sub>i</sub> = 250 V, I <sub>e</sub> = 3 A maximum, I <sub>th</sub> = 3 A				

## Dimensions



### ZCEH2



(3) Fixing nut thickness 3.5 mm.

# Limit switches

## XC Standard range

Compact design, metal, XCKD  
Complete switches with 1 cable entry

Type of head	Plunger (fixing by the body)					
	Form B (1)		Form C (1)		Form E (1)	
Type of operator	Metal end plunger	Metal end plunger with elastomer boot (2)	Steel roller plunger	Thermoplastic roller lever plunger, horizontal actuation in 1 direction	Thermoplastic roller lever plunger, vertical actuation in 1 direction	Thermoplastic roller lever plunger, horiz. or vert. actuation in 1 direction

### References of complete switches with 1 ISO M16 x 1.5 cable entry (3)

	2-pole NC + NO snap action (XE2SP2151)	XCKD2110P16 	XCKD2111P16 	XCKD2102P16 	XCKD2121P16 	XCKD2127P16 	XCKD2128P16 
	2-pole NC + NO break before make, slow break (XE2NP2151)	XCKD2510P16 	XCKD2511P16 	XCKD2502P16 	XCKD2521P16 	XCKD2527P16 	XCKD2528P16 
	2-pole NC + NC snap action (XE2SP2141)	ZCD29 + ZCDEP16 + ZCE10 	ZCD29 + ZCDEP16 + ZCE11 	ZCD29 + ZCDEP16 + ZCE02 	ZCD29 + ZCDEP16 + ZCE21 	ZCD29 + ZCDEP16 + ZCE27 	ZCD29 + ZCDEP16 + ZCE28 
	2-pole NC + NC simultaneous, slow break (XE2NP2141)	ZCD27 + ZCDEP16 + ZCE10 	ZCD27 + ZCDEP16 + ZCE11 	ZCD27 + ZCDEP16 + ZCE02 	ZCD27 + ZCDEP16 + ZCE21 	ZCD27 + ZCDEP16 + ZCE27 	ZCD27 + ZCDEP16 + ZCE28 
	3-pole NC + NC + NO snap action (XE3SP2141)	ZCD39 + ZCDEP16 + ZCE10 	ZCD39 + ZCDEP16 + ZCE11 	ZCD39 + ZCDEP16 + ZCE02 	ZCD39 + ZCDEP16 + ZCE21 	ZCD39 + ZCDEP16 + ZCE27 	ZCD39 + ZCDEP16 + ZCE28 
	3-pole NC + NC + NO break before make, slow break (XE3NP2141)	ZCD37 + ZCDEP16 + ZCE10 	ZCD37 + ZCDEP16 + ZCE11 	ZCD37 + ZCDEP16 + ZCE02 	ZCD37 + ZCDEP16 + ZCE21 	ZCD37 + ZCDEP16 + ZCE27 	ZCD37 + ZCDEP16 + ZCE28 
Weight (kg)	0.180	0.180	0.185	0.195	0.190	0.195	0.195

### References of complete switches with 1 entry for n° 11 cable gland

For an entry tapped for a n° 11 cable gland, replace P16 in the reference by G11. Example: XCKD2110P16 becomes XCKD2110G11 or ZCDEP16 becomes ZCDEG11.

Contact operation	closed open	(A) (B) = cam displacement (P) = positive opening point	NC contact with positive opening operation
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### Characteristics

Switch actuation	On end	By 30° cam			
Type of actuation					
Maximum actuation speed	0.5 m/s		1 m/s		
Mechanical durability (in millions of operating cycles)	15	10	15		
Minimum force or torque	For tripping: 15 N For positive opening: 45 N		12 N 36 N	6 N 18 N	
Cable entry	1 entry tapped M16 x 1.5 mm for ISO cable gland, clamping capacity 4 to 8 mm				

(1) Form conforming to EN 50047, see page 24.

(2) Nitrile for indoor use.

(3) Switches with gold contacts or eyelet type connections: please consult our Customer Care Centre.

# Limit switches

## XC Standard range

Compact design, metal, XCKD  
Complete switches with 1 cable entry

Type of head	Plunger (fixing by the head)	Rotary (fixing by the body)					Multi-directional
		Form A (1)					
Type of operator	M18 with metal end plunger	M18 with steel roller plunger	Thermoplastic roller lever	Variable length thermoplastic roller lever	Thermoplastic roller lever, Ø 50 mm	Variable length thermoplastic roller lever, Ø 50 mm	"Cat's whisker" (2)

References of complete switches with 1 ISO M16 x 1.5 cable entry (3)								
	2-pole NC + NO snap action (XE2SP2151)	XCKD21H0P16 	XCKD21H2P16 	XCKD2118P16 	XCKD2145P16 	XCKD2139P16 	XCKD2149P16 	XCKD2106P16 
	2-pole NC + NO break before make, slow break (XE2NP2151)	XCKD25H0P16 	XCKD25H2P16 	XCKD2518P16 	XCKD2545P16 	XCKD2539P16 	XCKD2549P16 	XCKD2506P16 
	2-pole NC + NC snap action (XE2SP2141)	ZCD29 + ZCDEP16 + ZCEH0 	ZCD29 + ZCDEP16 + ZCEH2 	ZCD29 + ZCDEP16 + ZCE01 + ZCY18 	ZCD29 + ZCDEP16 + ZCE01 + ZCY45 	ZCD29 + ZCDEP16 + ZCE01 + ZCY39 	ZCD29 + ZCDEP16 + ZCE01 + ZCY49 	ZCD29 + ZCDEP16 + ZCE06 
	2-pole NC + NC simultaneous, slow break (XE2NP2141)	ZCD27 + ZCDEP16 + ZCEH0 	ZCD27 + ZCDEP16 + ZCEH2 	ZCD27 + ZCDEP16 + ZCE01 + ZCY18 	ZCD27 + ZCDEP16 + ZCE01 + ZCY45 	ZCD27 + ZCDEP16 + ZCE01 + ZCY39 	ZCD27 + ZCDEP16 + ZCE01 + ZCY49 	ZCD27 + ZCDEP16 + ZCE06 
	3-pole NC + NC + NO snap action (XE3SP2141)	ZCD39 + ZCDEP16 + ZCEH0 	ZCD39 + ZCDEP16 + ZCEH2 	ZCD39 + ZCDEP16 + ZCE01 + ZCY18 	ZCD39 + ZCDEP16 + ZCE01 + ZCY45 	ZCD39 + ZCDEP16 + ZCE01 + ZCY39 	ZCD39 + ZCDEP16 + ZCE01 + ZCY49 	ZCD39 + ZCDEP16 + ZCE06 
	3-pole NC + NC + NO break before make, slow break (XE3NP2141)	ZCD37 + ZCDEP16 + ZCEH0 	ZCD37 + ZCDEP16 + ZCEH2 	ZCD37 + ZCDEP16 + ZCE01 + ZCY18 	ZCD37 + ZCDEP16 + ZCE01 + ZCY45 	ZCD37 + ZCDEP16 + ZCE01 + ZCY39 	ZCD37 + ZCDEP16 + ZCE01 + ZCY49 	ZCD37 + ZCDEP16 + ZCE06 
Weight (kg)	0.220	0.220	0.225	0.235	0.235	0.245	0.175	

### References of complete switches with 1 entry for n° 11 cable gland

For an entry tapped for a n° 11 cable gland, replace P16 in the reference by G11. Example: XCKD21H0P16 becomes XCKD21H0G11 or ZCDEP16 becomes ZCDEG11.

Contact operation	closed open	(A) = cam displacement (P) = positive opening point	NC contact with positive opening operation
Characteristics			
Switch actuation	On end	By 30° cam	By any moving part
Type of actuation			
Maximum actuation speed	0.5 m/s	1.5 m/s	1 m/s (any direct.)
Mechanical durability	10 million operating cycles		
Minimum force or torque	For tripping: 15 N For positive opening: 45 N	10 N 36 N	0.1 N.m 0.25 N.m
Cable entry	1 entry tapped M16 x 1.5 mm for ISO cable gland, clamping capacity 4 to 8 mm		

(1) Form conforming to EN 50047, see page 24.

(2) Value taken with actuation by moving part at 100 mm from the fixing.

(3) Switches with gold contacts or eyelet type connections: please consult our Customer Care Centre.

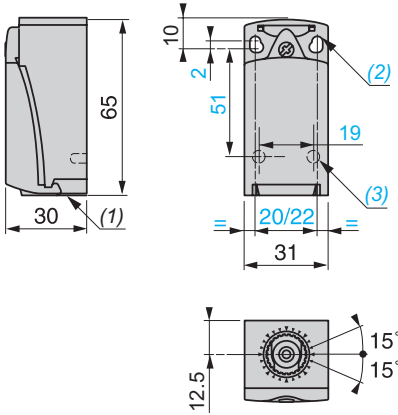
## Limit switches

XC Standard range

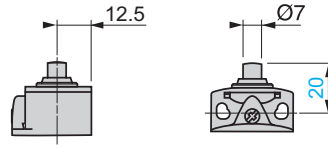
Compact design, metal, XCKD

Complete switches with 1 cable entry

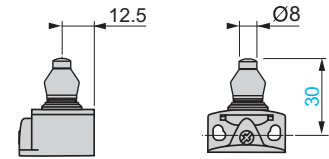
ZCD2● + ZCDEP16/ZCD3● + ZCDEP16



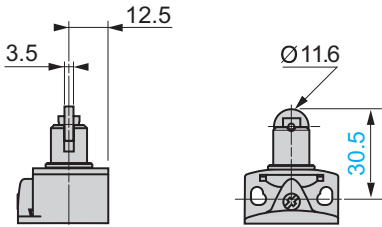
ZCE10



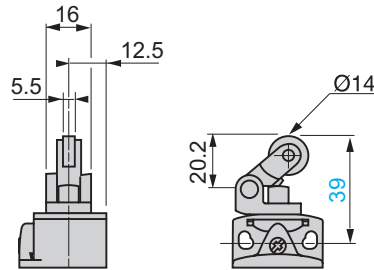
ZCE11



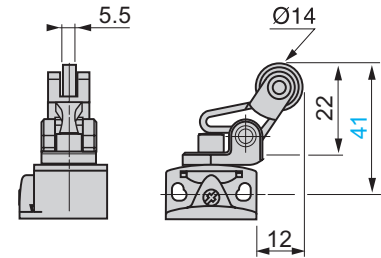
ZCE02



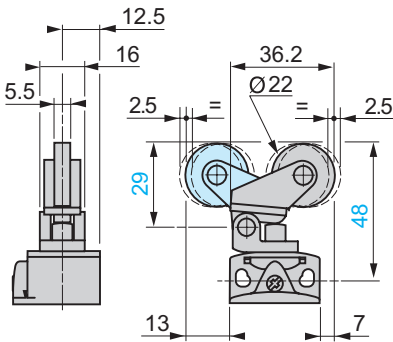
ZCE21



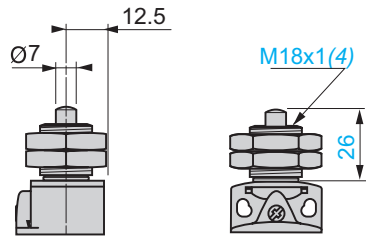
ZCE27



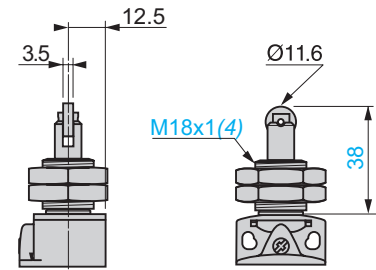
ZCE28



ZCEH0



ZCEH2



- (1) Tapped entry for ISO M16 x 1.5 or Pg 11 cable gland.
- (2) 2 elongated holes  $\varnothing 4.3 \times 6.3$  mm on 22 mm centres, 2 holes  $\varnothing 4.3$  on 20 mm centres.
- (3) 2 x  $\varnothing 3$  holes for support studs, depth 4 mm.
- (4) Fixing nut thickness 3.5 mm.

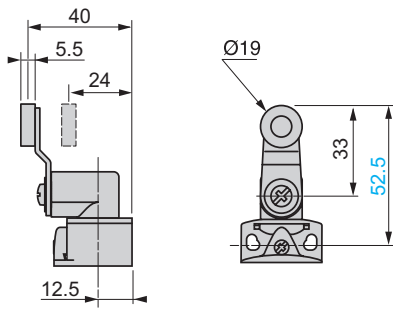
# Limit switches

XC Standard range

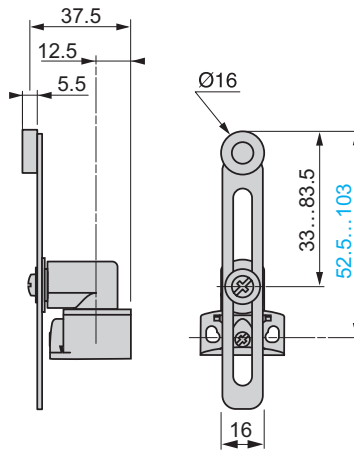
Compact design, metal, XCKD

Complete switches with 1 cable entry

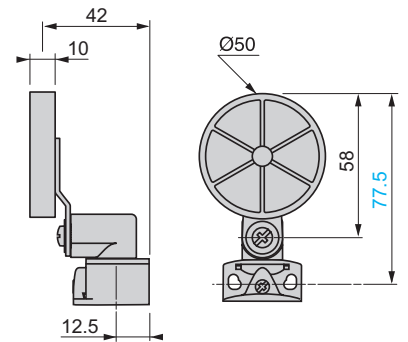
ZCE01 + ZCY18



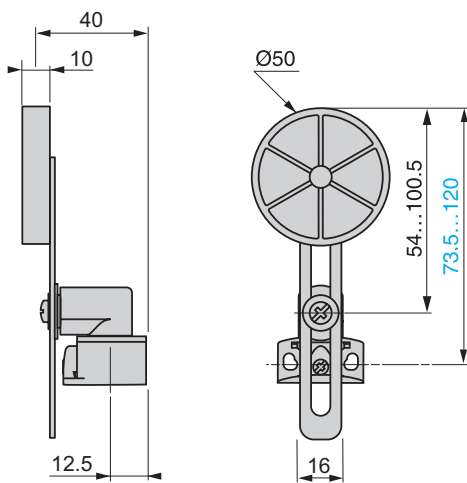
ZCE01 + ZCY45



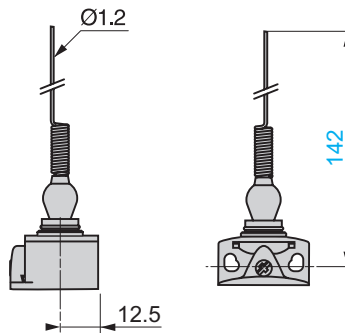
ZCE01 + ZCY39



ZCE01 + ZCY49











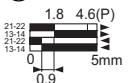
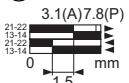
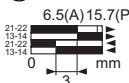
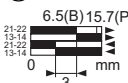
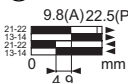

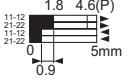
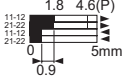
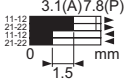
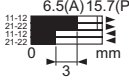
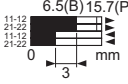
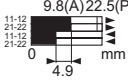



ZCE06






# Limit switches

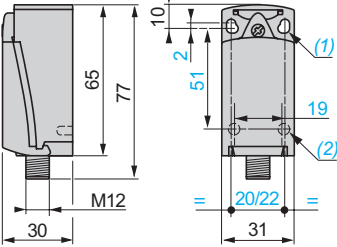
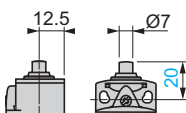
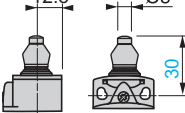
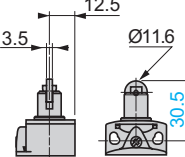
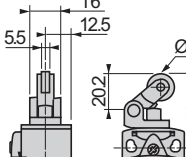
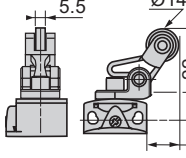
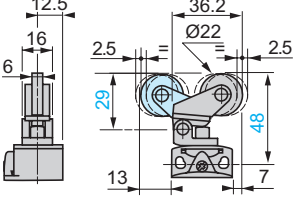
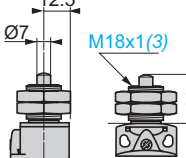
XC Standard range  
Compact design, metal, XCKD  
M12 connector

Type of head	Plunger (fixing by the body)					
	Form B (1)		Form C (1)	Form E (1)		
						
Type of operator	Metal end plunger		Metal end plunger with elastomer boot (2)	Steel roller plunger	Thermoplastic roller lever plunger, horizontal actuation in 1 direction	Thermoplastic roller lever plunger, vertical actuation in 1 direction

References							
2-pole NC + NO snap action (XE2SP2151)		XCKD2110M12 	XCKD2111M12 	XCKD2102M12 	XCKD2121M12 	XCKD2127M12 	XCKD2128M12 
2-pole NC + NC snap action (XE2SP2141)		ZCD29M12 + ZCE10 	ZCD29M12 + ZCE11 	ZCD29M12 + ZCE02 	ZCD29M12 + ZCE21 	ZCD29M12 + ZCE27 	ZCD29M12 + ZCE28 
Weight (kg)	0.190	0.190	0.195	0.205	0.200	0.205	
Contact operation	 closed  open			(A) (B) = cam displacement (P) = positive opening point		 NC contact with positive opening operation	
(1) Form conforming to EN 50047, see page 24.							
(2) Nitrile for indoor use.							

Characteristics									
Switch actuation	On end / By 30° cam								
Type of actuation	 / 								
Maximum actuation speed	0.5 m/s / 1 m/s								
Mechanical durability (in millions of operating cycles)	15 / 10 / 15								
Minimum force or torque	<table border="1"> <tr> <td>For tripping</td> <td>15 N</td> <td>12 N</td> <td>6 N</td> </tr> <tr> <td>For positive opening</td> <td>45 N</td> <td>36 N</td> <td>18 N</td> </tr> </table>	For tripping	15 N	12 N	6 N	For positive opening	45 N	36 N	18 N
For tripping	15 N	12 N	6 N						
For positive opening	45 N	36 N	18 N						
Connection	M12 connector, U <sub>i</sub> = 60 V, I <sub>e</sub> = 4 A maximum, l <sub>th</sub> = 4 A								

Connections									
M12 connector									
	<table border="1"> <tr> <td>XE2SP2151</td> <td>XE2SP2141</td> </tr> <tr> <td>1-2: NC</td> <td>1-2: NC</td> </tr> <tr> <td>3-4: NO</td> <td>3-4: NO</td> </tr> <tr> <td>5: <math>\perp</math></td> <td>5: <math>\perp</math></td> </tr> </table>	XE2SP2151	XE2SP2141	1-2: NC	1-2: NC	3-4: NO	3-4: NO	5: $\perp$	5: $\perp$
XE2SP2151	XE2SP2141								
1-2: NC	1-2: NC								
3-4: NO	3-4: NO								
5: $\perp$	5: $\perp$								

Dimensions	
ZCD2●M12	ZCE10    ZCE11    ZCE02    ZCE21
	
	
	
	
	ZCE27    ZCE28    ZCEH0
	
	
	
<p>(1) 2 elongated holes <math>\varnothing 4.3 \times 6.3</math> mm on 22 mm centres, 2 holes <math>\varnothing 4.3</math> on 20 mm centres.            (2) 2 x <math>\varnothing 3</math> holes for support studs, depth 4 mm.            (3) Fixing nut thickness 3.5 mm.</p>	

# Limit switches

XC Standard range  
Compact design, metal, XCKD  
M12 connector

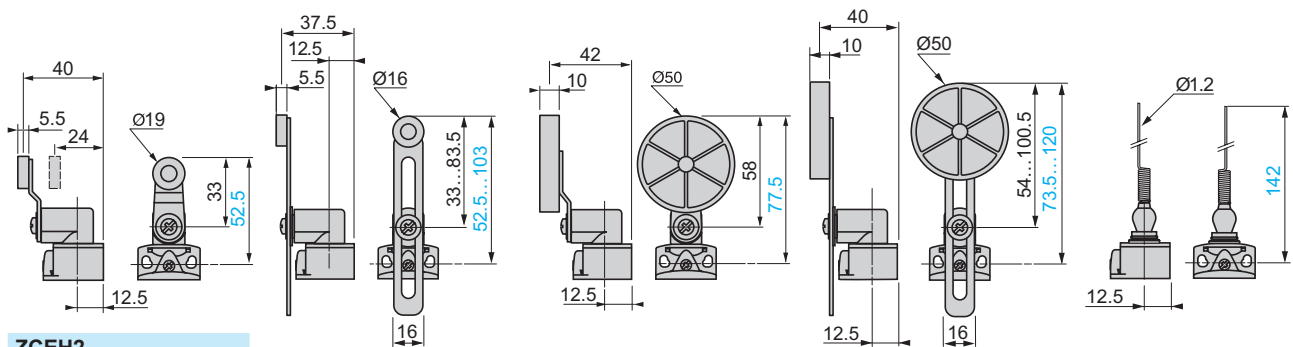
Type of head	Plunger (fixing by the head)		Rotary (fixing by the body)				Multi-directional
			Form A (1)				
Type of operator	M18 with metal end plunger	M18 with steel roller plunger	Thermoplastic roller lever	Variable length thermoplastic roller lever	Thermoplastic roller lever, Ø 50 mm	Variable length thermoplastic roller lever, Ø 50 mm	"Cat's whisker" (2)

References							
2-pole NC + NO snap action (XE2SP2151)	XCKD21H0M12	XCKD21H2M12	XCKD2118M12	XCKD2145M12	XCKD2139M12	XCKD2149M12	XCKD2106M12
2-pole NC + NC snap action (XE2SP2141)	ZCD29M12 + ZCEH0	ZCD29M12 + ZCEH2	ZCD29M12 + ZCE01 + ZCY18	ZCD29M12 + ZCE01 + ZCY45	ZCD29M12 + ZCE01 + ZCY39	ZCD29M12 + ZCE01 + ZCY49	ZCD29M12 + ZCE06
Weight (kg)	0.235	0.235	0.220	0.220	0.220	0.220	0.185
Contact operation			(A) = cam displacement (P) = positive opening point				

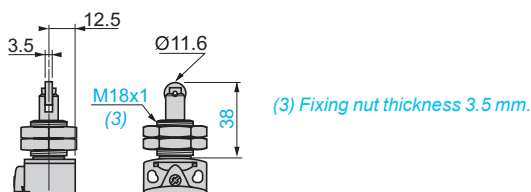
(1) Form conforming to EN 50047, see page 24.  
(2) Value taken with actuation by moving part at 100 mm from the fixing.

Characteristics					
Switch actuation	On end	By 30° cam			By any moving part
Type of actuation					
Maximum actuation speed	0.5 m/s	1.5 m/s			1 m/s (any direct.)
Mechanical durability (in millions of operating cycles)	10	5			5
Minimum force or torque	For tripping For positive opening	15 N 45 N	10 N 36 N	0.1 N.m 0.25 N.m	0.13 N.m -
Connection	M12 connector, U <sub>i</sub> = 60 V, I <sub>e</sub> = 4 A maximum, I <sub>th</sub> = 4 A				

Dimensions				
ZCE01 + ZCY18	ZCE01 + ZCY45	ZCE01 + ZCY39	ZCE01 + ZCY49	ZCE06





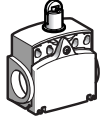
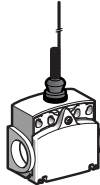
### ZCEH2








# Limit switches

## XC Standard range




Compact design, plastic, XCKT  
Complete switches with 2 cable entries





Type of head	Plunger (fixing by the body)			Multi-directional
	Form B (1)	Form C (1)	Form E (1)	
				
Type of operator	Metal end plunger	Metal end plunger with elastomer boot (2)	Steel roller plunger	Thermoplastic roller lever plunger, horizontal actuation in 1 direction

References of complete switches with 2 ISO M16 x 1.5 cable entries (4)						
	2-pole NC + NO snap action (XE2SP3151)	XCKT2110P16	XCKT2111P16	XCKT2102P16	XCKT2121P16	XCKT2106P16
	2-pole NC + NO break before make, slow break (XE2NP3151)	ZCT25P16 + ZCE10	ZCT25P16 + ZCE11	ZCT25P16 + ZCE02	ZCT25P16 + ZCE21	ZCT25P16 + ZCE06
	2-pole NC + NO make before break, slow break (XE2NP3161)	ZCT26P16 + ZCE10	ZCT26P16 + ZCE11	ZCT26P16 + ZCE02	ZCT26P16 + ZCE21	ZCT26P16 + ZCE06
	2-pole NC + NC simultaneous, slow break (XE2NP2141)	ZCT27P16 + ZCE10	ZCT27P16 + ZCE11	ZCT27P16 + ZCE02	ZCT27P16 + ZCE21	ZCT27P16 + ZCE06
	2-pole NO + NO simultaneous, slow break (XE2NP3131)	ZCT28P16 + ZCE10	ZCT28P16 + ZCE11	ZCT28P16 + ZCE02	ZCT28P16 + ZCE21	ZCT28P16 + ZCE06
Weight (kg)		0.100	0.100	0.105	0.115	0.095

### References of complete switches with 2 entries for n° 11 cable gland

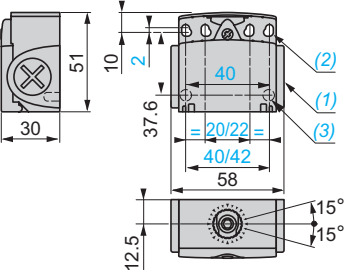
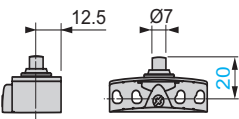
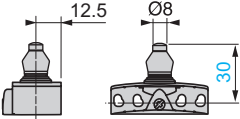
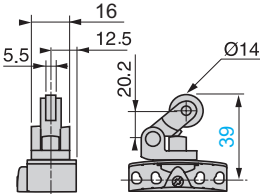
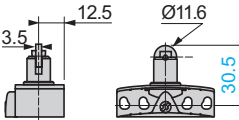
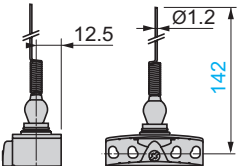
For entries tapped for n° 11 cable gland, replace P16 in the reference by G11. Example: XCKT2110P16 becomes XCKT2110G11.

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

Characteristics				
Switch actuation	On end	By 30° cam		By any moving part
Type of actuation				
Maximum actuation speed	0.5 m/s		1 m/s	1 m/s (any direction)
Mechanical durability (in millions of operating cycles)	15	10	15	5
Minimum force or torque	For tripping: 15 N For positive opening: 45 N	12 N 36 N	6 N 18 N	0.3 N.m
Cable entry (3)	2 entries tapped M16 x 1.5 for ISO cable gland Clamping capacity 4 to 8 mm (1 entry fitted with blanking plug)			

(1) Form conforming to EN 50047, see page 24. (2) Nitrile for indoor use.

(3) Value taken with actuation by moving part at 100 mm from the fixing. (4) Switches with gold contacts or eyelet type connections: please consult our Customer Care Centre.

Dimensions				
ZCT2●P16	ZCE10	ZCE11	ZCE21	
				
	ZCE02	ZCE06		
				

- (1) Tapped entry for ISO M16 x 1.5 or Pg 11 cable gland.  
 (2) 4 elongated holes  $\varnothing 4.3 \times 6.3$  mm on 22/42 mm ctrs, 4 holes  $\varnothing 4.3$  on 20/40 mm ctrs.  
 (3) 2 x  $\varnothing 3$  holes for support studs, depth 4 mm.

# Limit switches

XC Standard range  
Compact design, plastic, XCKT  
Complete switches with 2 cable entries

Type of head	Plunger (fixing by the head)		Rotary (fixing by the body) Form A (1)		
Type of operator	M18 with metal end plunger	M18 with steel roller plunger	Thermoplastic roller lever	Variable length thermoplastic roller lever	Thermoplastic roller lever, Ø 50 mm

References of complete switches with 2 ISO M16 x 1.5 cable entries (2)						
	2-pole NC + NO snap action (XE2SP3151)	XCKT21H0P16 1.8 4.6(P) 	XCKT21H2P16 3.1(A) 7.8(P) 	XCKT2118P16 25° 70°(P) 	XCKT2145P16 25° 70°(P) 	XCKT2139P16 25° 70°(P) 
	2-pole NC + NO break before make, slow break (XE2NP3151)	ZCT25P16 + ZCEH0 1.8 3.2(P) 	ZCT25P16 + ZCEH2 3.1(A) 5.6(P) 	ZCT25P16 + ZCE01 + ZCY18 25° 46°(P) 	ZCT25P16 + ZCE01 + ZCY45 25° 46°(P) 	ZCT25P16 + ZCE01 + ZCY39 25° 46°(P) 
	2-pole NO + NC make before break, slow break (XE2NP3161)	ZCT26P16 + ZCEH0 3 4.4(P) 	ZCT26P16 + ZCEH2 5.2 7.6(P) 	ZCT26P16 + ZCE01 + ZCY18 43° 66°(P) 	ZCT26P16 + ZCE01 + ZCY45 43° 66°(P) 	ZCT26P16 + ZCE01 + ZCY39 43° 66°(P) 
	2-pole NC + NC simultaneous, slow break (XE2NP2141)	ZCT27P16 + ZCEH0 1.8 3.2(P) 	ZCT27P16 + ZCEH2 3.1 5.6(P) 	ZCT27P16 + ZCE01 + ZCY18 25° 46°(P) 	ZCT27P16 + ZCE01 + ZCY45 25° 46°(P) 	ZCT27P16 + ZCE01 + ZCY39 25° 46°(P) 
	2-pole NO + NO simultaneous, slow break (XE2NP3131)	ZCT28P16 + ZCEH0 1.8 	ZCT28P16 + ZCEH2 3.1(A) 	ZCT28P16 + ZCE01 + ZCY18 25° 	ZCT28P16 + ZCE01 + ZCY45 25° 	ZCT28P16 + ZCE01 + ZCY39 25° 
Weight (kg)	0.145	0.145	0.145	0.155	0.160	

### References of complete switches with 2 entries for n° 11 cable gland

For entries tapped for n° 11 cable gland, replace P16 in the reference by G11. Example: XCKT21H0P16 becomes XCKT21H0G11.

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

Characteristics		Switch actuation		
Switch actuation		On end	By 30° cam	
Type of actuation				
Maximum actuation speed		0.5 m/s	1.5 m/s	
Mechanical durability		10 million operating cycles		
Minimum force or torque	For tripping	15 N	10 N	0.1 N.m
	For positive opening	45 N	36 N	0.25 N.m
Cable entry (3)		2 entries tapped M16 x 1.5 for ISO cable gland Clamping capacity 4 to 8 mm (1 entry fitted with blanking plug)		

(1) Form conforming to EN 50047, see page 24.

(2) Switches with gold contacts or eyelet type connections: please consult our Customer Care Centre.

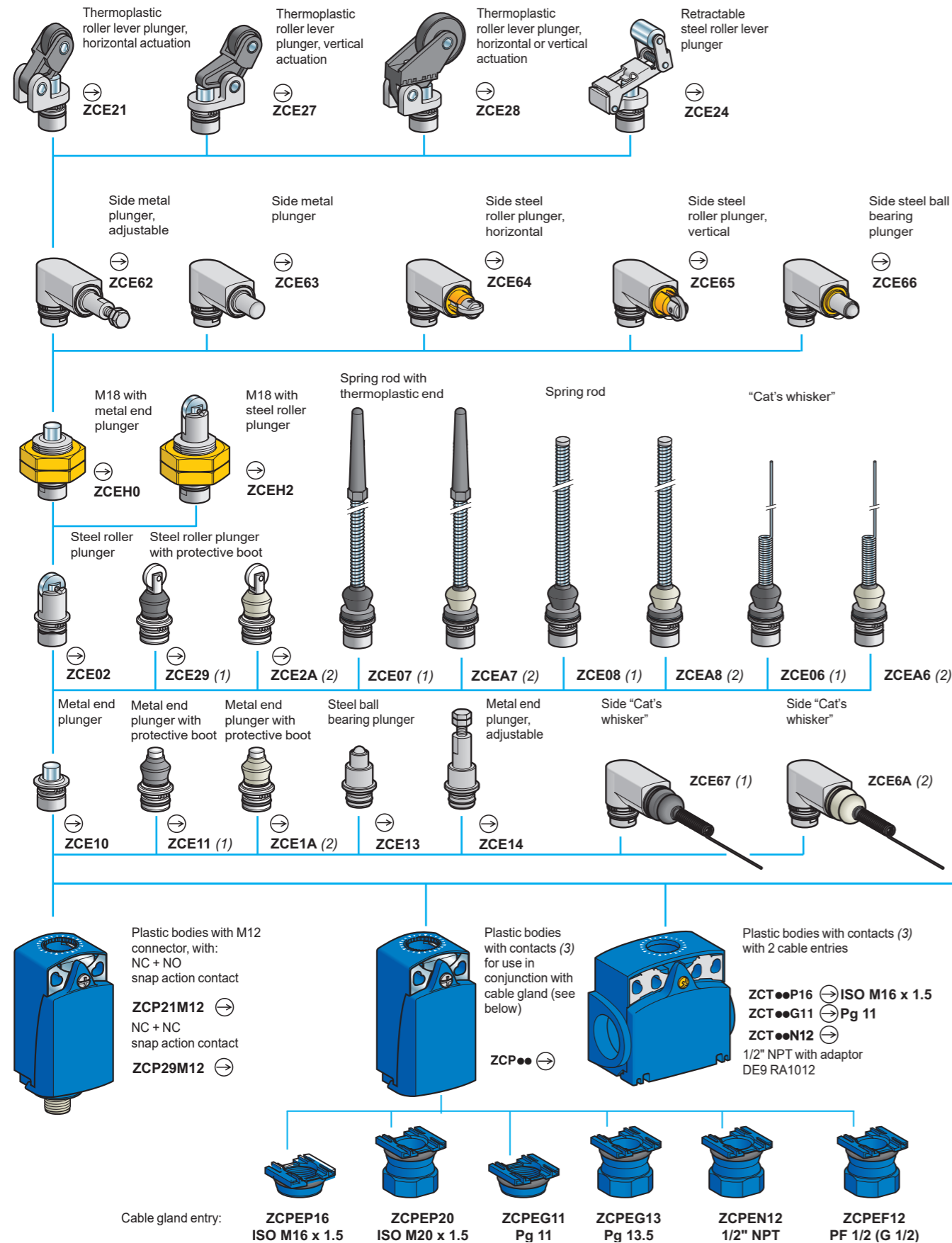
Dimensions			
ZCEH0	ZCE01 + ZCY18	ZCE01 + ZCY39	ZCE01 + ZCY45
<b>ZCEH2</b> 			

(4) Fixing nut thickness 3.5 mm.

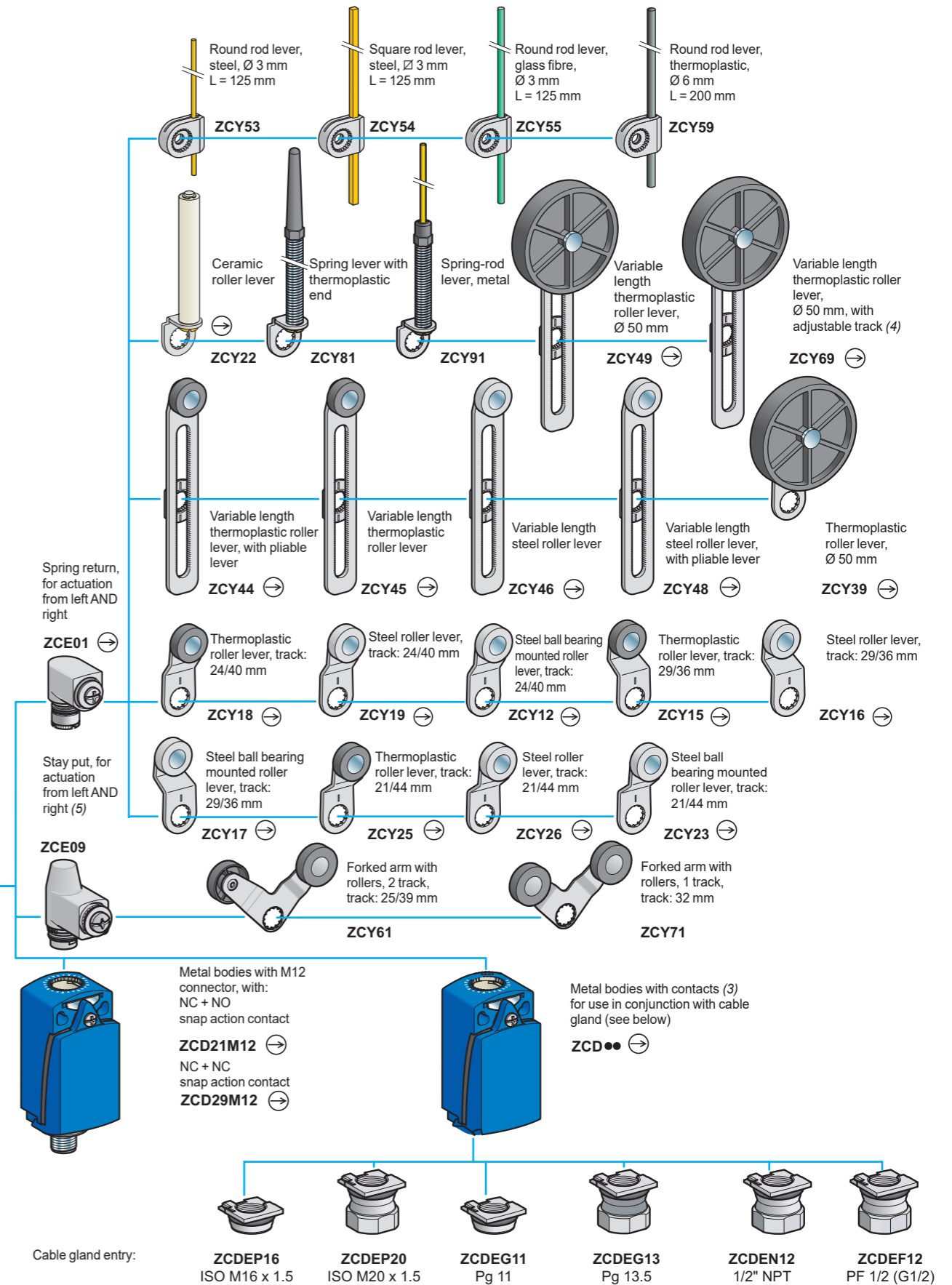
# Limit switches

## XC Standard range

Compact design, XCKD, XCKP and XCKT  
Variable composition



(1) Nitrile boot for indoor use.  
(2) Silicone boot for outdoor use.  
(3) For further information, see page 90.



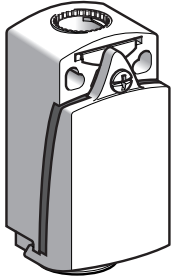
(4) Variable length and adjustable track by lever deformation.  
(5) Suitable with bodies: ZCD21, ZCP21, ZCT21, ZCD29, ZCP29, ZCD31, ZCP31, ZCD39, ZCP39, ZCD2M12, ZCP2M12

# Limit switches

XC Standard range  
Compact design, metal, XCKD  
or plastic, XCKP

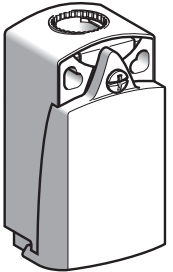
Adaptable sub-assemblies: bodies with contacts

520710



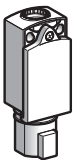
ZCD●●

520711



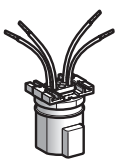
ZCP●●

DF50402



ZCP21D44

DF50403



ZCPED44

### Bodies with contacts, XCKD and XCKP (1)

Type of contact	Positive operation (2)	Scheme	Body material	Reference	Weight kg
<b>2-pole</b>					
NC + NO snap action (XE2SP2151)	⊖		Metal	ZCD21	0.140
			Plastic	ZCP21	0.070
NC + NC snap action (XE2SP2141)	⊖		Metal	ZCD29	0.140
			Plastic	ZCP29	0.070
NC + NO break before make, slow break (XE2NP2151)	⊖		Metal	ZCD25	0.140
			Plastic	ZCP25	0.070
NO + NC make before break, slow break (XE2NP2161)	⊖		Metal	ZCD26	0.140
			Plastic	ZCP26	0.070
NC + NC simultaneous, slow break (XE2NP2141)	⊖		Metal	ZCD27	0.140
			Plastic	ZCP27	0.070
NO + NO simultaneous, slow break (XE2NP2131)	-		Metal	ZCD28	0.140
			Plastic	ZCP28	0.070
<b>3-pole</b>					
NC + NO + NO snap action (XE3SP2151)	⊖		Metal	ZCD31	0.140
			Plastic	ZCP31	0.070
NC + NC + NO snap action (XE3SP2141)	⊖		Metal	ZCD39	0.140
			Plastic	ZCP39	0.070
NC + NC + NO break before make, slow break (XE3NP2141)	⊖		Metal	ZCD37	0.140
			Plastic	ZCP37	0.070
NC + NO + NO break before make, slow break (XE3NP2151)	⊖		Metal	ZCD35	0.140
			Plastic	ZCP35	0.070

### Components for connection using DEUTSCH connector

#### Bodies with contacts for DEUTSCH connector

Type of contact	Positive operation (2)	Scheme	Cable entry	Reference	Weight kg
<b>2-pole</b>					
NC + NO snap action (XE2SP2151)	⊖		Connector	ZCP21D44	0.065
<b>DEUTSCH male connector DT04-4P</b>				ZCPED44	0.015

(1) Bodies with gold contacts or eyelet type connections: please consult your Customer Care Centre.  
(2) ⊖: bodies with contacts assuring positive opening operation.

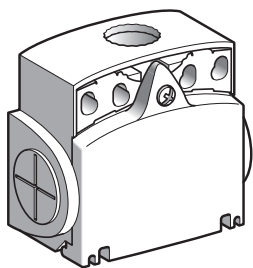
## Limit switches

XC Standard range

Compact design, plastic, XCKT

Adaptable sub-assemblies: bodies with contacts

561390



ZCT●●●

## Bodies with contacts, XCKT plastic, 2 cable entries

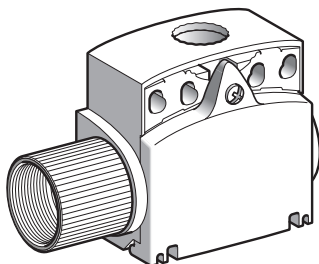
Type of contact	Positive operation (1)	Scheme	Cable entries	Reference	Weight kg
<b>2-pole</b>					
NC + NO snap action (XE2SP3151)	⊖		ISO M16 x 1.5	<b>ZCT21P16</b>	0.085
			Pg 11	<b>ZCT21G11</b>	0.085
NC + NO break before make, slow break (XE2NP3151)	⊖		ISO M16 x 1.5	<b>ZCT25P16</b>	0.085
			Pg 11	<b>ZCT25G11</b>	0.085
NC + NC simultaneous, slow break (XE2NP3141)	⊖		ISO M16 x 1.5	<b>ZCT27P16</b>	0.085
			Pg 11	<b>ZCT27G11</b>	0.085
NO + NO simultaneous, slow break (XE2NP3131)	-		ISO M16 x 1.5	<b>ZCT28P16</b>	0.085
			Pg 11	<b>ZCT28G11</b>	0.085
NO + NC make before break, slow break (XE2NP3161)	⊖		ISO M16 x 1.5	<b>ZCT26P16</b>	0.085
			Pg 11	<b>ZCT26G11</b>	0.085

## Bodies with contacts, XCKT plastic, 2 cable entries with 1/2" NPT adaptor

Type of contact	Positive operation (1)	Scheme	Reference	Weight kg
<b>2-pole</b>				
NC + NO snap action (XE2SP3151)	⊖		<b>ZCT21N12</b>	0.130
NC + NO break before make, slow break (XE2NP3151)	⊖		<b>ZCT25N12</b>	0.130
NC + NC simultaneous, slow break (XE2NP3141)	⊖		<b>ZCT27N12</b>	0.130
NO + NO simultaneous, slow break (XE2NP3131)	-		<b>ZCT28N12</b>	0.130
NO + NC make before break, slow break (XE2NP3161)	⊖		<b>ZCT26N12</b>	0.130

(1) ⊖: bodies with contact assuring positive opening operation.

561387



ZCT●●N12

# Limit switches

## XC Standard range

Compact design, metal, XCKD or plastic, XCKP and XCKT

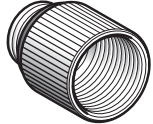
Adaptable sub-assemblies: bodies with contacts

561127



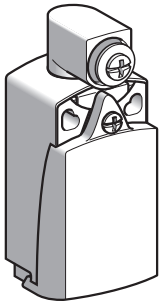
ZCE05

561392



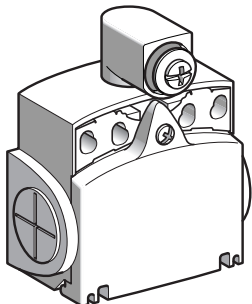
DE9RA1012

561388



XCK2001

561389



XCKT2001

### Accessories

Description	Suitable levers for use with head	Unit reference	Weight kg
Rotary head, without lever, spring return, for actuation from left AND right or left OR right (1)	ZCY12, ZCY15, ZCY16, ZCY17, ZCY18, ZCY19, ZCY22, ZCY23, ZCY25, ZCY26, ZCY39, ZCY53, ZCY54, ZCY55, ZCY81	ZCE05	0.045
Tap-off terminal for XCKT	Sold in lots of 10	XALZ09	0.010
Spacer for angular positioning of heads with adjustable levers, for values other than - 90°, 0° and 90°	–	XCMZ07	0.002
Adaptor for 1/2" NPT conduit (male Pg 11 / female 1/2" NPT)	Sold in lots of 10	DE9RA1012	0.050

### Bodies with contacts, XCKP plastic, with rotary head (without operating lever)

Type of contact	Scheme	Positive operation (2)	Cable entry	Reference	Weight kg
<b>2-pole</b>					
NC + NO snap action (XE2SP2151)			ISO M16 x 1.5	XCKP2101P16	0.115
			Pg 11	XCKP2101G11	0.115
			M12 connector	XCKP2101M12	0.125
NC + NO break before make, slow break (XE2NP2151)			ISO M16 x 1.5	XCKP2501P16	0.115
			Pg 11	XCKP2501G11	0.115

### Bodies with contacts, XCKD metal, with rotary head (without operating lever)

Type of contact	Scheme	Positive operation (2)	Cable entry	Reference	Weight kg
<b>2-pole</b>					
NC + NO snap action (XE2SP2151)			ISO M16 x 1.5	XCKD2101P16	0.185
			Pg 11	XCKD2101G11	0.185
			M12 connector	XCKD2101M12	0.195
NC + NO break before make, slow break (XE2NP2151)			ISO M16 x 1.5	XCKD2501P16	0.185
			Pg 11	XCKD2501G11	0.185

### Bodies with contacts, XCKT plastic, with rotary head (without operating lever)

Type of contact	Scheme	Positive operation (2)	Cable entry	Reference	Weight kg
<b>2-pole</b>					
NC + NO snap action (XE2SP3151)			ISO M16 x 1.5	XCKT2101P16	0.130
			Pg 11	XCKT2101G11	0.130
NC + NO break before make, slow break (XE2NP3151)			ISO M16 x 1.5	XCKT2501P16	0.130
			Pg 11	XCKT2501G11	0.130

(1) For programming see page 18.

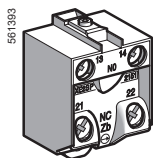
(2) : bodies with contact assuring positive opening operation.

# Limit switches

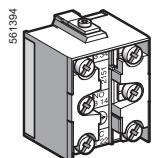
XC Standard range

Compact design, metal, XCKD or plastic, XCKP and XCKT

Adaptable sub-assemblies: contact blocks



XE2●●21●●



XE3●●21●●

### Contact blocks with screw clamp terminals for XCKD and XCKP

Type of contact	Positive operation (1)	Scheme	Reference for standard contacts	Weight kg
<b>2-pole</b>				
NC + NO snap action	⊕		XE2SP2151	0.020
NC + NC simultaneous, snap action	⊕		XE2SP2141	0.020
NC + NO break before make, slow break	⊕		XE2NP2151	0.020
NO + NC make before break, slow break	⊕		XE2NP2161	0.020
NC + NC simultaneous, slow break	⊕		XE2NP2141	0.020
NO + NO simultaneous, slow break	-		XE2NP2131	0.020
<b>3-pole</b>				
NC + NO + NO snap action	⊕		XE3SP2151	0.035
NC + NC + NO snap action	⊕		XE3SP2141	0.035
NC + NC + NO break before make, slow break	⊕		XE3NP2141	0.035
NC + NO + NO break before make, slow break	⊕		XE3NP2151	0.035

### Contact blocks with screw clamp terminals for XCKT

Type of contact	Positive operation (1)	Scheme	Reference for standard contacts	Weight kg
<b>2-pole</b>				
NC + NO snap action	⊕		XE2SP3151	0.015
NC + NO break before make, slow break	⊕		XE2NP3151	0.015
NO + NC make before break, slow break	⊕		XE2NP3161	0.015
NC + NC simultaneous, slow break	⊕		XE2NP3141	0.015
NO + NO simultaneous, slow break	-		XE2NP3131	0.015

(1) ⊕: contact blocks assuring positive opening operation.

# Limit switches

XC Standard range

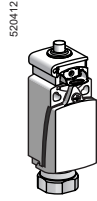
Compact design, plastic, with reset, XCPR and XCTR

Compact design, metal, with reset, XCDR

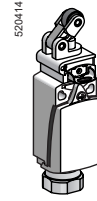
**■ XCPR, XCDR**  
with 1 cable entry

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

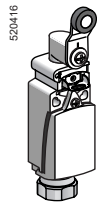
XCDR



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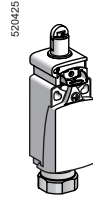


XCDR

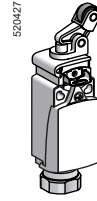


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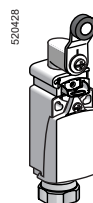
XCPR



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XCPR



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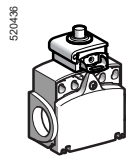
**□ With head for rotary movement (lever) or multi-directional. Fixing by the body**

**■ XCTR**

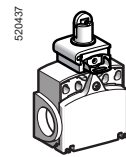
with 2 cable entries  
Tripping/resetting points and fixing centres  
conform to CENELEC 50047

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

XCTR

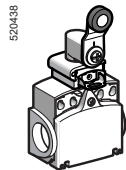


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**□ With head for rotary movement (lever) or multi-directional. Fixing by the body**

XCTR



Page 100

# Limit switches

## XC Standard range

Compact design, plastic, with reset, XCPR and XCTR

Compact design, metal, with reset, XCDR

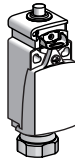



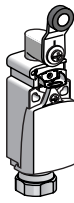

Environment characteristics		
<b>Conformity to standards</b>	Products	CE, EN/IEC 60947-5-1, UL 508, CSA C22-2 n° 14, EAC
	Machine assemblies	EN/IEC 60204-1
<b>Product certifications</b>		UL, CSA
<b>Protective treatment</b>	Standard version	"TC"
<b>Ambient air temperature</b>	For operation	- 25...+ 70 °C
	For storage	- 40...+ 70 °C
<b>Vibration resistance</b>	Conforming to IEC 60068-2-6	25 gn (10...500 Hz)
<b>Shock resistance</b>	Conforming to IEC 60068-2-27	50 gn (11 ms)
<b>Electric shock protection</b>		Class II conforming to IEC 61140 and NF C 20-030 for <b>XCPR</b> and <b>XCTR</b>
		Class I conforming to IEC 61140 and NF C 20-030 for <b>XCDR</b>
<b>Degree of protection</b>		<b>IP 66 and IP 67 conforming to IEC 60529; IK 04 conforming to IEC 62262</b>
<b>Repeat accuracy</b>		0.1 mm on the tripping points, with 1 million operating cycles for head with end plunger
<b>Cable entry</b>	Depending on model	Either: tapped entry for n° 13 cable gland, tapped ISO M20 x 1.5 or tapped 1/2" NPT
<b>Materials</b>		<b>XCDR</b> : Zamak bodies and heads, <b>XCPR</b> and <b>XCTR</b> : plastic bodies, Zamak heads
Contact block characteristics		
<b>Rated operational characteristics</b>		~ AC-15; A300 (Ue = 240 V, Ie = 3 A); Ithe = 10 A ⚡ DC-13; Q300 (Ue = 250 V, Ie = 0.27 A), conforming to EN/IEC 60947-5-1 Appendix A
<b>Rated insulation voltage</b>		Ui = 500 V degree of pollution 3 conforming to IEN/IEC 60947-1 Ui = 300 V conforming to UL 508, CSA C22-2 n° 14
<b>Rated impulse withstand voltage</b>		U imp = 6 kV conforming to EN/IEC 60947-1, IEC 60664
<b>Positive operation</b> (depending on model)		NC contacts with positive opening operation conforming to EN/IEC 60947-5-1 Appendix K
<b>Resistance across terminals</b>		≤ 25 mΩ conforming to IEC 60255-7 category 3
<b>Short-circuit protection</b>		10 A cartridge fuse type gG (gl)
<b>Connection</b> (screw clamp terminals)	XE2SP2151	Clamping capacity, min: 1 x 0.34 mm <sup>2</sup> , max: 2 x 1.5 mm <sup>2</sup>
	XE2NP2151	Clamping capacity, min: 1 x 0.5 mm <sup>2</sup> , max: 2 x 2.5 mm <sup>2</sup>
<b>Minimum actuation speed</b> (for head with end plunger)		<b>XE2SP2151</b> : 0.01 m/minute
		<b>XE2NP2151</b> : 6 m/minute


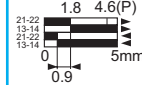
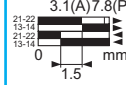
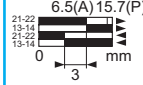
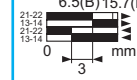
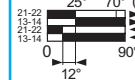
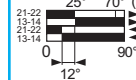

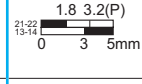
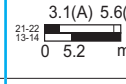
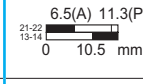
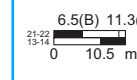
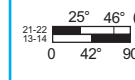
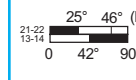


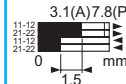
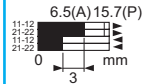
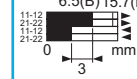
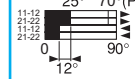
# Limit switches

XC Standard range

Compact design, plastic, with reset, XCPR

Complete switches with 1 cable entry

Type of head	Plunger (fixing by the body)				Rotary (fixing by the body)	
						
Type of operator	Metal end plunger	Steel roller plunger	Thermoplastic roller lever plunger, horizontal actuation in 1 direction	Thermoplastic roller lever plunger, vertical actuation in 1 direction	Thermoplastic roller lever	Steel roller lever

References of complete switches with 1 ISO M20 x 1.5 cable entry							
	2-pole NC + NO snap action (XE2SP2151)	<b>XCPR2110P20</b> 1.8 4.6(P) 	<b>XCPR2102P20</b> 3.1(A) 7.8(P) 	<b>XCPR2121P20</b> 6.5(A) 15.7(P) 	<b>XCPR2127P20</b> 6.5(B) 15.7(P) 	<b>XCPR2118P20</b> 25° 70° (P) 12° 90° 	<b>XCPR2119P20</b> 25° 70° (P) 12° 90° 
	2-pole NC + NO break before make, slow break (XE2NP2151)	<b>XCPR2510P20</b> 1.8 3.2(P) 	<b>XCPR2502P20</b> 3.1(A) 5.6(P) 	<b>XCPR2521P20</b> 6.5(A) 11.3(P) 	<b>XCPR2527P20</b> 6.5(B) 11.3(P) 	<b>XCPR2518P20</b> 25° 46° (P) 42° 90° 	<b>XCPR2519P20</b> 25° 46° (P) 42° 90° 
	2-pole NC + NC snap action (XE2SP2141)	<b>XCPR2910P20</b> 1.8 4.6(P) 	<b>XCPR2902P20</b> 3.1(A) 7.8(P) 	<b>XCPR2921P20</b> 6.5(A) 15.7(P) 	<b>XCPR2927P20</b> 6.5(B) 15.7(P) 	<b>XCPR2918P20</b> 25° 70° (P) 12° 90° 	–
<b>Weight (kg)</b>		0.115	0.115	0.125	0.120	0.155	–

## References of complete switches with 1 Pg 13.5 cable entry

For complete switches with 1 Pg 13.5 cable entry replace P20 by G13.

Example: XCPR2110P20 becomes XCPR2110G13.






## References of complete switches with 1 entry for 1/2" NPT conduit

For complete switches with 1 entry for 1/2" NPT conduit replace P20 by N12.

Example: XCPR2110P20 becomes XCPR2110N12.

<b>Contact operation</b>	 closed  open	(A) (B) = cam displacement (P) = positive opening point	 NC contact with positive opening operation
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## Characteristics

Switch actuation	On end	By 30° cam			
<b>Type of actuation</b>					
<b>Maximum actuation speed</b>	0.5 m/s	1 m/s			1.5 m/s
<b>Minimum force or torque</b>	For tripping	15 N	12 N	6 N	0.1 N.m
	For positive opening	45 N	36 N	18 N	0.25 N.m
<b>Cable entry</b>	1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm 1 entry tapped Pg 13.5 for cable gland, clamping capacity 9 to 12 mm 1 entry tapped for 1/2" NPT (USAS B2-1) conduit				
<b>Other versions</b>	Complete switches with cable entries other than those listed above. please consult our Customer Care Centre.				

## Limit switches

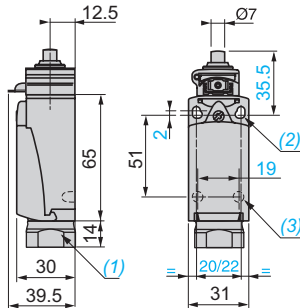
XC Standard range

Compact design, plastic, with reset, XCPR

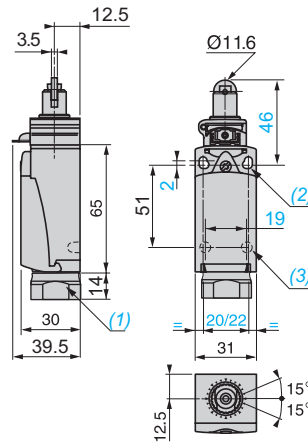
Complete switches with 1 cable entry

### Dimensions

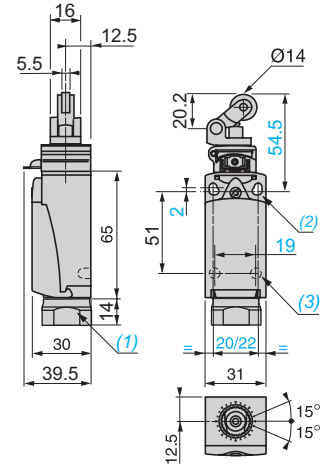
XCPR2•10●●●



XCPR2•02●●●



XCPR2•21●●●



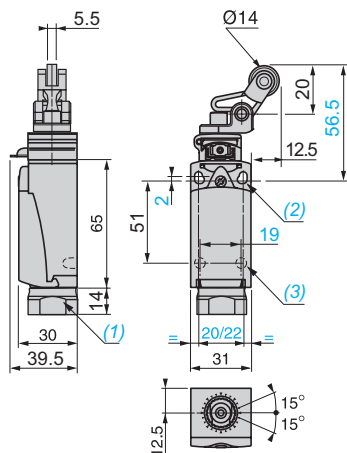
(1) Tapped entry for ISO M20 x 1.5 or Pg 13.5 cable gland or tapped 1/2" NPT.

(2) 2 elongated holes  $\varnothing 4.3 \times 6.3$  mm on 22 mm centres, 2 holes  $\varnothing 4.3$  on 20 mm centres.

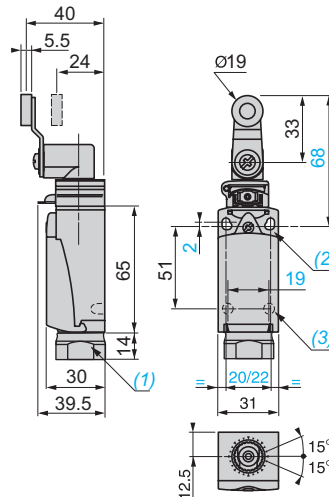
(3) 2 x  $\varnothing 3$  holes for support studs, depth 4 mm.

### Dimensions

XCPR2•27●●●



XCPR2•18●●●, XCPR2•19●●●



(1) Tapped entry for ISO M20 x 1.5 or Pg 13.5 cable gland or tapped 1/2" NPT.

(2) 2 elongated holes  $\varnothing 4.3 \times 6.3$  mm on 22 mm centres, 2 holes  $\varnothing 4.3$  on 20 mm centres.

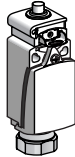





(3) 2 x  $\varnothing 3$  holes for support studs, depth 4 mm.

# Limit switches


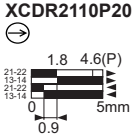
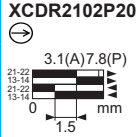
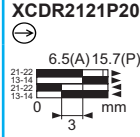
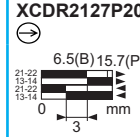
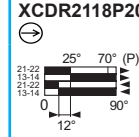
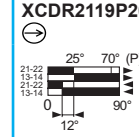
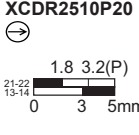
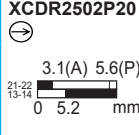
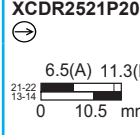

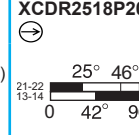
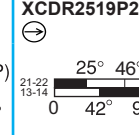
XC Standard range

Compact design, metal, with reset, XCDR

Complete switches with 1 cable entry

Type of head	Plunger (fixing by the body)				Rotary (fixing by the body)	
						

Type of operator	Metal end plunger	Steel roller plunger	Thermoplastic roller lever plunger, horizontal actuation in 1 direction	Thermoplastic roller lever plunger, vertical actuation in 1 direction	Thermoplastic roller lever	Steel roller lever
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References of complete switches with 1 ISO M20 x 1.5 cable entry						
 <p>2-pole NC + NO snap action (XE2SP2151)</p>	<b>XCDR2110P20</b> 	<b>XCDR2102P20</b> 	<b>XCDR2121P20</b> 	<b>XCDR2127P20</b> 	<b>XCDR2118P20</b> 	<b>XCDR2119P20</b> 
	<b>XCDR2510P20</b> 	<b>XCDR2502P20</b> 	<b>XCDR2521P20</b> 	<b>XCDR2527P20</b> 	<b>XCDR2518P20</b> 	<b>XCDR2519P20</b> 
<b>Weight (kg)</b>	0.215	0.220	0.225	0.225	0.255	0.255






### References of complete switches with 1 Pg 13.5 cable entry

For complete switches with 1 Pg 13.5 cable entry replace P20 by **G13**.  
 Example: XCDR2110P20 becomes **XCDR2110G13**.

### References of complete switches with 1 entry for 1/2" NPT conduit

For complete switches with 1 entry for 1/2" NPT conduit replace P20 by **N12**.  
 Example: XCDR2110P20 becomes **XCDR2110N12**.

<b>Contact operation</b>	 closed	 open	(A) (B) = cam displacement	 NC contact with positive opening operation
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Characteristics					
<b>Switch actuation</b>	On end	By 30° cam			
<b>Type of actuation</b>					
<b>Maximum actuation speed</b>	0.5 m/s	1 m/s			1.5 m/s
<b>Minimum force or torque</b>	For tripping	15 N	12 N	6 N	0.1 N.m
	For positive opening	45 N	36 N	18 N	0.25 N.m
<b>Cable entry</b>	1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm 1 entry tapped Pg 13.5 for cable gland, clamping capacity 9 to 12 mm 1 entry tapped for 1/2" NPT (USAS B2-1) conduit				

## Limit switches

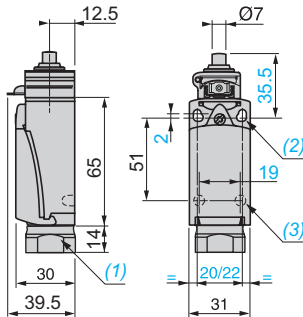
XC Standard range

Compact design, metal, with reset, XCDR

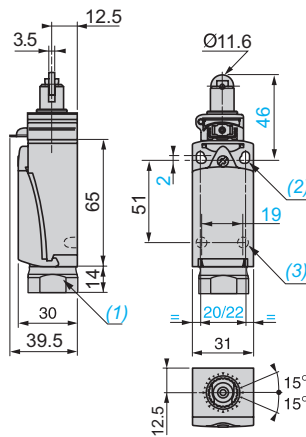
Complete switches with 1 cable entry

### Dimensions

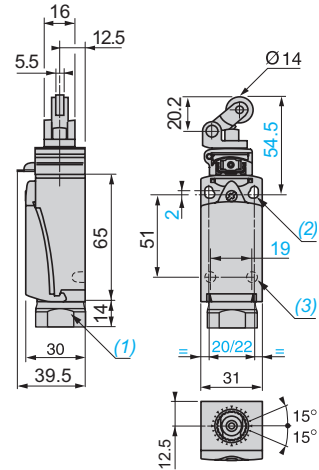
**XCDR2•10•••**



**XCDR2•02•••**



**XCDR2•21•••**



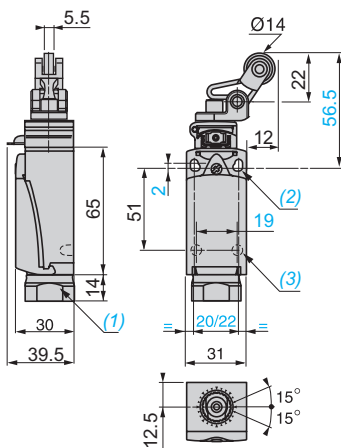
(1) Tapped entry for ISO M20 x 1.5 or Pg 13.5 cable gland or tapped 1/2" NPT.

(2) 2 elongated holes  $\varnothing 4.3 \times 6.3$  mm on 22 mm centres, 2 holes  $\varnothing 4.3$  on 20 mm centres.

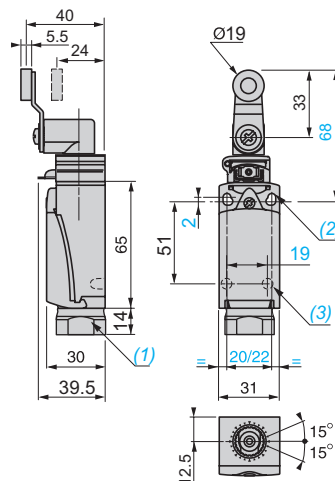
(3) 2 x  $\varnothing 3$  holes for support studs, depth 4 mm.

### Dimensions

**XCDR2•27•••**



**XCDR2•18•••, XCDR2•19•••**



(1) Tapped entry for ISO M20 x 1.5 or Pg 13.5 cable gland or tapped 1/2" NPT.

(2) 2 elongated holes  $\varnothing 4.3 \times 6.3$  mm on 22 mm centres, 2 holes  $\varnothing 4.3$  on 20 mm centres.



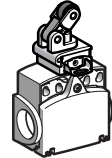
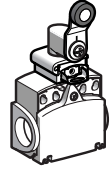

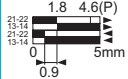
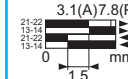
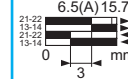
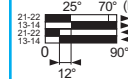

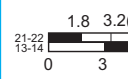
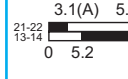
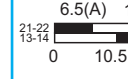
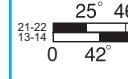
(3) 2 x  $\varnothing 3$  holes for support studs, depth 4 mm.

# Limit switches

XC Standard range

Compact design, plastic, with reset, XCTR

Complete switches with 2 cable entries

Type of head	Plunger (fixing by the body)				Rotary (fixing by the body)
					
Type of operator	Metal end plunger	Steel roller plunger	Thermoplastic roller lever plunger, horizontal actuation in 1 direction	Thermoplastic roller lever plunger	
<b>References of complete switches with 2 ISO M16 x 1.5 cable entries</b>					
 <p>2-pole NC + NO snap action (XE2SP3151)</p>	<b>XCTR2110P16</b> $\ominus$ 	<b>XCTR2102P16</b> $\ominus$ 	<b>XCTR2121P16</b> $\ominus$ 	<b>XCTR2118P16</b> $\ominus$ 	
	 <p>2-pole NC + NO break before make, slow break (XE2NP3151)</p>	<b>XCTR2510P16</b> $\ominus$ 	<b>XCTR2502P16</b> $\ominus$ 	<b>XCTR2521P16</b> $\ominus$ 	<b>XCTR2518P16</b> $\ominus$ 
Weight (kg)	0.120	0.125	0.135	0.165	

## References of complete switches with 2 Pg 11 cable entries

For complete switches with 2 Pg 11 cable entries replace P16 by **G11**.

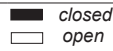
Example: XCTR2110P16 becomes **XCTR2110G11**.

## References of complete switches with 2 entries tapped for 1/2" NPT conduit

For complete switches with 2 entries for 1/2" NPT conduit replace P16 by **N12**.

Example: XCTR2110P16 becomes **XCTR2110N12**.

### Contact operation







(A) = cam displacement

(P) = positive opening point

$\ominus$  NC contact with positive opening operation

## Characteristics

Switch actuation	On end	By 30° cam		
Type of actuation				
Maximum actuation speed	0.5 m/s		1 m/s	1.5 m/s
Minimum force or torque				
For tripping	15 N	12 N	6 N	0.1 N.m
For positive opening	45 N	36 N	18 N	0.25 N.m
Cable entry (1 entry fitted with blanking plug)	2 entries tapped M16 x 1.5 mm for ISO cable gland, clamping capacity 4 to 8 mm 2 entries tapped Pg 11 for cable gland, clamping capacity 7 to 10 mm 2 entries tapped for 1/2" NPT (USAS B2-1) conduit using Pg 11 - 1/2" NPT adaptor <b>DE9RA1012</b>			

## Limit switches

XC Standard range

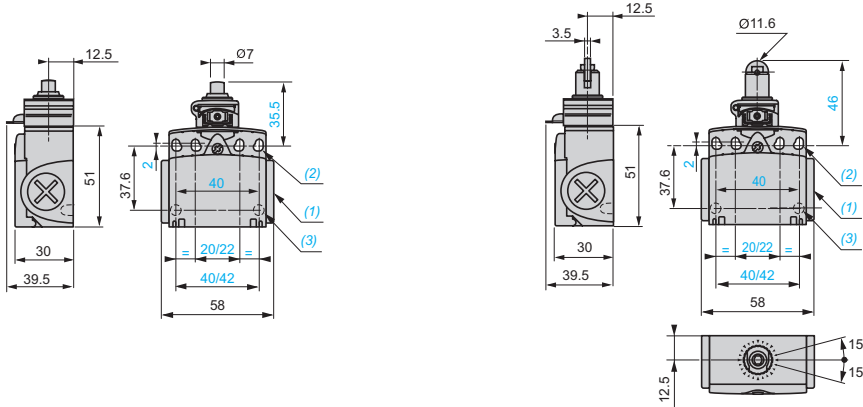
Compact design, plastic, with reset, XCTR

Complete switches with 2 cable entries

### Dimensions

XCTR2●10●●●

XCTR2●02●●●



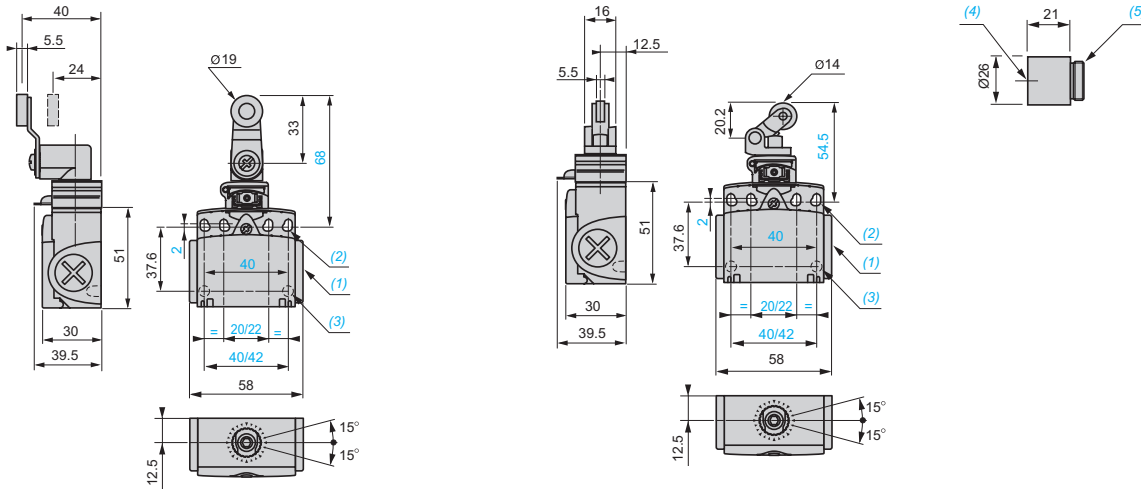
- (1) Tapped entry for ISO M16 x 1.5 or Pg 11 cable gland or tapped 1/2" NPT.  
 (2) 4 elongated holes  $\varnothing 4.3 \times 6.3$  mm on 22/42 mm centres, 4 holes  $\varnothing 4.3$  on 20/40 mm centres.  
 (3) 2 x  $\varnothing 3$  holes for support studs, depth 4 mm.  
 (4) Tapped entry for 1/2" NPT conduit.  
 (5) Pg 11 threaded sleeve.

### Dimensions

XCTR2●18●●●

XCTR2●21●●●

DE9RA1012



- (1) Tapped entry for ISO M16 x 1.5 or Pg 11 cable gland or 1/2" NPT conduit.  
 (2) 4 elongated holes  $\varnothing 4.3 \times 6.3$  mm on 22/42 mm centres, 4 holes  $\varnothing 4.3$  on 20/40 mm centres.  
 (3) 2 x  $\varnothing 3$  holes for support studs, depth 4 mm.

# Limit switches

XC Basic range

Compact design, plastic, XCKN and XCNT

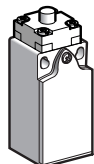
## ■ XCKN

with 1 cable entry

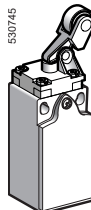
Conforming to CENELEC EN 50047

### □ With head for linear movement (plunger)

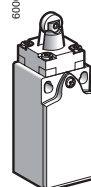
530748



530745



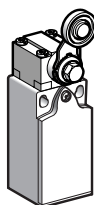
600039



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### □ With head for rotary movement (lever) or multi-directional

530749



530746



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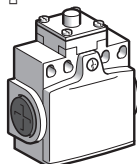
## ■ XCNT

with 2 cable entries

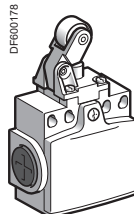
Conforming to CENELEC EN 50047

### □ With head for linear movement (plunger)

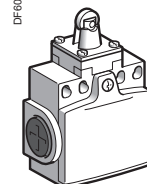
DF600177



DF600178



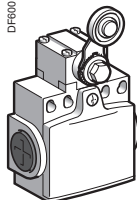
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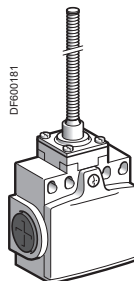
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### □ With head for rotary movement (lever) or multi-directional

DF600180



DF600181



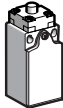
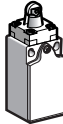
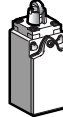


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Environment characteristics		
<b>Conformity to standards</b>	Products	IEC 60947-5-1, EN 60947-5-1, UL 508, CSA C22-2 n° 14, EAC
	Machine assemblies	IEC 60204-1, EN 60204-1
<b>Product certifications</b>		UL, CSA, CCC
<b>Protective treatment</b>	Version	Standard: "TC"
<b>Ambient air temperature</b>	For operation	- 25...+ 70°C
	For storage	- 40...+ 70°C
<b>Vibration resistance</b>	Conforming to IEC 60068-2-6	25 gn (10...500 Hz) except XCKN●●08: 10 gn, XCKN●●39 and XCKN●●49: 15 gn
<b>Shock resistance</b>	Conforming to IEC 60068-2-27	50 gn (11 ms) except XCKN2●49●● and XCKN●●39: 15 gn, XCKN2●08●●: 20 gn and XCKN2●45●●: 35 gn
<b>Electric shock protection</b>		Class II conforming to IEC 61140 and NF C 20030
<b>Degree of protection</b>		<b>IP 65 conforming to IEC 60529; IK 04 conforming to IEC 62262</b>
<b>Cable entry</b>		Depending on model: tapped entry for ISO M20 x 1.5 or Pg 11 cable gland, ISO M 16 x 1.5 cable gland or PF 1/2 (G 1/2).
<b>Materials</b>	Bodies	Plastic
	Heads	Plastic
Contact block characteristics		
<b>Rated operational characteristics</b>		~ AC-15; A300 (U <sub>e</sub> = 240 V, I <sub>e</sub> = 3 A); I <sub>the</sub> = 10 A ≡ DC-13; R300 (U <sub>e</sub> = 250 V, I <sub>e</sub> = 0.1 A), conforming to IEC 60947-5-1 Appendix A, EN 60947-5-1
<b>Rated insulation voltage</b>	2-pole contact	U <sub>i</sub> = 500 V degree of pollution 3 conforming to IEC 60947-1 U <sub>i</sub> = 300 V conforming to UL 508, CSA C22-2 n° 14
<b>Rated impulse withstand voltage</b>	2-pole contact	U <sub>imp</sub> = 6 kV conforming to IEC 60947-1, IEC 60664
<b>Positive operation</b>		NC contacts with positive opening operation conforming to IEC 60947-5-1 Appendix K, EN 60947-5-1
<b>Short-circuit protection</b>		10 A cartridge fuse type gG (gl)
<b>Connection</b>	Screw clamp terminals	Clamping capacity, min: 1 x 0.34 mm <sup>2</sup> , max: 2 x 1.5 mm <sup>2</sup>


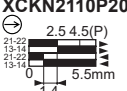
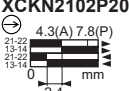
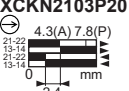



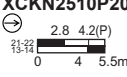
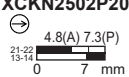
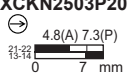
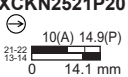




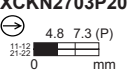
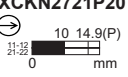
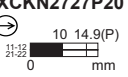

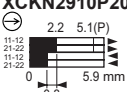
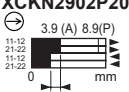
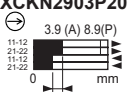
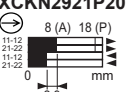
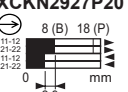



# Limit switches





## XC Basic range

Compact design, plastic, XCKN  
Complete switches with 1 cable entry

Type of head	Plunger (fixing by the body)				
					

Type of operator	Metal end plunger	Plastic roller plunger for lateral cam approach	Plastic roller plunger for traverse cam approach	Thermoplastic roller lever plunger, horizontal actuation in 1 direction	Thermoplastic roller lever plunger, vertical actuation in 1 direction
Sold and packed in lots of	20	20	20	20	20

References of complete switches with 1 ISO M20 x 1.5 cable entry						
	2-pole NC + NO snap action					
	2-pole NC + NO break before make, slow break					
	2-pole NC + NC simultaneous, slow break					
	2-pole NC + NC snap action					
Weight (kg)		0.065	0.065	0.065	0.070	0.070
Contact operation		 closed	 open	(A) (B) = cam displacement (P) = positive opening point	 NC contact with positive opening operation	

Characteristics					
Switch actuation	On end	By 30° cam			
Type of actuation					
Maximum actuation speed	0.5 m/s	0.3 m/s	1 m/s		
Mechanical durability (in millions of operating cycles)	10				
Minimum force or torque	For tripping	15 N	12 N	6 N	
	For positive opening	30 N	20 N	10 N	
Cable entry	1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm				

**References of complete switches with 1 Pg 11 cable entry**  
 For complete switches with 1 Pg 11 cable entry replace P20 by G11.  
 Example: XCKN2110P20 becomes XCKN2110G11.

**Other cable entries**  
 For complete switches with ISO M16 x 1.5 or PF 1/2 (G 1/2) cable entry, please consult our Customer Care Centre.

**Other contacts**  
 For complete switches with 2-pole contacts:  
 NO + NC make before break, slow break,  
 NO + NO simultaneous, slow break, please consult our Customer Care Centre.  
 For complete switches with 3-pole contacts:  
 NC + NO + NO snap action,  
 NC + NC + NO snap action,  
 NC + NC + NO break before make, slow break,  
 NC + NO + NO break before make, slow break, please consult our Customer Care Centre.

# Limit switches

XC Basic range

Compact design, plastic, XCKN

Complete switches with 1 cable entry

Type of head	Rotary (fixing by the body)				Multi-directional	
Type of operator	Thermoplastic roller lever	Variable length thermoplastic roller lever	Thermoplastic roller lever, Ø 50 mm	Variable length thermoplastic roller lever, Ø 50 mm	Spring rod	"Cat's whisker"
Sold and packed in lots of	20	20	20	20	20	20

## References of complete switches with 1 ISO M20 x 1.5 cable entry

	<b>2-pole NC + NO snap action</b>	<b>XCKN2118P20</b> 	<b>XCKN2145P20</b> 	<b>XCKN2139P20</b> 	<b>XCKN2149P20</b> 	<b>XCKN2108P20</b> 	<b>XCKN2106P20</b> 
	<b>2-pole NC + NO break before make, slow break</b>	<b>XCKN2518P20</b> 	<b>XCKN2545P20</b> 	<b>XCKN2539P20</b> 	<b>XCKN2549P20</b> 	<b>XCKN2508P20</b> 	<b>XCKN2506P20</b> 
	<b>2-pole NC + NC simultaneous, slow break</b>	<b>XCKN2718P20</b> 	<b>XCKN2745P20</b> 	<b>XCKN2739P20</b> 	<b>XCKN2749P20</b> 	<b>XCKN2708P20</b> 	<b>XCKN2706P20</b> 
	<b>2-pole NC + NC snap action</b>	<b>XCKN2918P20</b> 	<b>XCKN2945P20</b> 	<b>XCKN2939P20</b> 	<b>XCKN2949P20</b> 	<b>XCKN2908P20</b> 	<b>XCKN2906P20</b> 
Weight (kg)		0.085	0.090	0.110	0.115	0.085	0.075
Contact operation				(A) (B) = cam displacement (P) = positive opening point			

## Characteristics

Switch actuation	By 30° cam	By any moving part
Type of actuation		
Maximum actuation speed	1.5 m/s	1 m/s (any direction)
Mechanical durability	10 million operating cycles	5 million operating cycles
Minimum force or torque	For tripping: 0.1 N.m For positive opening: 0.15 N.m	0.13 N.m
Cable entry	1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm	

## References of complete switches with 1 Pg 11 cable entry

For complete switches with 1 Pg 11 cable entry replace P20 by G11.

Example: XCKN2118P20 becomes **XCKN2118G11**.

## Other cable entries

For complete switches with ISO M16 x 1.5 or PF 1/2 (G 1/2) cable entry, please consult our Customer Care Centre.

## Other contacts

For complete switches with 2-pole contacts:

NO + NC make before break, slow break,

NO + NO simultaneous, slow break, please consult our Customer Care Centre.

For complete switches with 3-pole contacts:

NC + NO + NO snap action,

NC + NC + NO snap action,


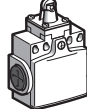
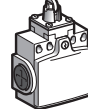

NC + NC + NO break before make, slow break,


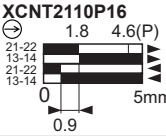
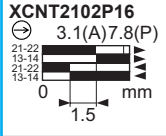
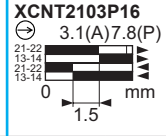
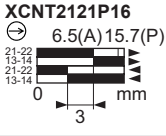

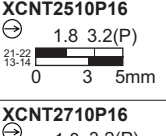
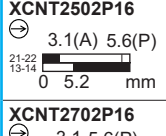
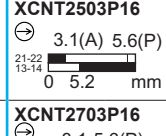
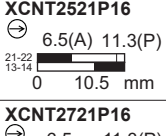

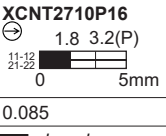
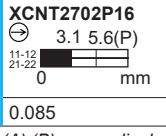
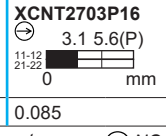
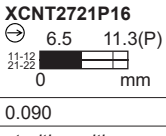
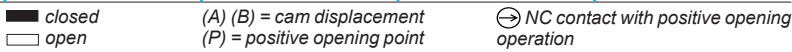
NC + NO + NO break before make, slow break, please consult our Customer Care Centre.




# Limit switches

## XC Basic range

Compact design, plastic, XCNT  
Complete switches with 2 cable entries

Type of head	Plunger (fixing by the body)			
				
Type of operator	Metal end plunger	Plastic roller plunger for lateral cam approach	Plastic roller plunger for traverse cam approach	Thermoplastic roller lever plunger, horizontal actuation in 1 direction
Sold and packed in lots of	10	10	10	10

References of complete switches with 2 ISO M16 x 1.5 cable entries				
 <p>2-pole NC + NO snap action</p>	<p><b>XCNT2110P16</b></p> 	<p><b>XCNT2102P16</b></p> 	<p><b>XCNT2103P16</b></p> 	<p><b>XCNT2121P16</b></p> 
 <p>2-pole NC + NO break before make, slow break</p>	<p><b>XCNT2510P16</b></p> 	<p><b>XCNT2502P16</b></p> 	<p><b>XCNT2503P16</b></p> 	<p><b>XCNT2521P16</b></p> 
 <p>2-pole NC + NC simultaneous, slow break</p>	<p><b>XCNT2710P16</b></p> 	<p><b>XCNT2702P16</b></p> 	<p><b>XCNT2703P16</b></p> 	<p><b>XCNT2721P16</b></p> 
Weight (kg)	0.085	0.085	0.085	0.090
Contact operation				

Characteristics				
Switch actuation	On end	By 30° cam		
Type of actuation				
Maximum actuation speed	0.5 m/s	0.3 m/s	1 m/s	
Mechanical durability (in millions of operating cycles)	10			
Minimum force or torque	For tripping	15 N	12 N	6 N
	For positive opening	30 N	20 N	10 N
Cable entry	2 entries tapped M16 x 1.5 mm for ISO cable gland, clamping capacity 4 to 8 mm			

**References of complete switches with 2 Pg 11 cable entries**  
 For complete switches with 2 Pg 11 cable entries replace P16 by **G11**.  
 Example: XCNT2110P16 becomes **XCNT2110G11**.

**Complete switches with 1/2" NPT cable entry**  
 For complete switches with 1/2" NPT cable entry use adaptor DE9 RA1012 (compatible with XCNT●●●●G11).



Description	Sold in lots of	Unit reference	Weight kg
Adaptor for 1/2" NPT conduit (male Pg 11 / female 1/2" NPT)	10	DE9RA1012	0.050

**Other contacts**  
 For complete switches with 2-pole contacts:  
 NO + NC make before break, slow break,  
 NO + NO simultaneous, slow break, please consult our Customer Care Centre.

# Limit switches

XC Basic range

Compact design, plastic, XCNT

Complete switches with 2 cable entries

Type of head	Rotary (fixing by the body)				Multi-directional	
Type of operator	Thermoplastic roller lever	Variable length thermoplastic roller lever	Thermoplastic roller lever, Ø 50 mm	Variable length thermoplastic roller lever, Ø 50 mm	Spring rod	"Cat's whisker"
Sold and packed in lots of	10	10	10	10	8	8

## References of complete switches with 2 ISO M16 x 1.5 cable entries

	<b>XCNT2118P16</b> 25° 70° (P) 	<b>XCNT2145P16</b> 25° 70° (P) 	<b>XCNT2139P16</b> 25° 70° (P) 	<b>XCNT2149P16</b> 25° 70° (P) 	<b>XCNT2108P16</b> 20° 	<b>XCNT2106P16</b> 20° 
	<b>XCNT2518P16</b> 25° 46° (P) 	<b>XCNT2545P16</b> 25° 46° (P) 	<b>XCNT2539P16</b> 25° 46° (P) 	<b>XCNT2549P16</b> 25° 46° (P) 	<b>XCNT2508P16</b> 20° 	<b>XCNT2506P16</b> 20° 
	<b>XCNT2718P16</b> 25° 46° (P) 	<b>XCNT2745P16</b> 25° 46° (P) 	<b>XCNT2739P16</b> 25° 46° (P) 	<b>XCNT2749P16</b> 25° 46° (P) 	<b>XCNT2708P16</b> 20° 	<b>XCNT2706P16</b> 20° 
Weight (kg)	0.105	0.120	0.120	0.120	0.100	0.090
Contact operation				(A) (B) = cam displacement (P) = positive opening point		

## Characteristics

Switch actuation	By 30° cam	By any moving part
Type of actuation		
Maximum actuation speed	1.5 m/s	1 m/s (any direction)
Mechanical durability	10 million operating cycles	5 million operating cycles
Minimum force or torque	For tripping: 0.1 N.m For positive opening: 0.15 N.m	0.13 N.m
Cable entry	2 entries tapped M16 x 1.5 mm for ISO cable gland, clamping capacity 4 to 8 mm	

## References of complete switches with 2 Pg 11 cable entries

For complete switches with 2 Pg 11 cable entries replace P16 by G11.  
Example: XCNT2118P16 becomes **XCNT2118G11**.

## Complete switches with 1/2" NPT cable entry

For complete switches with 1/2" NPT cable entry use adaptor DE9 RA1012 (compatible with XCNT●●●G11).



DE9RA1012

Description	Sold in lots of	Unit reference	Weight kg
Adaptor for 1/2" NPT conduit (male Pg 11 / female 1/2" NPT)	10	DE9RA1012	0.050

## Other contacts

For complete switches with 2-pole contacts:  
NO + NC make before break, slow break,  
NO + NO simultaneous, slow break, please consult our Customer Care Centre.

# Limit switches

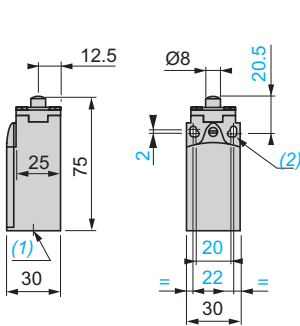
## XC Basic range

Compact design, plastic, XCKN

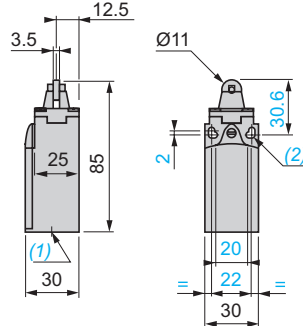
Complete switches with 1 cable entry

### Dimensions

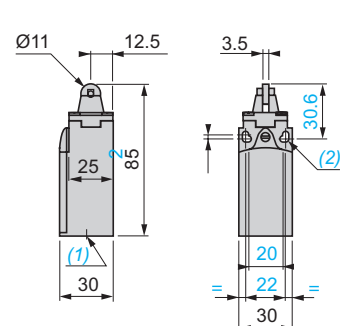
XCKN2●10P20



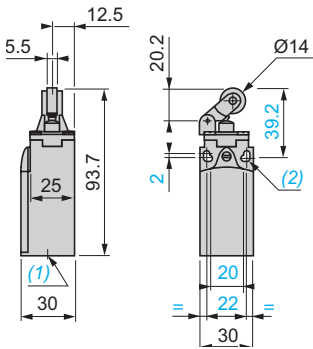
XCKN2●02P20



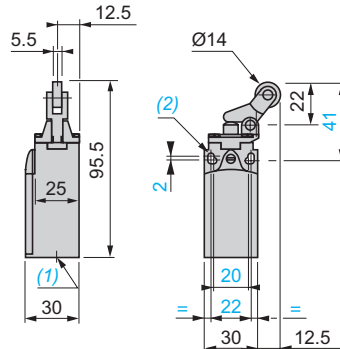
XCKN2●03P20



XCKN2●21P20

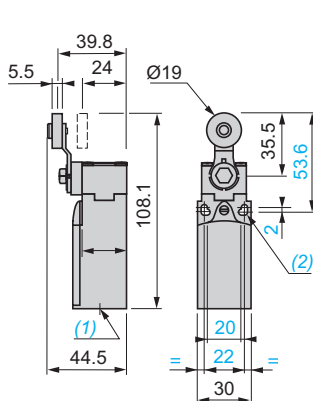


XCKN2●27P20

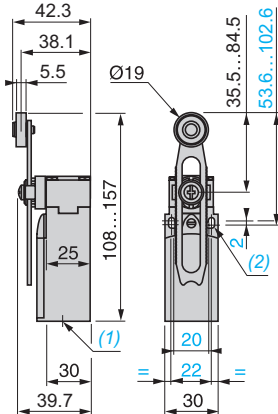


(1) 1 tapped entry for ISOM20 x 1.5 or Pg 11 cable gland.  
 (2) Ø: 2 elongated holes Ø 4.3 x 6.3 on 22 mm centres, 2 holes Ø 4.3 on 20 mm centres.

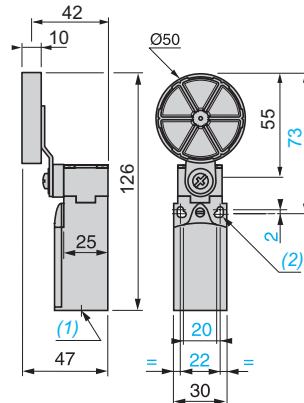
XCKN2●18P20



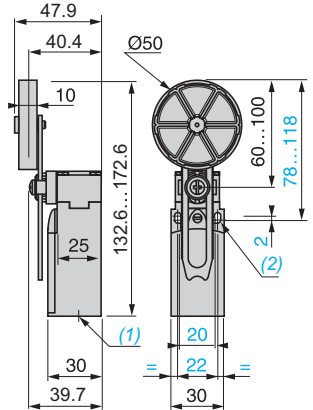
XCKN2●45P20



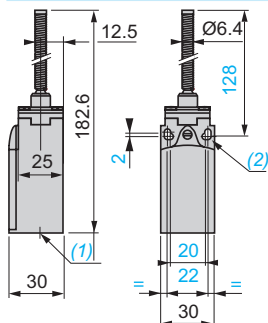
XCKN2●39P20



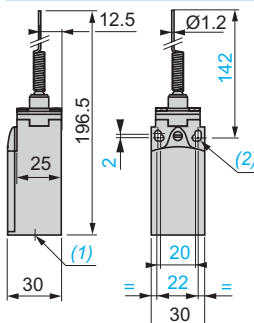
XCKN2●49P20



XCKN2●08P20



XCKN2●06P20



(1) 1 tapped entry for ISOM20 x 1.5 or Pg 11 cable gland.  
 (2) Ø: 2 elongated holes Ø 4.3 x 6.3 on 22 mm centres, 2 holes Ø 4.3 on 20 mm centres.

# Limit switches

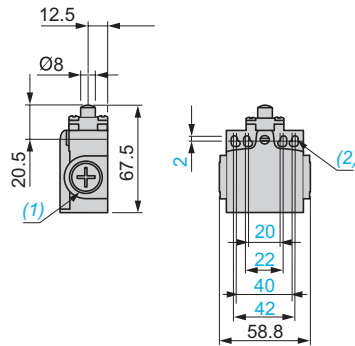
## XC Basic range

Compact design, plastic, XCNT

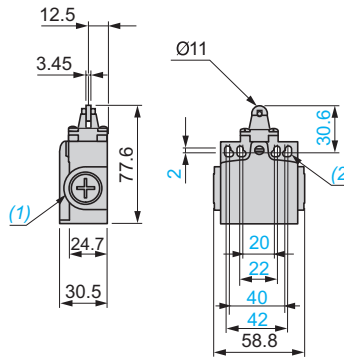
Complete switches with 2 cable entries

### Dimensions

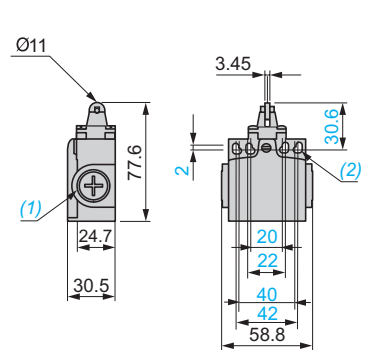
**XCNT2•10P20**



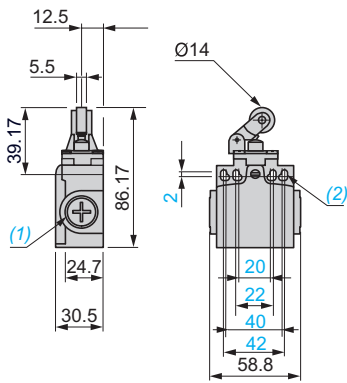
**XCNT2•02P20**



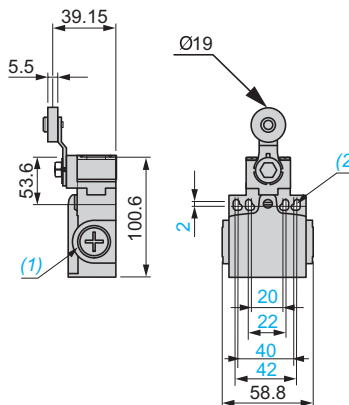
**XCNT2•03P20**



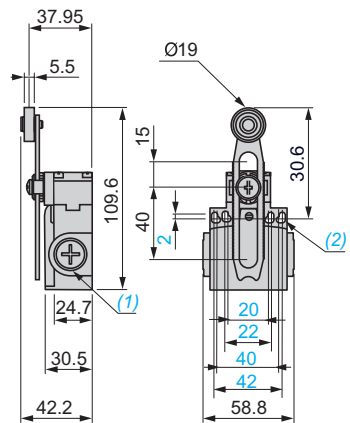
**XCNT2•21P20**



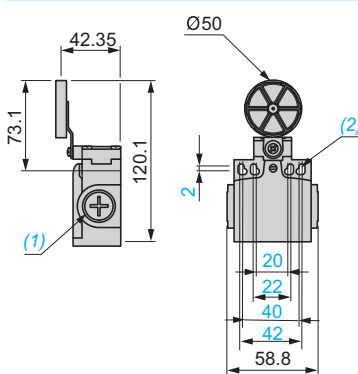
**XCNT2•18P16**



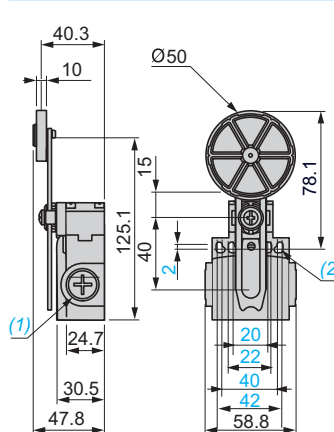
**XCNT2•45P16**



**XCNT2•39P16**

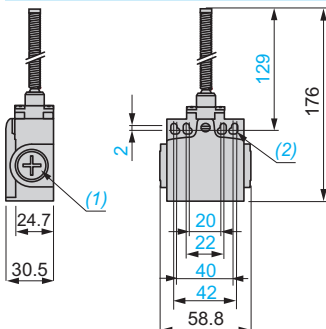


**XCNT2•49P16**

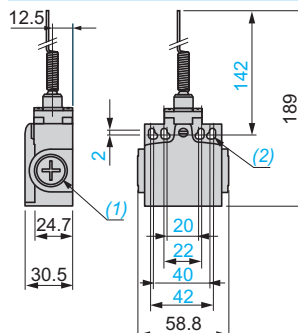


(1) 2 tapped entries for ISOM16 x 1.5 or Pg 11 cable gland.  
(2) Ø: 4 elongated holes Ø 4.3 x 6.3

**XCNT2•08P16**



**XCNT2•06P16**



# Limit switches

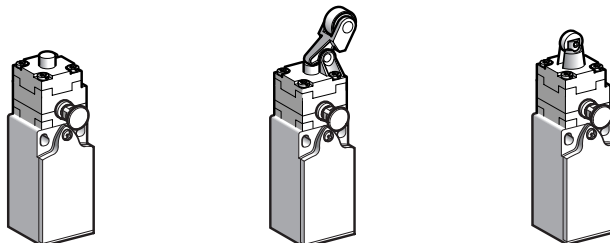
XC Basic range

Compact design, plastic, with reset knob,  
XCNR and XCNTTR

## ■ XCNR

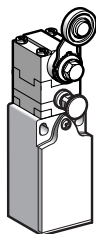
with 1 cable entry

### □ With head for linear movement (plunger)



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### □ With head for rotary movement (lever)

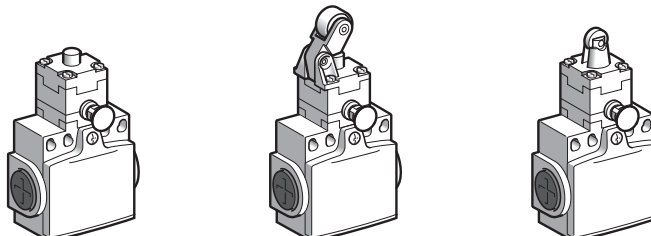


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## ■ XCNTTR

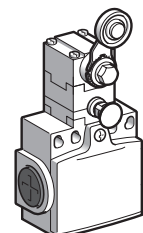
with 2 cable entries

### □ With head for linear movement (plunger)



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### □ With head for rotary movement (lever)



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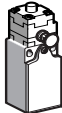
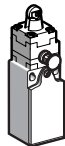



Environment characteristics		
<b>Conformity to standards</b>	Products	CE, IEC 60947-5-1, EN 60947-5-1, UL 508, CSA C22-2 n° 14, EAC
	Machine assemblies	IEC 60204-1, EN 60204-1
<b>Product certifications</b>		UL, CSA, CCC
<b>Protective treatment</b>	Version	Standard: "TC"
<b>Ambient air temperature</b>	For operation	- 25...+ 70°C
	For storage	- 40...+ 70°C
<b>Vibration resistance</b>	Conforming to IEC 60068-2-6	25 gn (10...500 Hz)
<b>Shock resistance</b>	Conforming to IEC 60068-2-27	50 gn (11 ms)
<b>Electric shock protection</b>		Class II conforming to IEC 61140 and NF C 20030
<b>Degree of protection</b>		<b>IP 65 conforming to IEC 60529; IK 04 conforming to IEC 62262</b>
<b>Cable entry</b>		Depending on model: tapped entry, for ISO M20 x 1.5 or Pg 11 cable gland, ISO M16 x 1.5 cable gland or PF 1/2 (G 1/2)
<b>Materials</b>	Bodies	Plastic
	Heads	Plastic
Contact block characteristics		
<b>Rated operational characteristics</b>		~ AC-15; A300 (Ue = 240 V, Ie = 3 A); Ithe = 10 A ≡ DC-13; R300 (Ue = 250 V, Ie = 0.1 A), conforming to IEC 60947-5-1 Appendix A, EN 60947-5-1
<b>Rated insulation voltage</b>	2-pole contact	Ui = 500 V degree of pollution 3 conforming to IEC 60947-1 Ui = 300 V conforming to UL 508, CSA C22-2 n° 14
<b>Rated impulse withstand voltage</b>	2-pole contact	U imp = 6 kV conforming to IEC 60947-1, IEC 60664
<b>Positive operation</b>		NC contacts with positive opening operation conforming to IEC 60947-5-1 Appendix K, EN 60947-5-1
<b>Short-circuit protection</b>		10 A cartridge fuse type gG (gl)
<b>Connection</b>	Screw clamp terminals	Clamping capacity, min: 1 x 0.34 mm <sup>2</sup> , max: 2 x 1.5 mm <sup>2</sup>

# Limit switches


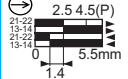
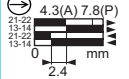
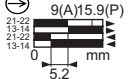
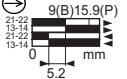
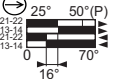


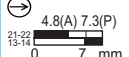
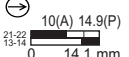

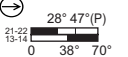



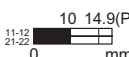

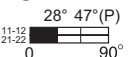









## XC Basic range

Compact design, plastic, with reset knob, XCNR






Complete switches with 1 cable entry

Type of head	Plunger (fixing by the body)				Rotary (fixing by the body)
					
Type of operator	Metal end plunger	Plastic roller plunger	Thermoplastic roller lever plunger, horizontal actuation in 1 direction	Thermoplastic roller lever plunger, vertical actuation in 1 direction	Thermoplastic roller lever
Sold and packed in lots of	10	10	10	10	10

### References of complete switches with 1 ISO M20 x 1.5 cable entry

 2-pole NC + NO snap action	<b>XCNR2110P20</b> 	<b>XCNR2102P20</b> 	<b>XCNR2121P20</b> 	<b>XCNR2127P20</b> 	<b>XCNR2118P20</b> 
 2-pole NC + NO break before make, slow break	<b>XCNR2510P20</b> 	<b>XCNR2502P20</b> 	<b>XCNR2521P20</b> 	<b>XCNR2527P20</b> 	<b>XCNR2518P20</b> 
 2-pole NC + NC simultaneous, slow break	<b>XCNR2710P20</b> 	<b>XCNR2702P20</b> 	<b>XCNR2721P20</b> 	<b>XCNR2727P20</b> 	<b>XCNR2718P20</b> 
 2-pole NC + NC snap action	<b>XCNR2910P20</b> 	<b>XCNR2902P20</b> 	<b>XCNR2921P20</b> 	<b>XCNR2927P20</b> 	<b>XCNR2918P20</b> 
Weight (kg)	0.080	0.080	0.085	0.090	0.100
Contact operation	 closed  open		(A) (B) = cam displacement (P) = positive opening point		 NC contact with positive opening operation

### Characteristics

Switch actuation	On end	By 30° cam			
Type of actuation					
Maximum actuation speed	0.5 m/s	0.3 m/s	1 m/s		1.5 m/s
Mechanical durability	100,000 operating cycles				
Minimum force or torque	For tripping	15 N	12 N	6 N	0.1 N.m
	For positive opening	30 N	20 N	10 N	0.15 N.m
Cable entry	1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm				

### References of complete switches with 1 Pg 11 cable entry

For complete switches with 1 Pg 11 cable entry replace P20 by G11.  
Example: XCNR2110P20 becomes **XCNR2110G11**.

### Other cable entries

For complete switches with ISO M16 x 1.5 or PF 1/2 (G 1/2) cable entry, please consult our Customer Care Centre.

### Other contacts

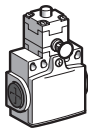
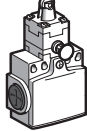
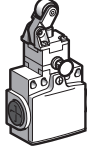
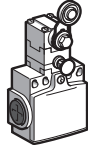

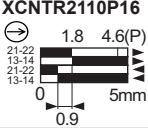
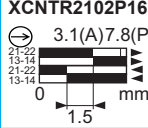
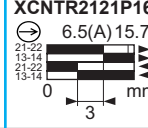
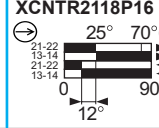

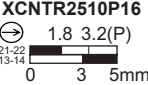
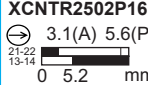

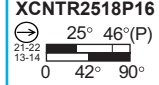

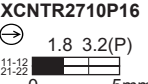
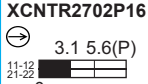
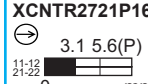
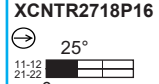



For complete switches with 2-pole contacts:  
NC + NO make before break, slow break,  
NO + NO simultaneous, slow break, please consult our Customer Care Centre.




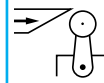
For complete switches with 3-pole contacts:  
NC + NO + NO snap action,  
NC + NC + NO snap action,  
NC + NC + NO break before make, slow break,  
NC + NO + NO break before make, slow break, please consult our Customer Care Centre.

# Limit switches

## XC Basic range

Compact design, plastic, with reset knob, XCNTR  
Complete switches with 2 cable entries

Type of head	Plunger (fixing by the body)			Rotary (fixing by the body)
				
Type of operator	Metal end plunger	Plastic roller plunger	Thermoplastic roller lever plunger, horizontal actuation in 1 direction	Thermoplastic roller lever
Sold and packed in lots of	10	10	10	10
References of complete switches with 2 ISO M16 x 1.5 cable entries				
 2-pole NC + NO snap action	<b>XCNTR2110P16</b> 1.8 4.6(P) 	<b>XCNTR2102P16</b> 3.1(A) 7.8(P) 	<b>XCNTR2121P16</b> 6.5(A) 15.7(P) 	<b>XCNTR2118P16</b> 25° 70°(P) 
 2-pole NC + NO break before make, slow break	<b>XCNTR2510P16</b> 1.8 3.2(P) 	<b>XCNTR2502P16</b> 3.1(A) 5.6(P) 	<b>XCNTR2521P16</b> 3.1(A) 5.6(P) 	<b>XCNTR2518P16</b> 25° 46°(P) 
 2-pole NC + NC simultaneous, slow break	<b>XCNTR2710P16</b> 1.8 3.2(P) 	<b>XCNTR2702P16</b> 3.1 5.6(P) 	<b>XCNTR2721P16</b> 3.1 5.6(P) 	<b>XCNTR2718P16</b> 25° 
Weight (kg)	0.105	0.110	0.135	0.095
Contact operation	 closed  open	(A) (B) = cam displacement (P) = positive opening point		 NC contact with positive opening operation

Characteristics					
Switch actuation	On end	By 30° cam			
Type of actuation					
Maximum actuation speed	0.5 m/s	0.3 m/s	1 m/s	1.5 m/s	
Mechanical durability	100 000 operating cycles				
Minimum force or torque	For tripping	15 N	12 N	6 N	0.1 N.m
	For positive opening	30 N	20 N	10 N	0.15 N.m
Cable entry	2 entries tapped M16 x 1.5 mm for ISO cable gland, clamping capacity 4 to 8 mm				

### References of complete switches with 2 Pg 11 cable entries

For complete switches with 2 Pg 11 cable entries replace P16 by G11.  
Example: XCNTR2110P16 becomes **XCNTR2110G11**.

### Complete switches with 1/2" NPT cable entry

For complete switches with 1/2" NPT cable entry use adaptor DE9 RA1012 (compatible with XCNTR●●●●G11).



DE9RA1012

Description	Sold in lots of	Unit reference	Weight kg
Adaptor for 1/2" NPT conduit (male Pg 11 / female 1/2" NPT)	10	DE9RA1012	0.050

### Other contacts

For complete switches with 2-pole contacts:  
NO + NC make before break, slow break,  
NO + NO simultaneous, slow break, please consult our Customer Care Centre.

# Limit switches

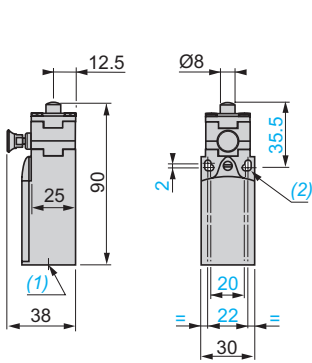
## XC Basic range

Compact design, plastic, with reset knob, XCNR

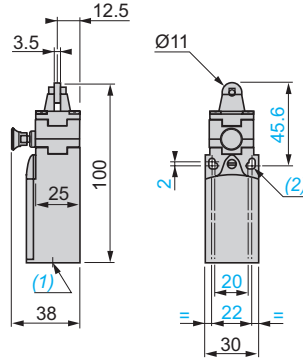
Complete switches with 1 cable entry

### Dimensions

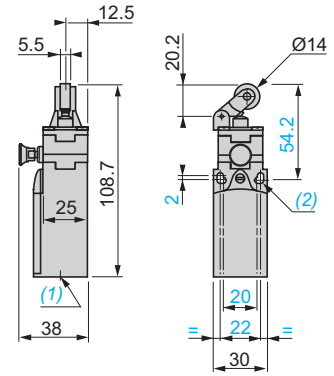
#### XCNR2•10P20



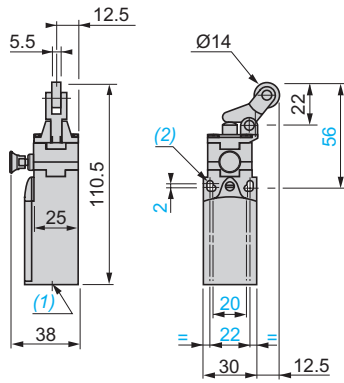
#### XCNR2•02P20



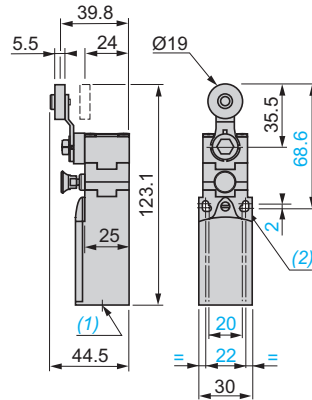
#### XCNR2•21P20



#### XCNR2•27P20



#### XCNR2•18P20



(1) 1 tapped entry for ISO M20 x 1.5 or Pg 11 cable gland.

(2) Ø: 2 elongated holes Ø 4.3 x 6.3 on 22 mm centres, 2 holes Ø 4.3 on 20 mm centres.

## Limit switches

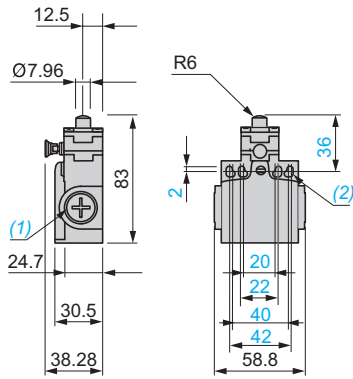
XC Basic range

Compact design, plastic, with reset knob, XCNTR

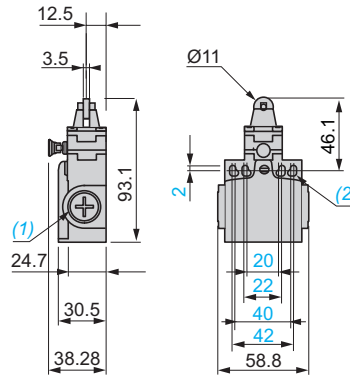
Complete switches with 2 cable entries

### Dimensions

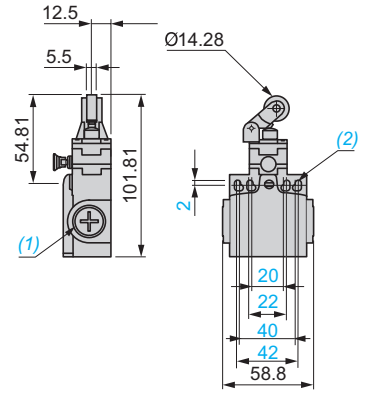
**XCNTR2•10P16**



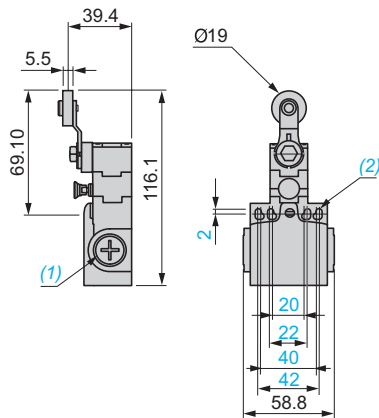
**XCNTR2•02P16**



**XCNTR2•21P16**



**XCNTR2•18P16**



(1) 2 tapped entries for ISO M16 x 1.5 or Pg 11 cable gland.  
 (2)  $\varnothing$ : 4 elongated holes  $\varnothing 4.3 \times 6.3$ .

# Limit switches

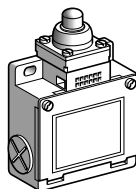
XC Standard range, Classic format  
Metal, XCKM, XCKL and XCKML

■ XCKM,  
with 3 cable entries

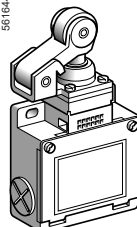
□ With head for linear movement  
(plunger)

□ With head for rotary movement  
(lever) or multi-directional

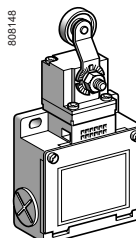
561643



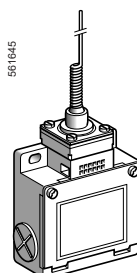
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808148



561645



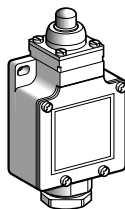
Page 118

■ XCKL,  
with 1 cable entry

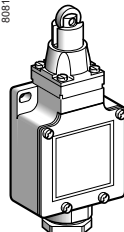
□ With head for linear movement  
(plunger)

□ With head for rotary movement  
(lever) or multi-directional

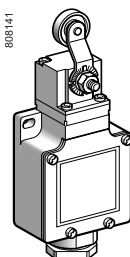
808140



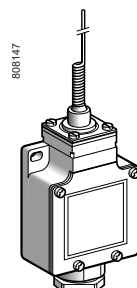
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808141



808147



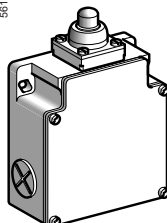
Page 120

■ XCKML,  
with 3 cable entries and 2 x 2-pole contacts

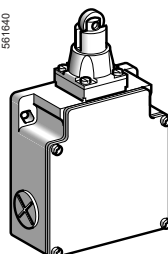
□ With head for linear movement  
(plunger)

□ With head for rotary movement  
(lever)

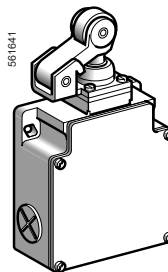
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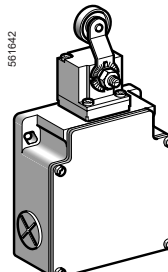
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561641



561642



Page 122

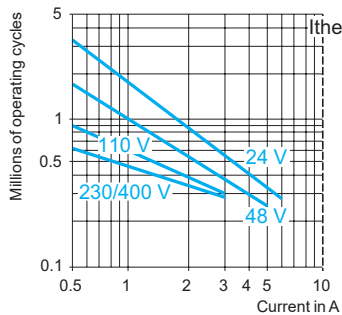
## Environment characteristics

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 CCC (only for XCKM) BV (only for XCKM and XCKL)
Protective treatment	Version	Standard: "TC". Special: "TH"
Ambient air temperature	For operation	- 25...+ 70°C
	For storage	- 40...+ 70°C
Vibration resistance	Conforming to IEC 60068-2-6	25 gn (10...500 Hz)
Shock resistance	Conforming to IEC 60068-2-27	50 gn (11 ms)
Electric shock protection		Class I conforming to IEC 61140 and NF C 20-030
Degree of protection		IP 66 conforming to IEC 60529; IK 05 conforming to IEC 62262
Repeat accuracy		XCKML 0.1 mm; XCKM and XCKL 0.05 mm on the tripping points, with 1 million operating cycles for head with end plunger
Cable entry or connector	Depending on model	XCKM: 3 tapped entries for Pg 11 cable gland or tapped ISO M20, or with 1/2" NPT adaptor XCKL: 1 tapped entry incorporating Pg 13.5 cable gland or 1 entry tapped 1/2" NPT XCKML: 3 tapped entries for Pg 13.5 cable gland or tapped ISO M20
Materials		Bodies: Zamak. Rotary heads: Zamak or plastic, depending on product reference. Other heads: plastic

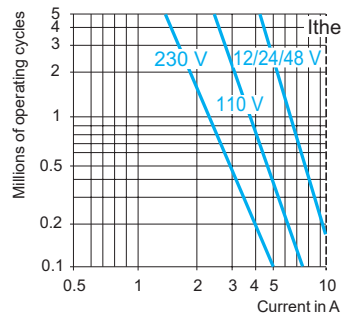
Contact block characteristics		
Rated operational characteristics	XE2●P	~ AC-15; A300 (Ue = 240 V, Ie = 3 A); Ithe = 10 A --- DC-13; Q300 (Ue = 250 V, Ie = 0.27 A), conforming to IEC 60947-5-1 Appendix A, EN 60947-5-1
	XE3●P	~ AC-15; B300 (Ue = 240 V, Ie = 1.5 A); Ithe = 6 A --- DC-13; R300 (Ue = 250 V, Ie = 0.1 A), conforming to IEC 60947-5-1 Appendix A, EN 60947-5-1
Rated insulation voltage	XE2●P	Ui = 500 V degree of pollution 3 conforming to IEC 60947-1 Ui = 300 V conforming to UL 508, CSA C22-2 n° 14
	XE3●P	Ui = 400 V degree of pollution 3 conforming to IEC 60947-1 Ui = 300 V conforming to UL 508, CSA C22-2 n° 14
Rated impulse withstand voltage	XE2●P	U imp = 6 kV conforming to IEC 60947-1, IEC 60664
	XE3●P	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	XE2●P	10 A cartridge fuse type gG (gl)
	XE3●P	6 A cartridge fuse type gG (gl)
Connection (screw clamp terminals)	XE2SP21●1	Clamping capacity, min: 1 x 0.34 mm <sup>2</sup> , max: 2 x 1.5 mm <sup>2</sup>
	XE2NP21●1	Clamping capacity, min: 1 x 0.5 mm <sup>2</sup> , max: 2 x 2.5 mm <sup>2</sup>
	XESP2151L and XENP2151L	Clamping capacity, min: 1 x 0.34 mm <sup>2</sup> , max: 2 x 1.5 mm <sup>2</sup> or 1 x 2.5 mm <sup>2</sup>
	XE3NP and XE3SP	Clamping capacity, min: 1 x 0.34 mm <sup>2</sup> , max: 1 x 1 mm <sup>2</sup> or 2 x 0.75 mm <sup>2</sup>
Minimum actuation speed		<b>XE2SP21●1, XESP2151L and XE3SP</b> : 0.01 m/minute <b>XE2NP21●1, XENP2151L and XE3NP</b> : 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 ~  
mm inductive circuit

**XE2SP21●1, XE2SP2141, XESP2151L**



**XE2NP21●1, XENP2151L**



DC supply ---

Power broken in W for 5 million operating cycles.

Voltage	V	24	48	120
mm	W	10	7	4

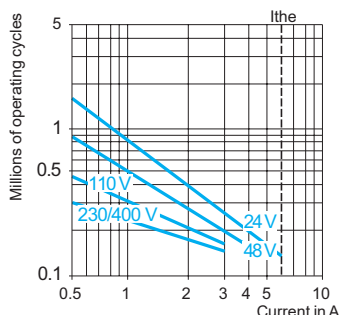
Power broken in W for 5 million operating cycles.

Voltage	V	24	48	120
mm	W	13	9	7

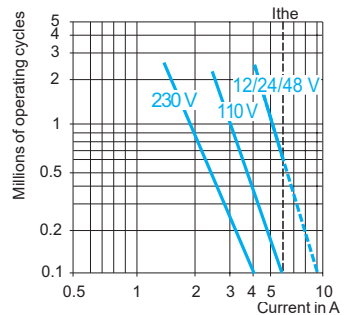
For XE2SP●151 on ~ or ---, NC and NO contacts simultaneously loaded to the values shown with reverse polarity.

AC supply  
50/60 Hz ~  
mm inductive circuit

**XE3SP●●●●**



**XE3NP●●●●**



DC supply ---

Power broken in W for 5 million operating cycles.

Voltage	V	24	48	120
mm	W	3	2	1

Power broken in W for 5 million operating cycles.

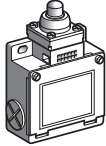
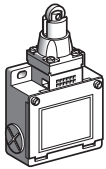
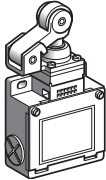
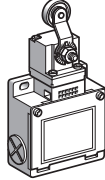
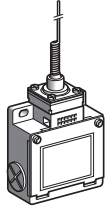
Voltage	V	24	48	120
mm	W	4	3	2

# Limit switches

## XC Standard range, Classic format

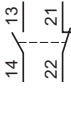




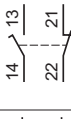




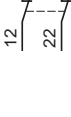




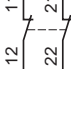




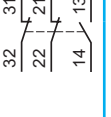




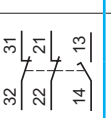







### Metal, XCKM

### Complete units with 3 cable entries

Type of head	Plunger (fixing by the body)	Rotary (fixing by the body)	Multi-directional, (fixing by the body)
			
			






Type of operator	Metal end plunger	Steel roller plunger	Thermoplastic roller lever plunger, horizontal actuation in 1 direction	Thermoplastic roller lever (1)	"Cat's whisker" (2)
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### References of complete units with 3 ISO M20 x 1.5 cable entries (3)

2-pole NC + NO snap action (XE2SP2151)		<b>XCKM110H29</b> 	<b>XCKM102H29</b> 	<b>XCKM121H29</b> 	<b>XCKM115H29</b> 	<b>XCKM106H29</b>
2-pole NC + NO break before make, slow break (XE2NP2151)		<b>XCKM510H29</b> 	<b>XCKM502H29</b> 	<b>XCKM521H29</b> 	<b>XCKM515H29</b> 	<b>XCKM506H29</b>
2-pole NC + NC snap action (XE2SP2141)		<b>ZCKM9H29 + ZCKD10</b> 	<b>ZCKM9H29 + ZCKD02</b> 	<b>ZCKM9H29 + ZCKD21</b> 	<b>ZCKM9H29 + ZCKD15</b> 	<b>ZCKM9H29 + ZCKD06</b>
2-pole NC + NC simultaneous, slow break (XE2NP2141)		<b>ZCKM7H29 + ZCKD10</b> 	<b>ZCKM7H29 + ZCKD02</b> 	<b>ZCKM7H29 + ZCKD21</b> 	<b>ZCKM7H29 + ZCKD15</b> 	<b>ZCKM7H29 + ZCKD06</b>
3-pole NC + NC + NO snap action (XE3SP2141)		<b>ZCKMD39H29 + ZCKD10</b> 	<b>ZCKMD39H29 + ZCKD02</b> 	<b>ZCKMD39H29 + ZCKD21</b> 	<b>ZCKMD39H29 + ZCKD15</b> 	<b>ZCKMD39H29 + ZCKD06</b>
3-pole NC + NC + NO break before make, slow break (XE3NP2141)		<b>ZCKMD37H29 + ZCKD10</b> 	<b>ZCKMD37H29 + ZCKD02</b> 	<b>ZCKMD37H29 + ZCKD21</b> 	<b>ZCKMD37H29 + ZCKD15</b> 	<b>ZCKMD37H29 + ZCKD06</b>
Weight (kg)	0.250	0.255	0.300	0.280	0.250	
Contact operation	 closed  open	(A) = cam displacement (P) = positive opening point		 NC contact with positive opening operation		

### References of complete units with 3 Pg 11 cable entries

For complete units with 3 Pg 11 cable entries, delete H29 from the end of the reference. Example: XCKM110H29 becomes XCKM110.

Characteristics					
Switch actuation	On end	By 30° cam			By any moving part
Type of actuation					
Maximum actuation speed	0.5 m/s	1.5 m/s			1 m/s (any direction)
Mechanical durability (4) (in millions of operating cycles)	20	15			10
Minimum force or torque	For tripping: 15 N For positive opening: 45 N	12 N 36 N	8 N 24 N	0.1 N.m 0.25 N.m	0.13 N.m -
Cable entry	3 entries tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm				

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

(2) Value taken with actuation by moving part at 100 mm from the fixing.

(3) Switches with gold contacts or eyelet type connections: please consult our Customer Care Centre.

(4) Limited to 15 million operating cycles for switches with contacts XE3•P.

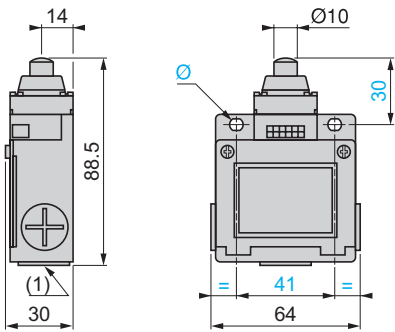
## Limit switches

XC Standard range, Classic format

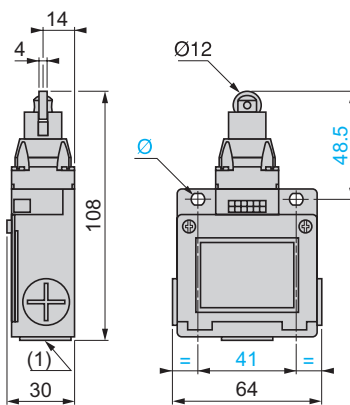
Metal, XCKM

Complete units with 3 cable entries

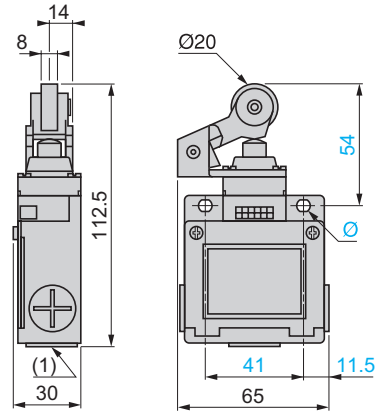
**XCKM●10**  
ZCKMD3● + ZCKD10



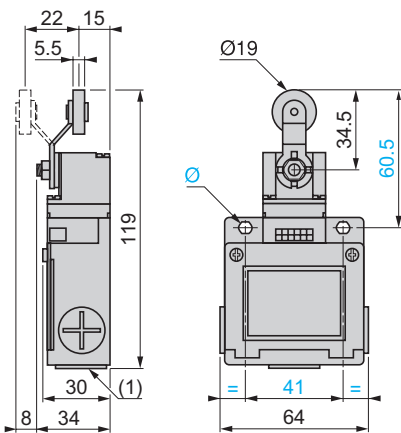
**XCKM●02**  
ZCKMD3● + ZCKD02



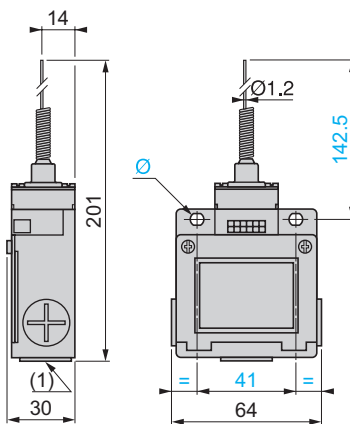
**XCKM●21**  
ZCKMD3● + ZCKD21



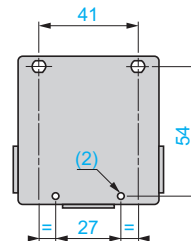
**XCKM●15**  
ZCKMD3● + ZCKD15



**XCKM●06**  
ZCKMD3● + ZCKD06



**Rear view XCKM●●●, ZCKM●, ZCKMD3●**

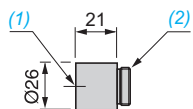


(1) 3 tapped entries for ISO M20 x 1.5 or Pg 11 cable gland or with 1/2" NPT conduit adaptor DE9RA1012.

(2) 2 x Ø 4 H 11, depth 10.

Ø: 2 elongated holes Ø 5.2 x 6.2

**Adaptor for 1/2" NPT conduit**  
**DE9RA1012**

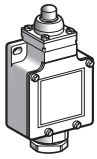
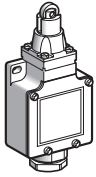
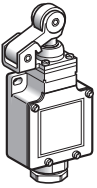
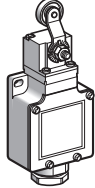
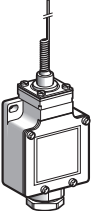









(1) Tapped entry for 1/2" NPT conduit.






(2) Pg 11 threaded sleeve.

# Limit switches

XC Standard range, Classic format  
Metal, XCKL  
Complete units incorporating Pg 13.5 cable gland

Type of head	Plunger (fixing by the body)			Rotary (fixing by the body)	Multi-directional, (fixing by the body)
					
Type of operator	Metal end plunger	Steel roller plunger	Thermoplastic roller lever plunger, horizontal actuation in 1 direction	Thermoplastic roller lever (1)	"Cat's whisker" (2)

References (3)						
2-pole NC + NO snap action (XE2SP2151)	 13, 14, 21, 22	<b>XCKL110</b> ⊕ 1.8 4.5(P) 0.9 5.5mm	<b>XCKL102</b> ⊕ 3.1(A) 7.8(P) 1.5 mm	<b>XCKL121</b> ⊕ 4.6(A) 11.1(P) 2.2 mm	<b>XCKL115</b> ⊕ 26° 58°(P) 11° 70°	<b>XCKL106</b> 30° 14°
2-pole NC + NO break before make, slow break (XE2NP2151)	 13, 14, 21, 22	<b>XCKL510</b> ⊕ 1.8 3.2(P) 0 5.5mm	<b>XCKL502</b> ⊕ 3.1(A) 5.6(P) 0 5.2 mm	<b>XCKL521</b> ⊕ 4.6(A) 8(P) 0 7.6 mm	<b>XCKL515</b> ⊕ 26° 42°(P) 0 36° 70°	<b>XCKL506</b> 30° 0 40°
3-pole NC + NC + NO snap action (XE3SP2141)	 31, 32, 21, 22, 13, 14	<b>ZCKLD39 + ZCKD10</b> ⊕ 1.8 4.5(P) mm 0.9 5.5	<b>ZCKLD39 + ZCKD02</b> ⊕ 3.1(A) 7.8(P) mm 1.5	<b>ZCKLD39 + ZCKD21</b> ⊕ 4.6(A) 11.1(P) mm 2.2	<b>ZCKLD39 + ZCKD15</b> ⊕ 26° 58°(P) 11° 70°	<b>ZCKLD39 + ZCKD06</b> 30° 14°
2-pole NC + NC simultaneous, slow break (XE2NP2141)	 11, 12, 21, 22	<b>ZCKL7 + ZCKD10</b> ⊕ 3.2(P) 1.8 5.5mm	<b>ZCKL7 + ZCKD02</b> ⊕ 5.6(P) 3.1(A) 9mm	<b>ZCKL7 + ZCKD21</b> ⊕ 8(P) 4.6(A) mm	<b>ZCKL7 + ZCKD15</b> ⊕ 42°(P) 23° 70°	<b>ZCKL7 + ZCKD06</b> 30°
3-pole NC + NC + NO break before make, slow break (XE3NP2141)	 31, 32, 21, 22, 13, 14	<b>ZCKLD37 + ZCKD10</b> ⊕ 1.8 3.2(P) mm 0 3 5.5	<b>ZCKLD37 + ZCKD02</b> ⊕ 3.1(A) 3.2(P) mm 0 5.2 5.5	<b>ZCKLD37 + ZCKD21</b> ⊕ 4.6(A) 8(P) mm 0 7.6	<b>ZCKLD37 + ZCKD15</b> ⊕ 26° 42°(P) 36° 70°	<b>ZCKLD37 + ZCKD06</b> 30° 0 40°
Weight (kg)		0.255	0.260	0.305	0.285	0.255
Contact operation		 closed  open	(A) = cam displacement (P) = positive opening point		⊕ NC contact with positive opening operation	

Characteristics					
Switch actuation	On end	By 30° cam			By any moving part
Type of actuation					
Maximum actuation speed	0.5 m/s	1.5 m/s			1 m/s (any direction)
Mechanical durability (4) (in millions of operating cycles)	20	15			10
Minimum force or torque	For tripping For positive opening	15 N 45 N	12 N 36 N	8 N 24 N	0.1 N.m 0.25 N.m
Cable entry	1 entry incorporating metal cable gland. Clamping capacity 6 to 13.5 mm.				

(1) Adjustable throughout 360° in 5° steps, or in 90° steps by reversing the notched washer.  
 (2) Value taken with actuation by moving part at 100 mm from the fixing.  
 (3) Switches with gold contacts or eyelet type connections: please consult our Customer Care Centre.  
 (4) Limited to 15 million operating cycles for switches with contacts XE3●P.

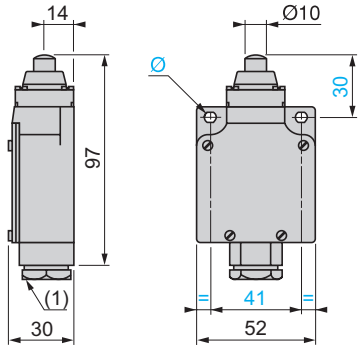
## Limit switches

XC Standard range, Classic format

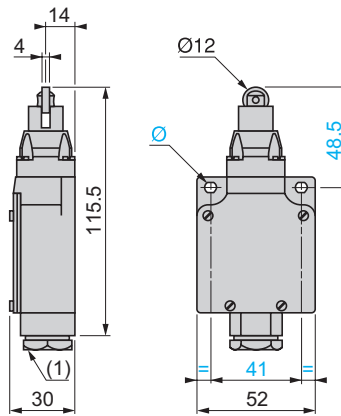
Metal, XCKL

Complete units incorporating Pg 13.5 cable gland

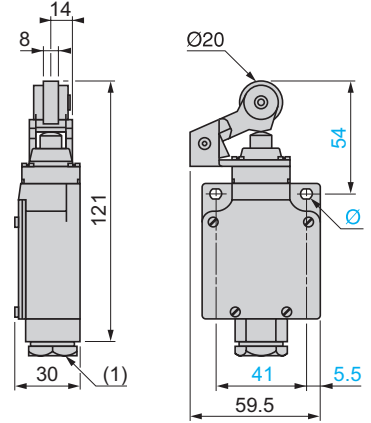
**XCKL●10**  
ZCKL● + ZCKD10  
ZCKLD3● + ZCKD10



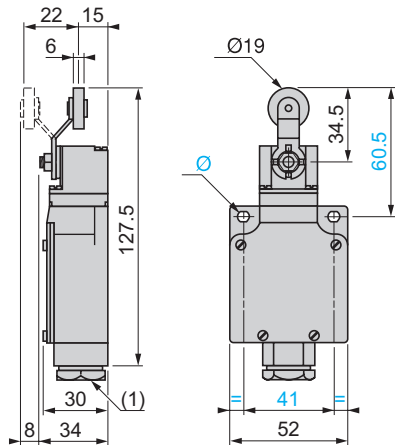
**XCKL●02**  
ZCKL3● + ZCKD02  
ZCKLD3● + ZCKD02



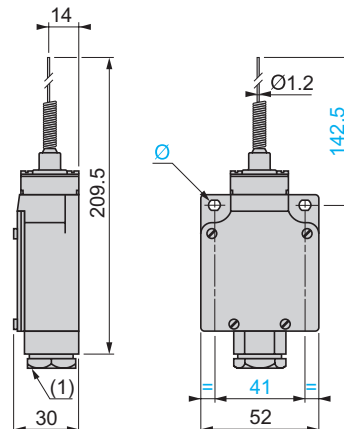
**XCKL●21**  
ZCKL● + ZCKD21  
ZCKLD3● + ZCKD21



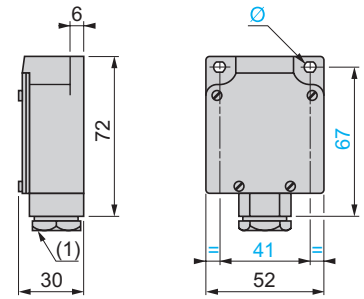
**XCKL●15**  
ZCKL● + ZCKD15  
ZCKLD3● + ZCKD15



**XCKL●06**  
ZCKL● + ZCKD06  
ZCKLD3● + ZCKD06



**Body fixings**

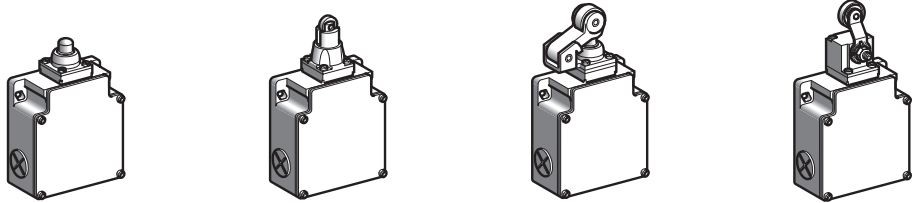


(1) Incorporated Pg 13.5 cable gland  
Ø: 2 elongated holes Ø 5.2 x 6.2

# Limit switches

XC Standard range, Classic format  
Metal, 2 x 2-pole contacts, XCKML  
Complete switches with 3 cable entries

Type of head	Plunger (fixing by the body)	Rotary (fixing by the body)	
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Type of operator	Metal end plunger	Steel roller plunger	Thermoplastic roller lever plunger, horizontal actuation in 1 direction	Thermoplastic roller lever (1)
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### References of complete switches with 3 ISO M20 x 1.5 cable entries (2)

<b>2 x 2-pole NC + NO snap action (XESP2151L)</b> 	<b>XCKML110H29</b> 	<b>XCKML102H29</b> 	<b>XCKML121H29</b> 	<b>XCKML115H29</b> 
<b>2 x 2-pole NC + NO break before make, slow break (XENP2151L)</b> 	<b>XCKML510H29</b> 	<b>XCKML502H29</b> 	<b>XCKML521H29</b> 	<b>XCKML515H29</b> 

### References of complete switches with 3 entries tapped for n° 13 cable gland (2)

<b>2 x 2-pole NC + NO snap action (XESP2151L)</b> 	<b>XCKML110</b> 	<b>XCKML102</b> 	<b>XCKML121</b> 	<b>XCKML115</b> 
<b>2 x 2-pole NC + NO break before make, slow break (XENP2151L)</b> 	<b>XCKML510</b> 	<b>XCKML502</b> 	<b>XCKML521</b> 	<b>XCKML515</b> 

<b>Weight (kg)</b>	0.400	0.405	0.450	0.430
<b>Contact operation</b>	closed open	(A) = cam displacement	NC contact with positive opening operation	
		(P) = positive opening point		

### Characteristics

<b>Switch actuation</b>	On end	By 30° cam		
<b>Type of actuation</b>				
<b>Maximum actuation speed</b>	0.5 m/s	1.5 m/s		
<b>Mechanical durability</b>	3 million operating cycles			
<b>Minimum force</b>	For tripping For positive opening	15 N 60 N	12 N 50 N	8 N 50 N
<b>Cable entry</b>	3 entries tapped ISO M20 x 1.5, clamping capacity 7 to 13 mm, or 3 entries tapped for n° 13 cable gland conforming to NF C 68-300 (DIN Pg 13.5), clamping capacity 9 to 12 mm.			

(1) Adjustable throughout 360° in 5° steps, or in 90° steps by reversing the notched washer.  
 (2) Switches available with other 2-pole slow break contact blocks: NO + NC make before break, NC + NC simultaneous (with positive opening operation), NO + NO simultaneous. Please consult our Customer Care Centre.

**Note: replacement parts**

The heads of limit switches XCKML are the same as those for XCKM and XCKL (see heads ZCKD10, ZCKD02, ZCKD21 and ZCKD15 on page 124).

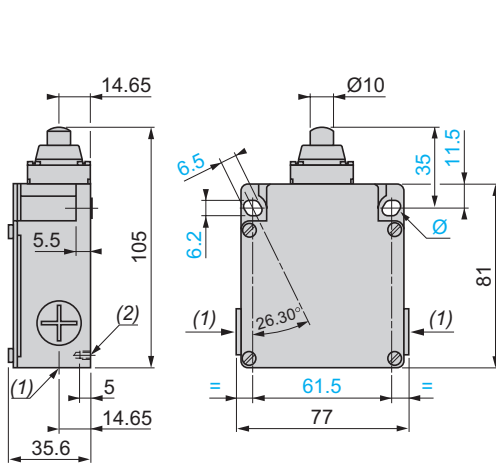
## Limit switches

XC Standard range, Classic format

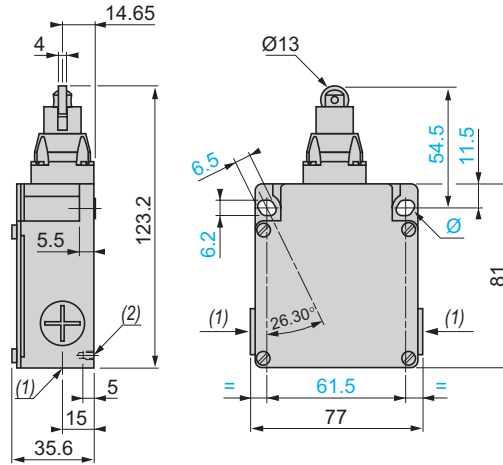
Metal, 2 x 2-pole contacts, XCKML

Complete switches with 3 cable entries

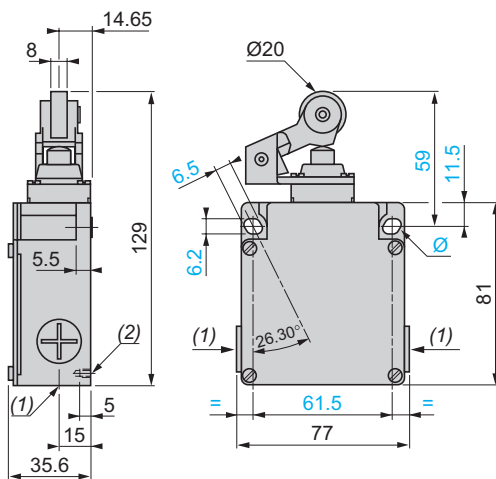
XCKML110H29, XCKML510H29, XCKML110, XCKML510



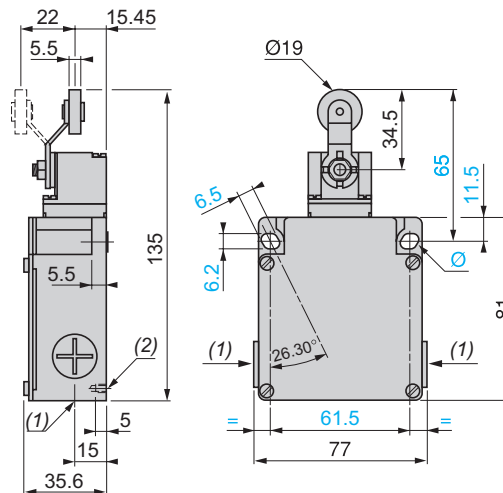
XCKML102H29, XCKML502H29, XCKML102, XCKML502



XCKML121H29, XCKML521H29, XCKML121, XCKML521



XCKML115H29, XCKML515H29, XCKML115, XCKML515



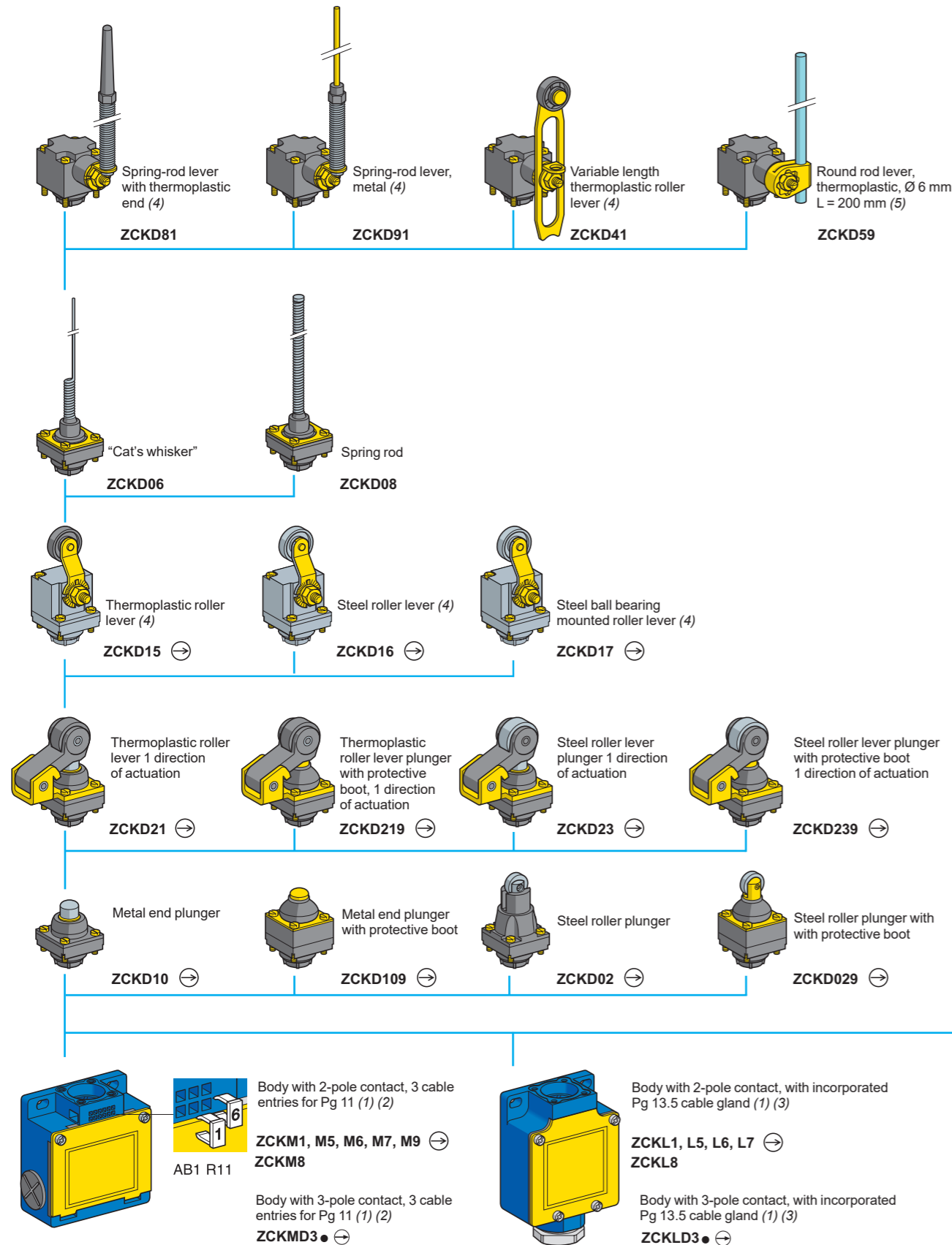
(1) XCKML●●●H29: 3 entries tapped M20 x 1.5. XCKML●●●: 3 tapped entries for n° 13 cable gland.

(2) 2 centring holes Ø 3.9 ± 0.2, for cover fixing holes alignment.

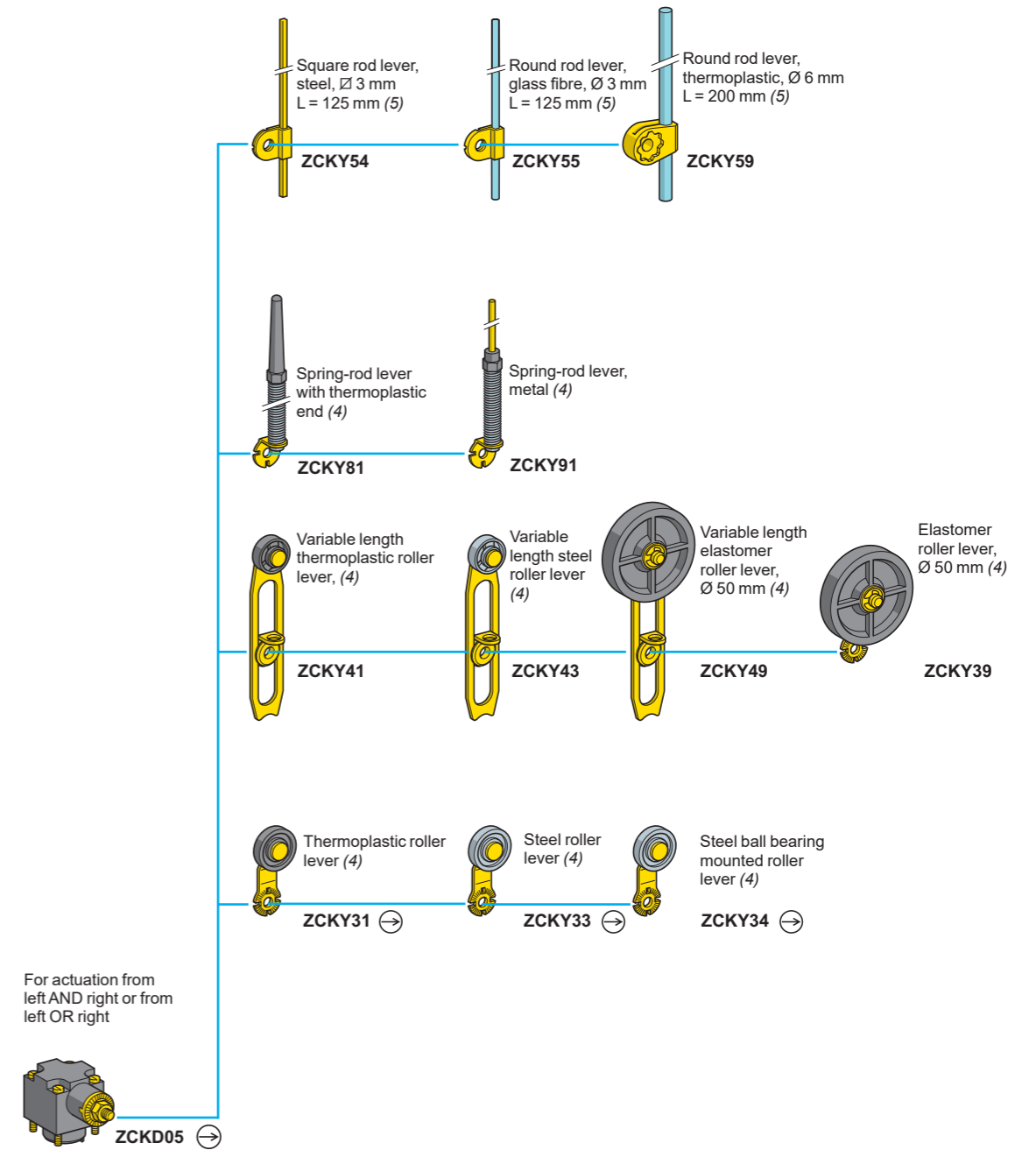
Ø 2 elongated holes 6.2 x 6.5, inclined at 26° 30' to the vertical axis, for M5 screws.

# Limit switches

XC Standard range, Classic format  
Metal, XCKM and XCKL  
Variable composition



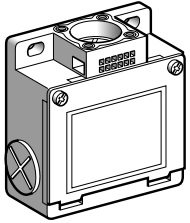
(1) For further information, see page 126.  
(2) For 3 cable entries tapped ISO M20 x 1.5, add **H29** to the reference. Example: ZCKM1 becomes **ZCKM1H29**.  
For one cable entry with 1/2" NPT adaptor, add **H7** to the reference. Example: ZCKM1 becomes **ZCKM1H7**.  
(3) For one cable entry tapped 1/2" NPT, add **H7** to the reference. Example: ZCKL1 becomes **ZCKL1H7**.



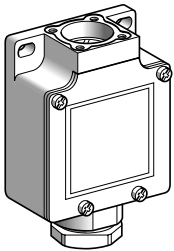
→: head assuring positive opening operation.  
(4) Adjustable throughout 360° in 5° steps, or in 90° steps by reversing the notched washer.  
(5) Adjustable throughout 360° in 5° steps, or in 45° steps by reversing the lever mounting.

# Limit switches

XC Standard range, Classic format  
Metal, XCKM and XCKL  
Adaptable sub-assemblies



ZCKM●



ZCKL●

Bodies with 2-pole contact						
With contact block	Scheme	Positive operation (1)	Cable entry	Reference	Weight kg	
<b>For limit switches XCKM</b>						
NC + NO snap action (XE2SP2151)		⊙	Pg 11	<b>ZCKM1</b>	0.210	
			ISO M20 x 1.5	<b>ZCKM1H29</b>	0.210	
			1/2" NPT (2)	<b>ZCKM1H7</b>	0.210	
NC + NO break before make, slow break (XE2NP2151)		⊙	Pg 11	<b>ZCKM5</b>	0.210	
			ISO M20 x 1.5	<b>ZCKM5H29</b>	0.210	
			1/2" NPT (2)	<b>ZCKM5H7</b>	0.210	
NO + NC make before break, slow break (XE2NP2161)		⊙	Pg 11	<b>ZCKM6</b>	0.210	
			ISO M20 x 1.5	<b>ZCKM6H29</b>	0.210	
			1/2" NPT (2)	<b>ZCKM6H7</b>	0.210	
NC + NC simultaneous, slow break (XE2NP2141)		⊙	Pg 11	<b>ZCKM7</b>	0.210	
			ISO M20 x 1.5	<b>ZCKM7H29</b>	0.210	
			1/2" NPT (2)	<b>ZCKM7H7</b>	0.210	
NO + NO simultaneous, slow break (XE2NP2131)		-	Pg 11	<b>ZCKM8</b>	0.210	
			ISO M20 x 1.5	<b>ZCKM8H29</b>	0.210	
			1/2" NPT (2)	<b>ZCKM8H7</b>	0.210	
NC + NC snap action (XE2SP2141)		⊙	Pg 11	<b>ZCKM9</b>	0.210	
			ISO M20 x 1.5	<b>ZCKM9H29</b>	0.210	
<b>For limit switches XCKL</b>						
NC + NO snap action (XE2SP2151)		⊙	Pg 13.5	<b>ZCKL1 (3)</b>	0.210	
			1/2" NPT	<b>ZCKL1H7</b>	0.210	
NC + NO break before make, slow break (XE2NP2151)		⊙	Pg 13.5	<b>ZCKL5 (3)</b>	0.210	
			1/2" NPT	<b>ZCKL5H7</b>	0.210	
NO + NC make before break, slow break (XE2NP2161)		⊙	Pg 13.5	<b>ZCKL6 (3)</b>	0.210	
			1/2" NPT	<b>ZCKL6H7</b>	0.210	
NC + NC simultaneous, slow break (XE2NP2141)		⊙	Pg 13.5	<b>ZCKL7 (3)</b>	0.210	
			1/2" NPT	<b>ZCKL7H7</b>	0.210	
NO + NO simultaneous, slow break (XE2NP2131)		-	Pg 13.5	<b>ZCKL8 (3)</b>	0.210	
			1/2" NPT	<b>ZCKL8H7</b>	0.210	

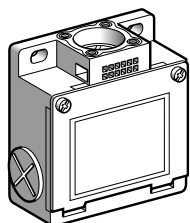
(1) ⊙: NC contact with positive opening operation.

(2) 3 tapped entries, one with metal adaptor for 1/2" NPT (USASB2-1) conduit.

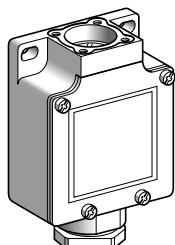
(3) Pg 13.5 cable gland included with switch.

# Limit switches

XC Standard range, Classic format  
Metal, XCKM and XCKL  
Adaptable sub-assemblies



ZCKMD3●



ZCKLD3●

Bodies with 3-pole contact					
With contact block	Scheme	Positive operation (1)	Cable entry	Reference	Weight kg
<b>For limit switches XCKM</b>					
NC + NO + NO snap action (XE3SP2151)		⊙	Pg 11	<b>ZCKMD31</b>	0.210
			ISO M20 x 1.5	<b>ZCKMD31H29</b>	0.210
			1/2" NPT (2)	<b>ZCKMD31H7</b>	0.210
NC + NC + NO snap action (XE3SP2141)		⊙	Pg 11	<b>ZCKMD39</b>	0.210
			ISO M20 x 1.5	<b>ZCKMD39H29</b>	0.210
			1/2" NPT (2)	<b>ZCKMD39H7</b>	0.210
NC + NC + NO break before make, slow break (XE3NP2141)		⊙	Pg 11	<b>ZCKMD37</b>	0.210
			ISO M20 x 1.5	<b>ZCKMD37H29</b>	0.210
			1/2" NPT (2)	<b>ZCKMD37H7</b>	0.210
NC + NO + NO break before make, slow break (XE3NP2151)		⊙	Pg 11	<b>ZCKMD35</b>	0.210
			ISO M20 x 1.5	<b>ZCKMD35H29</b>	0.210
			1/2" NPT (2)	<b>ZCKMD35H7</b>	0.210
<b>For limit switches XCKL</b>					
NC + NO + NO snap action (XE3SP2151)		⊙	Pg 13.5	<b>ZCKLD31 (3)</b>	0.210
			1/2" NPT	<b>ZCKLD31H7</b>	0.210
NC + NC + NO snap action (XE3SP2141)		⊙	Pg 13.5	<b>ZCKLD39 (3)</b>	0.210
			1/2" NPT	<b>ZCKLD39H7</b>	0.210
NC + NC + NO break before make, slow break (XE3NP2141)		⊙	Pg 13.5	<b>ZCKLD37 (3)</b>	0.210
			1/2" NPT	<b>ZCKLD37H7</b>	0.210
NC + NO + NO break before make, slow break (XE3NP2151)		⊙	Pg 13.5	<b>ZCKLD35 (3)</b>	0.210
			1/2" NPT	<b>ZCKLD35H7</b>	0.210

(1) ⊙ : NC contact with positive opening operation.

(2) 3 tapped entries, one with metal adaptor for 1/2" NPT (USASB2-1) conduit.

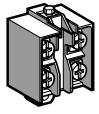
(3) Pg 13.5 cable gland included with switch.

# Limit switches

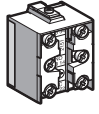
XC Standard range, Classic format  
Metal, XCKM and XCKL  
Adaptable sub-assemblies



XE2SP21•1



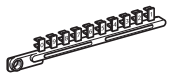
XE2NP21•1



XE3•P21•••



XCKZ09



AB1R11

Contact blocks						
Type of contact	Scheme	For bodies	Positive operation (1)	Reference	Weight kg	
<b>2-pole contact</b>						
NC + NO snap action		ZCKM1 ZCKL1	⊕	XE2SP2151	0.020	
NC + NO break before make, slow break		ZCKM5 ZCKL5	⊕	XE2NP2151	0.020	
NO + NC make before break, slow break		ZCKM6 ZCKL6	⊕	XE2NP2161	0.020	
NC + NC simultaneous, slow break		ZCKM7 ZCKL7	⊕	XE2NP2141	0.020	
NO + NO simultaneous, slow break		ZCKM8 ZCKL8	-	XE2NP2131	0.020	
NC + NC snap action		ZCKM9	⊕	XE2SP2141	0.020	
<b>3-pole contact</b>						
NC + NO + NO snap action		ZCKMD31 ZCKLD31	⊕	XE3SP2151	0.035	
NC + NC + NO snap action		ZCKMD39 ZCKLD39	⊕	XE3SP2141	0.035	
NC + NC + NO break before make, slow break		ZCKMD37 ZCKLD37	⊕	XE3NP2141	0.035	
NC + NO + NO break before make, slow break		ZCKMD35 ZCKLD35	⊕	XE3NP2151	0.035	

(1) ⊕: NC contact with positive opening operation or sub-assembly assuring positive opening operation.

Accessories for limit switches XCKM				
Description	Sold in lots of	Unit reference	Weight kg	
Tap-off terminal for cabling continuity	1	XCKZ09	0.010	
Clip-in markers (strips of 10 numbers: 0 to 9) Other markers, please consult our Customer Care Centre.	25	AB1R11	0.002	

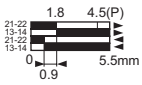
**Other versions** Gold flashed contacts.  
Please consult our Customer Care Centre.

# Limit switches

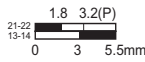
XC Standard range, Classic format  
Metal, XCKM and XCKL  
Adaptable sub-assemblies

## Heads ZCKD10, D109 with body

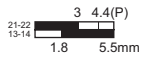
### ZCKM1, L1



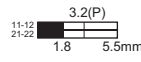
### ZCKM5, L5



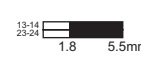
### ZCKM6, L6



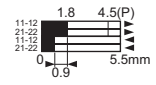
### ZCKM7, L7



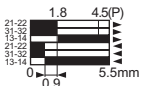
### ZCKM8, L8



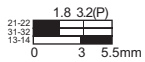
### ZCKM9



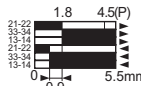
### ZCKMD39, LD39



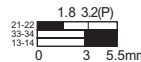
### ZCKMD37, LD37



### ZCKMD31, LD31

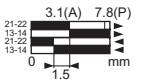


### ZCKMD35, LD35

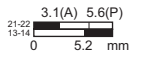


## Heads ZCKD02, D029 with body

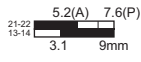
### ZCKM1, L1



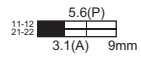
### ZCKM5, L5



### ZCKM6, L6



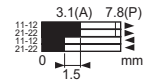
### ZCKM7, L7



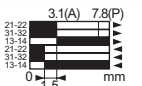
### ZCKM8, L8



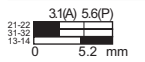
### ZCKM9



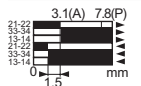
### ZCKMD39, LD39



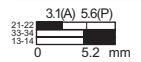
### ZCKMD37, LD37



### ZCKMD31, LD31

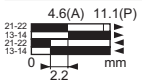


### ZCKMD35, LD35

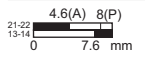


## Heads ZCKD21, D23, D219, D239 with body

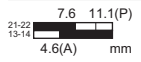
### ZCKM1, L1



### ZCKM5, L5



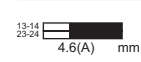
### ZCKM6, L6



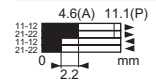
### ZCKM7, L7



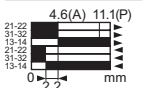
### ZCKM8, L8



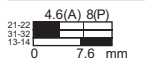
### ZCKM9



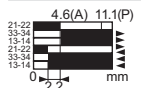
### ZCKMD39, LD39



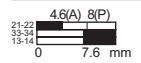
### ZCKMD37, LD37



### ZCKMD31, LD31

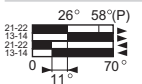


### ZCKMD35, LD35

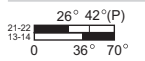


## Heads ZCKD15, D16, D17 with body

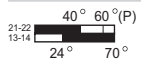
### ZCKM1, L1



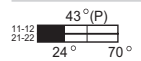
### ZCKM5, L5



### ZCKM6, L6



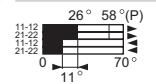
### ZCKM7, L7



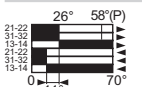
### ZCKM8, L8



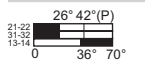
### ZCKM9



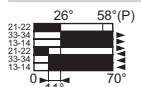
### ZCKMD39, LD39



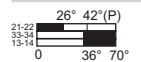
### ZCKMD37, LD37



### ZCKMD31, LD31

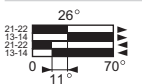


### ZCKMD35, LD35

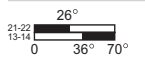


## Heads ZCKD41, D59, D81, D91 with body

### ZCKM1, L1



### ZCKM5, L5



### ZCKM6, L6



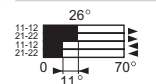
### ZCKM7, L7



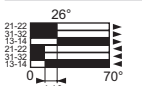
### ZCKM8, L8



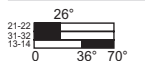
### ZCKM9



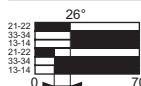
### ZCKMD39, LD39



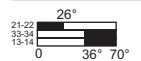
### ZCKMD37, LD37



### ZCKMD31, LD31



### ZCKMD35, LD35



## Heads ZCKD06, D08 with body

### ZCKM1, L1

## Limit switches

XC Standard range, Classic format

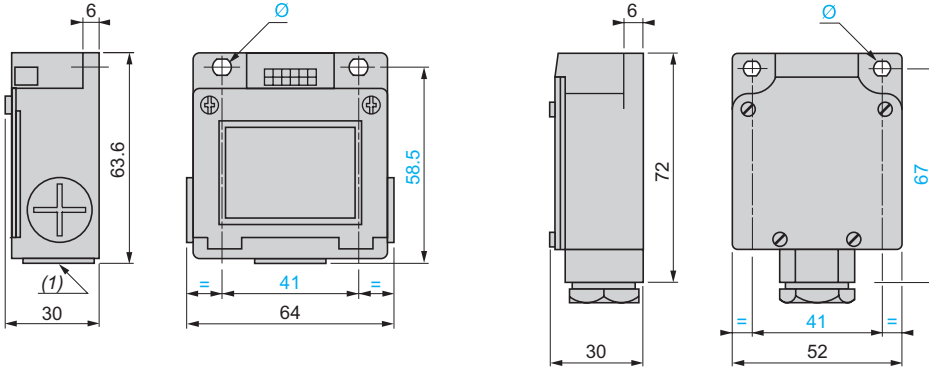
Metal, XCKM and XCKL

Adaptable sub-assemblies

### Bodies with contacts

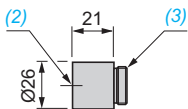
ZCKM1, M5, M6, M7, M8, M9, MD3●, MD3H●29, MD3●H7  
ZCKM1H29, M5H29, M6H29, M7H29, M8H29, M9H29  
ZCKM1H7, M5H7, M6H7, M7H7, M8H7

ZCKL1, L5, L6, L7, L8, LD3● (with incorporated Pg 13.5 cable gland)  
ZCKL1H7, L5H7, L6H7, L7H7, L8H7, LD3●H7 (with 1/2" NPT cable entry)



### Adaptor for 1/2" NPT conduit

DE9RA1012



(1) 3 tapped entries for ISO M20 x 1.5 or Pg 11 cable gland.

Ø: 2 elongated holes Ø 5.2 x 6.2

(2) Tapped entry for 1/2" NPT conduit.

(3) Pg 11 threaded sleeve.

# Limit switches

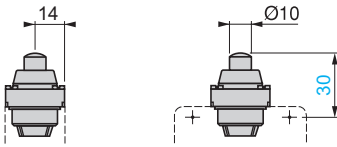
XC Standard range, Classic format

Metal, XCKM and XCKL

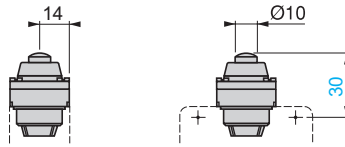
Adaptable sub-assemblies

## Plunger heads

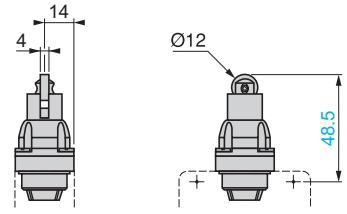
ZCKD10



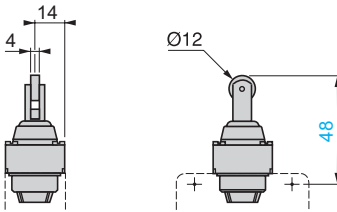
ZCKD109



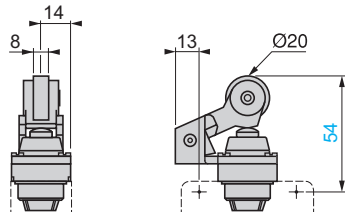
ZCKD02



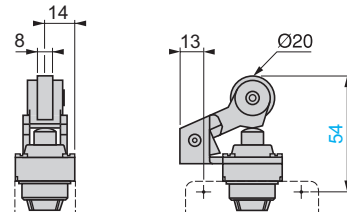
ZCKD029



ZCKD21, ZCKD23

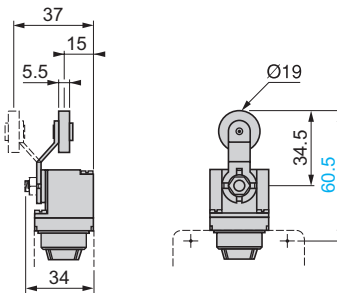


ZCKD219, ZCKD239

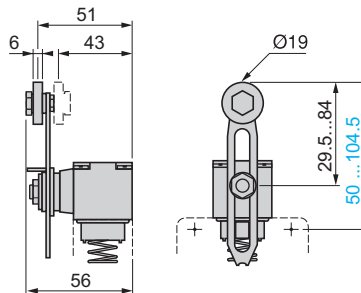


## Rotary heads

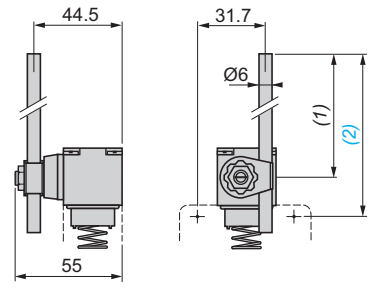
ZCKD15, ZCKD16, ZCKD17



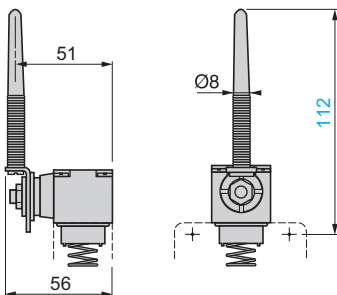
ZCKD41



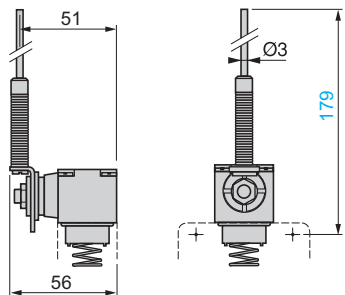
ZCKD59



ZCKD81

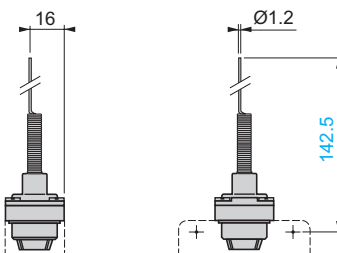


ZCKD91

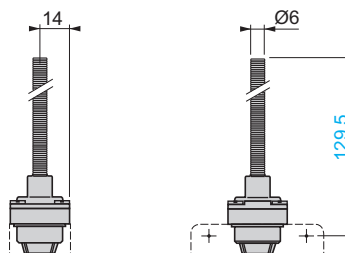


## Multi-directional heads

ZCKD06



ZCKD08



(1) 190 max.  
(2) 215.5 max.

Note: operating lever spindle threaded M6.

## Limit switches

XC Standard range, format EN 50041  
Plastic, double insulated, XCKS

### Complete switch

with 2 contacts (NO + NC) and 1 cable entry

■ The XCKS limit switches range, with 2 integrated contacts, offers "all-in-one", ready to use products.

□ XCKS, with head for linear (plunger) and rotary (lever) movement



### Variable composition switch

with 2, 3 or 4 contacts and 1 cable entry

■ The variable composition range expands the offer up to 4 contacts and choice among 18 different actuators.

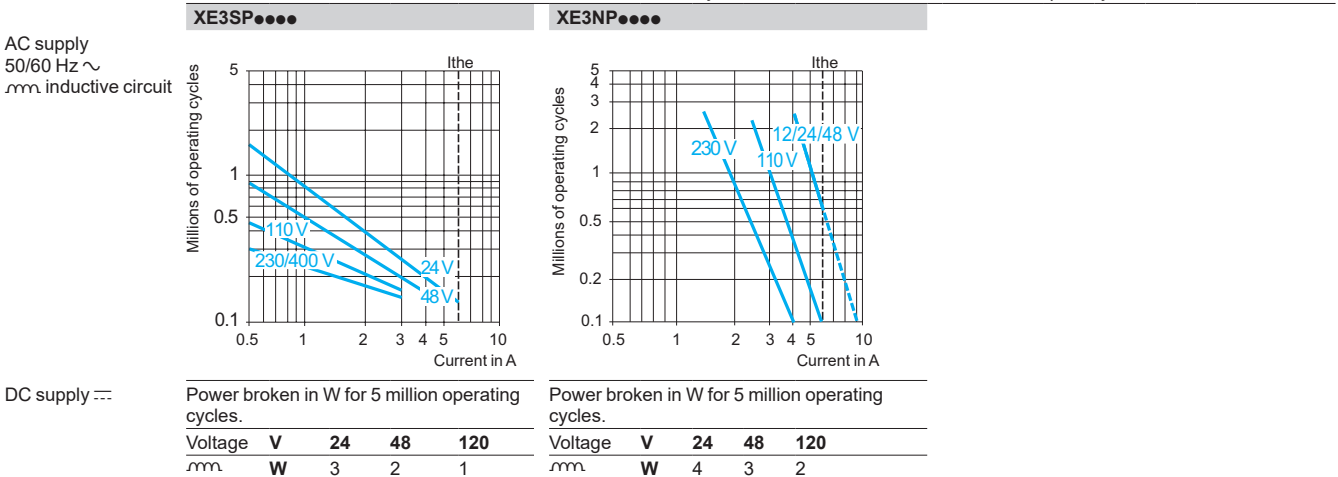
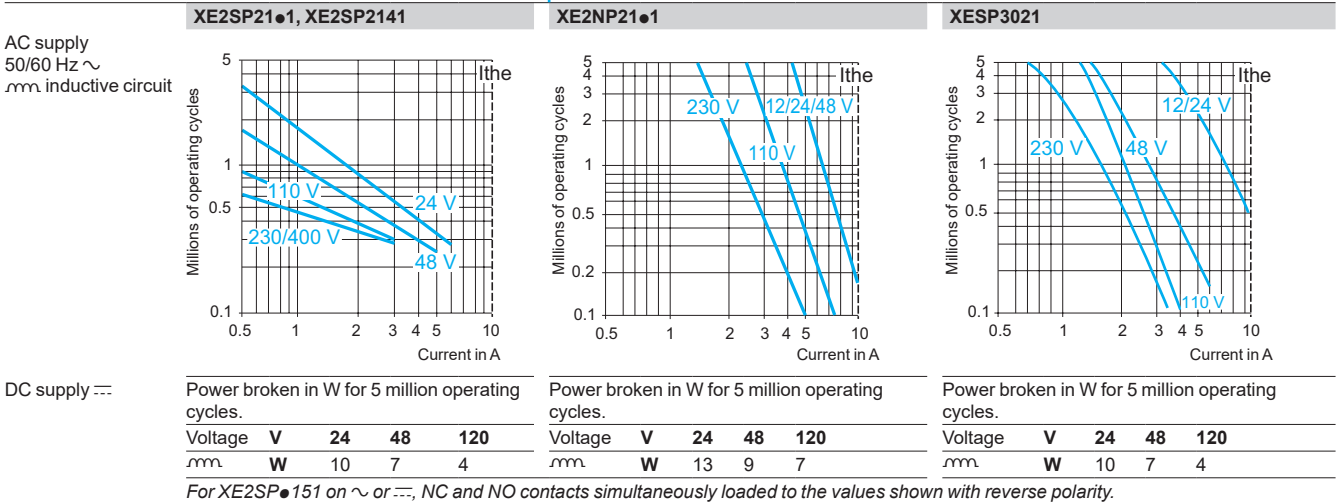
□ ZCKD: complete head with linear or rotary actuator  
□ ZCKS: bodies with 2, 3 or 4 contacts



### Environment characteristics

Conformity to standards	Products	CE, EN/IEC 60947-5-1, UL 508, CSA C22-2 n°14, CCC, EAC
	Machine assemblies	EN/IEC 60204-1
Product certifications		UL, CSA, CCC, EAC
Protective treatment	Version	Standard "TC", special "TH"
Ambient air temperature	For operation	- 25...+ 70 °C
	For storage	- 40...+ 70 °C
Vibration resistance	Conforming to EN/IEC 60068-2-6	25 gn (10...500 Hz)
Shock resistance	Conforming to EN/IEC 60068-2-27	XCKS1●●: 40 gn (11 ms) XCKS5●●: 50 gn (11 ms)
Electric shock protection	Conforming to EN/IEC 61140	Class II
Degree of protection	Conforming to EN/IEC 60529	XCKS1●●, XCKS5●●: IP 66 and IP 67 ZCKS: IP 65
	Conforming to EN 62262	XCKS1●●, XCKS5●●: IK 05 ZCKS: IK 03
Cable entry	Depending on model	Tapped entry for cable gland: ■ Pg 13.5 ■ ISO M20 x 1.5 ■ 1/2" NPT
Materials		Bodies and heads: plastic

Contact block characteristics		
Type of contacts	Conforming to EN/IEC 60947-5-1	Type Zb, electrically separate double break contacts
Positive operation (depending on model)		NC contacts with positive opening operation conforming to EN/IEC 60947-5-1 Appendix K
Rated operational characteristics	XCKS1●●, XCKS5●● XE2●P●, XESP●	~ AC-15 ; A300 (Ue = 240 V, Ie = 3 A) ; Ithe = 10 A --- DC-13 ; Q300 (Ue = 250 V, Ie = 0.27 A), conforming to EN/IEC 60947-5-1 Appendix A
	XE3●P●	~ AC-15 ; B300 (Ue = 240 V, Ie = 1.5 A) ; Ithe = 6 A --- DC-13 ; R300 (Ue = 250 V, Ie = 0.1 A), conforming to EN/IEC 60947-5-1 Appendix A
Rated insulation voltage	XCKS1●●, XCKS5●● XE2●P●, XESP●	Ui = 500 V degree of pollution 3 conforming to EN/IEC 60947-5-1
	XE3●P●	Ui = 300 V conforming to UL 508 and CSA C22-2 n° 14
Rated impulse withstand voltage	XCKS1●●, XCKS5●● XE2●P●, XESP●	U imp = 6 kV conforming to EN/IEC 60947-1, IEC 60664
	XE3●P●	U imp = 4 kV conforming to EN/IEC 60947-1, IEC 60664
Short-circuit protection	XCKS1●●, XCKS5●● XE2●P●, XESP●	10 A cartridge fuse type gG (gl)
	XE3●P●	6 A cartridge fuse type gG (gl)
Resistance across terminals		≤ 25 mΩ conforming to EN/IEC 60255-7 category 3
Connection (screw clamp terminals)	XCKS1●●, XCKS5●● XE2SP21●1	Clamping capacity, min: 1 x 0.34 mm <sup>2</sup> / AWG 22, max: 2 x 1.5 mm <sup>2</sup> / AWG 16
	XE2NP21●1	Clamping capacity, min: 1 x 0.5 mm <sup>2</sup> / AWG 20, max: 2 x 2.5 mm <sup>2</sup> / AWG 14
	XESP●	Clamping capacity, min: 1 x 0.75 mm <sup>2</sup> / AWG 20, max: 2 x 1.5 mm <sup>2</sup> / AWG 16
	XE3●P●	Clamping capacity, min: 1 x 0.34 mm <sup>2</sup> / AWG 22, max: 1 x 1 mm <sup>2</sup> / AWG 18 or 2 x 0.75 mm <sup>2</sup> / AWG 20
Minimum actuation speed		Snap action contacts (XCKS1●, XE●SP● and XESP●): 0.01 m/minute Slow break contacts (XCKS5●, XE2NP● and XE3NP●): 6 m/minute
Electrical durability	XCKS1●● + LC1D38 / ~ 230 V	15 million operating cycles
	XCKS5●● + LC1D38 / ~ 230 V	20 million operating cycles
	ZCKS	<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>



# Limit switches

XC Standard range, format EN 50041

Plastic, double insulated, XCKs

Complete switches with 1 cable entry

Type of head	Plunger (fixing by the body)	Rotary (fixing by the body)
--------------	------------------------------	-----------------------------



Form conforming to EN 50041 (1)	B	C	A	A	A	A	D
Type of operator	Metal end plunger	Steel roller plunger	Thermoplastic or steel roller lever (2)	Elastomer roller lever, Ø 50 mm (2)	Variable length thermoplastic or steel roller lever (2)	Variable length elastomer roller lever, Ø 50 mm (2)	Round thermoplastic rod lever, Ø 6 mm (3) (4)
Positive operation	⊕	⊖	⊕	—	⊕	—	—

## References of complete switches with 1 ISO M20 x 1.5 cable entry

<p>2-pole NC + NO snap action</p>	XCKS101H29	XCKS102H29	XCKS131H29 (thermoplastic) XCKS133H29 (steel)	XCKS139H29	XCKS141H29 (thermoplastic) XCKS143H29 (steel)	XCKS149H29	XCKS159H29
<p>2-pole NC + NO break before make, slow break</p>	XCKS501H29	XCKS502H29	XCKS531H29 (thermoplastic) XCKS533H29 (steel)	XCKS539H29	XCKS541H29 (thermoplastic) XCKS543H29 (steel)	XCKS549H29	XCKS559H29
Weight (kg)	0.125	0.135	0.160	0.175	0.165	0.180	0.170
Contact operation	closed open	(A) = cam displacement (P) = positive opening point		⊕ NC contact with positive opening operation			

## References of complete switches with 1 Pg 13.5 cable entry

For an entry tapped for a Pg 13.5 cable gland, delete H29 from the end of the reference. (Except XCKS133H29, XCKS143H29, XCKS533H29 and XCKS543H29). Example: XCKS101H29 becomes XCKS101.

## References of complete switches with 1/2" NPT cable entry

For an entry tapped for a 1/2" NPT cable gland, replace H29 at the end of the reference by H7. (Except XCKS133H29, XCKS143H29, XCKS501H29, XCKS533H29, XCKS539H29, XCKS543H29, XCKS549H29 and XCKS559H29). Example: XCKS101H29 becomes XCKS101H7.

## Characteristics

Switch actuation	On end	By 30° cam		By any moving part		
Type of actuation						
Maximum actuation speed	0.5 m/s	1.5 m/s		1 m/s		
Mechanical durability (in millions of operating cycles)	25	15	20			
Minimum force or torque	For tripping	15 N	12 N	0.10 N.m		
	For positive opening	30 N	20 N	0.15 N.m	—	0.15 N.m
Cable entry	1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm					

(1) Form conforming to EN 50041, see page 25.

(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.

(4) Value taken with actuation by moving part at 100 mm from the fixing.

# Limit switches

XC Standard range, format EN 50041  
Plastic, double insulated, XCKs  
Variable composition switches with 1 cable entry



Note: ZCKD heads can only be used with ZCKS bodies.

## References of variable composition switches (ZCKS bodies and ZCKD heads) with 1 ISO M20 x 1.5 cable entry (3)

Form conforming to EN 50041 (1)	B	C	A	A	A	A	D
Type of operator	Metal end plunger	Steel roller plunger	Thermoplastic roller lever (2)	Elastomer roller lever, Ø 50 mm (2)	Variable length thermoplastic roller lever (2)	Variable length elastomer roller lever, Ø 50 mm (2)	Round thermoplastic rod lever, Ø 6 mm (4) (5)
<b>Positive operation</b> 	⊙	⊙	⊙	—	⊙	—	—
 2-pole NC + NC snap action (XE2SP2141)	<b>ZCKS9H29 + ZCKD01</b> 	<b>ZCKS9H29 + ZCKD02</b> 	<b>ZCKS9H29 + ZCKD31</b> 	<b>ZCKS9H29 + ZCKD39</b> 	<b>ZCKS9H29 + ZCKD41</b> 	<b>ZCKS9H29 + ZCKD49</b> 	<b>ZCKS9H29 + ZCKD59</b> 
 2-pole NC + NC simultaneous, slow break (XE2NP2141)	<b>ZCKS7H29 + ZCKD01</b> 	<b>ZCKS7H29 + ZCKD02</b> 	<b>ZCKS7H29 + ZCKD31</b> 	<b>ZCKS7H29 + ZCKD39</b> 	<b>ZCKS7H29 + ZCKD41</b> 	<b>ZCKS7H29 + ZCKD49</b> 	<b>ZCKS7H29 + ZCKD59</b> 
 3-pole NC + NC + NO snap action (XE3SP2141)	<b>ZCKSD39H29 + ZCKD01</b> 	<b>ZCKSD39H29 + ZCKD02</b> 	<b>ZCKSD39H29 + ZCKD31</b> 	<b>ZCKSD39H29 + ZCKD39</b> 	<b>ZCKSD39H29 + ZCKD41</b> 	<b>ZCKSD39H29 + ZCKD49</b> 	<b>ZCKSD39H29 + ZCKD59</b> 
 3-pole NC + NC + NO break before make, slow break (XE3NP2141)	<b>ZCKSD37H29 + ZCKD01</b> 	<b>ZCKSD37H29 + ZCKD02</b> 	<b>ZCKSD37H29 + ZCKD31</b> 	<b>ZCKSD37H29 + ZCKD39</b> 	<b>ZCKSD37H29 + ZCKD41</b> 	<b>ZCKSD37H29 + ZCKD49</b> 	<b>ZCKSD37H29 + ZCKD59</b> 
<b>Weight (kg)</b>	0.095	0.105	0.145	0.150	0.155	0.155	0.150
<b>Contact operation</b>			(A) = cam displacement (P) = positive opening point		⊙ NC contact with positive opening operation		

## References of variable composition switches (ZCKS bodies and ZCKD heads) with 1 Pg 13.5 cable entry

For ZCKS bodies with 1 Pg 13.5 cable entry, delete H29 from the end of the reference. Example: ZCKS1H29 becomes ZCKS1.

### Characteristics

Switch actuation	On end	By 30° cam	By any moving part				
<b>Type of actuation</b>				or			
<b>Maximum actuation speed</b>	0.5 m/s	1.5 m/s	1 m/s				
<b>Mechanical durability (6)</b> (in millions of operating cycles)	25	15	20				
<b>Minimum force or torque</b>	For tripping For positive opening	15 N 45 N	12 N 36 N	0.15 N.m 0.3 N.m	— 0.3 N.m	— —	— —
<b>Cable entry</b>	1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm						

(1) Form conforming to EN 50041, see page 25.

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

(3) Switches with gold contacts or eyelet type connections: please consult our Customer Care Centre.

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

(5) Value taken with actuation by moving part at 100 mm from the fixing.

(6) Limited to 15 million operating cycles for switches with contacts XE3●P.

# Limit switches

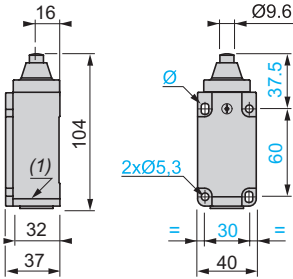
XC Standard range, format EN 50041

Plastic, double insulated, XCKs

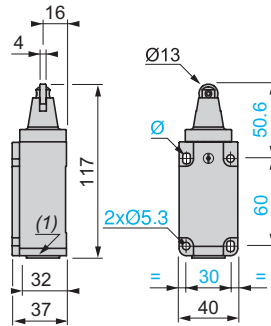
Complete switches with 1 cable entry

## Dimensions

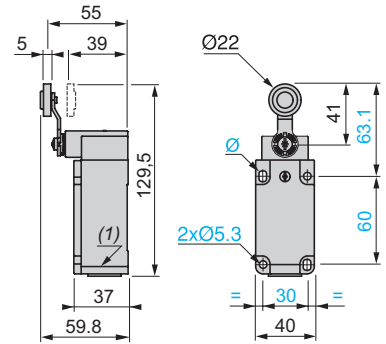
### XCKs0100



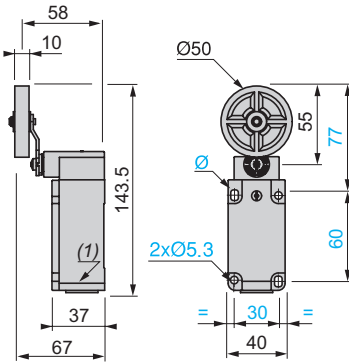
### XCKs0200



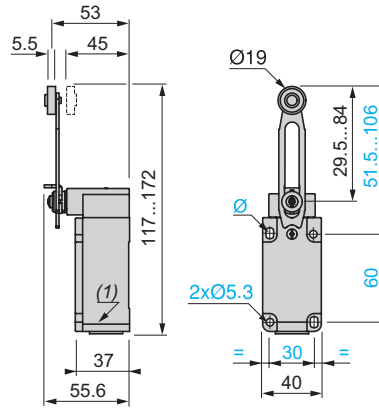
### XCKs3100 / XCKs3300



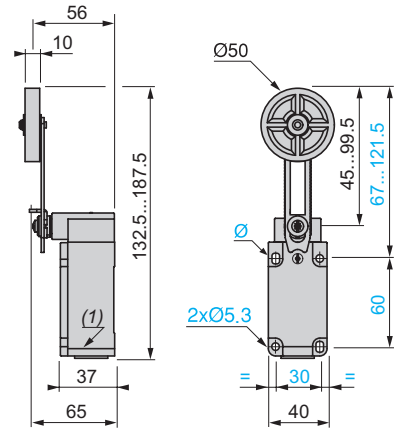
### XCKs3900



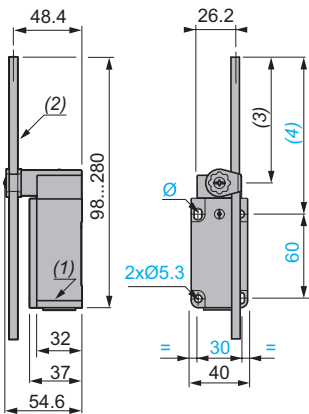
### XCKs4100 / XCKs4300



### XCKs4900



### XCKs5900



(1) 1 tapped entry for ISO M20 x 1.5 or Pg 13.5 or 1/2" NPT cable gland.

(2) Ø 6 rode, lenght 200 mm.

(3) 190 max.

(4) 212 max.

Ø : 2 elongated holes 5.3 x 7.3 mm.

## Limit switches

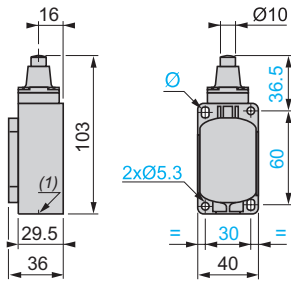
XC Standard range, format EN 50041

Plastic, double insulated, XCKS

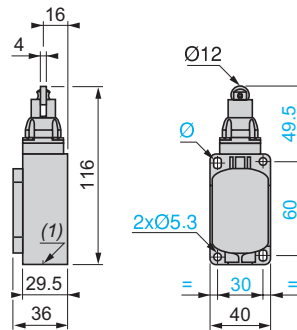
Variable composition switches with 1 cable entry

### Dimensions

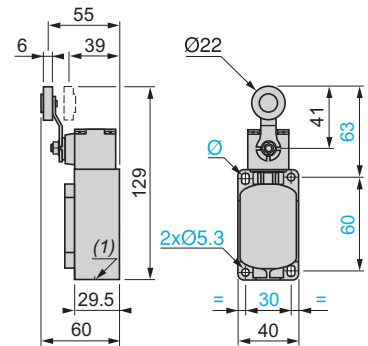
#### ZCKS● + ZCKD01



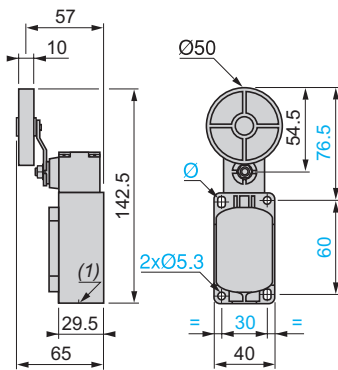
#### ZCKS● + ZCKD02



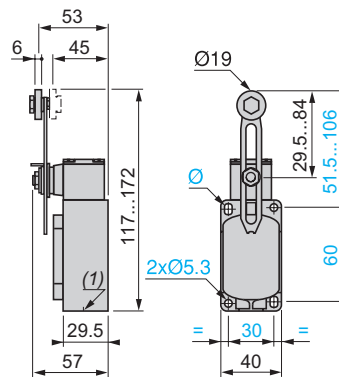
#### ZCKS● + ZCKD31



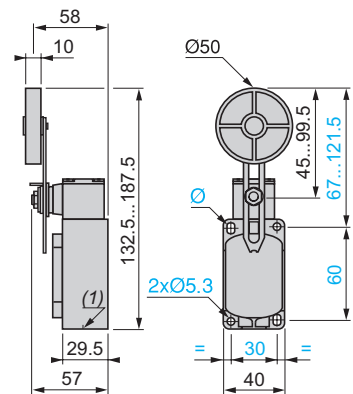
#### ZCKS● + ZCKD39



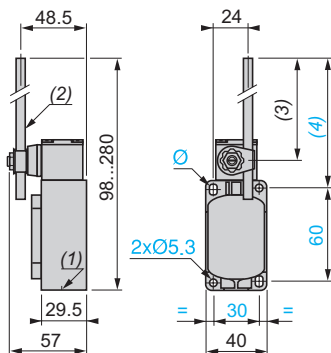
#### ZCKS● + ZCKD41



#### ZCKS● + ZCKD49



#### ZCKS● + ZCKD59



(1) 1 tapped entry for ISO M20 x 1.5 or Pg 13.5 or 1/2" NPT cable gland.

(2) Ø 6 rode, lenght 200 mm.

(3) 190 max.

(4) 212 max.

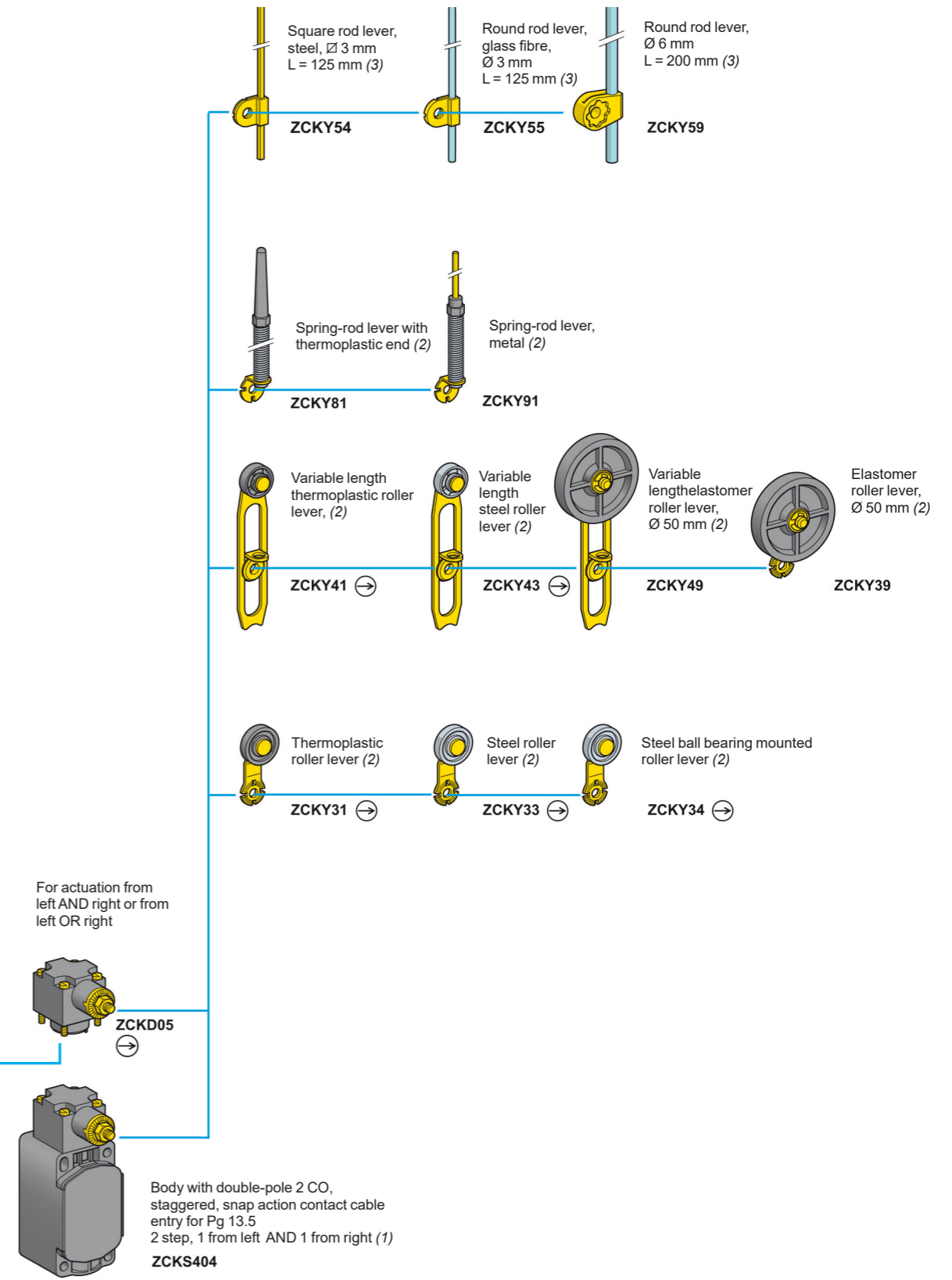
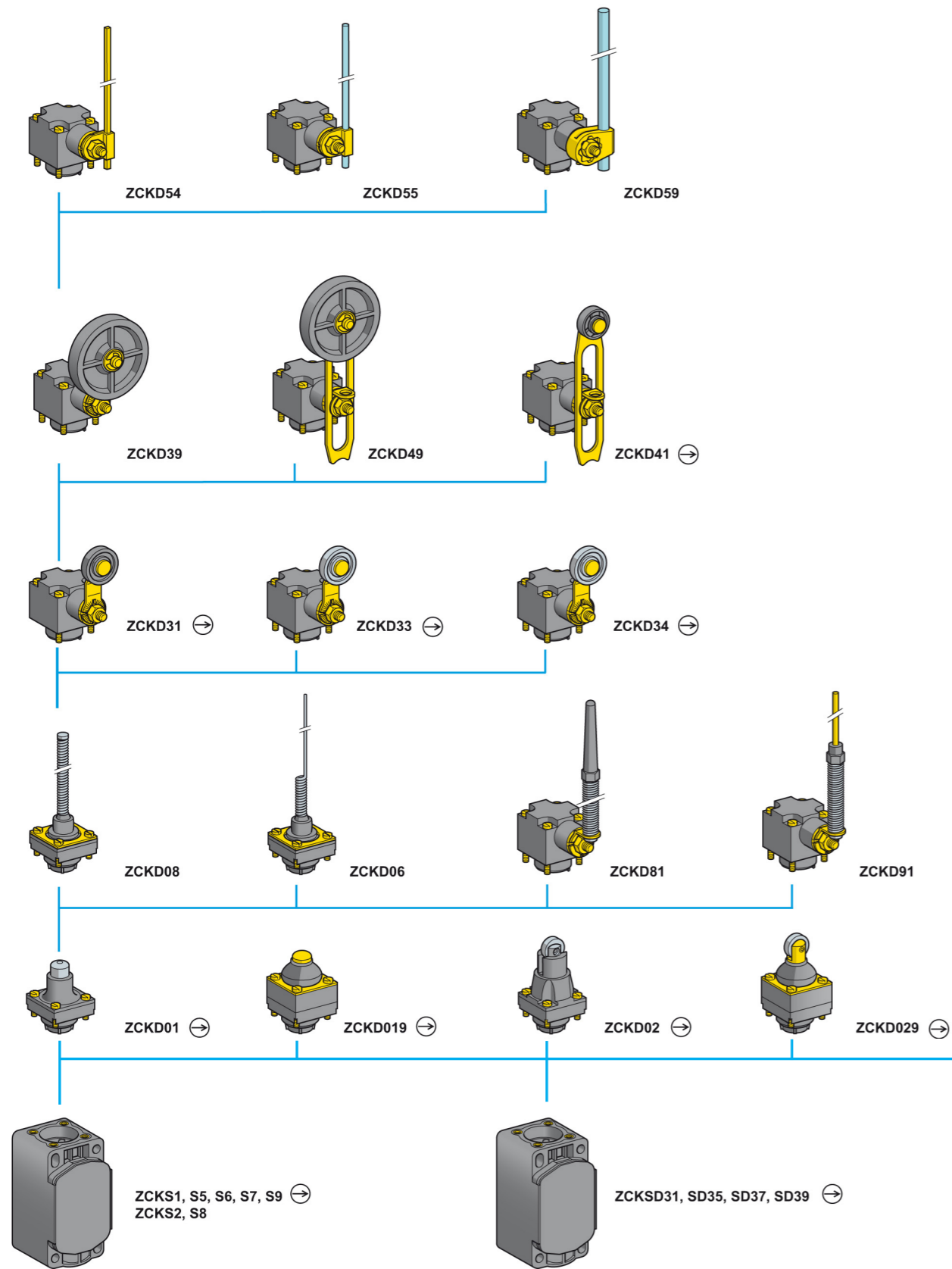
Ø : 2 elongated holes 5.3 x 7.3 mm.

# Limit switches

XC Standard range, format EN 50041

Plastic, double insulated, XCKS

Variable composition



(1) For further details see page 32302/7. For a cable entry tapped ISO M20 x 1.5, add H29 to the reference.

Example: ZCKS1 becomes ZCKS1H29.

(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.

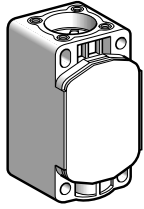
Note: ZCKD heads can only be used with ZCKS bodies.

# Limit switches

XC Standard range, format EN 50041

Plastic, double insulated, XCKs

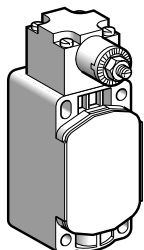
Variable composition switches



ZCKS●

### Bodies with 2-pole contact

Type	With contact block	Scheme	Positive operation (1)	Cable entry	Reference	Weight kg
1 step	NC + NO snap action (XE2SP2151)		⊕	Pg 13.5	<b>ZCKS1</b>	0.080
				ISO M20 x 1.5	<b>ZCKS1H29</b>	0.080
	2 CO simultaneous, snap action (XESP3021)		-	Pg 13.5	<b>ZCKS2</b>	0.080
				ISO M20 x 1.5	<b>ZCKS2H29</b>	0.080
	NC + NO break before make, slow break (XE2NP2151)		⊕	Pg 13.5	<b>ZCKS5</b>	0.080
				ISO M20 x 1.5	<b>ZCKS5H29</b>	0.080
	NO + NC make before break, slow break (XE2NP2161)		⊕	Pg 13.5	<b>ZCKS6</b>	0.080
				ISO M20 x 1.5	<b>ZCKS6H29</b>	0.080
NC + NC simultaneous, slow break (XE2NP2141)		⊕	Pg 13.5	<b>ZCKS7</b>	0.080	
			ISO M20 x 1.5	<b>ZCKS7H29</b>	0.080	
NO + NO simultaneous, slow break (XE2NP2131)		-	Pg 13.5	<b>ZCKS8</b>	0.080	
			ISO M20 x 1.5	<b>ZCKS8H29</b>	0.080	
NC + NC snap action (XE2SP2141)		⊕	Pg 13.5	<b>ZCKS9</b>	0.080	
			ISO M20 x 1.5	<b>ZCKS9H29</b>	0.080	



ZCKS404

### Bodies with double-pole contact and spring return rotary head

#### Without operating lever

Type	With contact block	Scheme	Positive operation (1)	Cable entry	Reference	Weight kg
2 step 1 from left and 1 from right	2 CO staggered snap action		-	Pg 13.5	<b>ZCKS404</b>	0.150
				ISO M20 x 1.5	<b>ZCKS404H29</b>	0.150

### Bodies with 3-pole contact and 1 cable entry

Type	With contact block	Scheme	Positive operation (1)	Cable entry	Reference	Weight kg
-	NC + NO + NO snap action (XE3SP2151)		⊕	Pg 13.5	<b>ZCKSD31</b>	0.080
				ISO M20 x 1.5	<b>ZCKSD31H29</b>	0.080
	NC + NC + NO snap action (XE3SP2141)		⊕	Pg 13.5	<b>ZCKSD39</b>	0.080
				ISO M20 x 1.5	<b>ZCKSD39H29</b>	0.080
	NC + NC + NO break before make, slow break (XE3NP2141)		⊕	Pg 13.5	<b>ZCKSD37</b>	0.080
ISO M20 x 1.5				<b>ZCKSD37H29</b>	0.080	
NC + NO + NO break before make, slow break (XE3NP2151)		⊕	Pg 13.5	<b>ZCKSD35</b>	0.080	
			ISO M20 x 1.5	<b>ZCKSD35H29</b>	0.080	

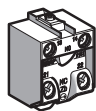
(1) ⊕: NC contact with positive opening operation or head assuring positive opening operation.

## Limit switches

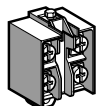
XC Standard range, format EN 50041

Plastic, double insulated, XCKS

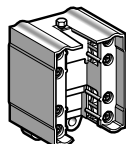
Variable composition switches



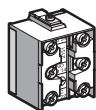
XE2SP21●1



XE2NP21●1



XESP3021



XE3●P21●●



DE9RA●●12

## Contact blocks for ZCKS●● bodies

Type of contact	Scheme	For body	Positive operation (1)	Reference	Weight kg
<b>2-pole contact</b>					
NC + NO snap action		ZCKS1	⊖	XE2SP2151	0.020
NC + NO break before make, slow break		ZCKS5	⊖	XE2NP2151	0.020
2 CO simultaneous snap action		ZCKS2	-	XESP3021	0.045
NO + NC make before break, slow break		ZCKS6	⊖	XE2NP2161	0.020
NC + NC simultaneous, slow break		ZCKS7	⊖	XE2NP2141	0.020
NO + NO simultaneous, slow break		ZCKS8	-	XE2NP2131	0.020
NC + NC snap action		ZCKS9	⊖	XE2SP2141	0.020
<b>3-pole contact</b>					
NC + NO + NO snap action		ZCKSD31	⊖	XE3SP2151	0.035
NC + NC + NO snap action		ZCKSD39	⊖	XE3SP2141	0.035
NC + NC + NO break before make, slow break		ZCKSD37	⊖	XE3NP2141	0.035
NC + NO + NO break before make, slow break		ZCKSD35	⊖	XE3NP2151	0.035

## Accessories for ZCKS●● and XCKS●●

Description	Minimum order quantity	Reference	Weight kg
Adaptator for 1/2" NPT conduit (male Pg 13.5 / female 1/2" NPT)	10	DE9RA1212	0.035
Adaptator for 1/2" NPT conduit (male M20 x 1.5 / female 1/2" NPT)	5	DE9RA2012	0.050

(1) ⊖ : NC contact with positive opening operation or sub-assembly assuring positive opening operation.

## Other versions

Gold flashed contacts.  
Please consult our Customer Care Centre.

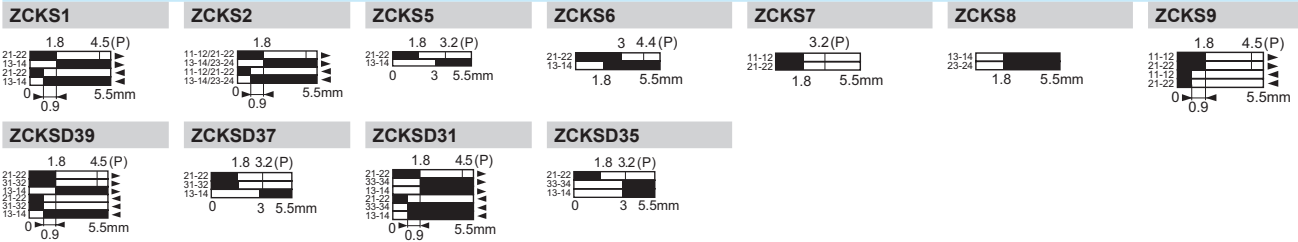
# Limit switches

XC Standard range, format EN 50041

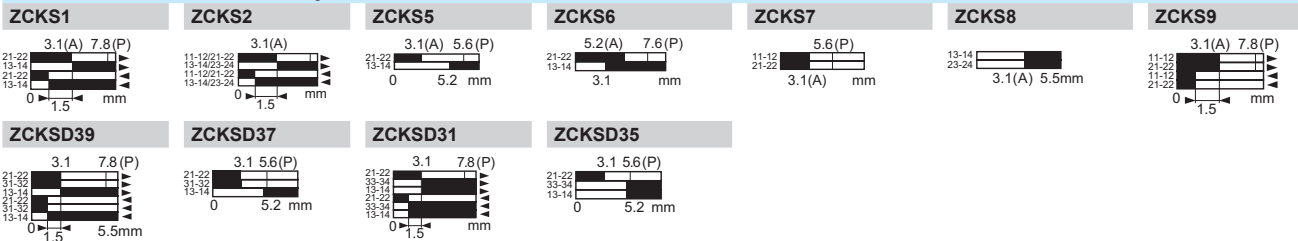
Plastic, double insulated, XCKs

Variable composition switches

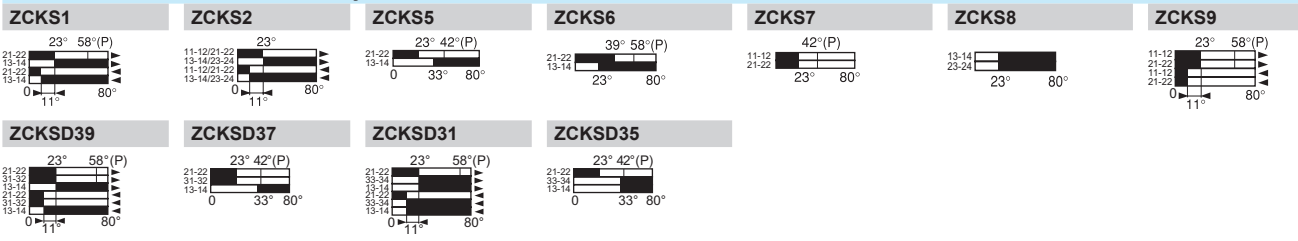
## Heads ZCKD01, D109 with body



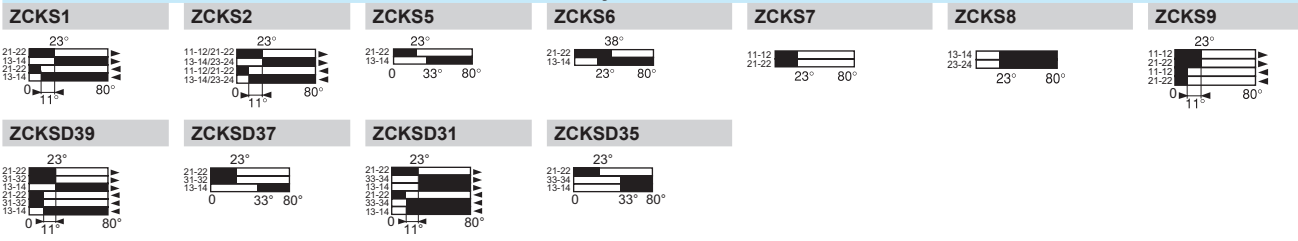
## Heads ZCKD02, D029 with body



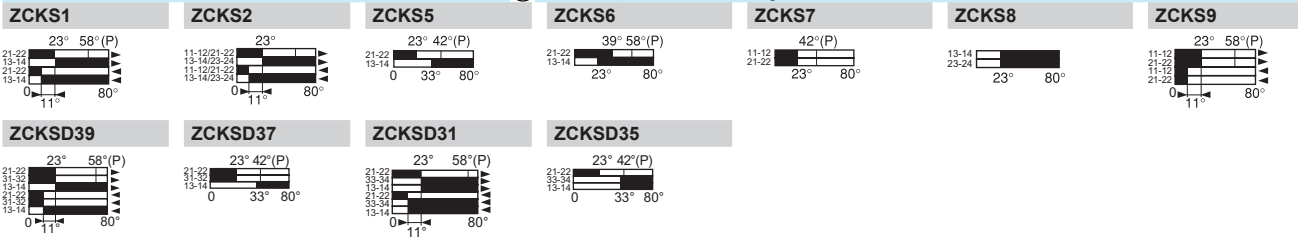
## Heads ZCKD31, D33, D34 with body



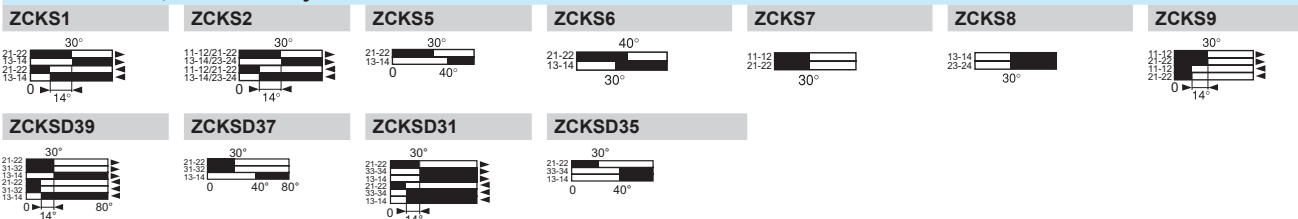
## Heads ZCKD39, D41, D49, D54, D55, D59, D81, D91 with body



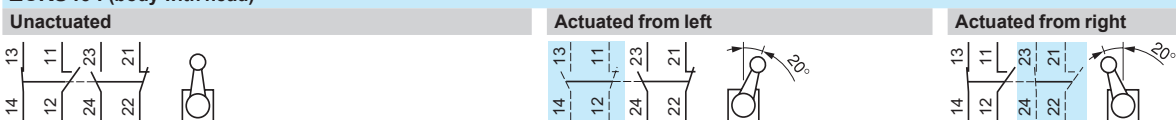
## Heads ZCKD05 (positive operation only assured with a ⊖ operating lever) with body



## Heads ZCKD06, D08 with body



## ZCKS404 (body with head)



Contact operation

■ closed

□ open

(A) = cam displacement

(P) = positive opening point

# Limit switches

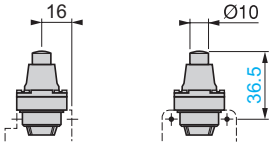
XC Standard range, format EN 50041

Plastic, double insulated, XCKS

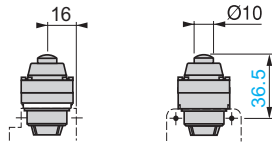
Variable composition switches

## Plunger heads

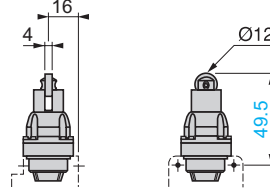
ZCKD01



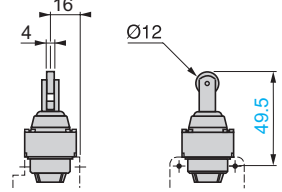
ZCKD019



ZCKD02

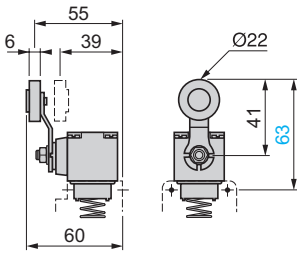


ZCKD029

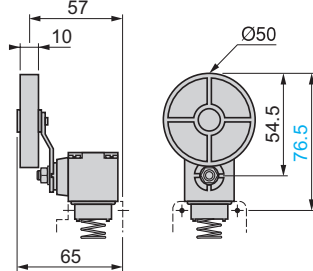


## Rotary heads

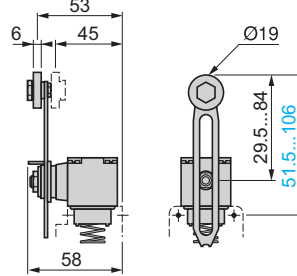
ZCKD31, ZCKD33, ZCKD34



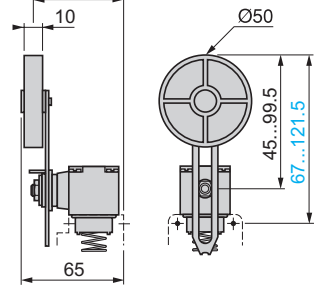
ZCKD39



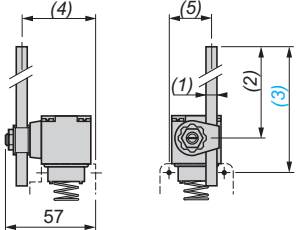
ZCKD41



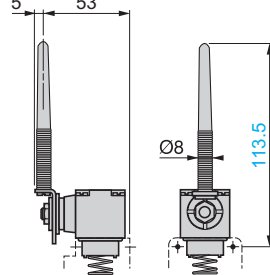
ZCKD49



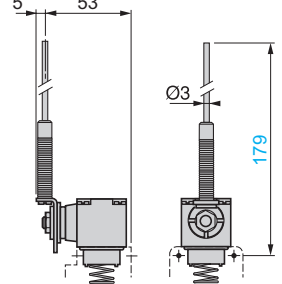
ZCKD54, ZCKD55, ZCKD59



ZCKD81



ZCKD91

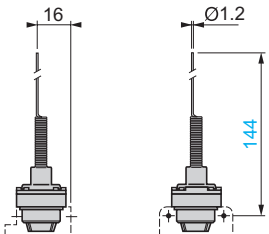


ZCK	(1) rod	(2)	(3)	(4)	(5)
D54	∅ 3, L = 125	115 max.	137 max.	49	24
D55	∅ 3, L = 125	115 max.	137 max.	49	24
D59	∅ 6, L = 200	190 max.	212 max.	46.5	26.2

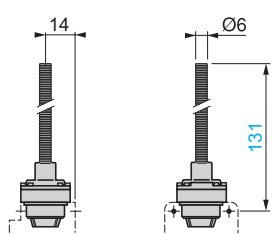
Note: operating lever spindle threaded M6.

## Multi-directional heads

ZCKD06



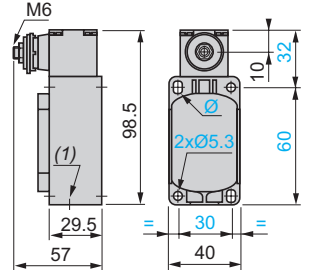
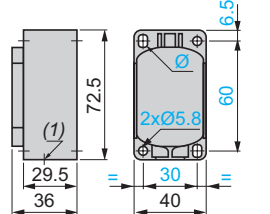
ZCKD08



## Bodies with contacts

ZCKS1, S2, S5, S6, S7, S8, S9  
ZCKS1H29, S2H29, S5H29,  
S6H29, S7H29, S8H29, S9H29  
ZCKSD3●, SD3●H29

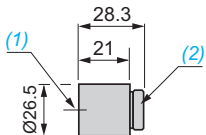
ZCKS404, S404H29



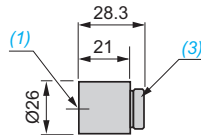
(1) 1 tapped entry for ISO M20 x 1.5 or Pg 13.5 cable gland.  
∅: 2 elongated holes 5.3 x 7.3.

## Adaptors for 1/2" NPT conduit

DE9RA1212 (Pg 13.5)



DE9RA2012 (M20)



(1) Tapped entry for 1/2" NPT conduit.  
(2) Pg 13.5 threaded sleeve.  
(3) M20 x 1.5 threaded sleeve.

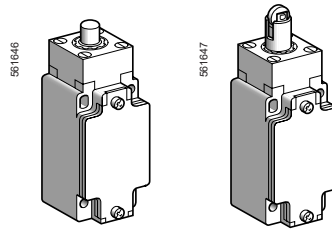
# Limit switches

XC Standard range  
Industrial format EN 50041  
Metal, XCKJ  
Conforming to CENELEC EN 50041

## ■ XCKJ

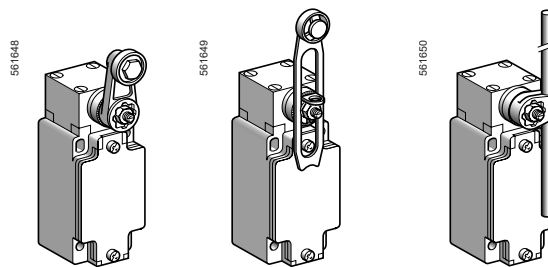
fixed body with 1 cable entry

### □ With head for linear movement (plunger)



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### □ With head for rotary movement (lever)

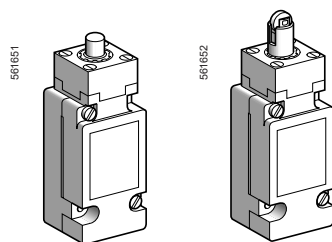


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## ■ XCKJ

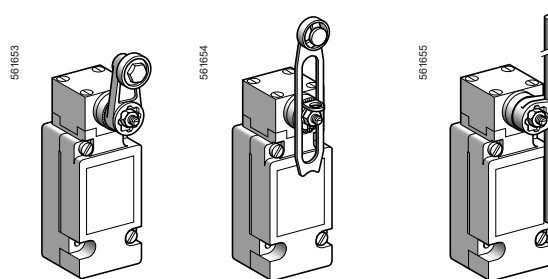
plug-in body with 1 cable entry

### □ With head for linear movement (plunger)



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### □ With head for rotary movement (lever)



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## Environment characteristics

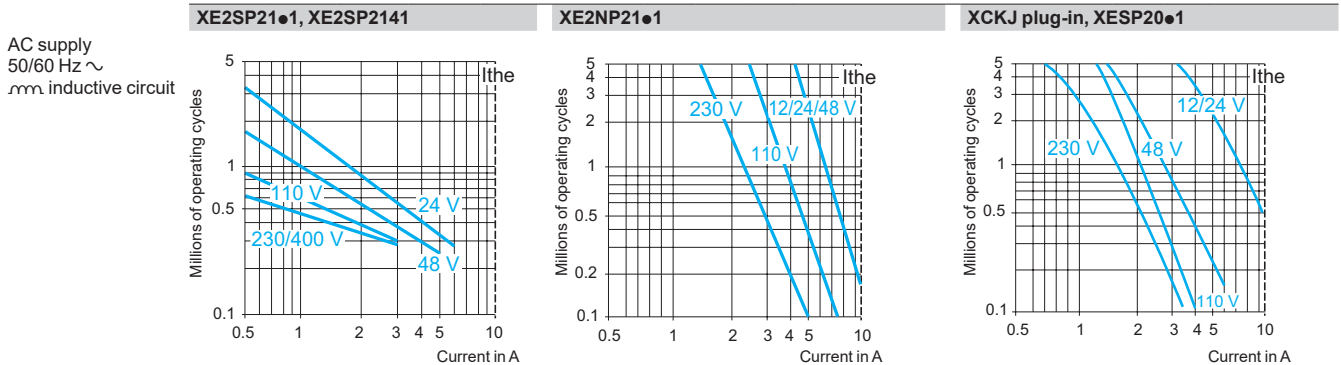
Conformity to standards	Products	CE, IEC 60947-5-1, EN 60947-5-1, UL 508, CSA C22-2 n° 14, EAC
	Machine assemblies	IEC 60204-1, EN 60204-1
Product certifications		UL, CSA, CCC, BV
Protective treatment	Version	Standard: "TC", special: "TH"
Ambient air temperature	For operation	- 25...+ 70°C, special sub-assemblies for use at - 40°C or + 120°C
	For storage	- 40...+ 70°C
Vibration resistance	Conforming to IEC 60068-2-6	25 gn (10...500 Hz)
Shock resistance	Conforming to IEC 60068-2-27	50 gn (11 ms)
Electric shock protection		Class I conforming to IEC 61140 and NF C 20-030
Degree of protection		IP 66 conforming to IEC 60529; IK 07 conforming to IEC 62262
Repeat accuracy		0.01 mm on the tripping points, with 1 million operating cycles for head with end plunger
Cable entry or connector	Depending on model	Tapped entry for Pg 13.5 cable gland, tapped ISO M20 x 1.5 or tapped 1/2" NPT, or M12 connector
Materials		Bodies and heads in Zamak

**Contact block characteristics**

<b>Rated operational characteristics</b>	XE2●P	~AC-15; A300 (Ue = 240 V, Ie = 3 A); Ithe = 10 A ---DC-13; Q300 (Ue = 250 V, Ie = 0.27 A), conforming to IEC 60947-5-1 Appendix A, EN 60947-5-1
	XE3●P	~AC-15; B300 (Ue = 240 V, Ie = 1.5 A); Ithe = 6 A ---DC-13; R300 (Ue = 250 V, Ie = 0.1 A), conforming to IEC 60947-5-1 Appendix A, EN 60947-5-1
<b>Rated insulation voltage</b>	XE2●P	Ui = 500 V degree of pollution 3 conforming to IEC 60947-1 Ui = 300 V conforming to UL 508, CSA C22-2 n° 14
	XE3●P	Ui = 400 V degree of pollution 3 conforming to IEC 60947-1 Ui = 300 V conforming to UL 508, CSA C22-2 n° 14
<b>Rated impulse withstand voltage</b>	XE2●P	U imp = 6 kV conforming to IEC 60947-1, IEC 60664
	XE3●P	U imp = 4 kV conforming to IEC 60947-1, IEC 60664
<b>Positive operation (depending on model)</b>		NC contacts with positive opening operation conforming to IEC 60947-5-1 Appendix K, EN 60947-5-1
<b>Resistance across terminals</b>		≤ 25 mΩ conforming to IEC 60255-7 category 3
<b>Short-circuit protection</b>	XE2●P	10 A cartridge fuse type gG (gl)
	XE3●P	6 A cartridge fuse type gG (gl)
<b>Connection</b> (screw clamp terminals)	XE2SP21●1	Clamping capacity, min: 1 x 0.34 mm <sup>2</sup> , max: 2 x 1.5 mm <sup>2</sup>
	XE2NP21●1	Clamping capacity, min: 1 x 0.5 mm <sup>2</sup> , max: 2 x 2.5 mm <sup>2</sup>
	XCKJ plug-in and XESP20●1	Clamping capacity, min: 1 x 0.75 mm <sup>2</sup> , max: 2 x 1.5 mm <sup>2</sup>
	XE3NP and XE3SP	Clamping capacity, min: 1 x 0.34 mm <sup>2</sup> , max: 1 x 1 mm <sup>2</sup> or 2 x 0.75 mm <sup>2</sup>
<b>Minimum actuation speed</b>		<b>XE2SP21●1 and XE3SP:</b> 0.01 m/minute <b>XE2NP21●1 and XE3NP:</b> 6 m/minute

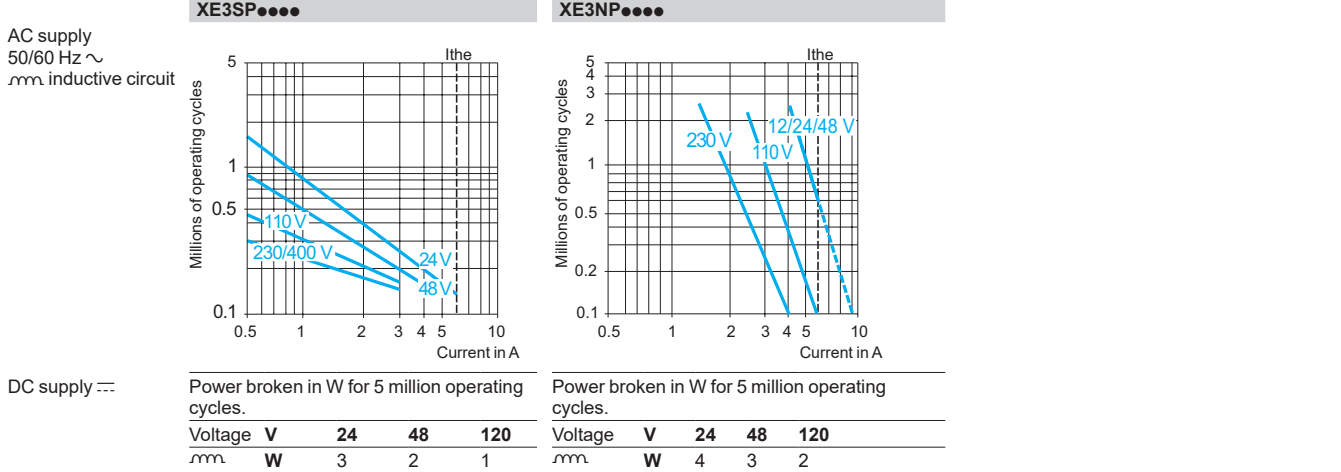
**Electrical durability**

- Conforming to IEC 60947-5-1 Appendix C
- Utilisation categories AC-15 and DC-13
- Maximum operating rate: 3600 operating cycles/hour
- Load factor: 0.5



DC supply ---	Power broken in W for 5 million operating cycles.									
	Voltage	V	24	48	120	Voltage	V	24	48	120
	mm	W	10	7	4	mm	W	13	9	7

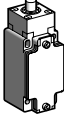



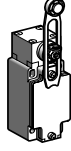


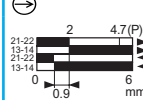
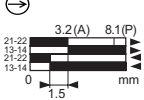
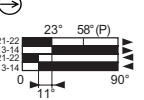
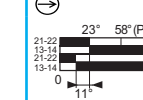
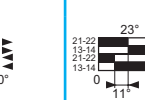
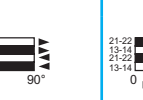

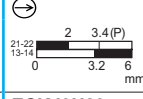
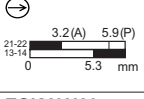
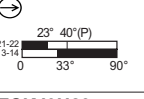
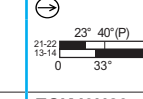
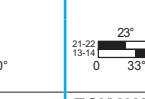
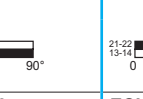


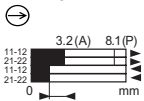
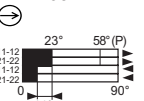
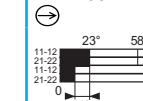

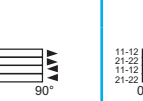


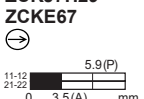
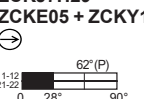
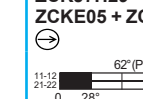



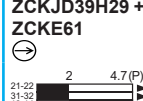






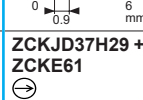
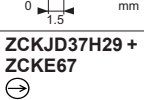
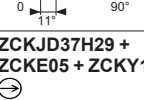

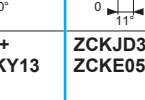
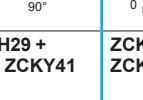



For XE2SP●151 on ~ or ---, NC and NO contacts simultaneously loaded to the values shown with reverse polarity.



DC supply ---	Power broken in W for 5 million operating cycles.									
	Voltage	V	24	48	120	Voltage	V	24	48	120
	mm	W	3	2	1	mm	W	4	3	2

# Limit switches

XC Standard range  
Industrial format EN 50041  
Metal, conforming to CENELEC EN 50041, XCKJ  
Complete fixed body switches with 1 cable entry

Type of head	Plunger (fixing by the body)		Rotary (fixing by the body) (switches supplied for actuation from left AND right)				
	Form B (1)	Form C (1)	Form A (1)			Form D (1)	
							
Type of operator	Metal end plunger	Steel roller plunger	Thermoplastic roller lever (2)	Steel roller lever (2)	Variable length thermoplastic roller lever (2)	Round thermoplastic rod lever, Ø 6 mm (2) (4)	
<b>References of complete switches with 1 ISO M20 x 1.5 cable entry(3)</b>							
	2-pole NC + NO snap action (XE2SP2151)	<b>XCKJ161H29</b> 	<b>XCKJ167H29</b> 	<b>XCKJ10511H29</b> 	<b>XCKJ10513H29</b> 	<b>XCKJ10541H29</b> 	<b>XCKJ10559H29</b> 
	2-pole NC + NO break before make, slow break (XE2NP2151)	<b>XCKJ561H29</b> 	<b>XCKJ567H29</b> 	<b>XCKJ50511H29</b> 	<b>XCKJ50513H29</b> 	<b>XCKJ50541H29</b> 	<b>XCKJ50559H29</b> 
	2-pole NC + NC snap action (XE2SP2141)	<b>ZCKJ9H29 + ZCKE61</b> 	<b>ZCKJ9H29 + ZCKE67</b> 	<b>ZCKJ9H29 + ZCKE05 + ZCKY11</b> 	<b>ZCKJ9H29 + ZCKE05 + ZCKY13</b> 	<b>ZCKJ9H29 + ZCKE05 + ZCKY41</b> 	<b>ZCKJ9H29 + ZCKE05 + ZCKY59</b> 
	2-pole NC + NC simultaneous, slow break (XE2NP2141)	<b>ZCKJ7H29 + ZCKE61</b> 	<b>ZCKJ7H29 + ZCKE67</b> 	<b>ZCKJ7H29 + ZCKE05 + ZCKY11</b> 	<b>ZCKJ7H29 + ZCKE05 + ZCKY13</b> 	<b>ZCKJ7H29 + ZCKE05 + ZCKY41</b> 	<b>ZCKJ7H29 + ZCKE05 + ZCKY59</b> 
	3-pole NC + NC + NO snap action (XE3SP2141)	<b>ZCKJD39H29 + ZCKE61</b> 	<b>ZCKJD39H29 + ZCKE67</b> 	<b>ZCKJD39H29 + ZCKE05 + ZCKY11</b> 	<b>ZCKJD39H29 + ZCKE05 + ZCKY13</b> 	<b>ZCKJD39H29 + ZCKE05 + ZCKY41</b> 	<b>ZCKJD39H29 + ZCKE05 + ZCKY59</b> 
	3-pole NC + NC + NO break before make, slow break (XE3NP2141)	<b>ZCKJD37H29 + ZCKE61</b> 	<b>ZCKJD37H29 + ZCKE67</b> 	<b>ZCKJD37H29 + ZCKE05 + ZCKY11</b> 	<b>ZCKJD37H29 + ZCKE05 + ZCKY13</b> 	<b>ZCKJD37H29 + ZCKE05 + ZCKY41</b> 	<b>ZCKJD37H29 + ZCKE05 + ZCKY59</b> 
Weight (kg)	0.430	0.455	0.480	0.490	0.485	0.485	
Contact operation	 closed  open		(A) = cam displacement (P) = positive opening point			 NC contact with positive opening operation	

### References of complete switches with 1 Pg 13.5 cable entry (2)

For complete switches with entry for Pg 13.5 cable gland, delete H29 from the end of the reference. Example: XCKJ161H29 becomes **XCKJ161**.

### References of complete switches with 1 entry for 1/2" NPT conduit (2)

For complete switches with entry for 1/2" NPT (USAS B2-1) conduit, replace H29 at the end of the reference by H7. Example: XCKJ161H29 becomes **XCKJ161H7**.

- (1) Form conforming to EN 50041, see page 25.
- (2) Adjustable throughout 360° in 5° steps, or in 45° steps by reversing the lever or its mounting.
- (3) Switches with gold contacts or eyelet type connections: please consult our Customer Care Centre.
- (4) Value taken with actuation by moving part at 100 mm from the fixing.

# Limit switches

XC Standard range

Industrial format EN 50041

Metal, conforming to CENELEC EN 50041, XCKJ

Complete fixed body switches with 1 cable entry

## Characteristics

Switch actuation	On end	By 30° cam		By any moving part
Type of actuation				
Maximum actuation speed	0.5 m/s	1 m/s	1.5 m/s	
Mechanical durability (1) (in millions of operating cycles)	30	25	30	
Minimum force or torque	For tripping	20 N	16 N	0.25 N.m
	For positive opening	50 N	40 N	0.50 N.m
Cable entry (3)	1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 9 to 12 mm			

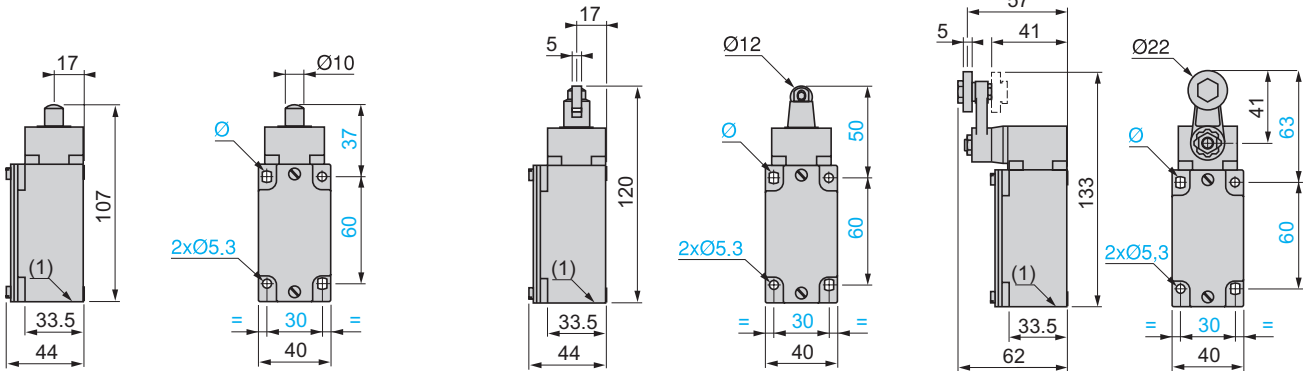
(1) Limited to 15 million operating cycles for switches with contacts XE3●P.

## Dimensions

XCKJ●61H29  
ZCKJ● + ZCKE61

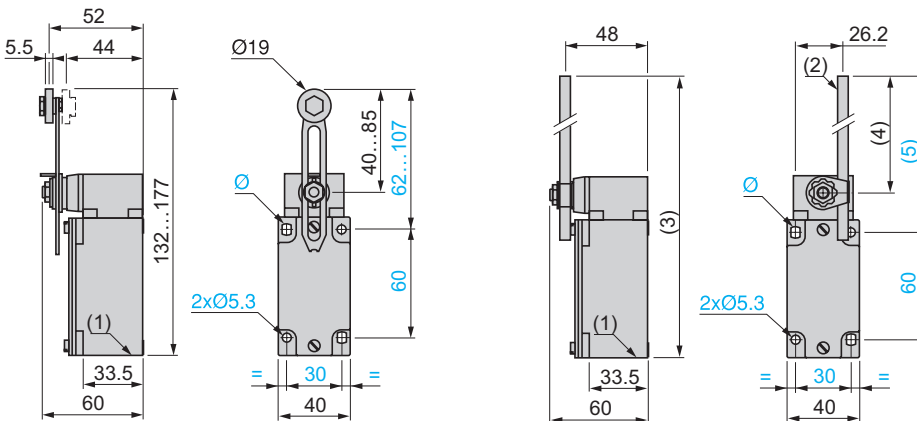
XCKJ●67H29  
ZCKJ● + ZCKE67

XCKJ●051●H29  
ZCKJ● + ZCKE05 + ZCKY11 or Y13



XCKJ●0541H29  
ZCKJ● + ZCKE05 + ZCKY41

XCKJ●0559H29  
ZCKJ● + ZCKE05 + ZCKY59



(1) 1 tapped entry for ISO M20 x 1.5 or Pg 13.5 cable gland or tapped 1/2" NPT.

(2) Ø 6 rod, length 200 mm.

(3) 282 max.

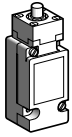
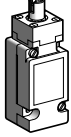


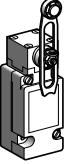
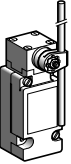

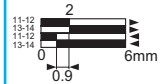
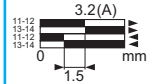
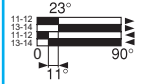
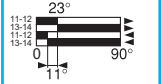
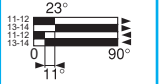
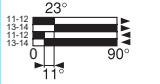


(4) 190 max.

(5) 212 max.

Ø: 2 elongated holes Ø 5.3 x 7.3.

# Limit switches

XC Standard range, industrial format EN 50041  
Metal, conforming to CENELEC EN 50041, XCKJ  
Complete switches, plug-in body  
With 1 cable entry

Type of head	Plunger (fixing by the body)		Rotary (fixing by the body) (switches supplied for actuation from left AND right)			
	Form B (1)	Form C (1)	Form A (1)		Form D (1)	
						
Type of operator	Metal end plunger	Steel roller plunger	Thermoplastic roller lever (2)	Steel roller lever (2)	Variable length thermoplastic roller lever (2)	Round thermoplastic rod lever, Ø 6 mm (2) (4)
<b>References of complete switches with 1 ISO M20 x 1.5 cable entry (3)</b>						
 Single-pole CO snap action	XCKJ1161H29	XCKJ1167H29	XCKJ110511H29	XCKJ110513H29	XCKJ110541H29	XCKJ110559H29
						
Weight (kg)	0.430	0.455	0.480	0.490	0.485	0.485
Contact operation	 closed  open		(A) = cam displacement			



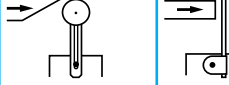
## References of complete switches with 1 Pg 13.5 cable entry (3)

For complete switches with entry for Pg 13.5 cable gland, delete **H29** from the end of the reference.  
Example: **XCKJ1161H29** becomes **XCKJ1161**.

## References of complete switches with 1 entry for 1/2" NPT conduit (3)

For complete switches with entry for 1/2" NPT (USAS B2-1) conduit, replace **H29** at the end of the reference by **H7**.  
Example: **XCKJ1161H29** becomes **XCKJ1161H7**.

## Characteristics

Switch actuation	On end	By 30° cam	By any moving part
Type of actuation			
Maximum actuation speed	0.5 m/s	1 m/s	1.5 m/s
Mechanical durability (in millions of operating cycles)	30	25	30
Minimum tripping force or torque	20 N	16 N	0.25 N.m
Cable entry	1 entry tapped M20 x 1.5 for ISO cable gland Clamping capacity 7 to 13 mm		

(1) Form conforming to EN 50041, see page 25.

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

(3) Switches with gold contacts: please consult our Customer Care Centre.

(4) Value taken with actuation by moving part at 100 mm from the fixing.

## Limit switches

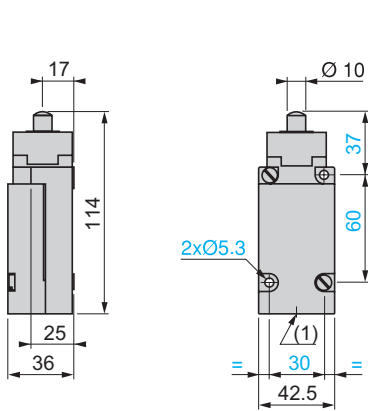
XC Standard range, industrial format EN 50041

Metal, conforming to CENELEC EN 50041, XCKJ

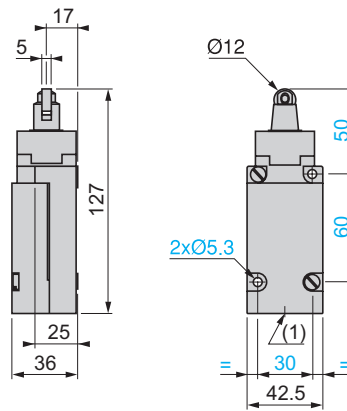
Complete switches, plug-in body

With 1 cable entry

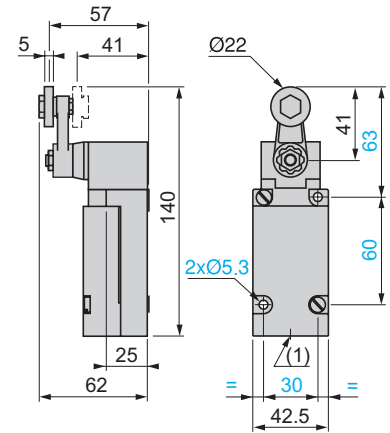
**XCKJ1161H29**



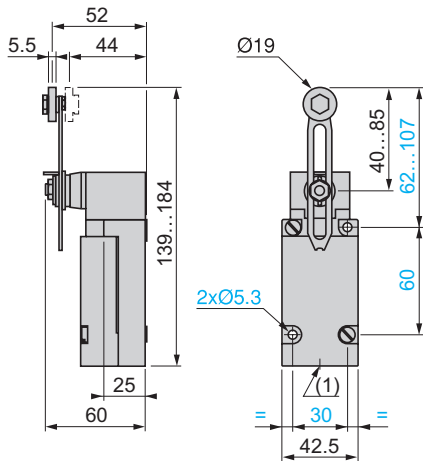
**XCKJ1167H29**



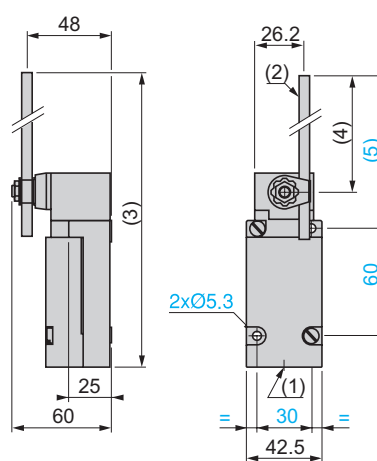
**XCKJ110511H29, XCKJ110513H29**



**XCKJ110541H29**



**XCKJ110559H29**



(1) 1 tapped entry for ISO M20 x 1.5 or Pg 13.5 cable gland or for 1/2" NPT conduit.

(2)  $\varnothing 6$  rod, length 200 mm.

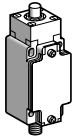
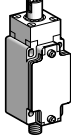
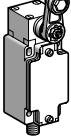
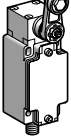
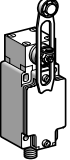
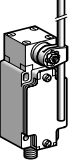
(3) 289 max.


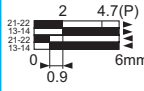
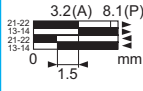
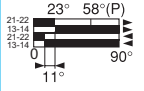
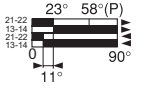
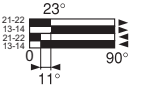
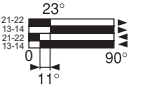
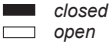
(4) 190 max.





(5) 212 max.

# Limit switches

XC Standard range, industrial format EN 50041  
Metal, conforming to CENELEC EN 50041, XCKJ  
Complete switches, fixed body  
M12 connector

Type of head	Plunger (fixing by the body)		Rotary (fixing by the body) (switches supplied for actuation from left AND right)			
	Form B (1)	Form C (1)	Form A (1)		Form D (1)	
						
Type of operator	Metal end plunger	Steel roller plunger	Thermoplastic roller lever (2)	Steel roller lever (2)	Variable length thermoplastic roller lever (2)	Round thermoplastic rod lever, Ø 6 mm (2) (3)

References (4)	2-pole NC + NO snap action (XE2SP2151)					
	XCKJ161D	XCKJ167D	XCKJ10511D	XCKJ10513D	XCKJ10541D	XCKJ10559D
						
Weight (kg)	0.430	0.455	0.480	0.490	0.485	0.485
Contact operation			(A) = cam displacement (P) = positive opening point			

Characteristics				
Switch actuation	On end	By 30° cam		By any moving part
Type of actuation				
Maximum actuation speed	0.5 m/s	1 m/s	1.5 m/s	
Mechanical durability (in millions of operating cycles)	30	25	30	
Minimum force or torque	For tripping	20 N	16 N	0.25 N.m
	For positive opening	50 N	40 N	0.50 N.m
Connection	M12 connector, U <sub>i</sub> = 60 V, I <sub>e</sub> = 4 A (see suitable pre-wired female connectors below).			

- (1) Form conforming to EN 50041, see page 25.
- (2) Adjustable throughout 360° in 5° steps, or in 45° steps by reversing the lever or its mounting.
- (3) Value taken with actuation by moving part at 100 mm from the fixing.
- (4) Switches with gold contacts: please consult our Customer Care Centre.

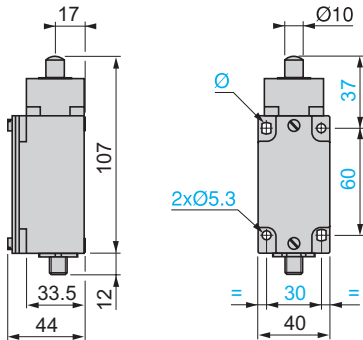
References of suitable pre-wired female connectors		
Type of connector	M12 straight, 5-pin, 4 A/24 V max.	M12 elbowed, 5-pin, 4 A/24 V max.
With cable, Ø 5.8 mm (4 x 0.34 mm <sup>2</sup> + 1 x 0.5 mm <sup>2</sup> )	L = 2 m	XZCP1164L2
	L = 5 m	XZCP1164L5
	L = 10 m	XZCP1164L10
Weight (kg)	L = 2 m	0.115
	L = 5 m	0.270
	L = 10 m	0.520

# Limit switches

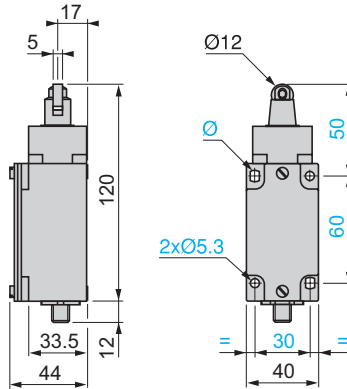
XC Standard range, industrial format EN 50041  
Metal, conforming to CENELEC EN 50041, XCKJ  
Complete switches, fixed body  
M12 connector

## Dimensions

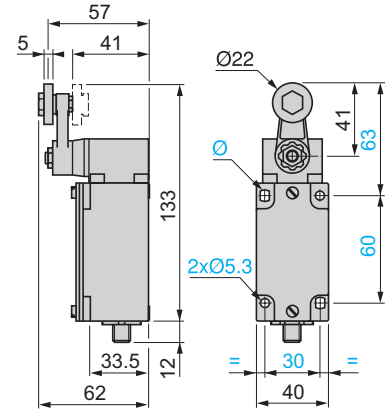
XCKJ161D



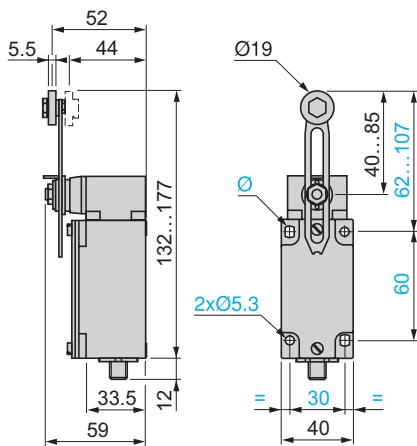
XCKJ167D



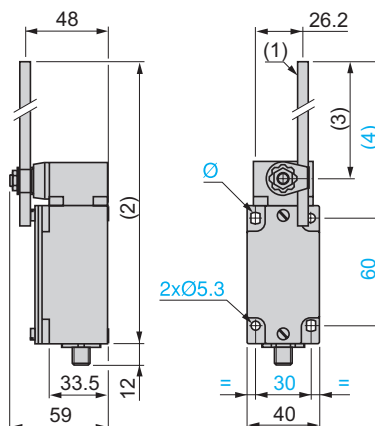
XCKJ1051D



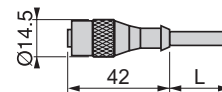
XCKJ10541D



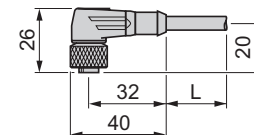
XCKJ10559D



XZCP1164L



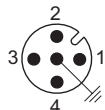
XZCP1264L



- (1) Ø 6 rod, length 200 mm.
- (2) 282 max.
- (3) 190 max.
- (4) 212 max.
- Ø: 2 elongated holes Ø 5.3 x 7.3.
- L: Cable length 2, 5 or 10 m.

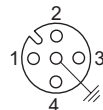
## Connections

Limit switch XCKJ●●●●D



1-2 = NC  
3-4 = NO  
5 =  $\perp$   
4 A / 24 V max.

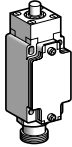
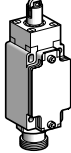
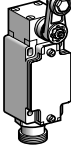
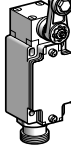
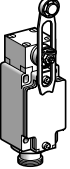
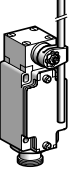
Pre-wired female connector XZCP1●64L


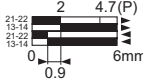
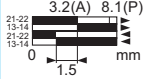
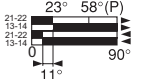
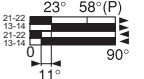
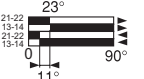
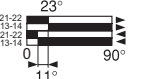










1 = brown  
2 = white  
3 = blue  
4 = black  
5 =  $\perp$  yellow/green

# Limit switches

XC Standard range, industrial format EN 50041  
Metal, conforming to CENELEC EN 50041, XCKJ  
Complete switches, fixed body  
7/8"-16UN connector

Type of head	Plunger (fixing by the body)		Rotary (fixing by the body) (switches supplied for actuation from left AND right)			
	Form B (1)	Form C (1)	Form A (1)		Form D (1)	
						
Type of operator	Metal end plunger	Steel roller plunger	Thermoplastic roller lever (2)	Steel roller lever (2)	Variable length thermoplastic roller lever (2)	Round thermoplastic rod lever, Ø 6 mm (2) (3)

References (4)	2-pole NC + NO snap action (XE2SP2151)					
	XCKJ161A	XCKJ167A	XCKJ10511A	XCKJ10513A	XCKJ10541A	XCKJ10559A
						
Weight (kg)	0.430	0.455	0.480	0.490	0.485	0.485
Contact operation	 closed  open		(A) = cam displacement (P) = positive opening point		 NC contact with positive opening operation	

Characteristics					
Switch actuation	On end	By 30° cam		By any moving part	
Type of actuation					
Maximum actuation speed	0.5 m/s	1 m/s	1.5 m/s		
Mechanical durability (in millions of operating cycles)	30	25	30		
Minimum force or torque	For tripping	20 N	16 N	0.25 N.m	
	For positive opening	50 N	40 N	0.50 N.m	
Connection	7/8"-16UN connector, Ui = 250 V; Ie = 6 A (see suitable pre-wired female connectors below).				

- (1) Form conforming to EN 50041, see page 25.
- (2) Adjustable throughout 360° in 5° steps, or in 45° steps by reversing the lever or its mounting.
- (3) Value taken with actuation by moving part at 100 mm from the fixing.
- (4) Switches with gold contacts: please consult our Customer Care Centre.

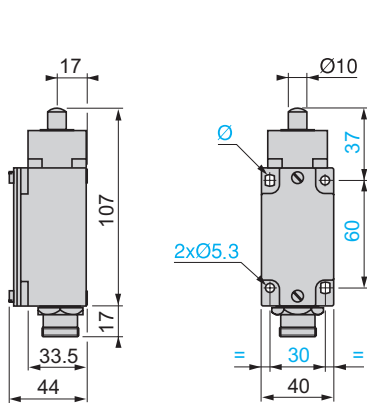
References of suitable pre-wired female connectors		
Type of connector	7/8"-16UN straight, 5-pin, 4 A/250 V max.	
With cable, Ø 5.9 mm (5 x 0.34 mm <sup>2</sup> )	L = 2 m	XZCP1764L2
	L = 5 m	XZCP1764L5
	L = 10 m	XZCP1764L10
Weight (kg)	L = 2 m	0.185
	L = 5 m	0.460
	L = 10 m	0.900

# Limit switches

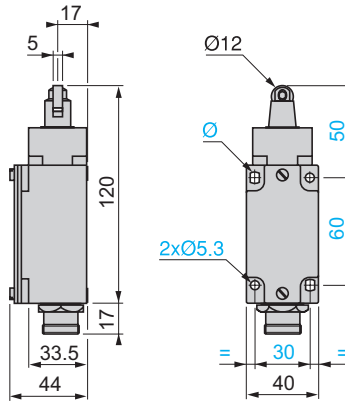
XC Standard range, industrial format EN 50041  
Metal, conforming to CENELEC EN 50041, XCKJ  
Complete switches, fixed body  
7/8"-16UN connector

## Dimensions

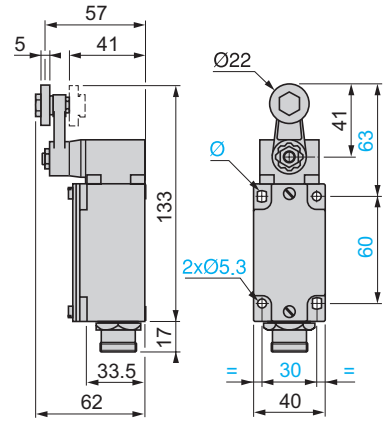
XCKJ161A



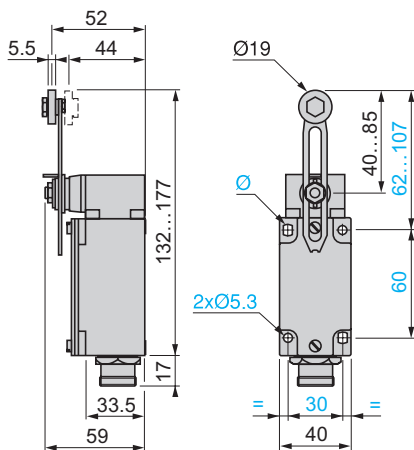
XCKJ167A



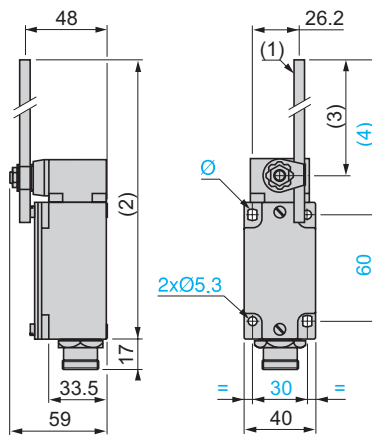
XCKJ1051●A



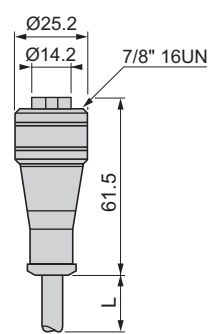
XCKJ10541A



XCKJ10559A



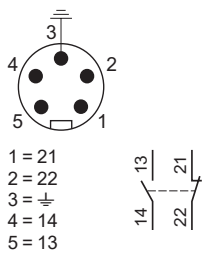
XZCP1764●



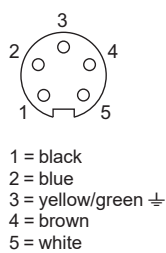
- (1) Ø 6 rod, length 200 mm.
- (2) 282 max.
- (3) 190 max.
- (4) 212 max.
- Ø: 2 elongated holes Ø 5.3 x 7.3.
- L: Cable length 2, 5 or 10 m.

## Connections

Limit switch XCKJ●●●●A

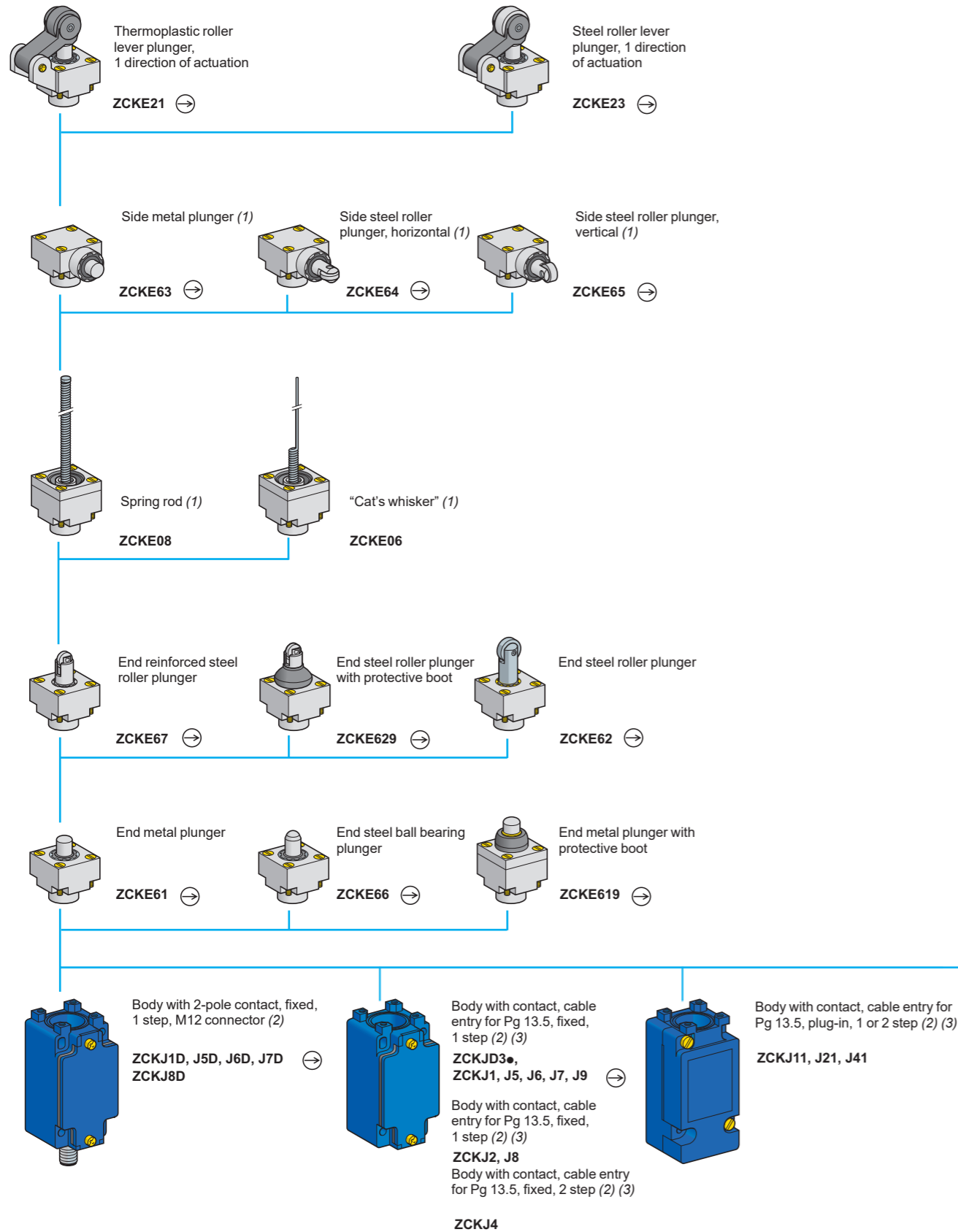


Pre-wired female connector XZCP1764●

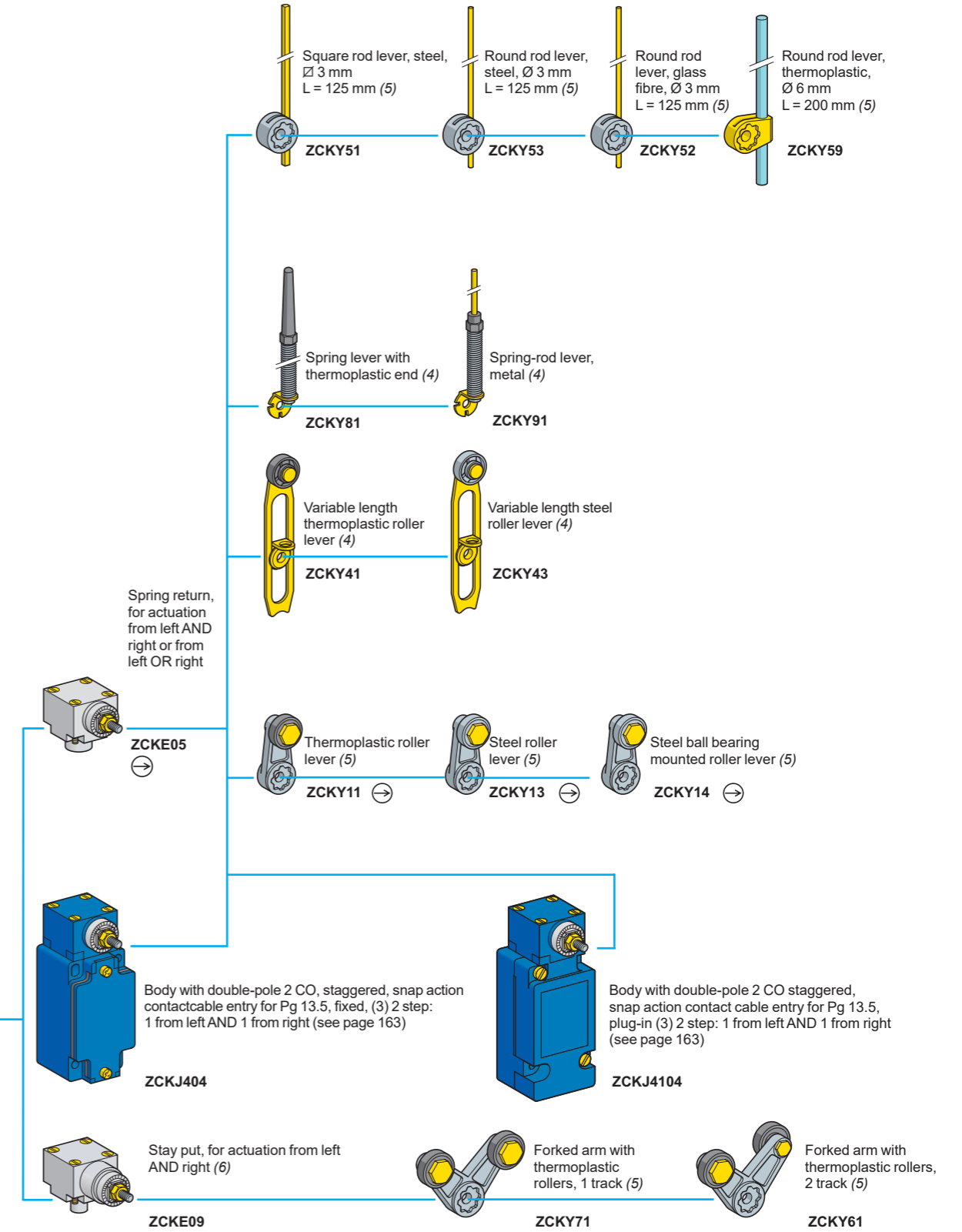


# Limit switches

XC Standard range, industrial format EN 50041  
 Metal, conforming to CENELEC EN 50041, XCKJ  
 Fixed or plug-in body  
 Variable composition: standard bodies



(1) Cannot be used with bodies ZCKJ4 and ZCKJ41.  
 (2) For further information, see page 159.  
 (3) For a cable entry tapped ISO M20 x 1.5, add H29 to the reference. Example: ZCKJ1 becomes ZCKJ1H29.  
 For a cable entry tapped 1/2" NPT, add H7 to the reference. Example: ZCKJ1 becomes ZCKJ1H7.



⊙ : head assuring positive opening operation.

(4) Adjustable throughout 360° in 5° steps, or in 90° steps by reversing the notched washer.  
 (5) Adjustable throughout 360° in 5° steps, or in 45° steps by reversing the lever mounting.  
 (6) Suitable for bodies with contacts ZCKJ1, J2, J31, J39.

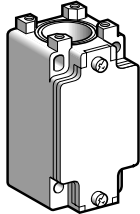
# Limit switches

XC Standard range, industrial format EN 50041

Metal, conforming to CENELEC EN 50041, XCKJ

Fixed or plug-in body

Adaptable sub-assemblies: standard bodies



ZCKJ

## Fixed bodies with 2-pole contact

Type	With contact block	Scheme	Positive operation (1)	Cable entry	Reference	Weight kg
1 step	1 NC + 1 NO snap action (XE2SP2151)		⊖	Pg 13.5	<b>ZCKJ1</b>	0.310
				ISO M20 x 1.5	<b>ZCKJ1H29</b>	0.310
				1/2" NPT	<b>ZCKJ1H7</b>	0.310
	2 CO simultaneous, snap action (XE2SP2021)		-	Pg 13.5	<b>ZCKJ2</b>	0.310
				ISO M20 x 1.5	<b>ZCKJ2H29</b>	0.310
				1/2" NPT	<b>ZCKJ2H7</b>	0.310
	1 NC + 1 NO break before make, slow break (XE2NP2151)		⊖	Pg 13.5	<b>ZCKJ5</b>	0.310
				ISO M20 x 1.5	<b>ZCKJ5H29</b>	0.310
				1/2" NPT	<b>ZCKJ5H7</b>	0.310
1 NO + 1 NC make before break, slow break (XE2NP2161)		⊖	Pg 13.5	<b>ZCKJ6</b>	0.310	
			ISO M20 x 1.5	<b>ZCKJ6H29</b>	0.310	
			1/2" NPT	<b>ZCKJ6H7</b>	0.310	
2 NC simultaneous, slow break (XE2NP2141)		⊖	Pg 13.5	<b>ZCKJ7</b>	0.310	
			ISO M20 x 1.5	<b>ZCKJ7H29</b>	0.310	
			1/2" NPT	<b>ZCKJ7H7</b>	0.310	
2 NO simultaneous, slow break (XE2NP2131)		-	Pg 13.5	<b>ZCKJ8</b>	0.310	
			ISO M20 x 1.5	<b>ZCKJ8H29</b>	0.310	
			1/2" NPT	<b>ZCKJ8H7</b>	0.310	
2 NC snap action (XE2SP2141)		⊖	Pg 13.5	<b>ZCKJ9</b>	0.310	
			ISO M20 x 1.5	<b>ZCKJ9H29</b>	0.310	
			1/2" NPT	<b>ZCKJ9H7</b>	0.310	
2 step	2 CO staggered snap action (XE2SP2031)		-	Pg 13.5	<b>ZCKJ4</b>	0.310
				ISO M20 x 1.5	<b>ZCKJ4H29</b>	0.310
				1/2" NPT	<b>ZCKJ4H7</b>	0.310

## Fixed bodies with 3-pole contact

Type	With contact block	Scheme	Positive operation (1)	Cable entry	Reference	Weight kg
-	1 NC + 2 NO snap action (XE3SP2151)		⊖	Pg 13.5	<b>ZCKJD31</b>	0.310
				ISO M20 x 1.5	<b>ZCKJD31H29</b>	0.310
				1/2" NPT	<b>ZCKJD31H7</b>	0.310
	2 NC + 1 NO snap action (XE3SP2141)		⊖	Pg 13.5	<b>ZCKJD39</b>	0.310
ISO M20 x 1.5				<b>ZCKJD39H29</b>	0.310	
1/2" NPT				<b>ZCKJD39H7</b>	0.310	
2 NC + 1 NO break before make, slow break (XE3NP2141)		⊖	Pg 13.5	<b>ZCKJD37</b>	0.310	
			ISO M20 x 1.5	<b>ZCKJD37H29</b>	0.310	
			1/2" NPT	<b>ZCKJD37H7</b>	0.310	
1 NC + 2 NO break before make, slow break (XE3NP2151)		⊖	Pg 13.5	<b>ZCKJD35</b>	0.310	
			ISO M20 x 1.5	<b>ZCKJD35H29</b>	0.310	
			1/2" NPT	<b>ZCKJD35H7</b>	0.310	

(1) ⊖: NC contact with positive opening operation.

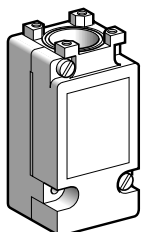
## Limit switches

XC Standard range, industrial format EN 50041

Metal, conforming to CENELEC EN 50041, XCKJ

Fixed or plug-in body

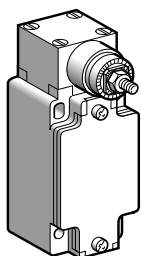
Adaptable sub-assemblies: standard bodies



ZCKJ01

## Plug-in bodies with contact

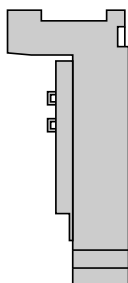
Type	With contact block	Scheme	Positive operation (1)	Cable entry	Reference	Weight kg
1 step	Single-pole 1 CO snap action		-	Pg 13.5	<b>ZCKJ11</b>	0.300
				ISO M20 x 1.5	<b>ZCKJ11H29</b>	0.300
				1/2" NPT	<b>ZCKJ11H7</b>	0.300
2 step	Double-pole 2 CO simultaneous, snap action		-	Pg 13.5	<b>ZCKJ21</b>	0.300
				ISO M20 x 1.5	<b>ZCKJ21H29</b>	0.300
				1/2" NPT	<b>ZCKJ21H7</b>	0.300
2 step	Double-pole 2 CO staggered, snap action		-	Pg 13.5	<b>ZCKJ41</b>	0.300
				ISO M20 x 1.5	<b>ZCKJ41H29</b>	0.300
				1/2" NPT	<b>ZCKJ41H7</b>	0.300



ZCKJ404

## Bodies with contact, with rotary head (without operating lever)

Type	With contact block	Scheme	Positive operation (1)	Cable entry	Reference	Weight kg
<b>Fixed body</b>						
2 step 1 from left AND 1 from right (see page 163)	Double-pole 2 CO staggered, snap action		-	Pg 13.5	<b>ZCKJ404</b>	0.455
				ISO M20 x 1.5	<b>ZCKJ404H29</b>	0.455
				1/2" NPT	<b>ZCKJ404H7</b>	0.455
<b>Plug-in body</b>						
2 step 1 from left AND 1 from right (see page 163)	Double-pole 2 CO staggered, snap action		-	Pg 13.5	<b>ZCKJ4104</b>	0.465
				ISO M20 x 1.5	<b>ZCKJ4104H29</b>	0.465
				1/2" NPT	<b>ZCKJ4104H7</b>	0.465



ZCKJ00

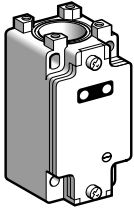
## Plug-in housing only

Description	For use with	Contacts	Reference	Weight kg
Single-pole 1 CO with positive opening operation	ZCKJ11	Silver	<b>ZCKJ01</b>	0.150
Double-pole 2 CO with positive opening operation	ZCKJ21	Silver	<b>ZCKJ02</b>	0.160
Double-pole 2 CO staggered	ZCKJ41	Silver	<b>ZCKJ04</b>	0.160

(1) ⊕: NC contact with positive opening operation.

# Limit switches

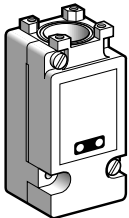
XC Standard range, industrial format EN 50041  
 Metal, conforming to CENELEC EN 50041, XCKJ  
 Fixed or plug-in body. Adaptable sub-assemblies:  
 bodies with indicator light module



ZCKJ●●●

### Fixed bodies with 2-pole contact

Type	With contact block	Scheme	Positive operation (1)	Cable entry	Reference	Weight kg
<b>With module comprising 1 LED, 24 V ⎓</b>						
1 step	1 NC + 1 NO snap action (XE2SP2151)		⊕	Pg 13.5	<b>ZCKJ120</b>	0.320
	1 NC + 1 NO break before make, slow break (XE2NP2151)		⊕	Pg 13.5	<b>ZCKJ520</b>	0.320
<b>With module comprising 2 LEDs, 24 V ⎓</b>						
1 step	1 NC + 1 NO snap action (XE2SP2151)		⊕	Pg 13.5 ISO M20 x 1.5	<b>ZCKJ121</b> <b>ZCKJ121H29</b>	0.320 0.320
	1 NC + 1 NO break before make, slow break (XE2NP2151)		⊕	Pg 13.5 ISO M20 x 1.5	<b>ZCKJ521</b> <b>ZCKJ521H29</b>	0.320 0.320
<b>With module comprising 2 LEDs, 110/240 V ~</b>						
1 step	1 NC + 1 NO snap action (XE2SP2151)		⊕	Pg 13.5 ISO M20 x 1.5	<b>ZCKJ134</b> <b>ZCKJ134H29</b>	0.320 0.320
	1 NC + 1 NO break before make, slow break (XE2NP2151)		⊕	Pg 13.5 ISO M20 x 1.5	<b>ZCKJ534</b> <b>ZCKJ534H29</b>	0.320 0.320



ZCKJ1●●●

### Plug-in bodies with single-pole contact

Type	With contact block	Scheme	Positive operation (1)	Cable entry	Reference	Weight kg
<b>With module comprising 2 LEDs, 24 V ⎓</b>						
1 step	CO snap action		-	Pg 13.5 ISO M20 x 1.5	<b>ZCKJ1121</b> <b>ZCKJ1121H29</b>	0.340 0.340
<b>With module comprising 2 LEDs, 110/240 V ~</b>						
1 step	CO snap action		-	Pg 13.5 ISO M20 x 1.5	<b>ZCKJ1134</b> <b>ZCKJ1134H29</b>	0.340 0.340

(1) ⊕: NC contact with positive opening operation.

### Indicator light module characteristics

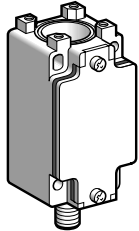
Type of indicator	1 LED or 2 LEDs	2 LEDs
Rated insulation voltage	50 V ⎓, conforming to IEC 60947-1	250 V ~, conforming to IEC 60947-1
Current consumption	7 mA per LED	9 mA per LED
Rated operational voltage	24 V ⎓	110/240 V ~
Voltage limits	20...30 V ⎓ (including ripple)	95...264 V ~
Service life	100 000 hours	100 000 hours
Reverse polarity protection	Yes	-

## Limit switches

XC Standard range, industrial format EN 50041

Metal, conforming to CENELEC EN 50041, XCKJ

Fixed or plug-in body. Adaptable sub-assemblies:  
bodies with M12 connector



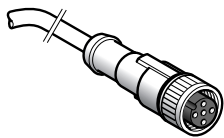
ZCKJ•D

### Fixed bodies with 2-pole contact

Type	With contact block	Scheme	Positive operation (1)	Reference	Weight kg
1 step	1 NC + 1 NO snap action (XE2SP2151)		⊖	ZCKJ1D	0.320
	1 NC + 1 NO break before make, slow break (XE2NP2151)		⊖	ZCKJ5D	0.320
	1 NO + 1 NC make before break, slow break (XE2NP2161)		⊖	ZCKJ6D	0.320
	2 NC simultaneous, slow break (XE2NP2141)		⊖	ZCKJ7D	0.320
	2 NO simultaneous, slow break (XE2NP2131)		-	ZCKJ8D	0.320

### Female pre-wired connectors

Description	Cable length	Reference	Weight kg
Female pre-wired connectors, M12, straight Ø 5,0 mm cable Conductor c.s.a: 5 x 0.34 mm <sup>2</sup> Nominal current : 4 A Nominal voltage: ~ 30 V, ~ 36 V	1 m	XZCP1164L2	0.115
	5 m	XZCP1164L5	0.270
	10 m	XZCP1164L10	0.520



XZCP1164L•

(1) NC contact with positive opening operation.

# Limit switches

XC Standard range, industrial format EN 50041

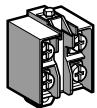
Metal, conforming to CENELEC EN 50041, XCKJ

Fixed or plug-in body

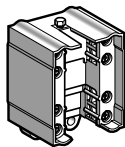
Adaptable sub-assemblies: contact blocks



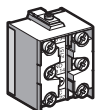
XE2SP21●1



XE2NP21●1



XE3P21●1



XE3●P21●1

Contact blocks						
Type of contact	Scheme	For bodies	Positive operation (1)	Reference	Weight kg	
<b>2-pole contact</b>						
1 NC + 1 NO snap action		ZCKJ1 ZCKJ1D	⊖	XE2SP2151	0.020	
1 NC + 1 NO break before make, slow break		ZCKJ5 ZCKJ5D	⊖	XE2NP2151	0.020	
2 CO simultaneous snap action		ZCKJ2	-	XE2SP2021	0.045	
2 CO staggered, snap action		ZCKJ4	-	XE2SP2031	0.045	
1 NO + 1 NC make before break, slow break		ZCKJ6 ZCKJ6D	⊖	XE2NP2161	0.020	
2 NC simultaneous, slow break		ZCKJ7 ZCKJ7D	⊖	XE2NP2141	0.020	
2 NO simultaneous, slow break		ZCKJ8 ZCKJ8D	-	XE2NP2131	0.020	
2 NC snap action		ZCKJ9	⊖	XE2SP2141	0.020	
<b>3-pole contact</b>						
1 NC + 2 NO snap action		ZCKJD31	⊖	XE3SP2151	0.035	
2 NC + 1 NO snap action		ZCKJD39	⊖	XE3SP2141	0.035	
2 NC + 1 NO break before make, slow break		ZCKJD37	⊖	XE3NP2141	0.035	
1 NC + 2 NO break before make, slow break		ZCKJD35	⊖	XE3NP2151	0.035	

(1) ⊖: NC contact with positive opening operation.

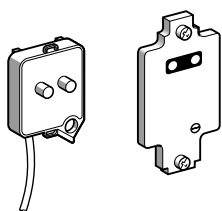
# Limit switches

XC Standard range, industrial format EN 50041

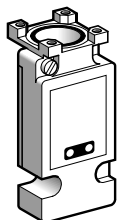
Metal, conforming to CENELEC EN 50041, XCKJ

Fixed or plug-in body

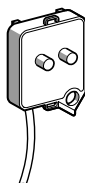
Adaptable sub-assemblies: add-ons



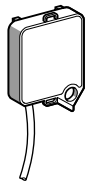
ZCKZ0●●



ZCKJ01●●



ZCKJ90●



ZCKJ82A

## Covers + indicator light module

For use with	Number and type of indicators	Voltage	Reference	Weight kg
Fixed body	1 LED	24 V $\overline{\text{---}}$	ZCKZ020	0.060
	2 LEDs	24 V $\overline{\text{---}}$	ZCKZ021	0.060
	2 LEDs	110/240 V $\sim$	ZCKZ034	0.060
Plug-in body	2 LEDs	24 V $\overline{\text{---}}$	ZCKJ0121	0.200
	2 LEDs	110/240 V $\sim$	ZCKJ0134	0.200

## Indicator light modules

For use with	Number and type of indicators	Voltage	Reference	Weight kg
Fixed body	1 LED	24 V $\overline{\text{---}}$	ZCKJ902	0.030
	2 LEDs	24 V $\overline{\text{---}}$	ZCKJ906	0.030
	2 LEDs	110/240 V $\sim$	ZCKJ904	0.030

## Module with resistor for machine diagnostics

For use with	Resistor value	Reference	Weight kg
Fixed body (ZCKJ1 only)	15 k $\Omega$ , 1/4 W	ZCKJ82A	0.030

### Other versions

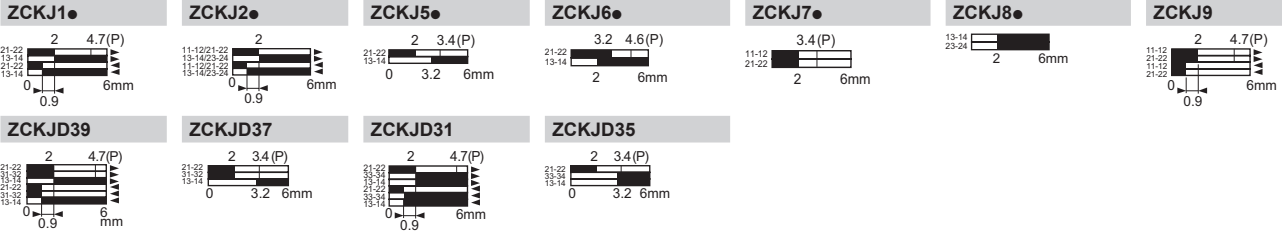
Covers + indicator light module for other supply voltages.  
Please consult our Customer Care Centre.

# Limit switches

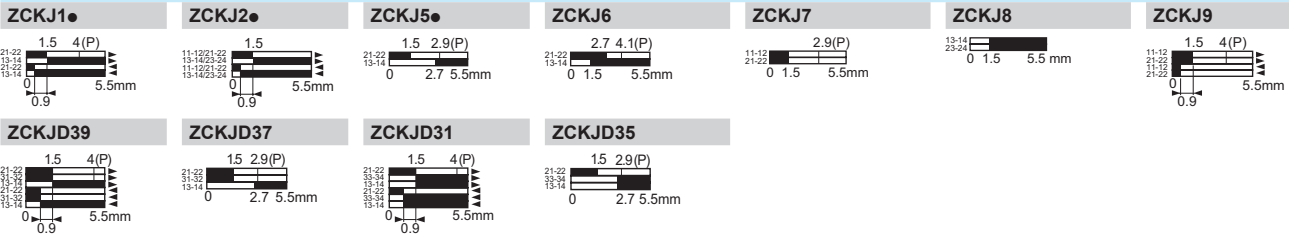
XC Standard range, industrial format EN 50041  
 Metal, conforming to CENELEC EN 50041, XCKJ  
 Fixed or plug-in body  
 Adaptable sub-assemblies

## Function diagrams (positive operation assured only if the associated sub-assemblies are )

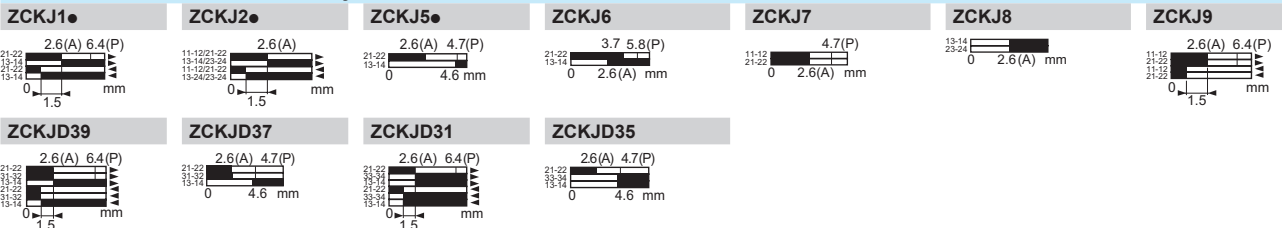
### Heads ZCKE61, ZCKE619, ZCKE66 with body



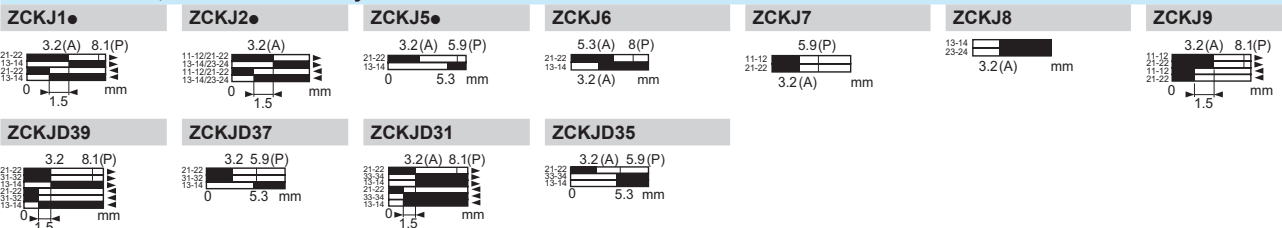
### Head ZCKE63 with body



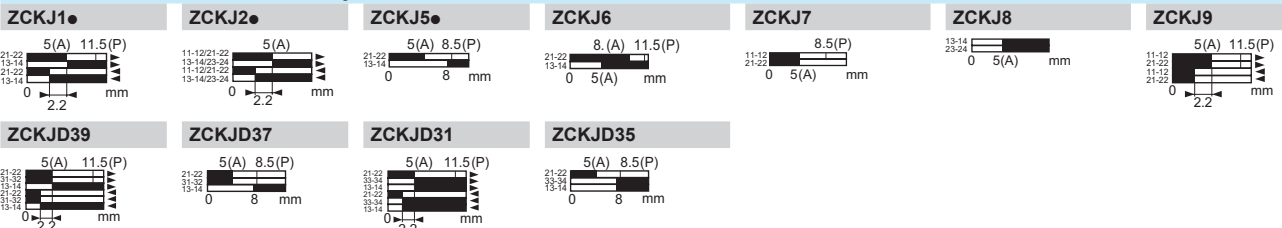
### Heads ZCKE64, ZCKE65 with body



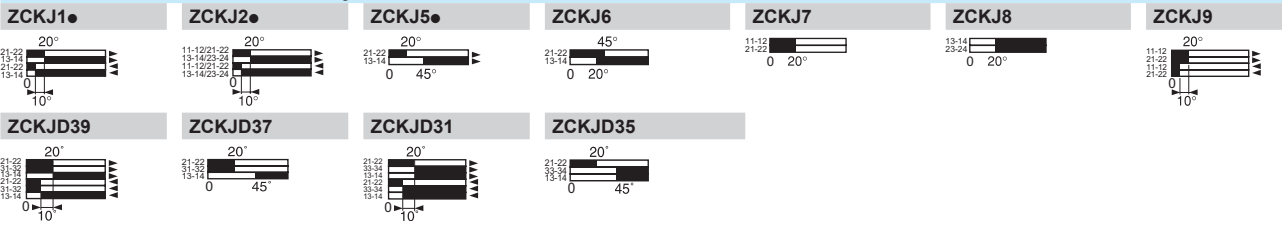
### Heads ZCKE67, ZCKE629 with body



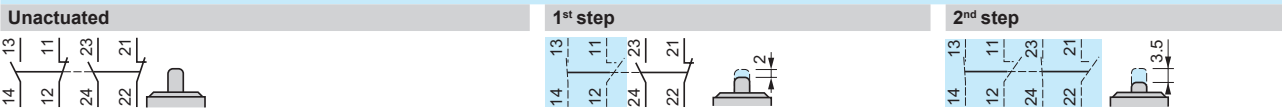
### Heads ZCKE21, ZCKE23 with body



### Heads ZCKE06, ZCKE08 with body



### ZCKJ4



Contact operation

 closed  
 open

(A) = cam displacement  
 (P) = positive opening point

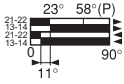
# Limit switches

XC Standard range, industrial format EN 50041  
Metal, conforming to CENELEC EN 50041, XCKJ  
Fixed or plug-in body  
Adaptable sub-assemblies

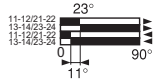
## Function diagrams (positive operation assured only if the associated sub-assemblies are )

### Head ZCKE05 with body

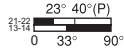
#### ZCKJ1●



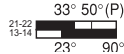
#### ZCKJ2●



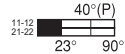
#### ZCKJ5●



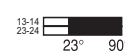
#### ZCKJ6



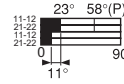
#### ZCKJ7



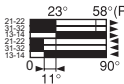
#### ZCKJ8



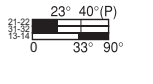
#### ZCKJ9



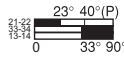
#### ZCKJD39



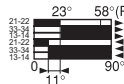
#### ZCKJD37



#### ZCKJD39

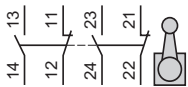


#### ZCKJD31

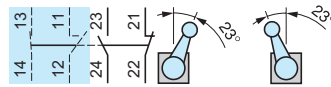


### ZCKJ4●

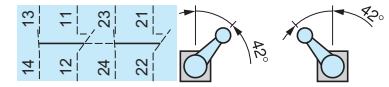
#### Unactuated



#### 1<sup>st</sup> step, actuated from left or right

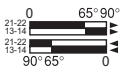


#### 2<sup>nd</sup> step, actuated from left or right

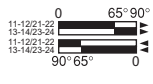


### Head ZCKE09 with body

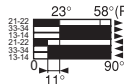
#### ZCKJ1●



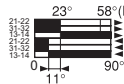
#### ZCKJ2●



#### ZCKJD31

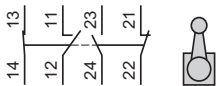


#### ZCKJD39

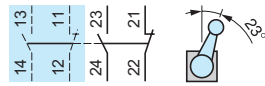


### ZCKJ404, J4104 (body with head)

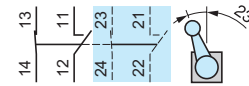
#### Unactuated



#### Actuated from left



#### Actuated from right



Contact operation

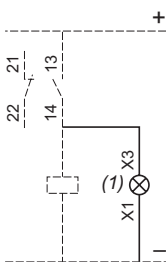
 closed  
 open

(P) = positive opening point

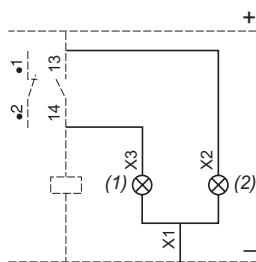
## Wiring schemes

### Indicator light modules

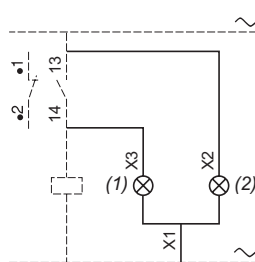
#### 1 LED, 24 V $\overline{\text{DC}}$



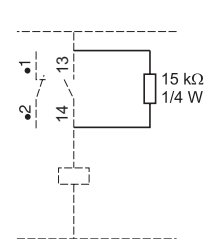
#### 2 LEDs, 24 V $\overline{\text{DC}}$



#### 2 LEDs, 110/240 V $\sim$

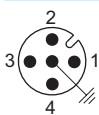


### Module with resistor



(1) Orange indicator  
(2) Green indicator

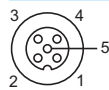
### ZCKJ●D



1 - 2 = NC  
3 - 4 = NO  
5 =  $\perp$   
4 A / 24 V max.



### Pre-wired connectors XZCP1164●



1 = brown  
2 = white/black  
3 = blue  
4 = black  
5 = yellow/green

# Limit switches

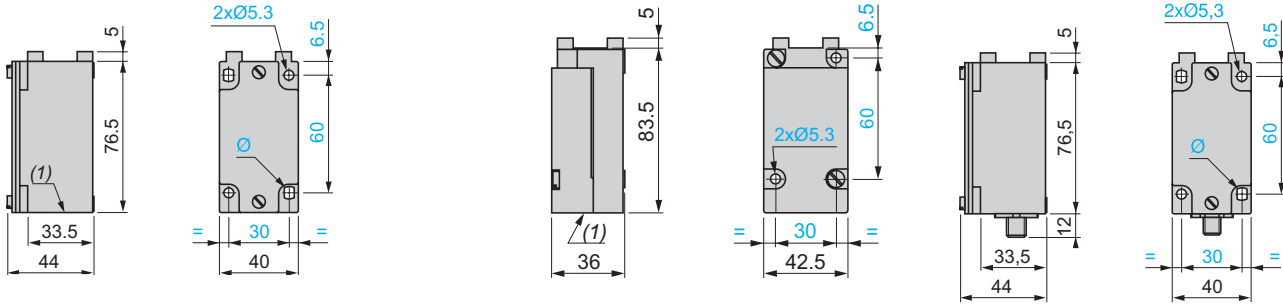
XC Standard range, industrial format EN 50041  
 Metal, conforming to CENELEC EN 50041, XCKJ  
 Fixed or plug-in body  
 Adaptable sub-assemblies

## Bodies

ZCKJ1, J2, J5, J4, J●2●, J●3●, J6, J7, J8, J9  
 ZCKJ1H29, J2H29, J5H29, J4H29, J●2●H29, J●3●H29,  
 J6H29, J7H29, J8H29, J9H29  
 ZCKJ1H7, J2H7, J5H7, J4H7, J●2●H7, J●3●H7, J6H7,  
 J7H7, J8H7, J9H7

ZCKJ11, J21, J41, J11●●  
 ZCKJ11H29, J21H29, J41H29, J11●●H29  
 ZCKJ11H7, J21H7, J41H7, J11●●H7

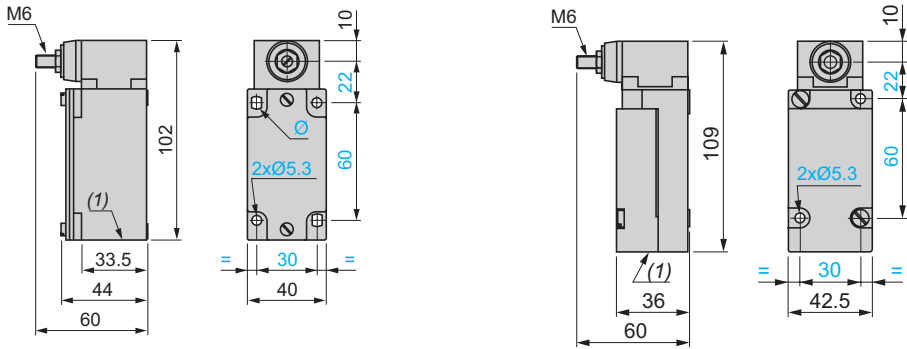
ZCKJ1D, J5D, J6D, J7D, J8D



## Bodies with rotary head mounted

ZCKJ404, ZCKJ404H29, ZCKJ404H7

ZCKJ4104, ZCKJ4104H29, ZCKJ4104H7

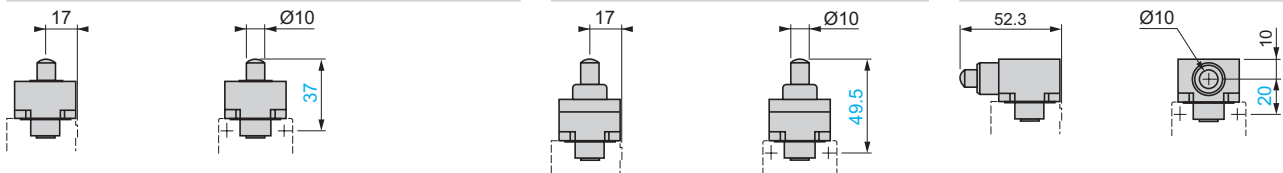


## Plunger heads

ZCKE61

ZCKE619

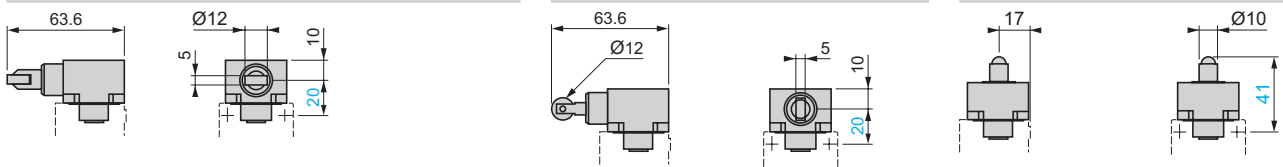
ZCKE63



ZCKE64

ZCKE65

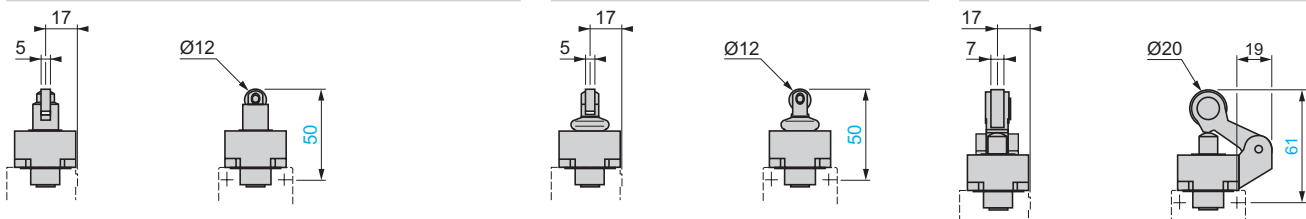
ZCKE66



ZCKE62, ZCKE67

ZCKE629

ZCKE21, ZCKE23



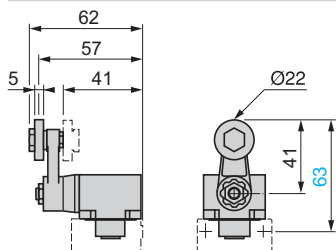
(1) 1 tapped entry for ISO M20 x 1.5 or Pg 13.5 cable gland or tapped 1/2" NPT.  
 Ø: 2 elongated holes Ø 5.3 x 7.3.

# Limit switches

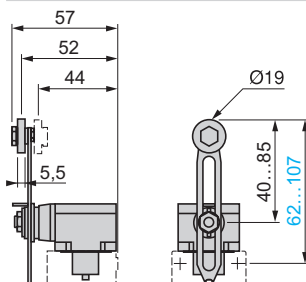
XC Standard range, industrial format EN 50041  
 Metal, conforming to CENELEC EN 50041, XCKJ  
 Fixed or plug-in body  
 Adaptable sub-assemblies

### Rotary head ZCKE05 with operating lever

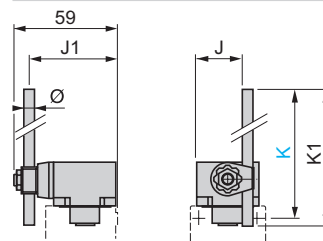
ZCKY11, ZCKY13, ZCKY14



ZCKY41, ZCKY43

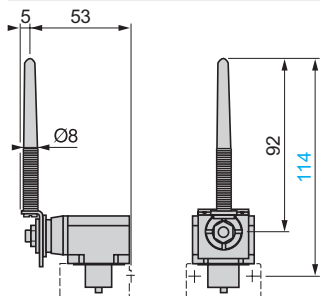


ZCKY51, ZCKY52, ZCKY53, ZCKY59

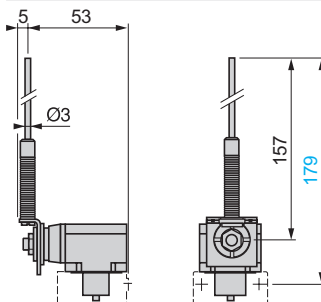


	J	J1	K max.	K1	Ø
ZCKY51	20	49	137	123	∅ 3
ZCKY52	20	49	137	125	∅ 3
ZCKY53	20	49	137	125	∅ 3
ZCKY59	26.2	48	212	200	∅ 6

ZCKY81

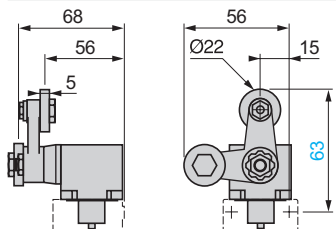


ZCKY91

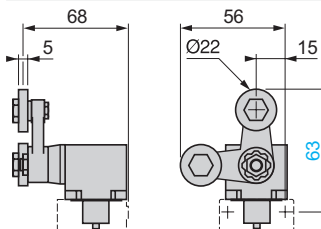


### Rotary head ZCKE09 with operating lever

ZCKY61

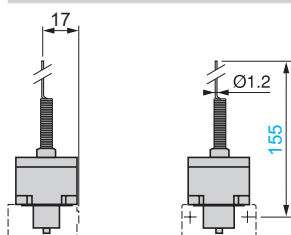


ZCKY71

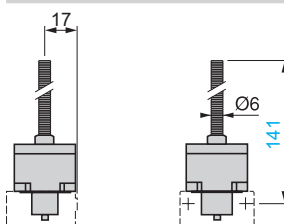


### Multi-directional heads

ZCKE06

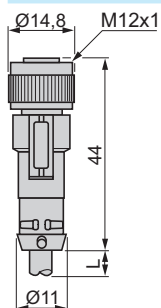


ZCKE08



Note: operating lever spindle threaded M6.

### Pre-wired connectors XZCP1164L



L = 2, 5 or 10 m.

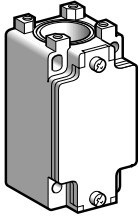
# Limit switches

XC Standard range, industrial format EN 50041

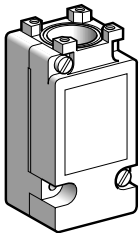
Metal, conforming to CENELEC EN 50041, XCKJ

Fixed or plug-in body

Adaptable sub-assemblies for low temperature applications (- 40°C)



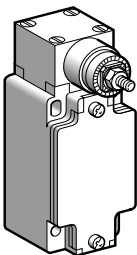
ZCKJ1



ZCKJ11

Bodies with contacts for plunger or rotary head						
Type	With contact block	Scheme	Positive operation (1)	Cable entry	Reference	Weight kg
<b>Fixed bodies</b>						
1 step	2-pole NC + NO snap action (XE2SP2151)		⊕	Pg 13.5	<b>ZCKJ1</b>	0.310
				ISO M20 x 1.5	<b>ZCKJ1H29</b>	0.310
				1/2" NPT	<b>ZCKJ1H7</b>	0.310
	Double-pole 2 CO simultaneous, snap action (XESP2021)		-	Pg 13.5	<b>ZCKJ2</b>	0.310
				ISO M20 x 1.5	<b>ZCKJ2H29</b>	0.310
				1/2" NPT	<b>ZCKJ2H7</b>	0.310
	2-pole NC + NO break before make, slow break (XE2NP2151)		⊕	Pg 13.5	<b>ZCKJ5</b>	0.310
ISO M20 x 1.5				<b>ZCKJ5H29</b>	0.310	
1/2" NPT				<b>ZCKJ5H7</b>	0.310	
2-pole NO + NC make before break, slow break (XE2NP2161)		⊕	Pg 13.5	<b>ZCKJ6</b>	0.310	
			ISO M20 x 1.5	<b>ZCKJ6H29</b>	0.310	
			1/2" NPT	<b>ZCKJ6H7</b>	0.310	
2-pole NC + NC simultaneous, slow break (XE2NP2141)		⊕	Pg 13.5	<b>ZCKJ7</b>	0.310	
			ISO M20 x 1.5	<b>ZCKJ7H29</b>	0.310	
			1/2" NPT	<b>ZCKJ7H7</b>	0.310	
2-pole NO + NO simultaneous, slow break (XE2NP2131)		-	Pg 13.5	<b>ZCKJ8</b>	0.310	
			ISO M20 x 1.5	<b>ZCKJ8H29</b>	0.310	
			1/2" NPT	<b>ZCKJ8H7</b>	0.310	
2-pole NC + NC snap action (XE2SP2141)		⊕	Pg 13.5	<b>ZCKJ9</b>	0.310	
			ISO M20 x 1.5	<b>ZCKJ9H29</b>	0.310	
			1/2" NPT	<b>ZCKJ9H7</b>	0.310	
2 step	Double-pole 2 CO staggered, snap action (XESP2031)		-	Pg 13.5	<b>ZCKJ4</b>	0.310
				ISO M20 x 1.5	<b>ZCKJ4H29</b>	0.310
				1/2" NPT	<b>ZCKJ4H7</b>	0.310
<b>Plug-in bodies</b>						
1 step	Single-pole CO snap action		-	Pg 13.5	<b>ZCKJ11</b>	0.300
				ISO M20 x 1.5	<b>ZCKJ11H29</b>	0.300
				1/2" NPT	<b>ZCKJ11H7</b>	0.300
Double-pole 2 CO simultaneous snap action		-	Pg 13.5	<b>ZCKJ21</b>	0.300	
			ISO M20 x 1.5	<b>ZCKJ21H29</b>	0.300	
			1/2" NPT	<b>ZCKJ21H7</b>	0.300	
2 step	Double-pole 2 CO staggered, snap action		-	Pg 13.5	<b>ZCKJ41</b>	0.300
				ISO M20 x 1.5	<b>ZCKJ41H29</b>	0.300
				1/2" NPT	<b>ZCKJ41H7</b>	0.300
<b>Bodies with contacts With spring return rotary head (without operating lever)</b>						
Type	With contact block	Scheme	Positive operation (1)	Cable entry	Reference	Weight kg
<b>Fixed body</b>						
2 step 1 from the left AND 1 from the right	Double-pole 2 CO staggered, snap action		-	Pg 13.5	<b>ZCKJ4046</b>	0.455
				ISO M20 x 1.5	<b>ZCKJ4046H29</b>	0.455
				1/2" NPT	<b>ZCKJ4046H7</b>	0.455
<b>Plug-in body</b>						
2 step 1 from the left AND 1 from the right	Double-pole 2 CO staggered, snap action		-	Pg 13.5	<b>ZCKJ41046</b>	0.465
				ISO M20 x 1.5	<b>ZCKJ41046H29</b>	0.465
				1/2" NPT	<b>ZCKJ41046H7</b>	0.465

(1) ⊕: head assuring positive opening operation.



ZCKJ4046

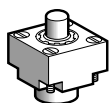
# Limit switches

XC Standard range, industrial format EN 50041

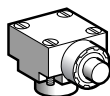
Metal, conforming to GENELEC EN 50041, XCKJ

Fixed or plug-in body

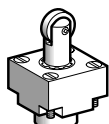
Adaptable sub-assemblies for low temperature applications (-40°C)



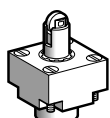
ZCKE616



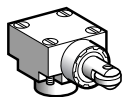
ZCKE636



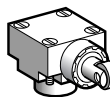
ZCKE626



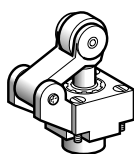
ZCKE676



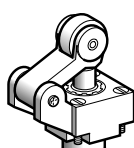
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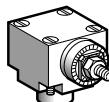
ZCKE656



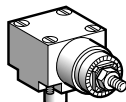
ZCKE216



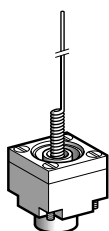
ZCKE236



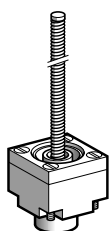
ZCKE056



ZCKE096



ZCKE066



ZCKE086

## Plunger heads

Type of operator	Compatible bodies	Maximum actuation speed	Positive operation (1)	Reference	Weight kg	
<b>For actuation on end</b>						
<b>End plunger metal</b>	ZCKJ●, ZCKJ●●	0.5 m/s	⊕	<b>ZCKE616</b>	0.140	
<b>Side plunger metal</b>	ZCKJ●, ZCKJ●●, except ZCKJ4 and J41	0.5 m/s	⊕	<b>ZCKE636</b>	0.200	
<b>For actuation by 30° cam</b>						
<b>Roller plunger steel</b>	ZCKJ●, ZCKJ●●	1 m/s	⊕	<b>ZCKE626</b>	0.155	
<b>End reinforced roller plunger steel</b>	ZCKJ●, ZCKJ●●	1 m/s	⊕	<b>ZCKE676</b>	0.155	
<b>Side roller plunger steel</b>	Horizontal	ZCKJ●, ZCKJ●●, except ZCKJ4 and J41	0.6 m/s	⊕	<b>ZCKE646</b>	0.205
	Vertical	ZCKJ●, ZCKJ●●, except ZCKJ4 and J41	0.6 m/s	⊕	<b>ZCKE656</b>	0.205
<b>Roller lever plunger (1 direction of actuation)</b>	Thermoplastic	ZCKJ●, ZCKJ●●	1.5 m/s	⊕	<b>ZCKE216</b>	0.185
	Steel	ZCKJ●, ZCKJ●●	1.5 m/s	⊕	<b>ZCKE236</b>	0.195

## Rotary heads (without operating lever)

Type	Compatible bodies	Maximum actuation speed	Positive operation (1)	Reference	Weight kg
<b>Spring return, for actuation from left AND right or from left OR right (see page 25)</b>	ZCKJ●, ZCKJ●●	1.5 m/s by 30° cam	⊕	<b>ZCKE056</b>	0.165
<b>Stay put, for actuation from left AND right (see page 25)</b>	ZCKJ1, J11 ZCKJ2, J21	0.5 m/s	–	<b>ZCKE096</b>	0.190

## Multi-directional heads

Type of operator	Compatible bodies	Maximum actuation speed	Positive operation (1)	Reference	Weight kg
<b>For actuation by any moving part</b>					
<b>"Cat's whisker"</b>	ZCKJ●, ZCKJ●●, except ZCKJ4 and ZCKJ41	1 m/s in any direction	–	<b>ZCKE066</b>	0.115
<b>Spring rod</b>	ZCKJ●, ZCKJ●●, except ZCKJ4 and ZCKJ41	0.5 m/s in any direction	–	<b>ZCKE086</b>	0.125

(1) ⊕: head assuring positive opening operation.

# Limit switches

XC Standard range, industrial format EN 50041

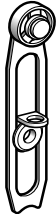
Metal, conforming to CENELEC EN 50041, XCKJ

Fixed or plug-in body

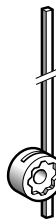
Adaptable sub-assemblies for low temperature applications (- 40°C)



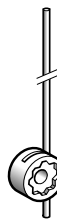
ZCKY1●



ZCKY4●



ZCKY51



ZCKY5●



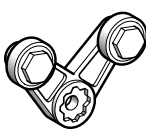
ZCKY59



ZCKY81



ZCKY91



ZCKY71



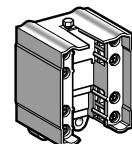
ZCKY61



XE2SP21●1



XE2NP21●1



XES P20●1

## Operating levers for rotary heads

Description		Positive operation (1)	Reference	Weight kg
<b>For actuation by 30° cam</b>				
Roller lever (2)	Thermoplastic	⊕	ZCKY11	0.025
	Steel	⊕	ZCKY13	0.035
	Steel, ball bearing mounted	⊕	ZCKY14	0.030
Variable length roller lever (3)	Thermoplastic	-	ZCKY41	0.030
	Steel	-	ZCKY43	0.040

## For actuation by any moving part

Square rod (2)	∅ 3 mm steel, L = 125 mm	-	ZCKY51	0.025
Round rod (2)	∅ 3 mm steel, L = 125 mm	-	ZCKY53	0.025
	∅ 3 mm glass fibre, L = 125 mm	-	ZCKY52	0.020
	∅ 6 mm thermoplastic, L = 200 mm	-	ZCKY59	0.030
Spring lever (3)		-	ZCKY81	0.020
Spring-metal rod lever (3)		-	ZCKY91	0.025

## For actuation by specific cam (only for operation with head ZCKE096)

Forked arm with rollers (2)	1 track	-	ZCKY71	0.035
	2 track	-	ZCKY61	0.035

## 2-pole and double-pole contact blocks

Type of contact	Scheme	For body	Positive operation (1)	Reference	Weight kg
NC + NO snap action		ZCKJ1	⊕	XE2SP2151	0.020
NC + NO break before make, slow break		ZCKJ5	⊕	XE2NP2151	0.020
2 CO simultaneous, snap action		ZCKJ2	-	XESP2021	0.045
2 CO staggered, snap action		ZCKJ4	-	XESP2031	0.045
NC + NO make before break, slow break		ZCKJ6	⊕	XE2NP2161	0.020
NC + NC simultaneous, slow break		ZCKJ7	⊕	XE2NP2141	0.020
NO + NO simultaneous, slow break		ZCKJ8	-	XE2NP2131	0.020
NC + NC snap action		ZCKJ9	⊕	XE2SP2141	0.020

(1) ⊕: NC contact with positive opening operation or sub-assembly assuring positive opening operation.

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

(3) Adjustable throughout 360° in 5° steps.

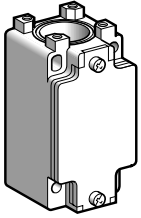
## Limit switches

XC Standard range, industrial format EN 50041

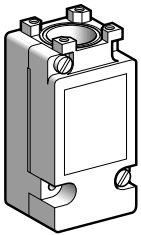
Metal, conforming to CENELEC EN 50041, XCKJ

Fixed or plug-in body

Adaptable sub-assemblies for high temperature applications (+ 120°C)



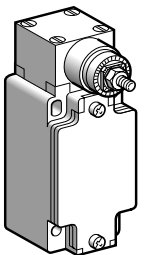
ZCKJ●



ZCKJ●15

Bodies with contacts		For plunger or rotary head				
Type	With contact block	Scheme	Positive operation (1)	Cable entry	Reference	Weight kg
<b>Fixed bodies</b>						
1 step	2-pole NC + NO snap action (XE2SP2151)		⊕	Pg 13.5	<b>ZCKJ1</b>	0.310
				ISO M20 x 1.5	<b>ZCKJ1H29</b>	0.310
				1/2" NPT	<b>ZCKJ1H7</b>	0.310
	Double-pole 2 CO simultaneous, snap action (XESP20215)		-	Pg 13.5	<b>ZCKJ25</b>	0.310
				ISO M20 x 1.5	<b>ZCKJ25H29</b>	0.310
				1/2" NPT	<b>ZCKJ25H7</b>	0.310
	2-pole NC + NO break before make, slow break (XE2NP2151)		⊕	Pg 13.5	<b>ZCKJ5</b>	0.310
				ISO M20 x 1.5	<b>ZCKJ5H29</b>	0.310
				1/2" NPT	<b>ZCKJ5H7</b>	0.310
	2-pole NO + NC make before break, slow break (XE2NP2161)		⊕	Pg 13.5	<b>ZCKJ6</b>	0.310
ISO M20 x 1.5				<b>ZCKJ6H29</b>	0.310	
1/2" NPT				<b>ZCKJ6H7</b>	0.310	
2-pole NC + NC simultaneous, slow break (XE2NP2141)		⊕	Pg 13.5	<b>ZCKJ7</b>	0.310	
			ISO M20 x 1.5	<b>ZCKJ7H29</b>	0.310	
			1/2" NPT	<b>ZCKJ7H7</b>	0.310	
2-pole NO + NO simultaneous, slow break (XE2NP2131)		-	Pg 13.5	<b>ZCKJ8</b>	0.310	
			ISO M20 x 1.5	<b>ZCKJ8H29</b>	0.310	
			1/2" NPT	<b>ZCKJ8H7</b>	0.310	
2-pole NC + NC snap action (XE2SP2141)		⊕	Pg 13.5	<b>ZCKJ9</b>	0.310	
			ISO M20 x 1.5	<b>ZCKJ9H29</b>	0.310	
			1/2" NPT	<b>ZCKJ9H7</b>	0.310	
2 step	Double-pole 2 CO staggered, snap action (XESP20315)		-	Pg 13.5	<b>ZCKJ45</b>	0.310
				ISO M20 x 1.5	<b>ZCKJ45H29</b>	0.310
				1/2" NPT	<b>ZCKJ45H7</b>	0.310
<b>Plug-in bodies</b>						
1 step	Single-pole CO snap action		-	Pg 13.5	<b>ZCKJ115</b>	0.300
				ISO M20 x 1.5	<b>ZCKJ115H29</b>	0.300
				1/2" NPT	<b>ZCKJ115H7</b>	0.300
	Double-pole 2 CO simultaneous, snap action		-	Pg 13.5	<b>ZCKJ215</b>	0.300
				ISO M20 x 1.5	<b>ZCKJ215H29</b>	0.300
				1/2" NPT	<b>ZCKJ215H7</b>	0.300
2 step	Double-pole 2 CO staggered, snap action		-	Pg 13.5	<b>ZCKJ415</b>	0.300
				ISO M20 x 1.5	<b>ZCKJ415H29</b>	0.300
				1/2" NPT	<b>ZCKJ415H7</b>	0.300
<b>Bodies with contacts</b>		<b>With spring return rotary head (without operating lever)</b>				
Type	With contact block	Scheme	Positive operation (1)	Cable entry	Reference	Weight kg
<b>Fixed body</b>						
2 step 1 from the left AND 1 from the right	Double-pole 2 CO staggered, snap action		-	Pg 13.5	<b>ZCKJ4045</b>	0.455
				ISO M20 x 1.5	<b>ZCKJ4045H29</b>	0.455
				1/2" NPT	<b>ZCKJ4045H7</b>	0.455
<b>Plug-in body</b>						
2 step 1 from the left AND 1 from the right	Double-pole 2 CO staggered, snap action		-	Pg 13.5	<b>ZCKJ41045</b>	0.465
				ISO M20 x 1.5	<b>ZCKJ41045H29</b>	0.465
				1/2" NPT	<b>ZCKJ41045H7</b>	0.465

(1) ⊕: head assuring positive opening operation.



ZCKJ4045

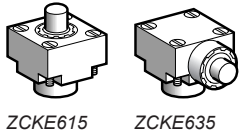
# Limit switches

XC Standard range, industrial format EN 50041

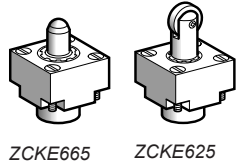
Metal, conforming to CENELEC EN 50041, XCKJ

Fixed or plug-in body

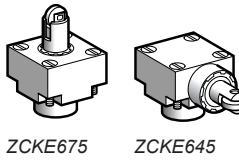
Adaptable sub-assemblies for high temperature applications (+ 120°C)



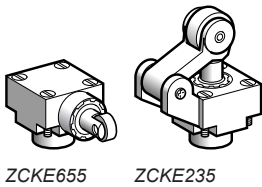
ZCKE615 ZCKE635



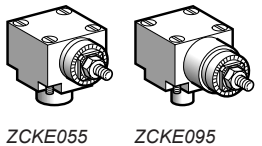
ZCKE665 ZCKE625



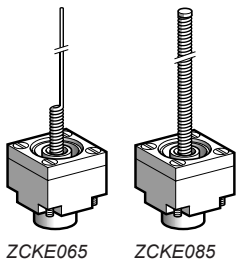
ZCKE675 ZCKE645



ZCKE655 ZCKE235



ZCKE055 ZCKE095



ZCKE065 ZCKE085

Plunger heads						
Type of operator		Compatible bodies	Maximum actuation speed	Positive operation (1)	Reference	Weight kg
<b>For actuation on end</b>						
End plunger	Metal	ZCKJ1, J2, J4, ZCKJ115, J215, J415, ZCKJ5, J6, J7, J8, J9	0.5 m/s	⊕	ZCKE615	0.140
Side plunger	Metal	ZCKJ1, J2, ZCKJ115, J215, ZCKJ5, J6, J7, J8, J9	0.5 m/s	⊕	ZCKE635	0.200
<b>For actuation by 30° cam</b>						
End ball bearing plunger	Steel	ZCKJ1, J2, J4, ZCKJ115, J215, J415, ZCKJ5, J6, J7, J8, J9	0.1 m/s	⊕	ZCKE665	0.150
End roller plunger	Steel	ZCKJ1, J2, J4, ZCKJ115, J215, J415, ZCKJ5, J6, J7, J8, J9	1 m/s	⊕	ZCKE625	0.155
End reinforced roller plunger	Steel	ZCKJ1, J2, J4, ZCKJ115, J215, J415, ZCKJ5, J6, J7, J8, J9	1 m/s	⊕	ZCKE675	0.155
Side roller plunger	Steel Horizontal	ZCKJ1, J2, ZCKJ115, J215, ZCKJ5, J6, J7, J8, J9	0.6 m/s	⊕	ZCKE645	0.205
	Steel Vertical	ZCKJ1, J2, ZCKJ115, J215, ZCKJ5, J6, J7, J8, J9	0.6 m/s	⊕	ZCKE655	0.205
Roller lever plunger (1 direction of actuation)	Steel	ZCKJ1, J2, J4, ZCKJ115, J215, J415, ZCKJ5, J6, J7, J8, J9	1.5 m/s	⊕	ZCKE235	0.195
	Thermoplastic	ZCKJ1, J2, J4, ZCKJ115, J215, J415, ZCKJ5, J6, J7, J8, J9	1.5 m/s	⊕	ZCKE215	0.185
<b>Rotary heads (without operating lever)</b>						
Type		Compatible bodies	Maximum actuation speed	Positive operation (1)	Reference	Weight kg
Spring return, for actuation from left AND right or from left OR right (see page 25)		ZCKJ1, J2, J4, ZCKJ115, J215, ZCKJ415, ZCKJ5, J6, J7, J8, J9	1.5 m/s by 30° cam	⊕	ZCKE055	0.165
Stay put, actuation from left AND right (see page 25)		ZCKJ1, J2, ZCKJ115, J215	0.5 m/s	–	ZCKE095	0.190
<b>Multi-directional heads</b>						
Type of operator		Compatible bodies	Maximum actuation speed	Positive operation (1)	Reference	Weight kg
<b>For actuation by any moving part</b>						
“Cat’s whisker”		ZCKJ1, J2, ZCKJ115, J215, ZCKJ5, J6, J7, J8, J9	1 m/s in any direction	–	ZCKE065	0.115
Spring rod		ZCKJ1, J2, ZCKJ115, J215, ZCKJ5, J6, J7, J8, J9	0.5 m/s in any direction	–	ZCKE085	0.125

(1) ⊕: head assuring positive opening operation.

# Limit switches

XC Standard range, industrial format EN 50041

Metal, conforming to GENELEC EN 50041, XCKJ

Fixed or plug-in body

Adaptable sub-assemblies for high temperature applications (+ 120°C)



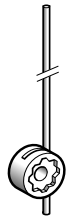
ZCKY1●



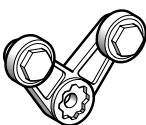
ZCKY43



ZCKY51



ZCKY5●



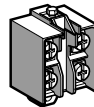
ZCKY715



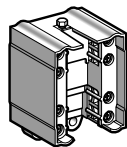
ZCKY615



XE2SP21●1



XE2NP21●1



XESP20●15

## Operating levers for rotary heads

Description		Positive operation (1)	Reference	Weight kg
<b>For actuation by 30° cam</b>				
Roller lever (2)	Thermoplastic	⊕	ZCKY115	0.025
	Steel	⊕	ZCKY13	0.035
	Steel, ball bearing mounted	⊕	ZCKY14	0.030
Variable length roller lever (3)	Thermoplastic	–	ZCKY415	0.030
	Steel	–	ZCKY43	0.040
<b>For actuation by any moving part</b>				
Square rod (2)	∅ 3 mm steel, L = 125 mm	–	ZCKY51	0.025
Round rod (2)	∅ 3 mm steel, L = 125 mm	–	ZCKY53	0.025
	∅ 3 mm glass fibre, L = 125 mm	–	ZCKY52	0.020
<b>For actuation by specific cam (only for operation with head ZCKE095)</b>				
Forked arm with rollers (2)	1 track	–	ZCKY715	0.035
	2 track	–	ZCKY615	0.035

## 2-pole and double-pole contact blocks

Type of contact	Scheme	For bodies	Positive operation (1)	Reference	Weight kg
NC + NO snap action		ZCKJ1	⊕	XE2SP2151	0.020
NC + NO break before make, slow break		ZCKJ5	⊖	XE2NP2151	0.020
2 CO simultaneous, snap action		ZCKJ25	–	XESP20215	0.045
2 CO staggered, snap action		ZCKJ45	–	XESP20315	0.045
NC + NO make before break, slow break		ZCKJ6	⊖	XE2NP2161	0.020
NC + NC simultaneous, slow break		ZCKJ7	⊖	XE2NP2141	0.020
NO + NO simultaneous, slow break		ZCKJ8	–	XE2NP2131	0.020
NC + NC snap action		ZCKJ9	⊕	XE2SP2141	0.020

(1) ⊕: NC contact with positive opening operation or sub-assembly assuring positive opening operation.

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

(3) Adjustable throughout 360° in 5° steps.

# Limit switches

## XC Standard range

### Product reference index

<b>A</b>									
AB1R11	128	XCKJ10511H29	146	XCKN2127P20	104	XCKP2511P16	74	XCMD2124L1	28
		XCKJ10513A	152	XCKN2139P20	105	XCKP2518P16	75	XCMD2124M12	36
		XCKJ10513D	150	XCKN2145P20	105	XCKP2521P16	74	XCMD2145C12	37
<b>D</b>		XCKJ10513H29	146	XCKN2149P20	105	XCKP2527P16	74	XCMD2145L1	29
DE9RA1012	92	XCKJ10541A	152	XCKN2502P20	104	XCKP2528P16	74	XCMD2145M12	37
	106	XCKJ10541D	150	XCKN2503P20	104	XCKP2539P16	75	XCMD21F0C12	36
	107	XCKJ10541H29	146	XCKN2506P20	105	XCKP2545P16	75	XCMD21F0L1	28
	113	XCKJ10559A	152	XCKN2508P20	105	XCKP2549P16	75	XCMD21F0M12	36
DE9RA1212	141	XCKJ10559D	150	XCKN2510P20	104	XCKP25H0P16	75	XCMD21F2C12	36
DE9RA2012	141	XCKJ10559H29	146	XCKN2518P20	105	XCKP25H2P16	75	XCMD21F2L1	28
		XCKJ110511H29	148	XCKN2521P20	104	XCKS101H29	134	XCMD21F2M12	36
<b>X</b>		XCKJ110513H29	148	XCKN2527P20	104	XCKS102H29	134	XCMD21G1C12	36
XALZ09	92	XCKJ110541H29	148	XCKN2539P20	105	XCKS131H29	134	XCMD21G1L1	28
XCDR2102P20	98	XCKJ110559H29	148	XCKN2545P20	105	XCKS133H29	134	XCMD21G1M12	36
XCDR2110P20	98	XCKJ1161H29	148	XCKN2549P20	105	XCKS139H29	134	XCMD2501L1	49
XCDR2118P20	98	XCKJ1167H29	148	XCKN2702P20	104	XCKS141H29	134	XCMD2502AM4	54
XCDR2119P20	98	XCKJ161A	152	XCKN2703P20	104	XCKS143H29	134	XCMD2502L1	28
XCDR2121P20	98	XCKJ161D	150	XCKN2706P20	105	XCKS149H29	134	XCMD2506L1	29
XCDR2127P20	98	XCKJ161H29	146	XCKN2708P20	105	XCKS159H29	134	XCMD2510AM4	54
XCDR2502P20	98	XCKJ167A	152	XCKN2710P20	104	XCKS501H29	134	XCMD2510L1	28
XCDR2510P20	98	XCKJ167D	150	XCKN2718P20	105	XCKS502H29	134	XCMD2511L1	28
XCDR2518P20	98	XCKJ167H29	146	XCKN2721P20	104	XCKS531H29	134	XCMD2515AM4	54
XCDR2519P20	98	XCKJ50511H29	146	XCKN2727P20	104	XCKS533H29	134	XCMD2515L1	29
XCDR2521P20	98	XCKJ50513H29	146	XCKN2739P20	105	XCKS539H29	134	XCMD2516L1	29
XCDR2527P20	98	XCKJ50541H29	146	XCKN2745P20	105	XCKS541H29	134	XCMD2517L1	29
XCKD2101G11	92	XCKJ50559H29	146	XCKN2749P20	105	XCKS543H29	134	XCMD2524L1	28
XCKD2101M12	92	XCKJ561H29	146	XCKN2902P20	104	XCKS549H29	134	XCMD2545L1	29
XCKD2101P16	92	XCKJ567H29	146	XCKN2903P20	104	XCKS559H29	134	XCMD25F0L1	28
XCKD2102M12	84	XCKL102	120	XCKN2906P20	105	XCKT2101G11	92	XCMD25F2L1	28
XCKD2102P16	80	XCKL106	120	XCKN2908P20	105	XCKT2101P16	92	XCMD25G1L1	28
XCKD2106M12	85	XCKL110	120	XCKN2910P20	104	XCKT2102P16	86	XC MN2102L1	70
XCKD2106P16	81	XCKL115	120	XCKN2918P20	105	XCKT2106P16	86	XC MN2103L1	70
XCKD2110M12	84	XCKL121	120	XCKN2921P20	104	XCKT2110P16	86	XC MN2106L1	71
XCKD2110P16	80	XCKL502	120	XCKN2927P20	104	XCKT2111P16	86	XC MN2107L1	71
XCKD2111M12	84	XCKL506	120	XCKN2939P20	105	XCKT2118P16	87	XC MN2110L1	70
XCKD2111P16	80	XCKL510	120	XCKN2945P20	105	XCKT2121P16	86	XC MN2115L1	71
XCKD2118M12	85	XCKL515	120	XCKN2949P20	105	XCKT2139P16	87	XC MN2121L1	70
XCKD2118P16	81	XCKL521	120	XCKP2101G11	92	XCKT2145P16	87	XC MN2145L1	71
XCKD2121M12	84	XCKM102H29	118	XCKP2101M12	92	XCKT21H0P16	87	XC MN2159L1	71
XCKD2121P16	80	XCKM106H29	118	XCKP2101P16	92	XCKT21H2P16	87	XC MN21F0L1	70
XCKD2127M12	84	XCKM110H29	118	XCKP2102M12	78	XCKT2501G11	92	XC MN21F2L1	70
XCKD2127P16	80	XCKM115H29	118	XCKP2102P16	74	XCKT2501P16	92	XC MN21F3L1	70
XCKD2128M12	84	XCKM121H29	118	XCKP2106M12	79	XCKZ09	128	XC MV2102D44	53
XCKD2128P16	80	XCKM502H29	118	XCKP2106P16	75	XCMD2101C12	49	XC MV2102M12	55
XCKD2139M12	85	XCKM506H29	118	XCKP2110M12	78	XCMD2101L1	49	XC MV2110D44	53
XCKD2139P16	81	XCKM510H29	118	XCKP2110P16	74	XCMD2101M12	49	XC MV2110M12	55
XCKD2145M12	85	XCKM515H29	118	XCKP2111M12	78	XCMD2102AM4	54	XC MV2115D44	53
XCKD2145P16	81	XCKM521H29	118	XCKP2111P16	74	XCMD2102C12	36	XC MV2115M12	55
XCKD2149M12	85	XCKML102	122	XCKP2118M12	79	XCMD2102L1	28	XC MV2502D44	53
XCKD2149P16	81	XCKML102H29	122	XCKP2118P16	75	XCMD2102M12	36	XC MV2502M12	55
XCKD21H0M12	85	XCKML110	122	XCKP2121M12	78	XCMD2106C12	37	XC MV2510D44	53
XCKD21H0P16	81	XCKML110H29	122	XCKP2121P16	74	XCMD2106L1	29	XC MV2510M12	55
XCKD21H2M12	85	XCKML115	122	XCKP2127M12	78	XCMD2106M12	37	XC MV2515D44	53
XCKD21H2P16	81	XCKML115H29	122	XCKP2127P16	74	XCMD2110AM4	54	XC MV2515M12	55
XCKD2501G11	92	XCKML121	122	XCKP2128M12	78	XCMD2110C12	36	XC MZ06	49
XCKD2501P16	92	XCKML121H29	122	XCKP2128P16	74	XCMD2110L1	28	XC MZ07	49
XCKD2502P16	80	XCKML502	122	XCKP2139M12	79	XCMD2110M12	36		92
XCKD2506P16	81	XCKML502H29	122	XCKP2139P16	75	XCMD2111C12	36	XC NR2102P20	112
XCKD2510P16	80	XCKML510	122	XCKP2145M12	79	XCMD2111L1	28	XC NR2110P20	112
XCKD2511P16	80	XCKML510H29	122	XCKP2145P16	75	XCMD2111M12	36	XC NR2118P20	112
XCKD2518P16	81	XCKML515	122	XCKP2149M12	79	XCMD2115AM4	54	XC NR2121P20	112
XCKD2521P16	80	XCKML515H29	122	XCKP2149P16	75	XCMD2115C12	37	XC NR2127P20	112
XCKD2527P16	80	XCKML521	122	XCKP21H0M12	79	XCMD2115L1	29	XC NR2502P20	112
XCKD2528P16	80	XCKML521H29	122	XCKP21H0P16	75	XCMD2115M12	37	XC NR2510P20	112
XCKD2539P16	81	XCKN2102P20	104	XCKP21H2M12	79	XCMD2116C12	37	XC NR2518P20	112
XCKD2545P16	81	XCKN2103P20	104	XCKP21H2P16	75	XCMD2116L1	29	XC NR2521P20	112
XCKD2549P16	81	XCKN2106P20	105	XCKP2501G11	92	XCMD2116M12	37	XC NR2527P20	112
XCKD25H0P16	81	XCKN2108P20	105	XCKP2501P16	92	XCMD2117C12	37	XC NR2702P20	112
XCKD25H2P16	81	XCKN2110P20	104	XCKP2502P16	74	XCMD2117L1	29	XC NR2710P20	112
XCKJ10511A	152	XCKN2118P20	105	XCKP2506P16	75	XCMD2117M12	37	XC NR2718P20	112
XCKJ10511D	150	XCKN2121P20	104	XCKP2510P16	74	XCMD2124C12	36	XC NR2721P20	112

# Limit switches

## XC Standard range

### Product reference index

XCNR2727P20	112	XCTR2121P16	100	XZCP1169L10	40	ZCE06	31	ZCEH2	75
XCNR2902P20	112	XCTR2502P16	100	XZCP1169L2	40		39		79
XCNR2910P20	112	XCTR2510P16	100	XZCP1169L5	40		49		81
XCNR2918P20	112	XCTR2518P16	100	XZCP1264L10	40		57		85
XCNR2921P20	112	XCTR2521P16	100		150		58		87
XCNR2927P20	112	XE2NP2131	93	XZCP1264L2	40		60	ZCKD01	120
XCNT2102P16	106		128		150		62		135
XCNT2103P16	106		141	XZCP1264L5	40		75	ZCKD02	118
XCNT2106P16	107		160		150		79		120
XCNT2108P16	107		168	XZCP1764L10	152		81		135
XCNT2110P16	106	XE2NP2141	93	XZCP1764L2	152	ZCE10	92	ZCKD06	118
XCNT2118P16	107		128	XZCP1764L5	152		30		120
XCNT2121P16	106		141	XZCP1771L10	40		38	ZCKD10	118
XCNT2139P16	107		160	XZCP1771L2	40		57		120
XCNT2145P16	107		168	XZCP1771L5	40		58	ZCKD15	118
XCNT2149P16	107	XE2NP2151	93				60		120
XCNT2502P16	106		128	<b>Z</b>			62	ZCKD21	118
XCNT2503P16	106		141	ZCD21	90		74		120
XCNT2506P16	107		160	ZCD25	90		78	ZCKD31	135
XCNT2508P16	107		168	ZCD26	90	ZCE106	80	ZCKD39	135
XCNT2510P16	106	XE2NP2161	93	ZCD27	80		84	ZCKD41	135
XCNT2518P16	107		128		81		86		
XCNT2521P16	106		141		90		57	ZCKD49	135
XCNT2539P16	107		160	ZCD28	90	ZCE11	58	ZCKD59	135
XCNT2545P16	107		168	ZCD29	80		60	ZCKE05	146
XCNT2549P16	107	XE2NP3131	93		81		62	ZCKE055	170
XCNT2702P16	106	XE2NP3141	93		90		74	ZCKE056	167
XCNT2703P16	106	XE2NP3151	93	ZCD29M12	81		78	ZCKE065	170
XCNT2706P16	107	XE2NP3161	93		85		80	ZCKE066	167
XCNT2708P16	107	XE2SP2141	93	ZCD31	90		84	ZCKE085	170
XCNT2710P16	106		128	ZCD35	90		86	ZCKE086	167
XCNT2718P16	107		141	ZCD37	80		88	ZCKE095	170
XCNT2721P16	106		160		81	ZCE21	74	ZCKE096	167
XCNT2739P16	107		168		90		78	ZCKE215	170
XCNT2745P16	107	XE2SP2151	93	ZCD39	80		80	ZCKE216	167
XCNT2749P16	107		128		81		84	ZCKE235	170
XCNTR2102P16	113		141	ZCDEP16	80	ZCE24	86	ZCKE236	167
XCNTR2110P16	113		160		81		30	ZCKE61	146
XCNTR2118P16	113		168	ZCE01	31		38	ZCKE615	170
XCNTR2121P16	113	XE2SP3151	93		39		57	ZCKE616	167
XCNTR2502P16	113	XE3NP2141	93		57		58	ZCKE625	170
XCNTR2510P16	113		128		60	ZCE27	60	ZCKE626	167
XCNTR2518P16	113		160		62		62	ZCKE635	170
XCNTR2521P16	113	XE3NP2151	93		74		74	ZCKE636	167
XCNTR2702P16	113		128		75		78	ZCKE645	170
XCNTR2710P16	113		141		79	ZCE28	84	ZCKE646	167
XCNTR2718P16	113		160		80		84	ZCKE655	170
XCNTR2721P16	113	XE3SP2141	93		81		78	ZCKE656	167
XCPR2102P20	96		128		84		80	ZCKE665	170
XCPR2110P20	96		141		85	ZCEF0	84	ZCKE67	146
XCPR2118P20	96	XE3SP2151	93		87		30	ZCKE675	170
XCPR2119P20	96		128	ZCE016	57		38	ZCKE676	167
XCPR2121P20	96		141		58		57	ZCKJ01	157
XCPR2127P20	96		160		60		58	ZCKJ0121	161
XCPR2502P20	96	XESP2021	160		60	ZCEF2	62	ZCKJ0134	161
XCPR2510P20	96		168	ZCE02	30		30	ZCKJ02	157
XCPR2518P20	96	XESP20215	171		38		38	ZCKJ04	157
XCPR2519P20	96	XESP2031	160		57		57	ZCKJ1	156
XCPR2521P20	96	XESP20315	171		58		60		166
XCPR2527P20	96	XESP3021	141		60	ZCEG1	62		169
XCPR2902P20	96	XZCP1164L10	40		62		30	ZCKJ11	157
XCPR2910P20	96		150		62		38		166
XCPR2918P20	96		159	ZCE026	57		57	ZCKJ1121	158
XCPR2921P20	96	XZCP1164L2	40		58		58	ZCKJ1121H29	158
XCPR2927P20	96		150		60	ZCEH0	60	ZCKJ1134	158
XCTR2102P16	100		159		62		62	ZCKJ1134H29	158
XCTR2110P16	100	XZCP1164L5	40		62		75	ZCKJ115	169
XCTR2118P16	100		150	ZCE05	49		79	ZCKJ115H29	169
			159		92		85	ZCKJ115H7	169
							87		

# Limit switches

## XC Standard range

### Product reference index

ZCKJ11H29	157	ZCKJ4H7	156	ZCKJD39	146	ZCKS404H29	140	ZCMC21T2	48
	166		166	ZCKJD39H29	146	ZCKS5	140	ZCMC21T5	48
ZCKJ11H7	157	ZCKJ5	156		156	ZCKS5H29	140	ZCMC25L1	48
	166		166	ZCKJD39H7	146	ZCKS6	140	ZCMC25L10	48
ZCKJ120	158		169	ZCKL1	126	ZCKS6H29	140	ZCMC25L2	48
ZCKJ121	158	ZCKJ520	158	ZCKL1H7	126	ZCKS7	140	ZCMC25L3	48
ZCKJ121H29	158	ZCKJ521	158	ZCKL5	126	ZCKS7H29	135	ZCMC25L5	48
ZCKJ134	158	ZCKJ521H29	158	ZCKL5H7	126	ZCKS7H30	140	ZCMC25L7	48
ZCKJ134H29	158	ZCKJ534	158	ZCKL6	126	ZCKS8	140	ZCMC25T06	48
ZCKJ1D	159	ZCKJ534H29	158	ZCKL6H7	126	ZCKS8H29	140	ZCMC29L1	48
ZCKJ1H29	156	ZCKJ5D	159	ZCKL7	120	ZCKS9	140	ZCMC29L10	48
	166	ZCKJ5H29	156		126	ZCKS9H29	135	ZCMC29L2	48
	169		169	ZCKL7H7	126	ZCKS9H30	140	ZCMC29L3	48
ZCKJ1H7	156	ZCKJ5H7	156	ZCKL8	126	ZCKSD31	140	ZCMC29L5	48
	166		166	ZCKL8H7	126	ZCKSD31H29	140	ZCMC29L7	48
	169		169	ZCKLD31	127	ZCKSD35	140	ZCMC37L1	48
ZCKJ2	156	ZCKJ6	156	ZCKLD31H7	127	ZCKSD35H29	140	ZCMC37L2	48
	166		166	ZCKLD35	127	ZCKSD37	140	ZCMC37L5	48
ZCKJ21	157		169	ZCKLD35H7	127	ZCKSD37H29	135	ZCMC39L1	48
	166	ZCKJ6D	159	ZCKLD37	120		140	ZCMC39L2	48
ZCKJ215	169	ZCKJ6H29	156		120	ZCKSD39	140	ZCMC39L5	48
ZCKJ215H29	169		166	ZCKLD37H7	127	ZCKSD39H29	135	ZCMC4DL1	48
ZCKJ215H7	169		166	ZCKLD39	120		140	ZCMC4DL2	48
ZCKJ21H29	157	ZCKJ6H7	156		127	ZCKY11	146	ZCMC4DL5	48
	166		166	ZCKLD39H7	127		168	ZCMD21	46
ZCKJ21H7	157	ZCKJ7	156	ZCKM1	126	ZCKY115	171	ZCMD21AM4	58
	166		166	ZCKM1H29	126	ZCKY13	146	ZCMD21C12	38
ZCKJ25	169	ZCKJ7D	159	ZCKM1H7	126		171		39
ZCKJ25H29	169		156	ZCKM5	126	ZCKY14	168	ZCMD21L08R12	39
ZCKJ25H7	169	ZCKJ7H29	146	ZCKM5H29	126		171	ZCMD21L08U78	39
ZCKJ2H29	156		166	ZCKM5H7	126	ZCKY41	146	ZCMD21L1	47
	166	ZCKJ7H7	156	ZCKM6	126		168	ZCMD21L2	47
ZCKJ2H7	156		166	ZCKM6H29	126	ZCKY415	171	ZCMD21L5	47
	166	ZCKJ8	156	ZCKM6H7	126	ZCKY43	168	ZCMD21M12	38
ZCKJ4	156		166	ZCKM7	126		171		39
	166	ZCKJ82A	161	ZCKM7H29	118	ZCKY51	168	ZCMD25	46
ZCKJ404	157	ZCKJ8D	159	ZCKM7H30	126		171	ZCMD25AM4	58
ZCKJ4045	169	ZCKJ8H29	156	ZCKM7H7	126	ZCKY52	168	ZCMD25L1	47
ZCKJ4045H29	169		166	ZCKM8	126		171	ZCMD25L2	47
ZCKJ4045H7	169	ZCKJ8H7	156	ZCKM8H29	126	ZCKY53	168	ZCMD25L5	47
ZCKJ4046	166		166	ZCKM8H7	126		171	ZCMD29	46
ZCKJ4046H29	166	ZCKJ9	156	ZCKM9	126	ZCKY59	146	ZCMD29AM4	58
ZCKJ4046H7	166		166	ZCKM9H29	118		168	ZCMD29C12	38
ZCKJ404H29	157	ZCKJ902	161	ZCKM9H30	126	ZCKY61	168		39
ZCKJ404H7	157	ZCKJ904	161	ZCKMD31	127	ZCKY615	171	ZCMD29L1	30
ZCKJ41	157	ZCKJ904	161	ZCKMD31H29	127	ZCKY71	168		31
	166	ZCKJ906	161	ZCKMD31H7	127	ZCKY715	171	ZCMD29L2	47
ZCKJ4104	157	ZCKJ9H29	146	ZCKMD35	127	ZCKY81	168	ZCMD29L5	47
ZCKJ41045	169		156	ZCKMD35H29	127	ZCKY91	168	ZCMD37	46
ZCKJ41045H29	169	ZCKJ9H7	156	ZCKMD35H7	127	ZCKZ020	161	ZCMD37L1	30
ZCKJ41045H7	169		166	ZCKMD37	127		161		31
ZCKJ41046	166	ZCKJ9H7	156	ZCKMD37H29	118	ZCMC21E1	48	ZCMD37L2	47
ZCKJ41046H29	166		166	ZCKMD37H30	127	ZCMC21E10	48	ZCMD37L5	47
ZCKJ41046H7	166	ZCKJD31	156	ZCKMD37H7	127	ZCMC21E2	48	ZCMD39	46
ZCKJ4104H29	157	ZCKJD31H29	156	ZCKMD39	127	ZCMC21E3	48	ZCMD39L1	30
ZCKJ4104H7	157	ZCKJD31H7	156	ZCKMD39H29	118	ZCMC21E5	48		31
ZCKJ415	169	ZCKJD35	156	ZCKMD39H7	127	ZCMC21E7	48		47
ZCKJ415H29	169	ZCKJD35H29	156	ZCKMD39H7	127	ZCMC21L1	48	ZCMD39L2	47
ZCKJ415H7	169	ZCKJD35H7	156	ZCKM1	126	ZCMC21L10	48	ZCMD39L5	47
ZCKJ41H29	157	ZCKJD37	156	ZCKM1H29	126	ZCMC21L2	48	ZCMD41L1	30
	166	ZCKJD37H29	146	ZCKM1H7	126	ZCMC21L3	48		31
ZCKJ41H7	157	ZCKJD37H30	156	ZCKM5	126	ZCMC21L5	48	ZCMD41L2	47
	166	ZCKJD37H7	156	ZCKM5H29	126	ZCMC21L7	48	ZCMD41L5	47
ZCKJ45	169	ZCKJD37H7	156	ZCKM5H7	126	ZCMC21T1	48	ZCMD4D	46
ZCKJ45H29	169	ZCKJ9H7	156	ZCKM6	126				
ZCKJ45H7	169		166	ZCKM6H29	126				
ZCKJ4H29	156		169	ZCKM6H7	126				
	166			ZCKM7	126				
				ZCKM7H29	118				
				ZCKM7H30	126				
				ZCKM7H7	126				
				ZCKM8	126				
				ZCKM8H29	126				
				ZCKM8H7	126				
				ZCKM9	126				
				ZCKM9H29	118				
				ZCKM9H30	126				
				ZCKMD31	127				
				ZCKMD31H29	127				
				ZCKMD31H7	127				
				ZCKMD35	127				
				ZCKMD35H29	127				
				ZCKMD35H7	127				
				ZCKMD37	127				
				ZCKMD37H29	118				
				ZCKMD37H30	127				
				ZCKMD37H7	127				
				ZCKMD39	127				
				ZCKMD39H29	118				
				ZCKMD39H7	127				
				ZCKM1	126				
				ZCKS1	140				
				ZCKS1H29	140				
				ZCKS2	140				
				ZCKS2H29	140				
				ZCKS404	140				

ZCMD4DL1	30	ZCT28P16	86
	31		87
	47		91
ZCMD4DL2	47	ZCY15	31
ZCMD4DL5	47		39
ZCMD61	46		57
ZCMD61C12	49		58
ZCMD61M12	49		60
ZCMD65	46		62
ZCMD69	46	ZCY16	31
ZCMD69C12	49		39
ZCMD77	46		57
ZCMD79	46		58
ZCMD81L1	47		60
ZCMD81L2	47		62
ZCMD81L5	47	ZCY17	31
ZCMV21	60		39
ZCMV21D44	57		57
ZCMV21M12	60		58
ZCMV25D44	57		60
ZCMV25M12	60		62
ZCMV29D44	57	ZCY18	75
ZCMV29M12	60		79
ZCMV41L03	62		81
ZCP21	90		85
ZCP21D44	90		87
ZCP25	90	ZCY39	74
ZCP26	90		75
ZCP27	74		79
	75		81
	90		85
ZCP28	90		87
ZCP29	74	ZCY45	31
	75		39
	90		57
ZCP29M12	78		58
	79		60
ZCP31	90		62
ZCP35	90		74
ZCP37	74		75
	75		79
	90		81
ZCP39	74		85
	75		87
	90	ZCY49	74
ZCPED44	90		75
ZCPEP16	74		79
	75		81
ZCT21G11	91		85
ZCT21N12	91		
ZCT21P16	91		
ZCT25G11	91		
ZCT25N12	91		
ZCT25P16	86		
	87		
	91		
ZCT26G11	91		
ZCT26N12	91		
ZCT26P16	86		
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	91		
ZCT27G11	91		
ZCT27N12	91		
ZCT27P16	86		
	87		
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ZCT28G11	91		
ZCT28N12	91		

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